



## ARUBAOS SPECTRUM ANALYZER MODULE

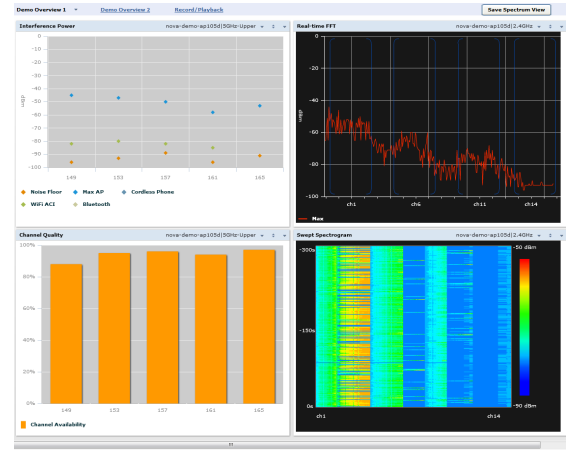
The Aruba Networks Spectrum Analyzer module in the Aruba OS operating system provides a critical layer of visibility into non-802.11 sources of RF interference and their effects on wireless LAN (WLAN) performance.

Using any Aruba 802.11n APs to scan the spectral composition of 2.4-GHz and 5-GHz radio bands, the spectrum analyzer remotely identifies RF interference, classifies its source and provides real-time analysis at the point of the problem.

Data collected by the Aruba spectrum analyzer is used to quickly isolate packet transmission problems, ensure over-the-air quality of service (QoS) and mitigate traffic congestion caused by RF contention with other devices operating in the same band or channel. Appropriate remediation measures can then be put in place to return the network to optimal performance.

Radio frequency (RF) interference in 802.11 WLANs is inevitable and unpredictable. It can originate from neighboring Wi-Fi networks or non-Wi-Fi sources, such as 2.4-GHz cordless phones, microwave ovens, analog video cameras and wireless telemetry systems. The characteristics and severity of RF interference can vary based on the type and location of the device. Interference can also occur continuously or intermittently, the latter being the most difficult to isolate.

The spectrum analyzer can be used in conjunction with Aruba's Adaptive Radio Management (ARM) technology. While the spectrum analyzer identifies and classifies Wi-Fi and non-Wi-Fi sources of interference, ARM employs infrastructure-based controls to optimize Wi-Fi client behavior and automatically ensures that APs stay clear of interference.



### FEATURE OVERVIEW

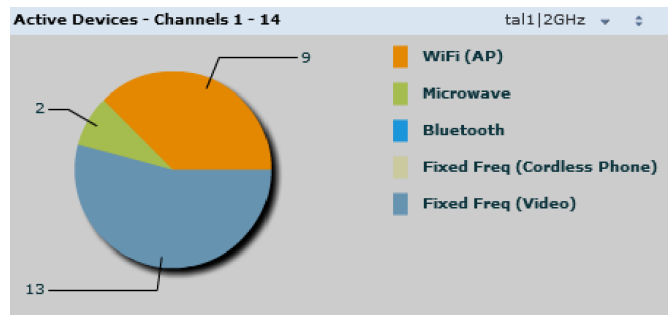
- Spectrum analysis is supported on all Aruba 802.11n APs.
- Radios continue to scan for wireless security events while performing spectrum analysis.
- Provides RF noise-level info to ARM for channel optimization.
- Integrates fast Fourier transform (FFT) displays and spectrograms for real-time troubleshooting and visualization – no need for an external laptop with specialized software.
- Spectrum analysis data recording capability enables extended unattended data capture and playback of intermittent interference events.
- Provides 14 different spectrum analysis charts for ease of troubleshooting and RF visualization.
- Enables notifications for detected non-Wi-Fi noise events to enable faster problem resolution.

### FAST DETECTION, HIGH ACCURACY

It is important to quickly detect and accurately classify sources of interference after which appropriate remediation measures can be put in place to return the network to optimal performance. Aruba 802.11n APs offer 312-kHz resolution bandwidth that enables the classification of more than 20 different sources of interference in less than five seconds.

