



1/3 Octave Band Real-Time Analyzer **SA-29/30**

1ch

2ch

Great Performance From a Compact Package Available in 1-channel or 2-channel configuration



Easy-to-Read Color Display With Touch-Panel Capability Makes Operation a Snap



Outline

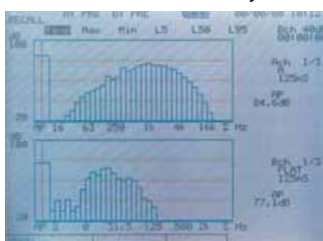
The 1/1 octave and 1/3 octave band spectrum analyzer SA-30 uses digital processing to enable simultaneous handling of two channels in real time. This general-purpose unit is suitable for a wide range of applications, including acoustic and vibration measurements. Analysis results can be shown on the large touch-panel color display in various bar graph and numerical formats. A data overlay function allows contrasting measured data with reference data. Results for six selected analysis functions can be displayed together. Using micro memory cards corresponding to the PCMCIA standard, data can be easily stored and moved to a computer for further processing.

(The SA-29 is a 1-channel version of the SA-30.)

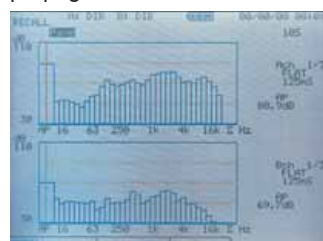
Features

- **Simultaneous analysis of 1/1 octave and 1/3 octave bands**
- **Wide analysis range from 0.5 Hz to 80 kHz (HIGH range is an optional feature)**
- **Memory card (CF card) allows storing large amounts of measurement data and easy data exchange with a computer**
- **Versatile trigger functions can start measurement and analysis automatically**
- **Serial interface and multi-channel capability allow control of several SA-29/SA-30 units from a single computer**
- **Large, easy-to-read color display with touch-panel function makes operation simple and intuitive.**

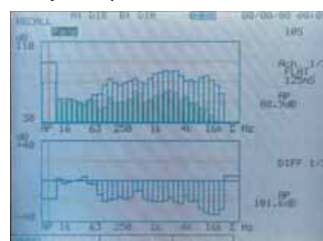
Possible to analyze vibrations and noise simultaneously



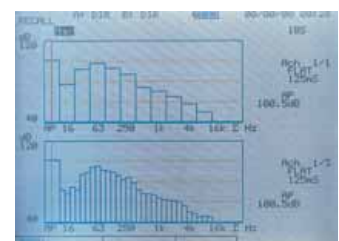
Evaluation for sound propagation characteristics



Easy comparison of data



Collect data in 1/3 octave mode but evaluate data in 1/1 octave mode



Built-in memory card slot

The memory card slot on the rear panel allows saving and loading of data on memory cards. Data are stored using the DOS file format, making them easy to process and handle on a computer.



Memory card (option)

Supplied infrared remote control

The supplied hand-held control allows the user to change measurement parameters and to control operation from a convenient location. (Control range approx. 3 meters)



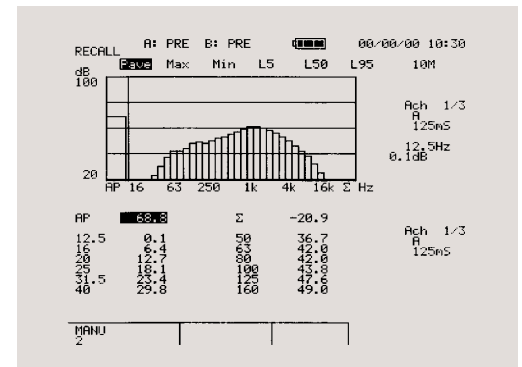
Rear panel

The power switch, various input and output connectors, serial interface, ATA card slot and other elements are arranged on the rear panel of the unit.



