



# Wide Range Measurement From **1 to 20 000 Hz**



**Free trial  
optional programs**  
now available on  
our website

**Sound Level Meter  
Class1**

(With low-frequency sound )  
measurement function

**NL-62**

# Measure Frequencies from 1 to 20 000 Hz. Measure Low-Frequency Sound and Noise with a Single Unit.

With the auto store function included as standard, as well as a timer function and external power supply support, the NL-62 is ideal for continuous measurement. Designed for intuitive ease of use, there is no more need to consult the manual during a measurement. The large 3-inch color screen is bright and easy to read. Sudden rainfall is also no problem, thanks to the water-resistant construction. Using the optional octave and 1/3 octave band real-time analysis program NX-62RT (under development), the unit can even operate as a frequency analyzer. The High-Precision Sound Level Meter NL-62 supports all your measurement needs.

255 mm  
10 inch



Equipped with non-slip rubber grips

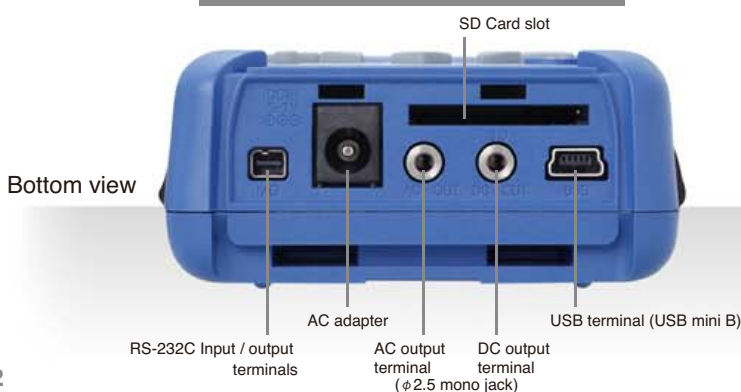
## Large color LCD screen

Three-inch LCD screen with a touch panel  
High resolution screen is easy to see indoors or outdoors and even in the dark.



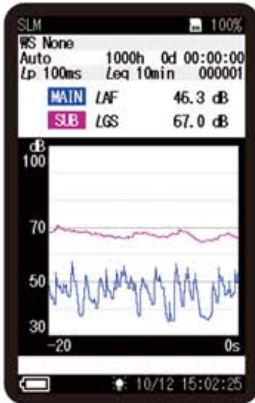
(Full scale)

### Variety of I/O Connections

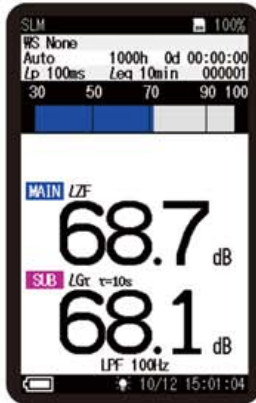


## No paper manual is needed.

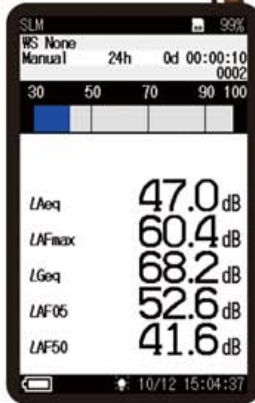
User instructions and a help function can be easily accessed on the device.



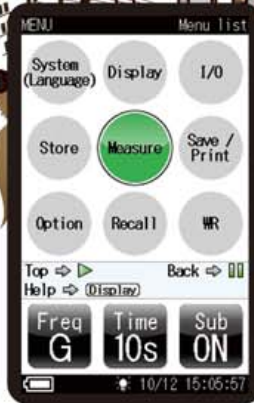
Measurement Display (Level-Time graph)



Measurement Display (low-frequency sound)



Parameter Screen



Menu screen



Help screen

## Water-resistant (Except for the microphone)

Guaranteed water-resistant to at least level IP54 (resistant to spraying water). Helps reduce failures caused by sudden rain showers.



\* Mounting the All-weather windscreen or rainproof windscreen helps raise the water-resistant performance of the entire unit, so that the microphone will meet IPX3 specifications.

## Use of rechargeable batteries

In these models it is possible to use rechargeable batteries which make these meters environmentally-friendly. 16 hour continuous measurement is possible (when using eneloop® or dry alkaline batteries).



- Please use the dedicated charger to charged eneloop® batteries.
- When using eneloop batteries, please read the eneloop® battery instruction manual.
- eneloop® is a registered trademark of Panasonic group.

