

DMD Extender V2

Raspberry Pi Installation
Addendum

V2.0 May 2015

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Important



The user installs the DMD Extender entirely at their own risk – Dr Pinball will not accept responsibility for damage or other problems caused by this system or its use.

The installation instructions are given purely as a guide. The user must exercise caution when performing the installation.



The Raspberry Pi receives its power from the pinball machine itself. Do not connect an external 5V supply to the Raspberry Pi power socket.

Introduction

This document is an addendum to the other installation documents for the DMD Extender. The details below show how all supported versions of Raspberry Pi are installed using the DMD Extender interface board version v2.

Installation Guide

These instructions relate to Version 2 of the DMD Extender interface, as shown in figure 1.

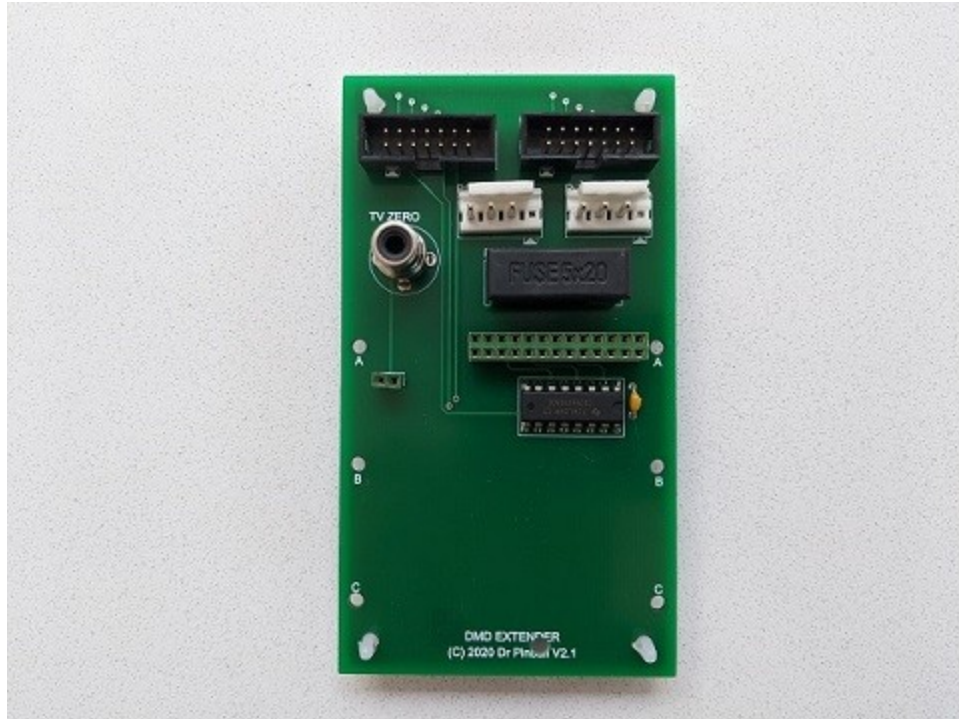


Figure 1 – DMD Extender Interface Board v2

This board supports the use of different versions of Raspberry Pi, as follows:

- Raspberry Pi 1 Model A+
- Raspberry Pi 1 Model B+
- Raspberry Pi Zero
- Raspberry Pi Zero W

Please note that Raspberry Pi 2, 3 and 4 are not supported.

Each of the following sections detail installation for each Raspberry Pi type - each one has a different method of mounting onto the interface board and connecting the video cables.

Raspberry Pi Model 1 A+ / B+

Raspberry Pi models A+ and B+ are shown in figures 2 and 3.

