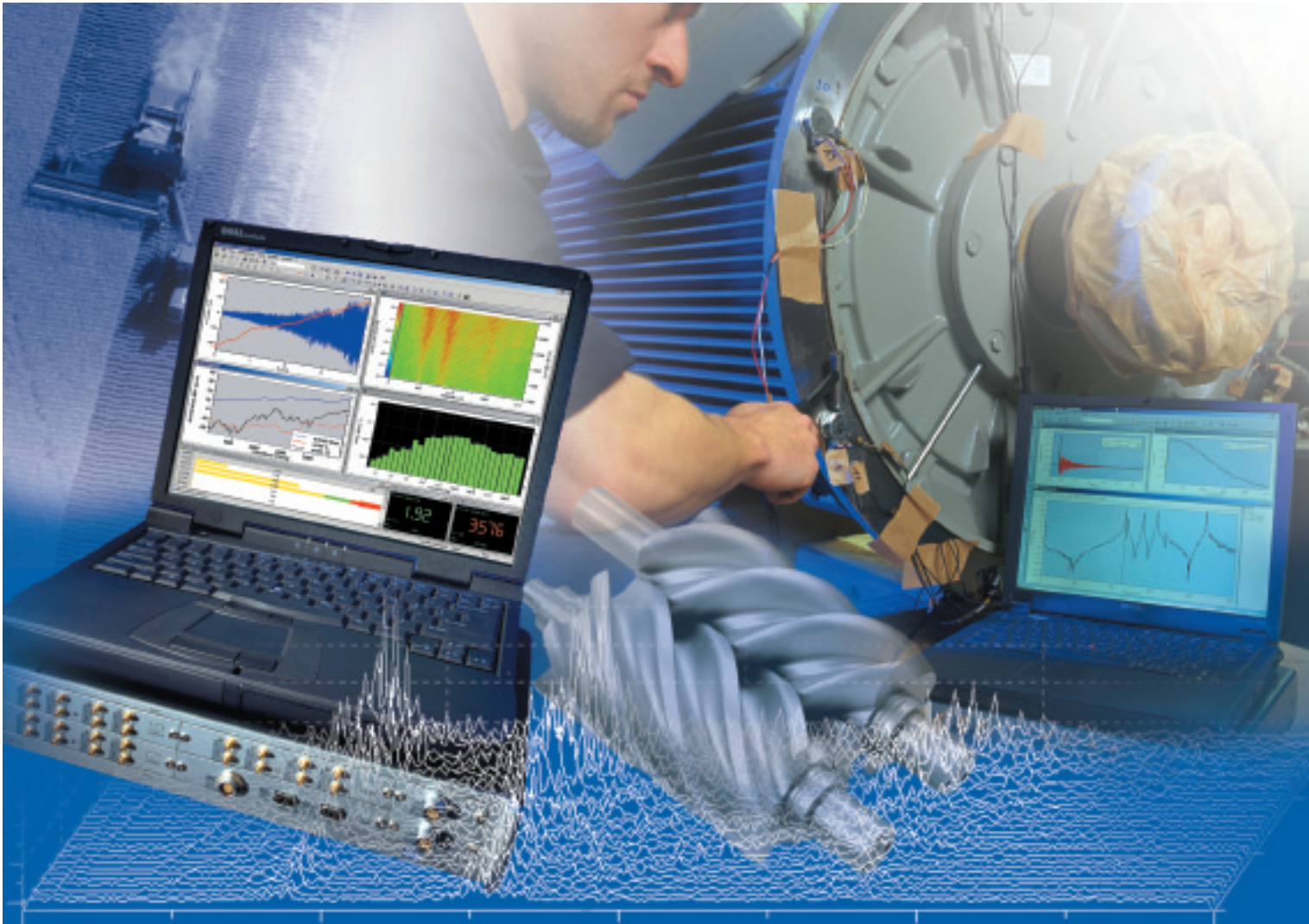


# LMS Pimento

## The Multichannel Analyzer with Portable Power



LMS Pimento

**lms** LMS  
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*Empowering Engineering Innovation*

# LMS Pimento

## The Portable Analyzer with Professional Power

Looking for a solution for general multichannel test & signal processing, or for acoustics, rotating machinery testing, structural or modal analysis ...?

