3D Printer Slot Assembly Shell for GR8BIT

August 18th, 2019.

A 3D Printed cartridge slot frame and mount for your GR8BIT computer. It is designed to occupy 2 half height 5.25" drive bays.

Cartridges will only fit in the slot in the correct orientation, label side up. Cartridges following MSX standards should not be obstructed. However I do not have any thing beyond Konami style cartridges to test with.

Printing

There are 3 pieces to print, a front, left and right side.
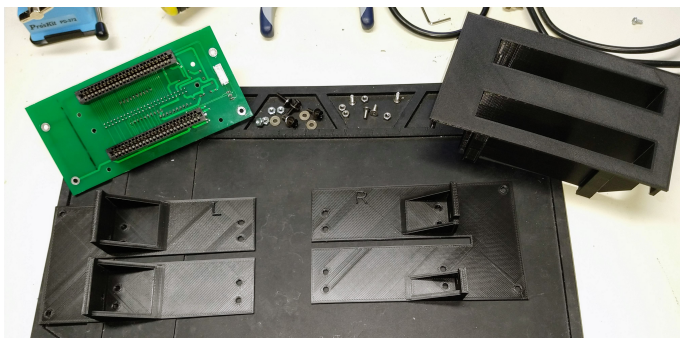
All 3 parts are meant to be printed with the broad face down. You will have to rotate the left and right side in your slicing software as the STL models are upright.

I used 20% infill, no first layer adhesion features such as brim, and otherwise default slicer options for Ultimaker Cura 4. What you see is printed by my Creality Ender 3.

There are cut-outs for insertion switches in the front-panel piece that will require keeping 'support' structures enabled in the slicing software.

Assembly

WARNING: Always be cautious not to over-tighten screws in 3D prints. Over-tight screws usually lead to splitting along layers.

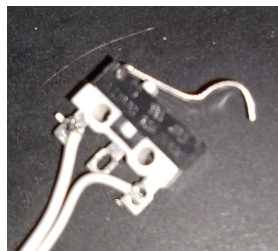## Build motherboard to slot board cable

If you bypassed the insertion switch mechanism by jumpering across GR8BIT motherboard connector 3, you'll need to pull that and build a new cable to bridge to the slot board.
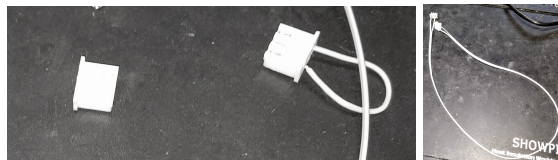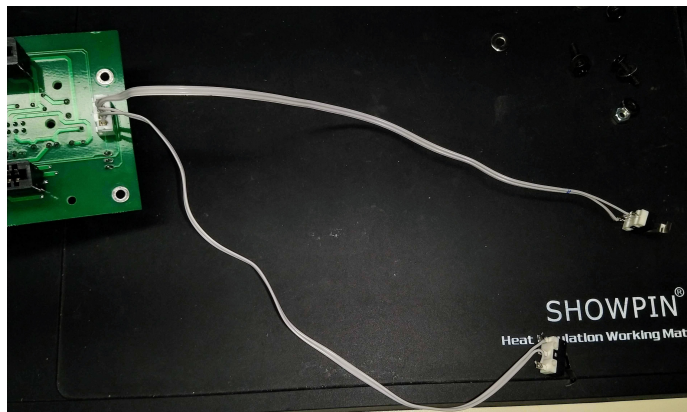

Build switch cable

The front panel has insert points designed for the following switch:

