H500

Wall-Mounted 802.11ac Wi-Fi Access Point and Switch

RUCKUS™
an ARRIS company

DATA SHEET

BENEFITS

GREAT ALL-IN-ONE

Combines the best of Wi-Fi with 802.11ac and great wired switching with four 100Mbps ports into one wallmounted unit.

GREAT WI-FI PERFORMANCE

Provide a great user experience no matter how challenging the environment with BeamFlex+™ adaptive antenna technology using a multi-directional antenna patterns.

AUTOMATE OPTIMAL THROUGHPUT

Improve performance automatically with ChannelFly™ and machine learning, which finds less congested Wi-Fi channels with dynamic RF channel selection.

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.

KEEP YOUR SWITCHES AND CABLES

Designed to operate on existing PoE switches and CAT 5e cabling to minimize costly upgrades.

EXPANDABLE CAPABILITIES

Augment AP capabilities through the onboard USB 2.0 port to support additional technologies like BLE.

MORE THAN WI-FI

Support services beyond Wi-Fi with Ruckus IoT Suite, Cloudpath security and onboarding software, SPoT Wi-Fi locationing engine, and SCI network analytics.

Modern hotel rooms, residence halls, and apartments need to function as full-featured technology hubs. Users expect fast, reliable wireless connectivity for all of their personal devices, along with voice, TV, and other wired and wireless services. But for operators of these venues, trying to deliver all of that over separate infrastructures is an installation nightmare—and a huge expense.

The Ruckus H500 combines industry-leading Ruckus 802.11ac wireless access point performance with a wall-mounted wired switch in a single, secure, and inconspicuous form factor. With integrated 2.4GHz and 5GHZ concurrent radios, four wired Ethernet ports, Power-over-Ethernet (PoE) output, and pass-through features for connecting legacy devices, it's an all-in-one in-room connectivity solution.

The H500 is perfect for hotel guest rooms, student residences, and multi-dwelling units that require simple connectivity for multiple devices in a single room, without multiple cables. It features an ultra-sleek, low-profile design that can be quickly and discretely installed in a standard electrical junction box. The H500 can connect a wide range of wired devices such as IPTV set top boxes, IP telephones, or networked mini-bars. At the same time, it draws on Ruckus wireless innovations to deliver extended range, reduced interference, and the industry's highest-performing 802.11ac coverage.

The H500 wall-mounted 802.11ac Wi-Fi AP incorporates patented technologies found only in the Ruckus Wi-Fi portfolio.

- Extended coverage with patented BeamFlex+ utilizing multi-directional antenna patterns.
- Improve throughput with ChannelFly, which dynamically finds less congested Wi-Fi channels to use.
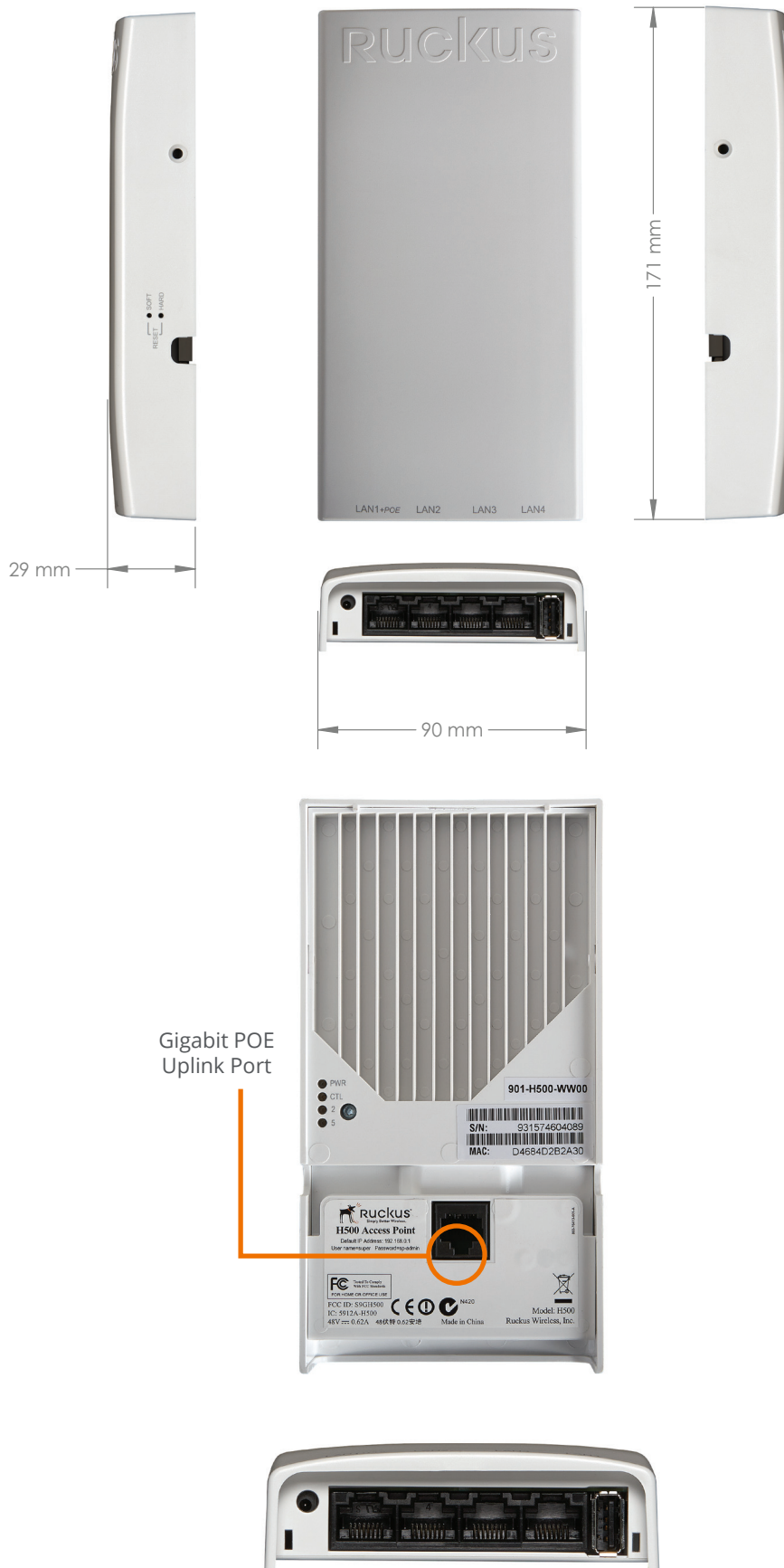
Additionally, the H500 features a USB port to support IoT devices such as Bluetooth Low Energy (BLE), and IEEE 802.3af-compliant PoE to directly power devices such as IP telephones from the wall switch. Cable channels in the H500 also support legacy cabling for devices such as digital phones that require access to a PBX system.

