

# RUCKUS<sup>®</sup> H550

Wall-Mounted Wi-Fi 6 2x2:2 Access Point with 1.8 Gbps HE80/40 Speeds, IoT, and Switch



## Benefits

### GREAT ALL-IN-ONE: WI-FI 6, IoT, WIRED PORTS

Deliver great in-room Wi-Fi and enable consolidated IP services with Wi-Fi 6 speed, BLT, Zigbee and a built-in 4-port Gigabit Ethernet switch.

### STUNNING WI-FI PERFORMANCE

Extends coverage with patented BeamFlex<sup>®</sup> + adaptive antenna technology while mitigating interference by utilizing multi-directional antenna patterns.

### SUPPORT MORE SERVICES

Multiple SSIDs and switch ports help support services such as VoIP, IPTV, and high-speed Internet access and in-room device connectivity. Embedded IoT helps support connected entry, staff alert and building automation.

### AUTOMATE OPTIMAL THROUGHPUT

ChannelFly<sup>®</sup> dynamic channel technology uses machine learning to automatically find the least congested channels. You always get the highest throughput the band can support.

### SERVE MORE DEVICES

Connect more devices simultaneously with two MU-MIMO spatial streams and concurrent dual-band 2.4/5GHz radios.

### MULTIPLE MANAGEMENT OPTIONS

Manage the H550 from the cloud, with on-premises physical/virtual appliances, or without a controller.

### BEYOND WI-FI

Support services beyond Wi-Fi with [RUCKUS IoT Suite](#), [Cloudpath<sup>®</sup>](#) security and onboarding software, [SPoT](#) Wi-Fi locationing engine, and [SCI](#) network analytics.

**How many devices can you connect in a single room? It sounds like the start of a riddle. But if you operate a hotel, apartment building, or other multi-dwelling unit (MDU) structure, your answer can have a big impact on your bottom line.**

The RUCKUS H550 wall-mounted access point, IoT gateway and Ethernet switch makes it easy to support the most demanding in-room connectivity requirements. It starts with RUCKUS patented Wi-Fi optimization intelligence to deliver the industry's highest-performing wireless connectivity. Combine that with four-ports of Gigabit Ethernet to connect multiple in-room wired devices, without extra cabling and add supports for Zigbee<sup>®</sup> and Bluetooth<sup>®</sup> Low Energy (BLE), as well as other protocols via optional USB modules. Put it all in a sleek, low-profile design that can be discretely installed over a standard electrical outlet.

The H550 is a perfect choice for delivering converged services in hospitality and residential locations such as hotel guest rooms, student residence halls, apartments, and other MDU structures. It can connect wired network devices such as IPTV set-top boxes, IP phones, or networked minibars, while simultaneously providing dual-band Wi-Fi 6 coverage and Zigbee<sup>®</sup> and Bluetooth<sup>®</sup> Low Energy (BLE). This enables The H550 to support a diverse range of IoT endpoints, minimizing the need for stand-alone IoT networks and simplifying the deployment of IoT solutions.

A PoE port and pass-through features can connect and power devices directly from the wall switch. And, an included cable channel can connect even legacy devices, like digital phones that require native access to PBX systems. All of these in-room services can coexist within the same junction box, dramatically reducing cabling, installation time, and construction costs.

The H550 wall-mounted Wi-Fi 6 AP incorporates patented technologies found only in the Ruckus Wi-Fi portfolio:

- Extended coverage with patented BeamFlex<sup>®</sup> + utilizing multi-directional antenna patterns.
- Improve throughput with ChannelFly, which dynamically finds less congested Wi-Fi channels to use.
- Maximize the reliability and performance of video and IP-based voice over Wi-Fi networks with the SmartCast<sup>™</sup> traffic prioritization engine

