R&S®GX430IS
Signal Analysis

Analysis of complex signal scenarios in line with ITU-R SM.1600

R&S®GX430IS is an option to the R&S®GX430 PC-based signal-analysis / signal-processing solution and covers the measurement methods specified by the ITU-R SM.1600 recommendation.

For unknown signals, R&S®GX430IS offers a variety of representations and tools for analyzing and measuring technical parameters such as bandwidth, symbol rate, number of tones, tone spacing, shift, modulation index, length of guard interval, number of channels, signal duration, symbol valency and modulation type.

For known or standardized methods (GSM, DECT, CDMA, etc.), correlation and pattern analysis techniques are available. The tools of R&S®GX430IS allow quick recognition of preambles, training sequences and synchronization words of known methods.

Time/frequency segmentation including filtering makes multichannel methods, noncontinuous emissions (bursts) and densely occupied signal scenarios easy to handle.

(Coded) orthogonal frequency division multiplex ((C) OFDM) signals and methods using multiple modulation (e.g. AM-FSK, FM-FSK) can be easily measured and analyzed.

I/Q constellation diagrams and eye patterns are available for evaluating the measured parameters and the equalizer settings.
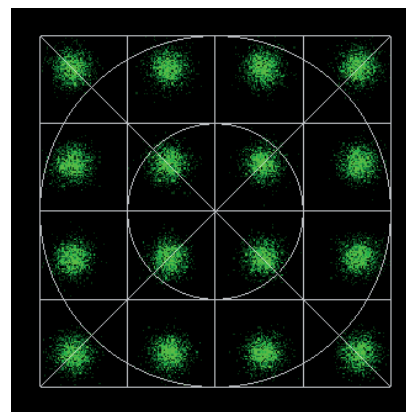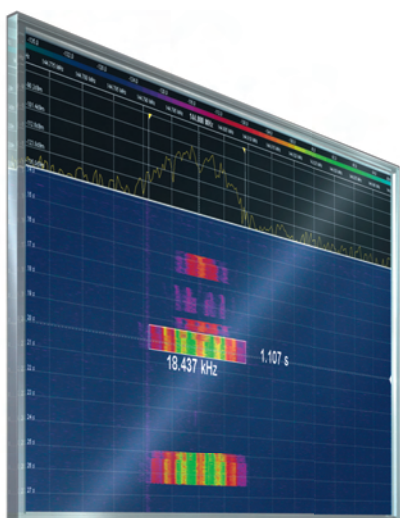
QAM16 constellation diagram

Years of Driving Innovation

ROHDE&SCHWARZ

Specifications, ordering information

R&S®GX430IS signal analysis in line with ITU-R SM.1600 recommendation

Measurement functions

Analysis of signals
❚ Time/frequency segmentation for multisignal scenarios
❚ Differentiation between analog signals, digital (C)OFDM signals and digital non-(C)OFDM signals

Measurable parameters for analog signals
❚ Bandwidth
❚ Center frequency
❚ Modulation type

Measurable parameters for digital signals
❚ Bandwidth
❚ Center frequency
❚ Symbol rate
❚ Shift or deviation
❚ Modulation index
❚ Number and spacing of tones/channels
❚ Level
❚ Time response, frame lengths and cycle times
❚ Symbol valency

Measurable parameters for digital (C)OFDM signals
❚ Bandwidth
❚ Center frequency
❚ Number of channels
❚ OFDM symbol duration
❚ Length of guard interval

