# RUCKUS® R676sn

## Indoor Wi-Fi 7 (802.11be) Access Point with Programmable Sector Antenna

### BENEFITS

**Connect more devices simultaneously**
Improve device performance, by enabling more simultaneous device connections with 6 spatial streams (2x2:2 in 2.4GHz, 5GHz, and 6GHz) technology. 9.34 Gbps combined data rate.

**High client density and performance**
Provides exceptional end-user experience within large indoor venues with high ceilings like convention centers, concert halls, airport terminals.

**Unique Programmable Sector Antenna**
To maximize deployment flexibility, throughput, and range, the R676sn features the industry's first programmable sector antenna, delivering both narrow and wide sector coverage on demand. This innovation optimizes signal strength, enhances throughput, and increases network capacity and works seamlessly with any client device.

**5 GbE minimizes wired backhaul bottleneck**
Optimized multi-gigabit Wi-Fi performance delivered using the built-in 1/2.5/5GbE port to connect to multi- gigabit switches.

**Multiple management options**
Manage the R676sn with on premise physical/ virtual appliances and control auto-provisioning for faster deployment and seamless firmware upgrades.

**Enhanced Security**
The latest Wi-Fi security standard with WPA3 and receive enhanced protection from man-in-the-middle attacks. Adds the power of RUCKUS DPSK3 to WPA3/ SAE combining enhanced security with the flexibility and ease of use of dynamic passphrase to secure network access.

**More Than Wi-Fi**
Support solutions beyond Wi-Fi with RUCKUS AI, RUCKUS One, RUCKUS Cloudpath Enrollment System and on-boarding software.



Large indoor venues like convention centers, concert halls, airport terminals and sport venues pose some of the most demanding wireless challenges due to extremely high client densities and ever-increasing bandwidth requirements. The RUCKUS R676sn access point (AP), powered by the latest Wi-Fi 7 standard and enhanced with RUCKUS' unique patented technologies, delivers multi-gigabit performance and exceptional reliability to meet the growing demand for high-density, top- tier wireless connectivity.

Wi-Fi 7 introduces a new generation of wireless performance with breakthroughs in speed, capacity, latency, and reliability. It's designed to redefine connectivity across demanding environments. Hospitality and education benefit from Wi-Fi 7's low latency and high reliability, while MDUs, large public venues, and service providers gain from its unmatched throughput and capacity to deliver faster, more efficient networks.

The RUCKUS R676sn is a high-end Wi-Fi 7, tri-band concurrent indoor AP that delivers 6 spatial streams (2x2:2 in 2.4GHz/5GHz/6GHz or, in dual-band mode, 2x2:2 in 2.4GHz and 4x4:4 in 5GHz) With Multi-Link-Operation (MLO), Preamble Puncturing, 4K QAM Modulation and 320MHz channels. It delivers industry-leading performance environments with a combined data rate of 9.34 Gbps.

## R676sn Programmable Sector Antenna

The R676sn unique programmable sector antenna delivers both narrow and wide sector coverage on demand. This offers many great benefits:

### Deployment Flexibility

With software-defined sector coverage, network operators can easily adapt the AP to different environments—narrowing the beam for high-density areas or expanding it for broader coverage.

### Optimized Performance & Signal Control

By precisely controlling the antenna's coverage, interference is minimized, and signal strength is maximized, ensuring better connectivity and higher data rates in targeted areas.

### Simplified Network Planning

Instead of deploying multiple APs with fixed coverage patterns, a single AP with a programmable sector antenna can be adjusted as needed, reducing hardware costs and simplifying network design.

### Dynamic Adaptation for Changing Needs

As network requirements evolve—whether due to seasonal crowd variations, temporary events, or new infrastructure—the antenna pattern can be reconfigured remotely, eliminating the need for costly physical adjustments.

### Enhanced Spectral Efficiency

By directing RF energy only where it's needed, this technology improves spectrum utilization, reducing co-channel interference and improving overall network capacity.

