

PENTEO AUDIO PLUGINS OPTIMIZED FOR 360 AUDIO

First to directly upmix Sony 360 Reality Audio base (360RA) formats with 3-level controls

Penteco solves the complexity of 2-level Dolby Atmos to / from 3-level 360RA conversions

New Non-LFE Dolby Atmos Audio Formats | New L / R Sweep Knob | Ableton Live Added

PerfectSurround Ltd., Los Angeles, CA (November 25, 2022) – PerfectSurround Ltd., creators of the only phaseless upmix/downmix DSP, has issued a major new release focused on the rapidly expanding 360 audio market particularly for gaming and VR/AR/XR.

“Penteco is the first upmixer to directly support Sony’s 3-level 360 Reality Audio formats” said Jeffrey Read, CEO of PerfectSurround Ltd. “Penteco is way more than just an upmixer, Penteco is now a universal format converter that supports a whopping 48 different audio input / output formats for a possible 2,256 channel-pair combinations in our flagship Penteco 16 Pro+.”

Every Penteco plugin is a complete solution that covers every upmix situation: Ambisonics Orders, phaseless downmixer and Binaural output from any supported audio format are included. Penteco’s unique phaseless process generates the perfect upmix with zero unwanted sonic artifacts that always downmixes 100% back to source.

1. First to Upmix Sony 360 Reality Audio Formats

Penteco is the only upmixer to natively support 360RA for direct audio format-to-format conversions.

Penteco’s phaseless DSP has been extended to generate a new bottom layer so that all three levels – upper, ear and bottom levels each have their own faders, modes, specialized controls and 3D Visualizer display.

Because of Penteco’s phaseless process, all of Penteco’s 48 supported audio formats can be converted to 360RA and back, and every upmix will downmix perfectly, 100% ITU back to source.

a. Perfect Dolby Atmos – 360RA Conversion

Large libraries of Dolby Atmos formats exist, so interoperability to / from 360RA formats is vital. But it’s difficult for sound designers to convert two-level Dolby Atmos to / from 3-level Sony 360 Reality Audio formats.

Penteco has solved this complex and time-consuming process to convert Dolby Atmos formats to / from Sony 360RA formats. It is now a direct audio format-to-format conversion in Penteco 16 Pro+ that delivers as near identical sound-stage mapping as possible.

- b. **Five 360RA formats added to Penteo 16 Pro+ as input/output formats** - 13.0 (5.0.5 +3B), 9.0.4 +2B, 7.0.4 +2B, 5.0.4 +2B, 5.0.2 +2B.
- c. **New Bottom Fader** – Penteo extracts the signal components and then the new bottom fader gives precise control over how much signal is shared with the bottom channels.
- d. **New Bottom Modes and Shelf** – Share, Push, and Slam modes, plus a new bottom shelf filter steer different signals to the bottom level for varied creative effects.
- e. **Binaural Output** – Output 360RA formats to an immediate, high-quality Binaural.
- f. **3-Level Penteo Visualizer** – Now displays 3 levels in 3D and 2D mode with an expanded 90° side view to best see the new bottom channel.

2. Five new non-LFE Dolby Atmos formats – Penteo has added 5 new Atmos formats as both input or output formats. Penteo now supports 19 different Dolby Atmos formats, more than any other upmixer: 9.0.4, 7.0.4, 5.0.5, 5.0.4, 5.0.2 added.

3. New Sweep Knob for 360 Audio Creative Effects

A popular user feature request has been for Penteo to add a fader to ‘sweep’ a signal from left to right and vice versa like an audio panner does. This is not advisable because Penteo is an upmixer, not a panner. Penteo needs a well-matched signal for a quality upmix to occur.

To solve this problem, Penteo has added a new Left / Right Sweep Knob located under the center fader which acts as a -100% Left / -100% Right balance to control left and right biased components.

The Sweep knob can be automated with the upper/bottom faders and the front/surround balance controls to ‘sweep’ the audio in 3-dimensions around the listener.

Sweeping will downgrade the downmix compatibility so it is not advisable to Sweep if a perfect downmix is desired. To alert the user, Penteo’s Downmix Compatibility Monitor clearly displays the degradation in red and percentage so the sound designer is aware.

4. Penteo Supports 8 DAWs

New - Ableton Live is a supported Penteo VST3 DAW - Ableton Live, which is heavily used in live music events, is now a Penteo supported VST3 DAW. Penteo’s unique 3.1 / 3.1 TRI format is optimized for live music – Penteo generates a discrete center channel and the rear surrounds which is ideal to create intense surround effects at live stage-based events.

All Penteo products support 64-bit AAX, VST3 and AU formats for Mac M1 and Windows 10. Specific DAWs supported: Pro Tools, Logic Pro (up to 7.1.4), Reaper, Pyramix, Nuendo, Cubase Pro, Da Vinci Resolve and Ableton Live.

