



Optimization Tips for Mac

Product: US-428
Platform: Macintosh
Issues: Audio latencies with MacOS 9.2.1 and US-428 Software Release 3.0.5

Background

The Macintosh software drivers for the US-428 provide a range of options for the user. In particular, the 'Audio Latency' setting available on the 'System' tab of the US-428 Control Panel lets the user choose between larger and smaller audio latencies. In general, larger latencies (e.g. 1024, 2048) provide increased buffering protection against audio applications and network traffic that compete for available processor time. Smaller latencies (e.g. 128, 256, 512) provide a shorter delay for software monitoring of input channels, at the risk of generating audio dropouts when network traffic or audio processing (such as reverb) consumes too much processor time.

User comments submitted to the US-428 Bulletin Board indicated conflicting reports about what latencies might reliably work with different software applications in certain configurations. In particular, it was reported that use of Appletalk Ethernet networking could cause audio dropouts for some users. To try to quantify these various issues, TASCAM recently conducted tests of the US-428 with a Macintosh using MacOS 9.2.1.

Test Setup

Test hardware: 400 Mhz PowerMac G4 Desktop
Operating sys: MacOS 9.2.1
US-428 Drivers: US-428 Version 3.0 and 3.0.5

Basic Test Results

The US-428 works extremely well on the Macintosh with a wide range of system configurations. If you have a need to work with smaller audio latencies you may wish to take the following issues into consideration:

1. If you wish to use the absolute smallest audio latency that is possible with your hardware, you will need to disable the 'Apple Enet' extension. This can be done using the Extension Manager Control Panel. If you are using Logic Audio you also should uncheck the 'Larger Disk Buffer' and 'Larger Process Buffer' options in the Audio Hardware and Drivers preferences panel.
2. If you are not using Ethernet networking, you should disable the 'Apple Enet' extension in all cases. This is particularly important to do if your computer is not connected to an Ethernet

network, or if it is connected to an Ethernet network but the network hub is turned off. The Apple Enet extension can cause audio dropouts as it periodically polls for a non-existent Ethernet connection.

3. If you wish to use Ethernet networking while playing audio through the US-428, you will generally need to use an audio latency of 512 or larger. A 256-sample latency may work on some systems with extremely fast processors. In all cases you should disable the 'Apple Enet' extension if your computer is not connected to a functioning Ethernet network.

4. The Release 3.0.5 drivers contain a improved buffering algorithm that improves operation at the 128 and 256 latency settings. They also correct a rare problem that showed up for certain users of virtual memory in the 3.0 drivers. The Release 3.0.5 drivers are recommended for all users and all Macintosh configurations.

5. The Monitor Color Depth setting available from the Monitors control panel may impact available audio latencies on certain computers, especially those models without hardware graphics acceleration. Use '256 Colors' for your Monitor to provide the best protection against audio dropouts when using small audio latencies.