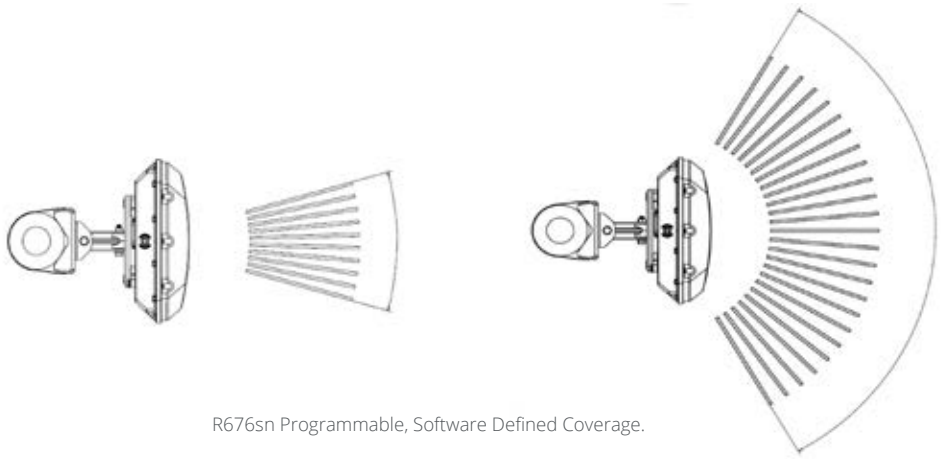

RUCKUS programmable sector antenna

## R676sn Programmable Sector Antenna Pattern

The R676sn programmable sector antenna enhances indoor Wi-Fi AP deployments by offering flexible, software-defined coverage that adapts to different environments. It can be switched between narrow beam for high-density areas and wide beam for broader coverage, offering several key benefits.

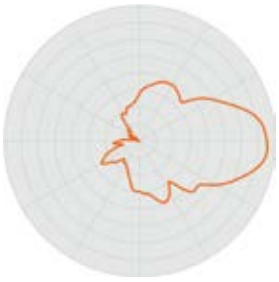
- Better Deployment Flexibility
- Dynamic Adaptation for Changing Needs
- Simplified Network Planning

This dynamic control minimizes interference while maximizing signal strength and data rates, leading to better connectivity and performance in targeted areas. Additionally, the ability to modify coverage patterns remotely eliminates the need for physical adjustments, making it ideal for scenarios with changing network demands, such as seasonal events or infrastructure expansions.

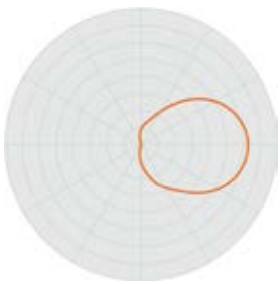


R676sn Programmable, Software Defined Coverage.

4 channels, 5.5 GHz, Narrow



2 channels, 2.45 GHz, Narrow



2 channels, 6.5 GHz, Narrow

2 channels, 5.5 GHz, Narrow

4 channels, 5.5 GHz, Wide

2 channels, 2.45 GHz, Wide

2 channels, 6.5 GHz, Wide

2 channels, 5.5 GHz, Wide

# Specifications

| WI-FI | |
|---|---|
| **Wi-Fi Standards** | • IEEE 802/11a/b/g/n/ac/ax/be, Wi-Fi 7 |
| **Supported Rates** | • 802.11be: 4 to 5765 Mbps<br>• 802.11ax: 4 to 4804 Mbps<br>• 802.11ac: 6.5 to 866 Mbps<br>• 802.11n: 6.5 to 300 Mbps<br>• 802.11a/g: 6 to 54 Mbps<br>• 802.11b: 1 to 11 Mbps |
| **Supported Channels** | • 2.4GHz: 1-13<br>• 5GHz: 36-64, 100-144, 149-165<br>• 6GHz: 1-233 |
| **MIMO** | • 2x2 SU-MIMO in tri-band mode. 4x4(5GHz) in dual-band<br>• 2x2 MU-MIMO in tri-band mode. 4x4(5GHz) in dual-band |
| **Spatial Streams** | • 2 in tri-band mode or 4 in dual-band mode at 5GHz |
| **Radio Chains and Streams** | • 2x2:2 in all 3 bands. 4x4:4(5GHz) in dual-band mode |
| **Channelization** | • 20, 40, 80, 160, 320 MHz |
| **Security** | • WEP, WPA, WPA-PSK, WPA2, WPA2-PSK, WPA3, WPA3-SAE, OWE, PMF (802.11w), Dynamic PSK, DPSK3<br>• WIPS/WIDS. TPM 2.0, Secure Boot |
| **Other Wi-Fi Features** | • WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v, MBO<br>• MLO (Multi-link operation ), Preamble Puncturing<br>• Web Authentication and Guest Access<br>• Hotspot, Hotspot 2.0<br>• Captive Portal<br>• WISPr |

