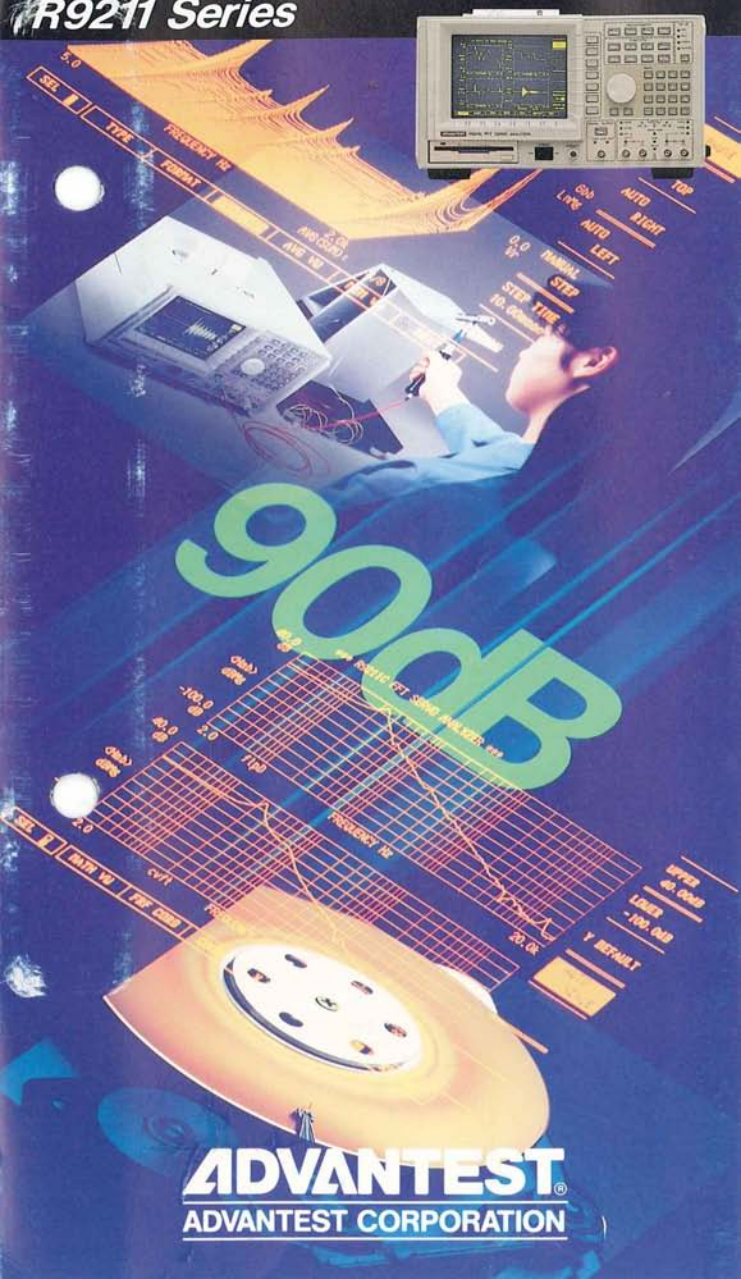
The best solution for your applications

90dB FFT Analyzers

R9211 Series



ADVANTEST®

ADVANTEST CORPORATION

A wide range to choose for specific applications; from the analysis of vibration, noise, acoustics, through to the analysis of servos.

The rapid progress of advanced technologies has brought about the need for various analysis and evaluation methods. Analyzers have become more complex than ever before, but are still required to provide multiple functions and be easy to use. The R9211 Series FFT analyzers respond to these needs.
The R9211 Series can measure over a wide measurement frequency range of 10 mHz to 100 kHz. Nevertheless, they have a high resolution of 16 bits and a wide dynamic range of 90 dB (representative value). The original measurement area modes have been systemized and incorporated into the broad user applications, making the FFT analyzers good performers. ADVANTEST's FFT analyzers are strong candiates for your next purchase.

Functions and options

	Curve-fit and synthesis function	Go/No-Go judgment by comparator function	10 mHz resolution running zoom*	Signal generator capable of generating digital signals	Signal generator with built-in summing amplifier	Power supply for acceleration sensor with built-in amplifier	Signal generator capable of outputting ±15 V	Waveform output: sine, multi-sine, swept sine, impulse, and random.	Differential input	Floppy disk drive	High-speed thermal printer	CM[illegible] memory (1 M-word)	"I/O+memory" card	High-speed operation processor
R9211B										▲	Opt.	Opt.	Opt.	
R9211C	●	●	●	●	●	●				●	Opt.	Opt.	●	●
R9211E			●				●				Opt.	▲	▲	
R9211A										●	Opt.	Opt.	Opt.	Opt.

