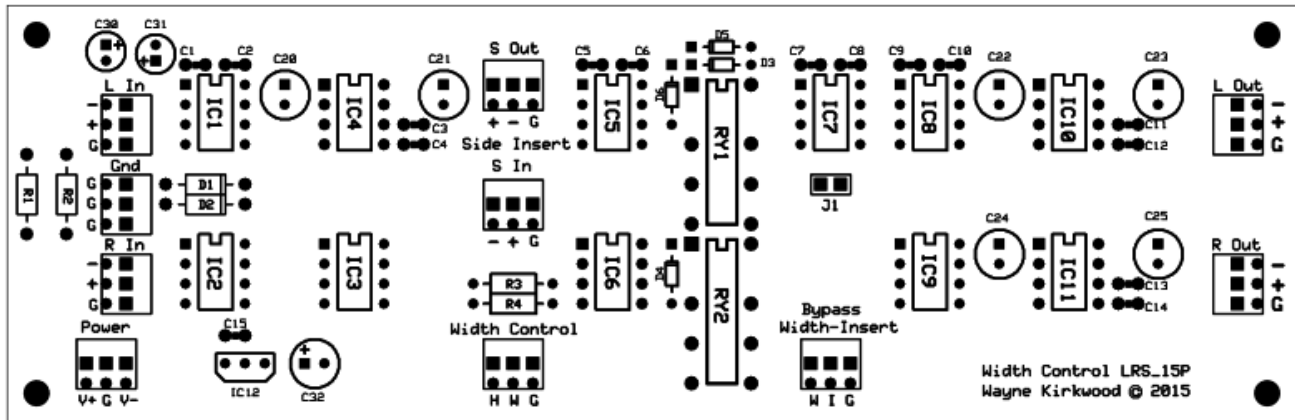


Assembly Instructions for the KA Electronics Stereo Width Controller



Stereo Width Controller PC Board Stuffing Guide

Install IC sockets

Place the PC Board on the bench silkscreen side face up.

Drop 11 8 pin IC sockets into their respective locations. Observe orientation of the notch.

Lift the board up and place a piece of cardboard on top of the board to form a sandwich of PC board, sockets and cardboard.

The cardboard is used to hold the sockets in place so the board can be turned over without the sockets dropping out.

Flip the board over.

Tack Solder only two of the round corner IC pins.

Once all the IC sockets are tack soldered, flip the board over.

Make certain that each socket is correctly oriented, fully seated on the board and square.

If you're satisfied with the sockets solder all of the remaining pins.

Visually check each pin's connection particularly those to the ground plane. Reheat any pins if needed.

Install resistors and diodes

Install 1R 1W fuse resistor in R1 and R2.

Install 100K 1% at R3 and R4.

Install 1N4004 diodes at D1 and D2. Observe polarity.

Install 1N4148 diodes at D3-D6.

Install ceramic capacitors

Install 100 nF (0.1uF) at C1-C15.

Install electrolytic capacitors

Note: The + (positive) terminals of the electrolytic have a square pad.

Install 47uF 35V at C30 and C31. The polarity of these capacitors are critical.

Install a 10 uF 25V polarized capacitor in C32.

The following capacitors to be installed are 10uF 25V. If the builder uses bipolar capacitors polarity is not important. If polar capacitors are used make certain that the positive (long) lead is in the square pad.

Install the 10uF 25V in C20-C25.

Install Phoenix three pin connectors at 10 locations.

Install relays and IC12

Install an LM78L12 regulator at IC12. Observe orientation.

Install DIP relays in locations RY1 and RY2.

Note: Do not install the ICs at this time.

Check all solder connections and reheat or reflow them if necessary.

Initial Tests

DC Tests

Connect a source of bipolar DC power.

Ground is in the middle.

If a variable power supply is used slowly raise the voltage to about +/-15V.

There should be no measurable current draw.

Check the voltages at pin 7 of IC1. It should be +15V. The voltage at pin 4 should be -15V.

Check the voltage at pin 6 of IC4. It should be +15V. The voltage at pin 5 should be -15V.

If excess current is drawn check the board for solder bridges and correct polarity of D1, D2, C36 and C37.

Check the voltage at the output of the +12V regulator at the junction of IC12 and C32.

Remove power.

Install the ICS

Install THAT1246 ICs at IC1, IC2, IC5 and IC7.

Install THAT1240 ICs at IC3, IC6, IC8 and IC9.

Install THAT1646 ICs at IC4, IC10, and IC11.

Offset and Current Draw Tests

Reconnect power.

If a variable power supply is used slowly raise the voltage to about +/-15V.

Measure the DC voltage drop across R1 and R2. It should measure approximately 50 mV. (43-45 mV is typical indicating a current draw of 45 mA.)

Measure the DC voltages relative to ground at pin 6 of IC1, IC2, IC3, IC5, IC6, IC7, IC8 and IC9. They should each measure less than 10 mV until IC6. After IC6, without a potentiometer connected to the Width terminals, the offsets may read as high as 100 mV. With a pot connected or a jumper from the wiper to ground connection all offsets should be less than 10 mV.

