Date: Mon, 21 Apr 2003 07:14:26 -0000
From: "jeff oakley"
Subject: Re: vcf12A resistor #3?

--- In EFM_Synth, "jeff oakley" wrote:
> hi, what is the value of resistor #3 on the VCF12A board? I
> cannot find it in the instruction pdf. thank you.anyone?

Date: Mon, 21 Apr 2003 12:39:48 -0000
From: "Jeff Brown"
Subject: Re: vcf12A resistor #3?

Since its part of a summing circuit, it should be the same as R1 and R2 - 100k.

BTW - I presume that the values on the schematic are correct. The parts list has all of the 100k resistors as 22k.

Date: Mon, 12 May 2003 23:29:05 -0000
From: "darkboneus"
Subject: VCF 12a Resonance question

I just finished a VCF 12a and I'm having a problem with the resonance. It works, don't get me wrong, but after about 4/5ths of the way (clockwise) on the rez knob) it is a bit too low pitched and boomy. The main problem is that at that point on the rez knob, the self oscillation kicks in very suddenly, the is no gradual build up. Is this the way that this filter should be behaving or does it sound like something is wrong? I'm also wondering how to lower the cutoff frequency so that the lowest point on the freq. knob is near silence.
Thanks.
-Rob

Date: Mon, 12 May 2003 22:07:18 -0400
From: harrybissell
Subject: Re: VCF 12a Resonance question

I'll take part #2

lower the frequency...

The current source that sets the minimum frequency cannot go below about 3uA... this is enough to keep the filter from
closing all the way. You need to add a resistor from the LM13700 Gm pins for frequency control.

Without having the schematic handy... there should be four sections of the filter controlled by one current source. Add ONE
resistor from any point on this line to the negative supply (-12V). You'll have to find the perfect value... I'd calculate

about 330K. Too high of a value does not work, too low of a value will shut the OTAs off completely, and you'll get a thump
when they do. You want just enough to make them go right to the edge of turning off...

With a scope, you can see the shut-off point because the DC bias of the whole filter will go to hell (usually negative) at
that point. Try a couple of resistor values and see what works.

The original Korg Delta filter used a 10M resistor for this purpose.

This advice goes for the VCF1 as well....

H^) harry

Date: Tue, 13 May 2003 15:08:19 -0000
From: "Tim Stinchcombe"
Subject: Re: VCF 12a Resonance question

Hi Rob/Harry,

Harry,
you didn't give the details of your calc, but 330k appears too high to me. I've simulated most of the circuit, and as it is, the full range of the cut-off pot will give a cut-off frequency from about 600Hz to about 6.5kHz, and the current output by the exponential converter formed out of Q1/Q2 is about 100uA to 1mA (divided by 4 into each LM13600). Here is my 'wet finger in the wind' calc: the Iabc pins are at about 2 diode drops above negative supply, say 1.4 volts, so when the p.d. across a resistor connected to neg supply drops below this, the amp will effectively shut off, i.e. for R=1.4/100u= approx 14kohm. The simulation with a 13k resistor gives cut-off frequency of about 20Hz to 6kHz, and the lower frequency is quite sensitive to the value chosen. (And certainly with 330k there is little difference from the original set-up!?) So experimentation is probably called for!

Rob,
It might be worth experimenting with different kinds of potentiometer 'tapers' for the resonance pot - several of the Doepfer filters I have use a 'type C' ('inverse log'?) for the pot used in a similar manner. This seems to mean you get slightly more control as the resonance kicks in - you only get small changes in resistance for relatively large pot movements.

Incidently, from the simulation, rather than there being a distinct 'bandpass' and 'lowpass' output for the filter, both really appear to be lowpass: the 'lowpass' being 24dB/oct slope, and the 'bandpass' being a mere 6dB/oct slope. Can anyone confirm that this is so? (I started flogging through the analysis - got far enough to confirm the cut-off frequency figures, but not to look at the overall 'shape' of each filter output.)

Tim

Date: Wed, 23 Jul 2003 00:42:36 -0000
From: "Fernando"
Subject: VCF12a multimode?

Hi,

Interested in building the VCF12a, I see the current documentation only shows the LP mode. Is there any extra docs to wire the board as a 2040-like multimode? (as stated) Tom? Harry? X?

Thank you again!

Fernando

Date: Wed, 23 Jul 2003 00:45:33 -0000
From: "Fernando"
Subject: Re: VCF12a multimode?

well... only the HighPass is missing.
Any clue?

Date: Wed, 23 Jul 2003 03:55:58 -0700
From: "tomg"
Subject: Re: Re: VCF12a multimode?

> well... only the HighPass is missing. Any clue?

Put a 47ohm resistor between C7 and gnd. The junction is your HP input...

Tom