WP-300N

eXtreme Power 11n 2.4Ghz 2x2

Wall-Plate PoE Access Point (500mW)

EAN Code : 47127571510

Supports CenOS 3.0 and CenOS 4.0 Software OS

11n/bg 2.4GHz	500mW RF Power	Built-in Antennas	300Mbps 2T2R	PoE 802.3af/at	LED Control	IAPP SUPPORTED	Tag VLAN	IAPP SUPPORTED	802.1x
Wall Plate	Wall Mount	PoE Bridge	Telnet w / CLI	Multi Language	MULTIPLE SSID x8	Bandwidth Control	x16 Control APs	Thin Access Point	Hotspot Guest Portal

WP-300N eXtreme Power 11n 2.4Ghz 2x2 Access Point with Router (500mW) supports dual operating systems. Users can freely choose between CenOS 3.0 and 4.0 software cores, which contain different sets of operation modes. Devices using CenOS 3.0 can be centrally managed through CERIO's Wireless Management Software (CWMS). CenOS 4.0 devices can use integrated management functions of Control Access Point (CAP Mode) to manage an AP network.

The WP-300N eXtreme Power 11n 2.4Ghz 2x2 Wall-Plate PoE Access Point hardware utilizes 500mW eXtreme power and **built-in 2.4 GHz 2x2 Omni directional antennas**. WP-300N's design makes it the ideal solution for **inconspicuous** and **high performance** deployment. Cerio's WP-300N provides in-room connectivity for a variety of environments such as **hotels, resorts, universities,** and

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luxurious homes.   WP-300N focuses on customers looking for a **modern** and **aesthetically appealing** way to improve their network. Strategic placement of WP-300N can replace unaesthetic RJ-45 wall ports and add a sense of modernism to a room or hallway.

The WP-300N can provide subscribers with an Ethernet connection for a local access to extend the range and increase the performance of a wireless network. The WP-300N hardware also **includes 802.3af/at PoE** capabilities that allows power and data to be supplied to the unit using CAT5 Ethernet cable. A **USB port** located on the side of the device allows users to **conveniently charge devices through a USB Charger**. Finally, when deployed in public places such as hotels and university campuses, WP-300N's ensures product safety from theft through its wall-plate design.

CenOS 3.0 Software Introduction:

CERIO's GS Firmware uses the CenOS 3.0 core . The firmware's main functions are Wifi application for Router + WiFi Access Point (Includes Router AP+WDS) and Pure WiFi Access Point (Includes AP+WDS) and Point to Point / Multi Point WiFi Bridge and Bridge + Repeater Extension WiFi AP and WISP/CPE for Router + WiFi Repeater AP functions .

The CenOS 3.0 core's operational mode supports Router AP with WDS mode / Pure AP with WDS Mode / Pure WDS mode / Client Bridge + Universal Repeater Mode and WISP/CPE Repeater +AP mode. The CenOS 3.0 features that simplify deployment and reduce cost for continued maintenance of the indoor Access Point . The Cerio CenOS is undoubtedly your wifi application best choice.

CenOS 4.0 Software Introduction:

CERIO's NGS Firmware uses the CenOS4.0 core. The firmware's three operation modes include Authentication Access Point (AAP) and both Control Access Point (CAP) and Thin Access Point (TAP) modes. CERIO's CenOS 4.0 Access Point uses hotspot technology importing concepts. Main functions include authentication login support through remote RADIUS Server, local user account, OAuth2.0 account and guest login in AAP mode.

