Mesh Wide Area Network AP 7181

Elevating Bandwidth to the **n**th Power

GENERATION "n"

The advent of 802.11n technology has forever changed the face of 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 just the beginning. More network capacity puts new robust applications at the fingertips of a larger pool of users, increasing opportunities for municipalities and enterprises to develop new revenue streams, decrease costs and drive a more compelling return on investment (ROI).

Motorola was among the pioneers of 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. Motorola's 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 Motorola is bringing the same bandwidth defying results to outdoor network environments with the first of its "n" generation solutions: The AP 7181.
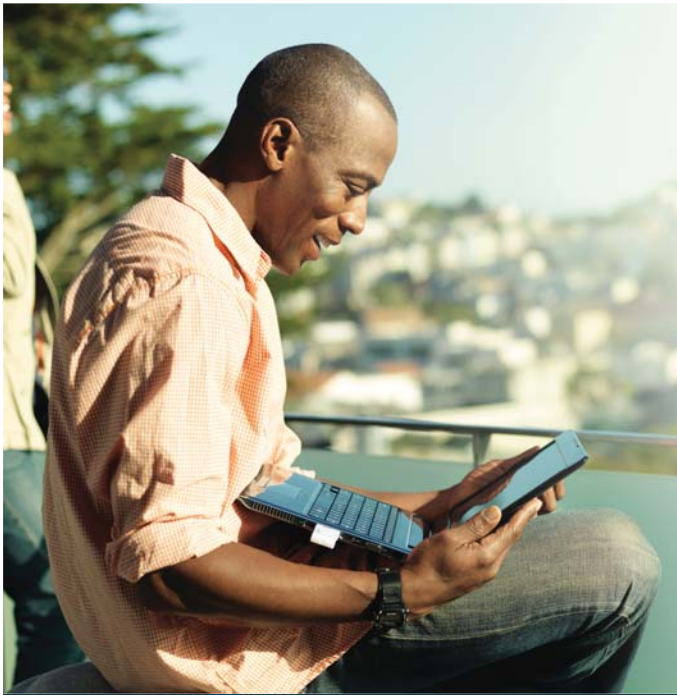
Design completed for one linear mile of urban city

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The New Outdoor Wireless Mesh Solution: AP 7181

The AP 7181 is a high performance, multi-radio 802.11n access point featuring superior network capacity, a data rate of 300 Mbps and Motorola's exclusive intelligent ADEPT (ADvanced Element Panel Technology) antenna system. The ADEPT system, allows the AP 7181 to achieve 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 achieves outstanding mesh throughput throughout a coverage area.

Fully integrated antennas surround the AP 7181 node, eliminating the self-shadowing interference and coverage challenges inherent with stick antenna designs. In addition, a software controllable down tilt feature allows network operators to enhance coverage remotely without the cost of changing antennas or hiring bucket trucks to make needed adjustments. Its aesthetically pleasing package brings access point design to an entirely new level.

