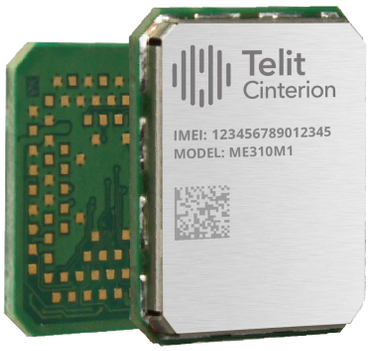
ME310M1

LTE Cat M1/NB2 LGA Module



Product Description

The ME310M1 is a next-generation member of our xE310 product family. This Category (Cat) M1 and NB2 module enables secure, massive, power efficient IoT device deployments and caters to low-data throughput IoT applications.

The ME310M1 offers ultralow power consumption and enhanced coverage quality. It's compliant with 3GPP Release 14 and has in roadmap upgrades to 3GPP Releases 15/16/17. It features Power Saving Mode (PSM) and extended Discontinuous Reception (eDRX), which significantly increase the longevity of battery-operated devices. The ME310M1 enhances coverage and provides superior in-building penetration.

The new modules have several next-generation features that make them ideal for device OEMs, systems integrators and enterprises such as utilities that need to dramatically extend the service life of their IoT devices beyond what traditional designs enable:

Compliance with 3GPP release 15/16/17 features such as IoT data communication over non-terrestrial networks(NTN). This provides users with future-proof flexibility to switch between cellular and satellite technologies to meet criteria such as coverage, performance, fallback, tariffs and more.

Support for embedded SIM (eSIM) and integrated SIM (iSIM) technologies. This provides additional future proofing over the full project lifecycle and faster deployments, as well as enterprise-grade security based on integrated Secure Element (iSE).

Best-in-class power consumption. This extends the service life of battery powered IoT devices to a decade or longer, which eliminates the expense of periodically replacing batteries.

Support for multiple location technologies, including Wi-Fi scan and GNSS. This maximizes flexibility when choosing technologies for indoor and outdoor positioning applications such as tracking high-value medical equipment around a hospital campus.

Support for the most secure and flexible connectivity solutions. This enables rapid, easy integration with wireless networks and seamless operation across multiple technologies.

The ME310M1 supports worldwide deployments with coverage for global bands. It's ideal for mass production and deployment use cases, including:

- Smart meters
- Asset Tracking
- Industrial sensors
- Medical devices and wearables

Key Benefits

- Compact Form Factor, optimized for high yield and low cost manufacturing
- Global SKU with future support for non-terrestrial networks (NTN)
- Ultra-low, best-in-class power consumption profile
- Embedded processing (IoT AppZone) and flexible SIM solutions, including Embedded SIM (eSIM) and Integrated SIM (iSIM) options
- Edge to Cloud easy onboarding
- Embedded GNSS and Wi-Fi scan for outdoor and indoor positioning
- Short Range and Mesh capabilities
- Flexible connectivity solutions with NExT™ data plans and Connectivity Activation

AVAILABLE FOR

WORLDWIDE

Connectivity Solutions

NExT™ powered by Telit Cinterion is a cloud native core network. Telit Cinterion is a full tier 1 MVNO, enabling new and enhanced turnkey connectivity solutions and device management services. With this IoT network, you can deploy powerful, intelligent Global roaming with multi -IMSI and localization capabilities (eUICC) on more than 600 mobile carriers in 200+ countries in 2G/3G/4G/CAT-M/NB-IoT & 5G. The NExTPro management tool provides full visibility, monitoring & analytics.

In addition, Telit Cinterion offers Connectivity Activation, a remote SIM provisioning service that leverages latest eSIM technology to simplify and optimize connectivity provisioning and M(V)NO selection. Connectivity Activation digitalizes SIM provisioning and makes the IoT journey seamless and efficient for your devices, from the factory to the last day of operation.

