

WiBORNE, INC.

Outdoor 802.11a 5 GHz High Power AP/CPE/Bridge/Router with 24dBi or 19dBi Integrated Antenna: CAP-5000 Series



CAP-5024



CAP-5020



CAP-520

The CAP-5024 / CAP-5020 are specially designed for applications of point-to-point as backhaul, or CPEs for point-to-multipoint to provide a superior performance solution for connecting many locations through wireless, yet flexible to customize for your deployment. It has up to three wireless interfaces for sectors or backhaul. The CAP-5024 / CAP-5020 deliver 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 or Turbo modes 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 and WDS Spanning Tree Bridging are available for all connected APs and clients in the same SSID group or Multiple SSIDs. QoS with voice / video / gaming priority is available.

CAP-5024 / CAP-5020 come with choice of radio powered up to 630mW. It also offers variety of CPU platforms customized for your deployment that can produce maximum of 50 dBm or 100 Watts EIRP!

Support channel selections from 4.9GHz - 6.1GHz providing support for both public and licensed bands. While bundle with WiBorne's outdoor AP [WAP-500](#) and [HSG Access Controllers](#), it supports remote management from individual clients to backhaul network management systems for hundreds of base stations with thousands of wireless clients. MIMO 802.11n and 3G technology.

CAP-5024 / CAP-5020 are based on state-of-the-art wireless technology with intelligent wireless edge platform enables new revenue generating converged services for IP data, voice (VoIP) and video streaming / conferencing / messaging. The CAP platform is a rugged communications-grade wireless delivery system with superior performance and high reliability to enable cost effective deployment. CAP-520 is outdoor AP model equipped with same radio, NEMA6 / IP 67 housing, and multi-strike gas discharge lightening protector. MTBF is more than 100,000 hrs.

Features:

- Single Atheros high power max. 630mW (28dBm) radio for 802.11a. Radio sensitivity up to -97dBm
- Time Division Duplex (TDD) with CSMA/CA, TDMA
- 108Mbps Turbo with data throughput up to 80Mbps in real
- 802.11n MIMO dual polarity for up to 300Mbps
- Packet Aggregation for improved VoIP and gaming
- Extreme distances, up to 150 km are supported.
- Channel width (Cloaking mode) for 5/10/20/40 MHz
- Channel selections from 4.9GHz, 5.150-5.850GHz, 6.1GHz, providing support for both public and licensed bands, LOS, NLOS scenarios
- IP 67 for CAP-5024/5020, NEMA 6 aluminum for CAP-520
- Firewall and NAT with stateful packet filtering
- QoS by IP/ protocol / subnet / ports, HTB, PCQ, CIR, EBS, and PIR. WiMAX 802.16 QoS Classification for Pre-WiMAX
- Layer 2 Mesh, WDS, Nstreme / bonding protocols, AP routing / transparent bridging. VRRP for High Availability
- 3G USB slot for backup connectivity
- Bridge: spanning tree protocol; multiple bridge interfaces; bridge firewalling, MAC NATting
- 802.11e QoS (WMM) Setting for priority of Video and Voice
- Tools: Device Discovery, Bandwidth, Link Test, Network Monitoring, Neighbor Viewer, Radio/Traffic Statistics
- Virtual Machine (VM) for 3rd party application software
- Client statistics (current signal level/quality, rate TX/RX, bytes TX/RX, radio rate) with graphical indication
- 64/128/152 bits WEP and WPA support.
- IPSec: DES, 3DES, AES-128/192/256, Camellia-128/192/256
- Routing for RIP, BGP, MPLS, VPLS, OSPF, GRE, Static
- VLAN: 802.1q, multiple VLANs; VLAN bridging
- 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, SSL, DNS, 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
- Watchdog for auto and remote reboot
- 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 High Power AP/CPE/Bridge/Router With 24dBi or 19dBi Integrated Antenna

