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
AT

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 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/teGall/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.
General Features

Frequency Bands
- UC20-E: 900/2100MHz@UMTS, 850/900/1800/1900MHz@GSM
- UC20-A: 850/1900MHz @UMTS, 3G only
- UC20-G: 800/850/900/1900MHz@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)

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

Special Features

USB Serial:
- Windows XP, Windows Vista, Windows 7, Windows 8, Windows CE 5.0/6.0/7.0, Linux 2.6/3.0, Android 2.3/4.0/4.2

Drivers:
- USB RIL: Android 2.3/4.0/4.2, Windows CE 6.0
- MUX: Linux 2.6/3.0, Android 2.3/4.0/4.2

Voice:
- HR, FR, EFR, AMR, AMR-WB

Voice Arithmetic:
- Echo Cancellation, Noise Reduction

Protocols:
- PPP/ TCP/ UDP/ FTP/ HTTP/ FILE/ MMS/ SMTP/ SSL

Dedicated GNSS AT Commands

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 (30dBm ±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
- 560mA@EDGE data, max power
- 593mA@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

Accuracy/Open Sky:
- <1.5m CEP-50

TTFF:
- -130dBm with XTRA™, typ.
  - Cold Start: 22s
  - Warm Start: 3s
  - Hot Start: 2s
  - Cold Start: 32s
  - Warm Start: 29s
  - Hot Start: 2.5s
  - Cold Start: -147dBm

Sensitivity (with LNA):
- 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:
- 

PWKEY:
- 

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
- http://www.quectel.com