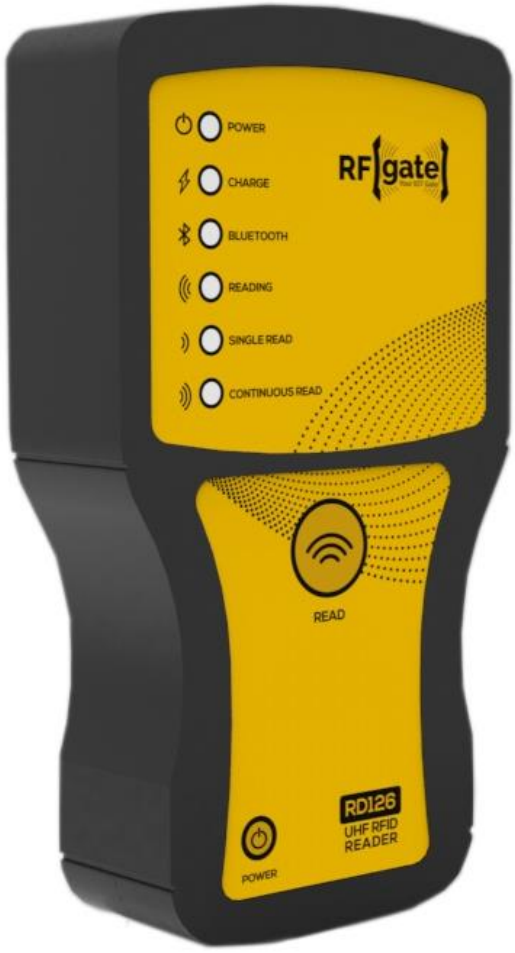
PRODUCT INTRODUCTION

RDRD126 Reader has a size of **7*12.9*2.62** cm. The module integrates a 4-MB SPI flash. At the MCU of this module there is a single 2.4 GHz Wi-Fi and Bluetooth combo chip designed with TSMC's 40 nm ultra-low power technology. MCU integrates all peripheral components seamlessly, including a crystal oscillator, flash, filter capacitors and RF matching links in one single package. Given that no other peripheral components are involved, module welding and testing is not required either. As such, MCU reduces the complexity of supply chain and improves control efficiency. Robust performance and low-energy consumption, MCU is well suited for any space-limited or battery-operated applications, such as wearable electronics, medical equipment, sensors and other IoT products.



INDICATOR LIGHTS

- Power (**RED**)
- Charge (**GREEN**)
- Bluetooth (**BLUE**)
- Reading (**GREEN**)
- Single/Continuous mode (**ORANGE**)

a. POWER LED

- Indicates device powered up and MCU is running

b. CHARGE LED

- If the charging cable plugged in and charging conditions are valid, the LED turns on after about 1 second and preserves its state until charging is completed.
- If charging is not valid the LED blinks 1 second on, 1 second off continuously. That means charging failed. This situation occurs for one of the following reasons:
  - Invalid charge adapter
  - Bad charging cable
  - The battery is damaged or expired
  - Overvoltage detected
  - Undervoltage detected

c. BLUETOOTH LED

- This led turns on when a connection established successfully
- Turns off when client device (Phone, tablet) disconnects

d. READING LED

- Blinks during reading operation in progress
- When a tag be found, device indicates that by a beep sound and vibration

e. SINGLE READ LED

- Indicates that the device is in single read mode

f. CONTINUOUS READ LED

- Indicates that device is in continuous read mode.

READING MODES

- **SINGLE READ MODE:** once the read button is pressed the device starts searching for tags. If it finds one tag within a period of 10 seconds, it notifies about that by making a sound (Beep) and vibration. Then sends the information of that tag via Bluetooth to the device that connected to the reader. But if it does not find any tag within 10 seconds, a different beep will sound.
- **CONTINUOUS READ MODE:** In this mode, search starts when you press the Read button. It continuously reads the tags and every time it finds a tag; it sends the tag information to the connected device via Bluetooth. The buzzer beeps until the “read button” is pressed again.

