
Subject: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [adingley](#) on Tue, 06 Dec 2022 13:50:52 GMT

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Perhaps this is a really nit-picky thing -- but I'm a little surprised by this.

I just received my second ULN-8mkIV (it's tricky to come by them these days with the current supply chain woes) but I have two units now, and I'm thrilled about having more inputs & DSP. I've been especially excited about a 2nd unit after reading this passage from the MIO manual's DSP Implementation Guide: (pg. 341)

"

All plug-in processing within the 3d Mixer occurs in the shared DSP/FPGA engines of the Metric Halo 3d hardware, completely independent of your Host computers' processor. The more 3d boxes you connect to your MHLINK domain, the more processing power you have."

The above does seem to indicate that the DSP/FPGAs are "shared", and that someone with multiple units is going to have an increased ability to process DSP plug-ins in their MIO mixer.

My actual experience is not quite what I was hoping for, though, "technically", I suppose it holds true.

What I'm seeing happen is:

- ALL DSP for inputs of box #1 seems to be handled SOLELY by the DSP/FPGAs in Box #1.
- ALL DSP for inputs of box #2 seems to be handled SOLELY by the DSP/FPGAs in Box #2.
- IF I max out the DSP on box #1, I still get digitally-garbled audio through my outputs... there's no "overflow" method in place that allows my "shared DSP/FPGAs" (from box #2) to intelligently handle the signal processing for signals flowing into Box #1.

I'm posting this because:

A) I'm not sure if there's a setting that I'm missing, and perhaps something I could do would change this behavior. -- If anyone knows what switch to flip, I'd be thrilled to have the DSP/FPGAs actually be "shared" as it seems to indicate in the manual.

B) I feel like that section of the manual could maybe be more explicit (if this behavior that I'm seeing IS the expected behavior).

* as I write this, I'm starting to think that maybe it is the default/expected behavior, and it probably has to do with maintaining low latency signal paths, as maybe the MHLINK system is fast enough to route real time audio, but not fast enough to route real time audio + offload DSP resources for that same real time audio in a bi-direction fashion while maintaining sample accurate sync, etc.

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [Mike_DM](#) on Tue, 03 Jan 2023 21:08:07 GMT

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I have experienced the same issue with a mk4 ul8, Uln8 3D and Lio 8 4p.

To get by on a schedule I lowered the sample rate which helped a bi... sometimes even restarting the interface helped... but really that seemed like voodoo from 1998. I'd love to see this improved with the next update.

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [DanRock101](#) on Sat, 27 May 2023 01:59:14 GMT

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THANK YOU! I was wondering why I was out of DSP during STEM MIXING and why ONLY the host box's DSP was being used.

I searched the MH Forums and there were THREE other posts regarding this issue

BJ only replied to one ...

I'll post my reply here and on the other Post/Topics here so you'll all have to search for the titles of the below Topics as I got this message when I tried to post my reply:

You cannot use links until you have posted more than 300 messages."

BTW, this SHOULD be a default state of the 3d MIOConsole Mixer, right? I mean, what is the use case for NOT wanting to have full access to ALL the DSP of ALL of your attached boxes (ie., Mixer>"Spread Host Channels Across Boxes") ?!?!? Am I missing something?

OTHER POSTS ABOUT SPREADING DSP ACROSS BOXES

"No DSP dispatch between two 3D cards"

"ULN-8 3D DSP maxed out"

"So.... Multi-device DSP seems to be NOT shared across units?"

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [bj](#) on Sat, 19 Aug 2023 22:37:34 GMT

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The DSP is determined by the input of the strip the process is running on. For physical channels, the box is the box of the physical channel. For host channels, the box is the root box, unless you have Mixer > Spread Host Channels Across Boxes set. If you do do se that, then the host channels will be assigned to boxes in a round-robin fashion.

Busses are round-robined, but you can force them onto a specific box by assigning the bus output to a physical output on that box (it can be an unused output).

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [adingley](#) on Sat, 19 Aug 2023 22:42:20 GMT

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Thanks! This is the clearest and most helpful answer I've seen to date.

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [bj](#) on Sat, 19 Aug 2023 22:52:06 GMT

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Sorry that it took me so long to respond to this in the first place; I must have missed the thread when you originally posted it...

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [adingley](#) on Sat, 19 Aug 2023 23:08:44 GMT

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No apologies necessary! This is helpful info.

Subject: Re: So.... Multi-device DSP seems to be NOT shared across units?

Posted by [DanRock101](#) on Sun, 20 Aug 2023 03:38:43 GMT

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Oh ok, that makes sense. Thanks for clearing that up. BTW, MIOConsole's DSP allocates across each box's DSP Chips much smoother than Universal Audio, or Apogee and I never run into ANY latency issues at all in the new 3d Console, or did I ever in the 2d. It kicks some serious butt!
