

6^{hd+fm}
ex

It's For Those Driven To Greatness





"I thought Omnia Original was the best I ever heard, until I heard Omnia-6. I never thought processing could get any better...until now Omnia-6 is magic."

Dan Kieley, Program Consultant, KHS-FM

► Success is never a concrete notion. It is measured in many ways.

For some, success is survival. For some, it's a gradual climb to a pre-established goal. But for a select few, success is being completely compelled to be constantly at the absolute top of your game – being so driven to greatness that you have no choice but to achieve it...and sustain it. For broadcasters driven to this ultimate level of success, we offer Omnia-6 hd ex+fm. Simply put, there has never been an audio processor that so precisely joins powerful signal processing with intelligent control; that so adroitly combines brains with beauty to translate your programming it into the loudest, clearest, sweetest, most compelling radio on the dial. For you, there's Omnia-6ex hd+fm – take control and change your world.

“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



A touch more powerful than the wheel of a vintage Ferrari GTO

- Omnia-6 grabs audiences by the ears and turns them into spellbound listeners. How? Our team of experts (the best in the biz) used their collective understanding of Digital Signal Processing, psychoacoustics and real-world broadcasting experience to create sophisticated processing algorithms that harness the power of fourteen high-speed Motorola 56303 DSP chips. This blend of technical expertise and broadcast experience results in jaw-dropping, natural, killer sound – free of the aliasing and digital artifacts that plague other processors. Omnia-6ex hd+fm makes use of special algorithms that result in thundering, powerful bass treatment and pure, transparent high frequencies. There are separate compressor & limiter sections that eliminate Intermodulation Distortion (IMD), and a greatly enhanced version of the Final Limiter/Clipper that became the industry benchmark in the original Omnia.fm. Add to this significant advances in pre-emphasis positioning, low-latency processing, and a 96kHz sampling rate (the world’s first in a broadcast audio processor) and you have the “secret weapon” that can help your station win the ratings wars.

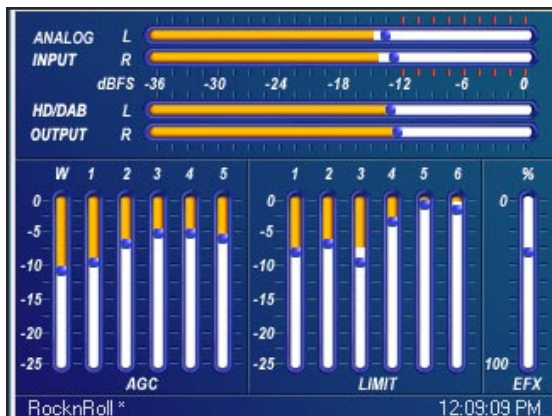
All those years of channel surfing have paid off. You'll instantly know what to do.



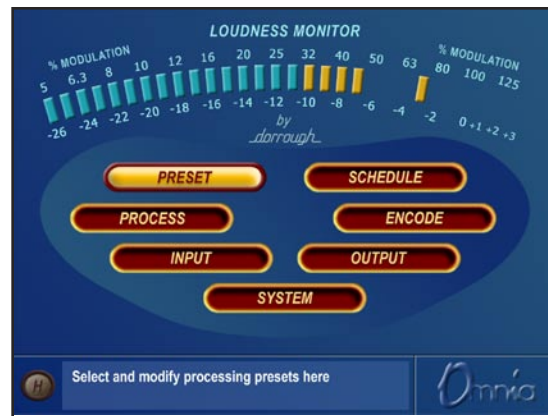
"You raised the bar man!! You'll sell a lot of these. I've budgeted for three of them for HOT 97, KISS and 'QCD!"

