450b Retro
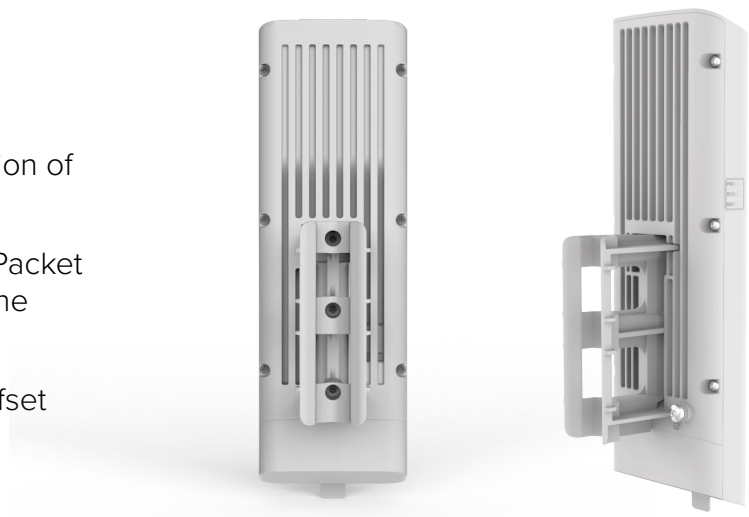## Point-to-Point Link / Subscriber Module

QUICK LOOK:

Cambium Networks 450 platform increases performance with the addition of the 450b Subscriber and Backhaul Module.

- **Ultra-wide band radios: 4.9 GHz to 5.925 GHz**

- **Capable of up to 300 Mbps aggregate in a 40 MHz channel**

- **Can function as a Point-to-Point (PTP) link or as a Subscriber Module (SM)**

KEY FEATURES

- Gigabit Ethernet Interface provides the maximum transfer rates to the device.

- 3.5 mm audio jack allows direct connection of headphones without any adapters.

- New System on a Chip (SoC) enhances Packet Processing Power more than 4x that of the 450 SM.

- Form factor allows the use of existing Offset Reflector dishes.

450b Retro Point-to-Point Link / Subscriber Module

Product

	RoW	FCC	ISED	EU	No Encryption
Model Numbers	C050045B101A	C050045B102A	C050045B103A	C050045B104A	C050045B105A

Spectrum

Channel Spacing	Configurable on 2.5 MHz increments
Frequency Range	4900 - 5925 MHz
Channel Width	5 MHz, 10 MHz, 15 MHz, 20 MHz, 30 MHz or 40 MHz

Specifications

Interface

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

Security

Encryption	FIPS-197 128-bit AES, 256-bit AES *(Requires Optional License for attached Access Point)*

450b Retro Point-to-Point Link / Subscriber Module

Performance

PPS	50,000	
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

Ultimate Sensitivity	-94 dBm
Maximum Deployment Range	Up to 40 miles (64 km) in PMP mode, up to 124 miles (200 km) in PTP mode
Latency	3 - 5 ms, typical
GPS Synchronization	Yes, synchronized by Access Point or via 3.5mm port using cnPulse (for PTP mode)
Quality of Service	Diffserve QoS

Physical

Integrated Antenna Gain	9 dBi
Azimuth (3 dB rolloff)	45°
Elevation (3 dB rolloff)	45°
VSWR (MAX)	2:1
Antenna Accessories	Optional Offset Reflector dish: HK2022A - 4-pack -- Enables total gain of 24 dBi
Surge Suppression	EN 61000-4-5: 10x700 µs, 4 kV, EN 61000-4-2: ESD 30 kV contact / 30 kV air
Mean Time Between Failure	>40 Years
Environmental	IP55
Temperature / Humidity	-40°C to 60°C (-40°F to 140°F), 0-95% non-condensing
Weight	0.4 kg (1 lb) (includes mounting bracket)
Wind Survival	200 kph (124 mph)
Dimensions (HxWxD)	28.6 cm x 8.9 cm x 8.9 cm (11.25 in x 3.5 in x 3.5 in)
Pole Diameter Range (w/ included mount)	1 in to 3 in pole diameter
Power Consumption	9 W typical, 12 W peak
Input Voltage	24-30 VDC, Canopy-style PoE

450b Retro Point-to-Point Link / Subscriber Module

Link Budget

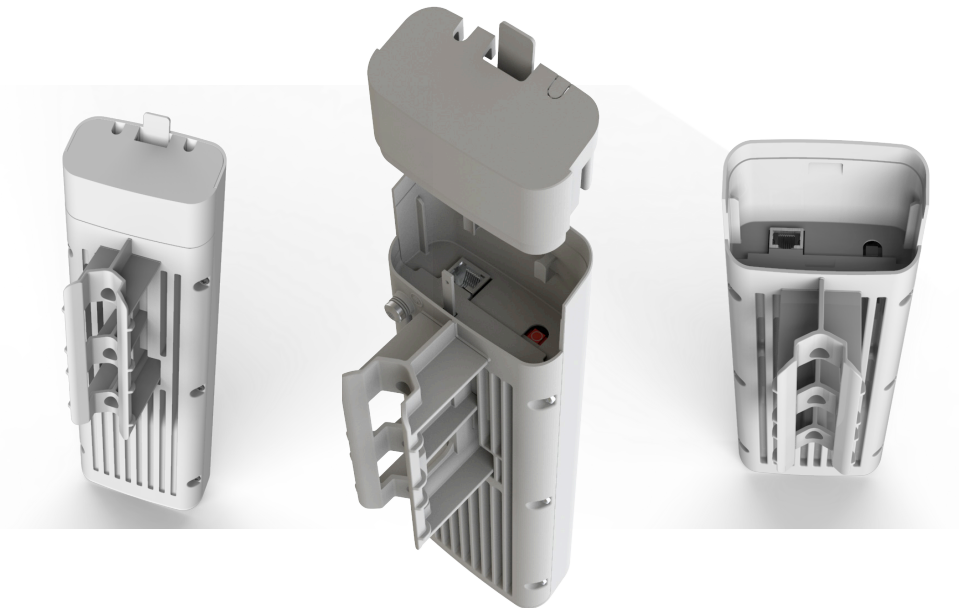|	
Transmit Power Range	57 dB dynamic range (to EIRP limit by region) (1 dB step)
Maximum Transmit Power	+27 dBm (MIMO, combined V+H) (+22 dBm @ 256QAM)
Power Control	ATPC (Automatic Transmit Power Control) at system level, all Subscribers implement ATPC

Certifications

ISED Canada	109W-0042
FCC ID	Z8H89FT0042
	EN 301 893 v2.1.1
	EN 302 502 v2.1.1

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

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