Pimoroni Pico VGA Demo Base

PIM553

Built especially to showcase the low cost, feature-rich RP2040 chip on the Raspberry Pi Pico, this board has VGA output, an SD card slot, digital I2S audio output, and more!

Based on the reference design by Raspberry Pi, our Pimoroni Pico VGA Demo Base is a great way to start experimenting with Raspberry Pi Pico/RP2040. It's the perfect way to demo of some of the fun things you can achieve with the RP2040 microcontroller such as generating a solid VGA output without taxing the CPU at all!

- Amaze your friends by showing them you still own a D-sub cable!
- Bask in the glory of 15-bit analog video!
- Get teary eyed over the warm, authentic, RC filtered PWM audio!

This board will run the various video **example programs** that Raspberry Pi have put together to demonstrate features of the RP2040.

Please note that VGA Demo Base only currently works with the C/C++ Pico SDK!

A **Raspberry Pi Pico is not included** - **click here** if you'd like to buy one!

Your Pico will need to have male headers soldered to it (with the pins pointing downwards) to attach to our add-on boards.

Features

- 15-pin VGA (D-sub) connector
- PCM5100A DAC for line out audio over I2S (**datasheet**)
- PWM audio output
- SD card slot
- Reset button
- Female headers to install your Raspberry Pi Pico
- Three user-controllable switches
- Rubber feet
- Compatible with Raspberry Pi Pico
- No soldering required (as long as your Pico has header pins attached)
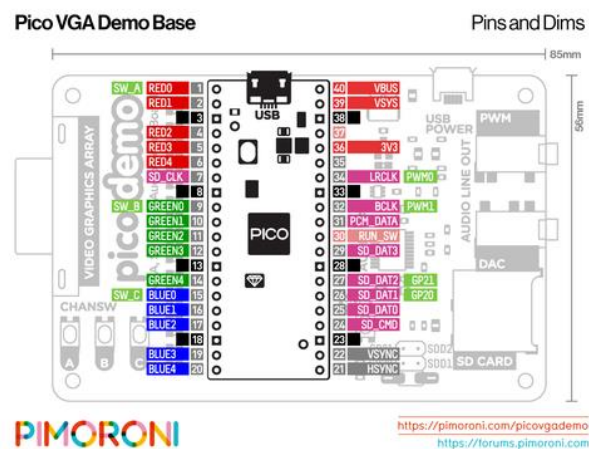- Programmable with C/C++

Getting started

The pin-out of our board is the same as Raspberry Pi's reference board, you can find it in chapter 3 of **Hardware Design with RP2040** along with more general info about the VGA reference board.

To run the audio and video examples in Raspberry Pi's experimental repos, first make sure you have up to date versions of **pico-extras** and **pico-playground**. When building the examples, you will need to specify the board configuration so that the examples use the correct pins. You can do this by creating a new build directory and then specifying the board definition when using cmake:

```
cmake -D"PICO_BOARD=vgaboard" ..
```

There's more details on about how to build applications with custom board configurations in Appendix D / page 267 of the **C/C++ SDK documentation**.

Pinout

About Raspberry Pi Pico

Raspberry Pi Pico is a flexible, low cost **microcontroller development board** from the folks at Raspberry Pi, based on their very own chip - the RP2040. It's easily programmable over USB with C/C++ or MicroPython, and ideal for using in all sorts of physical computing projects, devices and inventions - we're so excited to see what you make with it!

We've called our Pico-sized add-ons **packs**, as they're designed to attach to the back of your Pico as if it were wearing a very stylish backpack (or a miniature jet pack, if you prefer). We've also got Pico **bases** (larger add-on boards with a space to mount your Pico on top) and some other boards that let you do interesting hackerly things like using multiple packs at once - **click here** to view them all!