

# ePMP™ 4500 Series Access Points

## QUICK LOOK:

- **High-performance, scalable and reliable access points for fixed wireless broadband**
- **ePMP 4500 features MU-MIMO and up to 4 Gbps in performance**
- **Low TCO with three-year hardware warranty**
- **Interoperable with all Force 400 and Force 300 Subscriber Modules**



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 4500 Access Point series is the fourth generation ePMP based on 802.11ax technology. ePMP 4500 Access point interoperate with Force 400 Subscriber modules and support backward compatibility to Force 300 Subscriber modules. A sophisticated scheduling and QoS engine combined with TDD synchronization allows the ePMP 4500 to deliver consistently high-quality service plans to a large number of end users.

All ePMP 4500 Access point series are managed with cnMaestro™, and networks can be planned with LINKPlanner. Both are available from Cambium Networks at no charge.

### ePMP 4500

The ePMP 4500 delivers more than 4 Gbps and supports up to 120 subscriber modules. Featuring 8x8 MU-MIMO, the 5 GHz ePMP 4500 can transmit to four Force 400 SM's at the

same time. This effectively quadruples the capacity of 2x2 systems and in the process, increases link budgets by 6 dB with downlink beamforming. The ePMP 4500 has an integrated 90° 8x8 MU-MIMO sector antenna. With TDD synchronization, ePMP 4500 networks can scale to thousands of end users leveraging a small number of channels.

### ePMP 4500C

The ePMP 4500C features the same radio as ePMP 4500, but without the integrated antenna, allowing the end user to install their own sector antennas or horns.

### ePMP 4500L

The ePMP 4500L Feature 2x2 MIMO, this access point is connectorized with two RP-SMA for use with Cambium Networks 90°/120° degree sector antenna. This unit is also compatible with RF Elements Twistport™ adaptor for ePMP. Featuring the latest technology from 802.11ax, 1024QAM and 80 MHz channel bandwidth, this access points delivers performance above 1 Gbps.

## ePMP™ 4500 Series Access Points

| Spectrum and Interface                                                                 |                                                                                                                                                       |                                                                                                                                                       |                                                                                                                                                                        |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                        | ePMP 4500                                                                                                                                             | ePMP 4500C                                                                                                                                            | ePMP 4500L                                                                                                                                                             |
| <b>Channel Width</b>                                                                   | 20   40   80 MHz                                                                                                                                      | 20   40   80 MHz                                                                                                                                      | 20   40   80 MHz                                                                                                                                                       |
| <b>Proprietary Physical Layer</b>                                                      | 8x8 MU-MIMO/OFDMA based on 802.11ax underlying technology                                                                                             | 8x8 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                                                                                                                      | Configurable in 5 MHz increments                                                                                                                                       |
| <b>Frequency Range</b>                                                                 | Wide Band Operation<br>4910–6135 MHz                                                                                                                  | Wide Band Operation<br>4910–6135 MHz                                                                                                                  | Wide Band Operation<br>4910–6135 MHz                                                                                                                                   |
| (Note: Allowable frequencies and bands are dictated by individual country regulations) |                                                                                                                                                       |                                                                                                                                                       |                                                                                                                                                                        |
| <b>MAC Layer (Media Access Control)</b>                                                | Cambium Proprietary                                                                                                                                   | Cambium Proprietary                                                                                                                                   | Cambium Proprietary                                                                                                                                                    |
| <b>Ethernet Interfaced</b>                                                             | 100/1000 BaseT, rate auto negotiated, 802.3bt compliant & Aux SFP port                                                                                | 100/1000 BaseT, rate auto negotiated, 802.3bt compliant & Aux SFP port                                                                                | 100/1000 BaseT, rate auto negotiated, 802.3at compliant & Aux SFP port                                                                                                 |