## Continuous detailed measurements for one month

This meter can be used to conduct long-term measurements, such as environmental measurements. (If an AC adapter is used)

Duration of recording

**NL-62**

1000 h (approx. one month)

Previous model

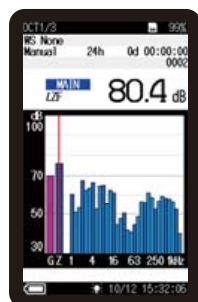
200 h (approx. one week)

Example of detailed recording

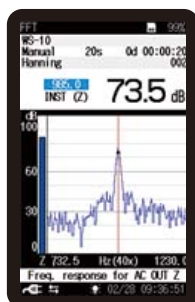
If the  $L_p$  is measured at 100 ms intervals and the  $L_{eq}$  is simultaneously measured at 10 min intervals over a 24 h period, the total size of accumulated data is approximately 74 MB (reference value)

## Functionality can be extended by a range of options

Add long-term data recording capability and frequency analysis function



1/3 octave band analysis screen (low range)



FFT analysis screen (x40)



Data management screen of AS-60 software

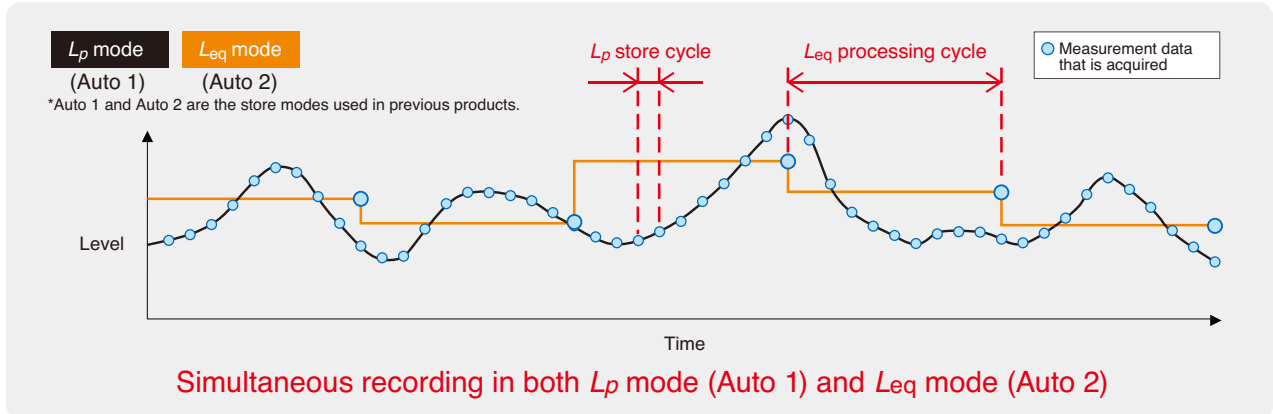
# Program function list

## Auto store function

This function enables continuous measurement in  $L_p$  mode (instantaneous SPL) and  $L_{eq}$  mode (equivalent continuous SPL) to be conducted simultaneously.

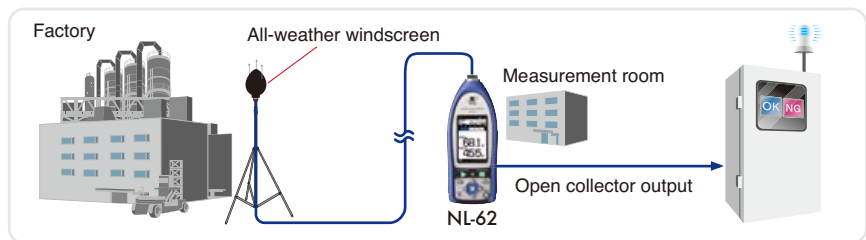
Total measuring time of Auto store function	Up to 1000 h	Equipped with a timer function
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$L_p$  mode (instantaneous SPL) and  $L_{eq}$  mode (equivalent continuous SPL) concept



## Comparator function

This function turns on when the open collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).



## Continuous data output function

This function enables the continuous acquisition of instantaneous values and processed values during both USB and RS-232C communication. This is a convenient function for users who can design their own control programs, where data has to be transferred continuously from the sound level meter to the computer.