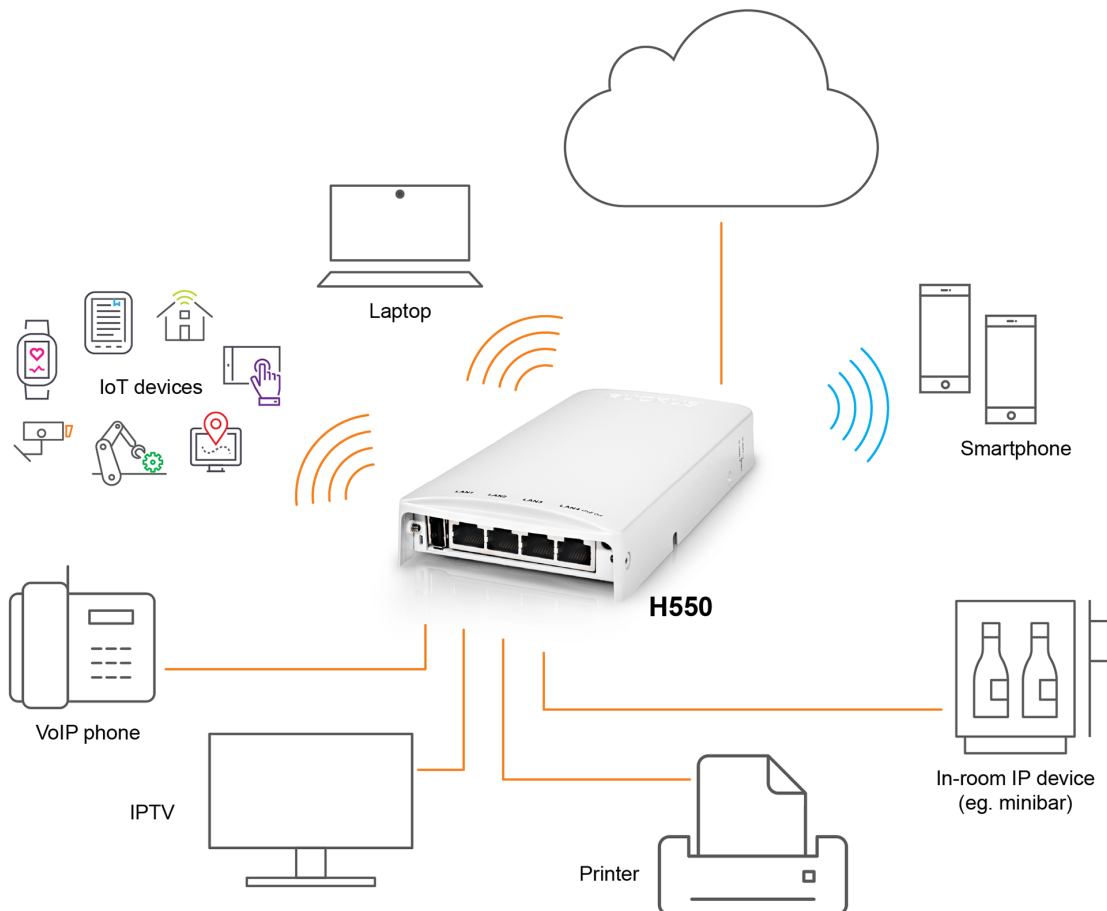
With Multiuser-MIMO connectivity, the H550 can simultaneously transmit and receive from/to multiple Wi-Fi 6 clients, improving network RF efficiency and overall performance, even for non-Wi-Fi 6 clients. The H550 also features a USB port to support future add-on radio modules, easy-to-deploy mesh networking capabilities, and support for up to 100 clients per room. Whether you're deploying ten or ten thousand APs, the H550 is also easy to manage through Ruckus' controller-less, appliance, virtual, and cloud management options.

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## CONVERGED WIRED AND WIRELESS SERVICES



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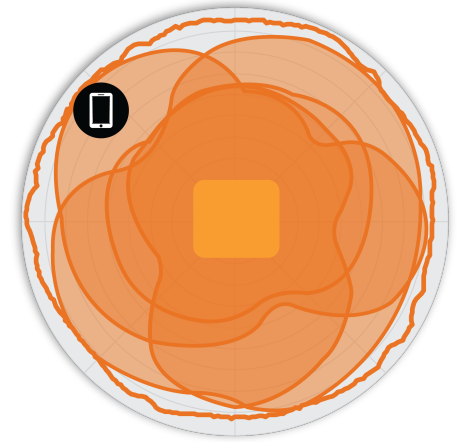
## Access Point Antenna Pattern

RUCKUS' BeamFlex+ adaptive antennas allow the H550 AP to dynamically choose among a host of antenna patterns in real-time to establish the best possible connection with every device. This leads to:

- Better Wi-Fi coverage
- Reduced RF interference

Traditional omni-directional antennas, found in generic access points, oversaturate the environment by needlessly radiating RF signals in all directions. In contrast, the RUCKUS BeamFlex+ adaptive antenna directs the radio signals per-device on a packet by-packet basis to optimize Wi-Fi coverage and capacity in real-time to support high device density environments. BeamFlex+ operates without the need for device feedback and hence can benefit even devices using legacy standards.

