

# ePMP™ 4600 Series Access Points

## QUICK LOOK:

- **High-performance, scalable and reliable access points for fixed wireless broadband**
- **ePMP 4600 features MU-MIMO for up to 4 Gbps in 6 GHz**
- **Low TCO with three-year hardware warranty**
- **Interoperable with all Force 4600 radios**



Cambium Networks' ePMP product line has set the standard for high performance, scalability and reliability in harsh interference environments, all at a compelling price. The ePMP 4600 Access Point series is the fourth generation based on 802.11ax technology. ePMP 4600 Access Points series interoperate with Force 4600 Subscriber Modules. A sophisticated scheduling and QoS engine combined with TDD synchronization allows the ePMP 4600 Access Point series to deliver consistently high-quality service plans to a large number of end users.

All ePMP 4600 Access Point series is managed with cnMaestro™, and networks can be planned with LINKPlanner. Both are available from Cambium Networks at no charge. The ePMP 4600 Access Point series is the first ePMP Access Point to operate across the 6 GHz spectrum. The ePMP 4600 covers 5.925 GHz to 7.125 GHz spectrum depending on local regulatory limits. For the FCC market, the ePMP 4600 leverages AFC (Automatic Frequency Coordination) services to comply with 6 GHz operation.

### ePMP 4600

Featuring 4x4 MU-MIMO and dual overlapping sectors, the ePMP 4600 can transmit to two SMs at the same time. This effectively doubles the capacity of 2x2 systems and in the process, increases link budgets by 3 dB with downlink beamsteering. Combining 160 MHz channels, 4096QAM and OFDMA the ePMP 4600 delivers up to 4 Gbps total aggregate capacity to as many as 120 subscribers. The ePMP 4600 is deployed with the 90° 4x4 MU-MIMO sector available from Cambium Networks.

### ePMP 4600L

The ePMP 4600L is a 2x2 MIMO Access Point that delivers up to 2 Gbps to as many as 64 end users. The ePMP 4600L supports GPS synchronization for mitigating self-interference and increasing subscriber density. The ePMP 4600L is deployed with the 90° 2x2 MIMO sector available from Cambium Networks

