



NoiseTutor Tutor [too-ter] - to have the guardianship, instruction, or care of.

The Larson Davis Rapid Deployment Noise Monitoring System

Highlights

- Rapid deployment
- Emailed reports and event notification
- Full data for advanced analysis
- Web publication made easy
- Leverage existing infrastructure
- Remote administration
- User control of system and data

Applications

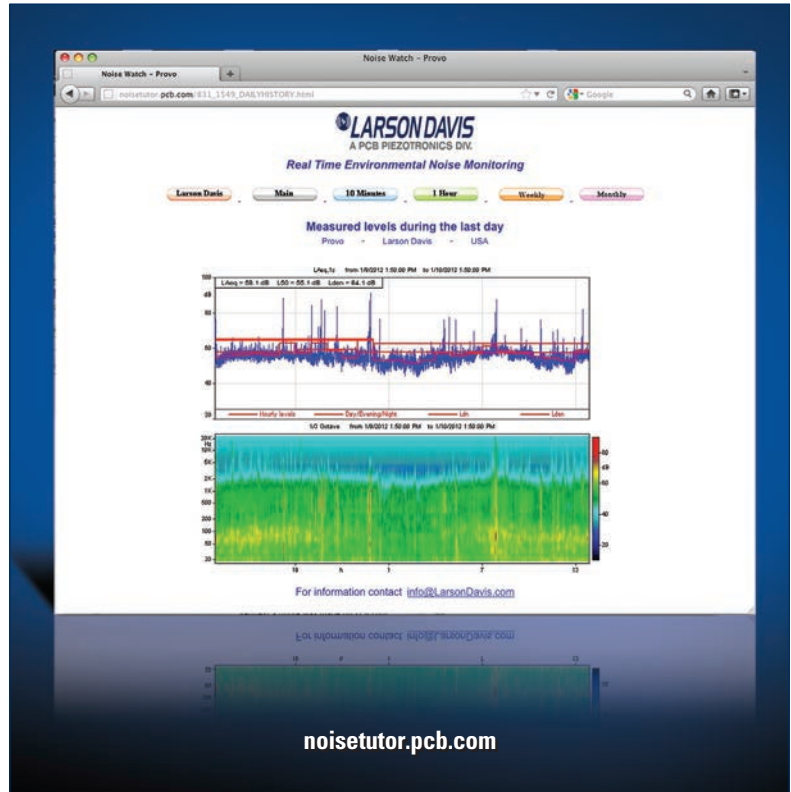
- Environmental Noise Monitoring
- Construction Noise
- Wind Farm Environmental Impact
- Short/Medium Term Noise Consulting Projects

Rapid Deployment

- Set up in the office including email recipient list, operational mode, graphing and data transmission options.
- In the field: launch system, connect to internet – GO!

Flexible Communication

- On-line publication
- Email update
- Daily data file to central server



Integrated Internet Solution for Remote Noise Monitoring

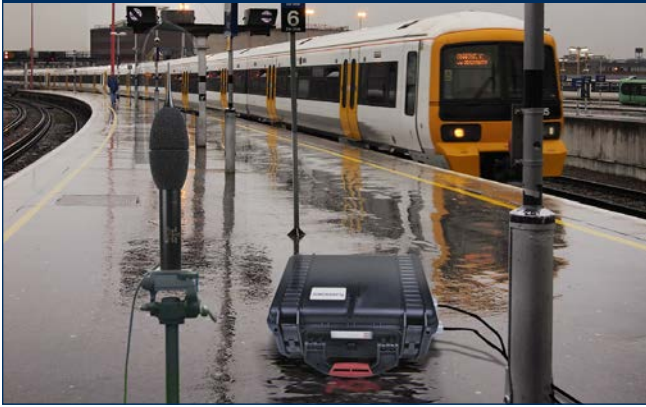
Continuous monitoring of environmental data in remote areas has always presented a unique set of challenges. Typical solutions involve complex installations, frequent visits to remote locations to keep the system fully operational and require expert level attention to retrieve and share data amongst customers, consultants and project leads.

Additional economic challenges can also present themselves on projects that are shorter in duration (e.g. construction sites, wind farm commissioning, concert venues, etc.). In these instances, customers often incur the expense of a permanent installation when a simple, easily deployed, “temporary” solution is all that is required.

