ePMP™ FORCE 200 FOR 2.4 GHz and 5 GHz

Wireless service providers and enterprises around the globe are challenged to deliver reliable connectivity in overcrowded RF environment. As spectrum increasingly becomes a scarce commodity, finding the right broadband connectivity solution is vital for all low and high density types of deployments.

Cambium Networks resolves this challenge with a breakthrough technology solution that delivers superior performance, resiliency and reach in the most congested environments. The ePMP Force 200 high gain integrated solution enhances range and improves throughput in high interference environments. ePMP Force 200 is a completely redesigned solution from Cambium Networks that combines a highly integrated, high performance radio with a high gain dish antenna. The radio supports a gigabit Ethernet interface in order to provide maximum throughput. Operating in the 2.4 and 5 GHz frequency spectrum, the solution brings wireless broadband connectivity to customers over longer distances and provides a superior return on investment.



Side View



With Optional Radome
Sold Separately

FEATURES:

- Cambium Networks' ePMP Force 200 is designed to operate in high interference environments and provides superior throughput of over 200 Mbps of real user data.
- Configurable Modes of operation ensure robust adaptivity to both symmetrical and asymmetrical traffic while providing high performance and round-trip latency as low as 2 – 3 ms.
- QoS management offers an outstanding quality for triple play services – VoIP, video and data and provides three levels of traffic priority.
- Long deployment range is enabled by a high gain antenna combined with 30 dBm of transmit power.
- This platform can be configured as a Subscriber Module or a high gain PTP radio.

PRODUCT	
Part Numbers	See below for complete list of part numbers and model numbers
SPECTRUM	
Channel Spacing	Configurable on 5 MHz increments
Frequency Range	2.4 GHz Model: 2402 – 2472 MHz 5 GHz Model: 4910 - 5970 MHz
Channel Width	5 | 10 | 20 | 40 MHz

Specifications

INTERFACE	
MAC (Media Access Control) Layer	Cambium Proprietary
Physical Layer	2x2 MIMO/OFDM
Ethernet Interfaced	10/100/1000 BaseT, Compatible with Cambium PoE & Standard PoE pinouts
Protocols Used	IPv4, UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, STP, SSH, IGMP Snooping
Network Management	HTTPs, SNMPv2c, SSH
VLAN	802.1Q with 802.1p priority
PERFORMANCE	
ARQ	Yes
Nominal Receive Sensitivity (w/FEC) @200MHz Channel	MCS0 = -92 dBm to MCS15 = -68 dBm (per branch)
Nominal Receive Sensitivity (w/FEC) @40MHz Channel	MCS0 = -89 dBm to MCS15 = -65 dBm (per branch)
Modulation Levels (Adaptive)	MCS0 (BPSK) to MCS15 (64QAM 5/6)
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	-15 to +30 dBm (combined, to regional EIRP limit) (1 dB interval)
PHYSICAL	
Surge Suppression	1 Joule Integrated
Environmental	IP55
Temperature	-30°C to +60°C (-22°F to +140°F) – with radome attached maximum temperature is +47°C (+116°F)
Weight	2.4 GHz Model: 2.8 kg (6.2 lbs) 5 GHz Model: 2.3 kg (5.1 lbs)
Wind Survival	145 km/hour (90 mi/hour)
Dimensions (Dia x Depth)	47 cm x 28 cm (18.5 in x 11.2 in)
Pole Diameter Range	6.4 cm - 7.6 cm (2.5 in - 3 in)
Power Consumption	10 W Maximum, 5 W Typical
Input Voltage	10 to 30 V
SECURITY	
Encryption	128-bit AES (CCMP mode)
CERTIFICATIONS	
FCCID	2.4 GHz: Z8H80FT0019 / 5 GHz: Z8H80FT0015
Industry Canada Cert	2.4 GHz: 109W-0019 / 5 GHz: 109W-0015
CE	5 GHz: EN 302 502 v1.2.1 5 GHz: EN 301 893 v1.7.1

