



AP-7131

The industry's first 802.11n access point with tri-radio design



FEATURES

802.11n support with 3X3 MIMO

Delivers maximum wireless network throughput to support virtually any enterprise application, including voice and video

Tri-radio, dual-band design

Supports 802.11a/b/g/n access, mesh and Wireless IPS sensor functionality

Gap-free dedicated 24x7 sensing via triple methodology rogue AP detection: on-channel, mobile unit and dedicated radio dual-band scanning

Around the clock network protection through instant rogue detection

The re-defined access point: a true wired network replacement

The AP-7131 is the industry's first 802.11a/b/g/n Adaptive Services Access Point that delivers the performance, coverage, reliability and security required to enable the truly wireless enterprise. The tri-radio expandable design provides simultaneous support for three major networking functions: high-speed wireless data, voice and video services for client access, self-healing mesh networking and Wireless Intrusion Prevention System (IPS) sensor functionality for around the clock protection of the network. The fully DFS compliant 802.11n Draft 2.0 AP-7131 offers speeds of up to 600 Mbps per Access Point — six times the bandwidth of an 802.11a/g access point. The Adaptive Services AP architecture allows the device to offer two modes of operation, without changing the firmware — either as a stand-alone access point or as a wireless switch adopted access point for centralized management. Support for dedicated rogue sensing and wireless traffic on a single device eliminates the need to purchase dedicated sensing hardware. Self-

configuration in an 802.3af environment further simplifies deployment. The ability to power both radios over 802.3af eliminates the need to upgrade the existing Power-over-Ethernet (PoE) infrastructure. And the elegant industrial design with an optional snap-on antenna façade enables enterprise wide deployment — from the warehouse to the front lobby. Packed with features, the AP-7131 offers the gap-free security and unmatched reliability you need to deploy a highly successful mobility solution at a low total cost of ownership (TCO).

Standalone access point: wired and wireless 'Network in a box' for the SME

As a standalone access point, the AP-7131 provides small to medium-sized businesses and enterprise branch offices with a consolidated wired and wireless networking infrastructure, all in a single device. The integrated router, gateway, firewall, DHCP and AAA Radius servers, VPN, hot-spot gateway, Power-over-Ethernet (PoE) simplify and reduce the costs associated with networking by eliminating the need to purchase and manage multiple pieces of equipment.

Dual dedicated functionality in a single device

The ability to dedicate two radios to different functions enables this single device to support dedicated 24x7 Wireless IPS rogue detection as well as wireless voice and data traffic — increasing security without increasing costs

Adaptive AP: extending the enterprise

Enables centralized management of mesh access points at remote sites including automatic firmware upgrades; provides site survivability for remote locations with 802.11a/b/g/n networks for unparalleled resiliency

802.3af dual-radio support

Standard Power-over-Ethernet (PoE) provides power for both radios; intelligent power management enables self-configuration based on available power; eliminates the need to upgrade the PoE infrastructure

Integrated Router, DHCP server, Stateful Packet Inspection Firewall, AAA server, NAT, and Hotspot Gateway

Eliminates need to purchase and manage additional equipment; simplifies provisioning of network services and public access

Centrally managed Access Point: Adaptive AP Mode

The AP-7131 is designed to cost-effectively meet the needs of large, distributed enterprises by converging the functionality of a thick access point and thin access point into a single device. This mode enables the deployment of a fully featured intelligent access point that can be centrally configured and managed via a Motorola wireless switch in either corporate headquarters or a network operations center (NOC). All traffic between the adaptive access points and the wireless switch is secured through an encrypted tunnel. And in the event of a WAN, distribution or core network failure, this fully independent configuration offers a Remote Site Survivability (RSS) feature that enables the delivery of secure uninterrupted wireless service in the remote location, offering unparalleled network resiliency.

In addition, a lower cost dependent mode access point configuration is also available. While this model always requires a central switch for normal operation, it also offers Remote Site Survivability, providing up to 72 hours of uninterrupted service in the remote location during network outages.

