**OPTIMOD 8700i LT**

**FM & DAB+/HD Radio Audio Processor**

**Key Features**

**Quick Setup** provides a guided, systematic procedure for setting up the 8700i LT. 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 Intermediate or Advanced Control.

**Six Processing Structures:** You can select between six processing structures that are Five-Band (or “Multiband”) for a consistent, “processed” sound with 17 ms delay (typical), free from undesirable side effects, Low-Latency Five-Band (12 ms delay), Ultra-Low-Latency Five-Band (3.7 ms delay), and Two-Band (17 or 22 ms delay) for a transparent sound that preserves the frequency balance of the original program material. Additionally, the 8700i has two “MX” processing structures - one Five-Band and one Two-Band - which include the exclusive, advanced MX peak limiting technology to decrease distortion while achieving substantial improvements in transient punch and high frequency clarity.

**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**: Applied to both the analog and digital radio processing chains, the phase skew corrector minimizes L-R energy that can cause multipath distortion while preventing comb filtering in mono receivers and stereo receivers when they blend.

**Advanced Control**: Provides a guided, systematic procedure for adjustment of the dynamics processing lets anyone get excellent results, while processing experts can fine-tune to their exact preferences with Intermediate or Advanced Control.

**True Peak Control**: The OPTIMOD automatically detects if voice or music is being processed and allows you to set up the processing individually for both.

**Speech and Music Detection**: The OPTIMOD automatically detects if voice or music is being processed and allows you to set up the processing individually for both.

**Optimod 8700i LT** is the light version of Orban’s flagship processor 8700i. It provides the versatile five-band and two-band processing of the 8700i and with this the industry’s most consistent sound for your station. Both analog FM transmission and digital media including DAB+, HD Radio and Streaming are supported by the OPTIMOD 8700i LT.

**Dimensions (W x H x D)**

19” x 5.25” (3U) x 15.5” / 48.3 cm x 8.9 cm (3U) x 39.4 cm

**GPI Interface**

2 x NPN open-collector

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8 x user-programmable inputs, floating on DB-25 male connector

**Tally Outputs**

2 x NPN open-collector

**Voltage**

90–240 VAC, auto-selected, 50–60 Hz, 50 VA, dual-redundant

**Dimensions (W x H x D)**

19” x 5.25” (3U) x 15.5” / 48.3 cm x 8.9 cm (3U) x 39.4 cm

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**TECHNICAL DETAILS**

**Total System Distortion**
- <0.01% THD, 20 Hz - 1 kHz, rising to <0.05% at 15 kHz, <0.005% SMPTE IM Distortion

**Frequency Response**
- Follows standard 50 μs or 75 μs preemphasis curve ±0 dB, 20 Hz - 15 kHz. Analog left/right output and digital output can be user configured for flat or pre-emphasized output

**Sample Rate**
- 64 kHz to 512 kHz, depending on processing being performed

**Peak Overshoot at HD Output**
- 0.5 dB True Peak maximum; 0.2 dB TYP typical

**Defeatable Analog FM Processing Delay**
- 0.27 to 12.0 seconds

**DAB+ /HD Mode Delay**
- 0.360515625 to 8.0 seconds (FM path); 0 to 6.0 seconds (HD path)

**Minimum Processing Delay**
- 3.7 ms to 270 ms, processing structure dependent
  - Multipath Mitigator delay = 146 ms
  - Subharmonic Synthesizer delay = 67.5 ms

**Low-Latency Monitor Output Delay**
- 6 ms

**Analog Audio Inputs/Outputs**
- Stereo or XLR connectors, with relay bypass
  - Nominal Input level: –4.0 to +13.0 dBu (VU) or -2 dBu to +20 dBu (PPM)
  - Output level: –6 dBu to +24 dBu peak

**Digital AES Audio Inputs/Outputs**
- 1 x Stereo input on XLR, 24 bit resolution, with relay bypass
  - Input Reference Level: Variable within the range of –30 dBFS to –7 dBFS (VU) or –23 dBFS to 0 dBFS (PPM)
  - 2 x Stereo outputs on XLR, can be individually set to emit the analog FM processed signal, the digital radio processed signal, or the monitor signal
  - Output Level (100% peak modulation): –20.0 to 0.0 dBFS software controlled

**Sampling Rate**
- 32 kHz, 44.1 kHz, 48 kHz, 88.2 kHz, and 96 kHz

**Wordclock Sync Input on BNC Connector**
- 1 x word clock or 10 kHz clock, automatically selected
  - DSP master clock can be phase-locked to these signals, which phase-locks the 19 kHz pilot tone frequency, facilitating SFN operation. Digital output sample frequency can also be locked to these signals.

**Composite Baseband Outputs**
- 1 x 192 kHz AES; 2 x analog providing –12 dBu (0.55 Vp-p) to +12.0 dBu (8.72 Vp-p) levels for 0.1 dB adjustment resolution