ePMP Force 200 PART and MODEL NO

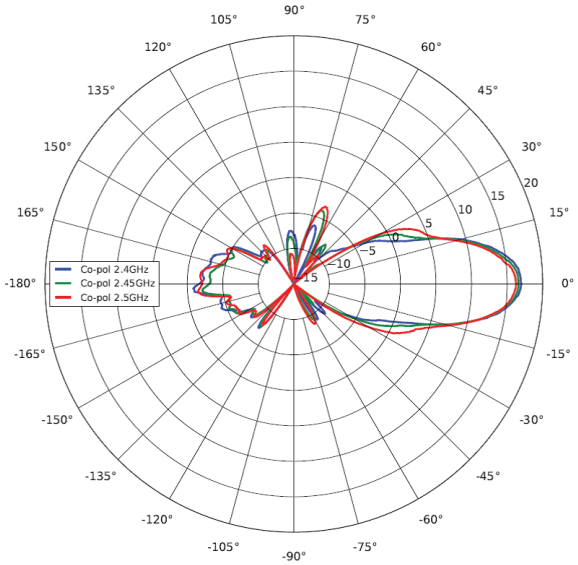
PART NO (for ordering)	Description	MODEL NO (for regulatory)
C058900C062A	ePMP 5 GHz Force 200AR5-25 High Gain Radio (FCC) (US cord)	C058900P062A
C050900C061A	ePMP 5 GHz Force 200AR5-25 High Gain Radio (ROW) (no cord)	C050900P061A
C050900C063A	ePMP 5 GHz Force 200AR5-25 High Gain Radio (EU) (EU cord)	C050900P061A
C050900C161A	ePMP 5 GHz Force 200AR5-25 High Gain Radio (ROW) (US cord)	C050900P061A
C050900C261A	ePMP 5 GHz Force 200AR5-25 High Gain Radio (ROW) (EU cord)	C050900P061A
C024900C161A	ePMP 2.4 GHz Force 200AR2-25 High Gain Radio (US cord)	C024900P161A
C024900C261A	ePMP 2.4 GHz Force 200AR2-25 High Gain Radio (EU cord)	C024900P161A
N000900L021A	ePMP Force 200 Radome	na

Specifications

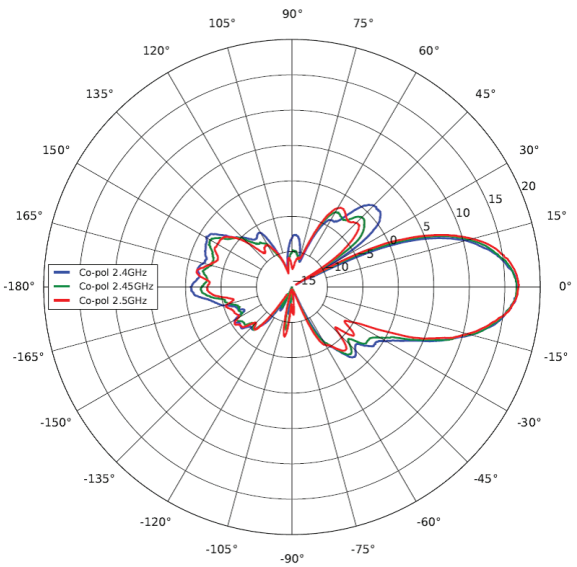
ANTENNA SPECIFICATIONS	2.4 GHZ SPECIFICATION
Frequency Range	2402 – 2472 MHz
Antenna Type	Dish
Peak Gain	17 dBi
3dB Beamwidth-Azimuth	17°
3dB Beamwidth-Elevation	17°
Front-To-Back Isolation	>20 dB
Cross Polarization	>15 dB

