

hole parts, their correct positions, polarity orientations and that there is no visual damage to any part present on VSSA PCB, including SMD electronic parts.

Cleaning instructions

Cleaning of the PCB is recommended before proceeding to calibration adjustments. PCB cleaning can be successfully performed with Trichloroethylene (C_2HCl_3) solution. Pay attention to manufacturer's user manual instructions and necessary safety precautions by using this cleaning product.

Calibration adjustments

VSSA amplifier module needs to be calibrated prior normal operation use. Calibration is straightforward and performed in two steps. This procedure requires two digital volt meters equipped with V and mV range, so the adjustments can be precise to 0,1 mV. In both steps of calibration connect VSSA amplifier module as shown in diagram (Fig.2) and fix it to heatsink as described in thermal considerations. GND potential is automatically connected to the heatsink by bolts of KSA and KSC transistors.

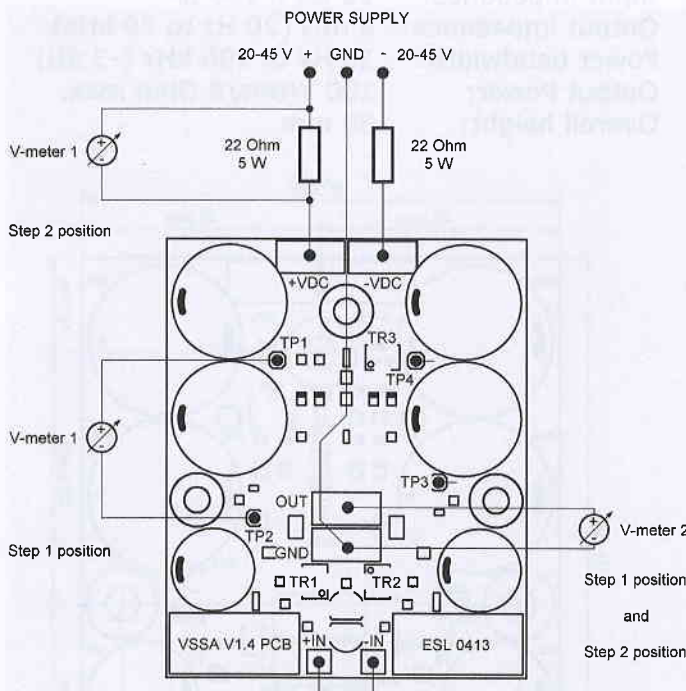


Fig.2 Calibration adjustments connection diagram

Do not forget to connect +IN and -IN input pads together by piece of a short wire. Perform

calibration adjustment measurements as specified in the next two steps:

1. **In Step 1 of calibration adjustment procedure only TR1 and TR2 trimmers will be adjusted.** Step 1 calibration adjustments will set VSSA amplifier to correct input bias current, correct VAS bias current and zero output DC offset voltage. In Step 1 procedure V-meter 1 is connected to TP1 and TP2, V-meter 2 is connected to OUT and GND, just as drawn in a schematic diagram (Fig.2). Set both V-meters to mV range. Power supply is connected to VSSA amplifier module via 22 Ohm/5 W resistors (Fig.2), please give enough space between the resistors to avoid any short circuits. **Our final target for V-meter 1 reading is 120 mV and 0 mV for V-meter 2 reading.** Turn on the power supply and observe both V-meters displayed values. Clockwise rotation of TR1 will increase mV value of V-meter 1 and decrease mV value of V-meter 2. Clockwise rotation of TR2 will increase mV value of V-meter 1 and increase mV value of V-meter 2. **Adjust trimmers gradually and only one at the time, so you can clearly notice the tendency of each trimmer rotation and mV readings on both V-meters.** Rotate trimmers in a direction to reach our final target goal 120 mV reading on V-meter 1 (meaning 12 mA VAS bias current) and 0 mV on V-meter 2 (meaning zero output DC offset). Test points TP3 (positive) and TP4 (negative) have the same function as TP1 and TP2 on T5 side and serves to measure VAS bias current on T6 side.
2. **In Step 2 of calibration adjustment procedure only TR3 trimmer will be adjusted.** Step 2 calibration adjustment will set VSSA amplifier to correct output bias current. In Step 2 procedure V-meter 1 is connected to positive rail 22 Ohm/5 W resistor, V-meter 2 is connected to OUT and GND, just as drawn in a schematic diagram (Fig.2), set V-meter 1 to V range and V-meter 2 to mV range. **Our final target for V-meter 1 reading is 4,00 V and 0 mV for V-meter 2 reading.** Turn on the power supply and observe both V-meters displayed values. Clockwise