TRASNA

Sara-R42

Compact LTE-M/NB-IoT/GPRS module

Product summary

Version 2

A product born from u-blox

Upgrade your IoT future with Trasna

Trasna supports over 250 leading brands across 80+ countries with end-to-end IoT connectivity hardware and software solutions for SIM, eSIM, iSIM/SoC, cellular IoT modules, and device management.

Formed through the integration of several established specialist IoT players, Trasna delivers the full cellular IoT value chain from chip to cloud. This foundation gives us unmatched control, efficiency, and innovation across the stack. By partnering with us, clients gain maximum value and a strong competitive edge.

Complete control

Enjoy end-to-end security. Everything starts and finishes with us, so you always have complete visibility and accountability at every stage

Complete efficiency

Our end-to-end solutions are designed to deliver optimal efficiency at every stage, reducing costs, time, and resources whilst ensuring fast, easy implementation

Complete innovation

We deliver cutting-edge, scalable technology, future-proofing your business with solutions that drive rapid growth and capitalise on emerging opportunities

u-blox cellular IoT is now Trasna

In March 2025, Trasna acquired u-blox's cellular IoT modules enabling it to strengthen its IoT connectivity chip-to-cloud offering in the OEM sector. This moved included u-blox's cellular module technology IP, product portfolio, and engineering team. This strengthened Trasna's position as a comprehensive cellular IoT solutions provider, offering end-to-end capabilities spanning semiconductor chip design, SIM and eSIM manufacturing, and cloud-based remote SIM and device management services.

Chip design

(e)SIM

Device mgmt

Cellular IoT modules

Trasna in numbers

Top **03** **in cellular modules**
Excl. China

20 bn **secure connections**
without breach

250+ **clients**
in 80 countries

25+ **years'**
in cellular IoT

Sara-R42

Sara-R42 is a compact LTE-M / NB-IoT / EGPRS module with built-in GNSS, 2G fallback, and global certifications for location-enabled, low-power IoT deployments. Designed for scalable applications, it combines 23 dBm output power, dynamic antenna tuning, and cloud-based positioning to deliver strong coverage and extended power autonomy in a 16 x 26 mm footprint.

Same great cellular products and team, now powered by Trasna

16 × 26 × 2.5 mm

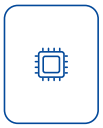
Benefits

Integrated communication and positioning
Supports cellular communication and GNSS simultaneously for accurate, always-on location and connectivity

Enhanced performance
Features configurable dynamic antenna tuning to adapt to frequency changes and maintain signal strength

Reliable global coverage
Delivers 23 dBm output power and multi-band support with 2G fallback for dependable worldwide operations

Highlights



Compact, flexible design
16 x 26 x 2.5 mm LGA module supports global deployment with software-configurable LTE bands and operator profiles

Multi-mode cellular connectivity
Enables LTE-M, NB-IoT, and 2G fallback with 23 dBm RF output for strong signal reliability

Simultaneous GNSS and LTE
Integrates M10 GNSS receiver for concurrent positioning and cellular communication

Cloud-based location services
Supports CellLocate for extended positioning in any scenario

Dynamic antenna tuning
Optimises antenna efficiency through frequency-aware tuning for improved performance

Power-optimised operation
Supports eDRX, and PSMto reduce energy usage and extend device lifespan

Trusted security
Ensures firmware integrity with hardware-based security provisioned in a secure production environment

Migration-ready design
Compatible with other Sara modules for easy upgrade paths from 2G, 3G, and 4G deployments

Use cases

- Smart metering and lighting
- Asset tracking and telematics
- Remote monitoring and alarm systems
- Connected health and medical devices
- Environmental and industrial sensors

