



# ELEVATING BANDWIDTH TO THE $n^{\text{th}}$ POWER



MESH WIDE AREA  
NETWORK AP 7181

# BREAKING NETWORK BARRIERS OUTDOORS

Enhanced capacity. Faster data speeds. Exceptional reliability. Your network has to deliver all three to take advantage of the latest video, field service, asset monitoring and control applications. To extend these key capabilities outdoors, CIOs and IT leaders are increasingly choosing our wireless mesh broadband technology to meet next generation requirements. And those investments are paying off – in savings, business efficiencies and new revenue opportunities.

Now powered by 802.11n, mesh wireless broadband networks deliver flexibility and scalability, minimal time to deployment and lower installation costs than wired alternatives.

These networks will transform how your city or business works. Enhanced wireless capabilities allow you to optimize traffic light signals to alleviate congestion during rush hour or in an emergency, automate meter reading so city utilities can capture data over the air, monitor video surveillance cameras in real time and enable constant, reliable network connections to vehicles in motion.

Only one company offers complete indoor/outdoor network wireless solutions that fully leverage “n” advantages: ours.

## GENERATION “n”

New 802.11n technologies are transforming indoor and outdoor wireless networks alike. Delivering spectacular improvements in the reliability, capacity and range of 802.11 communications, .11n mesh technology supports hundreds of megabits of throughput, reaching well beyond public operator capabilities. But that’s really only the beginning.

More network capacity puts new robust applications at the fingertips of a larger pool of your users, increasing opportunities to develop new revenue streams, decrease costs and drive a more compelling return on investment (ROI).

We pioneered WiFi wide area mesh networks for outdoor network deployments, acquiring the knowledge and expertise to enhance the technology required to dramatically improve capacity, reliability and performance. Mesh Wide Area Network (MWAN) solutions are ushering in a new era of content rich, real-time applications for government, enterprise and public safety operations around the globe.

The “n” network transformation may have started indoors. But we are bringing the same bandwidth defying results to outdoor network environments with the first of many “n” generation solutions: The AP 7181.

# THE ULTIMATE SOLUTION: MOTOROLA MESH AP 7181

The AP 7181 is a high performance, multi-radio 802.11n access point featuring our exclusive intelligent ADEPT (ADvanced Element Panel Technology) antenna system. The ADEPT system allows the AP 7181 to achieve and maintain maximum data rates by delivering a reliable dual data stream in an outdoor environment. Leveraging multiple transmit and receive RF chains and dual polarized antennas, the AP 7181 ensures outstanding mesh throughput throughout a coverage area.

Building a robust, reliable outdoor broadband network is a challenging proposition. Our Multiple Input Multiple Output (MIMO) class of products overcomes that challenge. ADEPT is designed to work with 802.11n MIMO to deliver enhanced coverage, capacity and lower TCO (total cost of ownership).

Fully integrated antennas surround the AP 7181 node, eliminating the self-shadowing interference and coverage challenges that often come with stick antenna designs. A software controlled down-tilt feature allows coverage to be modified as needed by electronically widening and tilting the beam pattern. Managed remotely from the AP 7181 Web console, this capability saves the time and expense required to adjust fixed antenna beam patterns, secure bucket trucks and replace an antenna. The AP 7181 is the result of years of customer research and created specifically to meet your outdoor networking needs. Compact and sleek, this access point brings design to an entirely new level.

## Today's Technology



Design completed for one linear mile of urban city

## 802.11n Technology



Design completed for one linear mile of urban city

# FEATURES AND BENEFITS

## RAPID ROI

Why AP 7181? By supporting higher sustained data rates, it enables a rapid return on investment by increasing your network capacity, supporting more applications and enabling more mobile users. Its radios operate at the highest allowable power, maximizing data rates and ensuring superior network and device performance and reliability.

## BETTER CONNECTIONS, MORE VALUE

The AP 7181 creates robust mobile data connections throughout the network by leveraging our patented MeshConnex™ routing technology.

MeshConnex provides efficient routing, low hop latency, low routing overhead, high-speed handoffs and proven scalability. The Opportunistic Radio Link Adaptation (ORLA) is a key decision-making element within MeshConnex™, designed to select data rates that will provide the best throughput at any given time. ORLA ensures your network will achieve reliable throughput at the highest possible data rate.