### INTEGRATED, EASY-TO-USE MANAGEMENT INTERFACE

Traditional spectrum analysis solutions have complex and confusing graphical user interfaces. Aruba offers a single intuitive interface and concurrent visibility into 14 different charts that provide easy to navigate summaries. IT administrators can navigate down to extract additional information at will. No additional management servers or laptops are required.



Active devices identified by the Aruba spectrum analyzer.

### THE ARUBA DIFFERENCE

Aruba's infrastructure-based spectrum analyzer is far more efficient and useful than handheld spectrum monitoring tools, which require IT staff to spend a sizable amount of time onsite to manually capture intermittent RF interference events.

# ARUBAOS SPECTRUM ANALYZER MODULE

The Aruba solution is also a departure from spectrum monitoring systems that require multiple management servers, additional APs and dedicated sensors. Instead, Aruba offers fully functional spectrum analysis capabilities by utilizing the existing WLAN infrastructure – 802.11n APs, Mobility Controllers and ArubaOS – to preserve capital investments and reduce operating costs.

Aruba 802.11n APs utilize Wi-Fi chipsets with integrated high-definition spectrum analysis capabilities. This allows the implementation of spectrum analysis at less than half the cost of solutions that require dedicated AP hardware. Unlike solutions that utilize a dedicated spectrum analysis chipset within the AP, Aruba 802.11n APs perform spectrum analysis and wireless security scanning simultaneously – providing 10x times more spectrum analysis data.

The pervasiveness of 802.11n WLANs is revolutionizing enterprise workforce productivity by delivering high-performance wire-free access for everyone, everywhere. As organizations rely more on WLANs to do business, spectrum analysis becomes critical to ensuring predictable and reliable Wi-Fi performance.

## ARUBA VS. OTHER SPECTRUM ANALYZERS

Capability	Aruba Networks	Others
Affordable spectrum analysis-capable APs	Yes	No
Single management interface for all reports	Yes	No
Simultaneous detection of multiple interfering devices	Yes	Yes
Detailed resolution for interference classification	Yes	Yes
Notifications for spectrum analysis events	Yes	Yes
Ability to take action with RF management	Yes	Yes
Real-time	Yes	No
Record/playback captured spectrum data	Yes	No

## SPECTRUM ANALYZER DASHBOARD VIEWS

The Aruba Mobility Controller integrates several types of graphical charts to monitor spectrum analysis data.

Category	View	Benefit
Channel Health	Device Duty Cycle	Gives a snapshot of channel utilization and monitors the effects of devices as a percentage of time.
	Channel Utilization Trend	Classifies transient vs. chronic interference sources over 10-, 30- or 60-minute intervals.
	Channel Metrics	Summarizes channel utilization, channel quality and channel availability statistics for all monitored channels based on noise floor, duty cycle, error rates and other parameters.
	Channel Quality Trend	Classifies transient vs. chronic channel quality issues over 10-, 30- or 60-minute intervals.
	Channel Summary	Identifies channel health by monitoring valid signal-to-interference ratios.
Interference Classification	Active Devices	Provides a snapshot of devices and helps mitigate harmful types of interference.
	Devices vs. Channels	Shows channel population based on the number and types of devices.
	Active Devices Trend	Displays 10-, 30- and 60-minute summaries of channel device population.
	Interference Power	Summarizes the signal-to-interference ratio of interfering devices.
	Active Devices Table	Summarizes the severity of interfering devices and highlights affected channels.
Real-Time Visibility	Real-Time FFT	Snapshot of energy detected on multiple channels at each frequency with 312.5-kHz resolution.
	FFT Duty Cycle	Shows the percentage of time an interfering device is active and estimates its impact on multiple channels.
	Channel Quality Spectrogram	One-second interval views of channel quality for real-time troubleshooting.
	Swept Spectrogram	Color-coded FFT graph shows one-second capture of multichannel interference.



WWW.ARUBANETWORKS.COM | 1344 Crossman Avenue, Sunnyvale, CA 94089  
1-866-55-ARUBA | Tel. +1 408.227.4500 | Fax. +1 408.227.4550 | info@arubanetworks.com