



E8871 802.11n Wireless Library

The IEEE 802.11n Task Group was formed to increase WLAN throughput above 100 Mbits/second while maintaining backward compatibility with existing 802.11a/g devices, raising spectral efficiency to at least 5 bits/s per hertz and maximizing range.

Because throughput is specified at the media-access control (MAC) layer, the radio physical-layer data rate must be near 150 Mbits/s. These lofty goals for the next generation of WLAN chip sets are now achievable with proven technology.

Multiple-input, multiple-output antenna technology is a compelling answer to 802.11n's requirements. MIMO essentially multiplies data throughput, with a simultaneous increase in range and reliability, without consuming any extra frequency spectrum. And it can be used in a fashion that maintains backward compatibility to the installed base of WLAN products.

The Enhanced Wireless Consortium (EWC) was formed to help accelerate the IEEE 802.11n development process and promote a technology specification for interoperability of next-generation wireless local area networking (WLAN) products. EWC specification has been adopted by the WLAN 11n joint proposal team as the next-generation Wi-Fi standard.

This WLAN 11n wireless library complies with the EWC Interoperability PHY Specification, V1.13, November 2005.

Fully encoded WLAN 11n signal can be easily generated and demodulated. The hierarchy system structure enables you a great flexibility to customize the whole system within the 11n framework. Moreover, transmitter and receiver measurements are provided including EVM, CCDF, BER/FER under MIMO channel.

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Main Features of the Library

- 20/40 MHz bandwidth
- Up to 4 antennas
- Convolutional coding
 - 1/2, 2/3, 3/4 and 5/6
- Modulation scheme
 - BPSK, QPSK, 16-QAM, 64-QAM
- Mixed mode and Green field mode
- Direct mapping and spatial spreading

11n TX Projects

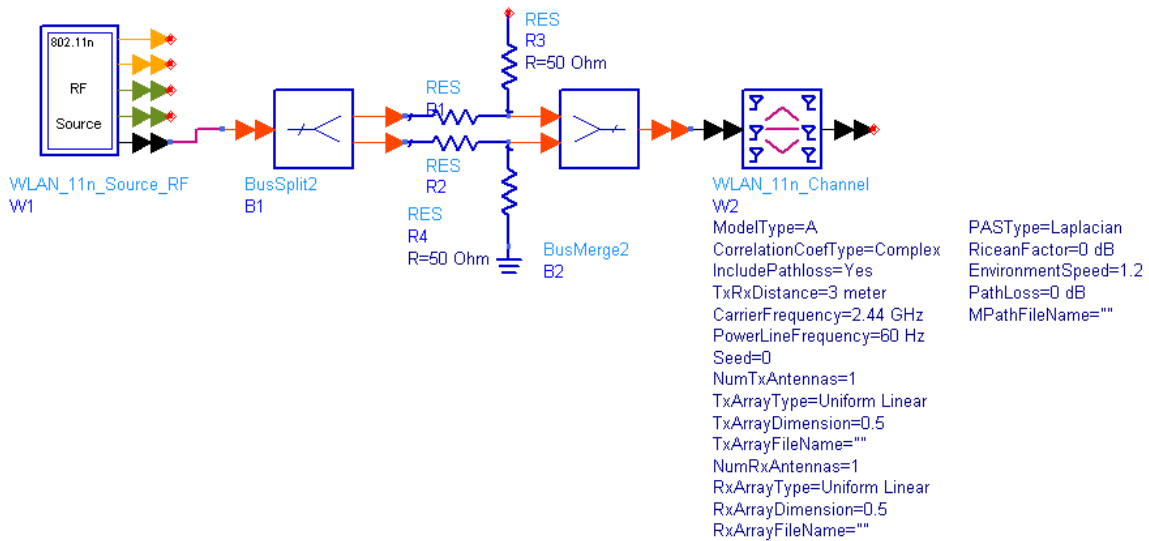
WLAN_11n_CCDF.dsn	CCDF measurement for two channels
WLAN_11n_Spectrum.dsn	Spectral measurements for two channels
WLAN_11n_TxEVM_2Tx.dsn	EVM measurements for two channels

11n Receiver Tests

WLAN_11n_AWGN_System_2SS.dsn	2 Spatial Stream BER and PER performance under AWGN channel
WLAN_11n_Fading_system_1SS.dsn	1 Spatial Stream BER and PER performance under fading channel
WLAN_11n_Fading_System_2SS.dsn	2 Spatial Stream BER and PER performance under MIMO fading channel

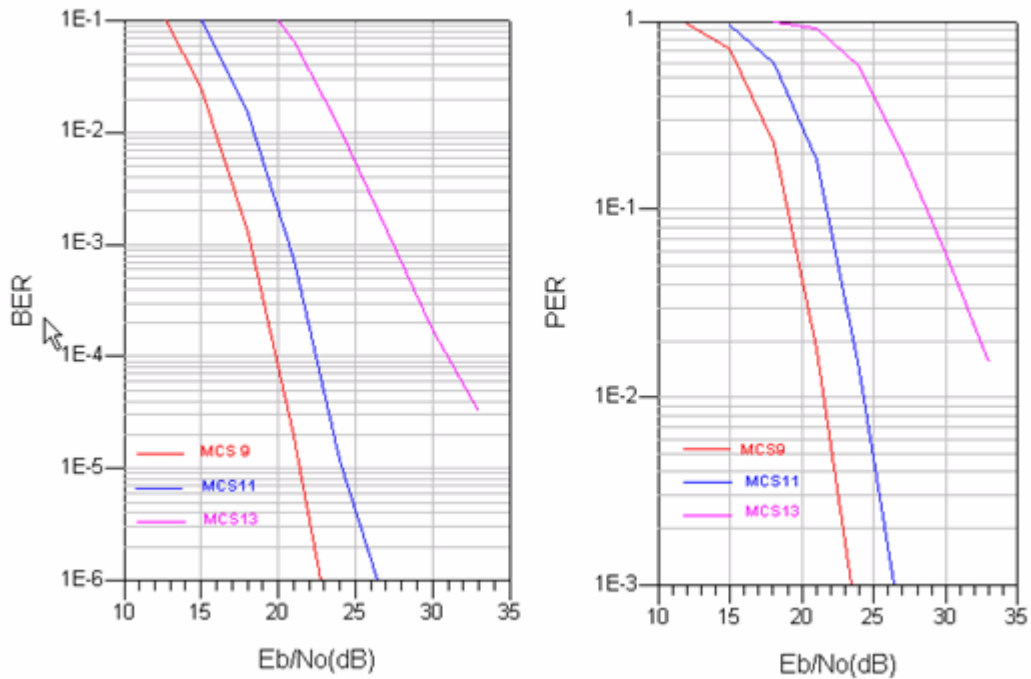
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802.11n RF Signal with MIMO Channel Setup



BER and PER of Two Spatial Streams Under Fading Channel

2 Spatial Streams BER and PER under Fading channel



Required ADS Modules

Besides the E8871 802.11n Wireless Library, the other ADS modules needed are:

- Design Environment (E8900)
- Data Display (E8901)
- Agilent Ptolemy Simulator (E8823)

Recent Publications

- Jack Shandle, Agilent ships 802.11n wireless library, **Wireless Net DesignLine**, 28 March 2006.
< <http://www.wirelessnetdesignline.com/products/wlan/184400521> >