WiFi Advisor™

The first wireless LAN analyzer built for installers at all skill levels

End users depend on WiFi to reliably deliver premium services such as video OTT and IPTV to endpoints throughout their homes. However, non-WiFi interference, competing WiFi networks and channels, and the exploding number of WiFi clients often hinder WiFi performance. As a result, 50% of all trouble calls are now WiFi related. Technicians who install and maintain WiFi in the home require robust installation methods and rapid, intuitive troubleshooting capabilities that even a WiFi novice can use.

The WiFi Advisor consists of a host application (running on an iPad, Android tablet, or the Viavi OneExpert platform) and one or more WFED-300AC test devices. It is the first test solution to meet the needs of technicians at all skill levels. Providing a new, visually rich approach to testing, its intuitive capabilities enable rapid characterization, optimization, and troubleshooting of highly changeable and vulnerable home WiFi networks. It shows a whole-home view of real WiFi performance margin and can deliver easy-to-understand information directly to the end customer.

Key Benefits

- Improves QoE, reduces trouble calls and repeats
- Reduces mean-time-to-repair
- Assesses a wide range of end-user device classes
- Educates customers about true performance
- Enables test conformance and repeatability across your workforce

Key Features

- Site performance report educates customers
- TrueMargin™ optimizes WiFi site throughput
- Intuitive and easy user interface recommends best channel and optimization steps
- Highly-configurable radio supports 2.4 G 802.11b/g/n and 5 G 802.11a/n/ac up to 3x3 with MIMO
- Associates job- or work-ticket information with site assessment results for export to StrataSync for storage and analysis

Applications

- WiFi troubleshooting and optimization
- Whole-home WiFi performance mapping and throughput analysis
- Wireless IPTV service installation
- End-user education

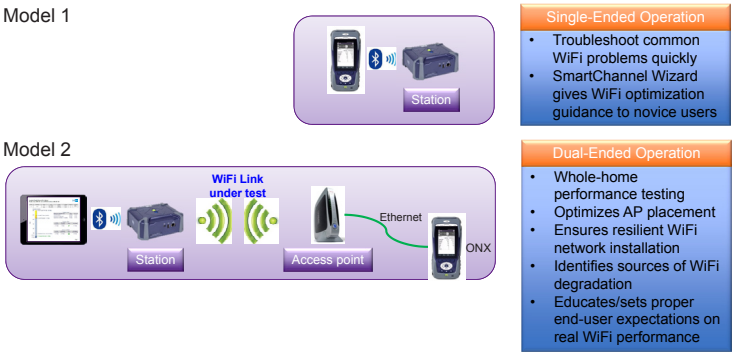
StrataSync™

Consolidate Your Test Investment

The WiFi Advisor is fully integrated with the Viavi OneExpert broadband-to-the-home test platform. This power combination lets you test fiber, the home WiFi network, and either copper or cable.

Flexible Viavi platform architecture helps customers maximize their overall investment in broadband-to-the-home test tools. There are two ways you can consolidate your toolset and minimize both OpEx and CapEx:

- Control a single WiFi Advisor from your OneExpert to do BSSID, spectral, and channel view testing. This lets you avoid purchasing a separate tablet device to host the WiFi Advisor application and reports. The OneExpert hosts the WiFi Advisor application.
- Conduct two-ended testing with a single WiFi Advisor, a tablet, and your OneExpert. Consolidate your tool set and eliminate the need for two WFEDs.

