

DMD Extender

Raspberry Pi Installation Addendum

V0.1 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 versions of Raspberry Pi are installed using the DMD Extender interface board version v0.7.

Installation Guide

These instructions relate to the modified version of the DMD Extender interface version v0.7, as shown in figure 1.

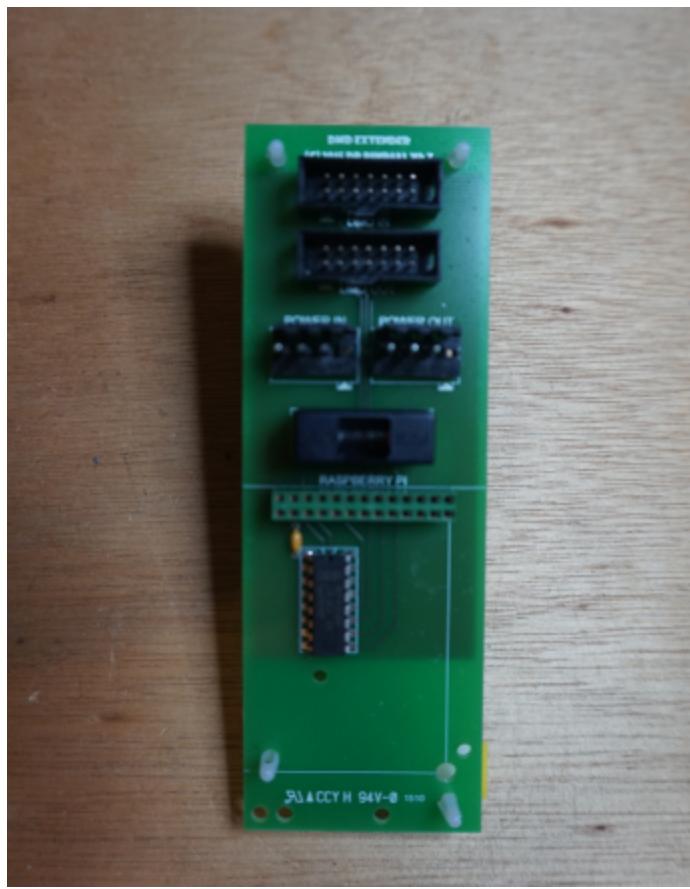


Figure 1 – DMD Extender Interface Board v0.7

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

- Raspberry Pi Model B Revision 1
- Raspberry Pi Model A/B Revision 2
- Raspberry Pi Model A+/B+

Please note that Raspberry Pi 2 is not currently supported – please use Model A+/B+ instead.

Each of the following sections detail installation for each Raspberry Pi type - each one has a different method of mounting onto the interface board:

- Type of mounting post
- Position of mounting hole on interface board / Raspberry Pi
- Position of cable tie for holding HDMI cable.

Figure 2 below shows the two types of mounting posts:

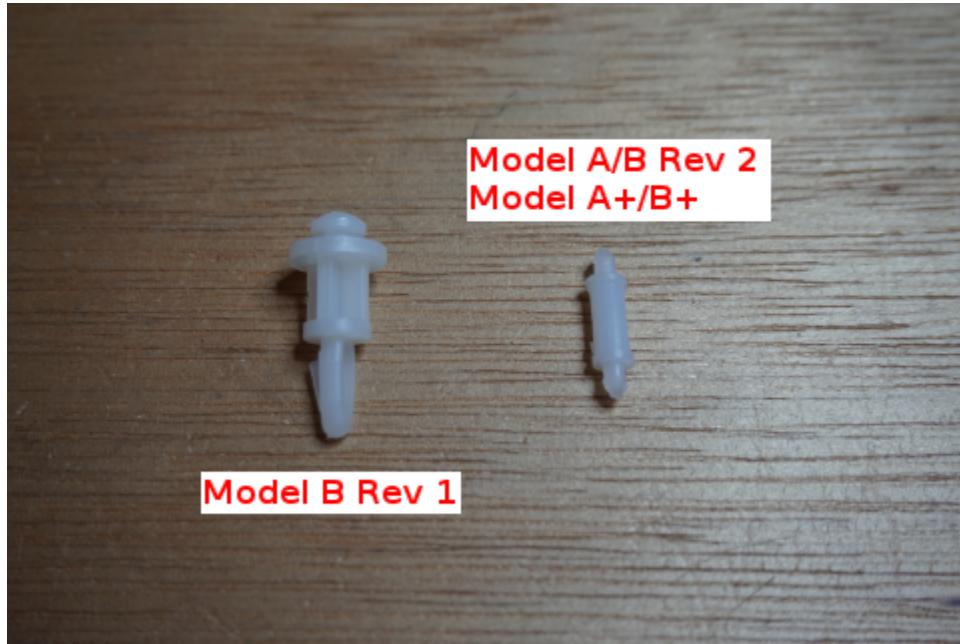


Figure 2 – Mounting posts

Each of the mounting posts should be used in the locations shown in figure 3.

