Date: Mon, 10 Mar 2003 02:44:10 -0000
From: "Al"
Subject: RXCV Pro - output voltages...

    Hi everyone,

    Just wondering what the output voltages of the RXCV Pro are supposed to
    be, i.e., Gate Voltage, Pitch CV range, etc.
    Also, The schematic specifies a 8 MHz crystal, but the parts list and the
    circuit description say 10 MHz... What's the right value?

    Thanks! Al K.

Date: Sun, 23 Mar 2003 05:04:36 -0000
From: "Al"
Subject: Stuck gate on my RXCV Pro...

    Hi all,

    I just finised my RXCV Pro and it works great, EXCEPT for the fact that
    every once in a while when you press a key, the Gate output goes high and
    stays there even after releasing the key. It's almost as if it's not
    getting certain Note Off MIDI messages... Has anyone had this problem? How
    did you fix it?

    Thanks, Al

Date: Sun, 23 Mar 2003 08:50:20 +0100
From: Jozsef Baksay
Subject: Re: Stuck gate on my RXCV Pro...

    Some keyboards doesn't send note off message, but instead a note on with
    velocity zero is used. Check this!

    Topy

Date: Mon, 24 Mar 2003 20:52:41 -0000
From: "Al"
Subject: Re: Stuck gate on my RXCV Pro...

    Thanks, but that's not it. Even if that were the case, it would be a
    constant problem. This seems to be more random, it happens mostly when I
    play fast passages or try to play chords and stuff...
    Anyone else?
    Al.

Date: Mon, 24 Mar 2003 13:13:52 -0800
From: Scott Gravenhorst
Subject: Re: Stuck gate on my RXCV Pro...

    I'm a FatMan guy, and I love to add mods. One time, I had added something
    and I was powering it from the FatMan's supply.
    The additional current demand caused just enough voltage droop that the 5
    volt supply wasn't really 5 volts any more. The
    symptom was random stuck notes and random missed notes. I found this by
    scoping the +5 and seeing the regulator fail to
    keep 5v at 5v. It was dipping low at line frequency. Not cutting out, just
    dipping low for an instant each cycle. I
    moved the mod to a different supply, thus removing the load on the
    FatMan's wallwart and that fixed the problem.

    The upshot here, is that if you have not already, I would take a scope and
    a DVM and scrutinize the power supply until you are
    certain that it is not the problem. It may also pay to check power at IC
    power input pins to make sure each one is getting
    clean regulated power.

    An intermittent thing like this could also be some bad connection, like a
    bad solder point. I've also seen a socketed IC
    do this when a pin is folded under such that it makes a touching contact.
    I use a high power magnifier (telescope eyepiece
    in my case) to look at my solder work. I touch up anything that looks
    questionable. This method has fixed several such
    problems for me.

    Scott

Date: Fri, 04 Apr 2003 16:52:35 -0000
From: "Al"
Subject: How I fixed my RXCV Pro...

    For people who may have problems with wrong CV values or stuck gates on
    their RXCV Pro:
    Searching the forum, I came across a message by Tom in which he tells
    someone who was getting wrong CV values, to change R6 (1K) to 470R or even
    220R. The message doesn't say anything about the stuck gate problem and
    that person didn't write back to tell us if the fix worked.
    So this is just to let future RXCV Pro builders/users that changing this
    resistor (in my case from 1K to 470R) WILL IN FACT FIX both the CV and
    stuck gate problems. It works perfect now!

    Peace, Al.

Date: Thu, 22 May 2003 22:05:59 +0800
From: "Benjamin Riggs"
Subject: RXCV Pro

    I'm currently populating my RXCVPro board and have some questions
    regarding some of the parts.
    firstly, the xtal on the schematic says 8 MHz, but the parts list says
    10MHz. which one do i use?

secondly, the footprint for the powersupply caps seems a bit small for the
470uF caps i can locate locally (the 2 of them wont fit in the space
between the regulators and the power connector). do i 1. use smaller
caps(i found some 220uF that fit the footprint, but i feel they may be a
bit small) 2.source some caps from somewhere else that will fit (do they
exist?)or 3. just make do with what i got (just jam em in as far as they
go).

cheers b.

