nRF52833 DK
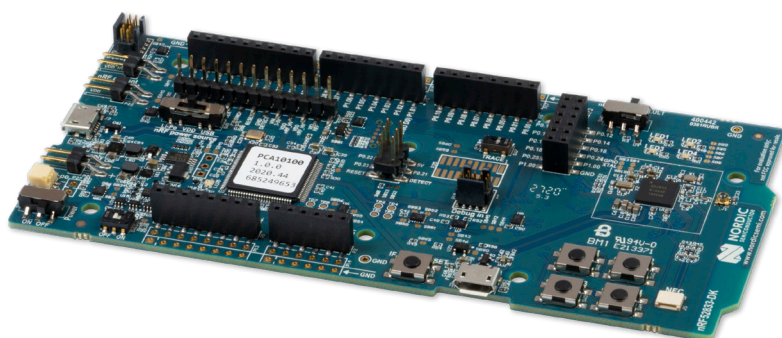
Development kit for Bluetooth Low Energy/Bluetooth mesh/Thread/ Zigbee/802.15.4/2.4 GHz applications for the nRF52820 and nRF52833 SoCs

Overview

The nRF52833 DK is an affordable single-board development kit for Bluetooth® Low Energy (LE), Bluetooth mesh, Thread, Zigbee, 802.15.4 and 2.4 GHz proprietary applications using the nRF52833 multi-protocol SoC. It also supports development for the nRF52820 SoC The kit is compatible with the Arduino Uno Rev3 standard making it possible to use a wide range of 3rd-party shields during development. The kit has access to all 42 I/Os and interfaces via connectors. There is an integrated PCB trace antenna and an RF connector for direct RF test measurements.

The DK is bundled with an NFC antenna that quickly enables testing of the SoC's NFC-A tag functionality. A SEGGER J-Link debugger is on the board, enabling programming and debugging, of both the nRF53833 SoC and external targets.

All analog and digital interfaces, and GPIOs are available via headers and edge connectors. The kit is Arduino Uno Rev3 hardware compatible, meaning it can be easily interfaced with external device shields.

Four user-programmable buttons and four LEDs simplify input and output. The nRF52833 DK is typically powered via USB, but can be powered by a wide range of sources, within the supply range of 1.7 to 5.0 V. In addition, it can be powered with an external source, it also includes a CR2032 battery holder and a Li-Po battery connector, for in-field testing. Current consumption can be measured by using the dedicated current measurement pins, for example by using Nordic's Power Profiler Kit II.

Key features

- Versatile development kit for nRF52833 and nRF52820 SoCs
- Arduino Uno Rev3 compatible
- 2.4 GHz and NFC antennas
- SWF RF connector for direct RF measurements
- User-programmable LEDs(4) and buttons(4)
- SEGGER J-Link OB programmer/debugger
- Pins for measuring power consumption
- 1.7-5.0 V supply from USB, external, Li-Po battery or CR2032 coin cell battery

nRF52833 SoC

- 64 MHz Arm® Cortex-M4 with FPU
- 512 KB Flash + 128 KB RAM
- Bluetooth 5.3 radio
  - Direction Finding
  - Long Range
  - Bluetooth mesh
  - +8 dBm TX power
  - -95 dBm sensitivity (1 Mbps)
  - 4.8 mA in TX (0 dBm)
  - 4.6 mA in RX (1 Mbps)
- IEEE 802.15.4 radio support
  - Thread
  - Zigbee
- Extended temperature range: -40°C to 105°C
- 1.7-5.5 V supply voltage range
- Integrated DC-DC regulator
- Full-speed 12 Mbps USB
- NFC-A tag
- 128 bit AES/ECB/CCM/AAR accelerator
- 12-bit 200 ksps ADC
- High speed 32 MHz SPI
- Full range of digital interfaces with Easy-DMA

Applications

- Professional lighting
- Industrial
- Advanced wearables
- Medical
- Smart Home
- Asset tracking and RTLS

For more information please visit: **nordicsemi.com/nRF52833DK**

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nRF52833 SoC

The nRF52833 DK is built around Nordic's nRF52833, ultra- low-power multiprotocol SoC. It supports Bluetooth 5.3, Bluetooth mesh, 802.15.4, Thread, Zigbee, and proprietary 2.4 GHz protocols.

