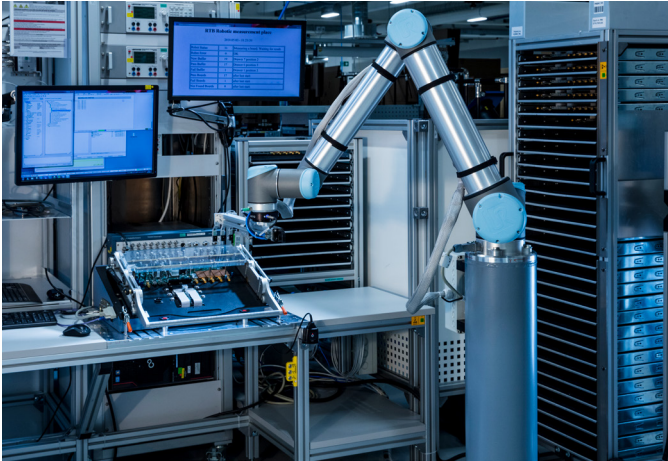


# INTERFERENCE HUNTING IN SMART FACTORIES

Smart factories rely heavily on wireless communications technology to automate production processes and increase productivity. Any source of RF interference can disrupt the production process or delay the output.



## Your task

RF interferer signals are invisible to the naked eye. Their source can be generated intentionally or unintentionally, be modulated or unmodulated, appear at any time and be located anywhere on the production floor.

Determining the location of the interferers can be challenging and time consuming. If the source of interference is not eliminated, however, the smart factory loses its business agility.

Rugged portable spectrum analyzers can be used anywhere in the factory to display all RF signals. Recording features allow users to perform postprocessing and analyze occurrence patterns to determine the emitter source.

## Rohde & Schwarz solution

R&S®Spectrum Rider FPH is a handheld spectrum analyzer with frequency ranges from 5 kHz to 44 GHz. Depending on the model, the analyzer can operate for up to eight hours on a single charge.

It has a small form factor and ergonomic design. It weighs only 2.5 kg and complies with the IP54 standard. This makes it easy to carry and use anywhere.

With the R&S®FPH-K15 interference analysis option, the analyzer can record the spectrogram for up to 999 hours; the duration depends on the recording interval setting. Postprocessing can be performed on the analyzer itself or with the free downloadable R&S®InstrumentView software.

With the R&S®FPH-K16 signal strength mapping option, the signal strength of the emitter can be displayed on an uploaded production floorplan. This provides a visual representation of the emitter's signal strength in a particular area and indicates the possible location of the emitter.

R&S®Spectrum Rider FPH makes interference hunting in factories simple and efficient. RF interferers can be swiftly identified and actions taken to ensure the smooth operation of smart factories.

R&S®Spectrum Rider FPH handheld spectrum analyzer with R&S®HE800-PA directional antenna



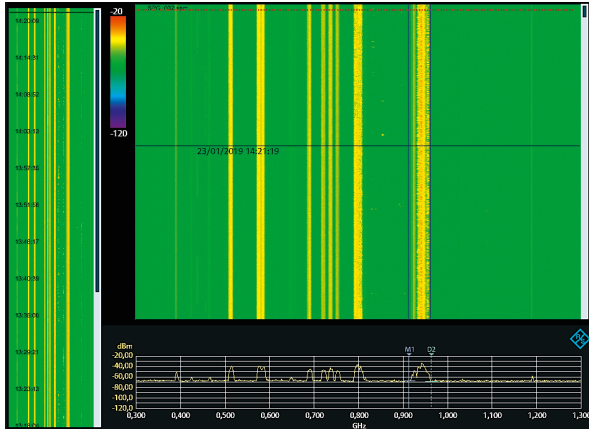
Application Card | Version 02.00

**ROHDE & SCHWARZ**

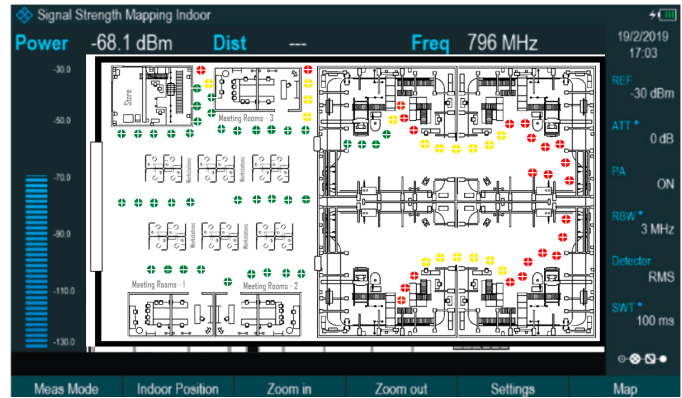
Make ideas real



Using R&S®InstrumentView software to postprocess interference behavior



With R&S®FPH-K16, a signal strength measurement on an indoor map shows that the interferer is potentially near the entrance. In this case, the interferer is a faulty digital advertising board near the entrance



Interference hunting setup: an R&S®HE400 directional antenna connected to the R&S®Spectrum Rider FPH



Remote control or postprocessing setup: a laptop or tablet connected to the R&S®Spectrum Rider FPH via LAN or a USB port for remote control or postprocessing



Designation	Type	Order No.
Handheld spectrum analyzer, 5 kHz to 2 GHz	R&S®Spectrum Rider FPH	1321.1111.02
Handheld spectrum analyzer, 5 kHz to 6 GHz	R&S®Spectrum Rider FPH	1321.1111.06
Handheld spectrum analyzer, 5 kHz to 13.6 GHz	R&S®Spectrum Rider FPH	1321.1111.13
Handheld spectrum analyzer, 5 kHz to 26.5 GHz	R&S®Spectrum Rider FPH	1321.1111.26
Handheld spectrum analyzer, 5 kHz to 44 GHz, with tracking generator	R&S®Spectrum Rider FPH	1321.1711.54
Interference analysis	R&S®FPH-K15	1321.0715.02
Signal strength mapping	R&S®FPH-K16	1321.0615.02
Handheld directional antenna (antenna handle)	R&S®HE400	4104.6000.02
Cable set, for R&S®HE400 (requires R&S®HE300USB)	R&S®HE400-K	4104.7770.02
USB adapter	R&S®HE300USB	4080.9440.02
HF antenna module, 8.3 kHz to 30 MHz	R&S®HE400HF	4104.8002.02
VHF antenna module, 20 MHz to 200 MHz	R&S®HE400VHF	4104.8202.02
UWB antenna module, 30 MHz to 6 GHz	R&S®HE400UWB	4104.6900.02
Log-periodic antenna module, 450 MHz to 8 GHz	R&S®HE400LP	4104.8402.02
Cellular antenna module, 700 MHz to 2500 MHz	R&S®HE400CEL	4104.7306.02
Microwave handheld directional antenna (antenna handle)	R&S®HE400MW	4104.6000.03
SHF antenna module, 5 GHz to 20 GHz (requires R&S®HE400MW)	R&S®HE400SHF	4104.8602.02
Handheld directional antenna, with preamplifier	R&S®HE800-PA	4115.6006.02

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PD 3609.1885.92 | Version 02.00 | July 2024 (st)  
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