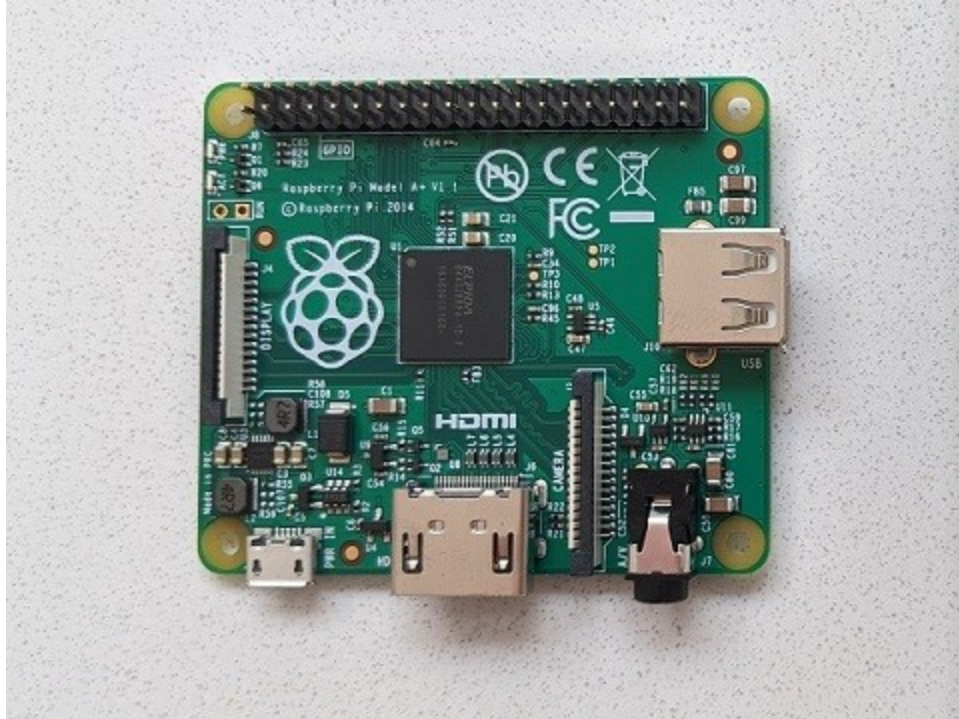


Figure 2 – Raspberry Pi Model 1 A+

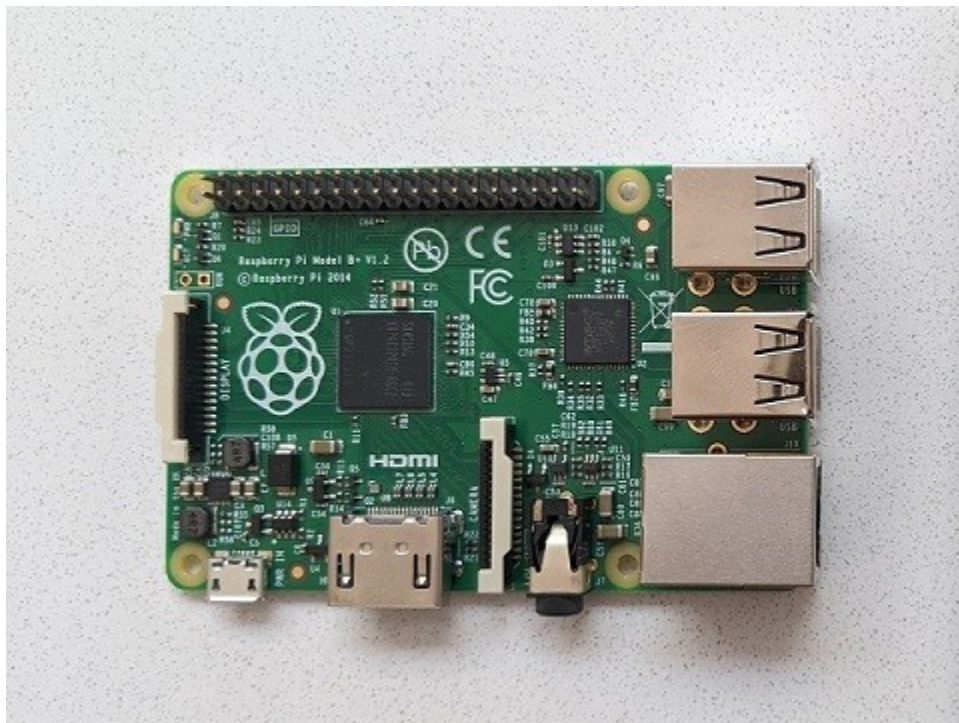


Figure 3 – Raspberry Pi Model 1 B+

The DMD Extender is supplied with 4 mounting posts which should be put into the correct holes as shown in figure 4.

