



WiNG 5-ENABLED OUTDOOR 802.11N MESH ACCESS POINT

# AP 7161

Breakthrough your walls and extend to the outdoors with WiNG 5 and the AP 7161, delivering ruggedized outdoor performance and the ability to defend your perimeters from intrusion. The AP 7161 brings together the latest in 802.11n 3x3 MIMO tri-radio design with a 24x7 Intrusion Prevention System, and AirDefense, both in software and dedicated sensor radio support. Big things can come in small packages.

## CAPACITY AND PERFORMANCE LEADING MESH DEPLOYMENTS

AP 7161 has been optimized within the Motorola WiNG 5 platform to provide leading capacity, performance and design and is ideal for industrial and enterprise campus, video surveillance, public safety, and smartgrid utility deployments.

## MOTOROLA MESH PATROL PERIMETER INTRUSION SECURITY

Extending the indoor network to the outdoors increases the need to guard against unwanted intruders and attackers, and monitor the performance and availability of mesh networks. In addition to industry standard security for clients and radio backhaul, the AP 7161 provides true perimeter security using either a dedicated dual-band sensor or software mode in 2.4GHz and 5GHz bands. Concurrent around-the-clock dual-band Network Assurance sensing and wireless traffic is provided together with spectrum analysis — eliminating the need for separate devices. The Integrated Wireless IPS sensor option enables the configuration of one radio for 24x7 rogue detection and termination, and two others can simultaneously be dedicated to wireless client access and/or meshing. As a result, enterprises can now deploy the most robust Wireless IPS solution while saving money — the cost to purchase, deploy and manage dedicated sensor hardware is eliminated.

## INDUSTRIAL AND ENTERPRISE CAMPUS DEPLOYMENTS

The AP 7161, specifically designed for outdoor use, delivers enterprise-class wireless networking in harsh environments. In addition to a NEMA 4X housing, AP 7161 has extended temperature range operation and an array of weatherized antenna and power accessories.

Motorola AP 7161 gives campus environments, self-forming, self-healing MESH capabilities, and support for Wi-Fi multimedia (WMM) extensions to ensure quality of service (QoS) while cost-effectively extending networks beyond and between buildings — with no need to install additional Ethernet cable or fiber. With integrated router, firewall, DHCP, AAA and hotspot services, the AP 7161 offers a superior outdoor WLAN solution.

## VIDEO SURVEILLANCE NETWORKS

Capacity in video surveillance solutions is critical to the performance of many networks designed to monitor and provide safety. To assist with the deployment of video where the camera application resides, the AP 7161 offers band unlocked radio flexibility letting the user choose the radio type, between 2.4GHz, 5GHz and 4.9GHz bands. The AP 7161 supports 3x3 MIMO (Multiple Input Multiple Output) technology reaching a maximum data rate of 300 Mbps, to maintain high performance and better quality of transmission.

## LESS IS MORE

Motorola's WiNG 5 WLAN solutions offer all the benefits of 11n—and then some. Our distributed architecture extends QoS, security and mobility services to the APs so you get better direct routing and network resilience. That means no bottleneck at the wireless controller, no latency issues for voice applications, and no jitter in your streaming video. And with our broad selection of access points and flexible network configurations, you get the network you need with less hardware to buy. Let us show you the less complicated, less expensive way to more capacity, more agility, and more satisfied users.

## PRODUCT SPEC SHEET

AP 7161

### RELIABLE SECURE PUBLIC SAFETY NETWORKS

The AP 7161 is designed to optimize network availability through its central and pre-emptive intelligence which dynamically senses weak or failing signals, securely moves mobile users to alternate APs, and boosts signal power to automatically fill RF holes and ensure uninterrupted mobile user access.

The AP 7161 band unlocked radios allow flexibility and deployment options for the public safety market. The powerful radio increases coverage, performance and obstruction penetration for outdoor use. In addition, receiver sensitivity has been increased proportionally so users have an increased ability to maintain high-performance access for mobility and client devices in the network.

### SMART GRID UTILITIES

Automatic Metering Infrastructure (AMI) is being deployed by utilities companies to increase efficiency and eliminate the need for their workforce to manually read utilities meters. The AP 7161 is designed to optimize wireless data for this application and will have sufficiently more bandwidth for multiple agencies applications, thus increasing the ROI for the different agencies.

### MOBILITY WITH VEHICLE MOUNTED MODEM

The AP 7161 enables any vehicle, train or bus to offer secure and reliable wireless broadband connectivity at high speeds as a Vehicle Mounted Modem (VMM). Access can be used for connectivity to the Internet, offloading DVR

content, live streaming video, database access and other high bandwidth applications. Bus systems, public safety, and mining operations can use the AP 7161 VMM for real-time network connectivity.

