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hd+fm

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New York, London, Paris, Munich: everyone's talking about Omnia

"We just received and installed our new Omnia processor on Hot 107.9, and it's the smoothest sounding box I've heard... very dynamic and not constricted in the least."

Tim Backer,
Clear Channel,
Syracuse, New York

▶**Which matters more: good genes or a good upbringing?**

It's an age-old debate, but we can tell you that Omnia-5ex hdfm benefits from both. You see, the original Omnia was the choice of stations worldwide who could have anything; The Omnia Sound now powers 5 of the 6 most listened to stations in the USA, the leading stations in Paris, all of the BBC's FM stations, and the number one stations in Canada, Ireland, Germany, Finland, Australia, China, Denmark, Sweden... But this baby was also raised by capable parents: a team of broadcast engineers, DSP experts, acousticians, real-time software specialists, filter gurus, and high-speed hardware designers. The result of this fusion, most agree, is stunning. Omnia-5ex hdfm . Nature <u>and</u> nurture.

"Some formats or program directors may be satisfied with preliminary adjustments and that's fine. But the Omnia is such a powerful tool that you can satisfy the toughest program director."

-John Boehm, Chief Engineer, WGCI-FM/AM, Chicago, Illinois

Imagine all that power in the palm of your hand. Are you ready?

The stories you've heard are true: Omnia has become the preferred audio processor of broadcasters in top markets worldwide. Why? Because of what's known as The Omnia Sound – sweet, clear, natural audio that pulls in listeners, hooks them, and keeps them coming back for more. Omnia-5ex hdfm helps you energize your signal with double handfuls of powerful technology, like 96kHz sampling (pioneered for broadcast processing by Omnia), 24-bit A-to-D conversion, our exclusive Bass Management system and a potent, fully adjustable digital distortion-canceling clipper. You'll also find the flexible software architecture Omnia is famous for, replete with twin PCMCIA slots to make software updates simple as sliding home a flash card. These features, combined with Ethernet remote control and more than 800 MIPS of blazing DSP power make Omnia-5ex hdfm the secret weapon your listeners will love and your competition will fear. What could be better?
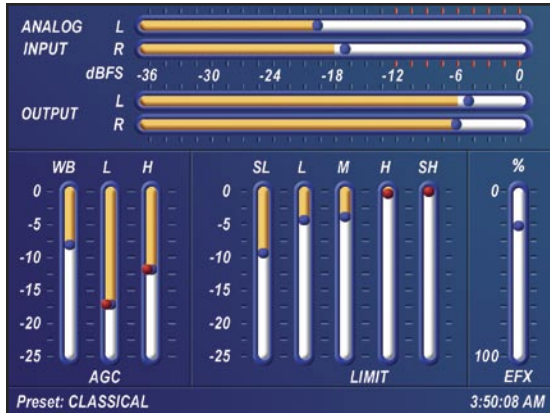
Quick, simple and precise: Controlling Omnia-5ex hdfm is as easy as adjusting your home stereo.
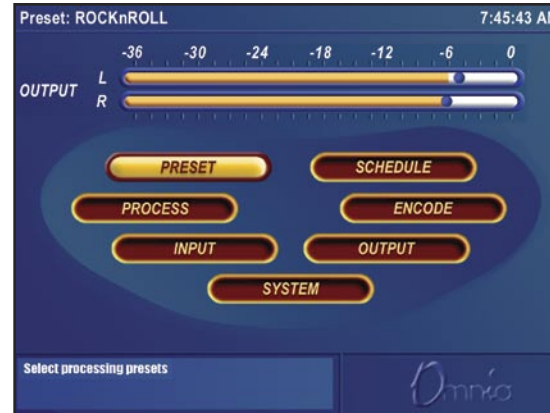

"I was looking for the best audio processing available. I couldn't find anything better than Omnia... Nobody had more features or a better sound."

