

Lab 2: Test Apparatus Construction

Due: Tuesday 02/12/2019

Objectives

1. To design and construct a test apparatus for guitar pedals for labs in Analog Circuit Design.

Supplies

- Two 1/4 inch audio jacks
- One breadboard
- One 3PDT switch
- One toggle switch
- Any other materials you can find or make in the engineering center

Requirements

Build a test apparatus with your lab partner to build and test guitar pedal circuits on. We will make use of this apparatus regularly throughout the semester. The requirements are as follows:

- The apparatus should be self contained and portable.
- The toggle switch should be mounted, and be wired into the breadboard (solder wires to the terminals and connect them to independent nodes in the breadboard)
- There should be places to mount potentiometers. You will be provided one potentiometer so that you can make holes the correct size.
- One 1/4 inch audio jack is an input. It should be mounted. It should also be possible to inject an input into the circuit using a function generator.
- One 1/4 inch audio jack is an output. It should be mounted. It should also be possible to measure the output signal with an oscilloscope.
- There should be clear labeling for power and ground rails for circuits built on this apparatus.
- The apparatus should be wired in true bypass with the 3PDT switch used to turn the circuit on or off.

Submit a short report (one per group) written in L^AT_EX that includes at a minimum, the following components:

- A 3D model of your test apparatus (Fusion360)
- A picture of your test apparatus, showing that it matches the 3D model
- A short discussion of any design choices made for the apparatus