

# Blend

The Blend (Arduino form factor) and the Blend Micro are two Arduino compatible development boards with BLE support (Atmega32u4 + nRF8001). The Blend is actually a 'BLE + Leonardo' board ([Leonardo](#) is an Arduino board).

This add-on board support package is to add support to the Arduino IDE for these boards.

- Tested and support Arduino IDE version 1.6.7.

Unless you know how to do with this repository, otherwise please use Boards Manager to install this support package.

## Installation

Step 1 - Install the Blend boards to Arduino IDE:

Install using Arduino IDE (version 1.6.7) Boards Manager, follow this document:

<https://github.com/RedBearLab/Blend/blob/master/Docs/BoardsManager.pdf>

Step 2 - Install BLE libraries:

Install using Arduino IDE Library Manager, follow this document:

<https://github.com/RedBearLab/Blend/blob/master/Docs/LibraryManager.pdf>

The Blend boards can be used as a standalone Arduino board without BLE. If you use BLE function, you need to use two libraries.

1: Install Nordic nRF8001 SDK from the Arduino Library Manager

It provides a lot of BLE examples/tutorials includes how to create your own services and characteristics.

2: Install RBL nRF8001 Library from the Arduino Library Manager

- This library requires Nordic's to work and provides a simple service and some APIs for easy to use with RBL examples and App. It is easy to use if you just want to exchange data between the board and iPhone or other BLE Central devices.

\*\*\* For Linux (e.g. Ubuntu 14.04) users: ModemManager will try to use the Blend Micro as a modem and this causes the upload process fail using Arduino IDE. To allow Arduino IDE to upload correctly, you need to fix it by modify the UDEV rule, write a simple UDEV rule to ignore it from being handled by modem manager.

In `"/etc/udev/rules.d/77-mm-usb-device-blacklist.rules"`, simply add this single line:

```
ATTR{idVendor}=="03eb", ENV{ID_MM_DEVICE_IGNORE}="1"
```

3: Another very useful library you can use which allows to define services and characteristics in code without using Nordic's nRFgo Studio.

[arduino-BLEPeripheral](#)

# Driver

The board contains an USB port, which allows you to load compiled sketches on to the board, the USB will act as a USB CDC (virtual COM) port and it requires driver to work.

Download the signed driver (RBL\_Windows\_Driver\_Installer.zip) for Windows (includes up to Windows 8 PC)

## Installation

Do not connect the Blend board to any USB port before the device driver is installed. To install, unzip the file, run the .exe and follow the instructions. After that, connect your Blend board to one of USB ports.

For Mac OSX and Linux, no driver is required.

# Fritzing

Blend Micro

[Fritzing file for the Blend Micro](#)

# Credits

1. [@sandeepmistry](#) provides another useful library for the Blend boards.
2. [@makenai](#) made a [Fritzing file for the Blend Micro](#).

# Troubleshooting

Recovery Procedure for Blend Micro sketch upload failing

1. Open the Blink sketch
2. Reset the board, it will enter to bootloader mode for 8 seconds (the LED - L will be flashing).
3. During this 8-second period, select the COM port of the board in the Arduino IDE (Menu -> Tools -> Serial Port)
4. Press "Compile and Upload" and then press the reset button on the board again, it should be able to load the sketch and fix the issue.

Potential reasons for sketch upload failure

1. Fail to upload a complete sketch last time. (e.g. uploading and suddenly removing power source, then the board's USB will not work since the firmware inside the board is invalid)

If you have any issue with install Arduino libraries, please read this:

<https://github.com/arduino/Arduino/wiki/Library-Manager-FAQ>

# Resources

1. [Blend Micro Forum](#)
2. [Nordic nRF8001 SDK for Arduino - Library](#)
3. [Nordic nRF8001 SDK for Arduino - Forum](#)
4. [RBL nRF8001 Library](#)
5. [Nordic Developer Zone](#)
6. [Bluetooth SIG](#)
7. Thanks [@makenai](#), made a [Fritzing file for the Blend Micro](#).

## Other Tutorials

<https://lilyhack.wordpress.com/2014/02/03/ble-read-write-arduino-raspberry-pi/>

## License

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