

# **Arduino Environment Guide for Andes Corvette-F1**

**Setup Arduino environment for Andes Corvette-F1 with RISC-V assembly language support**

# Outline

1. Install Arduino
  - i. Install Arduino v1.6.5
  - ii. Install Arduino Official Drivers
2. Install Andes Corvette-F1 N25 Board Package
  - i. Add Board Manifest
  - ii. Install Board Package
  - iii. Install Andes Drivers
  - iv. Modify Fragile Burn Script
3. Usage
  - i. Set Board-to-Use in Arduino
  - ii. Upload/Test Sample Assembly Project

# System Requirement

- OS: Windows 7 or above
  - Administrator Account Required
  - VirtualBox OK
- USB: USB 2.0 or above

VirtualBox users need to install its Extension Pack to enable USB 2.0

Windows 7 doesn't support USB 3.0 out of the box, so for VirtualBox users with a Windows 7 guest, use USB 2.0 just

# **1. Install Arduino**

1. Install Arduino v1.6.5
2. Install Arduino Official Drivers

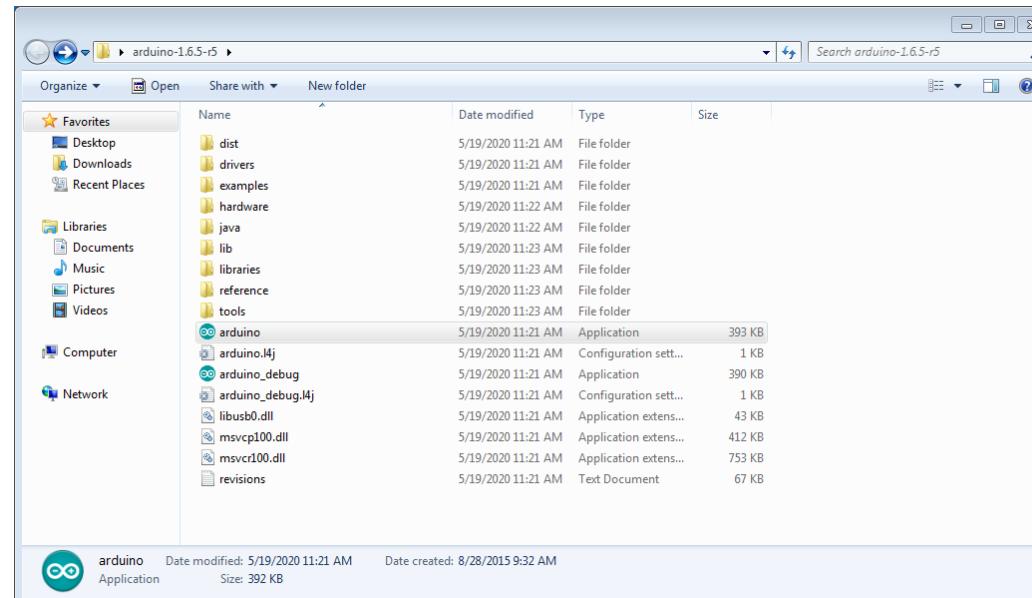
# 1-1. Install Arduino v1.6.5

1. Download Arduino v1.6.5 ZIP Installer from

[https://www.arduino.cc/download\\_handler.php?f=/arduino-1.6.5-r5-windows.zip](https://www.arduino.cc/download_handler.php?f=/arduino-1.6.5-r5-windows.zip)

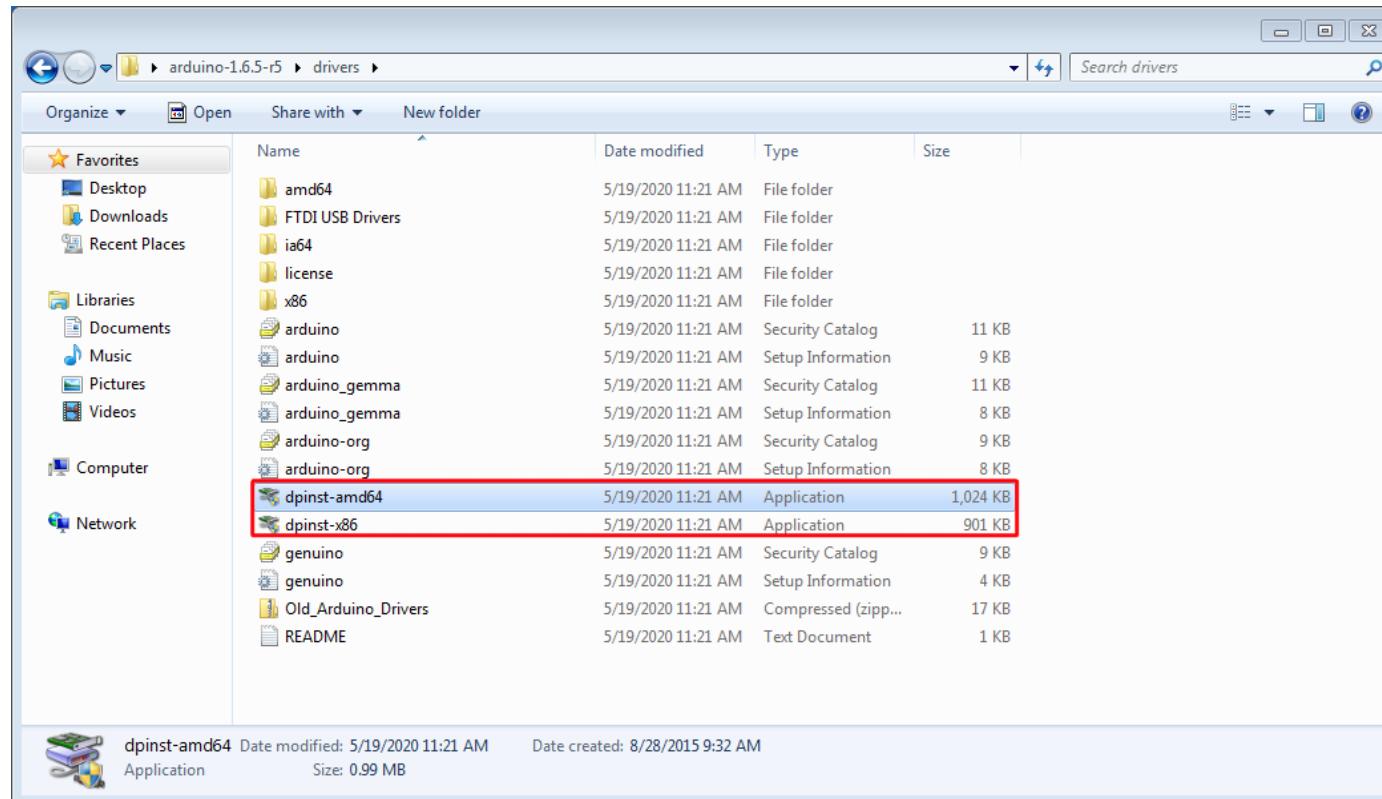
Only Arduino v1.6.5 is tested with the Andes board package

