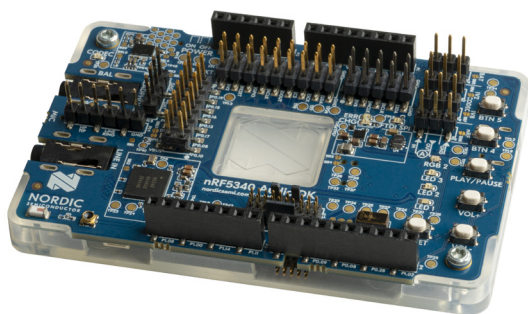


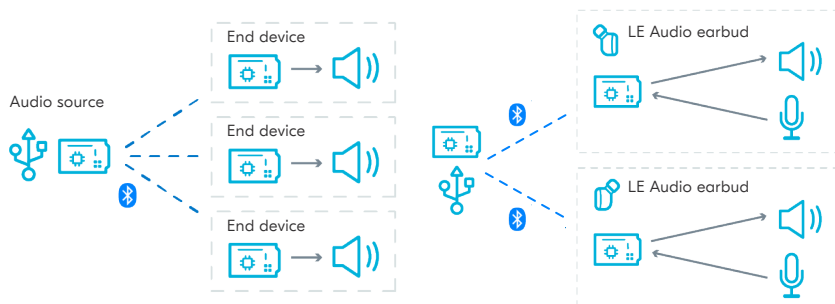
nRF5340 Audio DK

Bluetooth LE Audio development kit



Overview

The nRF5340 Audio Development Kit (DK) is the recommended platform for Bluetooth “LE Audio” products and contains everything needed to start development. The kit is configurable and can function as a USB dongle to send or receive audio data from a PC. It can also function as a Business Headset, a broadcast receiver, or a True Wireless Stereo (TWS) Earbud. For most use-cases, we recommend using two or more DKs.



The three main components of this DK are the nRF5340 SoC, nPM1100 PMIC, and Cirrus Logic’s CS47L63 Audio DSP. The CS47L63’s high-performance DAC and differential output driver are optimized for direct connection to an external headphone load. It is perfect for earbuds with mono-only and direct speaker output. The nRF5340 Audio DK is typically powered via USB and has a battery connector for a Li-Ion/Li-Po battery. The current consumption can be measured by using the dedicated current measurement pins. We recommend using Nordic’s Power Profiler Kit II for that. The new “Low Complexity Communications Codec” (LC3) that replaced Bluetooth Classic’s “Low Complexity Subband Codec” (SBC) is also available for this DK. The LC3 codec has superior audio quality compared to SBC, even at about half the wireless data rate. This low data rate is a key factor in minimizing the power consumption of your products.

The DK includes:

- Two 3.5 mm audio jacks for analog in and headphones out
- Five user-programmable buttons and LEDs
- SD-Card holder for extra storage if needed
- SEGGER J-Link debugger for programming and debugging
- Connectors to access the analog/digital interfaces, and GPIOs

Key features

- Bluetooth LE Audio support
- Based on our nRF5340 SoC
- 2.4 GHz antenna
- Two 3.5 mm audio jacks
- Cirrus Logic Audio DSP CS47L63
- SWF RF connector for direct RF measurements
- 5 user-programmable buttons
- 4 user-programmable LEDs
- SEGGER J-Link debugger on board
- Pins for measuring power consumption
- SD-Card holder for additional storage

nRF5340 SoC

- High-performance application processor
 - 128/64 MHz Arm Cortex-M33 with FPU & DSP instructions
 - 1 MB Flash + 512 KB RAM
- Fully programmable, ultra-low-power network processor
 - 64 MHz Arm® Cortex®-M33 with 2 KB instruction cache
 - 256 KB Flash and 64 KB RAM
- Arm TrustZone® and Arm CryptoCell-312
- Trusted execution, root-of-trust, secure key storage
- Bluetooth Low Energy
 - LE Audio
 - 2 Mbps, Advertising Extensions and Long Range
- NFC
- Full range of digital interfaces with EasyDMA
 - 96 MHz encrypted QSPI for external memory
 - 32 MHz high speed SPI for displays and fast sensors
 - 4×UART/SPI/TWI, UART/SPI/TWI
 - 12 Mbps full-speed USB, I²S, PDM, 4×PWM, 2×QDEC
- 12-bit 200 kSPS ADC
- 105 °C extended operating temperature
- 1.7-5.5 V supply voltage range NFC

nRF5340 SoC

The nRF5340 SoC combines a high-performance application processor with a fully programmable ultra-low-power network processor. This dual core architecture allows for optimal power efficiency. The 128 MHz Arm® Cortex®-M33 Application Processor has 1 MB flash and 512 KB of RAM, which is perfect for handling custom applications and audio codecs, like LC3. The 64 MHz Arm Cortex-M33 Network Processor has 256 KB Flash and 64 KB RAM. Which is power optimized to run Nordic's Bluetooth LE Audio stack.

nPM1100 PMIC

The nPM1100 power management IC has a highly efficient configurable buck regulator. It also includes an integrated battery charger with a charge current up to 400mA. It's extremely small form factor makes it ideal for size-constrained applications like True Wireless Earbuds.

nRF Connect SDK

The nRF Connect SDK is the software development kit for the nRF5340 SoC, and it has board support for the nRF5340 Audio DK. It supports the development of Bluetooth LE Audio, Bluetooth Low Energy, Thread, and other 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 nRF52 Series. It is a common platform for both cellular IoT and short-range development.

Applications

- LE Audio
- Headphones
- Hearing Aids
- Audio Guidles
- Office Headsets
- Audio Broadcast Solutions
- Conference Speakerphones

Related Products

<u>nRF5340 SoC</u>	SoC supporting Bluetooth Low Energy, Bluetooth mesh, Thread and Zigbee
<u>nRF Connect SDK</u>	Software development kit for the nRF5340
<u>nPM1100</u>	Ultra-small form-factor Power Management IC (PMIC) for charging batteries and power delivery
<u>Power Profiler Kit II</u>	Easy-to-use power measurement tool

Order information

nRF5340-Audio-DK	Bluetooth LE Audio development kit for the nRF5340 SoC
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The nRF5340 Audio DK is available for purchase through our distribution network.