Cerio's (Thin AP) wireless base station TAP function supports only GUI state monitor displays when acting as a Thin Access Point. Once this setting is operational, the device ends all NGS centralized control and management functions and operates strictly under the control and management of other supervising systems such as an AP utilizing CAP (Controller Access Point) mode. The thin AP deployment architecture acts to effectively improve network efficiency, and reduce security concerns of information theft from wired/wireless invades. Because no settings are stored in a Thin AP, device theft or invader intrusion would pose no threat to the networks security.
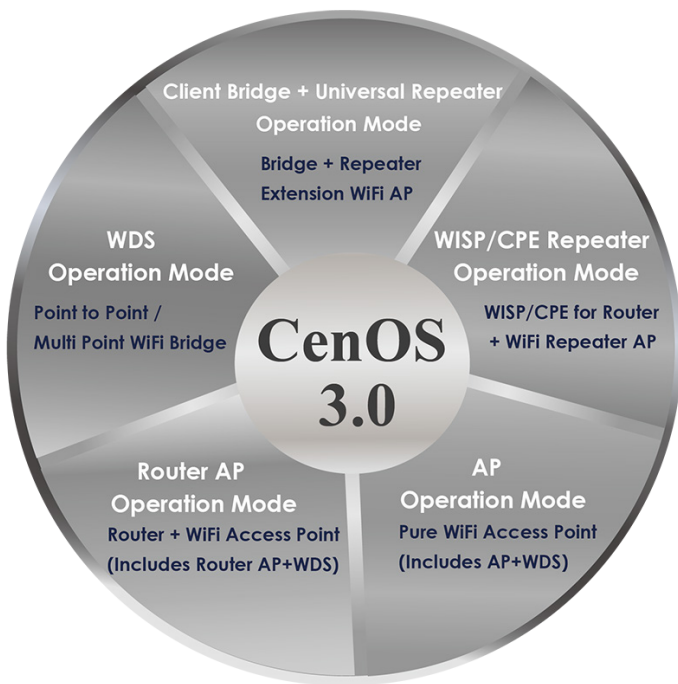
Control Access Point (CAP)- AP manager

Administrators should use CAP mode to simultaneously managed APs operating in AAP and TAP mode. Centralized

APs management enables control of Wi-Fi function / security / users authentication / firmware upgrade / system time / traffic monitoring / and system information. TAP mode supports GUI status monitoring, allowing administrators to facilitate audit APs. CERIO's NGS Firmware also supports load balance management through TAP mode (Real-time user limitation).

*This product is shipped with CenOS 3.0 preloaded as the default software bundle. Users wishing to change to CenOS 4.0 must visit the official CERIO website to download the CenOS 4.0 firmware.
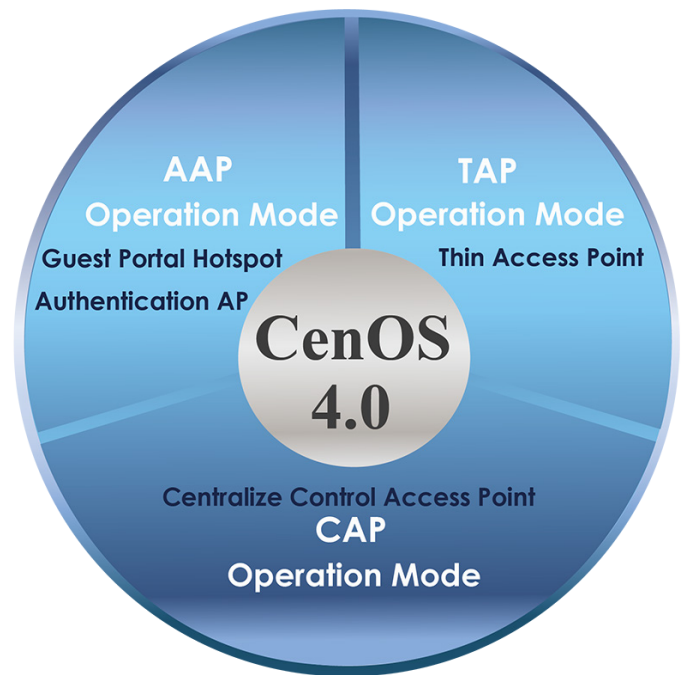
Integrated: CenOS 3.0 Software Bundle

Client Bridge + Universal Repeater Operation Mode
Bridge + Repeater Extension WiFi AP

WDS Operation Mode
Point to Point / Multi Point WiFi Bridge

WISP/CPE Repeater Operation Mode
WISP/CPE for Router + WiFi Repeater AP

CenOS 3.0

Router AP Operation Mode
Router + WiFi Access Point (Includes Router AP+WDS)

AP Operation Mode
Pure WiFi Access Point (Includes AP+WDS)

