



Tech Info Library

Macintosh AV: Noise With Sampled Audio (3/94)

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TOPIC -----

Customers are complaining about hiss and popping within a recorded audio sample. They are sampling from their internal CD-ROM drive using the CD-Remote DA with Fusion Recorder or Macromedia's SoundEdit Pro v1.0.5.

- Configuration:

Macintosh Quadra 840AV 8/230/Int.CD 300i & External CD 150

System Software: Clean Installed 7.1 from CD;

Express Modem Software;

Virtual Memory: OFF

File Sharing: OFF

Express Modem: OFF

Sound Out: 44 kHz; 16 Bit & Stereo

Sound In: Internal CD & Playthrough selected

**For Internal Sampling Sound In: External Audio & Playthrough selected

**For External Sampling:

- 1) Sampling a sound via the internal CD 300i OR external audio source using both SoundEdit Pro v1.0.5 and Fusion Recorder v1.0.1 and the Apple CD Remote DA produces a poor quality sound with "hiss", "popping" and hesitation or skipping through both the internal speaker and external headphones.

NOTE: With Fusion Recorder we also heard a high pitched tone at random times of a sampled sound. During the recording of the audio, the sound is perfect while playing through internal speaker or head phones.

- 2) Sampling a sound via the internal CD 300i using the Apple ATG Group's Zounds(1/20/93) application products a clean and acceptable sound (AIFF format) on playback. Appears to just dump the sound right to the hard drive during recording in a "ZoundsTemp1", "ZoundsTemp2", etc. file.
- 3) Converting audio track via the internal CD 300i using Fusion Recorder v1.0.1 and QuickTime 1.6.1 produces a clean and acceptable sound (MooV format) on playback.

The questions raised are:

- Can the Sound Manager be interfering in our samplings?
- Is there a setting that we have overlooked to eliminate the additional sound introduced in the sampling?

DISCUSSION -----

There are several issues to be considered here. First, the firmware present in most CD300 drives has difficulty correctly transferring digital audio. The problem has been corrected in the newer CD300 Plus drives.

Second, there is a basic throughput issue. In order to correctly read digital audio data, you need to read a chunk of audio, byte swap it, write it to disk, and issue another read command to the CD ROM drive before the drive overruns its read buffer. If you try this on a Macintosh with synchronous read and write calls, it is impossible to do.

There are a few things which the user can do to get the best performance from the Macintosh AV machines:

- Disable File Sharing. File sharing slows down overall system performance. For best results, disable file sharing before using digital audio software. Use the "Sharing Setup" control panel to disable file sharing.
- Unmount File Servers. For the reason mentioned above, unmount any network file servers before using digital audio software.
- Turn off Virtual Memory. Virtual Memory (VM) allows you to use part of your hard disk as if it was RAM. In general, sound editing applications do not work well with VM enabled. Use the Memory control panel to turn off VM and reboot your Macintosh.
- Turn off Speech Recognition. Apple's Speech Recognition software on the 660 and 840AV uses the DSP (Digital Signal Processor) to do its processing. Digital audio software requires nearly 100% of the DSP to perform its operations. Use the Speech setup control panel to disable Speech Recognition.
- Turn off the Express Modem. Apple's Express Modem software also makes heavy use of the DSP. Use the Express Modem control panel to turn off the Express Modem before using digital audio software.
- "Run Lean". Disable any unnecessary Extensions and Control Panels in the System Folder. Many Extensions and Control Panels use up some of the processing power of your Macintosh. To get the best performance from digital audio software, disable any unnecessary Extensions and Control Panels.
- Use High Speed Hard Disks. High Speed internal or external hard disks with SCSI-2 interfaces will work best for recording digital audio. You should also look for disks that don't use thermal recalibration or do it in the background when you are not recording audio.

- Optimize Your Hard Disk. Recording digital audio places a large burden on your hard disk. For best results use a hard disk optimizing program such as Speed Disk which is included in the Norton Utilities or the FWB Toolkit from FWB Software.

Article Change History:

23 March 1994 - Added specific tips on getting the most from the AV.

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