cnPilot™ e500, e501S, e502S Outdoor Wi-Fi Access Points
Omni and Sector Outdoor Wi-Fi Access Point

cnPilot™ e500, e501S and e502S are medium- to high-density outdoor Wi-Fi access points (AP) with a multi-functional design. These APs have internal antennas and an integrated mounting bracket to simplify installation. Perfect for a variety of applications, from omni-directional coverage to long-range Wi-Fi or high-interference outdoor-where a directional RF beam is required. The e501S and e502S have a 23 dBm front-to-back signal delta for excellent isolation in high-interference environments.

QUICK LOOK:

e500	e501S	e502S
802.11 a/b/g/n/ac		
5 GHz (2x2), 2.4 GHz (2x2)		
IP67 rated housing, UV protection, LTE Filter		
-30ºC to 60ºC		
15.4 W power out on one gigabit port		
6 dBi (5 GHz) gain omni antenna	13 dBi (5 GHz) gain sector antenna, 1200	17 dBi (5 GHz) gain sector antenna, 300

cnMaestro™

CLOUD-MANAGED ACCESS

All cnPilot APs are managed by cnMaestro from the cloud, an on-premises VM or a private datacenter. cnMaestro provides a single-pane-of-glass dashboard for Wi-Fi, Ethernet, fixed wireless broadband and service provider home routers.

- Zero-touch onboarding
- Inventory reports, mass configuration and upgrade
- Dashboard views with alarms and key performance metrics
- Remote troubleshooting tools
- Hierarchical device organization
- Cloud-managed guest portal with social login, vouchers, rate, time and throughput limits

cnMaestro Essential cloud management is included at no additional cost. There are no setup fees, licenses or recurring costs. cnMaestro includes detailed network statistics, channel utilization graphs, and integrated remote troubleshooting tools to ensure service is always on.

MULTI-FUNCTIONAL OUTDOOR WI-FI

The cnPilot e500/501/502 series includes a second gigbit Ethernet port to power up and connect a Cambium fixed wireless subscriber module, or any powered Ethernet device. e501S and e502S features Cambium engineered high gain sector antenna array that projects RF energy in a 1,200 or 300 arc out the front of the AP, with ~ -10dB in the remaining 600 providing a full 1,800 coverage, this is ideal for outdoor Wi-Fi on a warehouse, retail store, anywhere the AP is installed on the outside of the building. e501S features power out on one gigabit Ethernet port to connect any IP- and PoE-powered device such as an IP camera, Cambium fixed wireless subscriber module, or another Wi-Fi AP. Additionally, the e501S includes enterprise features designed to improve reliable connections. Controller-less roaming, dynamic channel selection, automatic transmit power control, band steering, multi-hop MESH with alternating 2.4 GHz and 5 GHz bands are all features of the cnPilot 500/501/502 series.

Integrated troubleshooting tools provide remote access for packet capture, client statistics, operational and RF statistics, and RF scanning for interference, channel utilization, and noise floor scan.

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Access Point Specifications

FCC	Ch 1-11, 36-48, 149-165		**Power**	802.3af or 802.3at powered device Typical load: 8 W, Max: 12.85 W 25 W when connected to full 802.3af load on GE 2
ISED	Ch 1-11, 36-48, 149-165			
ETSI	Ch 1-13, 32-48, 149-165			
ROW	Ch 1-13, 32-48, 159-169			
Radios	1 x 5 GHz radio (802.11 a/n/ac), 2x2 1 x 2.4 GHz (802.11 b/g/n), 2x2 SU-MIMO / MU-MIMO: 2 streams		**Dimensions**	300 mm x 204 mm x 65 mm (11.81 in x 8.03 in x 2.56 in)
			Weight	881 g (1.94 lbs)
SSID Security	WPA2 (802.11i), WPA2 Enterprise (802.1x/EAP), WPA PSK, Open		**Security**	Kengsington Key Slot
			LED	Two dual-color LED
Max PHY Rate	**2.4 GHz radio:** 300 Mbps **5 GHz radio:** 867 Mbps		**Ambient Operation Temperature**	-30ºC to 60ºC
Ethernet	Two IEEE gigabit Ethernet auto sensing		**Storage Temperature**	-40ºC to 70ºC
Antenna	Internal sector antenna 10.5 dBi (2.4 GHz) 13 dBi (5 GHz)		**Humidity**	95% RH non-condensing
			LTE Band Filter	38, 40
Max EIRP	36 dBm (2.4 GHz) 36 dBm (5 GHz) (EIRP limited by country regulations)		**Mount Options**	Integrated pole 38 mm and 76 mm (1.5 in and 2.99 in), wall mount
WLAN	256 clients, 16 SSIDs WPA-TKIP, WPA2 AES, 802.1x, 802.11w PMF		**Certifications (compliance)**	Wi-Fi Alliance 802.11 a/b/g/n/ac, Passpoint 2.0FCC, ETSI, CE, EN 60601-1-2, IEC60950, UI2043

