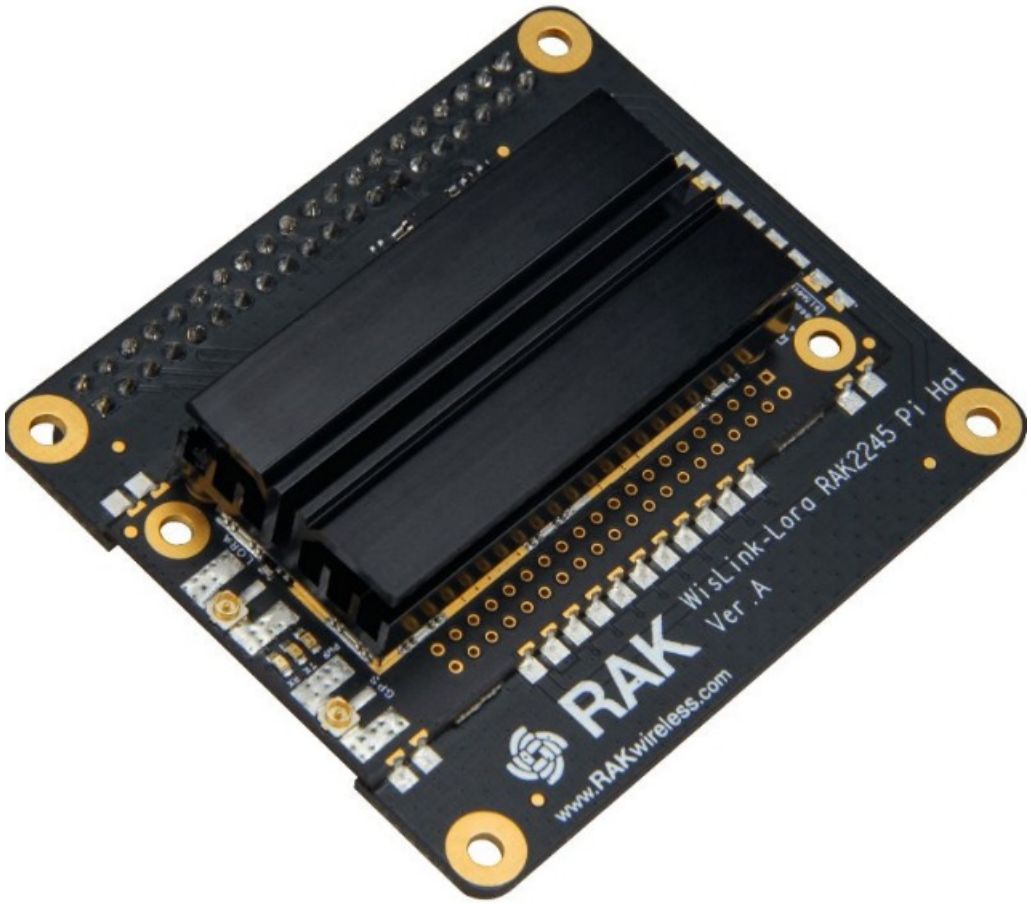
Shenzhen Rakwireless Technology RAK13300 LoRaWAN with Semtech LoRa Chip User Manual

Contents

1 Shenzhen Rakwireless Technology RAK13300 LoRaWAN with Semtech LoRa Chip
2 FCC Statement
3 INTEGRATION INSTRUCTIONS
4 Documents / Resources
5 Related Posts

Shenzhen Rakwireless Technology RAK13300 LoRaWAN with Semtech LoRa Chip



FCC Warning

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions.

1. This device may not cause harmful interference;
2. This device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Statement

"This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient or relocate the receiving antenna.
2. Increase the separation between the equipment and the receiver.
3. Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help."

INTEGRATION INSTRUCTIONS

1. This module has been tested and found to comply with the FCC Part15.247 for Modular Approval.
2. This Modular Approval is limited to OEM installation for mobile and fixed applications only. The antenna installation and operating configurations of this transmitter, including any applicable source-based time-averaging duty factor, antenna gain and cable loss must satisfy MPE categorical Exclusion Requirements of 2.1091. This modular should be installed and operated with minimum distance 20 cm between the radiator& your body.
3. The U.FL connector antenna has been approved for the modular. The maximum antenna gain is 2.3dBi. For situations where the host manufacturer is responsible for an external connector, the integration instructions shall inform the installer that a unique antenna connector must be used on the Part 15 authorized transmitters used in the host product.
4. When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: â€•Contains FCC ID: 2AF6B-RAK11330.
5. The Shenzhen Rakwireless Technology Co., Ltd. uses various test mode programs for test set up which operate separate from production firmware. Host integrators should contact Shenzhen Rakwireless Technology Co., Ltd. for assistance with test modes needed for module/host compliance test requirements.
6. The Shenzhen Rakwireless Technology Co., Ltd. modular transmitter is only FCC authorized for the FCC Part15.247 listed on the grant, and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuity), 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.

