



Don't Miss Unwanted Noise Transients

Issues when Measuring Noise with Spectrum Analyzer

The spread of industrial electrical and lighting equipment can cause unwanted noise and interference with radio broadcasts and wireless communications.

The switch to LED lights using drivers that generate high-frequency noise above 3000 MHz is known to interfere with stable communications, creating a need to identify sources and take countermeasures.

Issue: It is difficult to capture and identify transient noise.

Solutions

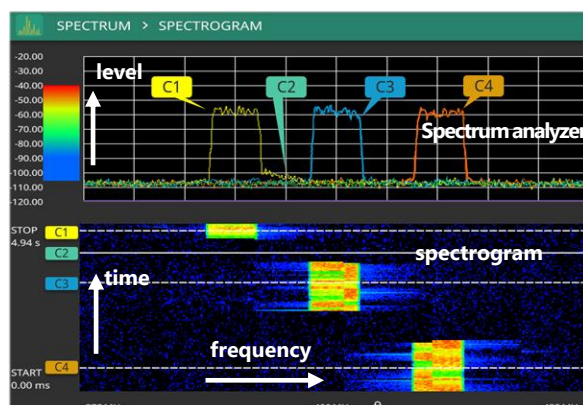
Use on-the-spot Monitoring to Record/Playback Noise Waveforms.



Field Master Real-time Spectrum Analyzer

Field Master Pro MS2090A (9 kHz to 54 GHz)

Field Master MS2080A (9 kHz to 6 GHz)



Waveform Monitoring Based on Frequency and Time

- When a set threshold is exceeded, the SAVE ON EVENT function*¹ records and plays-back/displays waveform/CSV data. Data captured at the failure instant can be extracted and analyzed (by remote operation if necessary).
- Identify noise sources efficiently using the three-point measurement*² with built-in software mapping and directional antenna.

*¹: Recording length depends on USB capacity

*²: Difficult to identify weak noise source

Locate External Noise Interfering with Disaster-prevention Radio Line.

Customer: Disaster Prevention Radio Construction and Maintenance Company
(Product: Field Master MS2080A)

■ Issues before implementation:

We assumed the unstable communication was due to external noise. An attempt to capture the noise with a real-time SPA was unsuccessful, so we needed to monitor the issue to clarify cause and effect.

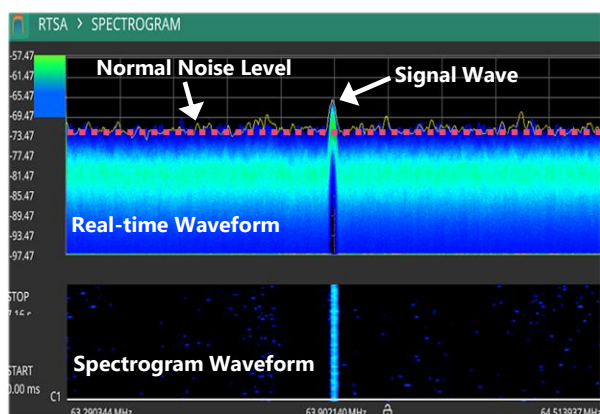


■ Results after implementation:

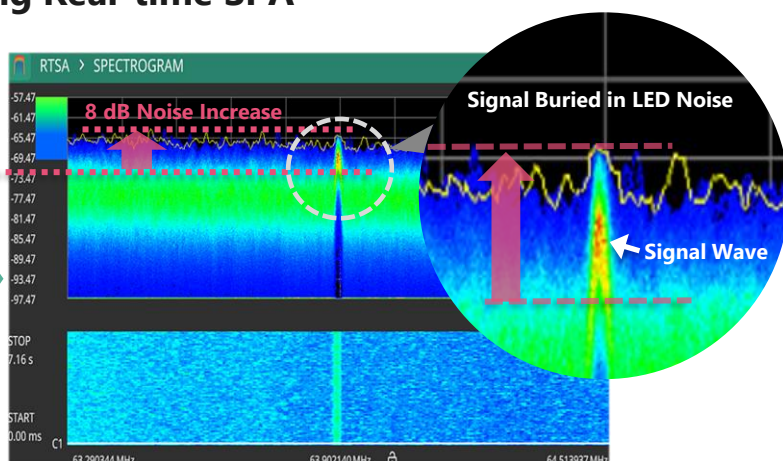
We thought the noise source might be an LED light turning-on and monitored the noise frequency using the Field Master record function. The noise level was rising after 19:00 each day and a location search using a directional antenna pinpointed the LED light as the source.

The customer understood the cause of problem and changed to an LED light with better EMC.

Noise from LED Light Measured using Real-time SPA



Normal Noise Level: -73 dBm



Noise Level: -65 dBm

The contents of this document may be subject to change without notice. In addition, the numerical results shown in each measurement screen example are not guaranteed values. Please refer to the catalog/data sheet for standard values.