

# 5G1 AX1200 for OW-500 (4N15) with built-in 5GHz Patch Antenna (15dBi) 2KM Distance PtP Throughput Test Report



1. Test Product model.



2. Introduction

The purpose of this test is to determine the average throughput and signal stability of OW-500 (4N15) with built-in 5GHz Patch Antenna (15dBi) via the Radio 1 (5G1) AX1200 at a distance of 2KM . This test specifically measures point-to-point WDS connections established using Cerio's CenOS 5.0 software core. The test was conducted between two OW-500 (4N15) units paired for 802.11ax operation.

3. Test Date and Personnel

|                |       |       |       |      |
|----------------|-------|-------|-------|------|
| Date: 2025.7.2 |       |       |       |      |
| Tester         |       |       |       |      |
| 7/2            | 07.02 | 07.02 | 07.02 | 7.2  |
| Ky             | Jacky | Kin   | MM    | Eric |

## 4. Test Environment

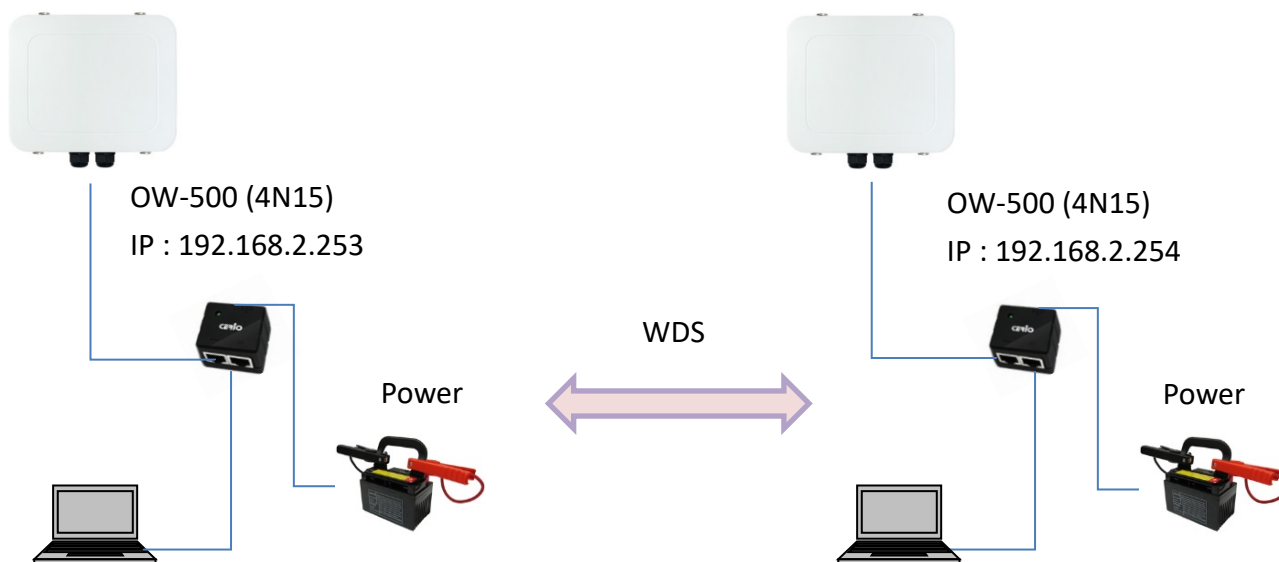
Location A: Second nuclear power plant breakwater.

Location B: Yehliu Tunnel entrance platform.

The distance from Location A to Location B is roughly 2178.24m, determined by Google Earth.