The nRF52833 has 512 KB flash and 128 KB RAM memory available for higher-value applications. The extended temperature range up to 105°C, a generous amount of memory, and dynamic multiprotocol support ensures the nRF52833 is an ideal device for a wide range of commercial and industrial applications, including professional lighting and asset tracking. A 1:4 RAM to Flash ratio and +8 dBm output power make the nRF52833 suitable for advanced wearables or smart home applications where robust coverage is important.

nRF Connect SDK

The nRF Connect SDK is the software development kit for the nRF52833 SoC, and it has board support for the DK. It supports development of Bluetooth Low Energy, Thread and Zigbee applications. It integrates the Zephyr RTOS, protocol stacks, samples, hardware drivers and much more. nRF Connect SDK also supports the nRF9160, our LTE-M/NB-IoT/GPS SiP, and the nRF53 Series. It is a common platform for both cellular IoT and short-range development.

In the box you will find the DK itself, an NFC antenna and a CR2032 battery, in addition to a note telling you where to go to get started.
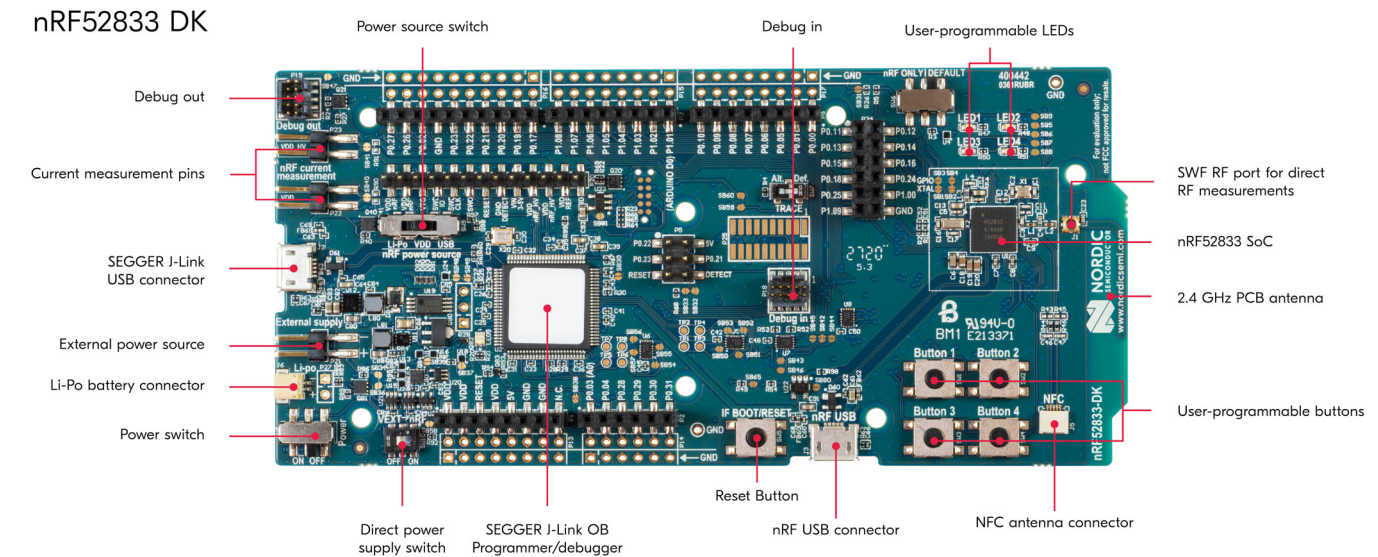
Related Products

nRF52833 SoC	SoC supporting Bluetooth Low Energy, Bluetooth mesh, Thread and Zigbee
nRF Connect SDK	Software development kit for the nRF5340
Power Profiler Kit II	Easy-to-use power measurement tool

Order information

nRF52833-DK	Development kit for the nRF5340 SoC

The nRF5340 DK is available for purchase through our distribution network.

nRF52833 DK

Diagram labels: Power source switch, Debug in, User-programmable LEDs, Debug out, Current measurement pins, SEGGER J-Link USB connector, External power source, Li-Po battery connector, Power switch, Direct power supply switch, SEGGER J-Link OB Programmer/debugger, Reset Button, nRF USB connector, NFC antenna connector, SWF RF port for direct RF measurements, nRF52833 SoC, 2.4 GHz PCB antenna, User-programmable buttons

For more information please visit: **nordicsemi.com/nRF52833DK**

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