

nRF52811 Product Specification



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1. nRF52811 Product Specification

This Product Specification contains functional descriptions, register tables, and electrical specifications, and is organized into chapters based on the modules and peripherals that are available in this IC.

- [nRF52811 Product Specification v1.2](#)
- [nRF52811 Product Specification v1.1](#)
- [nRF52811 Product Specification v1.0](#)

Note: The HTML rendition of the Product Specification corresponds to the latest version only. All versions are available as PDF files.

Features:

- *Bluetooth* 5.1, IEEE 802.15.4-2006, 2.4 GHz transceiver
 - -97 dBm sensitivity in 1 Mbps *Bluetooth* low energy mode
 - -104 dBm sensitivity in 125 kbps *Bluetooth* low energy mode (long range)
 - -20 to +4 dBm TX power, configurable in 4 dB steps
 - On-air compatible with nRF52, nRF51, nRF24L, and nRF24AP Series
 - Supported data rates:
 - *Bluetooth* 5.1: 2 Mbps, 1 Mbps, 500 kbps, and 125 kbps
 - IEEE 802.15.4-2006: 250 kbps
 - Proprietary 2.4 GHz: 2 Mbps, 1 Mbps
 - Angle-of-arrival (AoA) and angle-of-departure (AoD) direction finding using *Bluetooth*.
 - Single-ended antenna output (on-chip balun)
 - 4.6 mA peak current in TX (0 dBm)
 - 4.6 mA peak current in RX
 - RSSI (1 dB resolution)
- ARM® Cortex®-M4 32-bit processor, 64 MHz
 - 144 EEMBC CoreMark® score running from flash memory
 - 34.4 µA/MHz running CoreMark from flash memory
 - 32.8 µA/MHz running CoreMark from RAM memory
 - Serial wire debug (SWD)
- Flexible power management
 - 1.7 V to 3.6 V supply voltage range
 - Fully automatic LDO and DC/DC regulator system
 - Fast wake-up using 64 MHz internal oscillator
 - 0.3 µA at 3 V in System OFF mode, no RAM retention
 - 0.5 µA at 3 V in System OFF mode with full 24 kB RAM
- 192 kB flash and 24 kB RAM
- Nordic SoftDevice ready
- Support for concurrent multi-protocol
- 12-bit, 200 ksps ADC that has 8 configurable channels with programmable gain
- 64 level comparator
- Temperature sensor
- Up to 32 general purpose I/O pins
- 4-channel pulse width modulator (PWM) unit with EasyDMA
- Digital microphone interface (PDM)
- 3x 32-bit timer with counter mode
- 2x SPI master/slave with EasyDMA
- I²C compatible two-wire master/slave
- UART (CTS/RTS) with EasyDMA
- Programmable peripheral interconnect (PPI)
- Quadrature decoder (QDEC)
- AES HW encryption with EasyDMA
- 2x real-time counter (RTC)
- Single crystal operation
- Package variants
 - QFN48 package, 6 x 6 mm
 - QFN32 package, 5 x 5 mm
 - WLCSP package, 2.482 x 2.464 mm

Features:

retention



- 1.5 μA at 3 V in System ON mode, with full 24 kB RAM retention, wake on RTC
- 1.4 μA at 3 V in System ON mode, no RAM retention, wake on RTC

Applications:

- | | |
|--|--|
| <ul style="list-style-type: none">• Computer peripherals and I/O devices<ul style="list-style-type: none">• Mouse• Keyboard• Mobile HID• CE remote controls• Network processor<ul style="list-style-type: none">• Wearables• Virtual reality headsets | <ul style="list-style-type: none">• Health and medical• Enterprise lighting<ul style="list-style-type: none">• Industrial• Commercial• Retail• Beacons• Connectivity device in multi-chip solutions |
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