| <b>Supported Powering Methods</b>                                                      | 56V 30W PoE (included), standard 802.3bt PoE Supply, or cnMatrix Tower Switch, or wired DC input                                                      | 56V 30W PoE (included), standard 802.3bt PoE Supply, or cnMatrix Tower Switch, or wired DC input                                                      | 5 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                                                                                | IPv4/IPV6, UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, STP, SSH, IGMP Snooping                                                                                                 |
| <b>Network Management</b>                                                              | HTTPS, SNMPv2c, SSH                                                                                                                                   | HTTPS, SNMPv2c, SSH                                                                                                                                   | HTTPS, SNMPv2c, SSH                                                                                                                                                    |
| <b>VLAN</b>                                                                            | 802.1Q with 802.1p priority                                                                                                                           | 802.1Q with 802.1p priority                                                                                                                           | 802.1Q with 802.1p priority                                                                                                                                            |
| Performance                                                                            |                                                                                                                                                       |                                                                                                                                                       |                                                                                                                                                                        |
|                                                                                        | ePMP 4500                                                                                                                                             | ePMP 4500C                                                                                                                                            | ePMP 4500L                                                                                                                                                             |
| <b>Subscribers per Sector</b>                                                          | Up to 120                                                                                                                                             | Up to 120                                                                                                                                             | Up to 120                                                                                                                                                              |
| <b>ARQ</b>                                                                             | Yes                                                                                                                                                   | Yes                                                                                                                                                   | Yes                                                                                                                                                                    |
| <b>Nominal Receive Sensitivity (w/FEC) @20 MHz Channel</b>                             | MCS 0 = -91 dBm to MCS 11<br>(1024 QAM-5/6) = -62 dBm (per chain)                                                                                     | MCS 0 = -91 dBm to MCS 11<br>(1024 QAM-5/6) = -62 dBm (per chain)                                                                                     | MCS 0 = -93 dBm to MCS 11<br>(1024 QAM-5/6) = -63 dBm (per chain)                                                                                                      |
| <b>Nominal Receive Sensitivity (w/FEC) @40 MHz Channel</b>                             | MCS 0 = -88 dBm to MCS 11<br>(1024 QAM-5/6) = -59 dBm (per chain)                                                                                     | MCS 0 = -88 dBm to MCS 11<br>(1024 QAM-5/6) = -59 dBm (per chain)                                                                                     | MCS 0 = -90 dBm to MCS 11<br>(1024 QAM-5/6) = -60 dBm (per chain)                                                                                                      |
| <b>Nominal Receive Sensitivity (w/FEC) @80 MHz Channel</b>                             | MCS 0 = -85 dBm to MCS 11<br>(1024 QAM-5/6) = -57dBm (per chain)                                                                                      | MCS 0 = -85 dBm to MCS 11<br>(1024 QAM-5/6) = -57dBm (per chain)                                                                                      | MCS 0 = -87 dBm to MCS 11<br>(1024 QAM-5/6) = -57dBm (per chain)                                                                                                       |
| <b>Modulation Levels (Adaptive)</b>                                                    | MCS 0 (BPSK) to MCS 11 (1024 QAM-5/6)                                                                                                                 | MCS 0 (BPSK) to MCS 11 (1024 QAM-5/6)                                                                                                                 | MCS 0 (BPSK) to MCS 11 (1024 QAM-5/6)                                                                                                                                  |
| <b>GPS Synchronization</b>                                                             | Yes, via Internal GPS or Cambium Sync                                                                                                                 | Yes, via Internal GPS or Cambium Sync                                                                                                                 | Yes, via Internal GPS                                                                                                                                                  |
| <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 | 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™ 4500 Series Access Points

