

SARA-R10 module



Single-mode LTE Cat 1bis module

Designed to provide LTE global coverage along with indoor and outdoor positioning

- Cost-competitive LTE Cat 1bis solution in popular SARA form factor
- Easy migration path from legacy SARA 2G/3G designs
- Very low power consumption with eDRX and PSM power saving features
- Wi-Fi scan and u-blox CellLocate® for indoor and outdoor positioning
- Worldwide coverage thanks to global LTE Cat 1 network availability
- Global bands to access ubiquitous LTE networks



Standard



Professional



Automotive

16.0 × 26.0 × 2.2 mm



SARA-R10001D

Product description

The SARA-R10 module features LTE Cat 1bis medium capacity data connectivity (10 Mbit/s downlink, 5 Mbit/s uplink) with very low energy consumption in the popular SARA form factor. Thanks to connectivity to ubiquitous LTE Cat 1 networks, SARA-R10 is ideally suited to a wide range of value-oriented applications that require medium data speed, global coverage, and positioning. Typical applications are asset tracking, telematics, healthcare, payment & vending, smart metering, smart home and smart building.

The SARA-R10 module supports multi-band LTE and includes an embedded Wi-Fi radio to scan Wi-Fi hotspots for indoor and outdoor locations. SARA-R10 module is designed to provide an easy migration path from legacy SARA 2G/3G designs as well as for new designs.

SARA-R10 LTE Cat 1bis module features very low power consumption, both in idle and operation. With only 3uA in PSM and 15uA in eDRX is especially suited for low power applications with the advantage of the superior availability of the LTE Cat 1 networks.

The wider bandwidth available in LTE Cat 1 networks allows the SARA-R10 to send data much faster than LTE-M minimizing the time on air.

SARA-R10 module supports the u-blox CellLocate positioning service. Furthermore, it is optionally available with an embedded eSIM.

The module is professional grade and is qualified according to the u-blox qualification policy, based on the AEC-Q104 standard.

Grade	
Automotive	
Professional	•
Standard	
Regions	
	Global
Access technology	
LTE FDD bands	1, 2, 3, 4, 5, 7, 8, 12, 13, 20, 28, 66
LTE TDD bands	34, 38, 39, 40, 41
Data rate	Cat 1bis
Compatible u-blox services	
CellLocate®	•
Interfaces	
UART	2
USB	1
GPIO	6
Features	
eSIM	o
MQTT	•
TCP / UDP	•
HTTP	•
FTP (DL only)	•
TLS / DTLS	•
Secure boot and updates	•
Dual stack IPv4/IPv6	•
FOTA	•
eDRX	•
PSM	•
Deep sleep mode	•
Backup/restore	•
Wi-Fi scan	•
Antenna dynamic tuning	•

Cat 1 = 10 Mbit/s DL, 5 Mbit/s UL

o = Optional

SARA-R10 module



Features

LTE	LTE Cat 1bis (10 Mbit/s DL, 5 Mbit/s UL) 3GPP Release 14 Power saving features: PSM, eDRX, and CDRX
SMS	MT/MO PDU / Text mode SMS via SMS-C

Software features

Protocols	Dual stack IPv4 and IPv6 MQTT TCP/IP, UDP/IP HTTP FTP (DL only) TLS / DTLS GSMA SGP01/02 M2M ready (remote SIM provisioning)
Firmware upgrade	Via FOAT and FOTA (Firmware upgrade Over The Air)

Compatible u-blox services

Location	CellLocate
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Electrical data

Power supply	3.8 V nominal for the modem
Power consumption	PSM: 3 μ A eDRX (81.92 s): 15 μ A

Interfaces

Serial	2 UART 1 USB 2.0 (high-speed, 480 Mbit/s) 1 I2C (hardware-ready)
GPIO	Up to 6 GPIOs, configurable
(U)SIM	Supports 1.8 V and 3.0 V, SIM toolkit

Package

96-pin LGA (Land Grid Array): 16.0 x 26.0 x 2.2 mm
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Environmental data, quality & reliability

Operating temperature	-40 °C to +85 °C
RoHS compliant (lead-free)	
u-blox qualification policy (based on AEC-Q104 standard)	

Certifications and approvals

SARA-R10 series	FCC, ISED, RED, UKCA, NCC, RCM
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Support products

EVK-SARA-R10001D	Evaluation kit for SARA-R10001D
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Product variants

SARA-R10001D	LTE Cat 1bis module for global use
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Further information

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

For more product details and ordering information, see the [product data sheet](#).

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