### RAILWAY AND MASS TRANSPORTATION

Many features allow the AP7161 to meet the outdoor networking requirements of municipal agencies, transit systems, public safety and railway operations. Our unique routing engine, MeshConnex™ combines with a key enhancement called Opportunistic Radio Link Adaption (ORLA) to ensure the highest possible data rate in challenging outdoor environments — at all times. Data rates of 300 Mbps at the mesh layer create a high capacity network capable of serving multiple departments with high bandwidth requirements for applications such as video. Vehicle mounted modems deliver reliable wireless communications at speeds of 100+ km/h, easily serving personnel as well as passengers. With Auto Channel Selection, mobile devices in a MeshConnex network can automatically select the best channel based on device configuration, channel condition and network layout.

### INDUSTRY LEADER IN MESH TECHNOLOGY

With Scan Ahead, a secondary radio on a Mesh Point can scan ahead for an active channel to use in the event of a DFS radar detection.

## FEATURES

### Ideal Applications

- Industrial and Warehouse operations
- Public Safety
- Municipal and Operator Access
- Smart Grid Applications
- Video surveillance applications
- Extended hotspots for public access
- Enterprise, Education and Healthcare campus facilities
- Use as VMM in bus systems and mining

### 802.11n support with 3X3 MIMO

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

### Band-unlocked dual band design

The ability to dedicate multiple radios to multiple functions increases security without increasing costs; band-unlocked radios enable 24x7 dual band Wireless IPS sensing on both 2.4GHz and 5GHz with concurrent 802.11a/b/g/n client access and mesh

### Mesh networking

Patented Mesh Networking algorithms that allow wireless extension of existing wired or wireless networks in remote or outdoor locations

### Outdoor rated IP 67 Cast Aluminum Enclosure

Equipment designed to withstand wind, rain, and extreme temperatures

### Unmatched security for Federal and other Government agencies

FIPS 140-2 Level 1  
Validated enables secure mobility

## AP 7161 SPECIFICATIONS CHART

### HARDWARE SPECIFICATIONS

Operating Voltage	36-57 VDC
Operating Current	Not to exceed 750 mA@48VDC
Ethernet Ports	2 Gigabit Ethernet ports
Power In (POE)	POE support inbound power - 802.3AT on GE1
Dimensions (unit) * mounted	28.1cm W x 21.8cm H x 9.4cm D 11.1" W x 8.6" H x 3.7" D
Weight (Unit)	6.4lbs/2.9Kg
Mounting	Adaptable mounting kit for wall & pole deployments with optional extension arm accessory
LED	6 Top Mounted weatherized LEDs, with multi function read
Uplink	Outdoor Rated N-TYPE connectors
Antenna Connectors	Outdoor Rated N-TYPE connectors
Console Port	Outdoor rated RJ 45 Console Port
Multi Band Security Sensor	Outdoor 24x7 Integrated Wireless Intrusion Prevention System (IPS)/Assurance Sensor (SKU : AP-7161-66S40-WR, AP-7161-66S40-US)

### ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-40 to +70 Degrees Celsius
Storage Temperature	-40 to +85 Degrees Celsius
Operating Humidity	5-95%
Operating Altitude	8000 Feet
Storage Altitude	30,000 Feet
Electrostatic Discharge	EN61000-4-2. Air +/-15kV, Contact +/-8kV
Enclosure	Outdoor IP67 rated, corrosion resistant enclosure ASTM B117 Salt, Fog, And Rust resistance
Wind Ratings	150 mph * (unit bracket measurement)
Operation Shock and Vibration	IEC60721-3-4, Class 4M3 Ground Transportation Random Vibration MIL-STD-810F, Method 514.5C-17, Ground Transportation Mechanical Shock MIL-STD-810F, Method 516.5, Ground Transportation Sine Vibration IEC-60068-2-6 Procedure C1, Rail Transportation Sine Vibration IEC-60068-2-6 Procedure B1, Ground Transportation Mechanical Shock IEC-60068-2-27 Procedure A2, Rail Transportation Mechanical Shock IEC-60068-2-27 Procedure A1 Ground/Rail Transportation Shock IEC 600068-2-27 Ground/Rail Transportation Vibration IEC 600068-2-6

## PRODUCT SPEC SHEET

AP 7161

### RADIO SPECIFICATIONS

#### General Radio Specifications

Network Standards	IEEE 802.11 a/b/g/n, 802.11e, 802.11i, WPA2, WMM, and WMM-UAPSD
Supported Data Rates	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 54 Mbps 802.11n : MCS 0-15 up to 300Mbps

### RADIO SPECIFICATIONS (CONTINUED)

#### 802.11 b/g/n

Operating Frequency 2.4 – 2.483 GHz

Max EIRP\* 32dBm

#### 802.11 a/n

Operating Frequency 4.940GHz – 4.990 GHz and 5.25GHz - 5.35GHz and 5.470GHz – 5.825GHz

Max EIRP\* 34dBm

\*Max EIRP may vary based upon the deployed country

### NETWORKING AND SOFTWARE SPECIFICATIONS

Security	Stateful Firewall, IP filtering, NAT, 802.1X, 802.11i WPA2, WPA, 24x7 Dual band sensor capabilities *(subject to software license keys and sensor radio SKU) Advanced Forensics Connectivity Troubleshooting Wireless Intrusion Prevention LiveRF On board IDS, and secure guest hotspot access FIPS 140-2
Quality of Service	WMM, WMM-UAPSD, 802.1p, Diffserv and TOS
Routing	Layer 3 Routing, 802.1q/p, DynDNS, DHCP server/client, BOOTP Client, PPPoE and LLDP