- Christian Brenner, Satelli-Line GmbH, Munich, Germany

What good is power if it can't be controlled? That's why we've given Omnia-5ex hdfm a friendly, intuitive user interface you'll feel instantly at home with. The big, bright, full-color active-matrix display presents metering and easy-to-understand option screens; just a touch on the control wheel and you're on your way to crafting your station's signature sound. Controlling your Omnia-5ex hd+fm from a distance is easy as well with built-in TCP/IP, RS-232 and optional dial-up remote control. AES/EBU digital I/O doesn't cost you extra - it's standard equipment, so you can interface with the full spectrum of outboard equipment (even those with a 32 kHz sampling rate). And, like all Omnia audio processors, Omnia-5ex hd+fm is DAB compatible and ready for the future, thanks to open software architecture and PCMCIA slots that make it simple to download new presets or perform software updates.
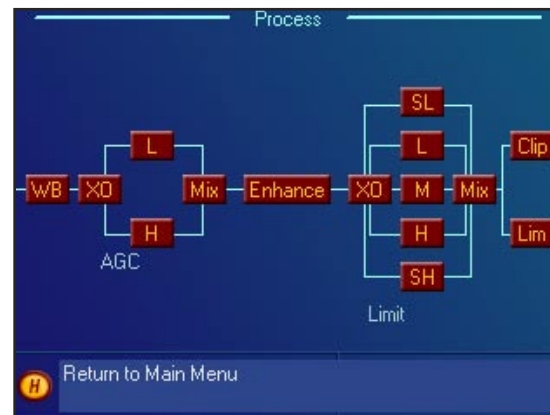
Omnia-5ex hdfm's full-color active-matrix control screen makes it easy to make adjustments, regardless of angle or ambient light.

Main Menu display with output meter allows fast access to all processing adjustments.

Clearly labeled, easy-to-use controls give you the power you need to create your station's signature sound.
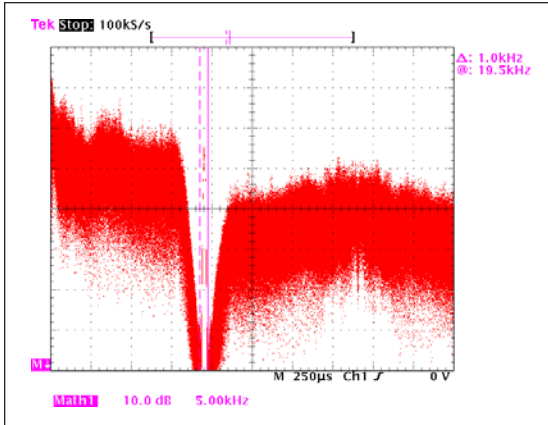

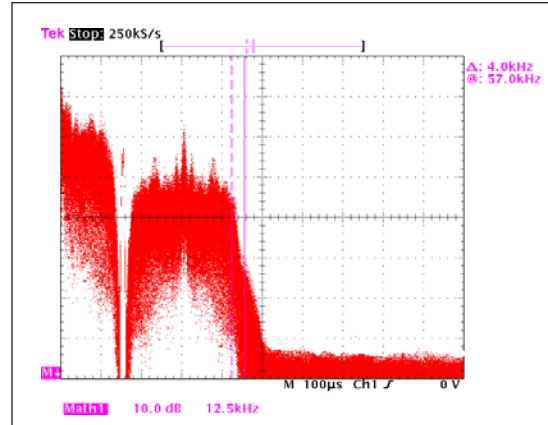Clear, logical processing block diagram makes navigation to different stages intuitive and simple.

▶ **Omnia-5ex hdfm comes loaded with factory presets to get you started,** but when you're ready to create your own signature sound there's a full complement of filters, crossovers, clippers and gain controls, including:

- Selectable, four-frequency high pass filter

- Multi-stage phase rotator

- Wideband AGC

- Two-band AGC

- Bass Management low frequency enhancement - with up to 16dB of adjustment range - allows very fine bass control not possible on other processors. Adjust the amount of deep bass, the bass clipper threshold, and more.

