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# AdafruitDS2413 Library Documentation

*Release 1.0*

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



# CHAPTER 1

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## Dependencies

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This driver depends on:

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

**Note:** This library depends on the OneWire library and will **not** work on the Raspberry Pi

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





## CHAPTER 2

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### Installing from PyPI

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On supported GNU/Linux systems like the Raspberry Pi, you can install the driver locally [from PyPI](#). To install for current user:

```
pip3 install adafruit-circuitpython-ds2413
```

To install system-wide (this may be required in some cases):

```
sudo pip3 install adafruit-circuitpython-ds2413
```

To install in a virtual environment in your current project:

```
mkdir project-name && cd project-name  
python3 -m venv .env  
source .env/bin/activate  
pip3 install adafruit-circuitpython-ds2413
```



## CHAPTER 3

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### 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 4

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### Documentation

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API documentation for this library can be found on [Read the Docs](#).



## CHAPTER 5

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### Contributing

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





## CHAPTER 6

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### Documentation

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For information on building library documentation, please check out [this guide](#).



## 7.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/ds2413\_simpletest.py

```
1  # SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
2  # SPDX-License-Identifier: MIT
3
4  # This example shows how to access the DS2413 pins and use them for both input
5  # and output. In this example, it is assumed an LED is attached to IOA and a
6  # button is attached to IOB. See the datasheet for details about how to
7  # interface the external hardware (it is different than most Arduino examples).
8  import time
9  import board
10 from adafruit_owewire.bus import OneWireBus
11 import adafruit_ds2413
12
13 # Create OneWire bus
14 ow_bus = OneWireBus(board.D2)
15
16 # Create the DS2413 object from the first one found on the bus
17 ds = adafruit_ds2413.DS2413(ow_bus, ow_bus.scan()[0])
18
19 # LED on IOA
20 led = ds.IOA
21
22 # button on IOB
23 button = ds.IOB
24 button.direction = adafruit_ds2413.INPUT
25
26 # Loop forever
27 while True:
```

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```
28 # Check for button press
29 if button.value:
30     # Print a message.
31     print("Button pressed!")
32     # Toggle LED
33     led.value = not led.value
34     # A little debounce
35     time.sleep(0.25)
```

## 7.2 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 8

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### Indices and tables

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