



# *wi4 Fixed*

Point-to-Multipoint Canopy® Solutions



**MOTOWI**<sup>4</sup>

# Canopy® Technology is as Simple as it is Powerful

The wi4 Fixed Point-to-Multipoint Canopy solution is streamlined, powerful and simple, with built-in installation and deployment assistance, making Canopy solutions faster and easier to implement. Components include:

**Access Point (AP) Module.** The Canopy AP seamlessly interfaces with an existing Local Area Network (LAN) via standard Ethernet connection. Compact and flexible, AP modules are built to be mounted outdoors, eliminating the need for overhead and in-ground wire or microwave.

**AP Cluster.** The foundation of the Canopy system is the AP cluster, a powerful system that includes six APs plus a Cluster Management Module (CMM). The CMM provides power for the Canopy modules and includes an Ethernet switch and a GPS receiver.

**Subscriber Module (SM).** Canopy SMs are compact and unobtrusive access receivers that are easy to install at a user's or customer's site. Subscriber Modules can be mounted outside, and need no additional software installation. Each AP module can serve up to 200 SMs.

## MOTOWi4™ WIRELESS BROADBAND SOLUTIONS

The wi4 Fixed Point-to-Multipoint Canopy solutions are part of the MOTOWi4 portfolio—a comprehensive portfolio of wireless broadband solutions and services that provides high-speed connectivity, enabling a broad range of applications in a host of environments. The MOTOWi4 portfolio also includes wi4 WiMAX, wi4 Mesh and wi4 Indoor solutions for public and private networks.

