



**LTE Cat NB2 Embedded**

## Product Description

With its small size and ultralow power consumption, the NE310L2 is a category NB2 product in the Telit xE310 product family. Cat NB2 devices are specifically tailored for low-data throughput IoT applications, exceeding market demands for optimized power consumption and enhanced coverage quality. The NE310L2 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 [Rel14], the NE310L2 LTE UE Cat 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 necessary data before returning to sleep mode. Enhanced coverage, enabled by maximum coupling loss (MCL) of up to +20 dB, provides superior in-building penetration compared to earlier cellular LTE standards.

LTE Cat 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 NB-IoT. These advantages make the NE310L2 ideal for enabling the quick implementation of LTE technology in which low cost and low power are more relevant than high speed. The NE310L2 series supports global band coverage for worldwide deployments and optional 2G fallback capability.

The NE310L2 enables enterprises to deploy new small-footprint designs across many application areas, including smart metering, healthcare monitoring, home automation, industrial sensors, smart agriculture, asset tracking, portable devices and many others benefitting from low-power and low-data rate capabilities.

## Key Benefits

- Small form factor ideal for size-constrained applications
- Ultralow power consumption
- 3GPP Rel 14 Cat NB2 evolution in the new Telit form factor xE310
- Perfect platform for global IoT applications such as smart metering, smart agriculture, health monitoring and asset tracking

## Family Concept

The xE310 flexible perimeter footprint family includes pin-to-pin compatible 2G (GE310-GNSS), Cat M1/NB2 and Cat NB2 only modules, empowering integrators to design a single PCB layout and deploy any combination of 2G and 4G technologies. Telit's miniature xE310 family delivers excellent 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 future-proof 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<sup>2</sup> to below 200 mm<sup>2</sup>. The xE310 allows for single and 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

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



## Variants

	NE310L2-W1	NE310L2-WW
<b>Market</b>	Worldwide	Worldwide
<b>4G Bands</b>	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66, B85	B1, B2, B3, B4, B5, B8, B12, B13, B18, B19, B20, B25, B26, B28, B66, B85
<b>2G Bands</b>	-	B2, B3, B5, B8
<b>Output Power</b>	LTE: 23 dBm (Power Class 3)	LTE: 23 dBm (Power Class 3) GSM/GPRS 33 dBm (Power Class 4)
<b>Approvals</b>	FCC/IC, RED, GCF, PTCRB, RCM, Anatel*, AT&T, Verizon*, Deutsche Telekom*, Telefonica*	FCC/IC, RED, GCF, PTCRB, Anatel*, AT&T, Verizon*

\*In process

## Product Features

- LTE UE Cat NB2
- 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 TS27.005, 27.007 and customized Telit AT commands
- SIM application tool kit 3GPP TS51.01
- SMS
- DTLS
- OMA Lightweight M2M (LwM2M) Device Management
- Firmware over-the-air (FOTA) update update using delta upgrade techniques

## Data

- LTE Cat NB2 (Rel 14)**
  - Uplink up to 160 Kbps
  - Downlink up to 120 Kbps
- GPRS (2G Fallback Variants)**
  - Uplink up to 42.8 Kbps
  - Downlink up to 85.6 Kbps

## Environmental

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

## Power Consumption

- PSM: 1.7  $\mu$ A\*\*
- eDRX 81.92s: 59  $\mu$ A\*\*

\*\*Preliminary

## Interfaces

- Dimensions:
  - 13.1 x 14.3 (NE310L2-W1)
  - 15 x 18 (NE310L2-WW)
- 6 I/O ports
- 1.8 V SIM interface
- UART
- SPI
- I2C

## Electrical & Sensitivity

- Supply voltage:
  - Nominal: 3.8 V dc
  - Operating voltage range: 3.2-4.2 V
  - Extended voltage range: 3.0-4.5 V

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