Quectel UC20
UMTS/HSPA+ Module

Dual-mode&Multi-band for UMTS&GSM

HSDPA 14.4Mbps HSUPA 5.76Mbps

LCC Package

Embedded Abundant Protocols

eCall

DFOTA

GLONASS+GPS

Rx-diversity

Digital Audio (Optional)

GPRS/EDGE Multi-slot Class 12

USB Drivers

Quectel Enhanced AT Commands

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 compact profile of 32.0×29.0×2.5mm 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 multi-feature, low power consumption and mechanical intensity. Its advanced LCC package allows fully automated manufacturing for high-volume applications.
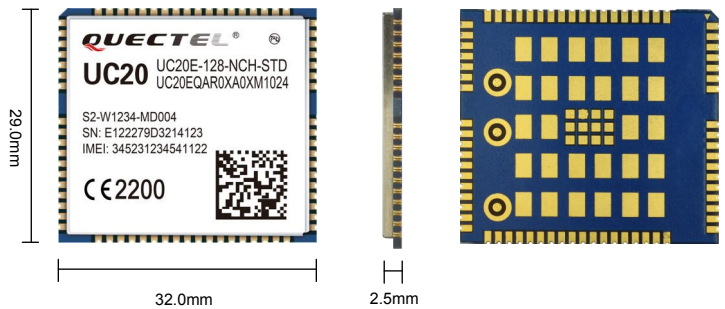
A rich set of Internet protocols, industry-standard interfaces (USB/UART/PCM/ADC/NETLIGHT/SD/Rx-diversity) and abundant functions (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE, Linux, Android/eCall/GNSS) extend the applicability of the module to a wide range of M2M applications such as automotive, metering, tracking systems, security solutions, routers, wireless POS, mobile computing devices, PDA, and tablet PC.

Key Benefits

- Worldwide UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- GNSS receiver available for applications requiring fast and accurate fixes in any location.
- High-quality data and image transmission even in harsh environment
- Primary and diversity receive paths are designed for equivalent noise-figure performance
- Robust mounting and interfaces
- Fast time-to-market:

    reference designs, evaluation tools and timely technical support minimize design-in time and development efforts

QUECTEL ®
Build a Smarter World

Quectel UC20
UMTS/HSPA+ Module

29.0mm

32.0mm   2.5mm

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	32.0×29.0×2.5mm
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
DATA	HSPA+	Max.14.4Mbps (DL)/Max.5.76Mbps (UL)
	UMTS	Max.384Kbps (DL)/Max.384Kbps (UL)
	EDGE	Max.236.8Kbps (DL)/Max.236.8Kbps (UL)
	GPRS	Max.85.6Kbps (DL)/Max.85.6Kbps (UL)
	CSD	14.4Kbps
Voice	Speech Codec Modes	HR, FR, EFR, AMR, AMR-WB
	Echo Arithmetic	Echo Cancellation Noise Reduction
Protocols		PPP/TCP/UDP/FTP/HTTP/FILE/MMS/SMTP/SSL

Special Features

Drivers	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
	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

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
TTFF@-130dBm with XTRA™, typ.	Cold Start	22s
	Warm Start	3s
	Hot Start	2s
TTFF@-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/JATE/ TELEC/ DoC_For_Russia