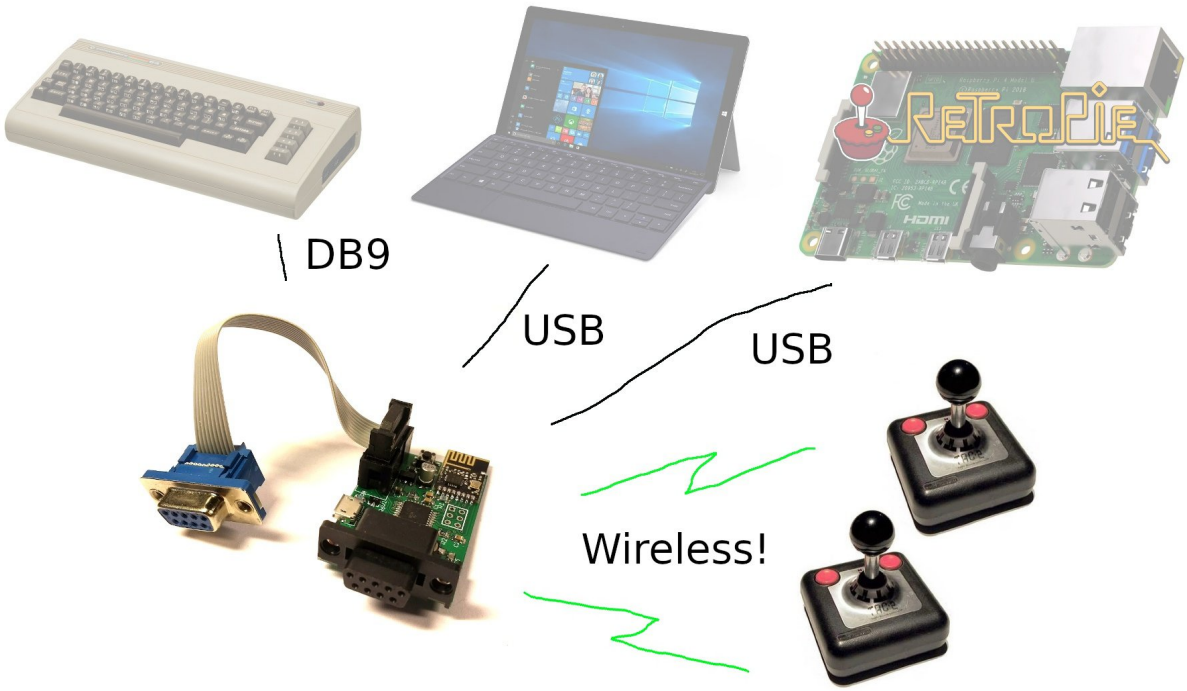
Chroma Wirecutter

Wireless joystick kit

2020-10-09



Content

Parts

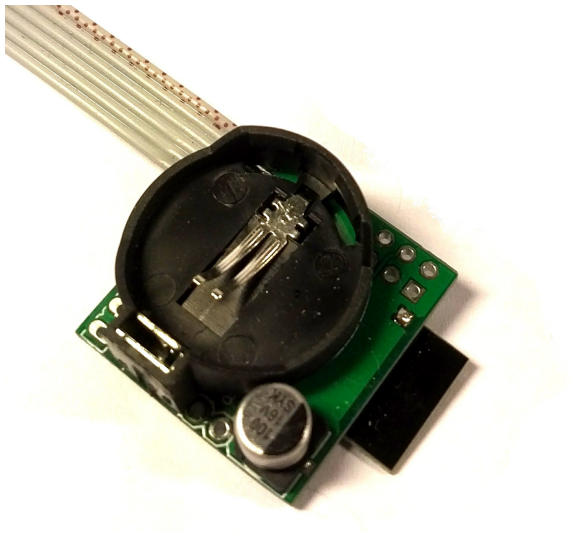
The transmitters

There are two types of transmitters: internal and external.

Both use a CR2032 battery as their power source. There is no need for a power switch, when done playing just put the joystick aside. In this state the battery should last for 10 years. With intense gaming an hour every day the battery should last a year.

Internal transmitter

The internal transmitter is mounted inside a digital joystick and connects to the switches/buttons within.