The AP 7181 is the result of years of customer research and development and is designed specifically to meet the outdoor network needs of municipal agencies, transit systems, public safety and enterprises.
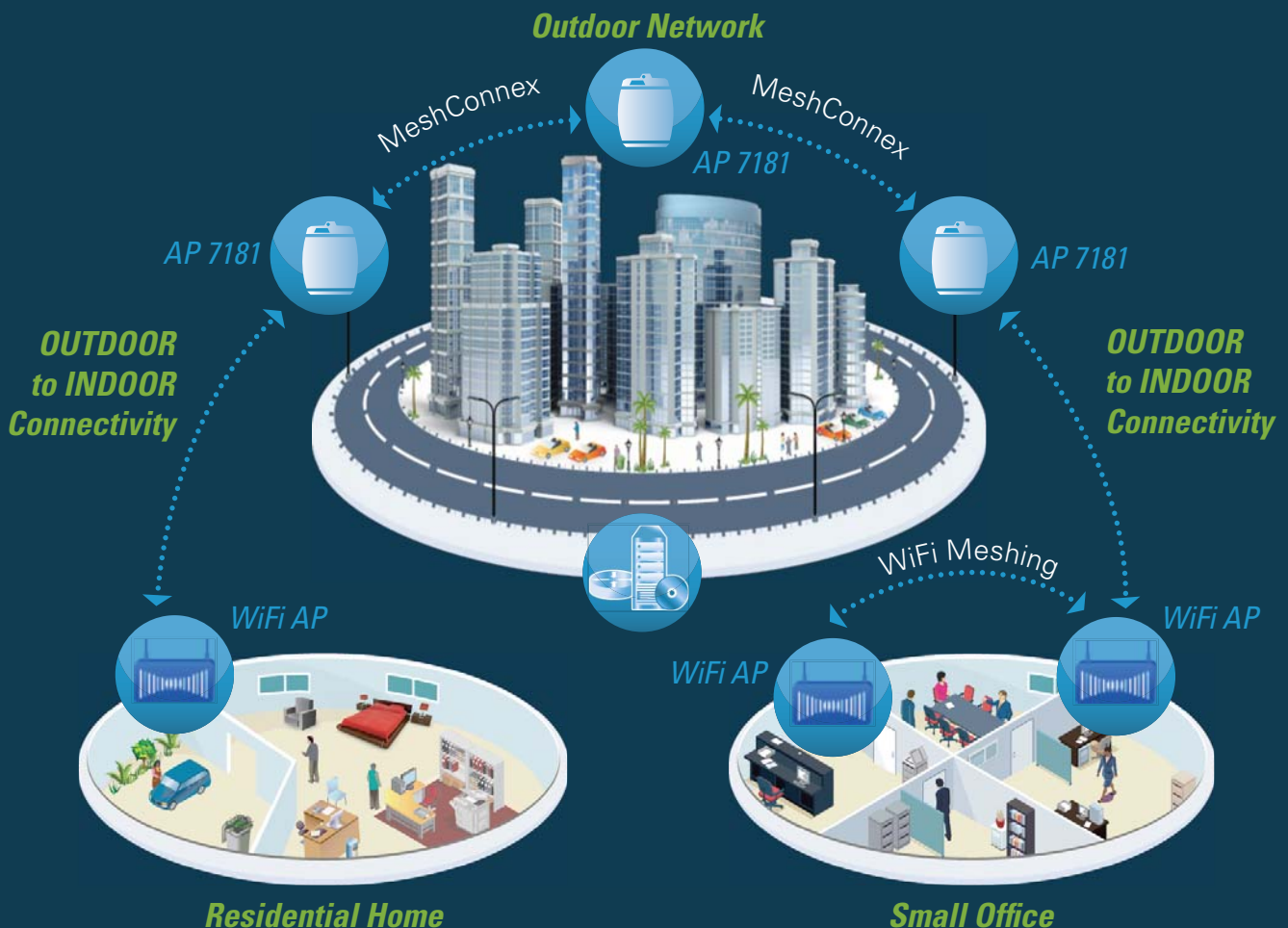
Rapid ROI

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

Better Connections, Measurable Value

The AP 7181 creates robust mobile data connections throughout the network by leveraging Motorola's 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 customers using a Motorola Mesh Wide Area Network enjoy reliable throughput at the highest possible data rate.

Rapid hand-offs, intelligent data routing and robust security are among AP 7181's market leading differentiators. Maximizing the advantages of 802.11n technology enhancements, the power of the AP 7181 lies equally in the high bandwidth applications it enables as well as the vastly improved network performance it delivers. What are the measurable benefits to municipalities and enterprises? Compelling video capabilities increased public access, a whole new level of workforce mobility and advanced monitoring and control options, to name just a few.


Outdoor Network

MeshConnex — AP 7181 — MeshConnex

AP 7181

AP 7181

OUTDOOR to INDOOR Connectivity

OUTDOOR to INDOOR Connectivity

WiFi AP

WiFi Meshing

WiFi AP

WiFi AP

Residential Home

Small Office

A NEW VIEW OF VIDEO

Video is having a profound effect on not only the way people communicate and consume information, but also on network infrastructure needs and performance. Leveraging the full technology enhancements 802.11n brings, 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 compelling benefits on the horizon include the ability to maintain continuous video connections to or from a moving vehicle or train, bringing real-time video surveillance to entirely different level.

