ACCESSAGILITY



WiFi Scanner User Guide Update 2.9.0.540

Revision History

This page is used to record information about the changes (additions, modification, and deletions) that have been made to this document.

Revision Date	App Version	Revision Summary
05/01/2023 - 05/10/2023	Update 2.8.31.b41	Document creation
05/10/2023 - 06/06/2023	Update 2.8.31.42	Updated Calibration method (Survey)
06/06/2023 - 07/05/2023	Update 2.8.36.46	Added new delete method, capability to continue last survey path, and show/hide markers (Survey); screenshot updates
07/05/2023 - 07/20/2023	Update 2.8.43.b53	Updated heatmap color scheme (Survey)
07/20/2023 - 09/13/2023	Update 2.8.47.b57	Heatmap color scheme ranges, show/hide survey paths in heatmap generation (Survey), renaming survey paths
09/13/2023 - 10/04/2023	Update 2.8.50.60	Updated screenshots, minor edits, added Optifi Agent for iOS
10/04/2023 - 11/20/2023	Update 2.8.50.b63	Various corrections and edits
11/20/2023 - 12/15/2023	Update 2.9.0.536	WLAN Pi firmware updates, Spectrum Graph primary channels now in quotes and screenshots updated, Optifi feature and screenshot updates, expanded Optifi Agent for iOS, added Optifi Agent for macOS
12/15/2023 - Present	Update 2.9.0.540	Removed iOS setup for Optifi Agent. Added link to Optifi User Guide in intro and mobile setup. Adjusted formatting.



Official Website: <u>https://wifiscanner.com/</u> Support: <u>support@accessagility.com</u> Twitter: <u>@accessagility</u> For MacOS users, please visit: <u>https://support.accessagility.com/hc/wifi-scanner-for-mac-os-user-guide</u>

About:

Simple, fast wireless network discovery of 802.11 a/b/g/n/ac/ax access points. Use WiFi Scanner to select the best configuration for your WiFi access point / router and optimize network speed. Also includes upload and download speed testing to quickly measure and analyze WiFi Internet performance problems.

Using WiFi Scanner, you'll see nearby wireless access points and their details including channels, signal levels (RSSI), noise, channel width, and MAC address, signal quality, maximum data rate, encryption, and much more.

WiFi Scanner is great for determining the best position for an access point at home or in the office. After selecting the best position, the optimal channel to use can be determined by selecting the least used channel resulting in improved WiFi speeds.

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Prerequisites and Setup

Software Download and Installation

To download WiFi Scanner, go to <u>https://www.accessagility.com/wifi-scanner-windows</u> and either buy the full featured version, or click the button to download the free trial.



The free trial version will allow full functionality of WiFi Scanner for 7 days. After, there will be options to purchase a license for future use.

After choosing an option to download WiFi Scanner, click the downloaded .exe file and follow the on screen prompts to complete the installation.



After the Installation Wizard has finished, you can choose to launch WiFi Scanner immediately and/or visit the support website to learn more about WiFi Scanner and how to use the tools and functions it has to offer.

License

Trial

To try WiFi Scanner, there is a 7-day evaluation period with all functionality enabled. After this trial expires, functionality will be limited, and you will have the option to purchase a license for full, continued use.



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Activation

In order to activate a device, you must have a License Key, which can be purchased at <u>https://www.accessagility.com/buy-wifi-scanner</u>. You can also obtain a License Key within WiFi Scanner by clicking 'Activate' in the top left and pressing *Buy Now*. After successfully purchasing a License Key, type or copy and paste the code into the text box.

🕐 WiFi Scanner File Help												
	Sno	wir	ng 183 of 184	mai Expired, E	innited Data 3							
Band	2	L	SSID	BSSID	Vendor	Channel	Band	Width				
♦ SSID	53		MicroFocus	40:E3:D6:C2:39:F1	Aruba, a Hewle	161	5 GHz	20 MHz				
♦ BSSID	141		NolijNET	0E:8D:CB:6D:20:FD	Meraki	64	5 GHz	20 MHz				
Vendor	15		GuestNET	0A:8D:DB:6D:2A:F8	Meraki	11	2.4 GHz	20 MHz				
Channel Width	3		[Hidden]	EA:CB:BC:31:2D:F0	Unknown	11	2.4 GHz	20 MHz				
Security	4		[Hidden]	E6:CB:BC:31:2D:F0	Unknown	11	2.4 GHz	20 MHz				
Signal	5		[Hidden]	E0:CB:BC:31:2D:F0	Meraki	11	2.4 GHz	20 MHz				

🥑 w	WiFi Scanner License Activation									
	WiFi Scanner Activation									
	License Key									
	If you have already purchased WiFi Scanner, please check your email for the License Key.									
	Activate		Buy Now							

Deactivation

You will have the option to deactivate your license on your device at any time. To do so, go to 'Help' \rightarrow 'About WiFi Scanner' \rightarrow 'License' and click *Deactivate License*.

🕑 About WiFi Scanner	×
Computer Name: DESKTOP-3KOAD6D Capabilities Network and Interface License	
WiFi Scanner	
Licensed To	
License Key:	
License Type: Professional	
License End Date: 09-25-2021	
Deactivate License	
Version 2.0.696, © 2020 AccessAgility LLC. All Rights Reserved.	

Limited Capability Mode

After a trial ends or a license expires, the application will enter Limited Capability mode. This mode allows continued use of WiFi Scanner, but with limited functionality.

Updates

WiFi Scanner automatically checks for updates during launch. If there is an update available, a prompt will appear to download and install it. You can manually check for updates by going to the 'Help' button (see 'Menu Navigation' under 'Help Button' on page <u>Help</u>).

Rollback

If a rollback for an earlier version is needed for any reason, contact support@accessagility.com.

Version History

To view version release notes, visit <u>https://support.accessagility.com/hc/windows-wifi-scanner-release-notes</u>

Reset Configuration

For a clean install of WiFi Scanner, follow the steps below to reset configuration. This could fix issues a user may have or prevent issues from occurring in the future.

- 1. Go to the Windows Control Panel
- 2. Click on 'Appearance and Personalization'
- 3. AccessAgility provided <u>How-To Page</u>



4. Click on 'Show hidden files and folders'



5. Within 'Files Explorer Options', check 'Show hidden files, folders, and drives'. Click Apply.

File Explorer Options	×								
General View Search									
Folder views You can apply this view (such as Details or Icons) to all folders of this type. Apply to Folders Reset Folders									
Advanced settings:									
Advanced settings: Advays show icons, never thumbnails Advays show menus Display file icon on thumbnails Display file icon on thumbnails Display file size information in folder tips Display the full path in the title bar Hidden files and folders Onon't show hidden files, folders, or drives Hide empty drives Hide extensions for known file types Hide folder merge conflicts Hide protected operating system files (Recommended)									
Restore Defaults									
OK Cancel Apply									

6. Open 'File Explorer' and navigate to the (C:) drive.



7. Now, locate the 'Program Data' file and open it.

📙 Apps		12/3/2018 8:12 PM	File folder
📙 Dell		10/8/2019 10:40 AM	File folder
📙 Drivers		12/3/2018 8:12 PM	File folder
📙 Intel		9/14/2020 11:04 AM	File folder
📙 PerfLogs		12/7/2019 4:14 AM	File folder
📙 Program Files		9/14/2020 11:04 AM	File folder
Program Files (x	36)	10/8/2020 9:34 AM	File folder
📕 ProgramData		10/1/2020 8:03 AM	File folder
Recovery		9/14/2020 11:02 AM	File folder

8. From here, find the 'WiFiScanner' folder and delete it.

📕 USOPrivate	9/14/2020 11:08 AM	File folder
USOShared	12/7/2019 4:14 AM	File folder
📮 WiFiScanner	9/24/2020 9:33 AM	File folder
WindowsHolographicDevices	12/7/2019 4:54 AM	File folder

9. Once these steps are complete, download and install the latest version of WiFi Scanner.

Uninstall Method

Open Apps & Features, which could be found by typing it in your search bar. Search for WiFi Scanner and click uninstall.



Theme

To change themes, click on the *Theme* tab on the top Right of the screen.



🕐 WiFi Scanner	File H	elp				SH	nowing data	a from Syst	em WiFi Interfa	ce				Theme 🗕	□ ×
Scanner Performance															
	Show	ring 109 of 109	SSID,Chann	el,BSSID									Sys	tem WiFi Interface	• +
▶ Band	2	SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Beacon Interval	Amendments	Mode	Security	Station Count	802.11r
♦ SSID	34	KTGYGroup	44:D9:E7:89:4C:C1	Ubiquiti Netwo	1	2.4 GHz	20 MHz	-83	now		e/i	b/g/n	WPA2 (PSK)	0	1
BSSID	80	wifiscannerB	38:90:A5:39:3A:01	Cisco Systems,	1	2.4 GHz	20 MHz	-62	now		d/e/i/k/r/v	b/g/n	WPA2 (PSK)	0	OTD
♦ Vendor	9	aa-mist	5C:5B:35:01:1F:11	Mist Systems,	6	2.4 GHz	20 MHz	-58	now		d/e/h/i/k/v	g/n	WPA2 (PSK)	0	
Channel Width	4	KTGY-Guest	44:D9:E7:89:58:50	Ubiquiti Netwo	157	5 GHz	40 MHz	-67	now		e/i	a/n/ac	WPA2 (PSK)	0	
Security	2	[Hidden]	02:18:4A:5A:31:AF	Meraki	11	2.4 GHz	20 MHz	-77	now		d/e/h/v	b/g/n		1	
Signal	5	Aruba-Lab	34:FC:89:D8:F9:70	Hewlett Packar	165	5 GHz	20 MHz	-55	now		d/e/h/i/k/v	a/n/ac	WPA2 (PSK)	2	
		AA-Guest	02:18:5A:59:9D:31	Meraki	153	5 GHz	20 MHz	-55	now		d/e/h/i/k/v	a/n/ac	WPA2 (PSK)	0	
		MicroFocus	40:E3:D6:C2:3C:B1	Aruba, a Hewle	44	5 GHz	40 MHz	-78	now		e/i/v	a/n/ac	AES (CCM) / WPA (WPA)	0	
		MAA-HQ	02:18:5A:5A:64:60	Meraki	48	5 GHz	20 MHz	-68	now		d/e/h/k/v	a/n/ac		0	
		MicroFocus	94:84:0F:19:14:81	Aruba, a Hewle	36	5 GHz	40 MHz	-75	now		e/i/v	a/n/ac	AES (CCM) / WPA (WPA)	0	
		MicroFocus_open	94:84:0F:19:14:80	Aruba, a Hewk	36	5 GHz	40 MHz	-74	now		e/v	a/n/ac		0	
		ULYWIFIGUEST	E6:CB:AC:31:64:88	Meraki	149	5 GHz	80 MHz	-72	now		d/e/h/i/k/v	a/n/ac	WPA2 (PSK)	0	
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Light Theme

🕐 WiFi Scanner F	ile H	elp				Sł	howing data	a from Syst	em WiFi Interf	ace				Theme 🗕	□ ×
÷															
	Show	ving 102 of 102 🥇	SSID,Chann	el,BSSID									Sys	tem WiFi Interface	· (+)
▶ Band		SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Beacon Interval	Amendments	Mode	Security	Station Count	802.11r
♦ SSID	30	KTGYGroup	44:D9:E7:89:4C:C1	Ubiquiti Netwo	1	2.4 GHz	20 MHz	-83	now		e/i	b/g/n	WPA2 (PSK)	0	<u> </u>
♦ BSSID	75	wifiscannerB	38:90:A5:39:3A:01	Cisco Systems,		2.4 GHz	20 MHz				d/e/i/k/r/v	b/g/n	WPA2 (PSK)		OTD
♦ Vendor 8	8	aa-mist	5C:58:35:01:1F:11	Mist Systems,	6	2.4 GHz	20 MHz	-59	now		d/e/ħ/i/k/v	g/n	WPA2 (PSK)	0	
♦ Channel Width	•	KTGY-Guest	44:D9:E7:89:58:50	Ubiquiti Netw		5 GHz	40 MHz		now			a/n/ac	WPA2 (PSK)		
♦ Security		[Hidden]	02:18:4A:5A:31:AF	Meraki	n	2.4 GHz	20 MHz	-77	now		d/e/h/v	b/g/n			
♦ Signal		Aruba-Lab	34:FC:89:D8:F9:70	Hewlett Packar	165	5 GHz	20 MHz		now		d/e/h/i/k/v	a/n/ac	WPA2 (PSK)		
		AA-Guest	02:18:5A:59:9D:31	Meraki	153	5 GHz	20 MHz	-59	now		d/e/ħ/i/k/v	a/n/ac	WPA2 (PSK)	0	
		MicroFocus	40:E3:D6:C2:3C:B1	Aruba, a Hewk	44	5 GHz	40 MHz		now			a/n/ac	AES (CCM) / WPA (WPA)		
		MAA-HQ	02:18:5A:5A:64:60	Meraki	48	5 GHz	20 MHz	-68	now		d/e/h/k/v	a/n/ac		0	
		MicroFocus	94:84:0F:19:14:81	Aruba, a Hewk	36	5 GHz	40 MHz					a/n/ac	AES (CCM) / WPA (WPA)		
		MicroFocus_open	94:84:0F:19:14:80	Aruba, a Hewk	36	5 GHz	40 MHz	-75	now		e/v	a/n/ac		0	
		ULYWIFIGUEST	E6:CB:AC:31:64:88	Meraki	149	5 GHz	80 MHz	-69	now		d/e/h/i/k/v	a/n/ac	WPA2 (PSK)	0	_
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Dark Theme

Scanner Tab

Main Results Table

This table displays the data taken from a packet capture of all the surrounding networks your device can see. The data is presented in a table view with rows and columns in order to convey relevant information in an easily readable, understandable, and accessible format.

