



Quectel Wireless Solutions Wireless Module Expert



U10 UMTS Module Presentation

2012-1



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❑ General Description

Target Applications

Highlights

Hardware Architecture

Software Advantage

Enhanced AT Commands

Mechanical Dimensions

❑ Feature

Powerful Chip Set

Enhanced Functions

New Release Functions

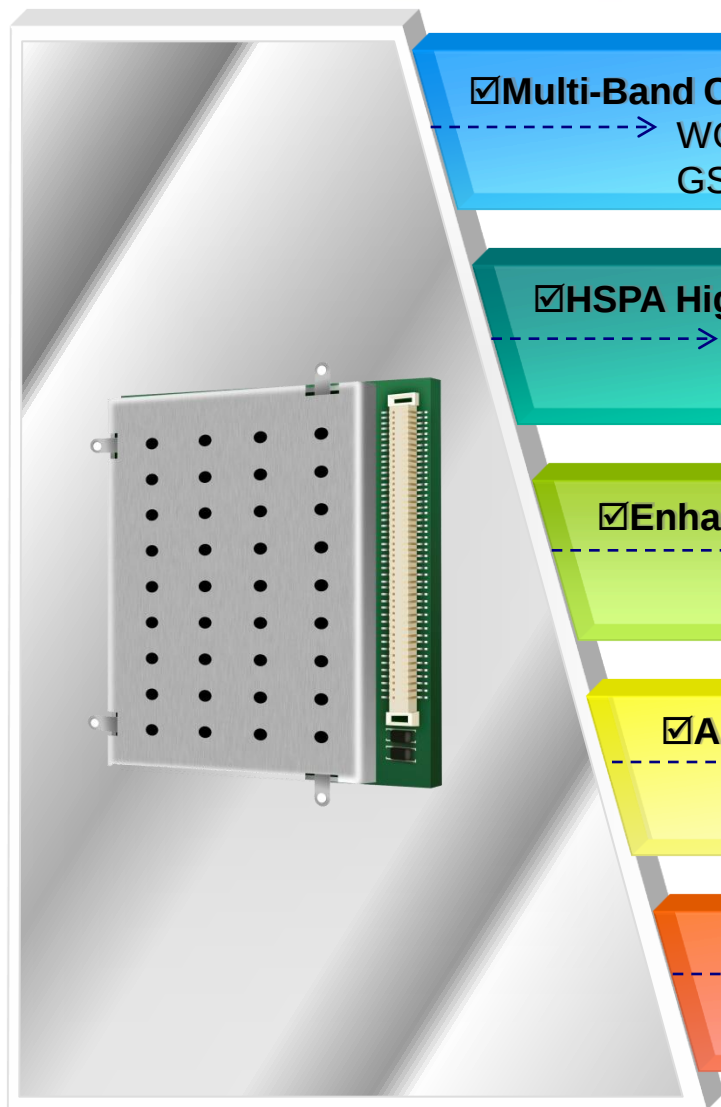
U10 Series

❑ U10 Vs. Competitors' Products

❑ Support Package

Technical Material Package

 **Video Surveillance** **Security** **Remote Control** **Smart Metering** **Tracking & Tracing** **Industrial PDA** **Wireless POS**

**☑Multi-Band Combination**

➤ WCDMA up to 3 bands
GSM/EDGE up to 4 bands

☑HSPA High Data Speed

➤ Max.7.2 Mbps (DL), max.5.76 Mbps (UL)