There is currently two connection options for the internal transmitters:

- Bare wire ends that needs to be soldered inside the joystick or solder on your own connectors.
- Female spade connectors that will fit directly on the spade connectors in a TAC-2. This is a completly recoverable modification to the TAC-2, the wire harness can be reinstalled later if desired.

Most TAC-2 has the spade connectors, but some have the wires soldered instead.

The Joystick works by shorting pins to ground. When pushing left the left wire is short to ground. The transmitter detects this and transmits it to the receiver board.

To connect/solder the wires to the correct function inside the joystick, this is the function/order of the wires:

- Button 2 (Not used very often.)
- Button 1
- Right
- Left
- Down
- Up
- Ground (Is marked, see below.)

The ground connection wire is always marked in at least one of the following ways:

- A red marking.
- It is longer than the others.
- It will have 2-3 spade connectors attached instead of one.

REMINDER: Depending on the internal design of the joystick, the connectors might be mirrored like they are in the TAC-2.

When looking at an open TAC-2 from above with the wire going up/away from you everything should be connected mirrored. Connect the down wire to the upper spade connector, up wire to the lower, right wire to the left and left wire to the right.

Mount the transmitter inside the joystick. It can easily be done with 1-2mm thick double sided tape. Make sure that the internal board is away from metal parts or insulate it with shrink wrap or electrical tape.

Make sure you can close the joystick without crushing the board.

External transmitter

An external transmitter is connected directly to the standard DB9 digital joystick connector of any joystick.

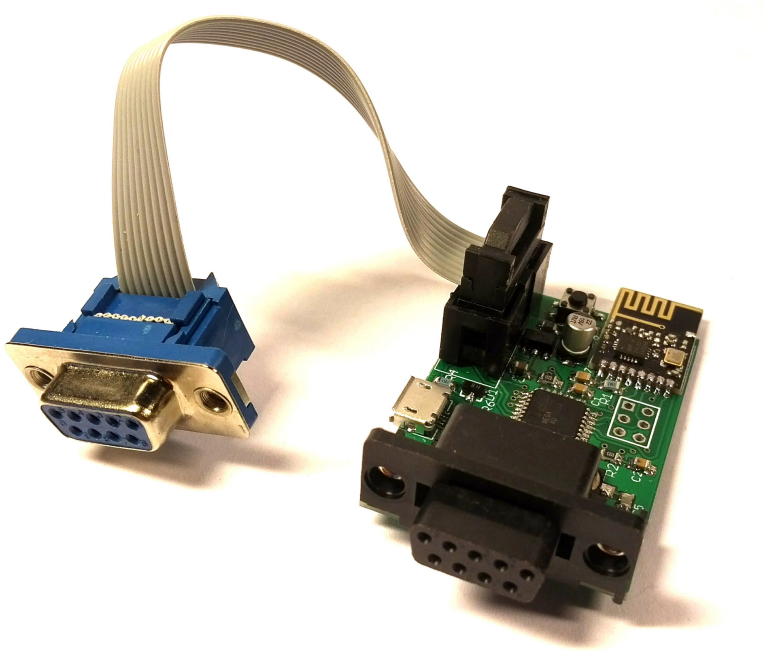
The jumper on the board is to feed the joystick with power. If closed the joystick is supplied with 3V from the CR2032. This might be enough to make a CD32 controller work at all as an ordinary joystick and make joysticks with auto fire work .
The battery life might become very short.

The receiver board

The receiver board receives movement from the transmitters and feed it into any retro computer with Atari style digital joystick DB9M connectors or into a computer with USB and support for Joystick HID. (Windows/Mac/Android/Raspberry Pi/...)

The green LED indicate power. The orange LED turns on while in pairing mode.

The black connector on the PCB is ”joystick 1” and the blue on the flat cable is ”joystick 2”. When connected via USB the order might depend on OS.



Pairing transmitters to the receiver.

It is normal to have two transmitters (joysticks) paired to one receiver board.
One transmitter paired as ”joystick 1” and one as ”joystick 2”.
But there is no limit on the number of transmitters that can be paired to a received board.

To pair a transmitter to a receiver do the following:

1. If the transmitter is already paired to another receiver, make sure that receiver is off.
2. Push the button on the receiver you want to pair the transmitter to.
3. Within 20 seconds (while orange LED is on):
    - Push left at least 5 times to pair as joystick 1.
    - Push right at least 5 times to pair as joystick 2.
4. Orange LED turns off at once after successful pairing. Done.