
Subject: Spectral decay time of HF drivers
Posted by [zheka](#) on Fri, 30 Nov 2012 20:07:53 GMT
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Wayne,

How important is spectral decay time and uniformity for the HF drivers in your opinion? Ribbons are supposed to have shorter decay time if compared to compression drivers.

<http://www.alconsaudio.com/site/cinema/pro-ribbon-vs-compression-driver.html>

Does it translate into audible advantage?

thank you

Subject: Re: Spectral decay time of HF drivers
Posted by [Wayne Parham](#) on Fri, 30 Nov 2012 20:30:34 GMT
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I love the sound of good ribbons. They've just always been so delicate and easy to break. And you can't crossover very low - part of the same problem, really - so directivity matching is difficult. Actually, I'd say it's almost impossible.

It's easy to like the VHF extension of ribbon drivers, and I definitely think they are better than older compression drivers with aluminum or early titanium diaphragms. That was important to me in the 1970s when a ribbon easily went past 20kHz when a compression driver could barely hit 10kHz. Compression drivers with aluminum and the early titanium diaphragms weren't all that hot, especially in terms of mass and breakup. They didn't reach all that high, and they usually were peaky in their top-octave, which wasn't high enough to begin with.

As for the impulse response, that is largely a function of mass and damping. While the ribbon driver usually has low mass and is usually electrically resistive, it doesn't provide a good acoustic load at all. Horns, on the other hand, present an excellent acoustic load for the driver, making them extremely well damped, efficient and therefore distortion-free. Especially when you get to the level of drivers with beryllium diaphragms. But even the composite diaphragms these days are good.

In the end, I think there is no doubt which is the better sounding driver to me. These days, almost every compression driver goes at least to 15kHz, and many reach 18kHz or more. So that took the only card left to the ribbons away. Now there's virtually nothing I like better about ribbon tweeters. I'd much prefer a good compression driver on a waveguide, crossed to an adjacent subsystem with matching directivity. Low distortion, high efficiency and controlled directivity. So in my opinion, the modern compression driver on a waveguide trumps the ribbon in every way.

Subject: Re: Spectral decay time of HF drivers
Posted by [zheka](#) on Fri, 30 Nov 2012 20:47:31 GMT
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Thank you Wayne.

just looking at the two waterfall charts below and leaving all other considerations aside, would you expect the difference in decay time on this scale to be a factor in practical terms?

Subject: Re: Spectral decay time of HF drivers
Posted by [Wayne Parham](#) on Fri, 30 Nov 2012 20:58:41 GMT
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Yes, I think the device with the greater decay time at 10kHz would sound more "spitty", like the old compression drivers on diffraction horns. But I would also question whether or not the charts presented by a manufacturer about competing products were really a good representation, or whether they picked a "worst case" to compare themselves with.

Subject: Re: Spectral decay time of HF drivers
Posted by [zheka](#) on Fri, 30 Nov 2012 21:15:33 GMT
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thank you.

Are any impulse response or waterfall charts of DE250 in your systems posted online?

Subject: Re: Spectral decay time of HF drivers
Posted by [Wayne Parham](#) on Fri, 30 Nov 2012 21:30:21 GMT
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DE-250 Spectral Decay

File Attachments

1) [DE250_waterfall.jpg](#), downloaded 3054 times

Subject: Re: spectral decay time of HF drivers
Posted by [zheka](#) on Fri, 30 Nov 2012 21:30:57 GMT
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Thank you!