2. Extract the downloaded file and the content should look like the following



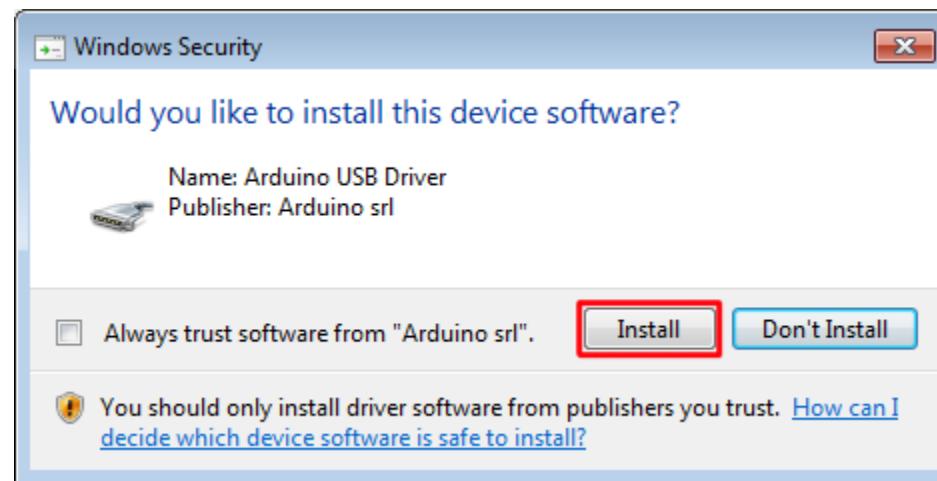
## 1-2. Install Arduino Official Drivers

- In `arduino-1.6.5-r5\drivers`,
  - run `dpinst-amd64` if you're on a 64-bit Windows
  - run `dpinst-x86` if you're on a 32-bit Windows