| Performance cont'd          |                                                                       |                                                                       |                                                                       |
|-----------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|
|                             | ePMP 4500                                                             | ePMP 4500C                                                            | ePMP 4500L                                                            |
| <b>Transmit Power Range</b> | 0 to +34 dBm<br>(combined, to regional EIRP limit)<br>(1 dB interval) | 0 to +33 dBm<br>(combined, to regional EIRP limit)<br>(1 dB interval) | 0 to +28 dBm<br>(combined, to regional EIRP limit)<br>(1 dB interval) |
| <b>Antenna</b>              | Integrated 8x8 MU-MIMO 90° Sector<br>17 dBi gain                      | N/A                                                                   | 90°/120° 2x2 Sector Antenna (C050900D021B)                            |

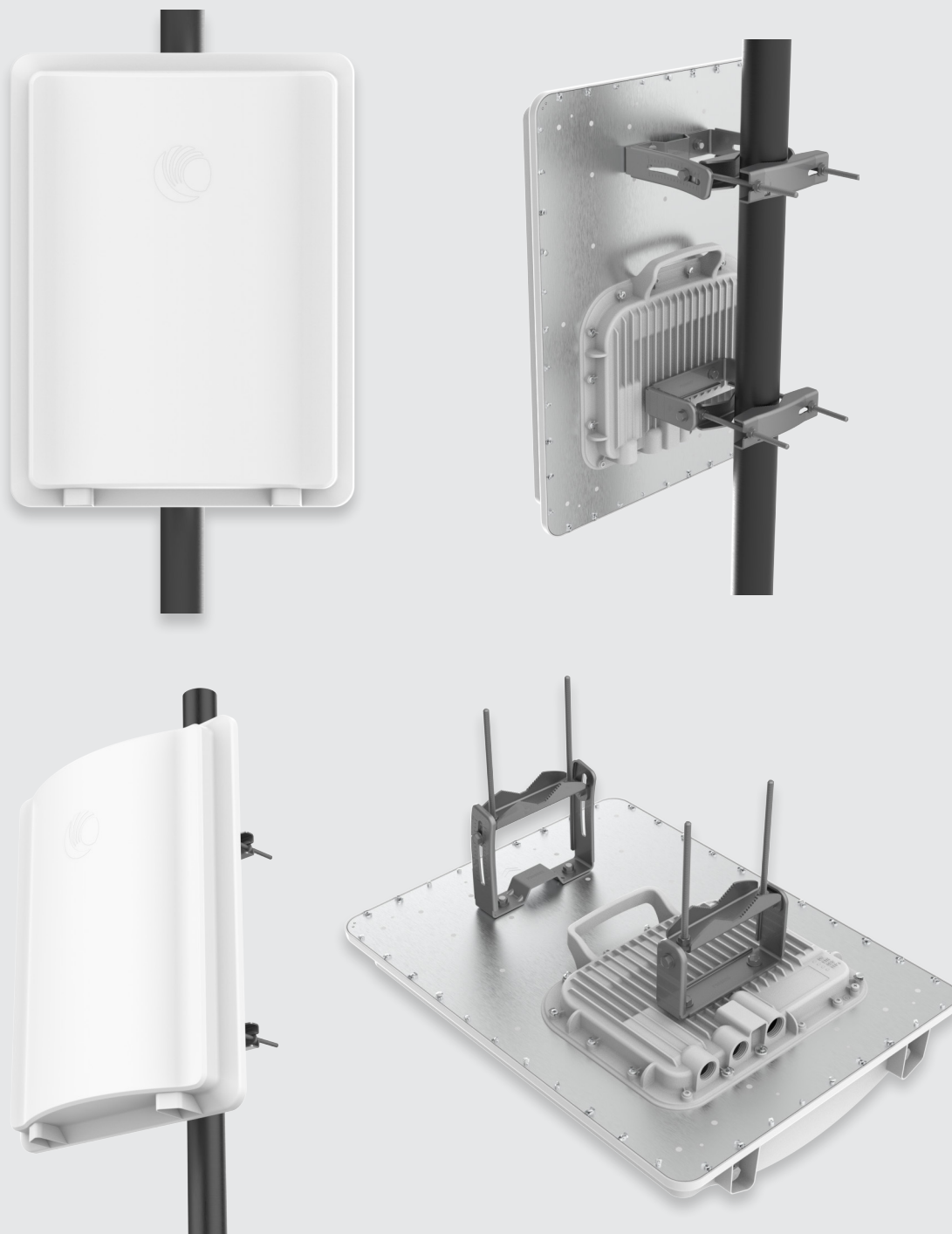
| Physical                         |                                              |                                                                          |                                                                                                              |
|----------------------------------|----------------------------------------------|--------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|                                  | ePMP 4500                                    | ePMP 4500C                                                               | ePMP 4500L                                                                                                   |
| <b>Surge Supression*</b>         | 1 Joule Integrated                           | 1 Joule Integrated                                                       | 1 Joule Integrated                                                                                           |
| <b>Environmental</b>             | IP67                                         | 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)                                           | -30°C to 55°C (-22°F to 131°F)                                                                               |
| <b>Weight</b>                    | 14.66 kg (32.32 lbs) with clamp              | TBD kg (TBD lbs) with clamp                                              | 1.3 kg (2.9 lbs)                                                                                             |
| <b>Dimensions (H x W x D)</b>    | 643 x 487 x 157 mm<br>(25.3 x 19.2 x 6.2 in) | 356 x 284 x 74 mm<br>(14.0 x 11.2 x 2.9 in)                              | 256 x 125 x 47 mm<br>(10.1 x 4.9 x 1.9 in)                                                                   |
| <b>Power Consumption</b>         | 32W Maximum                                  | 32W Maximum                                                              | 28W Maximum                                                                                                  |
| <b>Input Voltage</b>             | 44V to 59V                                   | 44V to 59V                                                               | 44V to 59V                                                                                                   |
| <b>Sector Antenna Connection</b> | Integrated 90° Sector                        | 8 x 50 ohm, RP (Reverse Polarity) SMA                                    | 2 x 50 ohm, RP (Reverse Polarity) SMA<br><i>Also compatible with RF Elements Twistport™ Adaptor for ePMP</i> |
| <b>GPS Antenna Connection</b>    | 1 x 50 ohm, SMA;<br>Integrated GPS Antenna   | 1 x 50 ohm, SMA; external GPS<br>External GPS Puck included in packaging | 1 x 50 ohm, SMA; external GPS<br>External GPS Puck included in packaging                                     |

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

| Certifications              |                                                      |                                                      |                                                      |
|-----------------------------|------------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
|                             | ePMP 4500                                            | ePMP 4500C                                           | ePMP 4500L                                           |
| <b>FCCID</b>                | Z8H89FT0065                                          | Z8H89FT0065                                          | Z8H89FT0062                                          |
| <b>Industry Canada Cert</b> | 109W-0065                                            | 109W-0065                                            | 109W-0062                                            |
| <b>CE</b>                   | See Cambium Website for<br>Declaration of Conformity | See Cambium Website for<br>Declaration of Conformity | See Cambium Website for<br>Declaration of Conformity |