Perhaps you need the power of a professional lab system, but you would prefer everything in a portable package? Perhaps you're on a tight budget and want a solution that's affordable today – and has the flexibility to expand tomorrow? Perhaps you need a solution that stands out from the crowd and fits in with the industrial standards used by your customers?

- Compact, ruggedized design powered by AC, DC, or internal battery
- Expandable from 4 to 24 channels with full signal conditioning (voltage, ICP® and microphone)
- 24-bit ADC, over 1 MSample/s throughput to host laptop/PC
- Up to 40 kHz bandwidth, with multiband and real-time octaves
- Tacho input for tracked analysis
- Auto industry CAN-bus support
- 24-bit DAC signal source for structural testing
- Silent operation – no fan
- Based on familiar Microsoft Windows 2000 / Windows XP operating system
- Design and manufacturing certified according to ISO9001 standards

### LMS Pimento is what you are looking for!

LMS Pimento is the personal instrument for professionals on the move. It can handle most tasks in general data acquisition & DSP, rotating machinery, structural analysis, acoustics including sound power and sound intensity measurements. It comes in a highly portable unit that equally serves at home, in the lab, or in the field. Starting with 4 channels, it is easily expandable up to 24 channels and its results are fully compatible with the LMS Noise & Vibration test systems used by most Fortune-500 companies today. Best of all, it's more affordable than you think!

LMS Pimento is ideal for users who simply want to take an analyzer off the shelf, switch it on, start measuring, and quickly produce a report.

### Designed for the task

Our industrial design team ensured that LMS Pimento is equally suited for use in the field as well as in the lab.

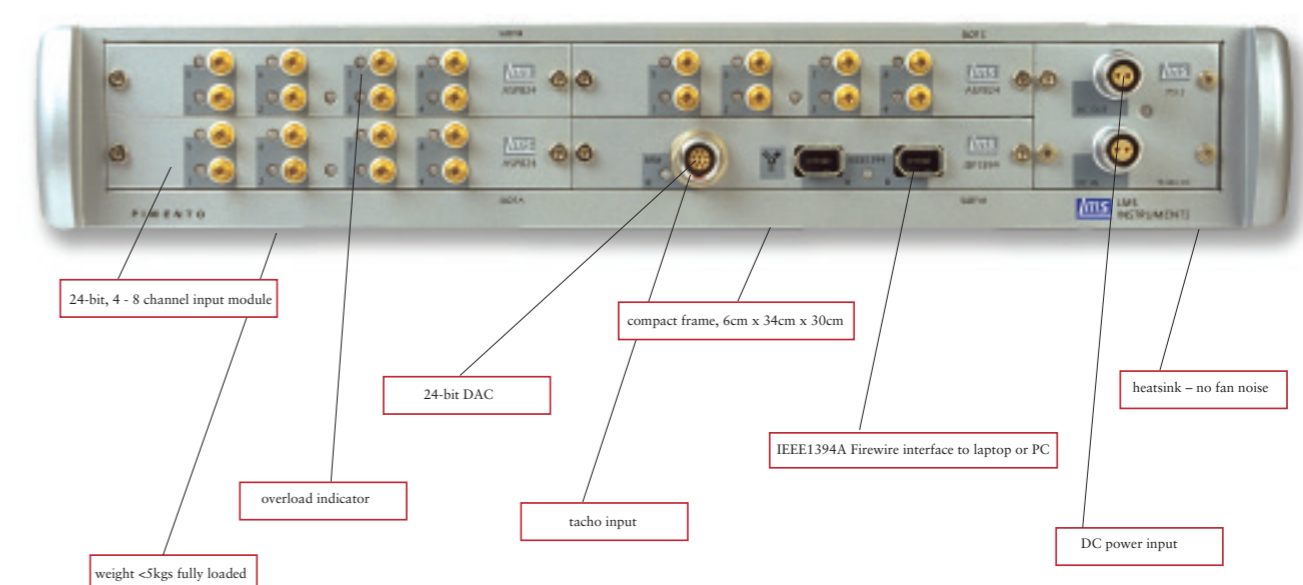
The LMS Pimento body is made of 3-ply high-strength steel and damping material to provide a lightweight, yet rugged framework. Special components were chosen to reduce power consumption to a mere 1.25 W per channel, while heat pipes and cooling fins eliminate the need for a fan and its associated noise.

