

# RM-BE1

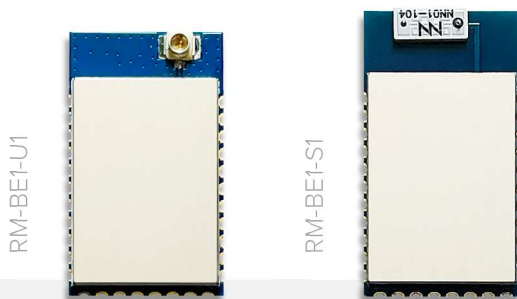


## Ultra-Low-Power Energy-Efficient Bluetooth® 5.0 Module with Harvesting

The RM-BE1 is a Bluetooth® 5.0 Low-Energy module fully compliant with 2Mbit High-Throughput (HT) and Long Range extensions.

RM-BE1 is based on Renesas energy-efficient RE01 MCU, featuring an Arm® Cortex®-M0+ core. RE01 is implemented on Silicon on Thin Buried Oxide (SOTB) process technology enabling for ultra-low current consumption in both active and standby mode and high speed CPU operation (64MHz) at low voltage (1.62V).

The module power supply circuitry supports energy harvesting and rechargeable batteries, allowing for building devices that do not require battery replacement.



### MAIN APPLICATIONS

- Ultra-Low-Power Wireless Networking
- IoT Battery Powered Devices
- Smart Home and Remote Control
- Security (fire detection, burglar detection)
- Healthcare Devices
- Smart Metering
- Industrial Monitoring and Control
- Structural Monitoring

### MCU FEATURES

- 32-bit ARM® Cortex®-M0+ core
- High-speed operation 64MHz at low voltage 1.62V
- 1.5-MB code flash memory, 256-kB RAM
- Active current: 35µA/MHz, Standby current: 500nA
- Energy harvesting and battery charger
- Ultra-low-power 14-bit AD converter
- Trusted Secure IP, secure boot

### BLUETOOTH LOW ENERGY

- Bluetooth 5.0 core specification compliant BLE transceiver and link layer
- Supporting LE 1M, 2M and Coded PHY, and LE Advertising extension
- Air data rate from 125 kbps to 2 Mbps
- RF output power up to +4 dBm

### SPECIFICATIONS

Power Supply	1.62V to 3.6V
Output Power	+4 dBm
Receiver Sensitivity	-95 dBm @ 1Mbps
Operating Temperature	-40°C to +85°C
Standby Current	500nA
Transmission Current	4.3mA @ 0 dBm
Reception Current	3.0mA @ 1Mbps
Size (RM-BE1-S1)	27.5 x 15.0 x 2.5 mm
Module Benefits	Energy Harvesting Battery Charger

- Available Q2 2021 -