

# PMP 450 MicroPoP

## Fixed Wireless Access Point

The Cambium Networks 450 platform adds another tool to more completely connect hard-to-reach subscribers with the affordable MicroPOP Access Point.

### QUICK LOOK:

- **Ultra-wide band radios: 4.9 GHz to 5.925 GHz**
- **Capable of up to 300 Mbps aggregate in a 40 MHz channel**
- **Onboard GPS to provide synchronization with network**



### KEY FEATURES

- Software-defined, purpose-built technology.
- Gigabit Ethernet Interface provides the maximum transfer rates to the device.
- Limited to 20 Subscribers and 2 miles range, but can be extended to 238 SMs and maximum range via license key.
- New System on a Chip (SoC) enhances Packet Processing Power more than 4x that of the original 450 hardware.
- Integrates seamlessly with existing 450 platform devices to extend coverage to obstructed or hard-to-reach areas, affordably.
- Centralized cloud management using **cnMaestro™**.
- Features fully scheduled deterministic TDD, with low and consistent latency to perform under load.

## PMP 450 MicroPoP Fixed Wireless Access Point

### Product

	RoW	FCC	ISED	EU	No Encryption
<b>Omni (9 dBi)</b>	C050045A201A	C050045A202A	C050045A203A	C050045A204A	C050045A205A
<b>Sector (13 dBi)</b>	C050045A206A	C050045A207A	C050045A208A	C050045A209A	C050045A210A

**License Key (Global) C000045K201A**

### Spectrum

<b>Channel Spacing</b>	Configurable on 2.5 MHz increments
<b>Frequency Range</b>	4900 - 5925 MHz
<b>Channel Width</b>	5 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz

## Specifications

### Interface

<b>MAC (Media Access Control) Layer</b>	Cambium Networks proprietary
<b>Physical Layer</b>	2x2 MIMO OFDM
<b>Ethernet Interface</b>	100/1000BaseT, full duplex, rate auto negotiated, 802.3 compliant
<b>Protocols Used</b>	IPv4, IPv6, UDP, TCP/IP, ICMP, Telnet, SNMP, HTTP, FTP
<b>Network Management</b>	IPv4/IPv6 (dual stack), HTTP, HTTPS, Telnet, FTP, SNMPv2c and v3, Cambium Networks cnMaestro™
<b>MTU</b>	1700 bytes
<b>VLAN</b>	802.1ad (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID

### Security

<b>Encryption</b>	FIPS-197 128-bit AES, 256-bit AES ( <i>Requires Optional License</i> )
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### Performance

<b>ARQ</b>	Yes
<b>Subscribers Per Sector</b>	Up to 20 (Optional license key available to allow up to 238)
<b>Modulation Levels (Adaptive)</b>	<b>MCS</b>
2x	QPSK
4x	16QAM
6x	64QAM
8x	256QAM
<b>Signal to Noise Required (SNR, in dB)</b>	
	10
	17
	24
	32
<b>Ultimate Sensitivity</b>	-94 dBm
<b>Maximum Deployment Range</b>	Up to 3.2 km (2 mi) - Optional license key to allow up to 64 km (40 mi)
<b>Latency</b>	3 - 5 ms, typical
<b>GPS Synchronization</b>	Yes, supported by embedded GPS module or Cambium Synch via PoE
<b>Quality of Service</b>	Diffserve QoS

### Physical

	<b>Omni (9 dBi)</b>	<b>Sector (13 dBi)</b>
<b>Surge Suppression</b>	EN 61000-4-5: 10x700us, 4Kv, EN 61000-4-2: ESD 30kV contact / 30kV air	EN 61000-4-5: 10x700us, 4Kv, EN 61000-4-2: ESD 30kV contact / 30kV air
<b>Mean Time Between Failure</b>	>40 Years	>40 Years
<b>Environmental</b>	IP67	IP67
<b>Temperature / Humidity</b>	-40°C to 60°C (-40°F to 140°F), 0-100% non-condensing	-40°C to 60°C (-40°F to 140°F), 0-100% condensing
<b>Weight</b>	1.2 kg (includes mounting bracket)	2 kg (includes mounting bracket)
<b>Wind Survival</b>	200 kph (124 mph)	200 kph (124 mph)
<b>Dimensions (H x W x D)</b>	56 x 9 x 9 cm (22 x 3.5 x 3.5 in), mount standoff 11 cm (4.3 in)	31 x 17 x 10 cm (12 x 6.7 x 3.7 in), mount standoff 11 cm (4.3 in)
<b>Power Consumption</b>	9 W typical, 12 W peak	9 W typical, 12 W peak
<b>Input Voltage</b>	46-59 V DC, 802.3af compatible	46-59 V DC, 802.3af compatible