## 1-2. Install Arduino Official Drivers (cont.)

- Click **Install** if questioned by the following kind of dialogue

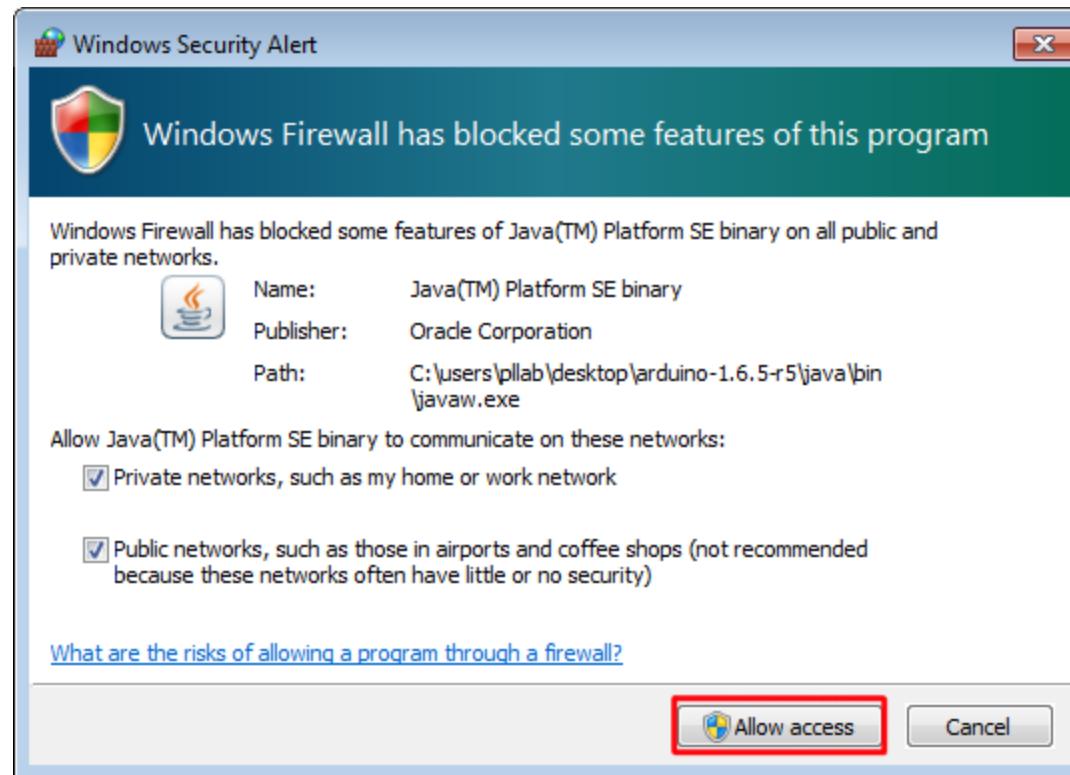


## **2. Install Andes Corvette F1-N25 Board Package**

1. Add Board Manifest
2. Install Board Package
3. Install Andes Drivers
4. Modify Fragile Burn Script

## 2-1. Add Board Manifest

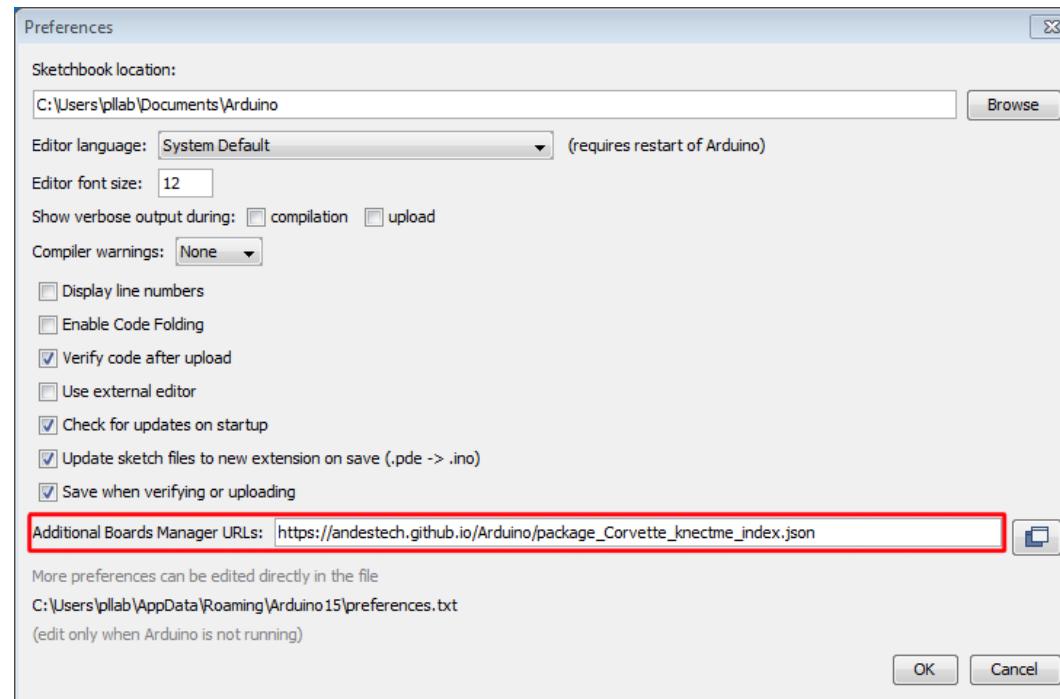
- Run Arduino ( arduino-1.6.5-r5\arduino.exe )
- Click Allow access if questioned by the following kind of dialogue



## 2-1. Add Board Manifest (cont.)

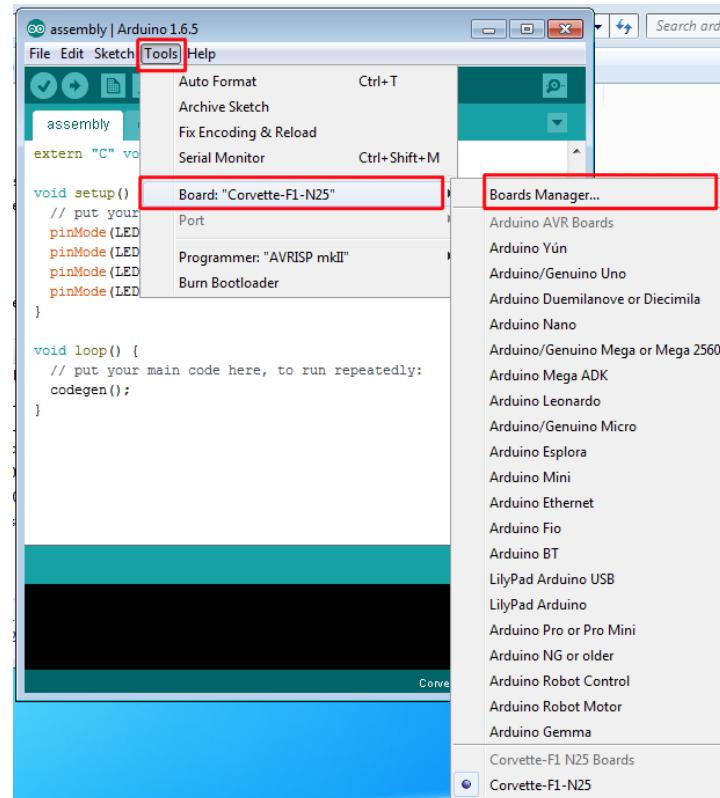
- Navigate to `File > Preferences` in Arduino
- Paste

`https://andestech.github.io/Arduino/package_Corvette_knectme_index.json` into `Additional Boards Managers URLs` and click `OK`