| RF | |
|---|---|
| **Antenna Type** | • Built-in programmable wide/narrow sector antenna<br>• Support for both wide and narrow degree coverage |
| **Power Class** | • LPI Low Power Indoor |
| **Antenna Gain (max)** | • Up to 12.8 dBi (narrow) and 11.3dBi (wide) |
| **Peak Transmit Power (Tx port/ chain + Combining gain)** | • 2.4GHz: 26dBm (2x2)<br>• 5GHz: 25dBm(2x2). 28dBm(4x4)<br>• 6GHz: 25dBm (2x2) |
| **Frequency Bands** | • ISM (2.4-2.484GHz)<br>• U-NII-1 (5.15-5.25GHz)<br>• U-NII-2A (5.25-5.35GHz)<br>• U-NII-2C (5.47-5.725GHz)<br>• U-NII-3 (5.725-5.85GHz)<br>• U-NII-5 (5.925–6.425GHz)<br>• U-NII-7 (6.525–6.875GHz) |

**2.4GHZ RECEIVE SENSITIVITY (dBm)**

| HT20 | | HT40 | | VHT20 | | VHT40 | |
|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 | MCS0 | MCS7 |
| -97 | -79 | -94 | -76 | -97 | -79 | -94 | -76 |
| **HE20/EHT20** | | | | **HE40/EHT40** | | | |
| MCS0 | MCS7 | MCS9 | MCS11 | MCS0 | MCS7 | MCS9 | MCS11 |
| -97 | -79 | -74 | -68 | -94 | -76 | -71 | -65 |

**5GHZ RECEIVE SENSITIVITY (dBm) in 2x2 tri-band mode**

| HT20/VHT20 | | | | HT40/VHT40 | | | | VHT80 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 |
| -96 | -79 | -76 | -73 | -93 | -75 | -73 | -70 | -90 | -72 | -70 | -67 |
| **HE20/EHT20** | | | | **HE40/EHT40** | | | | **HE80/EHT80** | | | |
| MCS0 | MCS9 | MCS13 | | MCS0 | MCS9 | MCS13 | | MCS0 | MCS9 | MCS13 | |
| -96 | -73 | -61 | | -93 | -70 | -58 | | -90 | -67 | -55 | |
| **HE160/EHT160** | | | | | | | | | | | |
| MCS0 | MCS9 | MCS13 | | | | | | | | | |
| -87 | -64 | -52 | | | | | | | | | |

**5GHZ RECEIVE SENSITIVITY (dBm) in 4x4 dual-band mode**

| HT20/VHT20 | | | | HT40/VHT40 | | | | VHT80 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 | MCS0 | MCS7 | MCS8 | MCS9 |
| -100 | -82 | -79 | -76 | -97 | -79 | -76 | -73 | -94 | -76 | -73 | -70 |
| **HE20/EHT20** | | | | **HE40/EHT40** | | | | **HE80/EHT80** | | | |
| MCS0 | MCS9 | MCS13 | | MCS0 | MCS9 | MCS13 | | MCS0 | MCS9 | MCS13 | |
| -100 | -76 | -64 | | -97 | -73 | -61 | | -94 | -70 | -58 | |
| **HE160/EHT160** | | | | | | | | | | | |
| MCS0 | MCS9 | MCS13 | | | | | | | | | |
| -91 | -67 | -55 | | | | | | | | | |

**6GHZ RECEIVE SENSITIVITY (dBm)**

| HE20/EHT20 | | | HE40/EHT40 | | | HE80/EHT80 | | |
|---|---|---|---|---|---|---|---|---|
| MCS0 | MCS9 | MCS13 | MCS0 | MCS9 | MCS13 | MCS0 | MCS9 | MCS13 |
| -96 | -73 | -61 | -93 | -70 | -58 | -90 | -67 | -55 |
| **HE160/EHT160** | | | | **EHT320** | | | | |
| MCS0 | MCS9 | MCS11 | MCS13 | MCS0 | MCS9 | MCS11 | MCS13 | |
| -87 | -64 | -58 | -52 | -84 | -61 | -55 | -49 | |

**2.4GHZ TX POWER TARGET (PER CHAIN)**

| Rate | Pout (dBm) |
|---|---|
| **MCS0, HT20** | 22 |
| **MCS7, HT20** | 19 |
| **MCS9, VHT20** | 18 |
| **MCS11, HE40** | 16 |
| **MCS13, EHT40** | 12 |

