

- Functional description

The RYSE BLE0101 is an advanced, highly flexible, ultra-low power multiprotocol System on Module (SoM) that enables Bluetooth 5 low energy and IEEE 802.15.4 (Thread and Zigbee) connectivity for portable, and extremely low power embedded systems. With an Arm® Cortex®-M4 with FPU processor, integrated 2.4G Hz transceiver, and an integrated antenna, the BLE0101 provides a complete RF solution allowing faster time to market with reduced development costs. Providing full use of the Nordic Semiconductor nRF52840's capabilities and peripherals, the BLE0101 can power the most demanding applications, all while simplifying designs and reducing BOM costs. The BLE0101 is an ideal solution for designs that require Bluetooth 5 features or 802.15.4 based networking for Thread and Zigbee. Increased integration with built in USB and 5.5 V compatible DC/DC supply reduces design complexity and BOM cost, while expanding possible applications. BLE0101 designs are footprint compatible with the BMD-300/301/330/360, providing low-cost flexibility for tiered product lineups.

- Features

- Based on the Nordic Semiconductor nRF52840 SoC
- Bluetooth 5 PHYs: LE 1M, LE 2M, and LE Coded (long range)
- Bluetooth 5 features: Advertising Extensions, Channel Selection Algorithm #2
- Bluetooth mesh
- IEEE 802.15.4 with Thread and Zigbee support
- Complete RF solution with an integrated PCB antenna
- Integrated DC-DC converter
- No external components required
- Arm® Cortex®-M4 with FPU 32-bit processor
- Arm® TrustZone® Cryptocell 310 security
- True random number generator
- Serial Wire Debug (SWD)
- Nordic Semiconductor SoftDevice ready
- 1 MB embedded flash memory
- 256 KB RAM
- 48 General Purpose I/O Pins
- 12-bit/200 KSPS ADC
- One Full-Speed USB (12 Mbps)
- Four SPI Master/Slave (8 Mbps)
- Quad SPI with Execute in Place (XIP)
- PWM 4 blocks x 4-channels each
- General Purpose and Low power comparators
- Temperature sensor
- Two 2-wire Master/Slave (I2C compatible)
- I2S audio interface
- Two UARTs (w/ CTS/RTS and DMA)
- 20-channel CPU independent Programmable Peripheral Interconnect (PPI)
- Quadrature Demodulator (QDEC)
- 5 x 32 bit timer/counters
- 3 x 24 bit Real Time Counters (RTC)
- NFC-A tag interface for OOB pairing
- Dimensions: 15.0 x 10.2 x 1.9 mm