
AdafruitRGB*DisplayLibraryDocumentation*

Release 1.0

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Mar 05, 2018

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Port of display drivers from <https://github.com/adafruit/micropython-adafruit-rgb-display> to Adafruit CircuitPython for use on Adafruit's SAMD21-based and other CircuitPython boards.

This driver depends on the Adafruit CircuitPython BusDevice module being installed on the board too: https://github.com/adafruit/Adafruit_MicroPython_BusDevice

Note that this driver currently won't work on micropython.org firmware, instead you want the micropython-adafruit-rgb-display driver linked above!

CHAPTER 1

Dependencies

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

Usage Example

```
import busio
import digitalio
from board import SCK, MOSI, MISO, D2, D3

from adafruit_rgb_display import color565
import adafruit_rgb_display.ili9341 as ili9341

# Configuration for CS and DC pins:
CS_PIN = D2
DC_PIN = D3

# Setup SPI bus using hardware SPI:
spi = busio.SPI(clock=SCK, MOSI=MOSI, MISO=MISO)

# Create the ILI9341 display:
display = ili9341.ILI9341(spi, cs=digitalio.DigitalInOut(CS_PIN),
                          dc=digitalio.DigitalInOut(DC_PIN))

# Main loop:
while True:
    # Clear the display
    display.fill(0)
    # Draw a red pixel in the center.
    display.pixel(120, 160, color565(255, 0, 0))
    # Pause 2 seconds.
    time.sleep(2)
    # Clear the screen blue.
    display.fill(color565(0, 0, 255))
    # Pause 2 seconds.
    time.sleep(2)
```


3.1 adafruit_rgb_display.rgb

Base class for all RGB Display devices

- Author(s): Radomir Dopieralski, Michael McWethy

class `adafruit_rgb_display.rgb.Display` (*width, height*)

Base class for all RGB display devices :param width: number of pixels wide :param height: number of pixels high

fill (*color=0*)

Fill the whole display with the specified color.

fill_rectangle (*x, y, width, height, color*)

Draw a rectangle at specified position with specified width and height, and fill it with the specified color.

hline (*x, y, width, color*)

Draw a horizontal line.

init ()

Run the initialization commands.

pixel (*x, y, color=None*)

Read or write a pixel at a given position.

vline (*x, y, height, color*)

Draw a vertical line.

class `adafruit_rgb_display.rgb.DisplaySPI` (*spi, dc, cs, rst=None, width=1, height=1, baudrate=12000000, polarity=0, phase=0*)

Base class for SPI type devices

read (*command=None, count=0*)

SPI read from device with optional command

reset ()

Reset the device

write (*command=None, data=None*)
SPI write to the device: commands and data

class adafruit_rgb_display.rgb.DummyPin
Can be used in place of a Pin() when you don't want to skip it.

high()
Dummy high Pin method

init (*args, **kwargs)
Dummy Pin init

low()
Dummy low Pin method

adafruit_rgb_display.rgb.color565(*r, g, b*)
Convert red, green and blue values (0-255) into a 16-bit 565 encoding. As a convenience this is also available in the parent adafruit_rgb_display package namespace.

3.2 adafruit_rgb_display.hx8353

A simple driver for the HX8353-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

class adafruit_rgb_display.hx8353.HX8353(*spi, dc, cs, rst=None, width=128, height=128*)
A simple driver for the HX8353-based displays.

```
>>> import busio
>>> import digitalio
>>> import board
>>> from adafruit_rgb_display import color565
>>> import adafruit_rgb_display.hx8353 as hx8353
>>> spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
>>> display = hx8353.HX8353(spi, cs=digitalio.DigitalInOut(board.GPIO0),
...     dc=digitalio.DigitalInOut(board.GPIO15))
>>> display.fill(0x7521)
>>> display.pixel(64, 64, 0)
```

