Subject: Stephens Trusonic 80FR Cabinet Help Required!
Posted by SingleDad on Mon, 14 Jun 2004 15:47:50 GMT
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Hi Everyone,I just found a pair of the Trusonic 80FR drivers and I need some help with a suitable cabinet design, can anyone help please!Stay Single!Single Dad

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by GM on Tue, 15 Jun 2004 03:49:16 GMT
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This isn't very specific. How large a cab can you tolerate, i.e. how much LF response you shooting for? For example, a T/S max flat cab is ~5ft^3 tuned to 39.6Hz based on some measured specs I found. Room size and desired position in it, i.e. in the corners, up against the wall, out well away from the wall? GM

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by akhilesh on Tue, 15 Jun 2004 16:13:16 GMT
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HI,I have a pair of these drivers. Most people i have played the speakers for did not really like them...they find them too midrangey (meaning low bass and low treble with compressed sound). However, the midrange is great. Stephens sold them in sealed boxes...2 cubic feet or so. Try that first. It's a simple design and you may like it! I have tried it, and it was nice. I currenlty have them in a 2 way configuration, with a tweeter, which of course makes them a non single driver, so we lose some of that "single driver magic".Anyways...good luck with them...hope you enjoy them.-akhilesh

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by GM on Tue, 15 Jun 2004 16:21:34 GMT
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Did you try them in a large T/S max flat cab with BSC and HF bypass cap (with/without Zobel) to tame the mids and 'lift' whatever HF response they have? Or just use digital EQ to shape the FR? Factor in the increased effective Qts if tube driven? GM

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by akhilesh on Tue, 15 Jun 2004 17:46:22 GMT
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HI i did. But they are no longer "single driver".:-)Lost some of the magic (coherence and imaging) i think, but better freq response. Based on my listening, inexpensive drivers like the fostex fe206E can give both: decent frequency response and a "pure single driver" setup with great single point coherence and imaging. -akhilesh

Subject: My thoughts & experiences with the Stephens Trusonic 80FR driver
Posted by akhilesh on Tue, 22 Jun 2004 13:10:48 GMT
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Hi Everyone, I have spent a lot of time with my trusonic 80FRs. I lived with them in a simple BR configuration (pure single driver with no crossover) for several months. I compared these with other full range drivers that friends & I had ...mostly the fe206E (fostex). I also demoed my Stepehens Trusonic 80FR pure full range boxes to many people. In general, most people were not really impressed by the trusonic 80FRs in pure single driver mode. While they are smooth and have a nice midrange, they have too many problems: too nasal, not enough high frequency and just about OK lows. All of this interferes with any meaninful enjoyment of music, and detailed recordings with many instruments sound really constrained. In comparison, the fe206E, a cheaper driver, has much better frequency extension in PURE single driver mode. THE FOSTEX SOUNDS MUCH BETTER. After these first few months, I decided to create a multi driver configuration. I added a tweeter, and also a baffle compensation circuit to boost the lows a bit. The result: a 2 driver setup with a fairly complex passive network. The sound: MUCH better. Smooth, but decent frequency extension (though bass below 50 hz is not happening with these drivers unless you seriously compromise sonic fidelity). However, this is a MULTI driver setup...meaning there IS a perceptible loss in coherence, imaging and all the other single driver thingies we cherish. There is also...GASP...a phase shift around 600 Hz....bang in the lower midrange. However, i can at least listen to these now pretty well...i like these almost as much as my still unmodded klipschorns. To read a semi-independent review of my 2 way setup, please check out:http://www.audioroundtable.com/SingleDriverSpeakers/messages/386.htmlWayne is a friend of mine...so he waxed a bit more lyrical on the speakers than is warranted! So, while there is a small fan following of these drivers on single driver websites, in my opinion, the Trusonic 80FR is NOT a great choice for a PURE single driver setup. It is however a decent driver for a 2 or 3 way setup. I don't think Stephens designed them as single drivers either (unlike Lowthers or Fostexes). They were usually part of a multi way configuration for a reason. If i was doing a PURE single driver setup...there are many choices. I will post a few below for people getting into this hobby:1. Buy fostex or lowther drivers and get cabinets built...designs exist all over the place, INCLUDING THE Manufacturer websites. www.quarterwave.com is also a good place to look at (though MArtin does use BSC networks so it may not be PURE single driver). 2. www.decware.com has a pure single driver setup they call Tower that should sound good (i have never heard it but Steve Deckert makes good stuff.. i own a zen amp). I think he sells it for around $1500. 3. Ed Schilling makes the horn shoppe speaker for around $700. This has got to be a good deal! He sent me a