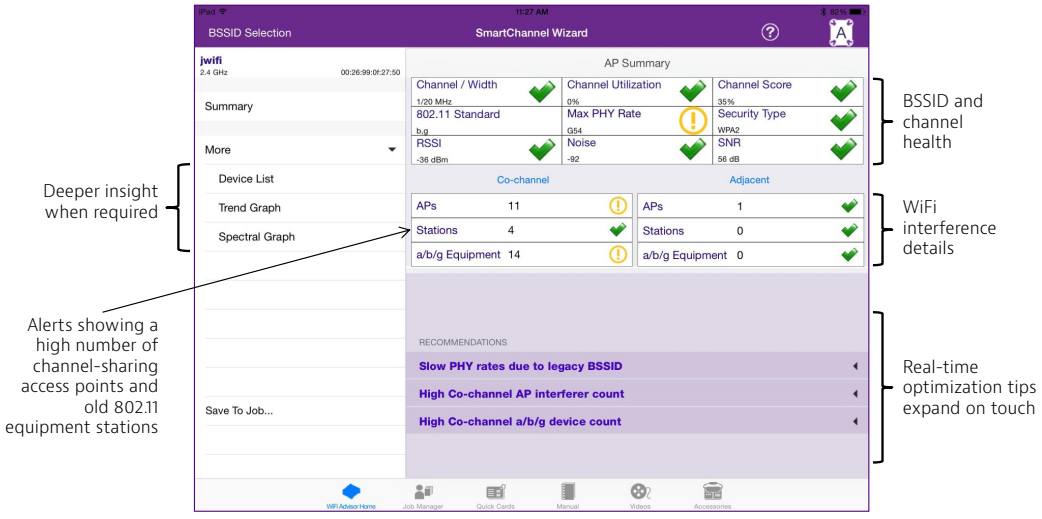


WiFi Advisor use models and OneExpert integration

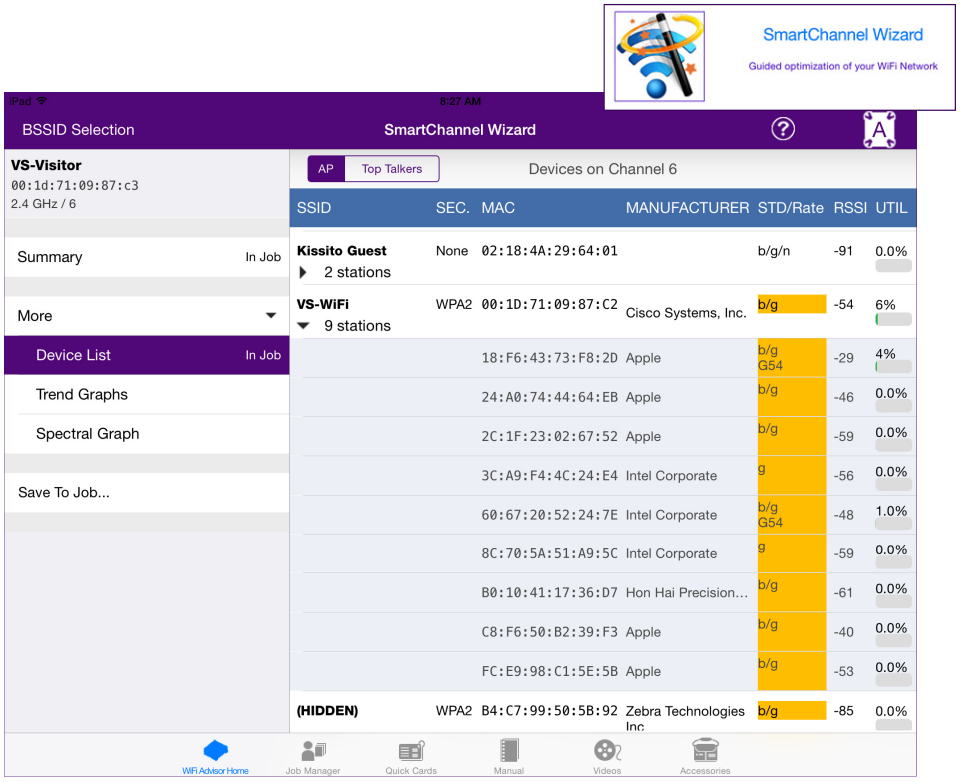
Troubleshooting and Optimization

Using a single WFED-300AC device, users can quickly visualize, optimize, and troubleshoot WiFi networks using the Smart Channel Wizard and the complementary BSSID, Channel, and Spectral views. The SmartChannel Wizard summarizes the KPIs and the health of the selected BSSID and the channel in which it resides. The summary will help novice uses and guide them to a resolution for each metric that is not optimal with practical optimization guidance. The Wizard sees beyond access point occupancies into the client detail of the entire customer network and the clients or any co-channel-sharing networks.

