# ME310G1

13.1 mm

14.3 mm

2.6 mm

LTE Cat M1/NB2 Embedded

Product Description

Enabling a new generation of massive low-cost IoT device deployment numbering in the hundreds of thousands or millions, the ME310G1 is the Category M1/NB2 (Cat M1/NB2) evolution of the brand-new Telit xE310 product family. Cat M1/NB2 devices are specifically tailored for low-data throughput IoT applications, exceeding market demands for optimized power consumption and enhanced quality of coverage. The ME310G1 creates new IoT-enabled business models by addressing connectivity and battery life concerns for original equipment manufacturers (OEMs), integrators and device designers looking to increase data points they can collect from their operation and customers via IoT devices. IoT is now possible at a scale and cost point that makes many previously unviable deployments ROI positive.

Compliant with 3GPP Release 14 (Rel. 14), the ME310G1 LTE UE Cat M1/NB2 module enables increased power saving for IoT applications using Power Saving Mode (PSM) and extended Discontinuous Reception (eDRX). These features allow devices to wake up periodically and deliver only small amounts of data necessary before returning to sleep mode. Enhanced coverage, enabled by maximum coupling loss (MCL) of up to +15 dB/+20 dB, provides superior in-building penetration compared to earlier cellular LTE standards. LTE Cat M1/NB2 devices are optimized in cost, size and power consumption compared to higher UE categories. 3GPP Rel. 14 further improves these features by adding techniques to increase the data rate for LTE-M and NB-IoT. These advantages make the ME310G1 ideal for enabling the quick implementation of LTE technology in which low cost and low power are more relevant than high speed. The ME310G1 series supports global bands coverage for worldwide deployments and 2G fallback capability

The ME310G1 enables enterprises to deploy new small-footprint designs across many application areas, including asset tracking, healthcare monitoring, smart metering, portable devices, industrial sensors, home automation and many others benefitting from low-power and low-data rate capabilities.
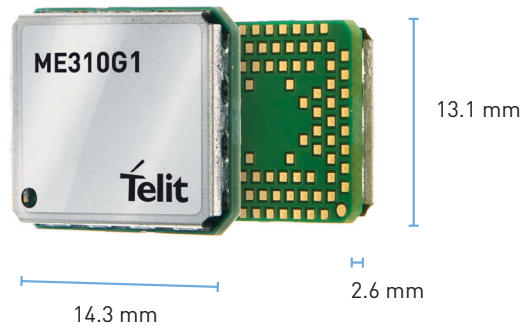
Key Benefits

- Small size and low power consumption
- Optimized for ease-of-design, high yield and low-cost manufacturing
- Compliant to 3GPP Rel. 14 Cat M1/NB2, tailored for IoT devices
- An ideal solution for medical devices, fitness trackers, industrial sensors, smart meters and other mass-production, mass-deployment applications.
- Module sizes ranging from 300 mm^2 to below 200 mm^2 on a fixed 94-pad LGA footprint enable a "design once, use anywhere" IoT device

OneEdge^{TM} Features

Telit offers ME310G1 with OneEdge, a software suite integrated with deployment and management tools to address the complexity expected with the exponential growth in the number of IoT devices. The following key components are included:

- **Lightweight M2M protocol** enables comprehensive device management, FOTA updates and application enablement of low-power devices with the goal of more robust and secure connections.
- **Telit simWISE™**, a module-embedded SIM technology, enables reduced footprint, streamlined manufacturing and logistics, secure communications for connected devices.
- **Telit IoT AppZone** can run code and applications directly inside the Telit module.
- **Telit's Connection Manager** automates operations for connection to cellular networks.
- **Location** services provide the position of devices even in the absence of a GNSS connection.