Figure 1. Example of BeamFlex+ pattern



☐ Client      ● Composite Pattern      ○ BeamFlex+ Pattern

Figure 2. H550 2.4GHz Azimuth Antenna Patterns



Figure 3. H550 5GHz Azimuth Antenna Patterns



Figure 4. H550 2.4GHz Elevation Antenna Patterns

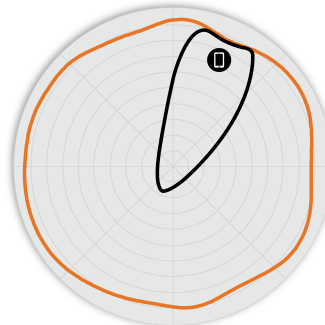


Figure 5. H550 5GHz Elevation Antenna Patterns



Note: The outer trace represents the composite RF footprint of all possible BeamFlex+ antenna patterns, while the inner trace represents one BeamFlex+ antenna pattern within the composite outer trace.

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Wi-Fi	
Wi-Fi Standards	<ul style="list-style-type: none"> <li>IEEE 802.11a/b/g/n/ac/ax</li> </ul>
Supported Rates	<ul style="list-style-type: none"> <li>802.11ax: 4 to 1,774 Mbps (MCS0 to MCS11, NSS=1 to 2 for HE 20/40/80)</li> <li>802.11ac: 6.5 to 867 Mbps (MCS0 to MCS9, NSS = 1 to 2 for VHT 20/40/80)</li> <li>802.11n: 6.5 Mbps to 300 Mbps (MCS0 to MCS15)</li> <li>802.11a/g: 6 to 54 Mbps</li> <li>802.11b: 1 to 11 Mbps</li> </ul>
Supported Channels	<ul style="list-style-type: none"> <li>2.4Ghz: 1-13</li> <li>5Ghz: 36-64, 100-144, 149-165</li> </ul>
MIMO	<ul style="list-style-type: none"> <li>2x2 SU-MIMO</li> <li>2x2 MU-MIMO</li> </ul>
Spatial Streams	<ul style="list-style-type: none"> <li>2 Streams SU/MU-MIMO (2.4Ghz &amp; 5Ghz)</li> </ul>
Radio Chains and Streams	<ul style="list-style-type: none"> <li>2x2:2 (2.4Ghz &amp; 5Ghz)</li> </ul>
Channelization	<ul style="list-style-type: none"> <li>20, 40, 80MHz</li> </ul>
Security	<ul style="list-style-type: none"> <li>WPA-PSK, WPA-TKIP, WPA2 AES, WPA3-Personal, WPA3-Enterprise, 802.11i, Dynamic PSK, OWE</li> <li>WIPS/WIDS</li> </ul>
Other Wi-Fi Features	<ul style="list-style-type: none"> <li>WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v</li> <li>Captive Portal</li> <li>Hotspot</li> <li>Hotspot 2.0</li> <li>WISPr</li> </ul>

RF	
Antenna Type	<ul style="list-style-type: none"> <li>BeamFlex+ adaptive antennas with polarization diversity</li> <li>Adaptive antenna that provides multiple unique antenna patterns</li> </ul>
Antenna Gain (max)	<ul style="list-style-type: none"> <li>Up to 1dBi</li> </ul>
Peak Transmit Power (aggregate across MIMO chains)	<ul style="list-style-type: none"> <li>2.4GHz: 19dBm</li> <li>5GHz: 22dBm</li> </ul>
Minimum Receive Sensitivity <sup>1</sup>	<ul style="list-style-type: none"> <li>-100dBm</li> </ul>
Frequency Bands	<ul style="list-style-type: none"> <li>ISM (2.4-2.484GHz)</li> <li>U-NII-1 (5.15-5.25GHz)</li> <li>U-NII-2A (5.25-5.35GHz)</li> <li>U-NII-2C (5.47-5.725GHz)</li> <li>U-NII-3 (5.725-5.85GHz)</li> </ul>

2.4GHZ RECEIVE SENSITIVITY (dBm) - PER RADIO CHAIN							
HT20		HT40		VHT20		VHT40	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-94	-75	-91	-72	-94	-75	-91	-72
HE20				HE40			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-94	-75	-71	-65	-91	-72	-68	-62

