

Dual VCA Troubleshooting Guide

1. Remove both ICs and connect power
2. Print out the component overlay to mark off the test results
3. Perform all the voltage tests in the assembly guide
 - a. this confirms the following are working OK and you can check them off on the component overlay sheet: SV1, C2, C4, C6, C3, C5
 - b. remove all jumpers, inputs and outputs
4. Plug signal from a VCO into DCIN Jack A
 - a. using a breadboard jumper and alligator clips to a jack plug, connect pin 4 of IC1 socket to your output (mixer etc.)
 - b. you should faintly hear the output from the vco; you may have to increase the volume on your output
 - c. disconnect the output to the audio
 - d. run a 5V DC voltage into the DCIN Jack A
 - e. measure the voltage at pin 4 of IC1 open socket. You should get approximately 9 or 10mV
 - f. this confirms the following are working OK and you can check them off on the component overlay sheet: J1, R3, R5
 - g. remove all jumpers, inputs and outputs
5. Plug signal from a VCO into DCIN Jack B
 - a. using a breadboard jumper and alligator clips to a jack plug, connect pin 13 of IC1 socket to your output (mixer etc)
 - b. you should faintly hear the output from the vco; you may have to increase the volume on your output
 - c. disconnect the output to the audio
 - d. run a 5V DC voltage into the DCIN Jack B
 - e. measure the voltage at pin 13 of IC1 open socket,. You should get approximately 9 or 10mV
 - f. this confirms the following are working OK and you can check them off on the component overlay sheet: J8, R20, R15
 - g. remove all jumpers, inputs and outputs

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6. Measure the voltage at pin 3 of IC1 open socket
 - a. adjust R1 trimmer from 0 fully CCW to fully CW
 - b. you should see the voltage move from approx -2.5mV to +2.6mV
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: R1, R2, R4

7. Measure the voltage at pin 14 of IC1 open socket
 - a. adjust R14 trimmer from 0 fully CCW to fully CW
 - b. you should see the voltage move from approx -2.5mV to +2.6mV
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: R14, R23, R16

8. Measure the voltage at pin 2 of IC2 open socket
 - a. adjust VR1 from fully CW to fully CCW
 - b. you should see the voltage move from between approx 0V to +6.5V, depending on the value you selected for R10
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: VR1, R10, R11

9. Measure the voltage at pin 9 of IC2 open socket
 - a. adjust VR2 from fully CW to fully CCW
 - b. you should see the voltage move from approx 0V to +6.5V, depending on the value you selected for R26
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: VR2, R26, R25

10. Run a 5V DC voltage into a CV Jack A
 - a. measure the voltage at pin 2 of IC2 open socket
 - b. adjust VR1 to 0
 - c. you should measure between +1 and +2V, depending on the value you selected for R10
 - d. repeat for the other CV Jack A
 - e. this confirms the following are working OK and you can check them off on the component overlay sheet: J3, J4, R8, R9
 - f. remove all jumpers, inputs and outputs

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11. Run a 5V DC voltage into a CV Jack B
 - a. measure the voltage at pin 9 of IC2 open socket
 - b. adjust VR2 to 0
 - c. you should measure between +1 and +2V, depending on the value you selected for R26
 - d. repeat for the other CV Jack B
 - e. this confirms the following are working OK and you can check them off on the component overlay sheet: J9, J10, R21, R22
 - f. remove all jumpers, inputs and outputs
- 12. Reinstall IC2 (TL074) but not IC1**
13. Measure the voltage at pin 1 of IC1 open socket
 - a. adjust VR1 from fully CCW to fully CW
 - b. you should see the voltage move from between approx 0V to -10V as you rotate the pot
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: D1, R13, R12, Q1, IC2 (partly)
14. Measure the voltage at pin 16 of IC1 open socket
 - a. adjust VR2 from fully CCW to fully CW
 - b. you should see the voltage move from between approx 0V to -10V as you rotate the pot
 - c. this confirms the following are working OK and you can check them off on the component overlay sheet: D2, R24, R18, Q2, IC2 (partly)
15. Using a breadboard jumper, short pins 4 and 5 of IC1 open socket
 - a. connect OUTA socket to your output (mixer etc)
 - b. plug signal from a VCO into DCIN Jack A
 - c. you should hear the output from the VCO
 - d. plug signal from a VCO into ACIN Jack A
 - e. you should hear the output from the VCO
 - f. this confirms the following are working OK and you can check them off on the component overlay sheet: C8, R6, R7, IC2 (partly), J5, J2, C1
 - g. remove all jumpers, inputs and outputs

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16. Using a breadboard jumper, short pins 12 and 13 of IC1 open socket
 - a. connect OUTB socket to your output (mixer etc)
 - b. plug signal from a VCO into DCIN Jack B
 - c. you should hear the output from the VCO
 - d. plug signal from a VCO into ACIN Jack B
 - e. you should hear the output from the VCO
 - f. this confirms the following are working OK and you can check them off on the component overlay sheet: C9, R19, R17, IC2 (partly), J6, J8, C12
 - g. remove all jumpers, inputs and outputs

17. Install a different IC1 if all the above tests pass