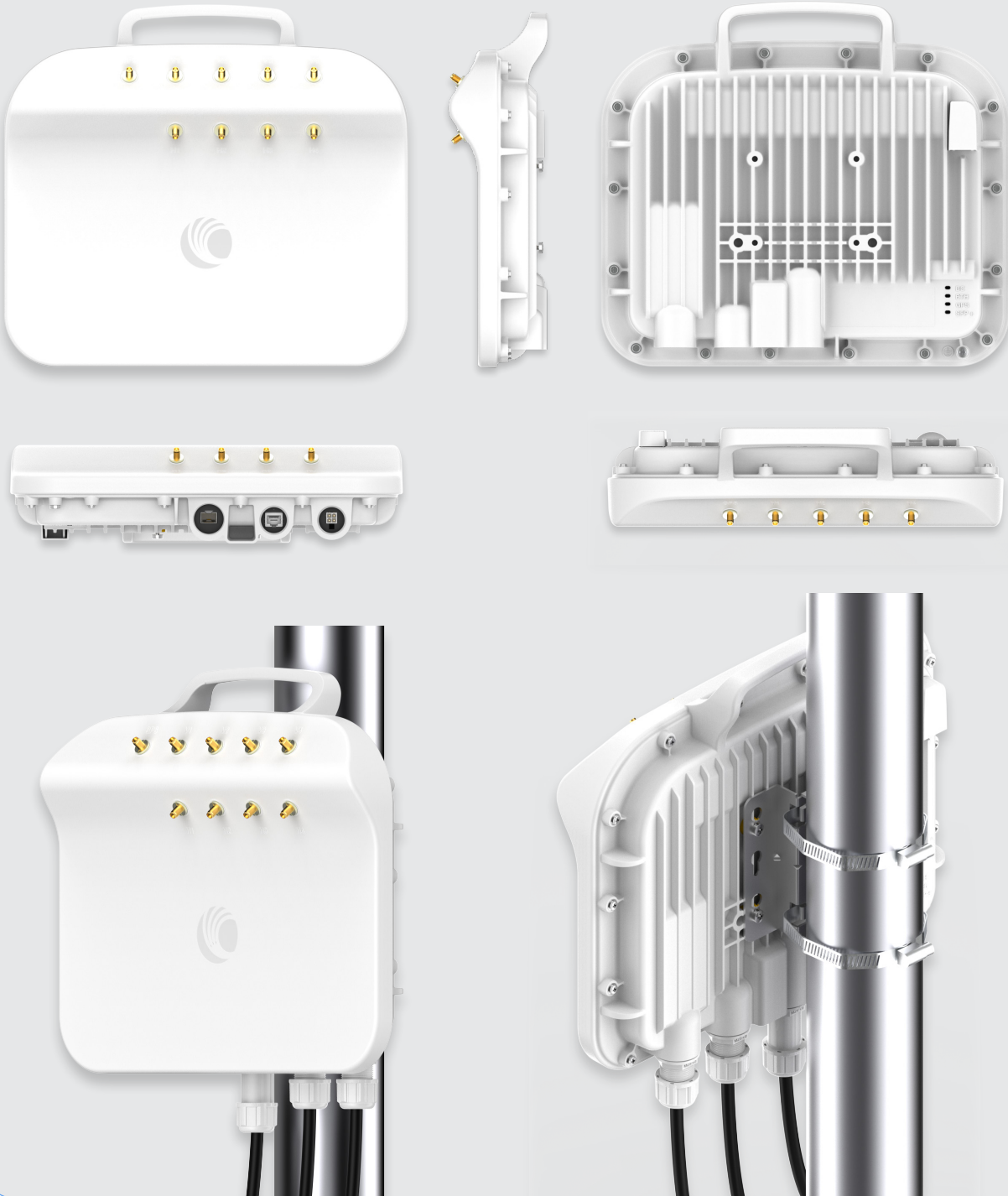
## ePMP™ 4500 Series Access Points

### ePMP 4500



## ePMP™ 4500 Series Access Points

### ePMP 4500C



## ePMP™ 4500 Series Access Points

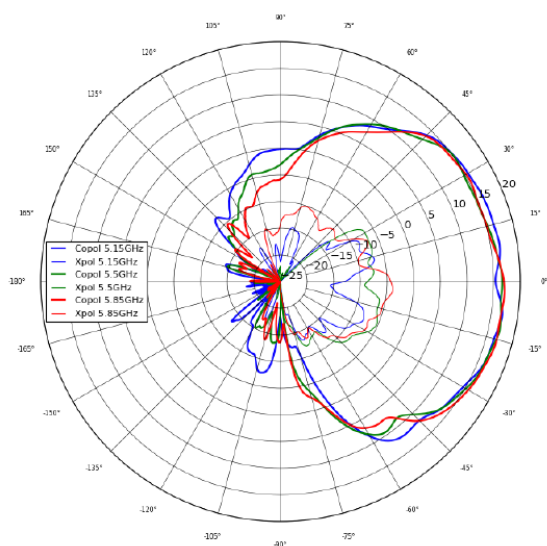
### ePMP 4500L



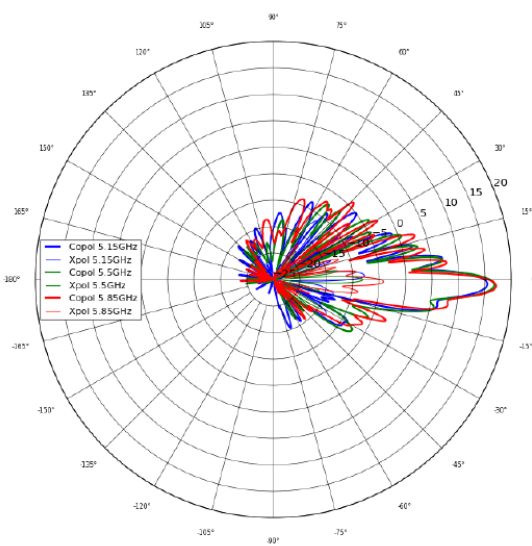
# ePMP™ 4500 Series Access Points

## Antenna Patterns

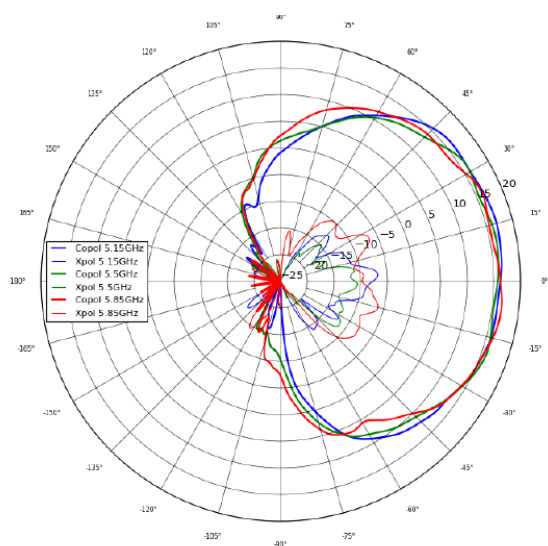
