

RAK7201 WisNode Button 4K Datasheet

Overview

Description

The WisNode Button is a remote wireless trigger device. It supports user-defined functions for each key and is based on the LoRaWAN 1.0.2 protocol. Supported LoRaWAN bands are IN865, EU868, AU915, US915, KR920, and AS923.

The Button is suitable for a variety of Smart Home applications: Entertainment system control ,Control of Lights, as a Snooze Button for your Alarms, or a Remote trigger. With long range wireless connectivity, amazing battery life, and four programmable buttons, there are a ton of applications this device can fit into.

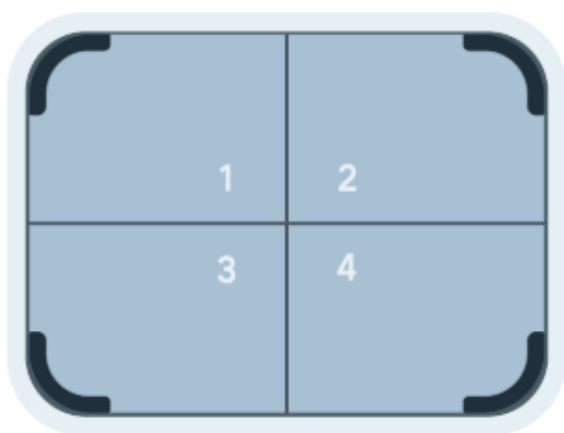


Figure 1: RAK7201 WisNode Button 4k

Features

- 4 Buttons with LED indicator
- **Product Size:** 43x57x15 mm
- **LoRaWAN®** 1.0.2 compatible
- **Battery:** 350 mAh
- **Battery working time:** 1 year (Rechargeable)
- **Power Consumption:** Transmit: 77.4-153* mA, Standby: 4.8 uA
- **Operating Temperature:** -20° C to 60° C
- **Working Environment:** Indoor

*transmit current depends on factors such as transmit power, SF and Payload Length

Specifications

Overview

Parameter	Value
LoRa protocol	LoRaWAN 1.0.2 Class A
LoRa TX power	20 dBm max
LoRa RX sensitivity	-136 dBm
LoRa antenna	Spring antenna
Battery capacity	350 mAh
Charge current	500 mA/5V
Battery lifetime	1 year
Sleep current	4.8 uA
Operating temperature	-20° C to 60° C
Dimensions	43x57x15 mm
Mounting	Sticker

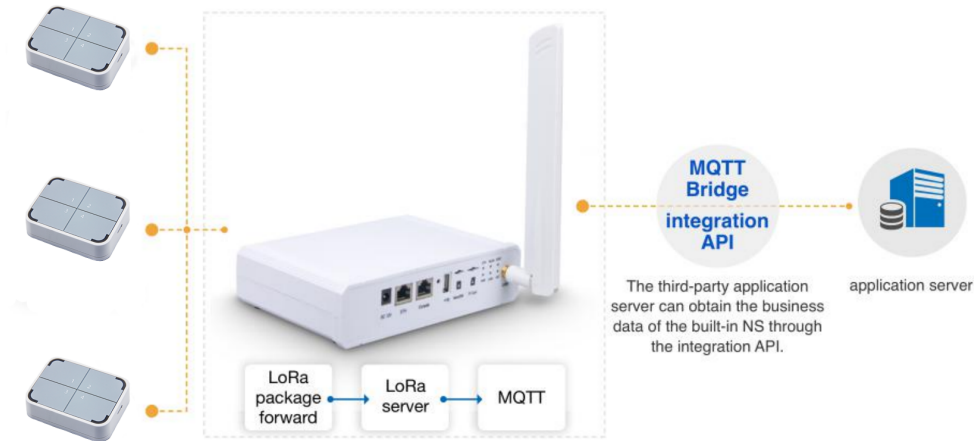


Figure 2: Typical deployment scenario

Hardware

The hardware specification covers the parameters of the RAK7201 in terms of electrical and supported LoRaWAN frequency parameters.

RF Characteristics

Parameter	value
LoRa protocol	LoRaWAN 1.0.2 Class A
LoRa TX power	20dBm max
LoRa RX sensitivity	-136 dBm
LoRa Antenna	Spring antenna

The RAK7201 supports different LoRaWAN frequency bands for different country regions.

Region	Frequency band common name (MHz)
Europe	EU868
India	IN865
North America	US915
Australia	AU915
Asia	AS923
Korea	KR920

Actuators

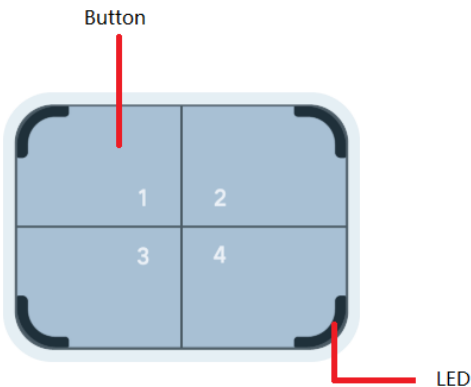


Figure 3: RAK7201 buttons and LEDs

- Buttons

RAK7201 has 4 buttons, which all can be configured to execute defined functionality. The stock firmware is configured to send the buttons ID number via a LoRa frame, whenever one is pressed.

- LEDs

- Blue LEDs

There are four blue LEDs, one per button, which light when a press occurs.

Status	Function
Flash once	The button is pressed.
Flash twice	The server received button information correctly.
Four LEDs flash clockwise	Joining the network.
Four LEDs flash for 1s	Joining to the network is successful.
Four LEDs are lit up	RAK7201 is in configuration mode.

2. Red LED on button 2

The red LED on Button 2 indicates the charging status of the RAK7201.

Status	Function
on	The battery is charging.
off	The battery is not charging.

3. Red LED on button 4

The red LED on button 4 indicates the network related information.

Status	Function
Flash for 1s	Joining to the network failed.
Flash for 1s after a button is pressed	Not connected to the network.
Flash twice	Transmission failed.

Interfaces

RAK7201 has a standard Micro USB port on the side, that adheres to the USB 2.0 specification. This port is used as both configuration interface and for charging the battery.

Electrical Characteristics

The following are the electrical characteristics of RAK7201 WisNode Button 4K. For specific details regarding a project, [contact us](#).

Power consumption:

Parameter	Value	Unit
Transmitting current	77.4-153*	mA
Standby current	4.8	uA

*transmit current depends on factors as transmit power, SF and payload length.

Battery Specification

The RAK7201 comes with a 350 mAh rechargeable LiPo battery inside. In need of replacement, adhere to the specification.

Parameter	Value	Unit
Nominal Battery Voltage	3.7	V
Nominal capacity	350	mAh
Temperature range	-20°~60° (discharge), 0°-45° (charging)	C
Battery dimensions	5.7x21x37.5	mm

Software

Firmware

The device runs on RAK firmware that allows configuration with a set of simple AT commands.

Working Modes

The WisNode Button 4K supports LoRaWAN. LoRaWAN supported modes are OTAA and ABP network mode. Class A communication.

Models/Bundles

Model	Description
RAK7201	4 keys LoRaWAN button (EU868/IN865/AU915/US915/KR920/AS923)