

LE50-868 Market Introduction



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Making machines talk.[®]

Feature Overview

Designed for:

- Lightning, building automation, irrigation, tracking, access control
- Ultra low-power applications
- Star, point-to-point communication



Main characteristics:

- LGA mount technology
- Dimensions: 26 x 15 x 3 mm
- Weight: 1,7g
- **Budget link 123dB**
- Output power up to 14dBm (configurable)
- Sensitivity -109 dBm
- Serial Data Rate: Up to 115.2 Kbps
- Radio Data Rate: from 4.8 kbps to 115.2 kbps
- Supply voltage range: 2.0 – 3.6V DC
- Up to 128kB Flash, 8kBRAM, 2kB EEPROM
- Frequency: 863-870 MHz
- Board consumption @25mW:
 - Stand by: 1uA (external wake up, interrupt)
 - 3uA (cyclic wake up, internal timer running)
 - Rx: 26mA
 - Tx: 45mA
- 9 I/O pins available for telemetry applications
- Networking S-ONE protocol stack:
 - Cyclic wake up
 - Telemetry profile I/O control
 - Address secured mode
 - Listen Before Talk
 - Analog RSSI level
 - Data encryption AES128
- Extended temperature range: -40°C to +85°C

- **Available complementary gateway solution GG863-SR that extends wireless network at 868Mhz to IP network**

Technologies

What is it?

S-One protocol stack is a Telit proprietary protocol typically used to replace the communication over cable (null modem) with wireless communication. It can be used to replace RS485 links (Profibus, Modbus) and replace half-duplex RS232 links (transparent mode).

Key characteristics

- Allows point-to-point or multi point (broadcast) communication
- Very low latency time: characters are transmitted to the radio link as they are sent to the serial link
- Hayes mode, or 'AT' mode, is used to configure the parameters of the products
- Listen Before Talk (LBT) avoids collision; no transmission of the RF channel is not free; waits random time before retry
- Stand by:
 - Hardware: DTR pin on modems and stand-by pin on boards
 - Software: ATP Hayes command. Wake-up on the first character received on the serial link
- Cyclic wake up: in combination with Hardware or Software stand by, the module performs a cyclic wake up to listen periodically the radio link.
- Repeater mode (bridge function): propagation on the long distances will be available in the future release
- Specific communication protocol for remote re-flashing of the modules (OTA)

Available modes

Transparent mode

- No host software adaptation: Plug & Play
- No internal integrity control. User is supposed to provide it
- Allows transmission of long frames
- The latency time is minimum (but still exists)

Address secured mode

- No host software adaptation: Plug & Play
- No internal integrity control. User is supposed to provide it
- Addressed secured: Multipoint secured mode
- Each node can address data to specific nodes or to all nodes in broadcast
- Nodes are addressed with an ID number (address at the beginning of each frame) and acknowledged
- 65535 different networks can be implemented with 65535 clients configured within each network

Telemetry mode

- Address secure
- Allows functional use of I/Os of the module

Download OTA mode

- Specific communication protocol for remote re-flashing of the modules

LE50-868 Demo Kit



DEMO kit of 2 LE50-868 modules with full equipment permits to test RF performances.

DEMO kit content:

- 2 Evolution Kit motherboards
- 2 LE50-868 interface boards
- 2 Antennas $\frac{1}{2}$ wave 868MHz, SMA
- 2 Power supply and 2 batteries
- 2 Serial cables

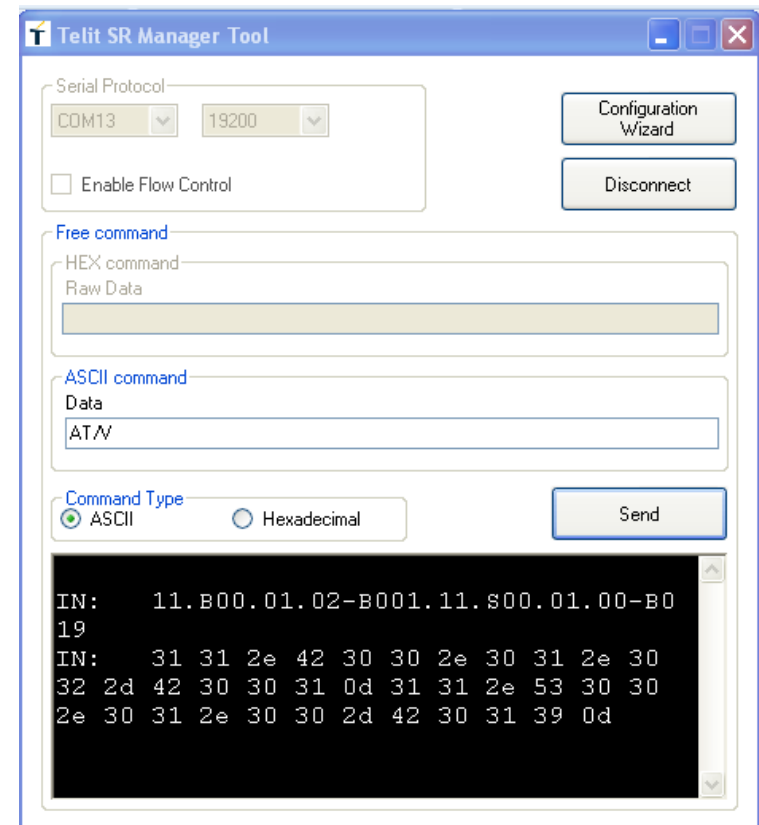


What is it?

The Telit SR Tool Manager provides an easy tool to flash, test and manage the LE modules that guaranties transparency of the SR technology complexity dramatically reducing the time to market and TCO.

Available functionalities

- Flashing: upgrade of the S-One firmware
- Send/receive data/command from/to the network (command type ASCII or HEX)
- Configuration wizard
- Ping and IO management



Telit's 868MHz Roadmap: Gateway Solution.

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



- Excellent range and sensitivity
- Small form factor Pin to Pin compatible with ZE Family (Zigbee 2007 or PRO stack), NE Family (Mesh low power) and ME Family (Wireless M-bus)
- Low cost product
- Low consumption in receive mode and cyclic wake up
- Address secured, telemetry mode and remote re-flashing
- User friendly tool for module configuration and test
- Complementary Gateway solution GG863-SR with GSM/GPRS link

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A large image of a circuit board with two circular components highlighted by magnifying glasses.

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