

FM-531 HD

High Definition Audio Processor



Our FM-531HD on-air FM processor has everything our flagship AirAura processor has for squeaky-clean audio and bass that rocks, but in a 1RU package and at a very budget-friendly price.

Our FM-531HD is a 1RU on-air processor for FM/HD use. Packaged in a compact, 1RU form factor, this processor brings the multiband precision of our flagship AirAura® processor to a budget-friendly price point. Its Vorsis Ultra High Resolution processing technology delivers superb on-air sound that's loud, yet detailed.

Features include a distortion-managed final clipper for squeaky-clean audio, smart stereo enhancement, bass management for deep, yet clean bass, and Sweet Spot Technology for consistent sound regardless of density variations in the source material.

Distortion-Managed Final Clipper

The technology utilized in our FM-531HD final peak clipper does not generate the objectionable aliasing and intermodulation distortions commonly associated with less-complex clipper technology.

Similar in certain ways to our acclaimed 31-band 'Fine Grain' limiter (a Vorsis exclusive), the FM-531HD utilizes high resolution distortion recognition algorithms to discern audio from distortion. The fine-grained selectivity afforded by this technology is the best way to sense and truly mitigate distortion. Other technologies can only make a "best guess" at separating desirable audio components from undesirable distortion products.

By analyzing the audio and the distortion products created during peak control, the FM-531HD removes distortion products and other artifacts that a listener might find objectionable. It is highly adept at minimizing

intermodulation distortion, especially close-spaced difference frequency intermodulation products in the midrange frequencies where human hearing is the most sensitive.

"Fine Grain" Processing

"Fine Grain" processing overcomes the limitations of peak limiters in other on-air processors. Using 31 limiter bands selected according to ISO standard 1/3 octave center frequencies the FM-531HD limiters (one for FM, one for HD) perform precision spectral energy control without generating additional density or artifacts usually associated with peak limiters having fewer bands. Operating according to accepted principles of human psychoacoustics, the action of the Stealth Limiter™ goes completely unnoticed by the ear. Because of the need for very shallow limiting in each band, there are absolutely no 'swishing' artifacts and no unnatural density buildup; just increased on-air loudness, detail, and "listenability" of the station's programming.

Sweet Spot Technology

Sweet Spot Technology (SST) has been designed by Vorsis to manage the behavior of the multiband AGC as program content density changes, something a typical broadband AGC simply cannot do. It effortlessly handles transitions between the hyper-compressed recordings of today and those of the past that have considerably more dynamic range. SST achieves uncannily natural-sounding consistency in both on-air loudness and spectral balance regardless of density variations in the incoming source material.

Vorsis Bass Management System - v2.0

The Vorsis Bass Management System (VBMS) enhances deep bass and impact without affecting the cleanliness of mid and high frequency content. Bass detail and the clarity of higher frequency audio are enhanced by this powerful, innovative algorithm. With VBMS' 'Texture' and 'Sub' controls, on-air bass has never sounded so good and so deep and natural.

Exclusive Multipath Limiter

Exclusive to the Wheatstone line of audio processors is the Multipath Limiter. This single user control can help mitigate the audible effects of multipath as well as reduce receiver-induced stereo blend by limiting the amount of L-R as a percentage of L+R for a more consistent and predictable sound.

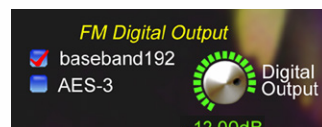
Smart Stereo Enhancement

Stereo enhancement is a standard feature on all Vorsis on-air processors and utilizes a Vorsis technology: Smart Stereo Enhancement. Operating in the sum and difference domain and utilizing specialized spectral management algorithms, it provides a smooth, natural, wide listening experience without triggering multipath effects. It delivers an extremely stable 'on-air' stereo image that's exciting to listen to. Users have reported hearing, for the very first time, artistically important nuances in familiar music that could not be heard when that material was processed by other on-air processors.

Wheatstone® baseband192

Wheatstone® baseband192 digitizes the entire multiplex spectrum up to and including the RDS, doing away with an analog composite interface between processing and transmission.

A single AES/EBU cable carries the digitized signal between the FM-531HD and any FM transmitter equipped with a digital baseband input, bypassing the need for multiplexing in the exciter and eliminating the resulting signal overshoot and its associated loudness tradeoff. The baseband192 interface is a standard feature in Wheatstone FM-531HD, AirAuraX3, and VP-8IP audio processors.



- Distortion-managed final clipper for squeaky clean audio
- 31-band limiting for precision spectral energy control without generating additional artifacts typically associated with fewer bands
- Exclusive SST technology for sound consistency regardless of density variations in the incoming source material
- Bass management technology for deep bass without affecting the cleanliness of mid and high frequency program
- Exclusive Multipath Limiter for mitigating the effects of multipath
- Smart stereo enhancement for extremely stable 'on-air' stereo image that's exciting to listen to
- Audio Processing Guru® GUI included standard
- Five band phase linear adjustable crossover feeding a five band AGC
- Exclusive 31-band limiter technology
- Exclusive VBMS™ (Vorsis Bass Management System)
- Selectable FM peak control via oversampled lookahead limiter or distortion masked clipper
- Four band full parametric equalizer
- Variable high pass filter
- Voice phase rotator
- AES3 digital input accepts 32kHz - 96kHz
- AES3 digital output automatically synchronizes to AES3 digital input
- WheatNet-IP compatible
- Wheatstone® baseband192 built in for digital link to transmitter