For example, the SmartChannel Wizard figure below shows high channel utilization and a high client station load. It recommends that the channel be changed to avoid the crowd and improve the experienced speed and throughput.

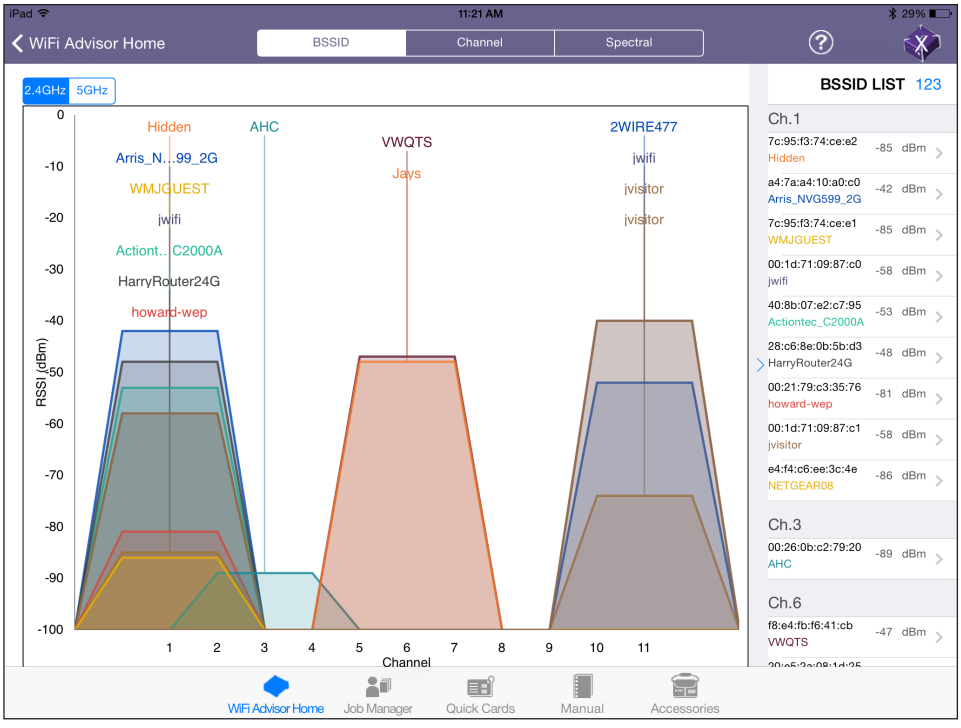


SmartChannel Wizard: built for the WiFi novice



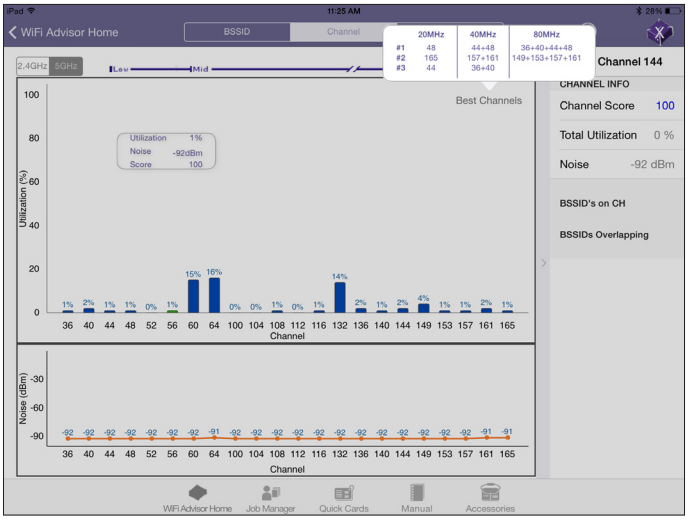
SmartChannel Wizard: Device List window

BSSID view provides quick visibility into active wireless networks and identifies the least-crowded channel to use for your access point. The application plots each in-range BSSID by channel and signal strength and identifies access points sharing a channel (co-channel interferers) or overlapping a channel (adjacent interferers) for each channel in the band. It also displays continuously-updated trend graphs of BSSID signal strength, noise, and channel utilization as the installer moves through the site.