Family Concept

The xE310 flexible perimeter footprint family includes pin-to-pin compatible 2G and Cat M1/NB2 modules. Integrators can design a single PCB layout and deploy any combination of 2G and 4G technologies.
Our miniature xE310 family delivers great business and technical value for OEMs, integrators and IoT device designers. They can leverage this form factor family to create low-power, cost-efficient devices with a small footprint and digitally transform their organization.
The 94-pad LGA footprint delivers comprehensive features with a reserve pad surplus. These can be used to future-proof the end device by adding Bluetooth® wireless technology and GNSS. The flexible perimeter space enables module family sizes to range from 300 mm2 to below 200 mm2.
The xE310 family allows for single- and multitechnology products (e.g., combination cellular, GNSS, etc.) and other fixed and mobile applications across various industries.

ME310M1

Variants

	ME310M1-W1	ME310M1-W2	ME310M1-W3
Market	Worldwide	Worldwide	Worldwide
LTE-M/NB-IoT	Dual-mode LTE-M/NB-IoT	Dual-mode LTE-M/NB-IoT	Dual-mode LTE-M/NB-IoT
4G Bands	B1, B2, B3, B4, B5, B8, B8_US, B12, B13, B14, B18, B19, B20, B25, B26, B27, B28, B66, B85	B1, B2, B3, B4, B5, B8, B8_US, B12, B13, B14, B18, B19, B20, B25, B26, B27, B28, B66, B85	B1, B2, B3, B4, B5, B8, B8_US, B12, B13, B14, B18, B19, B20, B25, B26, B27, B28, B66, B85
Output Power	LTE: 23 dBm (Power Class 3)	LTE: 23 dBm (Power Class 3)	LTE: 23 dBm (Power Class 3)
GNSS	Yes, non concurrent with cellular (GPS)	Yes, non concurrent with cellular (GPS)	Yes, concurrent with cellular (GPS, GLONASS, Galileo, BeiDou, NavIC, QZSS, SBAS)
IoT AppZone	-	Yes	-
Approvals	FCC/IC, RED, GCF, PTCRB, NCC, RCM*, JATE/TELEC, AT&T, FirstNet, Verizon, T-Mobile U.S.*, KDDI*, SOFTBANK*, NTT DOCOMO*, Telstra*	FCC/IC, RED, GCF, PTCRB, NCC, RCM*, JATE/TELEC, AT&T, FirstNet, Verizon, T-Mobile U.S.*, KDDI*, SOFTBANK*, NTT DOCOMO*, Telstra*	FCC/IC*, RED*, GCF*, PTCRB*, JATE/TELEC*, AT&T*, FirstNet*, Verizon*, T-Mobile U.S.*, KDDI*, SOFTBANK*, NTT DOCOMO*, Telstra*

**Planned*

Product Features

- LTE UE Cat M1 (1.4 MHz), NB2 (200 kHz)
- 3GPP Rel 14 compliant
- Half-duplex FDD
- Single Rx, single antenna
- PSM, eDRX, Extended Coverage
- Control via AT commands according to 3GPP TS 27.005, 27.007 and customized Telit Cinterion AT commands
- SIM application tool kit 3GPP TS 51.01
- SMS over NAS
- IPv4/IPv6 stack with TCP and UDP protocol
- TLS 1.3/DTLS
- OMA Lightweight M2M (LwM2M)
- Embedded intermitted GPS
- Concurrent GNSS on dedicated variant
- Wi-Fi Positioning
- Firmware over-the-air update (FOTA) using delta upgrade techniques
- eSIM option
- iSIM (roadmap)
- NExT embedded connectivity
- NExT eSIM Provisioning
- Short Range Radio
- Embedded Processing (AppZone)

Hardware and Electrical Specifications

- Dimensions: 15 x 18 mm
- 6 I/O ports
- 1.8 V SIM interface
- UART
- SPI
- I2C
- Normal Operating temperature range:
  -40° C to +85° C
- Extended Operating temperature range:
  -40° C to +90° C
- Supply voltage:
  - Nominal: 3.8 V dc
  - Operating Voltage Range 2.5 V - 4.5 V
  - Extended Voltage Range 2.2 V - 4.5 V
- Power consumption
  - PSM: 1.33 µA
  - eDRX 81.92s: 7 µA

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

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