☑Enhanced Multimedia

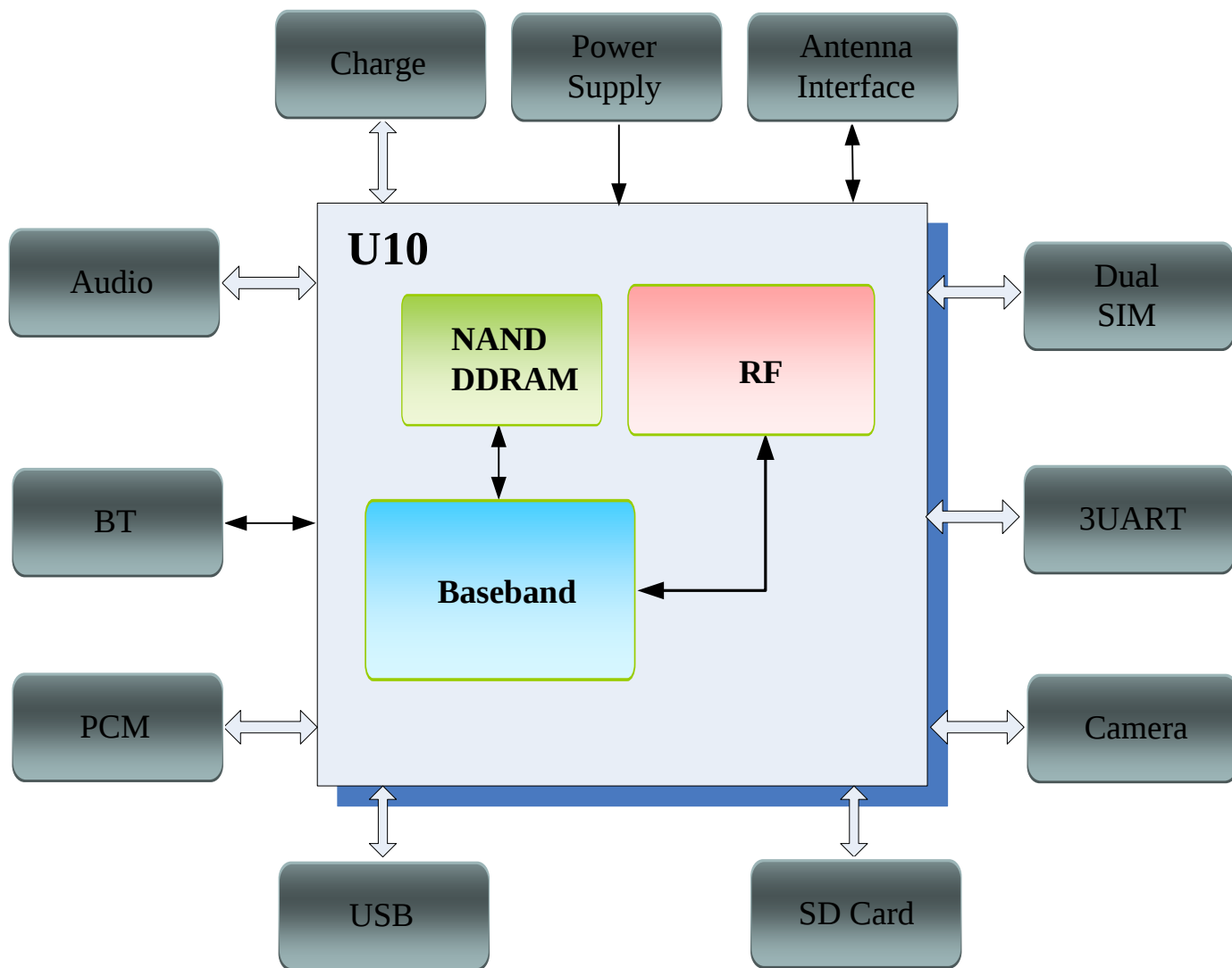
➤ Video call, H.264 codec, CMOS camera up to 8M

☑Abundant Function Interfaces

➤ USB/UART/SIM/Audio/SD/Camera
/PCM/Charge/BT/GPIO

☑Wide Working Temperature Range

➤ -40 ° C ~ +85 ° C



Multimedia Capability

- GIF and PNG fast rate decoding
- MPEG4, H.263, H.264 codec
- Video call

Quality Guarantee

- Reliable network protocol
- Steady flash protected mechanism
- Superior audio algorithms
- High Sensitivity

