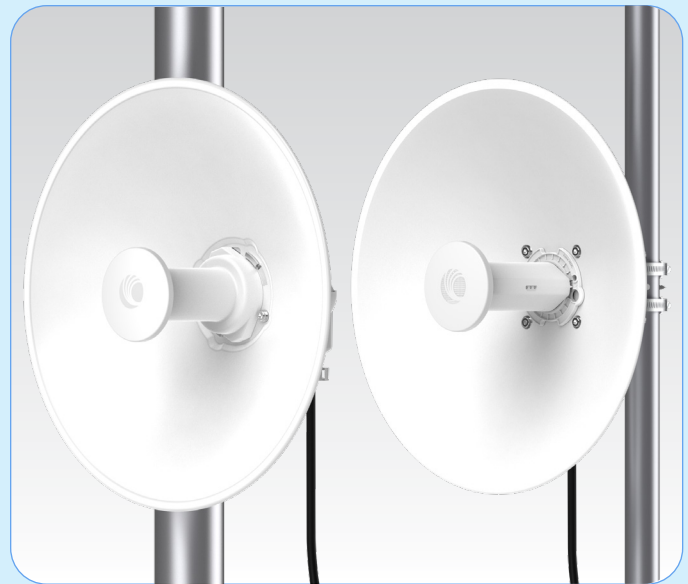


ePMP™ Force 4500 Series Subscriber Module

QUICK LOOK:

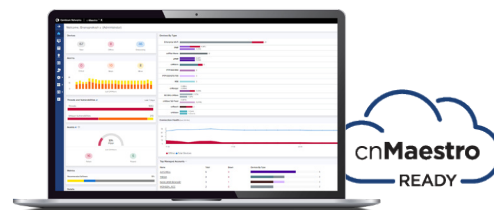
- **High-performance subscriber modules for point-to-point and point-to-multipoint fixed wireless broadband applications**
- **Gbps capacity leveraging 80 MHz channels and 802.11ax technology**
- **Compatible with ePMP 4500 Series Access Points for MU-MIMO performance.**
- **3-year hardware warranty**



Service providers face ever-increasing demand for capacity in a limited amount of spectrum. The Force 4500 series of subscriber modules (SM) meet this demand by offering high performance and low latency across both point-to-multipoint and point-to-point deployments.

Force 4500 SM series have the following differentiating features:

- High capacity and latencies less than 5 ms when using ePTP technology
- Proven air interface on top of 802.11ax technology
- Interoperability with the ePMP 4500 which uses MU-MIMO to achieve more than 4 Gbps per sector by transmitting to two ePMP 4500 SM's simultaneously.
- 1024QAM and an integrated 25 dBi dish antenna
- Multiple levels of QoS (Quality of Service) for voice, video and data applications supporting a wide variety of service packages for both residential and enterprise users
- Security features meeting the requirements of enterprise, industrial, government and service provider users



- Management by Cambium Networks cnMaestro™ element management system for easy provisioning, monitoring and upgrades
- Network planning with LINKPlanner and cnHeat
- 3-year hardware warranty and support from Cambium Networks
- Each SM comes with a Power over Ethernet injector and pole mount hardware included

ePMP™ Force 4500 Series Subscriber Module

Spectrum	
Specs in this table apply to all models, except where noted.	
Available Models	Force 4525 and Force 4525L
Channel Width MHz	20 40 80 MHz
Proprietary Physical Layer	Air Interface on top of 802.11ax technology (2x2 MIMO/OFDMA)
Channel Spacing	Configurable in 5 MHz increments
Frequency Range	Wide Band Operation 5150–5920 MHz (Note: Allowable frequencies and bands are dictated by individual country regulations.) Operation under AFC (Automatic frequency coordination) control in FCC jurisdictions.
MAC Layer (Media Access Control)	Cambium Proprietary
Ethernet Interface	100/1000 BaseT, Compatible with Cambium PoE & Standard PoE pinouts
Protocols Used	IPv4/IPv6 (Dual Stack), UDP, TCP, ICMP, SNMPv2c, NTP, STP, IGMP, SSH
Network Management	IPv4/IPv6, HTTPs, SNMPv2c, SSH, Cambium Networks cnMaestro™
VLAN	802.1Q with 802.1p priority