- Five band pre-limiter crossover

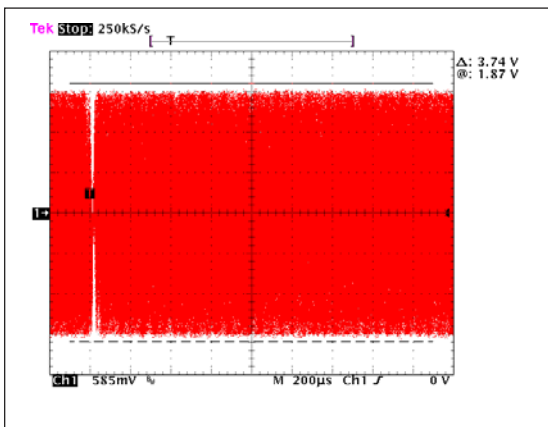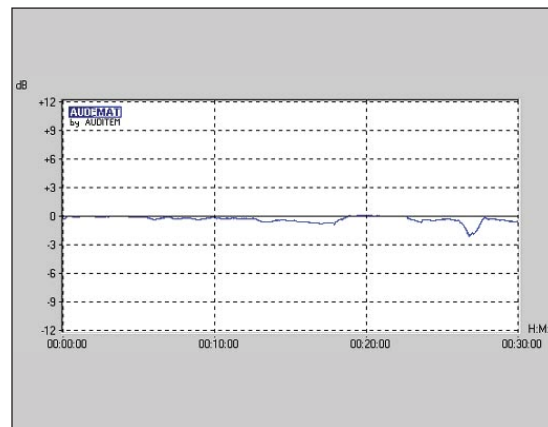- Adjustable, over-sampled five band limiter

Great care was taken to ensure the integrity of the 19kHz stereo pilot. Omnia-5ex hdfm provides over 50dB of pilot protection.

FFT analysis of Omnia-5ex hdfm's composite output spectrum reveals exceptional bandwidth limiting above 53kHz for exceptionally clean SCA or RBDS performance

Accuracy of the Omnia-5ex hdfm final limiter is unparalleled. Five band limiting structure provides rock-solid peak control.

The most loudness the law will allow: built-in MPX Power Limiting fulfills the ITU's BS-412 specification.

More Features:

- Post multi-band limiter mixer

- High performance, non-aliasing, distortion-canceling clipper

- DSP based digital stereo generator

- Digital composite clipper sampled at 768kHz with 50dB of stereo pilot protection

To interface with Omnia-5ex hdfm you have:

- Dual, adjustable analog composite outputs

- Discrete, adjustable balanced analog audio outputs

- Adjustable front panel high-drive headphone output

- AES3 output selectable for 32, 44.1, 48, or 96 kHz

- AES3 input - 32 – 96 kHz

- AES3 synchronizing input

- 10/100-Base-T Ethernet port

- System software and programming presets stored on a removable PCMCIA memory card

Omnia-5ex hd+fm... the power tool FM broadcasters have been waiting for.

▸ **Built to satisfy the most competitive radio markets on earth,**

Omnia audio processors' deep, rich feature set and advanced DSP algorithms push the state of the art of digital audio processing to new levels. Omnia processors generate tremendous competitive loudness, without any of the aliasing distortion or undesirable side effects found in other audio processors. While capable of extreme loudness without generating side effects, Omnia-5ex hdfm also brings a clarity that was previously unattainable to the FM radio dial.

Never before has it been possible to provide such dial dominating presence while maintaining extreme musical detail and clarity. Clients who hear it tell us "Our on-air tests showed clearer highs, deeper bass and just plain better sound... Omnia-5ex hd+fm blew us away!"

