

Skull And Circuits

VCO-1 Calibration

1. Octave tracking

Easiest to measure this on an oscilloscope, but a frequency counter works as well. The octave switch makes this process a bit easier.

Step 1: Put the octave switch on the lowest octave and the coarse and fine frequency in the middle position.

Step 2: Adjust the **'RANGE (RV2)** trimmer until the octave switch doubles the frequency. Each octave should be double the frequency of the previous one. You should be able to get a decent range of 5 octaves.

Step 3: Adjust the **OFFSET (RV5)** until you have 32.70Hz on the lowest octave.

Step 4: Repeat step 2 and 3 until you have good tracking.

Step 5: Adjust the **HI-CORRECT (RV1)** trimmer for better tracking at the high frequencies.

2. Sine shape

There are 2 trimmers, **SINSHAPE (RV10)** is by far the most important one. Hook up your oscilloscope to the sine wave output. And adjust until you have a sine wave. If you see a triangle wave you need to open up the trimmer a bit more, if you see a square type of wave, back off until you see it turning in a sine-wave. Easy enough.

The **SINE-SYM (RV 7)** trimmer can adjust for the differences in both transistors in the sine-shaper. Normally the middle position should give a decent result, trim if you find your sine-shape isn't symmetrical.

3. Saw animation

This one is a bit more involved. You need to hook up your scope on pin 1 of U3. You'll see a saw wave with a step in it. Now adjust **SAWTRIM2 (RV8)** until you have a smooth saw wave.

Repeat this but this time adjust **SAWTRIM1 (RV9)** while measuring pin 8 on U3.

4. Linear ramp

This one is simple, adjust **LINRAMPTRIM (RV4)** until you get the desired waveshape.