The Larson Davis NoiseTutor is an integrated solution, ideally suited to address the challenges of remote noise monitoring in an efficient and cost effective package. Designed for rapid deployment in a network environment, NoiseTutor provides Internet based remote control, a high speed network connection for the rapid transfer of large files, event alerts and real-time reports published directly to the end user’s website.

NoiseTutor allows for easy management of any configuration from a single system to a network of systems, each of which can be individually controlled. A sophisticated power optimization scheme provides individual system power management during low power battery operation, to avoid the loss of critical data in the event of AC power interruption.





For those looking for advanced analysis features, data received via e-mail can be concatenated and processed using Larson Davis DNA Software to obtain results over daily, weekly, monthly and even annual periods together with Ldn and Lden, numerical tables, time history and spectrograms of Leq and Ln.

OPERATION MODES

Real Time Publishing

The Sound Level Meter is used as a measurement front-end receiving the Leq and 1/3 rd octave data every second. Reports are typically produced as 10 min, 1 hour, 1 day, 1 week or 1-month updates which are published to a website and/or emailed to designated recipients.

Benefits of an Internet Connected Noise Monitoring Station:

- Speed and reliability improvements versus classical analog modems
- Support many noise monitor connections using a single Internet connection
- Automated reconnection without losing data when communication is interrupted
- No specialized hardware needed
- Flexible setup, leveraging existing infrastructure and products
- Simplify remote monitoring of data – on site specialists no longer required

For these reasons Larson Davis has focused on a solution leveraging network communications while at the same time ensuring compatibility with existing sound level meters.

The Larson Davis NoiseTutor Solution

In a network of NoiseTutor monitoring stations each unit can be completely independent with no need for a centralized management system or an associated web server. When a monitoring unit is active, the data is collected by the NoiseTutor at predetermined intervals (e.g. hourly, twice a day, etc.) after which a graphical report is dispatched to designated mail recipients or a website.

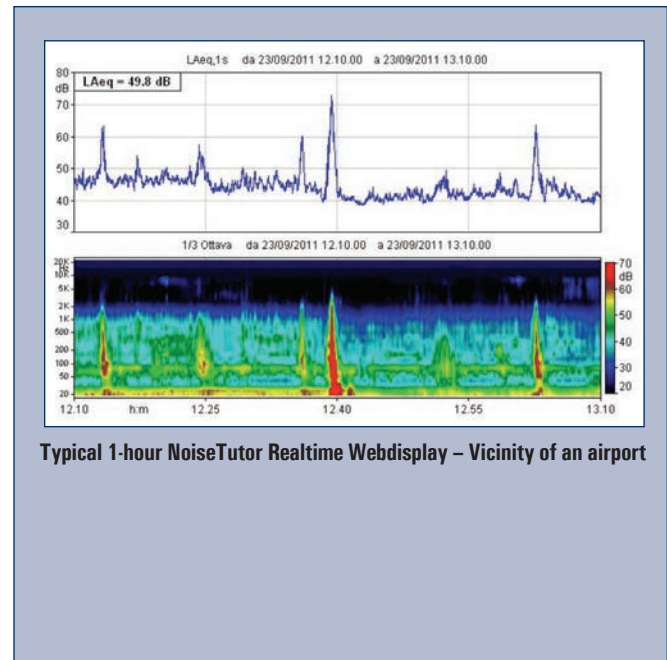
Each NoiseTutor station consists of a sound level meter, compact industrial PC, and a rechargeable battery to provide power during AC power interruptions. A power optimization scheme allows the PC to be in "Standby" mode while data collection on the SLM continues and no transmission is required.

The NoiseTutor solution allows for easy management of any configuration from a single remote monitoring station to a network of NoiseTutor stations with automatic distribution of information. Numerous variations are available and can be activated according to the specific monitoring (events, audio, video, weather, etc.) or networking scenario.

