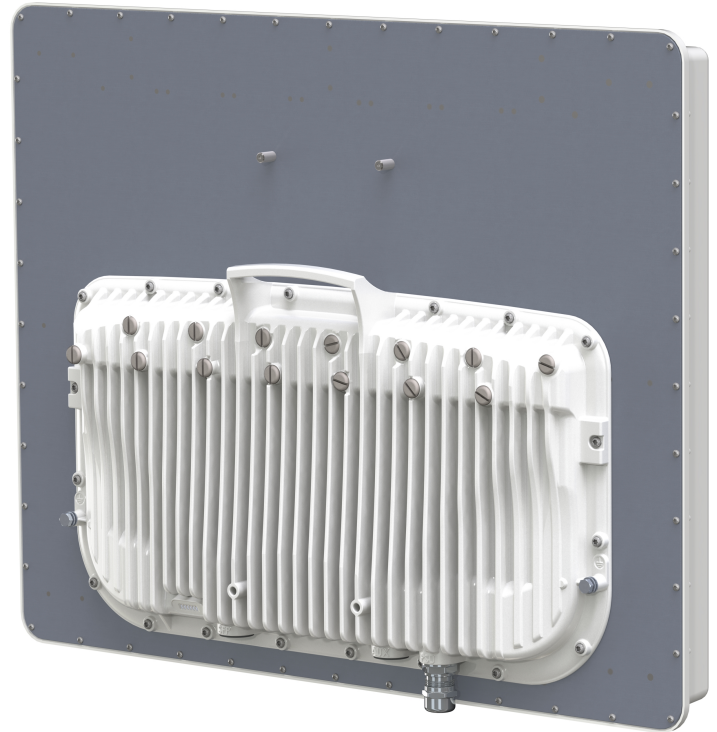# PMP 450m Access Point

Cambium Networks industry-leading 450 platform adds Multi-User MIMO capability with *cn*Medusa™ technology.

Key Features:

- ***cn*Medusa™ 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.

- Capable of throughput of **over 550 Mbps** in a 20 MHz channel, and **more than 1 Gigabit per second** per sector when using a 40 MHz channel*.

- Multi-User MIMO more effectively uses available spectrum by simultaneous transmissions to multiple subscribers, increasing **spectral efficiency** to more than 40 bps/Hz.

- **Protect your investment** in the 450 platform equipment by continuing to utilize existing Subscriber Modules (both 450 and 450i SMs work with the 450m and cnMedusa technology, even prior generation 430 will connect)

- Dramatically reduce the effect of interference with **smart beamforming**

- **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.

cnMedusa™

WISPA 2017 Product of the Year

PRODUCT

		RoW	US	EU	DES only	IC
Model Numbers	Integrated 90 degree sector	C050045A101A	C050045A102A	C050045A103A	C050045A104A	C050045A105A
	Limited Version	C050045A111A	C050045A112A	C050045A113A	C050045A114A	C050045A115A

SPECTRUM

Channel Spacing	Configurable to 2.5 MHz channel spacing
Frequency Range	5150-5925 MHz
Channel Width	5, 10, 15, 20, 30* and 40* MHz

Specifications

INTERFACE

MAC (Media Access Control) Layer	Cambium Networks proprietary
Physical Layer	14x14 Multi-User MIMO OFDM
Ethernet Interface	100/1000BaseT, full duplex, rate auto negotiated (802.3 compliant), SFP support up to 2.5G BiDi
Protocols Used	IPv4, UDP, TCP, IP, ICMP, Telnet, SNMP, HTTP, FTP
Network Management	HTTP, HTTPS, Telnet, FTP, SNMP v3
VLAN	802.1ad (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID

PERFORMANCE

Subscriber Per Sector	Up to 238	
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	10 ms, typical	
GPS Synchronization	Yes, via Autosync (CMM5 or UGPS)	
Quality of Service	Diffserv QoS	

LINK BUDGET

Antenna Beam Width (Azimuth)	90° integrated sector (dual polarity, H+V)
Antenna Beam Width (Elevation)	**2° Electrical Downtilt**, 8° Elevation (with Null Fill)
Maximum EIRP	+42 dBm (or up to maximum allowed by regulation)

PHYSICAL

Antenna Connection	Integrated Sector Array	
Surge Suppression (with LPU)	EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000065L007B	
Mean Time Between Failure	> 40 Years	
Environmental	IP67, IP66	
Temperature / Humidity	-40°C to +60°C (-40°F to +140°F), 0-95% non-condensing	
Weight	Integrated	Approx. 14.2 kg (31 bs)
Wind Survival	124 mph / 200 kph	
Wind Loading - Front Facing	@ 90 mph / 144 kph	376N
	@ 110 mph / 177 kph	562 N
	@ 124 mph / 200 kph	780 N
Dimensions (HxWxD)	Integrated	52 x 65 x 11 cm (20.3" x 25.7" x 4.4")
Power Consumption	70 W typical, 80 W peak (up to 110 W max with AUX port PoE enabled)	
Input Voltage	42.5-59 V DC	
Mounting	Pole mount with included brackets	

SECURITY

Encryption	FIPS-197 128-bit AES , 256-bit AES*

CERTIFICATIONS

Industry Canada (ISEDC)	109A0-50450M (5.1, 5.2, 5.4, 5.8 GHz)
FCC ID	QWP-50450M (5.1, 5.2, 5.4, 5.8 GHz)
CE	EN 301 893 v1.8.1 + EN 301 893 v2.1.1 Clause 4.8 (5.4GHz)
	EN 302 502 v2.1.1 (5.8 GHz)

* Indicates Future Software Release

CN PMP 450m AP 10272017

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