## ePMP™ 4600 Series Access Point

Spectrum and Interface		
	ePMP 4600	ePMP 4600L
<b>Channel Width</b>	20   40   80   160 MHz	20   40   80   160 MHz
<b>Proprietary Physical Layer</b>	4x4 MU-MIMO/OFDMA based on 802.11ax underlying technology	2x2 MIMO/OFDMA based on 802.11ax underlying technology
<b>Channel Spacing</b>	Configurable in 5 MHz increments	Configurable in 5 MHz increments
<b>Frequency Range</b> <small>Note: Allowable frequencies and bands are dictated by individual country regulations.</small>	Wide Band Operation 5925–7125 MHz	Wide Band Operation 5925–7125 MHz
<b>MAC Layer (Media Access Control)</b>	Cambium Proprietary	Cambium Proprietary
<b>Ethernet Interfaced</b>	100/1000 BaseT, rate auto negotiated, 802.3at compliant & Aux SFP+ port	100/1000 BaseT, rate auto negotiated, 802.3at compliant & Aux SFP+ port
<b>Supported Powering Methods</b>	56 V 30W PoE (included), standard 802.3at PoE Supply, or cnMatrix Tower Switch	56 V 30W PoE (included), standard 802.3at PoE Supply, or cnMatrix Tower Switch
<b>Protocols Used</b>	IPv4/IPV6 , UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, STP, SSH, IGMP Snooping	IPv4/IPV6 , UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, STP, SSH, IGMP Snooping
<b>Network Management</b>	HTTP/HTTPS, SNMPv2c, SNMPv3, SSH 802.1Q	HTTP/HTTPS, SNMPv2c, SNMPv3, SSH
<b>VLAN</b>	802.1Q with 802.1p priority	802.1Q with 802.1p priority
Performance		
	ePMP 4600	ePMP 4600L
<b>Subscribers per Sector</b>	Up to 120	Up to 120
<b>ARQ</b>	Yes	Yes
<b>Nominal Receive Sensitivity (w/FEC) @20 MHz Channel</b>	MCS 0 = -92 dBm to MCS 13 (4096 QAM-5/6) = -54 dBm (per chain)	MCS 0 = -92 dBm to MCS 13 (4096 QAM-5/6) = -53 dBm (per chain)
<b>Nominal Receive Sensitivity (w/FEC) @40 MHz Channel</b>	MCS 0 = -89 dBm to MCS 13 (4096 QAM-5/6) = -50 dBm (per chain)	MCS 0 = -89 dBm to MCS 13 (4096 QAM-5/6) = -50 dBm (per chain)
<b>Nominal Receive Sensitivity (w/FEC) @80 MHz Channel</b>	MCS 0 = -86 dBm to MCS 13 (4096 QAM-5/6) = -46 dBm (per chain)	MCS 0 = -86 dBm to MCS 13 (4096 QAM-5/6) = -47 dBm (per chain)
<b>Nominal Receive Sensitivity (w/FEC) @160 MHz Channel</b>	MCS 0 = -83 dBm to MCS 13 (4096 QAM-5/6) = -43 dBm (per chain)	MCS 0 = -83 dBm to MCS 13 (4096 QAM-5/6) = -44 dBm (per chain)
<b>Modulation Levels (Adaptive)</b>	MCS 0 (BPSK) to MCS 13 (4096 QAM-5/6)	MCS 0 (BPSK) to MCS 13 (4096 QAM-5/6)
<b>GPS Synchronization</b>	Yes, via Internal GPS or Cambium Sync	Yes, via Internal GPS or Cambium Sync
<b>QoS (Quality of Service)</b>	Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority	Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority, MIR/CIR support

## ePMP™ 4600 Series Access Point

Link Budget		
	ePMP 4600	ePMP 4600L
<b>Transmit Power Range</b>	0 to +31 dBm (combined, to regional EIRP limit) (1 dB interval)	0 to +28 dBm (combined, to regional EIRP limit) (1 dB interval)
<b>Antenna</b>	90° 4x4 Sector Antenna available - Part # C060940D301A	90° 2x2 Sector Antenna available - Part # C060900D021A

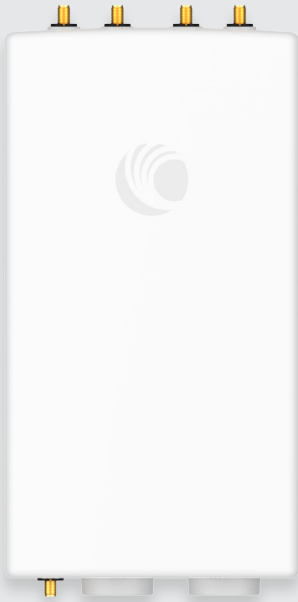
Physical		
	ePMP 4600	ePMP 4600L
<b>Surge Supression*</b>	1 Joule Integrated	1 Joule Integrated
<b>Environmental</b>	IP67	IP67
<b>Temperature</b>	-30°C to 55°C (-22°F to 131°F)	-30°C to 55°C (-22°F to 131°F)
<b>Weight</b>	1.02 kg (2.25 lbs) without bracket	0.73 kg (1.61 lbs) without bracket
<b>Dimensions (H x W x D)</b>	256 mm x 137 mm x 56 mm (10.1 in x 5.4 in x 2.2 in)	256 mm x 125 mm x 47 mm (10.1 in x 4.9 in x 1.9 in)
<b>Power Consumption</b>	28W Maximum	28W Maximum
<b>Input Voltage</b>	44V to 59V	44V to 59V
<b>Sector Antenna Connection</b>	4 x 50 ohm, RP (Reverse Polarity) SMA	2 x 50 ohm, RP (Reverse Polarity) SMA <i>Also compatible with RF Elements Twistport™ Adaptor for ePMP</i>
<b>GPS Antenna Connection</b>	1 x 50 ohm, RP (Reverse Polarity) SMA; external GPS Puck Antenna - Part # N000900L030A	1 x 50 ohm, RP (Reverse Polarity) SMA; external GPS Puck Antenna - Part # N000900L030A

