

Do It Yourself: Stern Star Trek ColorDMD Adapter Plate

The following document will attempt to walk you through the installation of the ColorDMD Adapter Plate so it can be easily installed in a 2013 Stern Star Trek pinball machine. Please note the Author of this document is not responsible for any damage you do to yourself or your property. **Duplication of this document is not permitted without written consent.**

Tools/Materials Needed:

- ColorDMD w/ Sigma 2.4 or [better firmware](#)
- Phillips #2 screwdriver
- 11/32 Nut driver
- Xacto knife
- A towel

Optional Materials:

- Black Matte Spray Paint
- foam Weather stripping
- Duck Tape
- Pop Bumper Bracket Mounting Screw
Twist Shank
Pinball Life #[237-5883-00](#)

The Adapter is made to completely cover the metal studs which were used to mount the original Red DMD. While these instructions are shown for Stern's Star Trek machine; the author expects this will fit any metal backbox made by Stern after Star Trek.

Special thanks to [Tatanka1961](#) on Pinside for the initial work and plans for this adapter.

Pre-Work:

The Adapter is CNCed out of MDF (wood). The CNC process may have left "fuzzies" around the perimeter of the CNCed surfaces. Remove these using a razor blade or Xacto knife. Once the edges have been "de-burred"; you may want to paint the MDF.

Because the MDF is light in color; it may be seen with the light reflected from the ColorDMD. To avoid this; you may wish to lightly dust the inside surfaces with a dark grey or black spraypaint. The Author used a Automotive dark grey primer he had in his garage.

Once your paint is dry; you may want to install some weather stripping to avoid light leakage. While the Author did not choose to do so; a picture is seen in [Tatanka1961's implementation](#):



Figure 1. **Weather Stripping Light Blocker** (Photo Credit: Tatanka1961)

This light blocker is installed on the flat side of the MDF; not on the CNCed side.

Finally, you'll want to install and ColorDMD firmware upgrades necessary for your project. Sigma 2.4 or better is recommended for this ColorDMD adapter as it provides you with an adjustment to align the display.

1) Carefully remove the Stern Speaker Panel from the back box. Lye it front side down on the cabinet with a towel between the panel and the side rails / glass of your machine. The towel protects stainless metal speaker panel and the siderails from getting scratched while you complete the installation.



Figure 2. **Existing Speaker Panel /w DMD** (Photo Credit: Tatanka1961)

2) Loosen the six nuts holding the Stern DMD to the speaker panel. Carefully remove each cable so you can completely remove the DMD and the red filter from the machine. Please note that you'll need to reuse the nuts; but you will not need any plastic spacers which kept the old DMD in place. I recommend storing these spacers in a ziplock bag; perhaps in the coinbox or with your old DMD and filter.

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3) Carefully remove the protective paper from the Clear DMD cover. Install it on the existing speaker panel studs.

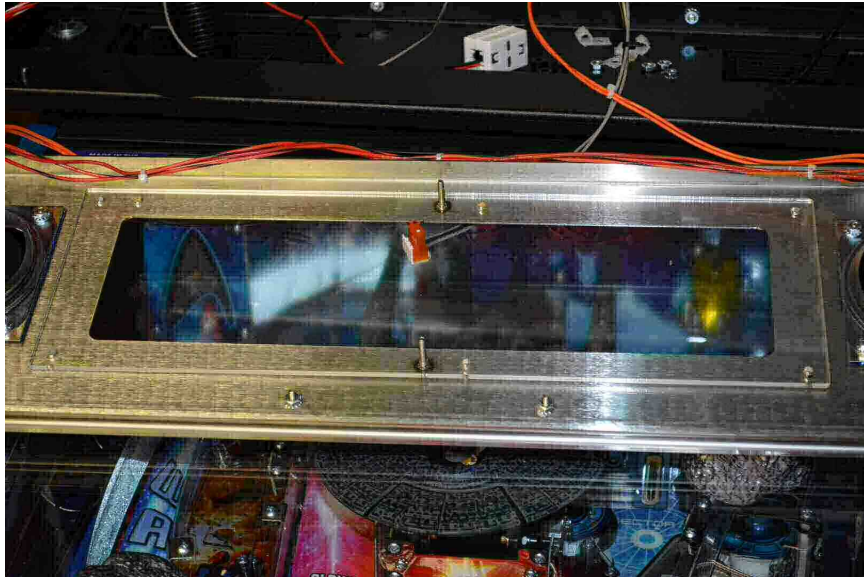


Figure 3. Clear DMD Cover installed

4) *(skip if you are using the included #8-32 screws)* If you are installing the optional Pop Bumper Studs; Carefully tap them into the ColorDMD mounting holes from the CNCed side (not flat). The pointed studs should come out of the backside of the DMD adapter and the head of the studs should be flush with the surface of the wood. Use a nail punch and hammer if necessary to make the studs flush on the CNCed side.