# Optional program function list

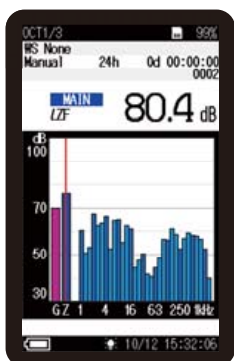
## Octave, 1/3 octave real-time analysis program NX-62RT



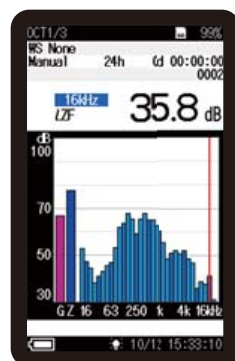
The NX-62RT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.



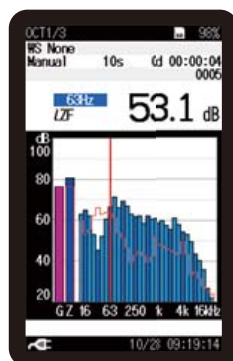
By adding the NX-62RT program to the NL-62, octave band and 1/3 octave band real-time analysis can be realized. Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. NC curve graph display and NC value calculation/display are also possible.



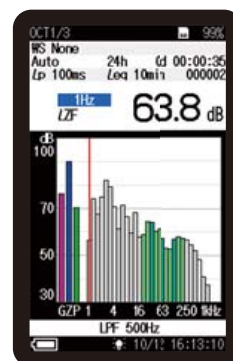
1/3 octave band analysis screen (low range)



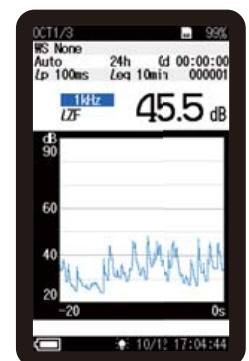
1/3 octave band analysis screen (high range)



Overlay analysis screen



1/3 octave band analysis screen (combined bands)



Measurement screen (Level-Time graph)

## Waveform recording program NX-42WR



The NX-42WR is supplied on the 2 GB SD card. The 2 GB SD card can be used as a memory card after installing the program.



This function enables users to record sounds and processing sound to levels simultaneously. Recorded data can be played on computer and used for frequency analysis.

(Uncompressed waveform WAVE file)

Sampling at 48 kHz, 24 kHz, 12 kHz, Selection of 24 bit or 16 bit

Maximum recording time (16 bit)

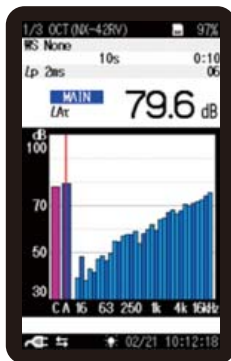
Sampling frequency	Memory card	512 MB	2 GB	32GB
48 kHz		1 h	4 h	79 h
24 kHz		2 h	9 h	158 h
12 kHz		4 h	18 h	315 h

## Reverberation Time Measurement Program NX-42RV

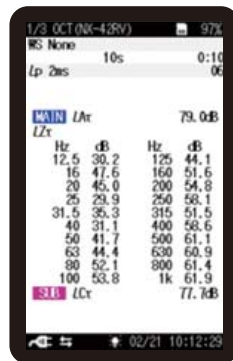


The NX-42RV is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.

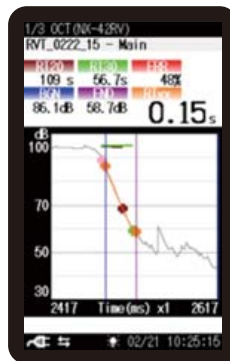
By adding the NX-42RV program to the NL-52/42, reverberation time measurements can be performed. The measurement method is the interrupted noise method. This program allows storage of reverberation time decay curves, T20/T30 calculation, Txx calculation (reverberation time calculation based on a user-defined interval) and averaged reverberation time results displayed on the SLM screen.



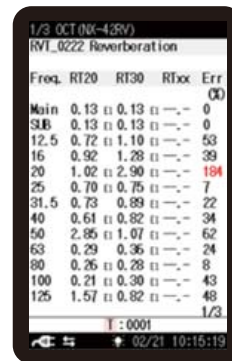
Measuring screen (graph)



Measuring screen (numeric)



Reverberation time decay curve screen



Result screen (T20/T30/Txx)

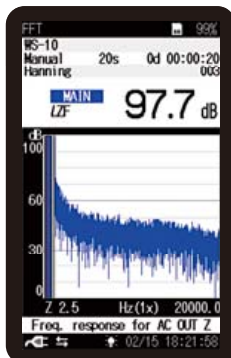
## FFT analysis program NX-42FT



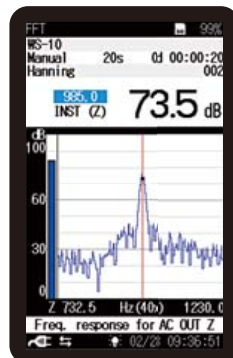
The NX-42FT is supplied on the 512 MB SD card. The 512 MB SD card can be used as a memory card after installing the program.