2.4 GHz ePMP Force 200 Azimuth Patterns

H-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH

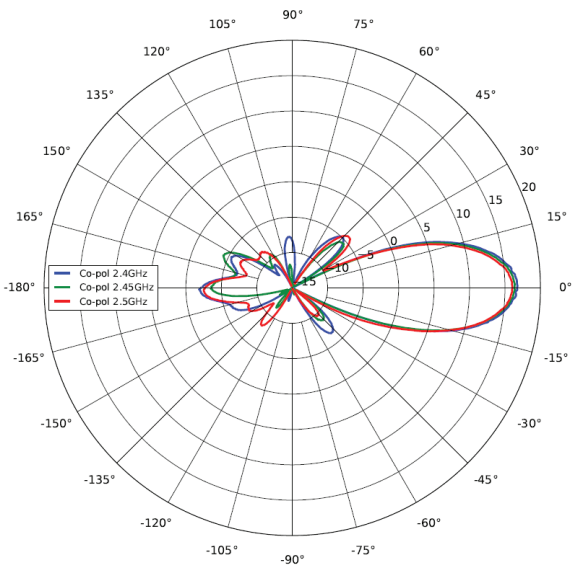


V-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH

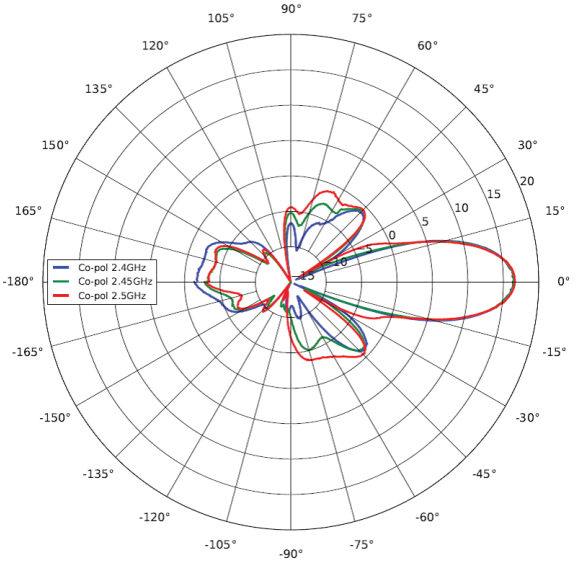


2.4 GHz ePMP Force 200 Elevation Patterns

H-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



V-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



© 2015 Cambium Networks Ltd. All rights reserved.

Specifications

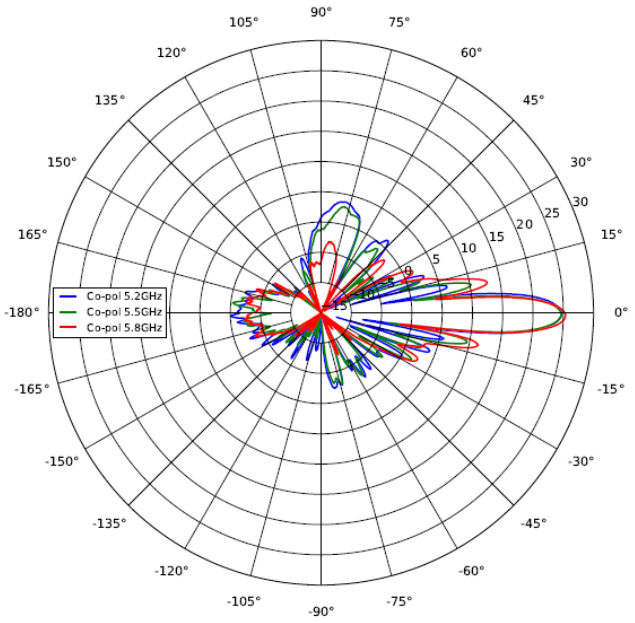
ANTENNA SPECIFICATIONS	5 GHz SPECIFICATION
FREQUENCY RANGE	5150 – 5970 MHz
ANTENNA TYPE	DISH
PEAK GAIN	25 dBi
3dB BEAMWIDTH-AZIMUTH	7°
3dB BEAMWIDTH-ELEVATION	7°
FRONT-TO-BACK ISOLATION	>25 dB
CROSS POLARIZATION	>15 dB

© 2015 Cambium Networks LTD. All rights reserved.