Flexible Application

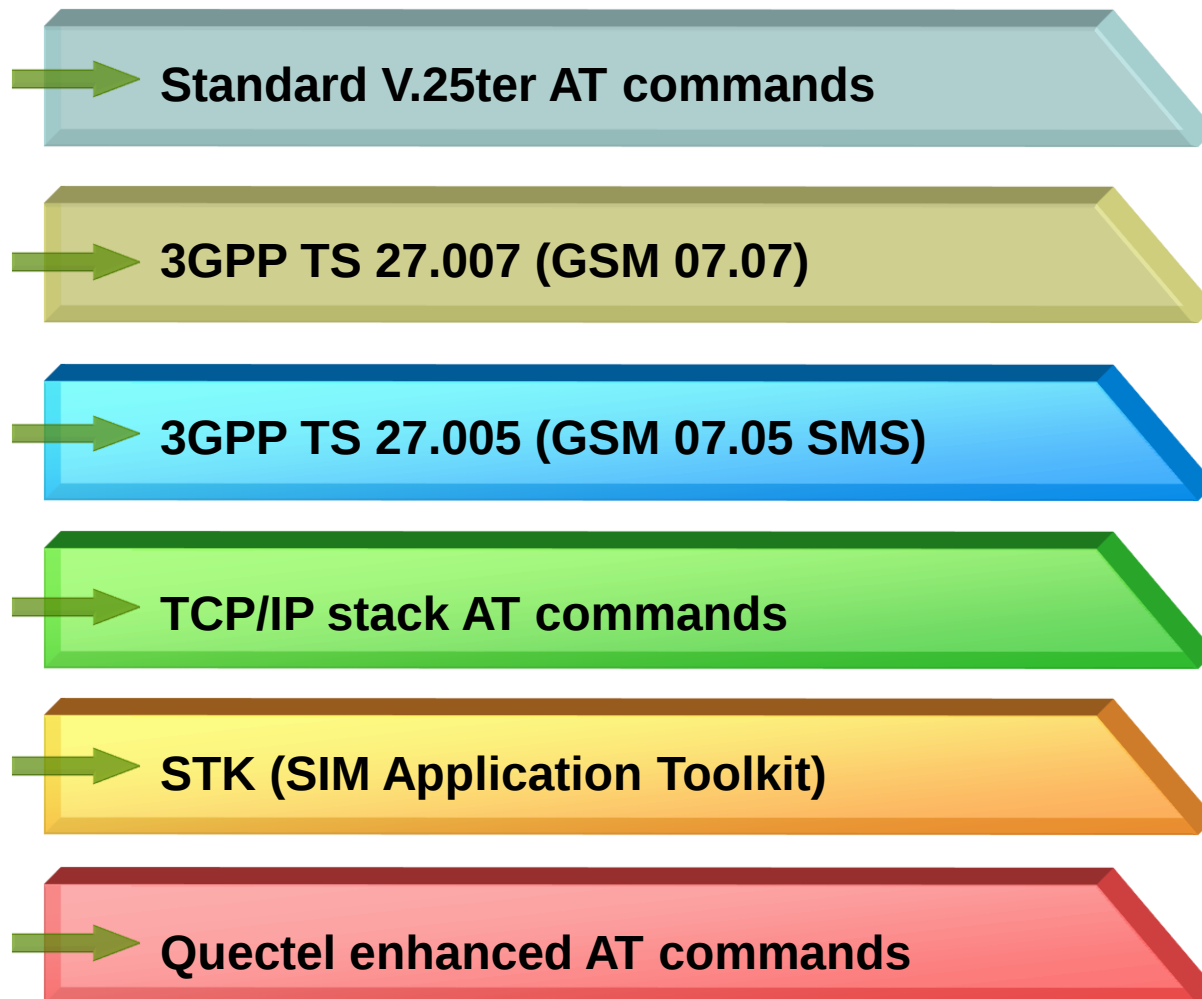
- Camera
- 3 UART ports
- DTMF codec
- USB driver for various OS

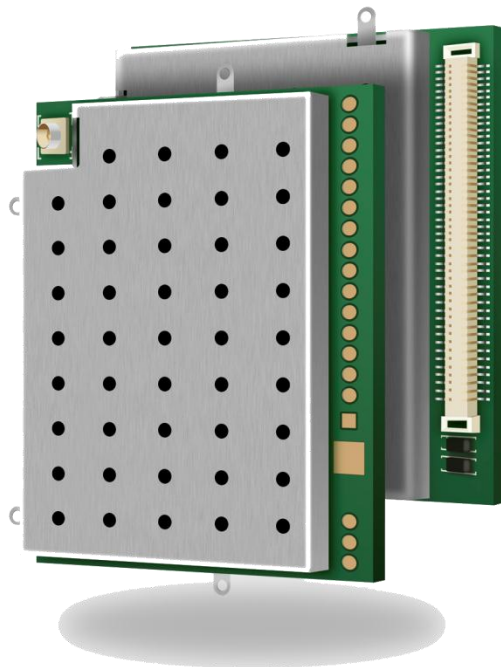
Internet Service

- TCP/IP, UDP, PPP
- FTP, HTTP, SMTP/POP3
- MMS
- RTP/RTSP

Special Feature

- Base station positioning
- FOTA
- Jamming Detection
- OPEN CPU embedded





Length: 37.7 mm ($\pm 0.15\text{mm}$)
Width: 29.9 mm ($\pm 0.15\text{mm}$)
Height: 5.0 mm ($\pm 0.25\text{mm}$)
Weight: Approx. 7g

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U10 is designed on MT6276, which is the new generation of MTK 3G powerful chip set. MT6276 is a feature-rich and most powerful single-chip solution. Based on the 32-bit ARM1176JZS™ RISC processor, MT6276's superb processing power provides a platform for high performance HSPA, GPRS/EDGE Class 12 MODEM application and leading-edge multimedia applications.

