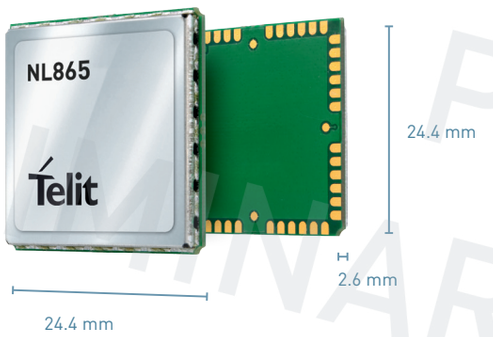
NL865B1 Series

PRELIMINARY

LTE Cat NB1 Embedded



Product Description

The NL865B1 is the Category NB1 - aka Narrowband IoT (NB-IoT) - evolution in the widely deployed Telit xL865 product family. Specified in the Release 13 of the 3GPP standard, LTE Cat NB1 is specifically tailored for IoT applications, offering optimized power consumption and enhanced coverage. In addition, with its square24.4 x 24.4 mm VQFN footprint, the NL865B1 is designed for size sensitive applications.

This next generation of products supports the new features specified by 3GPP to boost IoT applications, such as the Power Saving Mode (PSM) and the extended Discontinuous Reception (eDRX), which allow the devices to wake up periodically to deliver only very small amounts of data to the network and then go back to sleep for most of the time, thus allowing longer battery operation. Enhanced coverage, with up to +20dB in maximum coupling loss (MCL) com-pared to the other cellular technologies, is also one of the key benefits of this new LTE flavour. LTE Cat NB1 devices are therefore optimized in cost, size and power consump-tion compared to higher UE categories. These advantages make the NL865B1 the perfect platform to enable a quick implementation of LTE technology in IoT/M2M where low cost and low power are more relevant than high speed.

The NL865B1 helps increase the addressable market for LTE technology to include a broad range of new applications and use cases best served with lower maximum data rate, ultra-low power, reduced complexity and cost. Some examples are smart metering, smart parking, smart agriculture, waste collection, industrial sensors, healthcare monitors, home automation, and many more low data rate IoT devices. The NL865B1 is offered in a dual-band con-figuration for deployment in the European and Chinese NB-IoT networks, either in in-band, guard-band or standalone mode; additional regional variants will follow. It is highly recommended for new designs, but also in particular as a migration path for existing GPRS devices, both new and updated designs benefit from a significant extension in lifecycle with LTE Cat NB1.

The NL865B1supports embedded SIM chip as a mounting option, making it the ideal solution for durable and rugged designs, and reducing BOM cost and size on the customer's application.

Key Benefits

- Design once and deploy globally, thanks to the xL865 form factor family
- Compact VQFN package is ideally suited for low profile integrated solutions, limited real estate application boards, reducing cost in high-volume applications, as well as saving space and weight in portable devices
- Perfect platform for regional IoT applications such as smart metering, security & surveillance, point of sales, health monitoring, fleet management, asset tracking and wearable devices
- LTE UE Category NB1 compliant to the latest 3GPP Release 13 enhanced Machine-Type Communication (eMTC), specifically designed for IoT use cases, offering minimum power consumption and extended coverage

Family Concept

The xL865 family includes pin-to-pin compatible 2G and 3G modules - the GL865 and UL865 respectively – making it another pillar of the concept "design once and deploy globally." It enables integrators to develop a single PCB layout for 2G, 3G and 4G Cat NB1 technologies.

AVAILABLE FOR

- EMEA
- North America
- Latin America
- APAC
- Africa
- Russia

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NL865B1 Series

Product Features

Supported bands:

- NL865B1-E1
- Dual band LTE B8/B20
- Single Rx
- Half Duplex FDD
- LTE UE Category NB1
- 3GPP Rel. 13 compliant
- 3GPP Rel. 12 Power Saving Mode (PSM)
- 3GPP Rel. 13 Extended Discontinuous Reception (eDRX)
- 3GPP Rel. 13 Extended coverage
- Control via AT commands according to 3GPP TS27.005, 27.007 and customized AT commands
- Embedded UDP/IP stack

Data

LTE Category NB1

- Uplink up to 20 kbps (single-tone)
- Downlink up to 250 kbps

Physical & Environmental

- Compact dimensions 24.4 x 24.4 x 2.6 mm
- Extended temperature range: -40 to +85 °C

Interfaces

- UART
- I2C - for future release
- GPIO
- ADC
- 1.8 V SIM interface
- Optional embedded SIM chip

Approvals

- RED (Europe)
- CCC (China)
- GCF

Electrical

- Supply voltage
  - Nominal: 3.8 VDC

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