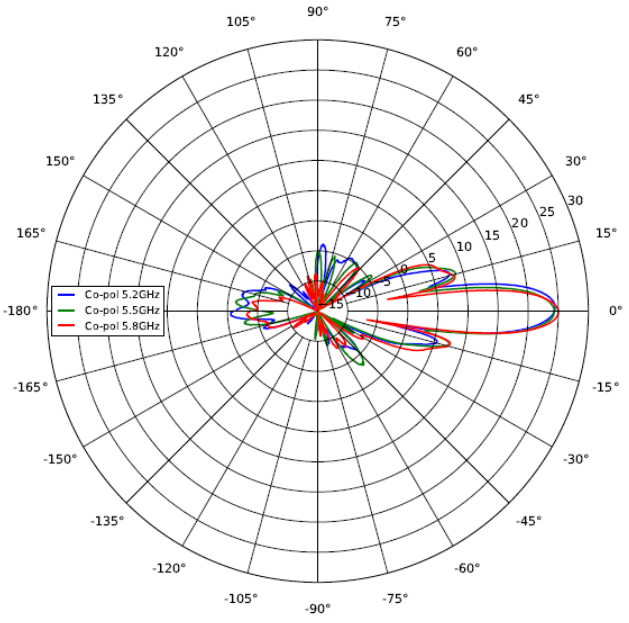
ePMP Force 200 Azimuth Patterns

ePMP Force 200 Elevation Patterns

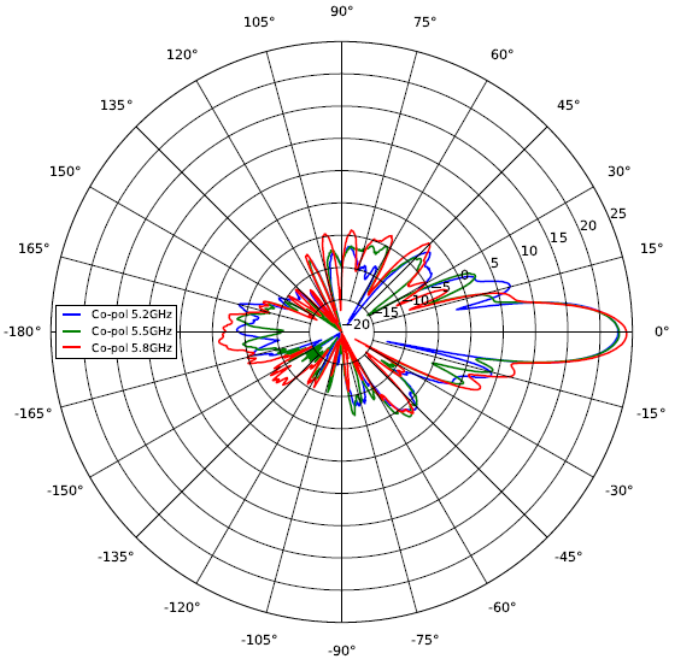
H-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



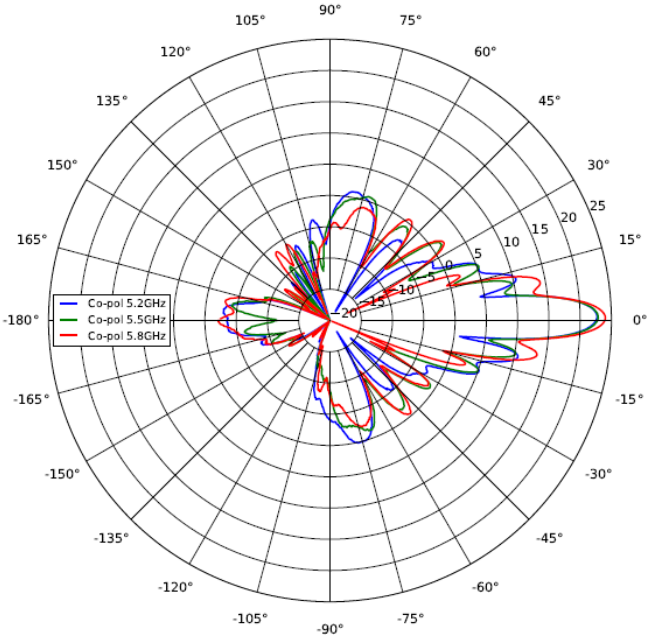
H-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



V-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



V-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



© 2014 Cambium Networks LTD. All rights reserved.