Whether you're deploying ten or ten thousand APs, the H500 is also easy to manage through Ruckus' appliance, virtual, and cloud management options.
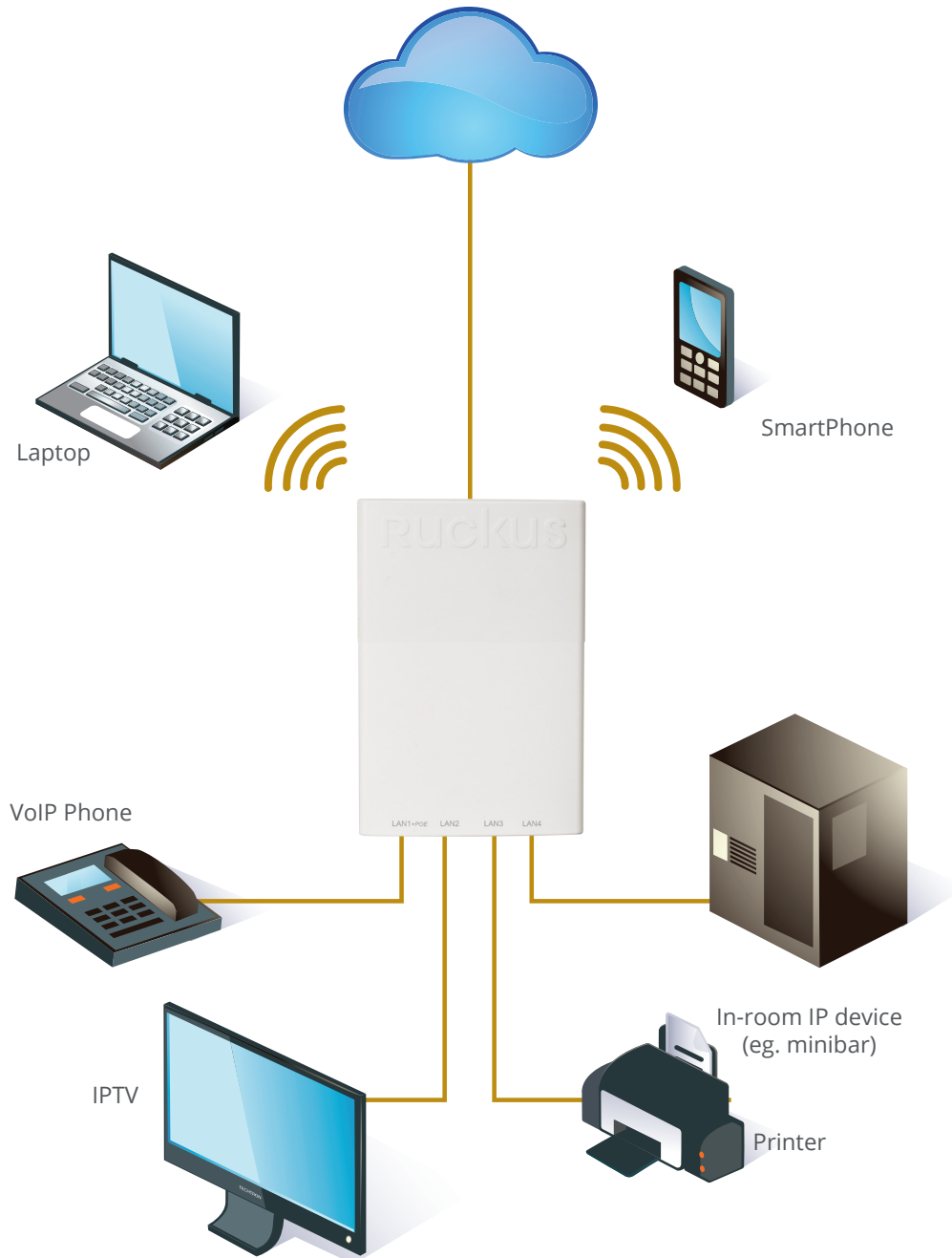
171 mm

