



MeshMAX –
Supports WiMAX, Wi-Fi Mesh and Wi-Fi

APPLICATIONS

- Security and Surveillance**
 Wireless solutions for bandwidth-intensive and high definition IP-surveillance cameras located at important city and transportation infrastructure, such as airports, bridges and trains
- Metropolitan Area Networks**
 Secure and reliable backhaul of Wi-Fi Mesh traffic
- Enterprise**
 Lowers infrastructure costs by not requiring Ethernet cabling to each access point.
- Mobile Hot Spot**
 On demand entertainment and broadband access solutions for public transportation and local businesses
- Triple Play**
 Network operator can deliver bundle of IPTV, VoIP and Internet access to subscribers through broadband wireless connection

PRODUCT MODELS	9100-XX MeshMAX 3500WM Tri-radio, WiMAX subscriber and Wi-Fi Mesh access point																																													
	9101-XX MeshMAX 3500W Tri-radio, WiMAX subscriber and Wi-Fi access point																																													
RF MODULATION AND OVER THE AIR DATA RATES	OFDM (Orthogonal Frequency Division Multiplexing) <table border="1"> <thead> <tr> <th></th> <th>5GHz band</th> <th>2.4GHz band</th> <th colspan="2">3.5 GHz Band</th> </tr> <tr> <th></th> <th></th> <th></th> <th>3.5MHz</th> <th>7MHz</th> </tr> </thead> <tbody> <tr> <td>BPSK</td> <td>6 and 9 Mbps</td> <td>6 and 9 Mbps</td> <td>1.4 Mbps</td> <td>2.8 Mbps</td> </tr> <tr> <td>QPSK</td> <td>12 and 18 Mbps</td> <td>12 and 18 Mbps</td> <td>2.8 and 4.2 Mbps</td> <td>6.6 and 8.5 Mbps</td> </tr> <tr> <td>16-QAM</td> <td>24 and 36 Mbps</td> <td>24 and 36 Mbps</td> <td>5.6 and 8.5 Mbps</td> <td>11.3 and 16.9 Mbps</td> </tr> <tr> <td>64-QAM</td> <td>48 and 54 Mbps</td> <td>48 and 54 Mbps</td> <td>11.3 and 12.7 Mbps</td> <td>22.6 and 25.4 Mbps</td> </tr> </tbody> </table> DSSS (For 2.4GHz radio only) <table border="1"> <tbody> <tr> <td>DBPSK</td> <td>N/A</td> <td>1 Mbps</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>DQPSK</td> <td>N/A</td> <td>2 Mbps</td> <td>N/A</td> <td>N/A</td> </tr> <tr> <td>CCK</td> <td>N/A</td> <td>5.5 and 11 Mbps</td> <td>N/A</td> <td>N/A</td> </tr> </tbody> </table>		5GHz band	2.4GHz band	3.5 GHz Band					3.5MHz	7MHz	BPSK	6 and 9 Mbps	6 and 9 Mbps	1.4 Mbps	2.8 Mbps	QPSK	12 and 18 Mbps	12 and 18 Mbps	2.8 and 4.2 Mbps	6.6 and 8.5 Mbps	16-QAM	24 and 36 Mbps	24 and 36 Mbps	5.6 and 8.5 Mbps	11.3 and 16.9 Mbps	64-QAM	48 and 54 Mbps	48 and 54 Mbps	11.3 and 12.7 Mbps	22.6 and 25.4 Mbps	DBPSK	N/A	1 Mbps	N/A	N/A	DQPSK	N/A	2 Mbps	N/A	N/A	CCK	N/A	5.5 and 11 Mbps	N/A	N/A
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WIRELESS PROTOCOL	802.16d for WiMAX backhaul 802.11a, 802.11b and 802.11g for Wi-Fi Access Proxim ORINOCO Mesh Creation Protocol (OMCP) for mesh backhaul extension																																													
BANDS SUPPORTED	3.4 - 3.6 GHz for WiMAX radio 5.15 - 5.85 GHz and 2.412 - 2.472 GHz for Mesh and Wi-Fi radios																																													
CHANNEL BANDWIDTH	3.5MHz and 7MHz for WiMAX 20MHz for Mesh backhaul and Wi-Fi Access Infrastructure																																													
WiMAX CHARACTERISTICS	Duplexing Mode – TDD NLOS and Interference Mitigation Features – OFDM 256FT, Adaptive Modulation, FEC Frame Duration – 5, 10 and 20ms DSSS																																													
DEVICE INTERFACE	Wired Ethernet Auto-sensing 10/100BASE-TX Ethernet Antenna Connector 1 Standard Type-N Female 5 GHz Mesh and Wi-Fi radio 1 Standard Type-N Female 3.5 GHz WiMAX radio 1 Standard Type-N Female 2.4 GHz Wi-Fi radio																																													
NETWORK ARCHITECTURE TYPE	Infrastructure																																													
TRANSMIT POWER SETTINGS	3.5GHz : +21dBm 5.0GHz : +18dBm 2.4GHz: +20dBm Output Power Values will have a tolerance of +/- 1.5 dB Output Power Attenuation (for Mesh and Wi-Fi radio): 0 – 12 dB, in 1 dB steps																																													
SOFTWARE SPECIFICATIONS	WiMAX Subscriber Features Local Monitoring: <ul style="list-style-type: none"> Serial CLI Logging to serial port, flash, RAM or Syslog server Remote Monitoring <ul style="list-style-type: none"> Telnet CLI HTTP TFTP SNMPv1, SNMPv2 MIB-II, Proxim MIBs, Bridge MIB, RIPv2 MIB, 802.16MIB, Etherlike MIB Remote Management Access <ul style="list-style-type: none"> Multi Level Password (user, administer, installer, factory, engineering) Authentication <ul style="list-style-type: none"> RADIUS Authentication and Provisioning MAC Address Table Encryption <ul style="list-style-type: none"> WEP (64 and 128 bit) and AES encryption VLAN <ul style="list-style-type: none"> 802.1Q VLAN tagging and filtering support Transparent passing of 802.1Q-compliant VLAN tagged frames QoS <ul style="list-style-type: none"> Asymmetric bandwidth support Packet Classification capabilities – 801.1D/802.1Q/802.1p priority; IPTOS; VLAN ID; IP Source/Destination Address; Source/Destination port; Ethernet Source Destination Address; IP Protocol and Ethertype Scheduling – Best Effort; Universal Grant Services; per service flow scheduling; priority, jitter and latency control for voice, video and data; min/max bandwidth enabling 																																													