Channel occupancy with BSSID view

Channel view finds the best channels for an access point by showing utilization, noise, co-channel interferers, adjacent channel interferers, and an overall channel score for each channel. Simply pressing the Best Channels button lists the top three channels for each channel width within the selected band.

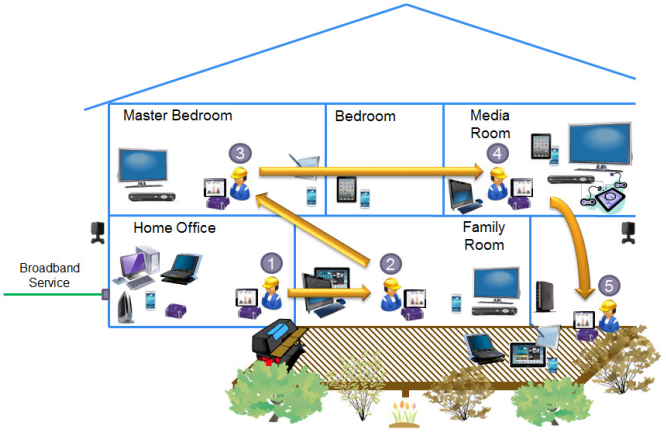


Channel view shows best channels

Spectral view shows damaging RF interference with a real-time spectral analyzer configurable by 802.11 band, channel, and channel width. It helps find interfering signals by showing all RF energy within a given channel/channel width of interest.

Spectral view shows interference within a channel

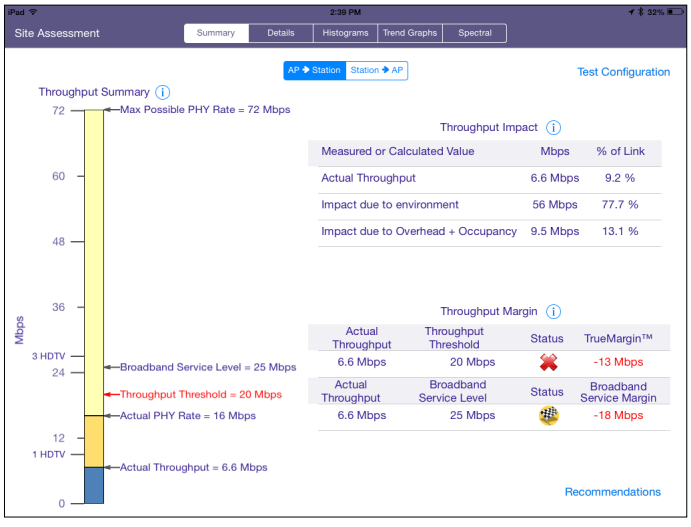
Site Assessment



Actual Layer 3 throughput margin is the key factor for determining the tolerance to changes in the WiFi environment. A high throughput margin equates to a high WiFi network resiliency and a reduced likelihood of trouble calls and repeat truck rolls. It is especially important when your customer expects high QOE in video over WiFi.

The WiFi Advisor shows real Layer 3 performance and determines the sources of throughput loss throughout a site. And, it conducts whole home performance testing either with or without the customer's access point. During the assessment, it lets a technician:

- Determine the maximum packet throughput capacity for a WiFi connection under test
- Gain visibility into factors impacting throughput
- Assess throughput margin relative to the configured service level threshold

