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intelligence everywhere™

PROVIDE RELIABLE BROADBAND
SERVICE TO REMOTE CUSTOMERS WITH
CANOPY SYSTEM 900 MHz MODULES

Service providers need to deliver reliable, high-quality broadband service at a low investment to succeed in today's competitive marketplace. Motorola's Canopy system provides carrier and enterprise network operators a robust wireless broadband portfolio of products to deliver proven cost-effective, secure, carrier-grade broadband access exactly when and where it is needed.

Existing networks cannot reach many subscribers who are willing to pay for broadband service. Motorola's Canopy 900 MHz system now provides a 3.3 Mbps signaling rate with increased **Non-Line of Sight (NLOS)** performance to reach subscribers in areas with foliage. 900 MHz modules can also be used to reach sparsely populated areas with a **Line of Sight (LOS)** performance of more than 40 miles depending on specific conditions.
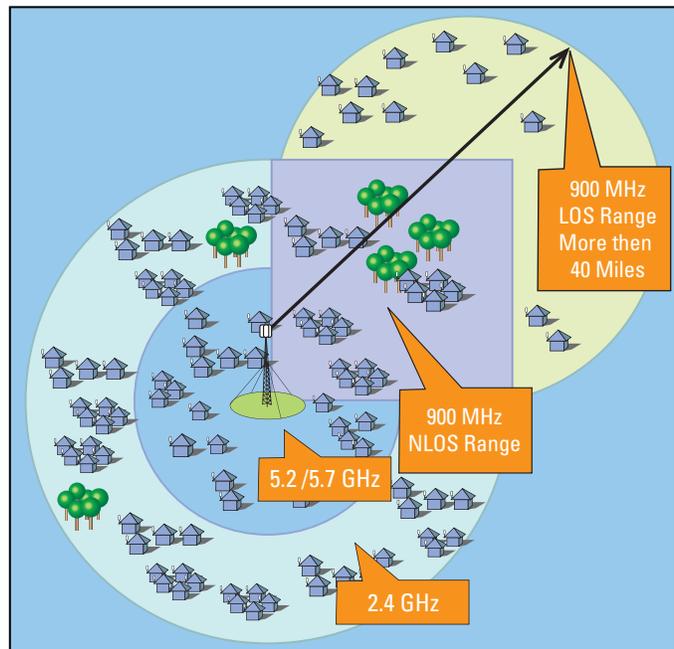
- **Carrier network operators** can enhance their customer base and revenue stream by expanding into sparsely populated or difficult to reach unserved markets hungry for broadband service.
- **Enterprise network operators** can reach remote locations at a fraction of the cost of deploying wireline broadband systems.

Image labels: 900 MHz LOS Range More then 40 Miles; 900 MHz NLOS Range; 5.2 /5.7 GHz; 2.4 GHz

OVERVIEW
The Canopy platform's flexible product design allows network operators to tailor installations to efficiently meet the bandwidth demand of remote business and residential subscribers. With Canopy system modules, subscribers to the edge of the network experience secure, reliable carrier-grade service. 900 MHz modules complement existing Canopy system networks by providing a reliable 3.3 Mbps signaling rate to those customers who are not able to be reached by 2.4 GHz, 5.2 GHz and 5.7 GHz networks.

900 MHZ MODULE APPLICATIONS
Add capacity in densely populated locations by deploying Canopy system 900 MHz Access Point and Subscriber Modules to complement existing 2.4 GHz, 5.2 GHz or 5.7GHz installations. Remote subscribers can be added to the network

quickly and with a minimum additional investment in equipment and labor.

Penetrate Foliage with increased NLOS performance to add subscribers in areas of foliage who are currently unreachable by current broadband wireless solutions. NLOS range is dependant on specific environmental conditions.

Reach Sparsely Populated Remote Areas with the long LOS range of the 900 MHz modules. Ranges reach more than 40 miles depending on specific conditions.

Extend the Existing Network by co-locating a 900 MHz Access Point module with an existing 2.4 GHz, 5.2 GHz or 5.7GHz SM to act as a Remote AP solution and efficiently provide coverage to areas that are difficult to reach due to foliage or other obstructions. This application is the most cost-effective means of reaching clusters of subscribers in remote areas or locations with foliage because it does not require a tower location or backhaul equipment.

900 MHZ SYSTEM BENEFITS

The Motorola Canopy system is a field-proven secure, scalable wireless broadband solution comprised of an array of modules that can be configured to meet the unique needs of service providers and enterprise network operators. The benefits of the Canopy system 900 MHz modules include the following:

- **Extend Broadband Network Coverage** to include subscribers in areas of foliage or sparsely populated remote areas.

- **Provide Secure Communications** with DES (Data Encryption Standard) encryption that provides 56-bit encryption or FIPS 197 certified AES (Advanced Encryption Standard) 128-bit encryption: the highest level of security for data communications.

- **Provide Reliable Service** by offering a consistent 3.3 Mbps signaling rate. The Canopy system's unique and powerful modulation scheme yields proven carrier-grade service and industry-leading interference tolerance.

- **Antenna Options** allow network operators to tailor the system to meet specific network and deployment requirements while leveraging the investment in equipment.

900 MHz System Features

Application	Encryption	Antenna	Signaling Rate	Range
Point-to-Multipoint	AES	Integrated	3.3 Mbps	More than 40 miles LOS depending on conditions
		External		
	DES	Integrated		
		External		

CANOPY SYSTEM ACCESS POINT MODULE 900 MHZ AP AND SM

Operating Frequency Range – ISM Band	902-928 MHz
Signaling Rate	3.3 Mbps at 2-level FSK
Carrier to Interference (C/I)	< 3 dB
Receiver Sensitivity	-90 dBm
Operating Range (all weather)	More than 64 km (40 miles) depending on conditions
DC Power	0.34 A @ 24 VDC = 8.2 W
Effective Isotropic Radiated Power (EIRP)	4W EIRP
Interface	10/100 Base T, half/full duplex. Rate auto negotiated (802.3 compliant)
Protocols Used	IPV4, UDP, TCP, ICMP, Telnet, HTTP, FTP, SNMP
Encryption	AES (FIPS 197 compliant), DES standard
Modulation Type	High index binary (2-level) Frequency Shift Keying (BFSK) optimized for interference rejection
Non-overlapping channels	3 non-overlapping, 8 MHz-wide channels
Access Method	Time Division Duplexing / Time Division Multiple Access (TDD/TDMA)
Network Management	HTTP, TELNET, FTP, SNMP Version 2C
Operating Temperature	-40° C to +55° C (-40° F to +131° F)

> The Motorola Canopy 900 MHz Integrated module has not been authorized as required by the rules of the Federal Communications Commission. This device is not, and may not be, offered for sale or lease, or sold or leased, until authorization is obtained.

CANOPY ACCESS POINT ANTENNA OPTIONS

Canopy system 900 MHz Access Point Modules are equipped with an integrated 60° antenna, or come designed with a standard N-Type connector to allow network operators to equip modules with either directional or omni-directional antennas to meet specific requirements.

STANDARD INTEGRATED ANTENNA

Antenna Beam Width — 60° beam width azimuth and 34° elevation ~12.5 dBi

OPTIONAL ANTENNAS

Directional — 60° beam width azimuth and elevation ~10 dBi

CANOPY ACCESS POINT FILTER OPTIONS

Motorola offers optional filters to that Canopy system 900 MHz Access Point Modules can be mounted near interference-prone environments.

For more information about how the Canopy system can extend your network and services, provide competitive advantage and outstanding ROI, call
800-377-2929
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