SARA-U2 series

UMTS/HSPA modules

Standard | Professional | Automotive

Highlights

- UMTS/HSPA/GSM module in ultra-small LGA package
- Also available in cost-effective UMTS/HSPA-only variant
- Seamless drop-in migration from SARA-G GSM/GPRS modules
- Extended temperature range: –40 to +85°C
- Low idle mode current
- Simple integration of u-blox GNSS and A-GNSS
- CellLocate®: (indoor) positioning based on cellular network
- Manufactured in ISO/TS 16949 certified production sites

SARA-U2 series:
16.0 x 26.0 x 3.0 mm

Product description

SARA-U2 UMTS/HSPA modules provide efficient and cost-effective high-speed mobile connectivity in an ultra-small LGA form factor. The SARA-U2 series offers seamless drop-in migration from GSM (SARA-G3 modules) and CDMA (LISA-C modules) as well as easy migration to LTE (TOBY-L modules).

SARA-U2 modules feature HSPA data-rates of 7.2 Mb/s (downlink) and 5.76 Mb/s (uplink). The modules have an extended operating temperature range of –40 to +85 C, low power consumption, and a rich feature set including dual-stack IPv4 / IPv6.

The SARA-U2 series is ideal for a wide range of industrial and consumer applications, such as connected navigation systems, mobile-internet devices, security and surveillance systems, eCall, fleet management, metering, anti-theft systems, and other automotive applications.

SARA-U2 modules provide a fully integrated interface to u-blox satellite positioning chips and modules to support telematics applications.

The SARA-U2 series includes variants supporting a combination of global bands and band combinations for North America and Europe/Africa/Asia. There is also a cost-saving UMTS-only variant for North America.

An extensive set of national regulatory and operator certificates is available. RIL software for Android and Embedded Windows is available free of charge.

SARA-U2 modules are manufactured in ISO/TS 16949 certified sites. Each module is tested and inspected during production. The modules are qualified according to ISO 16750 – Environmental conditions and electrical testing for electrical and electronic equipment for road vehicles.

Product selector

Model	Technology		Bands		Positioning			Interfaces					Audio		Features									Grade		
	HSUPA [Mb/s]	HSDPA [Mb/s]	UMTS/HSPA [MHz]	GPRS/EDGE [MHz]	GNSS via Modem	AssistNow Software	CellLocate®	UART	SPI	USB 2.0	GPIO	DDC for GNSS / I²C slave	Analog Audio	Digital Audio	Antenna Supervisor	Jamming Detection	Embedded TCP/UDP	Embedded HTTP, FTP	Embedded SSL	FW update via serial	eCall / ERA-GLONASS	Rx diversity	Dual stack IPv4/IPv6	Standard	Professional	Automotive
SARA-U201	5.76	7.2	800/850/900/1900/2100	quad	•	•	•	1		1	9	1		1	•	•	•	•	•	•	•		•		Professional	Automotive
SARA-U260	5.76	7.2	850/1900	850/1900	•	•	•	1		1	9	1		1	•	•	•	•	•	•			•		Professional	
SARA-U270	5.76	7.2	900/2100	900/1800	•	•	•	1		1	9	1		1	•	•	•	•	•	•	•		•		Professional	Automotive
SARA-U270 ATEX	5.76	7.2	900/2100	900/1800	•	•	•	1		1	9	1		1	•	•	•	•	•	•	•		•		Professional	
SARA-U280	5.76	7.2	850/1900		•	•	•	1		1	9	1		1	•	•	•	•	•	•			•		Professional	

Early Production Information

u-blox

Features

UMTS/HSPA	850/1900 and 900/2100 MHz 800/850/900/1900/2100 MHz 3GPP Release 7 5.76 Mb/s uplink, 7.2 Mb/s downlink
GSM	GSM 850/1900 and 900/1800 MHz Quad-band, 850/1900, 900/1800 MHz
GPRS	Class 12, CS1-CS4, up to 85.6 kb/s
EDGE	Class 12, MCS1-9, up to 236.8 kb/s
CSD	GSM max 9.6 kb/s UMTS max 64 kb/s
SMS	MT/MO PDU / Text mode
Voice	HR/FR/EFR/AMR/AMR-WB Echo cancellation and noise reduction

Software features

Protocols	Dual stack IPv4/IPv6 Embedded TCP/IP, UDP/IP HTTP/FTP/SSL (Secure Socket Layer) SSL TLS 1.2 (for embedded TCP/IP) Ethernet over USB eSIM and Bearer-Independent-Protocol
Network	Jamming detection
GNSS Interfaces	Direct access to u-blox GNSS via SARA AssistNow software for fastest GNSS Time-to-First-Fix CellLocate® & Hybrid Positioning
Emergency calling	E911 (USA) European eCall, eMLPP
Other	ODIS feature for AT&T Protect network from excessive signaling traffic
Firmware upgrade	Via UART and USB

Electrical data

Power supply	3.3 V to 4.4 V
Power consumption	
Power Off	65 µA
Idle (2G)	0.9 mA
Idle (3G)	0.9 mA
GPRS	215 mA (850 MHz, 900 MHz) 140 mA (1800 MHz, 1900 MHz)
HSDPA	580 mA
HSPA	460 mA

Interfaces

GPIO	9 GPIO, controllable via AT commands
(U)SIM	Supports 1.8 V and 3 V, SIM toolkit
Serial	1 UART, 1 USB 2.0 (high-speed, 480 Mb/s), 1 DDC (I²C) for GNSS and other I²C slaves
Audio	1 digital

Package

96 pin LGA: 16.0 x 26.0 x 3.0 mm, < 3 g

Environmental data, quality & reliability

Operating temperature −40 to +85°C (extended range)
RoHS compliant (lead-free)
Qualification according to ISO 16750
Manufactured in ISO/TS 16949 certified production sites

Certifications and approvals

SARA-U201:	PTCRB, GCF, FCC, IC, R&TTE, RCM, Anatel, AT&T (all planned)
SARA-U260, U280:	PTCRB, GCF, FCC, IC, AT&T
SARA-U270:	CCC, GCF, PTCRB, R&TTE, NCC (Taiwan), RCM (Australia), KCC (Korea), ATEX

Support products

EVK-U26 / EVK-U27	Evaluation Kits for SARA-U2 series
RIL software for	Android Embedded Windows 6.x, 7.x Windows Mobile 6.5
USB driver	Embedded Windows 6.x, 7.x Windows XP, Vista, 7, 8, 10 Windows Mobile 6.5

Product variants

SARA-U201	HSPA/GSM for global coverage
SARA-U260	HSPA/GSM modules for America
SARA-U270	HSPA/GSM modules for Europe and Asia
SARA-U270 ATEX	HSPA/GSM modules for Europe; ATEX
SARA-U280	HSPA modules for America

Further information

For contact information, see www.u-blox.com/contact-us.

For more product details and ordering information, see the product data sheet.