## 5. System Network Configuration



## 6. OW-500 (4N15) UI Screen

Location B : MAC Address and WDS

Browser address bar: 192.168.2.254/#

CERIO OW-500 (4N15) CenOS 5.0

System Wireless Utility Status

WDS Status

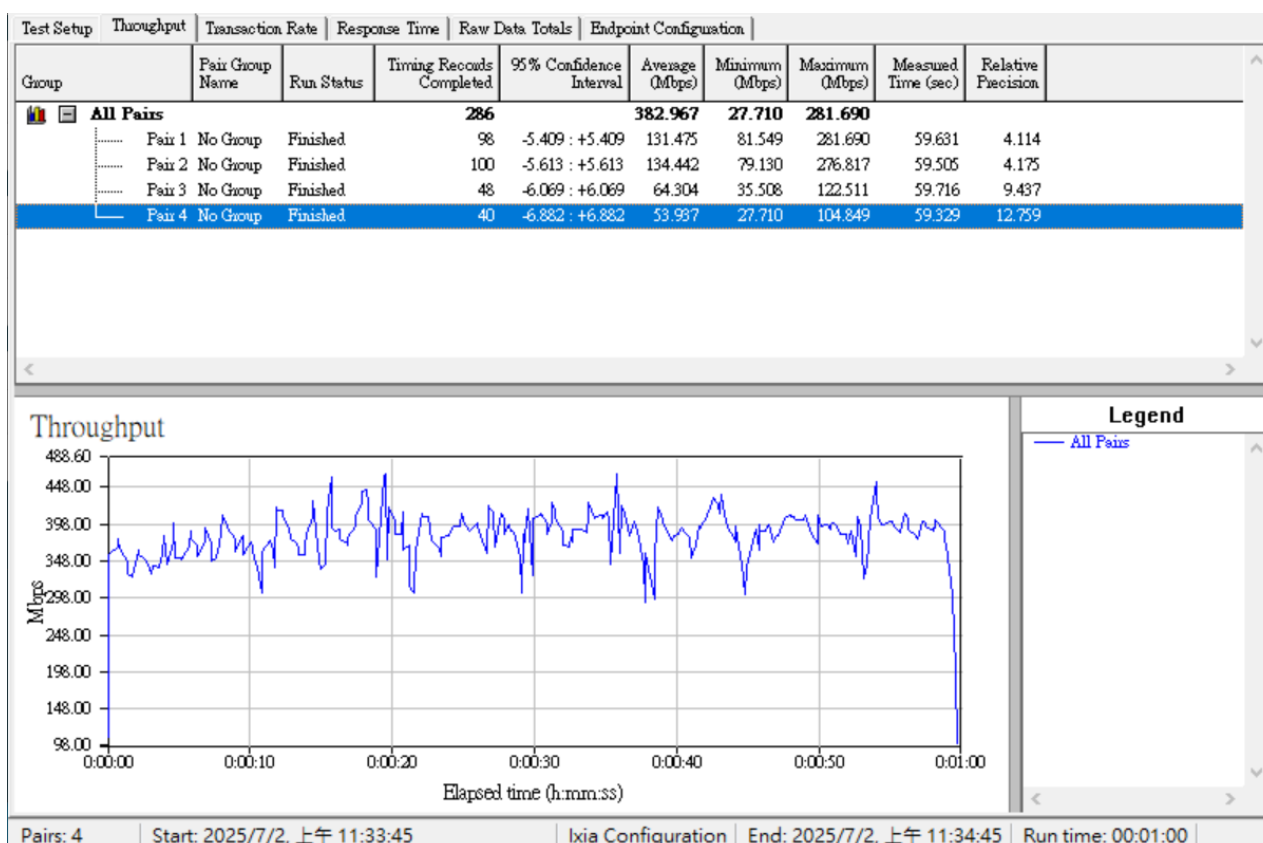
| Radio0 Client | MAC Address | Rate(RX/TX) | RSSI |
|---------------|-------------|-------------|------|
|               | -           | -           | -    |

| Radio1 Client | MAC Address       | Rate(RX/TX)   | RSSI |
|---------------|-------------------|---------------|------|
|               | 8c:4d:ea:ff:ff:18 | 576Mb / 648Mb | 47   |

| Radio2 Client | MAC Address | Rate(RX/TX) | RSSI |
|---------------|-------------|-------------|------|
|               | -           | -           | -    |

Refresh

| Band Mode | Channel | Throughput  | Antenna             |
|-----------|---------|-------------|---------------------|
| 802.11ax  | 56      | 382.967Mbps | Built-in 5GHz-15dBi |



5G1\_15dBi\_CH56

## 7. TEST Tools

| Test Equipment  |                                         |           |                  |
|-----------------|-----------------------------------------|-----------|------------------|
| Notebook        | Lenovo ThinkPad E14<br>Gen6 Notebook x2 | System OS | Windows 10 (x64) |
| Power (battery) | ALPHALINE MF85D23R x2                   |           |                  |
| Inverter        | DC to AC 350W Inverter x2               |           |                  |
| Tripod          | 2                                       |           |                  |
| PoE Injector    | Gigabit Injector (PoE-PE03GE-30W) x2    |           |                  |
| NIC             | LLANO USB3.0 2.5Gb RTL8152B NICx2       |           |                  |
| RJ-45 Cables    | Cat.5e x 4                              |           |                  |

|                                       |                                                                                                 |
|---------------------------------------|-------------------------------------------------------------------------------------------------|
| RF Cables                             | LLMR-NNP-1M x2                                                                                  |
| Test product                          | 1. OW-500 Series eXtreme High Power WiFi6 Tri-Radio Outdoor PoE Bridge/AP (+15dBi Patch ANT) x2 |
| Test Software and setting information |                                                                                                 |
| Application tools                     | Chariot Version 6.7                                                                             |
| Running time                          | 1 min                                                                                           |
| software                              | CenOS 5.0 Layer2 Softcore Core<br>Firmware version : Pme-CPE-IPQ60XX-CERIO V0.0.2/20250205      |
| Operation mode                        | Using Access Point mode with WDS function                                                       |
| Radio/Bandwidth / Channel             | Radio1 (5G1 2X2) / HE80 / CH56                                                                  |

## 8. On-site status

Location A: Second nuclear power plant breakwater. ( 核二廠消波提 )



Location B: Yehliu Tunnel entrance platform. ( 野柳隧道口平台 )



## Conclusion

Verify the point-to-point transmission performance of our latest Cerio designed Tri-Radio outdoor wireless AP model: OW-500 (4N15) at Radio 1(5G1) 5GHz distance of 2 km. At this time, the antenna used for this test is a built-in patch antenna (15dBi) to verify its functionality.

Test results at a 2km distance are based on an OW-500 (4N15) outdoor AP (+15dBi Patch ANT). For antennas of the same specifications, built-in antennas offer higher transmission performance than external antennas. While antenna adjustment over long distances is difficult, it remains an effective method for improving transmission quality and throughput. As a result, the optimal and most efficient data transmission speed reaches 382.967Mbps. Our transmission performance is extremely stable, delivering significant throughput even over long distances.

Cerio Outdoor Wireless Testing has proven to be an invaluable reference tool for users who plan to deploy our products in a various outdoor environments. We have unparalleled experience in creating high-quality wireless networking hardware and software products, which enables us to consistently meet user needs and satisfy consumer demands through extensive knowledge and product design.