
Subject: Dipole/Bipole Transmission Line

Posted by [Villain3g](#) on Wed, 09 Dec 2009 00:41:52 GMT

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I've got four Dayton RS 100-4's. I want to use them in a pair of bipole/dipole transmission lines tuned to 80hz. Im also going to attempt to laminate plywood to achieve a curved line. I have some questions:

Can two drivers occupy the same t-line?

Does the second driver's Sd affect the line length or cross section area?

Should they be wired bipole, dipole, or switchable?

Would curving the line be superior to the traditional folded line?

Attached is an un-proportional sketch... In the picture you can see a brace incorporated into one of the laminates to lock in the drivers.

I'm still in the brainstorming stage, any input is appreciated. The goal is to have them done by Christmas... We'll see

Specifications: * Power handling: 30 watts RMS/45 watts max * VCdia: 1" * Le: .67 mH * Impedance: 4 ohms * Re: 3.0 ohms * Frequency range: 80-20,000 Hz * Fs: 80 Hz * SPL: 87.2 dB 2.83V/1m, 84.2 dB 1W/1m * Vas: .07 cu. ft. * Qms: 3.10 * Qes: .57 * Qts: .48 * Xmax: 4mm * Sd: 37.4 cm²

File Attachments

1) [DSC01386.JPG](#), downloaded 14646 times

Subject: Re: Dipole/Bipole Transmission Line

Posted by [Villain3g](#) on Sat, 26 Dec 2009 23:00:55 GMT

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Made some headway on the speakers over the past two days. The New York snow storm gave me the push I needed to get started. Ive got them assembled and running, just need to finish them. My first impression was "WOW, There is actually some bass coming out of these." After the initial shock, I was disappointing with the upper frequency range. I haven't tuned the line yet. I imagine some dampening will clear that up some. Attached are some pictures of the construction process.

File Attachments

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Subject: Re: Dipole/Bipole Transmission Line

Posted by [Wayne Parham](#) on Sun, 27 Dec 2009 15:23:50 GMT

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Oh, wow, those look great! How do they sound?

Subject: Re: Dipole/Bipole Transmission Line

Posted by [Villain3g](#) on Sun, 27 Dec 2009 16:22:37 GMT

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These were a gift for my brother for Christmas. The intention was to start him off on a surround sound system. Over the next gift giving opportunities I'll add the remaining speakers. These speakers are starting as fronts for a 2.1 setup but will become great rears later on.

For his first impression, I had my brother close his eyes while I played a vocal jazz track for him. Halfway through I had him open his eyes and he was completely surprised. He told me that he had envisioned two large floor-standing speakers and two small speakers hanging in the top front corners.

I couldn't have been more happy with his description. That was exactly what I was going for. I wanted a full sound with a broad sound-stage from a relatively simple package.

They could be brighter. Maybe they will become more agile as they break in.

Subject: Re: Dipole/Bipole Transmission Line

Posted by [Villain3g](#) on Tue, 29 Dec 2009 04:06:21 GMT

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Today I compared these speakers to the ESSs in the picture. Renaissance music with harpsichord seemed to not compete with the crisp treble of the Heil driver. But the speakers seem to excel with vocal jazz and other "small" music platforms. My impression is that they out perform the heils in this format. The vocal performer seems to come forward of the sound-stage while the ESSs appear to be a broad but still two dimensional. I believe this is due to an excess of midrange. This isn't necessarily a bad thing but it does limit style of music.

File Attachments

- 1) [17555_580575285595_28400374_33954375_603788_n.jpg](#),
downloaded 14251 times
 - 2) [17555_580575290585_28400374_33954376_7557752_n.jpg](#),
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Subject: Re: Dipole/Bipole Transmission Line

Posted by [Wayne Parham](#) on Tue, 29 Dec 2009 13:52:12 GMT

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They sure are lovely speakers!