5. **Pricing and Availability** - All Penteo products are available today at www.perfectsurround.com
Penteco's new release sale ends December 2, 2022:

Penteco 16 Pro+: Universal format converter with 48 audio formats + Binaural
Sale \$599 USD - Regular price \$699, save \$100

Penteco 16 Pro: All surround, Atmos and Immersive formats with 38 audio formats
Sale: \$449 USD - Regular price \$499, save \$50

Penteco 360: 5.1 upmixer + fast 360 Audio creation with 15 audio formats + Binaural
Sale: \$249 USD - Regular price \$299, save \$50

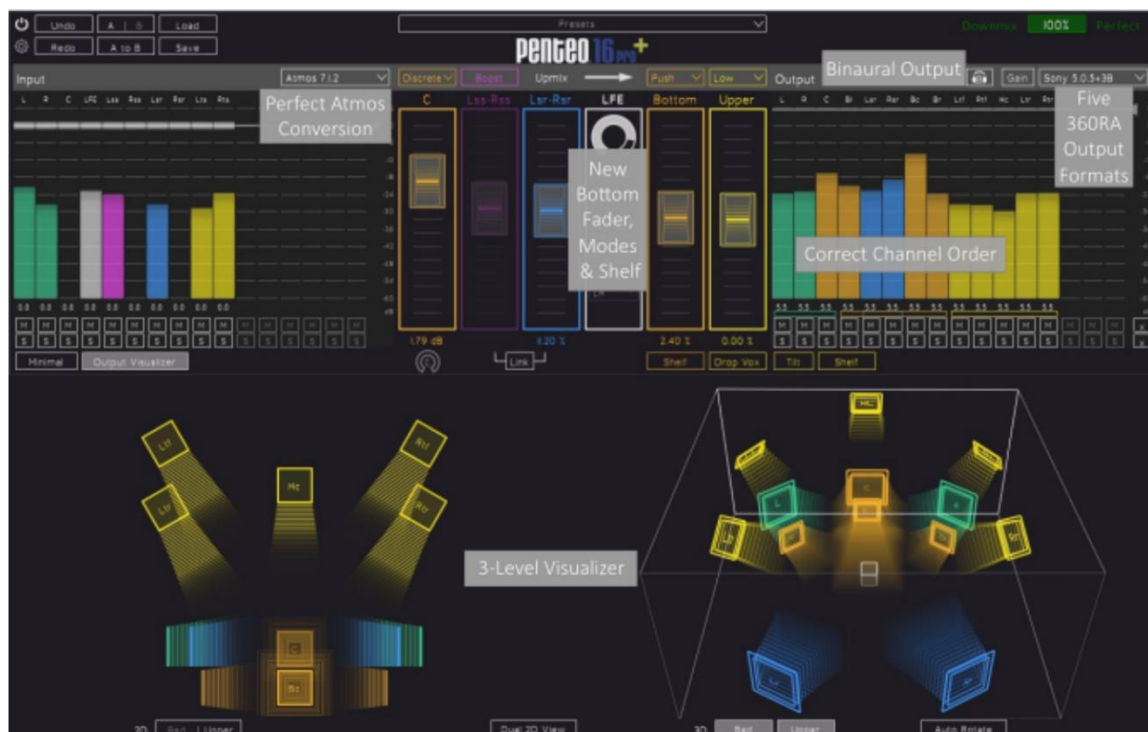
Award-Winning Penteco Audio Plugins

penteco 360 5.1 Upmixer/Downmixer + Fast 360 Audio	penteco 16 pro All Surround + All Immersive Formats	penteco 16 pro+ Universal Audio Converter - All Formats
15 Audio Formats + Binaural	38 Audio Formats + All Atmos	48 Audio Formats + Binaural
2.0 Stereo 3.0 / 3.1 LCR 3.0 / 3.1 Triangle 4.0 / 4.1 Quad 5.0 / 5.1 Surround	2.0 Stereo 3.0 / 3.1 LCR 3.0 / 3.1 Triangle 4.0 / 4.1 Quad 5.0 / 5.1 Surround 6.0 / 6.1 7.0 / 7.1 Surround	2.0 Stereo 3.0 / 3.1 LCR 3.0 / 3.1 Triangle 4.0 / 4.1 Quad 5.0 / 5.1 Surround 6.0 / 6.1 7.0 / 7.1 Surround
	2.1.2 3.1.2 3.1.4 4.1.2 4.1.4 5.1.2 5.1.4 7.0.2 / 7.1.2 7.1.4 7.1.6 9.1.2 9.1.4 9.1.6 Auro3D 9.1 / 10.1 / 11.1 / 13.1 DTSX 11.1	2.1.2 3.1.2 3.1.4 4.1.2 4.1.4 5.0.2 / 5.1.2 5.0.4 / 5.1.4 5.0.5 7.0.2 / 7.1.2 7.0.4 / 7.1.4 7.1.6 9.1.2 9.0.4 / 9.1.4 9.1.6 Auro3D 9.1 / 10.1 / 11.1 / 13.1 DTSX 11.1
11 Channel LoRo Downmix	16 Channel LoRo Downmix	16 Channel LoRo Downmix
1st / 2nd Order AmbiX 1st / 2nd Order FuMa Facebook 360 Mode YouTube 360 Mode 15 format Binaural Renderer	1st / 2nd / 3rd Order AmbiX 1st / 2nd / 3rd Order FuMa	1st / 2nd / 3rd Order AmbiX 1st / 2nd / 3rd Order FuMa Facebook 360 Mode YouTube 360 Mode 48 format Binaural Renderer
5.0.2 + 2B 5.0.4 + 2B		5.0.2 + 2B 5.0.4 + 2B 7.0.4 + 2B 9.0.4 + 2B 13.0 (5.0.5 + 3B)

