

# NRFICE Dongle-Free Bluetooth® FPGA Board

NRFICE-01

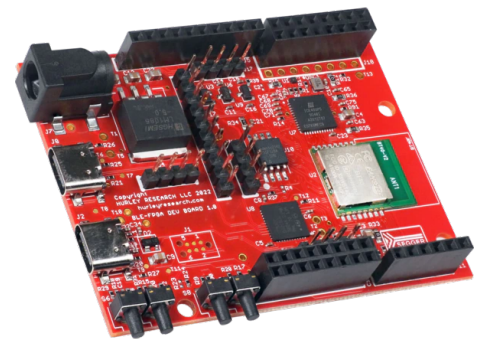
## Product Overview

09-10-2024

For the most up-to-date information, visit [www.mouser.com](http://www.mouser.com) or the supplier's website.

## Description

Hurley Research NRFICE Dongle-free Bluetooth® FPGA Board combines the dual-core Bluetooth SoC nRF5340 with the Lattice ICE40UP5K FPGA to simplify IoT products and edge computing development. This board consists of 128Mbit external flash memory, accessible from ICE40 or nRF, and two RGB LEDs, one each for nRF and ICE40. The NRFICE board features a Fanstel BT40 module with an FCC-approved trace antenna. This board offers a 9V to 12V barrel power range for connectors and 5V 3A regulators. The NRFICE board built-in JLink-OB provides dongle-free programming and debugging. This board also features a USB-C™ for nRF5340, providing a VCOM serial port and other USB implementations per code.



## Features

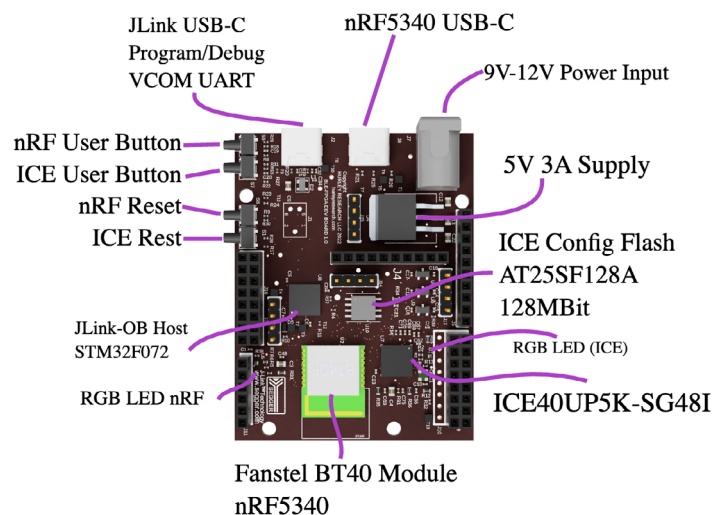
- Arduino UNO compatible form factor and 0.1" pinout
- 9V to 12V barrel power connector and 5V 3A regulator
- USB-C™ for J-Link OB, providing dongle-free programming and debugging of nRF5340 and passing through VCOM serial port to nRF5340
- USB-C™ for nRF5340, providing VCOM serial port and other USB implementations per code
- 128Mbit external flash memory, accessible from ICE40 and nRF
- Fanstel BT40 module with FCC approved trace antenna
- Four buttons, reset for each of ICE40 and nRF, and a user-programmable button for each
- Two RGB LEDs, one each for nRF and ICE40
- Wireless loading of example projects for nRF and ICE40 with Android app
- **NRFICE Android app:**
  - Copy and adapt to ideas
  - Wireless programming and configuration of nRF5340 and ICE40 FPGA
  - Incorporate re-programming of FPGA into a product design for ultimate flexibility
  - RGB LED control example
- **ICE40UP5K:**
  - 5280 LUTs
  - Ultra-low power and 100µA standby current typical
  - 1024KB single port SRAM
  - 120KB sysMEM™ embedded block RAM
  - Hardened I2C interfaces
  - I³C interface
  - Internal Nonvolatile Configuration Memory (NVCM)

## Features

- **nRF5340:**
  - High-performance application processor:
    - 128MHz/64MHz Arm® Cortex®-M33 with FPU and DSP instructions
    - 1MB Flash + 512KB RAM
    - 8KB 2-way set associative cache
  - Fully-programmable network processor:
    - 64MHz Arm Cortex-M33 with 2KB instruction cache
    - 256KB Flash + 64KB RAM
  - Next level security:
    - Trusted execution with Arm TrustZone
    - Hardware accelerated cryptography with Arm CryptoCell-312
    - Secure key storage
    - Secure bootloader with root-of-trust and DFU
- Full range of digital interfaces with EasyDMA:
  - Full-speed USB
  - 96MHz encrypted QSPI
  - 32MHz high-speed SPI
  - 105°C extended operating temperature
  - 1.7V to 5.5V supply voltage range

## NRFICE Image

### NRFICE



## Mouser Part Number

[View Part](#)

To learn more, visit <https://www.mouser.com/new/hurley-research/hurley-research-nrfice-board/>