Test plan for electric guitar kits

Amplifier testing

Setup:

Insert picture

Equipment needed

-Oscilloscope w/probes
-Function generator
-DC power supply
-Multimeter

Procedure:

1) Attach a scope probe to the input and output

2) Connect the DC power supply to the input of the switch

3) Connect the function generator to the input of the amplifier

4) Connect the multimeter to the output of the amplifier and set to AC measuring mode

5) Set the function generator to 160Hz sine wave with voltage of 100mV rms or 142mV amplitude

6) Set the DC power supply to 6Vdc

7) With the lowest gain resistor of 1.5k ohm, Turn on the power and confirm that the ON/OFF switch works. (criteria A)

8) Set the volume switch to the potentiometer and raise and lower the volume, volume on output should change, volume down for CCW movement, volume up for CW movement. (criteria B)

9) Turn the volume all the way up and confirm that the average voltage is no less than 5mV difference from the voltage on the input to the output. (criteria C)

10) Set the volume switch to the resistor position. Place two 5k ohm resistors in the sockets for the upper and lower resistor. Measure the output, passing is roughly half the voltage on the input from the function generator. (criteria D)

11) For testing gain, the volume switch needs to be in the potentiometer position with the potentiometer set so the volume is all the way up. Confirm that there is little to no distortion with a resistor value of 1.5k ohm, moderate distortion with a 1k ohm resistor and the highest amount of distortion with a resistor such as a 470 or 510 ohm. (criteria E)
Verification testing:

Date performed: 05/11/2010

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