**AP Cluster**

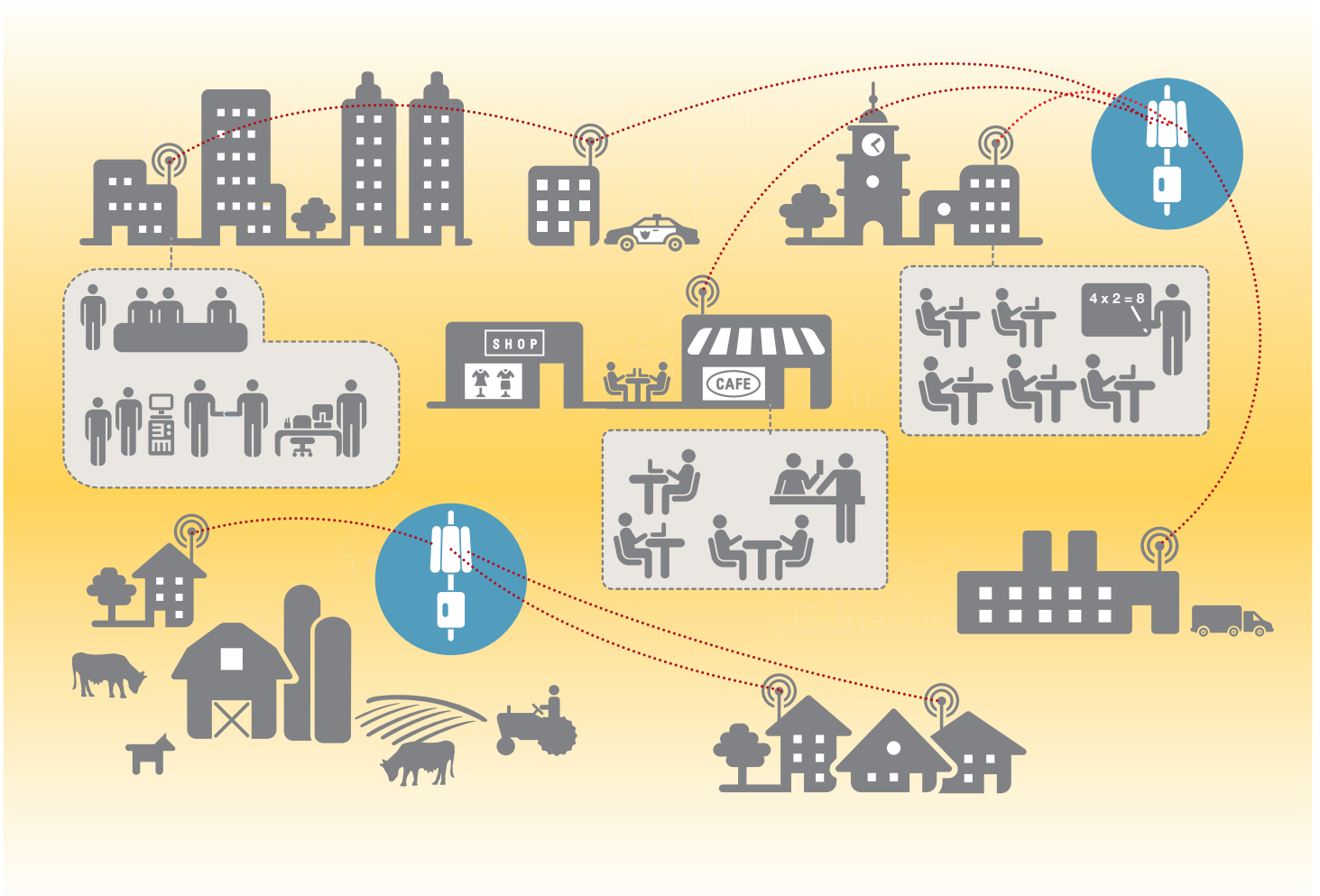


**Subscriber Module (SM)**



**Subscriber Module with Reflector**





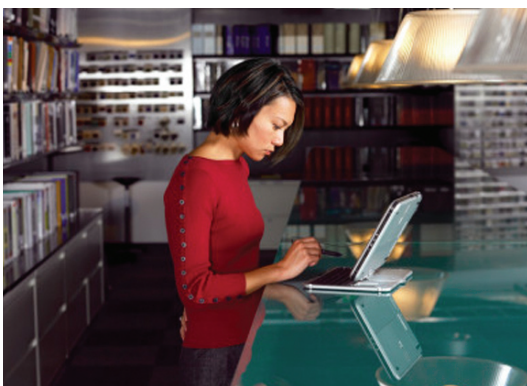
## Delivering Reliable, Cost-Effective High-Speed Connectivity to Multiple Locations

Wireless broadband is quickly becoming the world's preferred technology for enterprises, municipalities and service providers delivering advanced and in-demand IP-based voice, video and data applications. Motorola's Canopy Point-to-Multipoint solutions are leading the way with successful deployments all around the globe.

Canopy solutions deliver scalable, interference-resistant, high-speed connectivity to multiple residential, business, institutional and municipal locations. The platform combines exceptional reliability with robust performance, scalability, multiple layers of security, ease-of-use, accelerated deployment and remarkable affordability.

It also integrates seamlessly with existing network systems and management tools, making it easier and cost efficient to extend existing networks.

Maximizing the productivity of unlicensed wireless frequencies, Canopy solutions streamline the development, deployment, enhancement and extension of advanced IP-based wireless broadband networks. They excel at delivering ubiquitous high-speed connectivity and state-of-the-art services, and are currently helping drive successful business models as well as helping bridge the digital divide in more than 120 countries worldwide.





# Solutions That Speed Deployment and ROI Without Accelerating Costs

Motorola's Canopy solutions deliver the power, connectivity, high-demand services and cost-effectiveness that are crucial to increased return on investment and the ultimate success of virtually every wireless broadband network.

The platform combines superior broadband access performance with the flexibility to facilitate a wide range of commercial and private applications. The technology is designed to speed deployment and time to market, while helping control equipment, management and installation costs.

## Specific benefits include:

**Configuration Flexibility.** The Canopy solution offers flexible configuration options for adaptation to meet the needs and expectations of different customer environments ranging from businesses to schools to government and community networks. The system is an exceptionally efficient and affordable municipal, small business and enterprise application.

**Spectrum Options.** The Canopy system provides wireless broadband access in a wide variety of spectrum choices—including 900 MHz, 2.4, 5.1, 5.2, 5.4, 5.7 and 5.9 GHz—and helps ensure exceptional performance no matter which spectrum is best for your network.

**Fast Installation.** Its simple but elegant network design makes the Point-to-Multipoint Canopy system easier to install than most other networks. The solution features small cells that eliminate the need for coordination, and built-in installation and deployment assistance helps simplify every step of the deployment.

**Lower Costs.** The system makes broadband access to multiple locations extremely cost-effective. There are no major investments in equipment or software. The platform's exceptionally low acquisition, installation, operation and maintenance costs result in substantially lower cost of ownership.

## INCREASE CANOPY NETWORK EFFICIENCY WITH PRIZM EMS

The Prizm Element Management System is the optimum management platform for Canopy wireless networks. The system simplifies integration and aggregation of multiple networks with open, industry-standard interfaces, and enhances network value by delivering faster ROI with a payback period of months, not years.



# Enhancing the Business Case for Wireless Broadband Networks Around the World

Canopy Point-to-Multipoint solutions help provide the all-important user satisfaction, competitive differentiation and added revenue streams that are crucial to ensuring business growth, sustainability and ongoing success.

