



PTP 450i

Fixed Wireless Backhaul

The ultra-wide band PTP 450i Integrated features dynamic interference filtering, IP-66/67 enclosure, and multifunction AUX port. The PTP 450i boasts triple the power and range of a 450 product, along with ruggedisation to withstand industrial and public safety environments. Available as PMP or PTP.



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.



Specifications

MAC (Media Access Control) Layer Physical Layer Ethernet Interface Protocols Used Protocols Used Phy4, IPv6, UDP, TCP/IP, ICMP, Teinet, SNMP, HTTP, FTP IPv4/IPv6 (dual stack), HTTP, HTTP, FTP SNMPv2c and v3. Cambium Networks chimaestrol' NTU VLAN 802.1ad (DVLAN Q-inq.), 802.1g with 802.1p priority, dynamic port VID SECURITY Encryption FIPS-197 128-bit AES, 256-bit AES (Requires Optional License) PERFORMANCE ARQ Modulation Levels (Adaptive) Ax I (60AM I7 6x 6x 64QAM 24 8x 2560AM 32 Maximum Deployment Range Latency GPS Synchronisation Quality of Service Are Ves, via Autosync (UGPS, CMM4 or CMM5) Up to 200 kilometers (124 miles) depending on configuration Attendance Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Wind Survival Wind Survival ViDRATS Section 2.19 and Section 2.2.4 Wind Survival ViDRATS Section 2.10 and Section 2.2.4		INTERF	ACE			
Ethernet Interface Protocols Used IPV4, IPV6, UDP, TCP/IP, ICMP, Teinet, SMMP, HTTP, FTP IPV4/IPV6 (dual stack), HTTP, HTTP, HTTP, TTP, TTP, TTP, TTP, TTP, T		Cambium Networks proprietary				
Ethernet Interface Protocols Used IPV4, IPV6, UDP, TCP/IP, ICMP, Teinet, SMMP, HTTP, FTP IPV4/IPV6 (dual stack), HTTP, HTTP, HTTP, TTP, TTP, TTP, TTP, TTP, T	Physical Layer	2x2 MIMO OFDM				
Network Management IPv4/IPv6 (dual stack), HTTP, HTTPS, Teinet, FTP, SNMPv2c and v3, Cambium Networks cnMesestro™ VLAN 802.1d (DVLAN Q-inq), 802.1d with 802.1p priority, dynamic port VID						
cnMaestro™ NTU VLAN NET VLAN 802.lad (DVLAN Q-inQ), 802.lQ with 802.lp priority, dynamic port VID SECURITY Encryption FIPS-197 128-bit AES, 256-bit AES (Requires Optional License) PERFORMANCE ARQ Yes Modulation Levels (Adaptive) ARQ Ves Modulation Levels (Adaptive) ARQ Wax QPSK IO 4x I6QAM 17 6x 6x 64QAM 24 8x 256QAM 32 Maximum Deployment Range Latency GPS Synchronisation Quality of Service Diffserve QoS PHYSICAL Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / 40°C to +75°C (-40°F to +167°F), O100% condensing Weight Weight Vibration NEMA TS2 Section 2.19 and Section 2.2.3	Protocols Used	, , , , ,				
Solid (DVLAN Q-inQ), 802.1Q with 802.1p priority, dynamic port VID	Network Management	IPv4/IPv6 (dual stack), HTTP, HTTPS, Telnet, FTP, SNMPv2c and v3, Cambium Networks				
SECURITY Encryption FIPS-197 128-bit AES, 256-bit AES (Requires Optional License) PERFORMANCE ARQ Yes Modulation Levels (Adaptive) MCS Signal to Noise Required (SNR, in dB) 2x QPSK 10 4x 16QAM 17 6x 64QAM 24 8x 256QAM 32 Maximum Deployment Range Latency 3 · 5 ms. typical Quality of Service Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Wind Survival Vibration WEMA TSZ Section 2.19 and Section 2.2.3	MTU	1700 bytes				
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Modulation Levels (Adaptive) MCS Signal to Noise Required (SNR. in dB) 2x QPSK 10 4x 16QAM 17 6x 6x 64QAM 24 8x 256QAM 32 Maximum Deployment Range Latency GPS Synchronisation Quality of Service Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Wind Survival Vibration Modulation Levels (Adaptive) MCS Signal to Noise Required (SNR. in dB) 10 10 11 11 11 11 11 11 11 11 11 11 11						
