

Freeplay Boxy Pixel CM3 L2/R2 Add-On Install Guide

This is a living document. It may change at any time.

For feedback about the build process or this document, please contact feedback@freeplaytech.com.

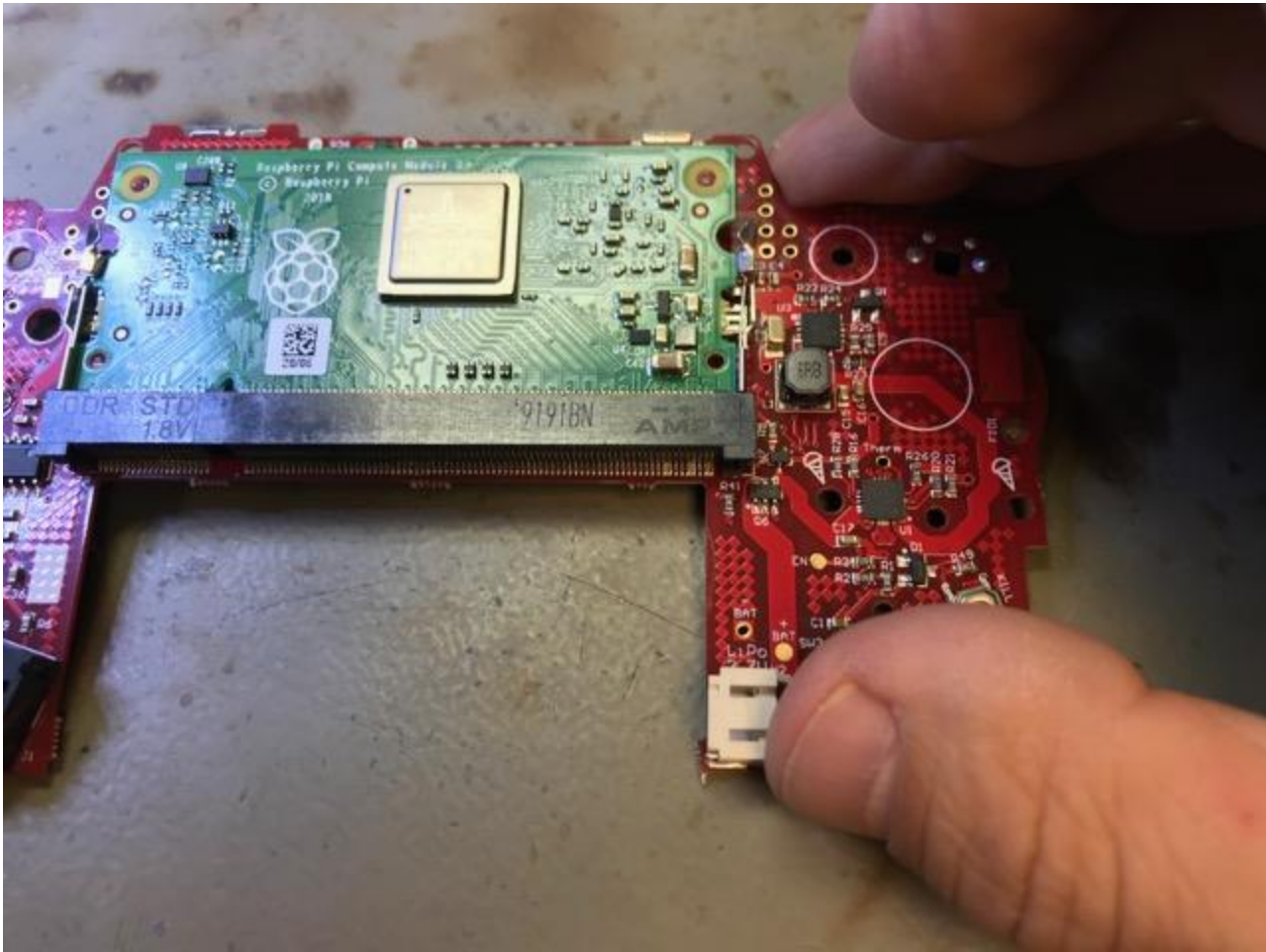
Read this entire document before starting your build.