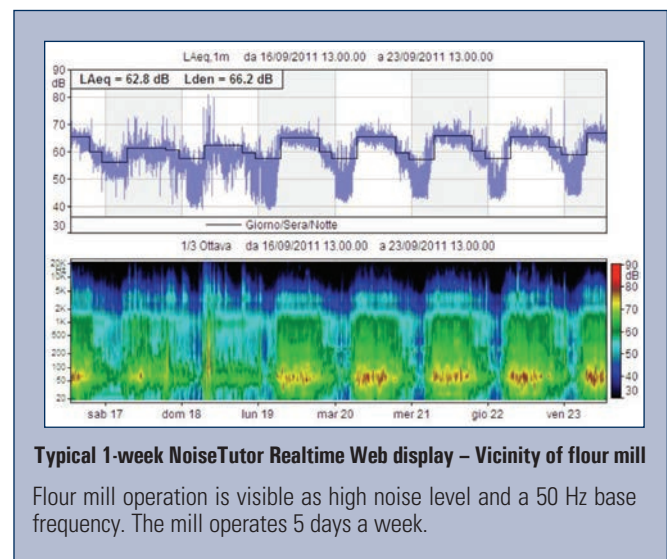
Each monitoring unit provides, on request, a method of web-publishing with real-time customizable graphical and numerical tables. Our server application, an example of which is visible at www.noisetutor.it or noisetutor.pcb.com, is made available for customization.

Seamless Integration with Larson Davis Sound Level Meter Software

NoiseTutor saves data in SLMDL format which is readable with our no-cost SLMUTILITY-G3 software. Here the data can be easily viewed or exported to Excel for further analysis.

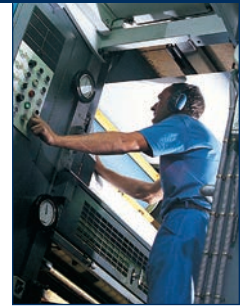


Typical 1-hour NoiseTutor Realtime Webdisplay – Vicinity of an airport



Typical 1-week NoiseTutor Realtime Web display – Vicinity of flour mill

Flour mill operation is visible as high noise level and a 50 Hz base frequency. The mill operates 5 days a week.



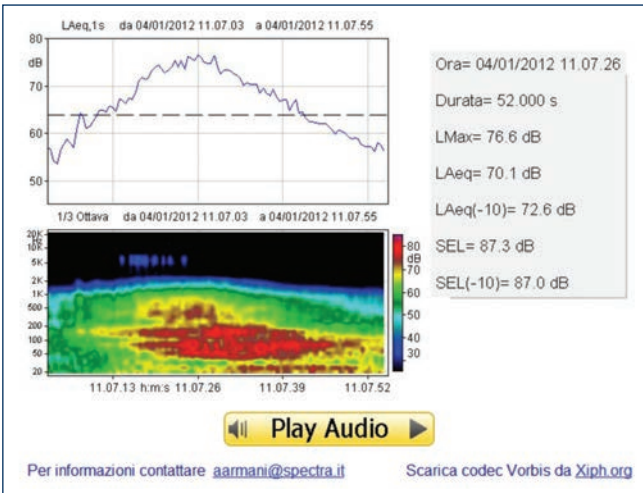
The real-time mode requires internet access that can be realized in different ways. Most typical are:

- Wired Ethernet
- Wireless Ethernet, WiFi
- Wireless 3G GSM

While typically users will want to be on-line 24/7, it is possible to send updates periodically and to put the PC to sleep in between. This lowers power consumption and in the case of cellular communication, the cost of transmission as well.

Real Time Publishing – Event Alert Option (SWW-DNA-NT-EV)

NoiseTutor can be configured to report noise events which can then be viewed on-line or automatically sent via email. All the information necessary to quickly and easily identify and characterize a noise event is reported. In addition, you can receive alerts on various system parameters including a low power condition. Finally, a user can listen to a sound recording for fast noise source identification.



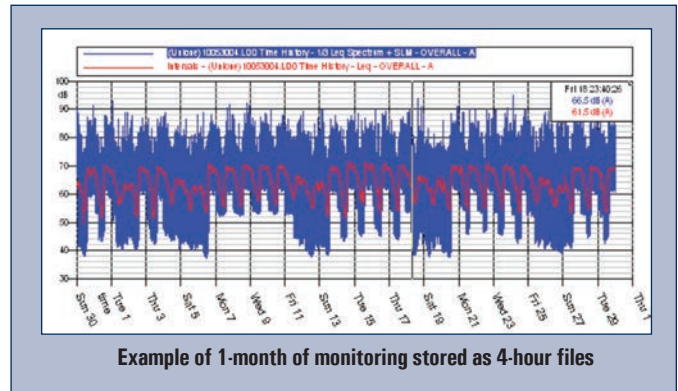
Off-Line

In parallel with the real-time mode, the SLM can acquire a complete data file using the full range of the SLM capabilities: time history, measurement history with 10 min interval, Spectral Ln, event recording including audio files etc. The SLM regularly generates data files which the PC will retrieve. The user can then opt to store the file on the PC or forward them to a remote ftp site.

