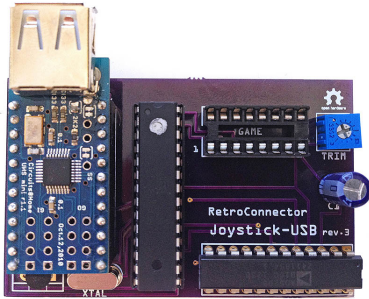# RetroConnector

USB Joystick Interface for Apple II

Thank you for purchasing this RetroConnector by Option8.
Please refer to this resource:
https://github.com/option8/RetroConnector/tree/master/USB_Joystick

If you have questions, please contact us via:
http://retroconnector.com/contact

Overview

The RetroConnector USB Joystick Interface connects a modern USB controller to an Apple II, without needing special software. It communicates with USB joysticks that use a generic USB protocol and don't require drivers. The Apple II provides power to the board and USB port through the Game Port.

The board has a DIP16 connector and comes with a 16-pin to 16-pin cable for connecting to an Apple II internal Game Port. The optional 16-pin to 9-pin adapter is required for the Apple IIc/IIc+ or anyone who prefers to connect to a 9-pin port.

Compatible Joysticks and Gamepads

Inexpensive, generic gamepads work best, since they do not use the USB connection to charge a battery or drive rumble motors. If you have successfully, or unsuccessfully, used a pad not on this list, please contact me and I will update the list.

Compatible

• PS3-style generic: http://www.amazon.com/gp/product/B002NQ4820
• Super Nintendo generic (with latest firmware): http://www.amazon.com/gp/product/B002JAU20W
• MadCatz USB Gamepad Pro 400 Series: http://www.gameseek.co.uk/pd/pcnt7swcqmtyh46ktq

NOT Compatible

• PS3 Wireless Sixaxis controller (Dualshock or Original)
• XBox 360 wired controller

Plug and Play

Plug one end of the included 16-pin cable into the GAME port on the logic board of your Apple II. If your computer doesn't have a 16 pin port (e.g. Apple //c) use the optional 16-pin to 9-pin adapter by plugging one end of the 16-pin cable into the adapter, and the adapter into the 9-pin paddle/joystick port on the back of your computer. Plug the other end of the 16-pin cable into the port on the RetroConnector Joystick Interface.

The 16-pin ribbon cable will have an indicator on one edge as to which is pin #1. Be sure that this edge lines up with the pin labeled #1 on the RetroConnector Joystick Interface board, or look for the notch in the DIP16 port. This notch indicates the end where pins #1 and #16 are. Plug your USB joystick or gamepad into the USB port on the RetroConnector Joystick Interface.

The Joystick Interface will detect which axes are active on the joystick once you start to move them. The first axis it detects in order is X (horizontal), and the second is Y (vertical). On most gamepads with dual thumbsticks, this will be the left stick.

The buttons on your gamepad should each trigger either the 0 or 1 button (even numbered buttons trigger 0, odd ones trigger 1), so you can use whichever pair of buttons is comfortable.

Calibration

To calibrate the RetroConnector Joystick Interface board, type this at your Apple II BASIC prompt:

```
10 print pdl(0) " " pdl(1)
20 goto 10
```

Then type *RUN* and hit enter. While the resulting numbers scroll down the screen, use a small screwdriver to adjust the board's trim potentiometer (labeled "TRIM") so the first two numbers are as close to 127 as possible. They may not be equal, so try to split the difference. Most Apple II programs allow for a certain "dead zone" in the middle of the values, so it's not necessary to be precisely 127 at center.

To test buttons along with joystick calibration, the above program can be adjusted:

```
10 print pdl(0) " " pdl(1) " " peek(-16287) " " peek(-16286)
20 goto 10
```

The last two values are button 1 and 2. Buttons should be *above* 127 when pressed, and *below* 127 when released.

Special Thanks To

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