Reply to sdiy? from Harry B

        on 29/12/05 4:10, harrybissell at harrybissell wrote:
        > The VCO3d has a 'bug' (feature).
        > In the original Moog design, the CV inputs were permanently
        > Connected so the impedance into the VCO never varied.
        > In a modular system, going from open circuit to 100K (the input
        > resistor)
        > will throw the pitch off every time a connection is made.
        > The design does NOT have a true summing junction, its 100K and 100ohms.
        > Close, no cigar.
        > I added an opamp voltage follower to each input. Now connecting the CVs
        > does not change the impedance at the pseudo-summer.
        > It was late in the design when I found the trouble. Buffers were the
        > easy way out at that point.
        >
        > H^) harry

Date: Tue, 08 Oct 2002 17:52:56 -0000
From: "neuroziz"
Subject: Help!!!

        Can somebody tell me where do freq pots on the VCO3D go connected to the
        board or how?.... i can't figure this out. Tom
        if you read this when would you be updating the instruction manual for the
        VCO3D....
        Thank you.

Date: Wed, 9 Oct 2002 05:46:14 -0700
From: "tomg"
Subject: Re: Help!!!

        Freq pots connect at pad D (VCO1) and L (VCO2). There are no pads for the
        Fine-Tune pots. Connect 1M-2M2 resistors to the
        common traces going to pin 2 (VCO1) and pin 4 (VCO2) of the 3046 and
        connect the resistors to the wipers of the fine tune
        pots

        Tom

Date: Wed, 12 Feb 2003 02:23:46 -0000
From: "schierld "
Subject: VCO3D question

        hey folks--I just received the VCO3D pcb in the mail and am in the process
        of putting it together. I noticed a few disagreements between the new
        schematic on the web page and the parts listing, as far as the pots and
        the trimmers go. what SHOULD the values of P1-P6 and T1-T6 be?

        thanks a bunch,
        billy colbeck

Date: Tue, 11 Feb 2003 21:52:38 -0800
From: Scott Bernardi
Subject: Re: VCO3D calibration

        I don't have a vco3d, but looking at the schematic, here's how I'd do it.
        1. Adjust FREQ pot P1 and INIT VCO trimmer T2 to output 0v.
        2. Adjust HI SCALE trimmer T3 to the 0 ohms position.
        3. Get an accurate 1.00v source voltage somewhere (if you've got an
           accurately calibrated midi2cv unit, use that.) and plug it into the KCV
           1V/OCT jack (A) so you can switch between 0v and 1v.
        4. Switch between 0v and 1v and adjust SCALE trimmer T1 until you get a
           one octave jump.
        5. Now turn your FREQ pot P1 until you jump up a few octaves.
        6. Alternating between 0v and 1v on the KCV 1V/OCT input, adjust HI SCALE
           trimmer T3 until you get a perfect octave jump.
        7. Readjust P1 to 0v and double check your octave response again. There
           may be some interaction between the SCALE and HI SCALE adjustments, and
           you'll have to go back and forth between them a couple of times.
        8. Adjust INIT VCO timmer T2 until you have a satisfying range (lowest
           freq to highest freq) at the extreme rotation points of FREQ pot P1.
        Repeat for the second VCO

Date: Wed, 12 Feb 2003 06:14:24 -0000
From: "pmclean_80207 "
Subject: Re: VCO3D calibration

        Thanks (wow! that was fast). As it turned out, right after posting the
        question, I went a fooled around with it some more and sorted it out. I
        did it by ear thus:
        1. Patched a steady-tone reference oscillator into the mixer
        2. 1V/oct MIDI2CV (Doepfer) into the 1V/oct input to the VCO3D
        3. Tuned both to unison for the middle-C on the keyboard
        4. Press Low-C on keyboard, adjust low trim to tune.
        5. Press Mid-C, adjust fine tune on panel to unison.
        6. Press High-C, adjust high-trim to tune.
        7. Press Mid-C, adjust fine tune on panel to unison.
        8. Repeat from step 4.

        Thanks again for the input.

