





Product Overview DAB+/HD Radio/ Streaming Audio Processors

	OPTIMOD 6300	OPTIMOD-PCn 1600
		
Hardware/Software	DSP Hardware based	Windows Service based Software for approved Windows computers
Multiple Audio Processors	No, one stereo or dual mono	Yes, multiples instances on one device
Audio Interfaces	Analog / Digital AES3	Windows sound devices, WASAPI standard
AoIP such as AES67, Dante, Ravenna	No	Yes, any standard via Windows sound device driver
Factory Presets and LESS-MORE Setup	Yes	Yes
Real Time Processing Structures	Two-band, Five-band	Advanced Five-band
Dedicated File Processing	No	Yes, Batch Processing (up to 16 processors)
Phase Skew Corrector	No	Yes
"True Peak" Control: accuracy better than 0.5 dB, typically 0.2 dB	Yes, typically 0.2 dB	Yes, typically 0.15 dB
MX Peak Limiter Technology	No	Yes, Hard & Soft Mode
Two independent ITU-R BS.1770-4 and CBS Loudness Controllers	Yes	Yes, with pass through mode
PreCode Technology: minimizes artifacts caused by low bitrate codecs, for consistent loudness and texture	Yes	Yes
Windows PC Remote Control	Yes	Yes
SNMP Support	Yes	Yes

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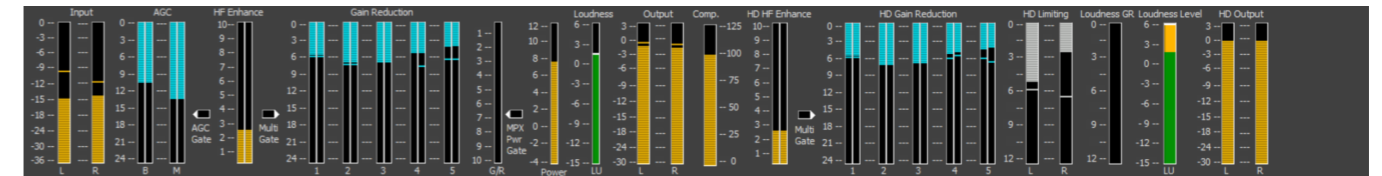
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Product Overview FM Audio Processors

Orban offers a wide range of OPTIMOD Audio Processors for FM, DAB+, HD Radio and Streaming. We can provide you with the product that is ideal for your application and your budget. Our Audio Processors are developed in close cooperation between our US and our German engineering team. We make sure that all OPTIMOD products are highly reliable and deliver the best sound for your station.



General Features

Quick Setup provides a guided, systematic procedure for setting up your OPTIMOD. This makes it very easy to install your new Audio Processor.

LESS-MORE is one of the famous OPTIMOD setup controls to easily customize your station's sound. LESS means the sound is closer to the source material, MORE gives you a higher level of processing. Alternatively, you can configure all parameters in ADVANCED mode; some models also have an INTERMEDIATE mode.

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.

Different audio processing structures: Depending on the model you can select between up to six different audio processing structures. All OPTIMODS offer two-band audio processing as well as five-band audio processing.

Various audio processing features: Dual-band window-gated AGC with Sum/Diff-Mode, two Stereo-Enhancer types and a 3-Band-EQ, Low-Bass-EQ, DJ Bass Boost and HF-Enhancer.

Speech and Music Detection: The OPTIMODS automatically detect if voice or music is being processed and allow you to set up the processing individually for both.

ITU BS-412 Multiplex Power Control: For countries requiring the multiplex power to be constrained to a specified limit, this feature can be activated to ensure compliance.

RDS: The OPTIMODS offer a built-in fully-featured RDS/RBDS generator that supports static and dynamic RDS values. UECP is supported as well.

Remote Control or front panel operation: You can operate all OPTIMODs comfortably via the supplied Windows PC Software using your local network or the Internet. Alternatively, most controls are also available via the front panel.

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

Analog and digital AES3 Inputs and Outputs: All OPTIMOD Audio Processors provide analog as well as digital AES3 audio inputs and outputs.

Analog composite output and SCA inputs: The FM Audio Processors are equipped with at least one analog composite output plus two SCA inputs which are summed into the analog composite output.

