

WiBORNE, INC.

Outdoor High Power Mesh AP Router

WiBorne mesh AP router, WAP-192M, is a low cost and simplicity device. It is a high-power outdoor Wi-Fi mesh router operating in the 802.11 b/g 2.4 GHz band!



WAP-192M

WiBorne Has Got You Covered

By knowing where today's advanced Hotspot and HotZone technologies can be best integrated, WiBorne stands ready to help you with 802.11 Wi-Fi, 802.16 WiMAX, narrowband point-to-point and point-to-multipoint microwave, and public safety wireless for city or rural areas. We can effectively integrate mesh routing architectures, wireless distribution system infrastructures, wireless LAN switch systems, and overlay the system with the WiBorne's Hotspot access control and security gateway or wireless switch which fully control associated wireless access points.

With today's existing wireless mesh network systems means higher costs as well as network management complications. Our mesh AP router, model WAP-192M, is low cost and simplicity. It is a high-power (250 mW transmitter output power for 802.11b or 100mW for 802.11g) outdoor Wi-Fi mesh router operating in the 802.11b/g 2.4 GHz band. Effective radiated power is dependent on the attached antenna and can be configured up to the FCC maximum power limit.

In our mesh network, both client access and communication between mesh nodes take place over one radio, which dynamically switches its function from AP-mode to mesh-node. This is least expensive system to deploy, while minimize hop counts for your networks. You can connect such mesh nodes into the wired network, directly over Ethernet or over a dedicated point-to-point, or point-to-multipoint, fixed wireless backhaul system.



Individual unit of such AP can also be switched among AP, AP client, bridge, repeater, WDS, and WDS router modes too. To provide path redundancy for your wireless network, we implement modified Spanning-Tree Protocol (STP) that defines a tree to span all switches in an extended network.

Its transparent bridges dynamically determine the best path from source to destination. It avoids bridge loops (two or more paths linking one segment to another), which can cause the bridges to misinterpret results. This algorithm forces certain redundant data paths into a standby (blocked) state. If one network segment becomes unreachable or costs changed, this algorithm reconfigures the spanning-tree topology and reestablishes the link by activating the standby path.

This implementation immediately solved the broadcast flooding that plagued your redundant network.

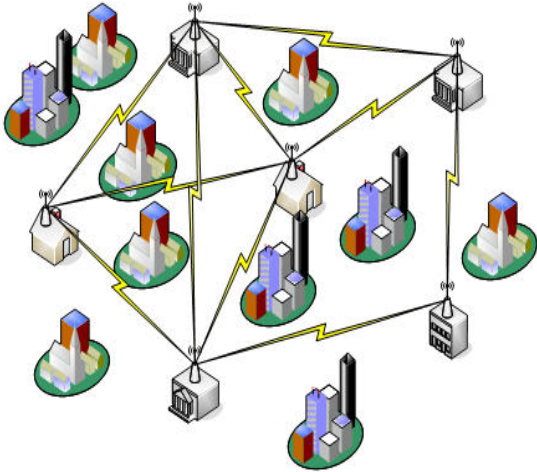


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WAP-192M creates a "cloud" of connectivity across your community:



- Install on street light, telephone, or utility poles. Use non-penetrating roof mounts or attach to the side of a building.
- Radios automatically create a secure, fault-tolerant interconnected mesh cloud" of connectivity
- Scales automatically. Just add additional mesh routers to extend the reach of the connectivity "cloud"
- 802.11b/g client Wi-Fi HotSpot / HotZone devices (computers, VoIP Wi-Fi phones, cameras) wirelessly attach to the "cloud"
- Full user login, authentication, and subscription access control can be implemented if desired
- Optimized protocol architecture creates high-speed point-to-multipoint mesh connections for acceptable-rate connectivity
- Repeating mesh nodes extend the reach of the backhaul cloud
- Low cost edge connector radios create high bandwidth links into the infrastructure

