



# nRF51 Dongle

*Development and test dongle for Bluetooth Smart, ANT and 2.4GHz applications.*

## PRODUCT OVERVIEW

The nRF51 Dongle is a development tool for making *Bluetooth*® Smart, ANT and 2.4GHz applications using the nRF51 Series SoCs. It has a standard USB connector and can be plugged directly into a PC USB port. The nRF51 Dongle supports standard Nordic tool-chain software with Segger J-Link OB Program/Debug and also ARM® mbed software. Additionally there is a user-programmable RGB LED and 6 solder pads for GPIO/interface connections.

The nRF51 Dongle can be used as a useful and highly cost-effective Bluetooth Smart packet sniffer using Nordic nRFsniffer software allowing detailed data related to Bluetooth Smart communication to be captured and analyzed. Using the Master Emulator firmware and the Master Control Panel Software it enables setting up of a peer device that you can use to test the connection of your application.

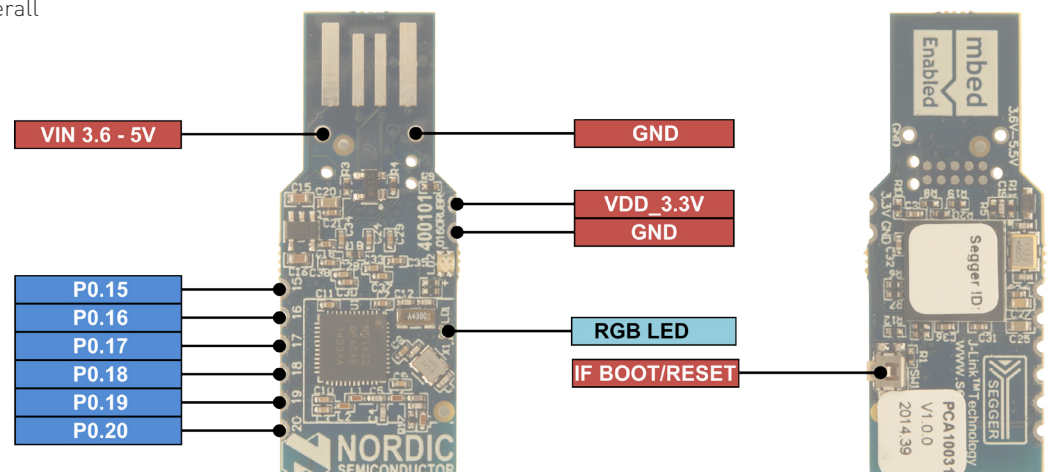
<b>Application</b>	<b>nRF51 Series software architecture</b> The nRF51 Series software architecture offers a clean separation between application code and Nordic's embedded protocol stacks. This means compile, link and run-time dependencies with the protocol stack and associated de-bugging challenges are removed. Application code can be developed and compiled independently of the protocol stack. This simplifies overall development efforts and reduces the possibility, and complexity of bugs during development.
<b>SoftDevice</b>	
<b>nRF51 SoC</b>	

## KEY FEATURES

- Supports Bluetooth Smart, ANT and 2.4GHz development
- Supports nRF Sniffer - Bluetooth Smart protocol sniffing firmware
- Supports Master Emulator – Bluetooth Smart Peer connection firmware
- Virtual COM port interface through UART
- Segger J-Link OB and ARM CMSIS-DAP Program/Debug supported
- ARM mbed enabled
- Drag and drop MSD programming
- User-programmable RGB LED
- 6 solder pads for GPIO/interface connections

## APPLICATIONS

- nRF51 Series software development
- Bluetooth Smart packet sniffing and analysis
- Bluetooth Smart Peer connection device



