

PMP 450i Fixed Wireless Access Point

QUICK LOOK:

Cambium Networks industry-leading 450 platform includes the all new PMP 450i and PTP 450i radios. The 450i product platform is the most scalable industrial-grade wireless broadband solution available.

- **Ultra-wide band radios:
5 GHz or 3 GHz**
- **Rugged metal enclosure**
- **2x2 OFDM MIMO radio capable
of up to 300 Mbps per sector**



ULTRA-WIDE BAND RADIOS

Supports the entire band, whether in 5 GHz or 3 GHz. Advanced radio design improves transmit power and increases receive sensitivity.

RUGGED METAL ENCLOSURE

Designed to meet IP-66 and IP-67 standards to withstand harsh environments. Optional ATEX/HAZLOC certified models available for hazardous deployments.

DYNAMIC INTERFERENCE FILTERING

Provides industry-leading noise isolation for improved performance.

UPDATED FPGA AND SOC ARCHITECTURE

Triplies the processing power compared to PMP 450.

MULTIFUNCTION AUX PORT

Allows for greater flexibility for deployment by adding a camera or other PoE directly.

OPTIONS FOR INTEGRATED 90° SECTOR ANTENNA

optimized for frequency re-use (>35 dB F/B), high gain, null fill and predictable performance, or Integrated 10° sector antenna for highly directional sectors.

INCREASE THROUGHPUT

Now capable of up to 300 Mbps per sector in a 40 MHz channel.

PMP 450i Fixed Wireless Access Points

Product		RoW	US	ISED	EU	No Encryption
5 GHz Model Numbers	Connectorized	C050045A001B	C050045A002B	C050045A015B	C050045A003B	C050045A004B
	Connectorized - Lite*	C050045AL01B	C050045AL02B	C050045AL15B	C050045AL03B	C050045AL04B
	Integrated 10° sector	C050045A046B	C050045A047B	C050045A048B	C050045A049B	C050045A050B
	Integrated 90° sector	C050045A005B	C050045A006B	C050045A016B	C050045A007B	C050045A008B
	Integrated 90° sector - Lite*	C050045AL05B	C050045AL06B	C050045AL16B	C050045AL07B	C050045AL08B
3 GHz Model Numbers	Connectorized	C030045A001A	C030045A001A	C030045A001A	C030045A001A	C030045A003A
	Connectorized - Lite*	C030045AL01A	C030045AL01A	C030045AL01A	C030045AL01A	C030045AL03A
	Integrated 90° sector	C030045A002A	C030045A002A	C030045A002A	C030045A002A	C030045A004A
	Integrated 90° sector - Lite*	C030045AL02A	C030045AL02A	C030045AL02A	C030045AL02A	C030045AL04A

*Lite models limited to 20 Subscribers

Spectrum

Channel Spacing	Configurable on 2.5 MHz increments, 3 GHz customizable to 50 KHz	
Frequency Range	3 GHz: 3300 - 3900 MHz	5 GHz: 4900 - 5925 MHz
Channel Width	5 MHz, 7 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz	5 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz



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Specifications

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

Performance		
Subscriber Per Sector	Up to 238 - *Lite models limited to 20 Subscribers, License Key (C000045K010A) available to remove this limit	
ARQ	Yes	
Modulation Levels (Adaptive)	MCS	Signal to Noise Required (SNR, in dB)
2x	QPSK	10
4x	16QAM	17
6x	64QAM	24
8x	256QAM	32
Maximum Deployment Range	Up to 40 miles (64 km)	
Latency	3 - 5 ms, typical	
GPS Synchronization	Yes, via Autosync (CMM5 or UGPS)	
Quality of Service	Diffserve QoS	

Link Budget	
Integrated Sector Antenna	90° Azimuth, 8° Elevation (3dB rolloff), 2° Electrical Downtilt, Dual polarity, or 10° Azimuth, 10° Elevation (3dB rolloff), Dual polarity
Antenna Gain	17 dBi ± integrated 90° sector , 23 dBi ± 1 dBi integrated 10° sector
Maximum Transmit Power	+28 dBm (MIMO, Combined H+V) (+25 dBm for 3 GHz) (may be limited by regulations)
Maximum EIRP	+43 dBm combined output (may be limited by regulations)
VSWR	1.5, Reflection Coefficient 0.2, Reflected Power 4%, Return Loss 14 dB
Power Control	ATPC (Automatic Transmit Power Control) at system level, all Subscribers implement ATPC

