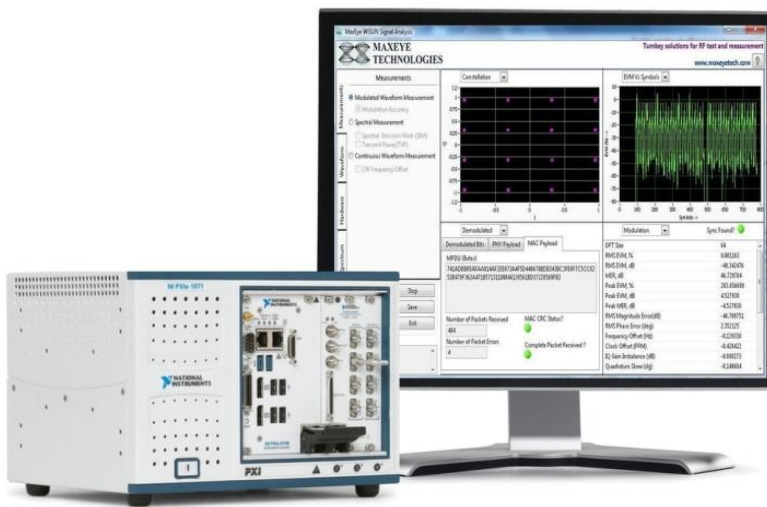# Wi-SUN RF Test and Measurement

Wi-Sun is the short form of Wireless Smart Utility Network and promoted by Wi-Sun Alliance. Wi-SUN Alliance is a consortium of Global Corporations and World Leaders in Smart Utility, Smart City and Internet of Things Markets. Wi-Sun network is developed as per IEEE 802.15.4g which defines PHY and MAC layer specifications. Wi-SUN brings Smart Ubiquitous Networks to service providers, utilities, local government and other enterprises, by enabling interoperable, multi-service & secure wireless mesh networks.

MaxEye Technologies provides generation and analysis functions in LabVIEW and .NET for generating and analyzing the Wi-SUN standard complaint signals using National Instruments Vector Signal Generators (NI VSG) and Vector Signal Analyzers (NI VSA) or Vector Signal Transceivers (NI VST).

MaxEye Wi-SUN Measurement Suite

The Wi-SUN measurement suite supports generating and analyzing the signal as per the IEEE 802.15.4g standard MAC and PHY protocol.

- MR OFDM Physical Layer

Key Features - Generation

- Supports both MAC and PHY Layer signal configuration
- Supports DFT Sizes 128, 64, 32, 16
- 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, EVM Vs SubCarriers, Magnitude Error Vs Symbols, Phase Error Vs Symbols, Power Vs Time Trace, Spectral Emission Mask Trace

Applications

- Wi-SUN Manufacturing Test
- Wi-SUN RF and Physical Layer Testing
- Design and Validation

Contact Information

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