Performance-driven Wi-Fi 6 for tough, high-density Outdoor environments

The Ray R6B-O is a cloud-managed 4x4:4 802.11ax (Wi-Fi 6) outdoor access point that is purpose built for stellar connectivity in high-density Harsh, rugged, and outdoor environments. The R6B-O provides a maximum of 3.6 Gbps aggregate frame rate with concurrent 2.4 GHz and 5 GHz radios.

Built for Wi-Fi 6 standards the R6B-O maximize performance and efficiency through OFDMA, TWT and MU-MIMO multiuser technologies, enabling an outstanding platform for the most demanding of uses—including high-density deployments and bandwidth or performance-intensive applications like voice and high-definition video

R6B-O Withstands harsh outdoor weather conditions, providing fast speed, high density, and reliable connectivity outdoors. It is ideal for deployments in large open areas such as a Stadium, arena and open-air deployments.

OVERVIEW

Ray has brought true innovation to the networking space with the world's first AI-driven wireless network with an element of extensibility through the Ray Wi-Fi Application store.

Wi-Fi Driven By AI

The Ray Cloud uses AI and data science to analyse large amounts of rich metadata collected from Access Points to provide actionable insight. The AI Platform makes networking predictable, reliable and measurable with unprecedented visibility into the user experience. Time consuming manual IT tasks are replaced with AI-driven proactive automation and self-healing capabilities, lowering networking operational costs and saving substantial time and money.

Ray Cloud

Microservices bring unparalleled agility, scale, resiliency. Ray makes it easy to add or remove new features by leveraging a microservices cloud architecture. New enhancements and bug fixes are delivered almost weekly without network disruption. Services scale up or down elastically when they're needed, eliminating the cost and complexity of monolithic hardware.

Plus, the Ray platform is inherently resilient as the failure of one service does not impact others.

Ray Access Point

The Ray enterprise-grade access point family consists of the Wi-Fi AP ranging from 300 Mbps to Multi Gigabit Speeds. These access points are all built on a real-time microservices platform and are managed by the Ray Cloud.

FEATURES AND BENEFITS

Effortless, Cloud-based Setup & Updates

Ray cloud, download its configuration, and joins the network. It self-optimizes, determining the ideal channel, transmit power, and client connection parameters. And it self-heals in the event of a switch or cable failure by meshing with nearby access points, providing continued internet service. Firmware updates are retrieved and installed automatically, ensuring that the network is always up to date with new features, bug fixes, and security updates.

Automatic RF Optimization / Automatic Cloud-based RF Optimization

Ray's sophisticated, automated RF optimization algorithms collect real-time, full-spectrum RF analysis data for threats and interference. This data is continuously fed back to the Ray cloud. The cloud then automatically tunes the Ray's channel selection and transmits power for optimal performance under the most challenging RF conditions. This ensures optimal performance under what could otherwise be challenging RF conditions.

Ray automatically assigns channel, width and power settings based on environment and client density.

It also provides airtime fairness and ensures that APs stay clear of all sources of RF interference to deliver reliable, highperformance WLANs. The Access Points can also be configured to provide dedicated air monitoring for spectrum analysis and wireless intrusion detection and determine the position of wireless stations.

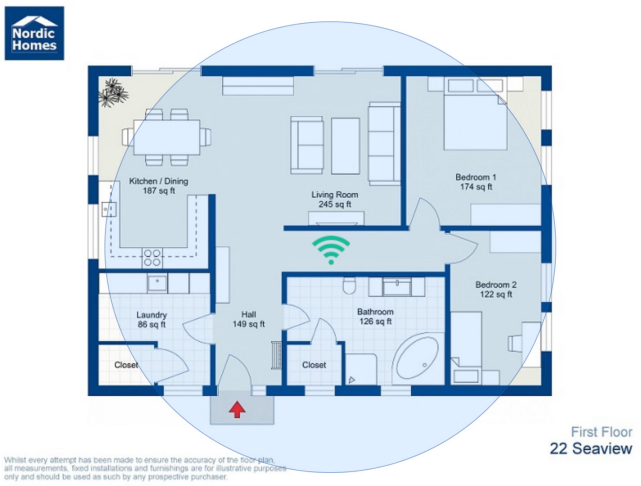
Dynamic Packet Capture

The Ray platform automatically captures packets and streams them to the cloud when major issues are detected. This saves IT time and effort and eliminates the need for truck rolls with sniffers.

