

LTE-M &amp; NB-IoT

# Monarch 2 GM02S/P Modules

Dual-mode power-optimized LTE-M & NB-IoT modules for IoT applications



The Monarch® 2 GM02S module family is based on Sequans' second-generation Monarch 2 LTE-M & NB-IoT platform. Beyond its support of an industry-leading power-optimized LTE stack, the modules bring a versatile toolbox of integrated features covering all IoT application needs, including one variant, GM02SP, with integrated GNSS. Monarch 2 GM02S modules also deliver remarkably high levels of security and reliability.

## Monarch 2 LTE-M & NB-IoT Platform

At the heart of Monarch 2 GM02S is a flexible platform offering a variety of services. These include an open SDK environment allowing customer application development, and LwM2M-based FOTA services. A variant of Monarch 2 GM02S, GM02SP, offers an integrated GNSS capability, notably optimized in power consumption.

## Next-Gen : Monarch 3 Platform for 5G eRedCap

Currently in development, Monarch 3 builds on Sequans' deep expertise to deliver the most advanced cellular chip for LPWA applications. This next-generation will be footprint compatible with the current Monarch 2 and support 5G NR eRedCap and LTE-M into a single, ultra-efficient chip—setting a new benchmark for cost-optimized, low-power, size and robust connectivity.

Module Variant	Regions	LTE Bands Supported	GNSS
GM02S	Worldwide	1, 2, 3, 4, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66, 85	No
GM02SP	Worldwide	1, 2, 3, 4, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66, 85	Yes

## Highlights

- + Dual-mode single-image LTE-M & NB-IoT with instant switch
- + Ultra-low power
- + Worldwide bands for global coverage on public and private networks
- + Location services with integrated GNSS\*
- + Edge processing with an open SDK
- + Industrial grade : trusted by the most demanding LPWA applications

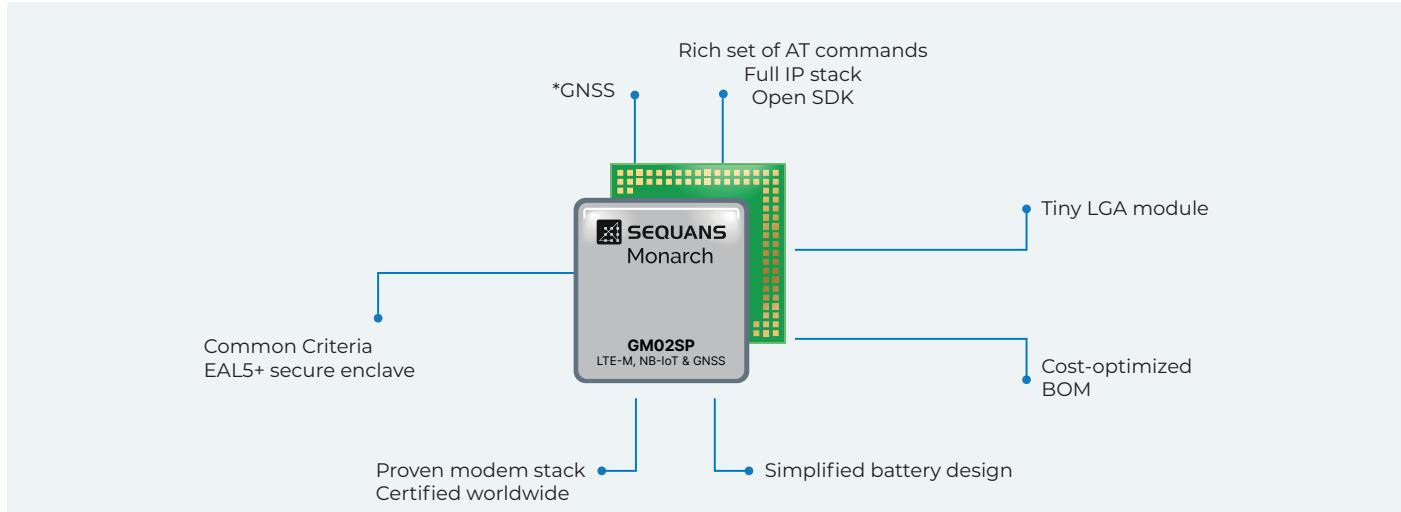
\* available on GM02SP

## Applications

					
Asset Tracking	Telematics	Utility Meters	Industrial Sensors	Health & Fitness Bands	Smart Home

# Monarch 2 GM02S & GM02SP Modules

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## LTE Modem

- + Industry lowest deep sleep mode at 1µA
- + 16.3 x 17 x 2.2 (typ.) mm LGA module
- + Single-SKU with support for LTE bands: 1, 2, 3, 4, 5, 8, 12, 13, 17, 18, 19, 20, 25, 26, 28, 66, 85
- + 3GPP Release 14 (upgradeable up to Release 17)
- + Max transmit power up to +23 dBm
- + Single power supply: 2.2 - 5.5V

## Throughput

- + LTE Cat M1: up to 1.1 Mbps (DL) / 0.3 Mbps (UL)
- + LTE Cat NB1/NB2: up to 105 kbps (DL) / 80 kbps (UL)

## GNSS\*

- + L1 band
- + Very low-power consumption per fix (with configurable performance vs. power levels)

## Interfaces

- + JTAG, I2C, SPI, ADC
- + GPIO including multiple module wake inputs and high precision LTE-synchronized GPIOs
- + UART x 3
- + USIM x 2 (ISO7816)
- + 50 Ohm cellular antenna interface
- + Dedicated GNSS RF input\*

## Software

- + Field proven LTE-M & NB-IoT LTE software stack
- + Rich set of AT commands compatible with other Sequans platforms
- + IP and non-IP data delivery
- + HTTPS, MQTT, CoAP to connect to all cloud platforms
- + AT Command driven GNSS navigation modes\*

## Environmental

- + Operating temperature: -40° C to +85° C
- + Storage: JEDEC MSL 3

## Certification

- + Certified with all major MNOs, and FCC, ISED, RED, UKCA, JATE/TELEC, ACMA, NCC, GCF/PTCRB

## GM02S & GM02SP EVKs

Connect to cellular LTE-M/NB-IoT networks in minutes.

Also includes :

- + Global SIM card from Soracom with 3 months connectivity (up to 30 USD)
- + One MiniUSB cable, embedded antenna with antenna tuner
- + GNSS antenna\*



GM02SP EVK

\* available on GM02SP

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