Only Cerio's special model supports Router AP mode

WP-300N's CenOS 3.0 Software supports Router AP Mode, Pure AP Mode, Pure WDS Mode, Client Bridge + Universal Repeater Mode, and WISP (CPE) Repeater Mode

Integrated: CenOS 4.0 Software Bundle

AAP Operation Mode
Guest Portal Hotspot Authentication AP

TAP Operation Mode
Thin Access Point

CenOS 4.0

Centralize Control Access Point
CAP Operation Mode

Only Cerio's special model supports CAP mode

WP-300N's CenOS 4.0 Software supports Control Access Point (CAP) Mode, Authentication Access Point (AAP) Mode, and Thin Access Point (TAP) mode

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CenOS 3.0 and CenOS 4.0 Overlapping Features

➢ Supports RF signal On/Off control with time setting features. Administrators can conveniently schedule wireless usage times and signal start times

➢ LED Control to Enable and Disable the blinking of the devices LED lights

➢ Supports IEEE802.1d Spanning Tree protocol, to prevent packet looping as a result of wireless/wired device network problems

➢ Supports up to 8 Multiple ESSIDS and IEEE 802.11F IAAP roaming protocol

➢ Supports wireless IGMP the v1/v2/v3 function, routing multi-cast stream to more efficiently manage media traffic

➢ Supports Ping Watchdog to detect crashes after consecutive failed pings

➢ Supports Hardware chipset base Watch Time Dog, allowing the OS to reboot automatically before a crash

➢ Software UI supports Auto reboot setting function. Software setting allows automatically reboot by Daily/Weekly/Monthly settings

➢ Auto Channel Scan and supports scanning other AP sites to survey information

➢ Administrative Access : HTTP/HTTPS protocol supports CLI access via Telnet and SSH

➢ Supports advanced monitoring user interface. The status page displays system status, CPU, memory, LAN and wireless network status, and provides a graphical chart for improved analysis by management. 。

Wireless Features

➢ Supports IEEE802.11n standards, up to 300Mbps(Tx) and 300Mbps(Rx) data transfer rates

➢ Transmission power control : Layer 1~9

➢ Each set of SSIDs supports connections of up to 32 users, supports up to 8 SSID (Virtual AP)

➢ Supports at total of 8 Multiple-ESSIDs per device

➢ IEEE802.11f IAPP : to facilitate faster roaming for the stations among different APs nearby

➢ Supports IEEE 802.11d-Multi country roaming

Authentication / Encryption (Wireless Security)

➢ Blocks client to client discovery within a specified VLAN (ESSID) through Client Isolation

➢ Supports data transmission encryption EAP-TLS + Dynamic WEP , EAP-TTLS + Dynamic WEP PEAP/MSPEAP + Dynamic WEP and supports user authentication WPA-PSK/TKIP,WPA-802.1x/TKIP, 802.11i WPA2-PSK/CCMP/AES, WPA2(802.1x /CCMP / AES)

➢ Hidden SSID broadcast support, and VLAN assignment on ESSID

➢ Access Control list (ACL) by MAC Address

Quality of Service (QoS)

➢ Support COS and DiffServ/TOS, IEEE 802.1Q Tag VLAN priority control

➢ Support IEEE802.11e WMM for wireless data packet prioritization

➢ Supports packet classification through DSCP (Differentiated Services Code Point)

Management

➢ Real-time status monitoring support for online users

➢ Supports intuitive network management interface and web browser management interface

➢ Support Firmware Upgrade via software Web Interface, also includes Reset to Factory Defaults

➢ Support SNMP v1/v2c/v3, MIB II. Also supports SNMP Traps to a list of IP addresses

➢ Supports HTTP or HTTPS management options

➢ In addition to supporting System Log, system recording via Telnet and SSH CLI access management is also supported.

