

# 450b Subscriber and Backhaul



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

## KEY FEATURES:

- Ultra-wide band radios support the entire band, from 4.9 to 5.925 GHz.
- 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.
- Capable of up to 300 Mbps aggregate in a 40 MHz channel.
- Backhaul radios can function as a Point-to-Point (PTP) link or as a Subscriber Module (SM), except for Global models.

## SPECIFICATIONS

PRODUCT		MID-GAIN (17 dBi)	HIGH GAIN 4-PACK (24 dBi)	HIGH GAIN (Radio Only)
Model Numbers	Global	C050045C011A*	C050045H012A*	C050045C012A*
	ROW	C050045B031A	C050045H021A	C050045B021A
	FCC	C050045B032A	C050045H022A	C050045B022A
	ISED	C050045B033A	C050045H023A	C050045B023A
	EU	C050045B034A	C050045H024A	C050045B024A
	No Encryption	C050045B035A	C050045H025A	C050045B025A

## 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

## INTERFACE

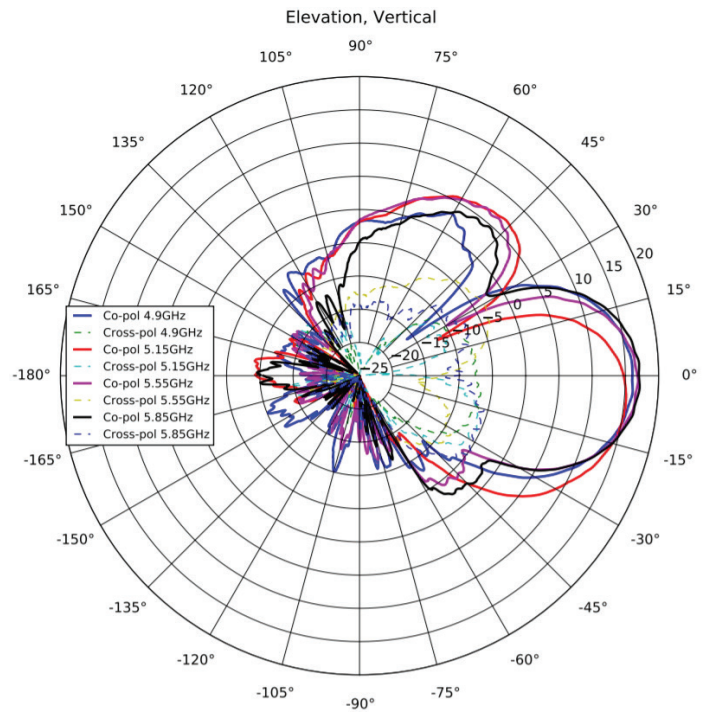
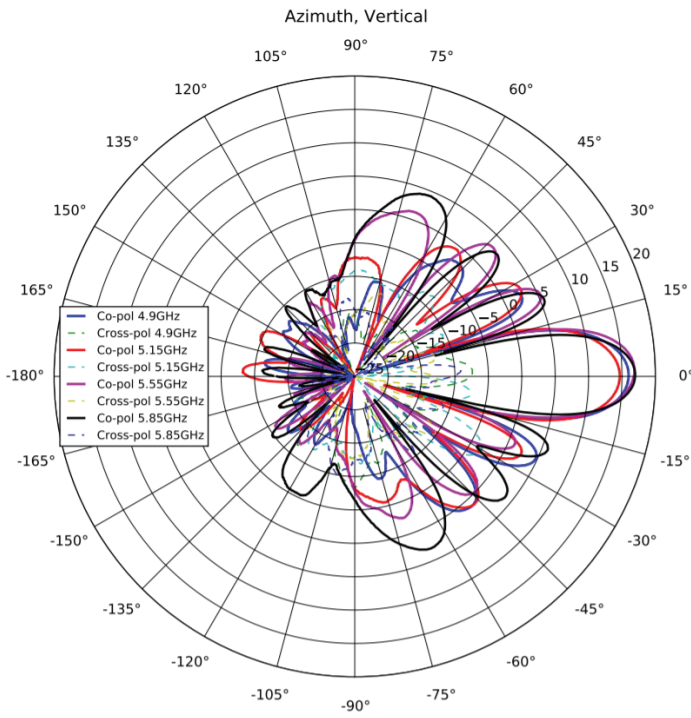
MAC (Media Access Control) Layer	Cambium Networks proprietary
Physical Layer	2x2 MIMO OFDM
Ethernet Interface	100/1000BaseT, full duplex, rate auto negotiated, 802.3 compliant
Protocols Used	IPv4, IPv6, UDP, TCP/IP, ICMP, Telnet, SNMP, HTTP, FTP
Network Management	IPv4/IPv6 (dual stack), HTTP, HTTPS, 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

