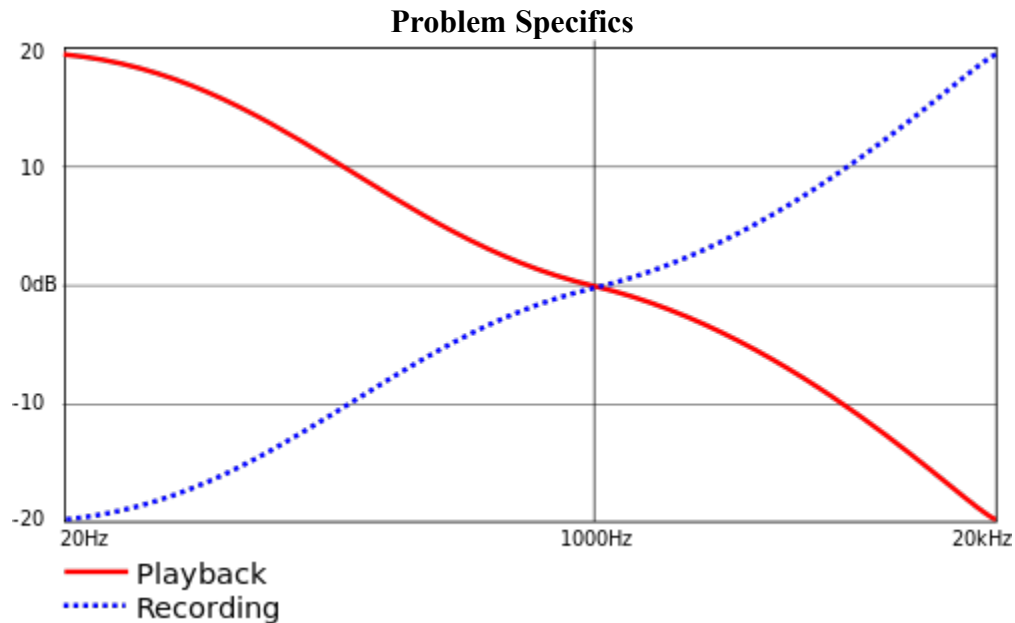


Problem Overview

Vinyl records are recorded with a preemphasis curve which attenuates bass frequencies and amplifies treble frequencies for the purpose of extending playtime on a surface, as well as removing some noise which the medium may introduce. Phonograph output voltages are much lower than the input voltages expected by modern devices with “*line in*” inputs. In order to listen to audio encoded on vinyl with modern equipment, an amplifier must deemphasize the RIAA equalization to achieve a flat frequency response as well as amplifying the voltage up to line level. The following chart shows the voltage gain in red that is necessary to flatten the preemphasis shown in blue dots.



[1]

In order to flatten the frequency response introduced in the recording process shown in blue dots, the amplifier design will have voltage gains of 20dB at 20Hz, 0dB at 1kHz and -20dB at 20kHz. To get the output level up to line level I will also include a variable gain voltage amplifier stage with a flat frequency response and gain between 0dB and 40dB.

Citation

[1] I Fergusson. (2006). RIAA-EQ-Curve_rec_play.svg[Online]. Available:
http://commons.wikimedia.org/wiki/File:RIAA-EQ-Curve_rec_play.svg