Date: Mon, 17 Feb 2003 15:24:46 -0000
From: "darkboneus "
Subject: VCO 3d fixes

        I just brought my modular synth to Dave Wilson at the New England
        Synthesizer museum because of a problem with my VCO3d tracking the CV from
        the RXCV. What was happening was that when I plugged the 1V/oct out from
        the RXCV into a multiple, and then patched from the multiple to the vco3d
        1v/oct ins, (both oscillators at once) the RXCV would drain voltage from
        the oscillators causing a scaling problem. Each individual oscillator
        worked perfectly if used alone. What we did to fix it was to remove r19 in
        the rxcv and replace it with a jumper wire. Bypassing this fixed the
        problem.

I also had a problem with the pulse width on the 3d. What was happening was that when I turned the pulse width up too much, the pulses eventually became so thin that they were inaudible and essentially useless. We fixed this by putting a diode clamp on the pulse width line of each oscillator. Now the 3d works perfectly with my system.

I just thought I'd pass thie info along in case anyone was having the same problem that I was.
-Rob Currier

Date: Sat, 26 Apr 2003 18:20:28 -0000
From: "darkboneus"
Subject: VCO3d Hi Scale tracking

I have been having a problem with oscillator 2 on my VCO3d. The vco will stay in tune across about 3 octaves on the keyboard until it hits a certain frequency. After that, the distance between an octave on the keyboard becomes less and less as I move upwards towards the higher notes. No matter how I trim it, it never seems right. If I trim the Hi Freq trimmer until the octaves sound good in the upper registers, then the lower registers are poor and vice versa. Is there a way that I can fix this by adding another trimmer? Has anyone else had this problem? My VCO4e tracks perfectly up and down the entire keyboard. It is a rock solid VCO. Should I just expect less range from the 3d?
-Rob

Date: Wed, 14 May 2003 21:15:56 -0000
From: "organix80"
Subject: VCO3d problems

Hello,

I build up the VCO3d for myself (own designed PCB) but it didn't work. I build it up twice, one time with old components (from my collection :)), and the second time with brand new components. The only that I get is an DC output, but it doesn't oscillate.

I guess there is something bad in my exponential converter area -> CA3046 and U5. (somewhere in my PCB, components or solder).

My question is: Does someone know if the oscillator must still oscillate when you disconnect the CA3046? Otherwise I guess I could try to connect an 'simple' resistor from the U2, U3 pin 3 to GND or - 12v. But I don't know what the oscillator 'wants' from the CA3046 and U5. I'm not so good in the exponential converters theory :)

Maybe someone has a solution.

Regards, Laurens.

Date: Thu, 15 May 2003 05:50:34 -0700
From: "tomg"
Subject: Re: VCO3d problems

> My question is: Does someone know if the oscillator must still oscillate
> when you disconnect the CA3046?

No it will not.

> Otherwise I guess I could try to connect an 'simple' resistor from the
> U2, U3 pin 3 to GND or - 12v. But I don't know what the oscillator
> 'wants' from the CA3046 and U5. I'm not so good in the exponential
> converters theory :)

If you go by conventional current theory... (it's wrong but it makes it
easy) Current flows from a more positive voltage. So the expo transistors
are providing a constant current sink. The current flows from the rail
through the 1,2,3 transistor, C3 charges until U2b turns on and triggers
Q1. This resets C3 and it starts all over again...Ditto for vco2.
You can look at the buffer output (U5 pin-1) and tell if it's your
expo....It should be about -0.6V to -0.7V on the emitters (3046 pin-3).
Likewise the buffer input (U5 pin-3) should be about the same voltage.

Tom

Many thanks Tom for your fast response! Ill'be trying your suggestions.
And all this demonstrates that the "myth" of a moog prodigy being a
"simplified" version of a minimoog (as some people claims) is absolutely
false....they are different animals!
All the best.
Ramiro

Date: Mon, 16 Jun 2003 02:23:24 -0000
From: "poison_in_a_colorful_bottle"
Subject: VCO3D

Ok one more question for the night :)
What value is R19 the parts list says 100k and the schemo says not used?
Also does this apply to R38 the schemo says not
used but does it need 100k? I hope this isn't supposed to obvious to me
(I'm still trying to figure all this stuff out :)
thx,
dustin

Date: Mon, 16 Jun 2003 01:00:40 -0400
From: harrybissell
Subject: Re: VCO3D

I'd say they are not used. They are not shown on the schematic, but they
actually go from the output to ground. You could use them to make the
sawtooth output smaller (prlly don't want that !) H^) harry