Date: Thu, 22 May 2003 17:11:42 -0000
From: "toneboy22"
Subject: Re: RXCV Pro

Hey Ben,

looked at the MidiCV4 schemo... don't know if the 2 schemos are same or
not.
don't know about the 8 vs 10MHz crystal. if the puter uses master clock
for timing, it WOULD make a diff. that's gonna hafta B TomG's call....

re the 470 vs 220mfd caps in pwr supply: if it's - & - 12V regs, you need
approx 3V higher at the IN. so, after puting in a
220mfd, put a voltmeter on the input to the reg(s) and the outputs. If U
get + & - 12V out, U R probably OK. check voltage
out, under load....put like a 680ohm resistor in series with an LED on the
output. this provides a light load for the reg,
AND gives U a "pwr on" indication. B sure to watch LED polartiy! BTW, most
regs are not *exactly* 12.000V. if it's 12.2 or
12.1 or even 11.9, that's cool. as long as it's stable and consistant.
Tb

Date: Mon, 2 Jun 2003 20:37:45 +0800
From: "Benjamin Riggs"
Subject: Re: Re: RXCV Pro

i got the 470uF caps to fit on the board. C1 managed to fit ok, but C2 i
had to mount horizontally in the space between U8
and U11 and bend the legs to the holes. things are still pretty tight
though. the pitch bend hole is now hidden, but still
accessible.
i'm still not sure on the crystal though. i'm guessing it's the 10Mhz (i
count 3 references to a 10Mhz, but only one to a
8Mhz). it's the last part i have to source and solder onto the board, so
someone please pull me up soon if i'm wrong.

Date: Sun, 20 Oct 2002 03:37:54 -0000
From: "neuroziz"
Subject: Question for tom g.

Tom what type of diodes (d3, d4, and d5) go on the RXCV-pro? ... It shows
them in the schematics but not in the parts list...

Date: Sat, 19 Oct 2002 23:30:07 -0700
From: "tomg"
Subject: Re: Question for tom g.

        1N4148

        Tom

Date: Thu, 12 Dec 2002 20:06:54 -0000
From: "fboliau "
Subject: RXCV-PRO

        Are there some last updates-changes to consider for building the RXCV-PRO
        - On the PCB 2 times R22 ?? - I read something about 220K to 220R changes.
        and I know about the Q1-Q4 misprint.

        Thanks,
        Fred

Date: Tue, 17 Dec 2002 00:37:20 -0800
From: "tomg"
Subject: Re: Re: Message for TOM/ RXCV-PRO

        The PDF is old and just there for reference go by the html.

        > > - Different PCB Layout.
        No...... It's the same board

        > > - Parts list D3-4/ 1N4148 ??
        Yes

        > > PDF tells that U9 should be TL072CP but html tells it should be LM358.
        LM358

        > I forgot the 2 x R 22 and R 23 ??
        I don't understand the question......

        > on the html schema LM336Z-5.0 is U7 but on th PCB it is U10
        No......
        the html says U10 just like the parts list and pcb U7 is the 7528

        Tom

Date: Tue, 17 Dec 2002 08:02:06 -0000
From: "fboliau "
Subject: Message for TOM/ RXCV-PRO (2nd Edition)

        --- In EFM_Synth, "tomg" wrote: > The PDF is old and just there for
        reference go by the html.

So then I have an old pcb BOARD

> > > - Different PCB Layout. > No...... It's the same board

On the .HTML board C3, an C4 are side by side, on the .PDF C3 is between 7912 and 7812

On the .HTML board R23 is 'short' on the .PDF R23 is 'long'

On the .HTML board D4 is under U11 on the .PDF D4 is on the left side of U12

-Maybe some other things

So if this is the same BOARD ???

