PRODUCT DATA

Noise Monitoring Software, version 7.0 — Types 7802 and 7840

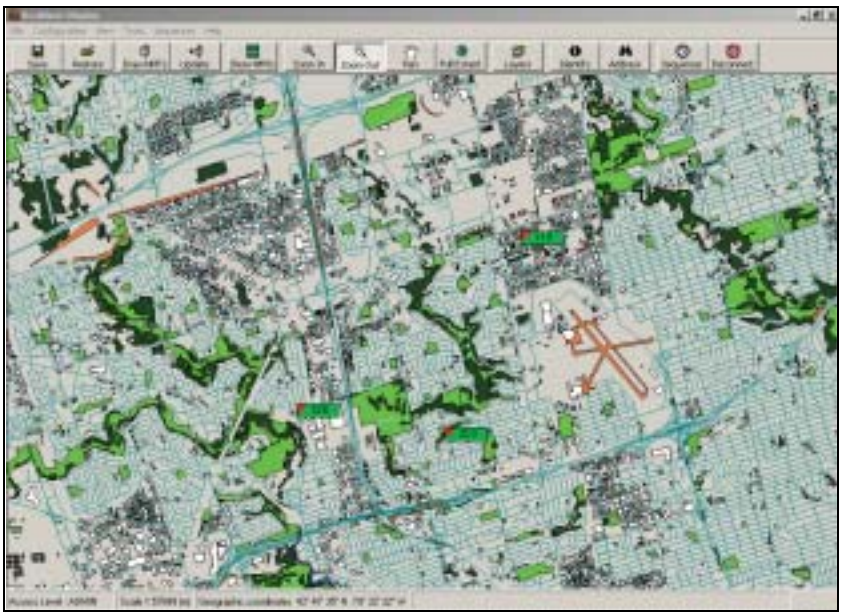
The basic software packages – Noise Monitoring Software Types 7802 and 7840 – are the central point in any Brüel & Kjær noise monitoring system. A typical noise monitoring system consists of a Noise Acquisition Server and a number of permanently and/or temporarily installed Noise Monitoring Terminals (NMTs). Data from permanently installed NMTs are downloaded at user-defined time periods, to the server via standard modems and public telephone lines. All data are sorted and stored in the system's databases, ready for immediate presentation.

USES

- Monitors airport, city, road, train and other environmental noise
- Downloads data automatically or manually from outdoor NMTs
- Stores downloaded data in a database
- Presents tabular and graphical reports on airport, city, road, train and other environmental noise
- Displays real-time noise situations at any site monitored by an on-line NMT
- Provides weather data to accompany noise data (requires Weather Data Option)

FEATURES

- Runs under Microsoft® Windows® 2000 or Windows® XP
- Economical use of public telephone lines
- Statistical reports based on fixed and user-definable periods
- Tabular and graphical reports
- Multi-user access via networking
- Supports the use of a GPS-unit for location information



Introduction

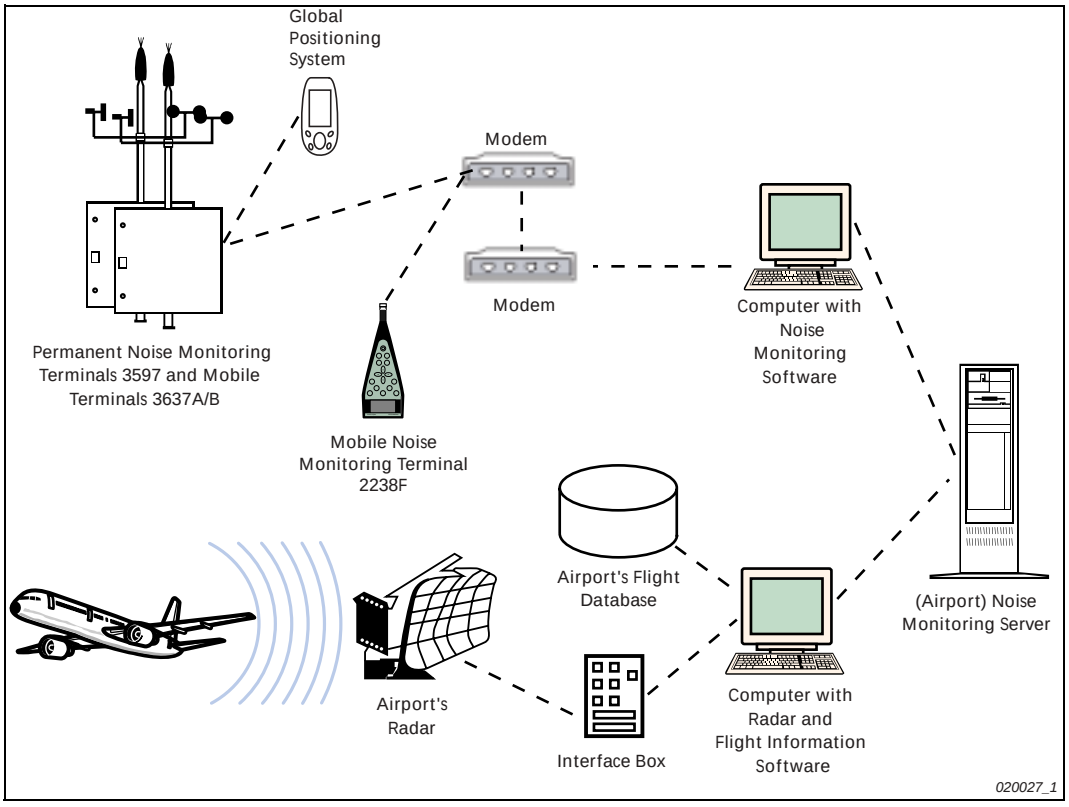
The Noise Monitoring Software is installed on the Noise Acquisition Server running Windows® 2000 or Windows® XP. The software is linked via a standard auto-dial modem and public telephone lines to permanently installed 'dial-up' Noise Monitoring Terminals (NMTs). The software also supports temporarily installed NMTs whose data are transferred using a modem and GSM telephone.

