

I540E0L8 (RENO DVK)

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

Description

The RENO Development Kit (DVK) is a complete platform that enables evaluation of RENO module that supports Bluetooth 5.0, Zigbee, Thread, ANT and NFC wireless connectivity. It provides Arduino interface and multiple peripheral interfaces (SPI, UART, I2S and I2C) for easy integration with peripheral devices.

This globally certified low power RENO module reduces user’s time to market with integrated wireless stacks, network stack, and all the advanced security features (ARM Trust Zone Cryptocell-310). This module supports SPI and UART host interfaces for easy integration of the wireless connectivity in various Internet of Things verticals like Wearables, Home automation, Industrial IoT and Smart medical.

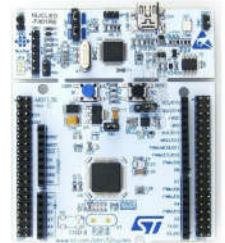
Features

- ❖ Full featured Bluetooth Low Energy 5.0 (BLE) with concurrent ZigBee/Thread, ANT and NFC-A
- ❖ Support for UART and SPI to interface with host MCU.
- ❖ Easy to use AT commands set and binary APIs to develop applications on host MCU with zero or negligible porting effort
- ❖ Supports advanced mesh networking protocols – Certified software stacks for Bluetooth Mesh, Thread and Zigbee
- ❖ Highlights of iVativ APIs and AT commands
 - Ready to use on all popular MCUs with zero or negligible porting effort
 - Seamless integration for RTOS or bare-metal based user application
 - Agnostic to underlying SoC / Chipset and it’s respective SDKs / firmware
 - Secure boot enabled
 - OTA FW update support
- ❖ Highly optimized hardware for ultra-low power consumption with excellent performance
- ❖ BLE secure connections and privacy
- ❖ ARM® CryptoCell 310 cryptographic accelerator and AES 128 bit encryption
- ❖ Over the air device firmware upgrade (OTA DFU)
- ❖ NFC Tag A support
- ❖ Module power consumption measurement

RENO DVK Kit Contents



RENO DVK



STM32 NUCLEO-F411RE



NFC Antenna



Micro-USB Cable



Mini-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

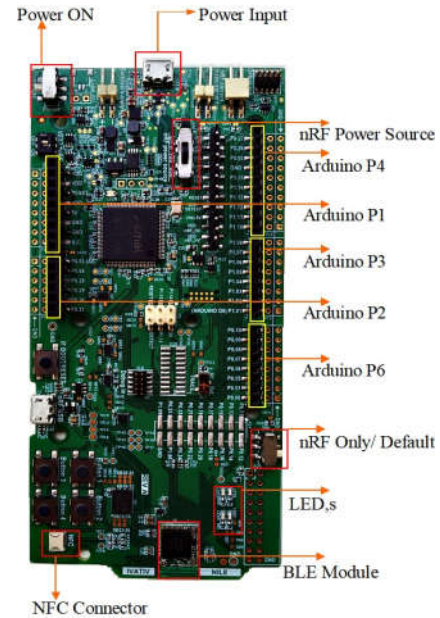
Kit Contents

RENO DVK	1
STM32 Nucleo-F411RE	1
Micro USB cable	1
Mini USB cable	1
NFC Antenna	1

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 RENO DVK is an affordable high performance Embedded development kit. This is a multiprotocol DVK supports Bluetooth 5, Bluetooth mesh, Thread, Zigbee and ANT. It is based on Nordic nRF52840 SoC. This kit is compatible with the Arduino Uno Rev3 standard making it possible to use a wide range of 3rd-party shields during development.

This kit has access to all I/O (46) and interfaces via connectors and there is an integrated PCB trace antenna. There is also a connector for an external NFC antenna (included in kit).

Certifications and approvals

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

Part Ordering

I540E0L8-2DVK	RENO DVK kit PCB Antenna
I540E0L8-3DVK	RENO DVK kit MHF4 connector

Additional Information

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