DATA SHEET

RIVI ELITE RV65

Indoor Wi-Fi 6 (802.11ax) 4x4:4 Wi-Fi Access Point with 2.5Gbps backhaul and 6 spatial streams

OVERVIEW

Wi-Fi capacity requirements in homes, home-offices, business and venues are rising due to the increase in the number of Wi-Fi connected devices. An increase in bandwidth requirements for applications and an ever-growing assortment of IoT devices puts further strain on already stretched Wi-Fi networks.

The RIVI RV65 access point (AP) with the latest Wi-Fi 6 (802.11 ax) technology delivers increased capacity, improved coverage and performance in dense environments. The RV65 is our mid-range dual-band, dual-concurrent AP that supports six spatial streams (4x4:4 in 5GHz, 2x2:2 in 2.4GHz). The RV65 supports peak data rates of up to 2974 Mbps and efficiently manages up to 512 clients connections. Furthermore, 2.5GbE Ethernet ensures the backhaul will not be a bottleneck for full use of available Wi-Fi capacity.

Also, wireless requirements within homes are expanding beyond Wi-Fi with BLE, Zigbee and many other non-Wi-Fi wireless technologies resulting in creation of network silos. Homes need a unified platform to eliminate network silos. The RIVI AP portfolio is equipped to solve these challenges.

The RV65 has built-in IoT radios with onboard BLE and Zigbee capabilities. In addition, the RV65 is a converged access point that allows customers to seamlessly integrate any new wireless technologies with the pluggable IoT module.

The RV65 is packed with patented technologies in addition to Wi-Fi 6 features such as OFDMA, MU-MIMO and TWT. The RV65 is ideal for medium-density deployments.

The RV65 Wi-Fi 6 AP incorporates patented technologies in the RIVI Wi-Fi portfolio.

- BeamFlex®+ Antennas: Extended coverage and optimised throughput with patented multidirectional antennas and radio patterns.
- ChannelFly®: Improved throughput dynamically changing the
- channels to use the least congested channel.
  RIVI Ultra-High-Density Technology Suite: Dramatically improved network performance with technologies such as Airtime Decongestion, Transient Client Management etc.

Whether you're deploying ten or ten thousand APs, the RV65 is easy to manage through RIVI's appliance and virtual management options.

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ACCESS POINT ANTENNA PATTERN

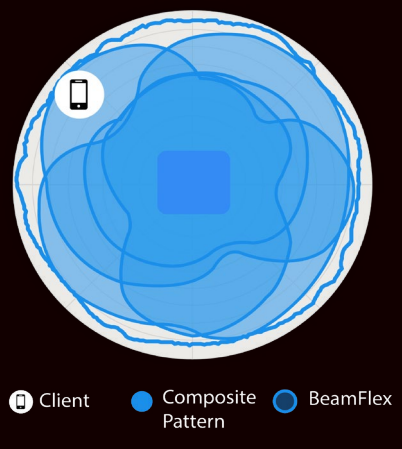
BeamFlex+ adaptive antennas allow the RV65 AP to dynamically choose among a host of antenna patterns in real-time to establish the best possible connection with every device.

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 RIVI BeamFlex+ adaptive antenna directs the radio signals per-device on a packet by-packet basis to optimise 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



BENEFITS

Stunning Wi-Fi Performance
Mitigate interference and extend coverage with patented BeamFlex®+ adaptive antenna technology utilising several directional antenna patterns.

Serve more devices
Connect more devices simultaneously with six MUMIMO spatial streams and concurrent dual-band 2.4/5GHz radios while enhancing device performance.

Converged Access Point
Allows customers to eliminate siloed networks and unify WiFi and non-WiFi wireless technologies into one single network by using built-in BLE and Zigbee, and also expand to any future wireless technologies through the USB port.

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

Better mesh networking
Reduce expensive cabling, and complex mesh configurations by checking a box with SmartMesh wireless meshing technology to dynamically create self-forming, self-healing mesh networks.

Figure 2. RV65 2.4GHz Azimuth Antenna Patterns

Figure 3. RV65 5GHz Azimuth Antenna Patterns

Figure 4. RV65 2.4GHz Elevation Antenna Patterns

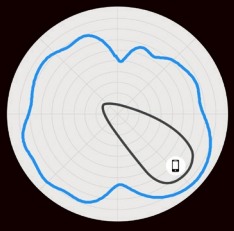
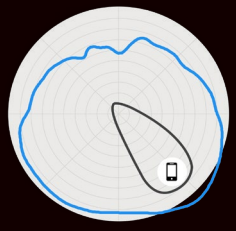


Figure 5. RV65 5GHz Elevation Antenna Patterns



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WI-FI	
Wi-Fi Standards	• IEEE 802.11a/b/g/n/ac/ax
Supported Rates	• 802.11ax: 4 to 2400 Mbps • 802.11ac: 6.5 to 1732 Mbps • 802.11n: 6.5 to 600 Mbps • 802.11a/g: 6 to 54 Mbps • 802.11b: 1 to 11 Mbps
Supported Channels	• 2.4GHz: 1-13 • 5GHz: 36-64, 100-144, 149-165
MIMO	• 4x4 SU-MIMO • 4x4 MU-MIMO
Spatial Streams	• 4 streams SU/MU MIMO 5GHz • 2 streams SU/MU MIMO 2.4GHz
Radio Chains and Streams	• 4x4:4 (5GHz) • 2x2:2 (2.4GHz)
Channelization	• 20, 40, 80, 160/80+80MHz
Security	• WPA-PSK, WPA-TKIP, WPA2 AES, WPA3, 802.11i, Dynamic PSK, OWE • WIPS/WIDS
Other Wi-Fi Features	• WMM, Power Save, Tx Beamforming, LDPC, STBC, 802.11r/k/v • Hotspot • Hotspot 2.0 • Captive Portal • WISPr

