PRODUCT SPEC SHEET
AP 7161

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WiNG 5 ENABLED OUTDOOR 802.11N MESH ACCESS POINT

Breakthrough your walls and extend to the outdoors with WiNG 5 and the Symbol AP7161, delivering ruggedized outdoor performance and the ability to defend your perimeters from intrusion. AP7161 brings together the latest in 802.11n 3x3 MiMO tri-radio design with 24x7 Intrusion protection system WLAN Security Services 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 Zebra 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.

ZEBRA MESHPATROL 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-modified housing, AP 7161 has extended temperature range operation and an array of weatherized antenna and power accessories.
AP7161 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.

RELIABLE SECURE PUBLIC SAFETY NETWORKS

ZEBRA

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 alogirthms 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

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 ULTITIES

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.

For more information on how the AP 7161 can benefit your business, please visit us on the web at **www.zebra.com/mesh** or access our global contact directory at **www.zebra.com/contact**

LESS IS MORE

Zebra'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.

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 21.8cx 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 Intergrated Wireless Intrusion Prevention System (IPS)/ Assurance Sensor (SKU : AP-7161-66S40-WR, AP-7161-66S40-US)

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
802.11n Capabilities	3x3 MIMO with 2 Spatial Streams 20MHz and 40MHz Channels Supported 300Mbps Data Rates per Radio Packet Aggregation (AMSDU,AMPDU) Reduced Interframe Spacing
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

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)
Operational Shock	IEC60721-3-4, Class 4M3, MIL STD 810F
Operational 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

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

Max EIRP*	34dBm

***Max EIRP may vary based upon the deployed country**

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 Zeland *For more country specific regulatory information please contact Zebra 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 Zebra or your authorized Partner

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
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

WARRANTY

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

(30) Day on Accessories

(90) Day on Software

CONDUCTED RECEIVER SENSITIVITY (ANTENNA ELEMENT NOT INCLUDED)
(typical) at antenna housing connector

Rate/MCS (2400MHz band)	Mode (2400MHz band)	Sensitivity (dBm) (2400MHz band)	Rate/MCS (5200MHz band)	Mode (5200MHz band)	Sensitivity (dBm) (5200MHz band)
1	Legacy	-94	6	Legacy	-92
2	Legacy	-92	9	Legacy	-92
5.5	Legacy	-91	12	Legacy	-91
11	Legacy	-89	18	Legacy	-89
6	Legacy	-89	24	Legacy	-85
9	Legacy	-89	36	Legacy	-82
12	Legacy	-90	48	Legacy	-77
18	Legacy	-88	54	Legacy	-76
24	Legacy	-84	MCS0	HT20	-92
36	Legacy	-82	MCS1	HT20	-88
48	Legacy	-78	MCS2	HT20	-86
54	Legacy	-76	MCS3	HT20	-82
MCS0	HT20	-89	MCS4	HT20	-79
MCS1	HT20	-90	MCS5	HT20	-74
MCS2	HT20	-85	MCS6	HT20	-73
MCS3	HT20	-82	MCS7	HT20	-71
MCS4	HT20	-79	MCS8	HT20	-92
MCS5	HT20	-75	MCS9	HT20	-90
MCS6	HT20	-73	MCS10	HT20	-87
MCS7	HT20	-72	MCS11	HT20	-84
MCS8	HT20	-89	MCS12	HT20	-81
MCS9	HT20	-89	MCS13	HT20	-76
MCS10	HT20	-87	MCS14	HT20	-75
MCS11	HT20	-84	MCS15	HT20	-73
MCS12	HT20	-81	MCS0	HT40	-88
MCS13	HT20	-76	MCS1	HT40	-85
MCS14	HT20	-74	MCS2	HT40	-83
MCS15	HT20	-72	MCS3	HT40	-79
MCS0	HT40	-86	MCS4	HT40	-76
MCS1	HT40	-85	MCS5	HT40	-71
MCS2	HT40	-83	MCS6	HT40	-69
MCS3	HT40	-80	MCS7	HT40	-68
MCS4	HT40	-76	MCS8	HT40	-89
MCS5	HT40	-72	MCS9	HT40	-86

MCS6	HT40	-70	MCS10	HT40	-84
MCS7	HT40	-68	MCS11	HT40	-81
MCS8	HT40	-87	MCS12	HT40	-78
MCS9	HT40	-86	MCS13	HT40	-73
MCS10	HT40	-84	MCS14	HT40	-72
MCS11	HT40	-81	MCS15	HT40	-70
MCS12	HT40	-78			
MCS13	HT40	-73			
MCS14	HT40	-72			
MCS15	HT40	-69