OW-400 2N10

eXtreme High Power WiFi6 Dual-Radio +10dBi Outdoor PoE Bridge/AP

EAN Code : 4712757151244

Introduction

CERIO's OW-400 2N10 is a WiFi6 Outdoor PoE Bridge/AP using the new generation of WiFi6 (802.11ax) dual-core 1Ghz high-computing processing chip with the latest MU-MIMO and OFDMA technology and provide higher efficiency and transmission speed. It's a WiFi6 11ax 2.4/5GHz dual-band wireless AP and supports a maximum transmission rate of up to 2400Mbps on the 5GHz frequency band and a maximum transmission rate of up to 574Mbps on the 2.4GHz frequency band. This is an AX3000 model that can simultaneously provide wireless signals in the 2.4GHz and 5GHz frequency bands.

The OW-400 2N10 hardware using a wireless amplifier chip, which enhances the signal distance capability and stability. It provides waterproof network connectors and an IP67 weather-proof durable design. Additionally, it built-in 10dBi 5GHz directional panel antenna, and two external N-Type antenna connectors are allocated to the 2.4GHz bands. It supports dual-ports IEEE 802.3at (PoE) function, allowing both power and data to be provided through CAT5e cabling. It can withstand harsh environmental wireless network deployment, making it the perfect product for any outdoor wireless application.

The CenOS 5.0 software core provides innovative and breakthrough advanced features for mobile client bridging/WISP roaming applications. It allows seamless wireless connection of fixed bridge and mobile stations. It provides a perfect solution for Public Transport (Railway, Bus, Subway, Gondola etc.) and Tourism Industry (Ferris Wheel, Park Train, etc.). The CAP mode centralized management for up to 32 APs. In addition to supporting point-to-point, multiple operation modes, Repeater and WISP modes. This makes it suitable for deploying and constructing applications such as transmitting video data for return and long-distance network data transmission.

Highlight Features

- 802.11bgn/ax 2TX/2RX with a maximum transmission rate of 574Mbps, and 802.11an/ac/ax 2TX/2RX with a maximum transmission rate of 2400Mbps.
- 300mW Output eXtreme High Power design.
- Aluminum casing design help to achieve optimal heat dissipation in hot outdoor environments, ensuring that the device maintains the best transmission performance at all times.
- Built in 10dBi 2x2 5GHz Directional Panel Antenna. Wireless PtP transmission distance up to 2.5KM.
- 2 external N-Type connectors for 2x2 2.4GHz band. Paired with **ANT-10FD** (2.4G 10dBi directional antenna) wireless PtP transmission distance up to 2.5KM.
- Supports the latest 11ax Low-Density Parity-Check (LDPC) function, which can efficiently perform error correction and supports Space-Time Block Coding (STBC), Transmit Beamforming (TxBF), which can enhance signal coverage and improve wireless transmission performance.
- Supports one 1 Gigabit ETH port and one 2.5Gigabit ETH port, both support PoE power input.
- Provide customizable login and logout Captive portal page by Web Page.
- Weather-proof Housing (IP67 Approved).
- CenOS 5.0 Control Access Point Mode (CAP) supports centralized management of up to 32 AP devices.
- **Operation Modes :** Access Point Mode (includes Hotspot Portal Authentication, Pure AP Mode, and AP + WDS Mode), Control Access Point Mode (Centralized AP Management), Client Bridge + Repeater Mode, and WISP / CPE Repeater Mode.
- With AP mode supports at total of 32 Multiple-ESSIDs per device (16 ESSID on 2.4Ghz and 16 ESSID on 5Ghz).
- With AP mode supports x8 WDS per Radio (2.4Ghz band WDS x8 and 5Ghz band WDSx8) for a total of 16 WDS Links.

Software Features

- Supports built-in 802.1x RADIUS authentication server account database for small and medium environments, removing the need to set up external server and avoiding additional costs. Also supports RADIUS Server authentication server account features to fit the needs of large-scale network environments.
- Built-in Time Policy function can set multiple times schedule apply to RF on/off and IP/MAC filter or other security function.
- Captive Portal Authentication supports by remote RADIUS server, Local account, third-party OAuth2.0, LDAP (AD), POP3, Guest and remote bulk MAC Address.
- Wireless AP group management - Automatic configuration and setting of intelligent control of AP.
- Each SSID supports 802.1q VLAN Tag standards, supporting up to 4096 group VLAN Tag capability.
- With AP mode supports MAC filtering and wireless account web authentication, and encryption methods such as WEP, WPA/WPA2/WPA3 Personal, WPA/WPA2/WPA3 Enterprise, 802.1x connection.
- QoS(Quality of Service) for bandwidth management and traffic prioritization and supports network.
- Users Upload/Download Bandwidth Control speed limits, and User Device (Total) bandwidth control. Administrators can regulate the limit of each network user.
- Support Band steering technology to automatically switch between frequency bands. When using dual-band network cards with 802.11ac, users can always automatically connect to 5Ghz Radio.
- Supports IEEE802.11f IAPP and IEEE802.11r and IEEE802.11k Fast Roaming.
- Support Ping Watchdog function, which automatically monitoring device operations and reboots the device before a crash can occur.
- Software Web UI supports auto reboot setting function. Software setting allows automatically reboot by Daily/Weekly/Monthly settings.
- Administrative Access : Supports Telnet and SSH.
- Provides Traffic Monitor and Graphical GUI Status Interface for Network and Radio Overview.