Band 2 Band 2 Society 199 et 2 Society 2	Optimize SSD Charmel/ESSE D BSSD D BSSD charac 1012/230.717 JSMF CSC/DB1C4F NDD MCRA211 MRXIST GCALLBOD NOO MCRA2110 MRXIST GCALCALDO NRXIST	SSID_Charmel_USSID SSID_Note SSID	Venor Ubiquiti Inc Ciaco Meraki Netgear Meraki Meraki Meraki Unknown Meraki	Channel 1 6 3 9 157 1 100 6 6 6 6 6 6	Band 2.4 GHz 2.4 GHz 2.4 GHz 5 GHz 5 GHz 5 GHz	Width 20 MHz 20 MHz 20 MHz 80 MHz 80 MHz	Signal -79 -48 -47 -65	Last Seen 24 hours ago now now	MCS 8 11 11	TPC	Mode b/g/n b/g/n/ax	Security WPA2 (PSK)	Station Count	Streams	Min Rate 1 Mbps	AP Uptime 31d 10:57:10	Channel Utilization	W Basic Rates	i-fi	• +
Control (1) Control (2) Control (D SSID/Lanve/ESSD D 8530 STMF 0500 Maxb 24 5000 Mod 24 5000 Mod 24 5000 MOD Ac8Ac3120 MOD 4000 5000 MOD 4000 5000 MOD 4000 5000 MOD 4000 5000 MOD 40000 5000	SSDC/uncertains SSSD SSSD Intel ISSD SSSD Intel SSSD Intel ISSD:SSD:SSD:SSD:SSD:SSD:SSD:SSD:SSD:SSD	Vendor Ubiquit Inc Cisco Meraki Netgear Meraki Meraki Meraki Meraki Meraki	Channel 1 2 6 2 9 2 157 2 100 2 64 2	Band 2.4 GHz 2.4 GHz 2.4 GHz 5 GHz 5 GHz 5 GHz	Width 20 MHz 20 MHz 20 MHz 80 MHz 80 MHz	Signal -79 -48 -47 -65	Last Seen 24 hours ago now now	MCS 8 11 11	23	Mode b/g/n b/g/n/ax	Security WPA2 (PSK)	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	W Basic Rates	i-fi	• +
1 Boto 2 SSD 3 SSD 5 SSD 9 SSD 1 Citica 2014 1 Social 2014 2 Highthaws 2 Social 2014 3 UWI BPCD 2 Social 2014 3 UWI BPCD 2 Social 2014 3 UWI BPCD 3 Social 2014 3 UWI BPCD 4 Addts 5 UWI BPCD 5 Social 2014 UWI BPCD VUI BPCD 6 Addts 5 UWI BPCD 7 Social 2014 UWI BPCD VUI BPCD 6 Fibres UWI BPCD VUI BPCD 1 Fibres UWI BPCD Fibres 1 Fibres	D BSSD values LBL2-200x/74 SUFF COCS-LEDBOD hawk-24 SCCD016/54 MOD AccBA-LEDD	BSSID BSSID Note 1812/394/7/85 CC-3C3EE/08000 CC-3C3EE/08000 CC-3C3EE/08000 ECCDSR/CF4Aa EACEBAC-312079 FACEBAC-312079 FACEBAC-312079 FACEBAC-312079 EACEBAC-312042 EACEBAC-3170A2 EACEBAC-3170A2 G2185A5A20251 CAREBACES1	Vendor Ubiquiti Inc Cisco Meraki Netgear Meraki Meraki Meraki Meraki Unknown Meraki	Channel 1 2 6 2 9 2 157 2 100 2 64 2 6 2	Band 2.4 GHz 2.4 GHz 3 GHz 5 GHz 5 GHz 5 GHz	Width 20 MHz 20 MHz 20 MHz 80 MHz 80 MHz	Signal -79 -48 -47 -65	Last Seen 24 hours ago now now	MCS 0 11 11	TPC 23	Mode b/g/n b/g/n/ax	Security WPA2 (PSK)	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	Basic Rates		
9 500 19 10 10 1000 9 5000 19 10 1000 500 9 Chandra 200 10 4000 10 4000 9 Chandra 200 10 4000 10 4000 9 Somithy 30 10 4000 10 4000 9 Samithy 30 10 4000 10 4000 9 Adrits 50 10000 7 Adrits 50 10000 10 Adrits 10 4000 10 4000 10 Adrit	ubress 16.02.79.4/7/2 _STMF CCSC-861.69.8 NHA-2A CCCD061.57.8 NOD AcCR-861.09 NR00 AcCR-861.09 NR01 BCR-64.80 NR02 BCR-64.80 NR04 BCR-64.81	152.0244/155 cc20261cf3636 cc02061cf4646 fAcBAC312026 fAcBAC312026 fAcBAC312026 fAcBAC312042 fAcBAC312042 cAcC312042 fAcBAC312042 fAcBAC312042 facBAC312042 facBAC312042	Ublquit Inc Cisco Meraki Netgear Meraki Meraki Meraki Unknown Meraki	1 6 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	2.4 GHz 2.4 GHz 2.4 GHz 5 GHz 5 GHz 5 GHz	20 MHz 20 MHz 20 MHz 80 MHz 80 MHz	-79 -48 -47 -65	24 hours ago now now now	8 11 11	23	b/g/n b/g/n/ax	WPA2 (PSK)	0	3	1 Mbps	31d 10:57:10	38%	1, 2, 5.5, 11		-
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9 Channell Wellin 20 4 With With 200 > Sonardy 3 4 With 2000 > Signal 5 4 With 2000 > Sonardy 3 4 With 2000 > Sonardy 5 4 With 2000 > Aloris 5 4 With 2000 > Filters	NDD EACRAC312D NOD EACRAC312D NOD EACRAC3170 INFOURT EACRAC3170 ACCRAC3170 EACRAC3170 ACRAC3170 EACRAC3170 ANDUEST EACRAC3170 Max EACRAC3170 ANDUEST EACRAC3170 Max EACRAC3170 ANDUEST EACRAC3170 Max EACRAC3170 ANDUEST EACRAC3170 Max EACRAC3170	EACBAC312DF0 EACBAC48D02C EACBAC48D02C EACBAC317042 CA6433E08000 E6CBAC317042 02185A5A2051	Meraki Meraki Meraki Meraki Unknown Meraki	157 5 100 5 100 5 64 5	5 GHz 5 GHz 5 GHz	80 MHz 80 MHz	-65			24	b/g/n/ax	WPA2 (PSK)	0	4	1 Mbps	24d 00:29:44	39%	1, 2, 5.5, 11		
Security Seguel Segu	YNDD FACE AC4620 IPRGUIST E6C8AC4820 INOD EAC8AC4820 INOD EAC8AC4820 INOD EAC8AC4820 INFOLIST EAC8AC4820 INFOLIST EAC8AC4820 INFOLIST EAC8AC4820 INFOLIST EAC9AC482000 INFOLIST EAC9AC482000 INFOLIST EAC9AC482000 INFOLIST EAC9AC482000 INFOLIST EAC9AC4820000 INFOLIST EAC9AC482000000000000000000000000000000000000	EACBAC48D02C E6CBAC48D02C EACBAC48D02C CA9C3EED8000 E6CBAC317042 02185A5A2051	Meraki Meraki Meraki Unknown Meraki	100 5 100 5 64 5	S GHz S GHz	80 MHz	-					WPA2 (PSK)			12 Mbps					
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Advis S Widerood Fitters	YOD EACBAC3170:	EACBAC31:7042 CA9C3EED80:00 E6C8AC31:7042 02:18:5A:5A:20:51	Meraki Unknown Meraki	64 S		80 MHz	-62	now	9	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	14d 18:45:49	3%	12, 24		
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ULVWWFDU AA Gent Fice prov Higher Higher Ulvwwfi Ulwwfi Ulwwfi Jan Jan Jan Jan Jan Jan Jan Jan Jan Jan	//FIGUEST E6:CB:AC:31:70: iwest 02:18:SA:SA:20:	E6:C8:AC:31:70:42 02:18:5A:5A:20:51	Meraki			20 MHz					b/g/n/ax	WPA2 (PSK)			11 Mbps					
A A Gaset Critic Purk Nettoperin Updataset Disadari U UvWill	uest 02:18:5A:5A:20: _DEVICES C6:9C:2E:ED:80: operience-Default-SSID F4:08:9F:D0:97: thurk-S 6C:CD:06:1C:EE	02:18:5A:5A:20:51		64	5 GHz	80 MHz	-67	now	9	24	a/n/ac	WPA2 (PSK)	0		12 Mbps	14d 18:45:58	2%	12, 24		
Circly, DAV Heritigram, Harrison, Ha	_DEVICES C6:9C2E:ED:80: perience-Default-SSID F4:08:9F:D0:97: thunk-S 6C:CD:D6:1C455		Meraki	48 9	5 GHz	20 MHz	-64	now	8	8	a/n/ac	WPA2 (PSK)		2	24 Mbps	12d 10:55:03	2%	24		
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Control Contro	thank-5 60-CD-D6-10-FE	SSID F4:08:9F:D0.97:7F	Cig Shanghai Co Ltd								b/g/n/ax	WPA2 (PSK)			11 Mbps					
	our	6C:CD:D6:1C:FF:A7	Netgear	44	5 GHz	160 MHz	-52	now	11	24	a/n/ac/ax	WPA2 (PSK)	0	4	6 Mbps	24d 00:29:41	19%	6, 12, 24		
9 30 30 30 30 30 30 30 30 30 30 30	_GUEST CA:9C:3E:ED:7F:	CA:9C:3E:ED:7F:E0	Unknown		2.4 GHz	20 MHz	-71	now	11	9	b/g/n/ax	WPA2 (PSK)	0	4	11 Mbps	69d 10:05:02	44%	11		
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0 -10 -20	yVault 3C:87:48:79:80:	3C:87:48:79:80:20	Technicolor CH USA Inc.	1 8	2.4 GHz	20 MHz	-70	now	8		b/g/n	WPA2 (PSK)		2	1 Mbps	0d 10:16:07	19%	1, 2, 5.5, 11		
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You can customize the table by right clicking on the column headers and choosing which categories you would like to display.

WiFi Scanner	File H	lelp								Showing c	iata from	Wi-Fi									Theme -	- 8 ×
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Band		SSID		BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	Basic Rates		
♦ SSID	60	RX Wellness	BSSID Note		Ubiquiti Inc	1	2.4 GHz	20 MHz	-79	now	8		b/g/n	WPA2 (PSK)	0	3	1 Mbps	31d 10:57:10	24%	1, 2, 5.5, 11		<u> </u>
BSSID	127		Vendor		Cisco Meraki								b/g/n/ax	AES (CCM) / WPA (WPA)			11 Mbps					
Vendor		Nighthawk-2.4	✓ Channel		Netgear	9	2.4 GHz	20 MHz	-45	now	11	24	b/g/n/ax	WPA2 (PSK)	0		1 Mbps	24d 00:29:44	27%	1, 2, 5.5, 11		_
Channel Width		WIFIBYOD	V Band		Meraki									WPA2 (PSK)			12 Mbps	14d 18:46:03				
Security		WIFIBYOD	✓ Width		Meraki	100	5 GHz	80 MHz	-73	now	9	24	a/n/ac	WPA2 (PSK)	0		12 Mbps	14d 18:45:49	6%	12, 24		
Þ Signal		ULYWIFIGUEST	🗸 Signal		Meraki	100		80 MHz		now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:49	6%			
Alerts		WIFIBYOD	 Last Seen 		Meraki	64	S GHz	80 MHz	-73	now	9	24	a/n/ac	WPA2 (PSK)	0		12 Mbps	14d 18:45:58	2%	12, 24		
Filters		KTGY_GUEST	Beacon Interval					20 MHz					b/g/n/ax	WPA2 (PSK)			11 Mbps					
		ULYWIFIGUEST			Meraki	64	5 GHz	80 MHz	-73	now	9	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	14d 18:45:58	2%	12, 24		
		AA-Guest	Amendments		Meraki	48	5 GHz	20 MHz	-67	now	8	8	a/n/ac	WPA2 (PSK)	1	2	24 Mbps	12d 10:55:03	4%	24		
		KTGY_DEVICES			Unknown	44	5 GHz	40 MHz	-56	now	11	23	a/n/ac/ax	WPA2 (PSK)	0	4	12 Mbps	50d 05:53:18	11%	12, 24		
		NetExperience-Defa	✓ Mode		Cig Shanghai Co Ltd	6	2.4 GHz	20 MHz	-57	now	11		b/g/n/ax	WPA2 (PSK)	0	2	11 Mbps	27d 20:23:35	51%	6, 12, 24		
		Nighthawk-5	✓ Security		Netgear	44	5 GHz	160 MHz	-60	now	11	24	a/n/ac/ax	WPA2 (PSK)	0	4	6 Mbps	24d 00:29:41	13%	6, 12, 24		
		KTGY_GUEST	 Station Count 		Unknown	11	2.4 GHz	20 MHz		now	11	9	b/g/n/ax	WPA2 (PSK)	0		11 Mbps	69d 10:05:02	64%	11		
		[Hidden]	Country		Unknown	1	2.4 GHz	20 MHz	-79	now	8		b/g/n	WPA2 (PSK)	0	3	6 Mbps	31d 10:57:10	28%	6, 12, 24		
		EnergyVault			Technicolor CH USA Inc.	1	2.4 GHz	20 MHz		now	8		b/g/n	WPA2 (PSK)	1		1 Mbps	0d 10:16:07		1, 2, 5.5, 11		
		ULYWIFI			Meraki	100	5 GHz	80 MHz	-72	now	9	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	14d 18:45:49	6%	12, 24		
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For more information about each individual column available for the Results Table, navigate to <u>Appendix A</u> at the end of this document.

Copying Results to Microsoft Excel

You can copy this data by right clicking on values within the table and paste the results into Microsoft Excel or another application. To highlight and copy multiple rows, hold the ctrl key while clicking with the mouse.



To avoid the entirety of the data being copied into a single Excel cell, or an error in copying multiple WiFi Scanner entries:

1. Select a single, desired WiFi Scanner entry.

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þ Band		SSID	BSSID	BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Uptime
♦ SSID	51	KTGY_GUEST	A-9C-2E-ED-80-00		Unknown	44	5 GHz	40 MHz	-66	now			a/n/ac/ax	WI942 (PSII)			12 Mbps	50d 09:05:31
♦ BSSID	112																	46d 15:15:56
Vendor	19	[Hidden]	E2:9C:3E:ED:7F:E0		Unknown	n	2.4 GHz	20 MHz	-74	now	11		b/g/n/ax		0	4	11 Mbps	69d 13:18:16
Channel Width		AA-Guest	02:1844:54:20:51		Meraki		2.4 GHz	20 MHz	-64				g/n	WIRAZ (PSIQ			24 Mbps	124 03:22:30
Security		ULYWIFIGUEST	E6:CBAC31:70:42		Meraki	64	5 GHz	80 MHz	-63	now		24	a/n/ac	WRAZ (PSK)	0		12 Mbps	14d 21:59:11
Signal		tbc																
Alerts		AA-Guest	02:1844/5A/35/F1		Meraki		2.4 GHz	20 MHz	-47	now		17	g/n	WRA2 (PSK)	0		24 Mbps	120 14:08:14
Fiters		[Hidden]	DEC88031/7042		Unknown			20 MHz					b/g/n	WRA2 (PSK)			11 Mbps	
		(Hidden)	DEC880312D:F0		Unknown		24 GHz	20 MHz	-47	now			b/g/n	WBA2 (PSK)	0		11 Mbps	14d 21:59:15
		RX Wellness	18.E829.9A/7F/85		Ubiquiti Inc			20 MHz					b/g/n	WRA2 (PSK)			1 Mbps	
		TVS1	00:01:21:30:43:48		WatchGuard Technologies, Inc.		24 GHz	20 MHz	-88	now		22	b/g/n	WBA2 (PSK)	0		1 Mbps	376 01:24:39
		(Hidden)	F2:90:3E:ED:80:00		Unknown			20 MHz					b/g/n/ax				11 Mbps	508/09/06/31
		TVSGuest1	54AF:97:2F:C3:E0		TP-Link Corporation Limited		24 GHz	20 MHz	-86	now			b/g/n	WRA2 (PSK)			1 Mbps	278 23:37:11
		ULYWIA	E0:C8:8C:31:2D:F0		Meraki			20 MHz					b/g/n	WRA2 (PSK)			11 Mbps	
		KTGY_GUEST	CA9C:1EED:80:00		Unknown	144	5 GHz	40 MHz	-70	now		23	a/n/ac/ax	WRN2 (PSK)			12 Mbps	1008 11:12:05
		(Hidden)	E2:55:7D:88:52:31		Meraki			20 MHz					b/g/n				1 Mbps	28 04:30:49
		Nighthawk-6G	6C:CD:DG:1C:FF:A5		Netgear		6 GHz	20 MHz	-66	now		19	a/ax	AES (CCM) / SAE (SHA256)/WPA3 (SAE (SHA256))			6 Mbps	246 0342:58
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	SSID	BSSID	BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Up
51	KTGY GUEST	CA-9C-2E-ED-80-00		Unknown		5 GHz	40 MHz					a/t/ec/es	WPA2 (PSK)			12 Mbps	50d 09
Cubh 2200		Pro 9010 86c2A/FD:AD:C2:AB		Unknown		24 GHz	20 MHz	-85	now			b/g/n	WPA2 (PSK)			6 Mbps	46d 15
Copy All Colu	lumns and Fields	F2:9C:3EED:7EE0		Unknown		2.4 GHz	20 MHz		now			b/g/n/ax				11 Mbps	69d 1
	lumns and Header Names	021844542051		Meraki		2.4 GHz	20 MHz	-65	now	8		9/n	WPA2 (PSK)			24 Mbps	128 0
Edit ESSID N	iote	E6:CBAC:31:70.42		Meraki	64	5 GHz	80 MHz	-61	now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 2
	tbc																
	AA-Guest	0218445A35F1		Meraki		2.4 GHz	20 MHz	-47	now			9/n	WPA2 (PSK)			24 Mbps	128 1
	[Hidden]	DECB8C:31:70:42		Unknown			20 MHz					b/g/n	WPA2 (PSK)			11 Mbps	
	[Hidden]	DECB8C3120F0		Unknown		2.4 GHz	20 MHz	-63	now			b/g/n	WPA2 (PSK)			11 Mbps	14d
	RX Wellness	18E829.9A7F.85		Ubiquiti Inc			20 MHz						WPA2 (PSK)			1 Mbps	
	TYS1	00.01:21:30:43:48		WatchGuard Technologies, Inc.		24 GHz	20 MHz	-80	now		22	b/g/n	WPA2 (PSK)			1 Mbps	37d
	[Hidden]	F2:9C3EED:80:00		Unknown			20 MHz					b/g/n/ax				11 Mbps	
	TYSGuest1	54/AF/97/2FIC3(E0		TP-Link Corporation Limited		24 GHz	20 MHz	-81	now	8		b/g/n	WPA2 (PSK)			1 Mbps	278
	ULYWIR	E0/CB/8C/31/2D/F0		Meraki			20 MHz						WPA2 (PSK)			11 Mbps	143
	VICK OUT T	C1 00 15 70 00 00			1.64	6.015					22	- to be to	14042 (000			12 Mbos	100
	Kidi docsi	CASCIEED8000		Unknown		D GHZ	40 MH2	-/1	now			anvaua	WINAL (FOR)				
	(Hidden)	E2:55/7D:88:52:31		Meraki	11	24 GHz	20 MHz	-83	now	8	21	b/g/n	maz (ron)	2	2	1 Mbps	28.0
	[Hidden] Nighthawk-6G	E2557D885231 6CCDD61CFFA5		Meraki Netgear	11	2.4 GHz 6 GHz	20 MHz 20 MHz 20 MHz	-83 -67	now	8	21 19	b/g/n a/ax	AES (CCM) / SAE (SHA256)/WPA3 (SAE (SHA256))	2	4 2 1	1 Mbps 6 Mbps	2d 240
	(Hidden) Nighthawk-6G	6CCDD61CFFA5		Unonown Meraki Netgear	11 37	24 GHz 6 GHz	20 MHz 20 MHz 20 MHz	-71 -83 -67	now now	8 11	21 19	b/g/n a/ax	AES (CCM) / SAE (SHA256)/WPA3 (SAE (SHA258))	2	4 2 1	1 Mbps 6 Mbps	28 0 246
	Fidden] Nighthawk-6G	60000610FFAS		Meraki Netgear	11 37	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz ectrum (-83 -67	now now now	8 11 Signal	21 19	alvaya b/g/n a/ax	AES (CCM) / SAE (SHA256)/WPA3 (SAE (SHA256)) D Details Copilot	2 0	4 2 1	1 Mbps 6 Mbps	28 (248
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	Nightawk-6G	60006106425		Meraki Netgoar	11 37	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz ectrum (-83 -67	now now Signal vs. Time 2.4/5	8 11 Signal	21 19 Summ GHz	alvada b/g/n a/ax	Mindag (200) ALS (COM) / SAE (SHA256)/WAN3 (SAE (SHA256)) D Details Copilot UNE-3 Off Channels UNE-3	2 0 UNI-22 (Exercise)	4	1 Mbps 6 Mbps	24
	Norsous) Philarni Nighthewk-6G	6CCDD61CFA5		Meraki Meraki Netgear	11 37	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz	-67 -67	now now Signal vs. Time 2.4/5	8 11 Signal GHz 6	21 19 Summ GHz	aliyada a/ax	Minic (ISA) Als (ICAN / SAE (SHA256) WHA3 (SAE (SHA256) D Details Copilet UNI-5 Details Units	0 0 019 Olamas UNIS 22 (Econded)	4	1 Mbps 6 Mbps	28
	Nichthawk-6G	E25570865231 6CCDD61CFFA5		Unaroki Meraki Netgear	11 37	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz	-71 -67 Graphs	now now Signal vs. Time 2.4/5	8 11 Signal	23 21 19 Summ GHz -30 -30	b/g/n a/ax	Imme (dan) Als (ccM / ski (dhu26) Wiha) GAE (dhu25()) Details Copilot Unit 2 Unit 2 Unit 2 Unit 2	2 0 095 Dames S URS 2: (Exercise)	4	1 Mbps 6 Mbps	28
	0 -30 -30	Cascillation 225570985231 6CCDD61CFFAS		Umprovin Merski Nedgear	11	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz ectrum C	-71 -63 Graphs	now now Signal vs. Time 2.4/5	8 11 Signal CHz 6	21 19 Summ GHz -30 -30	b/g/n a/ax	International Add (CCA / Saf (PAUSA) (MA3 God (PAUSA)) Details Copilet Units Units	2 0 0 UND 22 [Executed]	4	UNII-3	24
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				Noncola Noncol	11	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz ectrum (-71 -83 -67 Graphs	now now now Signal vs. Time 2A/S	8 11 Signal	21 19 Summ GHz -20 -20 -20 -20 -20 -20 -20 -20 -20 -20	tirnar a/ax a/ax ary SSIC	Als COM / SAL (M-SO) (MAI) GAL (M-SOI) Uberate: Copilet Uberate: Oph Daman Decate: Department Uberate: Department Decate: Decate:	BR Serve	4 2 1	UNIT-3	24
				Nordeal Nordeal Nordeal	11	24 GHz 6 GHz Sp	20 MHz 20 MHz 20 MHz ectrum (-71 -83 -67	now now now 2.4/5	8 11 Signal CGHz 6	21 19 GHz -30 -30 -30 -40 -70 -70	Arry SSIE	Add ScOAF SAE (SAUSSA WARD GAE (SAUSSA) Add ScOAF SAE (SAUSSA WARD GAE (SAUSSA) (SAUS) (SAUS) (SAUS) (SAUS) (SAUSSA (SAUSSA) (SAUSSA (SAUSSA) (SAU	Di Dormali Uni a (famine)	4 2 1	Unit-3	201
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				Nordel No	37	24 GHz 6 GHz Sp	au Mitz 20 Mitz 20 Mitz 20 Mitz	-83 -67	now now now 2.4/5	8 Signal GHz 6	21 19 GHz -20 -20 -20 -20 -20 -20 -20 -20 -20 -20	ing a set of the set o	Add Scoal, SAL SHUSSIN WHILE SAL SHUSSIN Add Scoal, SAL SHUSSIN WHILE SAL SHUSSIN UPD 1 SHUBSIN SHUBSI	Diff Dannel Diff Dannel Diff Dannel Diff Dannel	4 2 1	UNIT-3	201

