ORiNOCO® AP-4000MR-LR
For Metropolitan Wi-Fi and Enterprise Applications

Highest Capacity AP4000MR-LR Mesh Delivers Flexible, Scalable, and Reliable Voice and Data for Large Metropolitan and Enterprise Wi-Fi Deployments

The dual-radio ORiNOCO AP-4000MR-LR delivers voice and data over Wi-Fi to the edge of a network over a flexible, auto-forming, self-healing, near line of sight mesh backbone. The dual-radio architecture separates the mesh backbone traffic from the edge access traffic, increasing capacity compared to single-radio mesh architectures. The ruggedized form factor is designed specifically for outdoor installations enabling deployments in extreme weather conditions. Purpose-built for the metropolitan Wi-Fi market, the AP-4000MR-LR is built on the same reliable software used in ORiNOCO enterprise networks to ensure carrier-quality availability.

- The ORiNOCO Mesh Creation Protocol (OMCP) enables mesh backhaul and Wi-Fi coverage on the same radio, while the second radio is used exclusively for Wi-Fi coverage.
- Industry-leading throughput with 802.11g and 802.11a simultaneous operation
- Super Mode allows Super Mode-capable clients to get double the data rate as standard clients while simultaneously allowing standard Wi-Fi clients to communicate with the access points
- Robust RADIUS accounting and authorization interface enables detailed subscriber usage tracking
- WMM/802.11e quality of service support for data, voice and video
- Higher output power for extended range

Proactive Security Measures to Protect Your Network

ORiNOCO access points support the latest security standards, including IEEE 802.11i and AES encryption, and add proactive security measures to prevent attacks.

- Intra-cell blocking and traffic redirection to prevent subscriber-to-subscriber attacks.
- Broadcast bandwidth throttling prevents broadcast attacks.
- Spanning tree protocol prevents network loops caused by subscribers connecting two or more CPE devices together.
- IEEE 802.1x mutual authentication
- Dynamic per-user, per-session rotating keys
- Rogue access point detection and notification
- Secure management interfaces: SNMPv3, SSL and SSH

**Self Forming/Self-Healing Mesh Is Easy to Deploy**

Ease of deployment and integration with the wired network are critical factors in a successful, profitable wireless network rollout. ORiNOCO access points excel with key capabilities that simplify WLAN deployment.

- Self-forming and self-healing ORiNOCO Mesh Creation Protocol automatically routes traffic through the best path as AP-4000MRs are added or removed from the network
- Tools to speed installation and optimization: automatic channel selection, adjustable transmit power, external antenna connectors

Reliable by Design

With over 25 years of experience in the design and manufacture of wireless LANs, Proxim understands that service providers and enterprises require the same uptime and reliability in a wireless network as in a wired network. ORiNOCO access points offer:

- Robust features for metropolitan Wi-Fi and enterprise applications
- Automatic reconfiguration of security policy in the event of power loss
- Dual firmware image support – for rollback in the event of software or configuration change problems
- IEEE 802.3af Power-over-Ethernet for tower/rooftop installations and AC Power options for light pole installations
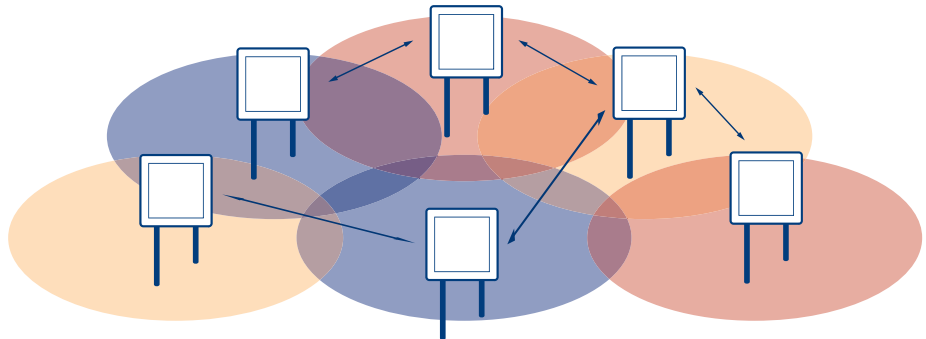
The ORiNOCO Mesh Creation Protocol uses one radio for simultaneous mesh backhaul and Wi-Fi coverage and the other radio for Wi-Fi coverage.