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### Physical

	Omni (9 dBi)	Sector (13 dBi)
<b>Integrated Antenna Peak Gain</b>	9 dBi	13 dBi
<b>3 dB Beamwidth - Azimuth</b>	360°	90°
<b>3 dB Beamwidth - Elevation</b>	12°	10°
<b>Polarization</b>	Dual linear, H + V	Dual linear, H + V
<b>Front-To-Back Isolation</b>	N/A	>28 dB
<b>Cross Polarization</b>	15 dB	15 dB

### Link Budget

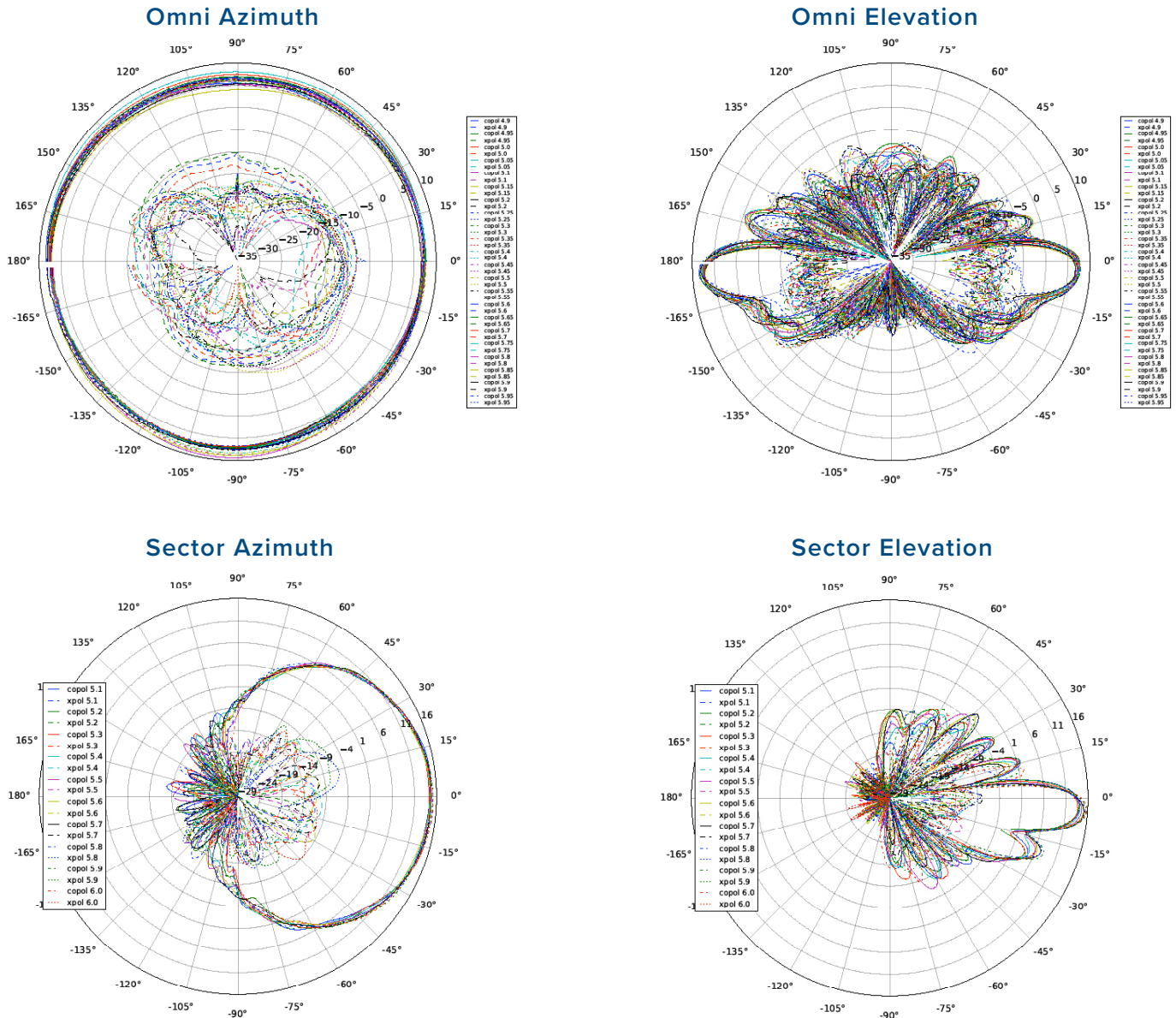
<b>Transmit Power Range</b>	56 dB dynamic range (to EIRP limit by region) (1 dB step)
<b>Maximum Transmit Power</b>	+27 dBm (MIMO, combined V+H) (+22 dBm @ 256QAM)
<b>Power Control</b>	ATPC (Automatic Transmit Power Control) at system level, all Subscribers implement ATPC

### Certifications

	Omni (9 dBi) / Sector (13 dBi)
<b>ISED Canada</b>	109W-0032
<b>FCC ID</b>	Z8H89FT0032
<b>ETSI</b>	EN 301 893 v2.1.1
	EN 301 502 v2.1.1

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## Antenna Patterns



### ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.