

## Spectra Long-Range Wireless Solutions

### FOR IMMEDIATE RELEASE

WiBorne proudly presents a wireless system that achieves high bandwidth at very long distances and reasonable price. This includes multi-polarized/plane/path of antennas, carrier class of wireless access points, and enterprise hotspot switch / gateway that support large number of concurrent users securely. Distance tested up to 40 kilometer (km) for point-to-multipoint (P2MP) links, or 100 km for point-to-point (P2P) links, with obstruction penetrating and extended range of 900 MHz, 2.4 GHz, 4.9 GHz, and 5 GHz.

### Base Station Antennas

Our antennas are designed with 360 degree "Stacked" Omni configuration and phased, which is a favorite for deployment requiring full omni-directional coverage with substantial multi-polarized gain. They provide Multi-Polarized/Multi-Plane/Multi-Path Technology. Multi-Polarized will solve wireless problems for tree penetration, office floor coverage, overall coverage pattern, greater non-line of site, noise reduction, with installation of lower tower.

3-D Radio Waves Science provides, built spatial diversity with obstruction penetrating quality. Our antennas support any frequencies within the 900 MHz, 2.4GHz, 5 GHz bands, and are ideal for point-to-multi-point or tower-to-CPE use. Our antennas will greatly reduce or solve common dropouts that other antennas see as obstruction or common interference. Current customers have found vast improvement in tree obstructed areas, body worn applications, and mobile use.



### Carrier Class of Radios for Base Station

Our Access Points range from 250 to unlimited clients concurrently. It's designed for deployment of WiFi zone / city with **WiMAX backward compatible**. Models WAP-250 for single radio and WAP-750 for 3 radios are both available for 360 degree of direction. Major functions are shown below.



WAP-240/500

WAP-750 / 250

- Full interchangeable internal wireless cards with: Atheros, Ubiquiti, Prism, Agere, etc.
- Integrated 100-200-500-1000 mW amplifier selectable.
- 802.1d bridging for Ethernet and wireless AP, and layer-3 proxy ARP bridging for wireless clients.
- NAT and Static (1:1) NAT support, with special support for FTP, IRC, H.323, and PPTP.
- Ability to do application-level (layer-7) firewall and shaping.
- Support for a wide-range of Ethernet devices, with the ability to assign multiple IPs per interface.
- Virtual distribution system (VDS) with 256-bit AES encryption and compression.
- Information such as wireless association counts, signal levels, services, system time and uptime are available on the main GUI desktop.
- Functional protocols: DHCP, PPPoE, MPPE, 802.1Q/VLAN, RIP, OSPF, BGP, WEP, WPA, EAP/TLS/TTLS.

### Full Range of Customer Premise Equipments (CPEs)

We offer full range of CPEs that are configurable with multi-modes: Universal AP repeater mode - **One WLAN interface used as AP and client concurrently**, 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). Radios are powered from 250mW to 400mW for 802.11 b/g, and 400mW for 802.11a, with variety of integrated panel antennas from 9 to 19 dBi. You even can have radio cell connected to external high gain antennas for 2.4GHz and 5GHz with P2MP ranged up to 40 km or more.

Typical usages include bridging satellite offices, corporate LANs, school campus, as well as wireless internet services. Our CPEs are also the solution of choice for bridging networks that are impossible to connect using wired alternatives, including networks separated by difficult terrain, railroads, or bodies of water.



## Backhaul | Dual Radio | Mesh Nodes

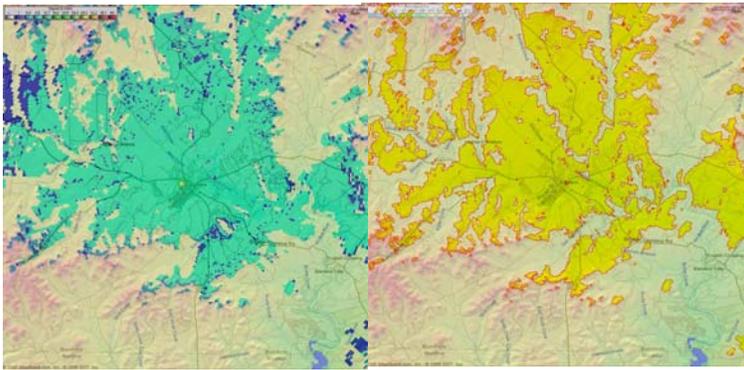
By combining a high-power 802.11b/g access point (AP) with our long-range and high-capacity 5 GHz mesh backhaul, WISP can now cost-effectively deploy Wi-Fi services over great distances:



- Dual radios architecture (2.4 GHz for 802.11b/g subscribers and 5 GHz for wireless mesh backhaul) overcomes well-documented inefficiencies and scalability limitations associated with omni-directional mesh networks
- 5 GHz backhaul combines benefits of mesh networking with the benefits of point-to-point links
  - Mesh networking: 360° coverage with NLOS capability; multiple wireless links with self-healing redundancy; link optimization; multi-hop networking; and optimized routing and load balancing
  - Point-to-point links: long range (up to 10 miles / 16 km) and improved penetration through high-gain, directional antennas with focused bursts
- High-power (28.2 W / 44.5 dBm EIRP) 5 GHz radio with 27+ dBi antenna enables long-range wireless links (up to 10 miles / 16 km) for backhaul
- High-power (3.2 W / 35.0 dBm EIRP) 2.4 GHz radio with 9+ dBi antenna provides broad coverage (up to 1200 ft / 350 meters) to 802.11b/g subscribers
- Multi-service system enables 802.1x and RADIUS authentication, end-to-end security, VLANs, and QoS
- Auto-discovery and rapid provisioning minimizes deployment expenses
- Multiple frequency bands (5.1- 5.8 GHz) allow deployments in a wide range of international regions

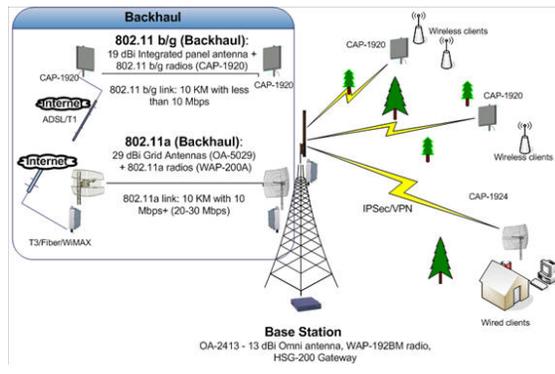
## WISP Consultation and Training

We have specialized full-time in the design, installation, and support of outdoor wireless wide-area networks with 20 years of experience from microwave, plus extensive knowledge of WISP planning, education, design, deployment, and troubleshooting. Following illustrates GPS navigation on an area of 25 km X 25 km. The first photo shows actual radio coverage from those blue and green areas, or "what radio can see". The second photo shows "Line of Site" or what "antenna can see". The 3<sup>rd</sup> shows network diagram.



What Radio Sees

What Antenna Sees



Network Diagram

## WiBorne Network Management Systems

To optimize wireless performance for your deployments, we developed hotspot gateway and wireless switch for large size of wireless users. It also secures wireless traffic with VPN / IPSec tunnels for whole deployment.

- Authentication, Authorization with Firewall, and Accounting/Billing for instant Hotspot.
- 250 or 1000 of concurrent users
- Centralized management with integrated access points (APs) or CPEs. It also controls any brands of linked APs / CPEs from console mode remotely.
- Remote administration and reconfiguring for gateways and associated CPEs
- Seamless IP roaming with large number of APs or CPEs
- Intrusion Prevention / Detection Systems (IDS/IPS): AWG-1000
- 802.1X, VPN/IPSec, or clientless (Bypass VPN). Free VPN client software for Windows / Linux
- Guest/Role accounts for organizations or public.
- Walled Garden for redirection to customized pre/post/failure of authentication pages
- Full Quality of Service (QoS) functions
- Billing Systems: Built-in accounting, credit card gateways, and prepaid cards: HSG-200
- Millions of transaction records for accounting database



HSG-200



AWG-1000

**WiBorne**  
Take your wireless airborne.  
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