BUTTONS

- **4.a POWER BUTTON:**
  - When device is OFF; **Long press (2 sec) to turn the device ON**
  - When device is ON; **Long press (2 sec) to turn the device OFF**
- **4.b READ BUTTON:**
  - **Short press:** starts / stops reading
  - **Long press:** changes read mode. Press continuously until buzzer indicates mode change (3 short beeps for continuous and single beep for single read mode)

Extra features

- If the reader runs into an error state, it tries to fix this situation. But, if it fails to fix it, automatically restarts itself.
- If the device doesn't respond to any command and fails to shut down or reset, please continuously press the "power button" for 6 seconds to force it to shut down.
- The device also has a CRC checksum feature which ensures data reliability.
- The device has electrical protections such as Overvoltage protection, Undervoltage protection, Short circuit protection, etc.
- For power efficiency, there is a power save feature. If the device is not being used for 5 mins the Sleep timer times out and turns the device OFF.
- Continuous read mode disables the sleep timer

Categories

Categories	Items	Specifications
Certification	Bluetooth certification	BQB
Wi-Fi	Protocols	802.11 b/g/n (802.11n up to 150 Mbps)
	Frequency range	A-MPDU and A-MSDU aggregation and 0.4 µS guard interval support
		2.4 – 2.5 GHz
Bluetooth	Protocols	Bluetooth V4.2 BR/EDR and Bluetooth LE specification
	Radio	NZIF receiver with -97 dBm sensitivity
		Class-1, class-2 and class-3 transmitter
		AFH
	Audio	CVSD and SBC
Hardware	Module interfaces	ADC, DAC, touch sensor, SD/SDIO/MMC Host Controller, SPI, SDIO/SPI Slave Controller, EMAC, motor PWM, LED PWM, UART, I2C, I2S, infrared remote controller, GPIO, pulse counter, Two-Wire Automotive Interface (TWAI, compatible with ISO11898-1)
	On-chip sensor	Hall sensor
	Integrated crystal	40 MHz crystal
	Integrated SPI flash	4 mb
	Operating voltage/Power supply	3.0 V - 3.6 V
	Operating current	Average:80 mA
	Minimum current delivered by power supply	500 mA
	Operating temperature range	-40 °C to 85 °C
	Antenna output power	up to +26 dB
	Battery	1800mAh

Specifications

- Frequency range: 840~960MHz
- Protocol: ISO 18000-6C/EPC C1G2
- Power supply: +3.6V ~ +5.5V, USB power supply
- Idle Current: < 10mA
- Sleep Current: < 300uA
- Working Current: Peak Current 360mA @ 26dBm CW
- Interface: USB to Uart, need to install SiliconLab CP210X VCP driver (baud rate: 115200bps, dataBits: 8, StopBits: 1, Parity: None, Flow Control: None).

USAGE AREAS

Archive

Assets

Textile

Warehouse

1. **Archive**
   We have come to a time when the traditional archiving process is never in line with the speed and requirements of our business. That is why we produced this reader to facilitate the process of archiving and accessing files very quickly and easily.
2. **Assets**
   There is a very great need to speed up the counting and tracking our assets, especially after the rapid development that is taking place.
3. **Textile**
   The facilitation process is not limited to certain areas. It also includes textile and clothing such as counting, organizing and storing operations
4. **Warehouse**
   In the past, the process of organizing and storage warehouses took long hours and even days. Such a product facilitates our warehouse operations.

BENEFITS

- They are more effective, space-saving devices instead of antennas or large devices.
- High performance, It does not require cables for communication.
- Practical, an embedded antenna is used for Bluetooth. Thus, there is no loss of power and distance.
- Provides instant information.
- It prevents sensitive information from leaving the company.
- Easy to carry, best in its segment.

GAINS

- **Time**: Saving time is achieved by speeding up the signal reception from the equipment times, making statistics and monitoring it.
- **Labor**: With the Bluetooth system, data transfer is provided without connecting to human factors.
- **Speed**: The data transfer is accelerated by instant communication of the devices.
- **Efficiency**: Under the control of a powerful system, each step will be more functional and efficient. It supports multiple input output and communication pins and external sensor connections.