LMS Pimento is modular, and digital calibration means modules can be swapped with other LMS Pimento systems without manual re-calibration actions. Expand from 4 to 24 channels if you need to - while still having space for a source and a dedicated tacho input.

### Maximized lifetime

In addition, LMS provides the high-quality, ISO-certified service you need to get the most out of your LMS Pimento hardware.

With the LMS Calibration Service Contract, we re-calibrate the system and provide you a certificate for future measurements with your LMS Pimento system. Through preventive maintenance, the lifetime of your system is maximized while ensuring optimal performance and accuracy. This preventive maintenance also minimizes the risk of unexpected downtime. In the unlikely event of a hardware failure, the LMS Maintenance Service Contract guarantees that you can continue your measurement campaign.



# From General Purpose Signal Processing to Tuned Applications

## General Purpose Data Acquisition & DSP

Pimento provides both real-time acquisition and off-line analysis of throughput data; the latter provides more analysis flexibility and is essential for "one-chance" events that must be recorded for detailed study later. There is a real-time oscilloscope for simultaneous display in both the time and frequency domains; and you can even sample and process different channels at different bandwidths to minimize data storage requirements and overhead.

- Replacement of your DAT-tape recorder
- DSP power on each input module for real-time measurements
- High-speed sustained recording to PC disk via FireWire interface
- Up to 100 kHz sampling, 40 kHz bandwidth per channel, and multiband
- On-line order, octave and frequency calculations during throughput
- Comprehensive data visualization and analysis
- Real-time cursors to track peaks
- Postprocessing into octaves, orders, spectra, time domains

## Structural Testing

With up to 24 channels, support of ICP and smart transducers (TEDS), Pimento packs everything you need! Stimulate the structure by an impact test, or use a shaker with a variety of excitation types. On-line, you can see the responses as spectra, FRFs, coherence and impulse functions. You can do a full modal analysis or simply look at the operational deformations of your structure.

- Support of smart transducers (TEDS)
- ICP accelerometer supply
- 24-bit DAC and 24 channels in the same unit for productive testing
- Impact-testing and shaker-testing mode
- Full Modal Analysis
- Geometry creation of your structure
- Frequency-domain animation (Operational Deflection Shapes)
- Time-domain animation

## Acoustics

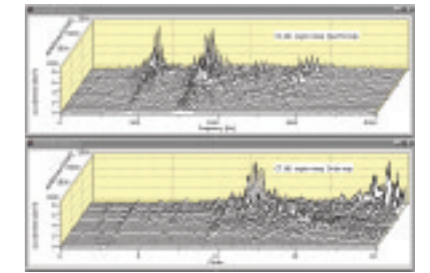
Pimento is the ideal solution for troubleshooting acoustic problems in the lab or in the field. It has no fan that makes noise, it can measure signals from a 6x4 microphone array, and you can process the data according to ANSI standards. The Sound Power module helps you qualify your products according to ISO3744, 3745, 3746 and meet noise directives, such as EC/2000/14, for outdoor equipment. The Acoustic Intensity module allows on-line visualization and can be used for sound-source localization.

- Octave and fractional ANSI octave
- Sound Power B Standards: ISO3744, ISO3745, ISO3746
- Sound Power C Standards: EC/2000/14, ISO7779
- Acoustic Intensity
- Direct audio replay from display

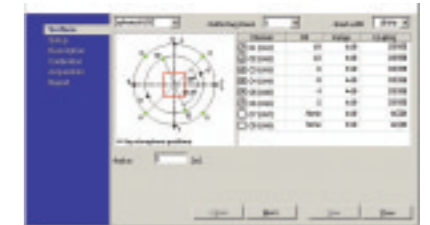
## Rotating Machinery

LMS Pimento tracks rotating systems and helps you to see the data as spectra and fractional octave waterfalls, color maps, orders, etc. Tacho conditioning and digital processing ensure accurate results in industrial applications, even for rapidly accelerating shafts. You can compare results from your throughput measurement with fixed-sampled and even time-domain re-sampled data.