A MORE ROBUST MOBILE OFFICE

The AP 7181 redefines the remote office, keeping highly mobile workers connected to key office applications, databases, email and more, greatly improving response times and operational efficiencies. Even legacy devices utilizing an 802.11 a/b/g backbone benefit from "n" infrastructure upgrades, allowing both enterprises and municipalities to see immediate gains in network performance while evolving toward a completely optimized network.
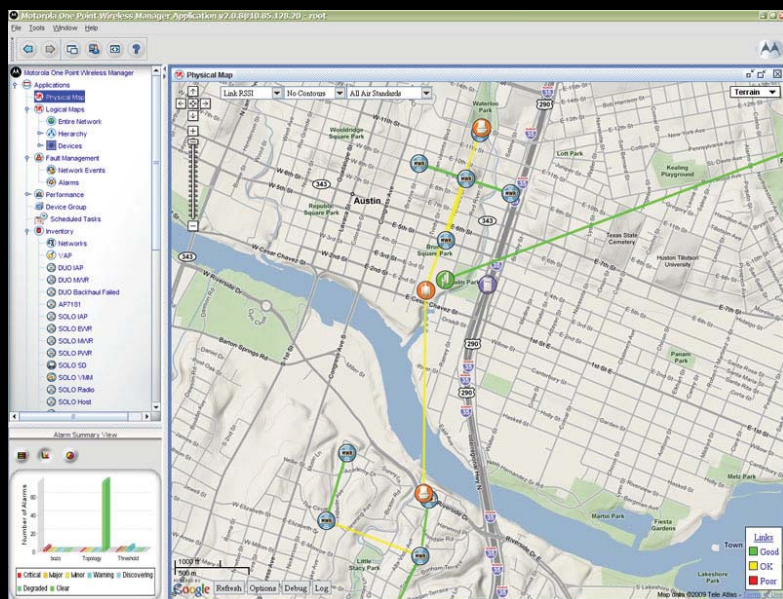

Asset Monitoring & Control

Imagine the operational efficiencies made possible through greater visibility and control of network assets and state-of-the-art applications that enable the same advantages; intelligent traffic systems that allow cities to optimize traffic flow and route patterns; remote monitoring of vital enterprise assets and campus facilities to improve security and worker safety. AP 7181 mesh networks can cost effectively and quickly make these scenarios a reality.

Planning, Design & Management

Greater visibility to network components allows network managers to identify and respond quickly to coverage outages and issues as they occur. Multiple management tools for multiple network equipment types running on multiple terminals is not a good network management strategy, greatly complicating issue discovery and response -- not to mention costly operational inefficiencies.

Motorola's One Point Wireless suite of software-based network design, deployment and management tools minimizes the risk of 802.11n network investments by helping to ensure the strongest links, proper equipment and right quantity of equipment is deployed, maximizing performance while minimizing costs. BroadbandPlanner, with its advanced RF modeling, integration with Google Maps and streamlined measurement and verification capabilities, helps ensure AP 7181 networks deliver optimal results and capacity over the long run. Wireless Manager accelerates the deployment of AP 7181 solutions through advanced Google Maps visualization and configuration tools and streamlines ongoing network integrity monitoring and user group management.
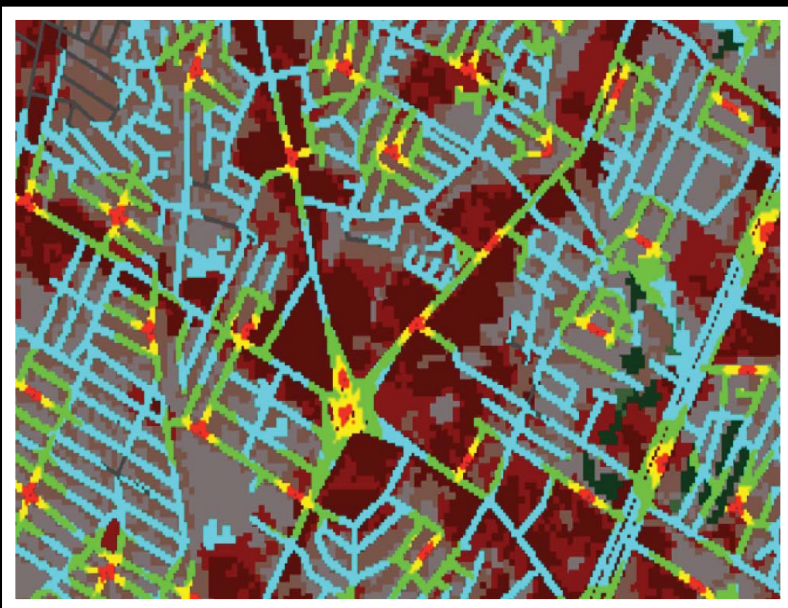
Safe & Secure