The outdoor installation of a Brüel & Kjær noise-monitoring system comprises a number of NMTs placed in, or near, sensitive residential areas. Since each NMT is capable of processing and storing data for many days, the frequency of downloading data to the central PC is kept to a minimum, e.g., once per day for permanent NMTs and once per hour for mobile NMTs. This keeps telephone costs down to a minimum. If leased lines are available, the system also offers real-time presentation of data.

Configuration of the Noise Monitoring System

Noise Monitoring Software, Types 7802 and 7840, handles the setup of each connected NMT. The setup covers, for example, calibration levels/times, detailed setup for event recording (SETL[1], NSETL[2], SENL[3], Min. and Max. duration), percentiles and hourly penalty. Furthermore, communication parameters, defining measurement and data-retention periods can be edited.
Before each download, the system verifies that system settings are consistent with that stored locally for each attached NMT. If a setting is changed, the system automatically updates the NMT. The NMT can be a Type 3597 C, 3637 A, 3637 B and/or Type 2238 F model.

Fig. 1
Basic noise-monitoring system

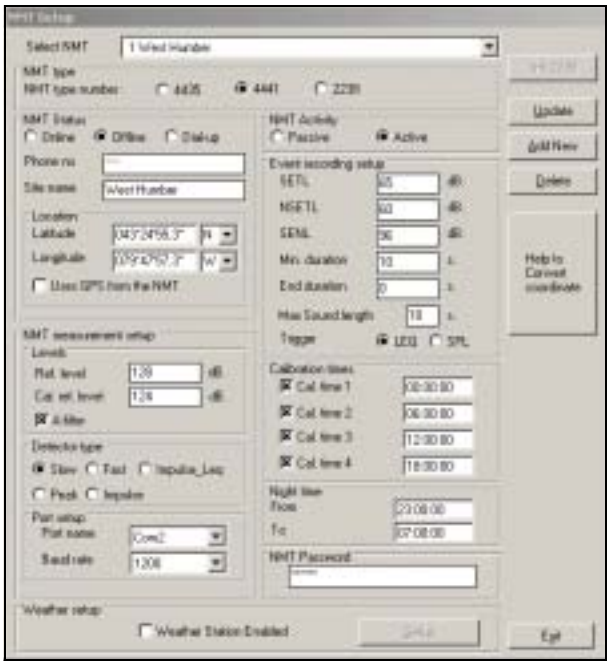


[1] SETL: Single Event Trigger Level
[2] NSETL: Night Single Event Trigger Level
[3] SENL: Single Event Noise Exposure Level

Downloading and Storing Data

By running a dedicated program within the Noise Monitoring Software, it is possible to connect to one or more of the NMTs. All stored data in an NMT is downloaded to the Noise Acquisition Server through the chosen communication line.

Fig. 2
NMT configuration options



The amount of data downloaded can be customised, ensuring optimal download transmission time. The system can download data through all types of communication lines, e.g., PSTN, ISDN or GSM.