## SEEING IS BELIEVING

Video is having a profound effect on not only how we communicate and consume information, but also on network infrastructure needs and performance.

Leveraging the full technology enhancements 802.11n brings, the AP 7181 delivers excellent video quality

by enabling faster download capabilities, reduced interference and enhanced connectivity, through improved frame aggregation and transmission of data files. Other noteworthy benefits on the horizon include the ability to maintain continuous video connections at high speeds to or from a moving vehicle or train.

## MOBILITY REDEFINED

The AP 7181 transforms the remote office, keeping highly mobile workers connected to key office applications, databases, email and more, greatly improving their response times and efficiencies.

Even legacy devices utilizing an 802.11 a/b/g backbone benefit from “n” infrastructure upgrades, allowing you to experience improved network performance, while evolving toward a completely optimized network.

## GREATER MONITORING & CONTROL

Imagine the operational efficiencies you could achieve by having greater visibility and control of network assets and state-of-the-art applications that enable the same advantages; intelligent traffic systems that allow you to optimize traffic flow and route patterns; remote monitoring of vital assets and campus facilities to improve security and worker safety.

AP 7181 mesh networks can cost effectively and quickly make these scenarios a reality.

## OUTDOOR NETWORK

MeshConnex / AP 7181



### RESIDENTIAL HOME

OUTDOOR TO INDOOR Connectivity

### SMALL OFFICE

OUTDOOR TO INDOOR Connectivity

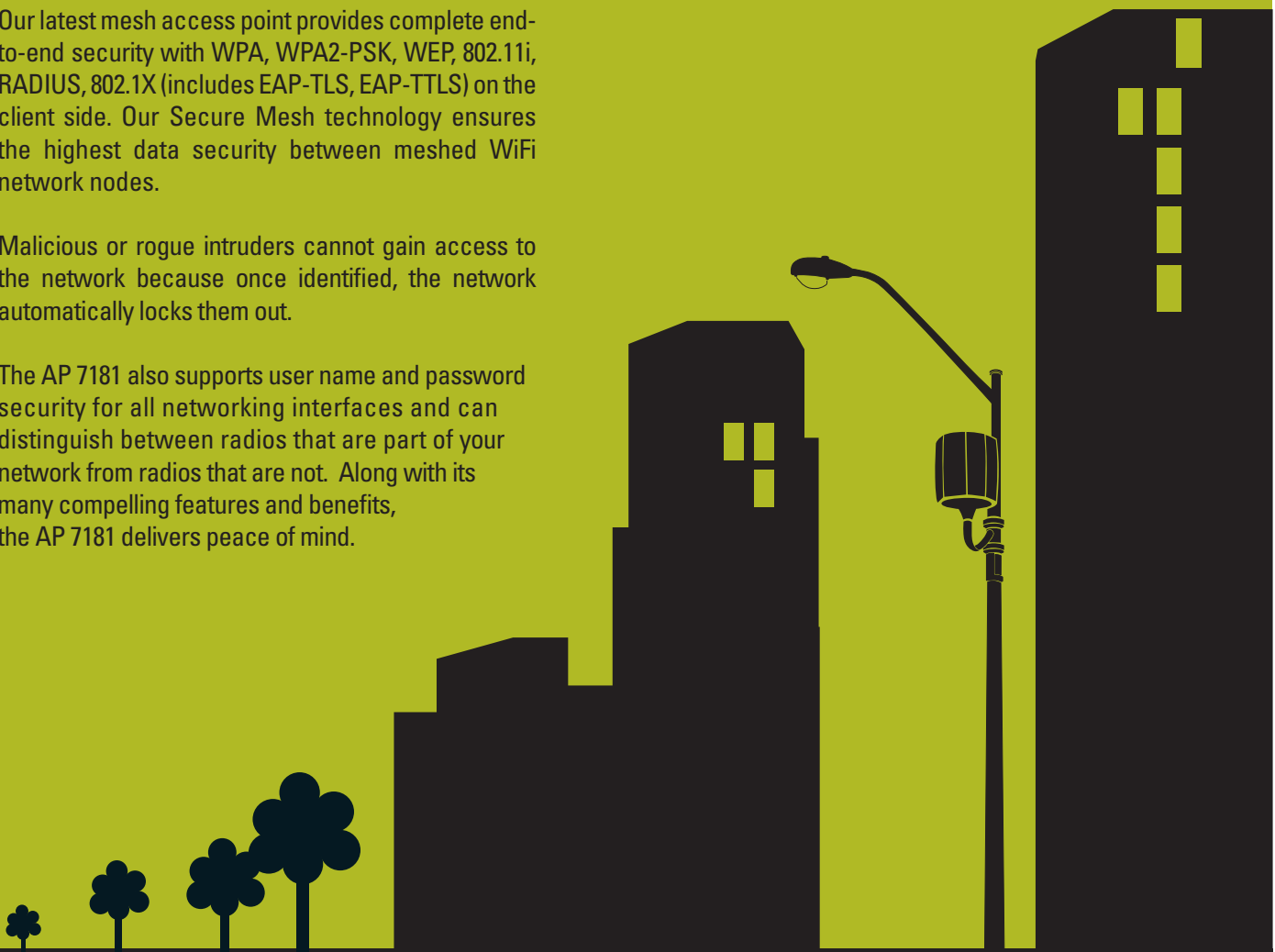