Network security keeps IT managers, network operators and Motorola engineers up at night. No matter the network size or type -- residential, small business, municipal Wi-Fi or campus-wide enterprise -- security remains a critical concern and one reflected in every aspect of the AP 7181's design. The new 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. Motorola's own SecureMesh technology is designed to ensure the highest data security between meshed WiFi network nodes. Additionally, the AP 7181 supports user name and password security for all networking interfaces and can distinguish between radios that are part of the network from radios that are not. Along with its many compelling features and benefits, the AP 7181 brings peace of mind.
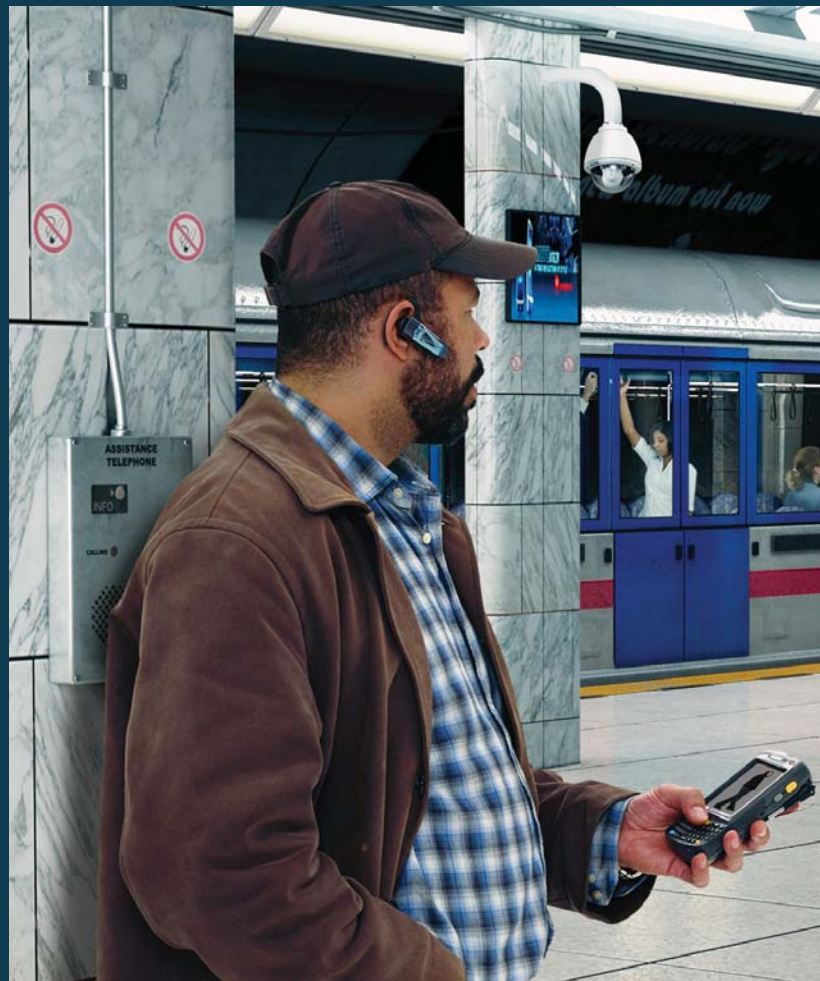
ONE COMPANY. ONE NETWORK. ONE INTEGRATED SOLUTION.

Motorola delivers 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 in the industry, helping to ensure contiguous coverage throughout city or campus environments.

As enterprise and municipal Wi-Fi mesh networks increase their reach and capacity, so too do the businesses and users that rely on them. 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. Motorola intends to lead Generation "n" innovation with game changing products that reflect superior design and engineering, deliver reliable performance at a lower cost and exceed customer expectations -- today and tomorrow.

ABOUT MOTOROLA WIRELESS BROADBAND

Motorola's comprehensive portfolio of reliable and cost-effective wireless broadband solutions together with our WLAN solutions provide and extend coverage both indoors and outdoors. The Motorola Wireless Broadband portfolio offers high-speed Point-to-Point, Point-to-Multipoint, Mesh, Wi-Fi and WiMAX networks that support data, voice and video communications, enabling a broad range of fixed and mobile applications for public and private systems. With Motorola's innovative software solutions, customers can design, deploy and manage a broadband network, maximizing uptime and reliability while lowering installation costs.

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