Performance		
	Force 4525	Force 4525L
ARQ	Yes	Yes
Nominal Receive Sensitivity (w/FEC) @20 MHz Channel	MCS 0 = -91 dBm to MCS 11 (1024 QAM-5/6) = -59 dBm (per chain)	MCS 11 = -91 dBm to MCS 11 (1024 QAM-5/6) = -59 dBm (per chain)
Nominal Receive Sensitivity (w/FEC) @40 MHz Channel	MCS 0 = -88 dBm to MCS 11 (1024 QAM-5/6) = -56 dBm (per chain)	MCS 11 = -88 dBm to MCS 11 (1024 QAM-5/6) = -56 dBm (per chain)
Nominal Receive Sensitivity (w/FEC) @80 MHz Channel	MCS 0 = -85 dBm to MCS 11 (1024 QAM-5/6) = -53 dBm (per chain)	MCS 11 = -85 dBm to MCS 11 (1024 QAM-5/6) = -53 dBm (per chain)
Modulation Levels (Adaptive)	MCS 0 (BPSK) to MCS 11 (1024 QAM-5/6)	MCS 0 (BPSK) to MCS 11 (1024 QAM-5/6)
Transmit Power Range	+3 to +28 dBm (combined, to regional EIRP limit) (1 dB interval)	+3 to +28 dBm (combined, to regional EIRP limit) (1 dB interval)
QoS (Quality of Service)	Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority, MIR/CIR* support	Three level priority (Voice, High, Low) with packet classification by DSCP, COS, VLAN ID, IP & MAC Address, Broadcast, Multicast and Station Priority, MIR/CIR* support

ePMP™ Force 4500 Series Subscriber Module

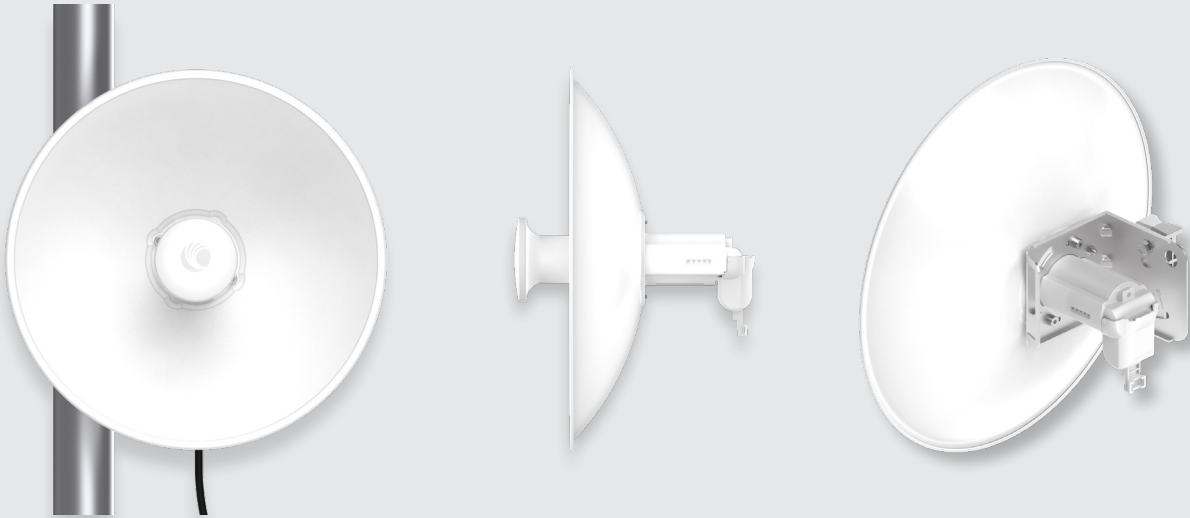
Physical		
	Force 4525	Force 4525L
Surge Supression*	1 Joule Integrated	1 Joule Integrated
Environmental	IP55	IP55
Temperature	-30°C to 55°C (-22°F to 131°F)	-30°C to 55°C (-22°F to 131°F)
Weight	2.76 Kg (6.1 lbs)	1.88Kg (4.14lbs)
Wind Survival	200 km/hour (124 mi/hour)	200 km/hour (124 mi/hour)
Dimensions (Dia x Depth)	472 x 472 x 296 mm (18.5 x 18.5 x 11.7 in)	472 x 472 x 281 mm (18.5 x 18.5 x 11.0 in)
Pole Diameter Range	Center: 3.1 to 7.6 cm (1.25 to 3.0 inches)	Center: 3.1 to 7.6 cm (1.25 to 3.0 inches)
Power Consumption	13W (Up to 15W in extreme cold temperatures when heater is activated)	13W
Input Voltage	Passive PoE 27–59V	Passive PoE 13–30V

