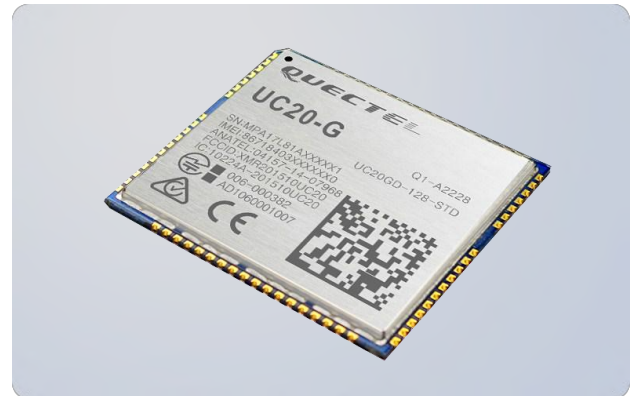


Quectel UC20

UMTS/HSPA+ Module



Quectel UC20 is a powerful UMTS/HSPA+ module offering maximally 14.4Mbps downlink and 5.76Mbps uplink data rates. The module is designed to provide customers with global network coverage on the connectivity of UMTS/HSPA+, and it is also fully backward compatible with the existing EDGE and GSM/GPRS networks.

Its compact profile of 29.0mm × 32.0mm × 2.5mm in cost optimized SMT form factor and high integration level enables integrators and developers to easily design their applications and truly benefit from the module's multi-functionality, low power consumption and mechanical intensity. Its advanced LCC package is ideally suited for large-scale manufacturing which has strict requirements for cost and efficiency.

A rich set of Internet protocols, industry-standard interfaces and abundant functions (such as USB serial drivers for Windows 7/8/8.1/10, Windows CE, Linux, Android/eCall/GNSS) extend the applicability of the module to a wide range of M2M applications such as automotive applications, smart metering, tracking systems, security solutions, routers, wireless POS terminals, mobile computing devices, PDAs and tablet PCs.



Key Benefits

- ✓ Worldwide UMTS/HSDPA+ 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
- ✓ Robust mounting and interfaces
- ✓ Fast time-to-market: reference designs, evaluation tools and timely technical support minimize design-in time and development efforts



Dual-mode & Multi-band
for UMTS & GSM



Max 14.4Mbps (DL)
Max 5.76Mbps (UL)



LCC Package



Embedded Abundant
Protocols



GPRS/EDGE



DFOTA



GLONASS+GPS



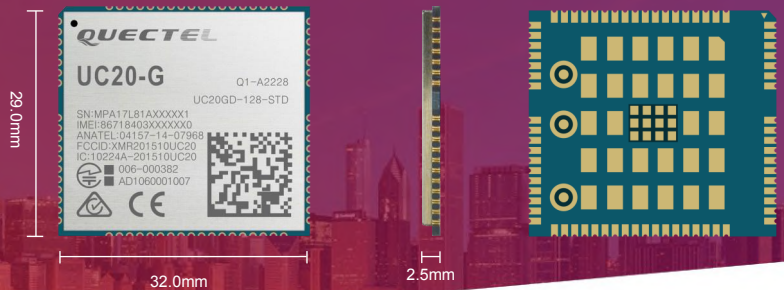
eCall



Digital Audio
(Optional)

Quectel UC20

UMTS/HSPA+ Module



Frequency Bands

UC20-G:

800/850/900/1900/2100MHz @UMTS
850/900/1800/1900MHz @GSM

Data

HSDPA: Max.14.4Mbps (DL)
HSUPA: Max.5.76Mbps (UL)
WCDMA: 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: Max.14.4Kbps (DL)/ Max. 14.4Kbps (UL)

Voice

Speech Codec Modes:

HR/FR/EFR/AMR/AMR-WB

Echo Arithmetic:

