RAK3172-SiP WisDuo LPWAN SiP

Thank you for choosing **RAK3172-SiP WisDuo LPWAN SiP** in your awesome IoT project! 🎉 To help you get started, we have provided you with all the necessary documentation for your product.

- Quick Start Guide
- AT Command Manual
- Datasheet
- Application Note
- Reference Design

Product Description

The RAK3172-SiP (and RAK3172LP-SiP variant) are low-power, long-range transceivers based on the STM32WLE5JC SoC in a system-in-package form factor. These two modules use different RF output paths to optimize current consumption depending on the application. The RAK3172-SiP uses RFO_HP, while the RAK3172LP-SiP uses the RFO_LP of the STM32WL SoC transceiver.

WisDuo SiP LoRa modules provide a small, easy-to-use, low-power solution for long-range wireless data applications. These modules comply with Classes A, B, and C of the LoRaWAN 1.0.3 specifications. They can easily connect to different LoRaWAN server platforms such as The Things Network (TTN), Helium, Chirpstack, and Actility. They also support LoRa point-to-point (P2P) communication mode, which facilitates the implementation of customized long-range LoRa networks.

The RAK3172-SiP/RAK3172LP-SiP can be configured using AT commands via a UART interface or custom firmware using the RUI3 API. The RAK3172-SiP/RAK3172LP-SiP are very small and offer low-power features suitable for battery-powered applications.

> ⚠ **WARNING**
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> The RAK3172-SiP does not have pre-flashed LoRaWAN credentials and you have to define and setup your own unique credentials for the SiP's.

Product Features

- Based on **STM32WLE5JC**
- Two variants available
  - RAK3172-SiP (uses RFO_HP)
  - RAK3172LP-SiP (uses RFO_LP)
- System-in-Package form factor
- RUI3 API compatible
- **LoRaWAN 1.0.3** specification compliant
- **Supported bands**: IN865, EU868, AU915, US915, KR920, RU864, and AS923
- LoRaWAN Activation by OTAA/ABP
- LoRa Point-to-Point (P2P) communication
- Custom firmware using Arduino via RUI3 API
- Easy-to-use AT Command set via UART interface
- Long-range - up to 15 km with optimized antenna
- ARM Cortex-M4 32-bit
- 256 kbytes flash memory with ECC
- 64 kbytes RAM
- Ultra-low power consumption of less than 2 µA in sleep mode
- **Supply voltage**: 2.0 V ~ 3.6 V
- **Temperature range**: -40° C ~ 85° C
- **Size**: 12 mm x 12 mm x 1.22 mm

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- **Package**: LGA73 type

> **NOTE**
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> For CE and FCC certifications we provide an AT command guide.
> You can find it in our RUI3 documentation or get it from our Download Center .

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