5GHZ RECEIVE SENSITIVITY (dBm) - PER RADIO CHAIN											
VHT20				VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-97	-76	-72	--	-92	-73	--	-67	-89	-70	--	-64
HE20				HE40				HE80			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-95	-76	-70	-65	-92	-73	-67	-62	-89	-70	-64	-59

2.4GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 HT20	16
MCS7 HT20	15
MCS8 VHT20	14
MCS9 VHT40	13
MCS11 HE40	11

5GHZ TX POWER TARGET	
Rate	Pout (dBm)
MCS0 HT20	19
MCS7 VHT40, VHT80	15.5
MCS9 VHT40, VHT80	14.5
MCS11 HE20, HE40, HE80	12

PERFORMANCE AND CAPACITY	
Peak PHY Rates	<ul style="list-style-type: none"> <li>2.4GHz: 574Mbps</li> <li>5GHz: 1,200Mbps</li> </ul>
Client Capacity	<ul style="list-style-type: none"> <li>Up to 512 clients per AP</li> </ul>
SSID	<ul style="list-style-type: none"> <li>8 per radio</li> </ul>

RUCKUS RADIO MANAGEMENT	
Antenna Optimization	<ul style="list-style-type: none"> <li>BeamFlex+</li> <li>Polarization Diversity with Maximal Ratio Combining (PD-MRC)</li> </ul>
Wi-Fi Channel Management	<ul style="list-style-type: none"> <li>ChannelFly</li> <li>Background Scan Based</li> </ul>
Client Density Management	<ul style="list-style-type: none"> <li>Adaptive Band Balancing</li> <li>Client Load Balancing</li> <li>Airtime based WLAN Prioritization</li> <li>Airtime Fairness</li> </ul>
SmartCast Quality of Service	<ul style="list-style-type: none"> <li>QoS-based scheduling</li> <li>Directed Multicast</li> <li>L2/L3/L4 ACLs</li> </ul>
Mobility	<ul style="list-style-type: none"> <li>SmartRoam</li> </ul>
Diagnostic Tools	<ul style="list-style-type: none"> <li>Spectrum Analysis</li> <li>SpeedFlex</li> </ul>

<sup>1</sup> Rx sensitivity varies by band, channel width and MCS rate.

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NETWORKING	
Controller Platform Support	<ul style="list-style-type: none"> <li>SmartZone</li> <li>ZoneDirector</li> <li>Unleashed<sup>2</sup></li> <li>Cloud</li> <li>Standalone</li> </ul>
Mesh	<ul style="list-style-type: none"> <li>SmartMesh™ wireless meshing technology. Self-healing Mesh</li> </ul>
IP	<ul style="list-style-type: none"> <li>IPv4, IPv6, dual stack</li> </ul>
VLAN	<ul style="list-style-type: none"> <li>802.1Q (1 per BSSID or dynamic per use based on RADIUS)</li> <li>VLAN Pooling</li> <li>Port-based</li> </ul>
802.1x	<ul style="list-style-type: none"> <li>Authenticator and Supplicant</li> </ul>
Tunnel	<ul style="list-style-type: none"> <li>L2TP, GRE, Soft-GRE</li> </ul>
Policy Management Tools	<ul style="list-style-type: none"> <li>Application Recognition and Control</li> <li>Access Control Lists</li> <li>Device Fingerprinting</li> <li>Rate Limiting</li> </ul>
IoT	<ul style="list-style-type: none"> <li>Integrated BLE and Zigbee (Dual Concurrent)</li> </ul>

POWER CONFIGURATION OPTIONS <sup>3</sup>						
Power Mode		802.3af	802.3at		802.3bt, uPoE, PoH	
Wi-Fi (2.4GHz) 2x2	Tx Power (per Chain)	16dBm	16dBm		16dBm	
Wi-Fi (5GHz) 2x2	Tx Power (per Chain)	19dBm	19dBm		19dBm	
IoT Radios	BLE	Enabled	Enabled		Enabled	
	Zigbee	Enabled	Enabled		Enabled	
Ethernet LAN Ports (4x)		Enabled	Enabled		Enabled	
PSE	PoE_Out	Disabled	Disabled	Enabled	Enabled	Enabled
	Power @ PD	NA	NA	8.4W	12.4W	12.95W
	Maximum Cable Length	NA	NA	20m	20m	100m
USB		Disabled	Enabled	Enabled	Disabled	Enabled
Power Consumption		12.54W	15.9W	24.91W	25.48W	32.21W