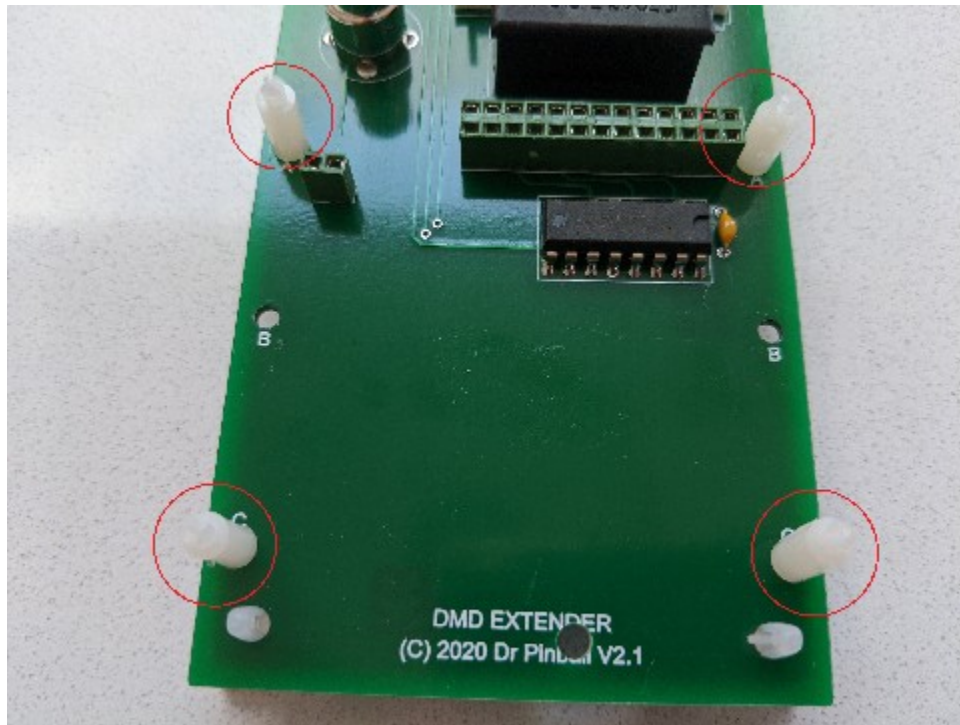


Figure 4 – Mounting post placement for A+ / B+

N.B. The DMD Extender does not use all of the connector pins of the Raspberry Pi – only 26 are needed, as shown in figure 5.