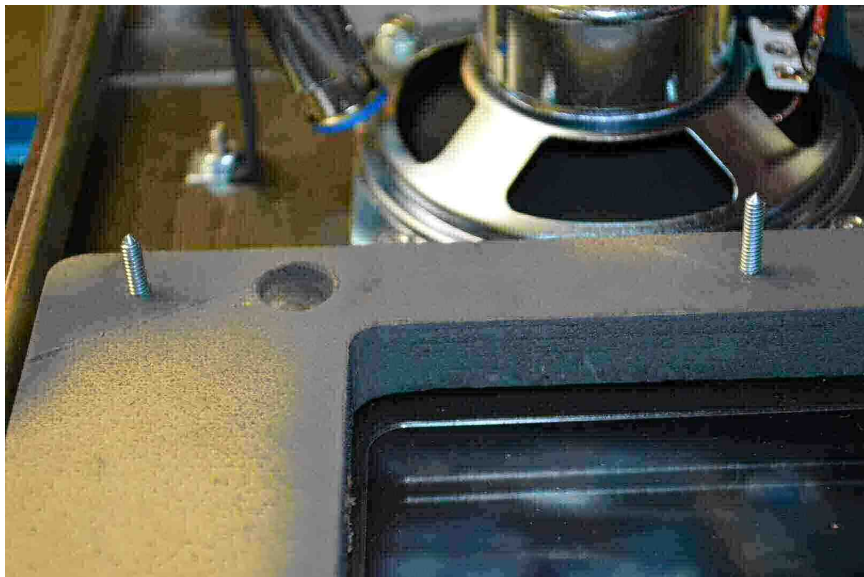


Figure 4. PopBumper Studs installed

5) The Adapter Plate is CNCed on one side to allow the acrylic DMD cover to set recessed inside the Plate. This CNCed side goes flush against the speaker panel and the existing studs mount to the Adapter Plate's recessed holes on the flat side. Go ahead and install the MDF plate. Use the old nuts (6 of them) to secure the plate and cover to the speaker panel. **Note:** The Plate has extra clearance holes to allow your LE number plate nuts to remain intact.



Figure 5. Secure the Plate to Panel

6) The ColorDMD is expensive; so the author recommends you put some ducttape or some other protective tape over the recessed nut holes. While not required by design; it's an extra level of protection should something weird happen:

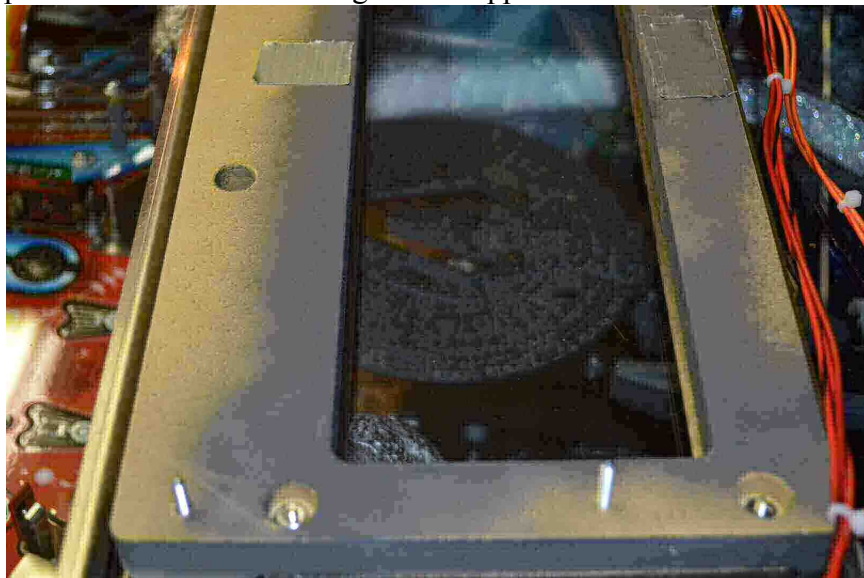


Figure 6. Protect your ColorDMD from scratches

7) Carefully install your ColorDMD. If you went with the optional pop bumper studs; Be extra careful to align the screen without scratching your LCD. If you are using the included #8-32 x 1/2" screws; they would install in the same pilot holes used by the pop bumper studs in these pictures. Install with the colordmd board left hand side near the top.

