

EMB-LR1276S

Long Range 868/915 MHz LoRaWAN OEM Micro Module



EMB-LR1276S is the new ultra low power LoRaWAN based wireless OEM Embit module. The EMB-LR1276S with its 11,5mm x 11,5mm form factor is the smallest LoRaWAN radio module available on the market. It embeds a full LoRaWAN™ Class A and Class C protocols and it enables to connect it to any LoRaWAN™ compliant network infrastructure. Also, Semtech's proprietary spread spectrum modulation technique provides high interference immunity.

EMB-LR1276S runs on a 32-bit ARM Cortex M0+ coupled with a sub-1GHz RF transceiver based on Semtech's SX1276 which fully supports both 868/915 MHz. The MCU is equipped with up to 256 KBytes of FLASH and up to 40 KBytes of SRAM memory. The module is also integrated with a TCXO which computes accurately the frequency drift due to instabilities such as variation in operating temperature and supply voltage.

EMB-LR1276S can communicate with other devices through a wide range of serial interfaces: UART, I2C and SPI ports, up to 19 digital and 4 analog I/O ports useful for the management of external devices and interfaces. Thanks to the extremely reduced power consumption of the Semtech's RF transceiver, the EMB-LR1276S is a perfect solution to implement long life battery powered devices.

EMB-LR1276S's firmware can be easily developed starting from the Embit SDK, allowing to establish LoRaWAN™ compliant end-nodes or custom point-to-point networks. The Embit evaluation kit (EMB-LR1276S-EVK) contains all the documentation, software and hardware tools to get started with the EMB-LR1276S module.

With the LoRa® disruptive long range wireless technology, the EMB-LR1276S delivers dramatic performance improvements for the AMI, IoT, M2M mobile and consumer markets. It offers a unique network scalability and 10x range



The LoRa name and associated logo are trademarks of Semtech Corporation or its subsidiaries.



Embit S.r.l.
Via Emilia Est 911
41122 Modena (Italy)
Phone: +39 059 371714
Fax: +39 059 3680498
www.embit.eu | info@embit-eu

Technical Specifications

MCU	32 bit ARM Cortex M0+
Transceiver	Semtech SX1276
Memory	40 KB RAM / 256 KB Flash
Frequency	863 ÷ 870 MHz / 902 ÷ 928 MHz
Tx output power	available at: up to +14 dBm up to +20 dBm
Rx sensitivity	up to -136 dBm at 300 bps (LoRaWAN protocol compliant modes) up to -148 dBm (proprietary narrowband modes)
Data rate	0.3 ÷ 37.5 kbps LoRa® 0.6 ÷ 300 kbps (G)FSK
Interfaces	USB/UART/I2C/SPI/ADC/SWD
Digital I/O	up to 19 lines
Analog I/O	4 ADC channel
Outdoor link range	over 15 km
Supply voltage	1.8 – 3.6 V
Tx current	39 mA @ +14 dBm 124 mA @ +20 dBm
Rx current	9.9 to 12 mA
Sleep Current	≤ 1 µA XLP sleep mode
Antenna	U.FL connector
Dimensions	11,5x11,5x3 mmr
Connector	32 PINS LGA Connector
Temperature Range	-40 to +85 °C
Ordering information:	EMB-LR1276S/ULwith UFL receptacle for external antenna