▲: Either of the marked functions can be selected. *: 10 mHz (<10 kHz), 100 mHz (≥10 kHz)

Applications

	An[illegible] of vibration and structure	Analysis of acoustics, noise, and voice	Evaluation of digital audio voice output	Evaluation of device noise	Evaluation of mechanical characteristics of optical disks	Evaluation of telephone line terminals equipment	Evaluation of A/D and D/A converters	Servo analysis of CD players, DAT decks, and video disk players	Digital servo evaluation	Evaluation of digital amplifiers and digital filters	1/1 or 1/3 octave analysis	Fast octave analysis	Analysis by synthesized frequency response functions	Transient signal characteristics (analysis of room or car acoustics)	Analog servo evaluation	130-dB dynamic servo analysis
	●	●	●	●	●	●	●	●	●	●	●			●	●	●
	●	●	●	●	●	●	●	●			●			●	●	●
		●	●	●	●	●	●	*2				●	*3			
		●	●	●	●	●	●	*2				●		●		

*2: Using Opt. 11 ("I/O+ memory" card), *3: Using Opt. 12 (High-speed operation processor)

■ *Powerful servo analysis functions*

FFT Servo Analyzer R9211B/C

- **Dynamic servo analysis of more than 130 dB**
- **Linear and log multi-sine sweep signal built-in**
- **Curve-fit and synthesis function (R9211C)**

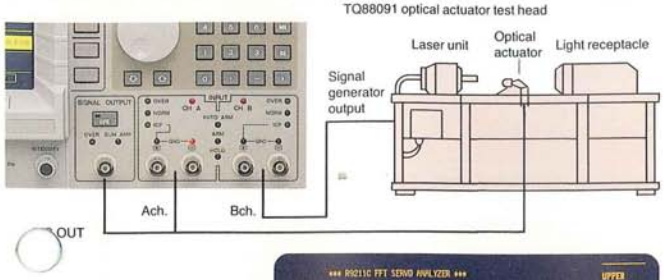
The built-in printer is optional.

R9211B and C provide the capability for servo-analysis through the ultra-high precision control of the drive units of the robots, VCRs, CD players, and hard disk drives. In particular, R9211C designs, simulates, and evaluates servo systems quickly by the use of the servo measurement function and the curve-fit and synthesis function.

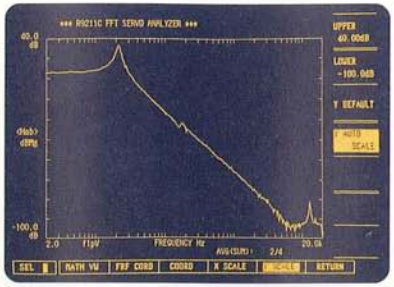
Major specifications

Number of input channels: 2
A/D resolution: 16 bits
Frequency span: 10 mHz to 100 kHz (1, 2, and 5 steps)
Dynamic range: 85 dB or more
Maximum input sensitivity: −125 dBV (approx. 0.56 μVrms) (−140 dBV, 2 kHz range)
Power supply for acceleration meter: Input coupling is available for AC only.
Measurement mode: Servo measurement, frequency response function measurement, time-frequency measurement, spectrum, and waveform
Frequency table servo function: linear/log frequency table
Signal source for servo measurement: Linear/log sine sweep, linear multi-sine sweep, and log multi-sine sweep
Go/No-Go judgment by comparator function: R9211C
Curve-fit and synthesis function: R9211C
Running zoom function (R9211C): Minimum span 100 mHz (≧ 10 kHz), Minimum span 10 mHz (< 10 kHz)

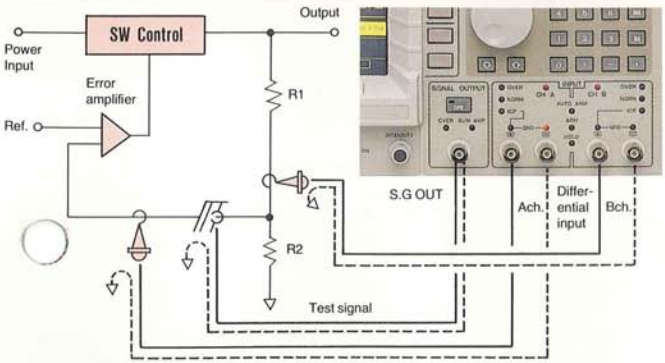
Optical actuator measurement

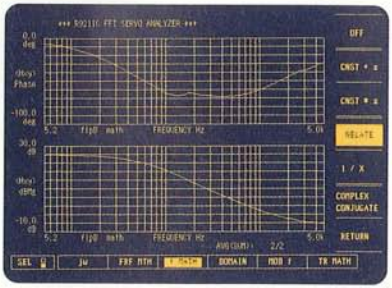


Example of optical actuator measurement ▶



Measurement of the loop gain of the switching power supply



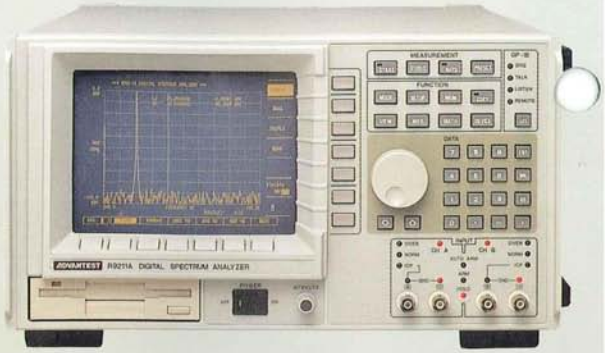


◀ Open loop measuremen of switching power supply (Board diagram)