> > I forgot the 2 x R 22 and R 23 > ?? I don't understand the question...... >

- Around U10 You have R22 and R23

- Above U12 You have R22 and R23 In the .PDF schema R22 = 47 K and R23 = 100K In the .HTML schema R22=100K and R23=47

In the partslist You got 1 x R22 2 x R23. Do a follow the .HTML schema??

I have the PCB like the .PDF, so I was under the impression that the .PDF file was the most recent one. So do I have on old PCB after all the waiting, and missing parts, and will it function ???

Fred

Date: Tue, 17 Dec 2002 04:23:34 -0800
From: "tomg"
Subject: Re: Message for TOM/ RXCV-PRO (2nd Edition)

There is no old version of this board......Yet anyway...You have the only version of the RXCVPro ever made. The PDF is old and wrong. Follow the html.
> I have the PCB like the .PDF, so I was under the impression that > the .PDF file was the most recent one. > So do I have on old PCB after all the waiting, and missing parts, > and will it function ???

Yes you do....It looks just like the html version, only black instead of red.......Follow the html....It will work.....I have deleted the PDF it's old and wrong.....do not follow the PDF.

Tom

Date: Tue, 17 Dec 2002 16:47:17 -0000
From: "fboliau "
Subject: Message for TOM/ RXCV-Pro (3th Edition)

Is this candid camera or something.
Is there no difference between the lay-out off the PC Board on the .HTML and the PCB I received, then I have to go to to Eye- Doctor.

I see very obious things, and my PC Board lay-out is exactly the same as
as the "former" .pdf PC Board lay-out, and NOT as the .HTML PCBoard lay-
out.
(see the former mail for the differences)
And are there no 2 of each R23 and R22 on the PC Board and on in the
schematic, then I am blind.
So above U12: R22=100K and R23=47K Left from U10: R22=47K and R23=2K2
I presume ???
Fred

Date: Tue, 17 Dec 2002 12:39:14 -0800
From: "tomg"
Subject: Re: Message for TOM/ RXCV-Pro (3th Edition)

I put both pictures on the same page..... Does anybody see what he's
talking about...or do I need a eye-doctor? I don't get it...It's the same
board.....isn't it?

http://www.ele4music.com/rxcvpro/boards.html

Tom

Date: Tue, 17 Dec 2002 12:50:27 -0800
From: "tomg"
Subject: Re: Message for TOM/ RXCV-Pro (3th Edition)

Never mind.....I see it now...Between U11-U12 R23 and D4 are different

Regardless of the difference follow the html.....

Tom (needs glasses) g

Date: Tue, 17 Dec 2002 19:32:51 -0000
From: "stevec927 "
Subject: RXCV-Pro Question

Sorry for the newbie question, but I need to know if the MIDI to CV
converter provides a linear VCO output (i.e.volts per hz). Thanks in
advance.

Date: Tue, 17 Dec 2002 20:19:57 -0000
From: "deknoww "
Subject: Re: RXCV-Pro Question

no, it is exponential.

i would imagine that if you are a programmer, you could change this in
firmware (i don't know how this is implemented, so I may be wrong)....i'm
not sure what other options you would have with the rxcvpro...other
options include:

paia: makes a standalone converter that has an optional (extra cost)
linear mod...or get a fatman (it has linear pitch and velocity cv and a
gate as well as a synth).

and there are other commercial options.

Deknow

Date: Tue, 17 Dec 2002 14:40:26 -0800
From: "tomg"
Subject: Re: RXCV-Pro Question

No....It's v/oct.... The PAiA midi2CV8 is also v/oct however it has a
optional daughter board that converts it to v/hz.

Tom

Date: Tue, 17 Dec 2002 21:05:00 -0000
From: "fboliau "
Subject: Message for TOM/ RXCV-Pro (FiNAL)

Tom,

Its running now. But..still a few questions.

Now I have to make a panel...

I got ca 8.9 Volt gate can it be changed to 5V ??

The KCV start on the lowest key-octave,.(with my KB from ca 2V, shouldn't
that be 0V)

It don't look that I have glide but that could be the"cheap" Key- Board
not sending MIDI ???

