

Tips for Buffers Settings on the FireStation

The following equation is used to calculate the audio latency of the mLAN driver

$$\begin{aligned}\text{Send} &= (\text{Buffer Length}) \times (\text{Buffer}) + (\text{ASIO Buffer Length}) \\ \text{Receive} &= (\text{ASIO buffer length}) \times 1\end{aligned}$$

There are 3 locations on your CPU were you can adjust the buffer settings

- 1) The Send (out of CPU) side of the mLAN control panel.
- 2) The Receive (in of CPU) side of the mLAN control panel
- 3) The Preferred buffer setting in the mLAN ASIO control panel
ALWAYS ADJUST STEP 3 LAST

-----Here are some rules to know-----

- 1) Always adjust the buffers length to multiples of ten.
Example 1: 2 buffers at 10 millsec. Or 2 buffer at 20 millsec
Example 2: 5 buffers at 10 millsec. Or 6 buffers at 30 millsec
- 2) Never set the ASIO control panels preferred buffer setting below the Receive buffer length setting of the mLAN control panel
- 3) Adjust the buffers in the mLAN control panel 1st then adjust the ASIO buffers to match. **Always set ASIO setting last.**
- 4) Always click **SET** on the control panel and then **apply** on your patch bay after making any changes to the buffer setting.
- 5) Recording at 24 bits does lower your latency

6) Latency is a problem shared by every CPU and every professional sound card. Every studio is unique. Learn your systems limits and strong points.

7) When playing software synths with a midi controller you must decrease the latency of mLAN to the lowest setting in order to get a note or sound to play in time with the track. Also, you should try not enabling the inputs (receive side).

8) Many tricks can be done to your Operating system to lower latency. Ask your local computer geek, or read PC magazine, Wired, Computer world, etc.; and never forget the web has many forums out there to help. The best site for XP is *pcaudiolabs.com*

However, perform the following at your own risk; many CPU and operating system changes can help your performance, but some can also be detrimental. Always make changes one-step at a time. This helps to understand which adjustment did or didn't work. Never change the buffer settings, install more RAM, and adjust the operating system at the same time.

9) The buffer setting for receive (right side) should always be set to 20 which is the max allowed. Latency related to receive (right side) is not affected by mLAN buffers.

10) SEND = (Outs of the CPU) left side of control panel
RECEIVE = (In of the CPU) right side of the control panel

11) *XP users only (very important)*
The Firestation mLAN interface runs as a service on XP .
You need to tune the machine for best performance on background services. Instructions on how to do this are as follows:

1. Right click *my computer...*
2. Choose properties which is the bottom choice
3. Next click on the advanced tab....
4. Now click the settings button under *performance...*
5. Click the advanced tab in this window...
6. Set processor scheduling for **BACKGROUND SERVICES..**

Also in this performance section you can change the visual settings to ADJUST FOR BEST PERFORMANCE

This is a good starting point for systems, which are 800 MHz, and above:

SEND

2 buffers

10 milliseconds

RECEIVE

20 buffers

10 milliseconds

ASIO

10 milliseconds

LINKS :

PCAUDIOLABS.COM

PRESONUS.COM

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