29 mm

90 mm

Gigabit POE
Uplink Port

PWR
CTL
2
5

901-H500-WW00

S/N: 931574604089

MAC: D4684D2B2A30

Ruckus
Simply Better Wireless.
H500 Access Point
Default IP Address: 192.168.0.1
User name=super Password=sp-admin

FCC ID: S9GH500
IC: 5912A-H500
48V === 0.62A 48伏特 0.62安培

Made in China

N420

Model: H500
Ruckus Wireless, Inc.

CONVERGED WIRED AND WIRELESS SERVICES

Laptop

SmartPhone

VoIP Phone

IPTV

In-room IP device
(eg. minibar)

Printer

LAN1+PoE   LAN2   LAN3   LAN4

ACCESS POINT ANTENNA PATTERN

Ruckus' BeamFlex+ adaptive antennas allow the H500 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+
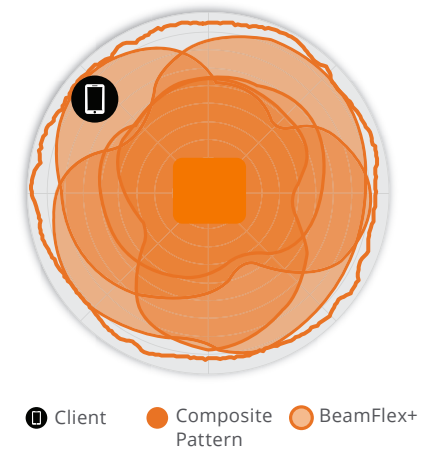
Figure 2. H500 2.4GHz Azimuth Antenna Patterns

Figure 3. H500 5GHz Azimuth Antenna Patterns

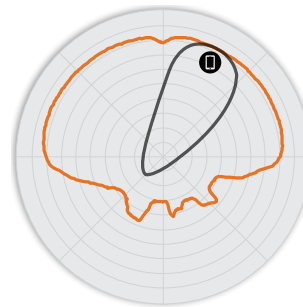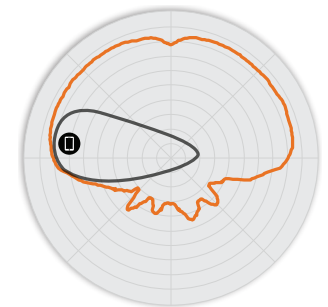**Figure 4. H500 2.4GHz Elevation Antenna Patterns**

Figure 5. H500 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.

WI-FI

Wi-Fi Standards	• 802.11a/b/g/n/ac
Supported Rates	• 802.11ac: 6.5 to 867Mbps (MCS0 to MCS9, NSS = 1 to 2 for VHT20/40/80) • 802.11n: 6.5 Mbps to 300Mbps (MCS0 to MCS15) • 802.11a/g: 54, 48, 36, 24, 18, 12, 9, 6Mbps • 802.11b: 11, 5.5, 2 and 1 Mbps
Supported Channels	• 2.4GHz: 1-13 • 5GHz: 36-64, 100-144, 149-165
MIMO	• 2x2 SU-MIMO
Spatial Streams	• 2 SU-MIMO
Channelization	• 20, 40, 80MHz
Security	• WPA-PSK, WPA-TKIP, WPA2 AES, 802.11i, Dynamic PSK • WIPS/WIDS
Other Wi-Fi Features	• WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v • Captive Portal • Hotspot • Hotspot 2.0 • WISPr