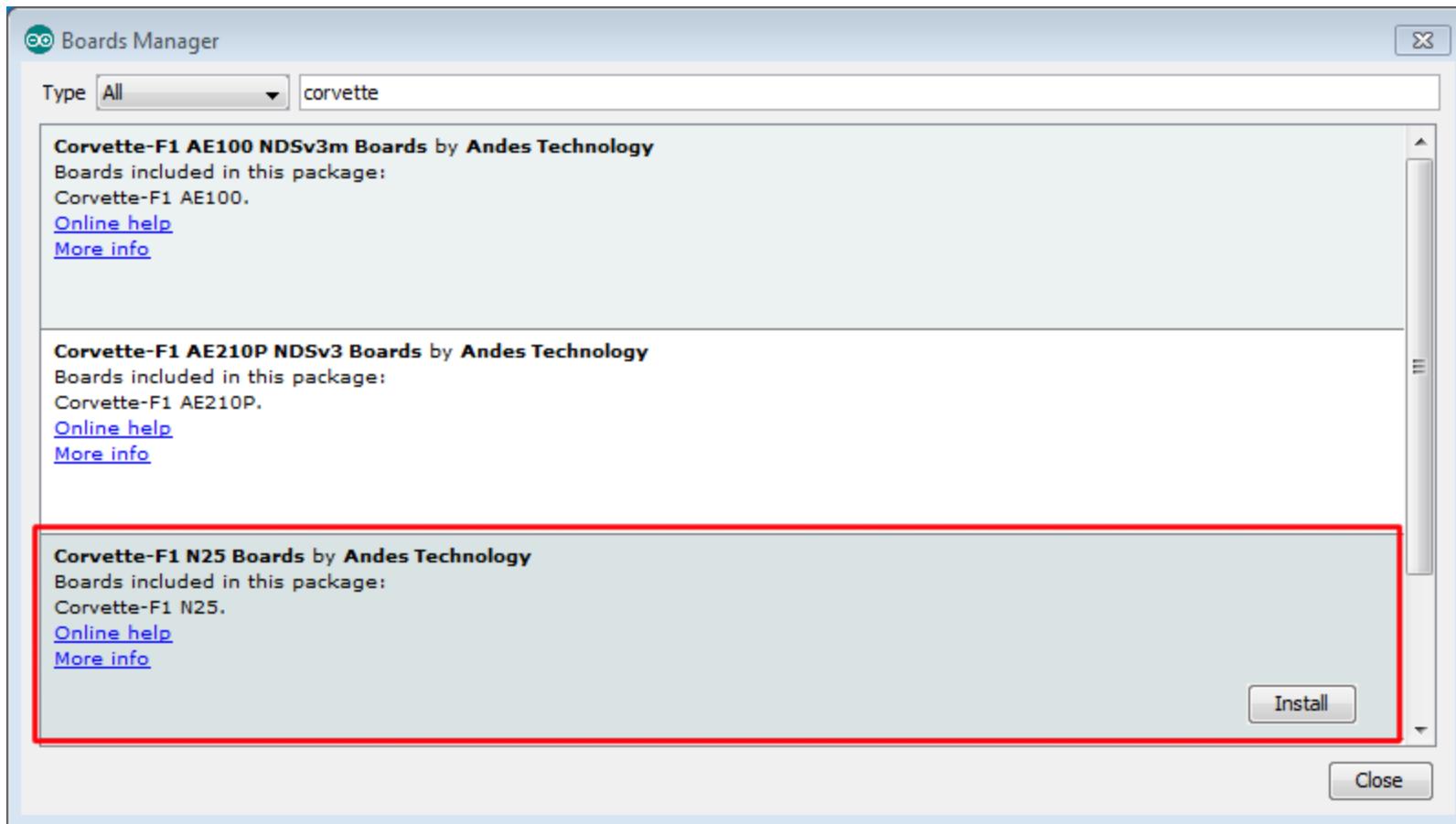
## 2-2. Install Board Package

- Navigate to Tools > Board: . . . > Boards Manager



## 2-2. Install Board Package (cont.)

- Search for `corvette` and install `Corvette-F1 N25 Boards`

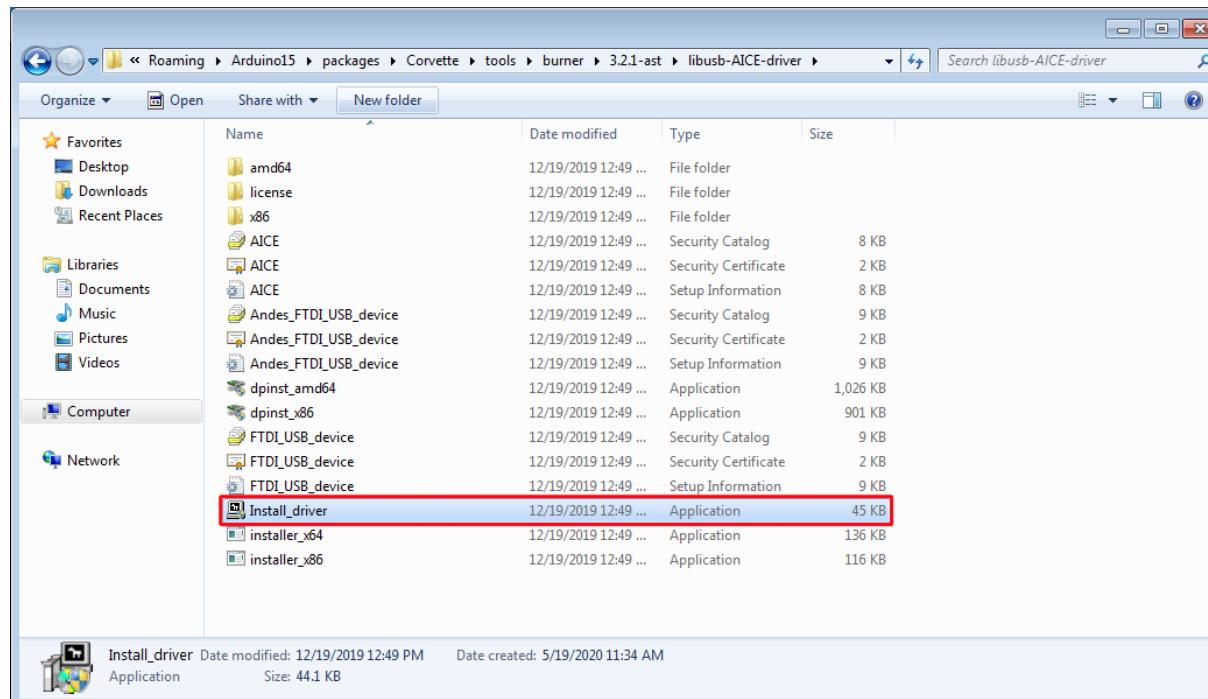


## 2-3. Install Andes Drivers

- Run

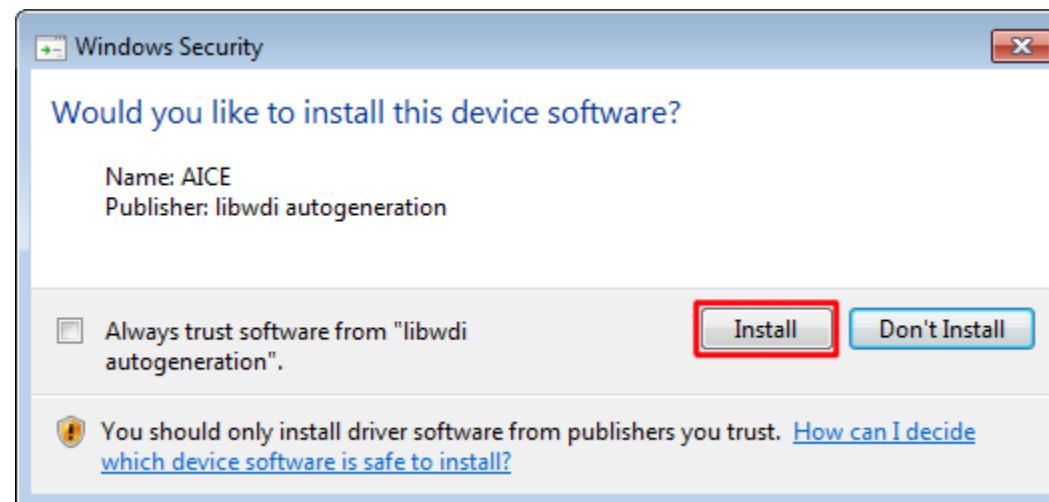
```