measured curve once that shows decent extension down to 50-60 HZ. I have never heard them but you see very few used ones on sale. 4. Moth audio's cicada is a good choice as well (again never heard but seen reviews). I think these are in the sub $1000 range also. 5. Classic audio (in St. Louis Missouri) sells the fe206E driver in a 1.2 cubic foot box, again in the sub $1000 range. They also sell many other drivers in other boxes. I have heard the 206E in the 1.2 cubic foot box. It sounds very good. I am not sure about the myriad of other drivers this website sells, and the other cabinets... in my estimation they may or may not sound good. I would be especially careful about Lowthers in bass reflex boxes. However, i can recommend the 206E in their 1.2 cubic foot box, since that is almost optimally designed, and i have actually heard it! Hope my views help other people getting started in the hobby. Often times, there is hype about a certain driver that leads to unrealistic expectations. I hope I have managed to present a balanced picture here.thanx, -akhilesh

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Subject: Re: My thoughts & experiences with the Stephens Trusonic 80FR driver
Posted by Martin on Thu, 24 Jun 2004 00:17:11 GMT
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akhilesh,You wrote :"1. Buy fostex or lowther drivers and get cabinets built...designs exist all over the place, INCLUDING THE Manufacturer websites. www.quarterwave.com is also a good place to look at (though MArtin does use BSC networks so it may not be PURE single driver)."Hmmmmmmmmmmmm .... I guess I would contend that the speakers are pure single driver but used in a politically incorrect and not so popular full range driver system set-up. After all the driver does not know what is supplying, or modifying, the input signal so it just happily plays the music. In reality, any box is an acoustic filter already so all I did was add an electrical filter and a solid state amp.Martin

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Subject: Re: My thoughts & experiences with the Stephens Trusonic 80FR driver
Posted by akhilesh on Thu, 24 Jun 2004 03:48:40 GMT
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HI Martin,Good to hear from you! For the purposes of this thread, I was using the commonly understood "purist" definition, which is a driver in a box with NO passive electronics. Did not mean to slight your website in any way, which i think is excellent, or your advice, which i have personally benefited from, including designing BSC circuits. thanx-akhilesh

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Subject: Re: My thoughts & experiences with the Stephens Trusonic 80FR driver
Posted by Martin on Thu, 24 Jun 2004 10:26:24 GMT
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Hi akhilesh,No offense taken at all.One of the lessons I have learned from my TL work is that there is no absolute definition for many speaker terms. People love absolute narrow definitions where they can look at some design and immediately apply a simple and obvious label to classify the design. Often the label also carries some implied measure of value or prestige. But the boundarys of these labels can become very fuzzy and things are not so clear. I guess I tend to work in this fuzzy boundary area. The thing I find most interesting, reading some of the forums, is the strictness in the application and acceptance of these labels that some contributors use while constructing their systems. They only work in very narrow bands of acceptance. You get enough of these types gathered on a forum then the topics become very limited in scope and the new comers start to buy into the philosophy without even questioning or being aware of other options or opinions. It feeds on itself. Things have to be just a certain way or it cannot be any good by definition. An alternate view is met with utter disbelief, ridicule, and contempt. Unfortunately, the full range purists are probably the best example of this behavior. The purists have very tight blinders on. But there are others. One of the other forums I read occasionally is totally focused on smaller two way bass reflex systems and crossovers. Raise an alternate topic and it is ignored. At an audio meeting I went to last year, the largest number of speaker systems being presented were smaller two way bass reflex designs with elaborate crossovers. Interesting for the first few and then .....So I have decided no more strict definitions and labels. If it sounds good then its OK by me.Martin

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Subject: Herd Mentality
Posted by Wayne Parham on Thu, 24 Jun 2004 14:07:26 GMT
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Hi Martin,I've come to many of the same conclusions you have. There's been lots of times when I encountered this sort of thinking in discussions about loudspeakers over the years. It used to be, about 25 years ago, that sealed boxes were the popular paradigm. I think it is because electro-mechanical specs weren't absolutely required to obtain an acceptable result. But whatever the case, it seems like a certain vocabulary develops in enthusiasts circles, and then herd mentality tends to set in.The popular vernacular is both fun and annoying at the same time. It makes the choice of products become a sort of tribal ritual, setting the boundaries of the gang. In a sense, one finds that they're not so much deciding on what sounds best, as what gang they want to be in and what would be coolest with their peers. Dare I say maybe the folks that just walk in to a stereo shop and pick out something they like are more balanced than we who are so concerned? In my favorite audio obsession, loudspeakers, there are some very distinct gangs, each with their own distinct colors. The group I'm most familar with often uses horns in their systems. Personally, I always felt the high-efficiency gang was most reasonable and well-adjusted, but I probably felt that way because I was a member of that gang. Still, I always felt that a horn enthusiast tended to be fairly objective about his design choices.That said, horns have long been viewed as being colored. I think this is mostly because, if undersized, they are. But I've always liked a well-designed horn, one that was large enough and appropriately implemented to exploit their strengths and minimize their deficiencies. They can be made to have flat response and excellent performance if designed well.All designs have strengths and weaknesses, as I'm sure you'll agree. Horns are great at some things, but they have very definite weaknesses that

