Macintosh II and Macintosh SE: Sound Level Differences

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TOPIC ---

What are the differences in sound level between the Macintosh SE and Macintosh II?

DISCUSSION ---

There is a significant difference in the sound output of the Macintosh SE and the Macintosh II -- as much as a difference of 14dB in output level for the same digitized sine wave -- because of differences in output strength at the sound jack.

The explanatory information is in the "Macintosh Family Hardware Reference Manual" (Addison-Wesley, ISBN# 0-201-19255-1).

Macintosh SE Sound Circuit:

The external sound line provides a low-impedance, high-level (8VAC peak-to-peak) signal that can drive any load of 32 or more ohms.

(WARNING: The signal available at the external sound jack on the Macintosh SE computer is capable of damaging some power amplifiers and can generate dangerous sound levels in headphones. You should use extreme caution when using this signal with amplifiers or headphones.)

Macintosh II Sound Circuit:

The external sound jack is at standard line level (approximately 1.5VAC peak-to-peak), and its source impedance is approximately 47 ohms. The jack is capable of driving a headphone load of 8 to 600 ohms, or the input to almost any audio amplifier or amplified speakers. It will NOT adequately drive a directly connected external speaker.

Based on this information, with the same volume setting on each machine, regardless of the input impedance of the audiometer, there will be a large difference in the sound level output.

One possible method of equalizing these signals would be to construct a box with a switch. When using a Macintosh SE, you could switch in either a fixed

resistor or a potentiometer to drop the audio input level to the audiometer. The other switch position would be straight through from the Macintosh II. This level-matcher would be completely passive in nature, and could be built relatively inexpensively.
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