Echo Cancellation/Noise Reduction

SMS

Text and PDU Mode

SMS Cell Broadcast

Point-to-point MO and MT

Interfaces

UART × 2: Main UART, Debug UART

(U)SIM × 1 : 1.8V/ 3.0V (U)SIM Card

USB × 1 : USB 2.0 with High Speed up to 480Mbps

PCM and I2C Interfaces: Digital Audio through PCM Interface (Optional)

ADC × 2 : 15 Bits

Control and Indicator Signals

Solder Pads for Main and GNSS Antennas

STATUS for Power ON/OFF Status Indication

RTC Backup

SD Card Interface

RESET

PWRKEY

Enhanced Features

eCall

(U)SIM Card Insertion Detection

Firmware Update: via USB or UART Interface

QuecFile: File System Access and Management

FOTA: QuecFOTA/DFOTA

GNSS: GPS/GLONASS

GNSS Features

Qualcomm gpsOne Gen8 with 16 GPS Channels and 14 GLONASS Channels

SBAS (WAAS/EGNOS/MSAS)

Support XTRA™ Technology

Accuracy <1.5m CEP-50 @Open Sky

TTFF @-130dBm with XTRA™:

Cold/Warm/Hot Start: Typ. 22s/3s/2s

TTFF @-130dBm without XTRA™:

Cold/Warm/Hot Start: Typ. 32s/29s/2.5s

Sensitivity with LNA:

Cold Start/Reacquisition/Tracking:

-147dBm/-159dBm/-161dBm

Power Saving Mode: DPO Mode

Dedicated GNSS AT Commands

Electrical Characteristics

Output Power:

Class 4 (33dBm±2dB) for GSM850 and EGSM900

Class 1 (30dBm±2dB) for DCS1800 and PCS1900

Class E2 (27dBm±3dB) for GSM850 and EGSM900 8-PSK

Class E2 (26dBm+3/-4dB) for DCS1800 and PCS1900 8-PSK

Class 3 (24dBm+1/-3dB) for

UMTS800/850/900/1900/2100

Consumption (GNSS OFF):

20µA @Power Off

2.7mA @GSM Sleep, DRX=2 (USB Disconnected)

2.7mA @WCDMA Sleep, DRX=6

(USB Disconnected)

269mA @GSM Voice, Max Power

503mA @WCDMA Voice, Max Power

587mA @GPRS Data, Max Power

469mA @EDGE Data, Max Power

548mA @HSDPA, Max Power

534mA @HSUPA, Max Power

Sensitivity:

-110dBm @UMTS Bands

-108.5dBm @GSM850/EGSM900

-108dBm @DCS1800/PCS1900

Software Features

USB Serial Driver:

Windows 7/8/8.1/10,

Windows CE 5.0/6.0/7.0*,

Linux 2.6/3.x/4.1~4.14

Android 4.x/5.x/6.x/7.x

RIL Driver: Android 4.x/5.x/6.x/7.x

NDIS Driver: Windows 7/8/8.1/10

Gobinet Driver: Linux 2.6/3.x/4.1~4.14

QMI_WWAN Driver: Linux 3.x(3.4 or later)/4.1~4.14

Protocols:

PPP/TCP/UDP/FTP/HTTP/FILE/MMS/SMTP/SSL

General Features

Temperature Range: -40°C ~ +85°C

Dimensions: 29.0mm × 32.0mm × 2.5mm

Weight: Approx. 4.9g

Supply Voltage: 3.3V~4.3V, 3.8V Typ.

GPRS/EDGE: Multi-slot Class 12 (10 by Default)

WCDMA: Release 99

GSM: Release 99/4

HSPA+: Release 5/6 (UL Category 6, DL Category 10)

3GPP TS 27.007, 3GPP TS 27.005 and Quectel

Enhanced AT Commands

Approvals

RoHS Compliant

GCF/Vodafone (Global)

CE (Europe)

FCC/PTCRB/AT&T (North America)

RCM (Australia & New Zealand)

JATE/TELEC (Japan)

IC/Rogers (Canada)

Anatel (Brazil)

NBTC (Thailand)

* Under Development