LM 26 – Digital Audio Loudspeaker Processor

Features:

- **2-in/6-out Lake® Processor**
  - Raised Cosine Equalization™
  - Linear phase and classic crossovers
  - LimiterMax™ peak and RMS limiters
  - Maximum available delay of 2 seconds
- **Audio Inputs and Outputs**
  - Analog with Iso-Float™ ground isolation
  - Digital AES3 4-in/8-out
  - Gigabit dual redundant Dante™ by Audinate® audio networking
- **Full control via Lake Controller software application**
- **Software configurable GPIO**
- **Front Panel**
  - Daylight-readable display
  - Dedicated Module Input and Output LED Metering
  - Dedicated Module Input and Output mute buttons with LED
  - Dynamic buttons and rotary encoder for parameter adjustment
- **Performance**
  - High quality A/D and D/A 24-bit conversion
  - 96 kHz internal sampling frequency
  - 32-bit floating point internal data path

Technology Overview

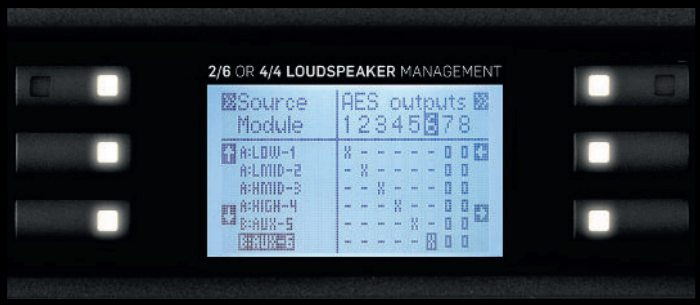
The LM 26 is a full-featured, 2-in/6-out stand-alone Digital Audio Loudspeaker Processor. Based on the highly acclaimed Lake Processing technology, it provides seamless compatibility with Lab.gruppen's PLM™ Series Powered Loudspeaker Management™ systems as well as with all Dolby® Lake Processors and earlier versions of the technology, including Lake Mesa Quad EQ™ and Lake Contour Pro 26™. The LM 26's easily programmable EQ and delay capabilities allow quick reconfiguration for use as processor and line driver for self-powered loudspeaker applications as well as for systems using separate power amplifiers.

In step with the flexible Lake Processing technology implemented in the PLM Series, the LM 26 will accept audio signals as analog, AES3 digital, or via Audinate's advanced Dante digital audio network at 48 kHz and 96 kHz sampling rates. Automatic input priority switching may be enabled, and the unit can function as both an input matrix mixer and Dante break-in and break-out box.

Exclusive Lake Processing features incorporated in the LM 26 include Raised Cosine Equalization; linear phase and classic crossovers; and LimiterMax peak and RMS limiters. The Super Module capability allows flexible grouping of processor channels across separate hardware frames, including prior Lake products and PLM Series units. All functions are controlled via wired or wireless networking by the Windows®-based Lake Controller software application. A universal power supply with detachable locking mains cable allows worldwide use.

The LM 26 can be controlled or monitored via a 9-pin General Purpose Input Output (GPIO) connection. External devices such as alarm systems can trigger mute, power control or preset recall functions; status and fault conditions can also be reported externally. GPIO configuration is available via the front panel or Lake Controller.

LM 26: Highlights

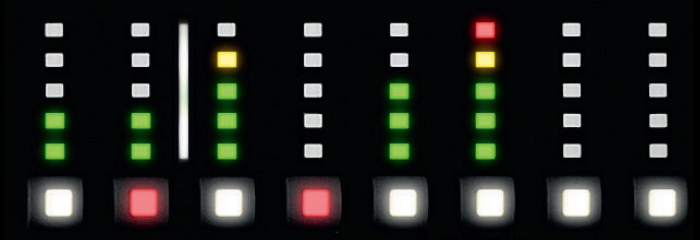


Display Meter View:

The default view of the daylight readable display provides Module I/O gain and limiter gain reduction meters along with associated frame, module and channel labels; an alternate I/O Status View provides a summary of input configuration, digital clock status and input level metering. A dedicated LED indicates various faults or warnings.