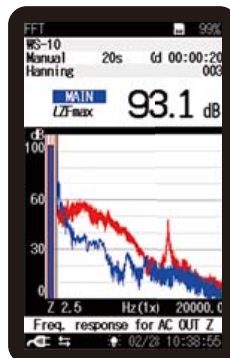
By adding the NX-42FT program to the NL-62, FFT analysis can be performed. The analysis frequency range is 20 kHz, with 8 000 spectrum lines (200 displayed). Saved analysis results can be loaded and shown in an overlay graph display together with current analysis data. Maximum zoom ratio is x40, and the top list screen can show up to 20 lines.



Analysis screen (x1)



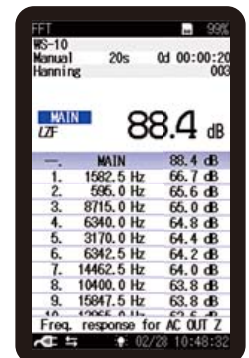
Analysis screen (x40)



Overlay analysis screen

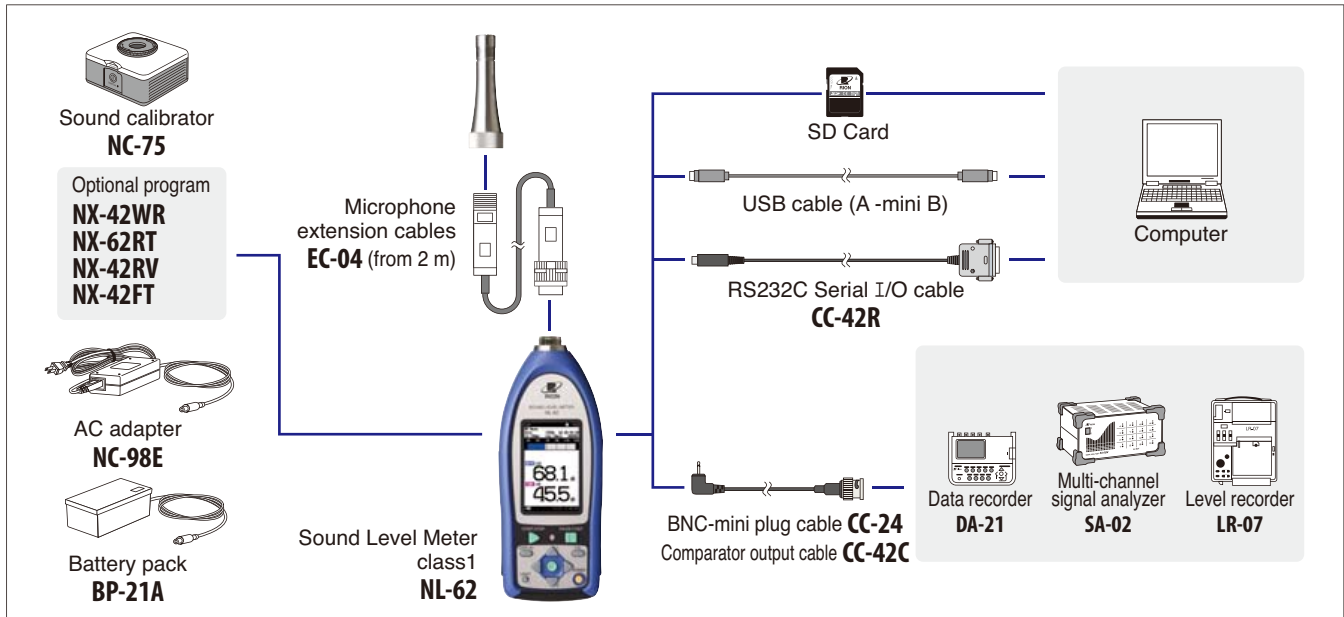


Linear average screen



Top list screen

## System construction



## Peripheral devices

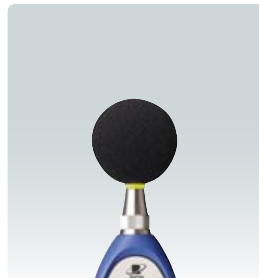
### All-weather windscreen WS-15



This windscreen is designed for outdoor installations. It helps to reduce wind noise and is equipped with rainproof features that satisfy the **IPX3 water-resistant** specifications. It is used with a microphone extension cable.

