Product Summary

SARA-U2 series

HSPA modules with 2G fallback

Standard

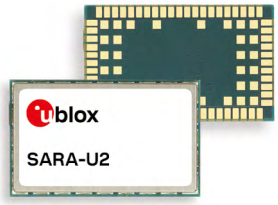
Professional

Automotive

The world's smallest global HSPA/GSM modules

- Versatile 3G product series with many configuration options
- Automotive-grade and ATEX-certified options available
- Easy migration between u-blox 2G, 3G and 4G modules
- Supports eCall, ERA GLONASS, CellLocate® indoor positioning, and GNSS / A-GNSS integration
- Extended temperature range of –40 °C to +85 °C

16.0 × 26.0 × 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 / TOBY-R / LARA-R modules).

SARA-U2 modules feature HSPA data-rates of 7.2 Mbit/s (downlink) and 5.76 Mbit/s (uplink). The modules have an extended operating temperature range of –40°C 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 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.

	SARA-U201 [A]	SARA-U260	SARA-U270 [A]	SARA-U280
Grade				
Automotive	•		•	
Professional	•	•	•	•
Standard				
Regions				
	Global	N & S America	EU/APAC	N & S America
Access Technology				
GSM/GPRS bands	Q	D2	D1	
UMTS/HSPA [MHz]	800, 850, 900, 1900, 2100	850, 1900	900, 2100	850, 1900
Data rate	M	M	M	M
Positioning				
GNSS via modem §	•	•	•	•
AssistNow Software	•	•	•	•
CellLocate®	•	•	•	•
eCall / ERA GLONASS	•		•	
Interfaces				
UART	2#	1	1	1
USB	1	1	1	1
DDC for u-blox GNSS	1	1	1	1
GPIO	9	9	9	9
Audio				
Digital audio	1	1	1	1
Features				
Antenna detection	•	•	•	•
Jamming detection	•	•	•	•
Embedded TCP/UDP	•	•	•	•
Embedded FTP/HTTP	•	•	•	•
Embedded SSL	•	•	•	•
FW update via serial	•	•	•	•
FOTA	•			
Dual stack IPv4/IPv6	•	•	•	•

M = 7.2 / 5.76 Mb/s down/up
D1 = Dual-band 900/1800 MHz
D2 = Dual-band 850/1900 MHz
Q = Quad-band

A = ATEX variant available
§ = external GNSS can be controlled via the modem
# = Available in latest firmware

SARA-U2 series

C

Features

UMTS/HSPA	850/1900 and 900/2100 MHz 800/850/900/1900/2100 MHz 3GPP Release 7 5.76 Mbit/s uplink, 7.2 Mbit/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 kbit/s
EDGE	Class 12, MCS1-9, up to 236.8 kbit/s
CSD	GSM max 9.6 kbit/s UMTS max 64 kbit/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 (only for SARA-U201) Protect network from excessive signaling traffic Last gasp (for “04” versions onwards)
Firmware upgrade	Via UART and USB FOTA (Firmware upgrade over the air) client (for SARA-U201-04 version onwards)

Interfaces

GPIO	9 GPIO, controllable via AT commands
(U)SIM	Supports 1.8 V and 3.0 V, SIM toolkit
Serial	2 UART for SARA-U201-04 version onwards 1 UART for all other variant versions 1 USB 2.0 (high-speed, 480 Mbit/s) 1 DDC (I^2C) for GNSS and other I^2C 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 °C to +85 °C (extended range)
RoHS compliant (lead-free)	
Qualification according to ISO 16750	
Manufactured in ISO/TS 16949 certified production sites	
ATEX / IECEX certification (SARA-U201 ATEX, SARA-U270 ATEX)	

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

Certifications and approvals

SARA-U201	ATEX, PTCRB, GCF, FCC (USA), ISED (Canada), RED (CE), RCM (Australia), SRRC/CCC (China), NCC (Taiwan), Giteki (Japan), Anatel (Brazil), AT&T, Rogers, NTT DoCoMo
SARA-U260, U280	PTCRB, GCF, ISED, FCC, AT&T, Rogers
SARA-U270	ATEX, GCF, RED, PTCRB, CCC, NCC (Taiwan), RCM (Australia), KCC (Korea), KT (Korea), SKT (Korea)

Support products

EVK-U201SARA	Evaluation kit specifically for SARA-U201
EVK-U26 / EVK-U27	Evaluation kits for SARA-U2 series
RIL software	Android
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-U201 ATEX	HSPA/GSM for global coverage; ATEX
SARA-U260	HSPA/GSM modules for America
SARA-U270	HSPA/GSM modules for Europe and Asia
SARA-U270 ATEX	HSPA/GSM modules for Europe and Asia; 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.