# Specifications

| 5GHZ TX POWER TARGET (PER CHAIN) | |
|---|---|
| **Rate** | **Pout (dBm)** |
| **MCS0, HT40** | 22 |
| **MCS7, HT40** | 19 |
| **MCS9, VHT80** | 17.5 |
| **MCS11, HE160** | 16 |
| **MCS13, EHT160** | 14 |

| 6GHZ TX POWER TARGET (PER CHAIN) | |
|---|---|
| **Rate** | **Pout (dBm)** |
| **MCS0, HT40** | 22 |
| **MCS7, HT40** | 17.5 |
| **MCS9, VHT80** | 16.5 |
| **MCS11, HE160** | 15 |
| **MCS13, EHT320** | 13 |

| POWER CONSUMPTION | | | |
|---|---|---|---|
| **Mode** | **Max Power** | **Capabilities** | **Wi-Fi Radios** |
| **DC Power** | 35W | *Full Functionality*<br>• 5Gbps Ethernet Enabled<br>• 1Gbps Ethernet Enabled<br>• USB Enabled (3W) | *Full Functionality*<br>Tri-band mode<br>• 2.4GHz (2x2) Tx 22 dBm<br>• 5GHz (2x2) Tx 22 dBm<br>• 6GHz (2x2) Tx 22 dBm<br><br>Dual-band mode<br>• 2.4GHz (2x2) Tx 22 dBm<br>• 5GHz (4x4) Tx 22 dBm |
| **802.3bt5 PoH, uPoE** | 35W | | |
| **802.3at** | 25.5W | • 5Gbps Ethernet Enabled<br>• 1Gbps Ethernet Enabled<br>• USB Disabled (0W) | Tri-band mode<br>• 2.4GHz (2x2) Tx 19 dBm<br>• 5GHz (2x2) Tx 20 dBm<br>• 6GHz (2x2) Tx 20 dBm<br><br>Dual-band mode<br>• 2.4GHz (2x2) Tx 20 dBm<br>• 5GHz (4x4) Tx 21 dBm |

| PERFORMANCE AND CAPACITY | |
|---|---|
| **Peak PHY Rates** | • 2.4GHz: 689 Mbps<br>• 5GHz: 5765 Mbps (4x4:4) or 2882 Mbps (2x2:2)<br>• 6GHz: 5765 Mbps |
| **Client Capacity** | • Up to 768 clients per AP |
| **SSID** | • Up to 36 per AP |

| RUCKUS RADIO MANAGEMENT | |
|---|---|
| **Antenna Optimization** | • Polarization Diversity with Maximal Ratio Combining (PDMRC) |
| **Wi-Fi Channel Management** | • ChannelFly<br>• Background Scan Based |
| **Client Density Management** | • Adaptive Band Balancing<br>• Client Load Balancing<br>• Airtime Fairness<br>• Airtime-based WLAN Prioritization |
| **SmartCast Quality of Service** | • QoS-based scheduling, QoS Mirroring<br>• Directed Multicast<br>• L2/L3/L4 ACLs |
| **Mobility** | • SmartRoam |
| **Diagnostic Tools** | • Spectrum Analysis<br>• SpeedFlex |

| NETWORKING | |
|---|---|
| **Controller Platform Support** | • SmartZone<br>• RUCKUS Unleashed*<br>• RUCKUS One |
| **Mesh** | • SmartMesh™ wireless meshing technology. Self-healing Mesh in 2.4 GHz, 5GHz, and 6GHz |
| **IP** | • IPv4, IPv6, dual-stack |
| **VLAN** | • 802.1Q (1 per BSSID or dynamic per user based on RADIUS)<br>• VLAN Pooling<br>• Port-based |
| **802.1x** | • Authenticator & Supplicant |
| **Tunnel** | • GRE, Soft-GRE |
| **Policy Management Tools** | • Application Recognition and Control<br>• Access Control Lists<br>• Device Fingerprinting<br>• Rate Limiting<br>• URL Filtering |

| PHYSICAL INTERFACES | |
|---|---|
| **Ethernet** | • One 100M/1/2.5/5GbE (PoE) port and one 10M/ 100M/1GbE port<br>• Power over Ethernet (802.3af/at/bt) with Category 5e (or better) cable<br>• LLDP support |
| **USB** | • 1 USB 2.0 port, Type C |
| **DC Power** | • 48V DC Terminal Block |

Product owner is responsible to abide by the country of deployment spectrum regulations when configuring and deploying this product/device.

