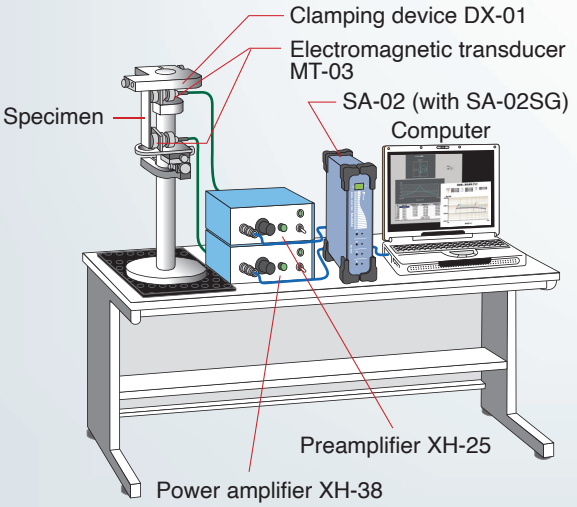
RION

Loss Factor Measurement System

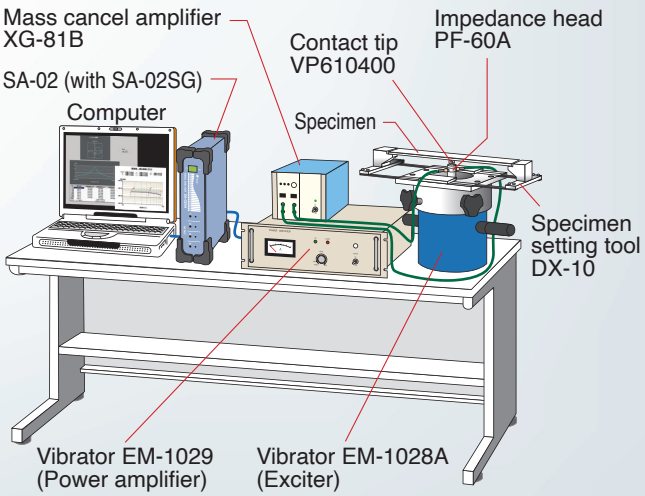
Vibration control materials such as laminated damping steel sheets, high-damping alloys, plastic, rubber, asphalt etc. are used extensively in automobiles, electric home appliances, office equipment and other areas to effectively reduce noise and vibrations.
This system uses the Multi-Channel Signal Analyzer SA-02 to measure the frequency response function of such materials. Easy menu-based operation allows measurement either with the cantilever or center excitation method. The resonance characteristics are then used to determine the loss factor η and Young's modulus E (or shear coefficient G) of the specimen according to the half-power bandwidth method. Measurement analysis results can be checked with a Nyquist diagram or the frequency response overlay function. Automatic measurement including temperature control of a thermostatic chamber for the specimen is also supported.

System Diagram

[Cantilever method]



[Center excitation method]



Equipment configuration

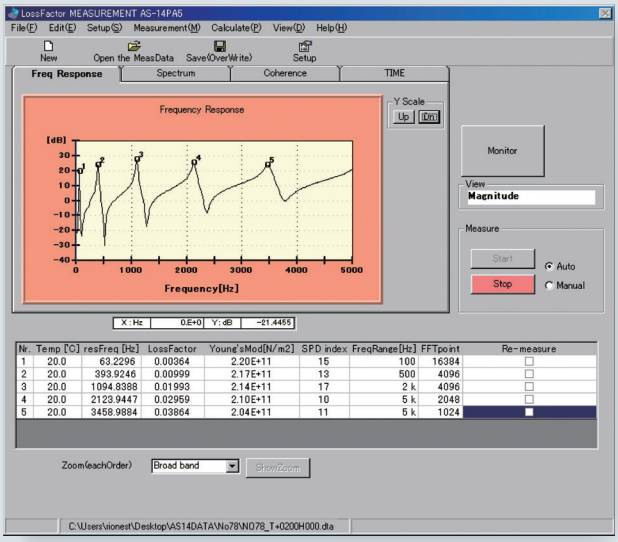
[Cantilever method]

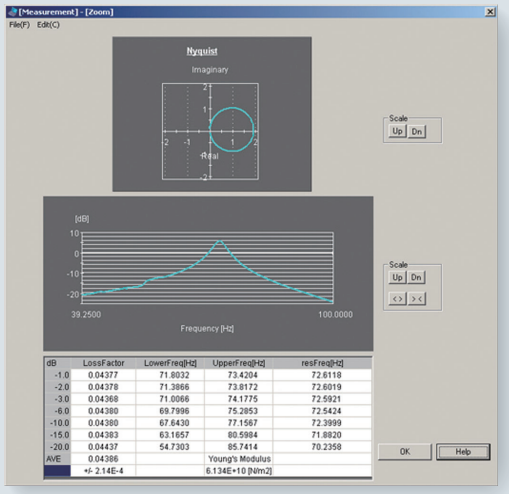
Product	Model	Quantity
4-Channel Signal Analyzer (with SA-02SG)	SA-02A4	1
Computer for SA-02		1
Loss Factor Measurement Software	AS-14PA5	1
Clamping device	DX-01A	1
Electromagnetic transducer	MT-03	2
Preamplifier	XH-25	1
Power amplifier	XH-38	1
Software for nomogram plotting and display		1
Temperature and humidity equipment		1

[Center excitation method]

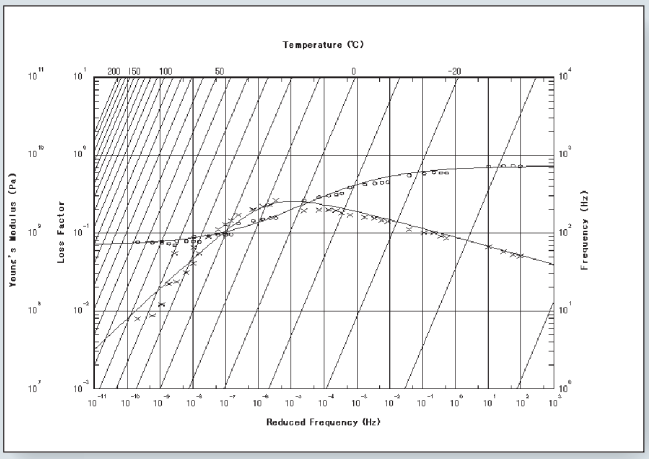
Product	Model	Quantity
4-Channel Signal Analyzer (with SA-02SG)	SA-02A4	1
Computer for SA-02		1
Loss Factor Measurement Software	AS-14PA5	1
Vibrator (Exciter/Power amplifier)	EM-1028A/ EM-1029	1
Specimen setting tool	DX-10	1
Impedance head	PF-60A	1
Contact tip	VP610400	1
Mass cancel amplifier	XG-81B	1
Software for nomogram plotting and display		1
Temperature and humidity equipment		1

Measurement result examples





Specimen measurement (frequency response function)



Software for nomogram plotting and display

Application examples

Steel sheets, alloys, plastic, rubber, asphalt or similar components for vibration damping in automobiles, consumer electric appliances, office automation equipment, etc.

∗ Specifications subject to change without notice.

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