Measurement functions

Recognition of known and standardized signals
(e.g. GSM, DECT) by correlating them with previously recorded signal samples
Measurable parameters:
❚ Preamble
❚ Length of guard interval
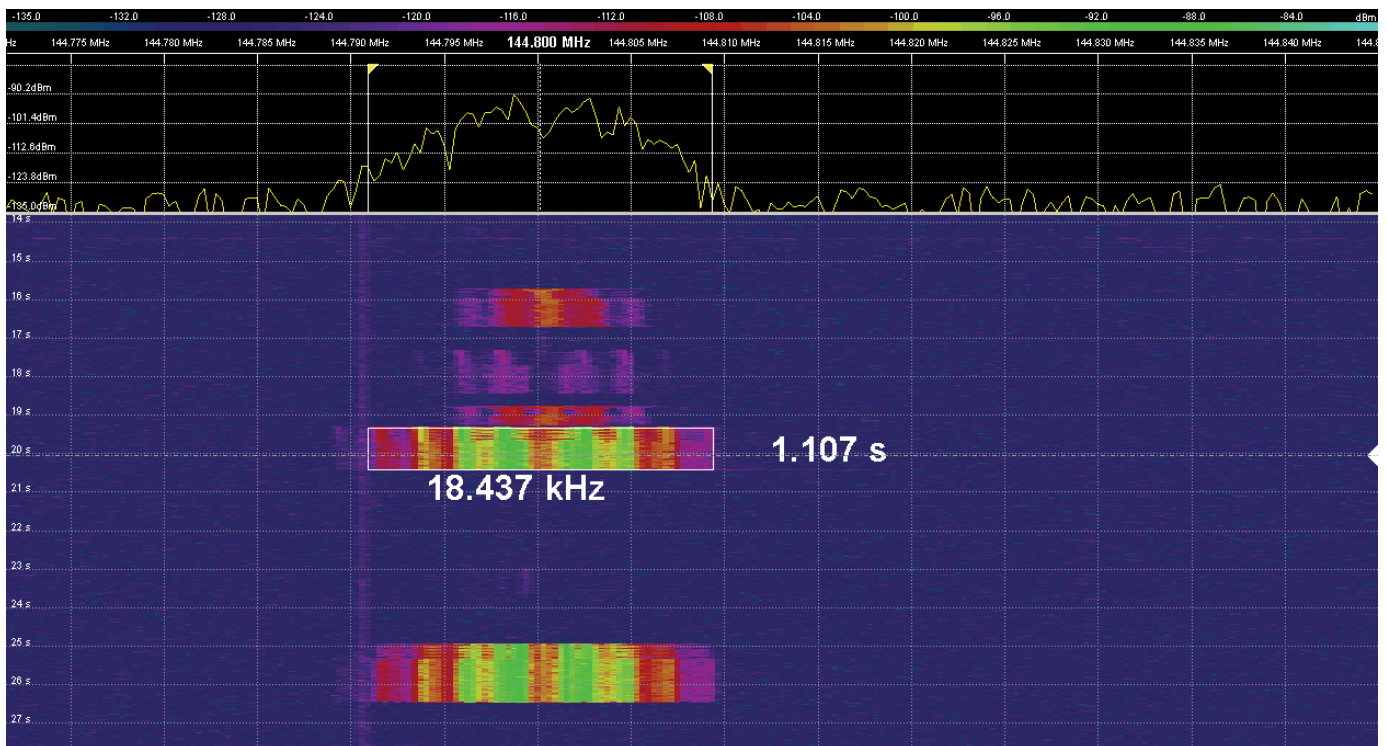❚ Training sequences and synchronization words

Analysis tools
❚ Spectrogram with zoom function
❚ Harmonic cursor
❚ Spectrum display: envelope, baseband, instantaneous frequency, delay and multiply (DAM), higher orders (1, 2, 4, 8, 1/h where h is the modulation index)
❚ Instantaneous data in time domain by means of histogram (I/Q data, envelope, instantaneous frequency, instantaneous phase)
❚ Zero crossing
❚ Auto- and cross-correlation
❚ Audio output, phase constellation diagram, eye pattern
❚ Equalizer, matched filter

Ordering information

Signal Analysis in Line with ITU-R SM.1600 Recommendation. Requires R&S®GX430.	R&S®GX430IS

Spectrogram of a burst transmission

18.437 kHz   1.107 s