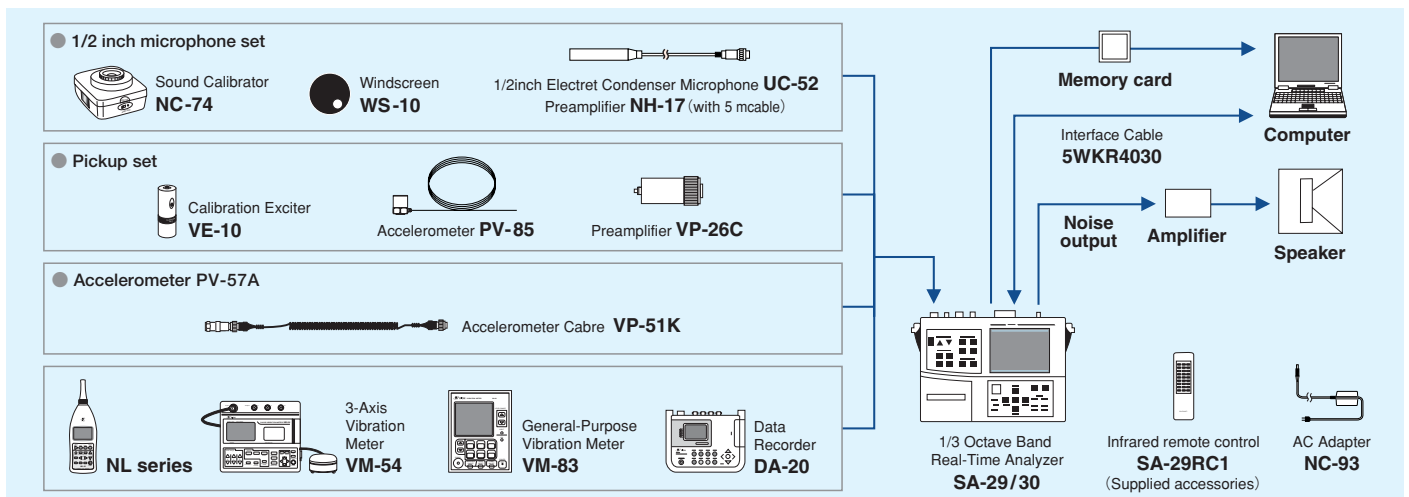
Built-in printer

The integrated thermal printer delivers a hard copy of analysis results anywhere in the field.

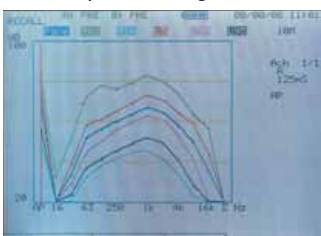


Print sample containing 1/3 octave analysis graph and numeric readings

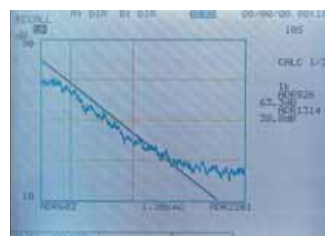
System diagram



Possible to display max. five kinds of processing results



Measurement for reverberation time in room



Possible to handle large amounts of data



Specifications

0Applicable standards

For 1/1 octave & 1/3 octave band filter:

IEC61260-1995 Class 1, JIS C 1513-1983 Type III,
ANSI S1.11 Type 1D

For frequency weighting filter:

IEC60651-1979, JIS C 1505-1988 for "A" and "C" for SLM,
JIS C 1510-1995 for "L_v" for VLM

Input section

Input channel: 1-ch (SA-29), 2-ch (SA-30)

Input connector: 7-pin (preamplifier input),
BNC(direct input)

Input level range: -120 to -40, -110 to -30, -100 to -20, -90 to
-10, -80 to 0, -70 to +10, -60 to +20 dB

Frequency weightings (analog):

A, C, FLAT and L_v

Overload level: F.S. of display +3 dB

Analyzer section

Frequency ranges:

LOW1: 0.5 to 500 Hz, 1/1 octave
0.4 to 630 Hz, 1/3 octave

LOW2: 2 Hz to 2 kHz, 1/1 octave
1.6 Hz to 2.5 kHz, 1/3 octave

MID: 16 Hz to 16 kHz, 1/1 octave
12.5 Hz to 20 kHz, 1/3 octave

HI (OPTIONAL): 63 Hz to 63 kHz, 1/1 octave
50 Hz to 80 kHz, 1/3 octave

Simultaneous analysis of 1/1 & 1/3-octave band is possible

Detector

True RMS, digital

Time weighting: 1 ms, 10 ms, 35 ms, 125 ms (Fast),
630 ms (VL), 1 s (Slow), 10 s

Dynamic range: 83 dB

Calculation section

Lp is used for calculation

Measurement functions:

P_{ave} , P_{sum} , P_{max} , P_{min} , L_1 , L_5 , L_{10} , L_{50} , L_{90} , L_{95} , L_{99}

Sampling period: 100 ms for L_x, 10 ms for P_{ave} , P_{sum} , P_{max} , P_{min}

Calculation period: 1 - 99 s, 1 - 99 min or 1 - 99h

Simultaneous calculations of max. 6 selected measurement
functions are possible

Operation mode: Time mode, Level mode

Display section

Display: Backlit color LCD (320 × 240 dots)

Display range: 80 dB

Display mode: Bar graph display (L-F)
Numerical display (NUM)
Level-time display (L-T)
Overlay display
Difference of two overlaid data

Max. 6 data are displayed simultaneously on screen from
current or stored data.

Trigger section

External, level, time and noise trigger is available

Memory section

Memory capacity

User weight memory: 1

Panel setting memory: 8 kinds of measuring conditions.

Manual: All displayed data to be stored,
200 data groups

Auto: Max. 6000 data (1/1 octave analysis), 1-ch
Max. 2400 data (1/3 octave analysis), 1-ch

Back layer: 1 (one) screen

Recall calculation is possible from stored data:

P_{ave} , P_{sum} , P_{Σ} , Mean, L_x and estimated Reverberation
time

Memory card *2

Name: CF card

Noise source

Type: White, Pink and 1/1 octave band noise

Output: BNC connector, output impedance approx. 600 Ω

AC output

Level: 1 Vrms at F.S.

Impedance: Approx. 600 Ω

Built-in printer

Line printer, paper width 80 mm

Possible to make copy of display

Printer paper: TP-31A

Infrared remote control

Remote control by infrared signal is possible

Data Communication

RS-232-C, Infrared com port (Both max. baud rate
115 200 bps)

Power requirements

DC 9 to 12 V

DC: 6 × IEC R20 (size "D") batteries

Battery life: Approx. 6h (SA-29) / 5 h (SA-30) by
alkaline batteries at 20°C

AC: AC adapter NC-93, 100 to 250 V (option)
Power Cord AA-38-222 (option)

Dimensions & Weight

Approx. 75(H) × 297(W) × 270(D) mm, approx. 2.5 kg incl.
batteries

Supplied accessories

Printer paper holder	SA-29-S07	1
Case	SA-27-051	1
Carrying strap	SA-27-052	1
Support band	SA-27-053	2
BNC-BNC input/output cable	NC-39A	1
Infrared remote control	SA-29RC1	1
Thermal printer paper	TP-31A	1
Lithium battery	CR-1/3N	1
IEC R20 (size D) battery	LR20	6
IEC R03 (size AAA) battery for remote control	LR03	2
Instruction manual		1
Serial interface instruction manual		1

Optional accessories

Power cord for AC adapter	AA-38-222
AC adapter	NC-93
High-frequency unit *1	SA-29S04
Hard case	SA-29-S06

Memory cards *2

64 MB CompactFlash memory card	MC-64CF
128 MB CompactFlash memory card	MC-12CF1
256 MB CompactFlash memory card	MC-25CF1
Accelerometer set	NK-60
Printer paper (6 rolls/pkg)	TP-31A

*1 Factory option. Only 1 channel is available for SA-29 and SA-30.

*2 The above memory cards have been verified for compatibility with this unit.
Operation with other memory cards is not assured. They are supplied with
card adapter for PC card slot.

* Specification subject to change without notice.

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