Subject: C-Core grid chokes
Posted by PakProtector on Tue, 13 Dec 2005 00:55:02 GMT
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Hey-Hey!!!,I just got the C-core gird chokes from Heyboer. Nice looking and right on spec.With a small gap they run from 575 Hy to 600 Hy from .5 vac @ 60 cps to 40vac. The gap does its job just like it should, and there is plenty of inductance. About 30kOhm per half at 20 cps( 2Pi*20*(L/2)). I plan to do full spectrum measurements on it soon. My Heathkit signal generator needs two 9V batteries, and I can't rob the smoke alarms anymore...:)I plan to set voltage level and measure Z across the spectrum. I wonder how it will do. And of course a few commercial grid chokes for comparison will make for some entertaining comparisons.cheers,Douglas

Subject: Re: C-Core grid chokes
Posted by Damir on Tue, 13 Dec 2005 17:33:30 GMT
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Hey, we need some columns, charts and photos in colour! And, finally, those Cw numbers... And mesurement of possible subsonic resonances with small-value coupling caps... And frequency response with cascode driver...etc.

Subject: measuring grid chokes
Posted by PakProtector on Tue, 13 Dec 2005 22:05:54 GMT
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That's what I had in mind. I will publish experimental set up, equipment used, and raw data. I have some access to a few commercial offerings( coincidently from winders who don't believe in publishing the data ). I am quite curious as to what they'll look like. I have heard stories, and look forward to either confirming them or disproving them...:)The question is, should I attach a manufacturer's name to a set of test results? Here is an open invitation to contribute to the experiments. Either with methods, or by providing samples. Best would be a choke with a published set of parameters, so the methods and experimental details can be compared.I am more concerned with how my designs work and measure. The commercial, mass production, off-the-rack coils are going on the bench just for purposes of entertainment and comparison.cheers,Douglas

Subject: Re: measuring grid chokes
Posted by Wayne Parham on Wed, 14 Dec 2005 14:52:32 GMT

I think it would be wise to publish test results identifying the items being tested.But there is one problem.  You and I both have this same sort of dilemma.Since you're pretty connected in the industry, your biases might be called into question.  Better to avoid this sort of thing.  The best way to do something like this is with independent confirmation.  An objective outside party is not going to be questioned like you might be.Then again, sometimes it's not economically possible to send samples out to a lab.  In that case, I'd say publish your findings but be careful about interpreting them.  If you post an unfavorable interpretation in a public forum, you'll probably be attacked.  Or if you post proudly about your own work, even in a private forum, sometimes people will react.  Not that controversy is always avoidable or even bad, but if you publish interpretations of work like this, it is bound to bring some your way.

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Posted by Wayne Parham on Wed, 14 Dec 2005 14:52:32 GMT


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Subject: Re: measuring grid chokes
Posted by PakProtector on Wed, 14 Dec 2005 15:50:55 GMT
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Hey Wayne,You raise some interesting points. Thank you for the warnings.I'd question the level of connection. I am just an interested DIY-er, just a customer. While I have had commercial ventures, they are in the past. Actually, one of the major points keeping me out of the commercial end are the restrictions it would put on my research.As to bias, and attacks, I can deal with that. The attacks on the results can be discounted by the standard practice of publishing the details and equipment used to gather the results. For certain attacks, one must consider the source's bias and motivation too. For some, I suspect that all I'll have to do is mention the name in connection with a measurement and wait for the attack.I made an open invitation to contribute suggested methods and samples. Since I have heard nothing on the method, let alone the sample offers, I'll assume a complete lack of interest in the project from any winders, and that this will continue while I post the measurements.What will likely happen is that the criticism, and attacks will appear like cockroaches in the dark, and go away with similar speed when questioned in detail. When performing unbiased measurements, it is hard to become concerned about biased attacks, no matter how well they are coordinated. I have read both RAT and Kipling.cheers,Douglas

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Subject: Re: measuring grid chokes
Posted by Manualblock on Wed, 14 Dec 2005 19:07:22 GMT
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I had a post to address this issue but after returning to post my thoughts I see you already have. Good Show; if you are straight with people and humble; you have no problems.Why Wayne and Yourself would have to even considor what others think is crazy; you both have proven yourselves over and again; what else is there to say?Any discussions you guys have just serve to benefit others. Thats why following out a thread is valuable; you never know what sits around the corner waiting to illuminate the subject.