The 6GHz band is enabled in countries where it is authorized by the local regulations. AP operates as per local regulations via country regulatory domain, otherwise 6GHz radio is disabled. Once this product is certified to operate in a particular country the 6GHz band may be enabled with a future software release.

* *Expected in a future software release.*

# Specifications

| PHYSICAL CHARACTERISTICS | |
|---|---|
| **Physical Size** | • 42.1cm (L), 29.1cm (W), 10.8.cm (H)<br>• 16.5in (L) x 11.5in (W) x 4.3in (H) |
| **Weight**<br>**Weight with bracket** | • 3.24kg / 7.15lbs<br>• 4.47kg / 9.85lbs |
| **Mounting** | • Wall Mount, Pole Mount, Flat Surface.<br>• Bracket included in the box |
| **Operating Temperature** | • -40ºC (-40ºF) to 65ºC (145ºF) |
| **Operating Humidity** | • Up to 95%, non-condensing |
| **Wind Survivability** | • 165 Miles Per Hour |

| PROGRAMMABLE SECTOR ANTENNA COVERAGE ANGLES | | | | |
|---|---|---|---|---|
| | Wide Sector Side View | Wide Sector Top View | Narrow Sector Side View | Narrow Sector Top View |
| **2.4 GHz** | 30° | 100° | 30° | 40° |
| **5 GHz (1st chain)** | 18° | 110° | 16° | 25° |
| **5 GHz (2nd chain)** | 20° | 100° | 20° | 30° |
| **6 GHz** | 20° | 100° | 20° | 30° |

| CERTIFICATIONS AND COMPLIANCE | |
|---|---|
| **Wi-Fi Alliance**[1] | • Wi-Fi CERTIFIED™ a, b, g, n, ac, ax, be (Wi-Fi 6, Wi-Fi 7 )<br>• Passpoint®, Vantage |
| **Standards Compliance**[2] | • IEC/EN/UL 60950-1 Safety<br>• IEC/EN/UL 62368-1 Safety<br>• EN 60601-1-2 Medical<br>• EN 61000-4-2/3/5 Immunity<br>• EN 50121-1 Railway EMC<br>• EN 50121-4 Railway Immunity<br>• IEC 61373 Railway Shock & Vibration<br>• UL 2043 Plenum<br>• EN 62311 Human Safety/RF Exposure<br>• WEEE & RoHS<br>• ISTA 2A Transportation |

[1] For complete list of WFA certifications, please see Wi-Fi Alliance website.

[2] For current certification status, please see price list.

| SOFTWARE AND SERVICES | |
|---|---|
| **Cloud Based Services** | • RUCKUS One |
| **Network Analytics** | • RUCKUS AI (Formerly known as RUCKUS Analytics) |
| **Security and Policy** | • Cloudpath |

| ORDERING INFORMATION | |
|---|---|
| **901-R676-WW51** | RUCKUS R676sn Wi-Fi 7 tri-band indoor wireless Access Point software switchable internal sectorized narrow and wide antenna 2x2:2 (2.4GHz) + 2x2:2 (5GHz) + 2x2:2 (6GHz). Wi-Fi 7 in all three bands. 6GHz LPI power class software configurable to 2x2 (2.4GHz) + 4x4 (5GHz) dualband mode.<br>One 5/2.5/1-Gigabit Ethernet backhaul one 1-Gigabit port, PoH/uPoE/ 802.3bt PoE support TPM 2.0, and Secure Boot. Power adapter not included. Includes limited lifetime warranty. Mounting brackets included. |

See RUCKUS price list for country-specific ordering information.
Warranty: Sold with a limited lifetime warranty.
For details see: http://support.ruckuswireless.com/programs-warranty_registration.

| OPTIONAL ACCESSORIES | |
|---|---|
| **902-1180-XX00** | • Multigigabit PoE injector (2.5/5/10)-BaseT PoE port, 60W |
| **902-0134-0000** | • Secure Articulating Mounting Bracket with 10º increment |
| **902-0183-XX00** | • Spare cable gland for weathering the RJ45 port, outdoor AP |

**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

## About RUCKUS Networks

RUCKUS Networks builds and delivers purpose-driven networks that perform in the demanding environments of the industries we serve. Together with our network of trusted go-to-market partners, we empower our customers to deliver exceptional experiences to the guests, students, residents, citizens and employees who count on them.

www.ruckusnetworks.com

Visit our website or contact your local RUCKUS representative for more information.



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