2. Right click on the selected entry and select "copy all columns and header names."

3. Move to the chosen Excel spreadsheet, select a desired cell.



4. Paste data (e.g., ctrl+v). The entirety of the data for the selected WiFi Scanner entry should now be shown in the Excel spreadsheet. Repeat process, with the next WiFiScanner entry and another selected Excel cell.

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BSSID: CA:9C:2E:ED:80:00	_																									
BSSID Note:																										
Vendor: Unknown																										
Channel: 44																										
Band: 5 GHz																										
Width: 40 MHz																										
Signal: -65																										
Last Seen: now																										
MCS: 11																										
TPC: 23																										
Mode: a/n/ac/ax																										
Security: WPA2 (PSK)																										
Station Count: 4																										
Streams: 4																										
Min Rate: 12 Mbps																										
AP Uptime: 50d 09:06:31																										
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9																										
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Exporting Results as a CSV File

It is also possible to convert the Results Table into a CSV file, which can be opened with Excel. Click on *File* at the top left corner, and highlight *Export Scan Results as CSV*. From the Results Table, you will have the option to export *All*, *Displayed*, or *Selected Rows*.

🕜 WiFi Scanner	File	Help							Sho	wing data fr	om Wi-Fi 2						Theme _	ъ×
~		Jacob Soccion																
	s	Save Session Ctri+5	nel,8SSID														Wi-Fi 2	•+
b Band	E	export Scan Results as CSV →	All	ø	Channel	Band	Width	Signal	Last Seen	Mode	Security	Station Count	Streams	Min Rate	Channel Utilization			
♦ SSID	6	Deen ocan	Displayed	wn		5 GHz	40 MHz			a/n/ac/ao	WPA2 (PSK)			12 Mbps				-
▶ 85SID	L	furged	Salastad Day	wn	44	5 GHz	40 MHz	-69	now	a/n/ac/ax		0	4	6 Mbps				
Vendor		AA-Guest	Selected Now	<u> </u>	40	5 GHz	20 MHz	-79	now	a/n/ac	WPA2 (PSK)	0	2	24 Mbps	3%			
Channel Width		[Hidden]	F2:9C:1EED:7EE0	Unknown	100	5 GHz	80 MHz	-79	now	a/n/ac/ax		0	4	6 Mbps				-
Security		Porsche_WLAN_8510	DA08:68:97:C0:E8	Unknown	6	2.4 GHz	20 MHz	-82	now	b/g/n	WRA2 (PSK)	0	1	1 Mbps				
D Signal		MAA-HQ	02:18:5A:5A:64:60	Meraki	40	5 GHz	20 MHz	-79	now	a/n/ac		0	2	24 Mbps	3%			
Alerts		EV-Corp	2C:88:ED:0E:2A:7C	SonicWall	3	2.4 GHz	20 MHz	-66	now	b/g/n	WPA2 (PSK)	0	2	1 Mbps				
Filters		KTGY_GUEST	CA9C3EED:7FE0	Unknown		2.4 GHz	20 MHz	-70	now	b/g/n/ax	WPA2 (PSK)	0		11 Mbps	54%			
		AA-Guest	02:18:54:59:90:31	Meraki		5 GHz	20 MHz		now	a/n/ac	WPA2 (PSK)			24 Mbps	2%			
		O-SRC-Guest	D2:9E43:69:0E44	Unknown			20 MHz			b/g/n/ax	WPA2 (PSK)			1 Mbps				
		DIRECT-53-HP OfficeJet Pro 7740	1A:60:24:68:48:53	Unknown		2.4 GHz	20 MHz	-67	now	b/g/n	WPA2 (PSK)			6 Mbps				
		KTGY_DEVICES	C69C3EED:7FE0	Unknown			20 MHz			b/g/n/ax	WPA2 (PSK)			11 Mbps				
		RX Guest	1EE829.9A7E85	Unknown		2.4 GHz	20 MHz	-74	now	b/g/n	WPA2 (PSK)			1 Mbps	37%			
		SSID4-2.4	6A:1483:F8:53:80	Unknown		24 GHz	20 MHz	-82	11 seconds ag	b/g/n		0		1 Mbps				
		ULYWIFIGUEST	E6:CBAC:31:2D:F0	Meraki			80 MHz			a/n/ac	WPA2 (PSK)			12 Mbps				
		(Hidden)	F2:9C:2EED:7F:E0	Unknown	36	5 GHz	40 MHz	-79	now	a/n/ac/ax		0	4	6 Mbps				
														hatoels		DFS Channels		
		-10 -20 -30 -40														UNI-26 (Extended)		
					24 VID/0005	12	13				1999 1997 1997 1997 1997 1997 1997 1997		* 2 3	eter S S				

All will contain a summary of all the results from the scan. *Displayed* will contain all the results displayed on the results table, which can be customized through filtering, explained in the following sections. *Selected Rows* will contain all highlighted rows from the Results Table. You can highlight rows by clicking and dragging the mouse on the selected range of results, or by holding down the Ctrl key and clicking individually on the desired results.

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2 KTGY_DEV	C6:9C:2E:EN/A	Unknown	44 5 GHz	40 MHz	-69 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	a/n/ac/a:	WPA2 (PS	0 N/	A	N/A	N/A	4 12	Wbps N/
3 [Hidden] F	F2:9C:2E:E N/A	Unknown	44 5 GHz	40 MHz	-69 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	a/n/ac/a	<	0 N/	A	N/A	N/A	4 6 N	bps N/
4 AA-Guest 0	02:18:5A:5N/A	Meraki	40 5 GHz	20 MHz	-79 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 minute	iN/A	N/A	N/A	N/A	a/n/ac	WPA2 (PS	0 N/	A	N/A	N/A	2 24	Mbps N/
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6 Porsche_VI	DA10806811N/A	Unknown	6 2.4 GHZ	20 MH2	-82 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9 minute	SN/A	N/A	N/A	N/A	b/g/n	WPA2 (PS	0 N/	A	N/A	N/A	1110	ops N/
MAA-HQ (2.18:0A:0 N/A	Meraki Contabilati	40 5 GHZ	20 MH2	-79 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	a/n/ac	100000	0 N/	-	ny A Ni fa	IN/A	2 24	mups N/
> EV-COTP A	CLEBSEDIN/A	Jokeewee	5 2.4 GHZ	20 MH2	-72 N/A	N/A	N/A	N/A	N/A	N/A N/A	N/A	N/A	now	N/A	N/A	IN/A	N/A	b/g/n	WPA2 (PS	0 N/	A	N/A N/A	N/A	211	ups N/
A A Guert	CH. 20.3E11N/A	Moraki	152 5 GHz	20 MHZ	-70 N/A	N/A	N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A	now	N/A	N/A N/A	N/A N/A	N/A N/A	alplac	WPA2 (PS	0 N/	~	N/A	N/A	4 11	wops N/
1 O SPC CH	12:16:34:3 N/A	Uekeeure	133 3 GHZ	20 MHz	-75 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	blalelow	WPA2 (PS	0 N/	~	N/A N/A	N/A N/A	4 1 4	hor N
DIRECT 521	02.5E.45.CN/A	Unknown	1 2 4 GHz	20 MHz	-70 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	blalo	WPA2 (P3	0 N/	~	N/A	N/A N/A	1 6 1	bor Ni
2 KTCK DEU	CENCLOSE ALLA	Unknown	6 2 4 CHz	20 4444	-72 N/A	AL/A	N/A	N/A	N/A	N/A	AL/A	AL/A	now	N/A	N/A	N/A	N/A	blalelas	WDA2 (05	0 14)	<u></u>	NIA	N/A	4 11	dhor Ni
A RY Guart	10-50-30-0 N/A	Unknown	1 2.4 GHz	20 MHz	-70 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A N/A	N/A	blalo	WPA2 (P3	0 N/	~	N/A	N/A N/A	2 1 6	hor N
5 TYS1	00-01-21-2 N/A	WatchGus Inc	2.4 GHz	6 2 4 GHz	20 MM2	-82 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	hialo	WDA2 (DS	<u> </u>	N/A	N/A	N/A	2.1.1
6 SSID4.7.4	54-14-B3-EN/A	Unknown	5 2 4 6 4 7	20 MHz	.83 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1 minute	N/A	N/A	N/A	N/A	h/e/n	0/8/11	0.0/	۵. ۵	N/A	N/A	31N	hos N/
17 ULYWIEIGIE	6-CB-AC- N/A	Meraki	157 5 GHz	80 MM	-68 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	alplac	WDA2 (DS	0.00	Â	N/A	N/A	2 12	thos Ni
18 [Hiddon] 8	E2-9C-2E-E N/A	Unknown	26 5 GHz	40 5442	-79 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	NI/A	N/A	N/A	N/A	alplacia		0.00		N/A	NIA	4 6 5	hor N
IN KTGY STA	CE-9C-2E-EN/A	Unknown	36 5 GHz	40 Mills	-79 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	alplacia	AFSICOM	0.00	Â	N/A	N/A	4 12	thos Ni
0 BX Wellne	18-F8-29-9 N/A	Ubiquiti Ir	1 2 4 6 Hz	20 MHz	-77 N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	now	N/A	N/A	N/A	N/A	h/e/n	WPA2 (PS	0.0/	<u> </u>	N/A	N/A	3 1 M	hos N/
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CSV File Export Sample

Filter Tree

The Filter Tree is a list of common categories used to refine the table. You can filter by band, SSID, BSSID, vendor, channel width, security, and signal. These filters will help narrow scanning results to your choosing. To hide/bring up the filter tree, simply click the blue oval next to the pause button.

WiFi Scanner	File H	elp								Showing	lata from	Wi-Fi									Thems	×
		_																				
	Shx /	ving 149 of 149 🌔 SSI	D,Channel,BSSID																		Mi-Fi	· +
Band		SSID	BSSID	BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	Basic Rate		
♦ SSID	62	RX Wellness	18:E8:29:9A:7F:85		Ubiquiti Inc		2.4 GHz	20 MHz					b/g/n	WPA2 (PSK)			1 Mbps	31d 10:57:10	24%			
▶ BSSID	129		CC-9C:3E:ED:80:00		Cisco Meraki								b/g/n/ax	AES (CCM) / WPA (WPA)			11 Mbps					
▷ Vendor		Nighthawk-2.4	6C:CD:D6:1C:FF:A8		Netgear	9	2.4 GHz	20 MHz	-44	now	11	24	b/g/n/ax	WPA2 (PSK)			1 Mbps	24d 00:29:44	31%			
Channel Width																	12 Mbps	14d 18:46:03				
♦ Security		WIFIBYOD	EA:CB:AC:48:D0:2C		Meraki	100	5 GHz	80 MHz		now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:49	2%			
Þ Signal		ULYWIFIGUEST	E6:CB:AC:48:D0:2C		Meraki			80 MHz						WPA2 (PSK)			12 Mbps					
♦ Alerts		WIFIBYOD	EA:CB:AC:31:70:42		Meraki	64	5 GHz	80 MHz		now	9	24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:58	2%	12, 24		
Filters		KTGY_GUEST	CA:9C:3E:ED:80:00		Unknown	6		20 MHz				23	b/g/n/ax	WPA2 (PSK)			11 Mbps	50d 05:53:17	45%			
		ULYWIFIGUEST	E6:CB:AC:31:70:42		Meraki	64	5 GHz	80 MHz		now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:58	2%	12, 24		
														WPA2 (PSK)			24 Mbps					
		KTGY_DEVICES	C6:9C:2E:ED:80:00		Unknown	44	5 GHz	40 MHz		now	11	23	a/n/ac/ax	WPA2 (PSK)			12 Mbps	50d 05:53:18	13%	12, 24		
		NetExperience-Default-SSID	F4:08:9F:D0:97:7F		Cig Shanghai Co Ltd	6	2.4 GHz	20 MHz		now	11		b/g/n/ax	WPA2 (PSK)	0	2	11 Mbps	27d 20:23:35	53%	6, 12, 24		
		Nighthawk-5	6C:CD:D6:1C:FF:A7		Netgear	44	5 GHz	160 MHz	-57	now	11	24	a/n/ac/ax	WPA2 (PSK)	0	4	6 Mbps	24d 00:29:41	14%	6, 12, 24		
		KTGY_GUEST	CA:9C:3E:ED:7F:E0		Unknown	11	2.4 GHz	20 MHz	-79	now	11	9	b/g/n/ax	WPA2 (PSK)	0	4	11 Mbps	69d 10:05:02	50%	11		
		[Hidden]	22:E8:29:9A:7F:85		Unknown	1	2.4 GHz	20 MHz		now	8		b/g/n	WPA2 (PSK)	0	3	6 Mbps	31d 10:57:10	24%	6, 12, 24		
		EnergyVault	3C:87:48:79:80:20		Technicolor CH USA Inc.	1	2.4 GHz	20 MHz	-68	now	8		b/g/n	WPA2 (PSK)	1	2	1 Mbps	0d 10:16:07	18%	1, 2, 5.5, 11		
		ULYWIFI	E2:CB;AC;48:D0:2C		Meraki	100	5 GHz	80 MHz	-73	now	9	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	14d 18:45:49	2%	12, 24		
											al vs. Ti		anal Sumi									
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Freeform Filtering

The Freeform Filter text box may better serve than the Filter Tree due to its refined functionality. In the text box, you can enter in exact searches for what you would like to see in the table. For example, you can enter a specific SSID to filter results for only that SSID.