Security	
Encryption	All models: 128-bit AES (CCMP mode), 256-bit AES optional where allowed

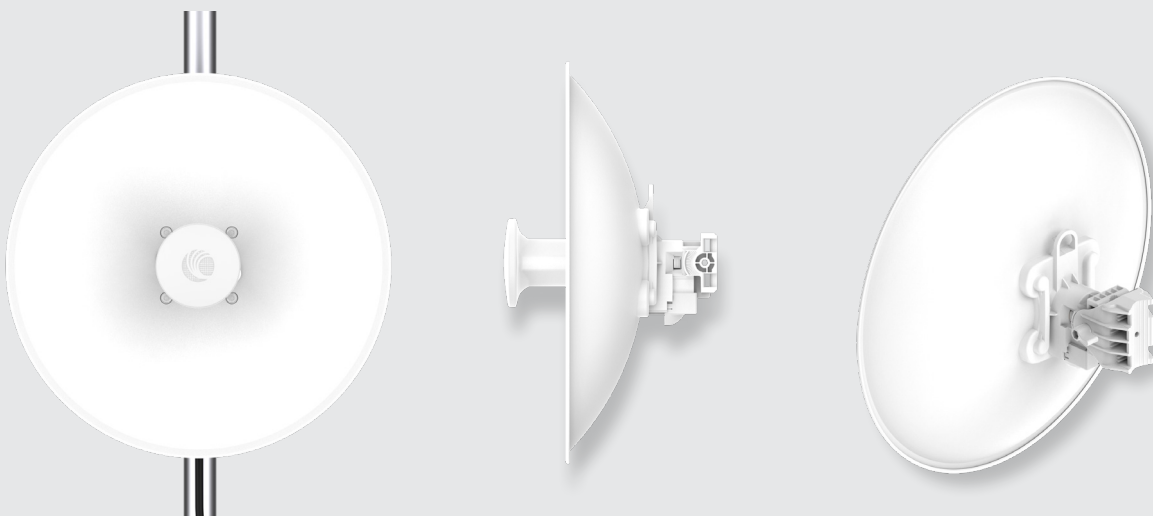
Certifications		
	Force 4525	Force 4525L
FCCID	Z8H89FT0074	N/A
FCC Regulatory Part #	C058940P142A	N/A
ETSI Regulatory Part #	C058940P142A	C050940P051A
Industry Canada Cert	109W-0074	N/A
CE	See Cambium Website for Declaration of Conformity	See Cambium Website for Declaration of Conformity

ePMP™ Force 4500 Series Subscriber Module

Force 4525



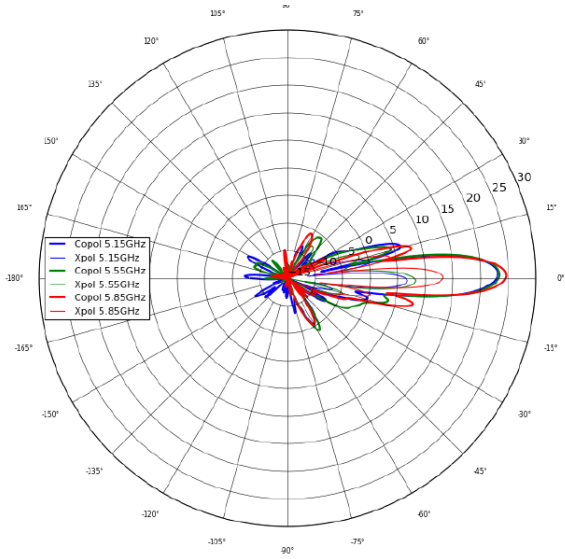
Force 4525L



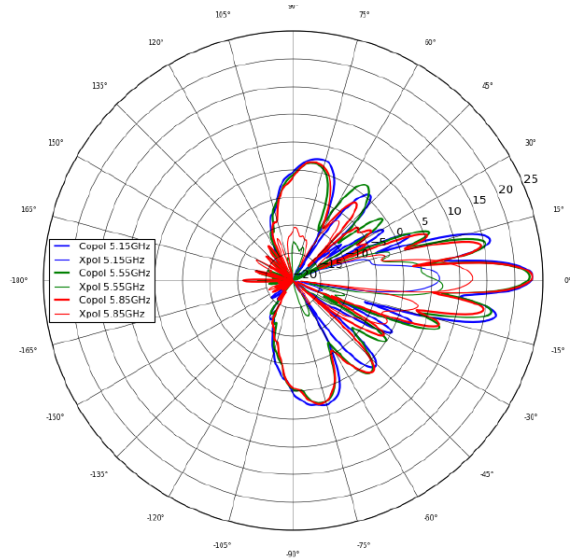
ePMP™ Force 4500 Series Subscriber Module