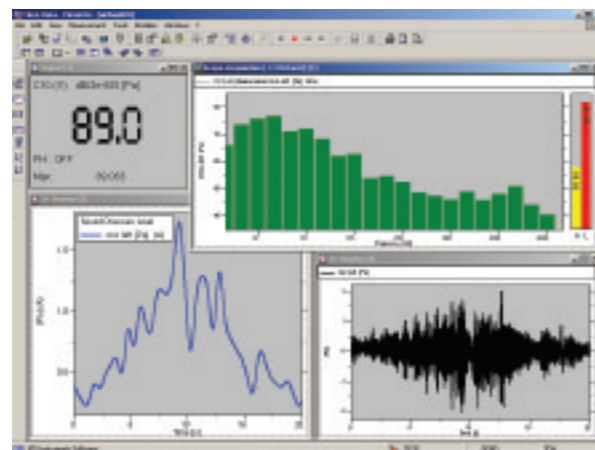
- Tacho conditioning with multiple-pulse per rev tracking
- Clear speed indicators
- Waterfall and user-defined color mapping
- Order analysis and order mapping
- FFT based or time-domain calculation of orders



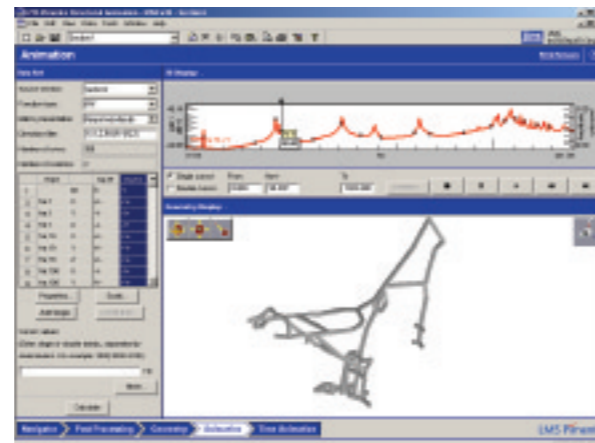
Spectrum waterfalls and orders



Sound power measurements according to ISO and EC Standards



Multichannel time recording in parallel with frequency, order, and octave measurements



Quickly analyze the deformation of your structure



# Dedicated Tools to Finish the Job and Print Your Report

## Personal productivity

There are often occasions when you're in the field and you need to process raw data to derive another result or "virtual channel", for example to low-pass filter the raw time data and convert between acceleration and velocity formats. The unique formula editor lets you create "mathematical channels" with a minimum of fuss. These channels are a combination of data from other channels, arithmetic operators, as well as smoothing, filtering and processing into other domains (octave, order, etc.) All these results are available on-line!

LMS Pimento includes a powerful command processor that lets you set up and perform measurement sequencing, to automatically perform sophisticated data operations before running a batch report. It's an easy and foolproof way of having another operator perform a complex test – especially in the field, where in the rush things may easily get lost or forgotten.

## Organizing your data

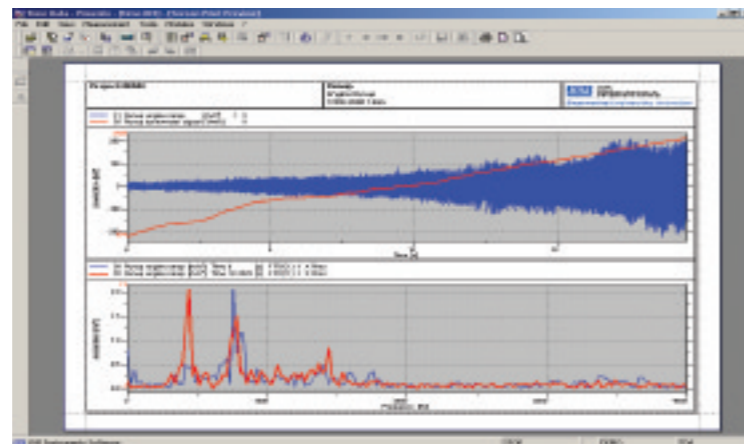
With a multichannel instrument it's important to have an interactive way of handling the avalanche of data that is generated. LMS Pimento includes a data handler that helps you to easily navigate across the different runs, through different channels, and different rpm ranges. Data are fully annotated with measurement parameters and user-defined attributes for test traceability.

