

VCO 4E (EFM 1900er series PCBs – old forum topics)

Date: Sat, 28 Sep 2002 17:41:11 -0000
From: "emmaker"
Subject: VCO4E Board vs Docs

The boards and docs in the support group for the VCO4E don't match up. Anyone got something different. Also are the expo heater schematics available which aren't marked on the silk screen available?

Jay

Date: Wed, 09 Apr 2003 01:58:06 +0000
From: "mike nothing"
Subject: VCO4e question

i was looking at the PDF file for this and an the parts list i don't see what part is needed for the C1 and C2. both show up on the PC board. but no parts are listed. can anyone help with this question?

thank you

Date: Tue, 8 Apr 2003 19:18:48 -0700
From: "John L Marshall"
Subject: Re: VCO4e question

Those are power supply bypass capacitors. Tom uses 0.1 uF disk ceramic. I would add an electrolytic in parallel with the ceramics.

Take care, John www.sound-photo.com

Unknown poster

What is the frequency range for the vco4e?

tomg
Posted 11/11/2003 7:26:39 PM

sorta dependes on how you build it... max? say.. (about)0.25Hz to (about)5KHz
Tom

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julian

Posted - 01/20/2005 : 4:56:10 PM

Hello,

My vco4e board is inactive. The whole board is covered with 'thru-holes' (?) which appear to go nowhere - ??

Basicly, i havent bothered filling any of these, as i really cant see any that have a use, but then im thinking that maybe i missed something, and thats why the board isnt working?

Before i mess about any further, can someone tell me if any ^have^ to be filled? And, if not, why are they all there?

Cheers, Julian

keninverse

Posted - 01/21/2005 : 12:26:22 PM

is this a double-sided board?

Dave Kendall

Posted - 01/21/2005 : 8:21:06 PM

Hi.

Looking at the double-sided board, there are 2 groups of 4 in-line holes at the top of the board (furthest away from the power input connector). The top group is connected to -V, the next one in, to +V. These could be handy for wiring to the CW and CCW ends of the FREQ and FINE pots, which have their wipers connected to the holes near R5 and R6.

OK. The weird bit. On the double sided board, there is a cluster of holes right next to C1. It looks like it is well suited for a TL071 or TL081 op-amp. If pin 1 of the op-amp is oriented so that it's closest to C1/R19, then pin 4 is actually connected to -V, and pin 7 to +V - just as per TL071 pinout. Pin 2 (the negative OPA input), is connected to the centre (wiper) of a group of 3 holes that are set up nicely for a multiturn trimmer. All the other connections are not normalled to other parts of the circuit, but are connected to various other thru holes. Hmmm....

What was it used for?

Anyone got any ideas? I haven't built my VCO4es yet, but I will soon....I want to know how deep the rabbit hole goes....

Cheers,

Dave

emcats

Posted - 01/25/2005 : 11:52:59 AM

If I remember correctly it's an undocumented heater circuit for the CA3046. Used to heat the expo converter to a stable temp so there is no tempature drift. Also if you use the heater DO NOT use the tempco resistor.

Jay S.

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julian

Posted - 02/21/2005 : 6:39:33 PM

Dont know if its all right just yet (it was late last night when i did it) but, following on from recent comments on the sdiy list, i coupled the sync output to input on my vco4e board, and everything now oscilates nicely.

Is this all correct? I can obviously couple them using switched jacks, so as still to be able to add an external sync input, but, now, in the cold light of day, i can see possible flaws in this setup.

Comments?

Cheers, Julian

emcats

Posted - 02/22/2005 : 12:14:36 PM

Julian,

No ground the sync input if you are not using it. If you tie the sync output to sync input the osc is syncing itself. This may or may not be a problem. If I were to guess about there being a problem it would be that at higher frequencies the sync would streach out the capacitor reset time. Better yet if you never plan to use the don't add the sync fet.

Jay S.

julian

Posted - 02/23/2005 : 01:43:22 AM

Hello Jay,

Now i tried tying the sync input direct to ground, but to no avail.

The only way i could get results was by tying to the sync output.

Any further ideas would be nice ;)

Cheers, Julian

yusson

Posted - 02/23/2005 : 07:59:48 AM

OK Julian, here is what I have done with the VCOs of the Wildcat for sync (these are the same design as the VCO4e) .

I simply solder a 2.2M resistor between the gate of the J112 and the -12V rail (not the ground ! If you check carefully Tom's schematic, the sync jack must be connected to -12V when no synch is used!).

The way I do it doesn't need the 2.2M resistor to be switched on or not : when there is no sync signal at the input the gate, the J112 is polarized to the lowest voltage there is and doesn't discharge the capacitor, if a sync signal is available the positive pulse of the sync with trigger the J112, the 2.2M value is very high and won't upset the sync signal !

Should the gate be left unconnected, the J112 bypasses the capacitor and there is no oscillation. If you tie the gate to ground the result may vary

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depending on the brand of J112 you use (component variability), it may or may not work ! If you tie it to -12V everything will work alright then.
I hope this will help you !
Cheers
Yves

emcats
Posted - 02/23/2005 : 12:27:04 PM

Julian,
Lets think.
The 2 fets form switches that short the cap (reset it if you will). One source is from the comparitor and the other is from the external sync. Doesn't work with the comparitor trying to trigger its normal fet, works with the comparitor triggering the sync fet.
Maybe the fet hooked to the comparitor is bad, has different pin out or the connection/soldering is marginal.
If you have a silly scope might look that the signal at the comparitor fets gate without the sync hooked up. Then look at the signal at the sync fet when it is hooked up.
As one of the other fellows mentioned having a high value resistor between the sync fets gate and -12 (or -15) would work also.
Best of luck!

Jay S.