Powerful Matrix Router:

The LM 26 provides a powerful output routing matrix via the front panel. This matrix, similar to the Lake Controller, allows any input or module output to be routed to the analog or digital outputs. The LM 26 is the first Lake device to allow I/O configuration and routing without the need for a computer.



Module I/O Levels and Dedicated Mute Buttons:

This section is dedicated to the Module input and output signals. The inputs and outputs are separated by a white marker. The meter segments for each channel indicate clipping (red); -2 dB (yellow); and -6, -12, -60 dB (green). The dedicated MUTE button is either RED (muted), WHITE (unmuted) or UNLIT (unused).

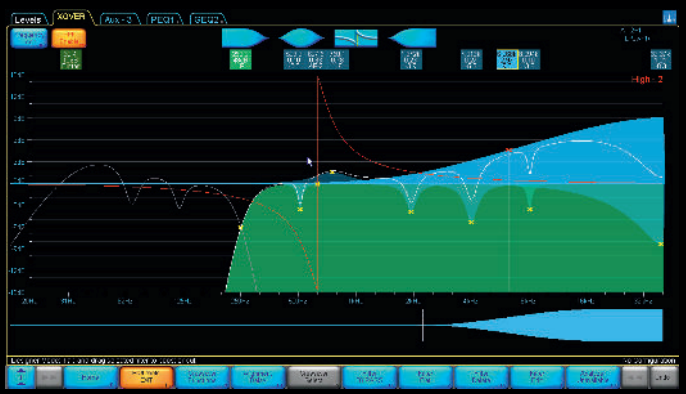
Intuitive Parameter Adjustment:

Parameters are adjustable using six dynamic function buttons and a rotary encoder. A user editable parameter is identified with an illuminated button or encoder, providing intuitive navigation and control. Parameters can be adjusted in small increments and simultaneous multiple-parameter adjustment is also available.

Lake Controller Software Suite:

The Lake Controller and associated applications, including Firmware Update and Preset Manger Utilities, form a powerful suite of software enabling detailed control and management of Lake Processor networks. The Lake Controller enables Windows PC-based adjustment of all LM 26 parameters, including gain, delay, limiters, EQ, crossovers and all I/O configuration and routing.

Using a wireless touch-screen Tablet PC, the Lake Controller can be used to group Processors together for simultaneous control from any location in the venue. The included Lake Analyzer Bridge provides a real-time interface with Smaart Live 5.4 and Live Capture Light/Pro, providing direct audio analysis and measurement feedback within the Lake Controller.

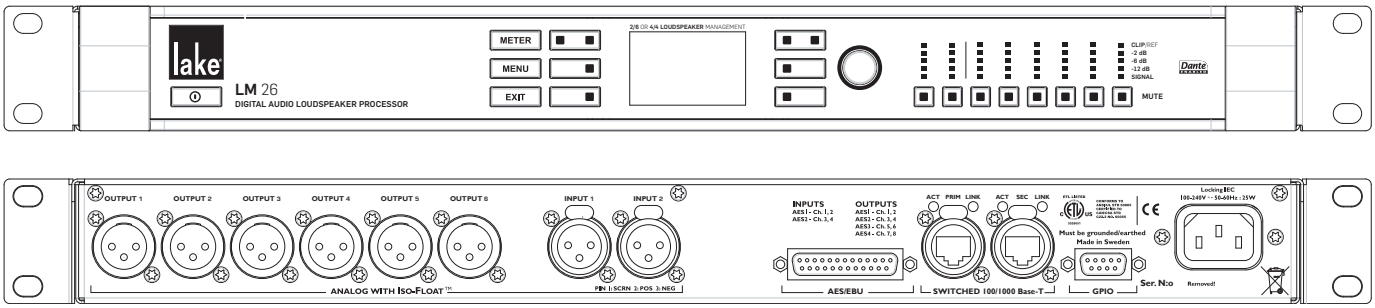


One Lake Controller for all Lake Products:

The LM 26 integrates into the Lake Controller software, alongside PLM Series devices, Dolby® Lake Processors, and all other legacy Lake devices. New Lake Controller functionality provides LM 26-specific routing features, GPIO configuration and combined PLM and LM 26 global power control and event log.

