Matrix Portal Sand Handles
Created by Ruiz Brothers

https://learn.adafruit.com/matrix-portal-sand

Last updated on 2023-08-29 04:31:34 PM EDT
# Table of Contents

## Overview
- Parts

## 3D Printing
- Parts List
- Fusion360 links
- Slicing Parts

## Assembly
- Align Handles
- Plug in Matrix Portal
- Power Cables
- Attach USB cable
- Attach Acrylic
Overview

In this project we’re making 3D printed handles for the Adafruit Matrix Portal.

The Adafruit Matrix Portal is a plug-n-play dev board that makes it easier to do internet connected projects using RGB matrices.

It features a Cortex M4 and the ESP32. It also has an on-board LIS3DH accelerometer.

With the STEMMA QT connector it can work with Adafruit’s 50 plus Stemma QT boards.
Matrix Portal is designed to snap on the back of RGB matrices that use a HUB75 port.

It uses power over USB-C so there’s no soldering needed to get up and running.

We think this makes RGB matrix projects much more compact with a single board.

The handle on the side has a cut out for the PCB so you can access the on-board components.

Parts

Adafruit Matrix Portal - CircuitPython Powered Internet Display
Folks love our wide selection of RGB matrices and accessories, for making custom colorful LED displays... and our RGB Matrix Shields...
https://www.adafruit.com/product/4745
64x32 RGB LED Matrix - 4mm pitch
Bring a little bit of Times Square into your home with this sweet 64 x 32 square RGB LED matrix panel. These panels are normally used to make video walls, here in New York we see them...
https://www.adafruit.com/product/2278

Black LED Diffusion Acrylic Panel 12" x 12" - 0.1" / 2.6mm thick
A nice whoppin' slab of some lovely black acrylic to add some extra diffusion to your LED Matrix project. This material is 2.6mm (0.1") thick and is made of special cast...
https://www.adafruit.com/product/4594

USB Battery Pack - 2200 mAh Capacity - 5V 1A Output
A smaller-sized rechargeable battery pack for your Raspberry Pi or Raspberry...
https://www.adafruit.com/product/1959

Mini Magnet Feet for RGB LED Matrices (Pack of 4)
Got a glorious RGB Matrix project you want to mount and display in your workspace or home? If you have one of the matrix panels listed below, you'll need a pack of these...
https://www.adafruit.com/product/4631
3D Printing

Parts List
STL files for 3D printing are oriented to print "as-is" on FDM style machines. Parts are designed to 3D print with minimal support material. Original design source may be downloaded using the links below.

Left-Matrix-Handle.stl
Right-Matrix-Handle.stl

Download CAD files from Thingiverse
Download CAD files from Prusa Printers

Fusion360 links

Edit Handles

Slicing Parts
Slice with setting for PLA material. The parts were sliced using CURA using the slice settings below.

PLA filament 215c extruder
0.2 layer height
10% gyroid infill
60mm/s print speed
60c heated bed
4% support density
Assembly

Align Handles
Position both handles so they are aligned with the screw mounts on the back of the matrix.

Use M3 screws or our magnet thumb screws () to secure the handles to the matrix display.

Plug in Matrix Portal
The HUB75 port press fits into data in port on the back of the matrix.

Power Cables
The included power cables attach to the power and ground screw mounts with the included screws.

The female side of the power cable plugs into the VCC and GND pins.
Attach USB cable
A USB C cable plugs into the USB port on the Matrix Portal.

Use a right angled USB cable or right angle extender to keep the wiring minimal.

Use a USB battery pack like our small 2200 mAh USB Battery Pack. ()

Attach Acrylic
Our Black LED acrylic () softens up the LEDs and keeps the colors looking vibrant.

You can attach acrylic to the display using ProTapes glue dash sheets.

Just attach small pieces to the corners and remove the protective backing.

Then just line up the acrylic with the edges and stick it over the display.

This makes the display show up much better on camera so you can have it in the background of your video calls.