

UNATTENDED NOISE MONITORING

NOISE MONITORING TERMINAL (NMT) TYPES 3597 C AND 3637 A/B

An NMT consists of a weatherproof microphone unit, a microphone power supply, a noise level analyzer, a system controller and a weatherproof cabinet. The NMT is the front-end of an unattended noise-monitoring system, and monitors environmental noise from airports, construction sites, and densely trafficked areas where noise is a major concern.

Types 3597 C and 3637 A/B:

- Check the calibration of the weatherproof microphone unit
- Correctly measure the signal from the weatherproof microphone unit
- Provide the necessary frequency and time weightings
- Process noise data
- Store the results of several months of monitoring
- Transmit data via RS-232, modem or LAN interface

USES

- Airport noise monitoring
- City noise monitoring
- Train noise monitoring
- Industrial noise monitoring
- Noise surveys

FEATURES

- Continuous all-weather monitoring
- 1/2- or 1-second L_{eq} and SPL measurements
- Dynamic range of 110 dB
- Automatic event detection on absolute or floating triggers
- 1/3-octave real-time analysis
- Sound recording
- Weather-data monitoring (optional)
- Remote verification of the measurement chain using CIC check and/or a built-in loudspeaker (except 3637 B)
- On-site operation via RS-232

- Remote operation via public telephone lines, cellular phones, ISDN

BRIEF SPECIFICATIONS

Dynamic Range: 110 dB

Memory Capacity: Standard configuration consists of a 10 GB hard disk giving at least three months storage space

Modem Interface: RS-232

Optional: Configuration for ISDN

Ambient Conditions

Weatherproof Microphone Unit

Type 4184:

Operating Temperature Range: -40 to +50°C (-40 to 122°F)

Operating Relative Humidity Range: < 100%

Maximum Relative Humidity: 90% at +40°C

Weatherproof

Cabinet and Contents

Operating Temperature Range: -30 to +50°C (-22 to 122°F); lower limit extended down to -40°C (-40°F) with optional extra heating unit WB 1128

Operating Relative Humidity: Max. 90% at +30°C

Contents weather-protected to IP 55 of IEC 529 and NEMA 3R



ORDERING INFORMATION

Type 3597 C Permanent Noise Monitoring Terminal consists of:

Type 3597 C-001: Basic NMT*

Type 4184: Weatherproof Microphone Unit

UA 1635 A: Temperature-controlled NMT Cabinet and battery, cables etc.

Type 3637 A Portable Noise Monitoring Terminal consists of:

Type 3597 C-001: Basic NMT*

Type 4184: Weatherproof Microphone Unit

KE 1008: Black Suitcase Pelican 1620 and GPS Receiver, batteries, cables

Type 3637 B Portable Noise Monitoring Terminal consists of:

Type 3597 C-001: Basic NMT*

Type 4198: Outdoor Microphone Unit (10 m Cable included)

KE 1008: Black Suitcase Pelican 1620 and GPS Receiver, batteries, cables

*Type 3597C-001 is the analyzer and controller consisting of:

Type 4441: Noise Level Analyzer

UL 0219: Computer

ZM 0069: Modem

VU 1033: LCD Display

and power supplies and cables

Accessories

Quoted on request

WEATHERPROOF MICROPHONE UNIT TYPE 4184

Weatherproof Microphone Unit Type 4184 is an outdoor unit that complies with Type 1 requirements. It functions correctly at up to 96% relative humidity, and in temperatures from -40 to +50°C. Its precision condenser microphone is buried and fully protected within the unit's body. It has spikes placed at the top of its windscreen to deter birds.

The weatherproof microphone unit, which is powered by Microphone Power Supply ZG 0418, has built-in charge injection calibration (CIC) and test sound-check facilities, making use of the 1000 Hz calibration signal provided by Type 4441 to perform routine electrical and acoustical calibrations and checks. CIC is a patented technique used for remotely moni-

toring the entire measurement setup including the microphone, preamplifier and connecting cable. The actual attenuation of the return signal relative to the calibration signal is indicated on the calibration chart. The system controller can initiate up to four automatic, routine calibrations and probe checks per day at user-specified times. Results are stored in its database.