must be addressed and designed around. So it was odd for me to find that some horn enthusiasts had become as prone to irrational fixation as the older acoustic suspension fans had been. I guess I see this kind of thinking as unsophisticated and uninformed.Here's another one I'm starting to see, and I think you'll identify with this. Tubes were made obsolete by transistors for the most part. Like everything else, there are strengths and weaknesses of both technologies, but transistors did tend to replace tubes, and the general public has forgotten about them. Most people under 40 have never heard a tube-based sound system, and get an image of Victrola and thin sound if you mention tubes, if they even know what vacuum tubes are at all.It is really enjoyable to see the old technology resurrected and used, and amps made with vacuum tubes sound better than you might expect. But it has also resurrected old debates that had all but died before many of us were born. The one I'm thinking about right now is the SET verses push-pull debate. There are others too, like the right amount of negative feedback and other things. But just take the SET appeal, for example.I'm new to tubes. My education pretty much glazed over them, with a single semester dedicated to tubes. So I understand how they work, but have very little experience with many of the issues of implementation. Certainly, many of the issues are the same between active devices, like Class A implementations running hotter and having generally lower drive but no crossover between positive and negative cycles. But there are obviously other issues that are specific to vacuum tubes, even some that are specific to device types. In these matters, I've learned a lot from folks like Eric Barbour and Steve Bench.What I've begun to find is that there is the same sort of irrational zeal for specific design approaches in tube circuits as there is in other aspects of audio. Why am I suprised? There is some tendency to idealize the SET configuration, for example, of which there are several nice examples. But naturally there are also poor SET products and a whole slew of mediocre designs. So it's nice to find voices in the crowd with what appears to be objective view. I'm not necessarily looking to the contrarian simply for an alternate view, but I do enjoy finding what really works and why, as opposed to follwing in the herd fashion, even if the herd seems fashionable.Wayne

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Subject: Every design has strengths & weaknesses
Posted by akhilesh on Thu, 24 Jun 2004 14:34:25 GMT
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HI MArtin,Yes, this is a fundamental question: what is a full range driver setup?WE have discussed this below in many threads as well.My experiences thus far tell me that each design has strengths & weaknesses. For example: a good PURe single driver setup (with no passive networks & no other drivers) has a purity and simplicity and coherence that is hard to match...even one uses cheap drivers like the Fostex FE206E. On the other hand, one will lose frequency extension and flatness. A 2 or 3 driver setup with minimal passive networks can take care of these problems (as i have done in my trusonic + tweeter + BSC setup) but at the expense of some of that coherence and imaging. I think we have to look at the driver & decide...for example i have read about (but never heard) of mongo rear loaded horn cabinet designs for Lowthers that claim to give great coherence, decent imaging and good frequency extension (flatness may not be that good with Lowthers). In the case of the trusonic 80FR, it is clearly not great for a PURe single driver setup, however, it does pretty well with a tweeter and a BSC.
-akhilesh

Subject: Re: Herd Mentality
Posted by akhilesh on Thu, 24 Jun 2004 14:38:10 GMT
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I agree, Wayne! Of course, assuming well executed designs, they should all give the same illusion, right? One of total fidelity?SO there may be many paths, but one goal (the illusion of high fidelity).A great push-pull design with great parts & workmanship will obviously beat the pants off a poor ly executed, or ill thought of SET design...and vice versa. The same logic can be extended to any component choice: for example horn loaded drivers versus BR versus sealed box. I tend to view these as means to an end: high fidelity. Often times, the means becoems the end...which is unfortunate. I have seen this in other pursuits as well.People tend to favor one "means" over another. -akhilesh

Subject: Re: Herd Mentality
Posted by Wayne Parham on Thu, 24 Jun 2004 15:46:12 GMT
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Yes, you're right. I should introduce you to Monte Vogt sometime. A friend of mine for decades, he graduated from Tulsa University with a mechanical engineering degree. He's the best I know of for car and automobile customization, knows engines and the rest of the vehicle completely.The reason I bring Monte up here is that he has no brand bias. It's all the same stuff mushed into different shapes is pretty much his view. I've seen him build wheel-standing 351 Cleveland Fords, and big-blocks and small blocks of every brand. Vettes have been his latest flavor, but he's pretty much done 'em all, including Porsche's and riceburners. He and I built the Olds motor in my Cutlass, and we have even built a few Wankle engines together. Lots of fun in lots of cultures.