(Mounting adapter WS15006 required separately)  
(For All-weather windscreen WS-15, use of ST-81 is recommended.)

### Rain-protection windscreen WS-16



This screen protects the microphone against rain for a short period of time. The rainproof performance of this windscreen is designed to satisfy the **IPX3 water-resistant** specifications.

### Sound calibrator NC-75



This Sound calibrator conforms to IEC 60942 (JIS C 1515), class 1, providing a level of performance sufficient for calibrating the precision sound level meter.

#### Specifications

Nominal acoustic pressure level	94 dB
Nominal frequency	1 kHz

### PISTONPHONE NC-72A



Compliant with JIS C 1515: 2020 (IEC 60942: 2017) class LS/M, class 1/M. Allows calibration with accuracy of  $\pm 0.10$  dB.

#### Specifications

Nominal acoustic pressure level	114 dB
Nominal frequency	250 Hz

### Tripod ST-80



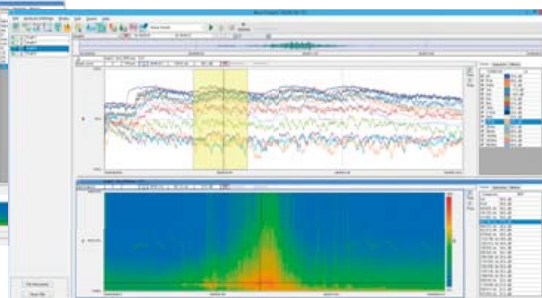
This stand can be used for general acoustic measurements. The sound level meter and microphone can be mounted on the stand.

## Waveform analysis software AS-70

This software allows you to load stored WAVE files from a RION sound level meter, vibration meter or data recorder. Octave, 1/3 octave, and FFT analyses can then be performed. Playback of the real sound files is also possible.



Frequency analysis screen



Frequency analysis screen

#### Specifications

Waveform analysis	Calculations	Maximum value, Minimum value, Average value, RMS, Variance, Differential and integral calculus, HPF, LPF
Frequency weighting		Z, A, C, G, C to A, $L_{z}$ (vertical) (JIS C 1510), $L_{xy}$ (horizontal) (JIS C 1510)
FFT analysis	Analysis points	32 to 65 536 points
	Display data	Power spectrum, Power spectral density, Spectrogram
Time weighting		10 ms, F, 630 ms, S, 10 s
Octave band analysis	Applicable standards	IEC 61260 Class 1 (JIS C 1514 Class 1)
	Analysis frequency	Octave band 0.5 Hz to 16 kHz (16 bands)
	range	1/3 octave band 0.4 Hz to 20 kHz (48 bands)

#### Recommended computer specifications

CPU	Intel Core™2 Duo 2 GHz or higher
RAM	2 GB or more (4 GB recommended)
HDD	20 GB free or more (100 GB or more recommended)
DISPLAY	XGA (1 024 × 768) or more
OS	Microsoft Windows 8.1 Pro 64 bit, 10 Pro 64 bit

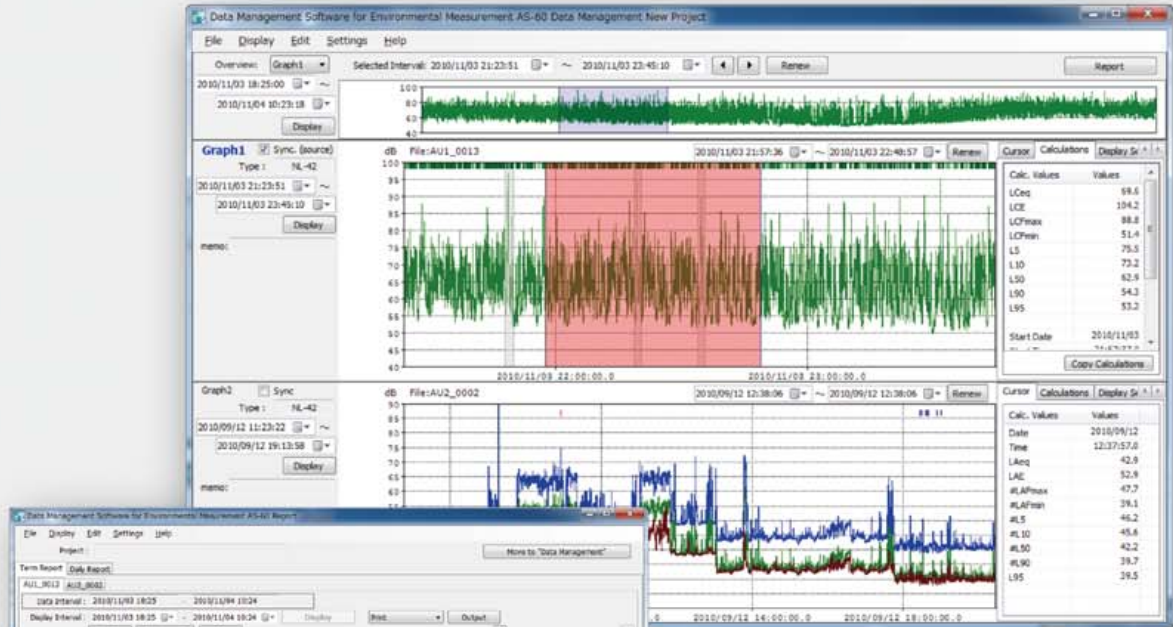
# Complete software for environmental measurements



