

# Motorola Canopy™ Wireless Broadband System

*(Can be configured for either Point-to-Point or Point-to-Multipoint)*

A Canopy™ System is based on a wireless broadband technology that provides for high-speed Internet access and was designed to provide cost-effective, “last-mile” high speed data access for customers who previously were underserved or lived in locations where infrastructure is non-existent. It may also be used in urban areas for specialized applications such as T1 redundancy. The Canopy system uses Point-to-Point and Point-to-Multipoint networks that can span distances ranging from two to 40 miles in a multipoint configuration, to as many as 80 miles in a Point-to-Point configuration.\* The basic building blocks of a Canopy system are:

- Access Point (AP) – easily interfaces with your existing Local Area Network (LAN).
- Backhaul Unit (BH) – provides Internet “feed” from a remote location.
- Subscriber Module (SM) – the Internet access receiver is small and easy to install; there’s no obtrusive equipment.

The Access Point and Subscriber Modules are compact and are designed to be mounted outdoors, so there is no need to run overhead and in-ground wire or microwave. And there’s no additional software for you to install, further limiting exposure to error.

The Canopy solution also delivers outstanding performance using a modulation scheme that improves the quality of data delivery and mitigates interference from other systems. Motorola’s Canopy platform offers security with over-the-air encryption that scrambles data bits and helps prevent interception, so data delivery with the Canopy solution is very reliable.

- Point-to-point configuration\*\* up to 10-80 miles at 7.5 - 33.6 Mbps
- Point-to-multipoint configuration\*\* up to 2-40 miles at 2.2 - 6 Mbps