CenOS 3.0 and CenOS 4.0 Software Comparison

WP-300N CenOS 3.0 Specifications	WP-300N CenOS 4.0 Specifications
➢ Operation Modes : Router AP with WDS Mode, Pure AP Mode, AP+WDS Mode, Pure WDS Mode, Client Bridge + Universal Repeater, and WISP (CPE) Repeater Mode ➢ Supports up to 8 group WDS (Wireless Distribution Service) bridging links ➢ RIP and OSPF support for keeping track of routing functions (dynamic routing) ➢ WISP multi-site selection support. Whether in the WISP's Client Bridge Repeater AP or the WISP's WISP + Repeater AP site settings can be set and support multi-site automatic backup ➢ Built-in Cerio CenOS3.0 software Core interface allows for communicating	➢ Operation Modes: (AAP) Authentication AP Mode, (TAP) Thin AP Mode, (CAP) Control AP Mode. ➢ Provide customizable login and logout portal page by Web Page ➢ Each Virtual ESSID supports 10 local built-in local accounts, Supports 10 local accounts x 8 virtual ESSID for a total of 80 local accounts. And supports external RADIUS server, and OAuth2.0 Facebook / Google accounts ➢ Provides customizable Login redirect URL and Login URL web links ➢ Each SSID supports 802.1q VLAN Tag standards，supporting a max of 4096 VLAN Tags ➢ Control Access Points (CAP) can centrally manage AAP and TAP devices. CAP allows management of up to 16 wireless base stations with NGS CenOS 4.0 support. CAP provides group management which provides convenience when changing wireless settings, updating firmware, etc. **Support Wireless Access Controller**

with Cerio Wireless Management Software (CWMS) and CERIO AM-Series AP Management WLAN Switch or Access Controller hardware device of network management servers

Cerio Wireless Management Software (CWMS)
Centralized APs management software– PC Base

Control AP Group Management
Support up to 500 Access Point / Windows base
CWMS only supports Cerio's CenOS 3.0 core

Network Features

➢ Supports fixed IP, automatically obtains IP (DHCP Client) and PPPoE dial-up connected devices to the WAN side of the Wifi link.

➢ Supports PPTP / L2TP client / server/ pass through

➢ PPPoE Reconnect includes 3 types: always connect, connect on demand, and manually connect and support DHCP server

➢ Supports proxy DNS servers, DNS servers automatically obtain NTP Clients

➢ Supports virtual DMZ, Virtual Server (IP / Port Fowarding, and supports IP/MAC Filtering

➢ UPnP (Universal Plug and Play) and NTP Network time synchronization function support

➢ Supports download and upload traffic

CERIO CenOS 4.0 Access Point provides authentication and authorization for a wireless networks. Administrator can select CAP (Control Access Point) mode to centralize management of network APs.

(CAP Mode) Control Access Point Mode

➢ AP Group management –maintain a set of setting templates that simplify the task to assign the same setting to multiple APs

➢ AP-Automatic configuration and provisioning by CAP mode.

➢ Locally maintained configuration profiles for managed APs

➢ Auto discovery managed APs for TAP/AAP mode.

➢ Centralized firmware Upgrade-Select multiple APs and upgrade their firmware at the same time

➢ Remote Firmware upgrade by TFTP and HTTP.

➢ Monitor wireless traffic, access point groups, and system information

➢ Wireless access points in group management supports local mapping function.

(TAP) Thin Access Point Mode

When devices operates in TAP (Thin AP) mode, other operation functions are disabled and the Thin AP device must be controlled and managed by other devices such as a NGS CenOS 4.0 CAP mode devices of AM-5000 Controller. Thin AP devices experience better CPU and memory loading, ultimately improving the overall performance of the network infrastructure.

Access Points operating under TAP mode can only provide status modules to administrators. Thin AP devices cannot control themselves, and instead needs other devices such as NGS CenOS 4.0 CAP mode (Controller access point- AP manager) to provide management settings. Thin APs provide network security because if the device were stolen or hacked, there would be no valuable information susceptible to loss due to the device's simplicity and lack of functionality.

(AAP) Authentication Access Point Mode

control and traffic analysis/statistics

➢ Layer 7 agreement and base policies to follow a range of IP addresses and IP/MAC Address service.

Service provider can benefit from the flexible web redirection service. This service provides a set of location, browser, and user-specific information to the backend system to enable value added personalized service provided by the WISP. Detailed location information is available via HTTPs/XML interfaces. Web pages can be either stored locally on the OS or remotely on a guest portal server.
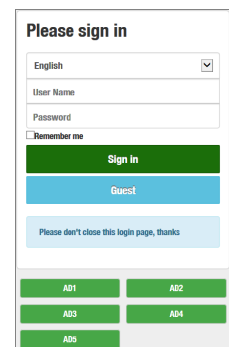
Authorization：Authorization: access control to network resource such as protected network with intranet, Internet, and bandwidth.