Gap-free security

To achieve true gap-free security, you need gap-free rogue detection, requiring dedicated dual-band sensing of 2.4 GHz and 5 GHz wireless LANs — typically provided by a standalone sensor. The AP-7131 is the first a/b/g/n access point to offer two services on a single platform — around-the-clock dedicated dual-band sensing as well as the ability to carry wireless traffic — eliminating the need for two separate devices. Integrated Wireless IPS sensor firmware enables the configuration of one radio for 24x7 rogue detection and termination, and a second radio can be dedicated to wireless traffic. As a result, enterprises can now deploy the most robust Wireless IPS solution available at a lower cost — the need and cost to purchase, deploy and manage dedicated sensor hardware is eliminated.

In addition, stateful firewall, encryption and authentication support key standards based security protocols that ensure enterprise-level protection for the wired and wireless network infrastructure. The powerful feature set enables security to be administered by either local, non-technical staff or remote IT professionals at your headquarters.

Mesh: cost-effective networking for challenging locations

Mesh functionality enables the cost-effective wireless extension of the enterprise network to areas where Ethernet or fiber cabling is cost-prohibitive or otherwise impractical. Mesh functionality includes multi-node, multi-link networks as well as simple point-to-point bridging to connect two wired networks. Self-healing ensures continuity of service in the event of a wired or wireless network failure. The self-forming highly resilient, VLAN and WMM QoS-aware mesh technology enables enterprises to wirelessly extend reliable high-performance voice, data and video services to workers in remote and outdoor locations.

End-to-end solution: from 802.11n network design to everyday support

Motorola provides full life-cycle support for your 802.11n mobility deployment, from network design to day-to-day support. Motorola's RF Management suite provides a comprehensive planning tool that enables the easy creation of a well-designed 802.11n wireless LAN, eliminating the high cost associated with an iterative trial-and-error approach and multiple site surveys. Motorola Professional Services offer expertise to assist with assessment through implementation of your mobility solution. Once your Motorola mobility solution is deployed, our responsive Customer Services keep your solution up and running, with maximum uptime — reducing your total cost of ownership.

Enterprise-class manageability — and a rapid return on investment (ROI)

You can count on this multi-function multi-purpose device to deliver a rapid return on investment. The AP-7131 can be deployed as a standalone or centrally managed device to provide wireless voice, data and video services, mesh backhaul and Wireless IPS sensor functionality, all in one device. This built-in flexibility simplifies the mobility architecture — there is less equipment to purchase and manage, reducing your capital and operational expenditures. And with Motorola's RF Management Suite (RFMS), you enjoy unified management of all your AP-7131 access points, enabling simplified, cost-effective planning, deployment and monitoring of large AP-7131 networks.

For more information on how your enterprise can benefit from the AP-7131, please visit us on the web at www.motorola.com/ap7131 or access our global contact directory at www.motorola.com/enterprisemobility/contactus

AP-7131 Specifications

802.11n Draft 2.0 Capabilities

3X3 MIMO with 2 Spatial Streams

20 MHz and 40 MHz Channels

300 Mbps Data Rates per Radio

Packet Aggregation (AMSDU, AMPDU)

Reduced Interframe Spacing

802.11 DFS

MIMO Power Save (Static and Dynamic)

Physical Characteristics

Dimensions: 5.50 in. L x 8.00 in. W x 1.10 in. H
13.97 cm L x 20.32 cm W x 2.79 cm H

Weight: 2.22 lbs/9.98 kg

Housing: Metal, plenum-rated housing (UL2043)

Available mounting: No additional hardware required to mount

Configurations: Above drop ceiling, under ceiling or on wall

LEDs: 6 top mounted LEDs, 1 bottom mounted LED, with multiple modes indicating 802.11a/g/n activity, power, Ethernet adoption, Wireless IPS and errors

Uplink: 2 ports (GE1, GE2) Auto-sensing 10/100/1000 Base-T Ethernet; 802.3af on GE1 LAN port

Antenna connectors: RP-SMA

Console port: RJ45 Console Port

User Environment

Operating temperature: -4°F to 122°F/-20°C to 50°C

Storage temperature: -40°F to 158°F/-40°C to 70°C

Operating humidity: 5 to 95% RH non-condensing

Operating altitude: 8000 ft./2438 m @ 82°F/28°C

Storage altitude: 15000 ft./4572 m @ 53°F/12°C

Electrostatic discharge: 15kV air, 8kV contact

Power Specifications

Operating voltage: 36-57VDC

Operating current: Not to exceed 600mA @ 48VDC

Integrated PoE support: 802.3af support for dual radios, 802.3at (draft)

