



# HCMP 700

## One Radio Many Missions

The Cambium Networks HCMP 700 Microwave-Line-of-Sight (MLOS) radio provides rapidly deployable, hardened, secure, and reliable High-Capacity-Line-of-Sight (HCLOS) connectivity for mission critical applications.

### BATTLEFIELD OPTIMIZED

The HCMP 700 is optimized for deployment in the most challenging tactical and fixed environments. The HCMP 700 combines ultra-wideband RF flexibility with advanced dynamic filtering and frequency selection to combat interference and jamming, whether on the battlefield or border. Proven as a primary component of many intelligence, surveillance and reconnaissance (ISR) DoD networks, the HCMP 700 delivers high capacity, reliable connectivity across both open and rugged terrain.

### HIGH PERFORMANCE

The HCMP 700 provides up to 450 Mbps throughput over a single RF channel in both NATO Band IV (4 GHz) and Unlicensed (5 GHz) wireless operation. With industry-leading strong system gain and an advanced OFDM and MIMO proprietary waveform, the HCMP 700 supports rapid deployable links up to 225 km.

### ULTRA-WIDEBAND FLEXIBILITY

As an ultra-wideband radio, the HCMP 700 covers the entire 4.4 to 5.925 GHz band (dynamically) providing maximum flexibility for operations planners, and is usable anywhere on the globe. Further, the HCMP 700 adds the industry's best spectral efficiency at true 10 bits per hertz to make the most of available spectrum -especially important in high RF-clutter environments typical on the battlefield or contested borders.

### SECURE

Combining NIST-validated FIPS 140-2 with up to 256bit AES the HCMP 700 ensures timely and secure delivery of VoIP, video, and C4ISR application data. Cambium also adds over-the-air-re-keying (OTAR) to streamline security key management. In addition to the radio's embedded FIPS 197 AES 256 commercial encryption, the radio supports external device encryption providing HCMP 700 users with assured security across their mission requirements.

### WARFIGHTER-FRIENDLY

All management, configuration items, and system logs are accessed via a standard web browser. User options include dedicated, isolated, secure ports for management allowing for separation of IP and management traffic.

Reflecting a decade of US DoD deployment experience with our original MLOS radio (the PTP 45600) and continuous warfighter feedback - the HCMP 700 is battlefield-ready to deliver reliable, easily deployable High Capacity Line of Sight.

### COMPLETE TACTICAL MLOS CONNECTIVITY KIT

Cambium provides a complete and complimentary suite of warfighter-friendly antennas, quick-deploy and toolless mast systems, auto-alignment, cabling and power systems.



## SPECIFICATIONS

Radio Model	PTP 700
RF Bands	Wide-band operation 4.400 GHz to 5.925 GHz in a single SKU Supported bands include: - NATO Band IV / NTIA Compliant (4.40 GHz to 4.99 GHz) - 4.9 GHz Public Safety Band - 5.1/5.2/5.4/5.8 GHz FCC, 5 GHz ETSI
Channel Sizes	5, 10, 15, 20, 30, 40, and 45 MHz channels (20 MHz channels with HCMP)
Spectral Efficiency	10 bps/Hz maximum
Channel Selection	By Dynamic Spectrum Optimization™ (DSO) or manual intervention; automatic selection on start-up and continual self-optimization to avoid interference
Maximum TX Power	29 dBm at BPSK; 23 dBm at 256 QAM
System Gain	Integrated: Up to 161 dB with 20 MHz channel and integrated 21 dBi antenna; Receiver Sensitivity -97 dBm with 5 MHz channel
Error Correction	Fast Preemptive Adaptive Modulation featuring 13 modulation / FEC coding levels ranging from BPSK to 256 QAM dual payload MIMO
Duplex Scheme	Time Division Duplex (TDD) Adaptive or fixed transmit/receive duty cycles.
TDD	Split synchronization using PTP-SYNC Module
Antenna	Integrated 21.5dBi & N-connectors to support variety of external antennas
Range	Up to 124 miles (200 km)
Security	128/256-bit AES Encryption (optional) HTTPS and SNMPv32 Identity-based user accounts; Configurable password rules; User authentication and RADIUS support Event logging and management; optional logging via syslog
FIPS-197	Compliant
FIPS 140-2 Level 2	Validated