Web Authentication

➢ **Authentication:** single sign-on (SSO) client with authentication integrated into the local authentication environment through local, RADIUS Server and OAuth2.0

➢ Support internet bandwidth control and restricts the number of guests.

➢ Allow MAC binding IP address for local users authentication

➢ Support Web-based for SSL browser-based authentication Default support OAuth2.0 through Google and Facebook account authentication

Wireless Resources

➢ AAP and TAP Mode provides a graphical user interface for monitoring AP statuses

➢ WP-300N's high power design provides stronger signal strength and ultimately more complete wireless coverage

➢ TAP mode devices support load balancing (real-time) for smartly distribute clients across APs for optimal performance

Cerio WP-300N CenOS3.0 / CenOS4.0 Comparison

2.4GHz | PoE Supported | EXTREME POWER

Software Bundle	CenOS 3.0	CenOS 4.0
Software Features	● Supports NAT Routing functions ● Supports wireless signal repeating/bridging functions ● Centralized AP management through CWMS ● Supports QoS bandwidth management	● Supports web login authentication : Local account / Auth2.0 / RADIUS Server / Guest Auth 2.0 ● AP can be converted to centralized AP manager ● Supports customized login page ● Supports QoS bandwidth management
Operation Mode	Router AP Mode, AP Mode and AP+WDS Mode, Pure WDS Mode, Client Bridge + Universal Repeater Mode, and WISP Repeater Mode	1. AAP (Authentication Access Point) Mode 2. TAP (Thin Access Point) Mode 3. CAP (Control Access Point) Mode

Features / Mode	AP Mode	AAP Mode
Web login authentication		Yes
Walled Garden Support	N/A	Yes
Privilege address		Yes
AP + WDS	Yes	No (Pure AP)
Max Associated Clients/AP	32 Max Client Limit	64 Max Client Limit
Wireless Security/Encryption	WEP/WPA/WPA2/RADIUS/ with 802.1X	WPA/WPA2/RADIUS/ with 802.1X
		TAP Mode
Thin AP　support	N/A	Only supports GUI AP status monitoring
		CAP Mode
Centralized AP Management	Centralized AP management not supported within the firmware operating system **CenOS 3.0 devices supports centralized AP management through CERIO Wireless Management Software or AM series hardware AP controller**	Yes (CAP Mode) 1. Supports management of up to 16 APs 2. Simultaneous management of AAP / TAP devices 3. AP Group Management/ AP Mapping/ AP Status Monitoring
Centralized AP Management Settings		1. AP scanning and VLAN Tagging support 2. IP Address / Gateway / DNS Setting 3. Operation mode changing 4. Wifi function settings 5. Firmware update 6. System time setting 7. AP profile copy
Status monitoring		1. Supports client connection monitoring 2. User bandwidth (TX/RX)

WDS Mode		
WDS Functions	8	N/A
Router AP / CPE (WISP) Mode		
Network Connection Methods	Static IP / Dynamic IP/ PPPoE / PPTP	
Server Support	DHCP Server / Virtual Server	
DDNS / UPNP / DMZ	Yes	N/A
IP Routing	Yes (Static / RIP / OSPF / Distribute OSPF over RIP)	
Client Bridge + Repeater		
AP Bridging	Yes	
Signal Extension	Yes (Supports Repeater AP Function)	N/A