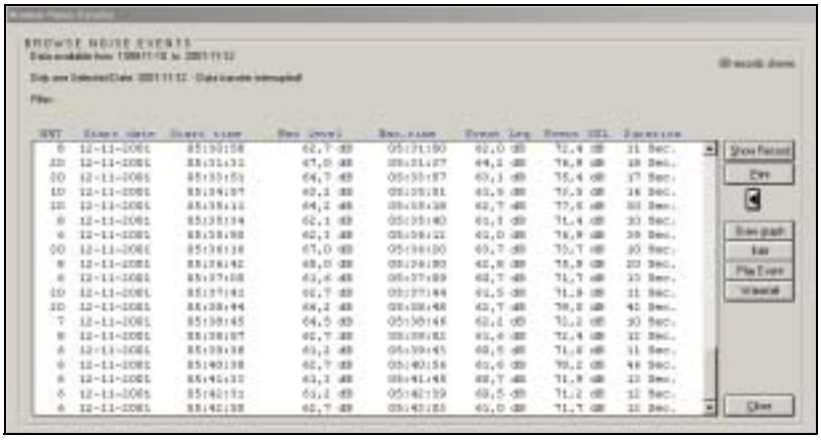
The Noise Acquisition Server stores the downloaded data in separate data folders. For example, downloaded calibration reports are stored in a specific folder named *Calibration*.

Database Lookup

The Database Lookup function enables you to examine in detail the contents of all noise data recorded in the database. You can extract Calibration, Short and Statistical reports (level and cumulative level distributions) based on periods of 1 hour, 24 hours, 1 month, and 7 other user-defined periods. With Type 7802, you can also extract Events.

The depth of detail available is illustrated, e.g., when looking up the Events database. An Event is registered when the sound level exceeds a predefined noise level or SETL for a predefined minimum duration at any given NMT.

Fig. 3
List of noise events – requires Type 7802



Data for each event can be displayed on-screen in three ways:

- Summarised report (Show Record button)
- Event in 2D graph (Draw graph button)
- Event in 3D graph (waterfall button)

Fig. 4
2D graph of a noise event – requires Type 7802

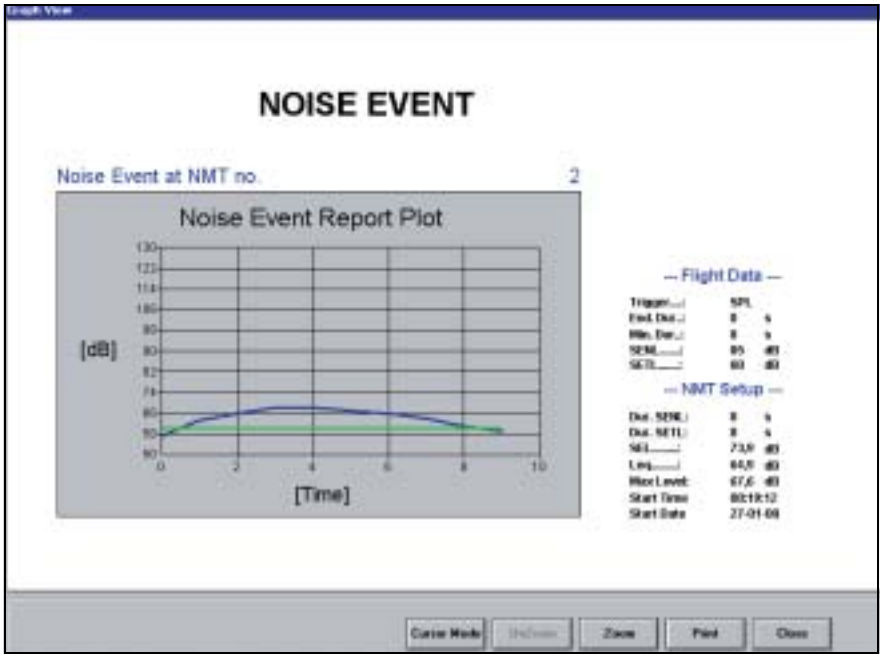
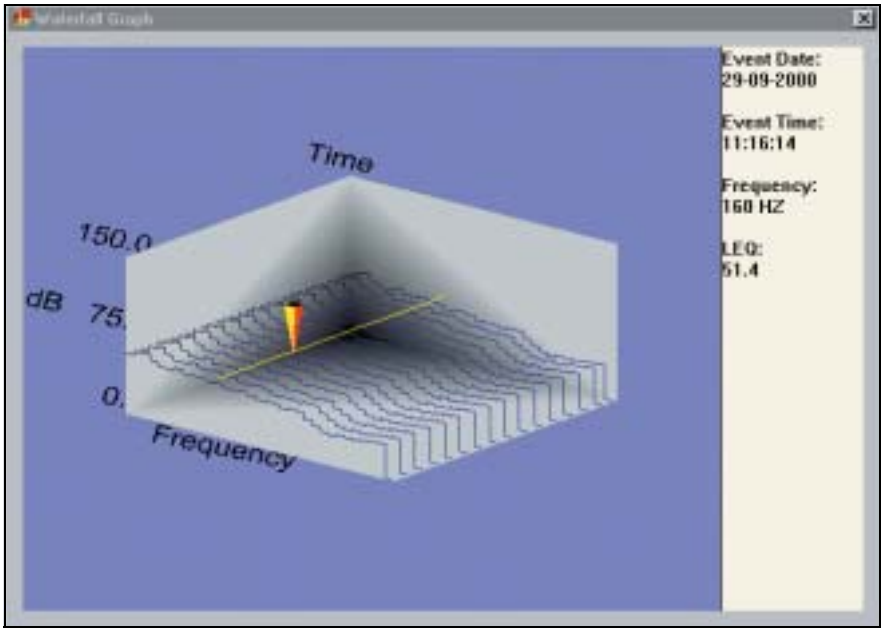


