

ClearMesh 300™

Wireless Mesh Node



Fiber-Grade Bandwidth • Wireless Flexibility • Mesh Reliability

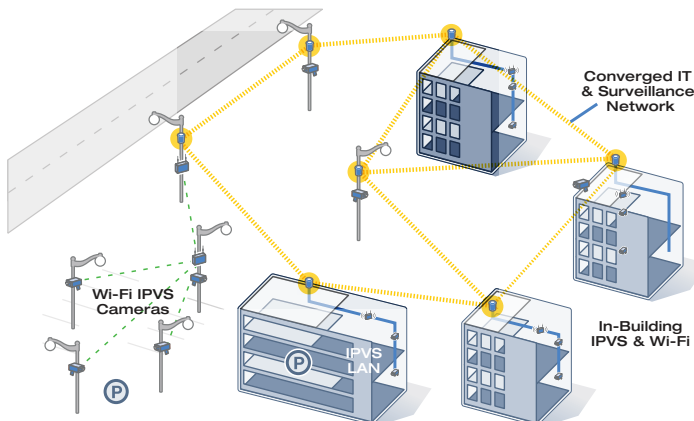
The ClearMesh 300™ (CM 300™) serves as a ubiquitous mesh network element in the ClearMesh Metro Grid™ and Sentry Mesh™ solutions. It integrates the best characteristics of three key technology components: the flexibility of wireless network deployment, the service quality of narrow beam transmission and the resilience of scalable mesh networking. The CM 300 provides fiber-grade bandwidth, and operates in a license-free spectrum without any interference issues. As a result, it can be deployed in campuses and dense metropolitan areas such as schools, business parks, port authorities, shopping malls and city centers.

An entire mesh network is managed from the central ClearMesh Management System – providing scalable, SNMP-based element management including fault and alarm correlation, configuration and performance management of the entire mesh network.

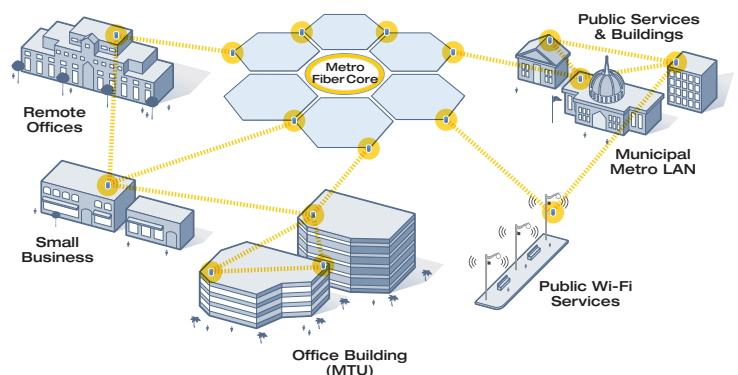
Highly Scalable • Powerful • Affordable

The wireless mesh architecture allows system integrators and network operators to expand a network in a pay-as-you grow business paradigm – at a fraction of the cost of fiber. The CM 300 will distribute up to 300 Mbps of wire-speed, full-duplex capacity – serving thousands of video streams, voice calls, and Internet sessions concurrently. It is the only wireless mesh product on the market that can truly support fiber-grade bandwidth. Using standard Ethernet switching technology, the mesh architecture of the network guarantees at least two routes into each building for optimal resilience and network uptime. VLAN and Class of Service support ensures that all Ethernet traffic is secure and voice and video streams are properly prioritized.

Sentry Mesh™ for Campus Deployments



Wireless Metro Grid™ for Metropolitan Deployments



► Features

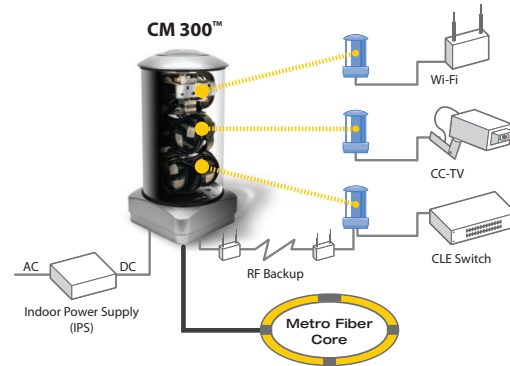
- Interference-free, secure transmission
- Ultra-low latency to support video and voice applications
- Fully integrated multi-service switch
- Full duplex 300 Mbps service capacity at service injection point
- Resilient Layer 2 mesh switching
- Assisted acquisition for easy installation
- Auto-tracking for continuous link optimization
- Standard CLI, HTTP and SNMP management support

► Service Applications

- Scalable video surveillance aggregation
- Broadband Internet Access
- Toll-quality VoIP services
- Business Ethernet services
- Campus LAN overlays
- Wi-Fi service aggregation

► Benefits

- Rapid installation and link setup
- License-free, pay-as-you-grow solution
- Supports over a hundred video streams per node
- Multi-service wireless mesh
- Centralized over-the-air management
- Compliant with industry standards



Power Requirements

Line voltage range / frequency	Each CM 300 is supplied with 48 VDC @ 6A by the IPS (Indoor Power Supply) supplied with each CM 300 IPS requires 100-240 VAC @ 0.3-3.2A, 47-63 Hz
Power consumption	30W nominal 290W maximum with heater on
Cabling	100m maximum cable run from CM 300 to customer network device

Wireless Optical Link

Transmission rate (per transceiver)	100 Mbps, full duplex
Operational range	40-250 meters (0.025-0.155 miles)
Transmitter	Near infrared LED, 870 nm
Eye safety	Eye-safe (IEC / EN 60825-1, Class 1)
Auto tracking	Enables transceivers to proactively realign and overcome building expansion and contraction
Assisted acquisition	Enables easy setup of optical links between CM 300s

System Platform

Transceiver configuration	3 individually activated transceivers CM 300 range of view: Azimuth 360° Elevation 28° (±14°) ^{2,3}
Environmental	Active environmental control Ambient operating temperature: -40° to 60° C (-40° to 140° F) Operating humidity: 0% to 100% Operational in winds up to 65 mph Will survive winds up to 120 mph Digital temperature sensor
Dimensions	Height: 55.9 cm / 22.0" Base Width: 28.4 cm / 11.2" Base Length: 28.4 cm / 11.2"
Weight	11.5 kg / 25 lbs
Mounting	Tip-Tilt Mount for leveling node provided with each CM 300 Recommended mounting method/equipment can be purchased as an option from ClearMesh or a third party vendor depending on building structure and mount. ³

Networking

Network topology	Ethernet mesh network with RSTP failover 100 Mbps full duplex optical wireless link for mesh interconnection Wire speed core switching capability 3 Gbps switching fabric
Ports	One dual-mode RS-232 or full duplex 10/100 Base-TX One full duplex 10/100 Base-TX Two full duplex 10/100/1000 Base-TX
Protocol Support	802.1w (Rapid Spanning Tree Protocol) 256 802.1Q VLANs (addresses 1-4094 supported) 802.1p CoS classification with 4 levels of priority queues Maximum frame size of 1526 bytes
Performance	0.1 millisecond latency per hop ¹
Management	ClearMesh element management system CLI through Serial / Telnet / SSH Web GUI through HTTP / HTTPS and Java Industry standard & enterprise MIB support SNMP v2

Standards Compliance

FCC Part 15 Class A
IEC / EN 60825-1, Class 1

1 Assumes no queuing delay and smallest packet size.
2 Orientation restrictions apply. Requires line of sight.
3 See Installation Manual for details.