

nRF5340 DK

Development kit for the nRF5340, a dual processor SoC supporting Bluetooth 5.2, Bluetooth mesh, NFC, Thread, and Zigbee



Related products	nRF5340 SoC
Related software/protocol stacks	nRF Connect SDK
Replacing products	Stock rotation with nRF5340 PDK
Supporting products	Power Profiler Kit
Product page	www.nordicsemi.com/nRF5340DK
Images/photos of nRF5340 DK	Download product photo here

PRODUCT SPECIFICATIONS

Wireless protocol support	Bluetooth Low Energy/Bluetooth mesh/ 802.15.4/Thread/Zigbee/ANT/2.4 GHz proprietary/NFC
Radio frequency	2.4 GHz
Antennas	2.4 GHz PCB antenna, NFC antenna
Analog interfaces	ADC/Comparator
Digital interfaces	USB/QSPI/HSSPI/UART/TWI/SPI/I2S/PDM/PWM/QDEC
Power supply	1.7-5.0 V
Power source	USB, external, Li-Po battery, CR2032 coin cell battery
Debugger	SEGGER J-Link OB
Buttons	4
LEDs	4

External memory	64 MB
Package content	1 x nRF5340 DK, 1 x NFC antenna, 1 x CR2032 battery

OVERVIEW

The nRF5340 DK is the development kit for the nRF5340, a dual-core Bluetooth® 5.2 SoC with Bluetooth Low Energy, Bluetooth mesh, Thread, and Zigbee wireless protocol support. The affordable DK makes all features available to the developer, on a single board.

The nRF5340 SoC combines a high-performance application processor with a fully programmable, ultra-low-power network processor. The 128 MHz Arm® Cortex®-M33 application processor has 1 MB flash and 512 KB of RAM, while the 64 MHz Arm CortexM33 network processor has 256 KB Flash and 64 KB RAM. The SoC has secure key storage, root-of-trust and trusted execution features, supports an operating

temperature up to 105°C, and has advanced digital interfaces. It is an ideal SoC for audio, professional lighting, advanced wearables, and other complex IoT applications.

The nRF5340 SoC supports an extensive range of wireless protocols. It supports Bluetooth Low Energy and is capable of all angle-of-arrival and angle-of-departure roles in Direction Finding, in addition to LE Audio, Long Range, high-throughput 2 Mbps and Advertising Extensions. Mesh protocols like Bluetooth mesh, Thread and Zigbee can run concurrently with Bluetooth Low Energy, enabling smartphones to provision, commission, configure and control mesh nodes. It also supports protocols such as NFC, ANT, 802.15.4, and 2.4 GHz proprietary.

The nRF5340 DK includes an NFC antenna that quickly enables testing of nRF5340 SoC's NFC-A tag functionality. A SEGGER J-Link debugger is on the board, enabling fullblown programming and debugging, of both the nR5340 SoC and external targets.

All analog and digital interfaces, and GPIOs are available via connectors. The DK is Arduino Uno Rev3 hardware compatible, meaning it can be easily interfaced with external device shields, including the Power Profiler Kit. 4 buttons and 4 LEDs simplify input and output to and from the nRF5340 SoC.

The nRF5340 can be powered by USB, an external source or battery. It also includes a CR2032 battery holder and a Li-Po battery connector, for in-field testing. Power consumption can be measured with dedicated power measurement pins.

The nRF Connect SDK is the software development kit for the nRF5340 SoC and has board support for the nRF5340 DK. It offers a complete solution that integrates the Zephyr RTOS, protocol stacks, application examples and hardware drivers. nRF Connect SDK is publicly hosted on GitHub, offers source code management with Git and has free SEGGER Embedded Studio IDE support.

The nRF5340 DK replaces the nRF5340 preview development kit (nRF5340-PDK) and has a fully featured nRF5340 SoC on it.

The box includes an nRF5340 DK, an NFC antenna and a CR2032 battery.

KEY FEATURES

- Affordable, versatile development kit for nRF5340 SoC
- Arduino Rev3 compatible
- 2.4 GHz and NFC antennas
- SWF RF connector
- SEGGER J-Link OB programmer/debugger
- User-programmable LEDs (4) and buttons (4)
- Pins for measuring power consumption
- 1.7-5.0 V supply from USB, external, Li-Po battery or CR2032 coin cell battery
- nRF5340 Bluetooth 5.2 SoC
 - High performance 128 MHz Arm Cortex-M33 application processor with 1 MB Flash and 512 KB RAM
 - Fully programmable, ultra-low power 64 MHz Arm Cortex-M33 network processor with 256 KB Flash and 64 KB RAM
 - Bluetooth Direction Finding, 2 Mbps, Long Range and Advertising Extensions
 - LE Audio
 - Bluetooth mesh, Thread and Zigbee
 - Trusted execution with Arm TrustZone
 - Accelerated cryptography, root-of-trust and secure boot with Arm CryptoCell 312
 - Secure key storage with the Key Management Unit (KMU)
 - 105°C extended operating temperature

APPLICATIONS

- Professional lighting and industrial
- Wearables
- Medical
- Smart home
- Asset tracking and RTLS
- Audio