

Enlace Backhaul / 1 Gbps / Wi-Fi 6 / Antena 25 dBi / 4.9-6.2 GHz / Alcance 10 km (32,808 ft) / IP67

SKU: C050940M101A Marca: CAMBIUM NETWORKS Categoría: 5 y 6 GHz

Garantía: 3 años

$32,386.99

Precios con IVA incluido

DESCRIPCIÓN

El enlace backhaul ePMP Force 425 integra tecnología 802.11ax (Wi-Fi 6) para entregar capacidad de 1 Gbps en conectividad punto a punto de próxima generación. Diseñado para proveedores de servicios que requieren extensiones de fibra, micropop o backhaul de bajo costo sin sacrificar rendimiento, combina antena de 25 dBi, rango de frecuencia 4.9-6.2 GHz y modulación 1024-QAM. La arquitectura ePTP de Cambium Networks garantiza latencia inferior a 5 ms con eficiencia espectral optimizada. Su construcción IP67 permite operación continua en condiciones climáticas extremas, eliminando la necesidad de gabinetes externos adicionales.

Características Generales
• Rendimiento: hasta 1 Gbps con 802.11ax (Wi-Fi 6)
• Antena integrada: 25 dBi de ganancia
• Rango de frecuencia: 4.9 - 6.2 GHz
• Anchos de canal: 20 / 40 / 80 MHz
• Modulación: 1024-QAM
• Latencia: menor a 5 ms
• 33% más ancho de banda vs generación anterior
• Alcance máximo: hasta 10 km (32,808 ft)
• Protección: IP67 para exterior y condiciones extremas
• Modo de operación: ePTP (punto a punto optimizado)

Desempeño
Capacidad máxima: 1 Gbps
Estándar: 802.11ax (Wi-Fi 6)
Modulación: 1024-QAM
Latencia: < 5 ms
Mejora de ancho de banda: 33% vs generación anterior
Alcance: hasta 10 km (32,808 ft)

Físicas / Eléctricas
Antena integrada: 25 dBi
Rango de frecuencia: 4.9 - 6.2 GHz
Anchos de canal: 20 / 40 / 80 MHz
Protección: IP67

Contenido del Paquete
Enlace completo para 2 puntos
2 unidades ePMP Force 425 con antena integrada

ESPECIFICACIONES

Característica 1	**Latencia inferior a 5 ms para aplicaciones críticas**
Característica 2	**1024-QAM para eficiencia espectral superior**
Característica 3	**Canales de 80 MHz con 33% más ancho de banda**
Característica 4	**Paquete completo listo para despliegue de dos puntos**
Característica 5	**Modo ePTP optimizado para backhaul punto a punto**
Característica 6	**Diseño todo-en-uno reduce complejidad de instalación**

MEMORIA TÉCNICA · C050940M101A

Número de parte de esta ficha: C050940M101A. La información corresponde a esta variante.

DATA SHEET 1?2020 Cambium Networks, Ltd. cambiumnetworks.com
quick look:
- Industry’s first point-to-point
solution based on 802.11ax
delivering up to Gbps capacity
- High-capacity enterprise access
- Low-cost WISP backhaul
- Wi-Fi hotspot backhaul
- GPON last mile
ePMP™ Force 400 Series
Cambium Networks introduces the ePMP Force 425 and Force 400C point-to-point solutions which deliver up to 1 Gbps throughput at a breakthrough price point based on the latest 802.11ax standards. The Force 400 Series is the ideal solution for service providers looking to deliver high-capacity access services to enterprise and residential customers. It also serves as a low-cost backhaul for MicroPOP’s and outdoor Wi-Fi access points that require lots of capacity at moderate range without the overhead of licensed microwave. With an integrated SFP port and optional GPON ONU module, the Force 425 makes a great fiber extension to reach places where fiber cannot.
The Force 425 pushes this capacity farther than ever with an integrated 25 dBi dish (and even farther with the optional 28 dBi range extender). The optional range extender is ordered separately and can be assembled and attached in the field to add additional link budget and fade margin, This is for challenging links or to move to higher capacity where needed and higher modulations can

