

# O-90

## Dual radio, dual concurrent 3x3:3 MIMO 802.11ac Wave 1 outdoor access point

### Key Specifications

- Up to 450 Mbps for 2.4GHz radio
- Up to 1.3 Gbps for 5GHz radio
- 802.11ac Wave 1 support
- 3x3 MIMO with three spatial streams per radio
- IP67 compliant exterior to withstand outdoor weather conditions
- Six integrated omnidirectional antennas
- 20/40/80 MHz channel width support
- 2x Gigabit Ethernet port
- Full operational capacity with 802.3at PoE
- Vertical wall or pole mounting support



### Cost Effective Outdoor Wi-Fi

The Mojo O-90 is a ruggedized enterprise-grade 3x3 MIMO 802.11ac outdoor access point with dual concurrent 5 GHz and 2.4 GHz band radios supporting 802.11a/n/ac, 802.11b/g/n, three spatial streams, and data rates of up to 1.3 Gbps and 450 Mbps, respectively.

### Why Choose the O-90?

The O-90 is ideal for delivering high performance in harsh or outdoor environments such as schools and universities, outdoor sections of hotel and enterprise campuses, warehouses, manufacturing yards, stadiums and sports arenas, malls, public hotspots, and other municipal WiFi deployments.

It can also be used to cost-effectively extend the range of WiFi access in areas where it is not practical to rollout Ethernet cables, and to implement point-to-point or backhaul mesh WiFi links to interconnect buildings or campuses, while simultaneously providing WiFi access to users.

### Mojo Cloud Managed WiFi

The O-90 is managed by the Mojo cloud managed platform which enables a complete workflow for wireless access, security and engagement. It leverages a purpose-built cloud architecture to produce enterprise-grade wireless networks for every application required, and ensures high reliability through an approach that is automated, scalable, secure and cost effective.

### Key Features

- 100% controller-free
- Ruggedized for any outdoor coverage requirements
- Internal antenna support makes installation fast and error-free
- Zero-touch deployment through automatic cloud activation and configuration
- Self-healing wireless mesh networking
- Cloud-defined operating modes for dedicated access, dedicated security or dual-mode
- Support for up to eight distinct SSIDs per radio
- Integrated firewall, traffic shaping, QoS and BYOD controls per SSID
- Dynamic RF optimization through smart steering, band steering and optimal channel selection
- Third party analytics integration for real-time data transfer

### What Really Matters

The future of WiFi requires intelligent, self-reliant access points that support high-performing, highly reliable networks without the need of antiquated controllers. This approach removes the complexity, instability and high costs associated to enterprise WiFi today.

**Access**

The O-90 supports WiFi networks that require less time and resources to deploy and maintain compared to traditional devices, resulting in significant cost savings.

- Mojo access points take less than two minutes to activate and configure after connecting to the cloud
- Support for up to eight individual SSID's per radio allows for maximum flexibility in network design
- Network controls like NAT, Firewall and QoS occur at the access point level, ensuring faster and more reliable networks
- Persistent scanning of all 802.11 channels results in increased insight and data about surrounding environmental factors that assist in RF optimization and client handling
- Smart steering addresses sticky client issues by automatically pushing clients with low speeds to a closer access point
- Band steering manages channel occupancy, pushing clients to the 5GHz channel for optimal throughput
- Access points continue to broadcast and support wireless networks even if their connection with the cloud is interrupted

**Security**

The O-90 offers complete visibility and control of the wireless airspace that keeps the integrity of the network in check and actively protects users without manual intervention.


- Every Mojo access point is equipped with the industry's only fully integrated wireless intrusion prevention capabilities
- Runs complete spectrum scans while simultaneously serving wireless clients without a third radio
- Mojo's patented Marker Packets™ are used to accurately detect access points on any network with the fewest false positives in the industry
- Mojo access points can be converted to a dedicated security sensor with a single click for maximum wireless protection
- VLAN monitoring enables a virtual connection to non-WiFi networks for complete network rogue detection and prevention
- Automatic prevention combines over-the-wire and over-the-air techniques to keep unauthorized clients off the network and authorized clients on it
- Access points continue to scan for wireless threats and enforce security policy even if their connection with the cloud is interrupted