Hardware Features

- Supports 2.4GHz/5GHz dual-band and the maximum transmission rates are 574/2400Mbps respectively while operating up to 2974Mbps.
- Hardware embedded high-power amplifier chip and high sensitivity receiver provide reliable performance for wireless deployment in various environmental applications.
- Supports 300mW at 2.4GHz/5GHz Output eXtreme High Power design.
- Built in 2x2 10dBi 5GHz Directional Panel Antenna.
- Support 2 external N-Type connectors are assigned to the 2.4GHz band.
- Supports one 1G Ethernet Port and one 2.5G Ethernet Port. Both support PoE function.
- PoE supports IEEE 802.3at standard, allows PoE power and data transmission through Cat5e cabling.
- Supports IP67 weather-proof durable design. Its high-temperature resistance and corrosion-proof casing can withstand harsh environments.
- Comply with IEC61000-4-2 ESD (Electro Static Discharge) load and discharge lightning protection Conductive: 6KV; Air: 8KV.
- Each pin of POE port with " Gas Discharge Tube (GDT) " design and supports IEC61000-4-5 standard.
- Supports 6KV lightning protection surge grounding port, and hardware reset button to factory default.
- Pressure vent (prevents internal condensation).
- Supports target wake time (Smart AP TWT) function, the device can stay in a sleep state to save power when it's not necessary to transmit.
- The OFDMA technology allowing multiple users to transmit simultaneously under different bandwidths, increasing transmission efficiency and no delay.
- 802.11ax BSS Coloring to improve service efficiency in high-density AP deployment environments.
- Supports 11ax 1024QAM, which improves the transmission efficiency higher than 256QAM.
- Built-in AES 128,256, DES/3DES, WAPI-2 hardware encryption algorithm acceleration engines.
- Supports "Hardware Watch Dog" function, to achieve automatic reconnection mechanism.

