

Easy Noise Analysis with Record and Replay

MS2690A/91A/92A Signal Analyzer

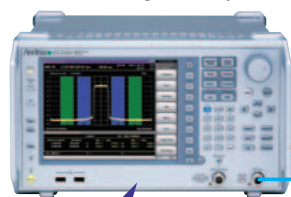
+ MS2690A/91A/92A-020 Vector Signal Generator (option)

Mobile phones, PCs, Game machines, Home electronics, etc., are a key part of all our lives but sometimes their correct operation is impaired by unwanted interference or “Noise” from other nearby machines; Noise evaluation to prevent mis-operation is a key measurement. However, capturing all noise from every source such as electric motors and other environmental factors is extremely difficult in terms of costs, labor and time. In addition, it is hard to generate stable noise for test capture. The MS269xA solves these problems at a stroke by capturing the noise and then using the built-in vector signal generator to replay it to accurately simulate the actual noise environment in the test laboratory.

Signal Analyzer Capture Function Records Noise

- Save frequency span × Capture time as data file in memory
- Re-sample saved data and output as file to internal or external hard disk
- Recall data saved in internal or external hard disk and analyze as many times as necessary
- Perform multi-domain analysis, such as frequency axis, time axis, spectrogram, etc.

MS269xA Signal Analyzer



Built-in pre-amp

When noise level is weak and other signal level is high, cut other signal with filter and amplify noise with pre-amp.

Record



- Center Frequency
50 Hz to 6 GHz (MS2690A)
50 Hz to 13.5 GHz (MS2691A)
50 Hz to 26.5 GHz (MS2692A)
- Frequency Span
1 kHz to 31.25 MHz (Standard)
1 kHz to 62.5 MHz (Opt.077)
1 kHz to 125 MHz (Opt.077+078)
- Sampling Rate
2 kHz to 50 MHz (Standard)
2 kHz to 100 MHz (Opt.077)
2 kHz to 200 MHz (Opt.077+078)
(It is an automatic setting according to the frequency span.)
- Attenuator: 0 to 60 dB
- Trigger: Video, Wide IF Video, External, SG Marker

Frequency Span	Sampling Rate	Max. Capture Time	Max. No. of Sample
1 kHz	2 kHz	2000 s	4 M
2.5 kHz	5 kHz	2000 s	10 M
5 kHz	10 kHz	2000 s	20 M
10 kHz	20 kHz	2000 s	40 M
25 kHz	50 kHz	2000 s	100 M
50 kHz	100 kHz	1000 s	100 M
100 kHz	200 kHz	500 s	100 M
250 kHz	500 kHz	200 s	100 M
500 kHz	1 MHz	100 s	100 M
1 MHz	2 MHz	50 s	100 M
2.5 MHz	5 MHz	20 s	100 M
5 MHz	10 MHz	10 s	100 M
10 MHz	20 MHz	5 s	100 M
25 MHz	50 MHz	2 s	100 M
31.25 MHz	50 MHz	2 s	100 M
50 MHz*	100 MHz	500 ms	50 M
62.5 MHz*	100 MHz	500 ms	50 M
100 MHz*	200 MHz	500 ms	100 M
125 MHz*	200 MHz	500 ms	100 M

*: Requires MS269xA-077/078

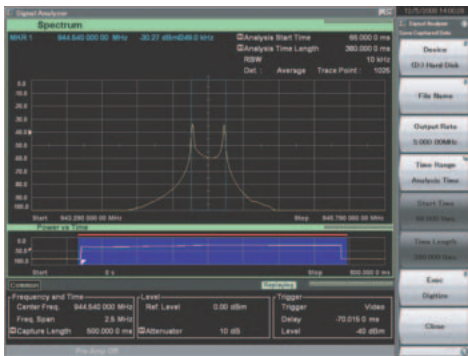
High resolution captures fine noise
200 MHz max. sampling rate = **5 ns resolution**

Need for Opt.077/078 Analysis Bandwidth Extension

When capturing noise, sometimes it is not possible to capture very small level fluctuations with a resolution of 20 ns (Sampling rate: 50 MHz), depending on the noise components. In this case, using smaller resolution of 5 ns (Sampling rate: 200 MHz) can capture signals closer to the true noise.

It is possible to recreate mis-operation phenomena by capturing noise generated from actual equipment such as electrical motors at a resolution of 5 ns and reproducing it with the vector signal generator.

Isolate and Save Only Noise Components in Captured Data



- Save only the required parts of the captured data to hard disk

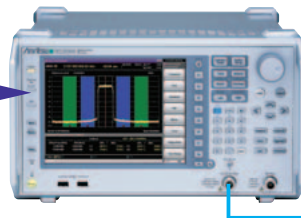
Filter out unwanted parts

- FULL:** All captured data for entire time
- Analysis Time:** Set analysis time (blue part in screen)
- Manual:** Any setting during captured time

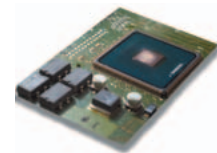
Replay Captured Noise from Vector Signal Generator

MS269xA Signal Analyzer
+ MS269xA-020 Vector Signal Generator (option)

- Built-in PC
- Built-in Vector Signal Generator



Controller board, etc.



- MS269xA-020 Vector Signal Generator
- Frequency Range: 125 MHz to 6 GHz
 - Output Level: -140 to 0 dBm
 - Baseband Generator Clock: 20 kHz to 160 MHz
 - Arbitrary Waveform Memory: 1 GB

- Vector Signal Generator generates waveform pattern with built-in PC based on data captured by Signal Analyzer
- Outputs generated waveform at arbitrary level and frequency → Replay noise

Advantages of MS269xA Signal Analyzer

■ High Resolution

Installing the Opt.077/078 Analysis Bandwidth Extension supports noise capture at sampling rates up to 200 MHz with 5 ns resolution.

■ Isolating Noise

After capturing the signal for the maximum time, data for just the required part with the noise can be saved to disk, greatly reducing the file size and saving disk space. Additionally, processing speed is increased when generating the vector signal generator noise waveform pattern with the PC.

■ All-in-one

Conventionally, a pre-amp, signal analyzer, and PC (for generating waveform pattern) are required to capture and replay noise. The all-in-one MS269xA has all these functions built-in to eliminate complex setup work and improve efficiency.

Ordering Information

Category	Model	Name	
Main frame	MS2690A	Signal Analyzer (50 Hz to 6 GHz)	Mandatory
	MS2691A	Signal Analyzer (50 Hz to 13.5 GHz)	
	MS2692A	Signal Analyzer (50 Hz to 26.5 GHz)	
Hardware options	MS269xA-008	6 GHz Preamplifier	
	MS269xA-020	Vector Signal Generator (125 kHz to 6 GHz)	Mandatory
	MS269xA-050	HDD Digitizing Interface (4 hours of continuous capture max.)	
	MS269xA-078 (Requires MS269xA-077)	Analysis Bandwidth Extension to 125 MHz (Sampling rate: 200 MHz max., ADC resolution: 14 bits)	Recommended