# D52

## ANT SoC MODULE SERIES

Module solutions using the nRF52832 SoC from Nordic Semiconductor to fast-track time to market for ultra low power sport & fitness (including ANT+) and IoT mesh applications.

### D52 MODULE SERIES BENEFITS

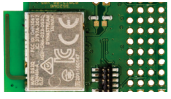
**Run** ANT and Bluetooth® low energy concurrently
**Rely** on high accuracy for ANT & Bluetooth with peripheral crystal clocks
**Scale** your use case with IoT solutions like ANT BLAZE* mesh networks

### WHY USE A MODULE?

**Accelerate** time-to-revenue with a complete RF design
**Reduce** costly fees associcated with RF certification
**Streamline** development with a suite of starter kits, tools & online resources

## MODULE FORM FACTORS

D52 ANT SoC Modules are available in multiple form factors including drop-in compatible layouts with past ANT Wireless module solutions and optional on-board accelerometer.



**D52Q M6 Development Module**
D52QD2M6IA-A

**D52M M8 Form Factor**
D52MD2M8IA
D52MPMM8IA

**D52Q M4 Form Factor**
D52QD2M4IA
D52QD2M4IA-A
D52QPMM4IA
D52QPMM4IA-A

## DEVELOPMENT / STARTER KITS

D52 Starter Kits contain everything you need to get started with evaluating D52 modules, the nRF52832 SoC, ANT & Bluetooth low engery.


D52DK2 STARTER KIT


D52EXT1 EXTENDER KIT

* ANT BLAZE runs on premium D52 module series SKUs

**THISISANT.COM/D52**
**INFO@THISISANT.COM**

## MODULE HARDWARE

- Integrated printed antenna
- On-board 32MHz and 20ppm 32.768 kHz crystal clocks
- Supply Voltage range:
  - 1.7V to 3.6V (D52QD2M4IA)
  - 1.71V to 3.6V (D52QD2M4IA-A)
- Operating temperature: Industrial (-40°C to +85°C)
- Up to 30 GPIOs (D52QD2M4IA), 24 GPIOs (D52QD2M4IA-A, D52CD2M8IA)
- Programmable output/channel from -20dBm to 4dBm
- RoHS compliant
- Layout compatible options with N5 M4, AP2, C7
- Excellent receiver sensitivity
  - -93dBm ANT mode (D52Q)
  - -96dBm BLE mode (D52Q)
- 1dBm resolution RSSI
- Total 512kB flash, 64kB RAM
- SPI, I2C and UART interface
- Onboard 3-axis MEMS accelerometer (D52QD2M4IA-A)
- 2 programmable interrupt pins
- Radio regulatory approval for major markets
- BLUETOOTH SIG qualification
- Pre-loaded with S210 ANT SoftDevice and Network Processor application

## ANT® OPERATION
**(when loaded with S212 or S332 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 & Selective data updates
  - Asynchronous transmit channel
  - Fast channel initiation

## D52 MODELS

| | PART NUMBER | DESCRIPTION | ORDERING/PACKAGE INFO* | PART STATUS |
|---|---|---|---|---|
|  | D52QD2M4IA<br>D5QPMM4IA-A | 20x20mm, 30GPIOs, 8 analog inputs | TRAY: 20pc in 4x5 tray<br>REEL: 800pc on 13”reel | Active |
|  | D52QD2M4IA-A<br>D52QPMM4IA-A | 20x20mm, 30 GPIOs, 8 analog inputs, 3-axis MEMS accelerometer | TRAY: 20pc in 4x5 tray<br>REEL: 800pc on 13”reel | Active |
|  | D52MD2M8IA<br>D52MPMM8IA | 14.0x9.8x2.0mm, 24GPIOs, 8 analog inputs | TRAY: 40pc in 8x5 tray<br>REEL: 1500pc on 13”reel | Active |
|  | D52D2M6IA-A | D52Q w/ accelerometer on board for starter kit & development use | TRAY: 10 pc on 150x165mm tray | Active |

## BLUETOOTH® OPERATION*
**(when loaded with the S332 SoftDevice)**

- Bluetooth 4. 2 compliant low energy single mode protocol stack suitable for Bluetooth low energy products
- Concurrent Central, Observer, Peripheral, and Broadcaster roles with up to:
  - Multiple connections as a central
  - One connection as a peripheral
  - Observe & Broadcaster
- Link layer
- L2CAP, ATT, and SM protocols
- GATT and GAP APIs
- GATT Client and Server

D52
ANT SoC MODULE SERIES

ANT™