

# SymNet FAQs

February 2002

**1. How much latency is there in a SymNet system?**

This question has a three part answer since the digital signal path through a SymNet system has three different major components.

- a. Converter delay – Approximately 850 microseconds for the AD, and 624 microseconds for the DA.
- b. One DSP core – maximum delay through any given 8x8 DSP core is approximately 240 microseconds, though typically it will be much lower. The max delay through the DSP core of an 8in or 8out is 120 microseconds
- c. SymLink – approximately 80 microseconds for an audio signal to travel, via SymLink, from the DSP core of one 8x8 to the unit immediately downstream. If there are any units in between, add an additional 80 microseconds for each SymNet DSP and 20 microseconds for each CobraLink.

In summary – the typical delay for a signal that goes into an analog input on an 8x8, and exits from an analog output on the same 8x8 is usually around 1.5 milliseconds.

**2. Speaking of delay, why do the DSP delay modules require so little DSP resource?**

The actual delay memory is handled outside of the SHARC DSP chips - by fast synchronous DRAM chips that can be accessed extremely quickly by the DSP. This greatly reduces the 'load' on the DSP core.

**3. Can I cut/paste DSP processing module settings?**

Yes. Use the mouse right-click to save and load DSP module settings to and from your disk-based 'Settings File'. The 'Settings File' is a library that you can use to store EQ, Compressor, Crossover etc setups, and recall them at will for later use. Alternatively, you can copy a whole DSP module within a configuration or between configurations. From the Design View, just click on the module, choose copy, and then paste it where you want the new module to go.

**4. Will SymNet work with AMX or Crestron controls systems?**

Yes. There is a dedicated RS232 port on the rear panel of all 8x8, 8in, 8out, and Cobra-Link units for this purpose. This port can be used simultaneously with the host computer connected to the front panel RS232 port, and the rear panel RS485 port. The control protocol documentation is available for download from our website:

[www.symetrixaudio.com/Products/symnet.htm](http://www.symetrixaudio.com/Products/symnet.htm)

**5. How do I get audio signals from one 8x8 to another via SymLink?**

Use the SymLink Bus Send>Returns, which can be found in the ToolKit at the left side of the SymNet Designer screen.

**6. How many SymNet units can I connect using SymLink?**

There can be a maximum of 8 SymNet hardware units in a SymLink ring. This includes the 8x8, 8in, 8out, and Cobra-Link.

**7. What happens if a SymLink ring is interrupted due to a bad, or unplugged cable?**

All units in the ring will continue to function but audio and control signals will not be transmitted across the gap nor will any control information be transferred "downstream" of the gap.

**8. What is the maximum recommended length of a SymLink cable?**

10 meters is the longest recommended cable length. In our lab, we have successfully used longer cables, up to 25 meters, but we only test and guarantee functionality at 10 meters.

**9. Is SymLink compatible with CobraNet?**

Not directly. The only similarity between SymLink and CobraNet is that they both use CAT5 cable and handle 64 channels of audio. In all other ways they are dissimilar and incompatible. However – we will soon be offering our CobraLink module which acts a virtual patch bay between SymLink and CobraNet. Keep your eye on our website for an announcement.

**10. Can I set up a SymNet system so that it loads a specific configuration when it powers up?**

Yes. Go to the Hardware Configuration drop menu. Choose 'Power On Default' This allows you to program the hardware to always 'wake up' running a specific configuration.

- 11. I seem to have lost the programming I 'Saved' in my SymNet hardware. Where is it?**

If you've already downloaded and 'Saved' a Configuration to memory it can seem as if you've lost your work if you've neglected to set the Power On Default as described in the previous item. This is due to the fact that the unit will power up with nothing running if you do not assign it a Power On Default configuration.
- 12. Can I plug microphones directly into a SymNet unit?**

Yes. The 8x8 and 8in are equipped with software controlled mic/line inputs. A digitally controlled precision analog attenuator is a part of the analog input stage. Adjustments made to the input gain block in SymNet Designer actually trim the level of analog signal being sent to the AD converter – allowing you to maximize the dynamic range performance of the SymNet hardware.
- 13. How much current is provided by the phantom power supply?**

About 10mA per input. Each input supply is current limited so a short in one input will not adversely affect other inputs.
- 14. Can I upload the stored presets from SymNet hardware into my laptop/desktop computer?**

Yes. SymNet's Archiving function allows you to store and extract SymNet setup Files to and from the rack mounted hardware.
- 15. Does SymNet hardware memory use an internal backup battery?**

No. SymNet uses FLASH RAM, which requires no backup battery – unlike older styles of RAM found in other DSP systems.
- 16. So why is there a battery on the DSP motherboard?**

There is indeed a battery on the DSP motherboard. Its only function is to keep the real time system clock running when power is disconnected from the SymNet hardware. FYI – the system clock drives the Event Scheduler – the feature that allows you to create a timed roster of Configuration and control output changes.
- 17. What kind of DSP is used in SymNet?**

Analog Devices SHARC ADSP-21065L running at approx. 66mhz. The 8x8 has four, the 8in and 8out each contain two. The four processors in the 8x8 can deliver a theoretical maximum combined total of 786 MFLOPS (Mega Floating Point Operations Per Second)).
- 18. My SymNet unit works just fine even though it isn't plugged in to AC power.**

Please consult a trained mental health professional.
- 19. I just added up all the % numbers in the DSP modules I put in my design, and it doesn't quite match what the DSP resource meter reads. Why?**

The DSP resource percentage figure located on each Module is rounded to the nearest integer value. The DSP resource total meter (located below the toolkit) tallies the actual, non-rounded figure. In addition, hidden routing modules are added to move audio between DSPs. These routing modules take a small amount of DSP resources.
- 20. Why am I missing the bottom of my SymNet Designer control screen?**

SymNet Designer is configured to work with displays that have 1024x768 resolution or greater. If your computer is running 800x600, then some controls and status indicators will be outside the display area of your monitor. You may be able to change your display resolution via the Windows Control Panel.
- 21. How do I program SymNet to work with analog controls, for instance I'd like to use a 10K rotary potentiometer as simple zone volume control.**

You can link ANY DSP Module parameter to any of the analog control input ports on the rear panel. Just right click on the fader, button, etc and choose "Assign Hardware Control". This launches a dialogue box that steps you through the short process of creating a parameter-control link.