Insights

Ray cloud service includes a base analytics capability for analysing up to 15 days of data which enables you to simplify the process of extracting network insights from data and analytics across your enterprise to properly align your support resources or introduce enhanced premium services.

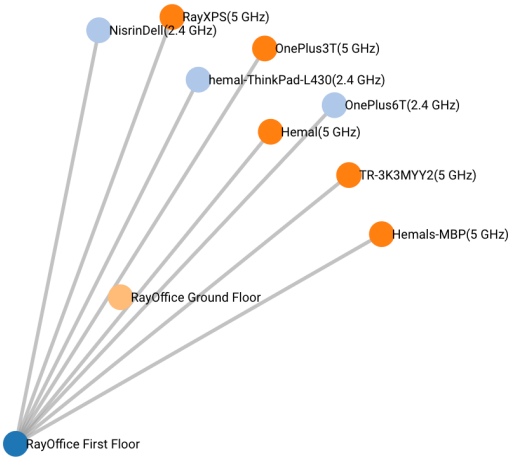
Drill down into the details of your network usage with highly granular traffic analytics. Extend your visibility into the physical world with built-in location analytics that enables you to view visitor numbers, dwell time, repeat visit rates, and track foot traffic trends.



Floor Plan & Wi-Fi RF Coverage

Integrated Enterprise Security And Guest Access

The Ray Platform features integrated, easy-to-use security technologies to provide secure connectivity for employees and guests alike. Advanced security features such as AES hardware-based encryption and WPA2-Enterprise authentication with 802.1X provide wirelike security while still being easy to configure. One-click guest isolation provides secure, Internet-only access for visitors. Our Enterprise policy feature enables group or device based, granular access policy control.



Network Chart

Application-aware Traffic Shaping

collect The Ray platform includes an integrated Layer 7 packet inspection, classification, and control engine, enabling you to set QoS policies based on traffic type and time. Prioritize your mission critical applications, while setting limits on recreational traffic, e.g., peer-to-peer and video streaming. Ray supports 250+ applications natively along with content categorization engines from a variety of industry leading security vendors.

Ready For IoT

Ray cloud is built as an IoT platform to natively support a variety of Internet of Things (IoT) products. The IoT platform can consume data from various IoT devices and manage them centrally reducing the requirement to setup a separate IoT gateway at customer premise.

Voice And Video Optimizations

Industry standard QoS features are easy to configure like Wireless Multi Media (WMM) Access Categories, 802.1p, and DSCP.

Mesh Networking

The Ray platform offers the most innovative Mesh networking which is Self Configuring, Self Healing, Self Managing and Self Defending. The technology dynamically selects the best Wi-Fi link for each device based on application, band and context, giving each one the bandwidth it needs for optimal performance.

Remote Working & Work From Home

Ray native VPN makes it easy to extend the corporate LAN to remote sites, without requiring all clients and devices to have client VPN software along with security.

Open Cloud API

The Ray AI cloud platform is 100% programmable, using open APIs, for full automation and seamless integration with complementary products including our AI for IT partners across LAN, WAN, security, engagement and asset location.

