ePMP™ Force 100

Force 100 Front

Force 100 Side

Force 100 Back

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 resolved this challenge with a breakthrough technology solution that delivers superior performance, resiliency and reach in the most congested environments. ePMP Force 100 high gain integrated solution enhances range and improves throughput in high interference environments. ePMP Force 100 is comprised of ePMP 1000 Connectorized Radio and ePMP 100A-525 Dish. Operating in the 5 GHz frequency spectrum, the solution brings wireless broadband connectivity to customers over longer distances and provides a superior return on investment.

The platform supports bandwidth-intensive services such as VoIP, video and data with high performance and exceptional reliability even in difficult RF conditions. It is the most effective connectivity solution for reaching the under and unconnected around the world.

Features

Cambium Networks' ePMP 1000 Connectorized High Gain Radio is designed to operate in **high interference environments** and provides **superior throughput** of more than **150 Mbps** of real user data.

Flexible Mode of operation ensures robust adaptivity to both symmetrical and asymmetrical traffic while providing **high performance** and exceptionally **low 6 ms latency.**

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 **25 dBi** antenna with **30 dBm** of transmit power.

This platform can be configured as a Subscriber Module acting as a standalone radio or a high gain Access Point radio in a PTP architecture.

Specifications

Product	
MODEL NUMBER	5 GHz: C050900C041A (ROW), C058900C042A (FCC), C050900C043A (EU)
Spectrum	
CHANNEL SPACING	Configurable on 5 MHz increments
FREQUENCY RANGE	5 GHz 5150 – 5970 MHz (exact frequencies as allowed by local regulations)
CHANNEL WIDTH	20 MHz or 40 MHz
Interface	
MAC (MEDIA ACCESS CONTROL) LAYER	Cambium Proprietary
PHYSICAL LAYER	2x2 MIMO/OFDM
ETHERNET INTERFACE	100 BaseT, Cambium PoE (V+ = pins 7 & 8, Return = pins 4 & 5)
PROTOCOLS USED	IPv4, UDP, TCP, IP, ICMP, SNMPv2c, HTTPs, FTP
NETWORK MANAGEMENT	HTTPs, FTP, SNMPv2c
VLAN	802.1Q with 802.1p priority
Performance	
ARQ	Yes
NOMINAL RECEIVE SENSITIVITY (W/ FEC) @ 20MHZ CHANNEL	MCS1 = -90 dBm to MCS15 = -62 dBm (per branch)
NOMINAL RECEIVE SENSITIVITY (W/ FEC) @ 40MHZ CHANNEL	MCS1 = -87 dBm to MCS15 = -59 dBm (per branch)
MODULATION LEVELS (ADAPTIVE)	MCS1 (QPSK 1/2) to MCS15 (64QAM 5/6)
LATENCY (nominal, roundtrip)	6 ms (Flexible Frame Mode) , 17 ms (GPS Sync Mode)
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	-17 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)
WEIGHT	4.5 kg (10 lbs)
WIND SURVIVAL	200 km/hour (124 mi/hour)
DIMENSIONS (DIA x DEPTH)	46cm x 29cm (18in x 11.5in)
POWER CONSUMPTION	7 W Maximum, 5 W Typical
INPUT VOLTAGE	10 to 30 V
Security	
ENCRYPTION	128-bit AES (CCMP mode)
Certifications	
FCCID	5 GHz: Z8H89FT0006
INDUSTRY CANADA CERT	5 GHz: 109W-0006
CE	5 GHz: EN 302 502 v1.2.1 5 GHz: EN 301 893 v1.7.1

Notes:

C050900C041A (ROW) – consists of a ePMP Radio Module [C050900A021A/C050900P021A] and ePMP Dish Antenna [C050900D007A]

C058900C042A (FCC) – consists of a ePMP Radio Module [C058900A122A/C058900P122A] and ePMP Dish Antenna [C050900D007A]

C050900C043A (EU) – consists of a ePMP Radio Module [C050900A023A/C050900P023A] and ePMP Dish Antenna [C050900D007A]

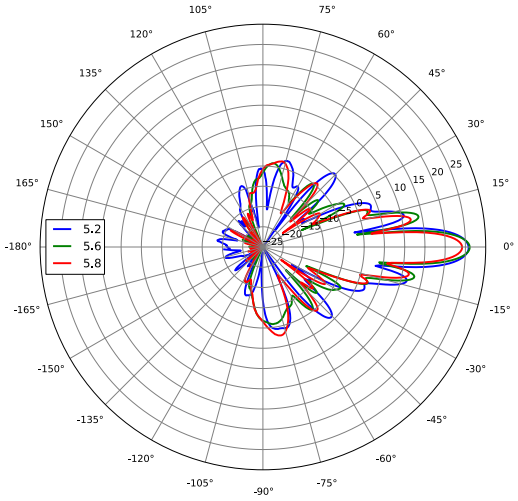
Specifications

ANTENNA SPECIFICATIONS	5 GHz SPECIFICATION
FREQUENCY RANGE	5150 – 5970 MHz
ANTENNA TYPE	INTEGRATED
PEAK GAIN	25 dBi
3dB BEAMWIDTH-AZIMUTH	7.5°
3dB BEAMWIDTH-ELEVATION	7.5°
FRONT-TO-BACK ISOLATION	>25 dB
CROSS POLARIZATION	>15 dB

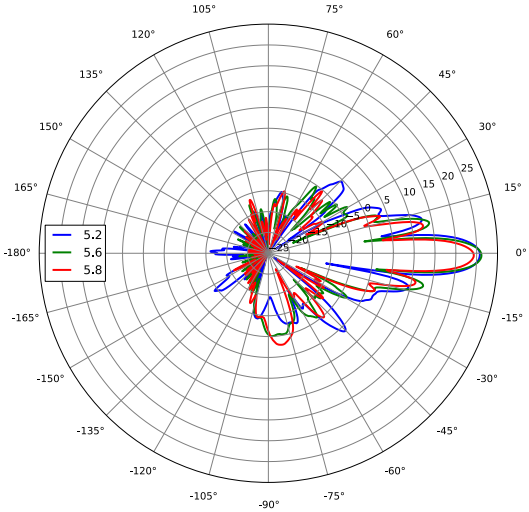
ePMP Force 100 Azimuth Patterns

ePMP Force 100 Elevation Patterns

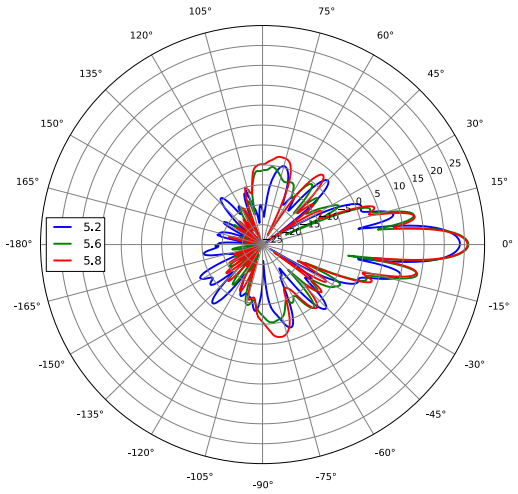
H-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



H-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION



V-POL ELEVATION GAIN (dBi) FOR ZERO AZIMUTH



V-POL AZIMUTH GAIN (dBi) FOR ZERO ELEVATION