

# ePMP™ 2000 Access Point with Intelligent Filtering

ePMP has set the standard for high-performance, scalability, and reliability in harsh interference environments all at a compelling price. ePMP 2000 is the next-generation Access Point bringing interference tolerance to a whole new level with unique Hypure™ technology, which combines *Intelligent Filtering* and *Smart Beamforming* to deliver new levels of performance in the face of interference.

The ePMP 2000 System consists of a high-performance, GPS-Synchronized Access Point (AP) Radio with *Intelligent Filtering*, a new compact high-performance Sector Antenna, and an optional Smart Antenna.

*Intelligent Filtering* improves both receive and transmit performance. It protects the network from off-channel interferers with a filter that dynamically moves around the channel. On the transmit side, it protects the RF environment by reducing off-channel transmission noise.

*Smart Beamforming* drastically reduces the effects of on-channel interference. The System learns the locations of each served Subscriber Module (SM) and forms a narrow beam toward the desired SM while that radio is transmitting in the uplink. This reduces the gain on the uplink for on-channel interferers that are transmitting at an azimuth angle different than the SM, delivering performance gains never before seen.

## KEY ADVANTAGES:

- **Industry-Leading Interference Tolerance:** Intelligent Filtering hardens ePMP 2000 to strong off-channel interferers and reduces off-channel noise for better radio co-location. Smart Beamforming with the optional Smart Antenna delivers dramatic performance improvements when dealing with strong co-channel interference.
- **Frequency Reuse:** GPS Synchronization and Transmit Power Control allow for industry-leading frequency reuse.
- **Unmatched Performance and Scalability:** With the efficient ePMP MAC protocol and advanced air-fairness scheduler, up to 120 simultaneously active Subscriber Modules can be served without performance degradation.

## KEY SPECIFICATIONS:

- Supports up to 120 Subscriber Modules
- Supports a wide frequency range: 5150 – 5970 MHz
- 802.3at compliant 100/1000BaseT Interface



## Specifications

### PRODUCT

Model/Part # See table below for full set of Model and Part Numbers

### SPECTRUM

Channel Spacing Configurable on 5 MHz increments

Frequency Range 5150 – 5970 MHz (exact frequencies as allowed by local regulations)

Channel Width 5 | 10 | 20 | 40 MHz

### INTERFACE

MAC (Media Access Control) Layer Cambium proprietary and optionally standard 802.11n

Physical Layer 2x2 MIMO/OFDM

Ethernet Interface 100/1000BaseT, rate auto negotiated, 802.3at compliant

Powering Methods Supported 56 V PoE (included), standard 802.3at PoE Supply, or CMM4 with 56 V and 5 pin to 7 pin cross over cable adapter

Protocols Used IPv4, UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, STP, SSH, IGMP Snooping, LLDP, DHCP, RADIUS, NTP

Network Management HTTPs, SNMPv2c, SSH, Cambium Networks *cnMaestro*™

VLAN 802.1Q with 802.1p priority

### PERFORMANCE

Subscribers per Sector Up to 120; Lite version limited to 10

ARQ Yes

Nominal Receive Sensitivity (w/FEC) @ 20 MHz Channel MCS0 = -93 dBm to MCS15 = -69 dBm (per branch)

Nominal Receive Sensitivity (w/FEC) @ 40 MHz Channel MCS0 = -90 dBm to MCS15 = -66 dBm (per branch)

Modulation Levels (Adaptive) MCS0 (BPSK) to MCS15 (64QAM 5/6)

GPS Synchronization Yes, via internal GPS or CMM4 with 56 V and 5 pin to 7 pin cross over cable adapter

Quality of Service Three-level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast, and Station Priority

Transmit Power Range 0 to +30 dBm (combined, to regional EIRP limit) (1 dB interval)

### RECOMMENDED ANTENNAS

Sector Antenna ePMP Sector Antenna (C050900D021A) available

ePMP 2000 Smart Antenna ePMP 2000 Smart Antenna (C050900D020A) available (complimentary; does not replace Sector Antenna)

### PHYSICAL

Sector Antenna Connection 2 x 50 ohm, RP (reverse polarity) SMA

Beamforming Antenna Connection 2 x 50 ohm, RP (reverse polarity) SMA, DC coupled (powering antenna)

GPS Antenna Connection 1 x 50 ohm, RP (reverse polarity) SMA

Surge Suppression 1 Joule Integrated

Environmental IP55

Temperature -30°C to +55°C (-22°F to +131°F)

Power Consumption	20 W Maximum [1]
Input Voltage	44 V to 59 V
Weight	0.7 kg (1.5 lbs) without brackets
Dimensions (L x W x H)	22.2 x 12.4 x 4.5 cm (8.75 x 4.9 x 1.75 in) without brackets
Pole Mount Included	Yes
Environmental Cover Included	Yes

## SECURITY

Encryption	128 bit AES (CCMP mode)
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## CERTIFICATIONS

FCCID	Z8H80FT0020
INDUSTRY CANADA	109W-0020
CE	EN 302 502 v1.2.1 EN 301 893 v1.7.1

### Notes:

[1] The maximum power consumption of the Access Point is the same regardless of whether the optional Smart Beamforming Antenna is equipped or not. This is because the Beamforming Antenna draws its power during the uplink cycle when the Access Point power consumption is not at its maximum.

## TABLE OF PART AND MODEL NUMBERS

Part Number	Model Number	Description	Region
C050900A033A	C050900P931A	ePMP 2000: 5 GHz AP with Intelligent Filtering and Sync (EU)	EU Member States
C058900A132A	C058900P132A	ePMP 2000: 5 GHz AP with Intelligent Filtering and Sync (FCC)	US and Canada
C050900A031A	C050900P931A	ePMP 2000: 5 GHz AP with Intelligent Filtering and Sync (ROW) (no cord)	All except NA and EU
C050900A231A	C050900P931A	ePMP 2000: 5 GHz AP with Intelligent Filtering and Sync (ROW) (EU cord)	All except NA and EU
C050900A131A	C050900P931A	ePMP 2000: 5 GHz AP with Intelligent Filtering and Sync (ROW) (US cord)	All except NA and EU
C050900L033A	C050900P931A	ePMP 2000: 5 GHz AP Lite with Intelligent Filtering and Sync (EU)	EU Member States
C058900L132A	C058900P132A	ePMP 2000: 5 GHz AP Lite with Intelligent Filtering and Sync (FCC)	US and Canada
C050900L031A	C050900P931A	ePMP 2000: 5 GHz AP Lite with Intelligent Filtering and Sync (ROW) (no cord)	All except NA and EU
C050900L231A	C050900P931A	ePMP 2000: 5 GHz AP Lite with Intelligent Filtering and Sync (ROW) (EU cord)	All except NA and EU
C050900L131A	C050900P931A	ePMP 2000: 5 GHz AP Lite with Intelligent Filtering and Sync (ROW) (US cord)	All except NA and EU
C050900S2KLA	N/A	ePMP2000 AP Lite License Key - Upgrade Lite (10 SM) to Full (120 SM)	All Regions

### Note:

Part Number is used to order the product from Cambium. Model Number is used for regulatory purposes