Fig. 4 shows a 2D graph of a noise event. A flexible zoom facility is provided as well as a cursor mode to 'pick-off' values along the curve. Colours and accompanying data can be chosen according to your wishes.

It's also possible to see the event in 3D, adding the frequency information as a third dimension. This graph can be tilted in all directions.

Fig. 5
3D waterfall graph of a noise event – requires Noise Monitoring Terminal Type 3597



Noise Monitoring Terminal Type 3597 C not only calculates and stores data regarding the noise event, but also stores the noise event as a sound file (in mp3-format). This allows you to listen to the recording and identify which kind of noise source created the event, just by clicking the **Play Event** button. This facility, together with the frequency information, allows you to easily find events created by special noise sources (see Fig. 3).

Mobile NMT Type 2238 F stores just one-second L_{eq} values plus two channels of additional information, e.g., wind speed and direction.

Real-time Display

Real-time Display shows maps (in GIS- or bitmap-format) of the area being monitored and pinpoints the positions of the NMTs. The setup details of the selected NMT are also given. Real-time data updated at one-second intervals can also be appended if required. Fig. 6 shows an example of a real-time display against the background of an airport map.

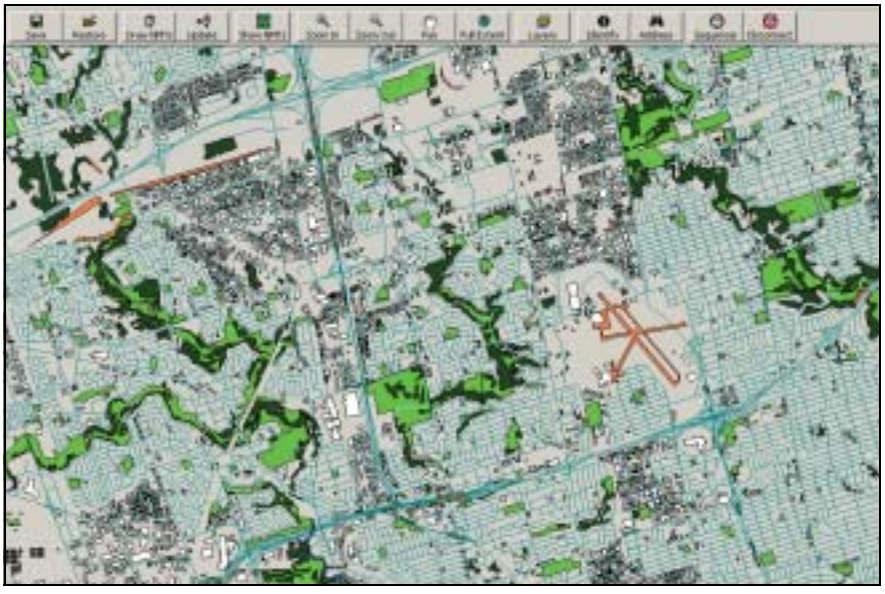


Fig. 6
Airport map and real-time display of data for a selected NMT

You can also switch to a Graphic Noise Display for the selected NMT, as shown in Fig. 7:

- the noise barometer at the top shows the current ambient noise level
- the chart on the left shows the current distribution of noise levels based on a class width of 5 dB
- the chart in the right-hand frame is a plot of noise level against time for the most recent event
- the bottom curve is a ‘strip chart’ showing the previous 4 minutes of ambient noise level

