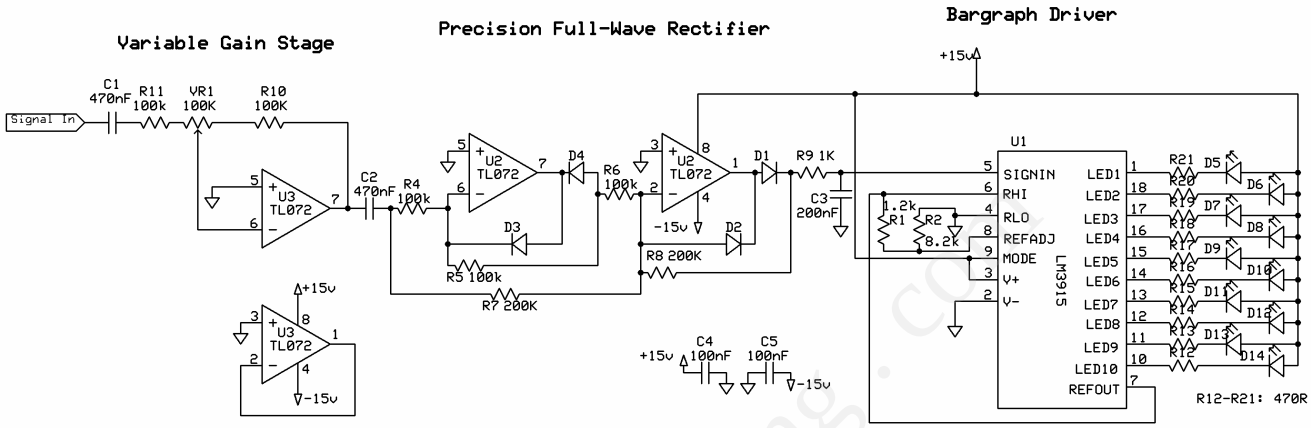
GROUP DIY

Universal Bargraph Driver

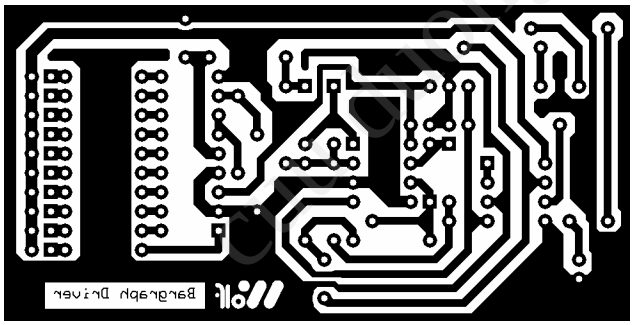
The circuit is based around the LM391x series of bargraph drivers. the original version uses an LM3915 version, which displays equal steps of 3dB per segment, but the LM3914 and 3916 can just as easily be used, giving a choice of linear or VU scaling. They are direct substitutions for the LM3915 and no alterations to the circuit need be made. The schematic is shown below.

The power supply can be anything from 15V to 24V, so if you have ±18V available, +18V can be used instead of +15V.

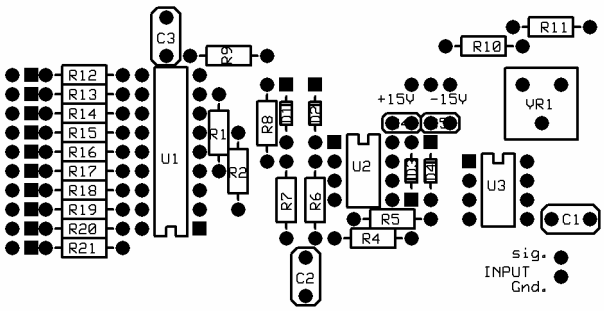


Schematic Diagram

The LM391x drivers display positive signals only, so the display driver is preceded by a precision, full-wave rectifier. To make this particular display board as versatile as possible, the whole arrangement is preceded by a variable gain stage at the front end, giving a ±6dB trim range with the values for R10, R11 and VR10. To give a greater trim range, increase the value of VR1 relative to R 10 and R11; for example, for a range of (approx.) ±20dB, VR1 should be ten times the value of R10 and R11, which in this instance would be 1MΩ. The same gain trim range could be accomplished if VR1 is kept at 100KΩ by reducing the values of R10 and R11 to 10kΩ, but this reduces the input impedance of the gain stage to a minimum value of 10KΩ, dependent on gain setting.



The PCB Trace layout (reversed)



The Component Overlay