WP-300N Hardware Key Features

- ➢ 500mW at 2.4Ghz Output eXtreme High Power, Built in 2.4GHz 2x2 Smart Omni Directional Antenna
- ➢ IEEE 802.11n 2Tx / 2Rx Design, Bandwidth of up to 300Mbps(Tx), 300Mbps(Rx) link rate
- ➢ Integragted IEEE 802.3af/at Power over Ethernet (PoE) in this device.
- ➢ Supports PoE Bridge by LAN Port function
- ➢ Provides 3 x Ethernet RJ45 10/100 ports
- ➢ Provides USB Port , works as USB Charger
- ➢ 2 x RJ11 Phone Pass Through (Line in and Line out)
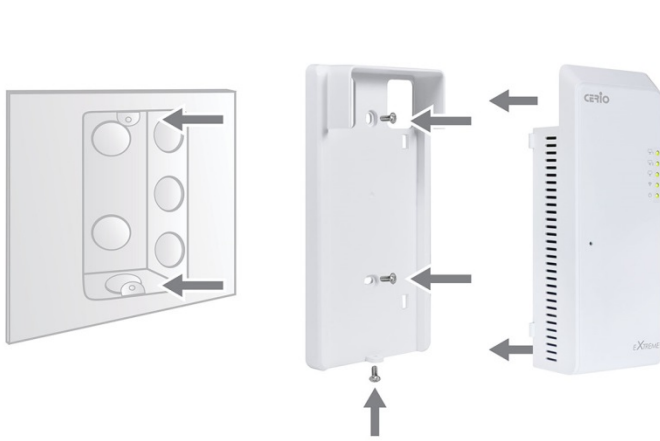
WP-300N Hardware Application

Smart of PoE Bridge Application

CERIO WP-300N eXtreme Power 11n 2.4Ghz 2x2 Wall-Plate PoE Access Point hardware is designed with a smart PoE Bridge function. The PoE Bridge function support provides next AP power and allows for the structure to be very convenient. The PoE Bridge supports CERIO PoE AP,, and other Passive PoE and 802.3af PoE IPCAM solution.
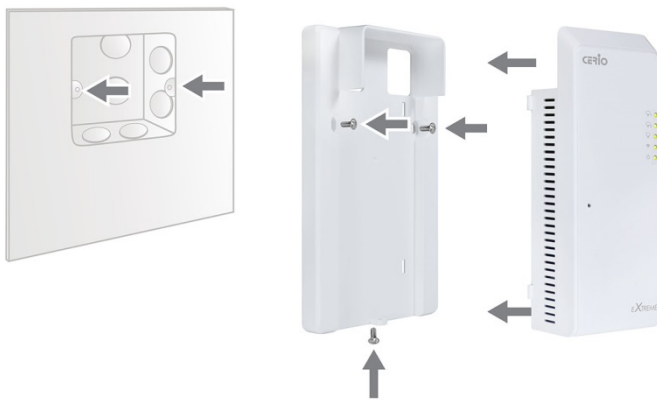
Wall Plate and Device Installation
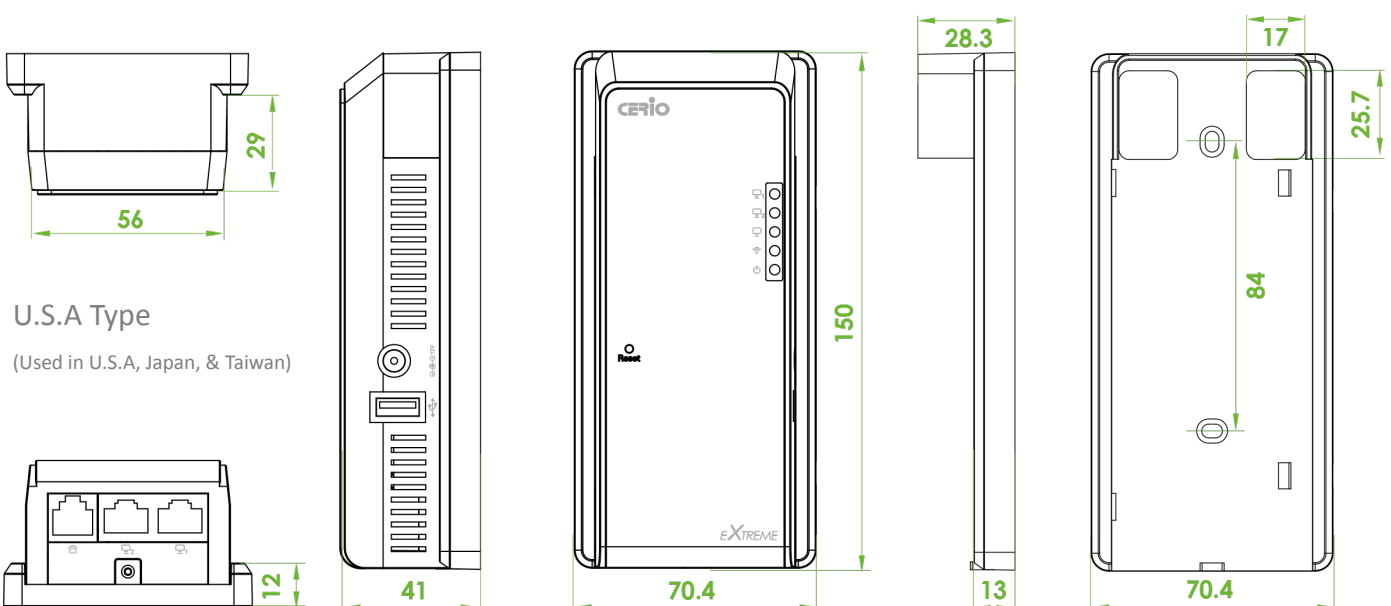
U.S.A Type Outlet Box