The format of the search follows that of the columns. Examples:

Column	Sample Entry
SSID	AA-Guest
BSSID	02:18:5A:5A:20:51
Vendor	Meraki
Channel	100

Band	5GHz
Width	40MHz

You can also combine different categories or filters to narrow results for even more precision.

Use bangs or exclamation points (!) to hide results with the specified keyword.

Use commas (,) to separate different filters to display multiple categories.

Use ampersands (&) to combine filters to further narrow results.

Alternatively, use carets (^) as a logical "or" syntax, to expand a filter search.

Example 1: '36,40MHz' – this will show all wireless networks that are on channel 36 OR have a channel width of 40MHz.

Example 2: '36&40MHz' – this will show all wireless networks that are on channel 36 AND have a channel width of 40MHz.



Play, Pause, Stop

Pause: This button will pause your current scanning session.

Stop: This button will stop your current scanning session and **you will not be able to resume**. You must save or discard the session after. Please keep in mind that WiFi scanner will continuously scan until stopped. We recommend allowing the software to scan for longer than a couple of minutes, as a shorter scan may miss important information.

Play: This will either resume a paused session or begin a new session after stopping a scan.

WiFi Scanner	File I	Icip							Show	ing data from Wi	-Fi									Theme	- 8 ×
_		_																			
 [] [Sho	wing 149 of 149 🤇 SSID,C	ThanneLBSSID																	Wi-Fi	• +
▶ Band	2	SSID	BSSID	BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	Basic Rates	
▶ SSID		RX Wellness	18:E8:29:9A:7F:85		Ubiquiti Inc	1	2.4 GHz	20 MHz	-80	now	8		b/g/n	WPA2 (PSK)	0	3	1 Mbps	31d 10:57:10	28%	1, 2, 5.5, 11	
♦ BSSID	129		CC:9C:3E:ED:80:00		Cisco Meraki		2.4 GHz	20 MHz					b/g/n/ax	AES (CCM) / WPA (WPA)			11 Mbps	50d 05:53:17	44%		
◊ Vendor		Nighthawk-2.4	6C:CD:D6:1C:FF:A8		Netgear		2.4 GHz	20 MHz	-45	now			b/g/n/ax	WPA2 (PSK)			1 Mbps	24d 00:29:44	26%	1, 2, 5.5, 11	
Channel Width		WIFIBYOD			Meraki		5 GHz	80 MHz					a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:46:03			
Security		WIFIBYOD	EA:CB:AC:48:D0:2C		Meraki	100	5 GHz	80 MHz	-74	now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:49	4%	12, 24	
♦ Signal		ULYWIFIGUEST	E6:C8:AC:48:D0:2C		Meraki	100	5 GHz	80 MHz	-74	now	9	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	14d 18:45:49	4%	12, 24	
Alerts		WIFIBYOD	EA:CB:AC:31:70:42		Meraki		5 GHz	80 MHz	-73	now			a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:58	2%	12, 24	
Filters		KTGY_GUEST	CA:9C:3E:ED:80.00										b/g/n/ax	WPA2 (PSK)			11 Mbps				
		ULYWIFIGUEST	E6:CB:AC:31:70:42		Meraki	64	5 GHz	80 MHz	-73	now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:58	2%	12, 24	
					Meraki			20 MHz						WPA2 (PSK)			24 Mbps				
		KTGY_DEVICES	C6:9C:2E:ED:80:00											WPA2 (PSK)			12 Mbps				
		NetExperience-Default-SSID	F4:08:9F:D0:97:7F		Cig Shanghai Co Ltd			20 MHz					b/g/n/ax	WPA2 (PSK)			11 Mbps				
		Nighthawk-5	6C:CD:D6:1C:FF:A7		Netgear	44	5 GHz	160 MHz	-59	now		24	a/n/ac/ax	WPA2 (PSK)		4	6 Mbps	24d 00:29:41	15%	6, 12, 24	
													b/g/n/ax				11 Mbps				
		[Hidden]	22:E8:29:9A:7F:85		Unknown		2.4 GHz	20 MHz	-79	now			b/g/n	WPA2 (PSK)		3	6 Mbps	31d 10:57:10	30%	6, 12, 24	
		EnergyVault	3C:87:48:79:80:20		Technicolor CH USA Inc.		2.4 GHz	20 MHz	-73	now	8		b/g/n	WPA2 (PSK)		2	1 Mbps	0d 10:16:07	23%	1, 2, 5.5, 11	
		ULYWIFI	E2:CB:AC:48:D0:2C		Meraki	100	5 GHz	80 MHz	-74	now		24	a/n/ac	WPA2 (PSK)			12 Mbps	14d 18:45:49	4%	12, 24	
		R.																			
		-10																			
		-20																			
		-30																			
		-40			NETGLAR. Gue NetByperience Default-SSID																
				Al-Opert								-40									
		SS Advised		يستعق	Акене								AR GORD	Brancie Certault-SSID							
		-60																			
		DRECT-SS-HP Officient Pro 607	N0											USpectate	-				492.0	Notes -	
		Chiefert			MINUNES																
		-80		0.000														and a l			
						N 1						-90									
		-100	3 4 5		8 9 10 11 1									8 4 8 8 8 8 8	3		. 8 5		124 128 128 132 136	144 149 153 157	
																	Channels				

Sub Tabs

Spectrum Graphs

The Spectrum tab in WiFi Scanner displays two graphs. They serve as visual representations for the 2.4 GHz, 5 GHz, and 6 GHz wireless bands. Each graph shows the channel numbers that occupy each band on the x-axis, and RSSI (or signal strength) on the y-axis. These graphs provide a clear picture of the surrounding wireless environment: all networks within the distance that your computer can detect, their associated signal strengths, and what channels they are using.

Understanding the wireless environment around you is crucial to effective channel planning and making informed decisions for improving your network configuration.



2.4 GHz Spectrum Graph



5 GHz Spectrum Graph

In both the 2.4 GHz and 5 GHz spectrum graphs, the Primary Channel is identified by the number within quotations, as illustrated below. In the 5 GHz spectrum graph, the Secondary Channel is always the second number that is not the Primary Channel.



2.4 GHz Spectrum Graph



5 GHz Spectrum Graph

Signal vs. Time

The *Signal vs. Time* tab is a visual representation of the strength of the signal your device is receiving from a given access point over time. The chart displays time in seconds on the x-axis and RSSI (signal strength) on the y-axis.



Signal Summary

Three charts are shown under the Signal Summary tab.

Signal Rank

Signal Rank is a bar graph of all the access points surrounding the device, as filtered by the user in the table view. The blue bar represents the access point that you have currently selected. Each access point is ranked according to its signal strength relative to your device (the closer to 0 the better).

The slider on the left allows you to set a minimum signal threshold. This will only display access points with signal strength equal to or stronger than the set threshold. Lastly, below the x-axis are two radio buttons that you choose whether you want to show access points on any band, or only those on the same band as your computer.



Adjacent Channel Interference

The *Adjacent Channel Interference* chart displays the channel of the currently selected network, any wireless networks currently overlapping on the same channel, and any networks on directly adjacent channels. This chart is like the spectrum graph, but the only data displayed here is relative to the currently selected network. This chart is useful for looking for interference issues.



Co-Channel Interference

This graph is also similar to the spectrum graph, but specific to a single channel. The cochannel interference graph will show the user every network that is using the same primary channel as the one selected in the table. As seen below, the chart consists of channels on the x-axis and RSSI on the y-axis. The difference in RSSI when access points are using the same channel is valuable for troubleshooting and diagnosing issues with WiFi.



SSID Details

This tab is data from packet captures that access points transmit. This is the hard data that is used to populate WiFi Scanner. Obviously, WiFi Scanner does not use every piece of data from these packet captures, just the most important. So, in any circumstance a user would like to investigate a network further than what WiFi Scanner presents, then *SSID Details* is what to look at. We include this section mostly for advanced users of the application and it is not intended to be relied on. Navigate to the <u>Appendix B</u> at the end of this document to learn more about *SSID Details*.

			Spectrum Signal vs. Time Signal Summary SSID Details
ID	Length	Name	Details
		+ Fixed Parameters	
	267 Bytes	 Tagged Parameters 	24 Parameters
0	0 Bytes	+ SSID parameter set	SSID: [Hidden]
1	7 Bytes	+ Supported Rates	11 (B) ,12 ,18 ,24 ,36 ,48 ,54 Mbit/sec
3	1 Bytes	+ DS Parameter set	Channel Number: 1
5	4 Bytes	+ Traffic Indication Map (TIM)	DTIM Count: 0 DTIM Period: 1
7	6 Bytes	+ Country Information	Country Code: US Environment: Any
35	2 Bytes	+ TPC Report	Transmit Power: 23dBm Link Margin: 0
42	1 Bytes	+ ERP Information	Barker Preamble Mode: Not set
11	5 Bytes	+ QBSS Load Element	802.11e CCA Version Station Count: 1 Channel Utilization: 121 (121%) Available Admission Capacity: 0 (0 us/s)
51	4 Bytes	+ AP Channel Report	Parsing not yet implemented
70	5 Bytes	+ RM Enabled Capabilities	Parsing not yet implemented
۹.	200	L UT & LTP (000 44 04 40)	

Copilot

Under the *Copilot* tab (formerly *Genius*), you can find notes, which are suggestions, tips, and general information on how to improve your wireless connection based on your device's current surroundings. *Copilot* generates these notes using the information captured by WiFi Scanner. This means that you're receiving real-time actionable information for your unique wireless environment.

Each note is tagged with a priority level: Very high, high, medium, low, or very low. You can also find alerts. The "Alert" tag doesn't necessarily imply that there is an issue but is simply a note of useful information.



Each note displays a title, the BSSID and SSID of the selected access point, a category (Security, Connectivity, Performance, or Configuration), and a body of text with information. Most notes also link to a relevant support article, and for those that don't, we are continuously working to add more in future versions of the app. You can filter notes by category and priority. The information provided by *Copilot* is not limited to the access point your device is connected to. You can select any of the access points within range of your device for even more useful insights.

Menu Navigation

In WiFi Scanner, menu options appear as shown:



WiFi Scanner



Preferences

General

This tab provides some customization options within WiFi Scanner to improve user experience.

WiFi Scanner Preferer	ices X
General Columns	Performance Remote WiFi Scanner Custom Filter BSSID Notes
Scan	
Scan Every	5 seconds 🔹
	Always ask to save session data
	If enabled, the app will ask for saving session's data upon app exit or start of a new scan.
	Always show connected SSID in filtered results
Age Out Networks	5 min 🔻
	Networks will be removed from the scan grid after the above threshold time.
Vendor OUI	
	Auto update Vendor OUI database
	If enabled, the app will automatically refresh Vendor OUI database (active internet connection is required).
	Update OUI Database

Columns

The *Columns* tab is another way to choose which columns appear in the table view of WiFi Scanner. Details about each column can be located in <u>Appendix A</u>.

WiFi Scanner Preferences		×
General Columns Performal	nce Remote wirl Scanner Cu	istom Filter BSSID Notes
WiFi Columns Visibility		
802.11r	Channel Utilization	Protection Mode
Ad Hoc	Clients (Number of Client	is) 🗹 Security
Amendments	County Code	Signal (RSSI)
AP Name	✔ Last Seen	Streams (Spatial Streams)
🗹 AP Uptime	Max Rate	🗹 ТРС
🗹 Band (Channel Band) 🗹 MCS	Vendor
Beacon Interval	MFP	Vidth (Channel Width)
BSSID Note	🗹 Min Rate	WiFi Protected Setup (WPS)
✓ Channel	Mode (PHY Mode)	
Speed Test Columns		
Avg Download Spee	d 🗌 Max Upload Speed	Recent Download Speed
Avg Upload Speed	Min Download Speed	Recent Upload Speed
Max Download Spee	d 🗌 Min Upload Speed	
		Save

Performance

Same as above, this tab allows for customization of the table view in the Performance Tab. Also, choose if and how often a speed test will be performed in the background to measure speeds of a given network.

WiFi Scar	nner Preferences			×
General	Columns Performance Remot	te WiFi Scanner		
	Avg Download Speed	Min Download Speed	Server	
	🖌 🖌 Avg Upload Speed	Min Upload Speed	SSID	
	Channel [PC IP Address	✓ Time	
	✓ Delay [PC MAC Address	Recent Download Spee	d
	Max Download Speed	PC Name	Recent Upload Speed	
	Max Upload Speed	RSSI		
Test	Execution			
	If repeat interval is less then 1 the seconds if none provided.	en, only single speed test v	will be performed. Default is	10
	Repeat Speed Test and wait	10 seconds between	tests.	
	Run Speed Test automatically	y when BSSID or SSID chai	nges.	
			Save	

Remote WiFi Scanner

Under this tab, you can add any Linux-based wireless device as an external scanner. Refer to the <u>WLAN</u> <u>Pi</u> section for additional details.

General Columns Performance Remote WiFi Scanner Custom Filter BSSID Notes SSH Devices Configure SSH Connection Device Name User Friendly Name
SSH Devices Configure SSH Connection Device Name User Friendly Name
Configure SSH Connection Device Name User Friendly Name
Configure SSH Connection Device Name User Friendly Name
Device Name User Friendly Name
User Friendly Name
Server Host Port Interface
Server Host or IP 22 wlan0
Username Password
SSH Username SSH Password
Use SSH Key-Based Authentication
Test Configuration Save Delete
Test configuration results

Custom Filter

With this feature, you are able to create and save custom filters using the flexibility of the Freeform Filter.

In the example, the first custom filter was created to only display networks with an SSID of AA-Guest. The second custom filter was created to only display networks using Channel 11 or 80mhz bandwidths.

Wil	Fi Scar	nner Prefere	nces					;	×
یر Ger	d: neral	Columns	<i>ि</i> 私 Performance	Remote WiFi Scanne	▼ r Custom Filter	BSSID Note			
	Add	New Filte	r						
	Filter Cha	Name nnel 11 or	Filter Tex 80 11,80m	rt hz					
				Save					
	Filter	'S					⊻	₹	
	FILTE	RNAME	FILTERTEXT						
	AA-G	uest	AA-Guest				ø	Ŵ	
	Chan	nel 11 or 80	n 11,80mhz				1	Ŵ	

	Show	ring 58 of 163	:	×			
Band	2	SSID	BSSID	Vendor	Channel	Band	Width
♦ SSID	65	KTGY_STAFF	CC:9C:3E:ED:7F:E0	Cisco Meraki	11	2.4 GHz	20 MHz
♦ BSSID	140						80 MHz
◊ Vendor	24	WIFIBYOD	EA:CB:AC:31:2D:F0	Meraki	157	5 GHz	80 MHz
Channel Width	4	KTGY_GUEST					80 MHz
Security	3	KTGY_DEVICES	C6:9C:3E:ED:7F:E0	Unknown	11	2.4 GHz	20 MHz
Signal	5	ULYWIFIGUEST	E6:CB:AC:31:70:42	Meraki	64	5 GHz	80 MHz
♦ Alerts	5	ULYWIFIGUEST	E6:CB:AC:31:2D:F0	Meraki	157	5 GHz	80 MHz
⊿ Filters	2	KTGY_STAFF					80 MHz
AA-Guest		ULYWIFI	E2:CB:AC:31:70:42	Meraki	64	5 GHz	80 MHz
Channel 11 or 8.		ULYWIFI	E0:CB:BC:31:2D:F0	Meraki	11	2.4 GHz	20 MHz
		[Hidden]	DE:CB:AC:48:D0:2C	Unknown	100	5 GHz	80 MHz
		ULYWIFI	E2:CB:AC:31:2D:F0	Meraki	157	5 GHz	80 MHz
		RX Guest	1E:E8:29:9B:7F:85	Unknown	36	5 GHz	80 MHz
		WIFIBYOD	EA:CB:AC:48:D0:2C	Meraki	100	5 GHz	80 MHz
		WIFIBYOD	EA:CB:BC:31:2D:F0	Unknown	11	2.4 GHz	20 MHz
		NetExperience-Default-SSID	90:3C:B3:B1:70:2F	Edgecore Networks Corporation	11	2.4 GHz	20 MHz
		ULYWIFIGUEST	E6:CB:AC:48:D0:2C	Meraki	100	5 GHz	80 MHz

The custom filters can be selected on the left side of the screen.