In addition to robust performance and proven reliability, Canopy solutions position network operators to offer today's—and tomorrow's—most innovative and sought-after applications such as high-speed Internet access, VoIP, video surveillance, interactive gaming and more. The system's high performance and extremely low latency of 5 to 7 milliseconds makes these high-demand technologies both efficient and cost-effective.

For networks of all kinds, Canopy solutions help deliver the crucial components of high satisfaction: service, security, productivity, affordability and enhanced user experience.

**Interference Resistance.** The solution's unique and powerful modulation scheme significantly improves the quality of data delivery and effectively mitigates interference from other systems of virtually every shape and spectrum. The system avoids self-interference by synchronizing all transmit and receive signals in the network via the Global Positioning System or GPS.

**Extended Coverage.** The Canopy platform's wireless signals are highly effective in line of sight (LOS) service in environments ranging from small communities to suburban areas to rural locations. Canopy equipment based on OFDM technology provides near-line of sight (nLOS) and non-line of sight (NLOS) coverage into urban and other environments that present significant obstruction challenges.

**Data Rates.** Canopy wireless broadband networks offer upload and download speeds as fast as or faster than virtually every other service available today. The Canopy system offers up to 21 Mbps (aggregate data rates). Of course, speeds on any network are affected by several factors so actual upload/download speeds may vary, but the potential to offer an incredible broadband experience is inherent in the system.

**Operating Ranges.** The platform offers superior broadband access for networks of various sizes and coverage areas. Because operating ranges are highly dependent on power levels, many of the system's components support adjustable power to meet specific network and regulatory requirements.

**Scalability.** The Canopy solution's advanced scalability allows you to quickly accommodate changing needs, wider geographical areas, larger populations and higher traffic volumes. In addition, its high tolerance for interference and directional antennas ensure that adding additional transmitters increases capacity without degradation of performance.

**Security.** The system provides multiple layers of security, including the over-the-air DES (Data Encryption Standard) encryption standard. For the highest-grade security, the platform is also available in some areas with AES (Advanced Encryption Standard) that provides 128-bit encryption to ensure secure data delivery and exceptional reliability. AES makes it virtually impossible to crack a code (it's estimated that it would take about 149 trillion years, a time period older than the Earth itself).

## **VIDEO SURVEILLANCE: SEEING IS PROTECTING**

For a variety of applications—including perimeter monitoring, access control, public and individual safety and more—video surveillance systems are rapidly becoming the technology of choice for a wide range of organizations. Canopy solutions provide a cost-effective, reliable backbone infrastructure for transporting any type of video, sound or data IP surveillance traffic that can dramatically improve protection of property, capital assets and personnel.



# Canopy Solutions Are Empowering Networks Around the Globe

Canopy Point-to-Multipoint solutions are proven in the world's toughest and most dense environments. Powering high-speed wireless networks in more than 4,000 systems around the world, Canopy solutions help specific countries and organizations in a myriad of diverse applications.

## **Michigan, USA.**

Replacing a Road Commission's costly telephone lines with high-speed wireless connectivity for collecting and sending traffic data.

## **Sergano, Italy.**

Enabling a small municipality to cost-effectively monitor local streets and areas to help reduce crime.

## **Macedonia.**

Quickly deploying the country's first wireless backbone network to deliver high-speed connectivity in both rural and urban areas nationwide.

## **Heart of China Railway Bureau.**

Upgrading rail station security monitoring in three coal-rich interior provinces.

## **Peru.**

Providing remote locations with high-speed communications for emergency first responders such as police and firefighters.

## **Kenya.**

Empowering corporate ISP AccessKenya to quadruple its business in just two years.

## **Rajastjan, India.**

Installing a wireless backbone network for connecting more than 10,000 local self-governing councils.

## **Australia.**

Helping ISP CommsLogic provide wireless broadband connectivity and VoIP service throughout the state of Queensland.







### Experience the Motorola Advantage

Motorola is one of the most trusted resources for wireless communication solutions around the world. Here are a few reasons why. First, Motorola's more than 75 years of RF innovation and leadership make us the world's most experienced wireless communication resource. Second, we offer a broad array of advanced technology options that are globally proven in the real world. Third, we support our customers with a rich portfolio of service solutions and support. Motorola's dedication to creating and maintaining trusted relationships over the long-term means providers and users alike are assured of high levels of worldwide support as their networks grow over the years.



**MOTOROLA**

Motorola, Inc. 1301 E. Algonquin Road, Schaumburg, Illinois 60196 U.S.A.

[www.motorola.com/motowi4](http://www.motorola.com/motowi4)

MOTOROLA and the stylized M Logo are registered in the U.S. Patent and Trademark Office. All other products or service names are the property of their registered owners.

© Motorola, Inc. 2008