Force 4525 Antenna Patterns

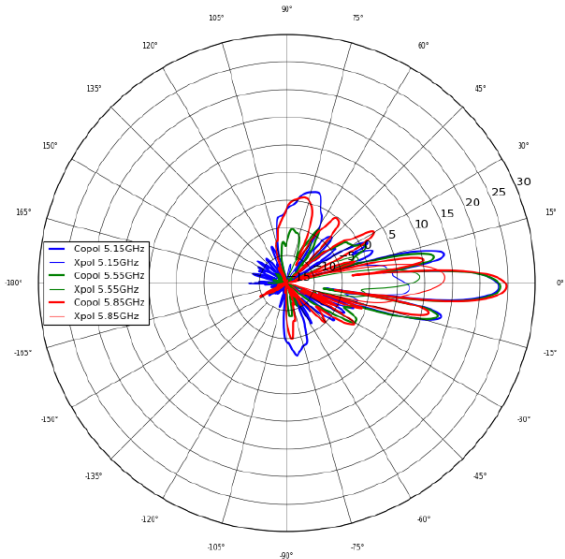
Azimuth Horizontal



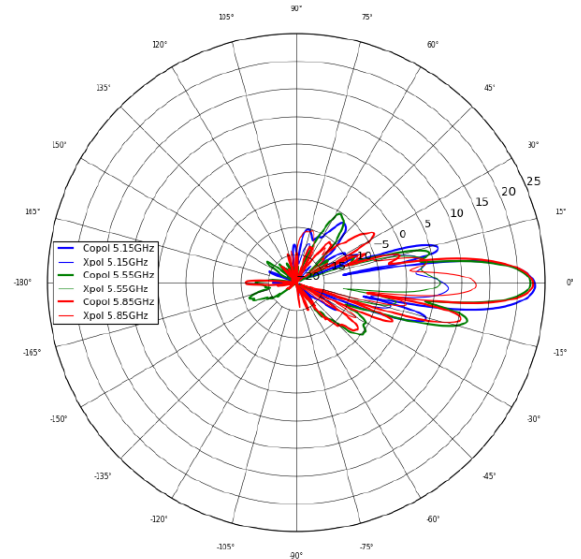
Azimuth Vertical



Elevation Horizontal



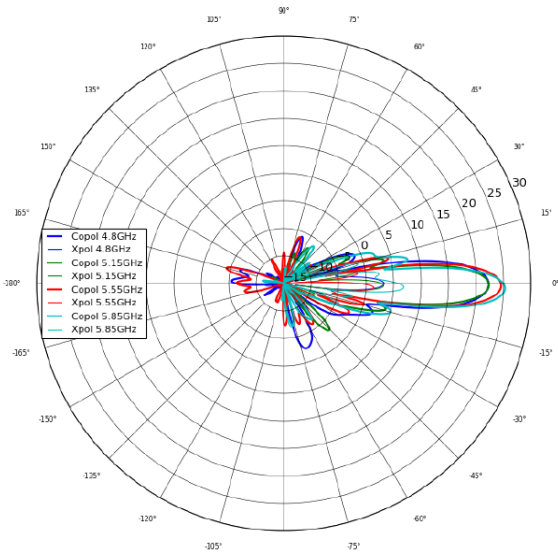
Elevation Vertical



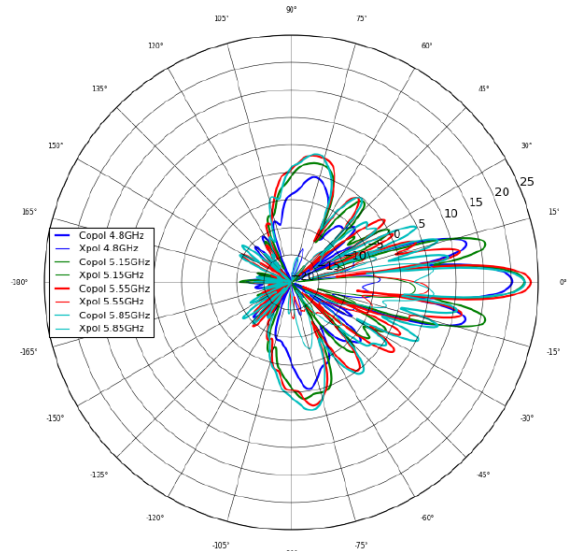
ePMP™ Force 4500 Series Subscriber Module

