

## Long Range Outdoor MIMO Wireless Bridge/Router WAP-350N

**Carrier Class WAP-350N 3.3~3.8 GHz 630mW 2X2 MIMO High Power and Superior Performance Routing Base Single to Multiple Radio Unit**



The WAP-350N is specially designed for applications of point-to-point, point-to-multipoint with 2X2 MIMO 300Mbps as based AP to provide a superior performance solution for connecting many locations through wireless, yet flexible to customize for your deployment. It has up to five wireless interfaces for sectors or backhaul. The WAP-350N delivers Internet service to your clients' network for extreme distance. You can use this package to provide high data rates and superior throughput for data-intensive yet up to hundreds of concurrent users for WiFi Citywide project. Multiple sites can share a single, high-speed connection to the Internet. The feature rich radio firmware allows you to apply the most advanced firewall, NAT, bandwidth shaping, cloaking modes, Super A/G for up to 108 Mbps of throughput, and other technologies to create a smart and manageable network. You can secure wireless traffic with firewall, VLAN, encryption (WEP/WPA/WPA2) from base to individual clients. Layer 2 Mesh / WDS / Spanning Tree Bridging (STP) are available for all connected APs and clients in the same SSID group or Multiple SSIDs. QoS with video / gaming priority is available. MTBF is more than 100,000 hrs.

**WAP-350N Series** While bundling with WiBorne's CPEs [CAP-5000](#), [HSG Access Controllers](#), or [EtherMUX E1/T1 MUX modems](#). This supports individual clients to backhaul network management systems for hundreds of base stations with thousands of wireless clients.

Optional features 3G technology, 5 radio slots, 3 Gigabit LAN ports; present WAP-350N a scalable device. With 802.11n radio module, WAP-350N support 300+ subs per sectorized base station with 150Mbps+ of PtMP performance. USB slots allow you to add 3G wireless modem(s) for backup, mobile installation, or multi-WAN (multiplexing) connectivity. This enables new revenue generating converged services for IP data, voice (VoIP) and video streaming / conferencing / messaging.

### Features:

- Single to triple Atheros high power max. 630mW (28dBm)
- Radio sensitivity up to -98dBm
- Highest and most consistent data throughput from 150 to 300Mbps depends on terrain, antenna gain
- Time Division Duplex (TDD) with CSMA/CA, TDMA
- Integrated ESD (14kV) + lightning surge protection (10kA)
- Packet Aggregation for improved VoIP and gaming
- Extreme distances, up to 233km are supported
- Channel width (spacing) for 5/10/20/40 MHz
- Max. 5 radios / 3 Gbits ports for outdoor/indoor units
- Radio with options from 2.3-2.5, 3.3-3.8, 4.9-6.45 GHz providing support for both public and licensed bands
- IP-67 / NEMA-6 certified 100% sealed strong mechanical structure, die cast all weather-proof hinged housing
- USB slots for additional 3G modem connection for backup connectivity or for a mobile installation, or both with multiplexing bonding for large bandwidth
- Lighten protector: multi-strike capability (gas discharge)
- Firewall and NAT with stateful packet filtering
- QoS by IP/ protocol / subnet / ports / packet classification & marking at L2~L4, 802.1p, DiffServ/TOS, HTB, PCQ, CIR, EBS, and PIR. WiMAX 802.16 QoS Classification for Pre-WiMAX, WMM Setting for priority of Video and Voice
- VRRP for High Availability
- Layer 2 Mesh, Nstreme / bonding protocols, AP routing / transparent bridging, with LoS/NLoS applications
- Virtual Machine (VM) for 3<sup>rd</sup> party application software
- Bridge: spanning tree protocol (STP); multiple bridge interfaces; bridge firewalling, MAC NATting
- Client statistics (current signal level/quality, rate TX/RX, bytes TX/RX, radio rate) with graphical indication
- 64/128/152 bits WEP and WPA/WPA2 support
- IPsec: DES, 3DES, AES-128/192/256, Camellia-128/192/256
- Routing for RIP v1/v2, BGP, MPLS, VPLS, OSPF, GRE, Static
- VLAN: 802.1q, multiple VLANs; VLAN bridging
- Software Utility/Console/Terminal/SSH/Telnet/CLI/SNMP/FTP
- Neighbor Discovery; ping; traceroute; bandwidth test; ping flood; packet sniffer; mac address spoofing; Dynamic DNS update tool
- Proxy: FTP & HTTP caching proxy server; HTTPS, DNS and HTTP, DNS entries, caching lists, access control lists
- Authentication: PPTP, PPPoE, L2TP, WPA, access control, MSCHAPv1/v2, RADIUS, MPPE encryption
- DHCP server/client/relay, multiple DHCP networks
- Layer 2 connectivity: bridge, synchronous, Asynchronous, ISDN, and SDSL
- UPnP, NTP, SNMP/MIB II, Cisco CDP, syslog/SNMP traps
- Monitoring and accounting for traffic, firewall logging, graphical bandwidth for each interface
- MiniPCI radio module swappable and country code selection.
- Watchdog for auto and remote reboot
- Tools: Device Discovery, Bandwidth, Link Test, Network Monitoring, Neighbor Viewer, Radio/Traffic Statistics
- BER (bits per rate) up to 10e-9 with very low latency
- Latency: <2 ms, disponibility 99.99%, depends on terrain
- Dynamic Multicast Filtering support for video surveillance