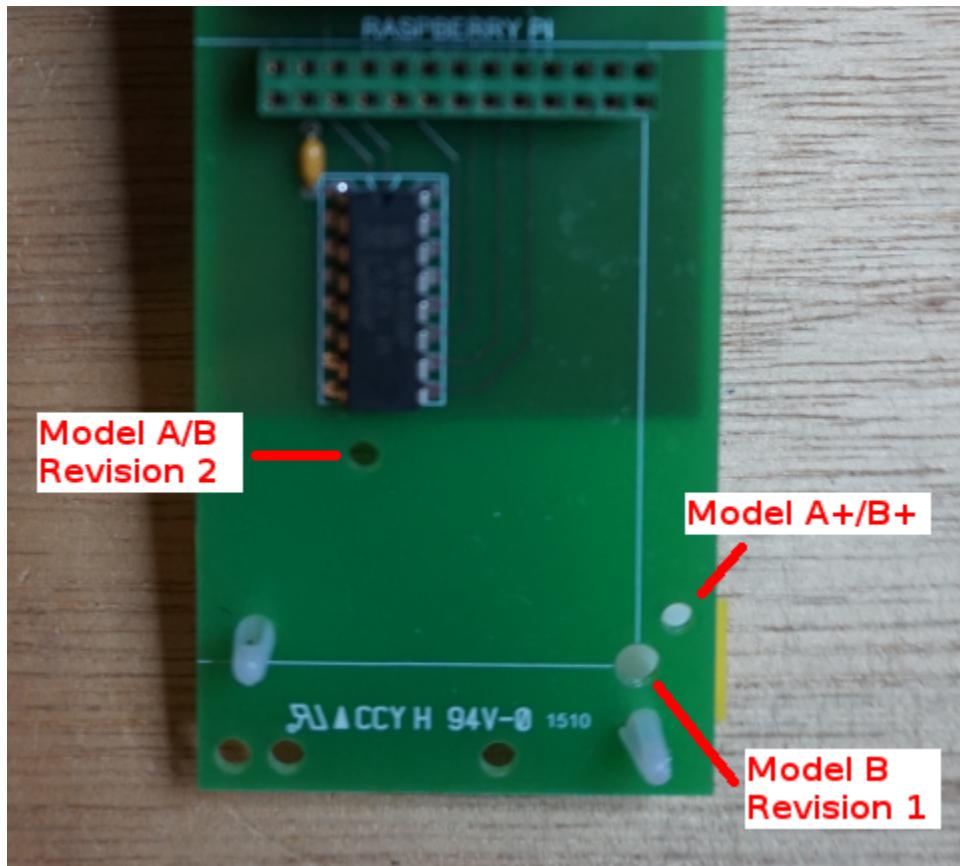


Figure 3 - Mounting post locations

Raspberry Pi Model B Revision 1

Revision 1 is shown in figure 4. It is the original version of Pi and does not have any mounting holes.



Figure 4 – Raspberry Pi Model B Revision 1

The mounting post should be fitted as shown in figure 5.