Model No.	CAP-5024 / CAP-5020 / CAP-520
Standard	IEEE 802.11a (Wireless LAN), 802.11n (MIMO) 10/100 Base-T IEEE 802.3 (CSMA/CD Ethernet)
Wireless & Wired Security Functions	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, DES, Mac/IP Mac Access Control Lists, Custom scan lists to prevent clients from scanning unwanted channels, Full firewall, NAT and Bandwidth Management support, Mac Authentication, 802.1q VLAN support, multiple VLANs; VLAN bridging client list, DHCP auto-auth configuration, hide/stealth ESSID/SSID setup, Multiple SSID, Multiple Access Points mode. Sniffer detects intrusion attempts (lite IPS)
Operation Functions	Static, dynamic (RIP v1/2, OSPFv2), or policy (source) routing, DHCP Server / Client Super A mode (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 control up to 630mW (TPC/ATPC), Country code Selection 802.11e QoS for Video and Voice Priority, protocol / port / IP / MAC filtering and shaping, 802.1p L2 & L3, layer 2 connectivity: bridge, synchronous, Asynchronous, ISDN, and SDSL
Operation Modes	Point-to-Point, P2MP, Bridging, Ethernet to WLAN Bridge, AP Client with Routing function, dynamic WDS, mesh-WDS, High performance learning bridge with STP. 3G connectivity
Management	SSH-based interface, Password, Web GUI, HTTP, Serial-based CLI, SNMP, Telnet, FTP, TFTP, Backup/Restore config-tool, Configuration tool for remote access and setup, User level access.
Power over Ethernet	802.3af 24 VDC Passive with built-in surge protector
Interface	External RJ-45 Bulkhead connector, 1 X RS232, 1 X RJ45 NIC. 1 or 2 MiniPCI wireless slots , 1-2 10/100 Ethernet ports , CAP-520 comes with one N-type connector.
Mounting	Pole or wall mount via 2pc clamps(included)
Enclosure	CAP-5024/CAP-5020: UV stabilized ABS plastic with electronics protected in IP 67 aluminum for EMF protection. CAP-520: NEMA 6 housing
Weight	CAP-5024: 2.5 lb (1.13kg); CAP-5020 : 1.6 lb (0.73kg); CAP-520: 2.65 lb (1.20 Kg)
Dimension (L x W x H)	CAP-5024:14"x14"x3.4" (356x356x86.5mm) integrated antenna 24 dBi, vertical/horizontal polarity CAP-5020:10.5"x10.5"x3.4" (267x267x86.5mm) integrated antenna 19 dBi CAP-520: 10"x7.1"x2.25" (254x180x57mm)
Temperature Range	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
Relative Humidity	0% to 99% non condensing
Surge Protector	CAP-5024/CAP-5020: PoE surge protector CAP-520: multi-strike gas discharge tube lightning protector

Platform Characteristics

Platforms	MIPS architectures started with CPU 680MHz or 300MHz
Memory	16/32MB SDRAM, 64MB or 128MB DDR RAM
LED	Power, 2 LED pairs for MiniPCI slot(s), 1 user LED (Internal)

Radio Characteristics

Radio Scheme	802.11a: OFDM. 802.11n MIMO, Time Division Duplex (TDD) with CSMA/CA, TDMA, BPSK, QPSK, 16QAM, 64QAM
Frequency Range	Standard 5.1 GHz ~5.8GHz, 4.9GHz, radio module dependable. Non-overlapping channels: 12
Data Rate	802.11a: 108 / 54 / 48 / 36 / 24 / 18 / 12 / 9 / 6 Mbps, 802.11n MIMO for 300Mbps
Range	Possible distance up to 35+miles / 56KM, depends on terrain, antenna, and throughput
Output Power (radio)	802.11a: max 630mW
Receiver Sensitivity (without antenna)	54Mb@-74dBm, 48Mb@-77dBm, 36Mb@-83dBm, 24Mb@-86dBm, 18Mb@-90dBm, 12Mb@-91dBm, 9Mb@-93dBm, 6Mb@-94dBm, 1Mbps@-97dBm.
Approvals	Radio FCC Part15, Section 15.247. WPC for CAP-520

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