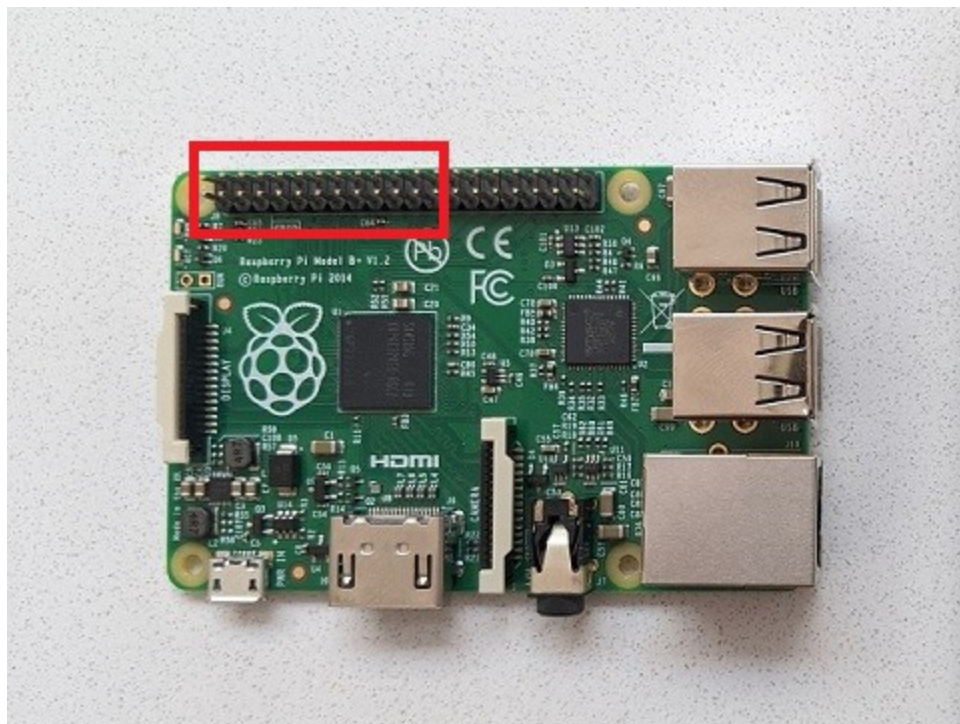


Figure 5 – Raspberry Pi Connector Pins

The Raspberry Pi can then be carefully mounted on the DMD Extender by lining up the posts and connector and pushing into place. Correctly mounted Raspberry Pi A+ and B+ are shown in figures 6 and 7.

