EMB-LR1121-e

868/915 MHz & 2.4 GHz
LoRa® Multi-Protocol Module*

Technical Specifications

EMB-LR1121-e is the new LoRaWAN® OEM Embit module which embraces the multiprotocol philosophy in order to be the pillar of **Hybrid Network**s.
Its transceiver allows the usage of different radio protocols, such as LoRaWAN, LoRa-based custom proprietary D2D (device to device) protocol, WMBus and Sigfox. This enlarges the possible range of applications and enables the possibility to build up an **Hybrid Network** for asset management.

One of the killer features of the **EMB-LR1121-e** is the single RF front-end for both 868 and 915 MHz leading to a single SKU which can be use in different world regions. Moreover, RF interface for 2.4 GHz unleashes the development of worldwide applications.
The radio is fully compliant with the worldwide 2.4 GHz frequency band regulation thus being able to operate anywhere in the world. Moreover, the use of the 2.4 GHz ISM radio band, being not subject to duty cycle restrictions, increasing the overall transmission rate with respect to other sub-1 GHz solutions.

EMB-LR1121-e can communicate with other devices through a wide range of serial interfaces: UART, I2C, SPI, several digital and analog I/O ports useful for the management of external devices and interfaces. Moreover, the extremely reduced power consumption makes the **EMB-LR1121-e** particularly suitable to implement long life battery powered devices.
EMB-LR1121-e can be configured as an embedded micro system or simple data modem.
The firmware can be easily developed starting from the Embit SDK. The Embit evaluation kit **(EMB-LR1121-e -EVK)** contains all the documentation, software and hardware tools to get started with the **EMB-LR1121-e** module.

The applications of EMB-LR1121-e are endless; some, of the most popular real-time use cases, are as follows:

• Smart Agriculture
• Smart cities
• Smart Healthcare
• Smart Environment
• Smart Homes and Buildings
• Smart fire evacuation systems
• Smart Industrial Control
• Smart metering, supply chain, and logistics

*PRELIMINARY VERSION - everything reported in this document is subject to changes.

MCU	Arm Cortex M0+ 32-bit RISC up to 56MHz
Transceiver	SEMTECH LR1121
Memory	up to 40kB RAM & 256kB Flash
Frequency	863-870 MHz & 902-930 MHz + 2.4GHz
Tx Output Power	up to +14 dBm (868MHz), up to +22 dBm (915Mhz) [up to +11,5dBm (2,4GHz)]
Rx Sensitivity	Up to -144dBm
Interfaces	UART/SPI/I2C/ADC
I/O	up to 30 lines
Outdoor link range	up to 15 Km
Supply Voltage	(1.8 – 3.6 V)
Antenna	uFL connector/GSG PCB pads for 868/915MHz, uFL connector/GSG PCB pads for 2.4GHz
Dimension	15.5x20x2.3 mm
Connector	SDM Edge Connector
Temperature Range	-40 °C +80 °C