(Used in U.S.A, Japan, & Taiwan)

E.U Type Outlet Box
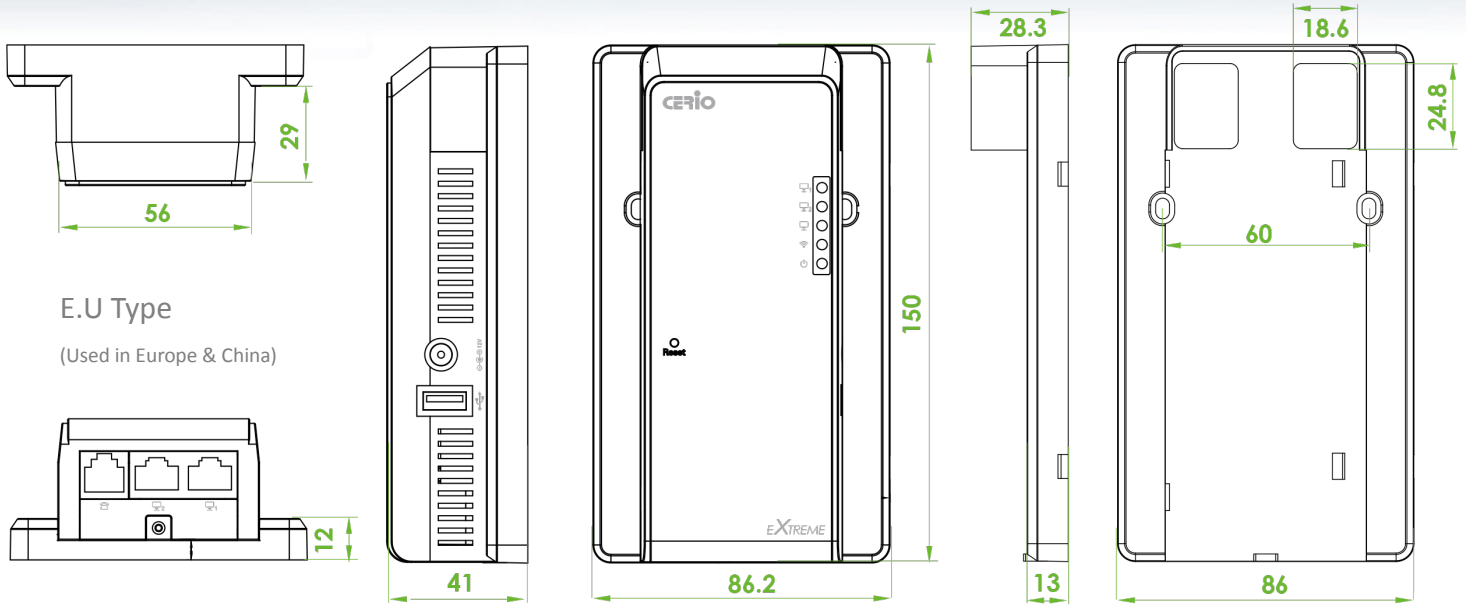
(Used in Europe & China)