CH 0 Vertical Polarization, Horizontal



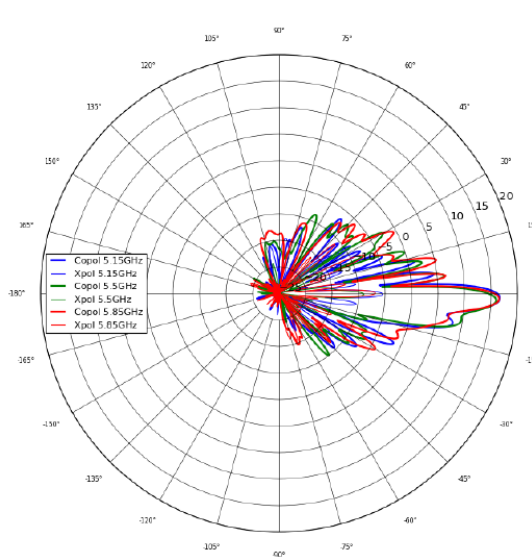
CH 0 Vertical Polarization, Elevation



CH 1 Vertical Polarization, Horizontal



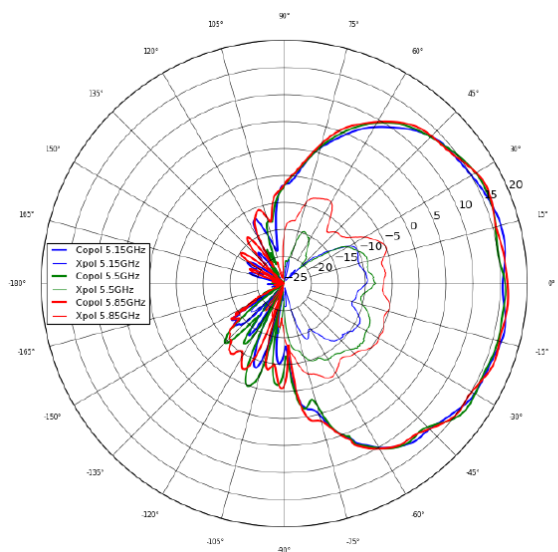
CH 1 Vertical Polarization, Elevation



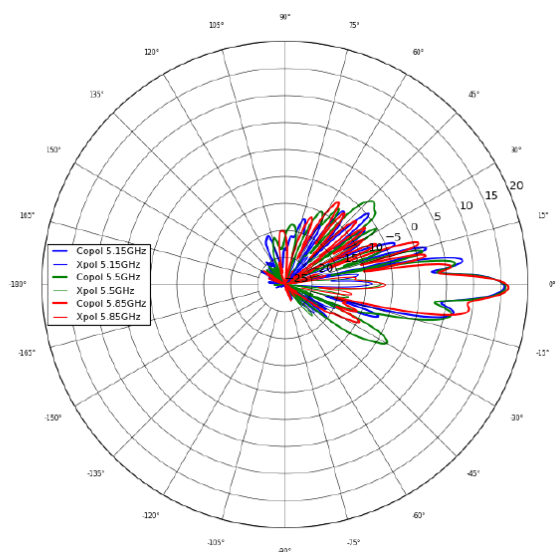
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## Antenna Patterns