## SoftDevices

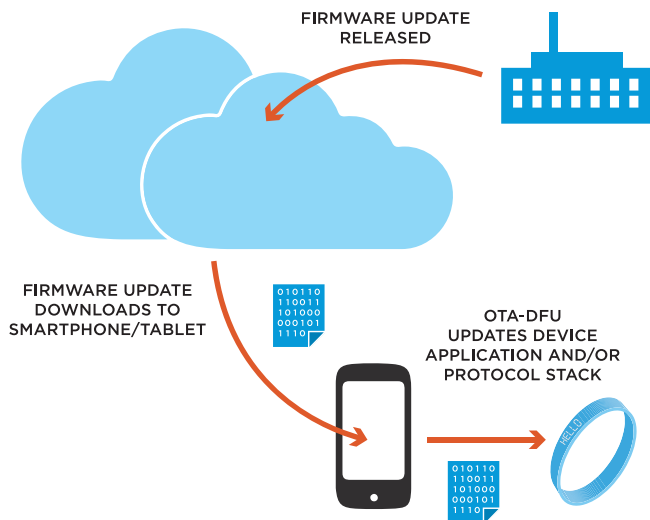
The Nordic protocol stacks are known as SoftDevices and complement the nRF51 Series SoCs. SoftDevices can support Bluetooth Smart, ANT and Bluetooth Smart/ANT combinations. SoftDevices are pre-compiled binary files for nRF51 Series SoCs and are available from Nordic Semiconductor as downloads. This brings maximum flexibility to application development and allows the latest stack version and associated features to be programmed into the nRF51 Series SoC.

### nRF51 Dongle compatible SoftDevices

S110	Bluetooth Smart peripheral stack
S120	Bluetooth Smart 8-link central stack
S130	Bluetooth Smart concurrent central/peripheral/broadcaster/observer stack
S210	ANT/ANT+ 8 link stack
S310	Bluetooth Smart peripheral/ANT 8-link stack

### OTA-DFU

nRF51 Series SoCs support an Over-The-Air Device Firmware Update (OTA-DFU) feature. This allows for wireless updates of application code and/or software stacks.



## RELATED PRODUCTS

nRF51 DK	Bluetooth Smart/ANT/2.4GHz Development Kit
nRF51822	Bluetooth Smart multiprotocol SoC
nRF51422	ANT/Bluetooth Smart multiprotocol SoC

## nRF51 Series Software Development Kit

The nRF51 Software Development Kit (SDK) is available from Nordic Semiconductor to support the nRF51 Series SoCs. The nRF51 SDK contains a wide range of software modules, complete examples and useful utilities. The nRF51 SDK is a great starting point for beginning building your applications. SoftDevices and the nRF51 SDK are available to download at [www.nordicsemi.com](http://www.nordicsemi.com).

The nRF51 DK is supported by a number of tool-chains. Nordic offers support for the following:

- Keil MDK
- IAR Workbench
- GCC
- ARM mbed

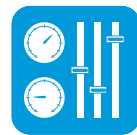
### nRF Sniffer



The Nordic nRF Sniffer is an application for nRF51 Series development tools for viewing Bluetooth Smart communication. The nRF Sniffer is a useful tool for learning about, and debugging Bluetooth Smart applications and allows for near real-time display of Bluetooth Smart packets and helps identification and fixing of issues by allowing developers to see what is happening on-air. Additionally, this application allows you to save nRF Sniffer capture files of your application's Bluetooth Smart link which can be sent to Nordic Technical Support allowing for faster resolution of issues by the support engineers.

The nRF Sniffer application together with Wireshark, a free, open-source protocol analyzer provides a powerful and cost-effective means to analyze Bluetooth Smart communication traffic and events between Nordic devices during the development cycle.

### Master Emulator firmware and Master Control Panel



Master Emulator firmware can be run on the nRF51 Dongle and can emulate a Bluetooth Smart Master mode peer device for development and test purposes. When used in conjunction with Master Control Panel software, available for smartphone and PC it provides a highly useful tool for testing Bluetooth Smart connections.

**nRF Sniffer, Master Control Panel and a range of demo apps are available from [www.nordicsemi.com](http://www.nordicsemi.com)**

## ORDER INFORMATION

nRF51-Dongle	Development and test dongle for Bluetooth Smart, ANT and 2.4GHz applications
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## WORLD WIDE OFFICE LOCATIONS

**Headquarters:**  
Trondheim, Norway  
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### For more information

Visit [www.nordicsemi.com](http://www.nordicsemi.com) for the complete product specification about this and any other wireless ULP products.

### About Nordic Semiconductor

Nordic Semiconductor is a fabless semiconductor company specializing in ULP short-range wireless communication. Nordic is a public company listed on the Norwegian stock exchange.

