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# **AdafruitOneWire Library Documentation**

***Release 1.0***

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Classes for use in communicating with devices on a 1-Wire bus.



# CHAPTER 1

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## Dependencies

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This driver depends on:

- [Adafruit CircuitPython](#)

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-owewire
```

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

```
sudo pip3 install adafruit-circuitpython-owewire
```

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-owewire
```



## CHAPTER 3

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### Usage Example

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```
import board
from adafruit_owewire.bus import OneWireBus
ow_bus = OneWireBus(board.D2)
devices = ow_bus.scan()
for d in devices:
    print("ROM={}\tFamily=0x{:02x}".format(d.rom, d.family_code))
```



## CHAPTER 4

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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 5

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### Documentation

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





## 6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/onewire\_simpletest.py

```
1 import board
2 from adafruit_onewire.bus import OneWireBus
3
4 # Create the 1-Wire Bus
5 # Use whatever pin you've connected to on your board
6 ow_bus = OneWireBus(board.D2)
7
8 # Reset and check for presence pulse.
9 # This is basically - "is there anything out there?"
10 print("Resetting bus...", end="")
11 if ow_bus.reset():
12     print("OK.")
13 else:
14     raise RuntimeError("Nothing found on bus.")
15
16 # Run a scan to get all of the device ROM values
17 print("Scanning for devices...", end="")
18 devices = ow_bus.scan()
19 print("OK.")
20 print("Found {} device(s)".format(len(devices)))
21
22 # For each device found, print out some info
23 for i, d in enumerate(devices):
24     print("Device {:>3}".format(i))
25     print("\tSerial Number = ", end="")
26     for byte in d.serial_number:
27         print("0x{:02x} ".format(byte), end="")
```

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```
28     print("\n\tFamily = 0x{:02x}".format(d.family_code))
29
30 # Usage beyond this is device specific. See a CircuitPython library for a 1-Wire
31 # device for examples and how OneWireDevice is used.
```

## 6.2 adafruit\_owewire.bus

Provide access to a 1-Wire bus.

- Author(s): Carter Nelson

**class** adafruit\_owewire.bus.OneWireAddress(*rom*)

A class to represent a 1-Wire address.

**crc**

The 8 bit CRC.

**family\_code**

The 8 bit family code.

**rom**

The unique 64 bit ROM code.

**serial\_number**

The 48 bit serial number.

**class** adafruit\_owewire.bus.OneWireBus(*pin*)

A class to represent a 1-Wire bus.

**static crc8**(*data*)

Perform the 1-Wire CRC check on the provided data.

**Parameters** *data* (*bytearray*) – 8 byte array representing 64 bit ROM code

**maximum\_devices**

The maximum number of devices the bus will scan for. Valid range is 1 to 255. It is an error to have more devices on the bus than this number. Having less is OK.

**readinto**(*buf*, \*, *start=0*, *end=None*)

Read into *buf* from the device. The number of bytes read will be the length of *buf*.

If *start* or *end* is provided, then the buffer will be sliced as if *buf[start:end]*. This will not cause an allocation like *buf[start:end]* will so it saves memory.

**Parameters**

- **buf** (*bytearray*) – buffer to write into
- **start** (*int*) – Index to start writing at
- **end** (*int*) – Index to write up to but not include

**reset**(*required=False*)

Perform a reset and check for presence pulse.

**Parameters** **required** (*bool*) – require presence pulse

**scan**()

Scan for devices on the bus and return a list of addresses.

**write** (*buf*, \*, *start=0*, *end=None*)

Write the bytes from *buf* to the device.

If *start* or *end* is provided, then the buffer will be sliced as if `buffer[start:end]`. This will not cause an allocation like `buffer[start:end]` will so it saves memory.

#### Parameters

- **buf** (*bytearray*) – buffer containing the bytes to write
- **start** (*int*) – Index to start writing from
- **end** (*int*) – Index to read up to but not include

**exception** `adafruit_onewire.bus.OneWireError`

A class to represent a 1-Wire exception.

## 6.3 `adafruit_onewire.device`

Provides access to a single device on the 1-Wire bus.

- Author(s): Carter Nelson

**class** `adafruit_onewire.device.OneWireDevice` (*bus*, *address*)

A class to represent a single device on the 1-Wire bus.

**readinto** (*buf*, \*, *start=0*, *end=None*)

Read into *buf* from the device. The number of bytes read will be the length of *buf*.

If *start* or *end* is provided, then the buffer will be sliced as if `buf[start:end]`. This will not cause an allocation like `buf[start:end]` will so it saves memory.

#### Parameters

- **buf** (*bytearray*) – buffer to write into
- **start** (*int*) – Index to start writing at
- **end** (*int*) – Index to write up to but not include

**write** (*buf*, \*, *start=0*, *end=None*)

Write the bytes from *buf* to the device.

If *start* or *end* is provided, then the buffer will be sliced as if `buffer[start:end]`. This will not cause an allocation like `buffer[start:end]` will so it saves memory.

#### Parameters

- **buf** (*bytearray*) – buffer containing the bytes to write
- **start** (*int*) – Index to start writing from
- **end** (*int*) – Index to read up to but not include



## CHAPTER 7

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### Indices and tables

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