Subject: Open back array
Posted by tolits on Sun, 04 Nov 2007 19:36:44 GMT
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http://picasaweb.google.com/bernardo.lito/Array

Subject: Re: Open back array
Posted by FredT on Mon, 05 Nov 2007 12:13:30 GMT
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Nice looking. Are those Neo 8's, and are they open back too? What are the midwoofers?

Subject: Re: Open back array
Posted by tolits on Mon, 05 Nov 2007 20:01:38 GMT
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Yes , those are 8 pcs. Neo8 and 18 pcs 6.5 midbass per speaker..These are cheap midbass made here in the Philiipines at $5 each.It was supposed to be an upgrade to my previous array using 9 pcs of Focal 5K013l 5inch bassmid in a close back array. The closed back sounded better. I could not make it sound right even with a DCX x'over until I reduced the negative going signal to the midbass. The difference is night & day. The sound became natural ,coherent and,life like and very detailed and effortless. I suspected that the asymmetrical shape of the cone causes some distortion. I tried applying this sound processing which limits the negative going signal. I tried this before with the focals before but the effect is good but not that big. Maybe with the no. of the bassmid in an open back configuration made the effect even more pronounced. The difference now is so big that would make keep this speakers. I am also thinking of making an open back array using 8 pcs of 12 in woofers and apply the same sound processing.Thanks

Subject: Re: Open back array
Posted by Tom R. on Tue, 06 Nov 2007 02:00:07 GMT
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Please elaborate on your explanation of reducing the "Negative going signal".I am not trying to be critical, I just don't understand.I have a line array using 8 of the same focal drivers per side and am interested in what you are doing.I clicked on your link: What was your impression of the two vertical 6.5 driver arraywith the Neo 8 in the middle? Did it reduce early wall reflections? Did it focus moreSound at the listing position? Tom

Subject: Re: Open back array
Posted by tolits on Tue, 06 Nov 2007 05:14:03 GMT
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If you look at the shape of the side view of the cone, it looks like at triangle. On the negative going signal, it moves like a spear. On the other hand on the positive going signal, it has a higher drag because of the parachute effect of the cone. What I do is use a tube configured in such a way I can variably decrease the negative going signal . Regarding my impression with the two 6.5 driver with Neo8 at middle It takes the performance to a higher level than the focals but with the negative limiting signal in place.Distortion became lower,imaging became better, Naturalness also has been enhanced. I would not go back to the Focal arrays in a close back and the 8 Neo.To me,It is simply a different level considering the bassmid are very cheap.

Subject: Re: Open back array
Posted by Tom R. on Wed, 07 Nov 2007 02:16:50 GMT
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What exactly did you do to the negitive portion of the signal / back wave to make the sound better? This was on a sealed enclosure or open baffle, just to clarify?Tom R

Subject: Re: Open back array
Posted by tolits on Wed, 07 Nov 2007 02:28:21 GMT
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I cut the negative going signal or I cut signal when the cones are moving in. I apply this on the open baffle set up.

Subject: Re: Open back array
Posted by FredT on Wed, 07 Nov 2007 10:54:49 GMT
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I don't understand. Are you using some kind of tuning device to reduce the signal when the cones are moving inward but not when they are moving outward. Does this reduce the electrical signal to the drivers or is it a mechanical device that physically reduces the cone's movement in one direction?

Subject: negative going signal
Posted by lcholke on Wed, 07 Nov 2007 14:52:15 GMT
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Hi Lito, Is the tube mounted behind the driver and stuffed with dampening material? Is the tube partly closed on the back end? If the tube that reduces the negative signal is acting as a rear enclosure, then the cone travel may be being limited, reducing the Doppler distortion. Is the bass reduced also. Thanks-Linc

Subject: Re: negative going signal
Posted by tolits on Wed, 07 Nov 2007 18:54:12 GMT
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Hi Linc,I am using a tube(12AX7) limiter before the power amp that drives the midbass.Lito

Subject: Re: Open back array
Posted by tolits on Wed, 07 Nov 2007 19:04:40 GMT
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Posted my reply to Linc. A tube(12ax7) limiter before the power amp that drives the midbass.