Networking Specifications

Layer 2 and Layer 3: Layer 3 routing, 802.1q, DynDNS, DHCP server/client, BOOTP client and PPPoE

Security: Stateful Firewall, NAT, 802.1x, 802.11i, WPA2, WPA Triple-Methodology Rogue Detection: 24x7 dual-band WIPS sensing, MU-assisted, on-board IDS and secure guest access (HotSpot)

Quality of Service (QoS): WMM, WMM-UAPSD, 802.1p, Diffserv and TOS

Radio Specifications

Wireless medium: Direct Sequence Spread Spectrum (DSSS), Orthogonal Frequency Division Multiplexing (OFDM) and Spatial multiplexing (MIMO)

Network standards: IEEE 802.11a/b/g/n (Draft 2.0), 802.11d and 802.11i WPA2, WMM and WMM-UAPSD

Data rates supported: 802.11b/g: 1,2,5,5.11,6,9,12,18,24,36,48, and 54Mbps
802.11a: 6,9,12,18,24,36,48, and 54Mbps
802.11n: MCS 0-15 up to 300Mbps

Operating channels: All channels from 4920 MHz to 5825 MHz
Chan 1-13 (2412-2472 MHz)
Chan 14 (2484 MHz) Japan only
Actual operating frequencies depend on regulatory rules and certification agency

Maximum available transmit power: 20dBm (dependent on regulatory rules and certification agency)

Transmit power Adjustment:: 1dB increments

Antenna configuration: 3x3 MIMO (transmit/receive on all three antennas)

Operating bands:	FCC	EU
	2.412 to 2.462 GHz	2.412 to 2.472 GHz
	5.150 to 5.250 (UNII -1)	5.150 to 5.250 GHz
	5.250 to 5.350 (UNII -2)	5.250 to 5.350 GHz
	5.470 to 5.725 (UNII -3)	5.470 to 5.725 GHz
	5.725 to 5.850 (ISM)	(Country Specific)

Japan

2.412 to 2.484GHz
4.900 to 5.000 GHz
5.150 to 5.250 GHz (W52)
5.250 to 5.350 GHz (W53)
5.470 to 5.725 GHz (W56)

Regulatory

Product safety certifications: UL / cUL 60950-1, IEC / EN60950-1, UL2043, RoHS

Radio approvals: FCC (USA), Industry Canada, CE (Europe), TELEC (Japan), China, Korea, Australia

Part Numbers

AP-7131-60020-WR	AP-7131 Single Radio 802.11n Access Point, Plastic Façade, with QIG
AP-7131-60028-WR	AP-7131 Single Radio 802.11n Access Point, 6 element Façade antenna Module, with QIG
AP-7131-66040-WR	AP-7131 Dual Radio 802.11n Access Point, Plastic Façade, with QIG
AP-7131-66048-WR	APN Dual Radio 802.11n Access Point, 6 element Façade antenna Module, with QIG
AP-7131-60020-D-WR	APN Single Radio 802.11n Access Point Dependent Mode
AP-7131-66040-D-WR	APN Dual Radio 802.11n Access Point Dependent Mode
SNB-7120FL-P-1	AP-7131 Single-Radio Remote 11n Sensor (external antenna) with Full WIPS license
SNB-7128FL-P-1	AP-7131 Single-Radio Remote 11n Sensor (integrated antenna) with Full WIPS license
SNB-7140FL-P-1	AP-7131 Dual-Radio Remote 11n Sensor (external antenna) with Full WIPS license
SNB-7148FL-P-1	AP-7131 Dual-Radio Remote 11n Sensor (integrated antenna) with Full WIPS license
50-14000-247R	AP-7131 Power Supply
AP-PSBIAS-1P3-AFR	Single Port High Power 802.3at (Draft) Power Injector
ML-2452-PTA3M3-036	3 Port MIMO Antenna
ML-2452-PTA2M3X3-1	Façade with 6 element antenna Module