RF

Antenna Type	• BeamFlex+ adaptive antennas with polarization diversity • Adaptive antenna that provides multiple unique antenna patterns per band
Antenna Gain (max)	• 2.4GHz: 2dB • 5GHz: 3-5dB (PD-MRC)
Peak Transmit Power (aggregate across MIMO chains)	• 2.4: 3dBi • 5GHz: 3dBi
Minimum Receive Sensitivity[1]	• -99dBm
Frequency Bands	• ISM 2.4-2.484GHz • U-NII-1 5.15-5.25GHz • U-NII-2A 5.25-5.35GHz • U-NII-2C 5.47-5.725GHz • U-NII-3 5.725-5.85GHz

2.4GHZ RECEIVE SENSITIVITY

HT20		HT40	
MCS0	MCS7	MCS0	MCS7
-92	-75	-90	-73

5GHZ RECEIVE SENSITIVITY

VHT20		VHT40		VHT80	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-96	-77	-94	-74	-90	-65

2.4GHZ TX POWER TARGET

Rate	Pout (dBm)
MCS0 HT20	16
MCS7 HT20	15

5GHZ TX POWER TARGET

Rate	Pout (dBm)
VHT20	19
MCS0 VHT40	18
MCS7 VHT40, VHT80	19
MCS9 VHT40, VHT80	18

PERFORMANCE AND CAPACITY

Peak PHY Rates	• 2.4GHz: 300Mbps • 5GHz: 867Mbps
Client Capacity	• Up to 100 clients per AP
SSID	• Up to 16 per AP

RUCKUS RADIO MANAGEMENT

Antenna Optimization	• BeamFlex+ • Polarization Diversity with Maximal Ratio Combining (PD-MRC)
Wi-Fi Channel Management	• ChannelFly • Background Scan Based
Client Density Management	• Adaptive Band Balancing • Client Load Balancing • Airtime Fairness • Airtime-based WLAN Prioritization
SmartCast Quality of Service	• QoS-based scheduling • Directed Multicast • L2/L3/L4 ACLs
Mobility	• SmartRoam
Diagnostic Tools	• Spectrum Analysis • SpeedFlex

NETWORKING

Controller Platform Support	• SmartZone • ZoneDirector • Unleashed[2] • Standalone
Mesh	• SmartMesh™ wireless meshing technology. Self-healing Mesh
IP	• IPv4, IPv6
VLAN	• 802.1Q (1 per BSSID or dynamic per use based on RADIUS) • VLAN Pooling • Port-based
802.1x	• Authenticator & Supplicant
Tunnel	• L2TP, GRE, Soft-GRE
Policy Management Tools	• Application Recognition and Control • Access Control Lists • Device Fingerprinting • Rate Limiting

[1] Rx sensitivity varies by band, channel width and MCS rate.
[2] Refer to Unleashed datasheets for SKU ordering information.

PHYSICAL INTERFACES

Ethernet	• 1 x 1GbE ports, RJ-45 • 4 x 10/100Mbps Ethernet ports
USB	• 1 USB 2.0 port, Type A

PHYSICAL CHARACTERISTICS

Physical Size	• 90 mm (W) x 171 mm (L), 29 mm (H) • 3.54in (W) x 6.73in (L) x 1.14in (H)
Weight	• 210g (0.46lbs) without bracket • 282g (0.62lbs) with bracket
Mounting	• Electrical wallbox; Standard US and EU single gang wall jack • Optional bracket for offset & wall mount
Operating Temperature	• 0°C (32°F) - 40°C (104°F)
Operating Humidity	• Up to 95%, non-condensing

POWER[3]

Power Supply	Maximum Power Consumption
802.3af/802.3at	• 9.5W
48VDC	• 9.4W

CERTIFICATIONS AND COMPLIANCE

Wi-Fi Alliance[4]	• Wi-Fi CERTIFIED™ a, b, g, n, ac • Passpoint®, Vantage
Standards Compliance[5]	• EN 60950-1 Safety • EN 60601-1-2 Medical • EN 61000-4-2/3/5 Immunity • EN 50121-1 Railway EMC • EN 50121-4 Railway Immunity • IEC 61373 Railway Shock & Vibration • EN 62311 Human Safety/RF Exposure • WEEE & RoHS • ISTA 2A Transportation

SOFTWARE AND SERVICES

Location Based Services	• SPoT
Network Analytics	• SmartCell Insight (SCI)
Security and Policy	• Cloudpath

ORDERING INFORMATION

901-H500-XX00	• Dual band 802.11ac Wi-Fi Wall Switch

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

902-0170-XX00	• Power Supply (Qty. 1)
902-0162-XX00	• PoE injector (Qty. 1)

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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[3] Max power varies by country setting, band, and MCS rate.
[4] For complete list of WFA certifications, please see Wi-Fi Alliance website.
[5] For current certification status, please see price list.

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