

EET-250L

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Experiment #2
Equipment Investigation, Troubleshooting & Repair

This exercise is a new venture in the EET-250L lab sequence.

The goals of this lab are:

- 1.) Perform a visual inspection and perform a function test on the device.
- 2.) Disassemble and reassemble an electrical device.
- 3.) Review practical schematic diagrams for the device.
- 4.) Use the schematics and compare them with the exposed internal components of the device.
- 5.) Locate and repair/replace any defective components seen or noted.
- 6.) Perform a system test to verify that the device is working properly.

Be sure to document your findings and any adjustments or repairs you make to your PAD-234 Trainer during this exercise. When you open up your case, your first order of business is to remove ANY loose wires or components which may have been dropped into the PAD-234 case. These loose wires & components can create shorts and failures. As such, loose wires & components should NEVER be stored inside the case.

I. Component Identification & Location

Complete the Table on the other side of this sheet in the following manner. Be sure to indicate the number of the PAD-234 Trainer you are working on. If you don't see a number, ask your instructor so one can be assigned. **Make special notes if you see any signs of component failure on your specific PAD-234.**

A list of components which are used in the PAD-234 are listed in the column entitled "**Component ID**".

Find each component on one of the schematic diagrams and in the column entitled "**Schematic**", write either "P", "G" or "D" to indicate on which schematic diagram (*Power Supply, Generator, Digital*, respectively) the component is located.

Then in the "**Schematic Location**" column indicate which quadrant the component is located on the schematic by the Column (Letter) and Row (Number). **Example:** *Component U5 is on schematic "G" and is located at D1.*

Then search the PAD-234 "**Main Circuit Board/Switch Board/Chassis**" to find the component and indicate if that particular component is located on the main circuit board (*MB*), the switch board (*SB*) or mounted to the chassis/case (*Ch*).

In the column labelled "**Description/Comments**" record a description of the component (*diode, regulator, LED, etc.*) and any other distinctive info about the component.

One of the items on the schematics is the "Title Block", which contains relevant information about the schematic diagrams such as the company the schematic belongs to, the person/department that drew the diagram, the date it was drawn, the function of the schematic/circuit, the revision or version to which this drawing applies and other pertinent info. When using schematics for troubleshooting, always try to make sure the schematic being used correlates to the same version/revision of the circuit you're testing.