be achieved.
For even longer range applications, the Force 400C is a connectorized option with two RP-SMA RF interfaces for use with larger parabolic dishes or horn antennas.
Leveraging the latest technology from the 802.11ax standard and Cambium Networks proprietary ePTP mode, the Force 425/400C delivers high spectral efficiency with features such as 1024 QAM, 80 MHz channels, a highly efficient frame structure and the proven ePTP air interface. The Force 400 Series delivers Gbps performance with less than 5 ms latency.
The Force 400 series has enterprise-grade security with 128-bit AES over-the-air encryption (256-bit AES where export rules allow), secure management interfaces with roles-based authentication and standards-based device authentication including RADIUS support.
Force 425/400C is built for the real world with IP67 ruggedization, simplified mounting scheme and Cambium Networks' 3-year hardware warranty.
Plan and manage your Force 425/400C deployments with Cambium Networks LINKPlanner and cnMaestro.

Spectrum
Force 400C / Force 425
Channel Width MHz 20 | 40 | 80
Proprietary Physical Layer802.11ax, 2x2 MIMO/OFDM
Channel
Spacing
Configurable in 5 MHz increments
Frequency Range
Wide Band Operation 4910 - 6135 MHz
(Note: Country dependent based on local regulations. Support of 5870 to 6135 coming in a future software upgrade.)
MAC Layer
(Media Access Control)
Cambium Proprietary
Ethernet Interface 100/1000 BaseT, Compatible with Cambium PoE & Standard PoE pinouts; 10 Gigabit SFP cage for optional SFP modules
Protocols
Used
IPv4/IPv6 (Dual Management 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 400C / Force 425
ARQ Ye s
Maximum Capacity 1 Gbps
Latency < 5 ms
Nominal Receive Sensitivity
(w/FEC) @20 MHz Channel
MCS 0 = -93 dBm to MCS 11 (1024 QAM-5/6) = -63 dBm (per chain)
Nominal Receive Sensitivity
(w/FEC) @40 MHz Channel
MCS 0 = -90 dBm to MCS 11 (1024 QAM-5/6) = -60 dBm (per chain)
Nominal Receive Sensitivity
(w/FEC) @80 MHz Channel
MCS 0 = -87 dBm to MCS 11 (1024 QAM-5/6) = -57 dBm (per chain)
Modulation Levels
(Adaptive)
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)

Physical
Force 400C Force 425
Connectors 1 x RJ-45, 1 x SFP, 2 x RP-SMA 1 x RJ-45, 1 x SFP
Surge Supression* 1 Joule Integrated 1 Joule Integrated
Environmental IP67 IP67
Temperature -30°C to 65°C (-22°F to 149°F) -30°C to 65°C (-22°F to 149°F)
Weight 1.3 kg (2.9 lbs.) 4.8 kg (10.6 lbs.)
Wind Survival 180 km/h (112 mph) 180 km/hour (112 mph)
Dimensions
(H x W x D)
256 mm x 125 mm x 46 mm
(10.1 in x 4.9 in. x 1.8 in.)
470 mm diameter x 285 mm depth
(18.5 in diameter x 11.2 in depth)
Pole Diameter Range Center:
3.1 to 7.6 cm
(1.25 to 3.0 in)
Center:
3.1 to 7.6 cm
(1.25 to 3.0 in)
Power Consumption 28 W 28 W
Input Voltage 802.3at or Passive PoE
44-59 V
- *Optional 56 V Surge Suppressor Available: Part # C000000L033A
Security
Force 400C / Force 425
Encryption 128-bit Over-the-Air Encryption (256-bit AES where export rules allow - ROADMAP Feature)
Certifications
Force 400C Force 425
FCC Regulatory
Part Number
C058940P122A C058940P102A
FCC ID** Z8H89FT0062 Z8H89FT0062
ETSI/ROW Regulatory
Part Number
C050940P021A C050940P001A
Industry Canada Cert** 109W-0062 109W-0062
CE EN 301 893 V2.1.1 (5.4 GHz),
EN 302 502 V2.1.1 (5.8 GHz)**
EN 301 893 V2.1.1 (5.4 GHz),
EN 302 502 V2.1.1 (5.8 GHz)**
**Certifications are a place holder until official grant is given

Antenna Specifications

Force 425 Force 425 with Range Extender
Frequency Range 4910 – 6135 MHz 4910 – 6135 MHz
Antenna Type Dish Optional Dish Accessory
Peak Gain 25 dBi 28 dBi
3 dB Beamwidth Azimuth 15º TBD
3 dB Beamwidth Elevation 30º TBD
Front-To-Back Isolation TBD TBD
Cross Polarization TBD TBD
Force 400C Force 425 Force 425 with Range Extender
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DATA SHEET
ePMP? Force 400 Series
Force 425 Antenna Patterns
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Azimuth, Horizontal
Elevation, Horizontal
Azimuth, Vertical
Elevation, Vertical