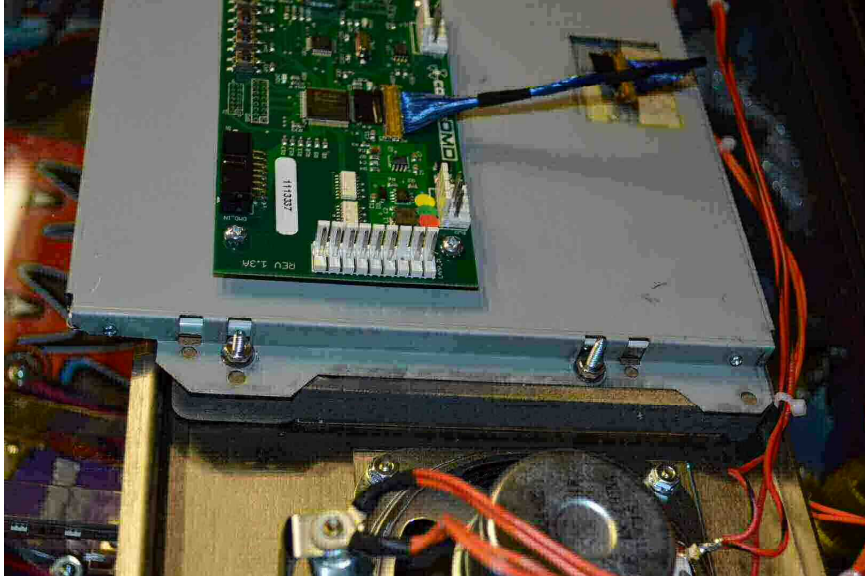


Figure 7. Secure ColorDMD to Adapter Plate

Secure the color dmd with 4 nuts or the included 4 qty #8-32 x 1/2" wood screws.

8) Secure the speaker/lamp wires using the existing wire guides. On the left hand side; secure the wire guide with the one remaining #8-32 x 1/2" screw.

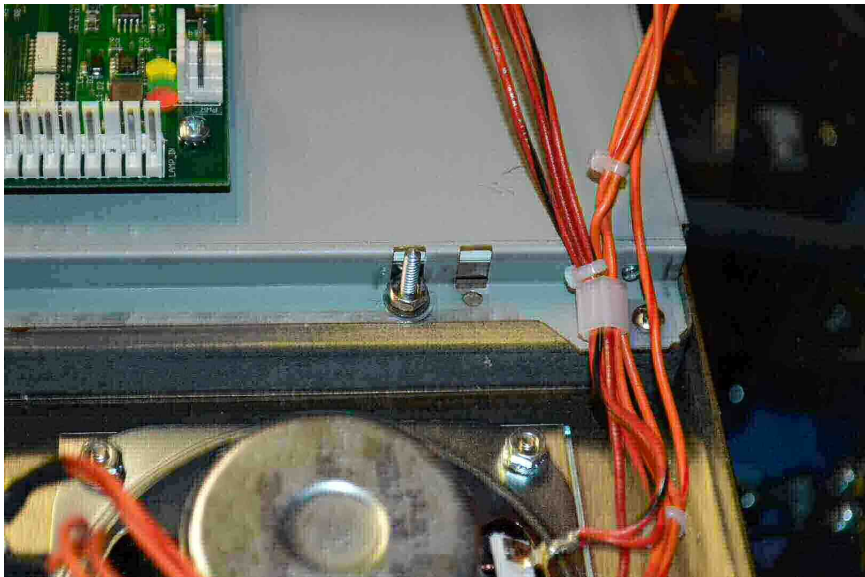


Figure 8. Secure left Wire Guide

9) Secure the two other wire guides with the screws which should have come with your ColorDMD.