Continued on back

Mesh networking

Allows wireless extension of existing wired or wireless networks in remote or outdoor locations

802.11i, WPA2, WPA and IPsec encryption

End-to-end enterprise class wired and wireless security

Wi-Fi Multimedia (WMM™), Quality of Service (QoS) and voice prioritization

Superior performance for demanding mission critical applications, including voice and video

WAN and LAN Ethernet ports

Single device solution for both wired and wireless networking

Java™ web-based graphical user interface; SNMPv3; command line interface (CLI)

Flexible management options; easy-to-use “anytime, anywhere” management

Integrated VPN

Cost-effective secure site-to-site communications

DFS compliance

Increased throughput through greater channel availability in the 5 GHz bands

SPECIFICATION SHEET

AP-7131

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Receiver Sensitivity				
Operating Band	Operating Modes	Data Rate	Typical Receive Sensitivity per Antenna in 3x3 Configuration (dBm)	
2.4 GHz	802.11b	1 Mb/s	-91.4	
		2 Mb/s	-90.2	
		5.5 Mb/s	-88.9	
		11 Mb/s	-86.7	
2.4 GHz	802.11g	6 Mb/s	-89.6	
		9 Mb/s	-89.5	
		12 Mb/s	-89.3	
		18 Mb/s	-87.5	
		24 Mb/s	-85.1	
		36 Mb/s	-81.3	
		48 Mb/s	-77.7	
2.4 GHz	802.11n Draft 2.0 (HT20)	MCS0	-88.9	
		MCS1	-87.6	
		MCS2	-84.7	
		MCS3	-82.0	
		MCS4	-78.5	
		MCS5	-75.2	
		MCS6	-73.9	
		MCS7	-71.9	
		MCS8	-88.5	
		MCS9	-85.8	
		MCS10	-82.0	
		MCS11	-80.0	
		MCS12	-76.4	
		MCS13	-73.0	
		MCS14	-70.9	
MCS15	-68.6			
2.4 GHz	802.11n Draft 2.0 (HT40)	MCS0	-82.7	
		MCS1	-80.3	
		MCS2	-76.5	
		MCS3	-75.9	
		MCS4	-70.4	
		MCS5	-68.9	
		MCS6	-65.1	
		MCS7	-63.3	
		MCS8	-82.3	
		MCS9	-79.9	
		MCS10	-76.3	
		MCS11	-75.8	
		MCS12	-69.6	
		MCS13	-68.4	
		MCS14	-65.3	
MCS15	-61.5			

Receiver Sensitivity (cont.)						
Operating Band	Operating Modes	Data Rate	Typical Receive Sensitivity per Antenna in 3x3 Configuration (dBm)			
5 GHz	802.11a	6 Mb/s	-89.0			
		9 Mb/s	-89.1			
		12 Mb/s	-88.9			
		18 Mb/s	-87.7			
		24 Mb/s	-84.7			
		36 Mb/s	-81.7			
		48 Mb/s	-77.5			
5 GHz	802.11n Draft 2.0 (HT20)	MCS0	-88.9			
		MCS1	-87.3			
		MCS2	-85.1			
		MCS3	-82.2			
		MCS4	-78.7			
		MCS5	-74.6			
		MCS6	-73.1			
		MCS7	-71.6			
		MCS8	-88.0			
		MCS9	-85.5			
5 GHz	802.11n Draft 2.0 (HT40)	MCS10	-82.9			
		MCS11	-80.5			
		MCS12	-76.7			
		MCS13	-72.5			
		MCS14	-70.9			
		MCS15	-68.9			
		5 GHz	802.11n Draft 2.0 (HT40)	MCS0	-85.2	
				MCS1	-83.9	
				MCS2	-81.2	
				MCS3	-78.5	
MCS4	-75.2					
MCS5	-71.4					
MCS6	-69.5					
MCS7	-67.7					
MCS8	-84.6					
MCS9	-82.2					
MCS10	-79.0					
MCS11	-76.6					
MCS12	-73.1					
MCS13	-68.9					
MCS14	-67.2					
MCS15	-65.2					



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