\*Motorola Canopy™ Wireless Broadband System 5.7 GHz backhaul with reflector kit

\*\* At time of order product will be configured to user specifications

# Motorola Canopy™ Wireless Broadband System Specifications

PRODUCT	Canopy Access Point	Canopy Subscriber Module	Canopy Backhaul Module
<b>MOTOROLA PART #</b> 2.4 GHZ	HK1068A DES	HK1067A DES	HK1069A DES 10 Mbps HK1070A DES 10 Mbps with reflector kit HK1071A DES 20 Mbps HK1072A DES 20 Mbps, with reflector kit HK1075A AES 10 Mbps HK1076A AES 10 Mbps with reflector kit
	HK1074A AES <sup>1</sup>	HK1073A AES <sup>1</sup>	
5.2 GHZ	HK1023A DES	HK1022A DES	HK1035A DES 10 Mbps HK1085A DES 10 Mbps Extended Range Backhaul with reflector kit HK1087A DES 20 Mbps Extended Range Backhaul with reflector kit HK1061A AES 10 Mbps <sup>1</sup> HK1086A AES 10 Mbps Extended Range <sup>1</sup> Backhaul with reflector kit
	HK1060A AES <sup>1</sup>	HK1059A AES <sup>1</sup>	
5.7 GHZ	HK1025A DES	HK1024A DES	HK1026A DES 10 Mbps with reflector kit HK1036A DES 20 Mbps with reflector kit HK1065A AES 10 Mbps with reflector kit <sup>1</sup>
	HK1064A AES <sup>1</sup>	HK1028A DES with reflector kit HK1063A AES <sup>1</sup>	RDH4378A* DES 45 Mbps RDH4393A** DES 45 Mbps
900 MHZ	HK1105* DES    HK1106* AES HK1107** DES    HK1108* AES	HK1101* DES    HK1102* AES HK1103** DES    HK1104** AES	
<b>OVER THE AIR DATA RATE</b>	10 Mbps at 2.4, 5.2, 5.7 GHz; NA @ 900 MHz	10 Mbps at 2.4, 5.2, 5.7 GHz; NA @ 900 MHz	10, 20 or 45 Mbps
<b>AGGREGATE THROUGHPUT RANGE</b>	6 Mbps at 2.4, 5.2, 5.7 GHz; 2.2 Mbps @ 900 MHz	4 Mbps at 2.4, 5.2, 5.7 GHz; 2.2 Mbps @ 900 MHz	7.5, 14, 27, or 33.6 Mbps
<b>FREQUENCY ACCESS METHOD</b>	Available in 2.4, 5.2, 5.7 GHz or 900 MHz	Available in 2.4, 5.2, 5.7 GHz or 900 MHz	Available in 2.4 GHz or 5.2 GHz or 5.7 GHz
<b>INTERFACE</b>	Time Division Duplex (TDD) Time Division Multiple Access (TDMA)	Time Division Duplex (TDD) Time Division Multiple Access (TDMA)	Time Division Duplex (TDD)
<b>SOFTWARE UPGRADE PATH</b>	10/100 BaseT, half/full duplex — Rate auto negotiated (802.3 compliant)	10/100 BaseT, half/full duplex — Rate auto negotiated (802.3 compliant)	10/100 BaseT, half/full duplex — Rate auto negotiated (802.3 compliant)
<b>NETWORK MANAGEMENT</b>	Remotely downloaded into FLASH via RF link	Remotely downloaded into FLASH via RF link	Remotely downloaded into FLASH via RF link
<b>POWER SUPPLY</b>	HTTP, TELNET, FTP, SNMP	HTTP, TELNET, FTP, SNMP	HTTP, TELNET, FTP, SNMP
<b>AC POWER</b>			
<b>DC POWER (TO UNIT)</b>	n/a	n/a	n/a
<b>POWER CONNECTOR</b>	0.30 Amp @ 24 VDC (7.2 watts) typical, 8.4 Watts max.	0.30 Amp @ 24 VDC (7.2 watts) typical	0.30 Amp @ 24 VDC (7.2 watts) typical, 8.4 Watts max.
<b>ENVIRONMENTAL</b>	n/a	n/a	n/a
<b>WIND SURVIVAL</b>			
<b>OPERATING TEMPERATURE</b>	190 km/hr (118 mph)	190 km/hr (118 mph)	190 km/hr (118 mph)
<b>PHYSICAL SPECIFICATIONS</b>	-40°C to +55°C (-40°F to +131°F)	-40°C to +55°C (-40°F to +131°F)	-40°C to +55°C (-40°F to +131°F)
<b>WEIGHT</b>			
<b>DIMENSIONS (H X W X L)</b>	0.45 kg (1 lb.)	0.45 kg (1 lb.)	Canopy Backhaul Module with Passive Reflector 3 kg (6.5 lbs.)
<b>SHIPS WITH</b>	29.9 cm x 8.6 cm x 8.6 cm (11.75" x 3.4" x 3.4")	29.9 cm x 8.6 cm x 8.6 cm (11.75" x 3.4" x 3.4")	29.9 cm x 8.6 cm x 8.6 cm (11.75" x 3.4" x 3.4") without reflector
<b>SECURITY</b>	Power supply <sup>2</sup>	Power supply <sup>2</sup>	Power supply <sup>2</sup>
<b>COMPLIANCE</b>	Available in DES or AES <sup>1</sup> See part numbers listed above	Available in DES or AES <sup>1</sup> See part numbers listed above	Available in DES or AES <sup>1</sup> See part numbers listed above
	UL Approved <b>FCC IDs:</b> 2.4 GHz ABZ89FC5808, 5.2 GHz ABZ89FC3789 5.7 GHz ABZ89FC5804, 900 MHz ABZ89FC5809 <b>Industry Canada Certification Numbers:</b> 2.4 GHz 109W-2400, 5.2 GHz 109W-5200 5.7 GHz 109W-5700, 900 MHz 109W-9000	UL Approved <b>FCC IDs:</b> 2.4 GHz ABZ89FC5808, 5.2 GHz ABZ89FC3789 5.7 GHz ABZ89FC5804, 900 MHz ABZ89FC5809 <b>Industry Canada Certification Numbers:</b> 2.4 GHz 109W-2400, 5.2 GHz 109W-5200 5.7 GHz 109W-5700, 900 MHz 109W-9000	UL Approved <b>FCC IDs:</b> 2.4 GHz ABZ89FC5808, 5.2 GHz ABZ89FC3789, Extended Range Backhaul ABZ89FC5807, 5.7 GHz ABZ89FC5804 <b>Industry Canada Certification Numbers:</b> 2.4 GHz 109W-2400, 5.2 GHz 109W-5200 Extended Range Backhaul 109W-5210, 5.7 GHz 109W-5700

<sup>1</sup> Ships standard with integrated antenna.  
<sup>2</sup> Available with optional connectorized antenna.

