

# ePMP™ Force 300 CSM

## Connectorized Subscriber Module



Wireless service providers and enterprises around the globe are challenged to deliver reliable connectivity in overcrowded RF environment. As spectrum increasingly becomes a scarce commodity, finding the right broadband connectivity solution is vital for all low and high density types of deployments.

Cambium Networks resolves this challenge with a breakthrough technology solution that delivers superior performance, resiliency and reach in the most congested environments. Combining the latest 802.11AC Wave 2 chipset and the field proven TDD MAC of ePMP, the Force 300 CSM offers a versatile solution enabling a wide variety of deployment models including high-gain parabolic dishes and narrow-beam horns for point to point applications and, with the ePMP 3000 Access Point, point to multipoint operations.

### KEY ADVANTAGES:

- Cambium Networks' ePMP Force 300 CSM is designed to operate in high interference environments and provides superior throughput of over 500 Mbps of real user data.
- The ePMP Force 300 CSM supports channel size configurations from 20 MHz up to 80 MHz and modulations up to 256 QAM.
- Configurable modes of operation ensure robust adaptivity to both symmetrical and asymmetrical traffic while providing high performance and round-trip latency as low as 3-5 ms.
- QoS management offers an outstanding quality for triple play services - VoIP, video, data - and provides three levels of traffic priority.
- Long deployment range is enabled by up to 27dBm of transmit power and connectorized antenna ports.
- The Force 300 CSM offers deployment versatility with options for parabolic dishes and compatibility with the RF Elements Twistport™ ePMP adaptor.
- Installation is a breeze with the easy to install mount, capable of pole and wall mounting.

## SPECIFICATIONS

### SPECTRUM

Channel Spacing	Configurable in 5 MHz increments
Frequency Range	Wide Band Operation 4.910 – 5.970 MHz (Note: Allowable frequencies and bands are dictated by individual country regulations.)
Channel Width	20   40   80 MHz

## SPECIFICATIONS

### INTERFACE

MAC (Media Access Control) Layer	Cambium Proprietary
Physical Layer	2x2 MIMO/OFDM
Ethernet Interfaced	10/100/1000 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

ARQ	Yes
Nominal Receive Sensitivity (w/FEC) @20 MHz Channel	MCS0 = -89 dBm to MCS8 (256 QAM-3/4) = -66 dBm (per chain)
Nominal Receive Sensitivity (w/FEC) @40 MHz Channel	MCS0 = -87 dBm to MCS9 (256QAM-5/6) = -64 dBm (per chain)
Nominal Receive Sensitivity (w/FEC) @80 MHz Channel	MCS0 = -84 dBm to MCS9 (256QAM-5/6) = -59 dBm (per chain)
Modulation Levels (Adaptive)	MCS0(BPSK)to MCS9 (256QAM5/6)
Transmit Power Range	0 to +29 dBm (combined, to regional EIRP limit) (1 dB interval)

### PHYSICAL

Surge Suppression	1 Joule Integrated; Optional 30V Surge Suppressor (C000000L065A)
Environmental	IP67 and IP68 Compliant
Temperature	-22°F to +140°F (-30°C to +60°C)
Weight	0.5 kg (1.1 lbs.) without bracket
Wind Survival	180 km/hour (112 mi/hour)
Dimensions	84 x 223 x 32 mm (3.3 x 8.8 x 1.3 inches) without brackets
Pole Diameter Range	6.4 cm – 7.6 cm (2.5 in – 3 in)
Power Consumption	12 Watts (Up to 15 Watts in extreme cold temperatures when heater is activated.)
Input Voltage	30 Volts nominal (14 to 30V range) (note that 14V minimum must be maintained at radio connector under all conditions including long cable lengths)
Powering Method Supported	29 V Cambium PoE (included)

### SECURITY

Encryption	128-bit AES (CCMP mode)
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### CERTIFICATIONS

FCCID	Z8H-89FT0047
Industry Canada Cert	109W-0047
CE	EN301 893 V2.1.1 (5.4 GHz), EN 302 502 V2.1.1 (5.8 GHz)

### PART NUMBER

### DESCRIPTION

C058910C122A	ePMP 5 GHz Force 300 CSM Radio (FCC) (US cord)
C050910C124A	ePMP 5 GHz Force 300 CSM Radio (IC) (Canada/US cord)
C050910C223A	ePMP 5 GHz Force 300 CSM Radio (EU) (EU cord)
C050910C323A	ePMP 5 GHz Force 300 CSM Radio (EU) (UK cord)
C050910C021A	ePMP 5 GHz Force 300 CSM Radio (ROW) (no cord)
C050910C121A	ePMP 5 GHz Force 300 CSM Radio (ROW) (US cord)
C050910C221A	ePMP 5 GHz Force 300 CSM Radio (ROW) (EU cord)
C050910C321A	ePMP 5 GHz Force 300 CSM Radio (ROW) (UK cord)
C050910C421A	ePMP 5 GHz Force 300 CSM Radio (ROW) (India cord)

## SPECIFICATIONS

PART NUMBER	DESCRIPTION
C050910C422A	ePMP 5 GHz Force 300 CSM Radio (India) (India Cord)
C050910C521A	ePMP 5 GHz Force 300 CSM Radio (ROW) (China cord)
C050910C621A	ePMP 5 GHz Force 300 CSM Radio (ROW) (Brazil cord)
C050910C721A	ePMP 5 GHz Force 300 CSM Radio (ROW) (Argentina cord)
C050910C821A	ePMP 5 GHz Force 300 CSM Radio (ROW) (ANZ cord)
C050910C921A	ePMP 5 GHz Force 300 CSM Radio (ROW) (South Africa cord)
C050910CZ21A	ePMP 5 GHz Force 300 CSM Radio (ROW) (No PSU)
ANTENNA CONNECTORS	5 GHZ SPECIFICATION
Frequency Range	4.910– 5.970 MHz
Antenna Type	Connectorized
Connectors	2 x 50 ohm, RP-SMA (Reverse Polarity SMA) Compatible with RF-Elements TwistPort™ Adaptor for ePMP