2x QPSK 10 4x 16QAM 17 6x 64QAM 24 8x 256QAM 32 Maximum Deployment Range Latency GPS Synchronisation Quality of Service Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Vibration VID to 200 kilometers (124 miles) depending on configuration Raty EQ4 8x 256QAM 32 Wind Survival BY (Connectorised (124 miles) depending on configuration Recommended on configuration PHYSICAL SO ohm. N-Type (Connectorised version only) EN6(00.04-5: 1.2us/50us. 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A PHYSICAL SO ohm. N-Type (Connectorised version only) EN6(00.04-5: 1.2us/50us. 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A Vibration Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3	ARQ	Yes				
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Maximum Deployment Range Latency 3 - 5 ms. typical Yes, via Autosync (UGPS, CMM4 or CMM5) Diffserve QoS PHYSICAL Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Wind Survival Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3 Weight Up to 200 kilometers (124 miles) depending on configuration 32 Wepending on configuration Repending on configuration 32 Wespending on configuration 40 C MM5) Wespending on configuration 40 C MM5 C MM		4x	16QAM	17		
Up to 200 kilometers (124 miles) depending on configuration		6x	64QAM	24		
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Yes, via Autosync (UGPS, CMM4 or CMM5) Diffserve QoS PHYSICAL Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Vibration Yes, via Autosync (UGPS, CMM4 or CMM5) PHYSICAL 50 ohm, N-Type (Connectorised version only) EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A >40 Years Plef7, IP66 -40°C to +75°C (-40°F to +167°F), 0-100% condensing Connectorised: Approx. 2.0 kg (4.5 lbs), Integrated: Approx. 2.5 kg (5.5 lbs) 322 km/h (200 mi/h) NEMA TS2 Section 2.1.9 and Section 2.2.3		Up to 200 kilometers (124 miles) de	epending on configu	ıration		
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Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Vibration PHYSICAL 50 ohm, N-Type (Connectorised version only) EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A >40 Years IP67, IP66 -40°C to +75°C (-40°F to +167°F), O-100% condensing Connectorised: Approx. 2.0 kg (4.5 lbs), Integrated: Approx. 2.5 kg (5.5 lbs) Wind Survival Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3	GPS Synchronisation	Yes, via Autosync (UGPS, CMM4 or 0	CMM5)			
Antenna Connection Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Vibration Surge Suppression (LPU fitted) EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A >40 Years Plef7, IP66 -40°C to +75°C (-40°F to +167°F), O-100% condensing Connectorised: Approx. 2.0 kg (4.5 lbs), Integrated: Approx. 2.5 kg (5.5 lbs) NEMA TS2 Section 2.1.9 and Section 2.2.3	Quality of Service	Diffserve QoS				
Surge Suppression (LPU fitted) Mean Time Between Failure Dust & Water Ingress Protection Rating Temperature / Humidity Weight Weight Wind Survival Vibration EN61000-4-5: 1.2us/50us, 500 V voltage waveform Recommended external surge suppressor: Cambium Networks Model # C000000L033A >40 Years P67, IP66		PHYSI	CAL			
Recommended external surge suppressor: Cambium Networks Model # C000000L033A	Antenna Connection	50 ohm, N-Type (Connectorised ver	sion only)			
Failure Dust & Water Ingress Protection Rating Temperature /				etworks Model # C00000L033A		
Protection Rating Temperature / -40°C to +75°C (-40°F to +167°F),		>40 Years				
Humidity O-100% condensing Connectorised: Approx. 2.0 kg (4.5 lbs), Integrated: Approx. 2.5 kg (5.5 lbs) Wind Survival Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3		IP67, IP66				
Integrated: Approx. 2.5 kg (5.5 lbs) Wind Survival Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3	· · · · · · · · · · · · · · · · · · ·					
Vibration NEMA TS2 Section 2.1.9 and Section 2.2.3	Weight		lbs),			
	Wind Survival	322 km/h (200 mi/h)				
Shock NEMA TS2 Section 2.1.10 and Section 2.2.4	Vibration	NEMA TS2 Section 2.1.9 and Section	2.2.3			
	Shock	NEMA TS2 Section 2.1.10 and Section	n 2.2.4			



