
AdafruitDS2413 Library Documentation

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CircuitPython driver for the DS2413 one wire 2 channel GPIO breakout.

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)
- [Adafruit OneWire](#)

Please ensure all dependencies are available on the CircuitPython filesystem. This is easily achieved by downloading the [Adafruit library and driver bundle](#).

CHAPTER 2

Usage Example

```
import time
import board
from adafruit_owewire.bus import OneWireBus
import adafruit_ds2413

ow_bus = OneWireBus(board.D2)
ds = adafruit_ds2413.DS2413(ow_bus, ow_bus.scan()[0])

led = ds.IOA
button = ds.IOB
button.direction = adafruit_ds2413.INPUT

while not button.value:
    led.value = True
    time.sleep(0.5)
    led.value = False
    time.sleep(0.5)
```


CHAPTER 3

Contributing

Contributions are welcome! Please read our [Code of Conduct](#) before contributing to help this project stay welcoming.

CHAPTER 4

Building locally

To build this library locally you'll need to install the `circuitpython-build-tools` package.

```
python3 -m venv .env
source .env/bin/activate
pip install circuitpython-build-tools
```

Once installed, make sure you are in the virtual environment:

```
source .env/bin/activate
```

Then run the build:

```
circuitpython-build-bundles --filename_prefix adafruit-circuitpython-ds2413 --library_
↪location .
```

4.1 Sphinx documentation

Sphinx is used to build the documentation based on rST files and comments in the code. First, install dependencies (feel free to reuse the virtual environment from above):

```
python3 -m venv .env
source .env/bin/activate
pip install Sphinx sphinx-rtd-theme
```

Now, once you have the virtual environment activated:

```
cd docs
sphinx-build -E -W -b html . _build/html
```

This will output the documentation to `docs/_build/html`. Open the `index.html` in your browser to view them. It will also (due to `-W`) error out on any warning like Travis will. This is a good way to locally verify it will pass.

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/ds2413_simpletest.py

```
1  # This example shows how to access the DS2413 pins and use them for both input
2  # and output. In this example, it is assumed an LED is attached to IOA and a
3  # button is attached to IOB. See the datasheet for details about how to
4  # interface the external hardware (it is different than most Arduino examples).
5  import time
6  import board
7  from adafruit_owewire.bus import OneWireBus
8  import adafruit_ds2413
9
10 # Create OneWire bus
11 ow_bus = OneWireBus(board.D2)
12
13 # Create the DS2413 object from the first one found on the bus
14 ds = adafruit_ds2413.DS2413(ow_bus, ow_bus.scan()[0])
15
16 # LED on IOA
17 led = ds.IOA
18
19 # button on IOB
20 button = ds.IOB
21 button.direction = adafruit_ds2413.INPUT
22
23 # Loop forever
24 while True:
25     # Check for button press
26     if button.value:
27         # Print a message.
```

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```
28     print("Button pressed!")
29     # Toggle LED
30     led.value = not led.value
31     # A little debounce
32     time.sleep(0.25)
```

5.2 adafruit_ds2413

CircuitPython driver for the DS2413 one wire 2 channel GPIO breakout.

- Author(s): Carter Nelson

class `adafruit_ds2413.DS2413` (*bus, address*)

Class which provides interface to DS2413 GPIO breakout.

IOA

The pin object for channel A.

IOB

The pin object for channel B.

pio_state

The state of both PIO channels.

class `adafruit_ds2413.DS2413Pin` (*number, host, direction=1*)

Class which provides interface to single DS2413 GPIO pin.

direction

The direction of the pin, either INPUT or OUTPUT.

value

The pin state if configured as INPUT. The output latch state if configured as OUTPUT. True is HIGH/ON, False is LOW/OFF.

CHAPTER 6

Indices and tables

- `genindex`
- `modindex`
- `search`

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I

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P

`pio_state` (*adafruit_ds2413.DS2413 attribute*), [12](#)

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