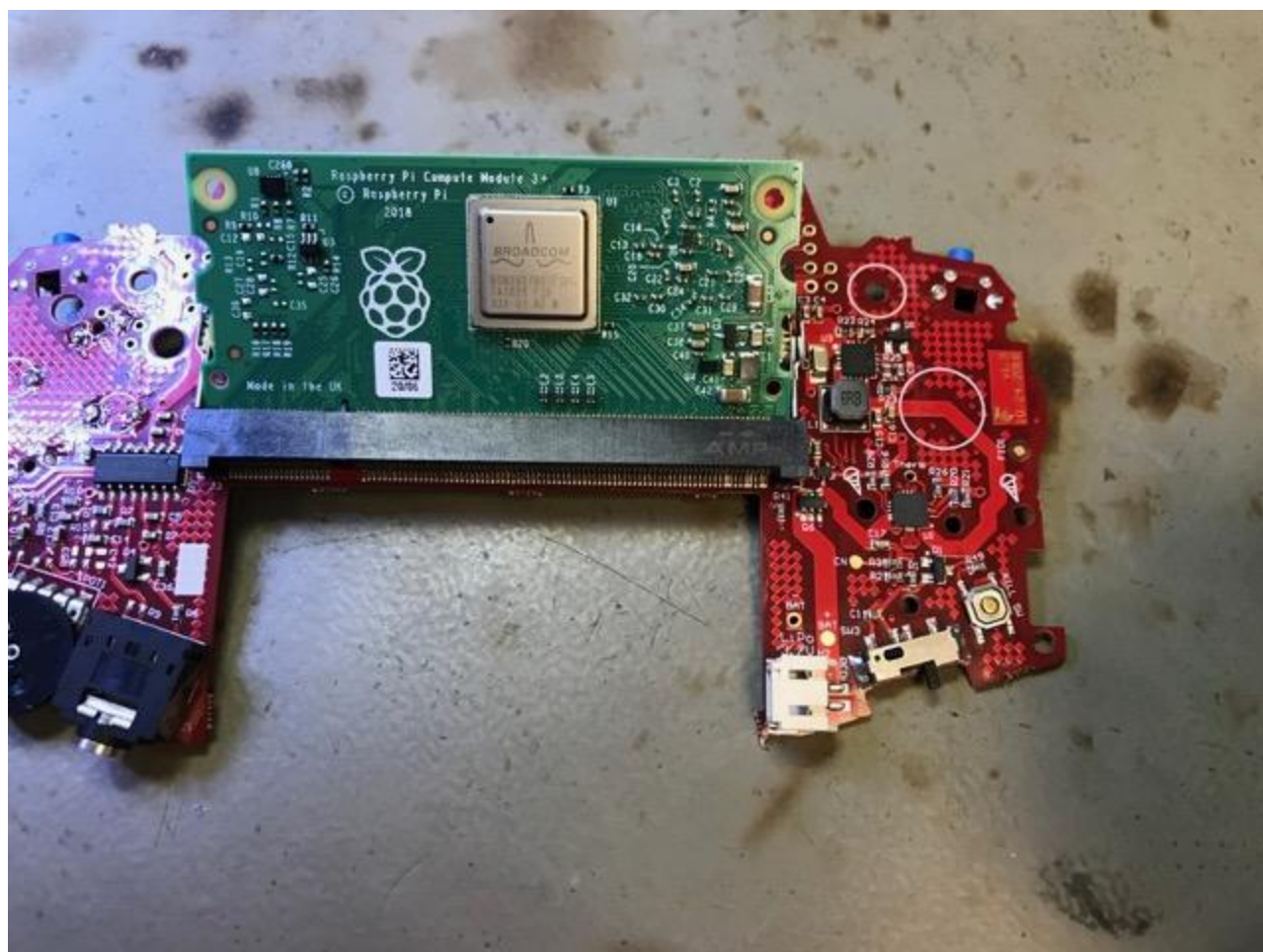
Assembly Instructions

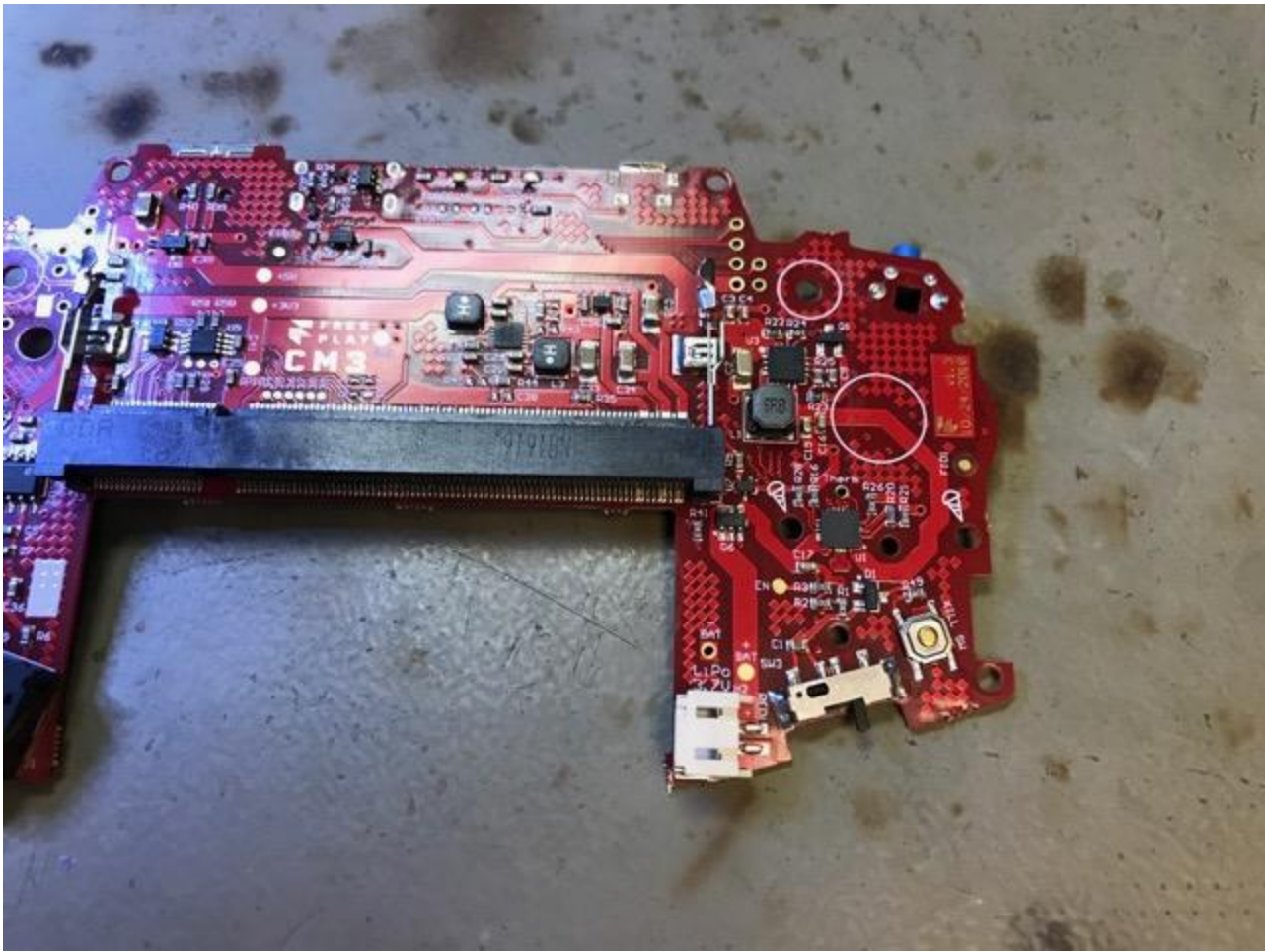


Your add-on kit should look something like the above photo. Below is the sequence of steps to install the kit onto your Freeplay CM3 Boxy Pixel kit.

