

# PTP 450

## VERTICAL MARKETS AND SOLUTIONS

### WIRELESS SERVICE PROVIDERS

- Enterprise Access
- Rural and Municipal connectivity
- Remote office connectivity
- Primary or backup connectivity

### ENTERPRISES

- Video surveillance backhaul
- Device/site monitoring
- LAN extension
- Leased line replacement



## Introduction

The Cambium Networks PTP 450 is our industry-leading Enterprise level point to point solution platform. This platform is ideal for enterprise services such as data, VoIP, video conferencing video surveillance and backup connection service. The solution can be cost-effectively deployed and configured within hours, providing robust connectivity in any types of environments.

Designed for fixed outdoor applications, the PTP 450 platform is optimized for reach, reliability and throughput. It features the most resilient and effective set of wireless broadband technologies in the marketplace.

The PTP 450 is available in multiple bands including 5 GHz, 3.5 GHz licensed and 3.65 GHz lightly licensed. This variety of bands gives enterprises and service providers flexibility to choose the most effective solution for their network.

## Main Differentiators

### » OPTIMIZED FOR ENTERPRISE PTP ACCESS

- Up to 125 Mbps capacity
- Quality of Service (QoS)
- VLAN Management
- Packet Filtering

The PTP 450 is a perfect cost-effective solution for multi-play bandwidth-intense services where service level agreements (SLAs) must be maintained.

### » CARRIER-GRADE RELIABLE HARDWARE

by Cambium Networks is constructed from high quality industrial components; it is out door-rated and rigorously tested to satisfy the most difficult environmental conditions. With 40-year MTBF, our equipment standards are unsurpassed in industries requiring fixed wireless broadband.

### » SIMPLE, EASY DEPLOYMENT

assessment is provided by the LINK Planner tool. LINKPlanner enables network designers to accurately predict the PTP 450 capacity by selecting the precise end points on a map. A variety of what-if scenarios can then be evaluated (antenna choice, channel bandwidth, elevation, etc.) to precisely plan the network prior to deployment. RF prediction tool developed by Cambium Networks designed to optimize the performance of a link prior to deployment.

## Powerful Features

The Cambium Networks PTP 450 point to point solution is designed for connecting enterprise customers to the network quickly while meeting service level agreements with reliable consistent throughput.

**Low latency of 3 - 5 ms** effectively supports video and VoIP services. **Flexible channel width** (5, 10 and 20 MHz) allows users to select the most effective channel width for the current network environment. **256-QAM** modulation rate offers the unique ability to use the PTP 450 platform for services requiring fast and reliable transmission.

**OFDM 2x2 MIMO A and B** technology allows dual stream operation for most channel conditions, guaranteeing successful deployment of wireless networks in challenging environments.

The PTP 450 can be fitted with either the CLIP (5 GHz only) or the reflector dish to **extend the range** by increasing the link budget. Multiple PTP 450s can be mounted on a single tower and synchronized with the Cambium GPS synchronization solutions.