## Documenting your data

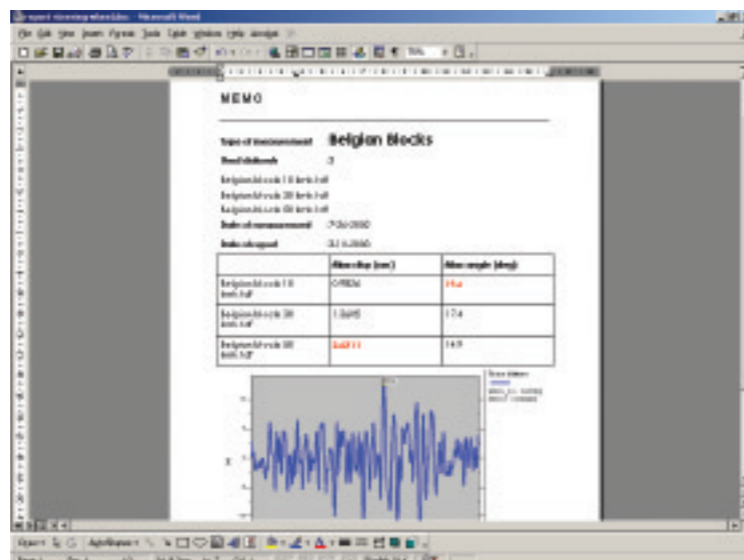
The job's not done till the paperwork's finished. LMS Pimento has a variety of functions that help you finish the task promptly. Documenting data ranges from direct printing to compatible printers, through copy-and-pasting windows into a Microsoft Word document, to fully automatic reporting using Visual Basic and Microsoft Office programs.

## Data compatibility

Your data are fully compatible with other LMS products; so you can easily share your data with your co-workers in the organization through LMS Test.Lab™, perform an advanced analysis using LMS CADA-X, or apply measured load data to your CAE models with LMS Virtual.Lab™.



Reporting capabilities range from direct printing...



... to using full capabilities of Microsoft Office

# Visual Basic Support to Streamline your Job from Measurement to Report

LMS Pimento offers a wealth of noise and vibration acquisition and analysis functions to meet the most demanding requirements. But sometimes you don't want to be confronted with all these options. You only need a subset that you want to use in an efficient and repetitive way. Or you have a company-specific processing function you want to use in your analysis.

LMS Pimento Visual Basic support enables an external program – a standalone Visual Basic program or a Visual Basic script within Microsoft Word or Excel – to operate LMS Pimento software and access its data and displays.

## Measure

- Load predefined measurement setup and layout files
- Read/write measurement annotation fields
- Control measurements
- Save results

## Process

- Open, close, save datasets
- Execute individual processing functions or predefined processing sequences
- Export data to Microsoft Excel, Universal file and wav
- Plug in your own processing function

## Report

- Automatically link to displays
- Access all data samples
- Access statistical functions ( Min, Max, Mean, RMS and Leq)