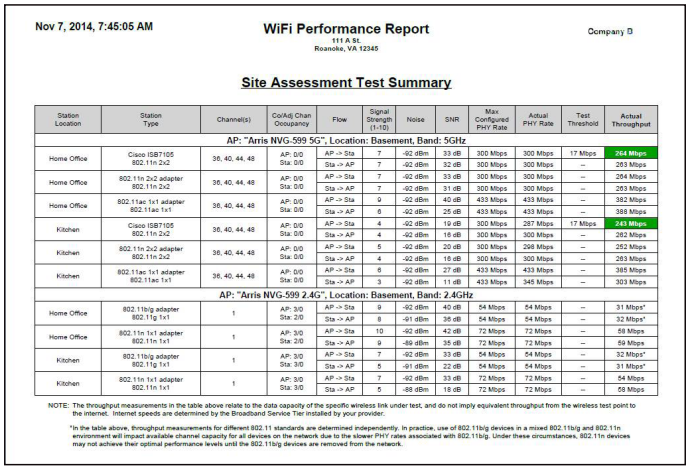


Site assessment analyze throughput and identifies slowdowns

Simple test profile configuration, guided test flows, and free-form test location sequencing make site assessment fast and easy, rapidly mapping WiFi performance across physical, link, and packet layers simultaneously. The test flow also allows for rapid "what if?" testing: if the end user wants to understand how a wireless set top box would work outside on the patio, it's a simple matter to add that location to the test flow.

Educating Customers Reduces Calls

Educating customers about their installed WiFi network is key to reducing callbacks and repeats. To this end, the WiFi Advisor gathers test results from all locations and all device profiles and creates a highly informative report that sets proper expectations. It can be e-mailed directly to the end user from the host application. The net result is a standardized approach to WiFi testing that thoroughly evaluates actual performance at each location of interest throughout the site and provides highly informative, leave-behind information.



Nov 7, 2014, 7:45:05 AM

WiFi Performance Report

111 A St.
Roanoke, VA 12345

Company

Site Assessment Test Summary

Station Location	Station Type	Channel(s)	Co/Adj Chan Occupancy	Flow	Signal Strength (1-10)	Noise	SNR	Max Configured PHY Rate	Actual PHY Rate	Test Threshold	Actual Throughput
AP: "Arris NVG-599 5G", Location: Basement, Band: 5GHz											
Home Office	Cisco ISB7105 802.11n 2x2	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	7	-92 dBm	33 dB	300 Mbps	300 Mbps	17 Mbps	264 Mbps
				Sta -> AP	7	-92 dBm	32 dB	300 Mbps	300 Mbps	--	263 Mbps
Home Office	802.11n 2x2 adapter 802.11n 2x2	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	7	-92 dBm	33 dB	300 Mbps	300 Mbps	--	264 Mbps
				Sta -> AP	7	-92 dBm	31 dB	300 Mbps	300 Mbps	--	263 Mbps
Home Office	802.11ac 1x1 adapter 802.11ac 1x1	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	9	-92 dBm	40 dB	433 Mbps	433 Mbps	--	382 Mbps
				Sta -> AP	6	-92 dBm	25 dB	433 Mbps	433 Mbps	--	388 Mbps
Kitchen	Cisco ISB7105 802.11n 2x2	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	4	-92 dBm	19 dB	300 Mbps	287 Mbps	17 Mbps	243 Mbps
				Sta -> AP	4	-92 dBm	16 dB	300 Mbps	300 Mbps	--	262 Mbps
Kitchen	802.11n 2x2 adapter 802.11n 2x2	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	5	-92 dBm	20 dB	300 Mbps	298 Mbps	--	262 Mbps
				Sta -> AP	4	-92 dBm	16 dB	300 Mbps	300 Mbps	--	263 Mbps
Kitchen	802.11ac 1x1 adapter 802.11ac 1x1	36, 40, 44, 48	AP: 0/0 Sta: 0/0	AP -> Sta	6	-92 dBm	27 dB	433 Mbps	433 Mbps	--	385 Mbps
				Sta -> AP	3	-92 dBm	11 dB	433 Mbps	345 Mbps	--	303 Mbps
AP: "Arris NVG-599 2.4G", Location: Basement, Band: 2.4GHz											
Home Office	802.11b/g adapter 802.11g 1x1	1	AP: 3/0 Sta: 2/0	AP -> Sta	9	-92 dBm	40 dB	54 Mbps	54 Mbps	--	31 Mbps*
				Sta -> AP	8	-91 dBm	36 dB	54 Mbps	54 Mbps	--	32 Mbps*
Home Office	802.11n 1x1 adapter 802.11n 1x1	1	AP: 3/0 Sta: 2/0	AP -> Sta	10	-92 dBm	42 dB	72 Mbps	72 Mbps	--	59 Mbps
				Sta -> AP	9	-89 dBm	35 dB	72 Mbps	72 Mbps	--	59 Mbps
Kitchen	802.11b/g adapter 802.11g 1x1	1	AP: 3/0 Sta: 3/0	AP -> Sta	7	-92 dBm	33 dB	54 Mbps	54 Mbps	--	32 Mbps*
				Sta -> AP	5	-91 dBm	22 dB	54 Mbps	54 Mbps	--	31 Mbps*
Kitchen	802.11n 1x1 adapter 802.11n 1x1	1	AP: 3/0 Sta: 3/0	AP -> Sta	7	-92 dBm	33 dB	72 Mbps	72 Mbps	--	54 Mbps
				Sta -> AP	5	-88 dBm	18 dB	72 Mbps	72 Mbps	--	59 Mbps

