

Agilent Signal Studio - 802.11a Option 410 for the ESG-D/DP Series Signal Generator

Product Overview

Use Signal Studio to create IEEE 802.11a test signals

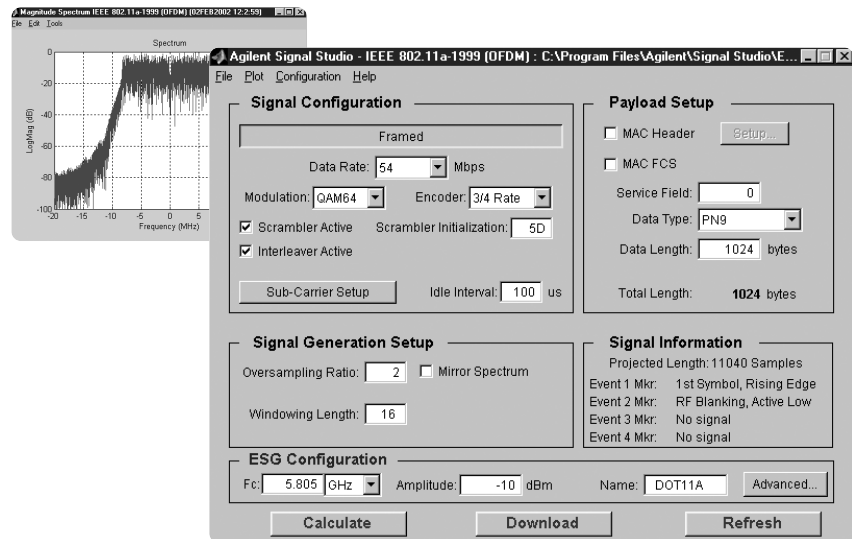
Signal Studio-802.11a software is a powerful tool for creating IEEE 802.11a baseband I/Q waveforms for use with the Agilent ESG digital series signal generator's dual arbitrary waveform generator.

Main features

- Intuitive user interface makes waveform creation fast and easy
- Plot spectrum and I/Q components
- Selectable framing includes preamble and header
- Raised cosine windowing
- Customize modulation and encoder settings including data rate, scrambling, interleaving, convolutional encoding, and MAC header
- Enable/disable FCS
- Remote control of basic ESG digital series RF signal generator functions from software

Try before you buy!

Download Signal Studio to a PC to evaluate the signal configuration and plotting capabilities of the software. A license key is required to load the waveforms created by the software into the ESG digital series RF signal generator. The license key can be ordered through your sales engineer or the nearest sales office, which can be found at www.agilent.com/find/assist.



Benefits

- Verify that the receiver decodes an independently generated 802.11a test signal correctly.
- Use as a test signal to perform standards-based tests.
- Use as test signal to stress components, such as power amplifiers, to determine basic performance such as adjacent channel interference.

I/Q Waveform generation

Signal Studio-802.11a software is a tool for creating an IEEE 802.11a waveform in an intuitive Windows®-based environment. The software calculates a baseband I/Q waveform file based on the user-defined 802.11a frame. The waveform file can then be downloaded to the ESG dual arbitrary waveform generator for playback.

Configuring and building WLAN 802.11a waveforms is made possible via Signal Studio's easy-to-use graphical interface. The configured I/Q waveform, along with basic instrument settings, is downloaded to the ESG and the signal generator automatically begins generating



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the modulated RF signal.

Ordering information

Signal Studio-802.11a is Option 410 for the Agilent ESG Digital Series RF Signal Generators.

The Signal Studio software requires that the ESG is equipped with the optional dual arbitrary waveform generator (Option UND). Firmware Revision B.03.75, or better, is required to activate the License Key on the ESG signal generator.

Upgrade kits

If you currently own an ESG and are interested in obtaining an upgrade kit only (license key) for that ESG, order:
E4433K Option 410

Signal Studio-802.11a data sheet	
Framing	Framed: bursted packets includes a PLCP Preamble (short and long) and Header (Signal field) Non-framed: Continuous non-burst payload data (no PLCP Preamble and Header added to payload)
Raised cosine windowing	Range: 0-16 samples
Convolutional encoding	1/2, 2/3, and 3/4 rate
Modulation formats	BPSK, QPSK, 16-QAM, 64-QAM
Data source	1s, 0s, 01s, 10s, PN9, PN15
Data rates	6,9,12,18,24,36,48,54 Mbps and Custom data rate
Custom data rate	Modulation: BPSK Encoder: Inactive Data rate: 12 Mbps Modulation: QPSK Encoder: Inactive Data rate: 24 Mbps Modulation: 16-QAM Encoder: Inactive Data rate: 48 Mbps Modulation: 64-QAM Encoder: Inactive Data rate: 72 Mbps Modulation: BPSK Encoder: 2/3 Data rate: 8 Mbps Modulation: QPSK Encoder: 2/3 Data rate: 16 Mbps Modulation: 16-QAM Encoder: 2/3 Data rate: 32 Mbps Modulation: 64-QAM Encoder: ? Data rate: 36 Mbps
Data length	Maximum • With MAC Header and FCS: 4061 Bytes • Without MAC Header and FCS: 4095 Bytes Minimum • 1 Byte
Idle interval between frames	Range: 0-1000 microseconds
Subcarrier setup	Range: -1 to -26, and 1 to 26. Individually selectable. All or any subcarrier configuration; except none.
Service field	16-bit Hex (First 7 LSB are masked to zero).
Scrambler seed initialization value	7 bit Hex
Oversample ratio	1,2
Frame length	Range: 24 microseconds to 5.484 milliseconds
Sample length	Maximum: 259,360 samples

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