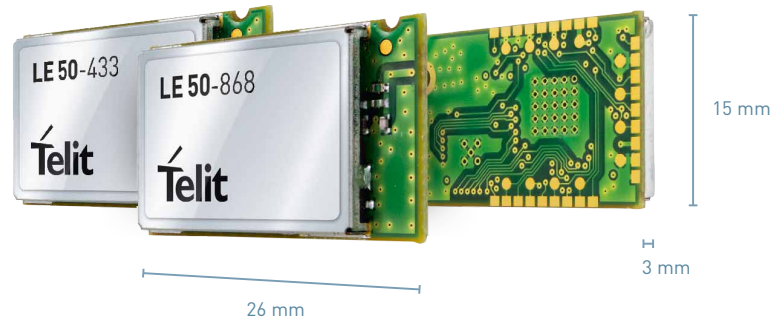


## LE50-433/868

### LICENCE-FREE SYSTEM

for Frequencies <1 GHz

Embedded



## Product Description

LE modules operate in the 433 MHz and 868 MHz ISM license free frequency bands with Tx power up to 25 mW. They organize in a “Star Network” topology over a Telit proprietary protocol ideal for use in replacing communication over cables such as RS485 links (Profibus, Modbus) and half-duplex RS232 links (transparent mode), with wireless technology.

They can also be used to create communications networks in a star topology and for long-chain communication with the new smart repeater function.

- Certified RF modules, LGA xE Form Factor, TTL RS232 interface
- Excellent RX sensitivity
- Hayes mode or ‘AT’ mode for configuration
- Listen Before Talk (LBT) for collision avoidance
- Cyclic wake up: wakes up periodically and listens to the radio link
- AES128 data encryption available
- Repeater mode (bridge function)
- Download Over The Air (DOTA)
- Industrial temperature range

## Key Benefits

- For ultra low-power, low-latency applications
- Ideal for upgrading cabled applications with wireless technology
- Wide area coverage
- Good for battery powered applications LE50-868 is over the air compatible with LE70-868 (500mW) in G3 868 MHz sub-band.

## Family Concept

The Telit LE family is comprised of multi-band, multi-channel radio modules operating on an advanced proprietary embedded stack that is easy to integrate and use in point-to-point or star network topologies.

They operate in the 433 MHz and 868 MHz bands and feature low power standby mode, efficient wake up on radio and link budget of 123 dB (119 dB for 433 MHz EU-only).

These certified LGA modules provide TTL RS232 interface, integrated digital and analog I/O. The family is pin-to-pin compatible with Telit ZE Family (ZigBee PRO stack), NE Family (low power mesh) and ME Family (Wireless M-Bus).

### Combine your Short Range module with

Cellular modules



GNSS modules



[www.telit.com](http://www.telit.com)

# LE50-433/868

## Product Features

- Range: Up to 2000 m
- Up to 128 kB Flash, 4 kB RAM, 2 kB EEPROM
- 32.768 kHz real time clock (RTC), 4 timers
- Configurable output power
- 9 I/O ports max available

## Networking

- Frequency: 433.05 - 434.79 MHz  
Channels: 4 to 8
- Frequency: 863 - 870 MHz  
Channels: 2 to 60
- Modulation: GFSK
- Point to point, star network
- ACK
- Addressed Mode
- Repeater Mode: bridge function  
(line propagation on the long distances)
- Listen Before Talk
- Telemetry
- Analog RSSI
- Cyclic wake up
- Remote CTS/RTS control
- Hayes Mode
- I/O Copy
- Download Over-the-Air
- AES encryption

## Optional Features

- LE50-433 / 868 module is available with DIP adapter and SMA connector

## Data

### LE50-433

- Serial Data Rate: Up to 115.2 Kbps
- Radio Data Rate: from 9.6 kbps to 115.2 kbps

### LE50-868

- Serial Data Rate: Up to 115.2 Kbps
- Radio Data Rate: from 4.8 kbps to 115.2 kbps

## Environmental

- LGA mount technology, 30 pads RF pads for antenna
- Rectangular 26 x 15 mm, height 3 mm
- Weight 1.7 g
- Temperature: -40°C to +85°C

## Interfaces

- Serial Interface: RS232 TTL (Tx, Rx, Cts, RTS)

## Electrical & Sensitivity

### LE50-433

- Output Power:  
Up to 14 dBm (default for EU 10 dBm)
- Power Supply: 2.0 to 3.6 V
- Board Consumption at 25 mW:  
Rx: 26 mA  
Tx: 45 mA
- Std-by consumption:  
-external wake-up (interrupt) 1 µA  
-cyclic wake-up (internal timer running) 3 µA
- Sensitivity (CER < 10-3): -109 dBm

### LE50-868

- Output Power: Up to 14 dBm
- Power Supply: 2.0 to 3.6 V
- Board Consumption at 25 mW:  
Rx: 26 mA  
Tx: 45 mA
- Std-by consumption:  
-external wake-up (interrupt) 1 µA  
-cyclic wake-up (internal timer running) 3 µA
- Sensitivity (CER < 10-3): -109 dBm



## Join the Telit Technical Forum

For a quicker and more rewarding integration experience join the Telit Technical Forum. There you can browse the first open forum covering all IoT topics, get direct support by region (EMEA, North America, Latin America, APAC), take part in this quickly growing IoT community and exchange experiences.