nRF21540 Product Specification

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Contents

1. nRF21540 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.

- nRF21540 Product Specification v1.2
- nRF21540 Product Specification v1.1.1
- nRF21540 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.

Key features:	Applications:
• Front-end module with RF PA and LNA • Supports Bluetooth® Low Energy, IEEE 802.15.4, and proprietary applications • Max output power 22 dBm • Adjustable output gain from 5 ±1 dB to 21 ±1 dB • User programmable modes for TX gain • Non-volatile memory storage for gain settings • Dual antenna port with antenna diversity support • RX gain +13 dB • Single-ended 50 Ω matched input and output • 110 mA at +20 dBm output power • 38 mA at +10 dBm output power • Control interface via I/O, SPI, or a combination of both • Supply voltage 1.7 V to 3.6 V, suitable for 1.8 V ±5% systems • Operating temperature -40°C to 105°C • Package variant QFN16 4 x 4 mm	• Smart Home applications • Industrial and factory automation • Asset tracking • Advanced CE remote controls • Sports and fitness • Toys • Medical • Beacons

Revision history

About this document This document is organized into chapters that are based on the modules and peripherals available in the IC.

Product overview nRF21540 is an RF front-end module suitable for Bluetooth Low Energy and IEEE 802.15.4 range extension.

Block diagram The block diagram illustrates the overall system.

Device controlnRF21540 uses an internal state machine to control the operation of the device. The state machine is controlled through direct pin control or through the built-in SPI slave interface.

SPI interface The data transitions for slave in and out (MOSI and MISO) happen on the falling edge of the serial clock (SCK). All SPI transfers are 2 B long.

Electrical specification The device is calibrated at 25°C to VDD=3.0 V. For other conditions, see Typical characteristics.

Register interface

Recommended operating conditions The operating conditions are the physical parameters that the chip can operate within.

Absolute maximum ratings Maximum ratings are the extreme limits to which the chip can be exposed to for a limited amount of time without permanently damaging it. Exposure to absolute maximum ratings for prolonged periods of time may affect the reliability of the device.

Ordering information This chapter contains information on IC marking, ordering codes, and container sizes.

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