PHYSICAL INTERFACES	
Ethernet	<ul style="list-style-type: none"> <li>1x 1GbE port, RJ-45, PoE In - 802.3bt Class 5</li> <li>4x 1GbE ports, RJ-45, one PoE Out port - 802.3af</li> </ul>
USB	<ul style="list-style-type: none"> <li>1 USB 2.0 port, Type A</li> </ul>

PHYSICAL CHARACTERISTICS	
Physical Size	<ul style="list-style-type: none"> <li>89.5 mm (W) x 178.5 mm (L), 29.3 mm (H)</li> <li>3.52in (W) x 7.03in (L) x 1.15in (H)</li> </ul>
Weight	<ul style="list-style-type: none"> <li>278g (0.613lbs) without bracket</li> <li>350g (0.772lbs) with bracket</li> </ul>
Mounting	<ul style="list-style-type: none"> <li>Electrical wallbox; Standard US and EU single gang wall jack</li> <li>Optional bracket for offset &amp; wall mount</li> </ul>
Operating Temperature	<ul style="list-style-type: none"> <li>0°C (32°F) - 40°C (104°F)</li> </ul>
Operating Humidity	<ul style="list-style-type: none"> <li>Up to 95%, non-condensing</li> </ul>

CERTIFICATIONS AND COMPLIANCE	
Wi-Fi Alliance <sup>4</sup>	<ul style="list-style-type: none"> <li>Wi-Fi CERTIFIED™ a, b, g, n, ac</li> <li>Wi-Fi CERTIFIED 6™</li> <li>WPA3 Enterprise Personal</li> <li>Wi-Fi Enhanced Open™</li> <li>Wi-Fi Agile Multiband™</li> <li>Passpoint™</li> <li>Vantage™</li> <li>WMM™</li> </ul>
Standards Compliance <sup>5</sup>	<ul style="list-style-type: none"> <li>EN 60950-1 Safety</li> <li>EN 60601-1-2 Medical</li> <li>EN 61000-4-2/3/5 Immunity</li> <li>EN 50121-1 Railway EMC</li> <li>EN 50121-4 Railway Immunity</li> <li>IEC 61373 Railway Shock &amp; Vibration</li> <li>EN 62311 Human Safety/RF Exposure</li> <li>WEEE &amp; RoHS</li> <li>ISTA 2A Transportation</li> </ul>

<sup>2</sup> Refer to Unleashed datasheets for SKU ordering information.

<sup>3</sup> Max power varies by country setting, band, and MCS rate.

<sup>4</sup> For complete list of WFA certifications, please see Wi-Fi Alliance website.

<sup>5</sup> For current certification status, please see price list.

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SOFTWARE AND SERVICES	
Location Based Services	<ul style="list-style-type: none"><li>• SPoT</li></ul>
Network Analytics	<ul style="list-style-type: none"><li>• RUCKUS Analytics</li><li>• SmartCell Insight (SCI)</li></ul>
Security and Policy	<ul style="list-style-type: none"><li>• Cloudpath</li></ul>

ORDERING INFORMATION	
901-H550-XX00	<ul style="list-style-type: none"><li>• Dual band 802.11ax Wi-Fi 6 Wall plate AP</li></ul>

See RUCKUS price list for country-specific ordering information.

Warranty: Sold with a limited lifetime warranty.

For details see: <http://support.ruckuswireless.com/warranty>.

OPTIONAL ACCESSORIES	
902-0180-XXYY	<ul style="list-style-type: none"><li>• PoE injector (60W) (Sold in quantities of 1, 10)</li></ul>
902-2170-XXYY	<ul style="list-style-type: none"><li>• Power Supply (50W) (Sold in quantities of 1 or 10)</li></ul>
902-0136-0000	<ul style="list-style-type: none"><li>• Optional Surface-mount bracket</li></ul>

PLEASE NOTE: When ordering Indoor APs, you must specify the destination region by indicating -US, -WW, or -Z2 instead of XX. When ordering PoE injectors or power supplies, you must specify the destination region by indicating -US, -EU, -AU, -BR, -CN, -IN, -JP, -KR, -SA, -UK, or -UN instead of -XX. For access points, -Z2 applies to the following countries: Algeria, Egypt, Israel, Morocco, Tunisia, and Vietnam.

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