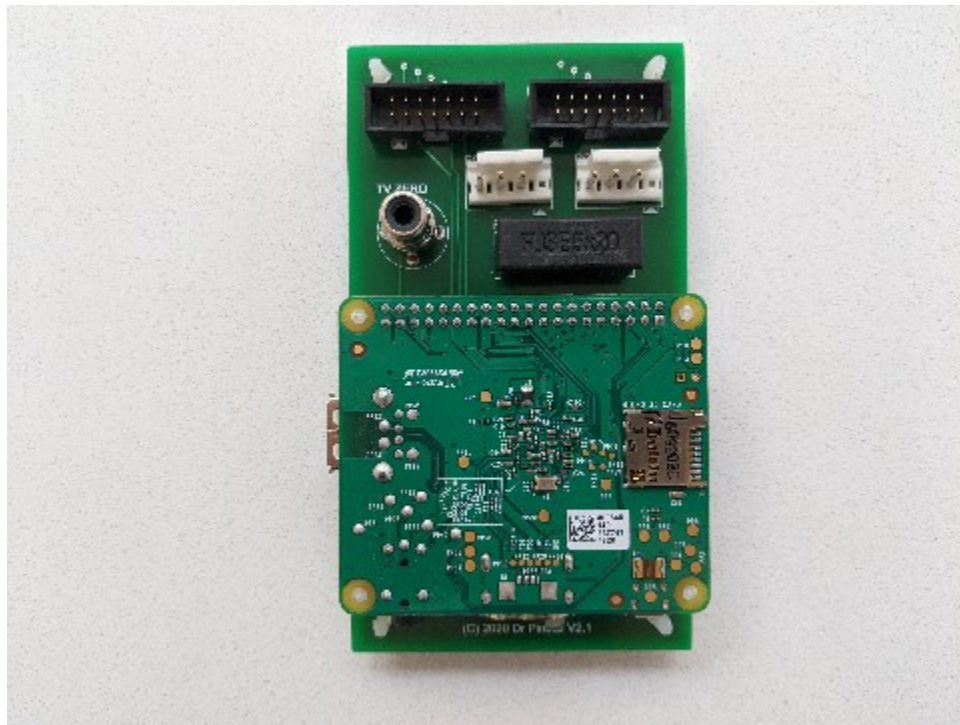


Figure 6 – Raspberry Pi A+ mounted on DMD Extender

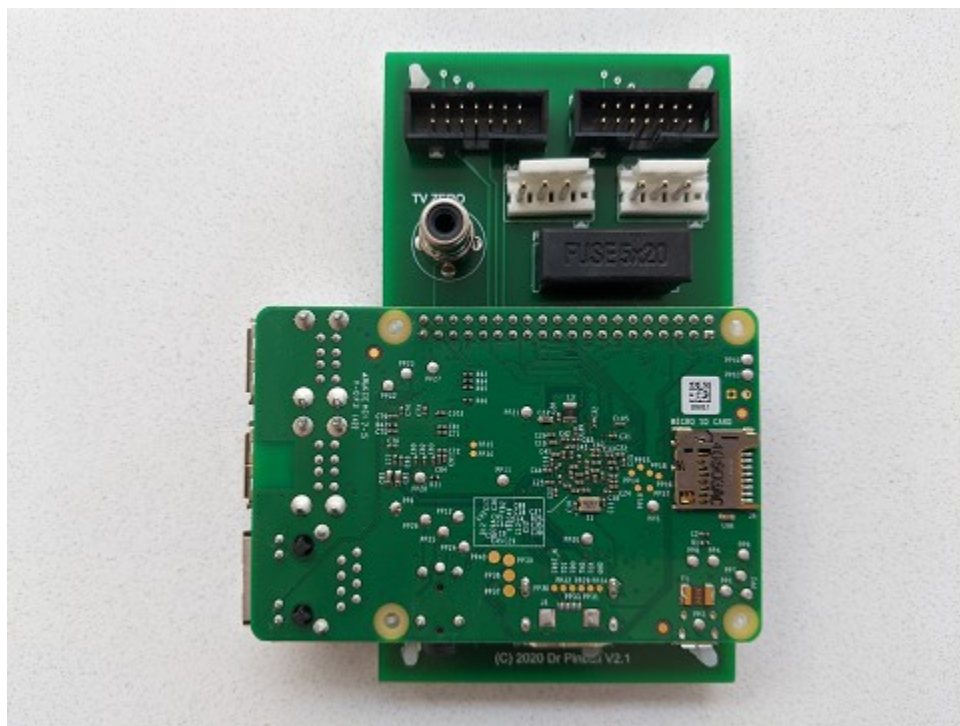


Figure 7 – Raspberry Pi B+ mounted on DMD Extender

Video connections can be made to the Raspberry Pi using either HDMI or Composite. For Composite video it is necessary to use an adapter cable to provide a connection to a standard RCA cable – this can be purchased from Dr Pinball, please visit www.drpinball.co.uk.

Raspberry Pi Zero / Zero W

Raspberry Pi Zero is shown in figure 8.