Remove the Raspberry Pi Compute Module

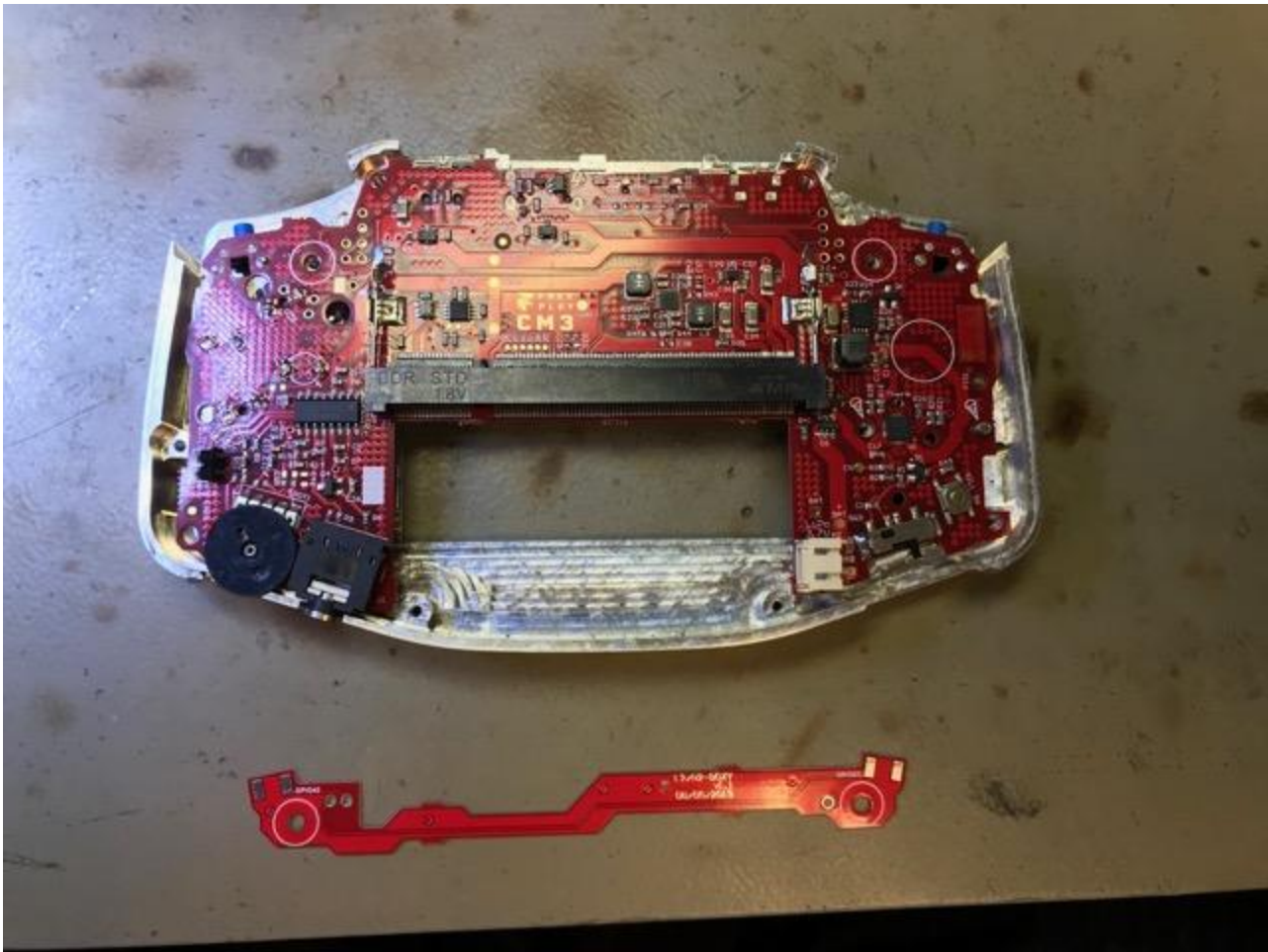


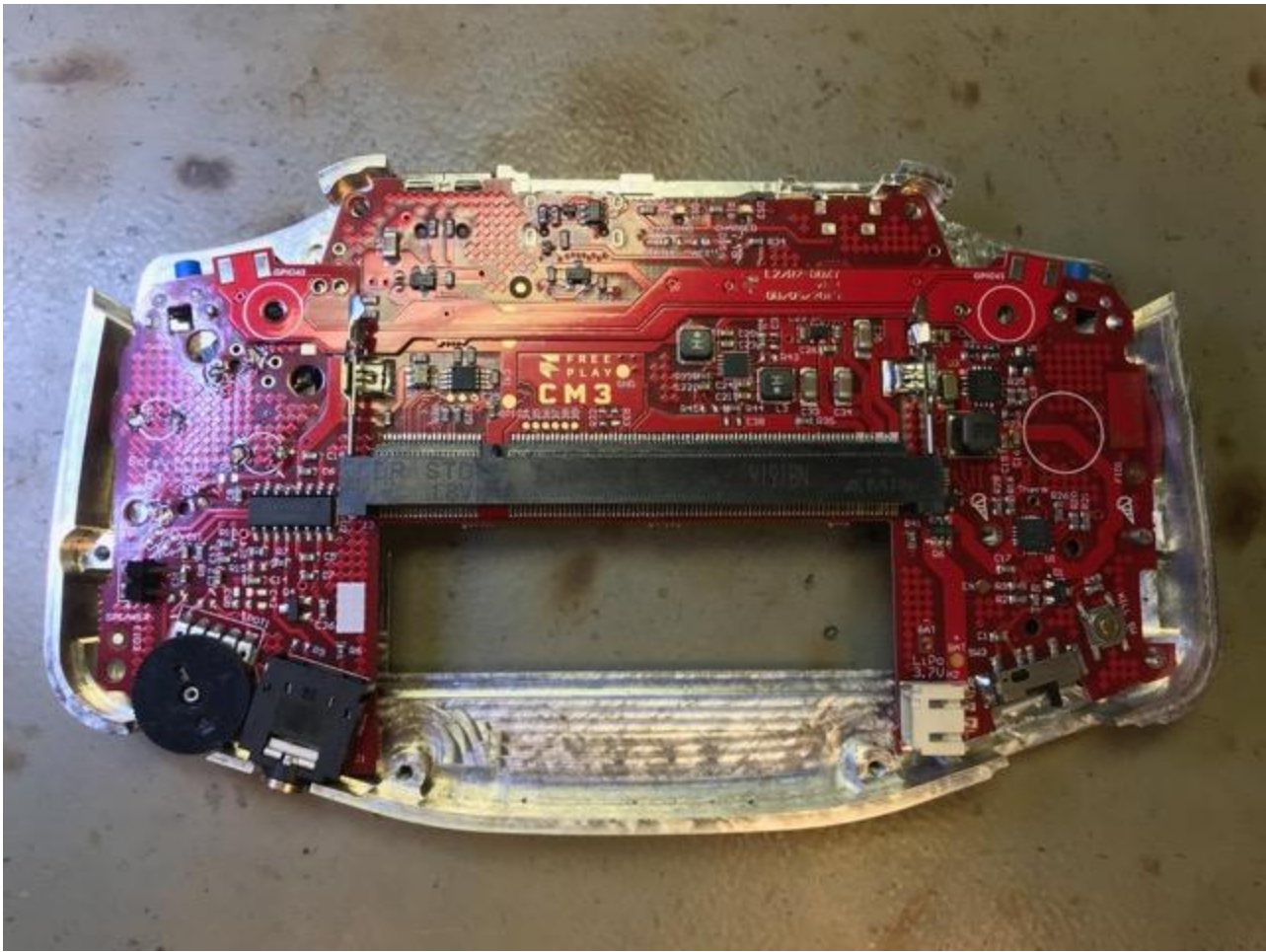


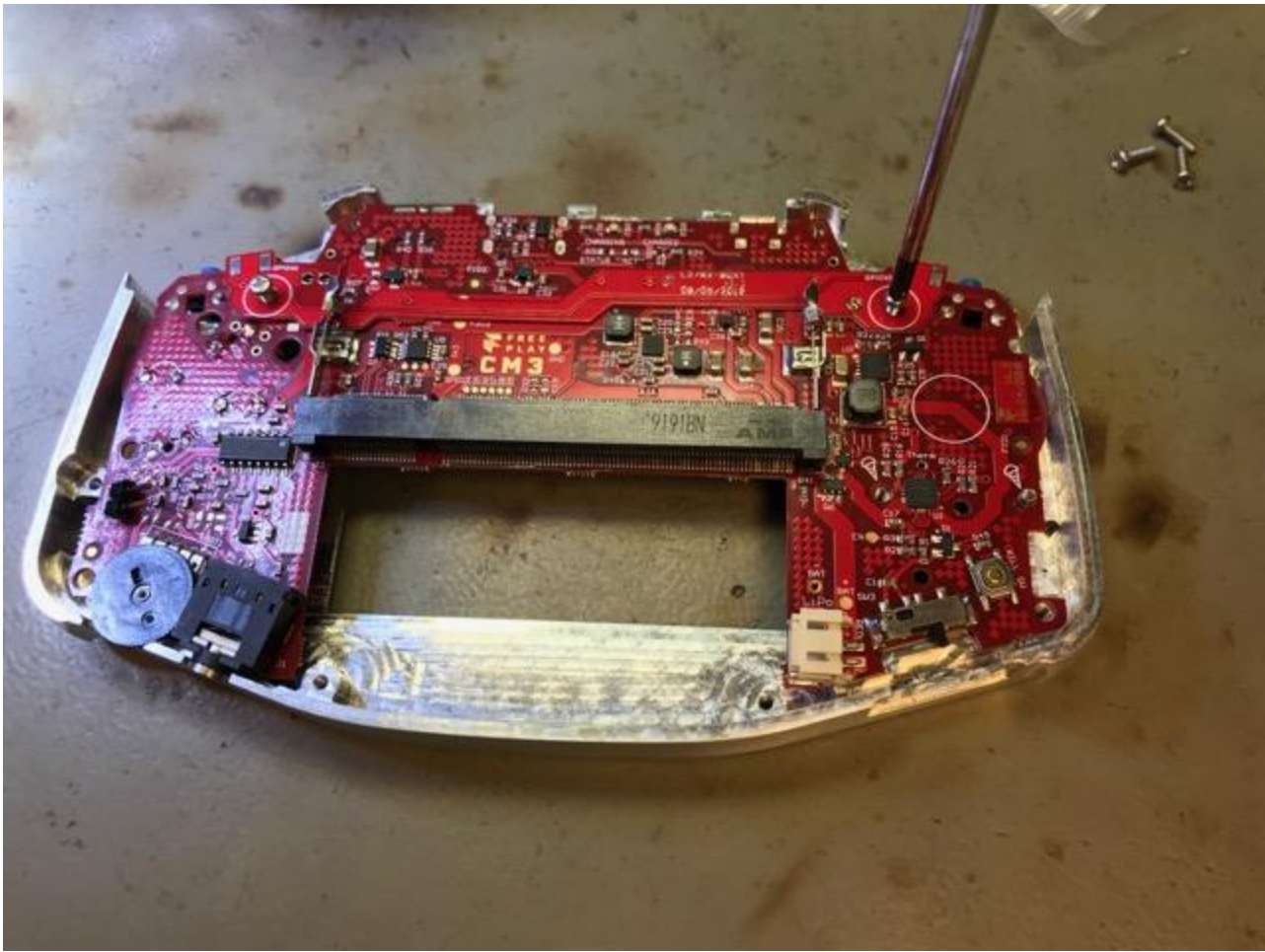