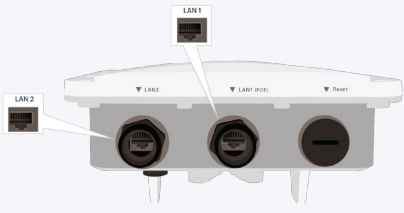
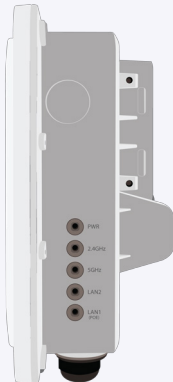
**Engagement**

The O-90 collects massive amounts of data and supports immersive guest network experiences that develops and reinforces the relationship between them and the brand.

- Persistent scanning of all 802.11 channels results in a comprehensive list of active wireless clients across the enterprise
- Choice statistics like location, duration, distance from access point and time of day are stored locally for every active wireless client
- Choice statistics like session duration, total data transfer up and down, data rate, smart device type and top-level domain are stored locally for every active connection
- Real-time notifications sent to third party systems that alert to the presence of enrolled devices
- Enables proximity marketing programs that trigger when certain devices are present
- Triggers automatic messaging via MMS, in-browser notifications and more

**Physical Specifications**

 <p>Front View</p>	Property	Specification
	Physical Dimensions	210 mm x 210 mm x 67 mm
	Weight	3.22 lb. (1.46 kg)
	Operating Temperature	-20°C to 55°C (-4°F to 131°F)
	Storage Temperature	-40°C to 70°C (-40°F to 158°F)
	Humidity	5% to 95% non-condensing
	Max power consumption	17.4W (DC plug)   19W (802.3at)

 <p>Bottom View</p>  <p>Side View</p>	Port	Description	Connector Type	Speed/Protocol
	LAN1	Gigabit Ethernet port that enables the device to connect to the wired LAN and communicate with the Mojo Cloud or Server. This port is also used to power the device using the 802.3at Power over Ethernet Plus (PoE+) standard.	IP67 rated weatherproof RJ-45	10/100/1000 Mbps Gigabit Ethernet 802.3at PoE+
	LAN2	Gigabit Ethernet port that can be used for wired extension of an SSID	IP67 rated weatherproof RJ-45	10/100/1000 Mbps Gigabit Ethernet
	Reset	Reset to factory default settings	Push button	Hold down an power cycle the device to reset

**Wi-Fi Specifications**

Frequency, Modulation, and Data Rates

IEEE 802.11b/g/n			
Frequency Band	Scanning	Transmission	
	All regions	USA & Canada (FCC/IC)	Europe (ETSI)
		2400 ~ 2483.5 MHz	2400 ~ 2473.5 MHz
Modulation Type	DSSS, OFDM		
Data Rates	Up to 450 Mbps (MCS 0-23) with automatic rate adaptation		
Antenna	Integrated modular high efficiency PIFA omnidirectional antenna with peak gain up to 7.5dBi		

IEEE 802.11a/n/ac			
Frequency Band	Scanning	Transmission	
	All regions	USA & Canada (FCC/IC)	Europe (ETSI)
		5.15 ~ 5.25 GHz 5.25 ~ 5.35 GHz 5.47~ 5.725 GHz 5.725~ 5.825 GHz	5.15 ~ 5.25 GHz 5.25 ~ 5.35 GHz 5.725~ 5.825GHz
Dynamic Frequency Selection	DFS and DFS2		
Modulation Type	OFDM		
Data Rates	Up to 1.3 Gbps (MCS 0-23) with automatic rate adaptation		
Antenna	Integrated modular high efficiency PIFA omnidirectional antenna with peak gain up to 10.2dBi		

**Maximum Transmit Power**

For 2.4GHz

Transmitter	Target Power(Bm)
<b>802.11b</b>	
1 ~ 2 Mbps	24
5.5 ~ 11 Mbps	24
<b>802.11g</b>	
6 ~ 24 Mbps	24
36 Mbps	23
48 Mbps	22
54 Mbps	22
<b>802.11n HT20</b>	
MCS 0,8,16	24
MCS 1,2,3,4,5,9,10,11,12,13,17,18,19,20,21	23
MCS 6,7,14,15,22,23	22
<b>802.11n HT40</b>	
MCS 0,1,2,3,4,5,8,9,10,11,12,13,16,17,18,19,20,21	23
MCS 6,7,14,15,22	22
MCS 23	21