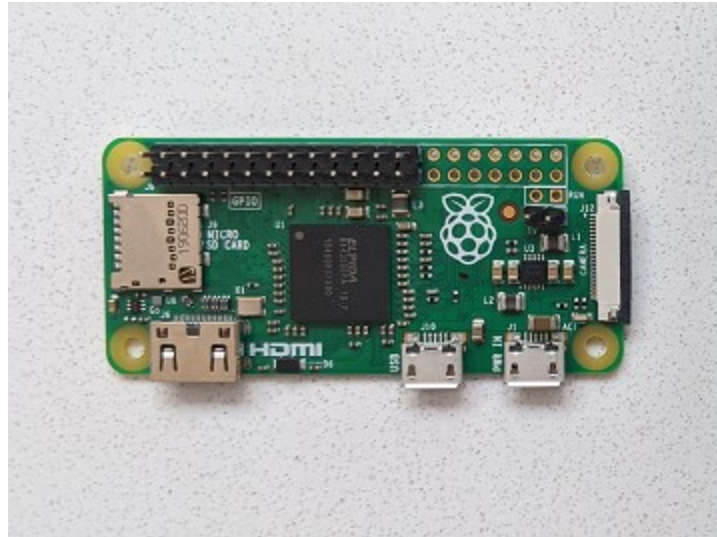


Figure 8 – Raspberry Pi Zero

The DMD Extender is supplied with 4 mounting posts which should be put into the correct holes as shown in figure 9.

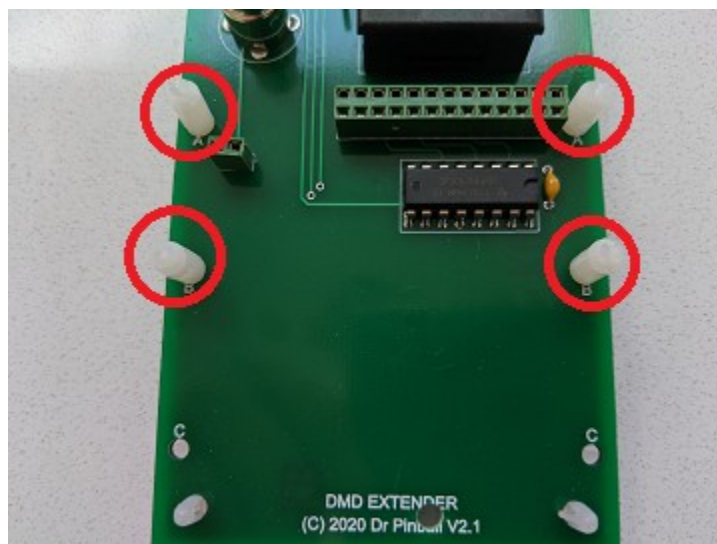


Figure 9 - Mounting post placement for Pi Zero

N.B. The DMD Extender does not use all of the connector pins of the Raspberry Pi – only 26 are needed, as shown in figure 10. However, there are an additional 2 pins needed for the composite video connection (shown in green below).

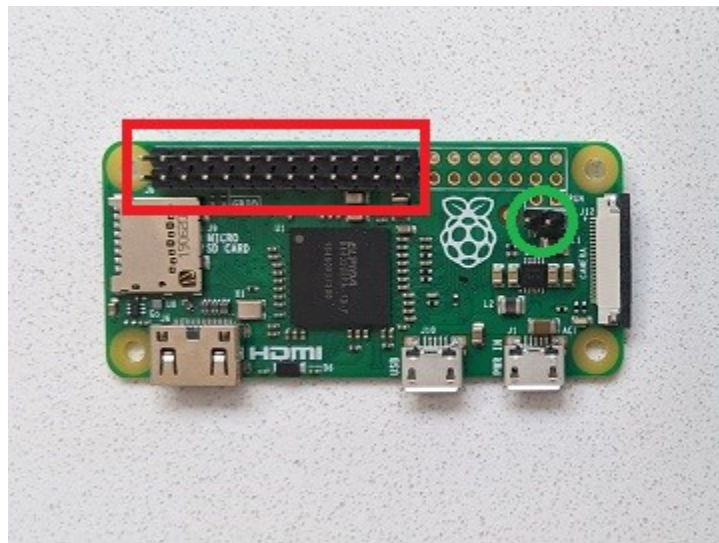


Figure 10 – Raspberry Pi Connector Pins

The Raspberry Pi can then be carefully mounted on the DMD Extender by lining up the posts and connectors and pushing into place. Correctly mounted Raspberry Pi Zero is shown in figure 11.

N.B. Be very careful to line all of the connector pins – there are 2 sets of pins, one set of 26 and another set of 2.