Thanks for the patience, maybe you switch the to pictures, so that You
don't find people like me pickering anymore....or was I the first

Fred

Date: Tue, 17 Dec 2002 16:56:46 -0500
From: prcamann@aol.com
Subject: Re: Message for TOM/ RXCV-Pro (3th Edition)

It's the same layout for both, but he's right on at least one point --
there are two R22 and two R23. Follow his directions to find them (near
U10 and U12).

Paul Camann

Date: Tue, 17 Dec 2002 22:05:55 -0000
From: "fboliau "
Subject: Re: Message for TOM/ RXCV-Pro (3th Edition)

look for C3, C4, D4 and right under R23 long and short

Fred

Date: Tue, 17 Dec 2002 16:21:48 -0800
From: "tomg"
Subject: Re: Message for TOM/ RXCV-Pro (FiNAL)

> I got ca 8.9 Volt gate can it be changed to 5V ??

Remove R22 and R23 - Jump Pin2 (U12) to Pin1 (U12) then Jump D4 and remove R24.

> The KCV start on the lowest key-octave,.(with my KB from ca 2V, > shouldn't that be 0V)

Not unless you have a 88 key controller. Chances are that your keyboard starts at C3 instead of C1. Not to worry though... you compensate at the vcos....

> It don't look that I have glide but that could be the"cheap" Key- > Board not sending MIDI ???

Make sure that R25 is 100K and R25 is a 47K. Put your meter on Pin10 (U11) at C15 and press 2 keys at the same time. Does it go high? If so check D5 and R27 to see if they are installed corectly. If it does not go high. Put your meter on Pin4 (U10) press 2 keys at the same time. Does it go high? If so you have a bad solder connection somewhere. If not.....It may be your keyboard...althought I really don't think that that's very likely.

> Thanks for the patience, maybe you switch the to pictures, so that > You don't find people like me pickering anymore....or was I the first

It has a long sorted past......We are trying to reform it but it just wants to be bad...

Tom

Date: Tue, 17 Dec 2002 16:24:39 -0800
From: "tomg"
Subject: Re: Message for TOM/ RXCV-Pro (FiNAL)

That;s not right!!

> Make sure that R25 is 100K and R25 is a 47K.

Make sure that R25 is 100K and R26 is a 47K.

That's better.

Tom

Date: Thu, 19 Dec 2002 12:56:44 -0000
From: "ballendo "
Subject: Re: RXCV-Pro Question

Hello,

But note that the Paia fatman MIDI is only set up for 4 octaves!

Hope this helps,

Ballendo

Date: Tue, 14 Jan 2003 22:15:49 -0000
From: "emmaker "
Subject: Re: Can't wait to get my RXCV-Pro!!!

Al,

e-mail Tom or Kim directly and see if your order has shipped. Assuming
you're in the US it should come USPS.

Do a search in this group. There are several issues (I'm assuming the
boards have not been modified from the ones I have).

* R2, R4, R5 in BOM are 220 ohm not 220K.

* Voltage reference in schematic is U10 not U7.

* U9 pin outs on schematics are: 7,5,6 = voltage ref, 7 out, 5 +in, 6 -in;
1,2,3 DAC out buffer, 1 out, 2 -in, 3 +in.

* Voltage ref goes into pin 4 of DAC (U7) in schematics.

* The output S/H amps and comparators are labeled wrong in schematics. Top
to bottom: U11, U11, U12, U11, U12, U11.

* Vel S/H amp has wrong pin out in schematics. Out = 7, -IN = 6, +IN = 5.

* Silk screen of transistors is wrong. This is just for the transistors
not the voltage reference (U10 on board, in BOM and
U7 in schems????)! Check docs for proper orientation.

* There are 2 R22s on the schematics and board. Make sure the one for the
voltage reference is 47K. Other talked about
below.

* ??????? DO THE SEARCH FOR THIS! I think that the voltage dividers for
the comparitors (U10: 1,2,3 & 8,9,10) are wrong. If
I remember right R22/R23 and R25/R26 need to be swapped (ie R22 & R25 =
100K & R23 & R26 = 47K). Also these values are for
+-12V power supply. You will have to re-calc them for +-15V. Vo = V+ *
(R23/(R22+R23))

And as always figure this all out for yourself to double check my work.