ORiNOCO AP-4000MR-LR Specifications

ADDITIONAL FEATURES

ORiNOCO Mesh Creation Protocol and availability	Self-forming/self-healing dual-radio wireless mesh backhaul for industry leading throughput
Tri-mode 802.11b, 802.11g and 802.11a support	Pre-configured, simultaneous 802.11b, 802.11g and 802.11a support
Frequency Band	5.745-5.85 GHz (802.11a); 2.4 GHz (802.11b/g)
Field Upgradeable	Software upgradeable to support new standards
IEEE 802.11i and AES encryption	Highest authentication and encryption methods including mutual authentication, message integrity check (MIC), per-packet keys initialization vector hashing and broadcast key rotation
Rogue AP and Client Detection	Detects and alerts unauthorized rogue Access Points and clients in both the 2.4 and 5 GHz bands
Secure Management Interfaces	SNMPv3 and SSL protect against unauthorized AP changes via the management interface
Multiple VLAN Support with different security settings	Up to 16 separate VLANs per radio each able to support a different security setting
Multiple BSSID Support	Up to 4 BSSIDs per radio
Auto configuration via DHCP	Ensures new APs automatically receive correct configuration and prevents security vulnerabilities with deliberate resets
Assured Software Upgrades	Guarantees new AP configuration file is valid before deleting current image - dual image support
Quality of Service	Draft IEEE 802.11e along with 802.1p and 802.1q improve performance of video and voice applications
Output Power	+24 dBm for 802.11b/g; +24 dBm for 802.11a
Transmit Power Control	Supports settable transmit power levels to adjust coverage cell size
Automatic Channel Selection	Simplifies installation by choosing best possible channel upon installation
RADIUS Support	Extensive RADIUS Accounting support, intra-cell blocking to prevent client-to-client snooping, multiple VLAN support with different security modes
Super Mode	Delivers greater than 30 Mbps throughput for ORiNOCO and Atheros-based clients while simultaneously compatible with non-Atheros clients
Advanced Filtering Capabilities	IEEE 802.1d bridging with static MAC address filtering, network protocol filtering, Proxy ARP, multicast/broadcast storm threshold filtering,TCP/UDP port filtering, intra-cell traffic filtering, and Spanning Tree support
External antenna connectors for 802.11b/g and 802.11a	Allows use of shaped and higher gain antennas to design for most efficient AP placement
Near line of sight capable	Line of sight and near line of sight connectivity extends deployment flexibility in rural as well as high-density urban areas
Extended Operating Temperature	Rated for –35° to 60° Celcius, can be deployed in hot or cold outdoor climates
Fast boot-up in cold climate	Sophisticated heating technology automatically heats the system to shorten boot-up time
Remote Reboot System	Reboot or reset to factory default can be performed remotely via a power injector button
Outdoor band support	For outdoor applications
Compliance	Wi-Fi, WEEE, RoHs, UL50, IP65

INTERFACE

Wired Ethernet	10/100 base-T Ethernet (RJ-45)
Wireless Ethernet	1 integrated 802.11b/g radio and 1 integrated 802.11a radio
RS-232	Unit configuration
Antenna Connector	2 Standard N-Female, 1 for each radio

HARDWARE SPECIFICATION

Memory	64 MB SDRAM; 8 MB Flash

PHYSICAL SPECIFICATIONS

Dimension Unpackaged:	10.5 x 10.5 x 3.25 in (267 x 267 x 83 mm)
Weight Unpackaged	6 lbs (2.72 kg)

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	-35° to 60°C	
Storage Temperature	-55° to 80°C	
Humidity	Operating	Max 95% relative humidity (non-condensing)
	Storage	Max 95% relative humidity (non-condensing)
Wind loading	125 mph	
Water and dust proof	IP65	

POWER SUPPLY

Power Injector	Input: 42 to 60 VDC
	Output: 48 VDC
Power Consumption	Maximum 20 Watt

LEDS

Type:	Power, Ethernet LAN Link Wireless Link

MANAGEMENT

- SNMPv1, SNMPv2c and secure SNMPv3 management
- Standard & ORiNOCO traps
- ORiNOCO MIB, Etherlike MIB, 802.11 MIB, Bridge MIB, MIB-II
- TFTP support
- Telnet CLI, Serial Port CLI (no proxy required)
- HTTPS (SSL) server for secure web-based management
- Syslog
- DHCP Server and Client

MTBF AND WARRANTY

100,000 hours; 1-year on parts and labor

PACKAGE CONTENTS

ORiNOCO AP-4000MR-LR, wall/pole mounting bracket, PoE power injector, Cable termination kit, one mini-DIN to DB9 connector cable for serial connection, documentation and software CD-ROM. Available Options: AC Power Kit with twist lock power cord, Wide Pole Mounting Kit for light pole installation and 2.4 & 5.8 GHz antennas

RELATED PRODUCTS

Proxim Wireless CommUNITY is designed for metropolitan networks:
- Tsunami MP.11 for backhaul between groups of AP-4000MRs connected to each other through the ORiNOCO Mesh Creation Protocol
- Ekahau Site Survey to predict Wi-Fi coverage before installation and to verify the coverage area after installation