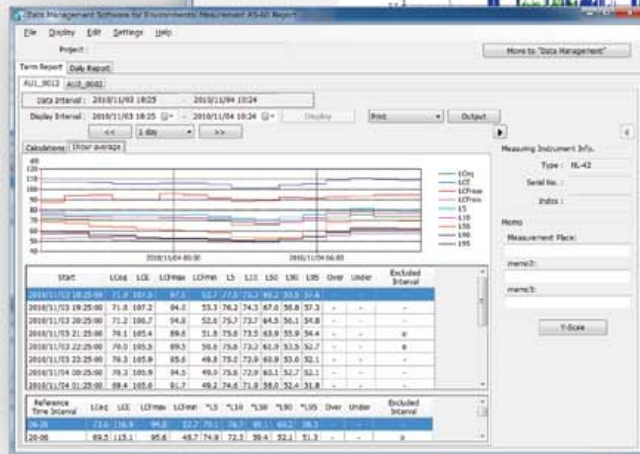
## Data management software for environmental measurement AS-60

Data management software for environmental measurement AS-60 enables the graph display of measurement data, arithmetic processing, excluded sound processing, preparation of reports, output of files, and playback of real sound files.

- Easy to use
- Reports easy to prepare
- Simultaneous display of multiple data items (up to 8 data items)
- Data stored in a data recorder can be loaded (CSV file for DA-40 Viewer)
- Data combination



Data management screen



Report preparation screen

### Supported models

- NL-62\*
- NL-52/42\*
- NL-32/31/22/21\*
- DA-40Viewer

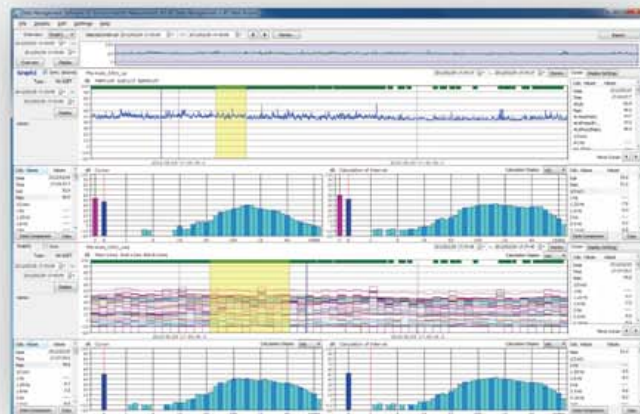
\*Only auto store data are supported.

### Recommended computer specifications (Common for AS-60/60RT/60VM)

- CPU Intel Core i5 2 GHz or higher
- RAM 2 GB or more (4 GB or more recommended)
- DISPLAY XGA (1024 x 768) or more, at least 65 536 colors
- OS Microsoft Windows 8.1 Pro 64 bit, 10 Pro 64 bit

● If AS-60/60RT/60VM is used for NL-52/42 data, the NX-42EX is also needed.

## Data management software for environmental measurement AS-60RT (Includes the octave and 1/3 octave data management software)



Data management screen

### Adds support for handling octave band analysis data to AS-60

AS-60RT is for managing SX-A1RT, NX-62RT/42RT or NA-28 data on a computer.

### Supported models

- SX-A1RT\*
- NX-62RT\*
- NX-42RT\*
- NA-28\*

\*Only auto store data are supported.

## Data management software for environmental measurement AS-60VM (Includes the vibration level data management software)

Adds support for handling data measured with VM-55EX/53A to AS-60

### Supported models

- VM-55EX\*
- VM-53A\*

\*Only auto store data are supported.

