Keysight Technologies

FieldFox Handheld Analyzers with Real-time Spectrum Analysis (RTSA)

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Unlocking Measurement Insights
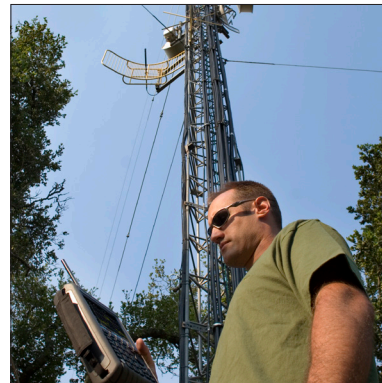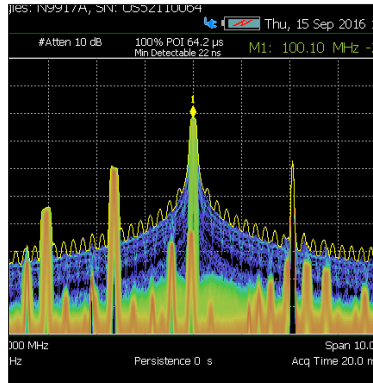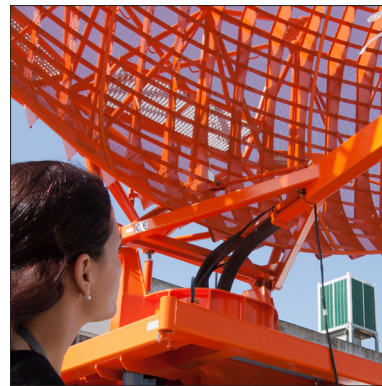
Signals Can Run, But They Can't Hide

Design and troubleshooting tasks can be very difficult when dealing with fast moving, elusive signals, and the challenges grow when these signals exist in complex multi-signal environments. Drawbacks associated with traditional interference analysis methods can make field troubleshooting more difficult than ever. There are two challenges to detecting interference: one is that interference is much more bursty than in the past, and the other is that interference signals may be occurring during a spectrum analyzer's background processing time (i.e., dead time).

A new tool that eliminates dead time is necessary to detect the most challenging signals; introducing real-time spectrum analysis (RTSA). With Keysight FieldFox handheld analyzers with real-time spectrum analysis (RTSA) up to 50 GHz, you can now confidently capture every interfering signal in real time with one integrated, lightweight unit. FieldFox with RTSA empowers you to detect, locate and mitigate interference issues.

Keysight FieldFox handheld microwave analyzers were designed for engineers and technicians performing interference hunting and signal monitoring specifically in surveillance and secure communications, radar, electronic warfare (EW) and commercial wireless markets.

Verify LTE uplink control and traffic channel operations.
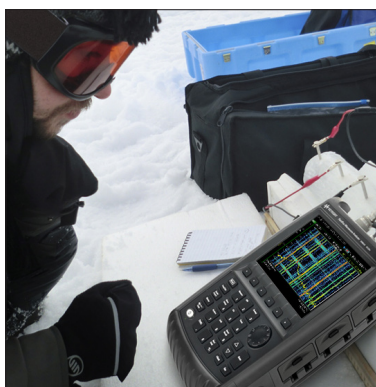
Quickly locate interfering signals.

Detect and differentiate multiple pulses at the same time.

FieldFox Provides Gap-free Real-time Spectrum Analysis

– 16 models with RTSA from DC to 50 GHz
– Detect and resolve real signal problems
– One multifunctional instrument
– Upgrade easily with software license key
– World-class performance

Key FieldFox RTSA Specifications

Function	Description
Real-time spectrum analyzer (RTSA)	
Frequency	5 kHz up to 50 GHz
Maximum real-time bandwidth	10 MHz
Minimum signal duration with 100% POI	12.2 µs
Minimum detectable signal	22 ns
Spurious-free dynamic range	63 dB
FFT rate (at 10 MHz span)	120,000 FFT/s
Minimum acquisition time (spectrogram display)	500 µs/div
General	
Environmental	Meets MIL-PRF-28800F Class 2, type tested for IP53
Temperature	Operating: –10 to +55 °C (14 to 131 °F)
Dimensions and weight	11.5” x 7.4” x 2.8” (292 x 188 x 72 mm), 3.2 kg/7.1 lb

With basic spectrum analysis it can be difficult to see all signals in a complex signal environment. FieldFox's real-time analyzer mode with density and spectrogram displays provides a fast and insight-producing view of dynamic and agile signals.

The density display is very data-dense and quite dynamic, updating about 50 times per second and with adjustable persistence to fade the older data. With an FFT rate of almost 120,000 per second and FFT overlapping, each display update represents about 2,500 spectra of gap-free data capture. The result is that you can see subtle details such as signals inside other signals, and signals near the analyzer noise floor, even when such signals are small and infrequent.