\*Global models can *only* function as SM

## SPECIFICATIONS

<b>SECURITY</b>		
Encryption	FIPS-197 128-bit AES, 256-bit AES (optional)	
<b>PERFORMANCE</b>		
PPS	50,000	
ARQ	Yes	
Modulation Levels (Adaptive)	MCS	Signal to Noise Required (SNR, in dB)
2X	QPSK	10
4X	16-QAM	17
6X	64-QAM	24
8X	256-QAM	32
Ultimate Sensitivity	-94 dBm	
Maximum Deployment Range	Up to 40 miles (64 km)	
Latency	3 - 5 ms, typical	
GPS Synchronization	Yes, synchronized by Access Point	
Quality of Service	Diffserve QoS	
<b>LINK BUDGET</b>		
Transmit Power Range	22 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	
<b>ANTENNA</b>	<b>MID-GAIN (17 dBi)</b>	<b>HIGH GAIN (24 dBi)</b>
Integrated Antenna Peak Gain	17 dBi	24 dBi
3 dB Beamwidth - Azimuth	15° Azimuth, 30° Elevation	7° Azimuth, 7° Elevation
Polarization	Dual linear, H + V	Dual linear, H + V
Front-To-Back Isolation	>20 dB	>25 dB
Cross Polarization	15 dB	15 dB
<b>PHYSICAL</b>		
Antenna Accessories	N/A	Optional Radome: N000900L021A
Surge Suppression	EN 61000-4-5: 10x700us, 4Kv EN 61000-4-2: ESD 30kV contact / 30kV air	EN 61000-4-5: 10x700us, 4Kv EN 61000-4-2: ESD 30kV contact / 30kV air
Mean Time Between Failure	> 40 Years	> 40 Years
Environmental	IP 55	IP 67
Temperature / Humidity	-40°C to +60°C (-40°F to +140°F), 0-95% non-condensing	-40°C to +60°C (-40°F to +140°F), 0-100% condensing
Weight	0.6 kg (1.4 lb.) (includes mounting bracket)	3.1 kg (7 lb.) (includes mounting bracket)
Wind Survival	200 km/hour (124 mi/hour)	200 km/hour (124 mi/hour)
Dimensions (HxWxD) (including mount)	12.5 x 24.8 x 12 cm (4.9" x 9.8" x 4.7")	45 cm diameter x 28 cm (17.8" diameter x 11.2")
Pole Diameter Range / Mechanical Tilt (w/ included mount)	2.5 to 4.1 cm (1" to 1.6") w/ included clamp (to 5.7 cm (2.25") w/ larger clamp ± 20 degrees mechanical tilt	2.5 - 7.6 cm (1" to 3") ± 20 degrees mechanical tilt
Power Consumption	9 W nominal, 12 W peak	9 W nominal, 12 W peak
Input Voltage	20 - 32 V DC	20 - 32 V DC
<b>CERTIFICATIONS</b>		
Canada (ISED)	109W-0032	109W-0042
FCC ID	Z8H89FT0032	Z8H89FT0042
ETSI	EN 301 893 v1.8.1, EN 301 893 v2.1.1 Clause 4.8 EN 302 502 v2.1.1	EN 301 893 v1.8.1, EN 301 893 v2.1.1 Clause 4.8 EN 302 502 v2.1.1

## 450b MID-GAIN ANTENNA PATTERNS



## 450b HIGH GAIN ANTENNA PATTERNS