Security	
<b>Encryption</b>	<b>All models:</b> 128-bit AES (CCMP mode)

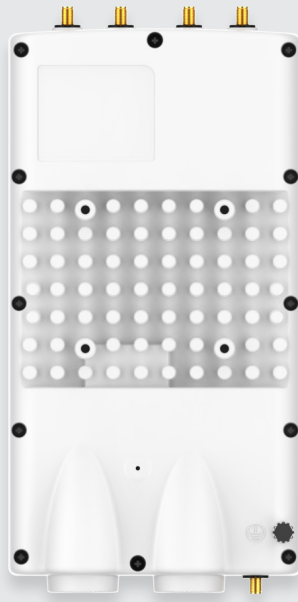
Certifications		
	ePMP 4600	ePMP 4600L
<b>FCCID</b>	Z8H89FT0068	Z8H89FT0069
<b>Industry Canada Cert</b>	109W-0068	109W-0069
<b>CE</b>	See Cambium Website for Declaration of Conformity	See Cambium Website for Declaration of Conformity
<b>FCC Regulatory Part Number</b>	C068940A112B	C068940A152A
<b>ETSI Regulatory Part Number</b>	C060940A011A	C060940A051A

# ePMP™ 4600 Series Access Point

## Force 4600



Front



Back Panel



Side



Bottom



Top

# ePMP™ 4600 Series Access Point

## Force 4600L



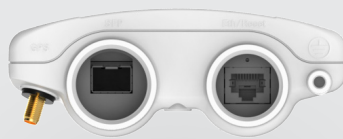
Front



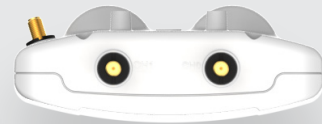
Back Panel



Side



Bottom



Top

## ePMP™ 4600 Series Access Point

### ePMP 4600 Ordering Information

<b>C060940A011A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (no cord)
<b>C060940A111A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (US cord)
<b>C068940A114A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (IC) (Canada/US cord)
<b>C060940A211A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (EU cord)
<b>C060940A213A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (EU) (EU cord)
<b>C060940A311A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (UK cord)
<b>C060940A313A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (EU) (UK cord)
<b>C060940A411A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (India cord)
<b>C060940A415A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (India) (India Cord)
<b>C060940A511A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (China cord)
<b>C060940A611A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (Brazil cord)
<b>C060940A711A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (Argentina cord)
<b>C060940A811A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (ANZ cord)
<b>C060940A911A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (South Africa cord)
<b>C060940AZ11A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (ROW) (No PSU)
<b>C068940A112B</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (FCC) (US cord)
<b>C060940A216A</b>	ePMP 4600 6 GHz 4x4 Access Point Radio (Indonesia) (EU Cord)

### ePMP 4600L Ordering Information

<b>C060940A051A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (no cord)
<b>C060940A151A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (US cord)
<b>C068940A154A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (IC) (Canada/US cord)
<b>C060940A251A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (EU cord)
<b>C060940A253A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (EU) (EU cord)
<b>C060940A351A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (UK cord)
<b>C060940A353A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (EU) (UK cord)
<b>C060940A451A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (India cord)
<b>C060940A455A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (India) (India Cord)
<b>C060940A551A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (China cord)
<b>C060940A651A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (Brazil cord)
<b>C060940A751A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (Argentina cord)
<b>C060940A851A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (ANZ cord)
<b>C060940A951A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (South Africa cord)
<b>C060940AZ51A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (ROW) (No PSU)
<b>C068940A152A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (FCC) (US cord)
<b>C060940A256A</b>	ePMP 4600L 6 GHz 2x2 Access Point Radio (Indonesia) (EU Cord)

### 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.