

Agilent 802.11a WLAN Signal Studio Software for the E4438C ESG Vector Signal Generator

Option 410 Product Overview

IEEE 802.11a test signals

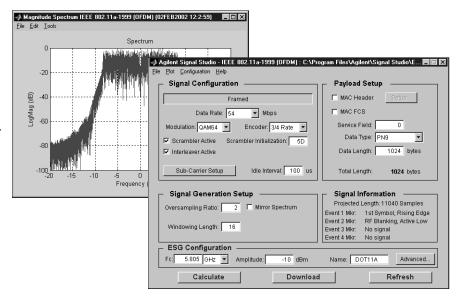
802.11a Signal Studio software is a powerful tool for creating IEEE 802.11a baseband I/Q waveforms for use with the Agilent E4438C ESG vector signal generator.

Main features:

- Quickly create 802.11a waveforms from the intuitive user interface
- Configure fully-coded 802.11a frames and 802.11a modulated data streams
- Add a user file as the payload data type
- Turn off individual or groups of sub-carriers
- Configure MAC header and enable MAC FCS
- Apply raised cosine windowing
- Activate scrambling, interleaving, and encoding
- Plot I/Q signals, spectrum, and CCDF curve
- Remote control of basic ESG functions from the software
- Connect to the ESG with 10B/T LAN or GPIB

Try before you buy!

Go to www.agilent.com/find/signalstudio and download 802.11a Signal Studio to your 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. 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

Component test

- Determine performance characteristics of 802.11a components
- Modify signal parameters to meet customized test needs
- Generate statistically correct signals to properly stress components

Receiver test

- Fully-coded frames enables PER and BER testing for receiver sensitivity tests
- Verify demodulation capability of WLAN receivers

I/Q waveform generation

802.11a Signal Studio software is a Windows®-based utility that simplifies the creation of 802.11a I/Q waveforms. It is intended for use with the E4438C ESG vector signal generator's baseband generator operating in arbitrary waveform mode.

Configuring and building 802.11a I/Q waveforms is quick and easy with Signal Studio's graphical interface. The configured I/Q waveform is downloaded to the ESG and the signal generator automatically begins generating the modulated RF signal.



Recommended configuration

E4438C ESG with the following options:

E4438C-002¹ 32 Msample baseband generator E4438C-410¹ 802.11a WLAN Signal Studio software

E4438C-506 6 GHz frequency range

E4438C-UNJ Enhanced phase noise performance

E4438C-005 6 GB internal hard drive

Upgrade kits

If you currently own an E4438C ESG vector signal generator and are interested in obtaining an upgrade kit only (license key), order: E4438CK and E4438CK-410

802.11a Signal Studio software specifications

802.11a Signai	Studio software sp	ecifications	
EVM	≤ 1.2% (38.42 dB), typical performance. See E4438C ESG Vector		
	Signal Generator Data Sheet, 5988-4039EN, for more details.		
Framing	Framed: bursted fully-coded 802.11a frames		
	 Non-framed: non-bursted 802.11a modulated data streams 		
Raised cosine	Range: 0-16 samples		
windowing			
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, user file		
Data rates	6, 9, 12, 18, 24, 36, 48, 54 Mbps, and custom data rate		
Custom data rate	Modulation	Encoder	Data rate
	BPSK	Inactive	12 Mbps
	QPSK	Inactive	24 Mbps
	16-QAM	Inactive	48 Mbps
	64-QAM	Inactive	72 Mbps
	BPSK	2/3	8 Mbps
	QPSK	2/3	16 Mbps
	16-QAM	2/3	32 Mbps
	64-QAM	1/2	36 Mbps
Data length	Maximum		
	 Without MAC header and FCS: 4095 bytes 		
	 With MAC header and FCS: 4061 bytes 		
	Minimum		
	• 1 byte		
ldle interval	Range: 0-1000 microseconds		
between frames			
Sub-carrier setup	Range: -1 to -26, and 1 to 26. Turn-off individual or groups		
	of sub-carriers.		
Service field	16-bit Hex (First 7 LSB are masked to zero).		
Scrambler seed	7 bits Hex		
initialization value			
Oversample ratio	2-5		
Frame length	Range: 24 microseconds to 5.484 milliseconds		

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Indicates required options. The baseband generator may be either option 001 or option 002; Option 001 contains 8 Msamples of memory.