C:\Users\${USERNAME}\AppData\Roaming\Arduino15\packages\Corvette\tools\burner\3.2.1-ast\libusb-AICE-driver\Install_driver.exe
```

- Note that the Roaming above could possibly be Local , depending on your system



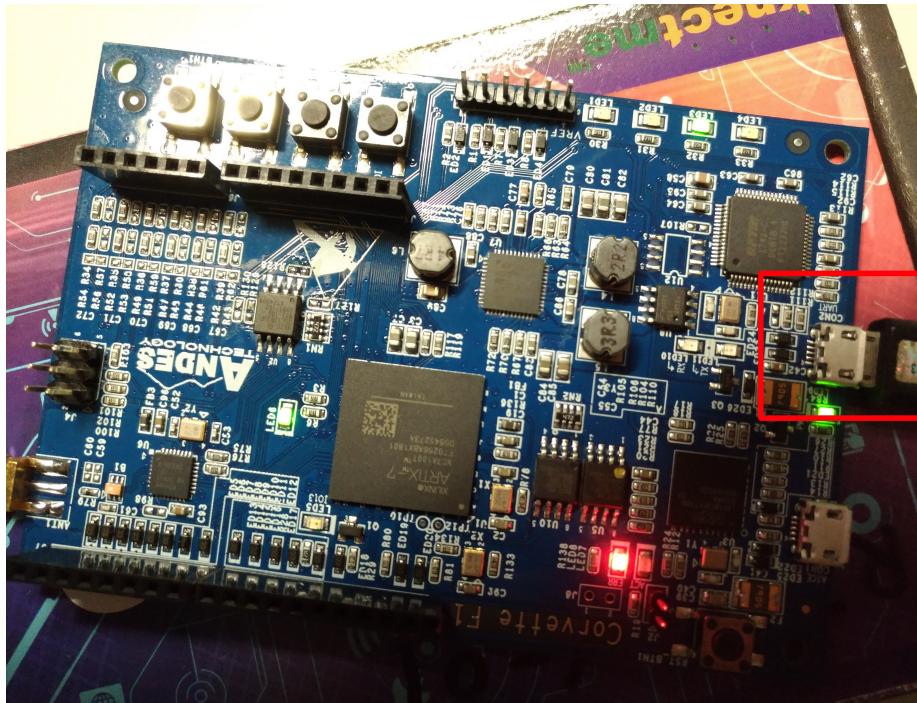
## 2-3. Install Andes Drivers (cont.)

- Click `Install` when questioned by the following kind of dialogue. There should be 3 dialogues