OUTDOOR MICROPHONE UNIT TYPE 4198 AND OUTDOOR MICROPHONE KIT UA1404

Type 4198 is a weatherproof microphone and preamplifier assembly that meets IEC 651 Type 1 and ANSI S1.4 Type 2 specifications. Use it in any situation where you have to make precise outdoor sound measurements.

Type 4198 is suitable for semi-permanent, unsupervised outdoor installation. In addition, Outdoor Microphone Kit UA 1404 includes all of the protective features of Type 4198, but without the microphone and

preamplifier. It enables you to weatherproof your Falcon Range® microphones and preamplifiers. Both the unit and kit enable you to make measurements that are protected against wind, rain, and perching birds.

NOISE MONITORING TERMINAL TYPE 3631

For simple broadband monitoring, Type 3631 offers an NMT based on Sound Level Meter Type 2238F and low-cost Weatherproof Microphone Type 4198. The system's dynamic range is 80dB and the sound level meter complies with the Type 1 standard. The SLM meas-

ures 1 second broadband L_{eq} and is able to store 3 days' worth of measurements. It also includes 2 auxiliary channels that can be used for recording weather information. Normally, downloads occur 3 times a day. Type 7802 or Type 7840 monitoring software installed in the

system controller can be set up to calculate the 1 hour reports and detect events from the data. The SLM must be calibrated by hand. Additionally, the SLM in Type 3631 is powered from a rechargeable battery, allowing it to run for 3 days.



BRIEF SPECIFICATIONS

As for Noise Monitoring Terminal Type 3597

Dynamic Range: 80 dB

Broadband Values: L_{Aeq} , L_{Ceq} OR L_{Lineq}

Auxiliary Input: 2 x DC-input channels for weather information

Memory Capacity: 3 days (7 with Aux. channels deactivated)

Modem Interface: RS-232

Capacity of 12V Rechargeable

Battery: 3 days

ORDERING INFORMATION

Type 3631 Portable Noise Monitoring Terminal with Type 2238F consists of:

Type 2238 F: Logging Sound Level Meter

UA 1404: Outdoor

Microphone Kit

Type 3592: Yellow Suitcase

and battery, tripod, cables, etc.

Optional Accessories

Type 7802: Noise Monitoring Software

Type 7804: Radar Data Option

WQ 0989: Weather Station



UNATTENDED NOISE MONITORING

NOISE MONITORING SOFTWARE 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. 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 database, ready for immediate presentation.

USES

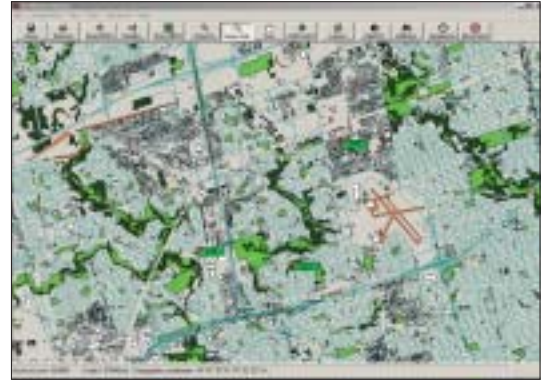
- Monitors airport, city, road, train and other environmental noise

FEATURES

- Runs under Microsoft®

Windows® 2000 or XP

- Economical use of public telephone lines
- Statistical reports based on fixed and user-definable periods
- Multi-user access via networking
- Supports the use of a GPS unit for location information
- Event reports – Type 7802 only
- Event spectra – Type 7802 only and only for NMTs Type 3597 and 3637
- Downloads data automatically or manually from outdoor Noise Monitoring Terminals
- 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 Noise Monitoring Terminal
- Provides weather data to

accompany noise data (requires Weather Data Option)

FLIGHT TRACKING SOFTWARE TYPE 7804

Flight Tracking Software Type 7804 enables the noise monitoring system to correlate aircraft movements with noise events recorded by Brüel & Kjær's range of Noise Monitoring Terminals. It provides data on track violations and singles out offending aircraft and airlines. It also provides data for comparative studies, for example, between two airlines operating with similar aircraft. Real-time and historical displays of flight tracks provide quantitative evidence of compliance or violation of noise abatement procedures. Type 7804 software is able to interface to existing radar systems

