
Subject: Ping Wayne: Paramour noise reduction?

Posted by [Mark Williams](#) on Mon, 23 May 2005 18:51:21 GMT

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Hello Wayne,I read a post somewhere where you recently planned to quiet down the Paramours a bit.Did you ever do this, and can you elaborate?What Stoetkit did you build that smokes the Paramours?Mark

Subject: Re: Ping Wayne: Paramour noise reduction?

Posted by [Wayne Parham](#) on Mon, 23 May 2005 22:39:56 GMT

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Hi Mark,I was thinking about doing some noise reduction on my Paramours, but changed my mind. It wouldn't be hard to do though. The power supply is very basic, so there is a lot of easy improvements you can make. The most obvious are to increase capacitance and to damp the diode switching spikes. Put 0.022uF caps across the diodes, maybe swap diodes to a fast switching type. Replace the electrolytics with larger values, possibly go to a premium brand and maybe add an LC stage with a nice big choke.For info on the Stoetkit, see the FSAudio forum.Here is a list of posts from a search query there:

<http://www.AudioRoundTable.com/cgi-bin/search.cgi?forum=FSAudio?query=StoetkitWayne>

Subject: Re: Ping Wayne: Paramour noise reduction?

Posted by [Mark Williams](#) on Tue, 24 May 2005 00:45:21 GMT

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Hi Wayne,Several questions:1) I don't understand how to measure the noise on my Paramours. I use the AC portion of my VOM, and hook the black lead to a ground (like T14), and the red lead to what??? And, what should I be seeing? What kind of reading is too much, etc. This is to be done with the Paramour powered up and the RCA jack shorted out?2) Also, some clarification of the "...0.022 mF caps across the diodes". Now, I'm not sure what you mean by "across".Do you mean for each of the two diodes a cap should attach to the ends of each diode? Or, do you mean a 0.022 cap will jump from one diode to the other. Sorry that I don't understand this basic concept. Not your writing. My inexperience.3) As for going with larger value caps in the power supply section. How much larger? When you do this, does it change the B+ value the audio section sees? Same thing when you add a choke? How do you select the value for the choke? I know, I know...start calculating, right? (E, I, and R) That's what I was afraid you were going to say...Thanks,Mark

Subject: Re: Ping Wayne: Paramour noise reduction?
Posted by [Wayne Parham](#) on Tue, 24 May 2005 03:15:53 GMT
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You'll need an oscilloscope to see the noise. A DVM won't really help you here. The 0.022uF capacitors should be soldered, one per diode, in parallel with them. If you increase the size of the electrolytics, B+ won't change. What will happen is you'll store energy in the caps longer, so it will smooth the ripple and it will also retain voltage longer after you switch off the AC input. If you add an LC stage, you won't change B+ either, because the coil has very little resistance, so it won't provide much of a DC voltage drop. On these power supply components, bigger is better. If you go huge, you might bypass with smaller polypropylene caps or use a conjugate pair as suggested by Rubycon, as in using a pair of N types or their Super E.

Subject: Re: Ping Wayne: Paramour noise reduction?
Posted by [Mark Williams](#) on Tue, 24 May 2005 12:54:11 GMT
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Hi Wayne, I see now. Thanks for the lesson. I always note a lot of guys fiddling around replacing filter caps with larger ones, and wondered if it would affect the B+ and they would also have to re-calculate what resistors were in the filter. Now I know using the larger caps will not affect the B+. This next question probably will affect it, but maybe insignificantly. What if one added another stage to the filter? After the last cap, say a cap with the same value, rating, etc. which would be preceded by a small value, but appropriate wattage resistor? I know I have some 220mF caps that I scrapped out of a computer (Foreplay uses this value), but I'm not sure about the Paramours. I'll have to look when I get home. Actually, my B+ runs a tad high as I recall. Thanks again for the lesson and link! Very interesting. Mark

Subject: Re: Ping Wayne: Paramour noise reduction?
Posted by [Wayne Parham](#) on Tue, 24 May 2005 13:01:19 GMT
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If you add a resistor in series, then B+ will drop. The amount is determined by current flow through the resistor. You can calculate PS current draw by measuring the voltage across the resistor that's already in the circuit and using Ohm's law to calculate current. Then use Ohm's law to calculate the amount of voltage drop that will be caused by putting another resistor in the line. Ohm's law is pretty simple stuff: $E = I \cdot R$ $I = E / R$ $R = E / I$ Where E is volts, I is amps and R is ohms.
