

Agilent Signal Studio for 1xEV-DO E4438C ESG Vector Signal Generator

Option 404 Technical Overview

1xEV-DO test signals

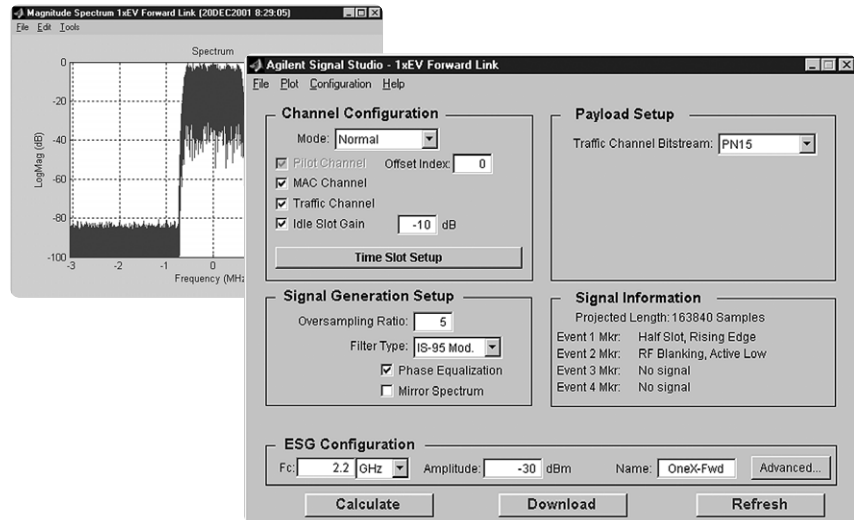
Signal Studio for 1xEV-DO software is a powerful tool for creating 1xEV-DO baseband I/Q waveforms for use with the Agilent E4438C ESG vector signal generator.

Main features

- Intuitive user interface
- Quickly create 1xEV-DO frames
- Forward link channels
 - Pilot, MAC, traffic, and control
- Reverse link channels
 - Pilot, MAC, ACK, and data
- Configure channels in each timeslot
- Selectable baseband filtering
- Plot I/Q signals, spectrum, and CCDF curve
- Configure ESG settings remotely
- 10B/T LAN or GPIB connectivity

Try before you buy!

Go to www.agilent.com/find/signalstudio and download Signal Studio for 1xEV-DO software to your PC. The signal configuration and plotting capabilities of the software can be evaluated. 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 1xEV-DO components
- Modify signal parameters to properly stress components
- Generate statistically correct signals

Receiver test

- Fully coded forward and reverse link signals for PER and BER testing
- Verify demodulation capability and sensitivity of access network and access terminal receivers
- Customize channel configurations in each timeslot
- Confirm basic link capability using continuous pilot mode

I/Q waveform generation

Signal Studio for 1xEV-DO software is a Windows®-based utility that simplifies the creation of 1xEV-DO 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 1xEV-DO I/Q waveforms is quickly achievable with Signal Studio's easy-to-use graphical interface. The configured I/Q waveform is downloaded to the ESG and the instrument automatically begins generating the modulated RF signal.

Windows is a U.S. registered trademark of Microsoft Corporation.



Ordering information

Signal Studio for 1xEV-DO is Option E4438C-404 for the Agilent E4438C ESG vector signal generator.

The Signal Studio software requires that the ESG is equipped with the optional baseband generator (E4438C-001, -002, -601, or -602).

Signal Studio for 1xEV-DO features¹

Forward link

Pilot channel	PN offset index: 0 to 511 Selectable mode: continuous or bursted
MAC channels	
Reverse activity	Data: 0 or 1 Gain relative to pilot: -30 dB to +30 dB
Reverse power control	Data: 0 or 1 Gain relative to pilot: -30 dB to +30 dB
Traffic channel	Data bitstream: 0s, 1s, 01s, 10s, PN9, PN15 Modulation type: QPSK, 8-PSK, 16-QAM
Idle slot gain	Noise level relative to pilot: 0 dB to -80 dB
Filter types	Rectangular, IS-95 standard, IS-95 modified (improved ACP), phase equalization
Oversampling ratio	Valid range: 2 to 30

Forward link FTM (factory test mode)

Pilot channel	PN offset index: 0 to 511
MAC channels	I/Q data: all zeroes
Traffic channels	Number of packets: 1 to 32 Preamble MAC index: 5 to 63 Packet payload: 0s, 1s, 01s, 10s, PN9, PN15 Data rate: 38.4, 76.8, 153.6, 307.2, 614.4, 921.6, 1228.8, 1843.2, 2457.6 kbps Encoding rate: 1/5 or 1/3 (automatically set) Modulation types: QPSK, 8-PSK, 16-QAM
Control channel	Data rate: 38.4 and 76.8 kbps
Filter types	Rectangular, IS-95 standard, IS-95 modified (improved ACP), phase equalization
Oversampling ratio	Valid range: 2 to 30

Reverse link

Pilot channel	
Reverse rate indicator channel	Data: 0 to 7 Octal
Data rate control channel	Data: 0 to F Hexadecimal Walsh cover index: 0 to 7 Gain relative to pilot: -30 dB to +30 dB
Data channel	Data bitstream: 0s, 1s, 01s, 10s, PN9, PN15 Data rate: 9.6, 19.2, 38.4, 76.8, 153.6 kbps Encoding rate: 1/4 rate @ 9.6, 19.2, 38.4, 76.8 kbps 1/2 rate @ 153.6 kbps Modulation type: BPSK
I & Q mask (42-bit)	Valid range: 0000000000 to 3FFFFFFF
Filter types	Rectangular, IS-95 standard, IS-95 modified (improved ACP)
Oversampling ratio	Valid range: 2 to 30

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-404.

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