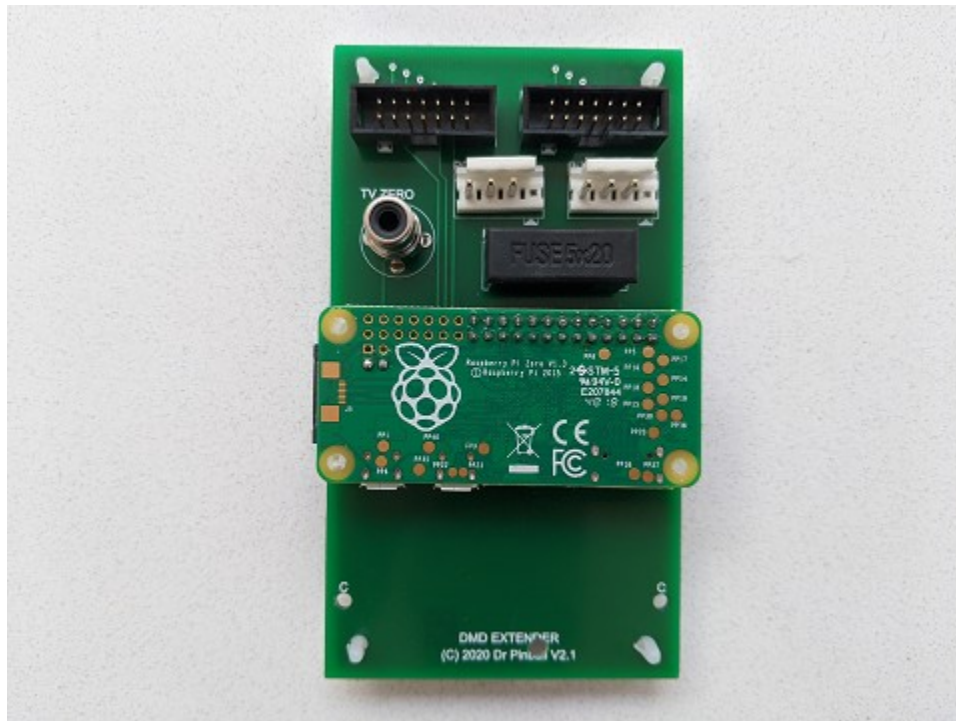


Figure 11 – Raspberry Pi Zero mounted on DMD Extender

Video connections can be made to the Raspberry Pi using either Mini HDMI or Composite. For Composite video connect a standard RCA video cable to the socket marked ‘TV ZERO’.

You may use an HDMI adapter to convert from Mini HDMI to HDMI – if you use an adapter you may need to move an adhesive mounting post to allow the adapter to fit correctly, see figure 12.