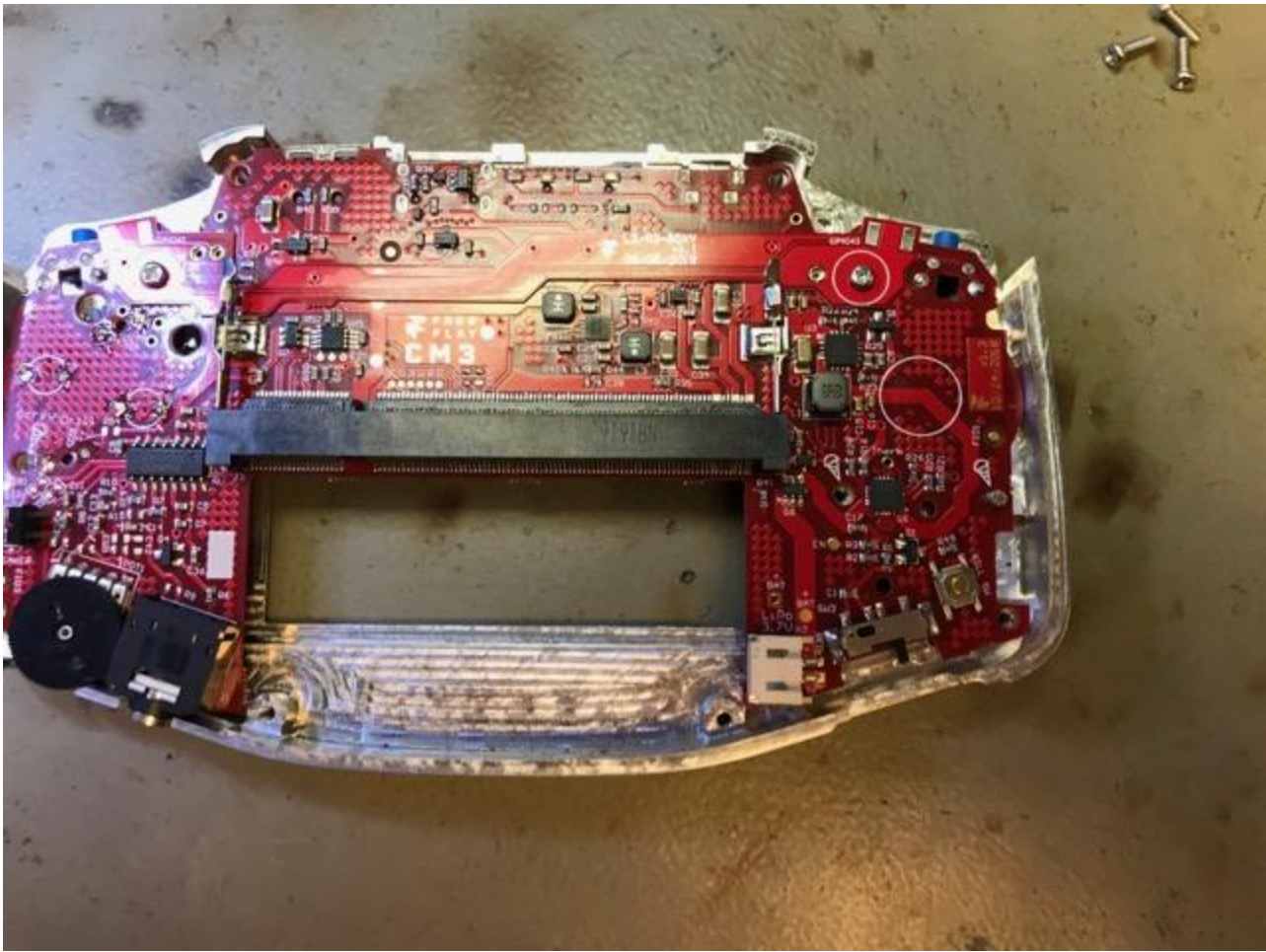
Place the Freeplay CM3 Into The Boxy Pixel Shell and
Screw Down The L2/R2 Add-On Board