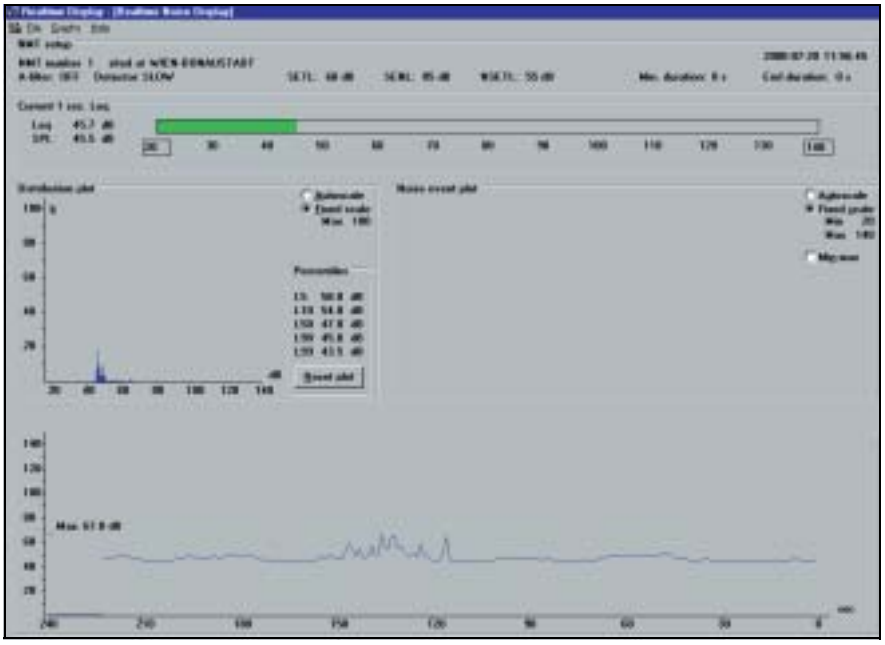


Fig. 7
Real-time Graphic Noise Display

Specifications – Noise Monitoring Software Types 7802 and 7840

Software

The software runs under Microsoft® Windows® 2000 or XP. The software is supplied on a CD-ROM and is security protected. The software supports networking for multi-user access.

Number of Noise Monitoring Terminals (NMTs) Supported (to a maximum combined total of 99)

Type 3597: maximum 99 and/or
Type 2238 F: maximum 20 and/or
Type 3637 A/B: max. 99

Passwords

Three passwords are used to gain three levels of user-privilege access

Event Detection and Recording

Type 7802 only
(Including Type 7840 upgraded with BZ 5399)

Data Collection

PERMANENT INSTALLATION
At a user-specified time, e.g., automatically once every 24 hours

TEMPORARY INSTALLATION
Data are collected from each NMT using a modem and GSM telephone, or directly via cable

Data Stored

- Calibration results
- Event reports – Type 7802 only
- Event Spectra – Type 7802 and only for NMT Types 3597 C and 3637 A/B
- Statistics for hourly, 24-hourly and monthly periods
- Statistics for seven additional user-defined periods (minimum 1 hour)
- Short reports for a user-specified interval (1, 2, 3, 4, 5, 6, 10, 12, 20 or 30 minutes)
- GPS (Global Positioning System) information for portable units Types 3637 A and 3637 B

Data Storage

All data are stored in the system's extensive database with import/export data facilities and user-definable fields for supplementary data, e.g., weather and radar. The user decides how long the data is retained

Computer Requirements

Microsoft® Windows® 2000 or XP Operating System
300 MHz Pentium® III processor
128 Mbyte RAM
SVGA graphic card (1024×768 pixels) 256 colours
10 GB hard disk
RS – 232 port
Modem (analog or ISDN, min. 56 KB/s)

Ordering Information

Type 7802	Airport Noise Monitoring Software
Type 7840	Noise Monitoring Software

Optional Accessories

Type 2238 F	Hand-held Noise Monitoring Terminal
Type 3597 C–001	Basic NMT unit for Types 3597 C and 3637 A/B
ZG 0430	Optional power supply for Type 3597 C–001
Type 3597 C	Noise Monitoring Terminal with temperature-controlled Cabinet including power and battery back-up + Type 4184
BZ 5399	Update of Type 7840 to Type 7802 (Event Records)
BZ 5400	Export of data to Type 7820
Type 3631	NMT with battery power for 3 days for Type 2238 F
Type 3637 A	Portable Noise Monitoring Terminal with GPS and Microphone Type 4184
Type 3637 B	As for Type 3637 A but with Microphone Type 4198

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