Network Specifications

Authentication Encryption	802.1x EAP-SIM/AKA/AKA'/FAST, EAP-PEAP, EAP-TTLS, EAP-TLS/MSCHAPv2, PEAPv0/PEAPv1 MAC authentication to local database (on AP, on Controller) or external RADIUS. MAC auth fallback to guest portal		**Network**	NAT, NAT logging firewall, DOS protection, L2/L3/DNS ACL, DHCP server, DHCP Relay option 82 LLDP, IGMP v1, v2, v3 VLAN Pooling, RADIUS attribute VID VLAN per SSID, per user Integrated WIDS (wireless intrusion detection)
Scheduled WLAN	On/off by day, week, time of day			
QoS	802.11e/WMM QoS. DSCP/ToS mapping		**Band Steer Load Balance**	Yes
VLAN	802.11Q, max 4096			
Fast Roaming	802.11r, OKC, Enhanced roaming		**Tunnel**	L2TP, L2oGRE, PPPoE
Mesh	Multi-hop (3), either band		**Network and RF Management Tools**	Out-of-band RF spectrum analysis, radio self test network assurance, RF monitor with chn/noise/interference, wired and wireless remote packet capture, auto logging, ZapD performance tool, rogue AP detection, ultralow power mode, honeypot control
Channel Selection	Auto RF: Manual, or automatic			
Auto TX Power	Auto RF: automatically adjust max transmit power			

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Management

Interfaces	HTTP / HTTPS web interface, SSL, Telnet SNMP V1, V2, V3 Syslog, SNMP traps, NTP
Deployment	cnMaestro Cloud, cnMaestro on-premises, Standalone AP
Services	Monetized, cloud managed guest portal with design tools
APIs	RESTful management and statistics API Presence location API Splunk WebSocket integration, WebSocket DNS, NAT, TCP connection log

Captive Portal	Hosted on cnMaestro Controller On-AP hosted guest portal Redirect to HTTP/RADIUS external portal/ authentication Active Directory integration, Google, Facebook, Office 365 integration Data rate, time duration, data throughput limit Server DNS logging
Hotspot 2.0	Hotspot 2.0/Passpoint 2.0
Accounting	RADIUS accounting, load balancing AAA servers, Dynamic Authorization COA, DM
Service Availabilty	Critical network resource monitor with automatic shutdown maintains device connectivity

Standards

Wi-Fi Protocols	802.11AC 2x2:2:2
	MIMO, VHT MCS rates, 256-QAM, HT20/40/80 MHz,
	Transmit beamsteering, Airtime Fairness, Packet Aggregation (AMSDU, AMPDU) RIFS, STBC, LDPC
	MIMO Power Save, MRC

e500   **e501S**   **e502S**

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e502S Ordering Information	
PL-e501S000A-US	e501S (FCC) Outdoor, 2x2, Integrated gigbit 802.11ac AP with tilt brackets
PL-e501S000A-EU	e501S (EU) Outdoor, 2x2, Integrated gigbit 802.11ac AP with tilt brackets
PL-e501S000A-RW	e501S (ROW) Outdoor, 2x2, Integrated 802.11ac AP with tilt brackets
PL-e501SP00A-US	e501S (FCC) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SP00A-EU	e501S (EU) Outdoor 120 sector 802.11ac AP WLAN AP with tilt bracket & PoE Injector
PL-e501SP00A-RW	e501S (ROW) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector, No country cord
PL-e501SPEUA-RW	e501S (ROW, EU cord) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SPUSA-RW	e501S (ROW, US cord) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SPUKA-EU	e501S (EU, UK cord) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SPUKA-RW	e501S (ROW, UK cord) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SPINA-RW	e501S (ROW, India cord) Outdoor 120 sector 802.11ac WLAN AP with tilt bracket & PoE Injector
PL-e501SPCNA-RW	e501S (ROW with China cord) Outdoor 120 sector 802.11ac WLAN AP with PoE Injector
PL-e501SPANA-RW	e501S (ROW with AUS/NZ cord) Outdoor 120 sector 802.11ac WLAN AP with PoE Injector
PL-e501SPBRA-RW	e501S (ROW with Brazil cord) Outdoor 120 sector 802.11ac WLAN AP with PoE Injector
PL-e501SPARA-RW	e501S (ROW with Argentina cord) Outdoor 120 sector 802.11ac WLAN AP with PoE Injector

Consult your Cambium Networks distributor for individual country availability.

ABOUT CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Its wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

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