Switch Model SS0750303F050S1A

Assemble the cable, 2 wires to each switch. Connect to the outer most pair of terminals on the switch so that it operates in the normally-closed mode.
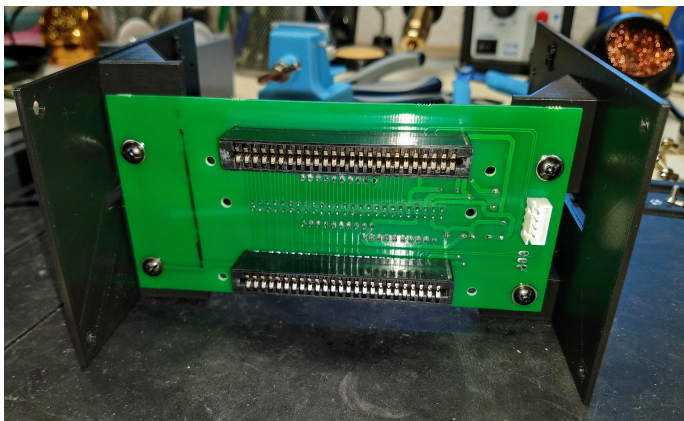

Switch will snap into place in the front panel piece.

Be sure to place the switch in correct slot. The fulcrum of the lever should be toward the front of the panel.

NOTE: You will most likely need to carefully bend the arc of the switch lever out 1 or 2 mm to ensure that all cartridges trigger the switch.

Attach slot pcboard

Using **3mm machine screws**, washers and nuts, mount the slot assembly pcboard onto the drive bay adapters.

Each piece, left and right, has an 'R' or 'L' on the inside to indicate (from the front) which piece belongs on which side. Also, the left side will not fit on the right side.

Attach the front face

Connect the insertion protection switches to the pcboard with the 4 pin connector.

The front panel has the word 'TOP' on the inside TOP. Mount it to the front with 4 screws and nuts. There are guides for framing the pcboard. Make sure it is flush against the pcboard.

WARNING: Again, do not over-tighten screws. These only need to be 'hand-tight'.
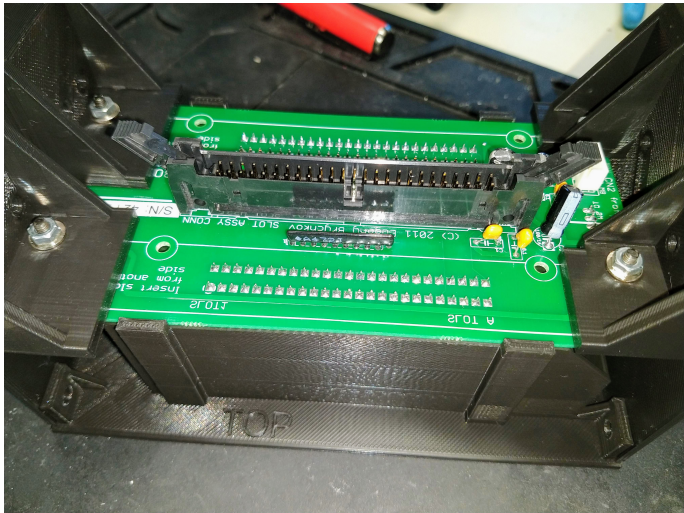
Install into drive bay

Install into the pc case drive bays. Most pc cases today have support guides separating each half-height segment. The side pieces of this assembly have a gap provided to fit around it.

4 mounting screw points are present for each half-height section. You should mount with 2 screws for each section (4 per side) to distribute the strain. I again use 3mm machine screws, with a washer and nut on the inside.

Alternatively, you may find it easier to mount in your drive bay with self-tapping screws. Again, don't over-tighten

Ready to play

Reassemble your GR8BIT, and enjoy.

Files

STL files to slice

- front-panel.stl - model from slot frame
- fp-mount-left.stl - left hand model for dual-half height bay
- fp-mount-right.stl - right hand model for dual-half height bay

Source Files

These items were modelled with OpenSCAD. Below are the source file names included for each STL file.

- front-panel.scad - source for slot frame
- fp-mount-left.scad - left hand side (from front view)
- fp-mount-right.scad - right hand side (from front view)