AdafruitSSD1306 Library Documentation

Release 1.0

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Jan 21, 2020

Contents

Adafruit CircuitPython driver for SSD1306 or SSD1305 OLED displays. Note that SSD1305 displays are back compatible so they can be used in-place of SSD1306 with the same code and commands.

This driver implements the adafruit_framebuf interface. It is **not** the `displayio` driver for the SSD1306. See the Adafruit CircuitPython DisplayIO SSD1306 driver for `displayio` support.

CHAPTER 1

Dependencies

This driver depends on:

- Adafruit CircuitPython
- Bus Device
- Adafruit framebuf

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

CHAPTER 2

Installing from PyPI

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-ssd1306
```

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

```
sudo pip3 install adafruit-circuitpython-ssd1306
```

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-ssd1306
```

CHAPTER 3

Usage Example

```
# Basic example of clearing and drawing pixels on a SSD1306 OLED display.
# This example and library is meant to work with Adafruit CircuitPython API.
# Author: Tony DiCola
# License: Public Domain

# Import all board pins.
from board import SCL, SDA
import busio

# Import the SSD1306 module.
import adafruit_ssd1306


# Create the I2C interface.
i2c = busio.I2C(SCL, SDA)

# Create the SSD1306 OLED class.
# The first two parameters are the pixel width and pixel height.  Change these
# to the right size for your display!
display = adafruit_ssd1306.SSD1306_I2C(128, 32, i2c)
# Alternatively you can change the I2C address of the device with an addr parameter:
#display = adafruit_ssd1306.SSD1306_I2C(128, 32, i2c, addr=0x31)

# Clear the display.  Always call show after changing pixels to make the display
# update visible!
display.fill(0)

display.show()
```

More examples and details can be found in the adafruit_framebuf docs.

CHAPTER 4

Contributing

Contributions are welcome! Please read our Code of Conduct before contributing to help this project stay welcoming.

CHAPTER 5

Documentation

For information on building library documentation, please check out this guide.

CHAPTER 6

Table of Contents

6.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/ssd1306_simpletest.py

```
# Basic example of clearing and drawing pixels on a SSD1306 OLED display.
# This example and library is meant to work with Adafruit CircuitPython API.
# Author: Tony DiCola
# License: Public Domain

# Import all board pins.
from board import SCL, SDA
import busio

# Import the SSD1306 module.
import adafruit_ssd1306


# Create the I2C interface.
i2c = busio.I2C(SCL, SDA)

# Create the SSD1306 OLED class.
# The first two parameters are the pixel width and pixel height.  Change these
# to the right size for your display!
display = adafruit_ssd1306.SSD1306_I2C(128, 32, i2c)
# Alternatively you can change the I2C address of the device with an addr parameter:
#display = adafruit_ssd1306.SSD1306_I2C(128, 32, i2c, addr=0x31)

# Clear the display.  Always call show after changing pixels to make the display
# update visible!
display.fill(0)
display.show()
```

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```

# Set a pixel in the origin 0,0 position.
display.pixel(0, 0, 1)
# Set a pixel in the middle 64, 16 position.
display.pixel(64, 16, 1)
# Set a pixel in the opposite 127, 31 position.
display.pixel(127, 31, 1)
display.show()
```

6.2 adafruit_ssd1306

MicroPython SSD1306 OLED driver, I2C and SPI interfaces

- Author(s): Tony DiCola, Michael McWethy

class adafruit_ssd1306.**SSD1306_I2C**(*width*, *height*, *i2c*, ***, *addr=60*, *external_vcc=False*, *reset=None*)

I2C class for SSD1306

Parameters

- **width** – the width of the physical screen in pixels,
- **height** – the height of the physical screen in pixels,
- **i2c** – the I2C peripheral to use,
- **addr** – the 8-bit bus address of the device,
- **external_vcc** – whether external high-voltage source is connected.
- **reset** – if needed, DigitalInOut designating reset pin

write_cmd(*cmd*)

Send a command to the SPI device

write_framebuf()

Blast out the frame buffer using a single I2C transaction to support hardware I2C interfaces.

class adafruit_ssd1306.**SSD1306_SPI**(*width*, *height*, *spi*, *dc*, *reset*, *cs*, ***, *external_vcc=False*, *baudrate=8000000*, *polarity=0*, *phase=0*)

SPI class for SSD1306

Parameters

- **width** – the width of the physical screen in pixels,
- **height** – the height of the physical screen in pixels,
- **spi** – the SPI peripheral to use,
- **dc** – the data/command pin to use (often labeled "D/C"),
- **reset** – the reset pin to use,
- **cs** – the chip-select pin to use (sometimes labeled "SS").

write_cmd(*cmd*)

Send a command to the SPI device

write_framebuf()

write to the frame buffer via SPI

CHAPTER 7

Indices and tables

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- modindex
- search

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