## Long-Range Outdoor MIMO High Power Bridge / Router WAP-350N

<b>Model No.</b>	WAP-350N
<b>Standard</b>	IEEE 802.11a/b/g (Wireless LAN), 802.11n MIMO, IEEE 802.3 (CSMA/CD Ethernet), optional 3G
<b>Wireless &amp; Wired Security Functions</b>	Secure with WPA, WPA2, 802.1x (EAP, MIC, TKIP and AES), 64/128/152 bits WEP, IPSec/VPN. WPA-PSK, WPA2-PSK, WPA-EAP, EPA-EAP2, EAP-TLS, AES-CCM, 802.11i TKIP, PEAP-MSCHAPv2, PEAP-TTLS, RADIUS client. Mac/IP, Mac Access Control Lists, Custom scan lists that prevent clients from scanning unwanted channels. Full firewall, NAT and Bandwidth Management support, Mac Authentication 802.1q VLAN support, 4096 VLANs; VLAN bridging client list, DHCP auto-auth configuration. Hide/stealth SSID setup, Multiple SSID, Multiple Access Points mode, Sniffer detects intrusion attempts (WIPS sensor)
<b>Operation Functions</b>	Static, dynamic (RIP v1/2, OSPFv2), or policy (source) routing, DHCP Server / Client Super A, G modes (Hardware compression, aggregation and bursting). Turbo mode for 108Mbps Mesh-WDS / OLSR / RSTP, or Layer 2 Mesh routing. Packet processing: 100,000 pps. Support up to 128 Virtual Access Points (SSIDs) for single interface, WDS settings, and even different MAC address. Cloaking to reduce interference, dynamic frequency selection (DFS/ACCS) mode for auto channel. Firmware upgradeable LED and audible alignment methods based on signal strength for antenna aiming Beacon real-time traffic monitor, AP association displays, with per-user, and system wide throughput and traffic reporting. Wireless site survey. ACK Timing, RTS Fragmentation Threshold Adjustable transmit power up to 800mW (TPC/ATPC) dependent on radio module and frequency 802.11e QoS for Video and Voice Priority, protocol / port / IP / MAC filtering and shaping Layer 2 connectivity: bridge, synchronous, Asynchronous, ISDN, and SDSL
<b>Operation Modes</b>	Point to Point, Point to Multipoint, Bridging, Routing, Ethernet to WLAN Bridge, AP Client with Routing function, dynamic WDS, L2 mesh, High performance learning bridge with STP. 3G connectivity.
<b>Management</b>	SSH-based interface, Password, Web / text GUI, HTTP, Serial-based CLI, SNMP, Telnet, FTP, TFTP, Backup/Restore config-tool, Configuration tool for remote access / setup, User level access.
<b>Power over Ethernet</b>	12-28 VDC with overvoltage protection. High power PoE available for multiple radios.
<b>Interface</b>	1 RJ45 (PoE) Bulkhead connector, 1 RS232, 1 Reset button, 1 to 5 MiniPCI slots, 3 x 10/100/1000 Ethernet, Autosensing Base-T/TX, MicroSD slot, USB slots for external devices / 3G modems
<b>Mounting</b>	Pole or wall mount via 2pc clamps(included)
<b>Enclosure</b>	IP67 certified 100% sealed with die cast all weather-proof housing hinged housing
<b>Weight</b>	6 lbs (2.73 Kg)
<b>Dimension (L x W x H)</b>	H=12"/304.8mm W=9"/228mm D=3.5"/89mm
<b>Temperature Range</b>	Operating: -45°C to 75°C (-49°F to 167°F). -45°C to 75°C (-49°F to 167°F) for radio and board
<b>Relative Humidity</b>	0% to 99% non condensing
<b>Lighten Protector</b>	Integrated ESD (14kV) + lightning surge protection (10kA) for radio module
<b>Antenna connectors</b>	External antennas with up to 2 N connectors for 2x2 MIMO
<b>Platform Characteristics</b>	
<b>Platforms</b>	680MHz Atheros MIPS CPU
<b>Memory</b>	128MB or 256MB DDR RAM
<b>Radio Characteristics</b>	
<b>Radio Scheme</b>	MIMO 802.11n. 802.11a: OFDM; 802.11b: DSSS 802.11g: DSSS/OFDM. FDD BPSK/QPSK/16QAM/64QAM. Access Method: Time Division Duplex (TDD) with CSMA/CA, TDMA
<b>Frequency Range</b>	International: 3.3-3.8GHz; USA: 3.65-3.675GHz
<b>Data Rate</b>	802.11n MIMO for 6.5 - 300Mbps
<b>Channels</b>	North America: non-overlapping 12 Channels (US, Canada) ETSI: 13 Channels (Most European Countries); TELEC: 4 Channels (Japan)
<b>Throughput</b>	Single radio from 60Mbps to 300Mbps (2 antennas)
<b>Output Power (radio)</b>	Maximum 630mW. Up to five radios
<b>Receiver Sensitivity (without antenna)</b>	54Mb@-81dBm, 48Mb@-83dBm, 36Mb@-87dBm, 24Mb@-88dBm, 18Mb@-92dBm, 12Mb@-94dBm, 9Mb@-97dBm, 6Mb@-97dBm, depends on radio. Tolerance +/-1.5dB
<b>Approvals</b>	Radio module CE & FCC Part15 (in progress), Section 15.247

Note: Sales price may be varied that is dependent on components for specific requirement.