AdafruitPCD8544 Library Documentation

Release 1.0

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Contents

A display control library for Nokia 5110 PCD8544 monochrome displays

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.

1.1 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-pcd8544
```

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

```
sudo pip3 install adafruit-circuitpython-pcd8544
```

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-pcd8544
```

CHAPTER 2

Usage Example

See examples folder for demos of pixels, lines, and text!

CHAPTER 3

Documentation

API documentation for this library can be found on Read the 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/pcd8544_simpletest.py

```
# SPDX-FileCopyrightText: 2021 ladyada for Adafruit Industries
# SPDX-License-Identifier: MIT

import time
import board
import busio
import digitalio

import adafruit_pcd8544

# Initialize SPI bus and control pins
spi = busio.SPI(board.SCK, MOSI=board.MOSI)
dc = digitalio.DigitalInOut(board.D6)  # data/command
cs = digitalio.DigitalInOut(board.D5)  # Chip select
reset = digitalio.DigitalInOut(board.D9)  # reset

display = adafruit_pcd8544.PCD8544(spi, dc, cs, reset)

display.bias = 4
display.contrast = 60

# Turn on the Backlight LED
backlight = digitalio.DigitalInOut(board.D10)  # backlight
backlight.switch_to_output()
backlight.value = True

print("Pixel test")
```

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

# Set a pixel in the origin 0,0 position.
display.pixel(0, 0, 1)
# Set a pixel in the middle position.
display.pixel(display.width // 2, display.height // 2, 1)
# Set a pixel in the opposite corner position.
display.pixel(display.width - 1, display.height - 1, 1)
display.show()
time.sleep(2)

print("Lines test")
# we'll draw from corner to corner, lets define all the pair coordinates here
corners = (
    (0, 0),
    (0, display.height - 1),
    (display.width - 1, 0),
    (display.width - 1, display.height - 1),
)

display.fill(0)
for corner_from in corners:
    for corner_to in corners:
        display.line(corner_from[0], corner_from[1], corner_to[0], corner_to[1], 1)
display.show()
time.sleep(2)

print("Rectangle test")
display.fill(0)
w_delta = display.width / 10
h_delta = display.height / 10
for i in range(11):
    display.rect(0, 0, int(w_delta * i), int(h_delta * i), 1)
display.show()
time.sleep(2)

print("Text test")
display.fill(0)
display.text("hello world", 0, 0, 1)
display.text("this is the", 0, 8, 1)
display.text("CircuitPython", 0, 16, 1)
display.text("adafruit lib-", 0, 24, 1)
display.text("rary for the", 0, 32, 1)
display.text("PCD8544! :) ", 0, 40, 1)

display.show()

while True:
    display.invert = True
    time.sleep(0.5)
    display.invert = False
    time.sleep(0.5)
```

6.2 adafruit_pcd8544

A display control library for Nokia 5110 PCD8544 monochrome displays

- Author(s): ladyada

6.2.1 Implementation Notes

Hardware:

- Nokia 5110 PCD8544 Display

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: https://github.com/adafruit/circuitpython/releases
- Adafruit's Bus Device library: https://github.com/adafruit/Adafruit_CircuitPython_BusDevice

class adafruit_pcd8544.**PCD8544**(*spi*, *dc_pin*, *cs_pin*, *reset_pin=None*, ***, *contrast=80*, *bias=4*, *baudrate=1000000*)

Nokia 5110/3310 PCD8544-based LCD display.

bias
The cached bias value

contrast
The cached contrast value

extended_command(*cmd*)
Send a command in extended mode

invert
Whether the display is inverted, cached value

reset()
Reset the display

show()
write out the frame buffer via SPI

write_cmd(*cmd*)
Send a command to the SPI device

CHAPTER 7

Indices and tables

- genindex
- modindex
- search

Python Module Index

a

Index