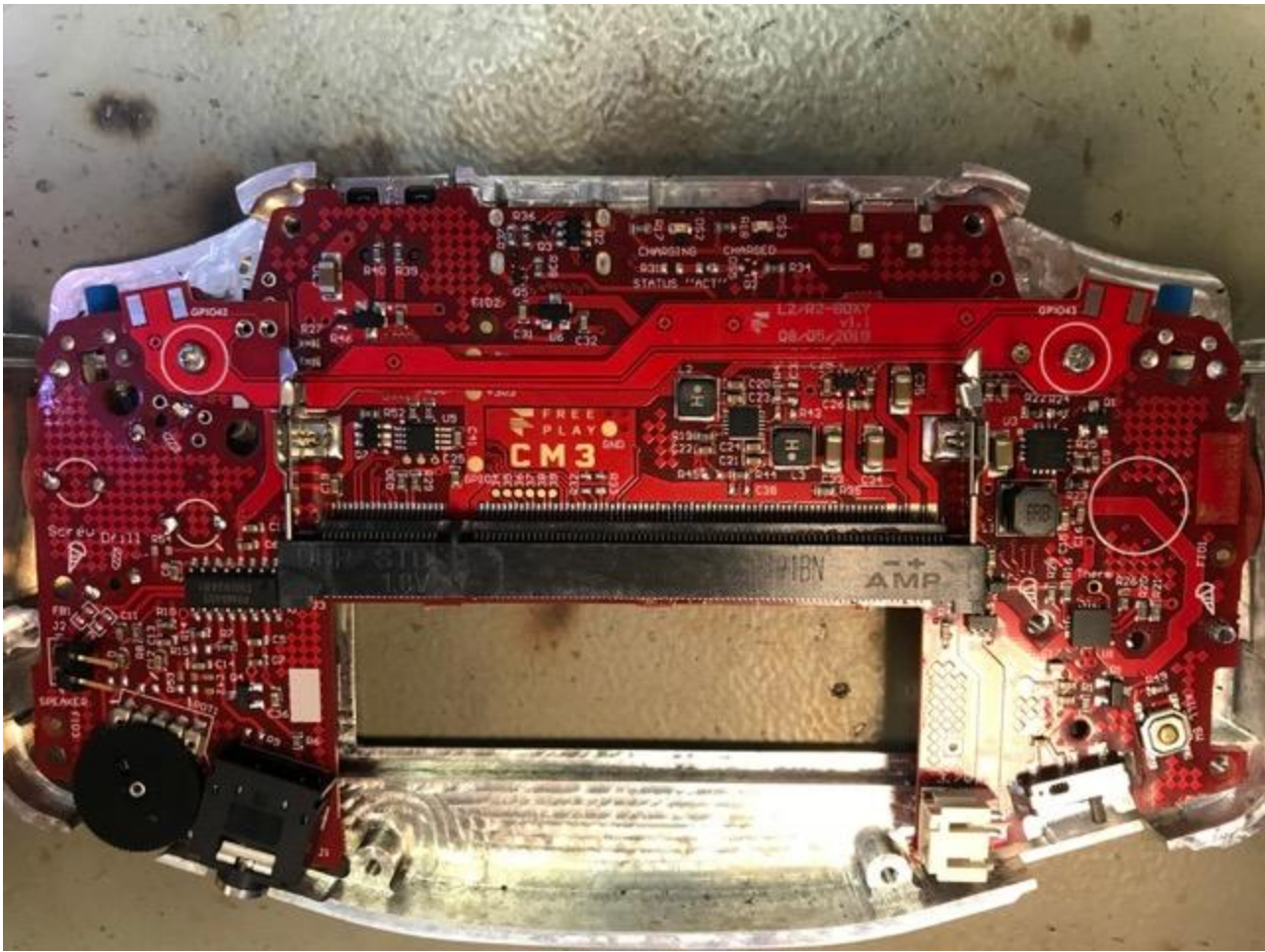




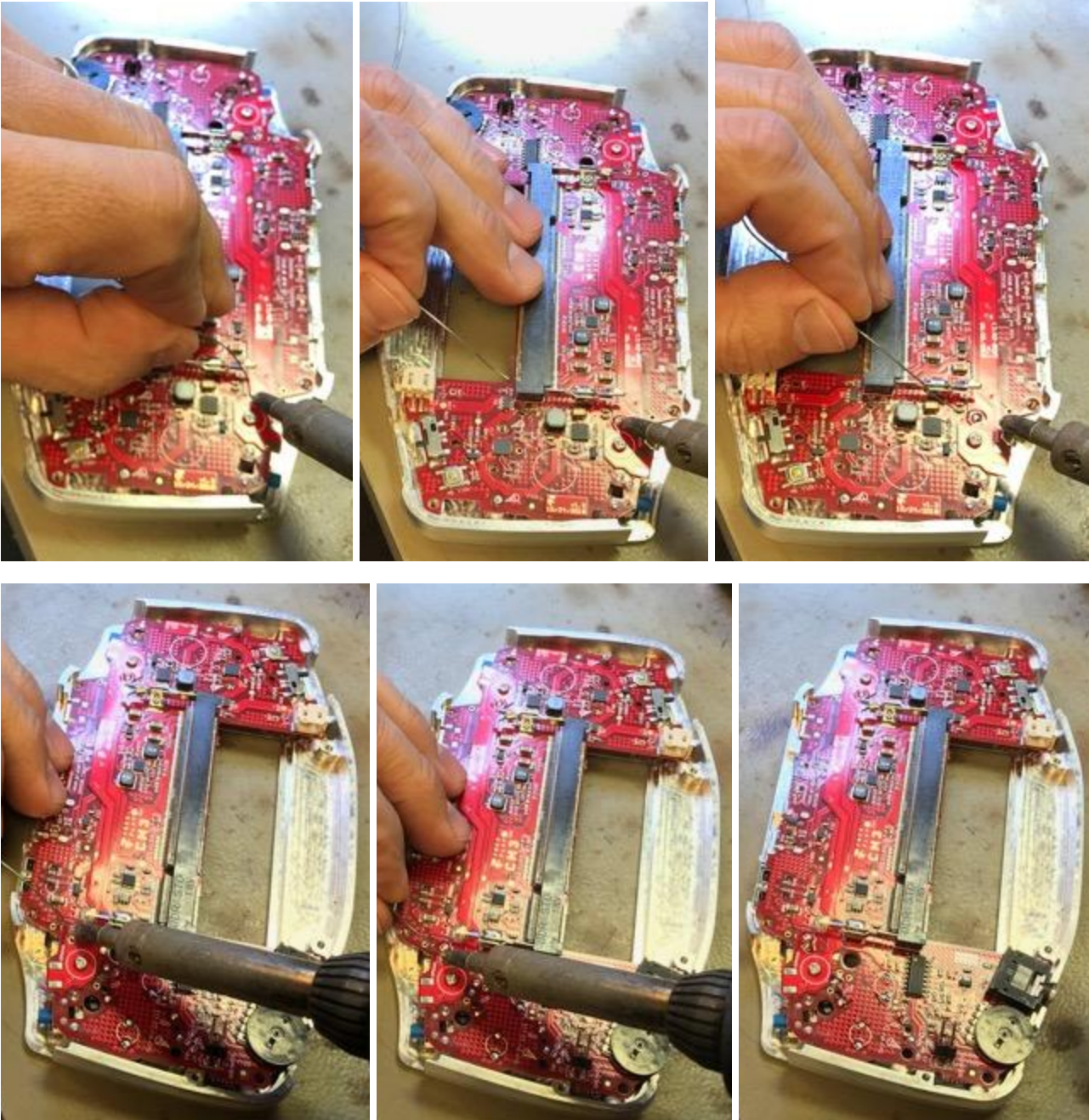




