AdafruitST7789 Library Documentation

Release 1.0

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Contents

displayio driver for ST7789 TFT-LCD displays.

CHAPTER 1

Dependencies

This driver depends on:

- Adafruit CircuitPython 4.0.0-beta.0+

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 board
import displayio
from adafruit_st7789 import ST7789

spi = board.SPI()
while not spi.try_lock():
    pass
spi.configure(baudrate=24000000) # Configure SPI for 24MHz
spi.unlock()
tft_cs = board.D5
tft_dc = board.D6

displayio.release_displays()
display_bus = displayio.FourWire(spi, command=tft_dc, chip_select=tft_cs, reset=board.
↪D9)

display = ST7789(display_bus, width=240, height=240, rowstart=80)

# Make the display context
splash = displayio.Group(max_size=10)
display.show(splash)

color_bitmap = displayio.Bitmap(240, 240, 1)
color_palette = displayio.Palette(1)
color_palette[0] = 0xFF0000

bg_sprite = displayio.TileGrid(color_bitmap,
                               pixel_shader=color_palette,
                               x=0, y=0)
splash.append(bg_sprite)

while True:
    pass
```

CHAPTER 3

Contributing

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

CHAPTER 4

Documentation

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

CHAPTER 5

Table of Contents

5.1 Simple test

Ensure your device works with this simple test.

Listing 1: examples/st7789_simpletest.py

```
"""
This test will initialize the display using displayio and draw a solid green
background, a smaller purple rectangle, and some yellow text.
"""
import board
import displayio
import terminalio
from adafruit_display_text import label
from adafruit_st7789 import ST7789

# Release any resources currently in use for the displays
displayio.release_displays()

spi = board.SPI()
tft_cs = board.D5
tft_dc = board.D6

display_bus = displayio.FourWire(
    spi, command=tft_dc, chip_select=tft_cs, reset=board.D9
)

display = ST7789(display_bus, width=240, height=240, rowstart=80)

# Make the display context
splash = displayio.Group(max_size=10)
display.show(splash)

```

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```
color_bitmap = displayio.Bitmap(240, 240, 1)
color_palette = displayio.Palette(1)
color_palette[0] = 0x00FF00  # Bright Green

bg_sprite = displayio.TileGrid(color_bitmap, pixel_shader=color_palette, x=0, y=0)
splash.append(bg_sprite)

# Draw a smaller inner rectangle
inner_bitmap = displayio.Bitmap(200, 200, 1)
inner_palette = displayio.Palette(1)
inner_palette[0] = 0xAA0088  # Purple
inner_sprite = displayio.TileGrid(inner_bitmap, pixel_shader=inner_palette, x=20,␣
↪y=20)
splash.append(inner_sprite)

# Draw a label
text_group = displayio.Group(max_size=10, scale=2, x=50, y=120)
text = "Hello World!"
text_area = label.Label(terminalio.FONT, text=text, color=0xFFFF00)
text_group.append(text_area)  # Subgroup for text scaling
splash.append(text_group)

while True:
    pass
```

5.2 adafruit_st7789

Displayio driver for ST7789 based displays.

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5.2.1 Implementation Notes

Hardware:

- Adafruit 1.54" 240x240 Wide Angle TFT LCD Display with MicroSD: https://www.adafruit.com/product/3787

Software and Dependencies:

- Adafruit CircuitPython firmware for the supported boards: https://github.com/adafruit/circuitpython/releases

class adafruit_st7789.**ST7789**(*bus*, ***kwargs*)
ST7789 driver

CHAPTER 6

Indices and tables

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- search

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