SOFTWARE SPECIFICATIONS (CONT'D)

Mesh and Wi-Fi Features

Remote Management

- SNMP v1; SNMP v2c and SNMP v3
- MIBs Supported: ORINOCO; rfc1213; rfc1643; 802.11i-D3; IANAIfType-MIB; MIB802
- DHCP
- Telnet
- HTTP
- TFTP
- BootP

Secure Configuration Support

- SNMPv3
- HTTPS
- SSH
- RADIUS Based Management Access authentication
- Encrypted storage for security and management parameters

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 authentication
- Dynamic MAC address control list, automatically updated without rebooting AP

Encryption

- 802.11i support for CCMP/AES keys of 128 bits (WPA2)
- TKIP encryption
- WEP (64 and 128 bit) and AES encryption

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 ProximVision™
- Detect MIC intrusion attacks

802.11 MAC level functionality

- Multiple SSID and BSSID
- Auto Channel Select
- Dynamic Frequency Selection (DFS)
- 802.11d support
- Transmit power control
- QoS support for mesh backhaul and access
- Closed system
- Channel Blacklist
- Turbo mode
- Super mode

Bridging and Filtering

- IEEE 802.1d Bridging
- VLAN Support
- WDS Relay
- Protocol Filtering
- Modified Proxy ARP support
- Multicast/Broadcast Storm Filtering
- TCP/UDP Port Filtering
- Intra-BSS Clients blocking
- Packet Forwarding
- VPN filtering

Network Layer

- DHCP Client
- DHCP Server
- DHCP Relay Agent
- Inter Access Point Protocol (IAPP)
- Link Integrity
- Syslog
- RADIUS Authentication
- RADIUS Accounting Support
- DNS Client
- SNTP
- TFTP Client
- Telnet Server
- HTTP Server
- SNMPv1/SNMPv2/SNMPv3
- Scan and Change

STATUS LEDS	Two indicators on the RJ-45 connector to indicate power/Ethernet traffic
LOCAL CONFIGURATION SUPPORT	RS-232 Serial port <ul style="list-style-type: none"> • RJ11 port built-into the unit • DB9 Female via a converter (included)
ENVIRONMENTAL	Water and Dust Proof <ul style="list-style-type: none"> • NEMA4
ELECTRICAL	POE Power Injector <ul style="list-style-type: none"> • Custom Power over Ethernet (802.3af compatible) • Input: Voltage 110 to 250 VAC (47-63Hz) • Output: 48V @ 420mA MAX (injected into the Cat-5 Cable) • Pin for reset to factory default of mesh AP AC Power Support <ul style="list-style-type: none"> • 110/240 VAC light pole power tap (purchased separately)
DIMENSIONS	
PACKAGED	14.57 x 13.70 x 8.19 in (370 x 348 x 208 mm)
UNPACKAGED	10.5 x 10.5 x 3.25 in (267 x 267 x 83 mm)
WEIGHT	
PACKAGED	12 lbs (5.44 kg)
UNPACKAGED	5.5 lbs (2.49 kg)
ENVIRONMENTAL	
OPERATING	<ul style="list-style-type: none"> • -33° to 60°C • 100% relative humidity (non-condensing) • Wind loading: 125mph
STORAGE	<ul style="list-style-type: none"> • -55° to 80°C (-41° to 176° Fahrenheit) • 100% humidity
PACKAGE CONTENTS	One MeshMAX 3500M ² Unit or One MeshMax 3500W ² Unit One wall/ pole mounting bracket One Power-Over-Ethernet injector and power cord One serial cable for local configuration One Ethernet cable weather-proof plug One Cable termination kit One Installation CD-ROM with Software and Documentation
MTBF	100,000 hours
	One year (Parts and Labor) Extended Warranty and Enhanced Service and Support options available with ServPak

