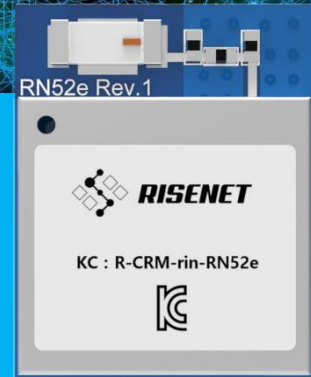# RN52e
BLE & 2.4Ghz RF Module

RN52e Rev.1

RISENET

KC : R-CRM-rin-RN52e

RN52e is an ultra-low power 2.4 GHz wireless System on Chip (SoC) module, a 32 bit ARM® Cortex™-M4 CPU, flash memory, and analog and digital peripherals.
RN52m adds capabilities for Bluetooth® 5.1 Direction Finding. Direction Finding enables positioning solutions to not only rely on received signal strength indicator (RSSI), but also the actual direction of a signal. RN52e offers comprehensive connectivity with a long list of capabilities and features. It is capable of all the latest features of Bluetooth, including Long Range and Direction Finding, but also 802.15.4, Thread and Zigbee.

Application

- Internet of Things (IoT)
  - Home automation
  - Building automation
  - Industrial
- Interactive entertainment devices
  - Remote control, 3D Glasses.
  - Gaming controller, Remote control toys
- Personal Area Networks
  - Health/fitness sensor and monitor devices
  - Medical devices, Key-fobs + wrist watch
- Mesh Network
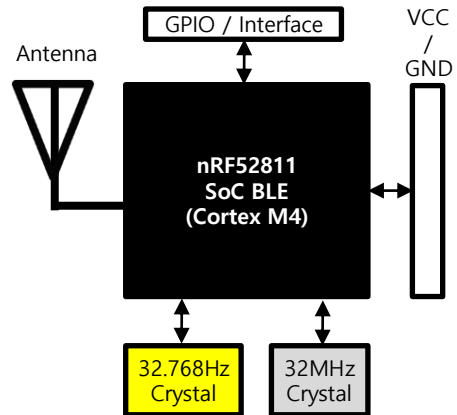 - BLE Mesh, Risenet Mesh

Features

- ARM® Cortex®-M4 32-bit, 64 MHz
- 192 KB Flash + 24 KB RAM

- Bluetooth 5.1 radio
  - Direction Finding
  - Long Range
  - +4 dBm TX power
  - -96 dBm sensitivity
  - 4.6 mA in TX (0 dBm)
  - 4.6 mA in RX
  - Integrated balun with 50 Ω single-ended output

- IEEE 802.15.4 radio support
  - Thread
  - Zigbee

- 1.7-3.6 V supply voltage range
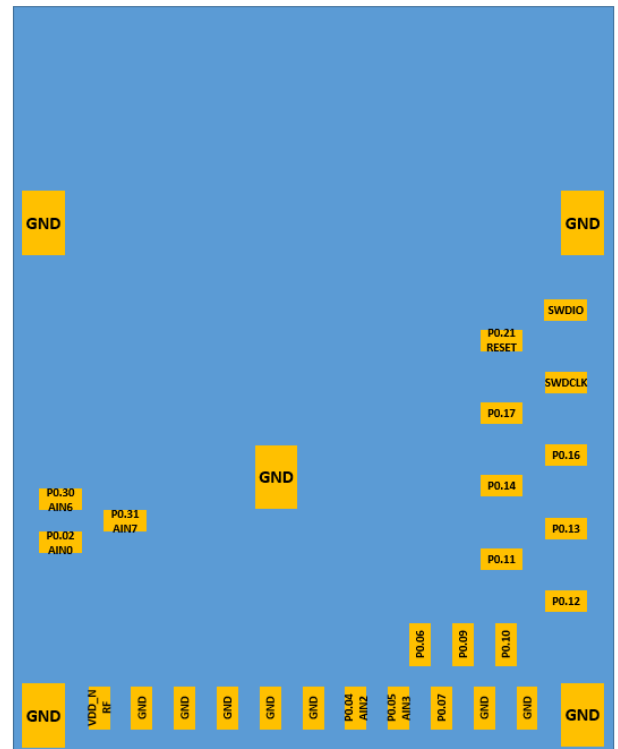- Full range of digital interfaces with EasyDMA

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RN52e BLE & 2.4Ghz RF Module

Features

Performance	
RF Chip	nRF52811
Data Rate (MAX)	2 Mbps
Transmit Power	< 4 dBm
Receiver Sensitivity	-96 dBm @ BLE mode
Features	
Frequency Band [MHz]	2400~2483.5 MHz
Modulation Techniques	GFSK
GPIO	16 Pins
Interface	SPI, UART, I2C
Operating Temperature	-25℃ to +75℃
Dimensions (L x W x H)	17.5 ± 0.3 mm x 14.0 ± 0.3 mm x 3.0 ± 0.3 mm
Programmability	
RAM Memory	24 kByte
Flash Memory	192 kByte
Networking and Security	
Encryption	AES
Power Requirements	
Operating Voltage	1.7 to 3.6 V DCDC
Transmit Current consumption Radio	4.6 mA @ 0 dBm
Receiver Current consumption Radio	4.6 mA
Regulatory Approvals	
KC	○

Block Diagram

Pin Configuration

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