Device and Wall Plate Bracket Dimensions : measured in mm

29
56

U.S.A Type

(Used in U.S.A, Japan, & Taiwan)

12
41
150
70.4

28.3
13
17
25.7
84
70.4

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E.U Type

(Used in Europe & China)

WP-300N Hardware Specifications

Application Software

OS System Compatible edition	Cerio CenOS 3.0/4.0 Software Core

Specifications

Network Standards Conformance	IEEE 802.11 b/g/n compliant
	IEEE 802.3 / IEEE 802.3u Fast Ethernet
	IEEE 802.3af/at Power over Ethernet
Ethernet Configuration	Ethernet Connector : (802.3af/at Power over Ethernet)
	RJ45 LAN/ETH0 (PoE In) x1
	RJ45 LAN1/ETH1 x1
	RJ45 LAN2/ETH2 (PoE Bridge) x1
USB Port	USB A Type : Only for 5V Power Charger
Telephone Configuration	RJ-11 Pass Through In x1 connector , Out x1 connector
LED Indicators	Power LED x 1,
	LAN/ETH0 x1
	LAN1/ETH1 x1

2.0b

LAN2/ETH2   x1

WiFi LED x1

Wireless Specifications

Data Transfer Rate	IEEE802.11b : 1 / 2 / 5.5 / 11Mbps (auto sensing)
	IEEE801.11g : 6/ 9/ 12/ 18/ 24/ 36/ 48/ 54Mbps (auto sensing)
	IEEE802.11n : 300Mbps (Tx), 300Mbps (Rx)
Frequency Range	2.412 ~ 2.462GHz (USA)
	2.412 ~ 2.484GHz (Japan)
	2.412 ~ 2.472GHz (Europe ETSI)
	2.457 ~ 2.462 GHz (Spain)
	2.457 ~ 2.472 GHz (France)
Channel Spacing	IEEE802.11b/g/n : 20/40MHz
Media Access Protocol	CSMA / CA with ACK
Modulation Method	IEEE 802.11b: DSSS (DBPK,DQPSK,CCK)
	IEEE 802.11g/n: OFDM (64-QAM,16-QAM,QPSK,BPSK)
Operating Channels	802.11b/g/n : 11 for FCC,14 for Japan,13 for Europe, 2 for Spain, 4 for France
Transmit Power Variation	Max : 27 ± 1 dBm
Receiver Sensitivity	Max : -92 dBm

Environmental & Mechanical Characteristics

Operating Temperature	-10 °C ~ 55 °C
Storage Temperature	-20 °C ~ 65°C
Operating Humidity	10% - 90% Non-Condensing
Storage Humidity	10% - 90% Non-Condensing
Antenna	Build in 2x2 Smart Omni Directional

	Antenna
Form Factor	Support Wall Plate (with bundle Bracket)
System Power Consumption	9.5 Watt Max. (with-out USB Charge requested)
Power Require	110 – 220V AC Power;12 VDC /1A
	Supports Power Over Ethernet (POE 48~57V voltage)
	Integragted IEEE 802.3af /at Power over Ethernet (PoE)
Dimensions (W x H x D)	Main Unit : 58x150x35mm
	With Wall Plate Bracket Set: 69.5x151.5x41mm(US-Type)
	With Wall Plate Bracket Set: 85.5x151.5x41mm(EU-Type)
Unit Weight	Main Unit :　170g
	With US Type Wall Plate Bracket :　39.5g
	With EU Type Wall Plate Bracket : 46.5g
Certifications	CE　，FCC，NCC　、ROHS compliant

Package Content

WP-300N Main Unit	x1
Wall Plate Bracket - 1　(U.S.A Specification)	x1
Wall Plate Bracket - 2　(Europe Specification)	x1
CD Manual	x1
Quick Installation Guide	x1
Warranty Card	x1

Note: This product supports both Power 12V DC input and Power Over Ethernet (PoE PD) Power input design. However, the Package Content does not include a Power adapter or PoE(PSE) source. Power sources can be requested as an optional component, and includes 12V PoE adapter or 802.3af / at 48V PoE (PSE) devices. (PoE Injector or PoE Switch)