Omnia VOLT™

Leave the Competition in the Dust with Audio Processing for FM, AM, SG, HD/DAB/DRM or Studio Applications.

OVERVIEW

Omnia VOLT is the latest triumph from the people who brought you the multiple-award-winning Omnia.11, the acclaimed Omnia.9, the power-packed Omnia 7, and the 13,000+ Omnia ONEs currently in service.

But this is not just another audio processor.

With VOLT, we have rewritten the rules for broadcast DSP, fine-tuning our algorithms and creating the world's best-sounding, most powerful, incredibly versatile 1RU audio processor. VOLT gives you more sonic performance and processing power in one rack unit than others give you in three. We invite you to compare this little dynamo against processors costing many thousands more.

FEATURES

- **New-Generation Frank Foti-designed Clipper.** The latest most advanced thinking on clipper design from a processing legend.
- **Dynamics Engine** designed by Senior Algorithm Developer Cornelius Gould.
- **Six Separate AGC Sections.** One wideband, plus five separate time-aligned multi-band sections, each with separate controls for every important parameter. Plus a tunable mid-band crossover. Give your station the loudness and consistent sound it deserves!
- **Five Separate Time-Aligned Limiters,** each with separate Drive, Hold, Threshold, and Attack/ Decay. They give you protection against overmodulation while maintaining a loud signature sound.
- **Variable Deep Bass, Phat Bass, and Warmth Enhancers.** Get that meaty Omnia sound, fine-tuned the way you want.
- **Bass Pre-Clipper.** Fully adjustable with Tightness and Girth controls. You'll have strong, listener-pleasing bass without worrying about intermodulation distortion.
- **Clipper Silk Adjustment.** If your format is prone to treble distortion, you can add just enough Silk to clean up those high frequencies.
- **Sensus Processing for Digital Program streams.** Omnia's exclusive Sensus algorithms actually predict how HD, DRM, or multicasting data reduction will affect your sound. They precondition your signal, making compression sound better—even at low bitrates.
- **Adjustable BS-412 Threshold and Processing** for full compliance with ITU standards.
- **Stereo Enhancement for FM Analog, without Adding Multipath.** You'll get a wider, more exciting signal that jumps out of listeners' radios.
- **Variable High-Pass and Switchable Phase Rotator.** Those ultra- low frequencies, too low to be perceived as bass by listeners, won't rob you of on-air power.
- **Automatic Mono "Dry Voice" Sensing.** Ideal for FM Analog Stereo stations using extreme processing: it keeps an extra hand on the clipper, to stop distortion when the L+R channel gets boosted by mono signals.
- **Totally Flexible Signal Path.** Use analog, AES/EBU digital, or Livewire® AoIP inputs; analog, AES/EBU digital, Livewire, or composite outputs. Adjust channel balance and correct polarity separately on each input. Save and recall input/output setups for different applications. All outputs are always active, regardless of input type.
- **Switchable Insert Points for Voltair®, Watermark Encoders, or Other Downstream Encoding.** Optimize your airchain and eliminate the need for external pre-processing! You can feed encoders with a pre-processed signal from VOLT's multiband AGC and limiters so your encoder sees a stronger, more reliable signal. Then feed the encoder's output back into VOLT, for post-encoding clipping that protects you against overmodulation.

- **Automatic "Failover" signal switching.** Designate a backup input to use if your main signal drops out or STL fails. Switch to this source automatically, with adjustable sensitivity, or trigger it as needed.
- **QuickTweak™ System** lets you fine-tune your sound like a processing genius. Get exactly the processing you want in minutes, while you're on the air, right from the front panel or a connected computer or tablet.
- **Graphic User Interface** is easy to navigate, but gives you the deep level of control you need.
- **Built-in HTML-5 Server** for full control from any computer, tablet, or smartphone… without special plug-ins.
- **Rugged 1RU Construction** fits any control room, technical center, or transmitter shack, with easy-to-see LED meters.
- **Cool Running, Fanless Operation.** VOLT can even be used near live mics.
- **Flexible Pre-Emphasis Switching** makes it easy to fit VOLT into any airchain.
- **Dual Variable Composite Outputs** (with FM DSP|Core).
- **Variable Pilot Level and Phase** (with FM DSP|Core).
- **Built-In Tone Generator** provides for quick setup and calibration.

IN DEPTH

Nail Your Signature Sound Faster with QuickTweak™

Whether you are a processing novice or expert, Omnia VOLT gives you the tools to create a superior signature sound. Choose from some of the best factory presets available, designed by Omnia's processing experts and by our favorite "insider" guest programmers. For those who want to push beyond stock presets, Omnia's new QuickTweak system lets you fine-tune your sound quickly. For experts, drill down into deeper parameter adjustments. Get exactly the processing you want, while you're on the air, whether you're at the front panel, or sitting in your car controlling VOLT over the web.

Nobody knows processing like Omnia. We've designed QuickTweak based on our decades of experience and market leadership, algorithmically linking complex and interactive parameters to create a core set of "meta" controls.

- QuickTweak is easy to understand: You can tune it by ear, and hear the results instantly.
- QuickTweak's six master controls allow millions of recallable variations, right from the front panel.
- You can use QuickTweak on the factory presets, or on your own custom presets.
- You can save your own settings after using QuickTweak to easily A/B compare preset modifications.
- Any preset can be adjusted with QuickTweak, or you can fine-tune using even deeper control layers. Presets can always be refined, then saved under a new title.
- Share presets by importing or exporting them with others in your company. Back-up preset files on common media.

