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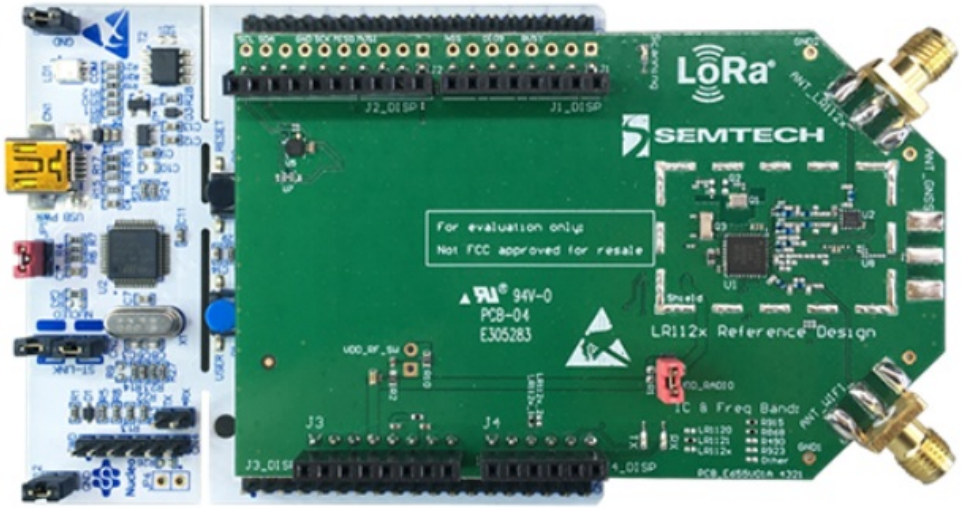
WORLD SENSING LR112X LoRa Module



Specifications

- **Product:** Worldsensing LoRa Module LR112X
- **Power Supply Range:** 3.6 to 5VdC
- **Maximum Consumption:** 500mA
- **Dimensions:** 24 x 36 x 4 mm

RF Specifications

SubGHz

- **Frequency Band:** 902- 928 MHz ISM Band
- **Modulation:** LoRa (lower subset of the first 64 channels)
- **Channel Spacing:** 200 kHz
- **Number of Channels:** 128 selectable on groups of 8, starting in 902.3 MHz
- **Channel Bandwidth:** 125 kHz

2.4 GHz

- **Frequency Band:** 2400 MHz -2480 MHz
- **Modulation:** LoRa
- **Channel Spacing:** 1 MHz
- **Channel Bandwidth:** 812 kHz

FCC/ISED Regulatory Notices

- The product complies with FCC and ISED regulatory notices regarding modifications, interference, wireless operation, and permitted antennas. Users should adhere to the guidelines provided to ensure proper operation and compliance.

Permitted Antenna

- The radio transmitter operates through a 50-ohm U.F.L. connector.
- Ensure compliance with FCC and ISED regulations when connecting antennas to the device.

Labeling Requirements for Host Device

The host device must be properly labeled to indicate the modules within it. The

certification label of the module must be visible at all times when installed in the host device. FCC and IC information should be displayed on the host device.

Installation

1. Ensure the power supply range is between 3.6V to 5VdC.
2. Connect the module using a 50-ohm U.F.L. connector.
3. Follow the labeling requirements when installing the module in the host device.

Configuration

1. Select the appropriate frequency band and modulation for your communication needs.
2. Set the channel spacing and channel bandwidth according to your requirements.
3. Refer to the user manual for detailed configuration options and settings.

Maintenance

1. Keep the device clean and free from dust or debris that may affect performance.
2. Regularly check connections and antennas for any signs of wear or damage.
3. Follow recommended storage and operating temperature guidelines.

Description

- Worldsensing LoRa Module LR112X
- LoRa module with optimized temperature stability for communicating in sub-GHz and 2.4-GHz bands.

General Specs

- Power supply range: 3.6 to 5VdC Maximum consumption: 500mA Dimensions: 24 x 36 x 4 mm

RF Specs

SubGHz

Frequency Band	902-928MHz ISM Band
Modulation	LoRa (lower subset of the first 64 channels)
Channel spacing	200 kHz
Number of channels:	128 selectable in groups of 8, starting in 902.3MHz
Channel bandwidth:	125 kHz

2.4 GHz

Frequency Band	2400 MHz – 2480 MHz
Modulation	LoRa
Channel spacing	1 MHz
Channel bandwidth:	812 kHz

Modification statement

Worldsensing has not approved any changes or modifications to this device by the user. Any changes or modifications could void the user's authority to operate the equipment.

Interference statement

This device complies with Part 15 of the FCC Rules and Industry Canada's licence-exempt RSS standards.
Operation is subject to the following two conditions:

1. This device may not cause interference, and
2. This device must accept any interference, including interference that may cause undesired operation of the device.

Wireless notice

This equipment complies with the FCC and ISED radiation exposure limits set forth for an uncontrolled environment. The antenna should be installed and operated with a minimum distance of 20 cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Permitted antenna

This radio transmitter has been approved by the FCC and ISED to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Antenna connection: Through 50-ohms. L connector.

2.4GHz:

- Maximum RF Output Power (Conducted/EIRP): FCC13 dBm
- Type of antenna
- internal = FPC antenna
- external = dipole
- Antenna gain
- internal = 3.9dBi

SubGHz:

- Maximum RF Output Power (Conducted/EIRP): F 22 dBm2dBm
- Type of antenna
  - internal = FPC antenna
  - external = dipole
- Antenna gain
  - internal = -2.9dBi
  - external = -0.9dB

Labeling requirements for the host device

The host device shall be properly labelled to identify the modules within the host device. The certification label of the module shall be clearly visible at all times when installed in

the host device, otherwise the host device must be labelled to display the FCC ID and IC of the module, preceded by the words “Contains transmitter module”, or the word “Contains”, or similar wording expressing the same meaning.

- Contains FCC ID: 2AHN4-WSBRDLR112X
- Contains IC: 21260-WSBRDLR112X
- Contains FCC ID: 2AHN4-WSBRDLR112X
- Contains IC: 21260-WSBRDLR112X

Supported FCC/ISED rules

- The WS-BRD-LR112X module has been certified to comply with FCC and ISED rules.
- The WS-BRD-LR112X module has been certified to comply with the following FCC rules.
  - FCC Part 15.247
  - FCC Part 15.209
- The WS-BRD-LR112X module has been certified to comply with the following ISED rules.
  - RSS-247 Issue 3
  - RSS-Gen Issue 5 amendment 2

If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuitry), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

RF exposure considerations

The WS-BRD-LR112X has been tested and certified as a mobile device for use at a minimum distance of 20 cm from the human body with no colocation with other transmitters. If the device is to be used closer than 20cm from the human body and/or with other transmitters simultaneously, the host product manufacturer is required to perform additional evaluation, testing, or testing and Class 2 permissive change. It is required to take responsibility for the module through a change in the

FCC ID (new application). The host product manufacturer must also inform the end user about RF Exposure conditions.

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FAQs

Q: Can I modify the device or make changes to it?
A: No, any changes or modifications to the device could void your authority to operate the equipment.

Q: What should I do if I encounter interference issues?
A: Ensure the device is compliant with FCC Part 15 rules and Industry Canada's standards. The device must not cause interference and should accept any interference that may occur during operation.

Documents / Resources

	WORLD SENSING LR112X LoRa Module [pdf] User Guide LR112X, LR112X LoRa Module, LoRa Module, Module

References

- User Manual

LoRa Module, LR112X, LR112X LoRa Module, Module, WORLD SENSING

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