BSSID Notes

This tab allows you to make a note about a particular BSSID.

WiFi Sca	nner Prefere	ences					×
Ceneral	Columns	ন্ট্রি Performance	Remote	G WiFi Scanner	T Custom Filter	BSSID Notes	
Add	New BSS	ID Note					
BSSID AA:BB	:CC:DD:EE:I	F		Note BSSID Note	2		Save
Adde	ed BSSID	Notes					↓ ↑
BSSID)			NOTE			DELETE
BSSIC)			NOTE			DELETE
BSSIC)			NOTE			DELETE
BSSIC)			NOTE			DELETE
BSSIC)			NOTE			DELETE
BSSIC)			NOTE			DELETE
BSSIC)			NOTE			DELETE

About WiFi Scanner

Capabilities

This tab will display information about the network interface card on the device running WiFi Scanner.



Network and Interface

Displays information about the network the device is currently connected to, as well as more information about the network interface card of your device.



License

The license will show information about your license including: who the license is assigned to, the license key, license type, and the end date. There is also a button to deactivate the license.

About WiFi Scanner	×
Computer Name: DESKTOP-	
Capabilities Network and Interface License	
WiFi Scanner	
Licensed To: AccessAgility	
License Key:	
License Type: Temporary	
License End Date: 04-24-2021	
Deactivate License	
Version 2.2.1.732, © 2021 AccessAgility LLC. All Rights Reserved.	
File



Open Session

After saving a session, open the session to see previous data of your wireless environment. Click on 'Open Session' within the file tab and select a session file to view.

Save Session

Saving a session in WiFi Scanner saves a scan file that is viewable later. This is useful in cases to allow a support agent to analyze a network and find possible issues. It may also be helpful to be able to save a session of the network to determine fluctuations of performance at different periods in time.

Export Scan Results as CSV

Another option to save results of a scan is to export them to a comma-separated values (CSV) file. This is helpful to view data in a file format, instead of opening the session within WiFi Scanner.

For a detailed explanation of how to do this, navigate to Exporting Results as a CSV File.

Open pcap File

A user may also open a pcap, or packet capture, file to view data captured outside of WiFi Scanner. This may be useful for users that want to view the wireless data of someone else who may not own WiFi Scanner.

Help



Visit Support Website

The support website is a very useful tool for anyone using WiFi Scanner. There is documentation on how to use WiFi Scanner, how each function works, what information the graphs and tables display, and even WiFi knowledge that is very useful.



Check For Updates...

After clicking here, WiFi Scanner will check for available updates. If there are none, an alert will display that reads "No software update is available for WiFi Scanner." In the case that there is an update, you will be prompted to download and install it.



WLAN Pi

WLAN Pi is a portable device that can be used as a throughput tester, remote WiFi scanner, packet capture tool, portable WiFi signal generator and more. This article details the history of WLAN Pi: <u>https://www.accessagility.com/blog/wlan-pi-project</u>.

For a User Guide of WLAN Pi, visit <u>https://userguide.wlanpi.com/hardware/compare-wlan-pi-models</u>.

For a demonstration of the uses of WLAN Pi, watch WiFiNigel's video, "10 Easy Things To Do With a WLAN Pi", at <u>https://youtu.be/Ua2d4ajR0pk</u>

Using WLAN Pi as a Remote Wireless Scanner Probe

WiFi Scanner allows you to use a WLAN Pi (or any Linux-based wireless device) as an external scanning interface via SSH. Using the picklist in the top right, you can select what device you wish to use for scanning. By default, WiFi Scanner will use the System WiFi Interface.

🕐 WiFi Scan	ner Fik	e He	lp							Show	wing data fr						Scan Interface: Wi-Fi 2	▼ Theme = d ² ×
		Showi	ing 56 of 56 SSID, Chan	nel'R221D	لقا ا													±
▷ Band			SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Mode	Security	Station Count	Streams	Min Rate	Channel Utilization		
♦ SSID	24		WIFIBYOD	EA:CB:AC:31:2D:F0	Meraki		5 GHz	80 MHz			a/n/ac	WPA2 (PSK)			12 Mbps			-
♦ BSSID	39		MAA-HQ	02:18:5A:5A:20:50	Meraki		5 GHz	20 MHz			a/n/ac				24 Mbps			
Vendor	12		NetExperience-Default-SSID	F4:08:9F:D0:97:7F	Cig Shanghai Co Ltd	6	2.4 GHz	20 MHz	-56	now	b/g/n/ax	WPA2 (PSK)	0	2	11 Mbps	57%		
D Channel Widt	h 4		ULYWIFIGUEST	E6:CB:AC:31:2D:F0	Meraki		5 GHz	80 MHz			a/n/ac	WPA2 (PSK)			12 Mbps			
▷ Security			ULYWIR	E0:CB:BC:31:2D:F0	Meraki	6	2.4 GHz	20 MHz	-54	now	b/g/n	WPA2 (PSK)	1	2	11 Mbps	36%		
▷ Signal			ULYWIR	E2:CB:AC:31:70:42	Meraki			80 MHz			a/n/ac	WPA2 (PSK)			12 Mbps			
D Alerts			ULYWIFIGUEST	E6:CB:AC:48:D0:2C	Meraki	56	5 GHz	80 MHz	-70	now	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2%		
Filters			AA-Guest	02:18:5A:08:20:C1	Meraki	161	5 GHz	40 MHz	-48	now	a/n/ac	WPA2 (PSK)	8	3	6 Mbps	6%		
			TP-Link_FCF2	40.ED:00:14.FC:F5	TP-Link Corporation Limited	44	5 GHz	160 MHz	-52	now	a/n/ac/ax	WPA2 (PSK)	0	4	6 Mbps			
			ULYWIR	E0:C8:8C:48:D0:2C	Meraki	1	2.4 GHz	20 MHz	-56	now	b/g/n	WPA2 (PSK)	2	2	11 Mbps	35%		
			NetExperience-Default-SSID	90:3C:B3:B1:70:2F	Edgecore Networks Corporation	6	2.4 GHz	20 MHz	-55	new	b/g/n/ax	WPA2 (PSK)	0	2	11 Mbps	53%		
			KTGY STAFF	CC:9C:3E:ED:7F:E0	Cisco Meraki	1	2.4 GHz	20 MHz	-76	now	b/g/n/ax	AES (CCM) / WPA (WPA)	0	4	11 Mbps	45%		
			MAA-HQ	02:18:44:54:35:F0	Meraki	6	24 GHz	20 MHz	-54	now	a/n		0	2	24 Mbps	31%		
			MAA-HQ	02:18:44:08:20:00	Meraki	1	2.4 GHz	20 MHz	-36	now	b/g/n		0	3	9 Mbps	61%		
			VFSint	D0:21:F9:44:53:59	Ubiquiti Inc	11	2.4 GHz	20 MHz	-79	now	b/g/n	WPA2 (PSK)	0	2	1 Mbps	28%		
			NETGEAR14	6C:CD:D6:1C:FF-A8	Netgear	7	2.4 GHz	20 MHz	-49	now	b/g/n/ax	WPA2 (PSK)	0	4	1 Mbps	16%		
			O-SRC	C8:9E:43:69:0F:45	Netgear	48	5 GHz	80 MHz	-79	new	aln/ac/ax	WPA2 (PSK)	0	4	6 Mbps			
			4				-											
														DFS C	sannels		DFS Channels	
			-10															
												-10						
			-20															
			-30									-20						
			460(492)									-30						
			2-40									-40						
			-50 ·50															
			2 U.WM									1 1 8 .9	MAAHQ					
						MIGNA						-eo N	etfapeterer Delaut 590					
			-70		EV-Gent							-70		UNDER			USANNANIST	
			0003000			freesidort							R21780 Raines					
							\neg					-80						
_			-90									-90						
			-100									-100						
_					6 7 8 9 1 Chan								x 4 4 1	- 21 25 1	2 3		auuep 11111111111111111111111111111111111	

To add a new Remote WiFi scanner, press the Plus (+) button on the top right.

This will bring you to the *Remote WiFi Scanner* tab of the Preferences window. Here, you can add a new device under Configure SSH Connection. Enter the Device Name, the Server Host IP address, which can be found on the main screen of WLAN Pi, the Username, and Password.



Server Address in WLAN Pi M4

WiFi Scanner Preferences			×							
General Columns Performance Remote V	V iFi Scanner Custom Fi	ilter BSSID Notes								
SSH Devices										
WLAN PI	• +									
Configure SSH Connection										
Device Name										
WLAN PI										
Server Host	Port	Interface								
10.10.2.99	22	wlan0								
Username	Password									
wlanpi	•••••									
Use SSH Key-Based Authentication	ı									
Test Configuration	Save	Delete								
Checking for monitor mode on wlan0 int Checking for tcpdump capture on wlan0 Checking if 2.4 GHz scanning is supporte Checking if 5 GHz scanning is supported Checking if 6 GHz scanning is supported	terface: Fail : Pass ed: Supported : Supported I: Supported									
*****Configuration Check Completed ***	**	Ľ	Ţ							

Configure SSH Connection

Once set, click on *Test Configuration*, wait for the Configuration Check to be completed, then click *Save*. You will now be able to select the WLAN Pi as a scanner device, and you will be able to use all the benefits of WiFi Scanner from the location of the WLAN Pi remotely.

WiFi Scanner	File H	elp							Showin	ng data from	Wi-Fi 2					Scan Interfac	# Wi-Fi 2	• hem		×
	Show	ving 49 of 49	ID,Channel,BSSID														Wi-Fi 2 WLAN Pi			[+
> Band		SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Mode	Security	Station Count	Streams	Min Rate	Channel Utilization					
> SSID		WIFIBYOD	EACBAC312DF0	Meraki	104	5 GHz	80 MHz	-68	now	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2%					
BSSID		MAA-HQ	02:18:5A:5A:20:50	Meraki	48	5 GHz	20 MHz	-66	now	a/n/ac		1	2	24 Mbps	3%					
Vendor		NetExperience-Default-SS	ID F4:08:9F:D0:97:7F	Cig Shanghai Co Ltd	6	2.4 GHz	20 MHz	-55	now	b/g/n/ax	WPA2 (PSK)	0	2	11 Mbps	53%					
Channel Width		ULYWIFIGUEST	E6:C8:AC:31:2D:F0	Meraki	104	5 GHz	80 MHz	-68	now	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2%					
Security		ULYWIR	E0:CB:BC:31:2D:F0	Meraki	6	2.4 GHz	20 MHz	-59	now	b/g/n	WPA2 (PSK)	1	2	11 Mbps	23%					
Signal		WIFIBYOD	EA:CB:AC:31:70:42	Meraki	157	5 GHz	80 MHz	-74	now	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2%					
Alerts		ULYWIFI	E2:CB:AC:31:70:42	Meraki	157	5 GHz	80 MHz	-74	now	a/n/ac	WPA2 (PSK)	1	2	12 Mbps	2%					
Filters		ULYWIFIGUEST	E6:CB:AC:48:D0:2C	Meralci	56	5 GHz	80 MHz	-72	now	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2%					
		AA-Guest	02:18:5A:08:20:C1	Meraki	161	5 GHz	40 MHz	-44	now	a/n/ac	WPA2 (PSK)	8	3	6 Mbps	7%					
		TP-Link_FCF2	40:ED:00:14:FC:F5	TP-Link Corporation Limited	44	5 GHz	160 MHz	-53		a/n/ac/ax	WPA2 (PSK)	0		6 Mbps						
		ULYWIRI	E0:CB:BC:48:D0:2C	Meraki		2.4 GHz	20 MHz	-56	now	b/g/n	WPA2 (PSK)			11 Mbps	20%					
		NetExperience-Default-SS	ND 90:3C:83:81:70:2F	Edgecore Networks Corporation		2.4 GHz	20 MHz	-53		b/g/n/ax	WPA2 (PSK)			11 Mbps	50%					
		MAA-HQ	02:18:4A:5A:35:F0	Meraki		2.4 GHz	20 MHz	-52	now	g/n		0		24 Mbps	36%					
		MAA-HQ	02:18:4A:08:20:00	Meraki		2.4 GHz	20 MHz	-39		b/g/n				9 Mbps						
		VFSint	D0:21:F9:44:53:59	Ubiquiti Inc		2.4 GHz	20 MHz	-74	now	b/g/n	WPA2 (PSK)			1 Mbps	26%					
		NETGEAR14	6C:CD:D6:1C:FF:A8	Netgear		2.4 GHz	20 MHz	-44		b/g/n/ax	WPA2 (PSK)			1 Mbps	20%					
		DIRECT-55-HP OfficeJet P	ro 6970 EC:8E:85:68:F0:58	Hewlett Packard	1	2.4 GHz	20 MHz	-79	now	b/g/n	WPA2 (PSK)	0	1	6 Mbps						
		<																		
		0 -10 -20 -30 -30 -30									0 -10 -30 -30		DFS Chan UNII-2	inels Ia		Di UNII-2c (E	rS Channels xiterated)		M04.00	
		50 50 50 50 50 50 50 50 50 50 50 50 50 5	k ho 675		ULINAL MARANE Company Antional	12	13						U.MIR(MGD)	1 2	Chan		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	149 153 153 150 150 150	157 161 165	

NOTE: If you encounter the following messages after flashing the WLAN Pi image, change the default password of the WLAN Pi using the web console.



The following are the WLAN Pi image versions tested for each model at the time of writing:

NEO2	v2.1.0
M4	v3.1.2 - WLPC 2023 Phoenix v3.1.4 - WLPC 2023 Prague
R4	v3.1.2 - WLPC 2023 Phoenix v3.1.4 - WLPC 2023 Prague
Pro	V3.1.2-dev3

For more information on using WLAN Pi with WiFi Scanner, visit

https://www.accessagility.com/blog/using-wlan-pi-as-remote-wifi-scanner.

Performance Tab

Speed Test

Single Test

Users can run single speed tests at any time by switching to the performance tab and navigating to the speed test in the bottom left corner.

🕐 WiFi Scanner Fi	le Help										Theme	-	8 X
<u> </u>													
Recent Download	Recent Upload	Delay	SSID	Time	Avg DL Speed	Avg UL Speed							
75.36 Mbps	69.20 Mbps	9 ms	AA-Guest	10:23:23 October	09, 2020 75.36 Mbps	69.20 Mbps							
AA C													
30	40 50 60	•• Ma 70	inassas, W	× 80 70									90 80 70
-10	69.20 Mbps	90		(sodquvi									60 (SW)
-0	Start	100	J	9 40 8 30									40 40
Delay 9 ms	Download 75.36 Mbps	Uplo 69.20	ad Mbps	20									30 20
				10									10
				0									0
									5 Test Numbers				10
							Speed	Test Finished					

Continuous Testing

There is an option to allow speed tests to run periodically while running the application. Go to 'WiFi Scanner' → 'Preferences' in the top left corner and go to the 'Performance' tab. Here, under 'Test Execution' set parameters to as seen fit.

WiFi Scar	nner Preferences	×
🛟 General	Columns Performance Remote WiFi Scanner Custom Filter BSSID Notes	
Spee	ed Test Results Window Columns Visibility	
	Avg Download Speed 📃 Min Download Speed 🗌 Server	
	🗹 Avg Upload Speed 🛛 Min Upload Speed 📝 SSID	
	Channel PC IP Address V Time	
	Delay PC MAC Address Recent Download Spee	d
	Max Download Speed PC Name Recent Upload Speed	
	Max Upload Speed RSSI	
Test	Execution	
	If repeat interval is less then 1 then, only single speed test will be performed. Default is seconds if none provided.	10
	Repeat Speed Test and wait 10 seconds between tests.	
	Run Speed Test automatically when BSSID or SSID changes.	
	Save	

Location Selection

Within the performance tab and located to the top right of the speed test icon, there is a cloud that will allow users to change the server location that they would like to use for speed testing. Note, the test will take 10-15 seconds before finishing.



