

Main overlay for the Transcendent 2000 synthesiser design. As you may notice only a little over half the board is shown here. The other half you'll find over the page.

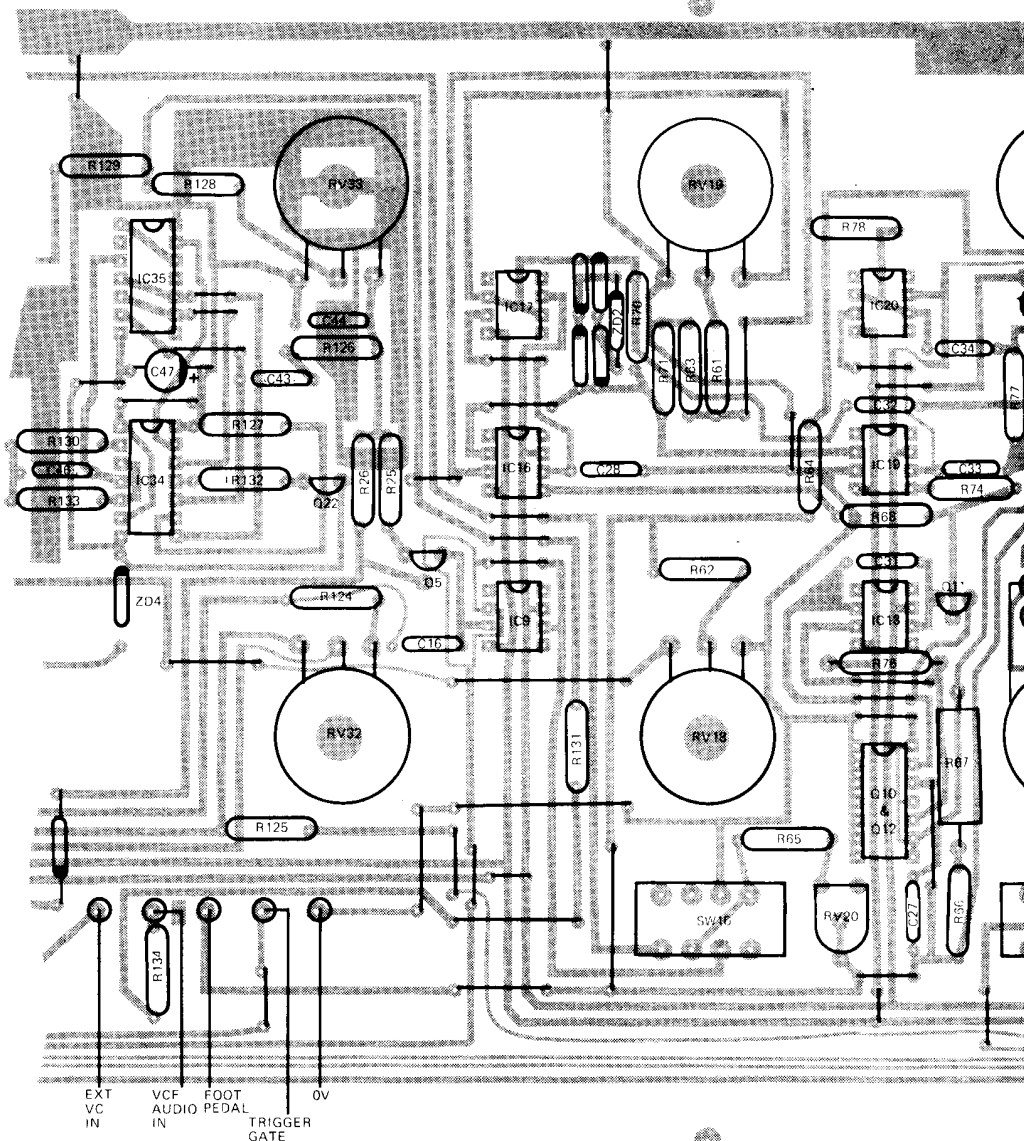
The reason for this is simply that with a PCB of this size our pages are too small to hold the diagram and still have it readable.

Foil patterns are not shown here, and the PCB is available from Powertran — see BUYLINES for details.

The two sets of contacts shown are mated with the Chiri connectors from the back panel wiring. Make sure the pins are straight, and that no solder has run down from the board, or the plug will not fit properly.

On the lower right is shown the PSU board overlay. Note that Q3 and Q1 require to be heat-sinked for correct operation.

Both the boards should be checked very carefully during assembly, and make sure you use the switch spacers on the main PCB. Cut the pot spindles *before* mounting them.



Problems?

Any problems in the VCF circuitry are likely to emanate from IC16 or IC19. If there are any large input offset voltages or current mirror imbalances or output leakage currents, then these will degrade the VCF performance. What will probably occur is that there will be a large DC offset voltage on the outputs that varies as the resonant frequency varies. This may cause severe signal dipping at certain frequencies and will only be cured by replacing the errant 3080.

The filter has two outputs, a bandpass and a lowpass. The signal volume will generally be less from the bandpass output because this output

attenuates all but the harmonics that lie close to its own resonant frequency, whereas the lowpass output has a flat response area which extends from somewhere just below resonance down towards low frequencies, and harmonics in this region are not affected.

Sweeping Statement

The 'synthesiser sound' is generated by sweeping the VCF resonant frequency with an AD waveform. This sweep voltage is variable in both depth and direction. The sweep pot is a dual pot; on one of its tracks there is an AD waveform at one end and the inverse at the other. Thus the wiper

will pan from a sweep going upwards to one going downwards. Two diodes provide a dead zone in the middle so that a pot position of No Sweep can be easily found. The second track on the AD sweep pot is used to provide a compensating DC level shift so that the frequency pot doesn't need to be retuned when the AD sweep depth is altered.

ADSR Alignment

Set up the VCO and VCF so that a ramp waveform at 500 Hz is presented to the VCA. Turn the RELEASE pot fully clockwise and put the BYPASS switch in the ADSR position. Listen to the VCA output

