Re: amplify 40kHz audio signal using TL082: first two stages are fine, but high noise from the third stage

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Date: 03/16/05

Date: Wed, 16 Mar 2005 12:48:21 −0800

"for_idea" <zhiyang@gmail.com> wrote in message
news:1111004366.450578.264430@z14g2000cwz.googlegroups.com...
> *Dear friends,*
> *I am making an ultrasound signal receiver. The transmitter and receiver*
> *is apart from each other about 6 meters. The circuit is powered by a 9v*
> *battery. I used three amplifiers from two TL082. The reference voltage*
> *(about 4.5v) is generated from voltage divider (two 100k resisters in*
> *series). All amplifiers are in inverting input mode. First and second*
> *stages are configured as: 10k input resister and 500k feedback*
> *resister. The signal output in the second stage is very good. However,*
> *the signal from the third stage (input res.= 10k, output res. = 200k)*
> *is significantly corrupted by noise. Please give me some advice to*
> *clean up the amplified signal.*

If my stated assumptions are incorrect, you can
take them as a form of advice.

I assume your single−supply circuit is referenced to
a "pseudo ground" developed by that divider.

I assume the amplifier supplies are well bypassed
to that pseudo ground at the frequencies you care
about, (and beyond for stability's sake).

I assume that your amplifiers stages are the simple,
Rfeedback/Rin configuration and nothing really
boneheaded is hidden by the invisible schematic.

I assume that you would not say "noise" when you
meant "oscillation".

I assume that you would not say "noise" when you
mean "interference getting into the input because of

inadequate shielding or shield connection".

I assume that you know about frequency selective filtering to remove noise from those parts of the spectrum you do not intend to capture as signal.

Now, given all that, you should expect some noise, and you should expect the most in the last gain stage. So I do not see what can be done unless the noise is excessive, and even then I would need to see a schematic. See http://www.tech−chat.de/aacircuit.html for a tool enabling you to post your schematic here.

> *Thanks,*

You're welcome.

−−
−−Larry Brasfield
email: donotspam_larry_brasfield@hotmail.com
Above views may belong only to me.