

# PTP 450i Connectorized Fixed Wireless Backhaul

Cambium Networks industry-leading 450 platform includes the all new PMP 450i and PTP 450i radios. The 450i product platform is the most scalable industrial-grade wireless broadband solution available.

## QUICK LOOK:

- **Ultra-wide band radios: 5 GHz or 3 GHz**
- **Rugged metal enclosure**
- **2x2 OFDM MIMO radio capable of up to 300 Mbps per sector**



### ULTRA-WIDE BAND RADIOS

Supports the entire band, whether in 5 GHz or 3 GHz. Advanced radio design improves transmit power and increases receive sensitivity.

### RUGGED METAL ENCLOSURE

Designed to meet IP-66 and IP-67 standards to withstand harsh environments. Optional ATEX/HAZLOC certified models available for hazardous deployments.

### DYNAMIC INTERFERENCE FILTERING

Provides industry-leading noise isolation for improved performance.

### UPDATED FPGA AND SOC ARCHITECTURE

Triples the processing power compared to PMP 450.

### MULTIFUNCTION AUX PORT

Allows for greater flexibility for deployment by adding a camera or other PoE directly.

### INCREASE THROUGHPUT

Now capable of up to 300 Mbps per sector in a 40 MHz channel.

## PTP 450i Connectorized Fixed Wireless Backhaul

### Product

		RoW	US	EU	DES Only
<b>5 GHz Model Numbers</b>	Connectorized	C050045B001B	C050045B003B	C050045A005B	C050045B007B
<b>3 GHz Model Numbers</b>	Connectorized	C030045B001A	C030045B001A	—	C030045B003A

### Spectrum

<b>Channel Spacing</b>	<b>3 GHz:</b> Customizable to 50 KHz	<b>5 GHz:</b> Configurable on 2.5 MHz increments
<b>Frequency Range</b>	<b>3 GHz:</b> 3300 - 3900 MHz	<b>5 GHz:</b> 4900 - 5925 MHz
<b>Channel Width</b>	5 MHz, 7 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz	5 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz

## Specifications

### Interface

<b>MAC (Media Access Control) Layer</b>	Cambium Networks proprietary
<b>Physical Layer</b>	2x2 MIMO OFDM
<b>Ethernet Interface</b>	100/1000BaseT, full duplex, rate auto negotiated (802.3 compliant)
<b>Protocols Used</b>	IPv4, IPv6, UDP, TCP/IP, ICMP, Telnet, SNMP, HTTP, FTP
<b>Network Management</b>	IPv4/IPv6 (dual stack), HTTP, HTTPS, Telnet, FTP, SNMPv2c and v3, Cambium Networks cnMaestro™
<b>MTU</b>	1700 bytes
<b>VLAN</b>	802.1ad (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID

### Security

<b>Encryption</b>	FIPS-197 128-bit AES, 256-bit AES <i>(Requires Optional License)</i>
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### Performance

<b>ARQ</b>	Yes
<b>Modulation Levels (Adaptive)</b>	<b>MCS</b>
2x	QPSK
4x	16QAM
6x	64QAM
8x	256QAM
<b>Signal to Noise Required (SNR, in dB)</b>	
	10
	17
	24
	32
<b>Maximum Deployment Range</b>	Up to 200 kilometers (124 miles) depending on configuration
<b>Latency</b>	3 - 5 ms, typical
<b>GPS Synchronization</b>	Yes, via Autosync (UGPS, CMM4 or CMM5)
<b>Quality of Service</b>	Diffserve QoS

### Physical

<b>Antenna Connection</b>	50 ohm, N-Type (Connectorized version only)
<b>Surge Suppression (LPU fitted)</b>	EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A
<b>Mean Time Between Failure</b>	>40 Years
<b>Dust and Water Ingress Protection Rating</b>	IP67, IP66
<b>Temperature / Humidity</b>	-40°C to +75°C (-40°F to +167°F), 0-100% condensing
<b>Weight</b>	Approx. 2.0 kg (4.5 lbs)
<b>Wind Survival</b>	322 km/h (200 mi/h)
<b>Vibration</b>	NEMA TS2 Section 2.1.9 and Section 2.2.3
<b>Shock</b>	NEMA TS2 Section 2.1.10 and Section 2.2.4
<b>External Icing</b>	NEMA 250-2003 Section 5.6
<b>Dimensions (HxWxD)</b>	26.0 x 13.4 x 6.4 cm (10.25" x 5.25" x 3.25")
<b>Power Consumption</b>	15 W typical, 18 W max, Using Aux port PoE for another device will increase power draw
<b>Input Voltage</b>	48-59 V DC, 802.3at compliant
<b>Mounting</b>	Wall or Pole mount with Cambium Networks Model # N000045L002A

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### Link Budget

<b>Antenna Beam Width</b>	10° azimuth for integrated antenna
<b>Antenna Gain</b>	3 GHz Integrated: +19 dBi dual pol, H+V
<b>Transmit Power Range</b>	40 dB dynamic range (to EIRP limit by region) (1 dB step)
<b>Maximum Transmit Power</b>	+27 dBm combined output (+25 dBm combined for 3 GHz)
<b>VSWR</b>	1.5, Reflection Coefficient 0.2, Reflected Power 4%, Return Loss 14 dB
<b>Power Control</b>	ATPC (Automatic Transmit Power Control) at system level, Backhaul slave implements ATPC (Future Software release)

### Certifications

	<b>3 GHz</b>	<b>5 GHz</b>
<b>Industry Canada</b>	109W-0028 (3 GHz)	109AO-50450I (4.9, 5.2, 5.4, 5.8 GHz)
<b>FCC ID</b>	Z8H89FT0028 (3 GHz)	QWP-50450I (4.9, 5.1, 5.2, 5.4, 5.8 GHz)
<b>CE</b>	–	EN 301 893 v1.8.1 (5.4 GHz) EN 302 625 v1.11 (Broadband Disaster Relief, 4.9 GHz, 5.1 GHz) EN 302 502 v1.2.1 (5.8 GHz)

#### ABOUT CAMBIUM NETWORKS

Cambium Networks is a leading global provider of wireless connectivity solutions that strengthen connections between people, places and things. Specializing in providing an end-to-end wireless fabric of reliable, scalable, secure, cloud-managed platforms that perform under demanding conditions, Cambium Networks empowers service providers and enterprise, industrial and government network operators to build intelligent edge connectivity. Cambium Networks' commitment to continuous innovation in wireless access is demonstrated in the millions of radios deployed in thousands of networks that benefit communities around the world. Team members also contribute to social responsibility activities to serve the communities in which they live. Headquartered outside Chicago and with R&D centers in the U.S., U.K. and India, Cambium Networks sells through a range of trusted global distributors.

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