

## Re: OSC and unity gain buffer

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*Source:* <http://sci.tech-archive.net/Archive/sci.electronics.design/2008-04/msg01817.html>

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- *From:* Jim Thompson <[To-Email-Use-The-Envelope-Icon@xxxxxxxxxxxxxxxx](mailto:To-Email-Use-The-Envelope-Icon@xxxxxxxxxxxxxxxx)>
  - *Date:* Thu, 10 Apr 2008 18:15:53 -0700
- 

On Thu, 10 Apr 2008 17:05:19 -0700 (PDT), eeaj2002  
<[eeaj2002@xxxxxxxx](mailto:eeaj2002@xxxxxxxx)> wrote:

On Apr 10, 4:46 pm, "Michael A. Terrell" <[mike.terr...@xxxxxxxxxxxxxxxx](mailto:mike.terr...@xxxxxxxxxxxxxxxx)>  
wrote:

Fred Bloggs wrote:

Michael A. Terrell wrote:

Fred Bloggs wrote:

Oh? You're quite the  
ignoramus today...thanx for  
more ammo:-)

If you know so damn much about video  
amplifiers why didn't you tell  
the OP that a unity gain buffer is the wrong  
configuration, or that you  
need to use double termination?

So much for your 'ammo'. OTOH, you  
ARE always shooting blanks.

A unity gain buffer would not be the wrong configuration for  
a series  
terminated drive into a high impedance termination of the  
line, such as

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into a scope. Can you tell me why you would want to use the x2 series termination with a video amplifier? I don't think you mentioned anything more than matching line/termination impedances which means as usual your post is misinformational and/or incomplete... Your statement: "Without the extra gain and resistor you have a sever mismatch which causes no end of problems."

Fred. double terminated video amps have been the standard for over 50 years. I can't help it if you don't understand. Look at a few of the Linear, Analog or Maxim data sheets for video amplifiers and educate yourself.

In the early days the video amp was a cathode follower circuit. Early solid state were emitter follower circuits. The amp needs as low of an output impedance as practical, then has to be matched to both ends of the 75 ohm coax. I apologize if you can't grasp this simple concept. Look at simple video distribution designs, too.

The OP said that he is using National's LMC6484 with a 1.5 MHz bandwidth which isn't a good choice. He didn't show a sample of the circuit, or provide a link to it. Unity gain amplifiers generally don't like high capacitance loads. The series resistance eliminates that problem, and provides an excellent match to the cable's characteristic impedance. Without more information about his design, it is impossible to give exact details. He didn't tell us if it is DC or capacitor coupled. If it is DC coupled is there any DC offset. That was why I asked if he had looked at it with a scope. Th last video amp design I worked on had a 0 to -63 dB output control, in .1 dB steps. It also had a DC to 40 MHz bandwidth. It is under a NDA, and I had to leave all the documentation behind when the job was completed. The gain control used an 18 bit serial interfaced D/A converter, and a four quadrant multiplier to give a -24 to -63 dB range. For the upper range a set of analog switches switched in a 24 dB gain stage. This method allowed the full range, while keeping the noise figure at an acceptable level. The -3 dB point varried from 49 to 73 MHz in the production boards. The embedded controller measured the DC offset and zeroed it, as well as setting the gain and switching the extra stage. This was followed by 16 seperate Sallen Key filters for the desired bandwidth. They were selected by a pair of 16 to one analog mux chips.

The worst video amplifier I ever had to work with was an RCA design with 17 6146 tubes. It was used in a TTU-25B TV transmitter, and probably other TV transmitters. One tube drove the other 16 in a distributed amplifier configuration, and all 16 had to be matched. It modulated the 1 KW stage of the TTU-1 transmitter which was the driver

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for the larger transmitter design.

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Sorry guys for the delay. Let me explain myself one more time. I think my signal matches the EIA standard and I have no problem when I connect it to the TV. It displays withouth any problem. I have not summed my signal with the oscillator yet but I was going to. I have not used any opamp yet. My output is very simple. I used exactly the application note made by TI and I have duplicated. The TI appnote can be found in the following URL address:

<http://www.gaw.ru/pdf/TI/app/msp430/slaa177.pdf>.

Please see the page 3 of this apnote for the schematic.

I thought if I add a color burst to this output it might work.

Thanks guys for the help,

John.

AC-couple the output. The circuit can't support a DC path to ground.

...Jim Thompson

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