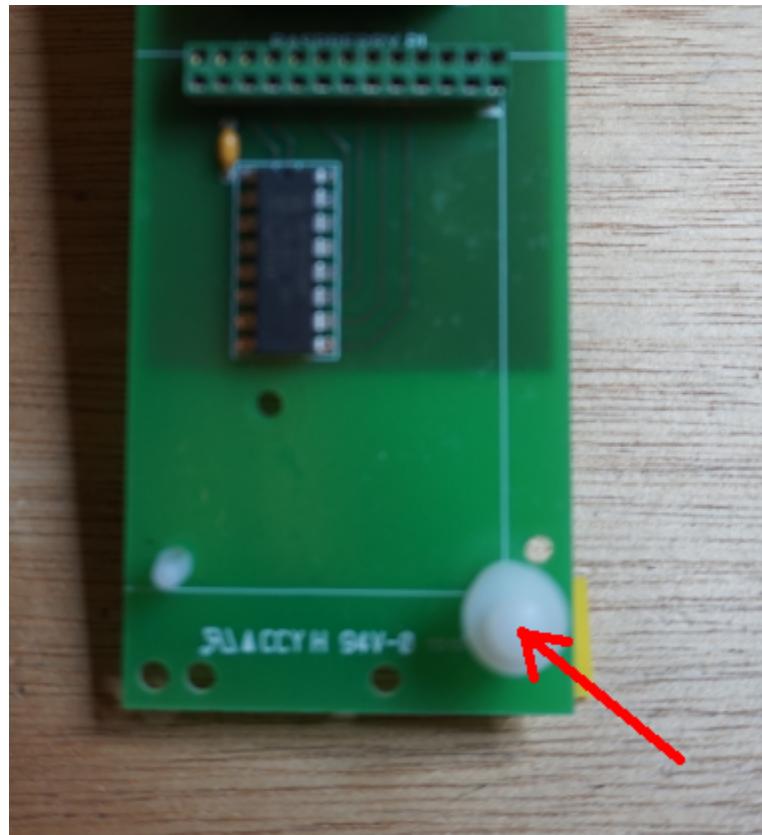


Figure 5 – Mounting post location (arrowed)

The Raspberry Pi should be mounted as shown in figure 6.

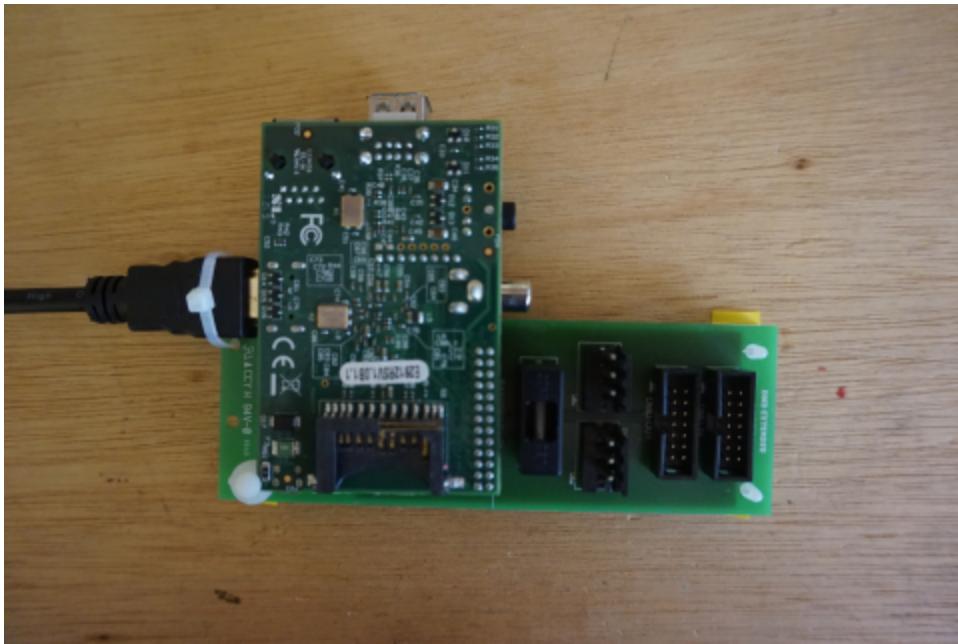


Figure 6 – Raspberry mounted on interface board

The Raspberry Pi has 26 connection pins (2 rows of 13 pins labeled 'P1') that are inserted into the interface board connector. The HDMI cable should be secured using the supplied cable tie.

The mounting post holds the corner of the Raspberry Pi as shown in figure 7.

