ORiNOCO AP-4900M
Technical Specifications

APPLICATIONS

- **Emergency services**
  Real-time computer-aided-dispatch on the move. Mobile office, voice, live-streaming video, and data connectivity for responder vehicles.

- **Metro Wi-Fi and 4.9 GHz public safety**
  Simultaneous 4.9 GHz Public Safety access and 2.4 GHz Metro Wi-Fi coverage on a single, dual-radio platform.

RADIO	Dual Radio Access Point with integrated radios:802.11a/4.9 GHz Public Safety + 802.11b/g	
DATA RATES SUPPORTED	4.9 GHz 10 MHz channels:	3, 4.5, 6, 9, 12, 18, 24, 27 Mbps
	4.9 GHz 20MHz channels:	6, 9, 12, 18, 24, 36, 48, 54 Mbps
	802.11b	1, 2, 5.5, 11 Mbps
	802.11g	1, 2, 5.5, 6, 9, 11, 12, 18, 24, 36, 48, 54 Mbps
	802.11a	6, 9, 12, 18, 24, 36, 48, 54 Mbps
NETWORK STANDARD	IEEE 802.11a IEEE 802.11b or IEEE 802.11g	
UPLINK	Autosensing 802.3 10/100BASE-T Ethernet	
FREQUENCY BAND	802.11b/g	2.412 to 2.462 GHz (FCC)
	802.11a	5.15 to 5.35 GHz (FCC UNII 1 and UNII 2), 5.725 to 5.85 GHz (FCC UNII 3/ISM)
	Public Safety 4.9GHz 4.94 to 4.99 GHz (FCC only)	
NETWORK ARCHITECTURE TYPE	Infrastructure mesh	
WIRELESS MEDIUM	802.11b or 802.11g	Direct sequence spread spectrum (DSSS); Orthogonal Frequency Division Multiplexing (OFDM)
	802.11a and 4.9 GHz	Orthogonal Frequency Division Multiplexing (OFDM)
MEDIA ACCESS PROTOCOL	Carrier sense multiple access with collision avoidance (CSMA/CA)	
MODULATION	OFDM	BPSK @ 6 and 9 Mbps QPSK @ 12 and 18 Mbps 16-QAM @ 24 and 36 Mbps 64-QAM @ 48 and 54 Mbps
	DSSS	DBPSK @ 1 Mbps DQPSK @ 2 Mbps CCK @ 5.5 and 11 Mbps
OPERATING CHANNEL	2.4 GHz Band	802.11b/g: 11 Channels
	5 GHz Band	FCC: 12
	4.9 GHz Band	10MHz channels, with the following center frequencies: 10 = 4.945 GHz (default) 20 = 4.950 GHz 30 = 4.955 GHz 40 = 4.960 GHz 50 = 4.965 GHz 60 = 4.970 GHz 70 = 4.975 GHz 80 = 4.980 GHz 90 = 4.985 GHz
		20MHz channels, with the following center frequencies: 20 = 4.950 GHz (default) 30 = 4.955 GHz 40 = 4.960 GHz 50 = 4.965 GHz 60 = 4.970 GHz 70 = 4.975 GHz 80 = 4.980 GHz
NON-OVERLAPPING CHANNELS	802.11a: 12; 802.11b/g: 3; 4.9 GHz 10 MHz: 5; 4.9 GHz 20 MHz: 2	
RADIO SPECIFICATIONS RF PERFORMANCE	The following tables show typical RF performance values for FCC-certified products (values may differ for products certified in other regulatory domains)	

802.11a RF Performance

802.11a Data Rates (Mbps)	54	48	36	24	18	12	9	6
Tx Power (dBm)	16	17	18	18	18	18	18	18
Receiver Sensitivity (dBm)	-70	-73	-78	-82	-84	-85	-86	-87
Antenna Gain (dBi)	0 (integrated diversity antennas; 5.15–5.85 GHz)							

RADIO SPECIFICATIONS
RF PERFORMANCE

802.11b/g RF Performance

802.11b/g Data Rates (Mbps)	G-only Rates								B-only Rates			
802.11b/g Data Rates (Mbps)	54	48	36	24	18	12	9	6	11	5.5	2	1
Tx Power (dBm)	17	18	18	18	18	18	18	18	20	20	20	20
Receiver Sensitivity (dBm)	-70	-73	-79	-82	-85	-88	-90	-91	-89	-91	-92	-93
Antenna Gain (dBi)	1 (integrated diversity antenna module; 2.4–2.5 GHz											

4.9 GHz 20 MHz Channel Public Safety RF Performance

Data Rates (Mbps)	54	48	36	24	18	12	9	6
Tx Power (dBm)	16	17	18	18	18	18	18	18
Receiver Sensitivity (dBm)	-70	-73	-78	-82	-84	-85	-86	-87
Antenna Gain (dBi)	N/A: Depends on external antenna							

4.9 GHz 10 MHz Channel Public Safety RF Performance

Data Rates (Mbps)	27	24	18	12	9	6	4.5	3
Tx Power (dBm)	16	17	17	17	17	17	17	17
Receiver Sensitivity (dBm)	-73	-76	-81	-85	-87	-88	-89	-90
Antenna Gain (dBi)	N/A: Depends on external antenna							