ISED Warning:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

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

This equipment complies with ISED radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body.This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter located or operating in conjunction with any other antenna or transmitter.
The host product shall be properly labelled to identify the modules within the host product. The ISED certification label of a module shall be clearly visible at all times when installed in the host product; otherwise, the host product must be labelled to display the ISED certification number for the module, preceded by the word “contains” or similar wording expressing the same meaning, as follows:
Contains IC: 25908-RAK11330

Conformity Assessment of the Radio Module to the RED

- This radio module is for professional installation only. When installing this radio module permanently into a host

product to a create new radio equipment device; the manufacturer responsible for placing the final radio product on the market in the EU must assess if the combination of this radio module and the host product complies with the essential requirements of the RE Directive 2014/53/EU.

- The final radio product will need to be fully assessed to Article 3.1a of the RED, for product safety
- With regard to RF exposure for Article 3.1a of the RED, the manufacturer of the final radio product will need to assess if the compliance assessment of the original radio equipment/module remains relevant to the final radio product, or if further action is necessary. This equipment can transmit more than 20mW output power, if the final radio equipment is used at the distance 20cm from a person or domesticated animal as the radio module was assessed, then the final radio product assessment could conclude that the final radio product is compliant with the RF exposure requirements without additional actions. If a closer distance is used, then the final radio product assessment could not automatically conclude that the final radio product is compliant with the RF exposure requirements without additional actions; and further assessment is necessary.
- The final radio product will need to be fully assessed to Article 3.1b of the RED, for EMC.

EMC testing of the radio module will have been performed on some sort of temporary host or test jig; but now the module is in a new host product and the EMC performance of the final radio product must be assessed. Most likely the host product will have its own EMC assessment for other functions, which should be performed with the radio module installed; and inclusion of the radio module into the host product will also require an assessment, such as to the relevant applicable part of EN 301 489, on the final radio product.
In theory, radio transmitter or receiver measurements made as conducted measurements at a radio module antenna port may be considered applicable to the radio performance of the final radio product. However, in this example, the radio module does not have an antenna port. The radio module has a pin which leads through a PCB trace to an antenna on the host product. If the manufacturer of the final radio product wishes to use conducted power, conducted emissions or receiver performance measurements from the radio module to show compliance of the final radio product, then they will need to exactly follow the detailed instructions from the radio module manufacturer; including input voltage, driver software, environmental conditions, antenna trace layout design construction and material, circuit board layout design construction and material, nearby circuitry, etc. In reality, it is expected that manufacturers of final radio products will need to test the output power, conducted spurious emissions and receiver performance requirements on the final radio product; and not take the results of those test cases from the radio module test reports. Radiated test cases will also need to be performed on the final radio product.

For CE

- The device belongs to receiver category 2.
- **Operating frequency range:** 863-870MHz
- **Maximum output power**: 27dBm

Manufacturer name and address

Shenzhen Rakwireless Technology Co., Ltd. Room 506, Bldg B, New Compark, Pingshan First Road, Taoyuan Street, Nanshan Distr ict, Shenzhen

Labeling

The proposed FCC IC label format is to be placed on the module. If it is not visible when the module is installed into the system, “Contains FCC ID: 2AF6B-RAK11330, Contains IC: 25908- RAK11330” shall be placed on the outside of final host system.

Labeling

This radio transmitter [25908- RAK11330] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Antenna info

About RAKwireless:

RAKwireless is a pioneer in providing innovative and diverse Cellular and LoRaWAN connectivity solutions for both Edge and Gateway IoT devices. We believe that through easy to use and modular designs we can accelerate the time to market for various IoT Applications in order to optimize system deployment in both Developer and Commercial settings.

www.RAKwireless.com

Documents / Resources

	**Shenzhen Rakwireless Technology RAK13300 LoRaWAN with Semtech LoRa Chip** [pdf] User Manual RAK13300 LoRaWAN with Semtech LoRa Chip, RAK13300, LoRaWAN with Semtech LoRa Chip, Semtech LoRa Chip