LM 26 – Introducing the New Flagship

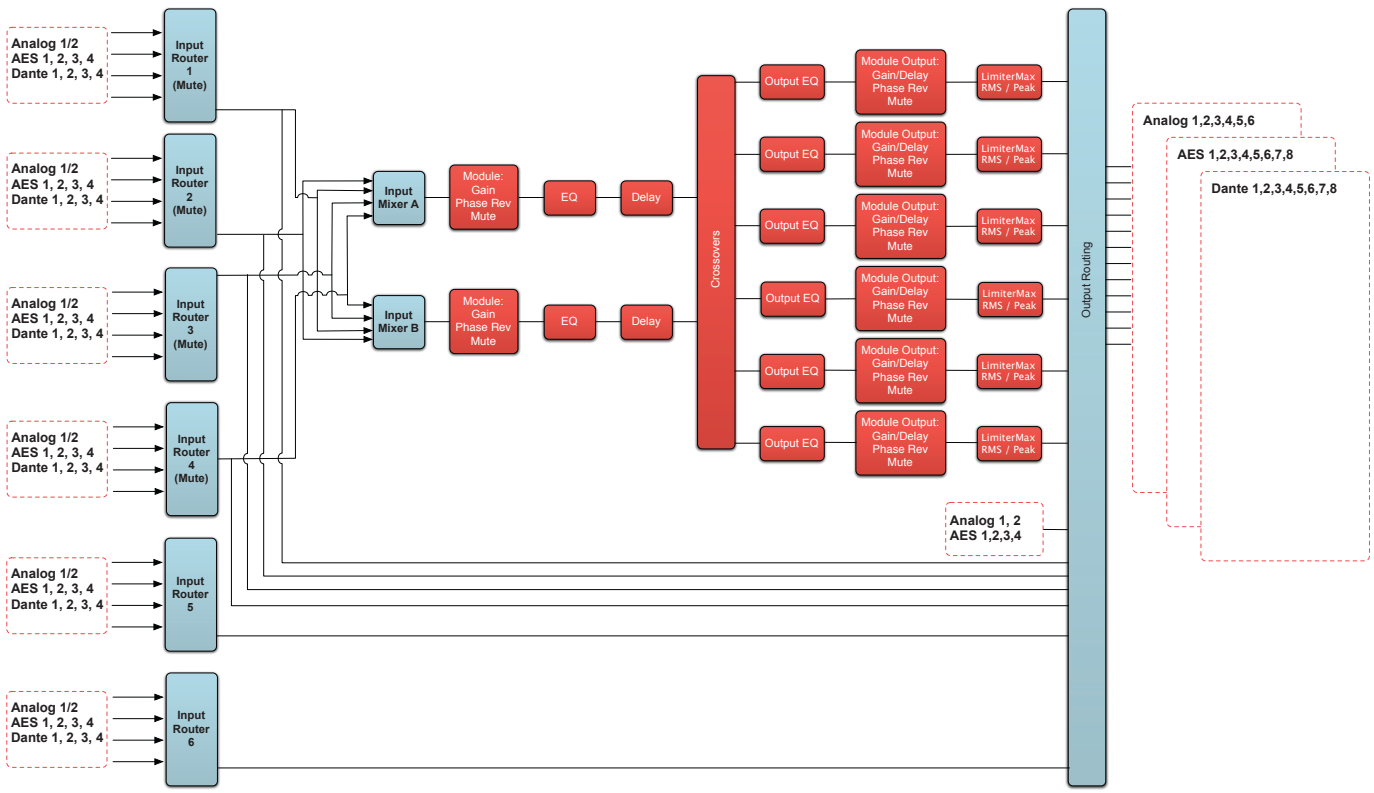
The LM 26 provides all the popular features found in legacy Lake Processors, including Mesa EQ filters, Linear Phase crossovers, AES3 connectivity, analog I/O with Iso-Float and Dante digital audio. But why stop there? This new flagship of the Lake Processor range also includes dual redundant Dante networking, GPIO connectivity, and new routing capabilities with dedicated pass-thru input routers to provide true Dante break-in and fail-over functionality.