# Specifications

Applicable standards	IEC 61672-1: 2013/2002 class 1 ISO 7196: 1995 ANSI/ASA S1.4-2014/Part 1 class 1 JIS C 1509-1: 2017 class 1 CE marking, WEEE Directives, Chinese RoHS (export model for China only)
Measurement functions	Simultaneous measurement of the following items, with selected time weighting and frequency weighting
Processing (main ch)	Instantaneous sound pressure level: $L_p$ Equivalent continuous sound pressure level: $L_{eq}$ Sound exposure level: $L_E$ Maximum sound pressure level: $L_{max}$ Minimum sound pressure level: $L_{min}$ Percentile sound levels: $L_N$ (0.1 to 99.9 %, 0.1-increment steps, max. 5 values)
Processing (sub ch)	Instantaneous sound pressure level: $L_p$
Additional processing	One of the following can be selected: C-weighted equivalent continuous sound level: $L_{Ceq}$ G-weighted average sound level: $L_{Geq}$ C-weighted peak sound level: $L_{Cpeak}$ Z-weighted peak sound level: $L_{Zpeak}$ Power average of max. level in time weighted sound level interval $L_{A1ms}$ I-time-weighted average sound level: $L_{A1eq}$ Max. value of I-time-weighted average sound level: $L_{A1max}$ * Because additional processing frequency characteristics are linked to sub channel frequency characteristics, $L_{A1ms}$ , $L_{A1eq}$ , $L_{A1max}$ can be selected when A characteristics are selected for sub channel. When C, G, or Z characteristics are selected, $L_{Ceq}$ and $L_{Cpeak}$ , $L_{Geq}$ , and $L_{Zpeak}$ can be selected for additional processing.
Microphone	Type UC-59L Sensitivity level -27 dB
Measurement range	A-weighting: 25 dB to 138 dB C-weighting: 33 dB to 138 dB G-weighting: 43 dB to 138 dB Z-weighting: 50 dB to 138 dB C-weighting peak sound level: 60 dB to 141 dB Z-weighting peak sound level: 65 dB to 141 dB
Inherent noise	A-weighting 17 dB or less C-weighting 25 dB or less G-weighting 35 dB or less Z-weighting 42 dB or less
Frequency range	1 Hz to 20 kHz
Frequency weighting	A, C, G and Z
Time weighting	F (Fast) and S (Slow), I (Impulse) and 10 s
Level range	Single range (Linearity range: 113 dB) Bar graph display range max Max. 110 dB (20 to 130 dB) Switching of bar graph display Set the upper/lower limit in 10 dB increments.
RMS detection circuit	Digital processing method
Sampling cycle	20.8 $\mu$ s ( $L_p$ , $L_{eq}$ , $L_E$ , $L_{max}$ , $L_{min}$ , $L_{peak}$ : sampling frequency: 48 kHz) 100 ms ( $L_N$ )
Calibration	Electrical calibration performed according to IEC and JIS standards, using internally generated signals: acoustic calibration performed with the NC-74.
Correction functions	Windscreen correction: Compliant with IEC 61672-1 and JIS C 1509-1 standards when the windscreen is installed. Diffuse sound field correction: Correction of frequency characteristics in order to comply with standards (ANSI S1.4) in diffuse sound field.
Delay time	The meter can be set to start measuring a specified time (OFF, 1, 3, 5 or 10 s) after the start button has been pressed or when a user-set trigger is exceeded.
Back erase function	When the PAUSE key is pressed to pause measurement, the preceding (user selectable) 0, 1, 3 or 5 s data are excluded from processing.
Display	Backlit semitransparent color TFT LCD display WQVGA (400 x 240 dots) * LCD with touch panel (Capacitive Touch Panel) Numerical display update frequency: 1 s Bar graph update frequency: 100 ms
Store	Manual Data for measurement results are stored manually in single address increments. Number of data Internal memory: max. 1 000 sets SD Card: depends on the capacity of the SD Card*1 Auto Instantaneous values ( $L_p$ mode) and processed values ( $L_{eq}$ mode) are stored continuously and automatically at preset intervals. $L_p$ sampling cycle 100 ms, 200 ms, 1 s, $L_{eq}$ 1s and user selected time (up to 24 hours) $L_{eq}$ sampling cycle 10 s, 1, 5, 10, 15, 30 min, 1, 8, 24 h, and user selected time (up to 24 hours) Measurement Time Max. 1000 h in Auto $L_p$ storage mode, max. 100 000 addresses in Auto $L_{eq}$ storage mode (depends on the capacity of the SD card)*1