3.3 adafruit_rgb_display.ili9341

A simple driver for the ILI9341/ILI9340-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

class adafruit_rgb_display.ili9341.ILI9341(*spi, dc, cs, rst=None, width=240, height=320, baudrate=16000000, polarity=0, phase=0*)
A simple driver for the ILI9341/ILI9340-based displays.

```
>>> import busio
>>> import digitalio
>>> import board
>>> from adafruit_rgb_display import color565
>>> import adafruit_rgb_display.ili9341 as ili9341
>>> spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
>>> display = ili9341.ILI9341(spi, cs=digitalio.DigitalInOut(board.GPIO0),
```

```
...     dc=digitalio.DigitalInOut(board.GPIO15))
>>> display.fill(color565(0xff, 0x11, 0x22))
>>> display.pixel(120, 160, 0)
```

scroll (*dy=None*)
 Scroll the display by delta y

3.4 adafruit_rgb_display.s6d02a1

A simple driver for the S6D02A1-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

class adafruit_rgb_display.s6d02a1.**S6D02A1** (*spi, dc, cs, rst=None, width=128, height=160*)

A simple driver for the S6D02A1-based displays.

```
>>> import busio
>>> import digitalio
>>> import board
>>> from adafruit_rgb_display import color565
>>> import adafruit_rgb_display.s6d02a1 as s6d02a1
>>> spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
>>> display = s6d02a1.S6D02A1(spi, cs=digitalio.DigitalInOut(board.GPIO0),
...     dc=digitalio.DigitalInOut(board.GPIO15), rst=digitalio.DigitalInOut(board.
    ↳ GPIO16))
>>> display.fill(0x7521)
>>> display.pixel(64, 64, 0)
```

3.5 adafruit_rgb_display.ssd1331

A simple driver for the SSD1331-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

class adafruit_rgb_display.ssd1331.**SSD1331** (*spi, dc, cs, rst=None, width=96, height=64*)

A simple driver for the SSD1331-based displays.

```
import busio
import digitalio
import board
from adafruit_rgb_display import color565
import adafruit_rgb_display.ssd1331 as ssd1331
spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
display = ssd1331.SSD1331(spi, cs=digitalio.DigitalInOut(board.GPIO0),
                        dc=digitalio.DigitalInOut(board.GPIO15),
                        rst=digitalio.DigitalInOut(board.GPIO16))

display.fill(0x7521)
display.pixel(32, 32, 0)
```

write (*command=None, data=None*)
 write procedure specific to SSD1331

3.6 adafruit_rgb_display.ssd1351

A simple driver for the SSD1351-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

```
class adafruit_rgb_display.ssd1351.SSD1351(spi, dc, cs, rst=None, width=128, height=128)
```

A simple driver for the SSD1351-based displays.

```
>>> import busio
>>> import digitalio
>>> import board
>>> from adafruit_rgb_display import color565
>>> import adafruit_rgb_display.ssd1351 as ssd1351
>>> spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
>>> display = ssd1351.SSD1351(spi, cs=digitalio.DigitalInOut(board.GPIO0),
...     dc=digitalio.DigitalInOut(board.GPIO15), rst=digitalio.DigitalInOut(board.
↪GPIO16))
>>> display.fill(0x7521)
>>> display.pixel(32, 32, 0)
```

3.7 adafruit_rgb_display.st7735

A simple driver for the ST7735-based displays.

- Author(s): Radomir Dopieralski, Michael McWethy

```
class adafruit_rgb_display.st7735.ST7735(spi, dc, cs, rst=None, width=128, height=128)
```

A simple driver for the ST7735-based displays.

```
>>> import busio
>>> import digitalio
>>> import board
>>> from adafruit_rgb_display import color565
>>> import adafruit_rgb_display.st7735 as st7735
>>> spi = busio.SPI(clock=board.SCK, MOSI=board.MOSI, MISO=board.MISO)
>>> display = st7735.ST7735(spi, cs=digitalio.DigitalInOut(board.GPIO0),
...     dc=digitalio.DigitalInOut(board.GPIO15), rst=digitalio.DigitalInOut(board.
↪GPIO16))
>>> display.fill(0x7521)
>>> display.pixel(64, 64, 0)
```

```
class adafruit_rgb_display.st7735.ST7735R(spi, dc, cs, rst=None, width=128, height=160)
```

A simple driver for the ST7735R-based displays.

CHAPTER 4

Contributing

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

CHAPTER 5

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-rgb_display --
↪library_location .
```


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