
Subject: Re: A 11 year long quest
Posted by [gofar99](#) on Tue, 20 Sep 2022 18:07:10 GMT
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Hi, Yes indeed some of the formulas are off. I had to tweak the values to get the response I wanted. Getting RIAA accurate is not a simple task. This is what I do.

I use a general purpose calculator like the nl you listed (BTW that is a good site for many calculations) one to get some close values. Then comes the tedious part. I test the whole preamp not just the eq part. This allows for anomalies in the circuitry as well as the EQ. I use two different PC based scopes and a passive inverse RIAA like in the below schematic. One of the scopes does Bode plots. I checked its signal generator with the second scope to verify that it was not a source of deviation. The test and verify process indicated that the max deviation between 10HZ and 100KHZ was less than 0.1db with an input signal of 1.0 volts. Feeding this into the inverse EQ is where things can get a bit fuzzy. I have to accept that when built as indicated and fed a proper low Z input the results will be within about +/- 0.1db. To error on the cautious side I automatically presume it to be +/- 0.25 db. Then with that fed into the preamp (47K / 100pf in the cables no additional cap in the preamp) I run the plot. With tweaked values in the internal EQ it comes out well below +/- 0.5 db 20HZ to 20KHZ. Usually the values are in the negative 0.3db range. Either the values on the input side when added to the preamp tend to cancel (maybe) or it is spot on. Most of the plots are virtual straight lines with a tiny deviation on the negative side at the bottom end. So again to be safe I just tell everyone that it is +/- 0.5db. That value is low enough to be swamped by quirks in the cartridges. My experience has been that regardless of cost of the cartridge (mine go from \$100 to over \$1500) the linearity is worse than the 0.5db range.

File Attachments

1) [RIAA.jpg](#), downloaded 203 times
