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Subject: PARIS and clocking

Posted by [mikeaudet](#) on Sun, 10 Mar 2013 22:06:50 GMT

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Hi everyone,

I've just spent some time digging through the vagaries of the PARIS clocking system.

This is how I now understand it from my tests and debugging:

Any clock coming into PARIS or generated from PARIS can be shared to another EDS card or MEC/442 once and once only.

For example, if I am running PARIS with internal clock, I can:

- 1) sync a second card to the first. And,
- 2) sync a second MEC/442 to the first MEC/442

If one tries to do a second jump, whether it is an interface or an EDS card, the 6th ESP chip occasionally locks up. This chip controls the timing of the card. When you hit play on the transport, the app updates a register in the sixth ESP chip.

If you ignore this and try to make a clock jump twice by, for example:

- 1) running a three card system with one interface. (the clock jumps from the first card to the second and the from the second card to the third). Or,
- 2) running a three card system with two or three interfaces without word clock.

The esp chip will occasionally lock up causing the PSCL to time out trying to write to the register and a delay before PARIS application GUI responds. This can manifest itself as a long delay after the PARIS app has opened but before the screen has drawn. Or, it can be a one second delay after pressing play before playback begins.

I know that people with larger setups have had submixes just refuse to play occasionally. Turning off the submix and turning it back on again would often fix it. I think this clocking issue is the cause.

I know that some people are having success running three or four MECs on internal clock, but it doesn't work reliably for me. Maybe some cards are more tolerant than others.

For me, with a 4 card system with two interfaces on the first two cards and on internal clock, the third card would very, very occasionally lock up. The fourth card would occasionally lock up. So, it seems to get worse the further from the clock source the EDS card is. With word clock, I didn't notice any trouble at all, but I seldom have audio playing from the fourth card, so I may just not have noticed it happening once in a blue moon on the fourth card.

I hope this helps someone track down some annoying bugs someday.

All the best,

Mike