

TinyScreen OLED TinyShield - ASD2431-R

tinycircuits.com/collections/leds-displays/products/tinyscreen



DESCRIPTION

Update: Be sure to check out the [TinyScreen+](#), an updated version that puts the processor, USB, battery charging and TinyScreen into a single board!

Originally Launched on [Kickstarter!](#)

TinyScreen is a beautiful color OLED display for your TinyDuino system. Create video games, a video player, or your own smart watch using this Tiny OLED screen! The screen is 0.96" diagonal with a resolution of 96x64 RGB pixels, each with 16-bit color. Since this is an OLED, there is no backlight needed and the screen is very bright with excellent colors. Four buttons are located along the side of the screen to allow for user input - like for playing games or creating menus for your projects (like is done on the TinyScreen Smartwatch project). The screen has a built in IO expander over I2C for control signals and button control, which eliminates using extra pins on the TinyDuino for this.

The screen uses an SSD1331 driver for the OLED display, and we have a highly optimized and easy to use library for this which supports both the OLED screen and the buttons on the board, even allowing for 20FPS+ video

playback from a microSD with the TinyDuino. It's also very easy to create your own projects to display text and graphics, or create your own tiny games.

The TinyScreen is also available with an alternative device address, which allows two TinyScreens to be used on the same TinyDuino stack when used with a [Ribbon Cable Extender](#) or with a TinyScreen+.

To learn more about the **TinyDuino Platform**, click [here](#)

TECHNICAL DETAILS

To see what other TinyShields this will work with or conflict with, check out the [TinyShield Compatibility Matrix](#)

TinyScreen Specs

- 96x64 OLED display, 16-bit color depth
- 0.96" (24.4mm) viewable area
- Total Size: 1.02" x 0.98" (25.8mm x 25.0mm)
- SSD1331 display controller
- Software controllable backlight (OLED brightness)
- Power down mode
- Four push buttons along the sides (connected to IO pins)

TinyDuino Power Requirements

- Voltage: 3.0V - 5.5V
- Current: 20 - 45mA (depending on brightness), due to the current requirements, this board cannot be run using the TinyDuino coin cell option

Pins Used

SPI and I2C Interface used:

- **A5/SCL** - I2C Serial Clock line
- **A4/SDA** - I2C Serial Data line
- **11 - SCLK**: This signal is the serial SPI clock out of the TinyDuino and into the TinyScreen.
- **13 - MOSI**: This signal is the serial SPI data out of the TinyDuino and into the TinyScreen.
- Note: SPI Chip select and button inputs are handled by the on-board I2C GPIO expander.

Dimensions

- Dimensions: 25.8mm x 25mm (1.01 inches x .984 inches)
- Max Height (screen surface to bottom of TinyShield connector): 4.40mm (0.173inches)
- Weight: 3.2 grams (.113 ounces)

Notes

- The TinyScreen library can be downloaded through the Arduino IDE menu at Sketch->Include Library->Manage Libraries... "TinyScreen"
 - TinyScreen Revision 5 boards can shut down the OLED boost converter for better power-down consumption, supported by our latest software library.
 - TinyScreen is also available with an alternative device address, which allows two TinyScreens to be used on the same TinyDuino stack when used with a [Ribbon Cable Extender](#) or with a TinyScreen+.
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