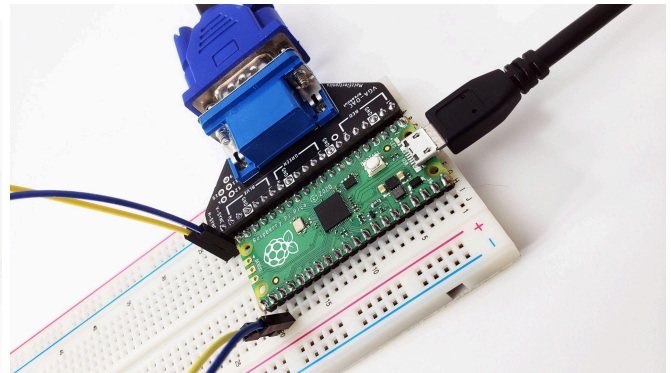
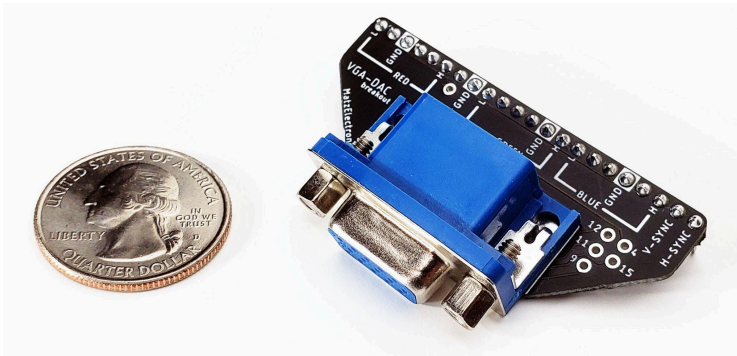


VGA-DAC Module

By [MatzElectronics](#)

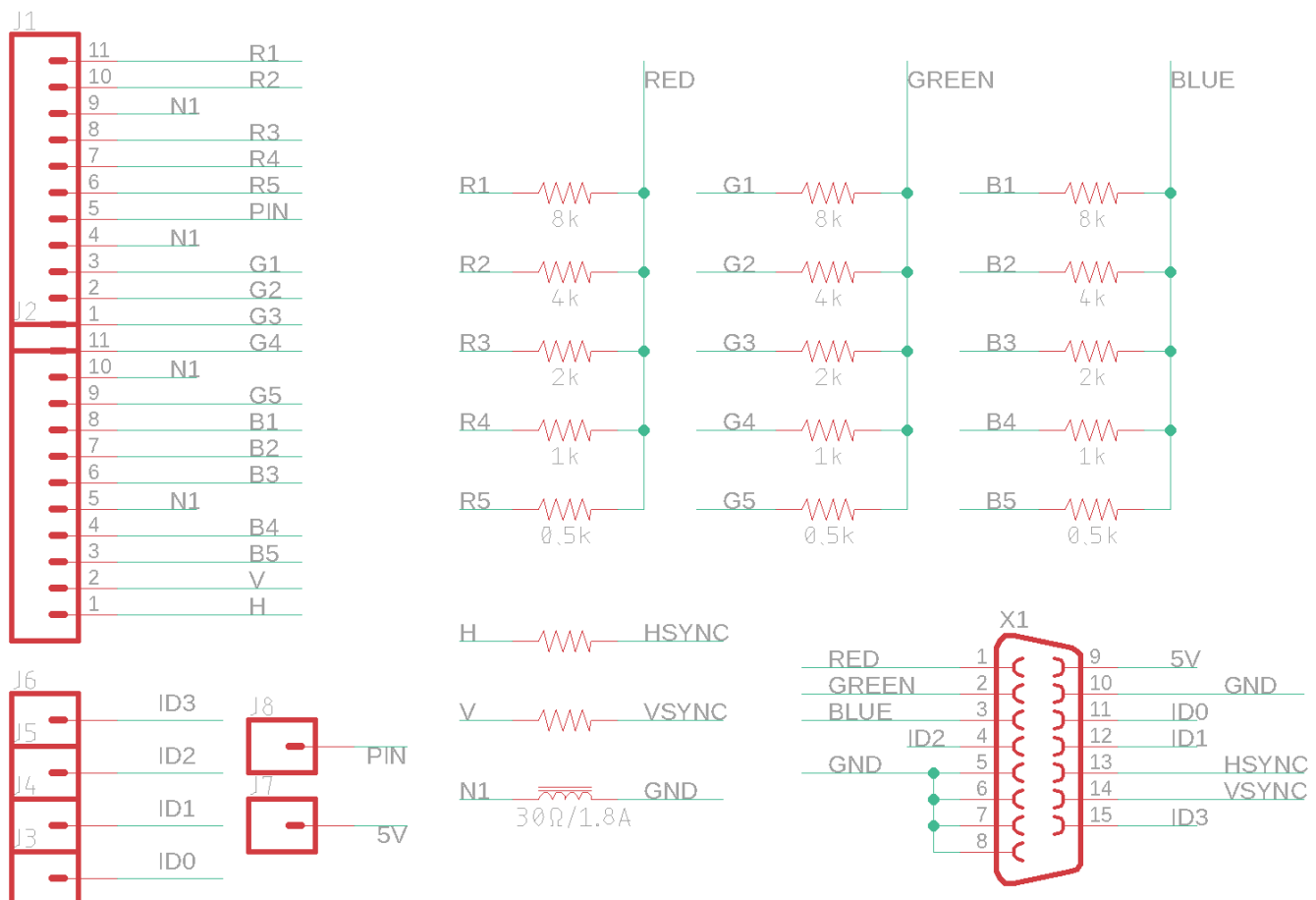
Available for purchase on [Tindie.com](#)



