

OPTIMOD-AM 9300

AM Audio Processor



Orban's OPTIMOD 9300 AM Audio Processor can help you achieve the highest possible audio quality in monophonic AM shortwave, medium wave and long wave broadcasts. OPTIMOD-AM delivers louder, cleaner, brighter, FM-like audio with an open, fatigue-free quality that attracts listeners and holds them. The 9300 is aimed toward medium and small-market broadcasters who do not intend to broadcast digitally and who are not running AM stereo.

Key Features

Quick Setup provides a guided, systematic procedure for setting up the 9300. It should be adequate for most users without special or esoteric requirements.

Easy **LESS-MORE** adjustment of the dynamics processing lets anyone get excellent results, while processing experts can fine-tune to their exact preferences with Advanced Control, available from PC Remote software.

Factory Presets: Each OPTIMOD comes with a variety of factory presets which you can use as basis to create your own signature sound. Orban is happy to help you find the perfect setup for your station.

Rides Gain: The 9300 rides gain over an adjustable range of up to 25dB, compressing dynamic range and compensating for operator gain-riding errors and for gain inconsistencies in automated systems.

Increased Loudness and Density: By the use of multiband limiting and multiband distortion-canceling clipping, the 9300 improves the consistency of the station's sound and increases loudness and definition without producing audible side effects.

Peak Level Control: Peak levels are precisely controlled to prevent overmodulation.

Transmitter Bandwidth Control: The OPTIMOD 9300 controls the transmitter bandwidth as necessary to meet government regulations, regardless of program material or equalization. OPTIMOD-AM's high-frequency bandwidth can be switched instantly in 500 Hz increments between 4.5 kHz and 9.5 kHz. The lower cutoff frequencies meet the output power spectral density requirements of ITU-R 328-5 without further low-pass filtering at the transmitter, while the 9.5 kHz filter meets the requirements of the NRSC-1 standard (North America). The 5.0 kHz filter makes the analog AM bandwidth compatible with HD-AM transmission. The lowpass filters have

parametric cutoff shapes, allowing you to trade off filter ringing against frequency response flatness.

High- and Low-frequency Compensation: The 9300 compensates for the high- and low-frequency rolloffs of typical AM receivers with a fully adjustable program equalizer providing up to 20 dB of high-frequency boost (at 5 kHz) without producing the side effects encountered in conventional processors. This equalizer can thus produce extreme preemphasis that is appropriate for very narrow-band radios. The 9300's fully parametric low- and mid-frequency equalizers allow you to tailor your air sound to your precise requirements and desires. The 9300 also fully supports the NRSC standard preemphasis curve.

Bypass Test Mode and Tone Generator: A Bypass Test Mode can be invoked locally, by remote control or by automation to perform a broadcast system test or to compare easily original and processed sound. A built-in line-up tone generator facilitates quick and accurate level setting.

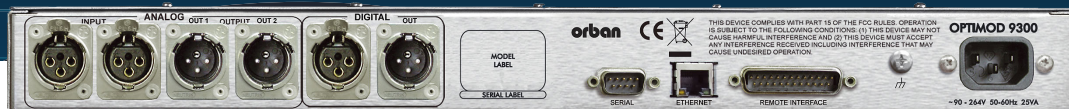
Failsafe switching detects loss of audio on the primary input, which you can assign to be the analog or digital input. If audio is lost on the primary input, the 9300 can switch automatically to the secondary input.

SNMP Support: The SNMP (Simple Network Management Protocol) feature allows you to monitor your OPTIMOD's status and to send alarm notifications via your OPTIMOD's Ethernet connection to your network.

Remote Control or front panel operation: You can operate and configure the 9300 comfortably via the supplied Windows PC Software using your local network or the Internet. Alternatively, all functionalities are also available via the front panel with its display.

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TECHNICAL DETAILS

Total System Distortion (de-emphasized, 100% modulation)	<0.01% THD, 20 Hz–1 kHz, rising to <0.05% at 9.5 kHz. <0.02% SMPTE IM Distortion
Frequency Response	±0.2 dB, 50 Hz–9.5 kHz, or as determined by user settable high-pass filter in the active transmission preset
Internal Sample Rate	32 kHz to 128 kHz, depending on processing being performed
Total System Separation	> 50 dB, 20 Hz - 15 kHz; 60 dB typical
Minimum Processing Delay	Less than 5 ms
Analog Audio Inputs/Outputs	1 x Stereo input on XLR connectors Nominal Input level: –4.0 to +13.0 dBu (VU) or -2 dBu to +20 dBu (PPM) 2 x monophonic output, capable to driving two transmitters Output level: –6 dBu to +24 dBu peak
Digital AES Audio Inputs/Outputs	1 x Stereo input on XLR, 24 bit resolution Input Reference Level: Variable within the range of –30 dBFS to –7 dBFS (VU) or -23 dBFS to 0dBFS (PPM) 2 x Mono outputs on XLR Output Level (100% peak modulation): –20.0 to 0.0 dBFS software controlled
Input/Output Sample Rate	32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz
Windows PC Software	Included in delivery; requires Microsoft Windows® 7 OS or higher; PC connection via TCP/IP protocol via direct cable connect, modem or Ethernet interface (RJ45) or serial RS232 interface
GPI Interface	8 x user-programmable inputs, floating on DB-25 male connector
Tally Outputs	2 x NPN open-collector
Voltage	85–264 VAC, auto-selected, 50–60 Hz, 30 VA
Dimensions (W x H x D)	19" x 1.75" (1U) x 14.25" / 48.3 cm x 4.5 cm (1U) x 36.2 cm

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