### INTEGRATED ANTENNA

Frequency	4.4 - 5.925 GHz
Gain	23 dBi +/- 1 dB nominal
V & H Beamwidth	10.0 degrees
Port to Port Isolation	18 dB minimum
Front-to-Back Ration	- 35 dB
VSWR	1.7:1
Polarization	Dual (Vertical & Horizontal Polarization)
Weight/Dim	370x370x40 mm (antenna panel only) < 2.5 kg
Environmental	IP66 / Operating:-40 to 60°C / Storage:- 40 to 70°C
Wind Load (Survival)	Up to 220 kmph
Material	Aluminum Construction, Reinforced Mounting

### TACTICAL DIRECTIONAL ANTENNA

Frequency	4.4 - 5.9 GHz
Gain	30 dBi nominal (29.3 dB at 4.4 GHz; 30.4 dB at 5.0 GHz)
Horizontal Beamwidth	4.7 degrees
Vertical Beamwidth	4.7 degrees
Cross-Polarization	- 30 dB
Front-to-Back Ratio	- 35 dB
VSWR	1.5:1
Polarization	Dual (Vertical & Horizontal Polarization)
Dimensions	37.7" [952.5mm] (ø) x 19.5" [495.3mm] (H)
Weight	10.5 lbs. / 4.76 kg
Environmental	IP66 / Operating:-40 to 60°C / Storage:-40 to 70°C
Wind Load	(Survival) 80 mph
Material	Aluminum Construction, (grid) Reinforced Mounting

### TACTICAL SECTOR ANTENNA

Frequency / Gain	4.4 - 5.9 Ghz @ 16dBi
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### TACTICAL OMNI DIRECTIONAL ANTENNA

Frequency / Gain	4.4 - 5.9 Ghz @ 7dBi
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### POSITIONER (AUTO-ALIGNMENT) OPTIONS

Physical Dimensions	Positioner Only: 9.12" (H) x 9.37" (W) x 5.25" (D) (23 cm x 24cm x 13 cm) Positioner w/ PTP700 Integrated: 19.12" (H) x 15" (W) x 8" (D) (48 cm x 38 cm x 20 cm)
Weight	24 lbs. (10.8 kg)
Environmental	IP-67
Power (Positioner)	100-240VAC to 24VDC supply included in positioner kit; 35W standby; 105W maximum
Power (Control Unit)	100-240 VAC 802.3at Power injector included in kit; < 15W
Operating Temp	-30°C to 55°C (-22°F to 131°F)
Pan/Tilt-Axis Range	±217° (±20 Standard Elevation) (Full 360° coverage)
Pan/Tilt-Axis Speed	22°/sec max (PAN) 11°/sec max (TILT)
Positioner Materials	Marine Grade Configuration, Aluminum Housing, 316 Stainless Steel Hardware, Permanently Sealed Radial Ball Bearings Finish: Polyester Powder Coat, Chemical Conversion Coating (Alodine) for Corrosion Resistance Integrated Control Unit IP-67 Junction Box (RJ45 & Power Cable Access)
Mounting	3" - 4" (7.6 cm x 10.2 cm) Pole Mount: tri-pod or mast NOT included and is supplied by customer
Management	Web-based interface (HTTP/HTTPS); Optional SNMPv3 remote monitoring
Hardware Support	One year support included; up to 4 years optional

### MAST SYSTEM

Heights	Up to 18 meters
Payload Capacity	75 to 145 lbs. *
Wind Loading	90 mph
Deployment Time	30-45 minutes *
Number of People	2-4