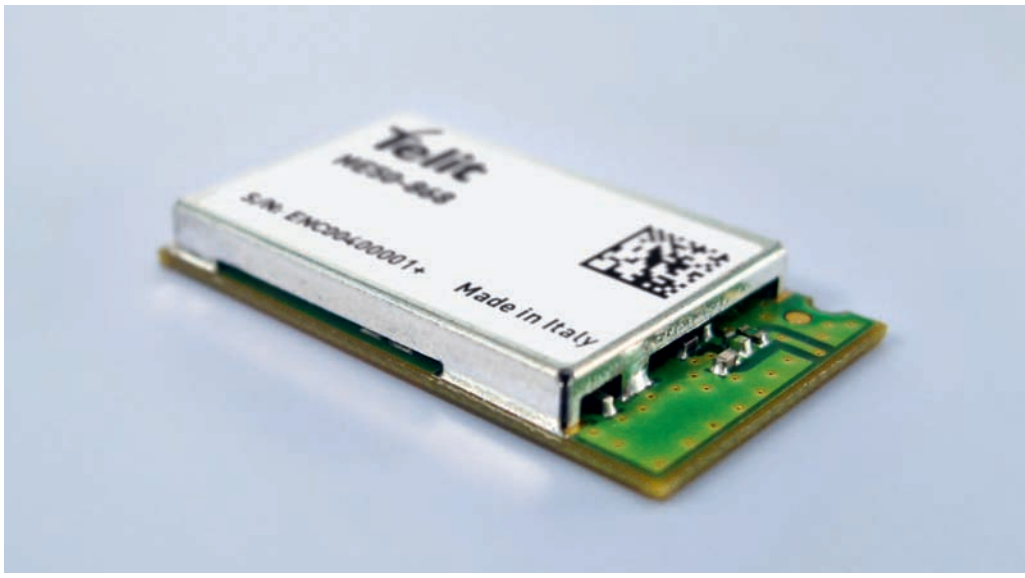
License-Free System
for Frequencies ‹1 GHz

Embedded

NE50-433
RF modules
38.4 Kbps - 25mW

NE50-868
RF modules
38.4 Kbps - 25 mW



- RoHS and WEEE Compliant
- Available LGA Format
- Embedded Low Power Mesh Stack
- Ultra Low Power Consumption+Std-by Mode
- Integrated Digital TTL I/Os and Analog Inputs
- DOTA - Upgradeable and Configurable Over-the-Air

Telit NE modules family is based on Mesh network concept in the license-free 433 MHz and 868 MHz ISM bands. With adjustable output power from 5 mW to 25 mW NE50-433 and NE50-868 modules can reach up to 1500 m in LOS.

Advanced proprietary embedded "Low Power Mesh" stack allows efficient power management on both end nodes and routers, network latency defined on the system requirements by setting different synchronous network time, data rate or message format, connecting up to 100 end nodes per router in a cluster tree architecture that enables scalability.

"Low Power Mesh" stack is designed for battery powered sensor networks that can be built automatically making it easily to integrated, thus reducing development time and cost for applications in building automation, metering (water, gas, electric), irrigation, tracking, lightning and access control. Telit NE50 modules are pin to pin compatible with ZE Family (Zigbee), ME Family (Wireless M-Bus) and LE Family (Telit Star Network).

Performance NE50-433
- Range: Up to 1500 m (Ext antenna)
- Output Power:
  Up to 14 dBm (default for EU 10dBm)
- Serial Data Rate: 19.2 Kbps
- Radio Data Rate: 38.4 Kbps
- Sensitivity (PER=1%): -101 dBm @ 38.4 Kbps

Performance NE50-868
- Range: Up to 1500 m (Ext antenna)
- Output Power: Up to 14 dBm
- Serial Data Rate: 19.2 Kbps
- Radio Data Rate: 38.4 Kbps
- Sensitivity (PER=1%): -105dBm @ 38.4 Kbps

Power Requirements
- Power Supply: 2 to 3.6 V
- Board Consumption at 25 mW:
  Rx: < 26 mA
  Tx: < 45 mA
  Std-by:
  - With clock running (internal timer running) < 3µA

Physical Properties
- Board Format:
  Rectangular 26 x 15 mm, height 3 mm
- Extended temperature: -40°C to +85°C

Mesh features
- Ultra low power end point
- Up to 10 hops on the network
- Up to 10 000 device in the network
- Cluster tree
- Auto-association
- Auto-repair
- Configurable network period and synchronous part

Networking
- Frequency:
  433.050 – 434.790 MHz (NE50-433)
  863 - 870 MHz (NE50-868)
- Channels: 8 (NE50-433), 13 (NE50-868)
- Modulation: GFSK
- Serial Interface: RS232 TTL
- Hayes Mode: Yes
- Download Over-the-Air: Yes
- Mesh Network: Yes
- I/O Copy: Yes
- Listen Before Talk: Yes

Order No.
Please contact your Telit representative for order codes and further information.

Making machines talk.®

QUALITY
INVESTMENT PROTECTION
BUSINESS SCALABLE
EASE OF INTEGRATION

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Embedded

NE 50 - 433
RF modules

NE 50 - 868
RF modules

(a)


(a)


(a)

actual size

Optional Features

- NE50 modules are available:
  - (a) as a compact SMD component without integrated antenna
  - (b) in DIP version

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Compact

NE 50 - 433
RF modules-DIP
38.4 Kbps - 25mW

NE 50 - 868
RF modules-DIP
38.4 Kbps - 25mW


(b)

Mesh Demo Case

Demo Case is available for testing and to assist during mesh network integration into the final application.

Mesh Demo Case Content:

- 4 demo boards with modules (can be set as Coordinator, Router, End device or Sniffer)
- 2 I/O management boards (with LEDs and switches)
- 1 RF USB dongle
- 4 SMA RF antennas
- 4 classic serial cables (for demo boards)
- 2 power supply block (for Coordinator and Routers)
- 2 primary +9V batteries (for End points only)

Other Services

- Custom application profiles
- Guest lectures and training courses
- Software testing and debugging

Complementary Gateway solution GG863-SR that integrates Short Range and GSM/GPRS capabilities with ARM9 - Linux OS core. GG863-SR can extend the mesh network range, establishing a direct connection between the IP host and gaining full control of the Short Range Network over IP.

Distributed by:

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