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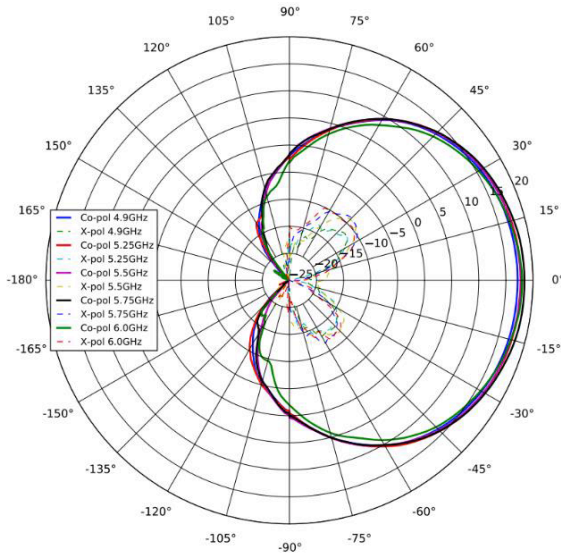
Physical			
		3 GHz	5 GHz
Antenna Connection	50 ohm, N-Type (Connectorized version only)		
Surge Suppression (LPU fitted)	EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A		
Mean Time Between Failure	>40 Years		
Dust and Water Ingress Protection Rating	IP67, IP66		
Temperature / Humidity	-40°C to +75°C (-40°F to +167°F), 0-100% condensing		
Weight	Connectorized	Approx. 2.0 kg (4.5 lbs)	Approx. 2.0 kg (4.5 lbs)
	Integrated	Approx. 7 kg (15.5 lbs)	Approx. 6.8 kg (15 lbs)
Wind Survival	322 km/h (200 mi/h)		
Vibration	NEMA TS2 Section 2.1.9 and Section 2.2.3		
Shock	NEMA TS2 Section 2.1.10 and Section 2.2.4		
External Icing	NEMA 250-2003 Section 5.6		
Dimensions (H x W x D)	Connectorized	26.0 x 13.4 x 6.4 cm (10.3" x 5.3" x 3.3")	26.0 x 13.4 x 6.4 cm (10.3" x 5.3" x 3.3")
	90° Integrated	73.2 x 19.7 x 15 cm (28.8" x 7.8" x 5.9")	59.5 x 15.7 x 15.5 cm (23.4" x 6.2" x 6.1")
	10° Integrated	—	31.0 x 31.0 x 6.4 cm (12" x 12" x 2.5")
Power Consumption	15 W typical, 18 W max, Using Aux port PoE for another device will increase power draw		
Input Voltage	48-59 V DC, 802.3at compatible		

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

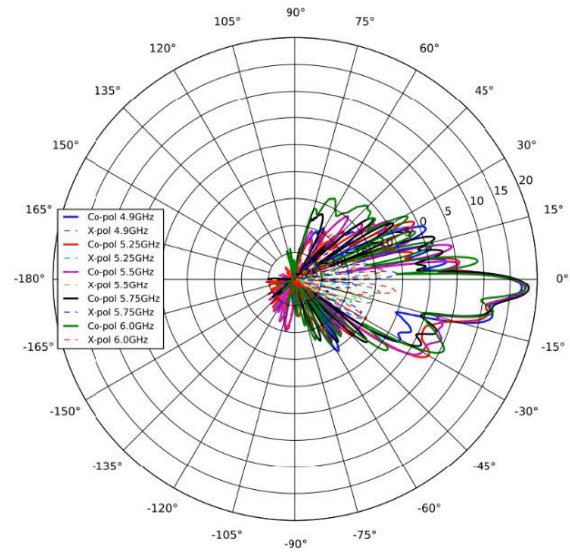
Certifications		
	3 GHz	5 GHz
ISED Canada	109W-0028	109AO-50450I
FCC ID	Z8H89FT0028	QWP-50450I
CE	EN 302 326-2 v1.2.2	EN 301 893 v2.1.1
		EN 302 502 v2.1.1

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5 GHz Antenna Pattern for 90° Integrated Sector

