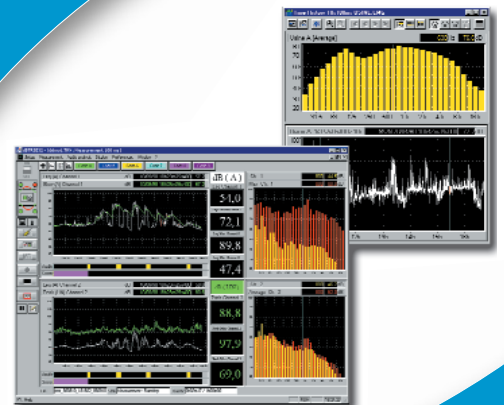




dBenv32

**Environmental noise and vibration
acquisition and processing
software suite**



01dB

MVI technologies group

dBENV32 is a unique environmental software suite composed of **dBTRIG32** for data acquisition and **dBTRAIT32** for data processing.

Used with **Symphonie** or **Jazz** acquisition units, **dBTRIG32** transforms a computer into an intelligent noise or vibration monitoring station.

Much more than a simple sound level meter, **dBTRIG32** can record the raw signal (like a digital tape recorder) and at the same time, perform real time digital frequency analysis (octaves or third octaves).

The two channel option with any combination of microphones or accelerometers can be connected with the same data logging capability for extended analysis.

Advanced trigger functions allow the user to generate alarm signals and start / stop event recordings (signal, spectrum) for different time periods and according to one or several conditions.

As the system is designed for automatic calibration and remote access, it is perfectly suited for unattended monitoring applications.

Unrivalled in terms of performance and flexibility, **dBTRIG32** is an intelligent noise surveillance tool that adapts and interacts to any disturbance of a given environment.

Data processing is performed by **dBTRAIT32** with unequalled ease of use and analysis capability - source identification by playback of audio records being one of the most attractive features of this software.

dBENV32 is therefore well suited to solve any type of noise and vibration measurement problem in both time and frequency domains.



dBENV32 main functions

Combining the functions of a sound level meter, a digital tape recorder and a real-time frequency analyser, **dBENV32** is a powerful investigation tool that can be used for a wide range of applications such as noise complaints or impact noise studies.

- Noise and / or vibration monitoring
- 115 dB maximum dynamic (option) for measuring from 20 dB to 135 dB without gain shift
- A, B, C, G weighting curves for acoustics
- ISO2631 weighting functions for vibration
- Programmable digital audio recording
- 20 Hz (1 Hz option) - 20 kHz bandwidth for octave and third octave spectra
- Noise source coding
- Manual or automatic (remote) calibration
- Multitasking with external applications (weather data acquisition, remote access and control by modem)
- Auto reboot facility in case of power shortage
- Down to 1/48th octave band analysis
- Real-time loudness, PNL, EPNL global levels
- Advanced triggering functions (audio records, spectrum, multispectrum, source codes and alarms) under user-defined multiple threshold conditions (absolute and / or relative)
- Extensive analysis in time and frequency domains
- Direct printing or cut-and-paste of results into reports

dBenv32 modules

dBenv32 I/N octave analysis:

In addition to 'classical' octave and third octave analysis, dBENV32 computes in real-time spectrum and multi-spectrum in 1/6th, 1/8th, 1/12th, 1/24th and 1/48th octave bands.

dBtrait32 Automatic processing script :

When processing a set of data files, it is possible to define a list of processing functions that can be applied to the lot by a simple mouse click.

The results can be directly sent to a printer or to a set of files for later editing in standard office software.

dBtrig32 Vibration module :

With this optional module, computation of overall levels according to ISO2631 standard has been implemented. The third octave frequency range is extended down to 1Hz and the sampling frequency can be set under 40 Hz, depending on hardware, allowing extended analysis of long vibration signals.

Simultaneous environmental noise and building vibrations measurements can therefore be performed.

dBtrig32 Expert module :

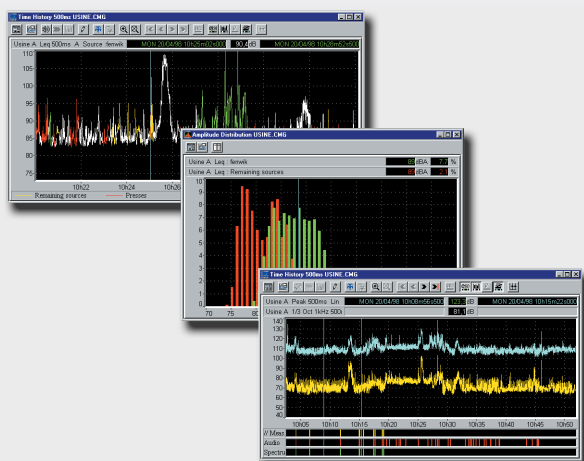
The expert module allows the user to define any combination of trigger conditions for recording audio or spectrum events and generate alarm signals.

Thresholds can be either relative or absolute providing very flexible event detection and data storage.

Without peer bin of the market, dBENV32 becomes an automated measurement system for investigation of any type of noise environment.

dBtrig32 Psychoacoustics module :

Overall levels used in the field of airport noise assessment (PNL, EPNL) are calculated by the software and can be displayed and stored with other global values. Similarly, the Loudness level according to ISO532B (Zwicker) is also computed in real-time.



