

OHIO

BT 5.4 Module

Description

OHIO is a highly integrated ultra-low-power standalone certified full featured BT 5.4 (Bluetooth Low Energy) module. This small form-factor module reduces the system cost and gives design flexibility to the user by combining a high-performance Arm® Cortex®-M4 64MHz CPU with a comprehensive mix of analog and digital peripherals, embedded flash, integrated antenna and needed crystals. This fine-tuned RF module is designed to deliver good performance and reliable wireless operation with no host.

OHIO is based on Nordic semiconductor’s nRF52810 SoC. This globally certified module reduces user’s development cost and time to market with integrated wireless stacks, network stack, and application APIs.

Features

- ❖ Standalone BT 5.4 (BLE) module that runs BT stack and applications
- ❖ Highly optimized hardware for ultra-low power consumption with excellent performance
- ❖ AES 128-bit hardware encryption
- ❖ 192KB flash, 24KB SRAM
- ❖ Secure over the air device firmware upgrade (OTA DFU)
- ❖ Nordic SDK with examples and comprehensive documentation covers all the features supported by the module.
- ❖ Foot print compatible with NILE series
- ❖ Flexible power management options
- ❖ Up to 30 GPIO
- ❖ EasyDMA support for high performance
- ❖ Temperature: -40 to 85C
- ❖ Power 1.7V to 3.6V with integrated DC-DC

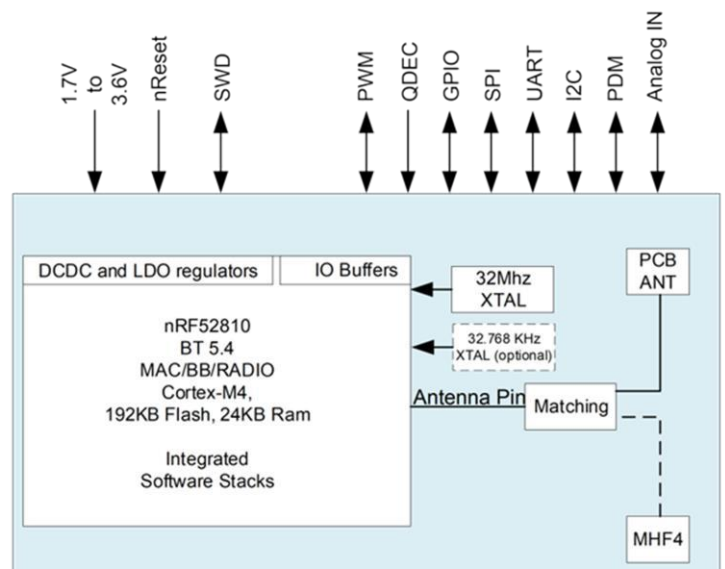


Footprint: 10 mm x 15 mm x 1.6 mm

Applications

- ❖ Beacons
- ❖ Mouse/Keyboard and Mobile HID
- ❖ Disposable medical sensors
- ❖ Sports and fitness trackers
- ❖ Wearable’s like VR headsets
- ❖ Smart Meters
- ❖ Toys and gaming peripherals
- ❖ Building and home automation
- ❖ Industrial lighting

Block Diagram



Specifications

Wireless Protocols	Bluetooth 5.4
Frequency	2.402 – 2.480 GHz
Data rates	2Mbps, 1Mbps
Security Features	AES128 HW encryption with EasyDMA
Antenna options	PCB Trace Antenna or MHF4 connector
Operating modes	BLE
Range	500 meters
Programmable TX output power	-20 to 4 dBm in 4dBm steps
Receive Sensitivity	Bluetooth: -96dBm at 1Mbps -93dBm at 2Mbps
Current consumption	Deep-power down mode: 300nA TX (0dBm): 4.6mA RX (1M PHY): 4.6mA
GPIO	30
Power supply and operating voltage range	Integrated DC-DC, 1.7v to 3.6v
Temperature	-40C to 85C
Humidity	5-90% non-condensing
Package	10 mm x 15 mm x 1.6 mm (including shield), 0.5mm pitch

Interfaces and peripherals

- ❖ UART (CTS/RTS) with EasyDMA
- ❖ SPI master/slave with EasyDMA
- ❖ I2C master/slave
- ❖ 4 channel PWM with EasyDMA
- ❖ PDM
- ❖ 8ch x 12bit ADC
- ❖ 3 x 32b timer with counter mode
- ❖ 2 x RTC
- ❖ 64 level analog comparator
- ❖ QDEC
- ❖ Temperature sensor

Certifications and approvals

- ❖ Module certifications: FCC, IC, CE, TELEC
- ❖ Bluetooth qualification: v5.3

Part Ordering

OHIO module	I510M0L0-I2LT (PCB Antenna, Tray packing)
	I510M0L0-I2LR (PCB Antenna, Tape/Reel packing)
	I511M0L0-I3LT (MHF4 connector, Tray packing)
	I511M0L0-I3LR (MHF4 connector, Tape/Reel packing)

Development Kit

Features:

- ❖ On board debugger LPC Link / Segger Jlink
- ❖ Arduino Uno Rev 3 shield compatible connector
- ❖ Access to I/O and interfaces via edge connectors and user programmable Buttons and LEDs

Additional Information

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<http://www.ivativ.com>