Product features

		Sara-R422	Sara-R422S	Sara-R422M10S
Grade	Automotive			
	Professional	•	•	•
	Standard			
Regions		Global	Global	Global
Access technology	LTE bands	1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28, 66, 85	1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28, 66, 85	1, 2, 3, 4, 5, 8, 12, 13, 18, 19, 20, 25, 26, 28, 66, 85
	GSM/EGPRS bands	Q	Q	Q
	LTE data rate	M1/NB2	M1/NB2	M1/NB2
	LTE power class	23 dBm	23 dBm	23 dBm
Positioning	Integrated u-blox GNSS receiver			•
	Dedicated GNSS antenna interface			•
	External GNSS control via modem		•	
Compatible Trasna services	AssistNow™ and CellLocate®		•	•
Interfaces	UART	2	2	2
	USB (for diagnostics)	1	1	1
	I2C	1	1	1
	USIM	1	1	1
	GPIO	6	6	6
Features	Secure boot, updates, production	•	•	•
	Jamming detection	•	•	•
	Last gasp		•	•
	Antenna detection	•	•	•
	LwM2M	•	•	•
	FW update via serial (FOAT)	•	•	•
	FW update via serial (FOAT)	•	•	•
	eDRX and power save mode	•	•	•
	Deep sleep mode	•	•	•
	Dual stack IPv4/IPv6	•	•	•
	Embedded MQTT / MQTT-SN		•	•
	Embedded TCP/UDP stack	•	•	•
	Embedded HTTPS, FTPS		•	•
	Embedded TLS / DTLS		•	•
	Embedded CoAP/DTLS		•	•
	Antenna dynamic tuning	•	•	•

M1 = LTE Cat M1 (up to 588 kb/s DL, 1119 kb/s UL)
NB2 = Cat NB2 (up to 127 kb/s DL, 158.5 kb/s UL)

Q = Quad-band

Features	LTE	3GPP Release 13 LTE Cat M1 and NB1 3GPP Release 14 LTE Cat M1: Uplink TBS of 2984b, CIoT optimizations, and Release Assistance Indication (RAI) 3GPP Release 14 LTE Cat NB2: Higher data rate (TBS of 2536b), mobility enhancement (RRC connection re-establishment), two HARQ processes, release assistant, random access on non-anchor carrier Cat M1 half-duplex, up to 588 kb/s DL, 1119 kb/s UL Cat NB1 half-duplex, 27.2 kb/s DL, 62.5 kb/s UL Cat NB2 half-duplex, up to 127 kb/s DL, 158.5 kb/s UL
	GSM	GPRS / EGPRS Multi-Slot Class 33
	SMS	MT/MO PDU / text mode SMS over SG/NAS
Software features	Protocols	Dual stack IPv4 and IPv6 Embedded TCP/IP, UDP/IP Embedded secure MQTT, MQTT-SN [1] Embedded HTTPS, FTPS, TLS, DTLS [1]
	Device mgmt.	OMA LwM2M
	GNSS Interfaces	Integrated u-blox M10 chip with concurrent GNSS (GPS, GLONASS, BeiDou, Galileo) [2] Dedicated GNSS antenna interface [2] Direct access to u-blox GNSS via module
	Functionalities	Antenna dynamic tuning Last gasp [1] Jamming detection
	Security	Secure boot Secure updates Secure production
	Firmware upgrade	Via UART or via FOTA (Firmware upgrade over the air)
Compatible Trasna services	Location	AssistNow [1] & CellLocate [1]
Electrical data	Power supply	3.8 V nominal, range 3.2 V to 4.5 V
	Power consumption	Power save mode: 3 µA Active idle mode: 0.1 mA
Interfaces	Serial	2 UART 1 USB, for diagnostics 1 DDC (I2C)
	GPIO	Up to 6 GPIOs, configurable
	(U)SIM	Supports 1.8 V; SIM toolkit
Package	96 pin LGA	16.0 x 26.0 x 2.5 mm, < 3 g
Environmental data, quality & reliability	Operating temperature	−40 °C to +85 °C
	RoHS compliant	Lead-free
	Trasna qualification policy	Based on AEC-Q104 standard
	Manufactured	IATF 16949 certified production sites
Certifications and approvals – planned	Sara-R42 series	ANATEL, FCC, UKCA, ISED, NCC, RCM, RED, GCF, PTCRB, Deutsche Telekom, Vodafone, AT&T [3], Verizon [3], KC [3], GITEKI [3]
	3 = available from ordering code 01B onwards	
Support products	EVK-R422M10S	Evaluation kit for Sara-R42 series
Product variants	Sara-R422	LTE-M, NB-IoT and EGPRS module for multiregional use
	Sara-R422S	Secure Cloud LTE-M, NB-IoT and EGPRS module for multi-regional use
	Sara-R422M10S	Secure Cloud LTE-M, NB-IoT and EGPRS module with integrated M10 GNSS receiver for multi-regional use

1 = only on Sara-R422M10S and Sara-R422S

2 = only on Sara-R422M10S

Take the next step

Grow your business with Trasna Sara-R42.
Contact your account manager to learn more.

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