- Paul Sanchez, WQHT/WQCD/WRKS-FM, New York City

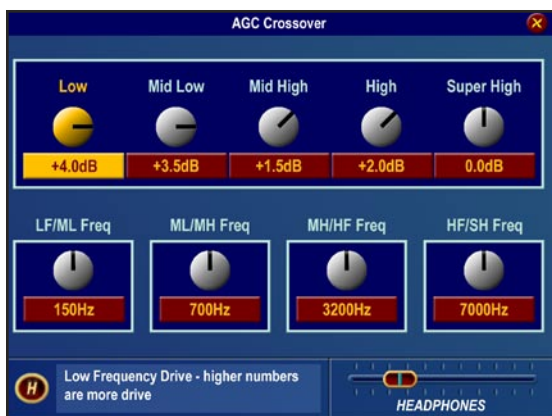
- Omnia-6ex hd+fm was developed by a team of the most talented engineers, scientists and broadcasters in the world, but it's as easy to operate as your home audio system. A single control wheel presides over the most intuitive, interactive user interface ever, with twin full color screens that provide constant metering alongside easy-to-understand control screens. An adjustable high-drive headphone output sits right on the front panel, making it easy to hear your changes in even the noisiest transmitter rooms. Plus, Omnia-6 boasts the most flexible processing platform ever created – analog and AES/EBU digital I/O let you interface the Omnia-6 with virtually any outboard gear (even those with a 32 kHz sampling rate). Its open software architecture and PCMCIA slots make it easy to further tailor your Omnia-6 to your needs with plug-in software modules or by downloading new presets. And there's flexible remote control via Ethernet, RS-232, or with the included modem and remote software package.



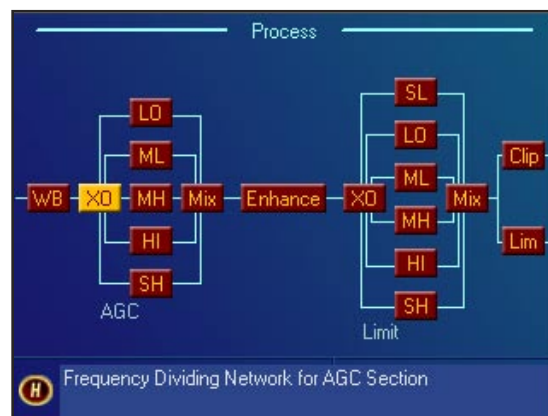
Omnia-6ex hd+fm's twin full-color control screens provide constant metering so you see the effects of your adjustments immediately.



Main Menu display includes a Dorrough Loudness Meter for accurate peak-to-average measurements of final output.



Adjustable AGC crossover settings (an Omnia first) give you even more power to create your station's signature sound.

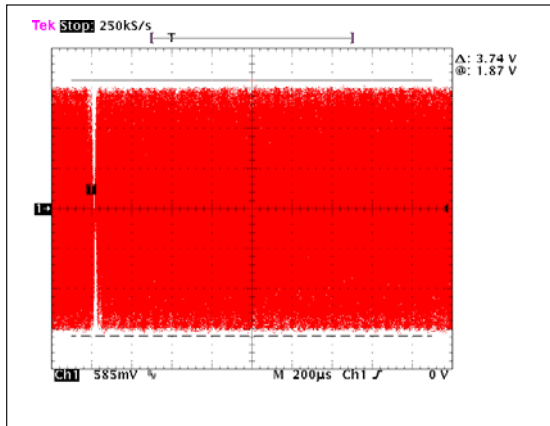
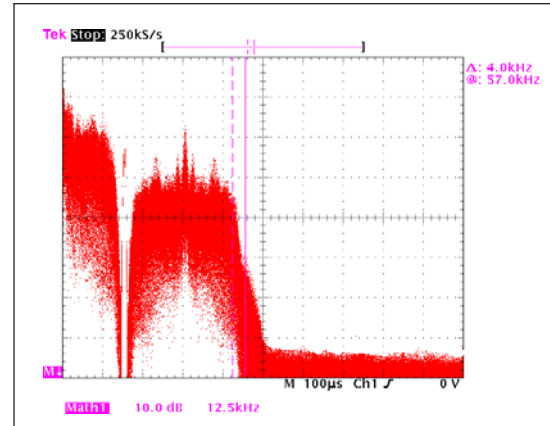


Clear, logical processing block diagram makes navigation to different stages intuitive and simple.