**Note:**

The actual transmit power will be the lowest of:

- Value specified in the Device Template
- Maximum value allowed in the regulatory domain
- Maximum power supported by the radio

**Country-Wise Max Transmit Powers (dBm)**

Countries	2.4GHz	5Ghz
Australia	20	23
Canada	30	23
India	20	20
Israel	20	20
Japan	20	20
UAE	20	17
USA	20	23

For 5GHz

Transmitter	Target Power(dBm)
<b>802.11a</b>	
6 ~ 24 Mbps	24
36 Mbps	23
48 Mbps	22
54 Mbps	22
<b>802.11n HT20</b>	
MCS 0,8,16	24
MCS 1,2,9,10,17,18	23
MCS 3,4,5,11,12,13,19,20,21	22
MCS 6,14,22	21
MCS 7,15,23	20
<b>802.11n HT40</b>	
MCS 0,8,16	23
MCS 1,2,9,10,17,18	22
MCS 3,4,5,6,11,12,13,14,19,20,21	21
MCS 7,15,22	20
MCS 23	19
<b>802.11ac VHT20/VHT40</b>	
MCS 0,1,2	23
MCS 3,4,5	22
MCS 6	21
MCS 7	20
MCS 8	18
MCS 9	17
<b>802.11ac VHT80</b>	
MCS 0,1,2	22
MCS 3,4,5	21
MCS 6	20
MCS 7	19
MCS 8	17
MCS 9	16

**Receive Sensitivity**

For 5GHz

MCS Index	Receive Sensitivity
<b>802.11a (legacy)</b>	
6Mbps	-91
36Mbps	-78
48Mbps	-75
54Mbps	-73
<b>802.11n HT20 (legacy)</b>	
MCS 0,8	-91
MCS 1,9	-88
MCS 2,10	-85
MCS 3,11	-81
MCS 4,12	-77
MCS 5,13	-74
MCS 6,14	-72
MCS 7,15	-71
<b>802.11n HT40</b>	
MCS 0,8	-87
MCS 1,9	-85
MCS 2,10	-82
MCS 3,11	-78
MCS 4,12	-74
MCS 5,13	-70
MCS 6,14	-69
MCS 7,15	-68
<b>802.11ac 256QAM VHT80</b>	
MCS 0	-84
MCS 1	-82
MCS 2	-79
MCS 3	-75
MCS 4	-71
MCS 5	-67
MCS 6	-66
MCS 7	-65
MCS 8	-60
MCS 9	-58

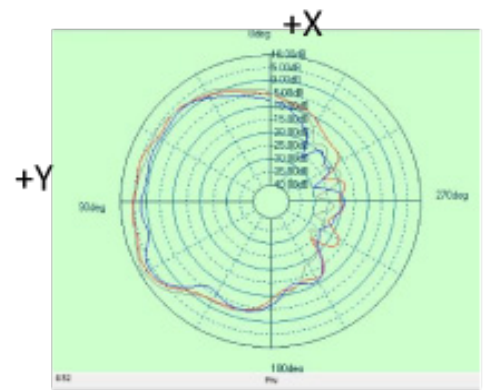
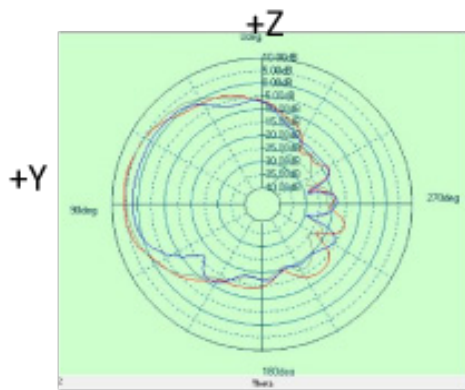
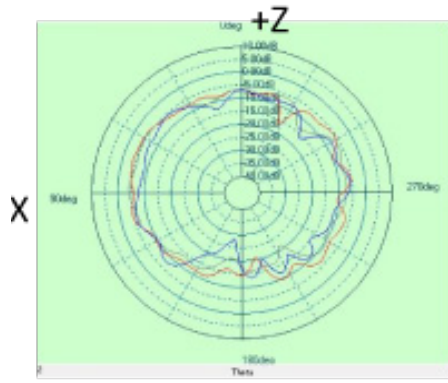
For 2.4GHz

