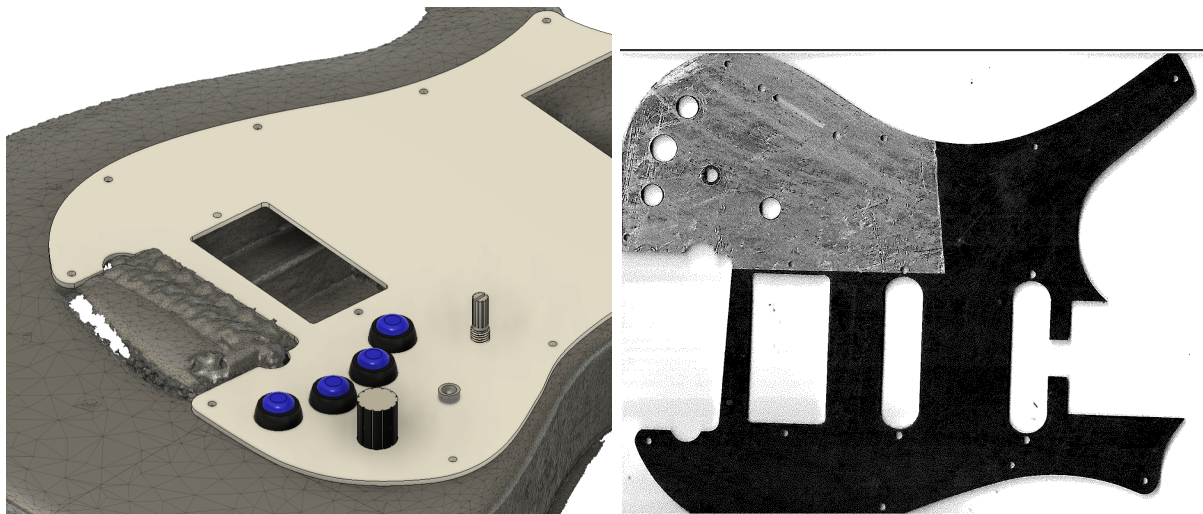


Embedded Switches Write-Up

The team was assigned the project and given an already working system that simply needed a more efficient and visually appealing design. Last year's group had got the project running on a breadboard, and created a prototype PCB. The group was given the task of creating a pick guard that would encase all the wiring and components needed to essentially have a pedal board implemented directly onto the guitar.



Through the use of the ARC a group member was able to obtain physical 3d scans of the guitar base and the cavity. The pickguard was not able to be 3D scanned due to its minimal thickness and high gloss. Instead, it was placed on a flatbed scanner and the outline was traced. Once the pick guard was traced, a layout for button placement was able to be designed in fusion. The pick guard was then laser cut from scrap acrylic in Washburn.



A challenge faced by the group was devising a way to charge the battery. There was a very space consuming micro usb to micro usb cord that was initially to be used but the group was able to find a more efficient method. The group ordered a barrel jack set, and the female jack was added to the pickguard.

The group met up in Innovation Studio and was able to assemble the embedded system as best as possible using various tools and methods.



A further expansion of the project was to manufacture a new PCB. A design was made, however the group ran into a challenge with this as meeting with the correct faculty took a week to schedule and an additional week to actually meet in person just to check the design. This resulted in the PCB not being manufactured. The group also decided that the further expansion of this project would not be enough for a full term of work. Therefore, apart from that expansion the project is nearly completed.

