

MIX

Professional Audio and Music Production

PSP Audioware Xenon Mastering Plug-In

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FIELD TEST

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The screenshot shows the PSP Audioware Xenon Mastering Plug-In interface with the following settings:

- detector:** II, x2, order, ovrsmp
- transient:** A, B, C, react, predict, 44.3%
- release:** 40.0ms
- input:** L: +14.0 dB, R: +14.0 dB
- attenuation:** L: -6.0 dB, R: -5.7 dB
- output:** L: +9.3 dB, R: +9.3 dB
- wordlength:** 16 bits, noise-shp, type B
- leveller:** -3.45dB
- link:** 64.2%
- in:** +4.68dB
- auto:** -9.79dB

Featuring the latest in adaptive envelope extraction algorithms, the Xenon mastering plug-in offers a two-stage limiter, integrated leveling amp, absolute intersample peak prevention and word-length reduction (requantization) using a triangular probability density function with three noise-shaping options. The plug-in uses 64-bit processing throughout its signal path, handles up to 192kHz files, and works in Audio Units, VST and RTAS hosts running on PCs, PPCs or Intel-based Macs.

Xenon's first stage of limiting does most of its gain reduction depending on how fast you set the transient control (a kind of attack control). The second stage uses finite impulse response-based envelope detectors with look-ahead to ensure every single transient is detected and controlled. Switching on oversample prevents intersample peak distortion that is ultimately produced by D/A converters in devices such as CD players. A D/A's reconstruction filter may construe two or more consecutive full-level (and legal) samples to describe a waveform peak with an illegal over(s). This "over" often exceeds the subsequent analog section's dynamic range and distorts.

To compensate for gradual volume changes long-term, Xenon's switchable Leveler works before the limiters when the entire program is to be consistently the same level at all times.

Xenon uses mastering engineer Bob Katz's K-System (www.digido.com) metering, measuring both true RMS and peak levels simultaneously, while also showing the crest factor or peak-to-average ratio. The K-System attempts to coordinate average recording levels and headroom with a standardized monitor level of 83dB SPL assigned to 0 dB. To accommodate the generally accepted standard amount of headroom used in broadcast (12 dB), CD production (14 dB) and film work (20 dB), all three K-System metering variants or scales K-12, K-14 and K-20 are available. To calibrate your monitoring system, an onboard pink-noise generator produces noise at 0dB RMS level appropriate to the chosen K-System scale.

I used Xenon on the 2-bus in Pro Tools in place of my usual mastering plug-in pair: a bus compressor followed by a limiter. I tried Xenon on many different songs, from soft and mellow acoustic to metal rock to pop R&B. I used Roger Nichols' [Inspector XL](#) plug-in to monitor the number of three-sample clips, "over" incidents and hidden clips. From both empirical data and listening tests, I concluded that I could get any mix louder with fewer artifacts and clips with Xenon--and this was without engaging the envelope oversampling feature in the first limiter stage. Turn that on and you can crank into the world of hypercompression without worrying about intersample peaks, clips or illegal overs--ever!

At more reasonable (and better-sounding) levels of bus compression, I used the output meter oversample function (different from the previously mentioned envelope oversampling feature) to "estimate" intersample peaks that the D/A's reconstruction filter might render as distortion. If the output meters go red, you can decide whether to reduce output or click on envelope oversampling.

Xenon makes mastering-style 2-bus processing a breeze with transparent control and important assurance against illegal peaks and distortion. At \$249, Xenon can exceed (and now replace) the performance of much more expensive combinations of plug-ins in every way.

PSPAudioware, www.pspaudioware.com.

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