Quectel UC20 Mini PCIe

UMTS/HSPA+ Module

Dual-mode&Multi-band for UMTS&GSM

HSDPA 14.4Mbps HSUPA 5.76Mbps

Mini PCIe Package

Embedded Abundant Protocols

eCall

Digital Audio (Optional)

GLONASS+GPS

Rx-diversity

USB Drivers

GPRS/EDGE Multi-slot Class

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

Quectel Enhanced AT Commands

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 harsh environment
- High sensitivity GNSS receiver available for applications requiring fast and accurate fixes in any location
- Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and development efforts
- Robust mounting and interfaces

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 is also fully backward compatible with existing EDGE and GSM/GPRS networks through multi-band combination of quad-band GSM and dual-band WCDMA.

The compact profile of 51.0×30.0×4.9mm in standard Mini PCIe form factor and the high integration level enable integrators and developers to easily design their applications and truly benefit from the low power consumption and convenient Plug and Play Function.

With an extended operation temperature range from -40°C up to 80°C, UC20 Mini PCIe functions reliably in extreme environments, and thus is ideal 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.

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Quectel UC20 Mini PCIe
UMTS/HSPA+ Module

51.0mm 30.0mm 4.9mm

General Features

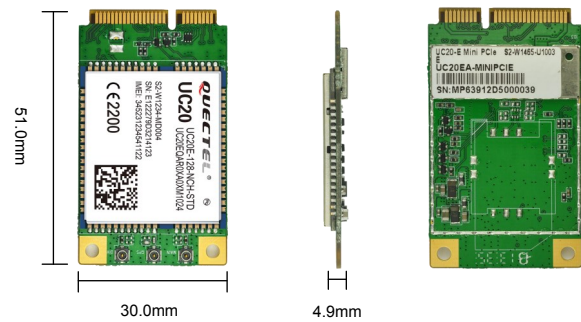|	
Frequency Bands	**UC20-E Mini PCIe** 900/2100MHz@UMTS 850/900/1800/1900MHz@GSM **UC20-A Mini PCIe** 850/1900MHz @UMTS, 3G only **UC20-G Mini PCIe** 800/850/900/1900/2100MHz@UMTS 850/900/1800/1900MHz@GSM
HSPA+	Release 5/6 (UL category 6, DL category 10)
EDGE	Multi-slot Class 12 (10 by default)
GPRS	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	51.0×30.0×4.9mm
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
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/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 CE 6.0
	NDIS	Windows XP, Windows Vista, Windows 7, Windows 8, Linux 2.6/3.0
	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

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
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×Seven-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/ IC/ RCM/ PTCRB/ GCF/ AT&T/ ICASA/ DoC_For_Russia

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