LITEPOINT

iQnxn *MIMO Test System for Wireless Development*

Test with confidence…Multi-stream Pre-N and 802.11n Devices

The new LitePoint IQnxn™ test system features multiple, synchronized VSAs and VSGs designed to characterize and test the latest Multiple In / Multiple Out (MIMO) WiFi products. Multi-stream device testing is very complicated and challenging to obtain good results. LitePoint's unique WLAN test platform and technology revolutionized WiFi test. It made wireless test simpler and low cost. This unique approach plus the close work with key multi-stream chipset solution makers allowed LitePoint to create a system that profiles the performance of popular MIMO devices with confidence. As the 802.11n spec evolves and is accepted, the LitePoint IQnxn will upgrade to meet those requirements like the popular LitePoint IQview one-box R&D tester.

LitePoint IQnxn comes with IQnxn MIMO Software Suite and bundles the LitePoint IQsignal™ legacy WiFi software suite. IQnxn MIMO also runs the following optional programs: LitePoint IQwave™ for MIMO, LitePoint Bluetooth software, and LitePoint IQfact™ production test program software.

Flexible and Scalable…2X, 3X, 4X

There are already many MIMO chip configurations being offered. Testing multi-stream configurations requires a very flexible test solution system. The LitePoint IQnxn allows chipset and product developers, QA and brand owners to test these configurations. The Starter System comes configured for 2x2. Other configurations (2x3, 3x3, 4x4) are possible by merely adding LitePoint IQnxn Expansion Units.

IQnxn accommodates 2x2 to 4x4 MIMO testing. 2x2 shown.

Versatility & Consistency – R&D to Manufacturing

The IQnxn MIMO test system is primarily for development, QA and initial production applications where 802.11n MIMO chipsets are used. R&D and QA users will find their testing needs met with the complete MIMO Software Suite including C-compatible and MATLAB APIs, IQsignal for MIMO, a MIMO channel simulator panel, and sample wave files. With the MIMO Software Suite, a user has complete compatibility with IQfact MIMO production test program and the LitePoint MIMO One-Box Tester Software Package for production using LitePoint IQview® or IQflex™ test instruments.

Longevity and Reliability

IQnxn evolves with your increasing stringent requirements and is designed for the long-term deployment in R&D and pre-manufacturing environments. Software upgrades will ensure compliance with MIMO and WLAN standards changes. No learning curve – intuitive user interface gives R&D engineers immediate and easy access to standards compliant test functions. Additionally, the versatile IQnxn, if ever needed, can be used on the manufacturing floor just like an IQview one-box-tester, offering you greater versatility and usability.

- **Only test solution with multiple integrated and synchronized VSA and VSG functions** for testing advanced MIMO products.

- **Supports major current MIMO implementations** and is software upgradeable to 802.11n when finalized.

- **High performance RF and EVM accuracy.**

- **I/Q analog baseband input and output ports** – for testing and validation through RF and baseband ports.

- **Expandable to meet your needs** – use IQnxn Expansion Units to accomplish 2x3, 3x3 and 4x4 MIMO testing.

- **Flexible** – tests both WiFi and Bluetooth with optional LitePoint programs.

iQnxn

Measurements
- Average/Peak Power
- Amplitude Statistics (CCDF)
- PSD/Spectral Density
- IQ Mismatch
- Phase Noise
- RX Sensitivity & PER
- Transmit Impairment

Modulation Formats
MIMO
- 802.11n*
- EWC
- Airgo
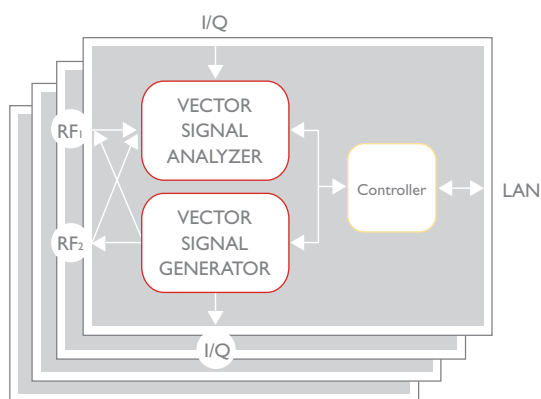- Modulation & Coding Scheme 0-32, 20 & 40MHz modes

$*$ When Available

Operation Modes
- RF Bands (2.4-2.5GHz, 4.9-6.0GHz)
- Baseband I/Q Modulation/Demodulation
- Single ended & Differential Baseband I/Os
- External Trigger, Signal Trigger or Free Running Capabilities
- Programmable or Continuous TX Waveform Repeat

Modulation Analysis
- Constellation Diagram
- EVM
- I/Q Amplitude & Phase Mismatch
- Spectral Flatness
- Carrier Leakage
- Phase Noise
- EVM vs. Symbol/Time
- EVM vs. Carrier
- Isolation

IQnxn Specifications

Frequency Bands		2.4 - 2.5GHz
		4.9 - 6.0GHz
RF Output Power	2.4 GHz Band	-10 to -90dBm
	5 GHz Band	-10 to -90dBm
RF Input Range	2.4 GHz Band	+20 to -70dBm
	5 GHz Band	+20 to -70dBm
Baseband Input Bandwidth		60MHz
Baseband Output Bandwidth		60MHz
Baseband Input Quantization		14 bit
Baseband Output Quantization		14 bit
Baseband Inputs	- Single Ended	I & Q
	- Differential	I-, I+, Q-, Q +
Baseband Outputs	- Single Ended	I & Q
	- Differential	I-, I+, Q-, Q +
EVM Accuracy		
RF Input	2.4 GHz Band	-36dB EVM
	5 GHz Band	-36dB EVM
RF Output	2.4 GHz Band	Better . than -36dB EVM
	5 GHz Band	Better than -36dB EVM
Baseband Input		-45dB EVM
Baseband Output		-45dB EVM

iQnxn

IQnxn is a vector signal based instrument, integrating multiple VSGs and VSAs in a single synchronized instrument configuration. The RF ports and an advanced RF switch matrix eliminate the need for external switching.

Accessories
Software
- Bluetooth for Manufacturing
- IQwave for MIMO Waveform Generator
- MATLAB API
- MATLAB API for MIMO
- IQfact Production Test Programs

Hardware
- IQnxn Expansion Unit
- MIMO 2.4GHz Channel Simulator
- MIMO RF 1:4 Coupler/Splitter

Our commitment is to serve our customers' long-term technology and strategic needs.

LitePoint Corporation designs and markets innovative, dedicated test instrument solutions for existing high volume and emerging wireless products markets, such as IEEE 802.11 WLAN, IEEE 802.15.3a (WiMedia™), IEEE 802.16 (WiMAX®), and Bluetooth®. LitePoint solutions are designed specifically to simplify and accelerate standards compliance and performance tests.

Register to Learn More About MIMO & IQnxn Today!
- Online - go to www.litepoint.com/mimo
- In person - call your local rep for an appointment

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