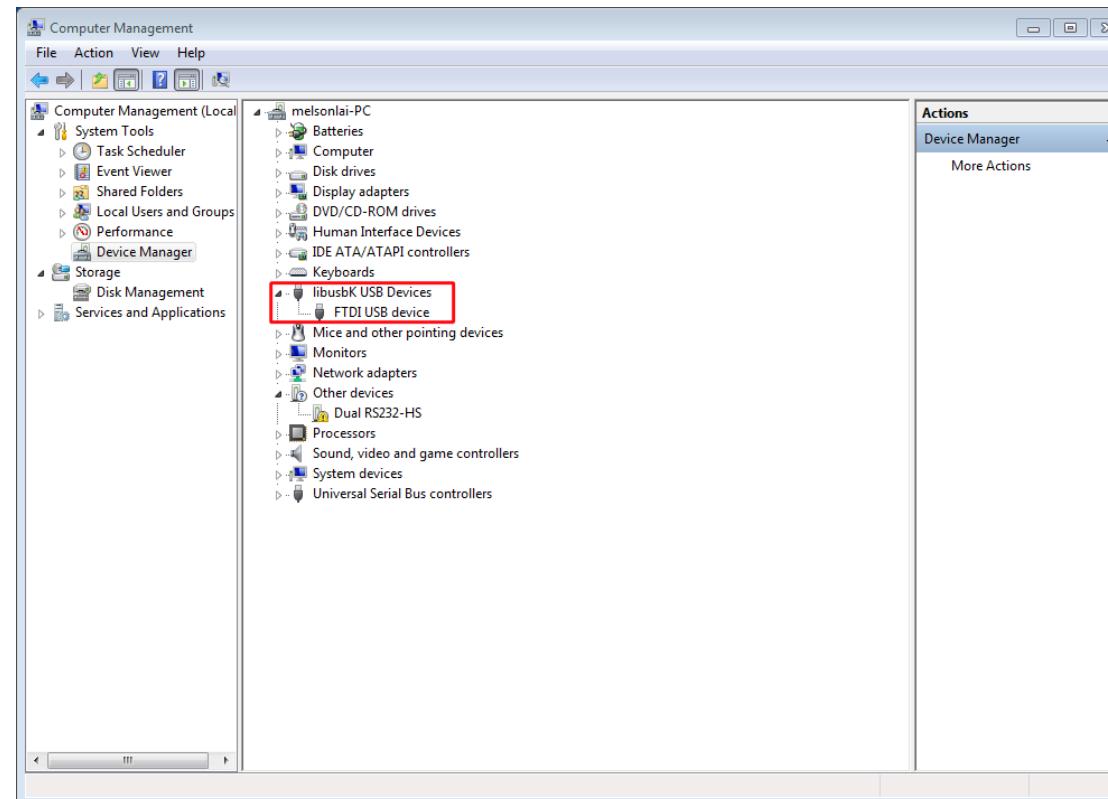
## 2-3. Install Andes Drivers (cont.)

- Reboot your computer and plug in your Andes Corvette-F1 board using the CON2 connector



## 2-3. Install Andes Drivers (cont.)

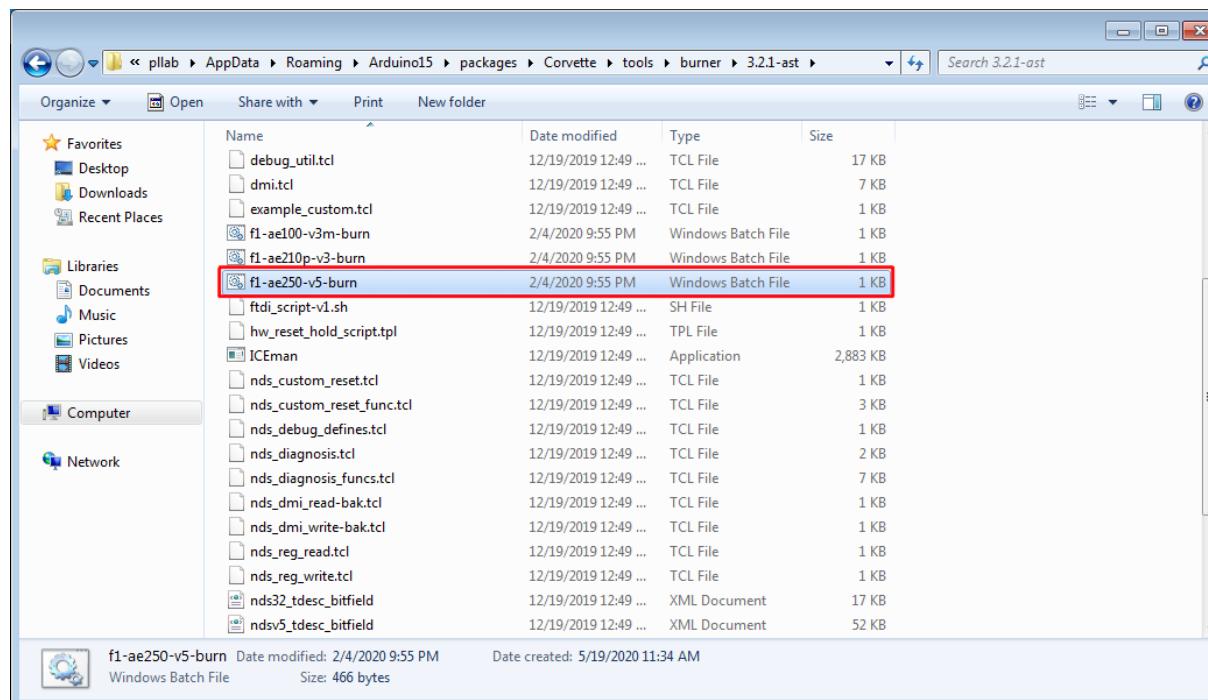
- In your Device Manager, you should find libusbK USB Devices\FTDI USB device



