Subject: Re: 3 km emulators (fwd)
From: "Bob Morse" <bob.morse@icecube.wisc.edu>
Date: Mon, May 31, 2010 6:38 pm
To: "Bob Morse" <morse@icecube.wisc.edu>
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---------- Forwarded message ----------
Date: Sat, 18 Apr 2009 20:42:16 -0500 (CDT)
From: andrew.laundrie@icecube.wisc.edu
To: Bob Morse <morse@icecube.wisc.edu>
Cc: Andrew Laundrie <awlaundrie@icecube.wisc.edu>,
Perry Sandstrom <sandstrom@icecube.wisc.edu>,
Hagar Landsman <hagar@icecube.wisc.edu>
Subject: Re: 3 km emulators

Hi Bob,

The quad emulators provide a low-pass response similar
to that of a quad. A schematic and a parts list are
attached. The parts list calls for 1/4 watt resistors
for R5,R6,R7 and R8. These need to be 2-Watt parts or
bigger, or else they may burn up, depending on what level
of power passes through the filter. The other resistors
can be small since they don't carry significant DC current.

The design goal was to implement a symmetric filter,
with minimal variation in impedance over frequencies
both below and above the low-pass "knee".

It does not work well to connect filters in series.
You can see what I mean by doing SPICE simulations.
Look for variations in the input and output terminal
voltages when driving and loading the circuit with
145-ohm impedance (the nominal impedance of the quads).
The design goal is to minimize variation in the input
terminal voltage over frequency. The component values
listed represent the best matching that I could attain
with this or any of the several other circuits I tried.

Andy

> Hi, Andy, Perry,
>
> My spy's tell me that you are the guys that can tell me about the
> 3 km Icecube quad emulators...can you send me a schmatic, and tell me
> exactly what they are supposed to do.
>
> cheers...bob morse
>
> Robert M. Morse tel: 808-956-7051, cell: 808-927-1785 FAX: 808-956-2930
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Attachments:

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