Subject: Re: negative going signal
Posted by Tom R. on Thu, 08 Nov 2007 00:23:23 GMT
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I have never heard of doing this before. Is there any documentation on the web that we can look at? If not, can you post further information on what you are doing? Schematic? Line / block drawing?Please advise,Tom R

Subject: limiter operation
Posted by lcholke on Thu, 08 Nov 2007 13:53:52 GMT
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Hi Lito,What order xover are you using? This method is very clever. It looks like the limiter limits the current surges/peaks to the speaker. I wonder if the energy being limited is made of frquencies outside the mid band. -Linc----------Aphex 1788 mike preamp description:"Microphone Output Limiter - All preamps have a maximum input level. Once that level is exceeded, there is no way to remove that very unpleasant distortion. In order to avoid that occurrence, many engineers set the preamp so that the expected peak level at maximum sound level is still at least 12dB below the clip point. While this provides some insurance against the preamp clipping, it causes a loss of noise performance and, in the case of digital, a loss of resolution. The Model 1788 has a unique limiter (patent pending) in the front end of the preamp which limits the output level of the microphone by as much as 20dB, hence the name 'Microphone Output Limiter'. This allows the engineer to get maximum noise performance and also allows maximum resolution for an analog to digital converter, all without worrying about crashing the preamp."

Subject: Re: limiter operation
Posted by Tom R. on Fri, 09 Nov 2007 00:51:05 GMT
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I may be wrong, but I do not think this is what Lito is doing…The microphone output limiter attenuates the entire signal. If I read the posts correctly, he is using a 12AX7 tube before the amplifier to reduce the negative portion of the input signal to the amp, and then to the speaker, so the driver only reacts to the positive portion of the signal. That's what I have interpreted. Not sure if that is correct, waiting on Lito's responseTom R

Subject: Re: limiter operation
Posted by lcholke on Fri, 09 Nov 2007 14:28:39 GMT
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Hi Tom,I read the same- tube before the amp.I asked a EE friend of mine about the operation of a std limiter, and he replied that it eliminates the signal peaks by acting as a variable gain stage. The low level signal recieves more gain and the high level signal less gain. This is often used where a mike is to loud and then to quiet as the singer moves about.-Linc

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Subject: Re: limiter operation
Posted by tolits on Fri, 09 Nov 2007 19:47:40 GMT
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Hi Linc,48 db LRLito

Subject: Re: negative going signal
Posted by tolits on Fri, 09 Nov 2007 20:02:06 GMT
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Hi Tom,Here is the limiter I have been using.http://picasaweb.google.com/bernardo.lito/Array/photo#5130946822579695378

Subject: Negative signal applied to RS 8
Posted by JPH on Fri, 16 Nov 2007 19:43:42 GMT
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I own a pair of RS 8 from Selah Audio Rick Craig's now discontinued design !!!!! and I also complain of the unnaturalness of the mid's and lack of openess and transparency,Rick redisigned the crossovers but in vain . I use 8 Daytons RS 180 and 8 Fountek ribbons , unfortunately I am not good in electonics so I dont relly have the ability to mount a negative reducing circuit , but I wonder if there is anything on the market that is ready to plug in and could do the same job ??? I've also used DCX buy with little improvement.I am tempted to think that the Daytons are not a good option ? but maybe reducing the negative signal woul do the miracle happen.Any suggestions are welcome JP

Subject: Re: Negative signal applied to RS 8
Posted by tolits on Sat, 17 Nov 2007 19:31:48 GMT
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Hi JPI don’t think there is any thing in the market that would accomplish the negative limiting signal.I am sending you a copy of the schematic I am using. It is very simple to make and maybe you can ask a friend who can make it for you. Remember , I tried this with the open back arrays wherin the effect is pronounced. You can try it with closed back and see if it works for you. Anyways, I play with the adjustment via the variable resisitor until it sounds right adjusting too the level of my DCX. To my ears, I get a setting that is very pleasing to my ears and sounds right.To me it’s like MAGIC. Don’t forget to maintain the correct polarity to the speakers they are driving.If the polarity is reversed, it becomes a positive going limiter. I think too that the daytons are a lot lot better than what I am using.Good luck. I hope it will give you the same pleasure I get from listening to them. By the way ,I am using too a subwoofer and my NEO8 are open back too.x’over is at 754hz.It sounds better with the subwoofer handling 100hz down.I also found out that due to the sheer nos. of the drivers the importance of breaking in the drivers before getting the max. result. I guess an array with so many drivers makes every thing very pronounced. It is like a magnifying glass.Lito