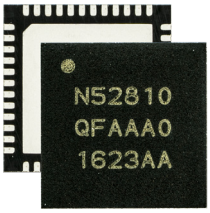
NORDIC SEMICONDUCTOR



nRF52810

High performance, entry-level Bluetooth Low Energy (LE)/ ANT/2.4GHz SoC

A Bluetooth 5.3 SoC for everybody

The nRF52810 is one of the baseline members of the nRF52 Series. It is a cost-effective and high-performance Bluetooth 5.3 SoC, with more available GPIOs and packe options as compared to the nRF52805. It completes our lineup of Bluetooth 5.3 devices that collectively offer the full spectrum of possibilities when designing *Bluetooth*® Low Energy connectivity into your products.

The nRF52810 supports high-throughput Bluetooth 2 Mbps bitrate giving increased application throughput and up to 50 % savings in energy usage. It supports channel selection algorithm #2 (CSA #2), improving the ability to coexist with other Bluetooth LE devices. It is an extremely cost-effective solution that makes it attractive in a wide range of applications.

	nRF52805	nRF52810	nRF52811	nRF52820	nRF52832	nRF52833	nRF52840	nRF5340
Bluetooth 5.3	X	X	X	X	X	X	X	X
Bluetooth 2 Mpbs	X	X	X	X	X	X	X	X
Bluetooth Long Range			X	X		X	X	X
Bluetooth Direction Find-ing			X	X		X		X
Bluetooth LE Audio								X
Bluetooth mesh				X	X	X	X	X
Thread			X	X		X	X	X
Zigbee				X		X	X	X
Matter							X	X

Stand-alone performance or network processor

The nRF52810 is the ideal compromise between advanced performance, functionality and cost. It is more than powerful enough to be used as a stand-alone SoC in middle to lower tier applications. Or it can be the perfect companion network processor, combining Bluetooth LE connectivity with a more powerful main application processor.

Over-the-air device firmware update

The nRF52810 and all nRF52 Series are flash-based SoCs and as such, fully support over-the-air device firmware updates (OTA DFU). This allows for in the field updates of application software.

Key features

- 64 MHz ARM® Cortex-M4
- 192 KB Flash + 24 KB RAM
- Bluetooth 5.3 2.4 GHz transceiver
  - 2 Mbps
  - CSA #2
  - Concurrent multiprotocol operation
  - +4 dBm TX Power
  - -96 dBm Sensitivity
  - 4.6 mA TX (0 dBm)
  - 4.6 mA RX (1 Mbps)
  - Integrated balun with 50 Ω single-ended output
- 1.7-3.6 V supply voltage range
- Integrated DC-DC regulator
- 0.3 µA in System OFF
- 1.5 µA in System ON with RTC
- Full range of digital interfaces with EasyDMA
- 12-bit 200 ksps ADC
- Small size

Applications

- Beacons
- Network processor
- Disposable medical sensors
- PC peripherals
- Remote controls
- Fitness sensors
- Toys
- Logistics and tagging

nRF 52 SERIES

For more information please visit: **nordicsemi.com/nRF52810**

nRF Connect SDK
The software development kit for the nRF52810 is the nRF Connect SDK. It supports development of Bluetooth Low Energy, ANT and proprietary 2.4 GHz applications on the nRF52810 SoC. It integrates the Zephyr RTOS, protocol stacks, samples, hardware drivers and much more.

Get started today
The nRF52 DK is the recommended development kit, it emulates the nRF52810, and can be used as a starting point for development before moving over to a custom board.

The nRF52805 in three different package options with 15 to 32 GPIOs as well as the nRF52 DK is avalable for purchase through Nordic Semiconductors distributor network.

For more information visit **nordicsemi.com/nRF52810**

Related products

nRF52 DK	Development kit for nRF52805, nRF52810 and nRF52832 SoCs
nRF Connect SDK	Main software development kit for the nRF52805 SoC and other nRF52 Series SoCs
nRF52811	SoC for Bluetooth LE/802.15.4/Thread/Zigbee/ ANT/2.4 GHz
nRF52832	SoC for Bluetooth LE/Bluetooth mesh/ANT/2.4 GHz
nRF52840	SoC for Bluetooth LE/Bluetooth mesh/ 802.15.4/ Thread/Zigbee/ANT/2.4 GHz
nPM1100	Higly efficient power management IC for low power small form factor devices
Power Profiler Kit II	Hardware tool for current measurement and power profiling your applications

Specification

Protocol support	Bluetooth 5/ANT/2.4 GHz proprietary
Microprocessor	64 MHz 32-bit Arm Cortex-M4
Memory	192 KB Flash + 24 KB RAM
On-air data rate	2 Mbps/1 Mbps
TX power	Programmable from +4 to -20 dBm in 4 dB steps
Sensitivity	Bluetooth 5: -93 dBm at 2 Mbps -96 dBm at 1 Mbps ANT: -93 dBm at 1 Mbps 2.4GHz: -93 dBm at 2 Mbps -96 dBm at 1 Mbps
Radio current consumption DC/DC at 3V	7.0 mA at +4 dBm TX power, 4.6 mA at 0 dBm TX power, 4.6 mA in RX at 1 or 2 Mbps
Oscillators	64 MHz from 32 MHz external crystal or internal 32 kHz from crystal, RC or synthesized
System current consumption DC/DC at 3 V	0.3 µA in System OFF, no RAM retention 0.5 µA in System OFF, full RAM retention 0.6 µA in System ON, no RAM retention 0.8 µA in System ON, full RAM retention 1.5 µA in System ON, full RAM retention and RTC
Hardware security	128-bit AES CCM, ECB, AAR
Digital interfaces	SPI master/slave TWI master/slave UART PWM QDEC PDM
Analog interfaces	12-bit 200 ksps ADC, RNG, GP comparator
Peripherals	3 × 32-bit Timer 2 × 24-bit RTC 20 × PPI channels 4 × GPIOTE Watchdog timer RNG Temperature sensor BPROT — flash protection
Voltage supply	1.7 to 3.6 V LDO or DC/DC
Package options	6 × 6 QFN48 with 32 GPIOs 5 × 5 QFN32 with 16 GPIOs 2.48 × 2.46 WLCSP33 with 15 GPIOs


6×6 mm


5×5 mm


2.48×2.46 mm