
AdafruitEPD Library Documentation

Release 1.0

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This library is for using CircuitPython with e-ink displays with built in SRAM.

CHAPTER 1

Dependencies

This driver depends on:

- [Adafruit CircuitPython](#)
- [Bus Device](#)

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 digitalio
import busio
import board
from adafruit_epd.epd import Adafruit_EPD
from adafruit_epd.il0373 import Adafruit_IL0373

# create the spi device and pins we will need
spi = busio.SPI(board.SCK, MOSI=board.MOSI, MISO=board.MISO)
ecs = digitalio.DigitalInOut(board.D10)
dc = digitalio.DigitalInOut(board.D9)
srcs = digitalio.DigitalInOut(board.D8)
rst = digitalio.DigitalInOut(board.D7)
busy = digitalio.DigitalInOut(board.D6)

# give them all to our driver
display = Adafruit_IL0373(152, 152, rst, dc, busy, srcs, ecs, spi)

# clear the buffer
display.clear_buffer()

r_width = 5
r_pos = display.height

#draw some rectangles!
color = Adafruit_EPD.BLACK
while r_pos > display.height/2:
    if r_pos < display.height - 50:
        color = Adafruit_EPD.RED
    display.rect(display.width - r_pos, display.height - r_pos,
                 display.width - 2*(display.width - r_pos),
                 display.height - 2*(display.height - r_pos), color)
    r_pos = r_pos - r_width

display.display()
```


CHAPTER 3

Contributing

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

4.1 Zip release files

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-epd --library_
↪location .
```

4.2 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/epd_simpletest.py

```
1 import digitalio
2 import busio
3 import board
4 from adafruit_epd.epd import Adafruit_EPD
5 from adafruit_epd.il0373 import Adafruit_IL0373
6
7 # create the spi device and pins we will need
8 spi = busio.SPI(board.SCK, MOSI=board.MOSI, MISO=board.MISO)
9 ecs = digitalio.DigitalInOut(board.D10)
10 dc = digitalio.DigitalInOut(board.D9)
11 srcs = digitalio.DigitalInOut(board.D8)
12 rst = digitalio.DigitalInOut(board.D7)
13 busy = digitalio.DigitalInOut(board.D6)
14
15 # give them all to our driver
16 display = Adafruit_IL0373(152, 152, rst, dc, busy, srcs, spi)
17
18 # clear the buffer
19 display.clear_buffer()
20
21 r_width = 5
22 r_pos = display.height
23
24 color = Adafruit_EPD.BLACK
25 while r_pos > display.height/2:
26     if r_pos < display.height - 50:
27         color = Adafruit_EPD.RED
```

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```
28     display.rect(display.width - r_pos, display.height - r_pos,  
29                 display.width - 2*(display.width - r_pos),  
30                 display.height - 2*(display.height - r_pos), color)  
31     r_pos = r_pos - r_width  
32  
33 display.display()
```

5.2 adafruit_epd.epd - Adafruit EPD - ePaper display driver

CircuitPython driver for Adafruit ePaper display breakouts * Author(s): Dean Miller

class `adafruit_epd.epd.Adafruit_EPD` (*width, height, rst_pin, dc_pin, busy_pin, srcs_pin, cs_pin, spi*)

Base class for EPD displays

begin (*reset=True*)

Begin display and reset if desired.

command (*cmd, data=None, end=True*)

Send command byte to display.

data (*dat*)

Send data to display.

draw_pixel (*x, y, color*)

This should be overridden in the subclass

fill (*color*)

fill the screen with the passed color

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

fill a rectangle with the passed color

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

draw a horizontal line

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

draw a pixel

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

draw a rectangle

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

draw a vertical line

CHAPTER 6

Indices and tables

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