
Subject: Host mixer channel clipping

Posted by [dave999z](#) on Wed, 26 Jun 2019 19:00:02 GMT

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I have a mixer channel with "ULN2 Host 1/2" selected as the input, sending output to Main. The host app, for purposes of this issue, is iTunes. Even when I set the channel slider at -0.25 gain, I am occasionally getting a red clip indicator. Not hearing any distortion, but I'm wondering why this is happening? I wouldn't think iTunes could output anything above zero. Thanks in advance for any thoughts.

Using a 3d-upgraded ULN2 with pb6 software on OS X 10.14.5.

Subject: Re: Host mixer channel clipping

Posted by [dave999z](#) on Wed, 07 Aug 2019 16:37:07 GMT

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Just updated Mio software, driver, and firmware with the pb7 release, and no matter what I set the host mixer channel level at, the red clip meter lights up. This is just with iTunes (with iTunes volume slider at max). I don't hear audible distortion.

Any thoughts on why this is happening?

Thanks.

Subject: Re: Host mixer channel clipping

Posted by [dave999z](#) on Wed, 07 Aug 2019 16:44:26 GMT

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Actually, from some Googling, it seems iTunes adds a few dB gain at the top of the slider. Well that explains it!

Subject: Re: Host mixer channel clipping

Posted by [rathammer](#) on Tue, 20 Aug 2019 16:22:07 GMT

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Hi,

I think what you referring to is not "iTunes adding a few dB" but rather the "post conversion distortion" which happens due to lossy encoding of the original signal. Masters that are delivered at a certain level will show up to 3dB more gain upon re-conversion from mp3 or mp4 or AAC codec back to the "linear" wave format. This is because the data reduction of lossy encoders (mp3 etc) generates additional signal components (i.e. distortion!!) and thus adding level to the signal.

This is actually why Apple initially created the Mastered for iTunes specifications, stating that

MFiT Masters have to be mastered with a true peak limiter and at a maximum level of -1dBFS. Additionally, the MFiT Mastering Studio has to make sure that after re-conversion no post-conversion clippings appear. If they do, levels have to be further reduced.

So what you see is actually why many professionals think that mp3s sound even worse when mastered with not enough headroom. The phenomenon you are seeing occurs in any consumer grade DAC or CD player without the consumers seeing the problem. They just hear the distortion.

But actually, many kids nowadays grew up hearing codec distortions and are used to them (maybe even liking them) just as we love the distortion of a vintage tube mic :) That's how sound aesthetics change over time, I guess :)))

cheers from Vienna
Andreas
