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.

Brüel & Kjær
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.

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\(^{1}\) SETL: Single Event Trigger Level
\(^{2}\) NSETL: Night Single Event Trigger Level
\(^{3}\) SENL: Single Event Noise Exposure Level
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.

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.

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.

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 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.

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
## 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)

<table>
<thead>
<tr>
<th>Type</th>
<th>Maximum NMTs Supported</th>
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<tbody>
<tr>
<td>Type 3597</td>
<td>99 max. and/or</td>
</tr>
<tr>
<td>Type 2238 F</td>
<td>20 max. and/or</td>
</tr>
<tr>
<td>Type 3637 A/B</td>
<td>max. 99</td>
</tr>
</tbody>
</table>

### 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

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
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<tbody>
<tr>
<td>Type 7802</td>
<td>Airport Noise Monitoring Software</td>
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<tr>
<td>Type 7840</td>
<td>Noise Monitoring Software</td>
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### Optional Accessories

<table>
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<tr>
<th>Type</th>
<th>Description</th>
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<tr>
<td>Type 2238 F</td>
<td>Hand-held Noise Monitoring Terminal</td>
</tr>
<tr>
<td>Type 3597 C–001</td>
<td>Basic NMT unit for Types 3597 C and 3637 A/B</td>
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<tr>
<td>ZG 0430</td>
<td>Optional power supply for Type 3597 C–001</td>
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| 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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