Hardware Overview

External for 2.4GHz N-Type Connecter

External for 2.4GHz N-Type Connecter

Built in 2x2 10dBi 5GHz
Directional Panel Antenna

Aluminum Adjustable Bracket Holes

6KV Lightning
Protection Surge
Grounding Port

Metal Corrosion-
Resistant Casing
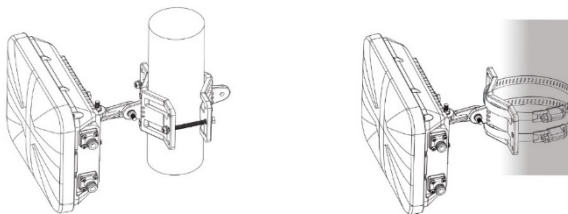
LED

Pressure Vent

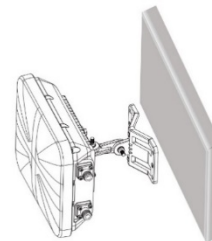Function Port

1G ETH1 / PoE in
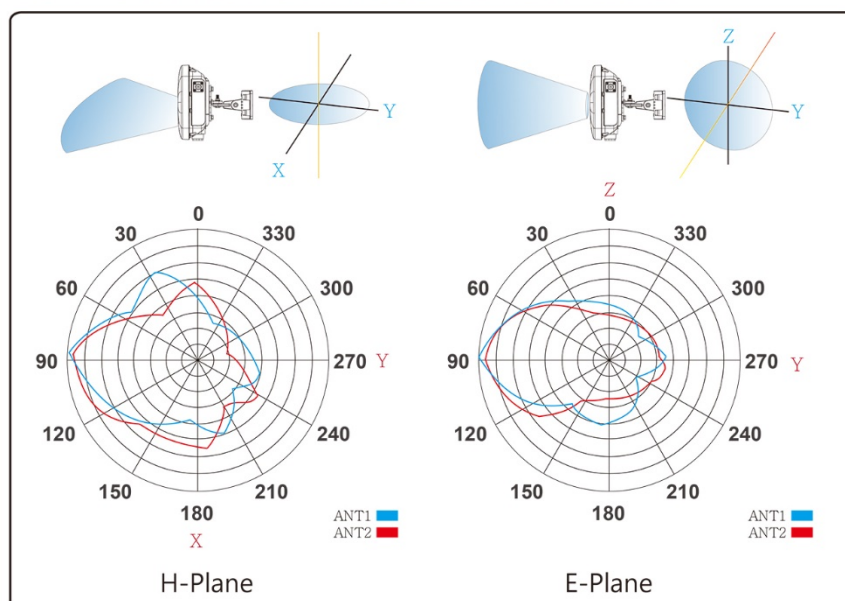
2.5G ETH2 / PoE in

Reset Button

Mounting Application
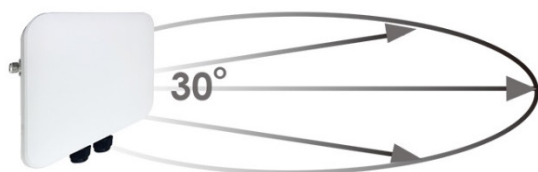
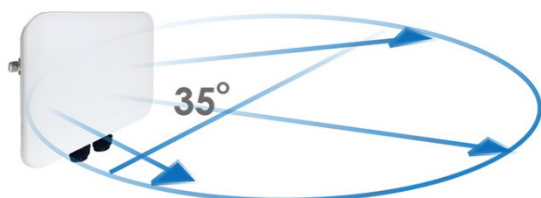### Adjustable Pole Mounting

Adjustable Wall Mounting

RADIATION PATTERN - Built-in 5Ghz 10dBi : OW-400 2N10

ANT1
ANT2

ANT1
ANT2

H-Plane

E-Plane

Antenna Angle and Coverage

Built-in 5Ghz 10dBi : OW-400 2N10
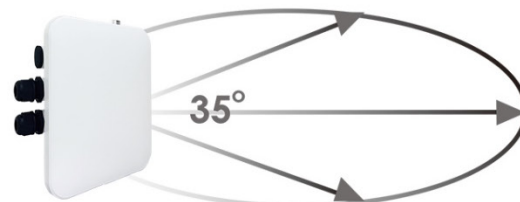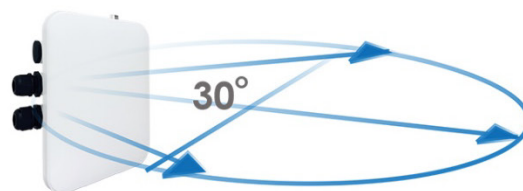When the main body is installed horizontally

Horizontal Beam-width 35°

35°

Vertical Beam-width 30°

Built-in 5Ghz 10dBi : OW-400 2N10
When the main body is installed vertically

Horizontal Beam-width 30°

30°

Vertical Beam-width 35°

P to P Throughput On Side Test Report

Distance	Frequency GHz	Model no	Throughput (Mbps)
0.67km	2.4G	OW-400 4N00+ANT-10FD (External 2.4G 10dBi directional antenna)	240.054
1.1km	5G	OW-400 4N00+ANT-14AD (External 5G 14dBi directional antenna)	412.337
1.6km	2.4G	OW-400 4N00+ANT-10FD (External 2.4G 10dBi directional antenna)	188.931
	5G	OW-400 2N10 (Built-in 5G 10dBi directional antenna)	147.216
	5G	OW-400 2N18 (Built-in 5G 18dBi directional antenna)	701.708
	5G	OW-400 4N00+ANT-18AD (外接 5G 18dBi directional antenna)	694.817
	5G	OW-400 4N00+ANT-14AD (外接 5G 14dBi directional antenna)	319.433
7km	5G	OW-400 2N18 (Built-in 5G 18dBi directional antenna)	139.479
7.7km	5G	OW-400 2N18 (Built-in 5G 18dBi directional antenna)	84.330

* Test results may vary due to actual environmental differences。

Software

Application Software
Cerio CenOS 5.0 Software Core

Standards & Hardware Specifications

Network Standards Conformance
IEEE 802.11 p/n/a/ac/ax compliant
IEEE 802.3 / IEEE 802.3u
IEEE 802.3af/at Power Over Ethernet compliant
IEEE 802.11Q VLAN
IEEE 802.11r/k Fast Roaming
IEEE 802.11e WMM
IEEE 802.1x RADIUS
IEEE 802.3az EEE

Ethernet Configuration
ETH1 : RJ45 10/100/1000M Ethernet Port x 1
ETH2 : RJ45 10/100/1000/2500M Ethernet Port x 1
(ETH1 or ETH2: Power over Ethernet 802.3at PoE in)
Function port : RJ45 x 1

Reset Button
Reset to the factory default (Need to remove the waterproof protection screw plug)