<sup>1</sup> All components in the Motorola Canopy System must be AES compatible.  
<sup>2</sup> Other components may be required, depending upon application and/or system configuration.



## Motorola Canopy™ Wireless Broadband System Specifications

	CMMmicro	CLUSTER MANAGEMENT MODULE (CMM)
<b>PART NUMBER</b>	RDH4370A	HK1029A
<b>MANAGED SWITCH</b>	Yes	No
<b>DIMENSIONS</b>	12.00" x 10.00" x 3.00" (30.3 cm x 25.2 cm x 7.7 cm)	17.00" x 12.88" x 6.50" (43.18 cm x 32.72 cm x 16.51 cm)
<b>WEIGHT</b>	8 lb (Approx. 3.5k)	25 lb (Approx. 11k)
<b>CABLES REQUIRED PER CONNECTED CANOPY MODULE</b>	1	2
<b>ETHERNET PORTS FOR CANOPY MODULES</b>	8	8
<b>SEPERATE ETHERNET FEED PORTS</b>	0	1
<b>MAINTENANCE PORTS</b>	0	1
<b>TOTAL PORTS</b>	8	10
<b>CONFIGURATION LIMITS OR CONDITIONS</b>		
<i>MAX LENGTH ANY ONE RADIO CAN BE FROM CLUSTER MANAGEMENT MODULE</i>	328 cable feet (100 m)	328 cable feet (100 m)
<i>MAX LENGTH FROM CLUSTER MANAGEMENT MODULE TO GPS ANTENNA</i>	100 cable feet (30.5 m)	100 cable feet (30.5 m)
<i>OPERATING TEMPERATURE</i>	-40°F to +131°F (-40°C to +55°C)	-40°F to +131°F (-40°C to +55°C)
<i>OVERALL</i>		Meets CE IP44 according to EN60529:2000
<b>POWER</b>	AC to DC converter provided, but not in enclosure – intended to be mounted in electronics hut or customer provided enclosure	AC to DC converter provided, mounted in enclosure
<i>AC INPUT VOLTAGE</i>	100 V – 240 V ~, no setting required	100 V – 240 V ~, 0.7 A – 0.35 A. Note: Applying 230 V to a unit which is set to 115 V may damage the unit
<i>AC FREQUENCY</i>	50 Hz to 60 Hz	50 Hz to 60 Hz
<i>AC INPUT POWER</i>	Maximum 92 watts with 8 modules connected to the CMM at maximum cable length	Maximum 92 watts with 8 modules connected to the CMM at maximum cable length
<i>DC VOLTAGE</i>	21.5 to 26.5 V DC, measured at CMM	17 to 32 V DC, measured at CMM
<i>DC POWER</i>	Maximum 81 watts with 8 modules connected to the CMM at maximum cable length	Maximum 84 watts with 8 modules connected to the CMM at maximum cable length





## Motorola Canopy™ Wireless Broadband System Accessories\*

	PART NUMBER
Reflector Hardware Kit	RDN9720A
Universal Mounting Bracket	RDN9721A
110 VAC Single XCVR Power Supply	RDN9722A
220 VAC Single XCVR Power Supply	RDN9723A
Ethernet Surge Suppressor	RDH4208A
CAT5 Cable Tester	RDN9811A
8-Port Ethernet & Power Surge Suppressor (NEMA enclosure)	RRDN4115A
8-Port GPS Surge Suppressor (NEMA Enclosure)	RRDN4114A
Audio Alignment Headset	RLN5635A

\* Not required for all configurations.  
See your Motorola representative to determine the solution that's right for your organization.

**For more information, contact:**