PRODUCT								
MODEL NUMBERS				Connectorized		Integrated		
	5 GHz	C054045B002A (ROW) C054045B006A (FCC) C054045B004A (ROW-DES only)			C054045B001A (ROW) C054045B005A (FCC) C054045B003A (ROW-DES ONLY)			
	3.3-3.6 GHz	C035045B002A C035045B004A (DES ONLY)			C035045B001A C035045B003A (DES ONLY)			
	3.55-3.8 GHz	C036045B002A C036045B004A (DES ONLY)			C036045B001A C036045B003A (DES ONLY)			
SPECTRUM								
CHANNEL SPACING	CONFIGURABLE ON 2.5 MHz INCREMENTS, SELECTABLE TO 50 KHz AT 3 GHz FREQUENCY							
FREQUENCY RANGE	5470 - 5875 MHz				3300 – 3600 MHz 3550 – 3800 MHz			
CHANNEL WIDTH	5 MHz, 10 MHz or 20 MHz (3.5, 7.0 MHz on 3GHz only)							
INTERFACE								
MAC (MEDIA ACCESS CONTROL) LAYER	CAMBIUM NETWORKS PROPRIETARY							
PHYSICAL LAYER	2x2 MIMO A and MIMO B OFDM							
ETHERNET INTERFACE	10/100/BaseT, half/full duplex, rate auto negotiated (802.3 compliant)							
PROTOCOLS USED	IPv4, UDP, TCP, IP, ICMP, Telnet, SNMP, HTTP, FTP							
NETWORK MANAGEMENT	HTTP, Telnet, FTP, SNMP v2c							
VLAN	802.1ad (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID							
PERFORMANCE								
ARQ	YES							
MODULATION LEVELS (ADAPTIVE)	MCS				SIGNAL TO NOISE REQUIRED (SNR, in dB)			
1X	QPSK – SISO				10			
2X	QPSK – MIMO-B				10			
4X	16QAM – MIMO-B				17			
6X	64QAM – MIMO-B				24			
8X	256QAM – MIMO-B				32			
RECEIVE SENSITIVITY (PER CHAIN, IN dB)	3 GHz				5GHz			
	1X/2X	4X	6X	8X	1X/2X	4X	6X	8X
@ 5MHZ CHANNEL	-92	-86	-80	-73	-91	-85	-79	-69
@ 10MHZ CHANNEL	-90	-83	-77	-70	-90	-83	-76	-64
@ 20MHZ CHANNEL	-87	-80	-73	-66	-87	-80	-72	-62
MAXIMUM DEPLOYMENT RANGE	UP TO 40 MILES							
LATENCY	3 - 5 ms, TYPICAL							
GPS SYNCHRONIZATION	YES, VIA AUTOSYNC (CMM3, CMM4, uGPS, iGPS)							
QUALITY OF SERVICE	DIFFSERVE QoS							
LINK BUDGET								
ANTENNA BEAM WIDTH	55° AZIMUTH, 55° ELEVATION (BOTH POLARIZATIONS)							
ANTENNA GAIN	9 dBi H+V, INTEGRATED PATCH (5 GHz) 8 dBi DUAL SLANT, INTEGRATED PATCH (3 GHz)							
TRANSMIT POWER RANGE	-30 TO +22 dBm (COMBINED, TO EIRP LIMIT BY REGION) (1 dB INTERVAL) (25 dBm FOR 3 GHz)							
MAXIMUM TRANSMIT POWER	22 dBm COMBINED OFDM (25 dBm FOR 3 GHz)							
REFLECTOR GAIN	+14 dBi FOR 5 GHz, +12 dBi FOR 3 GHz							
CLIP GAIN	+8 dBi (WITH CLIP (CASSEGRAIN LENS FOR IMPROVED PERFORMANCE), FOR 5 GHz ONLY)							

PHYSICAL	
ANTENNA CONNECTION	INTEGRATED PATCH ANTENNA, CONNECTORIZED VERSIONS AVAILABLE
SURGE SUPPRESSION	IEC 61000-4-2 (ESD) 15kV (AIR), 8kV (contact) IEC 61000-4-4 (EFT) 40A (5/50ns) IEC 61000-4-5 (LIGHTNING) 100A (8/20µS)
MEAN TIME BETWEEN FAILURE	> 40 YEARS
ENVIRONMENTAL	IP55
TEMPERATURE	-40°C TO +55°C (-40°F TO +131°F), 0-95% NON-CONDESNSING
WEIGHT	0.45 kg (1 lb.)
WIND SURVIVAL	190 km/hour (118 mi/hour)
DIMENSIONS (HxWxD)	30 x 9 x 9 cm (11.75" x 3.4" x 3.4")
TYPICAL POWER CONSUMPTION	9 W (5 GHz), 12 W (3 GHz)
MAXIMUM POWER CONSUMPTION	12 W (5 GHz), 15 W (3 GHz)
INPUT VOLTAGE	20 TO 32 V
SECURITY	
ENCRYPTION	56-bit DES, FIPS-197 128-bit AES
CERTIFICATIONS	
INDUSTRY CANADA	109W-0002 (5.4, 5.8 GHz) 109W-0007 (3.5 GHZ) 109W-0009 (3.65 GHz)
FCC ID	Z8H89FT0002 (5.4, 5.8 GHZ) Z8H89FT0009 (3.65 GHZ)
CE	EN 301 893 V1.6.1 (5.4 GHZ) EN 302 502 V1.2.1 (5.8 GHZ) EN 302 326-2 V1.2.2 (3 GHZ) EN 302 326-3 V1.3.1 (3 GHZ)