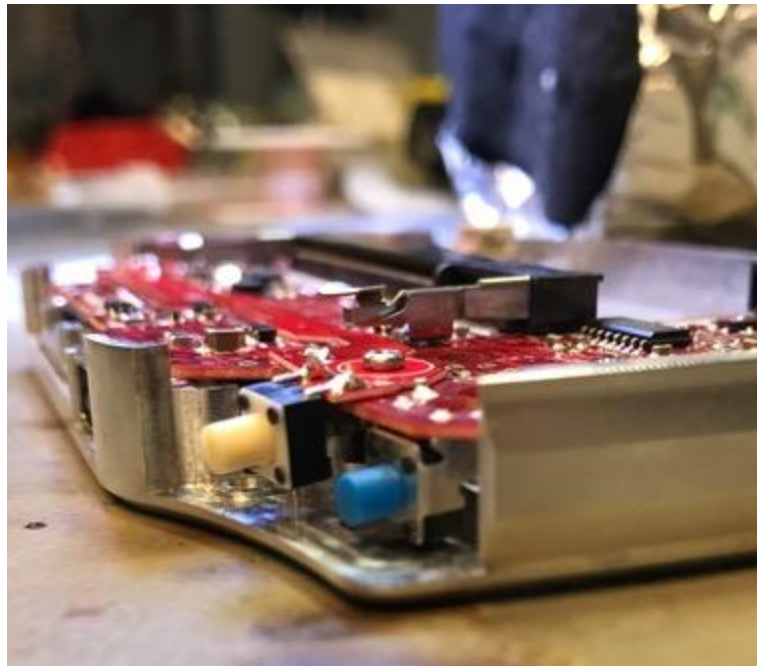


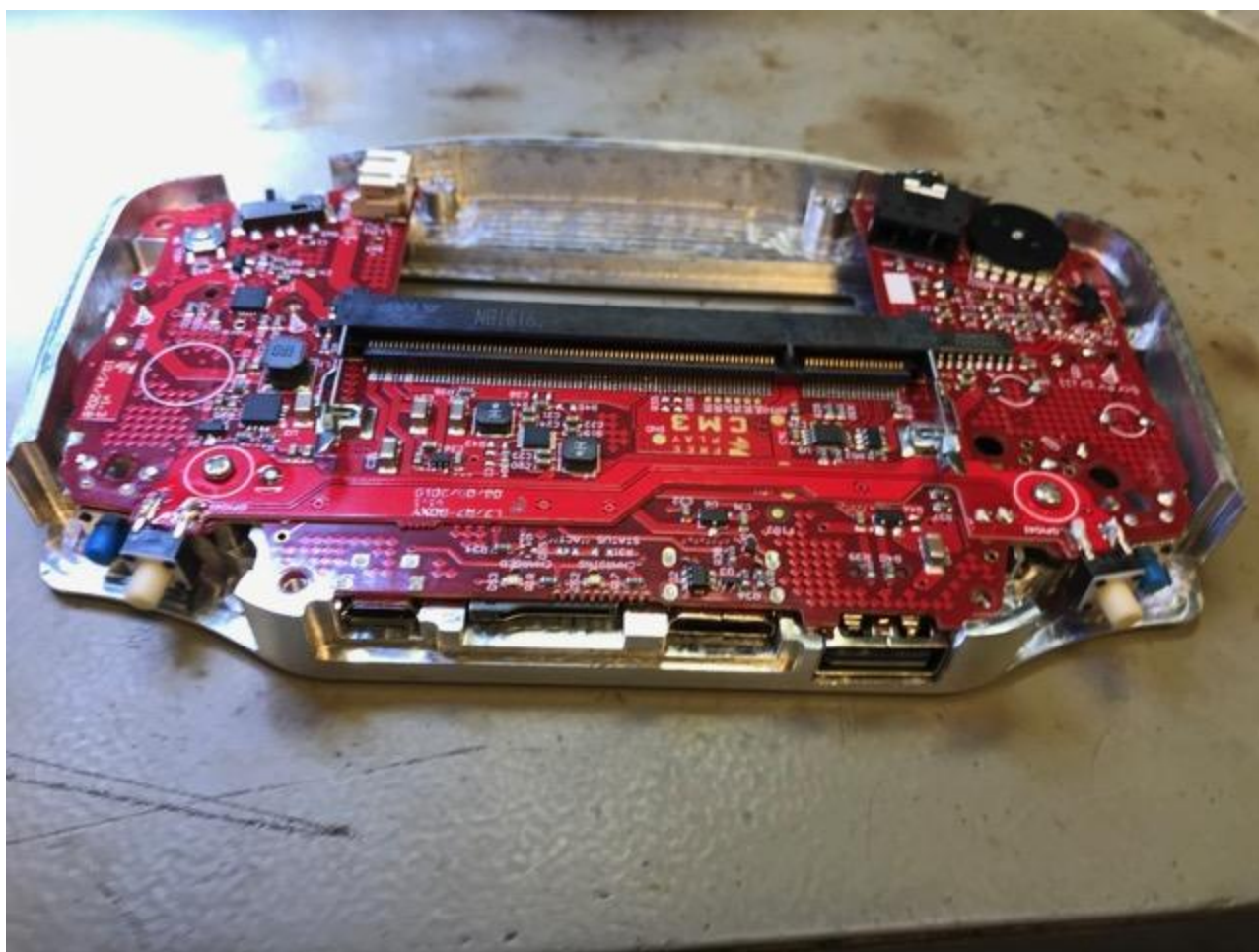


Solder The L2/R2 Add-On Board To The