MCS Index	Receive Sensitivity
<b>802.11b</b>	
1Mbps	-94
11Mbps	-86
<b>802.11g</b>	
6Mbps	-90
24Mbps	-81
36Mbps	-78
48Mbps	-74
54Mbps	-73
<b>802.11n HT20</b>	
MCS 0,8	-90
MCS 1,9	-87
MCS 2,10	-84
MCS 3,11	-80
MCS 4,12	-77
MCS 5,13	-73
MCS 6,14	-71
MCS 7,15	-69
<b>802.11n HT40</b>	
MCS 0,8	-86
MCS 1,9	-84
MCS 2,10	-81
MCS 3,11	-77
MCS 4,12	-74
MCS 5,13	-70
MCS 6,14	-68
MCS 7,15	-66

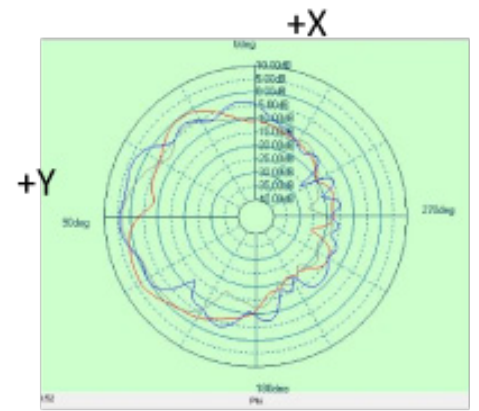
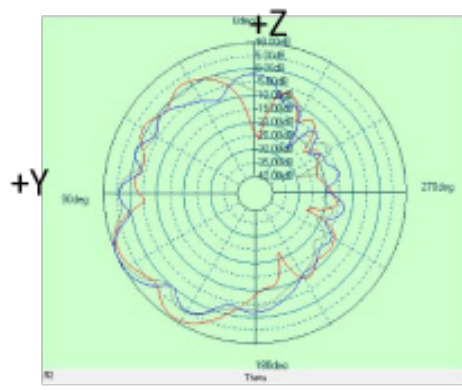
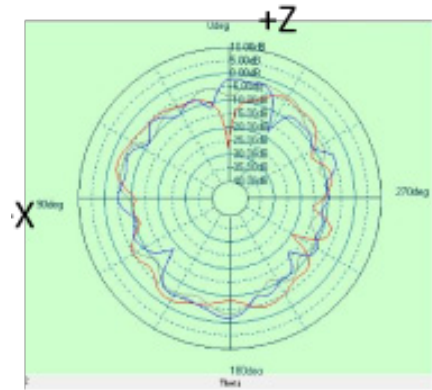
### Internal Antenna Radiation Patterns

5 GHz

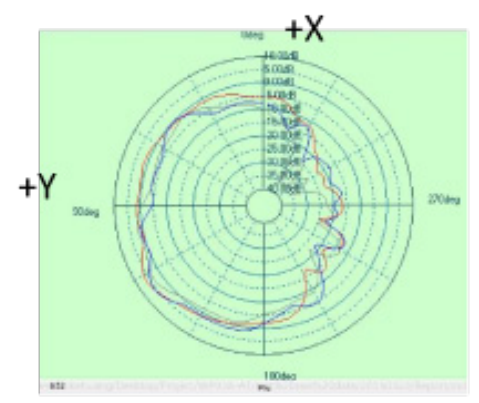
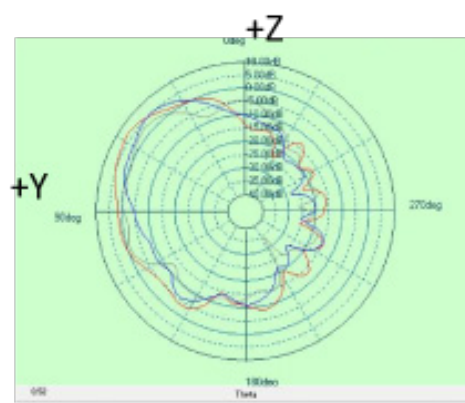
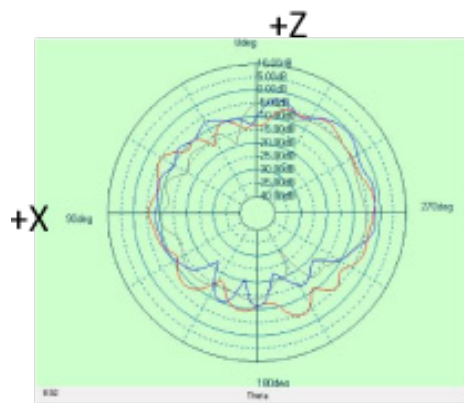
Antenna 1