NOTE: The throughput measurements in the table above relate to the data capacity of the specific wireless link under test, and do not imply equivalent throughput from the wireless test point to the internet. Internet speeds are determined by the Broadband Service Tier installed by your provider.

*In the table above, throughput measurements for different 802.11 standards are determined independently. In practice, use of 802.11b/g devices in a mixed 802.11b/g and 802.11n environment will impact available channel capacity for all devices on the network due to the slower PHY rates associated with 802.11b/g. Under these circumstances, 802.11n devices may not achieve their optimal performance levels until the 802.11b/g devices are removed from the network.

WiFi site assessment test summary

Specifications

WFED-300AC Test Device	
Supported 802.11 standards	2.4 GHz: b/g/n 5 GHz: a/n/ac
Number of streams	1x1, 2x2, and 3x3
Maximum achievable PHY rate	1.3 Gbps
Maximum UDP throughput	512 Mbps
Battery life	4 to 6 hours typical use
DC input voltage	+12 V DC ±2 V
Maximum DC input current	3 A
Connectors	1 mini USB 2.0 (device) 1 USB 2.0 Type A (host) 1 RJ45 Ethernet 10/100/1000M 12 V DC input
Unit height	65 mm
Unit width	177 mm
Unit depth	154 mm
Weight	0.82 kg
Humidity range	10% to 90% noncondensing
Operating temperature range	0 to +40°C
Storage temperature range	–30 to +60°C
Hazardous materials rating	RoHS-5
Host applications and devices	iPad, Android tablet, and Viavi OneExpert platform
iOS Software Application	
Minimum iOS version	iOS 8.1.0
Minimum iPad hardware	iPad 2, 16 GB
Android Tablet Software Application	
Minimum software version	4.1.x
Recommended hardware	Samsung Galaxy Tab, Tab A, Tab S, Note, Note Pro Verizon Xplore 8 in or larger
OneExpert Platform	
OneExpert DSL	
Minimum software version	4.0.4
Hardware	ONX-580
OneExpert CATV	
Minimum software version	2.0.0
Hardware	ONX-610/620

Ordering Information

Description	Part Number
WiFi Advisor standard package: WFED-300AC WiFi Advisor test device, carrying case, USB cable, AC power supply, and power cord	WFED300AC-1PC
WiFi Advisor installer package: two WFED-300AC WiFi Advisor test devices, carrying case, USB cable, two AC power supplies, and two power cords	WFED300AC-2PC
WiFi Advisor test device – 802.11ac 3x3	WFED-300AC
WiFi Advisor case, two-device capacity	CC-000302
Power supply desktop AC three-pin connection	AD-21165101
USB cable 6 ft – USB to micro USB	SMARTID-USBCABLE-6FT
Lithium ion battery 4 cell, rechargeable	SCHMLIONBATT4
VSE interface (iPad Air, WiFi, 16 G)	VSE-INTERFACE

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