COMPLIANCE STANDARDS

Safety	UL 60950 CSA 22.2 No. 60950-00 IEC 60950 3rd Ed (1999)
Radio Approvals	FCC Part 90
EMI and Susceptibility (Class B)	FCC Part 15.107 ICES-003 (Canada)
Security	802.1X and TKIP WPA AES and 802.11i
Wireless Network Standards	IEEE 802.11b IEEE 802.11g IEEE 802.11a
Other	FCC Bulletin OET-65C IEEE 802.1d spanning tree Wi-Fi Alliance Certification IEEE 802.11i Authentication/Encryption RSS-102 IEEE 802.11e QoS IEEE 802.3af SSH, Telnet, SSL, HTTP, SNMPv3

SNMP COMPLIANCE

ORiNOCO; RFC1213; rfc1643; SNMPv2c; 802.11i-D3; IANAifType-MIB; MIB802

ANTENNA

2.4 GHz

Dual on-board antennas to support antenna and polarization diversity:

One 3dBi vertically polarized omni antenna, 360 ° horizontal and 40° vertical beamwidths

One 2dBi horizontally polarized omni antenna, 360° horizontal and 30° vertical beamwidths

Certified with	1086-REA 1086-DA24-4 1086-OA24-5 1086-PA24-8.5 1086-PA24-9.5

5 GHz

Dual on-board antennas to support antenna and polarization diversity:

One 3dBi vertically polarized omni antenna, 360° horizontal and 40° vertical beamwidths

One 2dBi horizontally polarized omni antenna, 360° horizontal and 30° vertical beamwidths

Certified with	1086-REA 1086-PA50-7

2.4, 4.9, and 5GHz

Tri band (2.4, 4.9, and 5GHz) external Range Extender Antenna for use indoors

2.4, 4.9, and 5GHz

5054-SA120-14; 5054-SA60-17; Omnidirectional (Part# TBD); Directional (Part# TBD); Vehicle Mount (Part# TBD)

1086-OA49-8	360 degrees Omni-Directional Antenna
1086-OA49-10	360 degrees Omni-Directional Antenna
1086-PA49-10	45 degrees Directional Panel Antenna
21 dBi 4.9-5.0GHz	10 degrees Directional Panel Antenna

SECURITY ARCHITECTURE CLIENT AUTHENTICATION	Authentication	802.1X support including PEAP, EAP-TLS, EAP-TTLS EAP-SIM, and other EAP methods that conform to RFC 3748 to yield mutual authentication and dynamic per-user, per-session encryption keys
		RADIUS-based MAC address
		MAC address control list
	Encryption	802.11i support for CCMP/AES keys of 128 bits (WPA2)
		TKIP encryption enhancements (for WEP) with key hashing (per-packet keying) and broadcast key rotation (WPA)
		Support for WEP keys of 64 and 128 bits
	Message Authentication:	802.11i AES message authentication with 128 bit keys
		TKIP with 128 bit Michael Message Integrity Check
INTRUSION DETECTION	Rogue AP and client detection Detect switch port of rogue access point when used in conjunction with Wavelink Mobile Manager Detect MIC intrusion attacks	
STATUS LEDS	Four indicators on the top panel indicate power, wireless traffic, Ethernet traffic, and error conditions	
REMOTE CONFIGURATION SUPPORT	DHCP, Telnet, HTTP, TFTP, Boot P, and SNMP	
LOCAL CONFIGURATION	RS-232 Serial port, DB9 Female	
DIMENSIONS	Packaged	11.375 x 9.25 x 2.75 inches (289 mm x 235 mm x 70 mm)
	Unpackaged	7.8 x 4.75 x 1 inches (198 mm x 121 mm x 25 mm)
WEIGHT	Packaged weight	2.05 lbs (.92 kg)
	Unpackaged weight	.65 lbs (.29 kg) AP-only, .45 lbs (.20 kg) for power supply
ENVIRONMENTAL	Operating	0° to 55°C, 5-95% humidity non-condensing @ 5° to 55°C
	Storage	-20° to 85°C, 5-95% humidity non-condensing @ 5° to 85°C
PROCESSOR	220MHz MIPS 4000 processor	
SYSTEM MEMORY	16 Mbytes RAM 8 Mbytes FLASH	
INPUT POWER REQUIREMENTS	90 to 240 VAC ±10% (power supply) 48 VDC ±10% (device)	
POWER DRAW	10 watts, RMS	
WARRANTY	One year	
WI-FI CERTIFICATION	View Wi-Fi Interoperability Certificate for ORiNOCO AP-4000	
PART NUMBERS	8670-PS-US	Mesh access point – ORiNOCO AP-4900 US FCC-LMU; with Lower, Middle and Upper 802.11a bands; includes external antenna connectors for 802.11a, 4.9GHz, and 802.11b/g; includes one N-type male pigtail adapter.

[1] To achieve 802.11i security, the EAP method that is used must conform to both RFC 3748 and IETF draft-walker-ieee802-req-07 (Submitted as an Informational RFC). In RFC 3748, EAP- MD5-Challenge (Section 5.4), One-Time Password (Section 5.5) and Generic Token Card (Section 5.6), are non-compliant with the requirements specified in IETF draft-walker-ieee802-req-07 and thus do not support the 802.11i security claims when used with 802.11i.

AIRLINX Communications, Inc.
Box 253
Greenville, NH 03048
E-mail: sales@airlinx.com
Tel: (888) 224-6814
Fax: (603) 878-0530