Measure the DC voltages at both pins 1 and 8 of IC4, IC10 and IC11. They should each measure less than 10 mV.

This completes assembly and DC tests.

Detailed Parts List

A complete bill of materials is available from Mouser Electronics:

With THAT ICs: <https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=c66b355bb9>

Without THAT ICs: <https://www.mouser.com/ProjectManager/ProjectDetail.aspx?AccessID=96947b82d5>

Generic Parts List

Semiconductors

- 4) THAT1246 IC1, IC2, IC5, IC7
- 4) THAT1240 IC3, IC6, IC8, IC9
- 3) THAT1646 IC4, IC10, IC11
- 1) LM78L12 IC12
- 2) 1N4004 D1, D2
- 4) 1N4148 D3-D6

Electromechanical and Connectors

- 2) Relay DS2Y-S-DC12V RY1, RY2
- 11) 8 pin sockets
- 10) 3 pin Phoenix terminal blocks Mouser 651-1725669

Capacitors

- 15) 0.1/100V Mono Ceramic Mouser 581-SR201C104KAR C1-C15
- 6) 10uF radial NP or polarized 25V or greater C20-C25
- 1) 10uF radial polarized 25V or greater C32
- 2) 47uF/35V C30, C31

Resistors

- 2) 1R 1/4W R1, R2. (Flameproof/fusible is better but generic carbon film if that's all that's available. If you do use CF space it off the board.)
- 2) 100K 1% Mouser 271-100K-RC, R3, R4

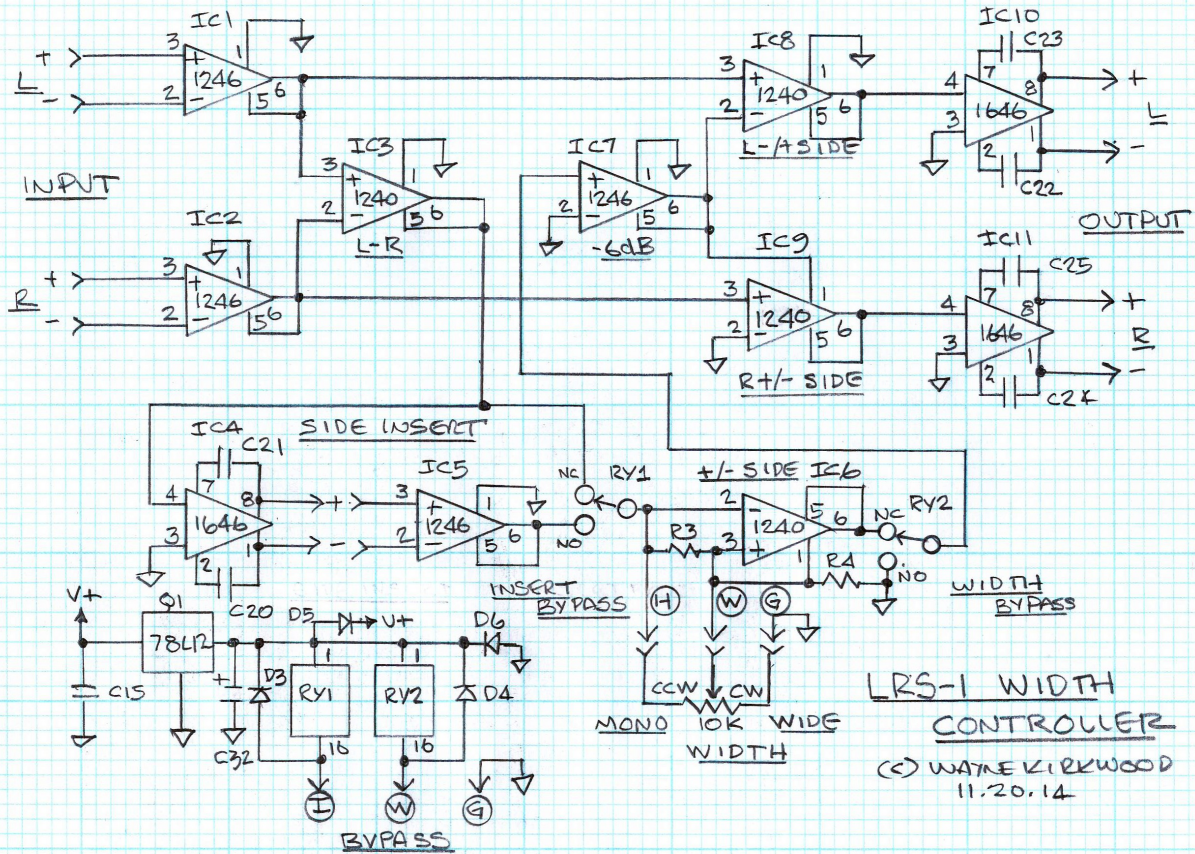
Other Resources

Pro Audio Design Forum Build Thread:

<http://www.proaudiodesignforum.com/forum/php/viewtopic.php?f=7&t=731>

For more information contact: sales@ka-electronics.com

Stereo Width Controller Schematic



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