■ *Plentiful analysis functions and various display functions*

FFT Analyzer R9211A/E

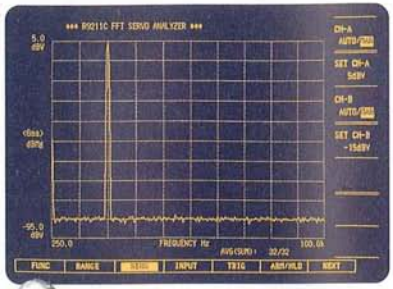
- **Dynamic measurement range of 90 dB (typical value), maximum input sensitivity of −140 dBV or more**
- **New applications using the time-frequency analysis function**
- **Running zoom function with a minimum span of 10 mHz (R9211A)**



R9211A and E analyze the voices of people and animals, acoustics of instruments and halls, city noises, vibration and noise from cars, constructions, and building machines. They serve as powerful tools for measuring the mechanical characteristics of optical and magnetic disks, analyzing audio signal distortions, analyzing transient signals, and measuring frequency response functions.

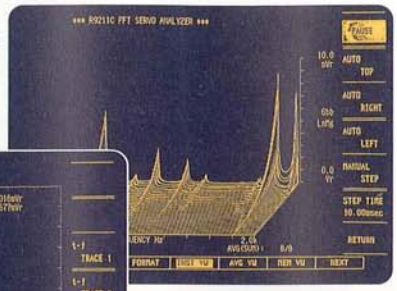
Major specifications

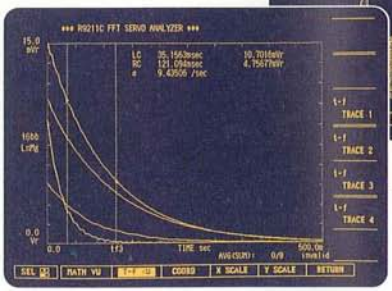
Number of input channels: 2
A/D resolution: 16 bits
Frequency span: 10 mHz to 100 kHz (1, 2, and 5 steps)
Dynamic range: 85 dB or more
Maximum input sensitivity: −125 dBV (approx. 0.56 μVrms), −140 dBV (2 kHz range)
Power supply for acceleration meter: Input coupling is available for AC only.
Measurement mode: Frequency response function measurement, time-frequency measurement, spectrum, and waveform
Summing amplifier: Can be turned on and off.
Running zoom function (R9211A): Minimum span 100 mHz (≧ 10 kHz), Minimum span 10 mHz (< 10 kHz)



◀ Spectrum data of 90 dB dynamic range

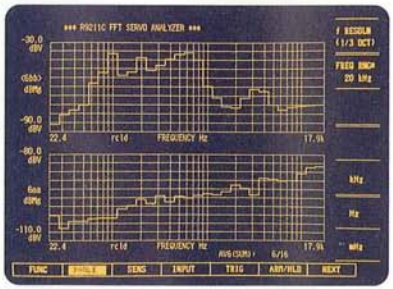
Three-dimensional display of response waveform of cushioning material ▶

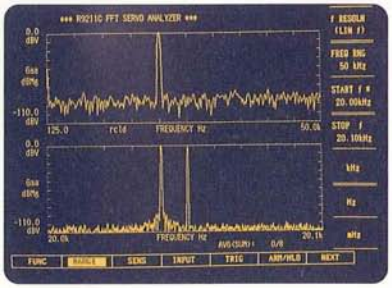




◀ Level monitor for cushioning materials (four points of oscillating frequencies are specified)

Example of two-channel three-decade octave analysis ▶





◀ Zoom spectrum data of 100 mHz span

ACCESSORIES

Impulse hammer with low output impedance and voltage output
(Made by DYTRAN)

The impulse hammer provides you with an easy and simple method for measuring the mechanical impedance or resonance characteristics of structures.

Model name	AHB5800SL Super-light-model	AHB5850A Three-range model
		
Head weight (g)	2.0	150
Force range (16-F)	50	50, 500, 5000
Nominal sensitivity (mV/lb)	100	100, 10, 1
Sensor resonance frequency (kHz)	300	50

Acceleration sensors with built-in amplifiers
(Made by ENDEVCO)

A wide selection of vibration detection elements are available for the measurement of vibration and shock. This allows the best method to be selected for specific applications.

Model	Sensitivity (mV/g)	Response frequency (Hz)	Resonance freguency (Hz)	Anti-G (G)
2250A-10/2250AMI-10 	10	4~15,000	80,000	2,000
7250A/7250AMI 	2/10	4~20,000	85,000	10,000
7254-10, −100 	10/100	1~10,000	45,000	5,000
7259A-1, −10 	1/10	5~30,000±1dB	150,000/100,000	10,000
7251-10, −100 	10/100	1~10,000	45,000	5,000
2256-10, −100 	10/100	1~5,000	20,000	2,000

ADVANTEST®

ADVANTEST C

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