Table View

The table view in the performance tab is useful to track the speeds of a given network. This table will keep track of the details of network performance, including but not limited to: latency, recent speeds, average speeds, and the time the test took place.



WiFi Survey Tab

WiFi Survey is currently in the Beta stage. Contact <u>support@accessagility.com</u> to have the WiFi Survey feature enabled for your license key.

Activating WiFi Survey

To activate the WiFi Survey Tab Press Ctrl+W after opening the WiFi Scanner Application.

NOTE: If the WiFi Survey tab does not appear after pressing **Ctrl+W**, close and relaunch the app.

Inactive:



Active:

WFi Scanner File	He	clp							Show	ing data from Wi-	Fi									Theme	- @ ×
💶 🗉 🔊	how	ing 126 of 126 🥤 🛛 SSI	D,Channel,BSSID																	Wi-Fi	+
⊳Band 2		SSID	BSSID	BSSID Note	Vendor	Channel	Band	Width	Signal	Last Seen	MCS	Amendments	TPC	Mode	Security	Station Count	Streams	Min Rate	AP Uptime	Channel Utilization	Basic Rates
♦ SSID 41		RX Wellness	1868299947585		Ubiquiti Inc	1	2.4 GHz	20 MHz	-m	now	8	d/e/v/k/v		b/g/n	WPA2 (PSK)	0	3	1 Mbps	19d 12544:56	37%	1, 2, 55, 11
> 855ID 107		(Hidden)	F29C3EED4000		Unknown		2.4 GHz	20 MHz	-68	now	11	d/⊌%∕v		b/g/n/ax				11 Mbps	388 07:53:48		11
> Vendor 19		KTGY_GUEST	CA9CBEED/7FE0		Unknown	6	2.4 GHz	20 MHz	-11	now	11	d/ofvik/v	8	b/g/iv/ax	WRAZ (PSK)	0	4	11 Mbps	57d 1205/21	57%	11
b Channel Width 4		WIFIBYCO	EACBAC:31:70:42		Meraki	64	5 GHz	80 MHz	-75	now	9	d/e/h/i/k/v	24	a/n/ac	WPA2 (PSK)	0		12 Mbps	2d 20:46:32	2%	12, 24
5 Security 2		ULYWIRGUEST	E6C8AC:31:7042		Meraki	64	5 GHz	80 MHz	-75	now	9	d/e/W/W	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	28 20:46:32	2%	12, 24
Signal 5		UDWIR	E2/CB/AC/31/70/42		Meraki	64	5 GHz	80 MHz	-75	now	9	d/oft/i/k/v	24	a/n/ac	WPA2 (PSK)	0	2	12 Mbps	2d 2046/32	2%	12, 24
> Alerts 5		AA-Guest	021854/54/2051		Meraki	48	5 GHz	20 MHz	-62	now	8	d/e/h/i/k/v	12	a/tv/ac	WPA2 (PSK)	1	2	24 Mbps	08 12:55:47	4%	24
Filters		MAA-HQ	02185A5A2050		Meraki	48	5 GHz	20 MHz	-62	now	8	d/oh/k/v	12	a/n/ac		1	2	24 Mbps	08 1255:47	4%	24
		KTGY_DEVICES	C69C2EED8000		Unknown	44	5 GHz	40 MHz	-74	now	11	d/oft/W/w	23	a/n/ac/ax	WPA2 (PSK)	0	4	12 Mbps	383 07:53 48	11%	12, 24
		KTGY_GUEST	CA9C2EED.80.00		Unknown	44	5 GHz	40 MHz	-74	now	11	d/e/h/i/kiv	23	a/tv/ac/ax	WPA2 (PSK)	9	4	12 Mbps	388 07:53:48	11%	12, 24
	Ш	KTGY_STAFF	CE9C2EED8000		Unknown	44	5 GHz	40 MHz	-74	now	11	d/oh/i/kiv	23	a/n/ac/ax	AES (CCM) / WPA (WPA)	0	4	12 Mbps	388 07:53 48	11%	12, 24
		NetExperience-Default-SSID	90.3C.83.81:70.30		Edgecore Networks Corporation	44	5 GHz	40 MHz	-57	now	11	d/of/k/w/#		a/n/ac/ax	WRAZ (PSK)	0	2	6 Mbps	0d 12:56/27	8%	6, 12, 24
		NETGEAR-SG-Guest	92:CD:D6:1CFF:A0		Unknown	44	5 GHz	160 MHz	-56	now	11	d/e/h/k/v	24	a/tv/ac/ax		0	4	6 Mbps	128 02:30:23	17%	6, 12, 24
		Nighthawk-5	6CCDID61CFFA7		Netgear	44	5 GHz	160 MHz	-56	now	11	d/oh/i/k/v	24	a/n/ac/ax	WRA2 (PSK)	0	4	6 Mbps	126 02:30:23	17%	6, 12, 24
		AA-Guest	02185A5A6461		Meraki	40	5 GHz	20 MHz	-81	now	8	d/oft/i/w	9	a/n/ac	WPA2 (PSK)	1	2	24 Mbps	0d 12:55:34	3%	24
		MRP TownHall	9218884F9131		Unknown	11	2.4 GHz	20 MHz	-86	now	8	d/e/v/k/v	29	b/g/n	WRA2 (PSK)	0	4	1 Mbps	548 04642:17	41%	1, 2, 55, 11
		Third-I	F42E7F1F5384		Aruba, a Hewlett Packard Enterprise G	2	2.4 GHz	20 MHz	-85	43 seconds ago	8	oliv		b/g/n	WPA2 (PSK)	1	4	1 Mbps	5431045203	23%	1,2
		1																			
																		Constant from			
		-30																			
																					a
		§ -00	- i e		- April Area							.40									
		2 40			mak															No. Contraction	2.442
		S SET 10 10 Disease in										·**			deel		LOOP CONTRACTOR OF				
													- 7		CONSERV.					17 1000 000000	
		-00 40 000										-50									
				And Education										1000					1000		
			A A.									~ D									

Creating a Project

Click on **Plus** Button next to *Projects* on the upper left of the screen



Once clicked, the **EDIT PROJECT** window will pop-up. Define the Project Properties: Project Name, Project Description. Click on the **Paperclip** Button to import the *Floor Plan* image. WiFi Survey supports JPEG and PNG image files.

Project Name	
AccessAgility	
Project Description	
Survey of AccessAgility Headquarters	
Upload Floor Plan Image	
C:\Users\engineer\Desktop\AA-HQ.jpg	
Floor Plan Preview	
Cancel Save	

Once all the required information is filled, click Save.



To Open a Project select the desired Project from the list on the left:

Project Options

 Projects
 +

 AccessAgility
 ⓒ Expand to

 Edit
 Save as

 Export
 Clear

 Delete
 Delete

EditOpens the EDIT PROJECT window to edit project propertiesSave AsCreates a duplicate of the projectExportExports the project as a .wifi-survey fileClearClears all markers, survey paths, boundary, speed test, etc. placed on the floor
planDeleteDeletes the project

Click on the button with **Three Dots** next to the project to drop down the menu.

Buttons Guide

The primary buttons are located at the top of the screen.





5 Undo Last Action



C. Redo Last Action Delete Markers



Place Access Points Perform Download/Upload Speed Test Generate HeatMap



Calibration Setup P Setup Floor Plan Boundary * Speed Test Settings

Zooming

For **Zooming** use the buttons at the bottom or use *Mouse Scroll Wheel*.



Performing Surveys

Setup Floor Plan Boundary

Click on the Setup Floor Plan Boundary button at the top of the screen.



On the imported *Floor Plan*, carefully click on the borders of the area to be surveyed. Each click will leave a marker to indicate the border.

Note: More clicks will generate a more accurate polygon.



To Readjust Markers, simply click and drag the marker to the desired location.

Note: WiFi Scanner will **not allow** you to create a Survey Path without setting up the boundary on the Floor Plan first.

Survey markers and heatmaps generated will be **limited** to the area indicated by the *Floor Plan Boundary*.

Calibration Setup



Click on the Calibration Setup Button at the top of the screen.

On the imported *Floor Plan*, click on Point A then on Point B to indicate what will be scaled. You can also drag the points after setting Point A and Point B to adjust their desired location.



Note: The points must be located within the Floor Plan Boundary.

Once the points are set, enter the actual distance between the two points on the calibration window at the top right of the screen.

Unit of Measurement can be in either Feet or Meters; click Set when finished.



Note: Calibration is necessary to generate Heatmaps.

Recalibration can be performed by doing the steps listed above again.

Select Survey Mode

Click on Expand to change survey mode





At Survey Type, you will have the option of either *Active/Connected Network* for Active Survey or *Passive/Scanned Networks* for Passive Survey.



An *active Wi-Fi survey* is when a surveying device is connected to the Wi-Fi network and records signal measurements based on the performance of the connection. A *passive Wi-Fi survey* is when the surveying device is not connected to any Wi-Fi network and is only listening to the Wi-Fi environment.

For more information, read our article, "Types of WiFi Surveys: Active vs. Passive". <u>https://www.accessagility.com/blog/wifi-survey-active-vs-passive</u>

Active Survey

Before beginning an Active Survey, you must connect to a wireless network. Once connected, you will be able to select *Active/Connected Network* as the Survey Type.

To begin a survey, click on the *Draw WiFi Survey Path* button 2. Click on your location on the floor plan to collect data. Green markers will appear with each click. To begin a new path, click on the *Start New WiFi Survey Path* button 4.



To stop data collection, click on Draw WiFi Survey Path again.

Clicking on a marker will provide data for the network you are connected to from that particular location.

WIFI SURVEY SCA	n data		×
SSID	BSSID	CHANNEL	RSSI
AA-Guest	02:18:5A:5A:20:51	48	-52

Passive Survey

The survey process follows the same steps as Active Survey, but does not require you to be connected to a specific wireless network.

To begin a survey, click on the *Draw WiFi Survey Path* button 2. Click on your location on the floor plan to collect data. A passive survey is indicated with orange survey markers. To begin a new path, click on the *Start New WiFi Survey Path* button 2.



Click on Draw WiFi Survey Path again to end your survey.

Clicking on a marker will provide the WiFi Survey Scan Data from that location.

WIFI SURVEY SCA	AN DATA		:	×
SSID	BSSID	CHANNEL	RSSI	
NETGEAR-5G-Gu	92:CD:D6:1C:FF:A	44	-53	
[Hidden]	E2:55:7D:B8:52:31	11	-81	
NetExperience-D	90:3C:B3:B1:70:2f	1	-49	
AA-Guest	02:18:5A:08:20:C	161	-48	
KTGY_DEVICES	C6:9C:2E:ED:80:0	44	-63	
MAA-HQ	02:18:5A:5A:20:5(48	-59	
KTGY_DEVICES	C6:9C:3E:ED:80:0	11	-55	
MAA-HQ	02:18:5A:08:20:C(161	-48	
[Hidden]	F2:9C:1E:ED:80:00	144	-74	
O-SRC-Guest	D2:9E:43:69:0F:44	9	-79	
KTON DEVICES	C6.0C.1E.ED.00.01	144	74	

Additional Survey Features

Minimum RSSI and Sound Alert

The user can enter the minimum signal value which will be used as the threshold. The app will then start an audio alert if the signal goes below that minimum value.

RSSI Min RSSI -52 dBm -40 dBm

A sound alert will only be triggered if the user has enabled the sound tracking.



Continuous Scanning

Continuous Scanning is a feature used specifically for Passive Surveys. This feature allows the Windows Wi-Fi card to continuously scan Wi-Fi networks and collect data as you perform a passive survey. This reduces the time to perform the survey as you can continuously walk around without much stops. This will also increase the rate WiFi Survey records data as you click on the floor plan.



NOTE: The tradeoff of this feature is accuracy. Because the data collected changes as you move, it will not be as precise when you place a marker on the floor plan. For a more accurate survey, you can perform a Stop-and-Go Survey Method, in which you must stop at each location and wait for the scan to be completed before moving on. This method takes more time to perform. This can be done by leaving Continuous Scanning disabled.

Network Filtering

For Passive Surveys, you have the capability to filter results based on BSSID, SSID, and Channel used.

Enter the information on what you would like filtered, then click the Apply Filter button, which is represented by the funnel.



The filtered results will appear on the right side of the screen.

Scanned Networks											
SSID	BSSID	Channel	RSSI	Last Seen							
AA-Guest	02:18:4A:5A:35:F1	6	-44	now							

If you would like to clear your filter results, click on the Clear Filter button.

BSSID is:] ∢ ×	SSID Contains:	Channel:		T	

Renaming Survey Paths

Double-click on the survey path you want to rename. Enter the desired survey path name and press enter.

Survey Paths		Survey Paths		
Survey Path #4	• •	Conference Room	• 🖬	
Survey Path #3 Double click to edit	0 1	Survey Path #3	0 1	
Survey Path #2	Ø 🛙	Survey Path #2	Ø 1	
Survey Path #1	0 1	Survey Path #1	• •	

Continuing Last Survey Path

The option to continue the last survey path is available on the left side of the screen under *Project Settings.*



If this option is **disabled**, switching to a different tab and returning to *Draw WiFi Survey Path* will automatically begin a new survey path.

Showing/Hiding Markers

Under *Project Settings*, there is an option to show or hide markers located on the floor plan. The marker boxes are ticked by default to show the markers. Unticking the box will hide the specified marker.

Generating Heatmaps

Click on the *Generate HeatMaps* button Several options appear on the left side of the window.

Heatmaps by Connected SSID

The *Connected SSID* tab is selected by default. This option is used for Active Surveys.

Tick the desired frequencies to be included and click *Generate Heatmap*.

By BSSID By SSID	Max: OdBm
Survey Paths Connected SSID	
SSID:	-5
	-10
2.4 GHz	-20
	-25
S GHZ	-30
S GH-	-40
0.012	-45
Generate Heatman	-50
Generate Headmap	-60
	-65
	-70
	-80
	-85
	-90
	····· •
	Min: -99dBm



Heatmaps by BSSID

Select the *By BSSID* Tab. This option is used for passive surveys.



Choose between 2.4 GHz, 5 GHz, and 6 GHz to filter frequency standards Select the BSSID you want to generate a heatmap for.



Heatmaps by SSID

Select the *By SSID* tab. This option is used for passive surveys.

Connected SSID By BSSID By SSID
🗹 2.4 GHz 🗹 5 GHz 🗹 6 GHz
AA-Guest
Antithesis
Antithesis-Guest
CoxWiFi
DIRECT-07-HP OfficeJet Pro 6970
DIRECT-09-HP M479fdw Color LJ
DIRECT-1D-HP Color LaserJet Pro
DIRECT-53-HP OfficeJet Pro 7740
DIRECT-55-HP OfficeJet Pro 6970
DIRECT-AB-HP OfficeJet Pro 9010

Select the frequencies that the heatmap will be derived from by checking the boxes. Click the SSID you want to generate a heatmap for.



Changing Heatmap Color Ranges

To change the heatmap color range, click on the gear icon at the bottom of the displayed color range. Select the desired color range.



Show/Hide Survey Paths for Heatmap Generation

To filter survey paths from the heatmap, click on the *eye* button to toggle between showing and hiding the survey path. Hidden paths are indicated with a *slash* across the *eye* button. These will be ignored during heatmap generation.

Survey Paths	
Survey Path #4	0
Survey Path #3	0 🛙
Survey Path #2	0
Survey Path #1	0 🛙

Saving Heatmaps

Right click on the image of the floor plan. You will be presented with the option to *Save as Image* and *Copy to Clipboard*. *Copy to Clipboard* allows you to directly paste the image to a document or an image tool such as *Paint*.

Estimated RSSI Value

By clicking on the generated heatmap or by hovering on a specific location, you will be able to see the estimated RSSI value of the network in that location.



Performing Speed Tests

This is a feature available only for Active Surveys. Click the *Perform Download/Upload Speed*

Click on your location in the floor plan to perform a speed test. The marker will change according to its progress with the speed test

€Download speed test started...

Download speed test finished, starting upload...

USpeed test finished.

Clicking on the marker will display the results of the speed test.



Speed Test Preferences

You can set thresholds for the speed test to indicate whether the upload and download speeds meet your requirements.

Click on the Speed Test Preferences button Enter the minimum thresholds for Upload speed and Download speed and the maximum threshold for Latency. Click Done.

After setting preferences, when you perform a speed test, it will compare the results to your preferences. If any of the thresholds set are exceeded, it will be indicated with a red or yellow marker. If the results are within the thresholds, the marker will turn green.

Speed Test Preferences		
Upload:		Mbps
Download:		Mbps
Latency:		ms
	Canc	el Done

Undo, Redo, and Delete Actions

The Undo Last Action , Redo Last Action , and Delete Marker to buttons can be applied to the following markers:

Start Survey Path
 Survey Path Marker
 Access Point Marker
 Speed Test Marker
 Boundary Markers

The *Delete Marker* simply deletes the marker clicked. If the marker beginning the survey path is deleted, the next Survey Path Marker becomes the starting point.

