

Signal Analysis Software for IEEE 802.11a, b, and g

► WCA11G



Automatic Control for the WCA300 Series and Off-line Analysis of Wireless LAN Signals

WCA11G Signal Analysis Software enhances the WCA300 Series Wireless Communications Analyzer to provide the complete evaluation of RF signals in IEEE802.11a 5 GHz, IEEE802.11b, 11g 2.4 GHz high speed wireless LAN (WCA380 up to 8 GHz: IEEE802.11a, b, g, WCA330 up to 3 GHz: IEEE802.11b, g)

The software runs on an external PC connected to the WCA300 Series over a wireline Ethernet link. The WCA11G automatically configures the WCA300 Series to acquire transmission data and transfers the results to the PC. Data is analyzed off line, where results can be easily organized, displayed, and documented.

The WCA300 Series performs real-time acquisition of signal with bandwidths of up to 30 MHz. With 30 MHz Span setting, the analyzer can capture up to 2000 Frame, which is equal 50 ms time length. The Spectrum MASK function can be used to automatically trigger an acquisition when predefined limits exceeded. Intermittent channel effects such as multi-path and transient noise can then be captured with the real-time trigger to ensure accurate analysis of the affected bursts.

► Features & Benefits

Automatically Controls the WCA300 Series to Evaluate Transmission Characteristics of IEEE 802.11a, b, and g RF Signals Precisely as Defined in the Standard, Ensuring Conformance

Automatically Detect Data format and Bit Rate of Specified Standard

Simple, Familiar Configuration – Uses Standard External PC to Control the Analyzer and to Acquire, Store and Analyze Data Offline in a Standard Windows Environment, Eliminating Tedious Setups and Uncertainties

Frequency Domain Triggering Can Be Set to Capture Transient Events and Intermittent Signal Fluctuations, No Matter when They Occur

Powerful Spectrum Mask Testing Automatically Detects Out-of-Limit Conditions and Captures Signals to Help Identify and Troubleshoot the Causes

► Applications

Debugging and Troubleshooting Product Designs

Qualification Testing to Ensure that Products Conform with Standards

Documentation of Test Results to Demonstrate Conformance

COMPUTING

COMMUNICATIONS

VIDEO

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Conforms with the Standards and More

The combination of WCA11G software and the WCA300 Series provides the measurements needed to ensure technical conformance with IEEE 802.11a, b, and g. Measurements that have been defined in the standards are performed in full accordance with requirements. Additional tests beyond those defined in the standards, such as spurious response and crest factor, give further insight and assurance. Instrument setups, data acquisition conditions and analysis parameters are automatically configured, eliminating set up uncertainties.

Share Resources in a Local Network

Because the connection to an external PC is a standard Ethernet link, shared access to the WCA300 Series can be granted to multiple stations in a lab or test facility via an Ethernet LAN. Once an acquisition is completed by one station, the WCA300 Series is free to be used by another, to capture signals directly from its own PC. With the WCA11G software, analysis and documentation are done off-line using data that has been downloaded and stored in each PC.

► WCA11G Measurements Include:

	IEEE802.11b Standard* ¹	IEEE802.11a Standard* ²	IEEE802.11g Standard * ¹
Power vs. Time	✓	✓	✓
Power vs. Sub-carrier		✓	✓
Flatness		✓	✓
Constellation	✓	✓	✓
Symbol Constellation		✓	✓
Segment Constellation	✓		✓
EVM vs. Time	✓		✓
EVM vs. Time and Subcarrier		✓	✓
MagError vs. Time	✓		✓
MagError vs. Time and Subcarrier		✓	✓
PhaseError vs. Time	✓		✓
PhaseError vs. Time and Subcarrier		✓	✓
Center Frequency Error	✓	✓	✓
OFDM transmitter Linearity		✓	✓
Symbol Table	✓	✓	✓
Spectrum MASK	✓	✓	✓
Transmit Power On, Power Down	✓		✓
PBCC Modulation Analysis			✓

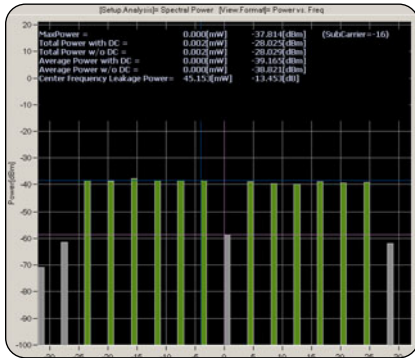
*¹ 2.4 GHz band using with WCA330, 380.

*² 5 GHz band using with WCA380.

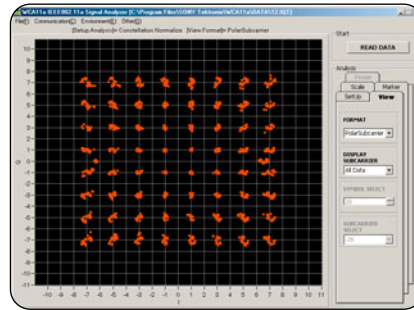
The WCA11G Software Can Be Run on Any Standard PC with a Minimum of:

- OS: Windows 98SE, Windows 2000, Windows XP
- CPU: Intel Pentium III, 866 MHz
- Memory: 512 MB
- Display: 1280x1024
- Ethernet LAN port

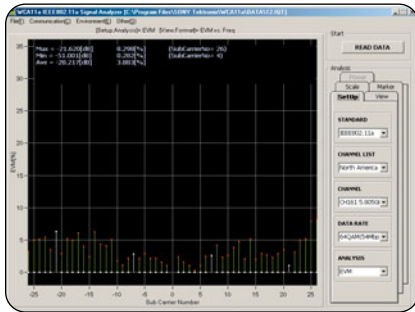
Examples of WCA11G Measurements



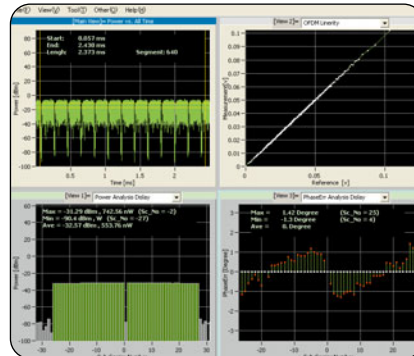
► Figure 1 - Power (vertical axis) vs. Sub Carrier Number (-32 to +32) during training sequence. Marker measurement indicates sub carrier power to 0 carrier power (20.2 dB).



► Figure 2 - Constellation display of a selected sub carrier (64QAM, including pilot).



► Figure 3 - EVM (vertical axis) vs. Sub Carrier Number. EVM is displayed using OFDM symbols (selected symbols displayed in circle).



► Figure 4 - Multi-domain view of 802.11g signal.

► Ordering Information

WCA11G

Signal Analysis Software for IEEE 802.11a, b, and g.

Included Accessories– Operators manual.

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www.tektronix.com



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