DATA SHEET
ePMP? Force 400 Series
Force 400C Ordering Information
C050940C021A ePMP 5 GHz Force 400C (ROW) (no cord)
C050940C121A ePMP 5 GHz Force 400C (ROW) (US cord)
C058940C124A ePMP 5 GHz Force 400C (IC) (Canada/US cord)
C050940C221A ePMP 5 GHz Force 400C (ROW) (EU cord)
C050940C223A ePMP 5 GHz Force 400C (EU) (EU cord)
C050940C321A ePMP 5 GHz Force 400C (ROW) (UK cord)
C050940C323A ePMP 5 GHz Force 400C (EU) (UK cord)
C050940C421A ePMP 5 GHz Force 400C (ROW) (India cord)
C050940C422A ePMP 5 GHz Force 400C (India) (India Cord)
C050940C521A ePMP 5 GHz Force 400C (ROW) (China cord)
C050940C621A ePMP 5 GHz Force 400C (ROW) (Brazil cord)
C050940C721A ePMP 5 GHz Force 400C (ROW) (Argentina cord)
C050940C821A ePMP 5 GHz Force 400C (ROW) (ANZ cord)
C050940C921A ePMP 5 GHz Force 400C (ROW) (South Africa cord)
C050940CZ21A ePMP 5 GHz Force 400C (ROW) (No PSU)
C058940C122A ePMP 5 GHz Force 400C (FCC) (US Cord)
Force 425 Ordering Information
C050940M001A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (no cord) - Priced per radio
C050940M101A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (US cord) - Priced per radio
C058940M104A ePMP 5 GHz Force 425 SM 2-pack packaging (IC) (Canada/US cord) - Priced per radio
C050940M201A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (EU cord) - Priced per radio
C050940M203A ePMP 5 GHz Force 425 SM 2-pack packaging (EU) (EU cord) - Priced per radio
C050940M301A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (UK cord) - Priced per radio
C050940M303A ePMP 5 GHz Force 425 SM 2-pack packaging (EU) (UK cord) - Priced per radio
C050940M401A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (India cord) - Priced per radio
C050940M402A ePMP 5 GHz Force 425 SM 2-pack packaging (India) (India Cord) - Priced per radio
C050940M501A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (China cord) - Priced per radio
C050940M601A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (Brazil cord) - Priced per radio
C050940M701A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (Argentina cord) - Priced per radio
C050940M801A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (ANZ cord) - Priced per radio
C050940M901A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (South Africa cord) - Priced per radio
C050940MZ01A ePMP 5 GHz Force 425 SM 2-pack packaging (ROW) (No PSU) - Priced per radio
C058940M102A ePMP 5 GHz Force 425 SM 2-pack packaging (FCC) (US Cord) - Priced per radio

DATA SHEET
ePMP? Force 400 Series
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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Force 400 Series Spares Ordering Information
C050940F001A ePMP 5 GHz Force 425 Spare Radio Only (ROW)
C058940F104A ePMP 5 GHz Force 425 Spare Radio Only (IC)
C050940F203A ePMP 5 GHz Force 425 Spare Radio Only (EU)
C050940F402A ePMP 5 GHz Force 425 Spare Radio Only (India)
C058940F102A ePMP 5 GHz Force 425 Spare Radio Only (FCC)
C050940M100A ePMP 5 GHz Force 425 Spare Dish 2-Pack, priced per unit
N000900L061A ePMP Force 400 Spares Kit
Extended Warranty Options
Each Force 400 Series radio comes standard with 3-year warranty on hardware.
EW-E1EPF400-WW ePMP Force 400 Extended Warranty, 1 Additional Year
EW-E2EPF400-WW ePMP Force 400 Extended Warranty, 2 Additional Years
EW-E1EPF425-WW ePMP Force 425 Extended Warranty, 1 Additional Year
EW-E2EPF425-WW ePMP Force 425 Extended Warranty, 2 Additional Years
Force 425 Optional Range Extenders
N000900L062A ePMP Force 425 Range Extender Dish Accessory 4-Pack Packaging, priced per unit