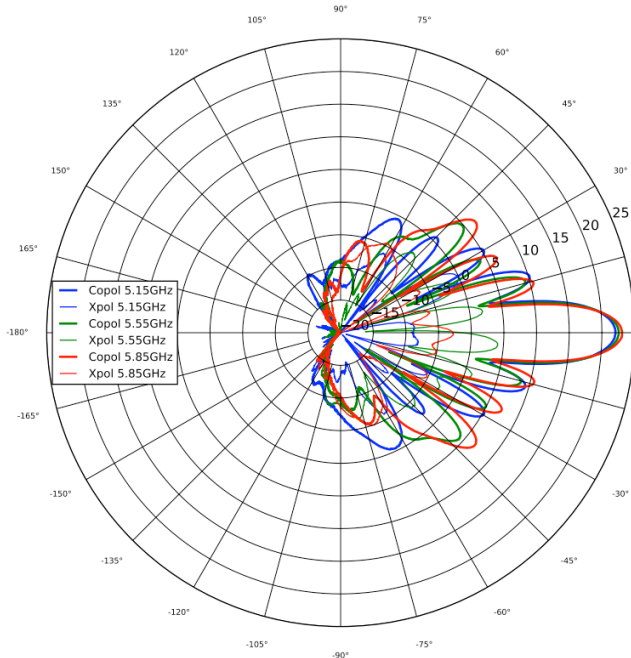


5 GHz Azimuth

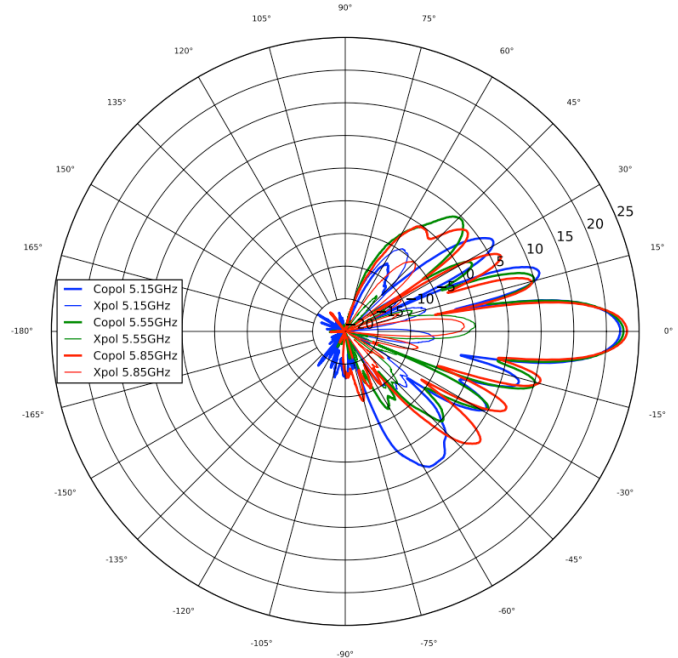


5 GHz Elevation

5 GHz Antenna Pattern for 10° Integrated Sector



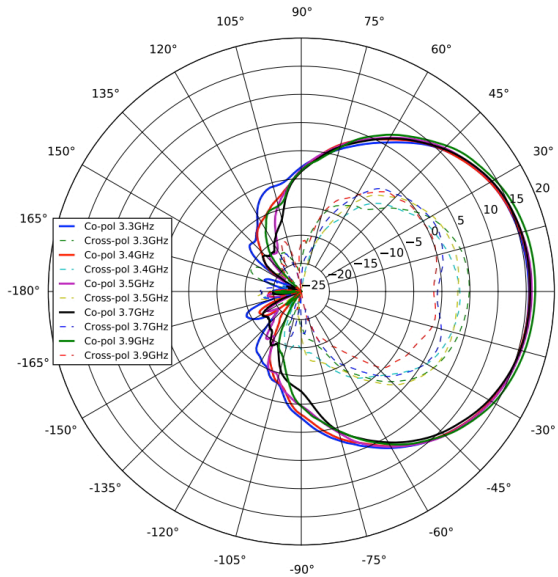
5 GHz Azimuth



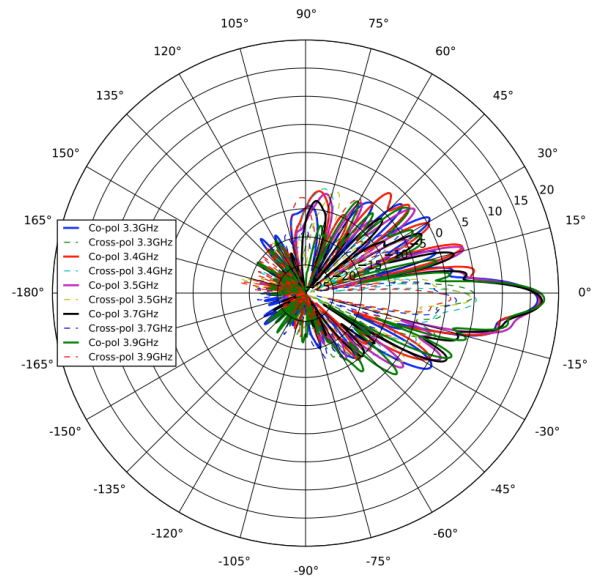
5 GHz Elevation

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3 GHz Antenna Pattern for 90° Integrated Sector



3 GHz Azimuth



3 GHz Elevation

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.