

# N5 ANT SoC MODULE SERIES



***Reduced complexity with dual-protocol support to accelerate time-to-market development***

Powered by Nordic Semiconductor's nRF51422 SoC, the N5 ANT SoC Module series offers dual protocol concurrent operation in a compact form factor suitable for wearables. Ideal applications include wearable technology, sport and fitness monitoring, commercial and home IoT, battery powered sensors and more. All N5 modules are pre-loaded with the S210 ANT SoftDevice, Network Processor application and ANT-WP bootloader.

Featuring a built in antenna, as well as on board clock crystals for highly accurate and ultra low power ANT and BLE operation, developers can leverage the enhanced power consumption and performance features of the N5 module series.

Developers using N5 series modules can benefit from the ANT protocol's multi-node connectivity solutions that are already used by an ever increasing number of applications in traditional ANT+ sport and fitness markets, and the expanding controls and monitoring markets. All modules also carry radio certifications for global regions including North America, Europe, Australia, New Zealand and Japan when operating with ANT and BLE, and have been qualified by the Bluetooth SIG.

The N5 starter kit contains everything needed to begin developing with N5 modules, the nRF51422 SoC, and ANT or BLE.

N5 Starter Kit  
N5DK1



**N5 M5  
Development  
Module**  
N5150M5CD,  
N548M5CB

**N5 M8  
Form Factor**  
N5150M8CD,  
N550M8CC,  
N548M8CB

**N5 M4  
Form Factor**  
N5150M4CD,  
N550M4CC,  
N548M4CB

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## MODULE HARDWARE

- Integrated PCB meander antenna
- On-board 32 kHz and 16 MHz crystal clocks
- 1.8V to 3.6V supply voltage range
- DC/DC converter
- Operating temperature:
  - 25°C to +75°C (N5150 and N548)
  - 40°C to +85°C (N550)
- 24 GPIOs (LGA package)
- Programmable output per channel from
  - 20dBm up to +4dBm
- Excellent receiver sensitivity
  - 90dBm ANT mode
  - 93dBm BLE mode
- 1dBm resolution RSSI
- Total 256kB embedded flash memory and 16kB/32kB RAM
- SPI, I2C and UART interface
- ARM SWD interface
- 14.0x9.8x2.0mm (LGA package)
- Drop-in compatible options with AP2/C7 modules
- Radio regulatory approval for major markets
- BLUETOOTH SIG qualification
- RoHS compliant
- Preloaded with S210 ANT SoftDevice, Network Processor application, and the ANT-WP bootloader

## ANT® OPERATION

(when loaded with the latest S210 or S310 SoftDevice)

- 79 selectable RF channels (2402 to 2480 MHz)
- Simple to complex network topologies: peer-to-peer, star, tree, star-to-star and more
- Broadcast, acknowledged, and burst data communication modes
- Built-in device search and pairing
- Built-in interference handling and radio coexistence management with application radio disable requests and application flash write/erase requests
- Enhanced ANT features
  - Supports up to 15 logical channels each with configurable channel periods (5.2ms - 2s)
  - Advanced burst data transfer modes (up to 60kbps)
  - Optional channel encryption mode (AES-128)
  - Supports up to 8 public, private and/or managed networks
  - Advanced power management features to optimize application power consumption including Event Filtering and Selective data updates
  - Asynchronous transmit channel
  - Fast channel initiation

## MODELS



PART NUMBER	SIZE (MM)	CONNECTION	CHIP	RAM SIZE
N5150M8CD	14.0 x 9.8 x 2.0	LG package, 31 pads, 24 GPIOs	nRF51422-CFAC, V3	32K
N550M8CC			nRF51422-CEAA, V3	16K
N548M8CB (EOL)			nRF51422-CEAA, V2	16K



PART NUMBER	SIZE (MM)	CONNECTION	CHIP	RAM SIZE
N5150M4CD	20.0 x 20.0	17 pins, SMT mount, 13 GPIOs	nRF51422-CFAC, V3	32K
N550M4CC			nRF51422-CEAA, V3	16K
N548M4CB (EOL)			nRF51422-CEAA, V2	16K



PART NUMBER	SIZE (MM)	CONNECTION	CHIP	RAM SIZE
N5150M5CD	20.0 x 20.0	20 pin Molex connector. Onboard JTAG programm. connector. 13 GPIOs	nRF51422-CFAC, V3	32K
N548M5CB (EOL)			nRF51422-CEAA, V2	16K

N5 ANT SoC series modules are available in tray and tape and reel packaging  
CONTACT [INFO@THISISANT.COM](mailto:INFO@THISISANT.COM) FOR PRICING AND MORE INFORMATION

## BLUETOOTH® OPERATION

(when loaded with the latest S310 SoftDevice)

- ANT operation functions as S210
- BLUETOOTH 4.1 compliant low energy single mode protocol stack
  - Link Layer
  - L2CAP, ATT, and SM protocols
  - GATT, GAP, and L2CAP APIs
- Peripheral and Broadcaster roles
- GATT Client and Server
- Full SMP support including MITM and OOB pairing

\* Bluetooth only mode when loaded with the S110 SoftDevice