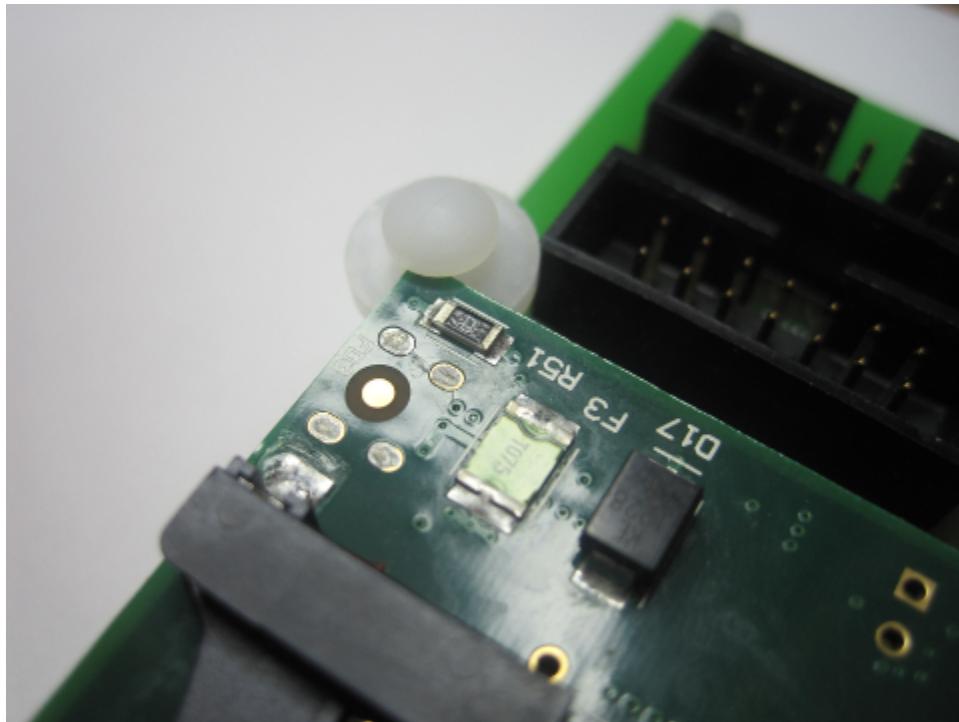


Figure 7 – Mounting post close up

Raspberry Pi Model A/B Revision 2

Revision 2 is shown in figure 8. It is the second version of Pi and has two mounting holes. Only one of the mounting holes is used in the installation.



Figure 8 – Raspberry Pi Model A/B Revision 2

The mounting post should be fitted as shown in figure 9.

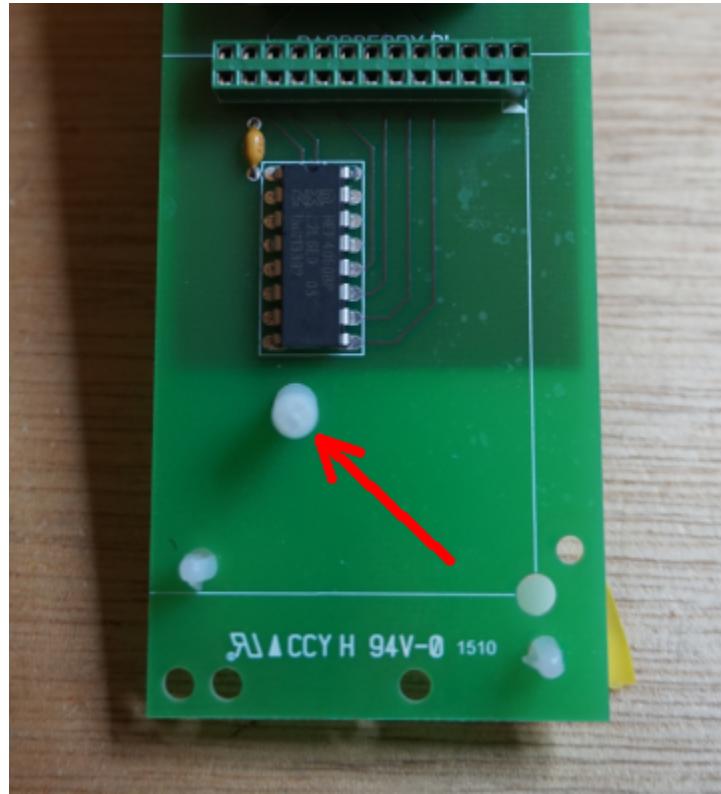


Figure 9 – Mounting post location (arrowed)

The Raspberry Pi should be mounted as shown in figure 10. The mounting post fits into the mounting hole on the Raspberry Pi.

