

# 5 GHz PMP 450m Access Point

## Subscriber and Backhaul

### QUICK LOOK:

Cambium Networks industry-leading 450 platform adds Massive Multi-User MIMO capability with cnMedusa™ technology.

- **Throughput of over 550 Mbps in a 20 MHz channel; More than 1.2 Gbps in a 40 MHz channel**
- **MU-MIMO with spectral efficiency of more than 60 bps/Hz**
- **Features smart beamforming to reduce interference**



### KEY FEATURES

- **cnMedusa™** technology enhances sector capacity by combining a smart beamforming antenna array with multiple RF transmit and receive chains, effectively multiplying available capacity by more than three times.
- Protect your investment in the 450 platform equipment by continuing to utilize existing Subscriber Modules (all 450 platform subscribers work with the 450m and cnMedusa technology, including prior generation 430 modules)
- SFP port allows for greater deployment flexibility, and AUX port allows for connection of camera or other PoE directly.
- The Limited Version can reduce capital investment until additional capacity is actually required. A 30-day trial of MU-MIMO operation is included, and a simple license key can permanently enable MU-MIMO operation when needed.



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### Product Model Numbers

	RoW	US	EU	No Encryption	ISED
<b>Integrated 90° Sector</b>	C050045A101A	C050045A102A	C050045A103A	C050045A104A	C050045A105A
<b>Limited Version</b>	C050045A111A	C050045A112A	C050045A113A	C050045A114A	C050045A115A

### Spectrum

<b>Channel Spacing</b>	Configurable to 2.5 MHz channel spacing
<b>Frequency Range</b>	5150-5925 MHz (4940-4990 MHz with optional license, C000045K149A)
<b>Channel Width</b>	5, 10, 15, 20, 30 and 40 MHz

## Specifications

### Interface

<b>MAC (Media Access Control) Layer</b>	Cambium Networks proprietary
<b>Physical Layer</b>	14 x 14 Multi-User MIMO OFDM
<b>Ethernet Interface</b>	100/1000BaseT, full duplex, rate auto negotiated (802.3 compliant), SFP support up to 2.5NBase-T
<b>Protocols Used</b>	IPv4, UDP, TCP, IP, ICMP, Telnet, SNMP, HTTP, FTP
<b>Network Management</b>	HTTP, HTTPS, Telnet, FTP, SNMP v3
<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>Subscribers Per Sector</b>	Up to 238	
<b>ARQ</b>	Yes	
<b>Modulation Levels (Adaptive)</b>	<b>MCS</b>	<b>Signal to Noise Required (SNR, in dB)</b>
2x	QPSK	10
4x	16 QAM	17
6x	64 QAM	24
8x	256 QAM	32
<b>Ultimate Sensitivity</b>	-94 dBm	
<b>Maximum Deployment Range</b>	Up to 64 km (40 miles)	
<b>Latency</b>	10 ms, typical	
<b>GPS Synchronization</b>	Yes, via Autosync (CMM5 or UGPS)	
<b>Quality of Service</b>	Diffserve QoS	

### Antenna

<b>Beam width - Azimuth</b>	90° integrated sector (dual polarity, H+V, 3dB rolloff), 120° (6dB rolloff)
<b>Beam width - Elevation</b>	2° Electrical Downtilt, 8° Elevation Beamwidth and Null Fill down to -30°
<b>Maximum EIRP</b>	+ 45 dBm (or up to maximum allowed by regulation)

### Physical

<b>Antenna Connection</b>	Integrated Sector Array
<b>Surge Suppression (with LPU)</b>	EN61000-4-5: 10/700µs, 2 kV voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000065L007C
<b>Mean Time Between Failure</b>	> 40 Years
<b>Environmental</b>	IP67, IP66
<b>Temperature / Humidity</b>	-40°C to 60°C (-40°F to 140°F), 0-95% non-condensing
<b>Weight</b>	Integrated - Approx. 14.2 kg (31.31 lbs)
<b>Wind Survival</b>	200 kph (124 mph)
<b>Wind Loading - Front Facing</b>	@144 kph / 90 mph: 376 N @177 kph / 110 mph: 562 N @200 kph / 124 mph: 780 N
<b>Dimensions (Diameter x Depth)</b>	Integrated - 52 x 65 x 11 cm (20.3" x 25.7" x 4.4")
<b>Power Consumption</b>	70 W typical, 80 W peak (up to 110 W max with AUX port PoE enabled)
<b>Input Voltage</b>	40 - 60 VDC
<b>Mounting</b>	Pole mount with included brackets (1.25" to 4" pole diameter)

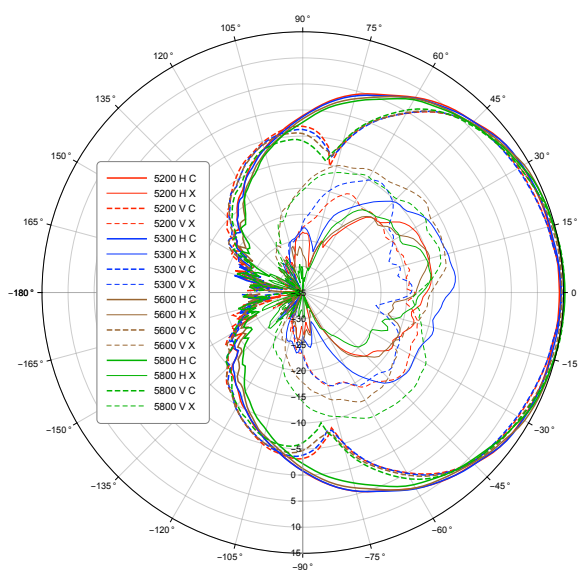
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### Certifications

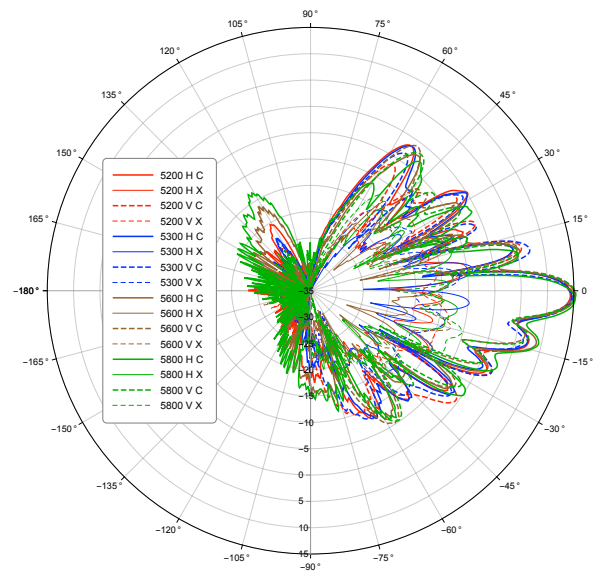
<b>ISED Canada</b>	109A0-50450M (5.1*, 5.2, 5.4, 5.8 GHz)
<b>FCC ID</b>	QWP-50450M (4.9*, 5.1, 5.2, 5.4, 5.8 GHz)
<b>CE</b>	EN 301 893 v2.1.1 EN 302 502 v2.1.1

\*License required

### 5 GHz 450m Antenna Patterns (Sector Mode)



5 GHz Azimuth



5 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.