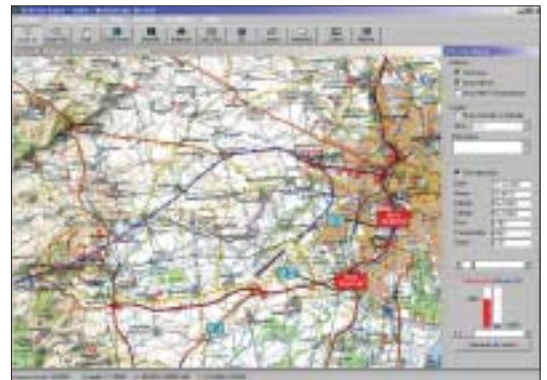
and also via disk or other communication channel.

USES

- Correlates aircraft noise with aircraft movements
- Identifies track violations

FEATURES

- Runs under Microsoft® Windows® 2000 or XP
- Multi-user access via network
- Fully integrated with ArcView® GIS from ESRI
- Monitors noise abatement procedures
- Displays Gates, Corridors and Cylinders



- Calculates aircraft/airline noise statistics
- Displays flight tracks on detailed layer-based maps
- Presents real-time flight tracks

REPORTING MODULE TYPE 7832

Reporting Module Type 7832 provides dedicated data management and reporting for Brüel & Kjær Noise Monitoring Systems. A reporting wizard function guides you all the way – from report selection, through creating data selection criteria, to the end result. The reports can be attached to an e-mail or saved in html format so they can be used on the Internet.

USES

- Reporting based on the data collected by Noise Monitoring Software Type 7802 and Flight-data Option Type 7804

FEATURES

- Fast Reporting – Report Wizards guide you through each step
- Displays measurement results in graphical or tabular format

- Generates, views and prints impressive reports in colour
- Exports reports internally or externally in all well-known Microsoft® Office formats
- Additional reports can easily be added
- Reports are created in the Crystal Reports™ environment
- Company logo can be shown on each report

- Reports can be dragged and dropped into a list that can be printed for a chosen time period
- Create or modify all reports (requires Crystal Reports™ license), or let Brüel & Kjær create additional customised reports

COMPLAINTS MODULE TYPE 7833

Complaints Module Type 7833 provides dedicated data management, analysis and reporting of noise complaints made to airport operators. The reports can be easily exported to other applications, attached to an e-mail or saved in html format.

USES

- Systematic registration of complaints in a database
- Manages the workflow of the airport's noise abatement office

FEATURES

- 32-bit software running under Windows® 2000

- Link to Microsoft® Word
- Tabular and graphical reports made in Crystal Reports™ environment
- Address matching using ArcView® GIS maps
- Built-in analysis tool to identify aircraft creating excessive noise – link the information to the stored complaint record

- (requires installation of Noise Monitoring Software Type 7802 and Flight Tracking Module Type 7804)
- Produces complaint reports and statistics
- Customises report layouts to your own corporate design

INM LINK TYPE 7834

INM Link Type 7834 builds a bridge between two worlds – real measurements made by Brüel & Kjær's Airport Noise Monitoring System (ANM) and the Integrated Noise Model (INM) developed by the FAA. INM is the prediction tool most widely used by airports throughout the world. INM Link extracts the flight data collected by the ANM system and inputs it into the INM prediction program. It is possible to calculate a far more accurate noise contour

map based on the real flight traffic at the airport rather than traditional maps based on simplistic information such as SIDs and STARs. INM Link offers a variety of data selection and integration options. The Flight Distribution Editor allows you to make simulations. For example, you can change the flight or runway parameters, change the flight mix or simulate the effect of increased traffic, special types of flight, or check-out the effect of moving traffic from one run-

way to another. And all based on real flight traffic data!

USES

Link between Brüel & Kjær's Airport Noise Monitoring System and the Federal Aviation Administration's Integrated Noise Model, version 6.1

FEATURES

- Calculates a far more realistic noise contour map based on the real flight traffic at the airport

- Imports all flight tracks into the INM prediction model, or divide the total flight into a number of mean tracks thus speeding up the calculations when generating a noise contour map in the INM program
- Uses the Flight Distribution Editor to make fast simulations. Choose more simplistic analysis modes to make simulations of the "what/if?" type.