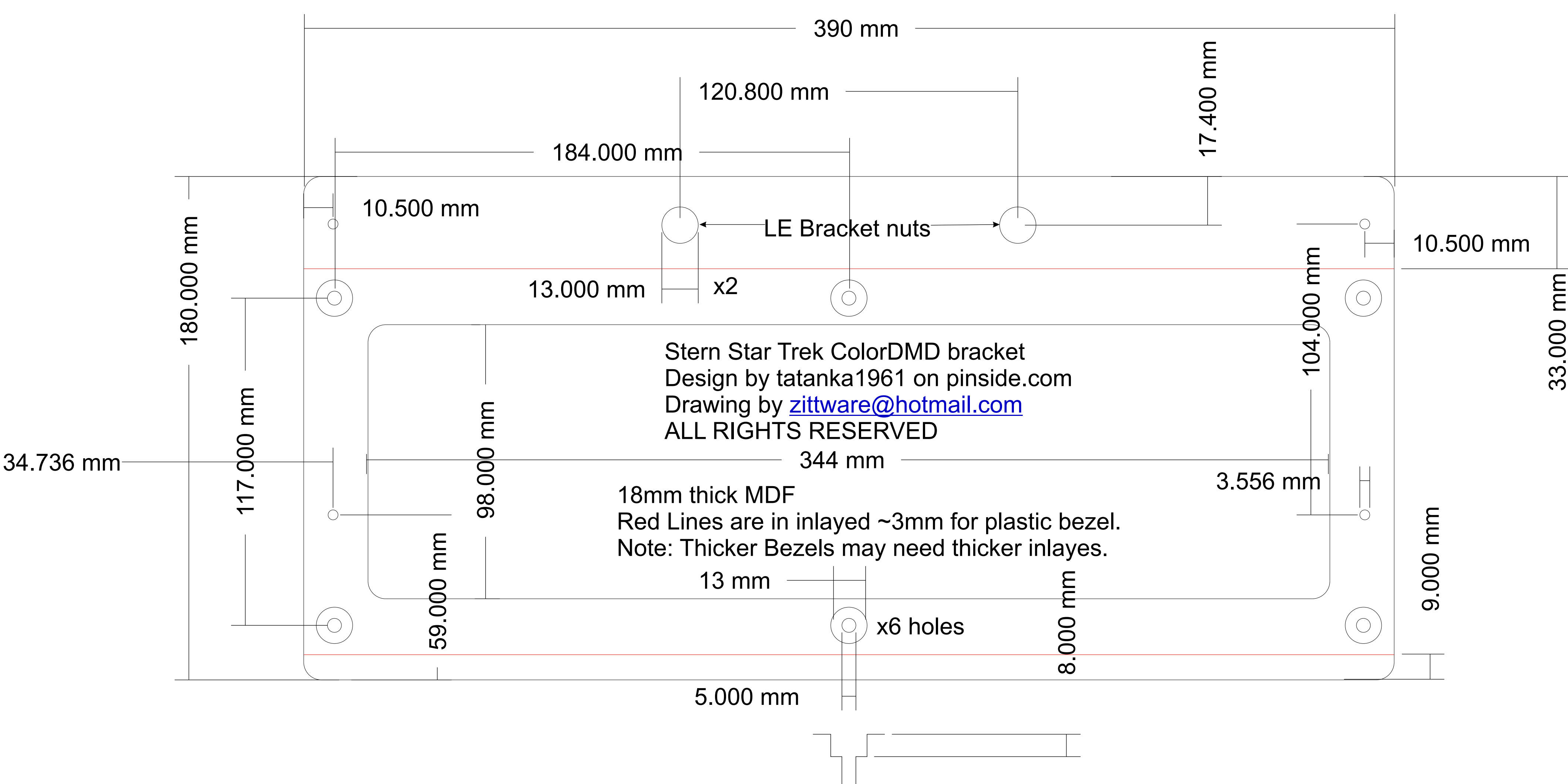
Figure 9. Secure remaining Wire guides

10) Complete the installation of your ColorDMD by following the [electrical connection recommendations](#) from ColorDMD. Re-Install the speaker panel and the backglass and enjoy your ColorDMD.

Congrats; you've completed the installation of the ColorDMD adapter.

Appendix A: ColorDMD Adapter drawings

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Version 1.0 (May 25, 2007)

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