

**MOTOROLA CANOPY™
FIXED WIRELESS
BROADBAND SOLUTION
BACKGROUNDER**



An Emerging Need

Access requirements and Internet usage vary widely across different communities, businesses and individual households, and the industry is beginning to see more diversity emerge in the delivery of telecommunications in order to meet those needs. At the same time, the high costs associated with licensing spectrum, running fiber and building large Internet access systems has left many communities and small businesses under- or unserved because it has been unprofitable to serve those markets, until now.

An Innovative Solution

The Motorola Canopy™ fixed wireless broadband solution allows community service providers to deliver always-on, high-speed Internet access to municipalities and enterprises, home offices, schools, hospitals and multi family homes as well as single family residences in rural areas and underserved markets.

As the world's leading supplier of digital cable set-tops and cable modems, Motorola is already a leader in end-to-end systems for the delivery of interactive digital video, voice and high-speed data solutions for broadband operators. The new Motorola Canopy system will support additional delivery options for areas where cable modem and DSL services are not available or deployment is not affordable or possible.

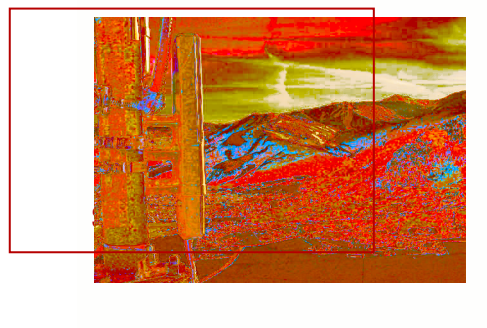
By operating in the unlicensed spectrum, Canopy allows community service providers to bypass infrastructure investments and spectrum licenses, significantly reducing the provider's start-up costs and the number of subscribers required to reach profitability.

Leading experts in RF technologies from Motorola and Motorola Labs developed the Canopy technology, commercially launched in June 2002. The Canopy system has been proven in the field since 2001, and there are now more than 23000 units shipped across seven countries.

Configuration

The Motorola Canopy system includes three elements: a small subscriber module, which is attached to the home or building; community-sized access points, which can be mounted on utility poles or water towers to distribute service to the surrounding community; and the backhaul unit, which can be used to provide bulk connectivity from a remote network to the access point site. The Canopy system uses Point-to-Point and Point-to-MultiPoint networks that can span distances ranging from two to 10 miles in a multipoint configuration, to as many as 35 miles in a Point-to-Point configuration.

The Canopy components are small, unobtrusive, easy to install and can serve a wide range of network purposes. A Canopy system can be deployed as a stand-alone system, or the Canopy elements can be used to extend the reach of wired IP distribution systems such as cable and DSL. Canopy elements also can serve as a redundant IP backhaul for enterprises and service providers.



Set Up & Deployment

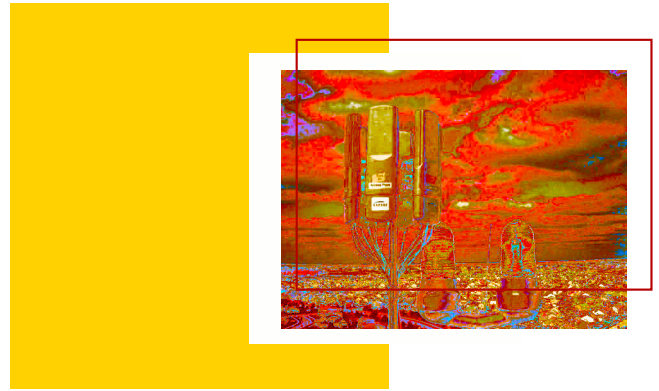
There is no need to integrate Canopy products with existing systems, eliminating potential network access complications. Canopy technology is compatible with Internet applications including IPv4, UDP, TCP, ICMP, Telnet, HTTP, FTP and SNMP. Network users do not need to install any special software. Individual units are connected via an Ethernet interface to the customer's computer or home network. A Canopy system can be configured to allow over-the-air software upgrades to provide new features for the access point modules, backhaul modules, and subscriber modules.

Reliability

Motorola's Canopy system uses network management tools and detects system outages to minimize downtime and operating costs. It is a distributed self-organizing system where functions such as frequency, time-slot allocation among cells, address translation and connectivity mapping are all implemented via algorithms in the individual radio/logic units, eliminating the need for expensive central management systems.

Speed and Cost Efficiency

With per-user measurable speeds of more than 6 Mbps, the Canopy system is faster than any other systems, including a wired T1. Its smart network design and small-sized



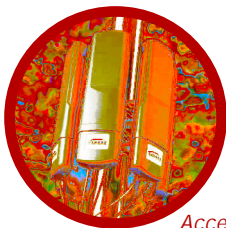
components make deployment and operation of a large wireless network, fast, easy and cost effective.

Security and Authentication

Sophisticated base-band processing and directional antennas enable the Canopy technology to virtually eliminate interference from other systems operating on the same frequency bands. To maintain privacy and security, the system comes equipped with an advanced over-the-air data encryption system (DES) providing cryptographically encoded communications. 128-bit authentication allows only authorized subscribers to gain service onto the Canopy network.

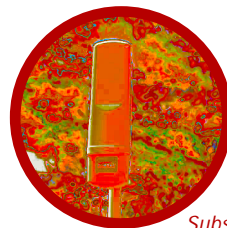
For more information visit — www.motorola.com/canopy

The Canopy system is comprised of three major components:



Access Point (AP)

The current AP implementation operates with a Radio Frequency (RF) signaling rate of 10Mbps per sector over a nominal communication range of two miles. Each transceiver operates with a 60-degree directional antenna to provide coverage to one sector. Each AP has approximately a two-mile reach, although the range can be extended up to 10 miles with the Canopy reflector kit.



Subscriber Module (SM)

The SM does not require any configuration by the subscriber. Once the SM is initiated, it scans the channels and automatically registers with an authenticated AP. The plug-and-play SM installation requires only Category 5 cable with DC power supplied through that cable. SMs may be located either indoors or outdoors.



Backhaul Unit (BU)

A wireless BU is a point-to-point option for carrying traffic to and from APs or other communication hubs when no fiber or cable connection is available. Each BU communicates with another single BU utilizing a directional antenna. In each BU link one device is configured as the RF timing master. This provision allows the BU to be synchronized to its attached AP to minimize interference.