OPTIMOD 5950

FM & DAB+/HD Radio Audio Processor

The OPTIMOD 5950 is the latest in a long line of award winning OPTIMOD processors. Only 1RU high, it offers a powerful suite of features including Orban's breakthrough MX peak limiter technology. Equipped with a new high-resolution touch display and controllable via any HTML5 web browser, the 5950 combines user-friendly operation with highest quality OPTIMOD audio processing for FM and DAB+/HD Radio broadcasts.

HD Radio® Digital AM & FM

Key Features

OPTIMOD 5950 is the culmination of 50 years of Orban processing experience. Incorporating the best features of the OPTIMOD 8700i and expanding upon them with additional capabilities, OPTIMOD 5950 fits any broadcast requirement. The MX peak limiter decreases distortion, increases transient impact, and provides more high frequency energy. The multipath mitigator/phase corrector prevents high frequency loss during mono listening, including weak-signal blending in car radios. The subharmonic synthesizer creates appropriate low frequency content from source material that is lacking it. OPTIMOD 5950 simultaneously processes one stereo program for FM and DAB+/HD Radio/Streaming. The settings can be coupled to make the blend between analog and HD1 as smooth as possible in HD Radio. Alternatively, the FM and the digital processing can be adjusted independently. This is valuable when the digital processing drives a channel that does not require blending, such as an Internet stream.

- **Six Processing Structures:** Five-Band, Low-Latency Five-Band, Ultra-Low Latency Five-Band, Two-Band, Five-Band MX and Two- Band MX.
- **Window-Gated AGC:** Intelligent two-band window-gated AGC controls levels subtly and unobtrusively.
- **RDS/RBDS:** Onboard generator supports dynamic PS scrolling and IP access, includes UECP.
- **Factory Presets:** Like all OPTIMODs, the 5950 also comes with a variety of factory presets; Orban's exclusive "Less-More" control simplifies creating your own signature sound.
- **AES67/SMPTE ST-2110:** Dual redundant network interfaces are available for AES67/SMPTE ST-2110 Audio-over-IP connections (Dante or RAVENNA).
- **Remote Control/Monitoring:** OPTIMOD 5950 can be configured and controlled via any HTML5 web browser. It also supports the SNMP v2 protocol, Ember+ and SSH.
- **"True Peak" Limiter:** The oversampled "True Peak" limiter in the digital processing path anticipates and controls peak levels following D/A conversion, a feature now required by many broadcasters.
- **ITU BS.412 Multiplex Power Control:** The defeatable "dual speed" Multiplex Power Controller constrains MPX power smoothly and reliably, ensuring compliance in countries that regulate it.
- **ITU-R BS.1770-4 Loudness Control:** This facilitates compliance with modern target loudness recommendations for FM and Digital Media.
- **Diversity Delay:** A multifunctional adjustable delay can be inserted in the FM and/or digital path to ensure time-alignment of the FM and HD Radio/DAB+ signals at the receiver.

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The OPTIMOD 5950 Broadcast Audio Processor, back panel.

- **Silence Detection:** A programmable silence detector is available for all physical inputs. It can generate alarms and allows automatic switching to a backup input/input audio storage.
- **Audience Measurement:** Internal Nielsen, Kantar or IPSOS Encoders are optionally available, allowing the FM and the DAB+/HD Radio signals to be watermarked independently.
- **Streaming Monitor Output:** Optionally, the processed signal can be monitored remotely via IP, allowing processor adjustment in locations where a clean off-air signal is unavailable.
- **µMPX interface:** The optional µMPX Interface allows you to transmit bandwidth-limited DMPX over IP.
- **APTmpX Interface:** The optional APTmpX Interface allows you to transmit full bandwidth DMPX over IP.
- **Internal Storage for Audio Backup:** An optional 2 GB Flash Memory provides two hours linear or twelve hours AAC, MP3 or OPUS encoded audio.
- **Internet Stream Decoder:** This optional feature can be used as a backup audio source received via Audio-over-IP.
- **SuperHiFi HLS+ Decoder:** Option provides metadata recovery that can be sent to dual IP destinations. Quu is supported and it has up to 3 minutes of playback buffering with time synced playout.
- **Dual Power Supplies:** Monitored dual-redundant power supplies ensure a trouble-free 24/7 operation.
- **Safety Bypass Relays:** The analog, digital AES3 and the composite audio inputs and outputs have defeatable safety bypass relays that operate in case of hardware or power failures.

Audio Input Channels:	1 x stereo analog 2 x stereo digital AES3 2 x stereo AoIP
Audio Output Channels:	1 x stereo analog 2 x stereo digital AES3, both independent configurable for DMPX 4 x stereo AoIP 2 x analog MPX/composite 1 x µMPX / APTmpX (DMPX over IP STL) 1 x headphone output (for monitoring)
SCA Inputs:	2 x (BNC)
Synchronization:	10 MHz clock input (BNC) AES11 sync input 19 kHz pilot tone reference output
GPIOs:	8 x inputs, 2 x outputs
Latency:	4 - 260 msec (depending on the processing structure) Low-latency processing Output: 3-8 msec
IP Network:	1 x RJ45 Ethernet Management/Control 1 x RJ45 Ethernet Streaming encoding/decoding/µMPX/APTmpX functionalities 2 x RJ45 Dual-redundant AoIP (AES67, SMPTE ST-2110, Dante or RAVENNA)

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