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Subject: Re: measuring grid chokes
Posted by PakProtector on Wed, 14 Dec 2005 20:24:07 GMT
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That is the whole idea. Fair and unbiased measurement. Why One would get so upset at the idea of their merchandise going under the 'scope is beyond me( and I never did say who/what gear I'd be measuring). Especially in such a field as Audio. While the final judge is the ear, one gets valuable insight into design through measurement of some parameters which can be quantified, like inductance and winding capacitance.cheers,Douglas

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Subject: Re: measuring grid chokes
Posted by colinhester on Wed, 14 Dec 2005 23:52:18 GMT
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Depending on how serious you are about this experiment, you might want to contact the local university's EE dept.  I'm sure a prof would be more than willing to donate time / resources to help secure data and verify your results.  Also,  what thought have you given to stastical variations in manufacturing?  This might prove to be intersting, depending on the winder and their QC/QA procedures.....$0.02

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Subject: Re: measuring grid chokes
Posted by PakProtector on Wed, 14 Dec 2005 23:59:20 GMT
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Hey Colin,Excellent idea. It won't do any good with the current situation. I could have God himself measure, and there would be knuckleheads comming out of the woodwork claiming that the numbers did not mean a thing. I do have access to the best, both at home and at the local University. There are also a few audio enthusiasts from work who feel the same about a well stocked lab as I do. I've a few sources of guidance, should that become an issue.And then there's the statistical variation...cheers,Douglas

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Subject: Re: measuring grid chokes
Posted by MQracing on Thu, 15 Dec 2005 00:36:48 GMT
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Hi Colinhester:Picking any one parameter or two... doesn't even begin to tell ya the whole story... and in fact can be quite misleading. For example... take a speaker (i'm not a speaker engineer by any stretch)... how many different parameters must a speaker designer juggle to achieve an end product... what if the evaluator only looks at one parameter as the measure of goodness?  What the designer probably tried to do was to juggle and optimize a wide range of parameters to get a good sounding product... not just focus on one or two parameters.I would guess any good speaker or driver designer.... say achieving the highest max flux density (as a sole parameter)

were the test... I'll bet a good driver designer could meet or beat your "spec" if that was the only "spec" he had to be concerned with.same goes for tranneys... I listed 18 different parameters that a designer might consider in a magnetics design and the list was short and done on the fly... for instance we would need to add to the list... flux density... an important parameter that you would not want to totally ignore so that you could lower some other arbitrary spec (in isloation) like the dc winding resistance as just one example.If you give an engineer the task of designing a product to maximize only one or some small set of parameters and allowed him to trade off all other performance parameters... it almost becomes a trivial excercise.but that's not how good products come about... or at least not in my experience.that's my .02 dollarsmsl

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Subject: purpose for measuring grid chokes
Posted by PakProtector on Thu, 15 Dec 2005 01:18:47 GMT
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hey-Hey!!!,Since there is no means of measuring how good a part will sound in-circuit, we're stuck measuring single parameters, or groups of them.With these measurments, it is possible to examine circuit behaviour, or at least make predictions based on well-researched guesses. Once a circuit has the device installed, we can see how it sounds. Since no reasonable measurements exists to quantify what we think we hear, we're stuck with single parameters or groups of parameters to measure.I have yet to see a group agree on why a SE amp sounds the way it does...yet there are plenty who'd refuse to classify the amp from the un-favoured topology as listenable. Only one can be best, and that sort of thing. Turns out there *ARE* a lot of characteristics that can be measured which shed light into how an amp should sound, and where its bandwidth will start and stop.In the grid choke example, to simplify, it is operating as a low DC/high AC impedance device. Seems reasonable that its impedance across the traditional audio spectrum would be of interest.  Since it is to me, and a few others, I've proposed not only to measure, but to describe the methods and equipment used to measure. The numbers are what they are, and if anybody wants to suggest ways of analyzing the data, or proposing a detailed method to gather it, I'm all ears.As to the rest of the suggestions on my design practices, I don't recall ever saying that any single parameter should be used in the design stage. Matter of fact, I have actually taken just the opposite aproach in discussions about PS DCR for examle. In God we trust, all others bring data!cheers,Douglas

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Subject: Re: measuring grid chokes
Posted by Manualblock on Thu, 15 Dec 2005 01:52:48 GMT
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Thats right; it's the roadmap.

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