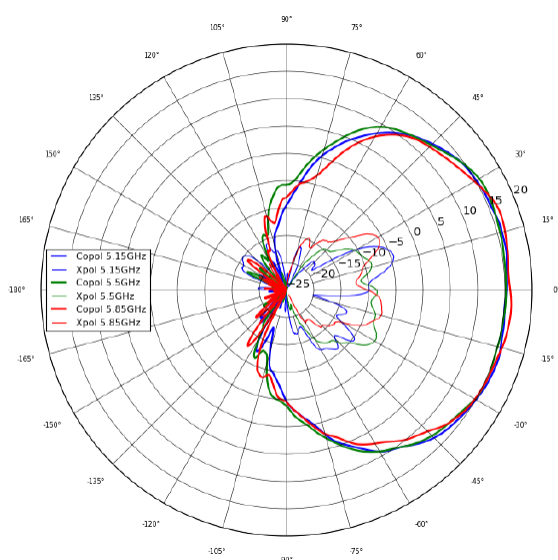
CH 2 Vertical Polarization, Horizontal



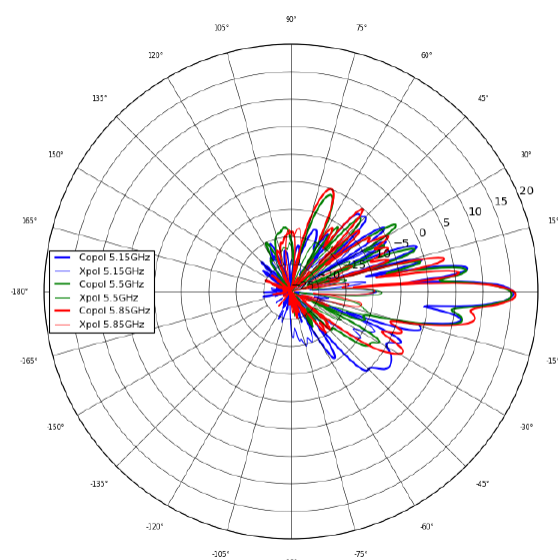
CH 2 Vertical Polarization, Elevation



CH 3 Vertical Polarization, Horizontal



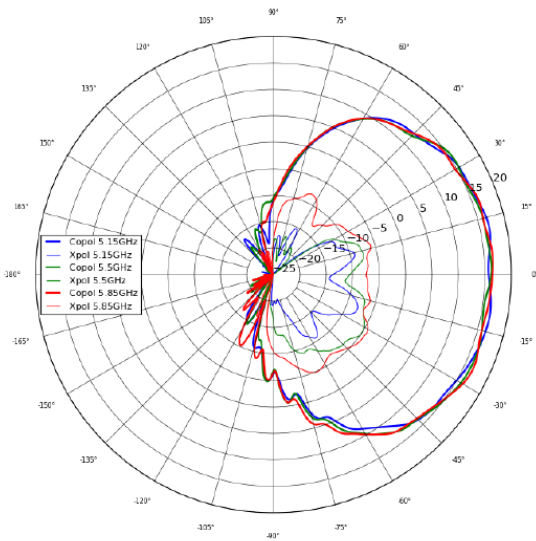
CH 3 Vertical Polarization, Elevation



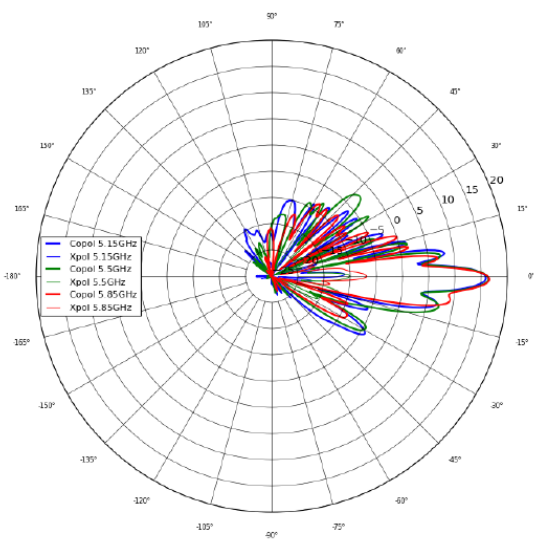
## ePMP™ 4500 Series Access Points

### Antenna Patterns

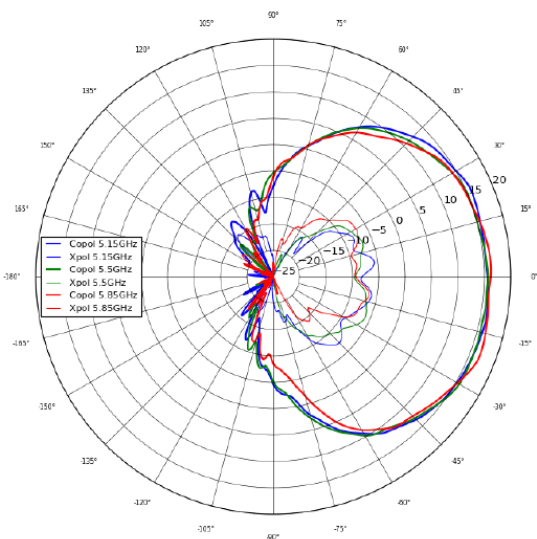
CH 4 Vertical Polarization, Horizontal



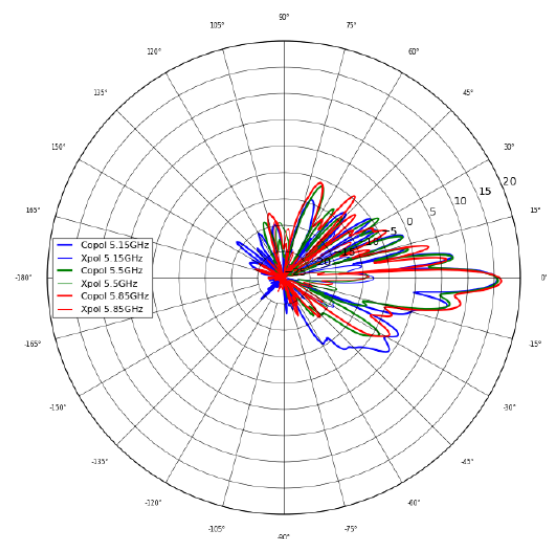
CH 4 Vertical Polarization, Elevation



CH 5 Vertical Polarization, Horizontal



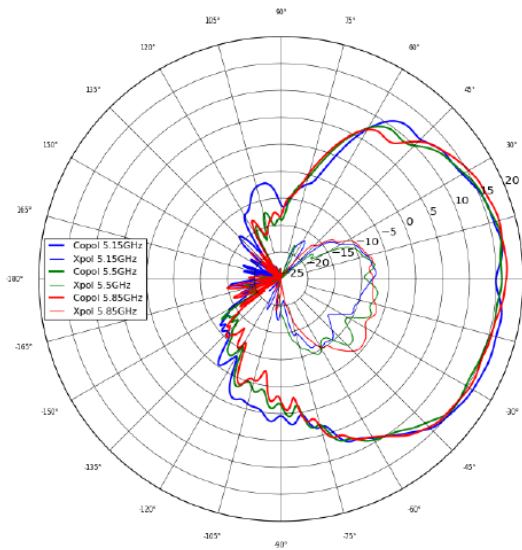
CH 5 Vertical Polarization, Elevation



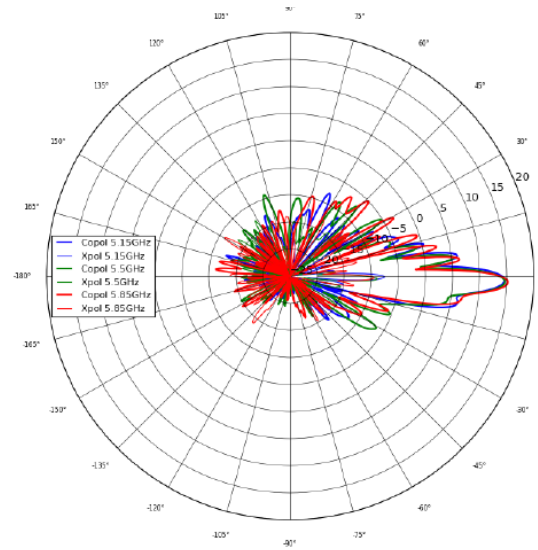
## ePMP™ 4500 Series Access Points

### Antenna Patterns

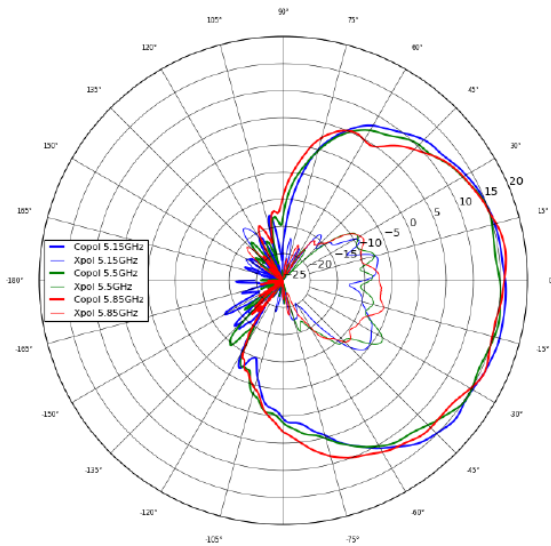
CH 6 Vertical Polarization, Horizontal



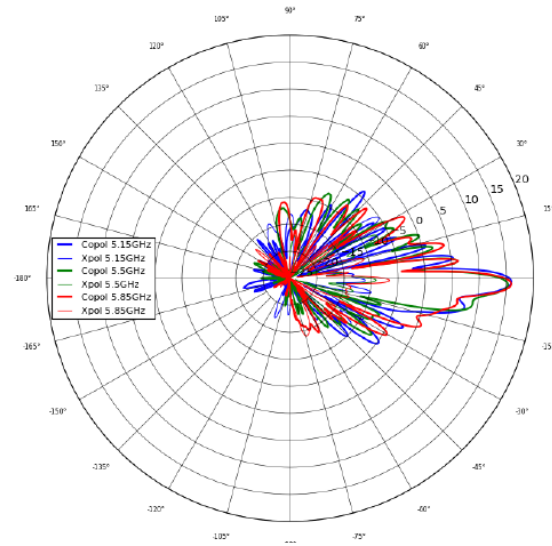
CH 6 Vertical Polarization, Elevation



CH 7 Vertical Polarization, Horizontal



CH 7 Vertical Polarization, Elevation



## ePMP™ 4500 Series Access Points

### ePMP 4500 Ordering Information

**C050940A021A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (no cord)

**C050940A121A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (US cord)

**C058940A124A** ePMP 4500 5 GHz 8x8 Access Point Radio (IC) (Canada/US cord)

**C050940A221A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (EU cord)

**C050940A223A** ePMP 4500 5 GHz 8x8 Access Point Radio (EU) (EU cord)

**C050940A321A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (UK cord)

**C050940A323A** ePMP 4500 5 GHz 8x8 Access Point Radio (EU) (UK cord)

**C050940A421A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (India cord)