## 2-4. Modify Fragile Burn Script

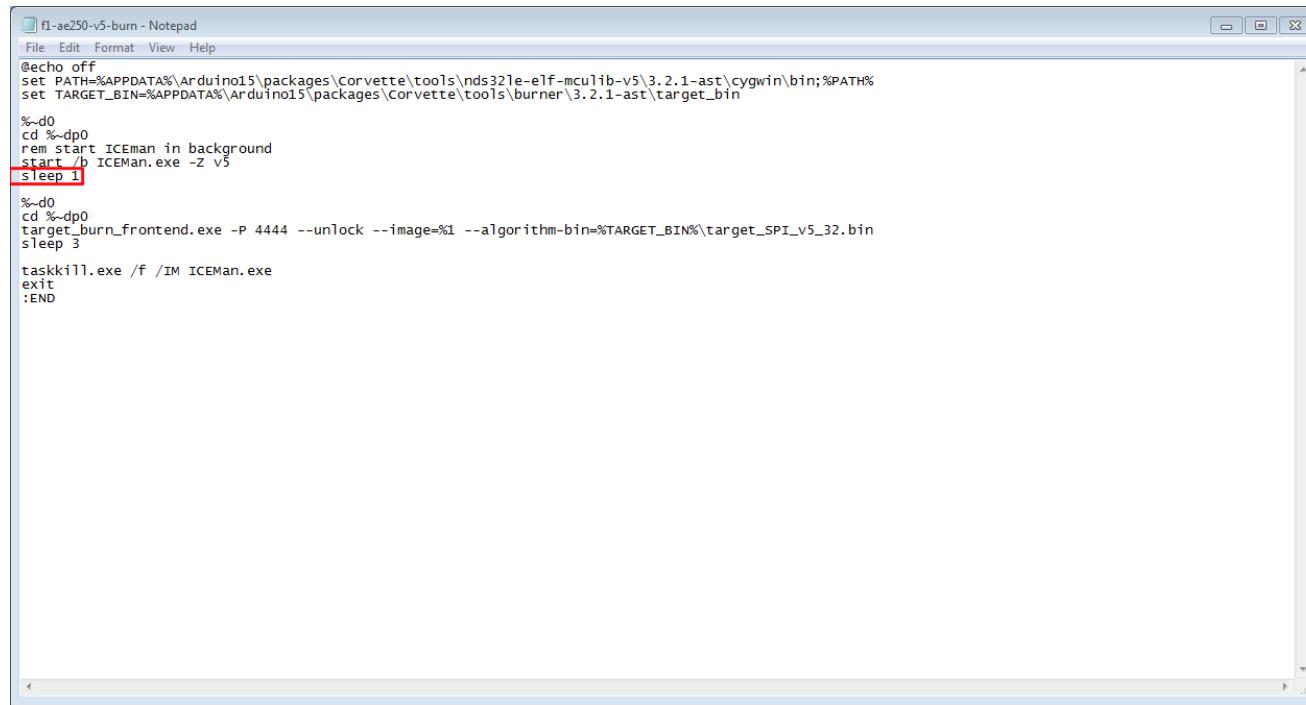
- Edit

```
C:\Users\${USERNAME}\AppData\Roaming\Arduino15\packages\Corvette\tools\burner\3.2.1-ast\f1-ae250-v5-burn.bat
```



## 2-4. Modify Fragile Burn Script (cont.)

- Replace `sleep 1` on line 9 with `sleep 10`



The screenshot shows a Windows Notepad window titled "f1-ae250-v5-burn - Notepad". The window contains a batch script with the following content:

```
@echo off
set PATH=%APPDATA%\Arduino15\packages\Corvette\tools\nds32le-elf-mcuLib-v5\3.2.1-ast\cygwin\bin;%PATH%
set TARGET_BIN=%APPDATA%\Arduino15\packages\Corvette\tools\burner\3.2.1-ast\target_bin

%~d0
cd %~dp0
rem start ICEman in background
start /b ICEMan.exe -Z v5
sleep 1 [Red box]

%~d0
cd %~dp0
target_burn_frontend.exe -P 4444 --unlock --image=%1 --algorithm-bin=%TARGET_BIN%\target_SPI_v5_32.bin
sleep 3

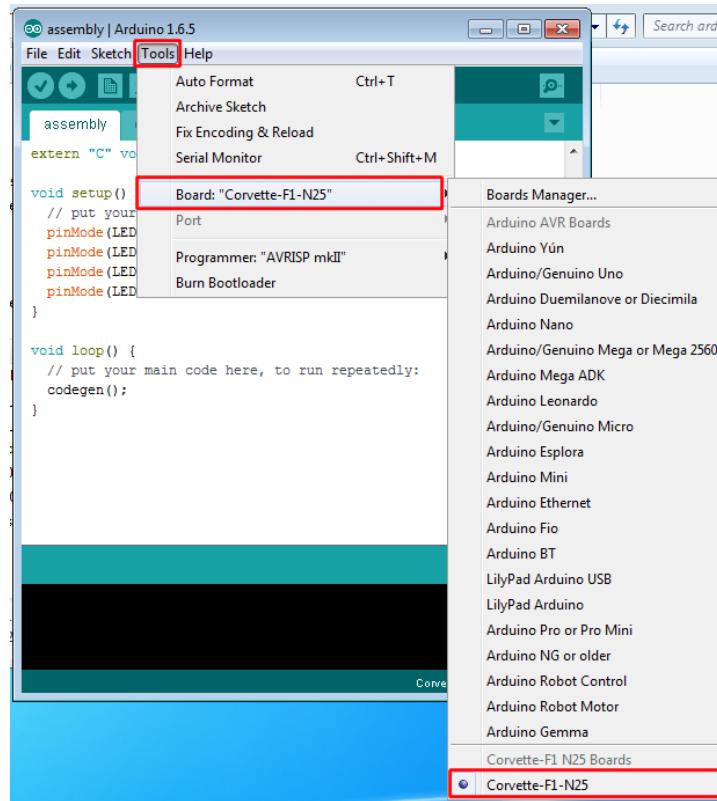
taskkill.exe /f /IM ICEMan.exe
exit
:END
```