The RTSA density display clearly shows the *Bluetooth*® and WiFi signals, and you can quickly distinguish that the signals coexist over the same frequency span. In contrast, with traditional swept SA mode the envelope of the WiFi signal is visible on the trace. However, the frequency hopping *Bluetooth* signals cannot be distinguished.
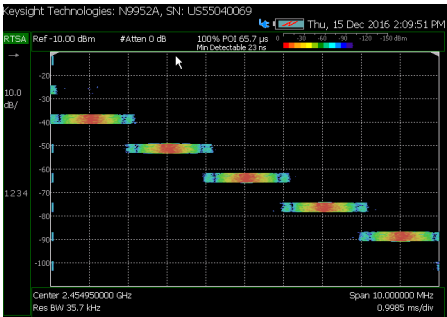
FieldFox's real-time spectrogram display provides even more insight into the nature of the signal environment. The additional dimension of time on the y-axis lets you see pulse patterns, pulse repetition intervals and other types of intermittent signals.
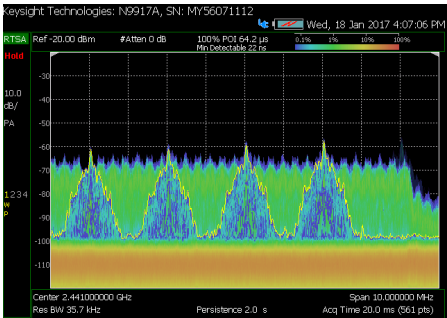
FieldFox real-time density display showing *Bluetooth* and WiFi signals
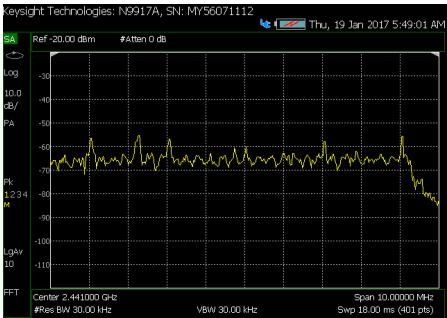
FieldFox traditional spectrum analyzer display of the same *Bluetooth* and WiFi signals.

FieldFox real-time spectrogram display reveals the frequency hopping *Bluetooth* signals and their occurrence in time.

Ordering Information

At only 7.1 lb, Keysight's FieldFox can be configured as an all-in-one cable and antenna tester (CAT) + vector network analyzer (VNA) + spectrum analyzer + RTSA and more. This means you can forget about carrying separate devices for every function you need. Go out there, get the job done in real time, and carry the precision of one.

Viewable day and night
FieldFox bright, low-reflective display and backlit keys enable easy viewing in direct sunlight or darkness

Outdoor dusk   Indoor   Night vision

Add option 350 real-time spectrum analyzer (RTSA) to any of the models below.

Combination (Spectrum Analyzer + Vector Network Analyzer)	
Model	Description
N9913A	FieldFox Handheld Microwave Analyzer, 4 GHz
N9914A	FieldFox Handheld Microwave Analyzer, 6.5 GHz
N9915A	FieldFox Handheld Microwave Analyzer, 9 GHz
N9916A	FieldFox Handheld Microwave Analyzer, 14 GHz
N9917A	FieldFox Handheld Microwave Analyzer, 18 GHz
N9918A	FieldFox Handheld Microwave Analyzer, 26.5 GHz
N9950A	FieldFox Handheld Microwave Analyzer, 32 GHz
N9951A	FieldFox Handheld Microwave Analyzer, 44 GHz
N9952A	FieldFox Handheld Microwave Analyzer, 50 GHz
Spectrum Analyzer	
Model	Description
N9935A	FieldFox Handheld Microwave Spectrum Analyzer, 9 GHz
N9936A	FieldFox Handheld Microwave Spectrum Analyzer, 14 GHz
N9937A	FieldFox Handheld Microwave Spectrum Analyzer, 18 GHz
N9938A	FieldFox Handheld Microwave Spectrum Analyzer, 26.5 GHz
N9960A	FieldFox Handheld Microwave Spectrum Analyzer, 32 GHz
N9961A	FieldFox Handheld Microwave Spectrum Analyzer, 43 GHz
N9962A	FieldFox Handheld Microwave Spectrum Analyzer, 50 GHz

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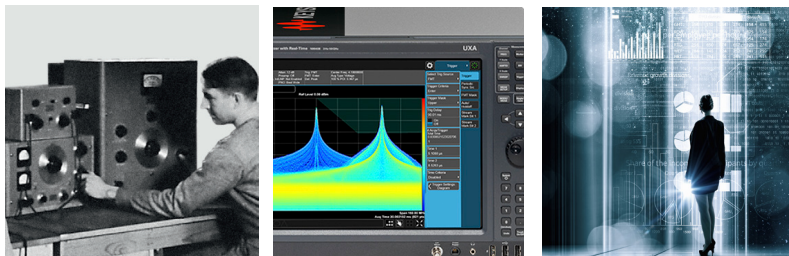
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