- One ARM1176JZS™ RISC processor, up to 650 MHz
- One ARM7EJ-S™ core, dedicated for Bluetooth
- One Fcore4 DSP, up to 312 MHz

Built on new and more powerful chipset platform, U10 achieves more capacity and better performance.



3 UART interfaces

More convenient and flexible for industrial applications.
Speeds up to 921600 bps.



USB

USB 2.0, high speed for software download.
More communication ports for AT commands and data transmission.



Audio

2 analog audio channels. 1 PCM digital audio interface.
Gain better speech quality via WBAMR algorithm.

A yellow sphere with a gradient and a shadow, positioned to the left of the section header.

SD Card

Up to 32 GB capacity and 104M bps in parallel mode.
Data storage for camera and user data.

A yellow sphere with a gradient and a shadow, positioned to the left of the section header.

Charge

Charging function for Li-ion battery , integrated in module, no extra cost.

A yellow sphere with a gradient and a shadow, positioned to the left of the section header.

Dual SIM

Dual SIM cards (USIM+SIM or SIM+SIM) standby mode.

**Camera**

CMOS type, up to 8M pixels.

Built-in hardware-based JPEG codec, Fcore4-based MPEG-4 codec, H.263 and H.264 codec enable real-time recording and playback of high-quality images and video.

Video	Decode (play back)	MPEG-4 @ 720p 30fps H.264(BL) @ 720p 15fps
	Decode (streaming)	H.263/MPEG4/H.264 @ nHD 15fps
	Encode (off line)	MPEG-4 @ WVGA 15fps H.264 @ HVGA 12fps
Video Call		MPEG-4/H.263 @ QCIF 15 fps