LED Indicators	
PWR (Power)	x1
ETH1 (PoE In-1)	x1
ETH2 (PoE In-2)	x1
2.4G Signal	x1
5G Signal	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
IEEE802.11n : 400Mbps (@ 40MHz 64QAM)
IEEE802.11ac : 867Mbps (@ 80MHz 256QAM)
IEEE802.11ax : 574Mbps(@ 40MHz 1024QAM)
IEEE802.11ax : 1200Mbps(@ 80MHz 1024QAM)
IEEE802.11ax : 2400Mbps(@ 160MHz 1024QAM)

RF Spatial Streaming
2.4Ghz: (IEEE802.11ax)
SU-MIMO (2ss, 1 user), DL/UL MU-MIMO (STA mode only, 2ss), DL/ULOFDMA(4 users)
5Ghz: (IEEE802.11ax)
DL MU-MIMO for HE160 and VHT160 (2ss, 2 users), UL MU-MIMO for HE160(up to 4 users), DL/UL MU-OFDMA (up to 4 users)

Frequency Range
IEEE802.11nbg :
Supports 2.412 ~ 2.462 GHz
IEEE802.11a/an/ac/ax :
Supports 5.180 – 5.240 & 5.725 – 5.825 GHz

Channel Spacing
IEEE802.11b/g/n : 20/40MHz
IEEE802.11ax: 40/80/160MHz

Media Access Protocol
OFDMA on top CSMA / CA , Spatial Reuse / BSS Color

Modulation Method
IEEE802.11b : DSSS (DBPK,DQPSK,CCK)
IEEE802.11a/g/n : OFDM(64-QAM,16-QAM,QPSK,BPSK)
IEEE802.11ac : OFDM (256-QAM, 64,-QAM, 16-QAM, QPSK,BPSK)
IEEE802.11ax : OFDMA (1024-QAM, 256-QAM, 64,-QAM, 16-QAM, QPSK,BPSK)

Operating Channels
2.4GHz : 1-13
5GHz : 36-64, 100-140, 149-165
(Depends on configured regulatory domain)

Transmit Power Variation
2.4GHz : Max : 24 ± 1 dBm
5GHz : Max : 24 ± 1 dBm

Receiver Sensitivity
2.4GHz : Max : -94 dBm
5GHz : Max : -93 dBm

Environmental & Mechanical Characteristics

Operating Temperature
-25 °C ~ 65 °C

Storage Temperature
-40 °C ~ 85°C

Operating Humidity
10% - 95% Non-Condensing

Storage Humidity
10% - 95% Non-Condensing

Antenna
2.4GHz : 2 N-Type Connectors for 2.4GHz Band
5GHz : Built in 2x2 10dBi 5GHz Directional Panel
Horizontal Installation:
Horizontal Range 35°, Vertical Range 30°
Vertical Installation:
Horizontal Range 30°, Vertical Range 35°

Vent
Automatically adjustable Vent design

Form Factor
Supports Adjustable Wall Mounting Installed
Supports Adjustable Pole Mounting Installed (Pole mounting diameter range 40 ~ 80 mm)

ESD	
Conductive: 6KV	
Air: 8KV	

Surge Protection
L to L: 2KV
L to G: 6KV (EN61000-4-5) (8/20 us)
(The main unit provides a grounding port)

Power Consumption
18Watt (Max)

Power Supply
Supports Power Over Ethernet (POE 48~57V)

Input Power
IEEE 802.3at 48~57V PoE In

Dimensions (W x D x H)
240 x 197 x 80 mm

Housing Materials
IP67 Rating / Die-Cast aluminum with Plastic Enclosure

Unit Weight
1.8kg

Production Location
TW

Certifications
CE, FCC, NCC, ROHS Compliant

Package Contents

Package Contents	
OW-400 2N10 Main Unit	x1
PoE Power supply Kit	x1
Adjustable Mounting Bracket Set	x1
Quick Installation Guide(Chinese/English)	x2
Warranty Card	x1

Related Products

Model No.	Photo	Description
ANT-10FD		2.4GHz 2x2 Outdoor IP68 Wide Rang Directional 10dBi Panel Pole/Wall Mount Antenna
ANT-05FN-S		2.4Ghz Outdoor thin type Omni 5dBi Plug Antenna
LLMR-NNP-1M		1M N-Plug (Male) to N-Plug (Male) LLMR200 Low Loss RF Antenna Cable
LLMR-NNP-2M		2M N-Plug (Male) to N-Plug (Male) LLMR200 Low Loss RF Antenna Cable
LP-300		2.4GHz / 5GHz N-Female to N-Male Lightning Protector
POE-OSP		Gigabit Ethernet PoE Pass-Through Outdoor Surge Protector
POE-OSP+		1/2.5Gbps Multi Gigabit Ethernet PoE Pass-Through Outdoor Surge Protector