



Letter to the Editor

Dear Editor,

I read the article from Jack Walton in Vol 4 ("A comparative review of power supply regulator designs with listening tests"- pp. 171) with great interest. I found it fascinating, especially after he concluded that the Jung/Didden vintage 1995 regulators along with the 2000 upgrades do so well! A couple of comments seem due, however.

1 - I did miss some details of the raw DC supplies used with the listening tests. Rectifiers, transformers, filter caps, etc. Plus any additional filtering, CM chokes, whatever. Related to this, any bypassing on the rails associated with the Borbely line-stage. This is important information for the reader.

2 - Perhaps you should also very carefully state just what you mean by the "Jung/Didden regulator" in the tests. Is this the regulator topology as updated, in "Improved Positive/Negative Regulators", *Audio Electronics*, issue 4/2000 (your ref 6). Or, is it the original 1995 design (your ref 1). I don't think that the improved design should be referenced as Jung/Didden, since Jan wasn't involved with it. Of course, he was with the first one of 1995. I can see a potential for some confusion here. Why not call what you tested the "Improved Positive/Negative Regulators", *Audio Electronics*, issue 4/2000.

3 - I couldn't distinguish among many of the various traces in the plots, so I can't comment much here. There is a tremendous amount of data being presented, and you don't want to be criticized for not making it very clear.

4 - Some additional types of music might be helpful in differentiating the various regulators. For instance, Pink Floyd for heavy rock bass impact, bluegrass for plucked strings, operatic female vocals for goose-bumps, etc. This is more of a suggestion for the future.

All-in-all however, this is an impressive body of work, and I applaud you for making such an extended effort. That takes real dedication, but you certainly seem to have it.

Walt Jung
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Jack Walton replies:

Thank you Walt for chiming in – your expertise and knowledge about this type of regulators is well known and we all should take advantage of it!
Let me address your points in order.

1 - The raw supply powering the regulators consisted of an Amveco dual 18V, 25VA transformer without common mode choke. The CRC filtration after the bridge diodes consisted of 4,700uF, 0.68R, 4700uF. This supply was housed in the chassis of a defective HP-465 Amplifier. The power leads within the chassis retained the original IEC connector, switch and fuse as well as the ferrite beads on both black and white leads. The only unusual aspect of the raw supply was that we used a K-Works "Empowered 2" power cable during the listening tests.



The “Borbely All-FET” line amplifier used a pair of 220uF local capacitors, no ceramic bypass caps. It was constructed on humble Radio Shack prototype board with all devices carefully matched for I_{dss} and G_m . The amplifier was housed in a Hammond extruded aluminum enclosure. RCA-type connectors, obtained from Parts Express were used throughout. Inter-connect cables between the line amplifier and the Pass unit used as power amp, as well as SACD player to line amplifier were Kimber Cable.

2 - In the future I will refer to the regulator as the “Improved Positive/Negative Regulators” – or **IPNR** for short!

3 – Jan has put color versions of the busy graphs on the Linear Audio website in the online resources | online articles section, so this should make it easier to interpret the data.

4 – As to listening to many more different types of music, I think I would have caused extreme listener fatigue and run out of wine if we used a lot more material!

What’s most striking is that the bottom 4 or 5 regulators were really inferior in terms of rendered experience compared to the top 5. It was just unmistakable.

I’ve been pouring over the past year’s JAES articles to see if we can tease out more info, lots of stuff to do, there are many more regulators to test (including the DMOSFETIPNR, and I would like to re-do that portion with a “naïve” and an “expert” group of listeners in a bigger listening environment. Stay tuned.

*Jack Walton,
New Jersey, USA*