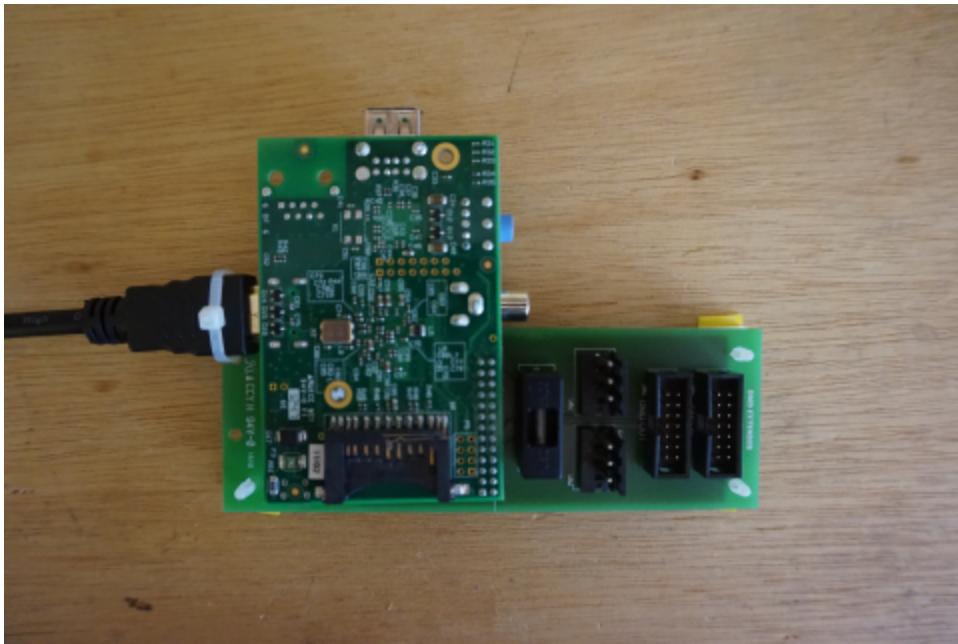


Figure 10 – Raspberry Pi mounted on interface board

The Raspberry Pi has 26 connection pins (2 rows of 13 pins labeled 'P1') that are inserted into the interface board connector. The HDMI cable should be secured using the supplied cable tie.

The mounting post is shown in figure 11.

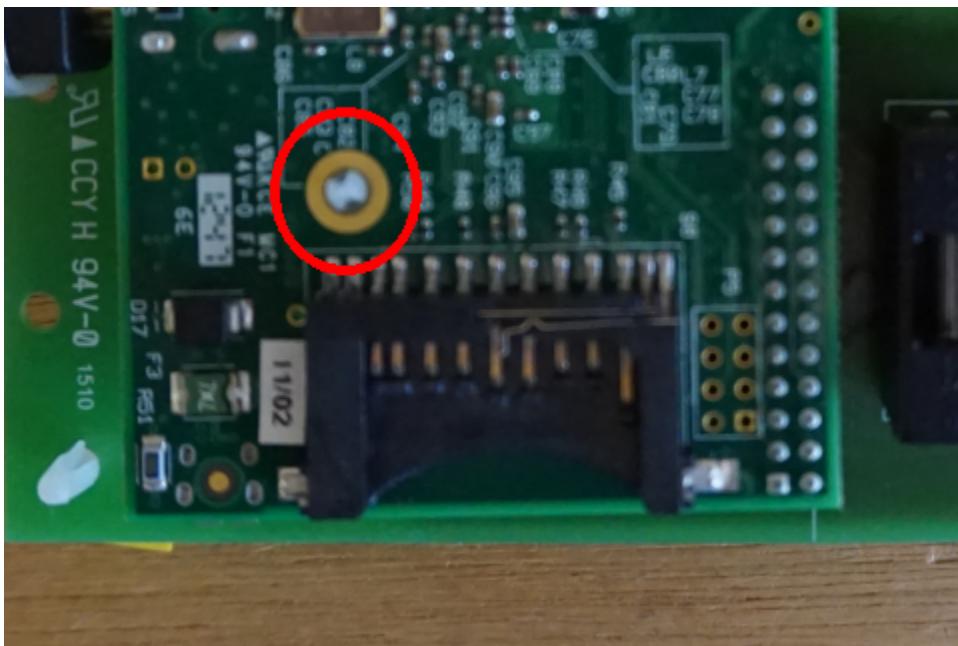


Figure 11 – Mounting post close up (circled)

Raspberry Pi Model A+/B+

Model A+ is shown in figure 12 - the install process is identical for the B+. It is the latest version of Pi and has four mounting holes. Only one of the mounting holes is used in the installation.

