Python Wrapper for C# API

Guide on using Python wrappers with the SMD3/SMD4 C# API.

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Background

Most AML products have a C# API available to allow easy integration of the product into your own application, without having to write an API yourself. The C# APIs provide an easy way to access all aspects of configuration and control of the product.

Using these APIs from C# is the easiest option. However, you can use the APIs with other languages such as C++ or Python.

Instructions

1. Download the latest copy of the API DLL for your product

Visit the product page for your product and look for the C# API download. For example, for the SMD4 visit the link below, and look for the downloads tab at the bottom of the page. https://arunmicro.com/products/smd4-stepper-motor-drive/

2. Download the pythonnet library

Pythonnet is a python library that allows developers to integrate .NET code within python. More information about pythonnet can be found here. htttps://pypi.org/project/pythonnet/

To install pythonnet via pip use the following command:

```
pip install pythonnet
```

3. Importing the API

Add a reference to the required dll, for example:

```
import clr
clr.AddReference(r"C:\source\SMD3API.dll")
from SMD3API import SMD3
```

4. Using the API

Example code for the SMD3, demonstrating connecting to the drive and moving the motor.

```
import clr
import time
clr.AddReference(r"C:\source\SMD3API.dll")
from SMD3API import SMD3

# Create an instance of the SMD3
smd3=SMD3()

# Auto connect to the first SMD3 device found
smd3.Connect("COM")

# Choose a temperature sensor
smd3.SensorSelect = Tsel.Thermocouple

# Move 100 steps in the positive direction
smd3.MoveRelative(100)
```

Example code for the SMD4, demonstrating connecting to the drive and moving the motor.

```
import clr
import time
clr.AddReference(r"C:\source\SMD4API.dll")
from Aml.Equipment.SMD4Api import *

# Create an instance of the SMD4
smd4=SMD4()

# Auto connect to the first SMD4
smd4.Connect()

# Move motor in clockwise direction
smd4.MoveClockwise()

# Wait 5 seconds
time.sleep(5)

# Stop motor
smd4.Stop()
```