❖ Features at a glance

- Compatible with IEEE 802.11b/g & IEEE 802.3 standards
- Detachable 8 dBi omni directional antenna
- Rugged weatherproof design in a compact and stylish enclosure with all electronics protected in aluminum for EMF protection.
- Ideal for wireless LAN access in all indoor and outdoor areas.
- Flexible mounting on wall or antenna mast (up to 2.5 inch diameter)
- Can be mounted for Horizontal or Vertical Polarities
- Power over Ethernet cable using PoE injector
- Auto Fall back data rate for long distance communication in noisy environments
- High standard watertight (IP66/67) and weatherproof
- Wireless security with 64/128Bit WEP, WPA (TKIP), WPA2 (AES or Mixed), 802.1x / RADIUS client, and MAC Access Control.
- Firewall (Port / IP / MAC filtering, Port forwarding, MAC filter, DMZ)
- IPSec VPN and NAT Traversal with Pre-Shared Key between nodes
- ACK Timing, RTS/CTS Fragmentation Threshold, Beacon, IAPP, and Preamble Type
- Adjustable output power up to 250 mW for 11b (CCK) and 100 mW for 11g (ODFM)
- Configurable Multi-modes AP: AP, AP Client, WDS, AP Bridge, PtP & PtMP Bridging, AP Client and Routing (WISP)
- WDS Modes: Bus, Star, Ring, and Mesh with 802.1d Spanning Tree Algorithm
- PPPoE and PPTP Client
- DHCP Server and Client
- Static and NAT Router
- Bandwidth Control for Client Mode
- Wireless Site Survey
- SNMP v1/v2c agent & MIB II management
- Web base Management System and CLI console commands
- System Status and Log Reports
- Firmware can be remotely upgraded
- Work with all operating system. Driver-less operation with true 'Plug and Play'
- Hardware Watchdog Timer to reset processor



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Outdoor High Power Mesh AP Router

Model No.	WAP-192M–Outdoor High Power Mesh AP Router
Standard	IEEE 802.11b/g (Wireless LAN), IEEE 802.3 (Ethernet)
Wireless & Wired Security Functions	Secure with 64/128Bit WEP, WPA (TKIP), WPA2 (AES or Mixed), 802.1x / RADIUS client, and MAC Access Control Firewall (Port / IP / MAC filtering, Port forwarding, MAC filter, DMZ) IPSec VPN and NAT Traversal with Pre-Shared Key between nodes
Operation Functions	ACK Timing, RTS/CTS Fragmentation Threshold, Beacon, IAPP, Preamble Type Adjustable transmit power up to 250 mW for 11b (CCK) & 100 mW for 11g (ODFM) Bandwidth Control for Client Mode Static and NAT Router, DHCP server and Client SNMP v1/v2c agent & MIB II management PPPoE and PPTP Client Wireless Site Survey, Clone MAC address Configuration Backup and Restore, uPnP, Hardware Watchdog Timer
Operation Modes	Wireless Mesh Access Point, AP Client (Ethernet to WLAN Bridge), WDS (Wireless Repeater; P-to-P, P-to-MP Bridge), Wireless Router, AP Client with Routing function (WISP Mode)
Management	Web-base management system and SSH CLI console commands
External Power Jack (via POE)	48 VDC @ 500mA (O.D-5.5mm, I.D-2.1mm), PoE and PS included
External Bulkhead connector	External RJ-45 Bulkhead connector - optional
Interface	One RJ45 (PoE), one RF connector
Mounting	Pole or wall mount via 2pc clamps (included)
Enclosure	Water Tight Aluminum Enclosure, Watertight IP66/67 and waterproof
CPE (AP) Weight	6.2 LBS (2.8 KGW)
Dimension	H=8.47", W=6.10", D=3.35" (215 X 155 X 85 mm)
Temperature Range	-30°C ~ +60 °C
Relative Humidity	10% to 90% non condensing
Antenna Characteristics	
Gain	Standard: 8 dBi omni directional, with panel antenna as optional
Frequency Range	2400 - 2500 GHz
VSWR	2.0 : 1 Max.
Polarization	Linear, vertical
HPBW	10° / vertical, 360° / horizontal
Down tilt	0°
Power handling	10 W (cw)
Impedance	50 Ω
Connector	External N Female
Radio Characteristics	
Radio Scheme	802.11g: OFDM(64QAM, 16QAM, QPSK, BPSK) 802.11b: DSSS(CCK, DQPSK, DBPSK)
Frequency Range	2.4 GHz ~2.497GHz
Data Rate	802.11g: 54 / 48 / 36 / 24 / 12 / 9 / 6 Mbps 802.11b: 11 / 5.5 / 2 / 1 Mbps
Channels	North America: 11 Channels (US, Canada) ETSI: 13 Channels (Most European Countries) TELEC: 14 Channels (Japan)
Range	up to 10 kilometers or above with higher gain antenna
Output Power	802.11g: 100mW max. 802.11b: 250mW max.
Receiver Sensitivity	802.11g: -75 ± 2dBm @ 54Mbps 802.11b: -84 ± 2dBm @ 11Mbps
Approvals	FCC Part15, Section 15,247, CE



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