Advantech Devices - DI and DO in MatDeck
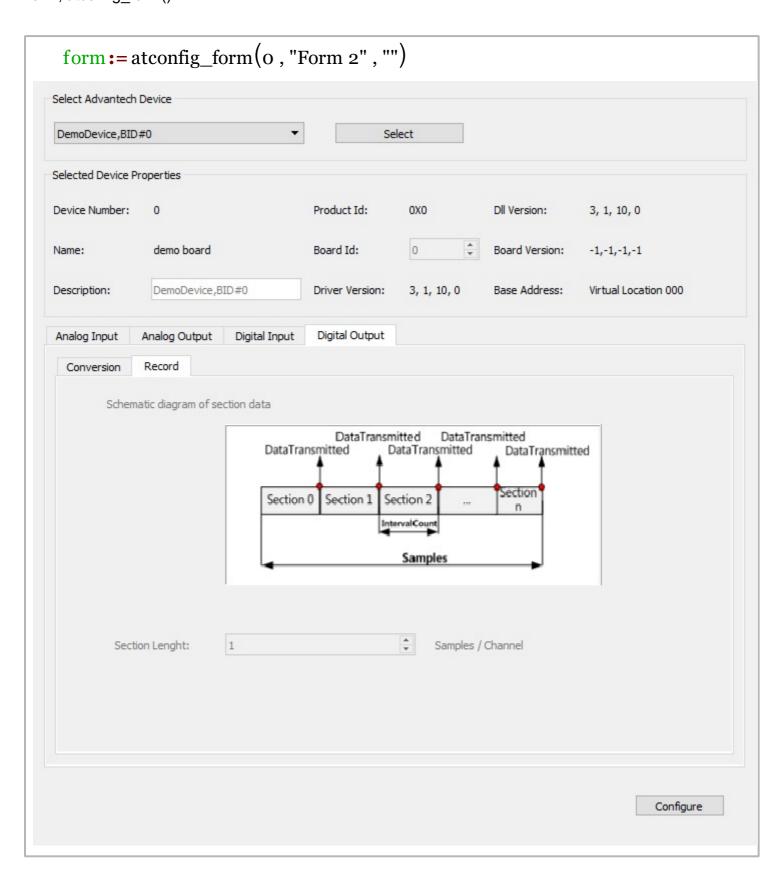
In this example, we illustrate the use of GUIs for Advantech Devices and Digital Input and Output channels.

Configuration of Advantech USB4704 Devices

The most effective and intuitive way for configuring the devices is by using MatDeck's GUI configuration form, atconfig_form().

$$\text{form} := \text{atconfig\_form}\big(0 \ , \ \text{"Form 2"} \ , \ \text{""}\big)$$

Select Advantech Device

DemoDevice,BID#0   ▼   Select

Selected Device Properties

Device Number:	0	Product Id:	0X0	Dll Version:	3, 1, 10, 0
Name:	demo board	Board Id:	0	Board Version:	-1,-1,-1,-1
Description:	DemoDevice,BID#0	Driver Version:	3, 1, 10, 0	Base Address:	Virtual Location 000

Analog Input | Analog Output | Digital Input | **Digital Output**

Conversion | **Record**

Schematic diagram of section data

Section Lenght: 1   Samples / Channel

Configure

Using Advantech USB4704 Device DI and DO

In the example, scenario DO0 is connected to DI0. The first step is to open USB4704 so that it can be used for the digital output and input. Advantech devices use separate open functions for AI, AO, DI, and DO.   The open functions return the device handle which is then used in later operations to access the appropriate devices.

```
1  dev1 := atdevice_do_open(0, false)
2  dev2 := atdevice_di_open(0, false)
```

The outputted digital value is set using the DO write function. The input value can be read using the standard DI read function. The result is shown in the canvas:

```
3  atdevice_do_write(dev1, 0, 1)
4  divalue := atdevice_di_read(dev2, 0)
```

Once done, we will finish by closing the device and releasing the handle

```
5  atdevice_close(dev1)
6  atdevice_close(dev2)
```

$$divalue = 6$$