**C050940A425A** ePMP 4500 5 GHz 8x8 Access Point Radio (India) (India Cord)

**C050940A521A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (China cord)

**C050940A621A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (Brazil cord)

**C050940A721A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (Argentina cord)

**C050940A821A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (ANZ cord)

**C050940A921A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (South Africa cord)

**C050940AZ21A** ePMP 4500 5 GHz 8x8 Access Point Radio (ROW) (No PSU)

**C058940A122A** ePMP 4500 5 GHz 8x8 Access Point Radio (FCC) (US cord)

**C050940A226A** ePMP 4500 5 GHz 8x8 Access Point Radio (Indonesia) (EU Cord)

### ePMP 4500C Ordering Information

**C050940A011A** ePMP 4500C 5 GHz Access Point Radio (ROW) (no cord)

**C050940A111A** ePMP 4500C 5 GHz Access Point Radio (ROW) (US cord)

**C058940A114A** ePMP 4500C 5 GHz Access Point Radio (IC) (Canada/US cord)

**C050940A211A** ePMP 4500C 5 GHz Access Point Radio (ROW) (EU cord)

**C050940A213A** ePMP 4500C 5 GHz Access Point Radio (EU) (EU cord)

**C050940A311A** ePMP 4500C 5 GHz Access Point Radio (ROW) (UK cord)

**C050940A313A** ePMP 4500C 5 GHz Access Point Radio (EU) (UK cord)

**C050940A411A** ePMP 4500C 5 GHz Access Point Radio (ROW) (India cord)

**C050940A415A** ePMP 4500C 5 GHz Access Point Radio (India) (India Cord)

**C050940A511A** ePMP 4500C 5 GHz Access Point Radio (ROW) (China cord)

**C050940A611A** ePMP 4500C 5 GHz Access Point Radio (ROW) (Brazil cord)

**C050940A711A** ePMP 4500C 5 GHz Access Point Radio (ROW) (Argentina cord)

**C050940A811A** ePMP 4500C 5 GHz Access Point Radio (ROW) (ANZ cord)

**C050940A911A** ePMP 4500C 