SPECIFICATIONS

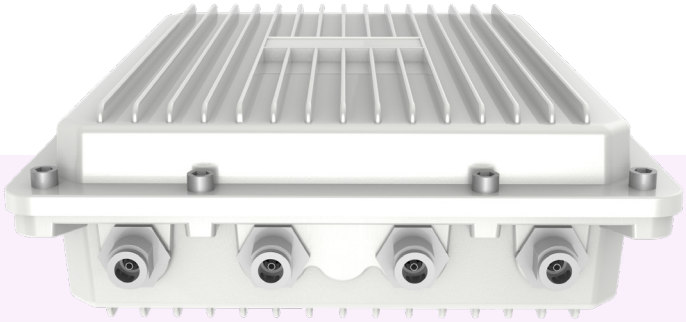
AP	
Wi-Fi Standards	802.11 ax/ac/b/g/n
WI-FI	
AP Type	Outdoor, dual radio, 5GHz and 2.4GHz 802.11ax 4x4 MIMO
Wi-Fi 6 (802.11ax) Features	› UL/DL-OFDMA › Target Wake Time (TWT) › Spatial Frequency Reuse (BSS Coloring)
Radio	› 2.4 GHz 802.11 ax/ac/b/g/n client access radio › 5 GHz 802.11 ax/ac/b/g/n client access radio
Max aggregate frame rate	› Max aggregate frame rate: 3657 Mbps › 2.4GHz: 1182Mbps › 5GHz: 2475M Mbps
Supported data rates (Mbps)	› 802.11b: 1, 2, 5.5, 11 › 802.11a/g: 6, 9, 12, 18, 24, 36, 48, 54 › 802.11n: 6.5 to 600 (MCS0 to MCS31, HT20 to HT40), 800 with 256-QAM › 802.11ac: 6.5 to 1,733 (MCS0 to MCS9, NSS = 1 to 4, VHT20 to VHT160), 2,166 with 1024-QAM › 802.11ax (2.4GHz): 3.6 to 1,147 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE40) › 802.11ax (5GHz): 3.6 to 2,402 (MCS0 to MCS11, NSS = 1 to 4, HE20 to HE160)
Supported frequency bands (country-specific restrictions apply)	› 2.400 to 2.4835GHz › 5.150 to 5.250GHz › 5.250 to 5.350GHz › 5.470 to 5.725GHz › 5.725 to 5.850GHz Available channels: Dependent on configured regulatory domain Dynamic frequency selection (DFS) optimizes the use of available RF spectrum
Supported Channels	› Available channels dependent on configured regulatory domain › 2.4GHz: 1-13 › 5GHz: 36-64, 100-144, 149-165
MIMO	› 4x4 SU-MIMO › 4x4 MU-MIMO
Radio Chains and Spatial Streams	› 4x4:4 › 4 for both SU-MIMO & MU-MIMO
Channelization	› 802.11n high-throughput (HT) support: HT20/40 › 802.11ac very high throughput (VHT) support: VHT20/40/80/160 › 802.11ax high efficiency (HE) support: HE20/40/80/160
Security	WEP, WPA, WPA2-PSK, WPA2-Enterprise with 802.1X, WPA3 - Personal, WPA3 - Enterprise, WPA3 - Enhanced Open (OWE) Personal PSK EAP-TLS, EAP-TTLS, EAP-MSCHAPv2, EAP-SIM
Wireless Security	Real-time WIDS/WIPS with instant alerting
Supported radio technologies	› 802.11b: Direct-sequence spread-spectrum (DSSS) › 802.11a/g/n/ac: Orthogonal frequency-division multiplexing (OFDM) › 802.11ax: Orthogonal frequency-division multiple access (OFDMA)* with up to 37 resource units (for an 80MHz channel)
Supported modulation types	› 802.11b: BPSK, QPSK, CCK › 802.11a/g/n: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM (proprietary extension) › 802.11ac: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM (proprietary extension) › 802.11ax: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM
Beamforming	Transmit Beamforming and Maximal Ratio Combining
Mesh	SON based Mesh

RADIO MANAGEMENT	
Antenna Optimization	Four integrated dual-band downtilt omni- directional antennas for 4x4 MIMO with peak antenna gain of 4 dBi in 2.4GHz and 5GHz. Built-in antennas are optimized for horizontal ceiling mounted orientation of the AP.
Wi-Fi Channel Management	Intelligent Radio Resource Management (iRRM)
Client Density Management	› Adaptive Band Balancing › Client Load Balancing › Airtime Fairness › Airtime-based WLAN Prioritization
RF PERFORMANCE	
Antenna	› 2.4GHz omni-directional antennas with 3 dBi peak gain › 5GHz omni-directional antennas with 6 dBi peak gain
Peak Transmit Power (Tx port/chain + Combining gain)	› Maximum (aggregate, conducted total) transmit power (limited by local regulatory requirements) › 2.4GHz: 26dBm › 5GHz: 28 dBm
Transmit power	› Configurable in increments of 0.5 dBm