### APPROVALS

Radio*	FCC Title 47, part 15, part 90; EN 301 489-17 EN 301 893 v1.5.1 DFS; EN 300 328; Industry Canada; China SRRC Australia/New Zealand *For more country specific regulatory information please contact Motorola or your authorized Partner
Safety*	UL 60950-1, -22; CSA C22.2 No.60950-1-07, -22 CB-IEC 60950 -1, 22; EN 60950-1:2006+ A11:2009 RoHS/WEEE/CMM; CE *For more country specific regulatory information please contact Motorola or your authorized Partner

Railway Certifications EN 50121, EN 50124, EN 50125, EN 50155, EN 61373

### OPTIONAL ACCESSORIES

#### Mounting Kit

Extension Arm for Mounting Kit

IP66 Outdoor Rated 802.3AT Power Injector

Mounting Kit for Outdoor IP 66 802.3AT Power Injector

External Antenna Options

### VMM ACCESSORIES

Mobile Antenna

AP 7161 Vehicle Mount

### WARRANTY

One (1) year on AP 7161 hardware \*accessories not included

(30) Day on Accessories

(90) Day on Software

**PRODUCT SPEC SHEET**

AP 7161

**CONDUCTED RECEIVER SENSITIVITY  
(ANTENNA ELEMENT NOT INCLUDED)**

(typical) at antenna housing connector, 2400MHz band

Rate/MCS	Mode	Sensitivity (dBm)
1	Legacy	-94
2	Legacy	-92
5.5	Legacy	-91
11	Legacy	-89
6	Legacy	-89
9	Legacy	-89
12	Legacy	-90
18	Legacy	-88
24	Legacy	-84
36	Legacy	-82
48	Legacy	-78
54	Legacy	-76
MCS0	HT20	-89
MCS1	HT20	-90
MCS2	HT20	-85
MCS3	HT20	-82
MCS4	HT20	-79
MCS5	HT20	-75
MCS6	HT20	-73
MCS7	HT20	-72
MCS8	HT20	-89
MCS9	HT20	-89
MCS10	HT20	-87
MCS11	HT20	-84
MCS12	HT20	-81
MCS13	HT20	-76
MCS14	HT20	-74
MCS15	HT20	-72
MCS0	HT40	-86
MCS1	HT40	-85
MCS2	HT40	-83
MCS3	HT40	-80
MCS4	HT40	-76
MCS5	HT40	-72
MCS6	HT40	-70
MCS7	HT40	-68
MCS8	HT40	-87
MCS9	HT40	-86
MCS10	HT40	-84
MCS11	HT40	-81
MCS12	HT40	-78
MCS13	HT40	-73
MCS14	HT40	-72
MCS15	HT40	-69

**CONDUCTED RECEIVER SENSITIVITY  
(ANTENNA ELEMENT NOT INCLUDED)**

(typical) at antenna housing connector, 5200MHz band

Rate/MCS	Mode	Sensitivity (dBm)
6	Legacy	-92
9	Legacy	-92
12	Legacy	-91
18	Legacy	-89
24	Legacy	-85
36	Legacy	-82
48	Legacy	-77
54	Legacy	-76
MCS0	HT20	-92
MCS1	HT20	-88
MCS2	HT20	-86
MCS3	HT20	-82
MCS4	HT20	-79
MCS5	HT20	-74
MCS6	HT20	-73
MCS7	HT20	-71
MCS8	HT20	-92
MCS9	HT20	-90
MCS10	HT20	-87
MCS11	HT20	-84
MCS12	HT20	-81
MCS13	HT20	-76
MCS14	HT20	-75
MCS15	HT20	-73
MCS0	HT40	-88
MCS1	HT40	-85
MCS2	HT40	-83
MCS3	HT40	-79
MCS4	HT40	-76
MCS5	HT40	-71
MCS6	HT40	-69
MCS7	HT40	-68
MCS8	HT40	-89
MCS9	HT40	-86
MCS10	HT40	-84
MCS11	HT40	-81
MCS12	HT40	-78
MCS13	HT40	-73
MCS14	HT40	-72
MCS15	HT40	-70

For more information on how the AP 7161 can benefit your business, please visit us on the web at [www.motorola.com/mesh](http://www.motorola.com/mesh) or access our global contact directory at [www.motorola.com/enterprisemobility/contactus](http://www.motorola.com/enterprisemobility/contactus)



Part number: SS-AP7161. Printed in USA 08/13. MOTOROLA, MOTO, MOTOROLA SOLUTIONS and the Stylized M Logo are trademarks or registered trademarks of Motorola Trademark Holdings, LLC and are used under license. All other trademarks are the property of their respective owners. ©2013 Motorola Solutions, Inc. All rights reserved. Specifications are subject to change without notice.

G3-29-114