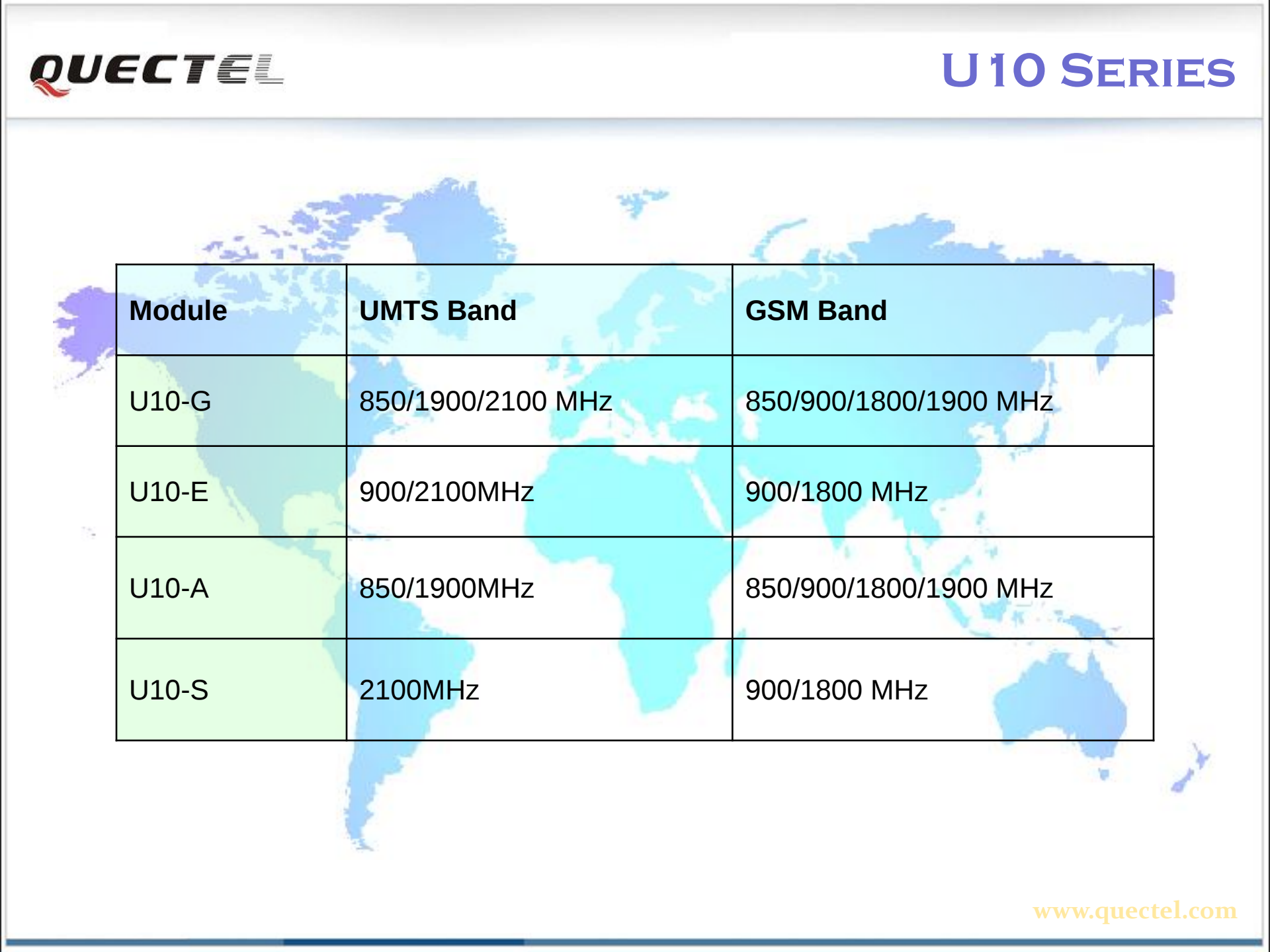
Bluetooth

BT 2.1+EDR integrated, up to 3Mbps

U10 integrates all BT host controller including LDO, Class-1 (8dBm) PA, bi-directional band pass SAW for BT frequency and there is an antenna pad on U10 PCB side, customers only need add an external antenna, which is connected to BT PAD.

U10 is fully compliant with Bluetooth V2.1 and offers the enhanced data rates up to 3 Mbps, it also has rich support of Bluetooth profiles to enable diversified applications that are widely used in M2M field with excellent interoperability.





Module	UMTS Band	GSM Band
U10-G	850/1900/2100 MHz	850/900/1800/1900 MHz
U10-E	900/2100MHz	900/1800 MHz
U10-A	850/1900MHz	850/900/1800/1900 MHz
U10-S	2100MHz	900/1800 MHz

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U10 Vs. COMPETITORS' PRODUCTS

Product Features		Quectel U10	C-Company Hx28	T-Company Ux864	S-Company Sx808X
Processor		ARM1176JZS™ 650MHz with cache Fcore DSP 312MHz	Unknown	ARM926EJS- 274MHz ADSP 100MHz	ARM926EJS 184MHz QDSP4 92MHz
Data	EDGE Class	12	10	12	Unknown
	GPRS Class	12	10	12	Unknown
	Peak Rate	DL 7.2Mbps, UL 5.76Mbps	DL 3.6Mbps, UL 384kbps	DL 7.2 Mbps, UL 384kbps	DL 3.6Mbps, UL 384kbps
Interfaces	UART	3	1	2	1
	Audio	2, support stereo earphone	1	2	1
	SIM	2, support dual SIM card standby mode (USIM+USIM or SIM+SIM)	1	1	1
	ADC	2	Not supported	3	Not Supported
	USB	2.0, high speed	2.0. full speed	2.0. full speed	2.0, high speed
	SD Card	Up to 32G bytes	Not supported	Not supported	Not supported

Product Features		Quectel U10	C-Company Hx28	T-Company Ux864	S-Company Sx808X
Interfaces	PCM	Support, also for digital audio	Not supported	Support	Support
	PWM	Support	Support	Support	Support
	Camera	Up to 8M	Not supported	Not supported	Not supported
	Battery Charging	Support	Not supported	Support	Not supported
	BT	2.1+EDR integrated, up to 3Mbps	Not supported	Not supported	Not supported
Temperature Range	Normal Operation	-40° C ~ +85° C	-30° C ~ +75° C	-30° C ~ +80° C	-40° C ~ +85° C
ESD	SIM /Antenna	Antenna: air discharge $\pm 10KV$, contact discharge $\pm 5KV$ SIM1: air discharge $\pm 8KV$, contact discharge $\pm 4KV$	Unknown	Unknown	Unknown
	Other Pin	UART1/PWR_KEY/EMERG_OFF, air discharge $\pm 8KV$, contact discharge $\pm 4KV$ Others: $\pm 1KV$ contact discharge	Unknown	Unknown	Unknown
MMS		Support	Not supported	Not supported	Not supported

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➤ **Technical materials package**

- Hardware, software, specification
- Application notes package
- Debug tool, download tool, test tool, EVB package
- Approvals & test report package



U10 EVB KIT

➤ **Development Tool**

• **Interfaces**

- ✓ 3 RS-232 interfaces
- ✓ USB interface
- ✓ Power supply
- ✓ Antenna interface
- ✓ Debug UART interface
- ✓ Handset interface
- ✓ Earphone interface
- ✓ Camera interface
- ✓ SD card interface

• **Features**

- ✓ OV2655 camera module
- ✓ Network status LED
- ✓ Power key
- ✓ Emergency off key
- ✓ Charging



Thank You!

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