10 MHz Reference Input: This input allows the internal DSP clock, the stereo pilot tone frequency and digital composite output sample rate to be locked to a 10 MHz reference signal, facilitating single-frequency-network (SFN) and near-single-frequency-network (N-SFN) operation.

Diversity Delay: A configurable delay can be added to the FM path to ensure time-alignment of the FM and HD radio /DAB+ signals at the receiver.

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.




Warranty: We offer five years warranty on all our OPTIMOD DSP-based hardware products.



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	Digital MPX	Dual-redundant Dante interface (AES67 compatible)	Streaming Monitor Output	Dual-redundant power supply	Safety Bypass Relays	Ratings Encoder Loopthrough	Xponential™ Loudness	Subharmonic Synthesizer	Multipath Mitigator	MX Peak Limiter Technology	ITU-R BS.1770 / R-128 Loudness Control	Processing for DAB+/streaming	Watermarking Encoder Upgrade	Low-delay Monitor Output
OPTIMOD 8700i 	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes, 6 ms delay, includes complete FM processing chain
OPTIMOD 8700i LT 	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes, 6 ms delay, includes complete FM processing chain
OPTIMOD 8600Si 	No	No	No	No	No	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes, 4 ms delay, taken from the multiband compressor output
OPTIMOD 5700i 	No	No	No	No	No	Yes	No	No	No	No	Yes	Yes	Yes	Yes, 4 ms delay, taken from the multiband compressor output
OPTIMOD 5500i 	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes, 4 ms delay, taken from the multiband compressor output

Digital MPX: The 384/192 kHz AES3 digital composite output is compatible and interoperable with the 192 kHz standard being implemented by several transmitter manufacturers.

Dante™ Audio-Over-IP Connectivity: The Dante™ interface provides a dual-redundant Ethernet connection for two stereo audio inputs and two stereo outputs, each with a dedicated level control. Sample rate conversion is provided for both the inputs and the outputs. Full AES67 support.

Streaming Monitor Output: This feature facilitates checking or improving your station's signature sound when you are unable to receive the 8700i processed FM signal off-air. The streaming feature allows you to monitor several points within the 8700i. The MP3 and OPUS codecs and the Icecast2 and SHOUTcast2 streaming protocols are supported, allowing streaming directly to the client PC via your LAN or the Internet.

Dual Power Supplies: The 8700i's and 8700i LT's dual power supplies with independent AC line inputs provide redundant operation to ensuring maximum uptime.

Safety Bypass Relays: Analog, AES3 digital and Analog MPX inputs and outputs have hard-wire safety bypass relays in case of hardware or power failures.

Ratings Encoder Loop-Through: You can place a ratings encoder between the AGC and the FM/digital radio split (allowing one ratings encoder to be used for both FM and HD/digital radio), or between the FM analog limiter output and the stereo encoder (to maximize the drive level to the ratings encoder and to avoid passing the watermark through FM peak limiting).

Xponential Loudness™ Algorithm: The Xponential Loudness™ algorithm reduces listening fatigue and actually improves

listeners' hearing using adaptive psychoacoustics. It's like an audio magnifying glass that brings out hidden detail, clarifying audio and inspiring audiences to listen longer.

Subharmonic Synthesizer: The Subharmonic Synthesizer creates energy one octave below program energy in the range of 50-90 or 60-120 Hz when such energy is not present at the input and when music is detected. It adds punch and slam to older material while retaining musicality and prevents introducing unnatural coloration in male speech.

Multipath Mitigator: The phase skew corrector maximizes both FM and digital radio processing paths for the quality of a mono mixdown or blend that might occur in a receiver or player device.

MX Peak Limiter technology: Dramatically improved peak limiter technology that decreases distortion while increasing

transient punch and high frequency power handling capacity compared to former models.

ITU-R BS.1770-4 Loudness Control is available for digital radio and analog radio processing chains in countries that enforce a BS.1770 loudness limit on digital and/or analog radio broadcasts.

Processing for DAB+/streaming: Except for the 5500i, all OPTIMOD FM Audio Processors also offer a DAB+/HD Radio/streaming path for parallel processing of digital broadcasting.

Watermarking Upgrade: An optional hardware module allows the integration of one Kantar or Nielsen watermarking encoder for audience measurement.