Force 4525L Antenna Patterns

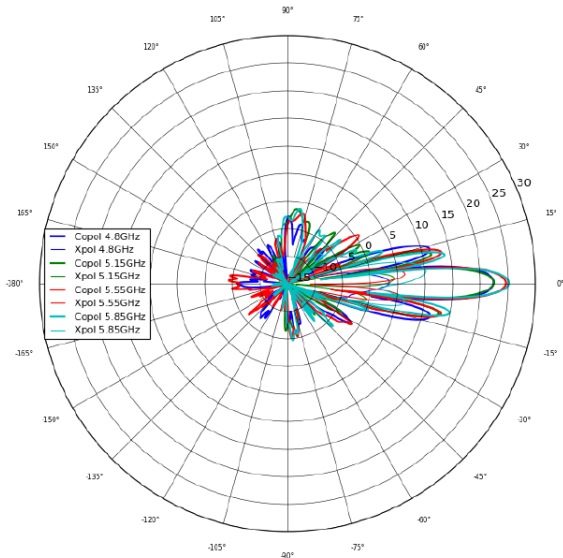
Azimuth Horizontal



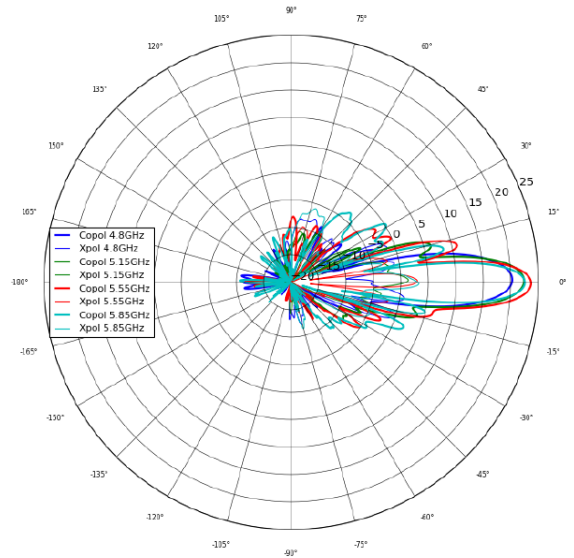
Azimuth Vertical



Elevation Horizontal



Elevation Vertical



ePMP™ Force 4500 Series Subscriber Module

Force 4525 Ordering Information

C050940M041A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (no cord)
C050940M141A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (US cord)
C058940M144A	ePMP 5 GHz Force 4525 SM Bulk packaging (IC) (Canada/US cord)
C050940M241A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (EU cord)
C050940M243A	ePMP 5 GHz Force 4525 SM Bulk packaging (EU) (EU cord)
C050940M341A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (UK cord)
C050940M343A	ePMP 5 GHz Force 4525 SM Bulk packaging (EU) (UK cord)
C050940M441A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (India cord)
C050940M445A	ePMP 5 GHz Force 4525 SM Bulk packaging (India) (India Cord)
C050940M541A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (China cord)
C050940M641A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (Brazil cord)
C050940M741A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (Argentina cord)
C050940M841A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (ANZ cord)
C050940M941A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (South Africa cord)
C050940MZ41A	ePMP 5 GHz Force 4525 SM Bulk packaging (ROW) (No PSU)
C058940M142A	ePMP 5 GHz Force 4525 SM Bulk packaging (FCC) (US cord)
C050940M246A	ePMP 5 GHz Force 4525 SM Bulk packaging (Indonesia) (EU Cord)

Force 4525L Ordering Information

C050940M051A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (no cord)
C050940M151A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (US cord)
C050940M251A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (EU cord)
C050940M253A	ePMP 5 GHz Force 4525L SM Bulk packaging (EU) (EU cord)
C050940M351A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (UK cord)
C050940M353A	ePMP 5 GHz Force 4525L SM Bulk packaging (EU) (UK cord)
C050940M451A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (India cord)
C050940M455A	ePMP 5 GHz Force 4525L SM Bulk packaging (India) (India Cord)
C050940M551A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (China cord)
C050940M651A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (Brazil cord)
C050940M751A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (Argentina cord)
C050940M851A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (ANZ cord)
C050940M951A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (South Africa cord)
C050940MZ51A	ePMP 5 GHz Force 4525L SM Bulk packaging (ROW) (No PSU)
C050940M256A	ePMP 5 GHz Force 4525L SM Bulk packaging (Indonesia) (EU Cord)

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.