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

GPRS/EDGE Multi-slot Class 12

USB Drivers

Quectel Enhanced AT Commands

UC20 is the latest Quectel 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 32.0×29.0×2.5mm 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 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/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
- 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
Wireless Module Expert

Quectel UC20
UMTS/HSPA+ Module

29.0mm

32.0mm   2.5mm

General Features

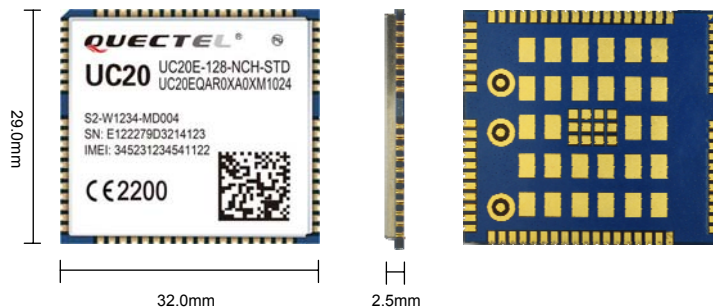|	
Frequency Bands	**UMTS/HSPA+:** 900/2100MHz (UC20-E) 850/1900MHz (UC20-A) 800/850/900/1900/2100MHz (UC20-G*) **GSM/GPRS/EDGE:** 850/900/1800/1900MHz
HSPA+	Release 5/6 (UL category 6, DL category 10)
EDGE	Multi-slot Class 12
GPRS	Multi-slot Class 12
WCDMA	Release 99
GSM	Release 99/4
Supply Voltage Range	3.4 ~ 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
	Echo Arithmetic	Echo Cancellation Noise Reduction
Protocols		PPP/TCP/UDP/FTP*/HTTP*/MMS/SMTP

Special Features

Drivers	USB Serial	Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE5.0/6.0, Linux 2.6/3.0, Android 2.3/4.0
	USB RIL	Windows CE6.0, Android 2.3/4.0
	NDIS	Windows XP, Windows Vista, Windows 7, Windows 8
	MUX	Linux 2.6/3.0, Android 2.3/4.0
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
QuecFOTA*		
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 1.4mA@UMTS sleep, DRX=9 280mA@GSM voice, max power 450mA@UMTS voice, max power 550mA@GPRS data, max power 420mA@EDGE data, max power 520mA@UMTS data, max power 520mA@HSDPA, max power 500mA@HSUPA, max power
Sensitivity	-110dBm@UMTS Bands -108.5dBm@GSM 850/900MHz -108dBm@GSM 1800/1900MHz

GNSS Features

GNSS Receiver		Qualcomm gpsOne Gen8
SBAS		WAAS, EGNOS, MSAS
AGNSS		Support 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	Cold Start	-147dBm
	Reacquisition	-159dBm
	Tracking	-161dBm
Power Saving Mode		Support DPO Mode
Dedicated GNSS AT Commands		

Interfaces

AUDIO	Digital Audio through PCM Interface
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
RESET	
PWRKEY	
ANTENNA	Pads for Primary, Rx-diversity and GNSS
STATUS	Indication for Power On and Off

Certificates

Approval	CE
Plan	GCF/FCC/PTCRB

∗ Under development

Wireless Module Expert