The VGA-DAC is a module designed to connect any microcontroller and output up to 5-bits per color to any monitor or TV with a VGA input.

The form-factor of the module is primarily designed for use with the Raspberry Pi Pico microcontroller module, and is based on the DAC circuit described in this

Schematic:



Raspberry Pi Pico:

Forum posts on the topic: <https://www.raspberrypi.org/forums/viewtopic.php?f=144&t=304267#p1826947>

Hardware reference guide from Raspberry Pi Org:

<https://datasheets.raspberrypi.org/rp2040/hardware-design-with-rp2040.pdf>

Example Code: <https://github.com/raspberrypi/pico-playground>

Video of examples running:

<https://www.hackster.io/news/learn-how-to-get-vga-video-output-from-a-raspberry-pi-pico-f97c8ead9dee>

Arduino UNO or similar:

Most of the Arduino examples are 1 bit/color. Simply connect the HSYNC and VSYNC pins from the Arduino to the VGA module. Then, connect each “color” pin to the “H” pin for each of the red, green, and blue colors of the VGA module. Then, connect the ground of the module to the ground of the Arduino.

<https://forum.arduino.cc/t/turn-your-uno-into-a-vga-output-device/99969>

uChip (Cortex M0):

<https://next-hack.com/index.php/2020/06/05/vga-library-for-uchip-with-usb-host-support-and-uchip-simple-vga-console/>

ESP32:

Bitluni did some amazing work here, and this module is compatible with his examples. Here’s a youtube link, and from there, you can follow links to his repos:

https://www.youtube.com/watch?v=qJ68fRff5_k

Parallax Propeller 1 (P8X32A), and Propeller 2:

The Propeller (P8X32A) will generate up to 3-bits/color, so just connect the module accordingly, starting with the “H” bit for each color. The example here will work with the module using different jumper wires

<https://learn.parallax.com/tutorials/language/propeller-c/propeller-c-simple-devices/vga-text-display>

It will work with the Propeller 2 as well, and if you’re smart enough to know how to work with the P2, you can probably figure out how to wire this thing up to it ;)