

Bluetooth Low Energy Development Kit

Overview

The nRF52 DK is a single-board kit for Bluetooth Low Energy, Bluetooth Mesh, ANT, and 2.4 GHz proprietary applications using the nRF52832 SoC (512 kB Flash, 64 kB RAM). It provides access to all I/Os via edge connectors, includes 4 user LEDs and 4 buttons, and is Arduino Uno Rev. 3 compatible for use with third-party shields.

An onboard SEGGER J-Link debugger enables programming/debugging of the onboard SoC and external devices. Power options include USB, external supply, or CR2032 battery (holder included) for in-field testing. The kit is supported by the nRF5 SDK, nRF Connect SDK, and nRF5 SDK for Mesh, with examples for Bluetooth LE and 2.4 GHz applications. Compatible IDEs include SEGGER Embedded Studio, Visual Studio, Keil, GCC, and IAR.

Key Features

- Rapid prototyping board tailored for IoT and wireless applications.
- Multi-protocol support enabling Bluetooth LE, Bluetooth Mesh, ANT, and proprietary 2.4 GHz.
- Enhanced Bluetooth 5 capability with higher throughput and extended advertising.
- User-friendly design with 4 programmable buttons and 4 LEDs.
- Plug-and-play compatibility with Arduino Uno Rev. 3 shields.
- On-board SEGGER J-Link debugger for seamless development.
- External SoC programming and debugging via dedicated header.
- Integrated antenna ensures stable wireless performance without external components.
- Flexible powering options: USB, external supply



Technical Specifications

- Processor: Arm® Cortex®-M4F @ 64 MHz with FPU and DSP instructions.
- Memory: 512 kB Flash, 64 kB RAM (on-chip).
- Connectivity: Bluetooth 5 (2 Mbps, CSA #2, Periodic Advertising), ANT, 2.4 GHz proprietary.

- Interfaces: GPIO, UART, SPI, I²C, ADC, PWM – routed to edge connectors.
 - Debugging Interface: SEGGER J-Link OB with SWD support.
 - Power Supply Voltage: 1.7 V – 3.3 V (from USB, external supply, or CR2032 battery).
 - Antenna: 2.4 GHz PCB trace antenna.
 - Form Factor: Arduino Uno Rev. 3 layout (~68 mm × 52 mm).
 - User I/O: 4 LEDs, 4 push-buttons.
 - Operating Conditions: Typical range –40 °C to +85 °C (industrial grade).
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Applications

- IoT Devices – Smart home hubs, connected sensors, automation controllers.
- Wearables – Fitness trackers, health monitors, smartwatches.
- Smart Lighting – Professional and consumer-grade wireless lighting systems.
- Industrial Monitoring – Asset tracking, predictive maintenance, sensor data logging.
- Environmental Monitoring – Air quality, weather stations, smart agriculture.
- Wireless Audio – LE Audio prototypes and Bluetooth-based sound systems.
- Healthcare Devices – Medical wearables, patient monitoring solutions.
- Automotive Applications – Vehicle diagnostics, tracking, and infotainment connectivity.
- Educational Development – Training kits, student projects, prototyping platforms.