At Lake we listen (and so does the LM 26):

So you need to distribute Dante audio, with an AES3 input source failing over to Analog and the result cascading to all Dante receivers? And you need a dual-redundant network topology to seamlessly switch in the event of a Ethernet problem? No problem. The LM 26 constantly listens for valid input signals, and checks for valid digital clocks and a valid Ethernet network, automatically switching as required to ensure the show goes on.

A total of six input routers can be independently configured with up to four input fail-over priority settings. And for the first time on any Lake Processor, the output of any of these six input routers can be patched directly to any analog, AES3 or Dante output without using any of the valuable Module processing channels.



Specifications LM 26

2-in/6-out Lake Processor	
2 Contour Modules	
Raised Cosine Mesa and Ideal graphic input equalizer	
Linear phase and classic crossovers and output EQ	
LimiterMax peak and RMS limiter	
Delay, mute, phase, gain	
Audio Performance	
Internal sample rate	96 kHz
A/D and D/A conversion resolution	24 bit
Internal data path	32 bit floating point
System propagation delay	< 1.22 ms
Maximum available delay	2 seconds
Analog	
Inputs and Outputs	2 inputs, 6 outputs
Dynamic range, inputs	116 dB
Dynamic range, outputs	115 dB
Frequency response, analog to digital	+/-0.1 dB, 20 Hz to 20 kHz
Frequency response, digital to analog	+/-0.03 dB, 20 Hz to 20 kHz
THD + Noise, inputs	0.00024% at 1 kHz
THD + Noise, outputs	0.00037% at 1 kHz
Iso-Float ground isolation	Yes, separate setting for input and output
Input sensitivity settings	12 or 26 dBu
Maximum output level	21 dBu
Input impedance	20 kOhm balanced, 10 kOhm unbalanced
Common mode rejection	-74 dB, 20 Hz to 20 kHz
Crosstalk	-98 dB, 20 Hz to 20 kHz
AES3	
Inputs and Outputs	4 inputs, 8 outputs
Supported resolutions	Up to 24 bit
Supported sample rates	44.1, 48, 88.2, 96, 176.4, 192 kHz
Termination	Selectable
Dante Audio Network	
Inputs and Outputs	4 inputs, 8 outputs
Supported sample rates	48, 96 kHz
Supports redundant paths	Yes
Flexible topology	Yes
Network latency	0.5, 0.8, 1.3, 4 ms
Front panel user interface	
Display	Daylight readable monochrome
Meters	LED meters and clip indicators per channel
Mute access	Mute button and LED indication per channel
LED Fault and Warning indication	Yes
Parameter adjustment	Rotary encoder
Standby Power button	On/Standby
Back panel interface	
Analog inputs and outputs	2 + 6 XLR
AES inputs and outputs	DB-25
Ethernet	Dual Neutrik® etherCON®
GPIO	DB-9
Power	Locking 3-pin IEC
Control and monitoring interface	Via Ethernet for Lake Controller software
Ethernet	
Gigabit Ethernet	1000 Base-T
Fast Ethernet	100 Base-Tx
GPIO	
Inputs	2 General Purpose Inputs (GPI) supporting external contact closure
Outputs	2 General Purpose Outputs (GPO) with internal contact closure
Software configurable input control	Standby state, Mute state, Dual Preset recall
Software configurable output indication	Standby state, Mute state, Faults, Ready
Device presets	
Frame presets	100
Power	
Nominal voltage	100-240 VAC
Operating voltage	70-265 VAC
Power consumption	30 W maximum
Dimensions (W/H/D)	W: 483 mm (19"), H: 44 mm (1 U), Overall D: 290 mm (11.5")
Weight	5 Kg (11 lbs.)
Finish	Black painted steel chassis with aluminum handles
Approvals	CE, ANSI/UL 60065 (ETL), CSA C22.2 NO. 60065, FCC

Specifications subject to change without notice