Freeplay CM3



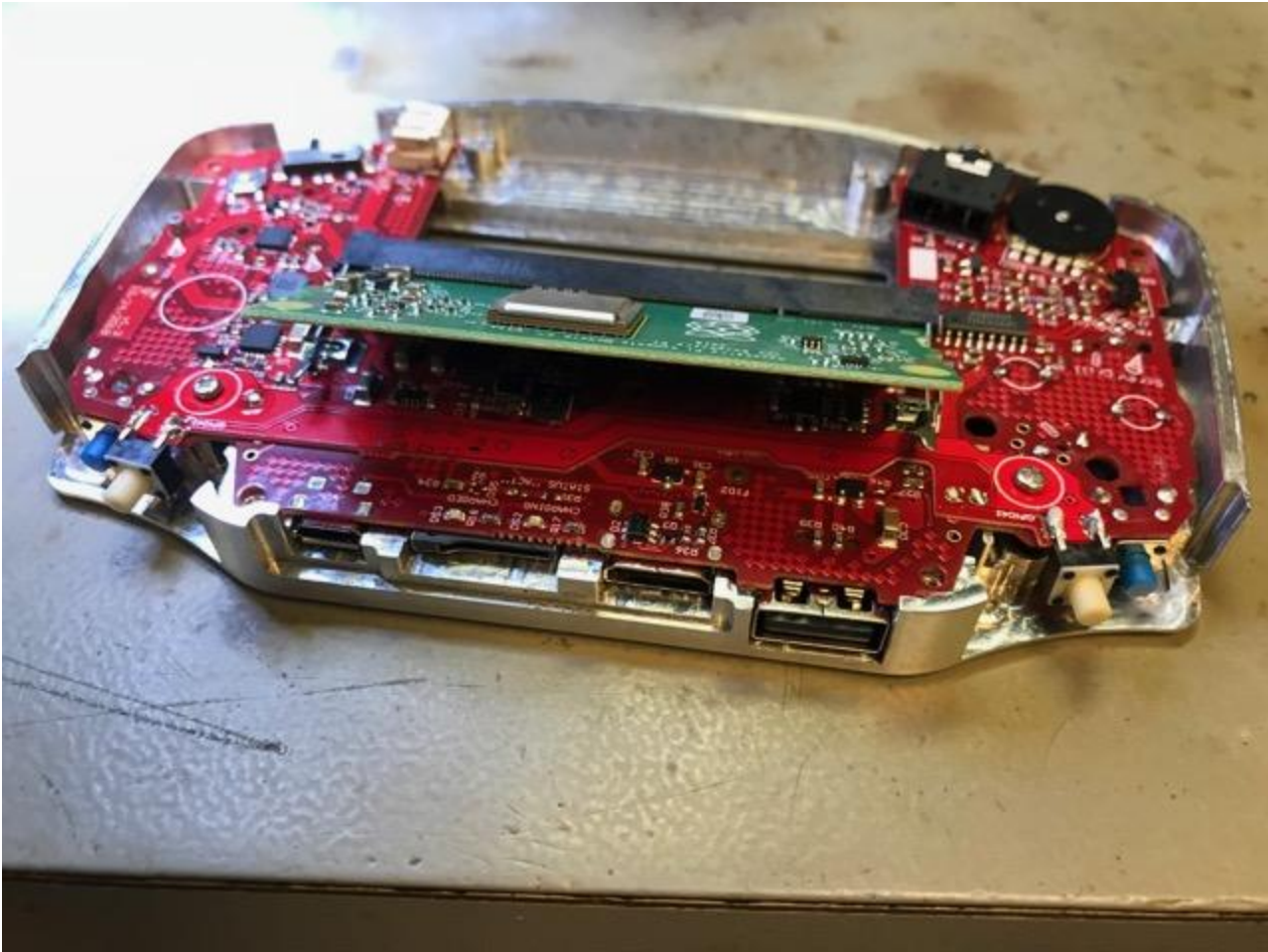
Solder The L2/R2 Buttons Onto The Add-On Board