About Penteo

Since 2012, thousands of post-production mixers, sound designers, composers and educators in over 50 countries have relied on Penteo audio plugins to deliver an immediate, phaseless, high quality upmix or downmix from any format between stereo and 48 different audio formats up to 16-channels, with binaural output. Penteo invests in the latest innovations to deliver the most powerful controls and logic that does the heavy work to speed your mixing session.

Penteo's phaseless process delivers a perfect upmix that will always downmix back to the original source 100% ITU, every time. Penteo delivers a deeply immersive upmix wide channel separation without introducing any unwanted sonic artifacts into the process. To learn more visit: www.perfectsurround.com



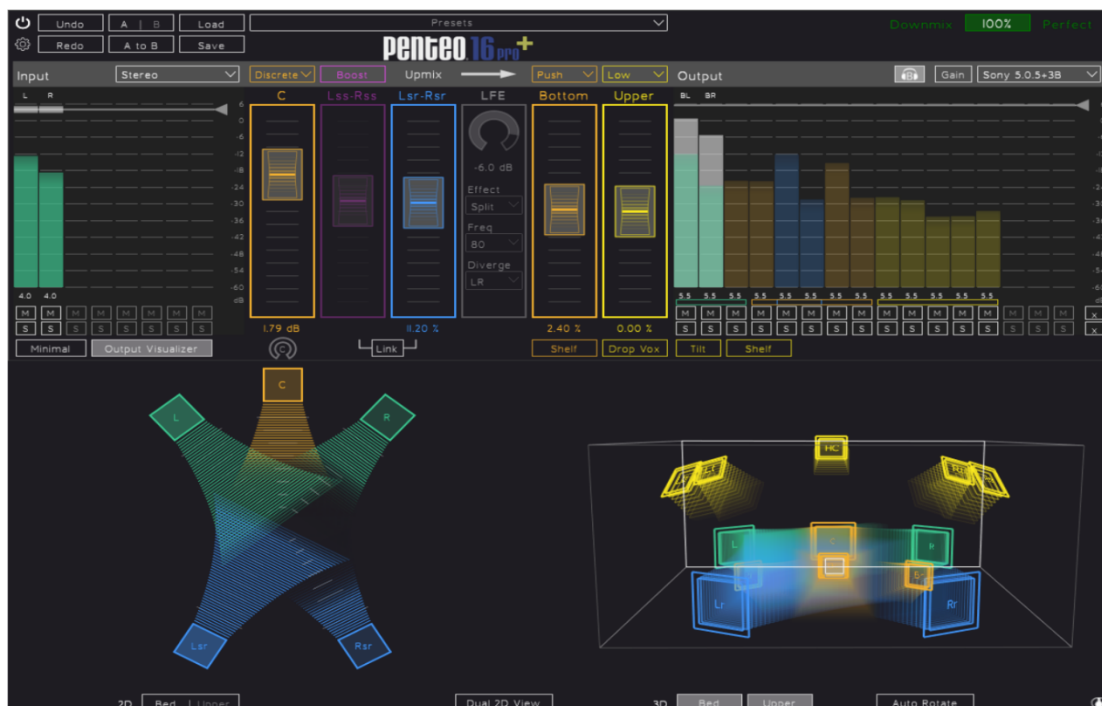
Penteo 16 Pro+ Dolby Atmos 7.1.2 conversion to Sony 360 Reality Audio 13.0 (5.0.5 +3B) with all new 360RA specific faders and controls identified.



Binaural output from Penteo 16 Pro+ converting 3rd Order Ambisonics FuMa directly to 360 Reality Audio 13.0 (5.0.5 +3B) A 23% Right Sweep is applied which results in a downmix compatibility of 93.4%.



Penteo 16 Pro+ converting Sony 360 Reality Audio 13.0 (5.0.5 +3B) directly to Dolby Atmos 9.1.6.
Penteo is the only upmixer that can directly upmix / downmix 360RA to / from Dolby Atmos.



Penteo 16 Pro+ upmixing Stereo to Sony 360 Reality Audio 13.0 (5.0.5 +3B) with Binaural Output.
Penteo is the only upmixer that outputs high quality Binaural from 48 audio formats.

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