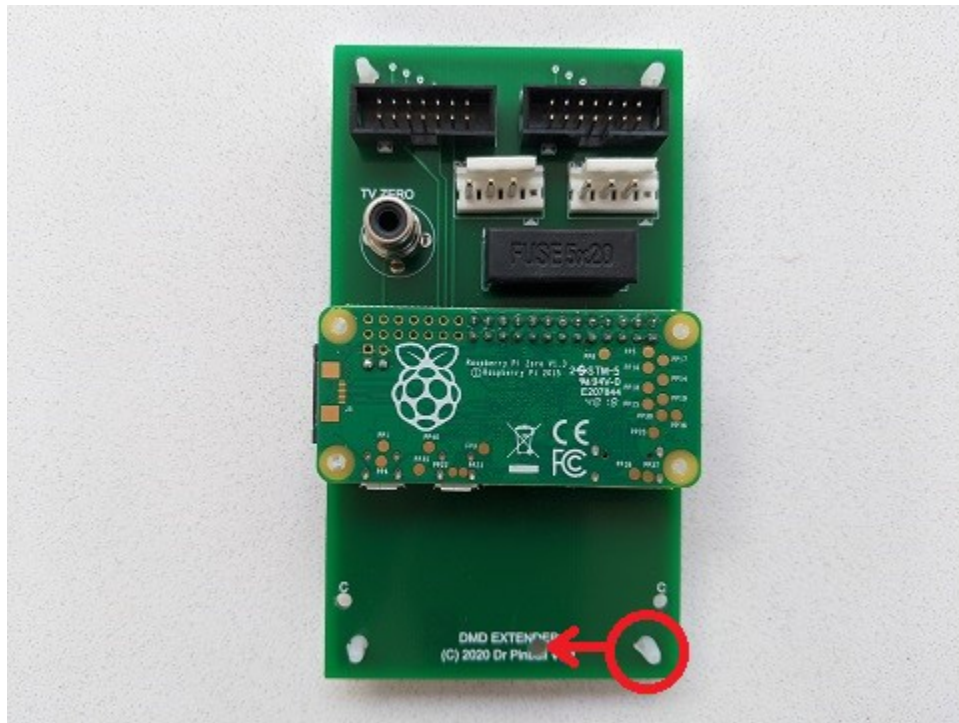


Figure 12 – Adhesive mounting post move for HDMI adapter

Raspberry Pi Zero Connector Pins

If your Pi Zero does not have the necessary connector pins these can be purchased from Dr Pinball, please visit www.drpinball.co.uk.

When soldering the pins it is easier to first push the pins into the DMD Extender sockets, then mount the Pi Zero onto the DMD Extender and solder the connections when everything is together, see figure 13.

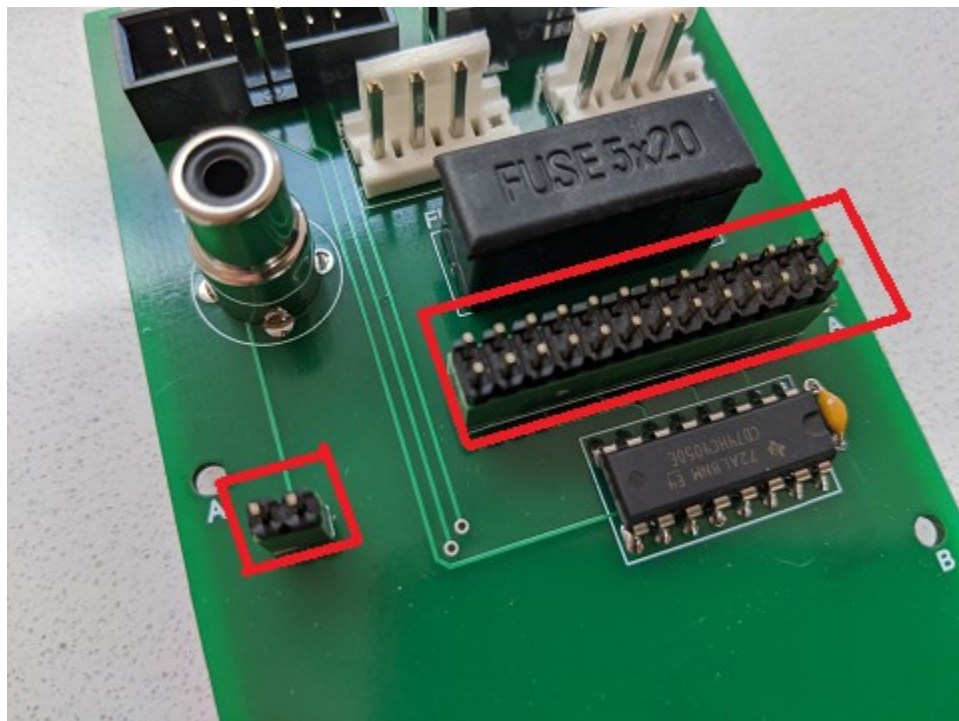


Figure 13 – Pi Zero Connection Pins