Subject: Re: Herd Mentality
Posted by Martin on Thu, 24 Jun 2004 15:55:25 GMT
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Wayne,You wrote :"All designs have strengths and weaknesses, as I'm sure you'll agree. Horns are great at some things, but they have very definite weaknesses that must be addressed and designed around. So it was odd for me to find that some horn enthusiasts had become as prone to irrational fixation as the older acoustic suspension fans had been. I guess I see this kind of thinking as unsophisticated and uninformed."I agree completely. What I find to be most amazing is reading a post where the writer is asking for help to solve some obvious deficiency they have found in their finished "purist" system. The most common problem I see being discussed is a lack of bass output and a shouting midrange from some full range driver system. In my opinion, this is almost always caused by a baffle step problem and/or mating a low Qts driver to a TL, BR, or poorly designed back loaded horn enclosure. It is never going to work well no matter where the speaker is placed in the room. A generally accepted solution is to put a foam strip between the

whizzer cone and the main cone, this seems a bit hit or miss without any real adjustability. Essentially this is damping the midrange response from the whizzer cone and killing the shout and probably a whole lot more. I have also seen recommendations to paint different substances onto the cone, this seems kind of irreversible and risky with an expensive driver. But both are generally acceptable in the cult of the purists. The other thing that is generally recommended is to add a subwoofer. What I find most amazing about this recommendation is the following question. Why would you go to all of the trouble to build a complex and large back loaded horn if you are going to go ahead and add a subwoofer for the bass response? Makes no sense but it is again acceptable to the cult of the purists. Build a simple closed box tuned to 100 Hz and then add the sub! A crossover in this frequency range is acceptable to the cult of the purists.So finally we turn to the taboo, adding a filter. The filter will rebalance the SPL response without any loose of detail. It will fix the slight phase problem associated with the baffle step region. It is completely adjustable and removable so it will fit almost any situation. To me is seems like a very obvious tweak. But it is not pure and we know that no matter how weak the bass, or shouty the midrange, it is better sounding then the filtered sound would ever be. So say the cult of the purists. But I do see progress in the cult. I see people adding resistance to their systems by using special wires and other tricks while claiming it as a new approach. Boy I am glad this is not adding a filter so we don't loose anything! I am also glad I am not a member of the cult of the purists or any other herd. Well, I guess I am a member of the cult of the refuse to conform and shut-up. I listen to my system and like the way it sounds, so do other people who visit and listen with me. OK bass and no shouting midrange.Martin (of the unwashed)

Subject: Re: Herd Mentality
Posted by Wayne Parham on Thu, 24 Jun 2004 17:21:59 GMT
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I agree with you completely, Martin.I've seen a couple single-driver speakers that sounded quite nice being just a speaker in a box. It's pleasant to listen to them, so I'm all for that. But if a speaker isn't really suited for this, as most aren't, then other solutions might be sought.I'm in full agreement with you on what solutions I'd explore and what ones I'd probably avoid. I'm not saying that I'm against folks that do it differently than I would. But I am saying that the solutions I've seen you propose are generally the same direction I'd go too.Wayne

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Subject: Re: Herd Mentality
Posted by akhilesh on Thu, 24 Jun 2004 18:53:08 GMT
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Hey... i'd love to meet him sometime. -akhilesh

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by Arnold on Sun, 08 Aug 2004 18:34:09 GMT
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I have a pair of 80FR's factory mounted in approx. 1 cubic sealed corner cabinets that were used as the satilites of a factory 3 piece system with a 15" woofer as the Low end driver. By themselves the have no low end and they realy need to be used as a 2-way system, but their mid-range is clear and sweet with a touch of warmth.I plan on adding coaxial mounted tweeters and try them with a sub-woofer. They were available from the factory as a 2-way with a coaxial mounted bullet horn tweeter.AS

Subject: Re: Stephens Trusonic 80FR Cabinet Help Required!
Posted by akhilesh on Mon, 09 Aug 2004 01:35:17 GMT
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That should work well! Do let us know how it worked. When you post how it worked, it may make sense to post a new thread, so everyone sees it.good luck!-akhilesh