Delete can also be performed by right clicking on a marker and clicking *Delete*.

The Undo Last Action and Redo Last Action affects creating, moving, and deleting markers.



Place Access Points

WiFi Survey provides a way to document AP Locations.

Click on the *Place Access Points* button will and click on its location on the floor plan. The WiFi Marker Details window will appear. This will allow you to enter the following information regarding the access point: Name, Serial Number (S/N), MAC Address, IP Address, and Barcode. You also have the option to provide notes about the AP and upload a floor plan image with its location.

ViFi Marker Details		
Name	5/N	
MAC	IP	
Note	Barcode	
	Upload Floor P	lan Image
Image Preview		
	Cancel	Save

This feature is also useful for documenting potential locations of the APs when performing an AP-on-a-Stick (APoS) Survey.



Example for APoS

Using Optifi With WiFi Scanner

Optifi is a cloud-based management solution that uses Android, iOS, Mac, and Windows agents to collect network performance and scanning data. WiFi scanning, speed testing, network stats, and more are sent to the Optifi Manager online interface for monitoring and active troubleshooting.

For a more detailed explanation of the other functions of Optifi, visit <u>https://www.accessagility.com/optifi</u> or refer to the <u>Optifi User Guide</u>

For additional support, visit https://support.accessagility.com/hc/knowledge-base-optifi.

Performing A Scan Through the End-User

Optifi Agent Introduction

Optifi Agent is an application that allows end-users to perform Wi-Fi scans without requiring knowledge about wireless networks.

Optifi Agent is free to use and can be downloaded at https://www.accessagility.com/optifi.

NOTE: The steps regarding Optifi Agent demonstrated in this user guide are primarily performed with Optifi Agent for Windows.

Performing A Scan Using Optifi Agent

There are several options in performing scans using Optifi Agent. This is indicated by the Test Frequency option, which can be modified through the *Pencil* button to the right of Test Frequency.

-56 dBm AA-Guest 5 GHz Channel: 36 20MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 173.3/173.3 Mbps Streams: 2/2 MCS: 8										
AA-Guest 36/20MHz, Meraki	1 1 85%	D ()								
	Last Executed: 05/02/2023									
🕜 Delay	🕜 Delay 🕢 Download 🕥 Upload									
19 ms	63.96 Mbps	89.87 Mbps								
Tes	st Frequency : Manual Onl									
Next Sc	Next Scheduled : Not Scheduled Run Now									
	C EXPORT SESSION									
	6	\$ @ \$	♀ ů							



This can also be reached by directly clicking on the Test Settings tab.

Automatic, recurring scans can be performed in time frames ranging from 1 Minute to Every Day.



The option for Only Manual Testing will not perform any automatic, recurring scans. To prompt a scan with Only Manual Testing, go to the *Home* tab, and click on Run Now to the right of Next Scheduled.

-56 dBm AA-Guest 5 GHz Channel: 36 20MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 173.3/173.3 Mbps Streams: 2/2 MCS: 8									
AA-Guest 36/20MHz, Meraki	111 85%	í 🖞							
<u></u>									
La	st Executed: 05/02/2023								
🕜 Delay	🕜 Delay 🕢 Download 🍙 Upload								
19 ms	63.96 Mbps	89.87 Mbps							
Test Fr	equency : Manual Only	0							
Next Sched	Next Scheduled : Not Scheduled Run Now								
	DEXPORT SESSION								
	A	\$ @ ~							

This will perform a scan for Delay (Latency), Download Speed, and Upload Speed of the network you are connected to, as well as a scan of all surrounding Wi-Fi networks.

During scans, you will see the following messages appear in the applet.

Running WiFi Scan... Connecting to server... Upload Test Started... Tests run completed...

Once the scan is completed, click on the icon next to *Export Session*. You will be prompted to save the scan that was last performed.

-56 dBm AA-Guest 5 GHz Channel: 36 20MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 173.3/173.3 Mbps Streams: 2/2 MCS: 8									
AA-Guest 36/20MHz, Meraki	11 85%	D ()							
Lo	ast Executed: 05/02/2023								
🕜 Delay	🕢 Download	🔶 Upload							
19 ms	63.96 Mbps	89.87 Mbps							
Test F	requency : Manual Onl	y <u>2</u>							
Next Scheo	duled : Not Scheduled	<u>Run Now</u>							
	ſ	\$ 0 \$	e ä						

This file can be opened with WiFi Scanner and will show a more detailed result of the scan for the Network Engineer or Analyst to examine.

🕐 WiFi Scanner	File He	dp						Showing	g data from op	tif-session-	522023-11-24-49-AI	W.wifi-scenner					Theme	_ @ ×
	Show	ing 113 of 113 SSID,Cha	innel,BSSID														Wi-Fi2	• +
þ Bend		SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Mode	Security	Station Count	Streams	Min Rate	Channel Utilization			
		KTGY_GUEST	CA902EED8000	Unknown	44	5 GHz	40 MHz	-68	1 day ago	a/n/ac/ax	WFA2 (PSK)	12	4	12 Mbps	12%			
þ 859D		Antithesis-Guest	70:47:41:65:1F:2A	Ubiquiti Inc		24 GHz	20 MHz	-82	1 day ago	b/g/n	WBA2 (PSK)			1 Mbps	34%			
Vendor		TYST	00.01/21/30:43:48	WatchGuard Technologies, Inc	6	2.4 GHz	20 MHz	-83	1 day ago	b/g/n	WBA2 (PSK)	0	2	1 Mbps				
Channel Width	4	AA-Guest	02:18:5A:08:20:C1	Meraki	161	5 GHz	40 MHz	-43	1 day ago	a/n/ac	WPA2 (PSK)	11	3	6 Mbps	ms			
Security		M4A-HQ	021854542050	Meraki	48	5 GHz	20 MHz	-63	1 day ago	a/n/ac		1	2	24 Mbps	5%			
5 Signal		NetExperience-Default-SSID	F408.9F.D0.97:7E	Cig Shanghai Co Ltd	149	5 GHz	40 MHz	-71	1 day ago	a/n/ac/ax	WRA2 (PSK)	0	2	6 Mbps	7%		, i i i i i i i i i i i i i i i i i i i	
Alerts		ULYWIFIGUEST	E6C88C312DF0	Unknown	11	24 GHz	20 MHz	-52	1 day ago	b/g/n	WRA2 (PSK)	0	2	11 Mbps	24%			
		[Hidden]	DECEBC48D0.2C	Unknown	1	2.4 GHz	20 MHz	-57	1 day ago	b/g/n	WPA2 (PSK)	0	2	11 Mbps			<u> </u>	
		hug2g676228	00804E069C3C	Hughes Network Systems	11	24 GHz	20 MHz	-83	1 day ago	b/g/n	WRA2 (PSK)	0	3	1 Mbps				
		ULYMFI	E2:CBAC48D02C	Meraki	100	5 GHz	80 MHz	-73	1 day ago	a/n/ac	WBA2 (PSK)	1	2	12 Mbps	3%			_
		WIREYOO	EACE/BC312D40	Unknown	11	24 GHz	20 MHz	-51	1 day ago	b/g/n	WPA2 (PSK)	0	2	11 Mbps	2455			
		Nighthawk-2.4	6CCD:D6:1CFFA8	Netgear		2.4 GHz	20 MHz	-46	1 day ago	b/g/n/ax	WFA2 (PSK)			1 Mbps	38%			
		DIRECT-53-HP OfficeJet Pro 7740	1A:60:24:68:48:53	Unknown		2.4 GHz	20 MHz	-70	1 day ago	b/g/n	WPA2 (PSK)	0		6 Mbps				
		MAA-HQ	02:18:44:54:20:50	Meraki	n	2.4 GHz	20 MHz	-70	1 day ago	g/n		0	2	24 Mbps	39%		<u> </u>	_
		RX Wellness	186829987F85	Ubiquiti Inc	36	SGHz	80 MHz	-79	1 day ago	a/n/ac	WBN2 (PSK)	5	3	6 Mbps	8%			_
		ULYMPIGUEST	E6:CB:0C:31:70.42	Unknown	6	2.4 GHz	20 MHz	-55	1 day ago	b/g/n	WFA2 (PSK)	0	2	11 Mbps	19%			_
		(Hidden)	F2:9C3EE0:80:00	Unknown	6	24 GHz	20 MHz	-48	1 day ago	b/g/h/ax		0	4	11 Mbps			1	·
														15 Channels		DPS Channels		
				NAMES AND T	UC00WIG:													
		×																
		Careful Conception	6.er									″ _{••}	- 100 U00	TRADEST				
		-70 CT-CRIMINAL CO-111										-70						
		-40	Martin Cale Division	The state is a second sec	Transferrings							-50				riprovers		
					- \													
		-100			10 11							-300	* 2 3	1 3 3		8 2 8 3 2 8 2 8 8 8	3 3 9 8 8	2 2

Performing A Scan Remotely

Performing a scan remotely requires the Optifi Agent, installed on the end-user's device, and the Optifi Manager - Remote Cloud Viewer App, which can be accessed at <u>https://app.optifi.com</u>.

This is an option for when a support technician does not have physical access to an end-user's device. It is also helpful for assisting non-tech-savvy users as the steps required from them are minimal.

Setting Up Optifi Agent

Click the Share button to access the Share tab.

-56 dBm AA-Guest 5 GHz Channel: 36 20MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 173.3/173.3 Mbps Streams: 2/2 MCS: 8									
AA-Guest 36/20MHz, Meraki	н 85%	D ()							
L	ast Executed: 05/02/2023								
🕜 Delay	🕢 Download	🔿 Upload							
19 ms	63.96 Mbps	89.87 Mbps							
Test	Frequency : Manual Only	<u></u>							
Next Sche	duled : Not Scheduled	Run Now							
DEXPORT SESSION									
	A	© 🗘	<u>ڳ</u>						

-41 dBm AA-Guest 5 GHz Channel: 161 40MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 400/400 Mbps Streams: 2/2 MCS: 8	~	×
Either you can share your 'Current Share ID' OR 'URL' to connect with technician		
Share ID: 8mvzwl	ſ	[[
OR		
Share URL: https://app.optifi.com/?connectID=4XZUyr0atohuUAVtLhi	ſ	
Start Sharing Data		
රා 🕸 🏟 < 🤇) ද්	2 ^d t

There are two ways to share data remotely. The first option is with the randomly generated Share ID, and the second option is through a randomly generated Share URL. Provide either the Share ID or the Share URL to the support technician. Click the play button to begin sharing. From this point, the end-user does not need to do anything until the scans and tests are completed.

NOTE: Data sharing must continue running in the background for the duration the support technician performs scans and tests remotely.
Refreshing Share ID and Share URL

If a new Share ID or Share URL is needed, you can refresh the randomly generated ID or URL by clicking on the *Refresh* button.



Newly Generated Share ID and Share URL

Stop Sharing Data

Once the support technician is complete with scans and tests, the end user should click on *Stop Sharing Data*.



Setting Up Optifi Manager

Optifi Manager can be accessed at <u>https://app.optifi.com</u>. It is a web application, so no download is required to use it.

Optifi Manager can be used without an email address, with very limited capabilities, or with an email address and a subscription for full use.

Use Without Email Registration

If you are using Optifi Manager without registering, you can only obtain access to the end-user's data through their randomly generated Share URL.



Once you access this link, you will be directed to Optifi Manager.

C	□ • 0 φα# x + σ X												
<pre></pre>	- C 🖄 https://app.optifi.com									A*	<u></u>		D
	🖲 OPTIFI 🕷	onitor. Troubleshoot.	Optimize.								Login		¢,
	signal summary 🖉 🕂 🗖												빤
											1		
	Created \downarrow	SSID	BSSID	Vendor	Channel	Band	Width	Signal (dBm)	Signal (%)	Download Speed	Upload Speed		
	02 May, 2023-15:03:57	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-0.00	-	ALC: No officer	ALC: UNKNOWN		
	02 May, 2023-15:03:52	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12-081		ALC: NO WHEN	ALC: UNKNOWN	11	
	02 May, 2023-15:03:47	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-		-	ALC: No obligation	All off where		
	02 May, 2023-15:03:42	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.000	-		-	No. On callings	80.00 x80.00		
	02 May, 2023-15:03:37	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12-001	-	No. No. of Street, or other	All off where		
	02 May, 2023-15:03:32	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-		-	ALC: NO WHEN	80.00 x80.00		
	02 May, 2023-15:03:27	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-		-	ALC: NO WHERE	MILLION MARKS		
	02 May, 2023-15:03:22	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-			No. On colleges	MILLIO MARKS		
	02 May, 2023-15:03:17	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-			No. No. of Lot.	Million Magaz		
	02 May, 2023-15:03:12	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-0.00	-	ALC: NO WHEN	Million Magaz		
	02 May, 2023-15:03:07	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-		-	No. No. of Lot.	All of the second		
	02 May, 2023-15:03:01	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-0.00	-	ALC: NO WHERE	80.00 x81gpt		
	02 May, 2023-15:02:56	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-0.00	-	ALC: NO WHERE	80.00 x81aps		
	02 May, 2023-15:02:51	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12-001	-	No. No. of Long	80.00 x81gpt		
	02 May, 2023-15:02:46	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12.001	-	No. No. of Lot.	MILLION MARKS		
	02 May, 2023-15:02:41	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12.001	-	ALC: NO WHERE	MICH MARK		
	02 May, 2023-15:02:36	AA-Guest	02:18:5a:08:20:c1	Meraki	-	1.04	-	-12-001	-	ALC: NO WHEN	10.00 million		

You will only be able to view when the scan was *Created*, the *SSID* of the network, and the *BSSID* and *Vendor* of the access point.

NOTE: You will **not** be able to perform scans or tests with this option.

Use With Email Registration

To register with an email address, click on the *Login* button at the top right of the screen.



You will be prompted to enter your email address. Then *Click Send Magic Link*.



You will be informed to check your email to be logged in.



Find the email with "Log in to Optifi" as the subject header. Once opened, click on *Log in to Optifi*.



🖲 OPTIFI (opt WiFi Scan Speed Computer and Network Info 🧷 B Signal Summary 🖉 LAN/WAN Latency 🧷 Signal Quality 🖉 Speed Testing 🧷 Roaming/Connection History 0 Signal (dBm) Signal (%) Download Speed Upload Sp

You will be redirected to Optifi Manager with the registered email address in place of Login.

From here, you can access the end-user's data through either the Share URL or the Share ID. To access with the Share URL, simply obtain the user's Share URL and enter it on your web browser.

To access through the Share ID, click on *Click to connect with agent*, enter the Share ID number generated from Optifi Agent in the end-user's device, and click submit.

Select Device from the list or add it's ShareID manually								
Device Name	name	Email	Select					
Share ID: p7Ab42 Submit								

🕐 🗖 🔍 Optifi	× +									- c		
C 凸 http://app.op/filcom												
OPTIFI Monitor: Troubleshoot. Optimize. Optifi@accessagility.com +												
TEST TO RUN ON CONNECTED AGENT Connected ID: **Ab42 Device Name: DESKTOP-914QMSG Click to connect with agent												
WiFi Scan 🗋 Speed Run Test												
Signal Summary 🖉 Comput	er and Network In	fo 🖉 LAN/WAN Latenc	y 🖉 Signal	Quality 🖉 S	peed Testir	ig 🖉 Roar	ming/Connection Hist	iory 🖉 🕂 📘				
										\$		
Created \downarrow	SSID	BSSID	Vendor	Channel	Band	Width	Signal (dBm)	Signal (%)	Download Speed	Upload Speed		
22 Nov, 2023-15:59:45	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-42 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:45	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-42 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:40	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:40	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:35	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:35	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:30	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:30	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:24	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:24	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:19	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-42 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:19	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-42 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:14	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		
22 Nov, 2023-15:59:14	AA-Guest	02:18:5a:08:20:c1	Meraki	161	5 GHz	40MHz	-41 dBm	93%	63.96 Mbps	89.87 Mbps		

Once this is completed, Optifi Manager is set up and ready to begin scanning and testing.

Connecting to Optifi Manager through Optifi Agent - Manager Pairing

You can also link to the Optifi Manager directly through the Optifi Agent. Click on the *Manager Pairing* tab and enter your profile ID along with the given profile key.

-40 dBm AA-Guest 5 GHz Channel: 161 40MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 400/400 Mbps Streams: 2/2 MCS: 8										
		MANAGER								
Profile ID	:									
Profile Key	:	Profile key								
	CONIN	ECT	CAN	ж						
			<u>ہ</u>	© 🕸	≪ 🤹					

To obtain this information, navigate to Optifi Manager. Click on the email address you have registered with Optifi, and click on *Profile*.