SPECIFICATIONS

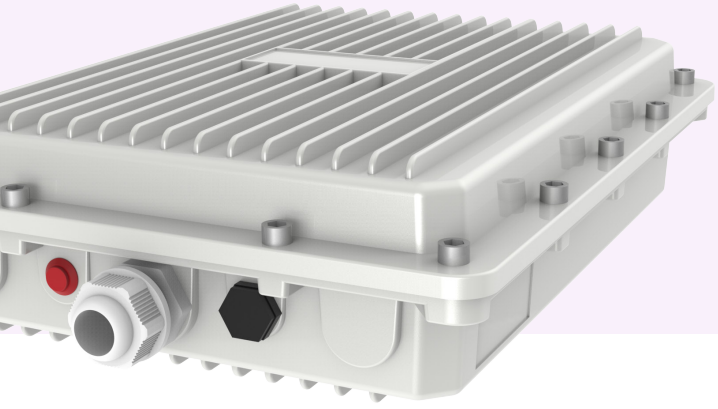
2.4GHZ RECEIVE SENSITIVITY (dBm)							
HT20		HT40		VHT20		VHT40	
MCS0	MCS7	MCS0	MCS7	MCS0	MCS11	MCS0	MCS11
-92	-72dBm	-90dBm	-71dBm	-93dBm	-63dBm	-91dBm	-60dBm

5GHZ RECEIVE SENSITIVITY (dBm)					
HT20		HT40			
MCS0	MCS7	MCS0	MCS7		
-93dBm	-75dBm	-91dBm	-72dBm		
VHT20		VHT40		VHT80	
MCS0	MCS11	MCS0	MCS11	MCS0	MCS9
-93dBm	-74dBm	-91dBm	-72dBm	-88dBm	-62dBm
HE20		HE40		HE80	
MCS0	MCS11	MCS0	MCS11	MCS0	MCS11
-93dBm	-63dBm	-90dBm	-60dBm	-87dBm	-56dBm



2.4 GHZ RF Power		
MCS0	HT20	23±1dBm
MCS7	HT20	22±1dBm
MCS0	HT40	22±1dBm
MCS7	HT40	21±1dBm
MCS0	HE20	21±1dBm
MCS11	HE20	20±1dBm
MCS0	HE40	20±1dBm
MCS11	HE40	19±1dBm

5 GHZ RF Power		
MCS0	HT20	23±1dBm
MCS7	HT20	22±1dBm
MCS0	HT40	22±1dBm
MCS7	HT40	21±1dBm
MCS0	VHT20	22±1dBm
MCS9	VHT20	21±1dBm
MCS0	VHT40	22±1dBm
MCS9	VHT40	20±1dBm
MCS0	VHT80	20±1dBm
MCS9	VHT80	19±1dBm
MCS0	HE20	21±1dBm
MCS11	HE20	20±1dBm
MCS0	HE40	20±1dBm
MCS11	HE40	19±1dBm
MCS0	HE80	19±1dBm
MCS11	HE80	18±1dBm



SPECIFICATIONS

Maximum number of associated client devices	› Support for up to 1,024 associated client devices per radio
Maximum number of BSSIDs	› 16 BSSIDs per radio › Up to 31 per AP

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/EoGRE › Openvpn › L2TP/IPSEC
Policy Management Tools	› Application Recognition and Control › Access Control Lists › Device Fingerprinting › Rate Limiting › Integrated Layer 7 firewall with mobile device policy management › Flexible guest access with device isolation
Quality of Service	› WMM Access Categories with DSCP and 802.1p support › QoS-based scheduling › Directed Multicast › L2/L3/L4 ACLs
Mobility	› 802.11r for fast Layer 2 roaming › Centralized Layer 3 roaming

Ethernet (WAN)	1 * 10/100 /1000/2500Mbps RJ45 WAN Port › Power over Ethernet (802.3af/at/bt) with Category 5/5e/6 cable › LLDP
Ethernet (LAN)	1 * 10/100 / 1000/2500Mbps RJ45 LAN Port
DC Power	1x DC power connector
Reset Button	Reset to the factory default settings
Indicators	One multi-color status LED

Physical Size	› 295.1mm * 231.1mm * 80mm
Weight	› 3.78 kg
Mounting	› Wall, Drop ceiling, Desk

Operating temperature	-20~45 ℃
Humidity	5%~95% non-condensing
Storage Temperature	-0~70 ℃
Storage Humidity	5%~95% non-condensing

DC Adaptor (12V, 2.0A, 24W)	22.69W
802.3at PoE+	22.34W

Please refer to Ray Warranty on Website

› Wall/Ceiling plate bracket
› Ethernet Cable
› Mounting Screws
› Quick Start Guide

› RWHCC0N083
› R7B-C 3657 Mbps Wi-Fi 6, 2 Radio 4x4 MIMO Indoor Wireless Access Point with 3 Year Warranty