

Device Description

The JRD-1171 BLE Module is a Bluetooth Low Energy (BLE) wireless communication module based on the Nordic Semiconductor nRF52840 system-on-chip (SoC). The module is designed to provide wireless connectivity for embedded systems and supports multiple wireless protocols, including Bluetooth 5.3 (BLE), Thread, Zigbee, ANT, and IEEE 802.15.4.

The module includes an integrated Power Amplifier (PA) to enhance transmission power and a Low Noise Amplifier (LNA) to improve reception sensitivity. It features a u.FL connector for external antenna integration, allowing flexible antenna selection and placement.

The JRD-1171 BLE Module operates within the 2.4 GHz ISM band and supports modulation schemes including GFSK for BLE and DSSS/PSK for IEEE 802.15.4-based protocols. The module's radio transceiver provides up to +3.8 dBm transmit power (with PA enabled) and a receive sensitivity of -103 dBm at 1 Mbps BLE. The module is controlled by an integrated 32-bit ARM Cortex-M4 processor running at 64 MHz. It includes 1 MB of flash memory and 256 KB of RAM for application execution and data storage. Available interfaces include UART, USB 2.0 Full-Speed, GPIOs, and an SWD debug interface.

The JRD-1171 BLE Module operates within a voltage range of 2.7V to 5.5V and supports an extended operating temperature range from -40 °C to +85 °C. Security features include hardware-accelerated AES-128/256 encryption, SHA hashing, and a true random number generator (RNG) via the onboard Arm CryptoCell-310 security subsystem.

Designed for integration into electronic devices requiring wireless communication, the JRD-1171 BLE Module provides a reliable and power-efficient connectivity solution for IoT, industrial automation, and wireless sensor networks.