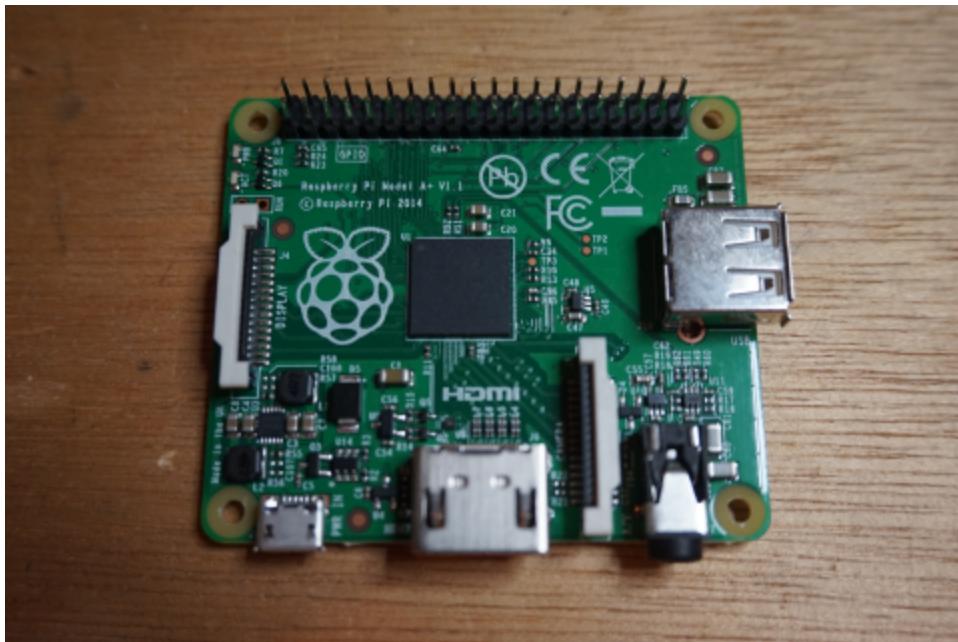


Figure 12 – Raspberry Pi Model A+

The mounting post should be fitted as shown in figure 13.

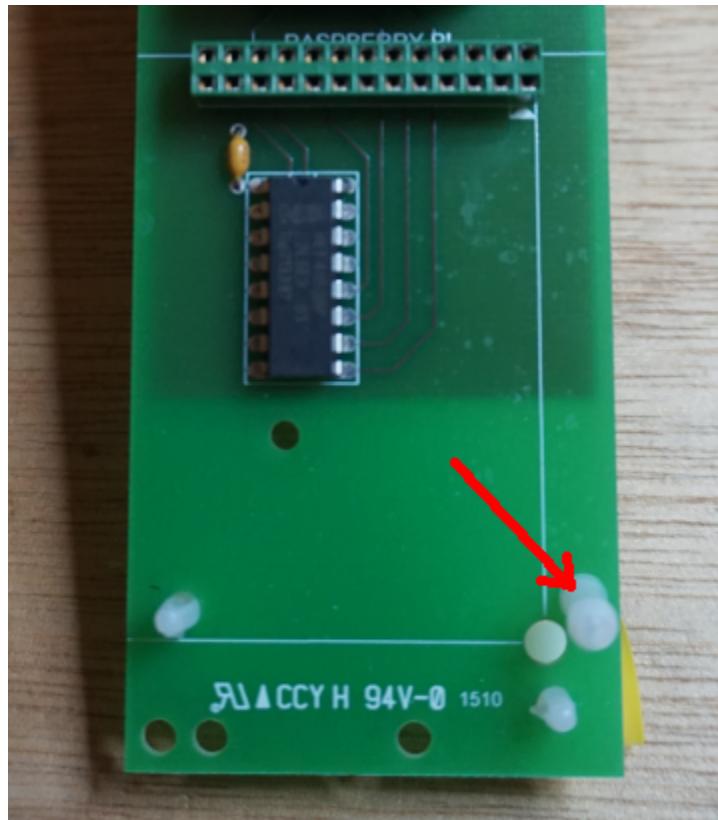


Figure 13 – Mounting post location

The Raspberry Pi should be mounted as shown in figure 14. The mounting post fits into the mounting hole on the Raspberry Pi.