RF	
Antenna Type	• BeamFlex+ adaptive antennas with polarization diversity • Adaptive antenna that provides unique antenna patterns per band
Antenna Gain (max)	• Up to 3dBi
Peak Transmit Power (Tx port/ chain + Combining gain)	• 2.4GHz: 26dBm • 5GHz: 28 dBm
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 (dBm)							
HT20		HT40		VHT20		VHT40	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS7	MCS0	MCS7
-93	-75	-90	-72	-93	-75	-90	-72
HE20				HE40			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-93	-75	-70	-64	-90	-72	-67	-61

5GHZ RECEIVE SENSITIVITY (dBm)											
VHT20				VHT40				VHT80			
MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9	MCS0	MCS7	MCS8	MCS9
-98	-80	-77	-	-95	-77	-	-72	-92	-74	-	-69
HE20				HE40				HE80			
MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11	MCS0	MCS7	MCS9	MCS11
-98	-80	-75	-70	-95	-77	-72	-67	-92	-74	-69	-64

2.4GHZ TX POWER TARGET (PER CHAIN)	
Rate	Pout (dBm)
MCS0 HT20	22
MCS7 HT20	19
MCS8 VHT20	18
MCS9 VHT40	17
MCS11 HE40	15

5GHZ TX POWER TARGET (PER CHAIN)	
Rate	Pout (dBm)
MCS0, VHT20	22
MCS7, VHT40, VHT80	16.5
MCS9, VHT40, VHT80	15
MCS11, HE20, HE40, HE80	12.5

PERFORMANCE AND CAPACITY	
Peak PHY Rates	• 2.4GHz: 574 Mbps • 5GHz: 2400 Mbps
Client Capacity	• Up to 512 clients per AP
SSID	• Up to 31 per AP

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

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NETWORKING	
Controller Platform Support	• Unleashed and Cloud
Mesh	• SmartMesh™ wireless meshing technology. Self-healing Mesh
IP	• IPv4, IPv6, dual-stack
VLAN	• 802.1Q (1 per BSSID or dynamic per user 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
IoT Capbale	• Yes

PHYSICAL INTERFACES	
Ethernet	• One 2.5Gbps Ethernet port and one 1Gbps Ethernet port • Power over Ethernet (802.3af/at) with Category 5/5e/6 cable • LLDP
USB	• 1 USB 2.0 port, Type A

PHYSICAL CHARACTERISTICS	
Physical Size	• 224 mm (W) x 194 mm (L) x 47 mm (H) • 8.8 in (W) x 7.6 in (L) x 1.9 in (H)
Weight	0.854kg (1.88Lbs)
Mounting	• Wall, acoustic ceiling, desk • Secure bracket (sold separately)
Physical Security	• Hidden latching mechanism • T-bar Torx • Bracket (902-0120-0000) Torx screw & padlock (sold separately)
Operating Temperature	• 0°C (32°F) - 40°C (104°F)
Operating Humidity	• Up to 95%, non-condensing

POWER[1]		
Power Supply	**Operating Characteristics**	**Max Power Consumption**
802.3af PoE	• 2.4GHz radio: 2x2, 19dBm per chain • 5GHz radio: 2x4, 20dBm per chain • 2nd Ethernet port, onboard IoT & USB disabled	12.25W
802.3at PoE+	• Full Functionality • 2.4GHz radio: 2x2, 23 dBm per chain • 5GHz radio: 4x4, 22 dBm per chain • 2nd Ethernet Port, onboard IoT & USB Enabled (3W)	PoE+ : 21.59W DC Power: 21.46W

CERTIFICATIONS AND COMPLIANCE	
Wi-Fi Alliance[2]	• Wi-Fi CERTIFIED™ a, b, g, n, ac, ax • Passpoint®, Vantage
Standards Compliance[3]	• 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 • UL 2043 Plenum • EN 62311 Human Safety/RF Exposure • WEEE & RoHS • ISTA 2A Transportation

ORDERING INFORMATION	
RIV-RV65-UNL	• **RV65** dual-band (5GHz and 2.4GHz concurrent) 802.11ax indoor wireless access point, 4x4:4 + 2x2:2 streams, adaptive antennas, dual ports, onboard BLE and Zigbee, PoE support. Unleashed managed. Includes adjustable acoustic drop ceiling bracket. One Ethernet port is 2.5GbE. Does not include power adapter (available separately).
RIV-RV65-CLD	• **RV65** dual-band (5GHz and 2.4GHz concurrent) 802.11ax indoor wireless access point, 4x4:4 + 2x2:2 streams, adaptive antennas, dual ports, onboard BLE and Zigbee, PoE support. Remote management (3 years hosted). Includes adjustable acoustic drop ceiling bracket. One Ethernet port is 2.5GbE. Does not include power adapter (available separately).

CLOUD/ REMOTE MANAGEMENT LICENCE RENEWALS	
CLD-1-YR-RENEW	• 1 year hosted remote management licence renewal, per AP
CLD-3-YR-RENEW	• 3 year hosted remote management licence renewal, per AP

[1] Max power varies by country setting, band, and MCS rate.

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

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