5 GHz Access Point Radio (ROW) (South Africa cord)

**C050940AZ11A** ePMP 4500C 5 GHz Access Point Radio (ROW) (No PSU)

**C058940A112A** ePMP 4500C 5 GHz Access Point Radio (FCC) (US cord)

**C050940A216A** ePMP 4500C 5 GHz Access Point Radio (Indonesia) (EU Cord)

## Bridge-in-a-Box Outdoor Wireless Ethernet Bridge

### ePMP 4500L Ordering Information

**C050940A061A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(no cord)

**C050940A161A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(US cord)

**C058940A164A** ePMP 4500L 5 GHz 2x2 Access Point Radio (IC)  
(Canada/US cord)

**C050940A261A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(EU cord)

**C050940A263A** ePMP 4500L 5 GHz 2x2 Access Point Radio (EU)  
(EU cord)

**C050940A361A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(UK cord)

**C050940A363A** ePMP 4500L 5 GHz 2x2 Access Point Radio (EU)  
(UK cord)

**C050940A461A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(India cord)

**C050940A465A** ePMP 4500L 5 GHz 2x2 Access Point Radio (India)  
(India Cord)

**C050940A561A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(China cord)

**C050940A661A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(Brazil cord)

**C050940A761A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(Argentina cord)

**C050940A861A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(ANZ cord)

**C050940A961A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(South Africa cord)

**C050940AZ61A** ePMP 4500L 5 GHz 2x2 Access Point Radio (ROW)  
(No PSU)

**C058940A162A** ePMP 4500L 5 GHz 2x2 Access Point Radio (FCC)  
(US cord)

**C050940A266A** ePMP 4500L 5 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.