Adafruit IS31FL3731 Library Documentation

Release 1.0

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CircuitPython driver for the IS31FL3731 charlieplex IC.

This driver supports the following hardware:

- Adafruit 16x9 Charlieplexed PWM LED Matrix Driver - IS31FL3731
- Adafruit 15x7 CharliePlex LED Matrix Display FeatherWings

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

Matrix:

```
import adafruit_is31fl3731
import board
import busio
with busio.I2C(board.SCL, board.SDA) as i2c:
    display = adafruit_is31fl3731.Matrix(i2c)
    display.fill(127)
```

Charlie Wing:

```
import adafruit_is31fl3731
import board
import busio
with busio.I2C(board.SCL, board.SDA) as i2c:
    display = adafruit_is31fl3731.CharlieWing(i2c)
    display.fill(127)

    # Turn off pixel 4,4, change its brightness and turn it back on
    display.pixel(4, 4, 0)   # Turn off.
    display.pixel(4, 4, 50)  # Low brightness (50)
    display.pixel(4, 4, 192) # Higher brightness (192)
```

CHAPTER 3

Contributing

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

CHAPTER 4

API Reference

4.1 adafruit_is31fl3731

CircuitPython driver for the IS31FL3731 charlieplex IC.

This driver supports the following hardware:

- ‘Adafruit 16x9 Charlieplexed PWM LED Matrix Driver - IS31FL3731

<https://www.adafruit.com/product/2946>‘_ * Adafruit 15x7 CharliePlex LED Matrix Display FeatherWings

- Author(s): Tony DiCola

class adafruit_is31fl3731.**CharlieWing**(*i2c*, *address=116*)

Supports the Charlieplexed feather wing

static pixel_addr(*x*, *y*)

Calulate the offset into the device array for x,y pixel

class adafruit_is31fl3731.**Matrix**(*i2c*, *address=116*)

The Matrix class support the main function for driving the 16x9 matrix Display :param ~adafruit_bus_device.i2c_device i2c_device: the connected i2c bus i2c_device :param address: the device address; defaults to 0x74

audio_play(*sample_rate*, *audio_gain=0*, *agc_enable=False*, *agc_fast=False*)

Controls the audio play feature

audio_sync(*value=None*)

Set the audio sync feature register

autoplay(*delay=0*, *loops=0*, *frames=0*)

Start autoplay :param delay: in ms :param loops: number of loops - 0->7 :param frames: number of frames: 0->7

blink(*rate=None*)

Updates the blink register

fade (*fade_in=None*, *fade_out=None*, *pause=0*)

Start and stop the fade feature. If both fade_in and fade_out are None (the default), the breath feature is used for fading. if fade_in is None, then fade_in = fade_out. If fade_out is None, then fade_out = fade_in

param fade_in positive number; 0->100

param fade-out positive number; 0->100

param pause breath register 2 pause value

fill (*color=None*, *blink=None*, *frame=None*)

Fill the display with a brightness level :param color: brightness 0->255 :param blink: True if blinking is required :param frame: which frame to fill 0->7

frame (*frame=None*, *show=True*)

Set the current frame :param frame: frame number; 0-7 or None. If None function returns current frame :param show: True to show the frame; False to don't force a show

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

Set blink or brightness for an x,y pixel :param x: horizontal pixel position :param y: vertical pixel position :param color: brightness value 0->255 :param blink: True to blink :param frame: the frame to set the pixel

static pixel_addr (*x*, *y*)

Calulate the offset into the device array for x,y pixel

reset ()

Kill the display for 10MS

sleep (*value*)

Set the Software Shutdown Register bit :param value: True to set software shutdown bit; False unset

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