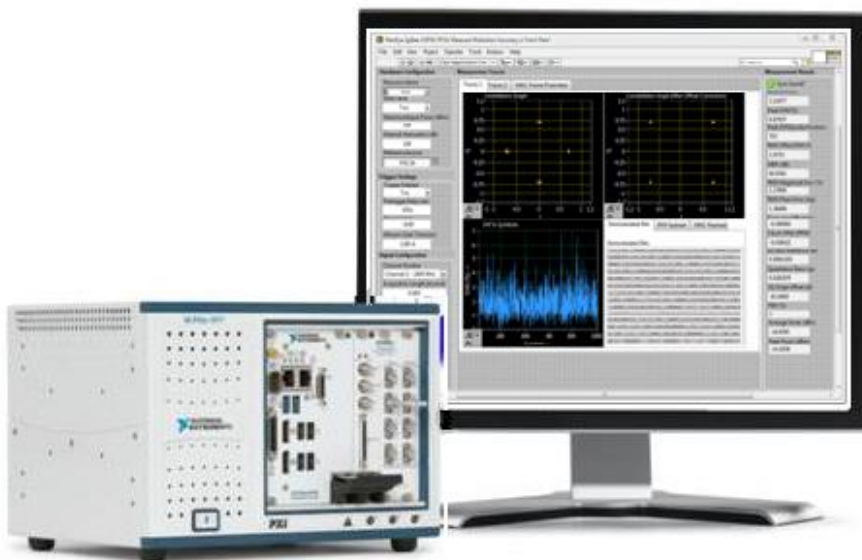


ZigBee RF Test and Measurement



ZigBee is the only standards-based wireless technology designed to address the unique needs of low-cost, low-power wireless sensor and control networks in just about any market. MaxEye Technologies provides the signal generation and analysis tools using National Instruments Vector Signal Generators/Analyzers or Vector Signal Transceiver to test the physical layer and RF front end of the ZigBee devices.

MaxEye ZigBee Measurement Suite

The ZigBee measurement suite supports generating and analyzing the signal as per the IEEE 802.15.4 standard MAC and PHY protocol.

- i. OQPSK Physical Layer (2.4GHz)
- ii. BPSK Physical Layer (868/915 MHz)

The standard defines different modulation types, data rates based on the frequency band.

Band	Frequency Range (MHz)	Modulation Type	Chip Rate (Kchips/sec)	Data Rate (Kbits/sec)	Pulse shaping Filter Type
2.4 GHz	2400 to 2483	OQPSK	2000	250	Half Sine Wave Filter
868 MHz	868 to 868.6	BPSK	300	20	Raised Cosine
915 MHz	902 to 928	BPSK	600	40	Raised Cosine

Key Features - Generation

- Supports both MAC and PHY Layer signal configuration
- Generation of various frame formats including Data Frame, Beacon Frame, Acknowledgement Frame and MAC Command Frame
- Payload Types: PN Sequence, User Defined Bits, Test Pattern and From File
- Generation of multiple frames with user configurable inter frame spacing. The payload is continuous across frames. This enables receiver sensitivity tests with longer payload sequence.
- Impairments : AWGN, IQ Impairments (Gain Imbalance, Quadrature Skew and IQ offset), Frequency Offset and Clock Offset

Key Features - Analysis

- Error Vector Magnitude (EVM) , Offset EVM and MER measurements
- Frequency Offset, Clock Offset, Magnitude and Phase Error
- IQ Gain Imbalance, Quadrature Skew and IQ Offset (Carrier Leakage)
- Transmit Power, Spectral Emission Mask and offset channel power measurements
- Multiple Frame Decoding, Demodulated Bits , Physical Layer Payload bits (PPDU), MAC Payload Bits (MPDU)
- Packet Error Rate Measurement (PER)
- Supported Traces
 - Constellation Trace, EVM vs Symbols Trace, Offset EVM vs Symbols Trace, Magnitude Error vs Symbols, Phase Error vs Symbols, Power vs Time Trace, Spectral Emission Mask Trace

Applications

- ZigBee Manufacturing Test
- ZigBee RF and Physical Layer Testing
- Design and Validation

Contact Information

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