

Quectel UC20

Mini PCIe

UMTS/HSPA+ Module

UMTS/HSPA+



Dual-mode&Multi-band
for UMTS&GSM



HSDPA 14.4Mbps
HSUPA 5.76Mbps



Mini PCIe Package



Embedded Abundant
Protocols



eCall



Digital Audio



GLONASS+GPS



Rx-diversity



USB Drivers



GPRS/EDGE
Multi-slot Class 12



Extended Temperature
Range -40°C to +80°C



Quectel Enhanced
AT Commands



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

The tiny profile of 51.0x30.0x4.9mm in standard Mini PCIe form factor and highly integration level enable integrators and developers to easily design their applications and truly benefit from low power consumption and convenient Plug and Play Function.

With an extended temperature range from -40°C up to 80°C, UC20 Mini PCIe functions reliably in extreme environments for use outdoors or inside at sites that lack cooling and heating systems.

A rich set of Internet protocols, industry-standard interfaces (USB/UART/PCM/LED_WWAN#/GNSS) and abundant functions (USB drivers for Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE, Linux, Android) extend the applicability of the module to a wide range of commercial and industrial M2M applications.

Key Benefits

- ☞ Worldwide UMTS/HSPA+ and GSM/GPRS/EDGE coverage
- ☞ Standard Mini PCIe form factor maximizes the convenience for customers to design and use
- ☞ High-quality data and image transmission even in hazard conditions and dark environment
- ☞ High sensitivity GNSS receiver
- ☞ Fast time-to-market:
reference designs, evaluation tools and timely technical support minimize design-in time and development efforts
- ☞ Robust mounting and interfaces

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Mini PCIe

UMTS/HSPA+ Module

General Features

Frequency Bands	UC20-E Mini PCIe 900/2100MHz@UMTS 850/900/1800/1900MHz@GSM UC20-A Mini PCIe 850/1900MHz @UMTS, 3G only UC20-G Mini PCIe 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	3.0 ~ 3.6V, Typ. 3.3V
Operation Temperature	-40°C ~ +80°C
Dimensions	51.0x30.0x4.9mm
Weight	Approx. 9.8g
Control via AT commands	3GPP TS27.007, 27.005 and other enhanced AT Commands

Specifications

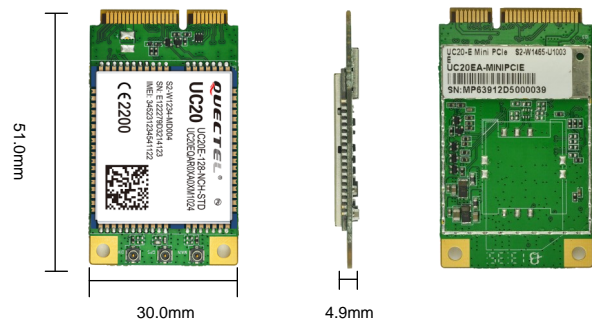
SMS	Point-to-point MO and MT SMS Cell Broadcast Text and PDU Mode
HSPA+	Max.14.4Mbps (DL)/Max.5.76Mbps (UL)
UMTS	Max.384Kbps (DL)/Max.384Kbps (UL)
DATA	EDGE Max.236.8Kbps (DL)/Max.236.8Kbps (UL)
GPRS	Max.85.6Kbps (DL)/Max.85.6Kbps (UL)
CSD	14.4Kbps
Speech Codec Modes	HR, FR, EFR, AMR, AMR-WB
Voice	Echo Arithmetic Echo Cancellation Noise Reduction
Protocols	PPP/TCP/UDP/FTP/HTTP/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
Firmware Update	Firmware Update via USB Interface
QuecFile	File System Access and Management
FOTA	QuecFOTA, DFOTA
GNSS	GPS/GLONASS
QuecLocator	

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)	3.1mA@GSM sleep, DRX=9 3.0mA@UMTS sleep, DRX=9 43.0mA@Idle, USB active 365mA@GSM voice, max power 630mA@UMTS voice, max power 681mA@GPRS data, max power 570mA@EDGE data, max power 660mA@HSDPA, max power 640mA@HSUPA, max power
Sensitivity	-110 dBm@UMTS Bands -108.5 dBm@GSM 850/900MHz -108 dBm@GSM 1800/1900MHz

GNSS Features

GNSS Receiver	Qualcomm gpsOne Gen8
SBAS	WAAS, EGNOS, MSAS
AGNSS	Supports XTRA™ Technology
Accuracy@Open Sky	<1.5m CEP-50
Cold Start	22s
Warm Start	3s
Hot Start	2s
TTFF@-130dBm with XTRA™, typ.	Cold Start 32s
	Warm Start 29s
	Hot Start 2.5s
TTFF@-130dBm without XTRA™, typ.	Cold Start -147dBm
	Reacquisition -159dBm
Sensitivity (with LNA)	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	1xSeven-Line UART Interface
USIM	1.8V/3V
LED_WWAN#	Network Status
W_DISABLE#	Close RF Channel
PERST#	Reset Pin
USIM Holder	UC20-E Mini PCIe supports

Certificates

Approval	CE/ FCC/ GCF/ PTCRB/ RCM
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