# SAFER, MORE SECURE CONNECTIONS

Network security keeps your IT managers and our network engineers up at night. No matter your network size or type – residential, small business, municipal WiFi or campus-wide enterprise – security remains a critical concern and one we've addressed in every aspect of the AP 7181's design.

Our latest mesh access point provides complete end-to-end security with WPA, WPA2-PSK, WEP, 802.11i, RADIUS, 802.1X (includes EAP-TLS, EAP-TTLS) on the client side. Our Secure Mesh technology ensures the highest data security between meshed WiFi network nodes.

Malicious or rogue intruders cannot gain access to the network because once identified, the network automatically locks them out.

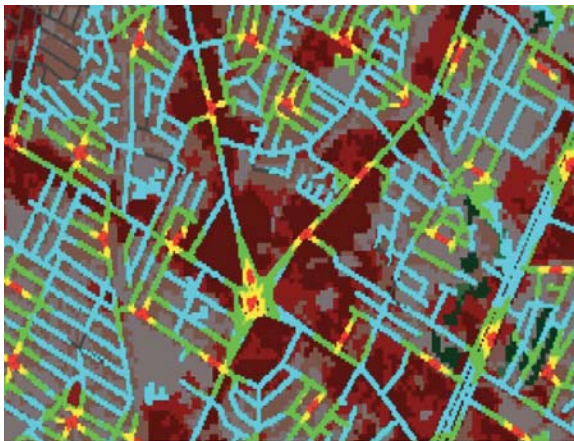
The AP 7181 also supports user name and password security for all networking interfaces and can distinguish between radios that are part of your network from radios that are not. Along with its many compelling features and benefits, the AP 7181 delivers peace of mind.



# PLANNING, DESIGN & MANAGEMENT

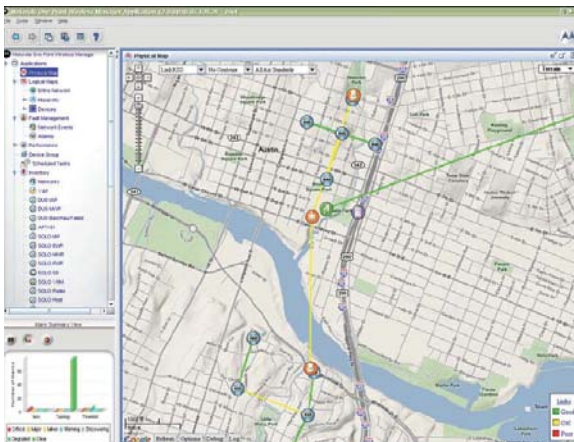
Greater visibility to network components allows you to identify and respond quickly to coverage outages and issues as they occur. Multiple management tools for multiple types of network equipment running on multiple terminals is not an efficient network management strategy. In fact, it can greatly complicate issue discovery and response – not to mention lead to costly operational inefficiencies.

Our One Point Wireless software-based network design, deployment and management tools help provide one integrated platform to run your network – a much more effective IT strategy. It helps protect network investments by ensuring the strongest links, proper equipment and right quantity of equipment are deployed.