Antenna 2



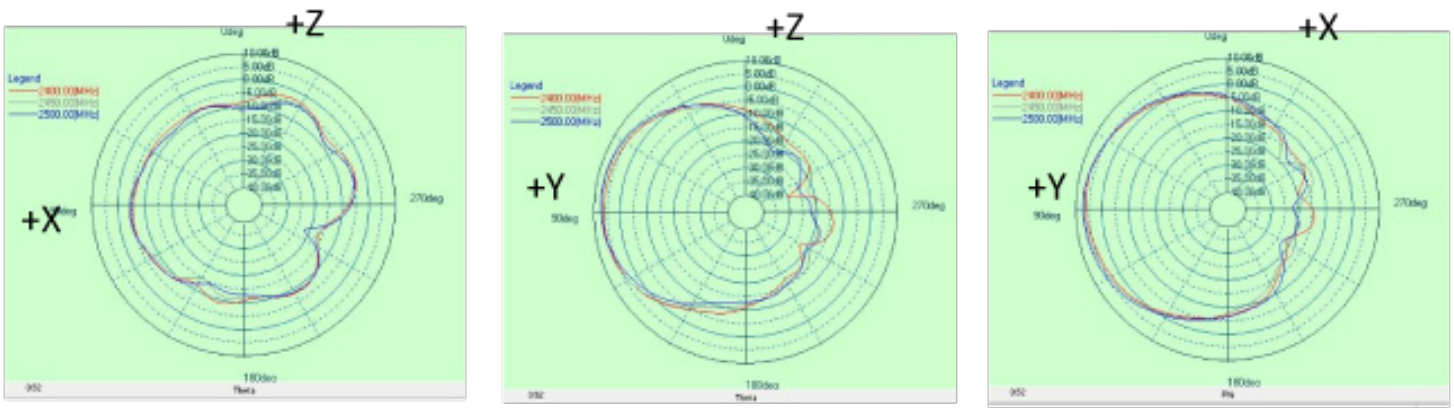
Antenna 3



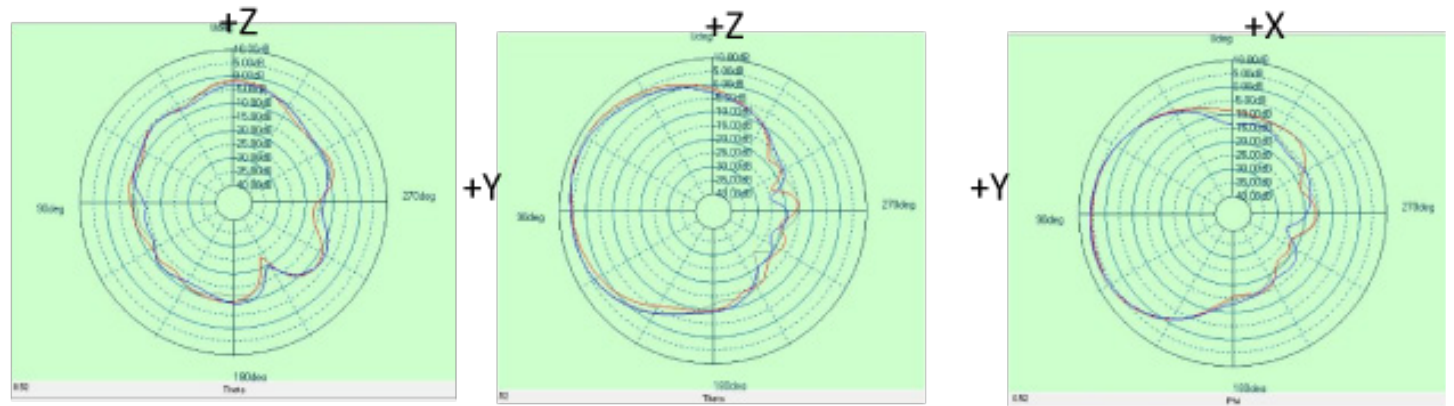


2.4 GHz

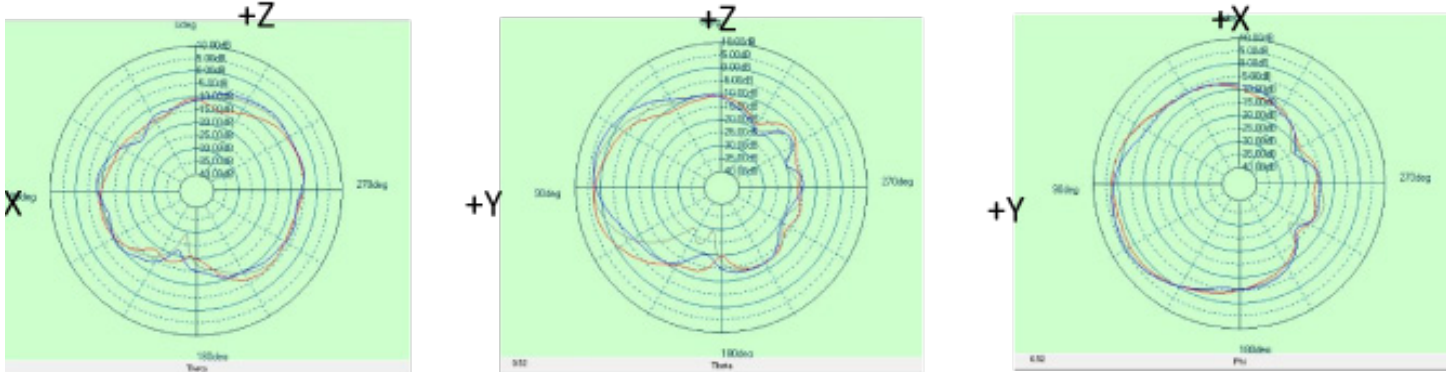
Antenna 1



Antenna 2



Antenna 3



**About Mojo Networks, Inc.**

Mojo Networks is redefining the modern WiFi platform. Imagine the scalability to set up millions of access points with a few clicks, all from your smartphone. Envision an Internet experience that engages users with your business to drive results. Stay secure on the same WiFi cloud powering Fortune 500s, Global 2000s and the highest levels of government. And enjoy the cost savings of a cloud-first solution without the pricey markup of proprietary hardware. Welcome to the era of prolific connectivity. Founded in 2003, Mojo Networks (formerly known as AirTight Networks), serves customers in the Fortune 500, Global 2000 and large carriers around the world. Set up a free trial of Mojo Networks today at [www.mojonetworks.com](http://www.mojonetworks.com).

**Security**

**Access Point Mode:**

- WPA/WPA2 (802.11i) with TKIP or AES-CCMP encryption and PSK or 802.1x authentication
- Integrated WIPS background wireless scanning and Rogue AP prevention

**WIPS Sensor Mode:**

- Dedicated dual-band WIPS scanning for complete 24/7 protection from wireless threats

**Regulatory Specifications**

**RF and Electromagnetic**

Country	Certification
USA	FCC Part 15.247, 15.407
Canada	IC
Europe	CE EN300.328, EN301.893 Countries covered under Europe certification: Austria, Belgium, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Iceland, Luxembourg, Latvia, Lithuania, Malta, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Slovakia, Slovenia, Switzerland, The Czech Republic, UK.

**Safety**

Country	Certification
USA	UL 60950
Canada	cUL 60950
European Union (EU)	EN 60950, RoHS