

OFDM Backhauls 30, 60 & 300 Mbps

Motorola's Canopy™ Wireless Broadband

DATA SHEET



BENEFITS

The benefits of the Canopy OFDM Backhauls include:

- **Increased Performance Levels.** The OFDM Backhauls deliver exceptional link reliability and performance in noisy RF conditions and challenging nLoS and NLoS environments.
- **Eliminates Monthly Recurring Costs:** The E1/T1 voice transport eliminates recurring monthly costs by pairing a wireless link with Canopy's T1/E1 Multiplexer where applicable. The 300 Mbps has two T1/E1s built into the unit.
- **Lessens Tower Space Requirements.** The modules small footprint and power over Ethernet means that operators don't have to use up valuable tower space.
- **Reduces Overall Operating Costs** by enabling operators to remotely manage, monitor and optimize link performance.
- **Connect Around Obstructions** to establish a high-throughput link to transport latency sensitive voice, video and data.

Features

- **Highly Effective** in challenging environments to establish a reliable link in adverse conditions over hills, around buildings, through trees and over water.
- **Long Range capabilities** to reduce the number of hops required to establish a robust link saving money and lowering latency.

- **Multi-Beam Space Time Coding** transmits two redundant signals spaced in time to bring multi-path signals into phase resulting in less fade margins (9 dB versus 40 dB fade margin) than conventional radios.
- **TDM Mode** optimizes radio performance to deliver quality T1/E1 voice when used along with the Canopy T1/E1 Multiplexer.
- **Interference Mitigation Techniques** provides reliable signal quality.
- **Adaptive Modulation** ensures maximum throughput and link integrity optimized for the radio path even as path characteristics change.
- **Dynamic Frequency Selection (DFS)** automatically changes channels to avoid interference and combat link fading without user intervention. The OFDM radios monitor the entire band 400 times per second, log the interfering channels and if interference is encountered automatically switch to a clean channel. The radios can operate on different channels at each end and still connect. The 30 & 60 Mbps modules employ 12 MHz channels while the 300 Mbps modules make use of 30 MHz channels.
- **Built-in Security** protection via a complex proprietary signal with scrambling applied.

MOTOwi4 Backhaul Solutions for the Most Challenging Locations & Applications

The MOTOwi4 Backhaul portfolio helps enterprise users, service providers and carriers to establish highly reliable and secure point-to-point wireless backhaul links while taking advantage of the 5.7 GHz frequency band to help lower operating costs. With Motorola's Canopy OFDM Backhauls, available in 30, 60 & 300 Mbps, users can achieve more throughput and reach further distances in Line-of-Sight (LoS) environments and establish reliable links in challenging near-LoS and Non-LoS conditions.

The Canopy system takes advantage of the increased bandwidth to enable operators to transmit IP data, VoIP, video and channelized voice for a

broad array of applications, including:

- **Uniting Campuses** with High Bandwidth Requirements
- **Providing the Backbone** for Canopy Access Point Clusters and Metro WiFi Networks
- **Backhauling Cellular Systems**
- **Replacing Fiber Networks**

The Canopy OFDM Backhauls use multiple receivers and transceivers in a dual polarized configuration and are available with an integrated or connectorized antenna. The connectorized antenna provides a higher gain and therefore enables reliable communications over long distances including open expanses of water.

Seamless Integration — the Canopy OFDM Backhauls integrate seamlessly with the MOTOwi4 solutions including WiMAX, Metro WiFi and today's Canopy solutions.

Components

Each end of the Canopy OFDM Backhauls includes an outdoor unit and a small powered indoor unit, mounting equipment and embedded web servers to manage the link either directly or remotely.

Outdoor Unit

The integrated outdoor unit is a small, durable, lightweight radio that contains all the required RF and networking elements necessary to establish highly reliable connections. This includes dual polarized antennas with two transmitters and receivers as well as digital signal processors. The connectorized unit provides 2 N-type connections for external antennas. The outdoor unit connects via a single RJ-45 (CAT5) cable to the indoor unit that supplies power.

The Canopy 30 & 60 Mbps Backhauls contain a single drop cable (Power over Ethernet) configuration to enhance simplicity of use and reduce cable cost. The Canopy 300 Mbps Backhaul has an outdoor casing that allows a rich array of supported interfaces and configuration options, such as:

- Gigabit Copper Ethernet (1000BaseT)
- Gigabit Optical Ethernet (1000BaseSX)
- Dual T1/E1 Interface
- Power over Gigabit Ethernet

Powered Indoor Unit

The indoor unit supplies power, -48V DC and AC, to the outdoor unit and is extremely lightweight. The unit is a wall-mountable box and takes up no rack space. The indoor unit has two LEDs: a power LED that indicates the unit is powered up and working and an Ethernet LED that indicates when data is being transferred.

Installation

Initial setup for the Canopy OFDM Backhaul is easy and ideally suited for space-constrained and aesthetically challenging environments.

Each pair of outdoor units is preset with its own built-in IP address as well as the MAC address of the outdoor unit to which it will connect. The preset addresses enable the link's security features and allow the two units to communicate only with each other. Alignment is virtually "power up and point." Wide-beam seven-degree antennas make it easy to establish the initial connection.

For more information and detailed specifications about the Canopy OFDM Backhauls; call 866-515-5825 in the U.S. 800-795-1530 internationally, visit us online at www.motorola.com/canopy or contact your Authorized Canopy Solution Provider.



30/60 and 300 Mbps Backhaul Integrated Antenna



30/60 and 300 Mbps Backhaul Connectorized Antenna*



* Connectorized Antennas sold separately.

See User Guide for a complete list of FCC approved 1-2' Flat Panels and 2-6' Parabolic Antennas.