2140_10062301.LD0.Slndf	2140_10062103.LD0.Slndf	2140_10061905.LD0.Slndf
2140_10062300.LD0.Slndf	2140_10062102.LD0.Slndf	2140_10061904.LD0.Slndf
2140_10062205.LD0.Slndf	2140_10062101.LD0.Slndf	2140_10061903.LD0.Slndf
2140_10062204.LD0.Slndf	2140_10062100.LD0.Slndf	2140_10061902.LD0.Slndf
2140_10062203.LD0.Slndf	2140_10062005.LD0.Slndf	2140_10061901.LD0.Slndf
2140_10062202.LD0.Slndf	2140_10062004.LD0.Slndf	2140_10061900.LD0.Slndf
2140_10062201.LD0.Slndf	2140_10062003.LD0.Slndf	2140_10061805.LD0.Slndf
2140_10062200.LD0.Slndf	2140_10062002.LD0.Slndf	2140_10061804.LD0.Slndf
2140_10062105.LD0.Slndf	2140_10062001.LD0.Slndf	2140_10061803.LD0.Slndf
2140_10062104.LD0.Slndf	2140_10062000.LD0.Slndf	2140_10061802.LD0.Slndf

4-hour files forwarded to your ftp site. File names contain SLM serial number, date stamp (y-m-d) and sequential number for easy recognition.

Using Larson Davis DNA processing software, files can be merged into a single file representing an entire month.



As an alternative, using the 831LXTSDK library, any user can connect the data to his own software or even a corporate database.

File Size and Scheduling Options to Control Transmission Costs

Email recipients can be in the central administrative office or equipped with a smartphone in the field. During real-time operation the graphical reports can be sized to fit the user's device and help reduce the cellular transmission costs. A typical 1-day file containing 1 second Leq with 1/3rd octave data is about 14 MB (12MB with zip compression).

Off-Line - Continuous Sound Recording Option (SWW-DNA-NT-CS)

With the continuous sound recording option, NoiseTutor can be configured to stream audio files directly to the compact industrial PC through the AC/DC output of the sound level meter. These compressed audio files (.ogg format) can be displayed along with the time history data in DNA Software and any segment replayed with ease.

Remote Access to Noise Monitoring Station

Standard, commercially available tools can be used to administer the remote PC. It is also possible to extend the PC functionality and incorporate a directional webcam for visual identification of noise sources. Compared to other solutions, NoiseTutor gives you control over your system components and data.





Specifications	
Electrical	
AC input	90 - 240 V, 50 - 60 Hz
Battery runtime (continuous)	6 hrs, typical at 68 °F (20 °C)
Battery runtime (daily wakeup)	30 hrs, typical at 68 °F (20 °C)
Battery Voltage	12.8V nominal, 14.7V fully charged, 10.0V low power disconnect
Battery Type	Lithium Iron Phosphate (LiFe)
Battery Capacity	81 Wh
Shipping requirements	Package labeled to indicate it contains a lithium battery
Mechanical	
Size (W x L x H)	18 x 13 x 7 in (46 x 33 x 18 cm)
Weight	18.3 lbs (8.3 kg)
IP rating	IP65
Environmental	
Operating Temperature	-40 °F TO 140 °F (-40 °C to 60°C)
Operating Humidity	0 to 99% relative humidity (non-condensing)
Standards Compliance	
IEC 61672-1 Class 1 when used with Model 831 or SoundTrack LxT1	
ANSI S1.4 Type 1 when used with Model 831 or SoundTrack LxT1	