Here, you will find the Profile ID and the Profile Key.

	Manitar Traublashaat Ontimiza	-44 dBm AA-Guest 5 GHz Channel: 161 40MHz Wide Meraki 802.11ac 10.10.8.142 Tx / Rx: 400/400 Mbps Streams: 2/2 MCS: 8						
	Monitor, houbleshoot, Optimize.			MANAGER PAIRING	3			
Subscriptions Support	Profile	* Connected						
		Profile ID	:	HQCMvf				
Profile		Profile Key	:	1950				
Profile ID : HQCMvf								
Profile Key : 1950								
					∩© ©~	兽 🝳		

Once entered and connected, you will be able to see your device listed in Optifi Manager when clicking on *Click to connect with agent*. Click on *Select* to choose the device and complete the link.

Select Device from the list or add it's ShareID manually								
Device Name	name	Email	Select					
	engineer		<u>Select</u>					
Share ID: Submit								

You can further customize the device details listed by navigating to the Profile Details tab of the Optifi Agent.

502.11dc 10.10.0.110	117/17	. 13.3/173.3 Mbps 30.601113. 272 MC3. 0
		PROFILE DETAILS
Device Name	:	Test Device
Name	:	AccessAgility
Email	:	optifi@accessagility.com
_		
	UPDA	CANCEL
		ି ଓ 🕸 📽 < 😑

Clicking *Update*, restarting the Agent, and refreshing the Manager will reflect the changes on Optifi Manager.

Select Device from t	he list or add it's Sha	arelD manually	×						
Device Name	name	Email	Select						
Test Device	AccessAgility	optifi@accessagility.com	<u>Select</u>						
Share ID: Submit									

NOTE: At the moment, Manager Pairing is only available on Optifi Agent for Windows.

Performing A Scan Using Optifi Manager

To perform a scan, select the desired type of scan. The available options are *WiFi Scan* and *Speed* Test. Once selected, click on *Run Test*.



Once completed, a link to download the session file will appear. Click on the link to download the file.

🗹 🛛 WiFi Scan 🗌 Speed	Run Test	optifi-session-532023-11-33-00-AM.wifi-scan	€

This file can be opened with WiFi Scanner and will show a more detailed result of the scan for the Network Engineer or Analyst to examine.

Will Scanner He Help Stowing data from cptif-session-532023-11-33-00 AdJ.vitf-scanner Theme						Theme _	δX											
<u> </u>																		
	Show	ing 138 of 138	SSID,Channel,B	SSID													Wi-Fi 2	• 🕂
▶ Band		SSID	BSSID	Vendor	Channel	Band	Width	Signal	Last Seen	Mode	Security	Station Count	Streams	Min Rate	Channel Utilization			
> SSID		O-SRC	C89E4369.0E45	Netgear	48	5 GHz	80 MHz	-79	10 minutes ago	a/n/ac/ax	WPA2 (PSK)	0	4	6 Mbos				<u> </u>
♦ BSSID	120	Moon_2.4GHZ	CA11:22:5A:75:D3	Unknown	1	2.4 GHz	20 MHz	-83	6 days ago	b/q/n/ax	WPA2 (PSK)	0	4	1 Mbps	65%			
Vendor		(Hidden)	E2:55:7D:88:52:31	Meraki	11	2.4 GHz	20 MHz	-83	10 minutes ago	b/g/n		2	2	1 Mbps	17%			
Channel Width		[Hidden]	F2:9C-2E-ED:7E-E0	Unknown	36	5 GHz	40 MHz	-79	10 minutes ago	a/n/ac/ax		0	4	6 Mbps				
Security		Tysons Corner Suites	20.66-00-26-18:08	Ruckus Wireless	11	24 GHz	20 MHz	-83	6 days ago	b/g/n		1	2	1 Mbps	34%			
Signal		[Hidden]	E2:55:7D:88:52:3F	Meraki	11	2.4 GHz	20 MHz	-82	11 minutes ago	b/g/n		2	2	1 Mbps	17%			
Alerts		Antithesis	72A7:41:95:DE:11	Unknown	6	24 GHz	20 MHz	-83	41 minutes ago	b/g/n	WPAZ/WPA3 (PSK/SAE)	0	4	1 Mbps	24%			
Filters		Antithesis-Guest	70:A7:41:95:DE:11	Ubiquiti Inc	6	24 GHz	20 MHz	-83	2 hours ago	b/g/n	WPA2 (PSK)	0	4	1 Mbps	30%			
		AA-Guest	021844.0820:01	Meraki	1	24 GHz	20 MHz	-48	10 minutes ago	b/g/n	WPA2 (PSK)	2	3	9 Mbps	38%			
		KTGY_DEVICES	C6:9C:2E:ED:7D:60	Unknown	52	5 GHz	20 MHz	-79	10 minutes ago	a/n/ac/ax	WPA2 (PSK)	0	4	12 Mbps	2%			
		EnergyVault	30:87:48:79:80:20	Technicolor CH USA Inc.	1	24 GHz	20 MHz	-71	10 minutes ago	b/g/n	WPA2 (PSK)	1	2	1 Mbps	31%			
		MRP TownHall	92:18:88:4F:91:31	Unknown		24 GHz	20 MHz		2 hours ago	b/g/n	WPA2 (PSK)			1 Mbps				
		KTGY_GUEST	CA9C/2EED/7D/60	Unknown	52	5 GHz	20 MHz	-79	10 minutes ago	a/n/ac/ax	WPA2 (PSK)		4	12 Mbps	2%			
		tbo	2A:3F:08:CD:C4:5C	Unknown		2.4 GHz	20 MHz		41 minutes ago	b/g/n	WPA2 (PSK)	0		1 Mbps				
		[Hidden]	DEC8:8C:48:D0:2C	Unknown	1	24 GHz	20 MHz		10 minutes ago	b/g/n	WPA2 (PSK)	0	2	11 Mbps				
		TYSGuest1	54:AF:97:2F:C3:E0	TP-Link Corporation Limited	11		20 MHz		10 minutes ago	b/g/n	WPA2 (PSK)			1 Mbps				
		(Hidden)	DECB:AC:31:2D:F0	Unknown	157	5 GHz	80 MHz		11 minutes ago	a/n/ac	WPA2 (PSK)	0	2	6 Mbps				_
															<u></u>			
															Channels	DfS Channels		
		-10																
		-20										-10						
												-20						
		~										-30						
		~*																
		50 PRE-100	r Debut-SSID									1						
		2	200		= 1	. minis	1947.					8 -50						
		-60 D BCT-55-HP C	OfficeJet Pro 6970									-60 ⁽					Modernet Contract	
		.70	- week									-70			TARAN	UNIONIZATI 15	Resign Conversion	
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		-100										-100					لصلحاته	
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Optifi Manager Pricing

The initial email registration will provide you a 7-Day Free Trial. Visit our website to obtain more information about pricing. <u>https://agent.optifi.com/#pricing</u>

Optifi Agent for macOS

Optifi Agent for macOS functions the same way as Optifi Agent for Windows.

Scans can be performed by clicking *Run Now* in the Home Tab. The Test Frequency can be modified by clicking the *Pencil* button next to Test Frequency. The resulting data can be downloaded into a file by clicking *WiFi Scanner Data*.



The Test Frequency and other test settings can also be modified by clicking on the Settings Tab (gear button) of the Optifi Agent applet, which will open the Preference Window, and navigating to the Test Setup Tab.

• • •	Optifi
 Preferences General Placeholders Test Setup 	Test Setup Test frequency Only Manual Testing
Account	WAN Ping/DIG Host www.google.com
	Test to run 🗹 WiFi Scan 🗹 Speed 🗹 Ping 🗹 DNS

To obtain sharing information for Optifi Manager, click on the Sharing Tab of the Optifi applet.



Optifi Agent for iOS and Android

You can also download Optifi Agent for Android 13 or later versions at https://www.accessagility.com/optifi-agent-windows-download

Optifi Agent is available for iOS 17 or later versions. Download Optifi Agent for iOS in the App Store: <u>https://apps.apple.com/us/app/optifi-agent/</u> <u>id826551029?platform=iphone</u>

For additional help with setting up Optifi Agent for mobile devices, refer to the Optifi User Guide





Optifi Agent for iOS and Android

Appendix A - Results Table Columns

WiFi Columns Visibility

802.11r Fast roaming. To check if roaming is conjured over the wire (DS) or over the air. Over the air is preferred to prevent layer 2 and 3 firewalls/blocks from preventing roaming messages reaching other access points. For more information, visit: https://www.cisco.com/c/en/us/td/docs/wireless/controller/technotes/80211r-ft/b-80211r-dg.html

Ad Hoc If access point is in ad-hoc mode instead of infrastructure mode

Amendments 802.11 Amendments supported by access points. Use this to confirm which ones are enabled or missing.

Roaming related - <u>https://support.apple.com/en-us/HT202628</u> Quality of service / QBSS - <u>https://support.accessagility.com/hc/802.11e-gbss-and-wmm</u>

AP Name Access point name configured by admin and detected from beacon. Not supported for all access points.

AP Uptime Using timestamps from beacons we can detect how long the access point has been online. This can be used to determine if the AP hasn't been updated in a while or if it is rebooting constantly due to malfunction. It can also be used for security purposes to see if there are new APs that weren't installed by an admin.

Band (Channel Band) Frequency band for access point (2.4, 5, or 6 GHz)

Basic Rates Basic rates allowed and used to manage cell size (minimum) rate.

Beacon Interval Time between beacon frames. Typical value is 102.4 ms but a few ms difference is OK. Some vendors / user change this value to higher number to reduce beacon airtime usage but this isn't recommended and can cause issues with access point discovery and roaming

BSSID BSSID, or Basic Service Set Identifier, is the MAC address of the access point radio. This value will be unique. The format is always 6 Octets with the first three being Vendor UI, unless locally administered MAC addresses are used (Meraki, others).

U/L I/G	Universally administered	Locally administered
	<i>x</i> 0- <i>xx-xx-xx-xx</i> - <i>xx</i>	x2-xx-xx-xx-xx-xx
Unicest (individual)	<i>x</i> 4- <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i>	<i>x</i> 6- <i>xx-xx-xx-xx</i> - <i>xx</i>
Unicast (individual)	<i>x</i> 8- <i>xx-xx-xx-xx</i> - <i>xx</i>	<i>x</i> A- <i>xx-xx-xx-xx</i> - <i>xx</i>
	<i>x</i> C- <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i>	<i>x</i> E- <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i>
	x1-xx-xx-xx-xx	x3-xx-xx-xx-xx-xx
Multicopt (group)	<i>x</i> 5- <i>xx-xx-xx-xx</i>	x7-xx-xx-xx-xx
Multicast (group)	<i>x</i> 9- <i>xx-xx-xx-xx</i> - <i>xx</i>	<i>x</i> B- <i>xx-xx-xx-xx</i> - <i>xx</i>
	<i>x</i> D- <i>xx-xx</i> - <i>xx</i> - <i>xx</i> - <i>xx</i>	<i>x</i> F- <i>xx-xx-xx-xx</i> -xx

Universal/Local and Individual/Group bits in MAC addresses

BSSID Note Enter a label for a BSSID. In many cases knowing where an AP / BSSID is installed is not easy to determine from scanning information. Some APs Vendors allow AP names but even then, the name may not indicate any special information about the AP. BSSID Note can be used to record AP location or any information to better document AP.

Channel This is the primary channel configured for access points. If channel width is wider than 20 MHz the access point will use other channels and have a center channel as well. Place cursor over right or left corner of spectrum graph to see all channels and the underlined channel is the primary channel

	-20	NE Nighth Solid Super		
	-30		SSID RSSI Channel	Nighthawk-5 -21 dBm 36, 40, <u>44</u> , 48, 52, 56
	-40		Channel Width	160 MHz
Ē				

Channel Utilization From 802.11e / QBSS load. Used to determine if the channel is overloaded and to make access point channel planning or config change decisions.

Country Regulatory domain for access point. Some 6GHz client adapters will not enable 6 GHz mode if the country code detected does not allow 6 GHz frequency. Use for confirming that access point model is correct for country

Last Seen We scan every few seconds and will show the last time the access point was detected

Max Rate Maximum data rate possible with current network / signal / noise conditions. Related to MCS number / value.

MCS (Modulation Coding Scheme) The higher the number the higher the data of the access point and more stable the connection. For a detailed table, visit <u>https://mcsindex.com/</u>

MFP (Management Frame Protection) If MFP is enabled or not, and if it is required or not. 6 GHz requires MFP enabled.

Min Rate Minimum data rate for connection permitted when joining access point. Used to prevent low speed connections.

Mode (PHY Mode) Displays 802.11 standard used: 802.11a/b/g/n/ac/ax

Protection Mode Protection mode is enabled when two devices don't understand that same standard. When enabled, it typically slows down the network, so it is something to watch out for performance improvement. This article explains more on Protection Mechanisms: https://www.cwnp.com/802-11n-protection-mechanisms-part-1/

Security Security type configured

Signal (RSSI) RSSI, or Received Signal Strength Indicator, is a method of measurement of received signal strength defined in the 802.11 standards. Negative values closer to zero indicate a stronger signal strength.

SSID SSID, or Service Set Identifier, is the network name. This name can be repeated and by multiple access points and when grouped together is known as an ESSID

Station Count / Clients (Number of Clients) Number of stations connected to access points. Will only show if 802.11e is enabled and supported by the access point.

Streams (Spatial Streams) Number of streams in operation for access point. Newer access points support 3x3 or higher. If your access point stream is not showing with full stream count, then check if power/POE is enough to allow all streams to be enabled. Most enterprise access points disable streams when POE is not enough.

TPC (Transmission Power Control) Max power setting for access point. Defined by amendment 802.11h. For more information, visit: https://www.cisco.com/c/en/us/support/docs/wireless-mobility/80211/200069-Overview-on-802-11h-Transmit-Power-Cont.html

Vendor This is the equipment vendor name based on OUI from IEEE OUI database. We download the latest database regularly to keep this data updated. In some cases, you may want to override this database and can edit the file located here: "C:\ProgramData\AccessAgility\WiFi Scanner\oui.txt"

NOTE: We may overwrite this file when software or file is updated

Width (Channel Width) Displays channel width used: 20, 40, 80, or 160 MHz

WPS (WiFi Protected Setup) WPS is used for allowing easy pairing between wifi router and client. <u>https://www.wi-fi.org/discover-wi-fi/wi-fi-protected-setup</u> Enabling this is a potential security issue. For more information on this vulnerability, visit <u>https://www.cisa.gov/news-events/alerts/2012/01/06/wi-fi-protected-setup-wps-vulnerable-brute-force-attack</u>

Appendix B - SSID Details

Fixed Parameters

Capabilities Information Provides a list of the device capabilities

Timestamp Provides a time of how long the SSID has been consecutively active. See *AP Uptime* in Appendix A for more information on Timestamps.

ID Length Name Expand All Details - Fixed Parameters Timestamp 28d 04:14:54

Tagged Parameters

AP Channel Report The AP Channel Report element contains a list of channels where a STA could potentially find an AP.

BSS Load Element BSS Load (QoS Basic Service Set) comes from the 802.11e amendment

Country Information US country code or a value of indication to which country the AP belongs to.

DS Parameter Set Channel Number that is being used by AP in the given SSID

Extended Capabilities Breaks down each octet into subcategories and describes capabilities of each.

HT Capabilities List of all supported 802.11n capabilities that are supported for High Throughput (HT)

HT Information List of information regarding 802.11n capable device utilization and channel layout. i.e. channel number and secondary/ primary

Measurement Pilot Transmission Generating a radio measurement report based, at least in part, on at least one of a beacon and a probe response, and the measurement pilot frame.

Multiple BSSID Indicator of how many BSSID there are within the SSID

Power Constraint The Power Constraint information element is used to allow a network to describe the maximum transmit power to stations.

RM Enabled Capabilities 802.11k defines Radio Resource Management (RRM) mechanism that enables 802.11k capable client's radio to better understand the RF environment that they exist in which will help clients to have better roaming.

SSID Parameter Set SSID logical name of WLAN Network.

Supported Data Rates Mbit/sec that are supported by AP and SSID configuration.

Traffic Indication Map (TIM) TIM which informs the clients about the presence of buffered multicast/broadcast data on the access point. It is generated within the periodic beacon at a frequency specified by the DTIM Interval.

TPC Report Transmit power and Link Margin: TPC Report information elements are included in several types of management frames, and include two one-byte fields.

VHT Capabilities Describes network capabilities. The drop down displays more information on what is available.

VHT Operation The VHT Operation IE describes the channel information and the basic rates supported by the transmitter.

VHT Tx Power Envelope An AP can set this bit to 1 to enable power save operations during a VHT transmission burst, or 0 to disable them.