

As I posted before, the main difference in sound between the OB-8 and the OB-Xa is a bass loss of the OB-8 due to a 22Hz highpass in the signal path.

While 22Hz don't look that dramatic, remind You that the phase is fucked up at much higher frequencies. You can see the saw wave distorted to an exponential slope instead of a linear one for the entire low octave. The pulse has extreme overshoots (differentiated), and the triangle is hard to describe, but not a triangle at all anymore.

In my earlier posting I suggested increasing coupling capacitors, but this affects the autotune routine which is optimized for speed and will produce errors with the enlarged time constants.

Last night I tried an alternative method: Compensating the phase shift of the voices in the output stage (after the autotune loop).

The "bad guy" actually is the coupling between the VCF and VCA: it's a 75kOhm resistor in series with a 100nF capacitor.

To compensate for this, we have to put a similar network into the feedback loop of an opamp.

To avoid additional stages, I decided to change the frequency response of the opamp that converts the final VCA's output current to a voltage.

Now here's the way to go:

- (1) Replace the resistors R505 and R506 (100k) with 1M resistors on both voice boards (4 resistors in total). If You stand in front of Your open OB-8, these resistors are located near the right edge of the board, next to a TL082 opamp. Cutting them out is easier than desoldering them on the 2-sided pcb.
- (2) Now build a small network of a 120k resistor and a 56nF cap *in series* and connect the whole network *in parallel* to the new 1M resistors (solder it right on top).

That's all. If You want to do an A-B crosscheck, modify one voice board first and cycle thru the voices. You will hear the difference, and You will also see it at a scope.

If You find the original OB-8's sound more pleasant, just short the four 56n capacitors. Or solder 4p1t switch across the caps to have immediate access to both sounds.

For my part, I have the change hardwired, without a switch. If I want less bass, I can do this with the mixing console ...

DISCLAIMER:

Though this works fine on my OB-8 (and I don't know any reason why it shouldn't ob Yours as well), I guarantee for nothing.

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