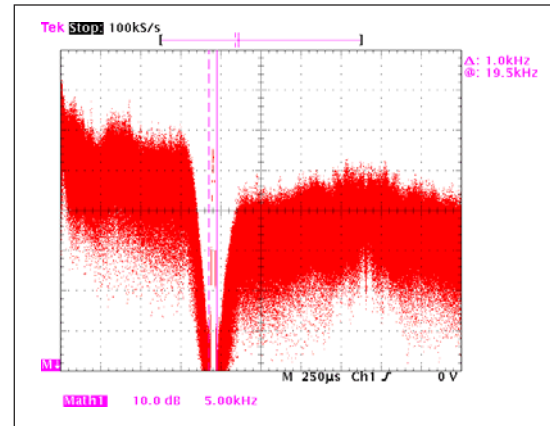
► Omnia-6ex hd+fm comes loaded with factory presets to get you started, but when you're ready to create your own signature sound, there's a full complement of filters, crossovers, clippers and gain controls, including:

- Selectable, four-frequency high pass filter
- Selectable phase rotator
- Wide-band automatic gain control (AGC) stage
- Space-EFX™ adjustable stereo enhancement algorithm
- Five-band adjustable crossover network (an Omnia-6 first)
- Adjustable five-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.
- Fixed six band pre-limiter crossover
- Completely adjustable, over-sampled six band limiter

FFT analysis of Omnia-6ex hd+fm's composite output spectrum reveals exceptional bandwidth limiting above 53kHz for exceptionally clean SCA or RBDS performance.



Accuracy of the Omnia-6ex hd+fm final limiter is unparalleled. Unique six-band limiting structure provides rock-solid peak control.



Great care was taken to ensure the integrity of the 19kHz stereo pilot. Omnia-6ex hd+fm provides over 50dB of pilot protection.

More Features:

- Post multi-band limiter mixer
- High performance, non-aliasing, distortion-canceling clipper for the conventional FM channel
- High performance look ahead limiter for the HD channel
- DSP based digital stereo generator
- Digital composite clipper sampled at 768 kHz with >50dB of stereo pilot protection

To interface with the Omnia 6 you have:

- Dual, adjustable analog composite outputs
- Discrete, adjustable balanced analog audio outputs
- Adjustable front panel high-drive headphone output
- 2 AES3 outputs selectable for 32, 44.1, 48, or 96 kHz
- AES3 input: 32 – 96 kHz compatible
- AES3 synchronizing input
- 10/100-Base-T Ethernet port
- System software and programming presets stored on a removable PCMCIA memory card

Power is for those who know how to use it.



► “I gave the engineering team that developed Omnia-6ex hd+fm a single objective - to design an audio processor that would provide sound that is absolutely natural yet completely compelling,” says Omnia’s founder, Frank Foti. “They surpassed even MY high expectations!” Built to satisfy the most competitive radio markets on earth, Omnia-6ex’s deep, rich feature set and advanced DSP algorithms push the state of the art of digital audio processing to new levels. The main design goal for Omnia-6ex hd+fm was the generation of 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-6ex hd+fm 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 have heard Omnia-6ex hd+fm tell us “you didn’t just raise the bar... you launched it into orbit!”

GENERAL FEATURES

Internal Sample Rate:	Up to 768kHz
Internal Processing Resolution:	24-bit
A/D & D/A Resolution:	24-bit
Maximum bands of processing:	Five-band AGC, Six- band Limiter. Independent Compression/Limiting.
User Interface:	Twin full-color active-matrix control screens
Crossover Network:	User-adjustable for Five-band AGC
Computer Control Interface:	RS-232, PCMCIA modem card (supplied) 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 out- puts. ±0.2dB 30Hz - 20kHz on HD output
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 out- put 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 (supplied) 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 – 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, elec- tronically balanced, 24-bit digital-to-analog converter.
Connector:	XLR, male, EMI suppressed.
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 • 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 com-
pliant • DAB ready • Unique Final Look Ahead HD Radio Limiter

POWER

Configuration:	Universal power supply accepts 100- 240VAC, 50-60Hz, 80VA.
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.



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