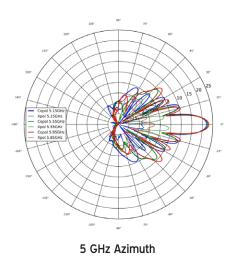
External Icing	NEMA 250-2003 Section 5.6		
Dimensions (HxWxD)	Connectorised: 26.0 x 13.4 x 6.4 cm (10.25" x 5.25" x 3.25"), Integrated: 31.0 x 31.0 x 6.4 cm (12" x 12" x 2.5")		
Power Consumption	15 W typical, 18 W max, Using Aux port PoE for another device will increase power draw		
Input Voltage	48-59 V DC, 802.3at compliant		
Mounting	Wall or Pole mount with Cambium Networks Model # N000045L002A		
	LINK BUDGET		
	3 GHz	5 GHz	
Antenna Beam Width	17° azimuth for integrated antenna	10° azimuth for integrated antenna	
Antenna Gain	+19 dBi dual slant integrated, or external	+23 dBi H+V integrated, or external	
Maximum Transmit Power	+25 dBm (MIMO, Combined H+V)	+28 dBm (MIMO, Combined H+V) (may be limited by regulations)	
Maximum EIRP	+43 dBm combined output (may be limited by regulations)	+50 dBm combined output (may be limited by regulations)	
VSWR	1.5, Reflection Coefficient O.2, Reflected Power 4%, Return Loss 14 dB		
Power Control	ATPC (Automatic Transmit Power Control) at system level. Backhaul slave implements ATPC (Future Software release)		
	CERTIFICATIONS		
	3 GHz	5 GHz	
ISED Canada	109W-0028	109AO-50450I	
FCC ID	Z8H89FT0028	QWP-50450I	
CE	EN 302 326-2 v1.2.2	EN 301 893 v2.1.1 EN 302 502 v2.1.1	
	SPECTRUM		
	3 GHz	5 GHz	
Channel Spacing	3 GHz Customisable to 50 KHz	5 GHz Configurable on 2.5 MHz increments	
Channel Spacing Frequency Range			

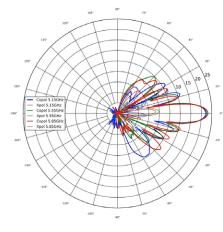
Ordering Information

Product Code	Description
C050045B001B	5 GHz Connectorised
C050045B002B	5 GHz Integrated
C030045B001A	3 GHz Connectorised
C030045B002A	3 GHz Integrated



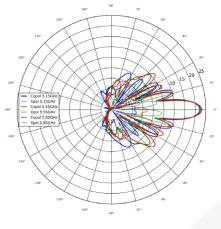
5 GHz Antenna Pattern for Integrated PTP 450i



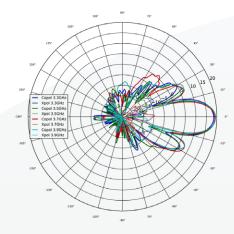


5 GHz Elevation

3 GHz Antenna Pattern for Integrated PTP 450i



3 GHz Azimuth



3 GHz Elevation

Why Rising Connection is using equipment designed and built by Cambium Networks?

- High quality and worldwide longevity track record of installations across a diverse application base
- Using establish world best practices in design and materials with full support of both Australian and International Standards
- · Constant evolution of hardware and improvements in firmware for the benefit of the customer
- Established interoperability with various equipment and propriety security systems
- · Full portfolio of solution development services and cloud management

This demonstrates to Rising Connection that you will have the Quality, Reliability and Product Support.

PO Box 4107 Carlton NSW 2218

E-mail: info@risingconnection.com.au

www.risingconnection.com.au

ABN 50 161 068 042