

NILE DVK

BT 5.0 + ZB/Thread + NFC-A Standalone DVK

Description

The NILE Development Kit (DVK) is a platform that enables development of hostless Bluetooth Low Energy, Bluetooth Mesh, Zigbee, Thread, ANT wireless connectivity. It provides Arduino interface and multiple peripheral interfaces (SPI, UART, I2S and I2C) for easy integration with peripheral devices.

NILE module is based on Nordic nRF52840 SoC. This globally certified module reduces user's development cost and time to market with integrated wireless stacks, network stack, and application APIs and all the advanced security features (ARM Trust Zone Cryptocell-310). This module comes with a highly efficient development environment for ease of application development in various IoT verticals like Wearables, Home automation, Industrial IoT and smart medical.

Features

- ❖ Full featured Bluetooth Low Energy 5.0 (BLE)
- ❖ Supports advanced mesh networking protocols – Certified software stacks for Bluetooth Mesh, Thread and Zigbee
- ❖ Powerful Open CPU: 32bit, 64MHz ARM Cortex-M4 CPU with floating Point unit (FPU) and has 1MB flash with cache and 256kB RAM that stands enough for customer's high end applications
- ❖ Highly optimized hardware for ultra-low power consumption with excellent performance
- ❖ Support for secure boot, BLE secure connections and privacy
- ❖ ARM® CryptoCell 310 cryptographic accelerator and AES 128 bit encryption
- ❖ Over the air device firmware upgrade (OTA DFU)
- ❖ Generic GATT client and server APIs
- ❖ Nordic SDK with examples and comprehensive documentation covers all the features supported by the module. SDKs are available for BLE, Bluetooth Mesh, Thread, Zigbee, ANT and Home kit
- ❖ NFC Tag A support
- ❖ 3.3V or 5V power supply with integrated switching regulator
- ❖ Module power consumption measurement
- ❖ Concurrent mode

NILE DVK Kit Contents



NILE DVK



NFC Antenna



Micro-USB Cable

Applications

- ❖ Personal fitness devices
- ❖ Wearables for wireless payment
- ❖ Connected health
- ❖ Virtual/Augmented reality applications
- ❖ Smart home sensors and controllers
- ❖ Industrial IoT sensors and controllers
- ❖ Gaming controllers
- ❖ Asset trackers and Locationing devices

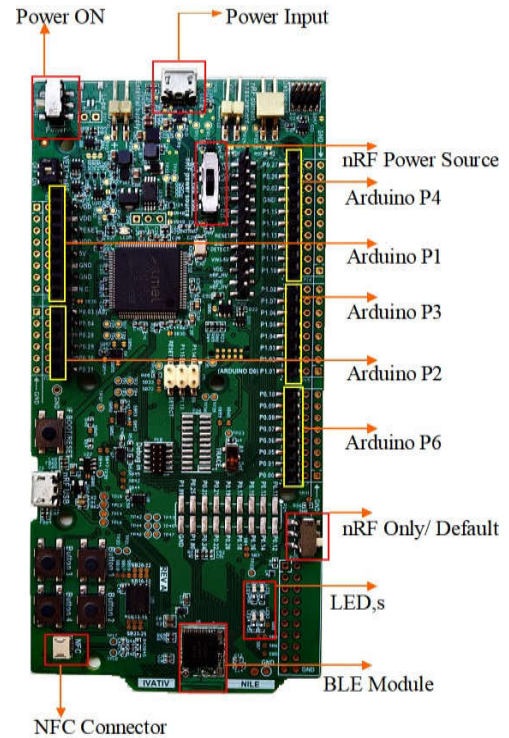
Kit Contents

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|-----------------|---|
| NILE DVK | 1 |
| Micro USB cable | 1 |
| NFC Antenna | 1 |

NILE Module Specifications

| | |
|--|---|
| Wireless Protocols | Bluetooth 5, Thread, Zigbee, NFC, ANT+ |
| Frequency | 2.402 – 2.480 GHz |
| On-air Data rates | Bluetooth 5 - 2Mbps, 1Mbps, 500kbps, 125kbps 802.15.4 - 250kbps NFC - 106kbps |
| Security Features | ARM CryptoCell 310, 128-bit AES HW accelerator, Secure boot and all security features of BLE spec |
| Antenna options | PCB Trace Antenna or MHF4 connector |
| Operating modes | BLE, BLE Mesh, Zigbee, Thread, BLE + Zigbee, BLE + Thread and ANT |
| Programmable output power | -20dBm to +8dBm |
| Receive Sensitivity | Bluetooth 5: -103dBm at 125kbps -99dBm at 500kbps -96dBm at 1Mbps -92dBm at 2Mbps 802.15.4: -100dBm at 250kbps |
| Current consumption | 450nA – Deep sleep mode 1.5µA – System standby mode 4.8mA – TX at 0dBm output power |
| NFC | NFC-A (Type 2) Tag with wake-on field - “Touch to pair” support |
| GPIO | 46 configurable |
| Range | > 1000 meters |
| Power supply and operating voltage range | Integrated DC-DC, 1.7v to 5.5v |
| Temperature | -40°C to 85°C |
| Humidity | 5-90% non-condensing |
| Package | 10 mm x 15 mm x 1.5 mm (including shield), 0.5mm pitch |

Development Board



The NILE DVK is an affordable single-board development kit for Bluetooth 5, Bluetooth mesh, Thread, Zigbee, ANT using Nordic nRF52840 multi-protocol SoC.

This kit has access to all I/O (46) and interfaces via connectors. This comes with an integrated PCB trace antenna and MHF4 connector. There is also a connector for an external NFC antenna (included in kit). Free software development tools, including protocol stacks (soft devices) are available to download from

Certifications and approvals

- ❖ Module certifications - FCC, IC, CE
- ❖ Bluetooth qualification - v5.0 (Low Energy)
- ❖ Zigbee and Thread certified

Part Ordering

| | |
|---------------|-----------------------------|
| I540M0L8-2DVK | NILE DVK kit PCB antenna |
| I540M0L8-3DVK | NILE DVK kit MHF4 connector |

Additional Information

For the latest collaterals, please visit <http://www.ivativ.com>