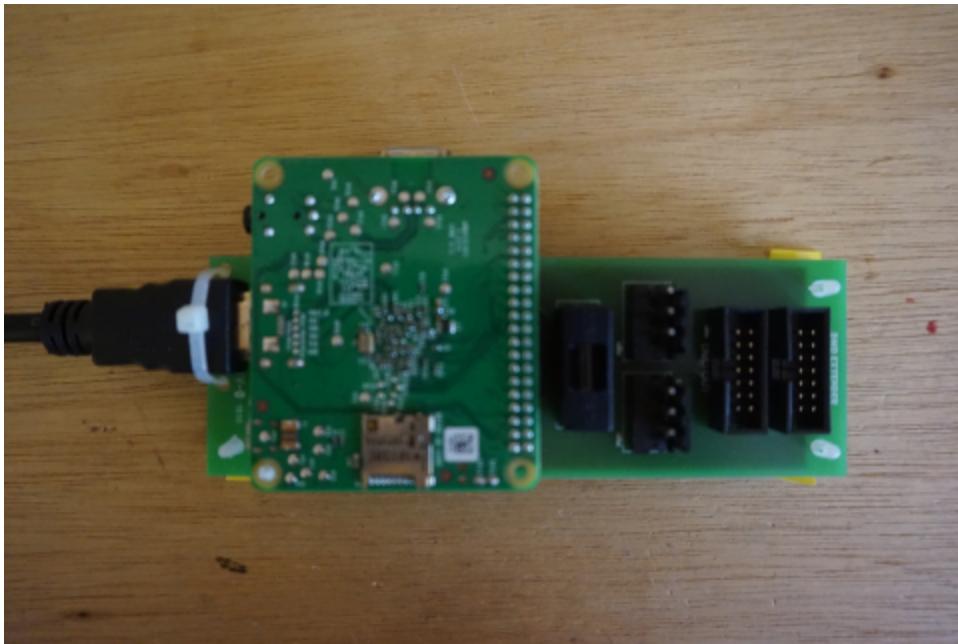


Figure 14 – Raspberry Pi mounted on interface board

The Raspberry Pi has 40 connection pins (2 rows of 20 pins labeled 'GPIO') – only 26 pins (2 rows of 13 pins) are required to be connected into the interface board connector. The HDMI cable should be secured using the supplied cable tie.

Figure 15 shows the pins that should be connected – the remaining pins will be left unused.

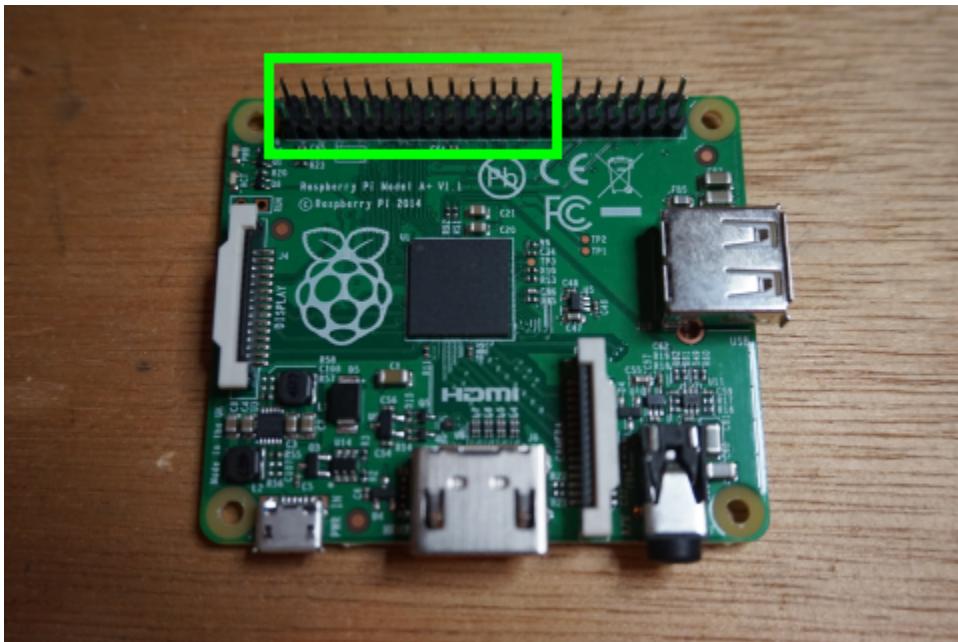


Figure 15 – Connection pins (marked in green)

The mounting post is shown in figure 16.



Figure 16 – Mounting post close up (circled)