Good luck. Jay

Date: Fri, 17 Jan 2003 16:50:03 -0000
From: "Al "
Subject: RXCV-PRO Questions.....

        Hey all:

        Here's a couple of things I couldn't find the answer to on the forum. Am I
        just plain missing it?

        - What's the final word on the R22/R23 thing? (They appear twice on the
        HTML schematics and board layout, as well as on the
        actual PCB). What are the right values for these four resistors?

        - Some people on here have said that there are some discrepancies
        regarding R2, 4 & 5. However, both the HTML schematics
        and BOM say they are 220R resistors, which seems to make more sense (to
        me) than the proposed 220K. What's the deal?

        - What modifications should be made to it so it will run off of +/-15Vdc?
        As somebody suggested in another post, the
        voltage dividers on the glide and gate comparators seem like a good
        candidate. Is there anything else? Can someone guide me
        through it? (Sorry, I'm dumb!)

        Thanks for all the help guys.

        Peace, Al

___

???

        Hi all
        I have just experienced some weirdnesses with LM358 brands and the EFM
        MIDI2CV modules (either RXCV pro or Wildcat rev1 and 2).
        One year ago when I completed my Wildcat rev1 project I used a cheap
        LM358N chip made in china to populate the MIDI2CV module. After setting up
        the trimmer I obtained quite a satisfactory V/Octave tracking with my 4
        octave Mk149 Evolution MIDI keyboard : I set it up such that I had 1.00V
        when pressing the leftmost key (C) with the octave range set to -2, and
        9.00V when pressing the right most key (C) with the octave range set to
        +2. And in between, everything is nicely scaled. This was very satifactory
        indeed.
        I have just completed my Wildcat rev1 project and I used a brand new batch
        of LM358N. But when setting up the trimmer I cannot obtain such an
        extended range in the V/octave conversion, what I get is 1.48V when
        pressing the leftmost key (C) with the octave range set to -2, and 9.00V
        when pressing the right most key (C) with the octave range set to +2. In
        fact, the range becomes correctly scaled starting from the third C key
        (+3.00V) with the octave range set to -2 !!!!
        Therefore, I checked the PCB, my connections, the solder points to
        understand what I did wrong but couldn't find any errors. Eventually I
        substituted the brand new LM358N by the cheap one I used in the rev1 board
        and ... it was now all scaled perfectly over the full 8 octave range !
        After that I tried different LM358N I had in my drawers and it appeared
        that the accuracy of the voltage tracking for the low octaves is very much
        depending on the LM358N chip used !!!!!
        Do somebody else in this forum experienced similar problems ? Is it a
        known problem of the LM358N ? Is there a more reliable IC to use ?
        I look forward to your comments.

        Edited by - yusson on 07/28/2004 06:25:13 AM

yusson, France
PostedÊ-Ê07/28/2004Ê:Ê 1:22:26 PM Ê Ê Ê Ê

Hi, the **LM358** continued
having discussed with some electronic gurus, I gather that this problem
comes from the design of the module that stresses the LM358 to the limit
of the voltage range it can handle with respect to the power rails. To
make this module less sensitive to the brand of LM358 requires to modify
the design... I have some ideas but in the meantime I bought two other
chips from different chip companies and tested them.
There are my conclusions :
two ICs gave satisfactory results that is accurate voltage tracking over 9
octaves :
these are LM358N from ST microelectronics and LM358N from Motorola
two ICs were allright over a 8 octave range but gave 1.2V for the lowest C
instead of 1V
there are LM358AN from ST microelectronics and the LM358AN from (I don't
know the compagny, the logo on the chip is two parallel waves...) and
eventually the brand that scored worse, that is with good tracking over
only 7 octaves, was the LM358N from National Semiconductor
Thus for those building the Wildcat or the RXCV pro I recommend the LM358N
from ST microelectronics and the LM358N from Motorola