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# Quectel UC20

## UMTS/HSPA+ Module

UMTS/ HSPA



Dual-mode & Multi-band  
For WCDMA & GSM



HSDPA 14.4Mbps  
HSUPA 5.76Mbps



LCC Package Type



Embedded Abundant  
Protocols



eCall



Compact Size



USB 2.0 High Speed  
Compliant Interface



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 14.4 Mbps downlink and 5.76 Mbps uplink. UC20 is designed to provide customers with global network coverage on the connectivity of HSPA+/ WCDMA. It can also be fully backward compatible to existing EDGE and GSM/ GPRS networks through multi-band combination of quad band WCDMA 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.

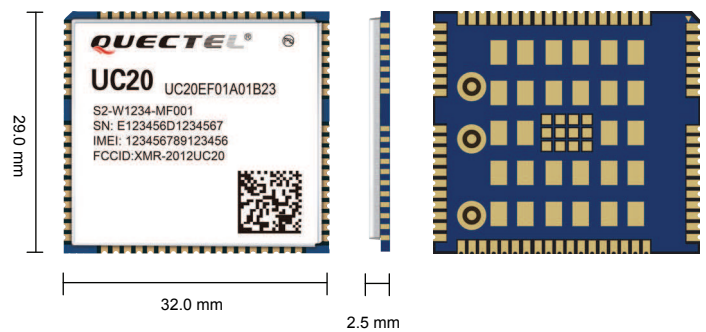
A rich set of internet protocols, industry-standard interfaces (USB/ UART/ PCM/ ADC/ Antenna-Diversity) and abundant functions (USB drivers for Windows XP, Windows Vista, Windows 7, Windows CE, Linux, Android/eCall) extend the applicability of the module to a wide range of M2M applications such as automotive, metering, tracking systems, security solutions, routers, wireless POS, mobile computing devices, PDAs, 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 transmission of data and images even in hazard conditions and dark environment
- ☛ Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and effort
- ☛ Equivalent noise-figure performance is archived by primary and diversity receive patches of WCDMA
- ☛ Robust mounting and interfaces

# Quectel UC20

## UMTS/HSPA+ Module



### General Features

<b>Frequency Bands</b>	<b>UMTS/HSPA+:</b> 900/ 2100 MHz (UC20-E) 850/ 1900 MHz (UC20-A) <b>GSM/GPRS/EDGE:</b> 850/ 900/ 1800/ 1900 MHz
<b>HSPA+</b>	Release 5/6 (UL category 6, DL category 10)
<b>EDGE</b>	Multi-slot Class 12
<b>GPRS</b>	Multi-slot Class 12
<b>WCDMA</b>	Release 99
<b>GSM</b>	Release 99/ 4
<b>Supply Voltage Range</b>	3.4 ~ 4.3V
<b>Operation Temperature</b>	-40 °C ~ +80 °C
<b>Dimensions</b>	32.0 x 29.0 x 2.5 mm
<b>Weight</b>	Approx. 7.0g
<b>Control via AT commands</b>	3GPP TS27.007, 27.005 and other enhanced AT Commands

### Specifications

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

### Special Features

<b>USB Drivers (TBD)</b>	Windows XP, Windows Vista, Windows 7, Windows CE, Linux, Android
<b>eCall</b>	Accident, Emergency Services
<b>SIM Detection</b>	HW SIM Card Detection Design
<b>Firmware Update</b>	FW Update via USB and Serial Interface
<b>QuecFile</b>	File System Access and Management

### Electrical Characteristics

<b>Output Power</b>	Class 3 (+24 dBm +1/-3 dB) for UMTS bands Class E2 (+27 dBm ±3 dB) for EDGE 850/ 900 Class E2 (+26 dBm +3/-4 dB) for EDGE 1800/ 1900 Class 4 (33 dBm ±3 dB) for GSM 850/ 900 Class 1 (30 dBm ±2 dB) for GSM 1800/ 1900
<b>Consumption (TBD)</b>	75 µA @ Power off 3.1 mA @ Sleep 280 mA @ GSM voice 570 mA @ UMTS voice 530 mA @ GPRS data 470 mA @ EDGE data 750 mA @ UMTS data 705 mA @ HSDPA 700 mA @ HSUPA
<b>Sensitivity (TBD)</b>	-110 dBm @ WCDMA 2100 MHz -109 dBm @ WCDMA 1900 MHz -110 dBm @ WCDMA 850/ 900 MHz -108.5 dBm @ GSM 850/ 900 MHz -108 dBm @ GSM 1800/ 1900 MHz

### Interfaces

<b>Audio</b>	Digital Audio through PCM Interface
<b>USB</b>	2.0 High Speed
<b>UART</b>	X2, Full Functions and Debug
<b>USIM</b>	1.8V/ 3V
<b>Netlight</b>	X2, Indication for Net Mode and Net Status
<b>ADC</b>	X2, 15bits
<b>RTC Backup</b>	Real Time Clock Supported
<b>RESET</b>	
<b>PWRKEY</b>	
<b>Antenna</b>	Pads for Primary, Rx Diversity and GPS
<b>WAKEUP</b>	Wakeup In and Wakeup Out
<b>Status</b>	Indication for Power On and Off Status