

Making LVGL Work in Arduino

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1. Software Download

- a. ESP32_Display_Panel (v0.2.1)
- b. ESP32_IO_Expander (prompted to install when installing the previous)
- c. LVGL (8.4.0)
- d. SquareLine Studio (1.3.4) [SquareLine Studio](#)

2. Open the example program in **Arduino**:

- a. File > Examples > ESP_Display_Panel > SquareLine > v8 > Porting
- b. File > Save as...
- c. Save the file in an easy-to-access place

3. Porting.ino

- a. Add the highlighted include statement

```
#include <Arduino.h>
#include <ESP_Panel_Library.h>
#include <lvgl.h>
#include "screens/ui_Screen1.c" //Placed before ui.h
#include <ui.h>
#include "lvgl_port_v8.h"
```

4. ESP_Panel_Board_Custom.h (tab open in Arduino)

- a. Ensure that each of the following has the listed value.

<u>PROPERTY</u>	<u>VALUE</u>
#define ESP_PANEL_USE_CUSTOM_BOARD	(1)
#define ESP_PANEL_USE_LCD	(1)
#define ESP_PANEL_LCD_NAME	ST7796
#define ESP_PANEL_LCD_WIDTH	(320)
#define ESP_PANEL_LCD_HEIGHT	(480)
#define ESP_PANEL_LCD_COLOR_BITS	(16)
#define ESP_PANEL_LCD_BGR_ORDER	(1)
#define ESP_PANEL_LCD_INEVRT_COLOR	(1)
#define ESP_PANEL_LCD_MIRROR_Y	(1)
#define ESP_PANEL_LCD_IO_RST	(1)
#define ESP_PANEL_LCD_RST_LEVEL	(0)

5. ESP_Panel_Library.h

- a. Navigate to Arduino folder > Libraries > ESP_Display_Panel > scr
- b. Add the following to the */LCD*/ section in the header file
 - i. #include "lcd/ST7796.h"

6. lv_conf.h

- a. Navigate to Arduino folder > Libraries > lvgl
- b. Copy lv_conf_template.h into the project folder (Step 2c)
- c. Rename it to lv_conf.h
- d. Ensure that each of the following has the listed value.

<u>PROPERTY</u>	<u>VALUE</u>
#if	1
#define LV_COLOR_DEPTH	16
#define LV_COLOR_16_SWAP	1
#define LV_DPI_DEF	166

7. SquareLine Studio

- a. Create > Arduino > Arduino with TFT_eSPI (v1.1.1)
- b. Project Settings:

Resolution:	480	320	//(Width x Height)
Rotation:	0 degree		
Color Depth:	16-bit swap		
LVGL version:	8.3.6		

Previous Attempt:

1. Set up lv_conf.h
 - a. Change #if 0 to #if 1
 - b. Copy the file into the arduino libraries folder
2. Set up tft eSPI User_Settings file
3. Copy examples and demos to specified folders.
4. Fix include in lv_example_style_14
 - a. Add a ../ to the lv_theme_private include to match:
#include "../../src/themes/lv_theme_private.h"
5. Fix include in lv_example_scale_7
 - a. Add a ../ to the lvgl_private include to match:
#include "../../src/lvgl_private.h"
6. CRY