Family Concept

The xE310 flexible perimeter footprint family includes pin-to-pin compatible 2G (GE310-GNSS) and Cat M1/NB2 (ME310G1) modules, enabling integrators to design a single PCB layout and deploy any combination of 2G and 4G technologies. Telit's miniature xE310 family delivers great business and technical value for OEMs, integrators and IoT device designers interested in low-power, low-cost, small-footprint devices to take digital transformation initiatives to the next level across their organization.

The 94-pad LGA footprint delivers a comprehensive set of features with a surplus of reserve pads to futureproof the end device with additions like Bluetooth connectivity and GNSS. The flexible perimeter space allows modules in the family to go in sizes from around 300 mm^2 to below 200 mm^2. The xE310 allows for single as well as multi-technology products such as combination cellular, GNSS and other solutions in the fixed and mobile applications for smart utilities, smart cities, telematics, point of sale, and home and commercial automation.

AVAILABLE

WORLDWIDE

ONEEDGE™

**Complete,
Ready-to-Use Access**
to the Internet of Things

IoT Modules   Connectivity Plans   Software & Platforms

ME310G1

Variants

	ME310G1-W1	ME310G1-WW	ME310G1-WWV
Market	Worldwide	Worldwide	Worldwide
LTE-M/NB-IoT	Dual Mode LTE-M/NB-IoT	Dual Mode LTE-M/NB-IoT	LTE-M
4G Bands	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B27, B28, B66, B71, B85
2G Bands	-	B2, B3, B5, B8	B2, B3, B5, B8
Output Power	LTE: 21 dBm (Power Class 5)	LTE: 23 dBm (Power Class 3) GSM/GPRS 33 dBm (Power Class 4)	LTE: 23 dBm (Power Class 3) GSM/GPRS: 33 dBm (Power Class 4)
Approvals	FCC/IC, RED, GCF, PTCRB, AT&T, Verizon, Sprint	FCC/IC, RED, GCF, PTCRB, AT&T, Verizon, Sprint, ANATEL, RCM, TELSTRA*, JATE/ TELEC, NTT DOCOMO*, KDDI*, SOFTBANK*, Deutsche Telekom*, CCC*, NCC*, KC, SKT	FCC/IC*, RED*, GCF*, PTCRB*, AT&T*, Verizon*
Voice	No	No	Yes VoLTE and 2G Voice

In process

Product Features

- LTE UE Cat M1 (1.4 MHz)/NB2 (200 kHz)
- 3GPP Rel. 14 compliant
- Half-duplex FDD
- Single Rx, single antenna
- 3GPP Rel. 12 PSM
- 3GPP Rel. 13 eDRX
- 3GPP Rel. 13 extended coverage
- Control via AT commands according to 3GPP TS 27.005, 27.007 and customized Telit AT commands
- SIM application tool kit 3GPP TS 51.01 - VoLTE
- SMS over NAS
- IPv4/IPv6 stack with TCP and UDP protocol
- TLS 1.3/DTLS
- Embedded GNSS (GPS, GLONASS, Beidou, Galileo)
- OMA Lightweight M2M (LwM2M)
- Firware Over-the-Air update (FOTA) using delta upgrade techniques

Data

LTE Cat M1 (Rel. 14)
- Uplink up to 1 Mbps
- Downlink up to 588 Kbps

LTE Cat NB2 (Rel. 14)
- Uplink up to 160 Kbps
- Downlink up to 120 Kbps

EGPRS (2G Fallback variants)
- Uplink up to 210 Kbps
- Downlink up to 264 Kbps

Environmental

- Extended temperature range -40° C to +85° C

Interfaces

- Dimensions:
  - 13.1 x 14.3 x 2.6 mm (ME310G1-W1)
  - 15 x 18 x 2.6 mm (ME310G1-WW)
- 6 I/O ports
- 1.8V SIM Interface
- USB 2.0 HS
- UART
- SPI
- I2C

Electrical & Sensitivity

Supply voltage:
- Nominal: 3.8 V dc
- Operating voltage range: 3.4–4.2 V
- Extended voltage range: 2.6–4.5 V

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