GENERAL FEATURES

Internal Sample Rate:	Up to 768kHz
Internal Processing Resolution:	24-bit
A/D & D/A Resolution:	24-bit
Maximum bands of processing:	Two-band AGC, Five-band Limiter. Independent Compression/Limiting.
User Interface:	Full-color active-matrix control screen
Computer Control Interface:	RS-232, PCMCIA modem card (optional) or networked control with TCP/ IP via Ethernet port

AUDIO PERFORMANCE

Frequency Response:	±0.2dB 30Hz - 15kHz, de-emphasized, as measured at discrete left/right analog outputs.
System Distortion*:	<0.02% THD or better, de-emphasized.
Stereo Noise*:	>80dB de-emphasized.
Total System Separation*:	>65dB, 30Hz - 15kHz.

*These parameters are measured at the recovered left/right audio output of a Belar FMS-2 stereo decoder. This figure is a system measurement inclusive of all processing along with the digital stereo encoder.

Main to Sub Crosstalk :	>75dB, measured with a spectrum analyzer.
Sub to Main Crosstalk :	>75dB, measured with a spectrum analyzer.

COMPOSITE I/O SECTION

SCA/RDS Subcarrier Input

Type: Subcarrier input >53kHz sums into composite baseband output. Input level control provided via front panel user interface. High pass filter provided to suppress subcarrier sub-harmonics from causing crosstalk into main multiplexed baseband signal.

Composite Outputs

Configuration: Two independent, individually adjusted outputs. Each output has separate output driver section. Capable of driving 100 feet of low capacitance RG-58A/U cable.

Level:	0-10Vp-p, adjustable via front panel user interface.
Connector:	BNC female, unbalanced.

Pilot Sync Output

Source: Buffered, TTL level (5v) square-wave reference for RDS or other 57kHz subcarrier services.

Connector:	BNC female, unbalanced.

COMPUTER INTERFACE

Configuration:	RS- 232, PCMCIA modem card (optional) or TCP/ IP via 10-Base-T Ethernet port.
Communications:	Remote control via included Windows®-based Omnia Remote program

REMOTE CLOSURES INTERFACE

Configuration:	Eight user-selectable remote tally functions, set via front panel user interface.
Connector:	DB-9, EMI suppressed.

ANALOG & DIGITAL I/O SECTIONS

(All input and output sections are standard equipment.)

Analog Audio Input

Discrete Left/Right Audio Inputs: 10kΩ load impedance, electronically balanced bridging input, 24-bit analog-to-digital converter.

Maximum Input Level:	+24dBu.
Connector:	XLR, female, EMI suppressed.

Digital Audio Input

Configuration:	Stereo AES/EBU.
Sampling Rate:	32kHz, 44.1kHz, 48kHz, 96kHz, sample rate converter provided.
Connector:	XLR, female, EMI suppressed, balanced and floating.

Analog Audio Output

Discrete Left/Right: Flat or pre-emphasized, 600Ω load or greater, electronically balanced, 24-bit digital-to-analog converter.

Connector:	XLR, male, EMI suppressed.

2 Digital Audio Outputs

Configuration:	Stereo AES/EBU.
Sampling Rate:	User-selectable: 32kHz, 44.1kHz, 48kHz, 96kHz, sample rate converter provided.
Connector:	XLR, male, EMI suppressed, balanced and floating.
External Sync:	User selectable, synchronizing to external source within 32-96kHz

ADDITIONAL FEATURES

Integrated Digital Stereo Generator • Two PCMCIA expansion slots • Optional Omnia SPACE- EFX™ Stereo Enhancement System • MPX 53kHz Low Pass Filter • MPX Pilot Protection Filter • Selectable Phase Rotation • Software upgrades via PCMCIA card • User-configurable Bass Management EQ • PCMCIA internal modem included • Eight contact closures provided • User presets stored on removable PCMCIA card • Programmable Daypart Scheduling • ITU BS- 412 compliant • DAB ready

POWER

Configuration:	Universal power supply accepts 100-240VAC, 50-60Hz, 50VA.
Connector:	IEC, detachable 3-wire power cord, EMI suppressed.

DIMENSIONS AND WEIGHT

19"w x 16.25"d x 5.25"h (48.3 x 13.3 x 36.8 cm), 36 lbs. (16.3 kg), net

WARRANTY

Two years, parts and labor, limited.