### **3. Usage**

1. Set Board-to-Use in Arduino
2. Upload/Test Sample Assembly Project

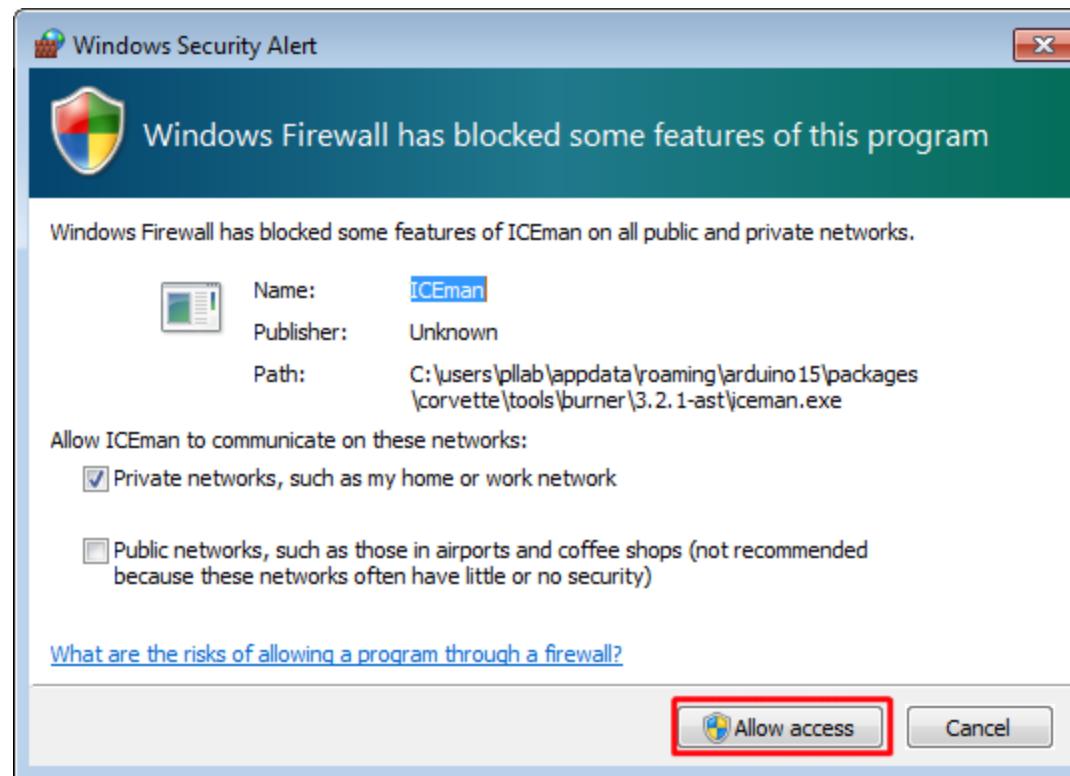
## 3-1. Set Board-to-Use in Arduino

- In Arduino, navigate to Tools > Board: ... and select Corvette-F1-N25



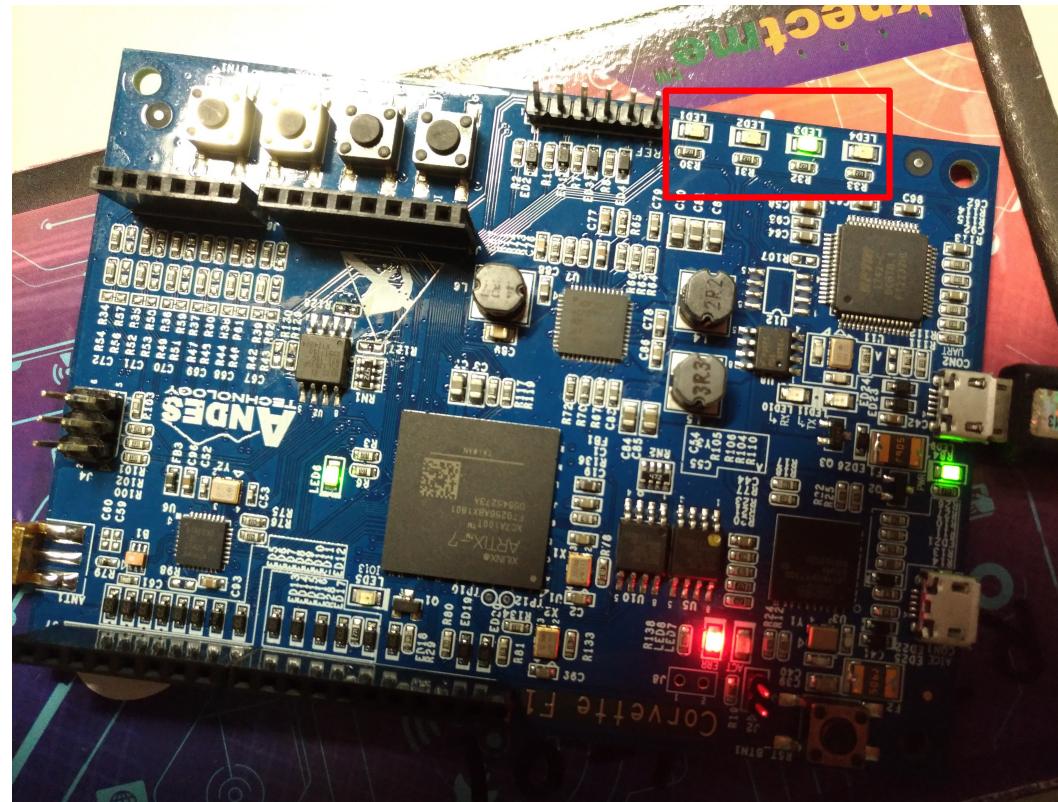
## 3-2. Upload/Test Sample Assembly Project

- Open the sample project and select Sketch > Upload
- Click Allow access when prompted by the following kind of dialogue



## 3-2. Upload/Test Sample Assembly Project (cont.)

- If upload is successful, you should see LEDs on your Andes Corvette-F1 blinking



**Thanks**