

# Omnia.9sg

## Your Processor's Secret Weapon



## OVERVIEW

**For split audio processing applications, no one does it better than the processor-agnostic 9sg!**

We know that the main processor must be installed at either the studio or at the transmitter. Each location has its advantages and disadvantages. Placing a processor at the studio is often more convenient as some transmitter sites are difficult to access, but doing so can compromise quality and loudness as STL audio quality varies and the clippers found in other stereo generators are often mediocre at best. Some transmitters have built-in stereo generators but quality and features vary.

Placing the processor at the transmitter site allows the composite signal from the processor to be fed directly into the transmitter, which provides the best audio quality and the most loudness, but not all transmitter sites have adequate network connectivity for remote control and are often located in remote or difficult-to-access areas. This means making adjustments to the processing is often a challenge.

Split processing—placing the main processor at the studio and performing final stage limiting and stereo generation at the transmitter—can be an ideal, no-compromise solution with the Omnia 9sg.

The processor-agnostic Omnia.9sg was always more than just a stereo generator. With the latest software, this final-stage processor takes its next leap forward with a new clipper design, Livewire+ AES67, audio playout with internal processing for localization or backup, and more.

## FEATURES

- Full IP remote with remote audio streaming. Because transmitters are often located in hard-to-reach locations, full-featured remote access is critical.
- Optional RDS encoder supports UECP protocol, allowing each Omnia.9sg to be individually addressed to customize and localize RDS information.
- Built-in http server with push support for dynamic RDS data (with optional internal RDS encoder option).
- Selectable SSB (single sideband) stereo encoding makes SSB compatible with nearly all receivers.
- RF bandwidth controller reduces multipath distortion.
- ITU-R BS.412 power limiter for European countries.
- Auto Pilot turns off pilot for mono content, reducing noise, great for spoken word/news/talk/sports formats.
- Relay bypass including composite pass-through. Should Omnia.9sg fail or lose power, a backup standalone processor can be fed through it and be put on-air automatically and immediately.
- Built-in internal playback capability with processing. Should normal audio be lost, the built-in player in Omnia.9sg can immediately and automatically provide back-up content and audio processing until the problem is resolved.
- Optional local audio insertion allows each Omnia.9sg to interrupt normal program audio and insert local content such as traffic, weather, and geo-targeting advertising, with audio processing.
- "Omnia Toolbox" features including oscilloscope, FFT, and RTA, valuable signal-analysis tools built right into the product, eliminating the need for standalone engineering tools.
- Dual redundant power supplies. Back up if one supply fails. Each supply can be fed from a different electrical circuit; if one circuit fails, the unit stays on air.
- Two composite inputs, two composite outputs. A "hot" backup processor can be looped through the Omnia.9sg and be automatically and immediately placed on air should the 9sg fail or lose power; also makes it possible to use an external RDS encoder if desired.

## IN DEPTH

### New Clipper Design

Audio processing architect Hans van Zutphen designed the new clipper now featured in the Omnia.9sg. This psychoacoustically controlled distortion masking clipper is louder, cleaner, and more efficient. It takes into account how the human ear perceives distortion and uses that information to effectively mask it, leaving only clean, distortion-free audio on the air. The new clipper also uses less internal processing power from the CPU to get the job done faster, resulting in lower latency.

### Livewire+ AES67!

This software update makes Omnia.9sg a Livewire+ AES67 product. It is now 100% AES67-compliant!

### Omnia.9sg Is Processor Agnostic

Omnia.9sg is processor agnostic, making the processor you love even more loveable. That is, it can be used to improve the audio quality and loudness of any station with any processor from any manufacturer. If a station can't afford a brand new top-of-the-line processor, or if they like the sound of the front end of their current processor but want better back-end performance, they can add a 9sg for less than half the cost of a new all-in-one box.

### No-Compromise Split Processing

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## Multiple Transmitter Sites

Many FM broadcasters have their main transmitter at one tower site and their backup transmitter at another. A stereo generator is required at both transmitters, which often means two complete standalone processors. Installing an Omnia.9sg at each transmitter site allows a station to use the same main processor at the studio to feed both sites, which represents a potential cost savings and consistent processing between the main and auxiliary sites. This applies to applications where a common STL is shared between the sites or when individual STLs are used.

In Europe, it is common for a national broadcaster to work from a single studio location and have dozens or even hundreds of transmitter sites located throughout the country. The appeal of having one main processor at the studio and an Omnia.9sg at each transmitter site works brilliantly on this larger scale as well.

When configured with the local audio insertion option, these national broadcasters can also interrupt network content and insert localized content at each transmitter site such as local traffic, weather, or geo-targeted advertising.

## Internal Playback with Processing

Omnia.9sg can now store audio on its SSD for internal file playback. The playback system can be used as a backup source in case something upstream in the chain fails (STL, studio, playback automation system), or for the insertion of local ads, IDs, weather, etc. To support local payout at the transmitter, Omnia.9sg includes a highly capable built-in 4-band processor of its own. Based upon the dynamics processing found in Omnia.7 and Omnia.9, it includes over 20 newly created presets designed specifically to work with Omnia.9sg's clipper.

Optionally, this internal processing can be licensed to process auxiliary input streams, turning your 9SG into a fully functional backup processor.

## Ratings Encoder & Enhancement Applications

Research shows that ratings encoders and/or enhancement devices such as Voltair benefit from being fed processed audio. Some processors have special "insert points" that make this possible internally, but many do not. Placing the main processor and the encoder at the studio and using Omnia.9sg at the transmitter can help facilitate this.

## SPECIFICATIONS

### Frequency Response:

+/- .5 dB 20 Hz to 15 kHz

### Signal-Noise Ratio:

Greater than -80 dBu de-emphasized, 20 Hz to 15 kHz

### Stereo Separation:

65 dB minimum, 20 Hz to 15 kHz, 70 dB typical

### Stereo Baseband Output:

Adjustable from -2 dBu to +22 dBu (0.1 dB increments) into 600-Ohms, 20-Ohm output impedance

### Analog Inputs:

Two balanced, EMI filtered XLR connectors

### Digital Inputs:

AES/EBU In & External Sync

### Composite I/O:

Four 75-Ohm BNC female, two inputs, two outputs

### Remote Control:

RJ45 supporting 100BASE-T Ethernet connections

### Power Requirements:

100-264 VAC, 47-63Hz autosensing, dual PSU

## Power Connector:

Dual IEC male, detachable 3-wire power cords supplied

## Environmental:

Operating: 0 to 50 degrees C

Non-Operating: -20 to 70 degrees C

## 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.