## A wealth of applications ...

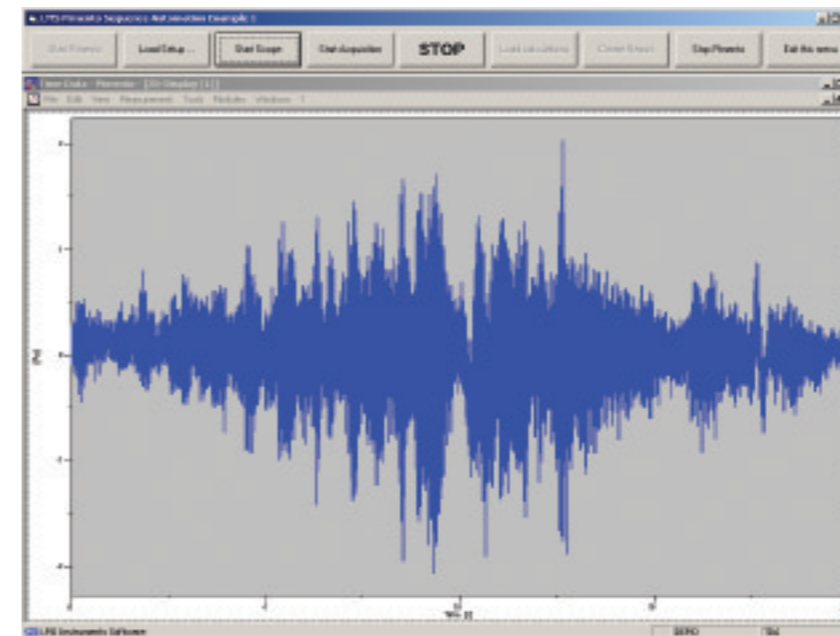
The Visual Basic support in LMS Pimento opens a wide range of applications:

- Create simplified user interfaces for repetitive tasks
- Improve data organization by enforcing file naming conventions and locations
- Unify data annotation
- Interface with external devices such as test benches
- Use MS Excel mathematical functions to implement company-specific processing functions
- Create great reports

## ... to simplify your job

If you aim for efficiency, you'll certainly appreciate these benefits:

- Reduce training and operating costs by lowering the threshold for operators
- Increase your value-added time by streamlining repetitive acquisition and analysis procedures
- Leverage corporate knowledge by embedding it in customized procedures
- Make deliberate decisions based on consistent data



Create your own user interface for repetitive tasks or company specific processing functions

## Portable Power

LMS Pimento weighs less than 5 kg (approx. 11 lbs) in fully-loaded condition and its footprint equals the size of a laptop - Pimento is as compact as anyone would want. And because it's designed to survive rigorous use in the field, and able to run from AC, DC or even its own internal battery – it's ideal for professionals on the move!

## Professional Power

You need a toolbox that can handle any sound & vibration task. That's why LMS Pimento packs an impressive performance: 4 to 24 channels with 24-bit ADCs for the highest quality measurements; up to 40 kHz bandwidth per channel (on input module MSP424), over 1MSample/s in sustained data throughput; a tacho to track rotating machinery and a 24-bit DAC to stimulate a structure.

## Protection Power

Even with all this impressive processing power, LMS Pimento is more affordable than you'd expect. The basic 4-channel instrument is about the same price as a traditional analyzer, and you add extra channels and analysis modules when needed. It's a "built-in" investment protection - your solution will grow alongside you and will not be left behind on the shelf.

## Pedigree Power

With over 20 years of experience in noise & vibration testing, LMS understands your testing and analysis applications like no one else. We pioneered the use of multichannel testing, and packed the power of lab systems into the portable Pimento. We've even ensured data compatibility with the LMS CADA-X, LMS Test.Lab and LMS Roadrunner so you can share your data with others.

# LMS Pimento – it's small, but very, very powerful!

[www.lmspimento.com](http://www.lmspimento.com)

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INTERNATIONAL**  
*Empowering Engineering Innovation*

Interleuvenlaan 68  
3001 Leuven - Belgium  
Phone: +32 16 384 200  
Fax: +32 16 384 350  
e-mail: [info@lms.be](mailto:info@lms.be)  
<http://www.lmsintl.com>

LMS France	phone 01 69 35 19 20	fax 01 69 35 19 45
LMS Deutschland	phone (07152) 97 97 90	fax (07152) 97 97 99
LMS Italiana	phone 0321/ 622 440	fax 0321/ 622 429
LMS UK	phone (024) 7647 4700	fax (024) 7647 1554
LMS N. America		
Detroit office	phone (248) 952-5664	fax (248) 952-1610
Los Angeles office	phone (714) 891-4205	fax (714) 891-6809
LMS Japan	phone 045-476-0077	fax 045-476-0870
LMS Korea	phone 02-571-7246	fax 02-574-7321
LMS China	phone (010) 8497 6463	fax (010) 6499 3735
LMS India	phone 080-336 71 22	fax 080-356 53 90