Total Versatility with DSP|Core Firmware

VOLT's DSP|Core firmware modules rearrange and modify VOLT as your needs change. DSP|Cores aren't extra cost add-ons! Download the functionality you need for free, install the DSP|Core firmware package from a connected computer, and reboot. It's that simple.

- Use VOLT for FM Analog Stereo at the station, with high-quality baseband clipping to feed uncompressed STLs, or at the transmitter, with dual composite outputs.
- Use VOLT for AM Broadcast, with purpose-built presets for the challenges of AM radio. VOLT's Tunable Asymmetrical Modulation and Tilt controls help you get modern results, even from older transmitters!
- Use VOLT for Studio and Program Production or Syndication. It comes with the tools and presets you need for modern production styles.
- Use VOLT for HD/DAB/DRM/Web Streaming. Our exclusive Sensus algorithms reduce compression artifacts even at low bitrates.
- Use VOLT as a standalone FM Stereo Generator at the transmitter for direct connection to transmitters.
- Use VOLT for low-latency FM Stereo to comply with local regulations, using a high-efficiency clipper that's optimized for this kind of broadcast.

Front Panel

Rear Panel

SPECIFICATIONS

Frequency Response

- User selection of flat, 50 µs, or 75 µs pre-emphasis curve within ± 0.50 dB, 30 Hz to 15 kHz.

Signal-to-Noise Ratio

- Audio >95 dB analog, >120 dB digital I/O.

System Distortion

- Less than 0.01% THD, 20 Hz – 7.5 kHz (second harmonic distortion above 7.5 kHz is not audible in the FM system).

Latency

- 16ms nominal, +-0.5ms depending on IO selection. Low Latency FM version 10ms

Input / Output

- Composite: Output impedance 75Ω, single-ended and floating over chassis ground. BNC connectors with EMI suppression. Maximum cable 100' / 30M RG-58U.
- Output level: Separately adjustable for each of two outputs, 0V - 10V in 0.05V steps.
- Pilot Level: Adjustable from 4.0% to 12.0% in 0.1% steps and OFF. Pilot Stability: 19 kHz, ± 0.5 Hz. S/N: -85 dB typical, 75 µS de-emphasized across 15 kHz, at 100% modulation Distortion: < 0.02% THD 20 Hz – 15 kHz, 75 µS de-emphasized @ 100%.
- Stereo Separation: > 65 dB, 30 Hz – 15 kHz. Linear Crosstalk: > -80 dB, main to sub or sub to main channel @ 100%. Non-linear Crosstalk: > -80 dB, main to sub or sub to main @ 100%. 38 kHz Suppression: > 70 dB @ 100%. 76 kHz Suppression: > 80 dB @ 100%. Pilot Protection: > -65 dB relative to 9% pilot injection, ± 1 kHz. 57 kHz (RDS/RBDS) Protection: > -50 dB.

Analog

- Left and Right Stereo on EMI-suppressed XLR-3, balanced with "pin 2 hot."
- Input: Electronic balanced, impedance 10kΩ, nominal +4 dBu, max +22 dBu.
- Output: Impedance 20Ω for >600Ω load, +4 dBu nominal, +22 dBu peak. Converters: 24 bit, 128x oversampled with linear-phase anti-aliasing filter.
- Crystal Semiconductor CS5361, 24 bit 128x over-sampled delta sigma converter with linear-phase anti-aliasing filter.

- Pre-ADC anti-alias filter, with high-pass filter at <10 Hz.
- Delta sigma converter with linear-phase and anti-aliasing filter.

Digital

- Stereo per AES/EBU standard, 24 bit resolution. Input locks to any rate 32 kHz – 108 kHz. Output locks to input, internal 48 kHz, or separate external AES/EBU "digital black" reference 32 kHz – 96 kHz.

Audio over IP

- Audio and control over IP per Livewire standard, on same RJ-45 used for Ethernet control.

Remote Control

- GPI: EMI suppressed DB-9 at logic levels, +5 V and ground supplied. Ethernet: 10/100BaseTX.
- Ethernet on EMI-suppressed RJ-45. TCP/IP control via HTML-5 internal web server, password protected. Manual addressing and port selection.

Electrical/Physical

- Power: 100 - 250 VAC, 47-63 Hz. < 40 VA. Typical draw 12W RMS, maximum 15W RMS. Internal supply with overVOLTage and short circuit protection. Meets EN55022, EN55011 Level B Conducted Emissions. EN61000-4-2, -3, -4, -5, -6 level 3 immunity compliant. Full international safety approval. CE marked. EMI suppressed IEC male connector. Detachable 3-wire power cords supplied for US and European use. Temperature: 32° to 122° F / 0° to 50° C for all operating VOLTage ranges.
- Humidity: 0-95% RH, non-condensing.
- Dimensions: 19" wide x 1.75" high x 16" deep (48.26cm x 13.335 cm x 40.64 cm) including connectors. Unit requires one EIA rack space for mounting.
- Shipping Weight: 12 lbs. / 5.5 kg

Regulatory

North America: FCC and CE tested and compliant, power supply is UL approved.

Europe: Complies with the European Union Directive 2002/95/EC on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS), as amended by Commission Decisions 2005/618/EC, 2005/717/ EC, 2005/747/EC (RoHS Directive), and WEEE.

OMNIA AUDIO | 1241 SUPERIOR AVENUE | CLEVELAND, OH 44114 USA
MAIN: +1.216.241.7225 | **24/7 SUPPORT:** +1.216.622.0247 | **TELOSALLIANCE.COM**