# BROADBAND PLANNER

With advanced RF modeling, Google Maps and measurement and verification capabilities make sure AP 7181 networks deliver optimal performance and capacity over the long run. BroadbandPlanner is an ideal solution for service providers, as well as wireless partners serving enterprises and government organizations wishing to provide municipal applications to public safety teams, city workers and private citizens.



# WIRELESS MANAGER

Provides a holistic view of your entire outdoor network and provides quick launch access to indoor WLAN sites, allowing you to quickly respond to issues. It provides integrated network control while reducing training time and costs. With the ultra-light thin client you can now track any alarms and link performance data in real time via an HTML page accessed from your smartphone.

# ADVANCED 802.11n

## OUTDOOR WIRELESS NETWORKS

CAN SUPPORT A WIDE VARIETY OF ROLE-BASED APPLICATIONS.

Below are just some of the endless possibilities:

	VIDEO	WORKFORCE MOBILITY	MONITORING & CONTROL
ENTERPRISE	<ul style="list-style-type: none"> <li>• Fixed Camera Connectivity</li> <li>• Campus Surveillance</li> </ul>	<ul style="list-style-type: none"> <li>• Mobile Office</li> <li>• Field Reporting</li> <li>• Database Access</li> <li>• Tele-medicine / Remote</li> <li>• Biometrics</li> <li>• VoIP</li> </ul>	<ul style="list-style-type: none"> <li>• Remote Facility Security</li> <li>• Fleet /Asset Mgmt.</li> <li>• Incident/Event Mgmt.</li> </ul>
MUNI/ PUBLIC SAFETY	<ul style="list-style-type: none"> <li>• Public Transit Surveillance</li> <li>• Red Light Cameras</li> <li>• Incident/Event Mgmt.</li> </ul>	<ul style="list-style-type: none"> <li>• eCitations/eTicketing</li> <li>• License Plate Recog</li> <li>• Criminal Database Access</li> <li>• Field Reporting</li> <li>• Mobile Office</li> <li>• VoIP</li> </ul>	<ul style="list-style-type: none"> <li>• AMR</li> <li>• Smart Parking</li> <li>• Traffic Optimization</li> <li>• Waste Water Treatment</li> <li>• Water Main Leak Detection</li> <li>• Lift Station Monitoring</li> </ul>



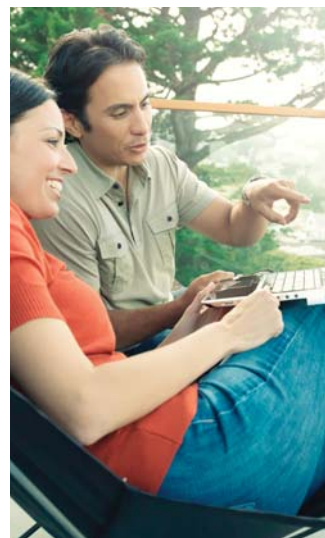
# ONE COMPANY ONE INTEGRATED NETWORK SOLUTION

We deliver mobility and agility inside the enterprise, between locations and out to end-user devices. The AP 7181, together with the AP-7131 indoor access point, creates a seamless indoor/outdoor mesh network solution that delivers contiguous coverage throughout city or campus environments.

Successful 802.11n mesh deployments require an in-depth understanding of the outdoor wireless space and advanced RF design and management tools to ensure long-term network performance, reliability and ROI. We intend to lead Generation “n” innovation with game changing products that reflect superior design and engineering, deliver reliable performance at a lower cost and exceed your expectations – today and tomorrow.

## ABOUT WIRELESS NETWORK SOLUTIONS

We deliver the seamless connectivity that puts real-time information in customers’ hands and the agility needed to grow business or better protect and serve the public. Integrated with world-class devices, our solution portfolio includes indoor WLAN, outdoor wireless mesh, point-to-multipoint, point-to-point networks and voice over WLAN solutions. Combined with powerful software for wireless network design, security, management and troubleshooting, wireless network solutions deliver trusted networking and anywhere access to organizations across the globe.



For news and comments on the industry join the conversation at [wirelessnetworkpulse.com](http://wirelessnetworkpulse.com)



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