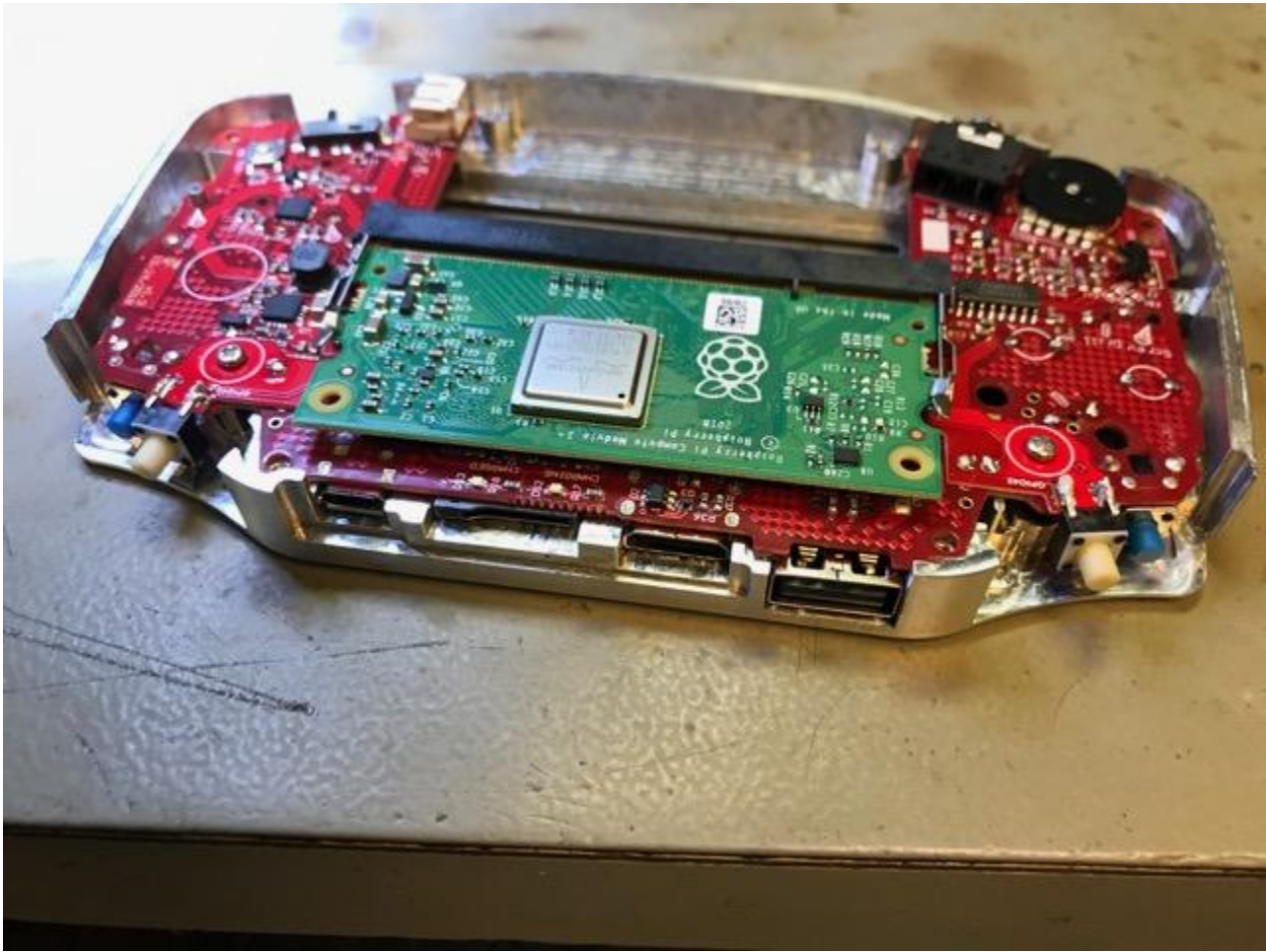


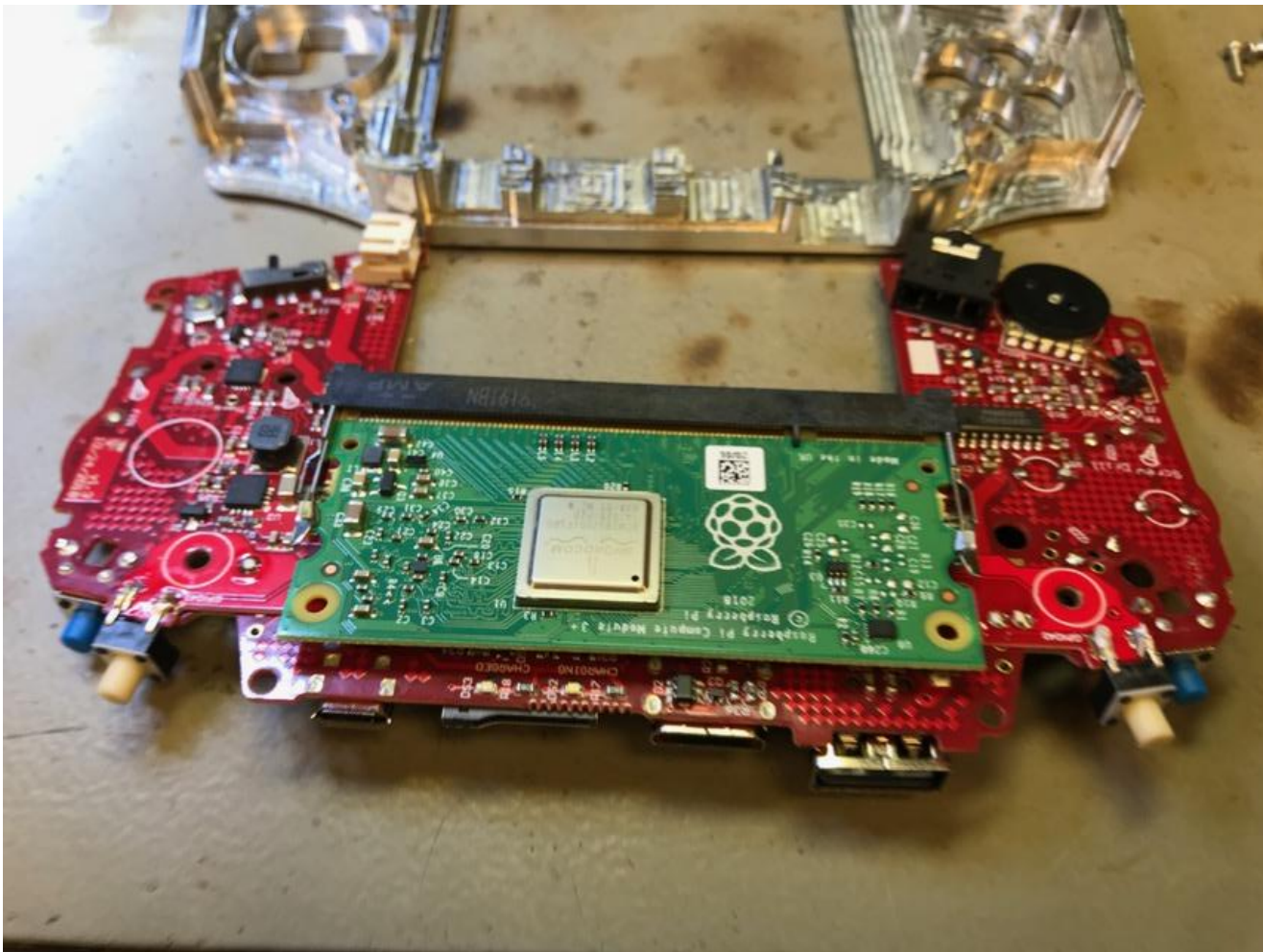


Re-Attach The Raspberry Pi Compute Module To The Freeplay CM3

If you are using the version with ADC for a standard GBA shell, make sure you solder your analog stick connections and place them under the main PCB before you screw everything down and put the CM3 in its socket.







Software Setup

SSH into your Freeplay CM3 and run these commands

```
cd /home/pi/Freeplay
mv mk_arcade_joystick_rpi mk_arcade_joystick_rpi_old
git clone https://github.com/TheFlav/mk\_arcade\_joystick\_rpi.git
cd mk_arcade_joystick_rpi
./install.sh
```

Make sure it says “DKMS: install completed.” near the end of the output. If you see the word FATAL or ERROR near the bottom, something went wrong. Please post a copy of the output at <https://forum.freeplaytech.com/showthread.php?tid=4669>

After the driver is installed, edit the conf file:

```
sudo nano /etc/modprobe.d/mk_arcade_joystick.conf
```

That file should have several example lines in it for different configurations. For most installs, choose one and remove the # from the front of the line. Any line starting with # will be ignored (commented out). See the next section for more info about this file and its contents.

This process can be simplified for analog sticks by using the `make config` Makefile target to run an analog reading utility. It will generate a config for you as well as get the min/max values of the analog sticks.

It may be necessary to run the utility again after restart because of the way it reads the L2/R2 and L3/R3. If the config generator says reversed logic, you can either edit the config above manually or re-run the utility after reboot.

For more details about this setup process, refer to https://github.com/TheFlav/mk_arcade_joystick_rpi.

After editing the file to have the options you need for your setup, reboot. When you are back at the main menu, go through this process:

- Press Start (which may now be the right shoulder or other button)
- Choose CONFIGURE INPUT
- Hold down the A button to begin the process
- Set up the buttons however you wish

mk_arcade_joystick.conf Options

Example for L2/R2 Add-on

```
options mk_arcade_joystick_rpi map=4 gpio=4,17,6,5,19,26,16,24,23,18,15,14,-20,42,43,-1,-1,-1,-1,-1,-1
hkmode=2
```

After changing this configuration, you may want to reboot and then configure inputs in EmulationStation/RetroPie.