Channel	Type	dB	Leq	Lmin	Lmax	L95	L50	L50	L10	L5
Usine A	Leq	A	87.9	73.1	118.6	77.2	79.1	84.2	90.6	92.8
Usine A	Peak	Leq	84.3	78.4						
Usine A	1/3 Oct 20Hz	LN	80.0	54.5	119.0					
Usine A	1/3 Oct 25Hz	LN	80.0	67.2	113.3					
Usine A	1/3 Oct 31.5Hz	LN	80.5	60.3	111.4					

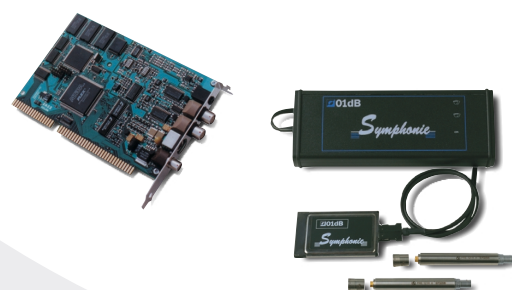
File	USINE CMO
Location	Usine A
Weighting	A
Data type	Leq
Start	2004/08 10:02:31:000
End	2004/08 16:42:54:000
1/3 Deviation Leq (dB)	2.1 dBA
Quickest Period (dB)	
Start	2004/08 15:33:31:000
End	2004/08 16:03:31:000
Level	89.7 dBA
L95	85.7 dBA
Level L95	4.0 dBA
Quickest Period (dB)	
Start	2004/08 10:02:31:000
End	2004/08 16:42:54:000
Level	90.2 dBA
L95	86.2 dBA
Level L95	14.0 dBA

Source	dB	%	dB	dB	h.m.s.ms
Pressure	89.7	0.7	74.9	101.6	00:07:15:200
Remain	93.3	2.3	79.1	118.6	00:02:39:700
Remaining sources	95.9	3.1	74.8	109.3	00:03:10:700

dBenv32 hardware

dBENV32 is compatible with Symphonie and Jazz acquisition units with similar specifications.

Symphonie is type 1 approved to IEC651 and IEC804 by LNE and PTB. Digital filtering meets class 0 specifications of IEC1260 for both systems.



dBTRIG32

Measurement System	
Hardware platform	Symphonic, Jazz
Accuracy	Type 1 according to IEC 651 and IEC 804 Type approval at PTB and LNE (Symphonie and dBTRIG)
Measurement range	Typically 20-140 dB up to 6 ranges
Protection	Auto-reboot facility to protect against power failure
Sound Level Meter Mode	
Measured	Slow, Fast, Impulse, short Leq, Peak
Time step	From 20 ms to 1s
Weightings	A, B, C, G, Lin, Independent peak weighting
Trigger	Manual, clock, according to user-defined periods
Audio Recording	
Pass band	Up to 20kHz
Duration	From 1s to 80min (20kHz) or 60 days (40Hz) per record
Number	Only limited by hard disk size
Trigger	Manual, clock or threshold with pre-trigger facility
Threshold	According to monitored level (global or frequency band) with many conditions
Frequency Analysis	
Spectra	Octaves or third octaves from 20 Hz to 20 kHz by digital filtering (IEC1260 class 0)
Time step	Same as global values
Storage	Continuous or threshold conditions, average spectra on events
Data Storage	
Storage	Free or daily/weekly regular periods
Capacity	Only limited by hard disk size
Example	< 16 MB of data corresponds to 3 months of Leq (1s)
Calibration	
Type	Manual or automatic
Automatic	Start and end of each measurement session, Periodic check possible
Options	
2 channels	Same specifications on both channels with independent settings (except time step and audio pass band)
115dB max. dynamic Vibrations	From 20dB to 135dB 1/3 octave spectra down to 1Hz, ISO2631 weightings, pass band of signal recording down to under 40Hz (upper limit)
Psychoacoustics Expert mode	Loudness (Zwicker ISO 532B), PNL, PNLT in real-time Advanced triggering with user defined multiple threshold conditions (audio, source code, freq. analysis, alarms)
External control	DDE interface

dBTRAIT32

Display	
Type	Time history, spectra, multispectra of any measured value over user-defined periods
Time step	Selectable (recombination of short Leq)
Cursors	2 cursors with zoom, Leq between cursors, etc.
Curves	Multi-curves' display, automatic autoscale
Source Identification	
Type	Manual or automatic (time or threshold conditions)
Coding	Source ranking, event detection and elimination
Time and Frequency Analysis	
Type	Tables or color graphics
Results	Overall Leq and statistical analysis over selectable time periods, and for noise events
Sources	Leq by source and occurrence
Statistics	Cumulative and probability distribution, user defined indices
Periods	Loudest and quietest periods
Regulation	Occupational noise : noise exposure and OSHA indices
Spectra	Octave and third octave, Instantaneous, minimum, maximum, weighted, unweighted, etc.
Report	Direct to printer, copy/paste to standard office software
Advanced Processing	
Time	Detailed analysis of audio records (time step down to 1 ms)
Decimation	Undersampling of audio records
Options	
Script	Automatic processing scripting tool
1/N octave	Multispectrum analysis (N from 6 up to 48) of audio records (time step down to 1 ms)
Audio Playback	
Type	Direct replay of audio records from time history plot
Hardware platform	Symphonic, Jazz or PC multimedia sound system
PC set-up	
Computer Configuration	
Minimum	Pentium 75 with 16MB RAM and Windows 95/98 (also Windows NT 4.0 + Service Pack 3 for dBTRAIT32)



dBenv32

Benefits

2 channels

Type 1 approved with Symphonie

Audio recordings

Real time

Multitasking

Psychoacoustics

Expert system

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