Run Mode Summary		
	Offline	Realtime Publishing
Data Management	Transmission only Maintenance window	Continuous
IT Requirements	Email Program Email Connection	Web Server
File Format	Larson Davis SLM DL file (native SLM-UTILITY G3 Software) .ogg sound file with SWW-DNA-NT-CS option (1 hr continuous audio file, 10k Hz bandwidth = 12MB)	.jpeg image .ogg sound file
Processing Software	SLM-UTILITY-G3 DNA 831/LXT SDK	
Sound Recording	Events Only Continuous	On Events
Remote Maintenance Access	YES	YES
Local Storage of Data Files	YES	YES
Typical File Size	15MB (1s Leq with 1/3 octave) <1MB (1s Leq zipped)	
Email Groups	2	3
ftp Site	2	1

Available Configurations	
NMS021	Complete NoiseTutor including Model 831 SLM & PRM831
831-FF	Type 1 Sound Level Meter with PRM831 and 377B02 microphone
EXC020	20 ft (6 m) microphone extension cable
831-LOG	Firmware option to enable periodic data logging
831-OB3	Firmware option to enable 1/1 and 1/3 octave filters
831-ELA	Firmware option to enable exceedance logging and measurement history
EPS2116	Outdoor microphone protection
EPS041	NoiseTutor software, enclosure and accessories (see below)
NMS022	Complete NoiseTutor including Model 831 SLM & PRM2103-FF
831	Type 1 Sound Level Meter
PRM2103-FF	Outdoor preamplifier with automatic calibration check
CBL203-20	PRM2103 to 831 cable, 20 ft (6 m)
831-LOG	Firmware option to enable periodic data logging
831-OB3	Firmware option to enable 1/1 and 1/3 octave filters
831-ELA	Firmware option to enable exceedance logging and measurement history
EPS2116	Outdoor microphone protection
EPS041	NoiseTutor software, enclosure and accessories (see below)
EPS041	NoiseTutor software, enclosure and accessories
	Outdoor enclosure including gland for AC power & microphone cable
FITPC-NT	Compact Industrial PC with Windows® 7 Professional; rated for environmental use -40 °F to 140 °F (-40 °C to 60 °C); Includes NoiseTutor software
1980.0001	8 in. LCD monitor
1125.0016	Small, portable, wireless keypad
COM-LS300-DC	Sierra Wireless LS300 gateway for mobile access (specify carrier)
0281.0005	80 Whr Lithium Iron Phosphate battery with charger
SWW-NT	CD with web starter software and manuals
Optional Accessories	
SWW-DNA-NT-EV	Add event alerts via web, email or SMS (SMS requires 3G or 4G device)
SWW-DNA-NT-CS	Add continuous sound recording, needed for event audio recording
TRP003	Instrumentation tripod for mounting EPS2116
TRP001	Camera tripod for mounting EPS2116
SEN031	Combined weather sensor: wind speed and direction (no moving parts), temperature, humidity, pressure, rainfall (requires CBL167 cable + DVX008A)
CBL204-10	NoiseTutor external 12V battery cable, 10 ft (3 m), with spade connectors
EPS037	Rolling hard case case (CCS035) with 100 Ah battery; requires CBL204-10
EPS036	Rolling hard case case (CCS035) with 2 x 21 Ah batteries; requires CBL204-10
EPS043	Fiberglass enclosure for use on TRP019/20
CCS035	Rolling hard case with foam for single 100 Ah battery or 2 x 21 Ah batteries
Customer Supplied Items	
	Website hosting facilities (server, Microsoft IIS and ftp)
	SIM card with mobile data plan for LS300
	PC remote admin software such as logmein, radmin or TeamViewer



3425 Walden Avenue, Depew, NY 14043-2495 USA

Phone 716-926-8243

Toll-Free in USA 888-258-3222

Fax 716-926-8215 E-mail sales@larsondavis.com

Web Site www.larsondavis.com

ISO 9001 CERTIFIED

© 2016 PCB Group, Inc. In the interest of constant product improvement, specifications are subject to change without notice. PCB, and ICP are registered trademarks of PCB Group Inc., SoundTrack LXT, Spark and Blaze are registered trademarks of PCB Piezotronics, Inc. HV Manager is a trademark of PCB Piezotronics, Inc. All other trademarks are properties of their respective owners.

For environmental noise monitoring and building acoustics, Larson Davis offers a full line of instruments, accessories and software. For personal noise and vibration exposure monitoring, Larson Davis complements this with sound level meters, personal noise dosimeters, human vibration meters, audiometric calibration systems and hearing conservation programs.

Visit www.larsondavis.com to locate your nearest sales office