

WiLANTA LVSG11abg

IEEE 802.11a/b/g PHY + MAC Signal Generation Solution

Overview

WiLANTA LVSG11abg is a comprehensive signal generation software for generating IEEE 802.11abg compliant signals (PHY+MAC layers) in the 2.4 & 5 GHz ISM (Industrial Scientific and Medical) band. WiLANTA LVSG11bg seamlessly integrates with the NI PXI RFSG 5670 to generate ideal and/or impaired IEEE 802.11b/g compliant RF signals, providing the user with complete control over the MAC frames (Management, Control and Data).

It facilitates configuration of all the MAC frame fields as mentioned in the standard along with duration ID (lets you to set the network allocation

vector field and amount of time the frame occupies the channel). WiLANTA LVSG11bg allows the generation of multiple frames which can be a combination of various frame types.

The measurement set includes the Power Spectral density plot, IQ Plots, Transmitter Power Plot, Constellation and Eye diagrams.

The Software allows the user to add impairments to the generated signal to test the robustness of DUT.

Features

Standards Supported

- IEEE 802.11g
- IEEE 802.11b
- IEEE 802.11a

Supported frequency range

- 2.4 GHz Band
- 5 GHz Band

Data Rates Supported

- 1,2,5,5.6,9,11,12,18,24,36,48,54 Mbps

Modulation formats Supported

- OFDM
- CCK/DSSS

MAC Frames Supported

- Data
- Management
- Control

Mode of Transmission

- Continuous mode transmission
 - Modulated Spectrum
 - Unmodulated Carrier
- Burst mode transmission
 - Packet transmission

Data configuration patterns

- User defined pattern
- Predefined pattern
- Text message
- PRBS (PN Sequence)

Impairments Supported

- Memoryless Nonlinearity
- AWGN (Additive White Gaussian Noise)
- Frequency Offset
- DC Offset
- I/Q gain imbalance
- Quadrature skew
- Phase noise

Configurations

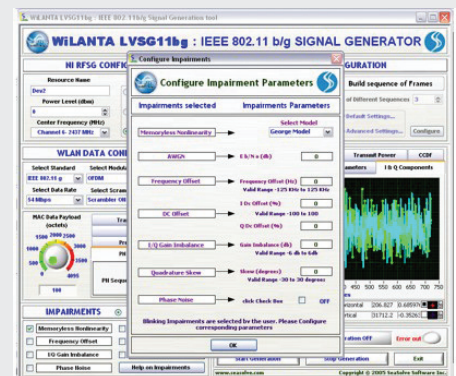
- Enable/Disable MAC configuration
- Enable/Disable Impairments Configuration
- Enable/Disable Scrambler
- Adjust Transmitter Frequency Change
- Configure Output Power

Display Parameters

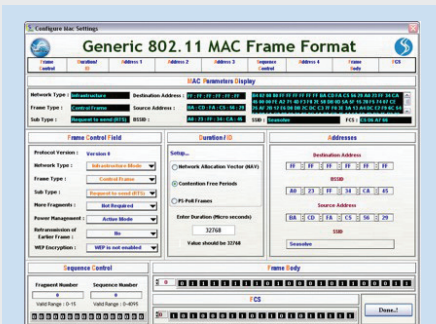
- Standard
- Modulation
- Data Rate
- Number of packets transmitted
- Data Payload (Octets)
- Impairments Applied
- Network Type
- Frame and subframe Type
- Destination and Source Addresses
- BSSID
- FCS
- Entire Frame Body

Extensive Graphical capabilities

- User defined plot color and style of lines
- Zoom
- Markers



For simulation purpose WiLANTA LVSG11bg allows modeling and viewing of various impairments. The addition of these impairments transforms WiLANTA LVSG11bg from ideal signal generation solution to Signal+noise generator solution.

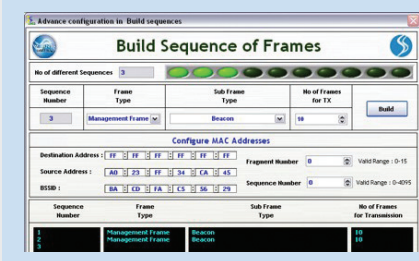


IEEE 802.11b/g MAC Frame Format

Supports all the Sub Frame types mentioned in standard

- Measurements
- IQ plot
- Constellation Diagram
- Transmit power plot
- Power Spectrum plot
- CCDF plot

Generate multiple frames or sequence of frames in one shot



WiLANTA LVSG11bg reduces time and delay by allowing the user to transmit multiple frames one after the other in just one click. The frame sequences can be a combination of data, management and control frames that include sub-frames.