nRF52805 Product Specification



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1. nRF52805 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.

- nRF52805 Product Specification v1.4
- nRF52805 Product Specification v1.3
- nRF52805 Product Specification v1.2

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

Features:

- Bluetooth 5.0, 2.4 GHz transceiver
 - -97 dBm sensitivity in 1 Mbps Bluetooth Low Energy mode
 - -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 5.0 2 Mbps, 1 Mbps
 - Proprietary 2.4 GHz 2 Mbps, 1 Mbps
 - 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
 - Serial wire debug (SWD)
- · Flexible power management
 - 1.7 V to 3.6 V supply voltage range
 - On-chip DC/DC and LDO regulators with automated low current modes
 - 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 retention
 - 1.1 μA at 3 V in System ON mode, with full 24 kB RAM retention, wake on RTC (running from LFXO clock)
 - 1.0 μA at 3 V in System ON mode, no RAM retention, wake on RTC (running from LFXO clock)

- 192 kB flash and 24 kB RAM
- · Advanced on-chip interfaces
 - Programmable peripheral interconnect (PPI)
 - 10 general purpose I/O pins
 - EasyDMA automated data transfer between memory and peripherals
- Nordic SoftDevice ready with support for concurrent multiprotocol
- Temperature sensor
- 12-bit, 200 ksps ADC 2 configurable channels with programmable gain
- 3x 32-bit timer with Counter mode
- SPI master/slave with EasyDMA
- I²C compatible two-wire master/slave
- UART (CTS/RTS) with EasyDMA
- Quadrature decoder (QDEC)
- · AES HW encryption with EasyDMA
- 2x real-time counter (RTC)
- Single crystal operation
- Package variants
 - WLCSP package, 2.482 x 2.464 mm



Applications:

- Proprietary protocol devices
- Network processor
- Beacons
- Smart Home sensors
- Presenters/Stylus

- Health monitoring
- Drug delivery
- Asset tags
- Toys
- Retail tags and labels

