

Quectel UC20

UMTS/HSPA+ Module



Dual-mode & Multi-band
for UMTS & GSM



HSDPA 14.4Mbps
HSUPA 5.76Mbps



LCC Package



Embedded Abundant
Protocols



eCall



Compact Size



GLONASS+GPS



Rx-diversity



Digital Audio
(Optional)



GPRS/EDGE
Multi-slot Class 12



USB Drivers



Quectel Enhanced
AT Commands

Key Benefits

- Worldwide UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- Minimal SMT form factor ideal for small end products with tight space
- High-quality data and image transmission even in hazard conditions and dark environment
- Fast time-to-market:
reference designs, evaluation tools and timely technical support minimize design-in time and development efforts
- Equivalent noise-figure performance is achieved by primary and diversity receiving patches of WCDMA
- Robust mounting and interfaces



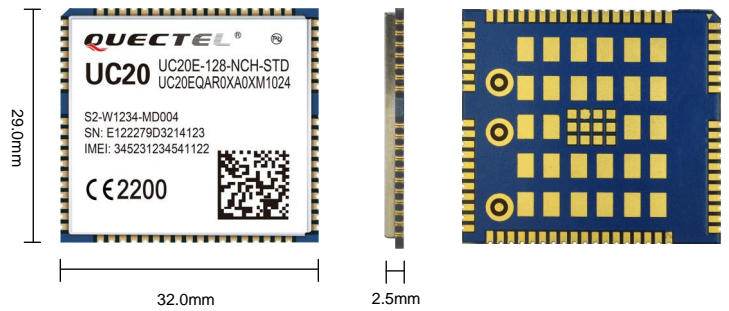
Quectel UC20 is a powerful function UMTS/HSPA+ module offering a maximum data rate of 14.4Mbps downlink and 5.76Mbps uplink. UC20 is designed to provide customers with global network coverage on the connectivity of UMTS/HSPA+. It can also be fully backward compatible with existing EDGE and GSM/GPRS networks through multi-band combination of penta-band UMTS and quad-band GSM.

The tiny profile of 32.0x29.0x2.5mm in cost optimized SMT form factor and highly integration level enable integrators and developers to easily design their applications and truly benefit from the module's small size, low power consumption and mechanical intensity. Its advanced LCC package allows fully automated manufacturing for high-volume applications.

A rich set of Internet protocols, industry-standard interfaces (USB/UART/PCM/ADC/NETLIGHT/SD/Rx-diversity) and abundant functions (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE, Linux, Android/eCall/GNSS) extend the applicability of the module to a wide range of M2M applications such as automotive, metering, tracking systems, security solutions, routers, wireless POS, mobile computing devices, PDA, and tablet PC.

Quectel UC20

UMTS/HSPA+ Module



General Features

Frequency Bands	UC20-E 900/2100MHz@UMTS 850/900/1800/1900MHz@GSM UC20-A 850/1900MHz @UMTS, 3G only UC20-G 800/850/900/1900/2100MHz@UMTS 850/900/1800/1900MHz@GSM
HSPA+	Release 5/6 (UL category 6, DL category 10)
EDGE	Multi-slot Class 12 (10 by default)
GPRS	Multi-slot Class 12 (10 by default)
WCDMA	Release 99
GSM	Release 99/4
Supply Voltage Range	3.3 ~ 4.3V, 3.8V typ.
Operation Temperature	-40 °C ~ +85 °C
Dimensions	32.0x29.0x2.5mm
Weight	Approx. 4.9g
Control via AT commands	3GPP TS27.007, 27.005 and other enhanced AT Commands

Specifications

SMS	Point-to-point MO and MT SMS Cell Broadcast Text and PDU Mode
HSPA+	Max.14.4Mbps (DL)/Max.5.76Mbps (UL)
UMTS	Max.384Kbps (DL)/Max.384Kbps (UL)
DATA	EDGE Max.236.8Kbps (DL)/Max.236.8Kbps (UL)
GPRS	Max.85.6Kbps (DL)/Max.85.6Kbps (UL)
CSD	14.4Kbps
Speech Codec Modes	HR, FR, EFR, AMR, AMR-WB
Voice	Echo Arithmetic Echo Cancellation Noise Reduction
Protocols	PPP/TCP/UDP/FTP/HTTP/FILE/MMS/SMTP/SSL

Special Features

USB Serial	Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE5.0/6.0/7.0, Linux 2.6/3.0, Android 2.3/4.0/4.2
Drivers	USB RIL Android 2.3/4.0/4.2, Windows CE6.0 NDIS Windows XP, Windows Vista, Windows 7, Windows 8, Linux2.6/3.0 MUX Linux 2.6/3.0, Android 2.3/4.0/4.2
eCall	Accident, Emergency Services
USIM Detection	Hardware USIM Card Detection Design
Firmware Update	Firmware Update via USB and UART Interface
QuecFile	File System Access and Management
QuecLocator	
FOTA	QuecFOTA, DFOTA
GNSS	GPS/GLONASS

Electrical Characteristics

Output Power	Class 3 (24dBm +1/-3dB) for UMTS bands Class E2 (27dBm ±3dB) for EDGE 850/900 Class E2 (26dBm +3/-4dB) for EDGE 1800/1900 Class 4 (33dBm ±2dB) for GSM 850/900 Class 1 (30dBm ±2dB) for GSM 1800/1900
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Consumption (GNSS Off)

45µA@power off
1.5mA@GSM sleep, DRX=9
1.1mA@UMTS sleep, DRX=9
293mA@GSM voice, max power
532mA@UMTS voice, max power
610mA@GPRS data, max power
503mA@EDGE data, max power
593mA@HSDPA, max power
576mA@HSUPA, max power

Sensitivity

-110dBm@UMTS Bands
-108.5dBm@GSM 850/900MHz
-108dBm@GSM 1800/1900MHz

GNSS Features

GNSS Receiver	Qualcomm gpsOne Gen8 with 16 GPS channels and 14 GLONASS channels
SBAS	WAAS, EGNOS, MSAS
AGNSS	Supports XTRA™ Technology
Accuracy@Open Sky	<1.5m CEP-50
TTF@-130dBm with XTRA™, typ.	Cold Start 22s Warm Start 3s Hot Start 2s
TTF@-130dBm without XTRA™, typ.	Cold Start 32s Warm Start 29s Hot Start 2.5s
Sensitivity (with LNA)	Cold Start -147dBm Reacquisition -159dBm Tracking -161dBm
Power Saving Mode	Supports DPO Mode
Dedicated GNSS AT Commands	

Interfaces

AUDIO	Digital Audio through PCM Interface (Optional)
USB	2.0 High Speed
UART	1×Full Function, 1×Debug
USIM	1.8V/3V
NETLIGHT	1×NET_MODE, 1×NET_STATUS
ADC	×2, 15bits
RTC Backup	Real Time Clock
SD	
RESET	
PWRKEY	
ANTENNA	Pads for Primary, Rx-diversity and GNSS
STATUS	Indication for Power On and Off

Certificates

Approval	CE/ FCC/ IC/ KC/ NCC/ OFCA/ GCF/ PTCRB/ RCM/ SKT/ AT&T/ Rogers/ ANATEL/ Vodafone/ TA/ NAL
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