

## Question/Issue:

The analog outputs of the AD-8000 (DAC-8 card) are noisy or exhibit a fluttering sound. What is the proper procedure for configuring the DAC-8 to work with a console or other similar device?

## Answer:

This note assumes that the AD-8000 system and all external devices are synchronized properly. For more information on system synchronization, please see the appropriate application note.



Firstly, to determine whether the noise is coming from the DAC-8 card itself or somewhere else in the system, listen to all four channel-pairs of the headphone output (one at a time, of course). Does the same noise appear at the headphone output? Also, connect an AES/EBU device (such as an R-DAT) to one of the AES outputs. Listen through that device to determine whether the noise is present at the AES outputs. If the noise is not present at the headphone output and the AES outputs, then its point of origin is probably the DAC-8 card -- read on.

The internal jumper pins that configure the DAC-8 card for balanced/unbalanced and pin 2/pin 3 operation may not be set properly. There are four possible configurations to which the DAC-8 can be set. They are:

1. Balanced/Pin 2 hot: All jumpers in horizontal position.
2. Balanced/Pin 3 hot: All jumpers in vertical position.
3. Unbalanced/Pin 2 hot: All even jumpers in horizontal position, odd jumpers removed.
4. Unbalanced/Pin 3 hot: All odd jumpers in horizontal position, even jumpers removed.

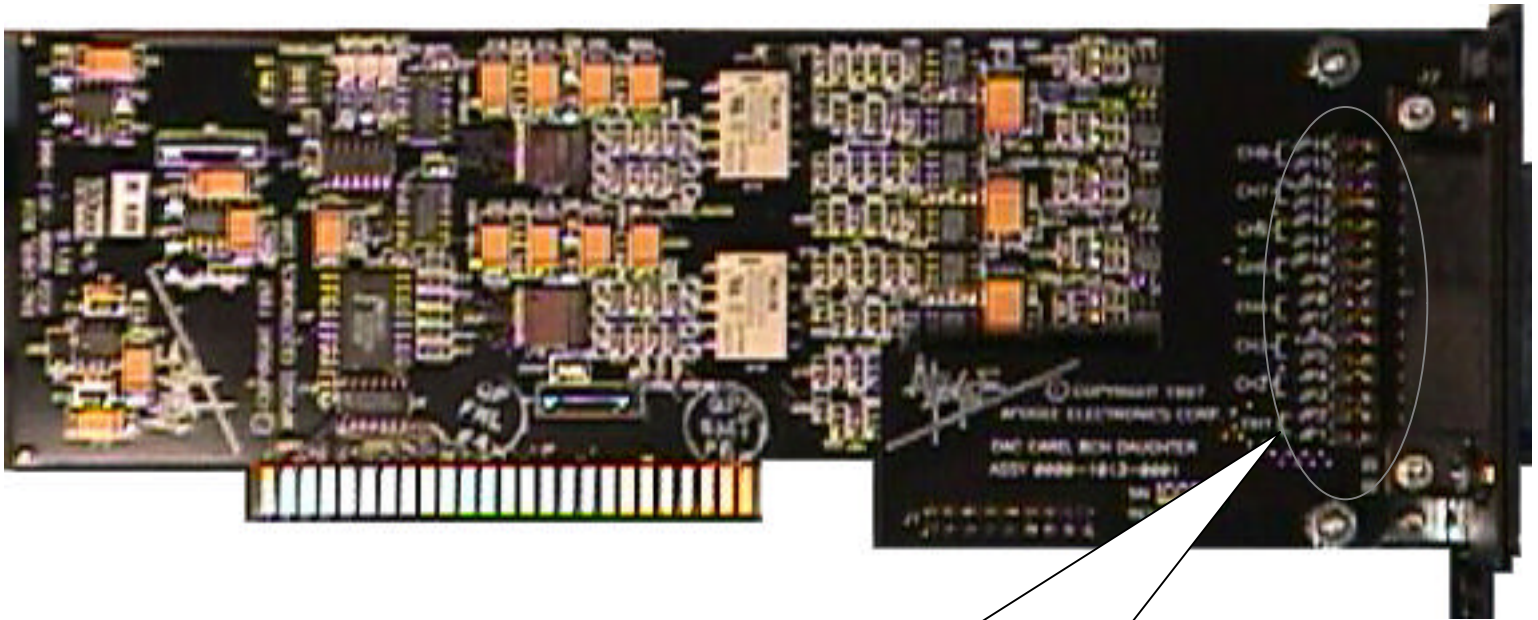
To troubleshoot your setup, set channels 1-4 each to one of the four different configurations. Connect each of those four channel outputs to a different channel input on a mixer and audition each one. Determine which channel is the cleanest and reconfigure the remaining jumpers to match the clean output channel (only one channel will sound right -- all other channels will be distorted or conspicuously noisy).



This exercise is useful even if your console's manufacturer claims that the console is balanced -- some consoles have creative input architectures and may actually be single-ended (unbalanced). If the DAC-8 card is set to balanced operation (default setting from the factory) and the outputs are being fed to an unbalanced source, one of the pins with signal (pin 2 or 3) is being grounded-out. This accounts for the distortion and popping.



If you are traveling with the AD-8000 and are unsure as to the balanced/unbalanced configuration of the next studio at which you will be working, you can configure the DAC-8 card for unbalanced operation. The unbalanced setting will ensure that the card functions correctly with both balanced and unbalanced systems. The only drawback is that the output signal will be attenuated by 6 dB. You can additionally configure the card for pin 2 hot operation and carry two output cables -- one that is wired for pin 2-hot operation and one that is pin 3 hot.



1. Balanced/Pin 2 hot: All jumpers in horizontal position.
2. Balanced/Pin 3 hot: All jumpers in vertical position.
3. Unbalanced/Pin 2 hot: All even jumpers in horizontal position, odd jumpers removed.
4. Unbalanced/Pin 3 hot: All odd jumpers in horizontal position, even jumpers removed.