Data recall	Allows viewing of stored data
Setup memory	Up to five setup configurations can be saved in internal memory, for later recall Start up via file settings previously stored on SD card possible
Waveform recording*2	
File format	Uncompressed waveform WAVE file
Sampling frequency	Select 48 kHz, 24 kHz or 12 kHz
Data length	Select 24 bit or 16 bit
Outputs	
DC output	Output DC signals using a frequency weighting characteristic selected by processing.
Output voltage	2.5 V, 25 mV / dB at bar graph display full scale
AC output	Output AC signal using frequency weighting selected by processing or by A, C, Z, G weighting
Output voltage	1 V (rms values) at bar graph display full scale
Comparator output	Turns on when the open-collector output exceeds the set value (max. applied voltage 24 V, max. current 60 mA, allowable dissipation 300 mW).
USB	Allows USB to be connected to a computer and recognized as a removable disk Allows USB to be controlled via communication commands
RS-232C communication	Allows for RS-232C communication via use of a dedicated cable
Data continuous output	
Type of data	Instantaneous value $L_p$ Processed value $L_{eq}$ , $L_{max}$ , $L_{min}$ , $L_{peak}$
Output interval	100 ms
Power requirements	Four IEC R6 (size AA) batteries (alkaline or rechargeable batteries) or external power supply
Battery life (23 °C)	Alkaline battery LR6 (AA): 16 h Ni-MH secondary battery: 16 h At the maximum * Depends on the setting
AC adapter	NC-98E
External power voltage	5 to 7 V (rated voltage: 6 V)
Current consumption	Approximately 120 mA (normal operation, rated voltage)
Ambient conditions	Temperature -10 to +50 °C Humidity 10 to 90 % RH (non-condensing)
Dustproof / water-resistant performance*3	IP code: IP54 (except for microphone) See precautions regarding waterproofing
Dimensions, weight	Approx. 255 (H) x 76 (W) x 33 mm(D), approx. 400 g (with batteries)
Supplied accessories	Storage case x 1, Windscreen WS-10 x 1, Windscreen fall prevention rubber x 1, Hand strap x 1, LR6 (AA) alkaline batteries x 4, SD card 512 MBx1

## Options

Product name	Product number
Waveform recording program (Inst.on 2 GB SD card)	NX-42WR
Octave, 1/3 octave real-time analysis program (Inst.on 512 MB SD card)	NX-62RT
Reverberation time measurement program (Inst.on 512 MB SD card)	NX-42RV
FFT analysis program (Inst.on 512 MB SD card)	NX-42FT
Data management software for environmental measurement	AS-60
Data management software for environmental measurement (Includes the octave and 1/3 octave data management software)	AS-60RT
Data management software for environmental measurement (Includes the vibration level data management software)	AS-60VM
Waveform analysis software	AS-70
SD Card 512 MB	MC-51SD1
SD Card 2 GB	MC-20SD2
SD Card 32 GB	MC-32SP3
AC adapter (100 V to 240 V)	NC-98E
Battery pack	BP-21A
Microphone extension cables	EC-04 (from 2 m)
BNC-Pin output code	CC-24
Comparator output cable	CC-42C
RS 232C serial I/O cable	CC-42R
USB cable	Commercially available product
Sound calibrator	NC-75
All-weather windscreen	WS-15
Windscreen mounting adapter	WS-15006
Rain-protection windscreen	WS-16
Sound level meter tripod	ST-80
All-weather windscreen tripod	ST-81

\*1 Use Rion fully guaranteed products. \*2 NX-42WR required (sold separately).

\*3 Protection against harmful dust and water splashing from any direction.

### Precautions regarding waterproofing

Before use, verify that the rubber bottom cover and the battery compartment lid are firmly closed.

To maintain the water and dust proof rating, internal packing replacement is required every five years (at cost).



RION CO., LTD. is recognized by the JCSS which uses ISO/IEC 17025 as an accreditation standard and bases its accreditation scheme on ISO/IEC 17011. JCSS is operated by the accreditation body (IA Japan) which is a signatory to the Asia Pacific Accreditation Cooperation (APAC) as well as the International Laboratory Accreditation Cooperation (ILAC). The Quality Assurance Section of RION CO., LTD. is an international MRA compliant JCSS operator with the accreditation number JCSS 0197.



ISO 14001 RION CO., LTD.  
ISO 9001 RION CO., LTD.

\* Windows is a trademark of Microsoft Corporation. \* Specifications subject to change without notice.

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