5G2 AX2400 for OW-500 (4N18) with built-in 5GHz Patch Antenna (18dBi) 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 (4N18) with built-in 5GHz Patch Antenna (18dBi) via the Radio 2(5G2) AX2400 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 (4N18) units paired for 802.11ax operation.

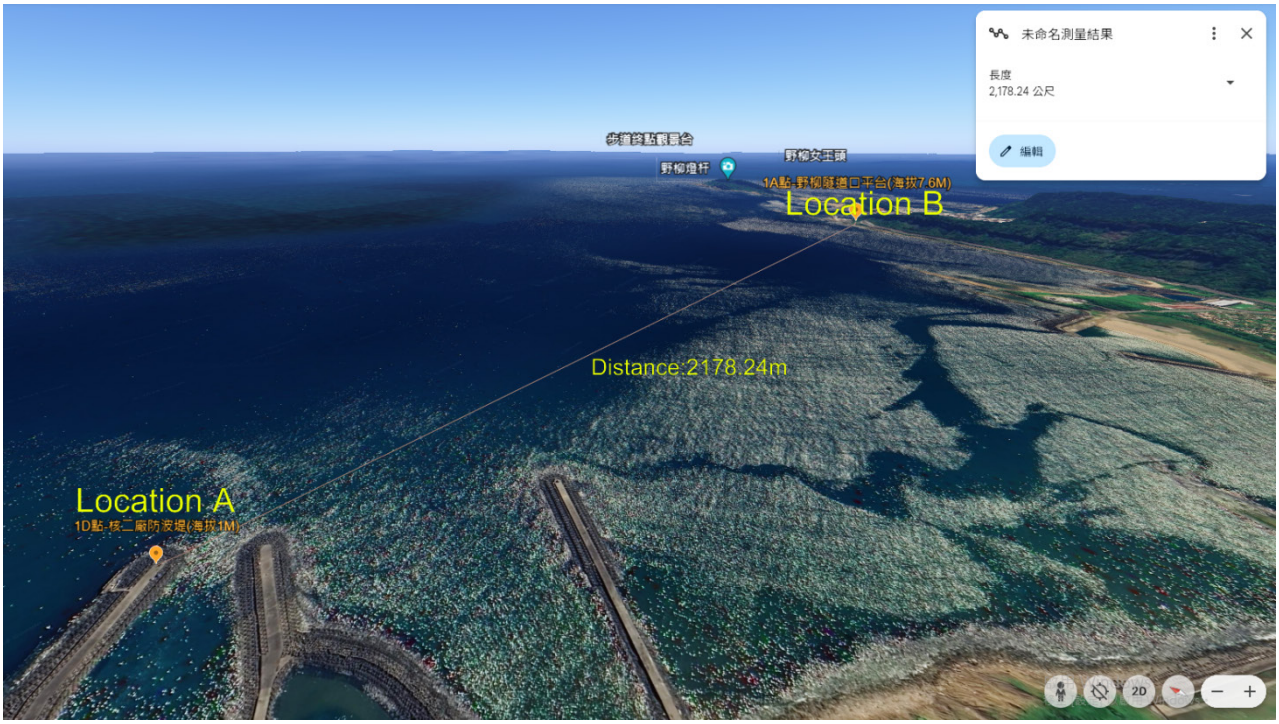
3. Test Date and Personnel

Date: 2025.7.2				
Tester				
7/2	07.02	07/02	07.02	7.2
				Eric

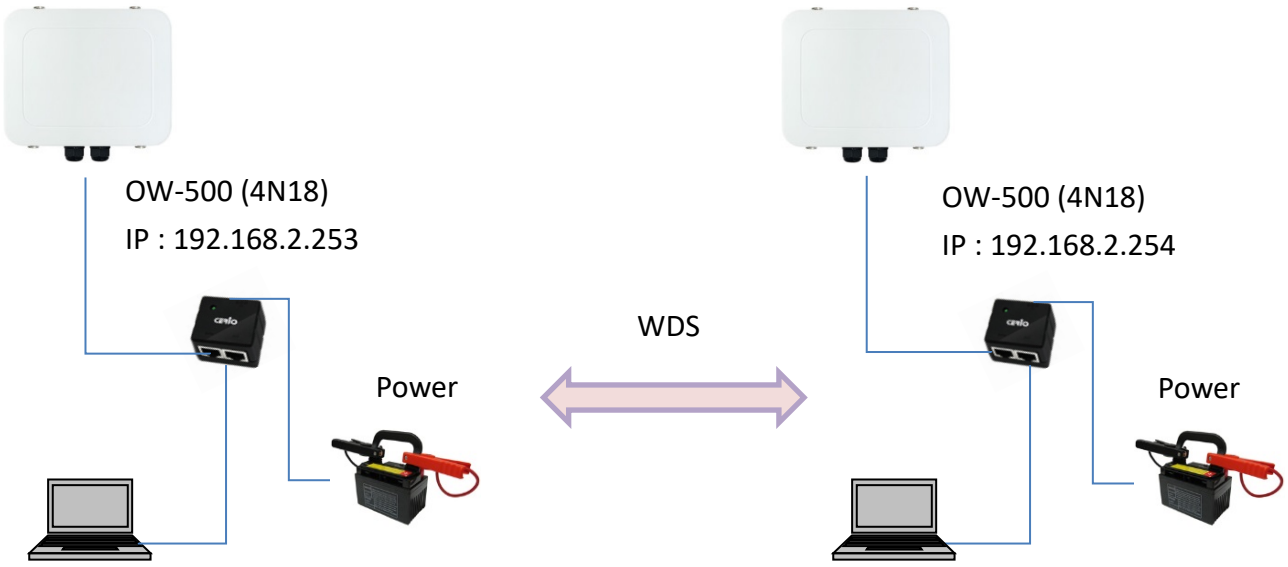
4. Test Environment

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.

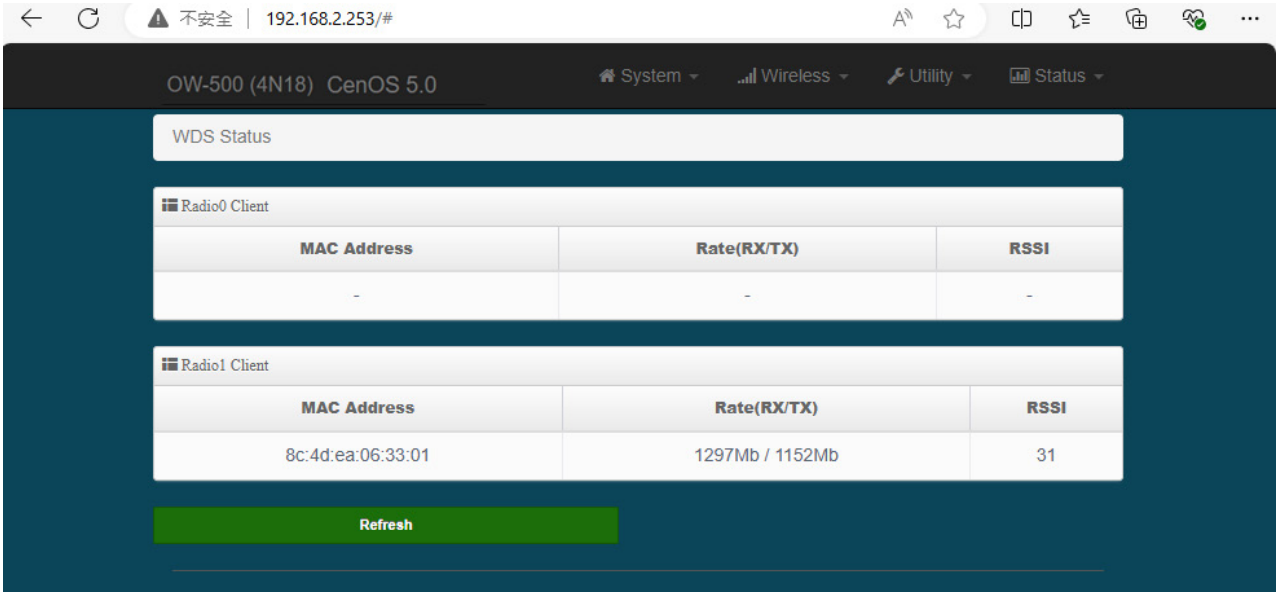


5. System Network Configuration

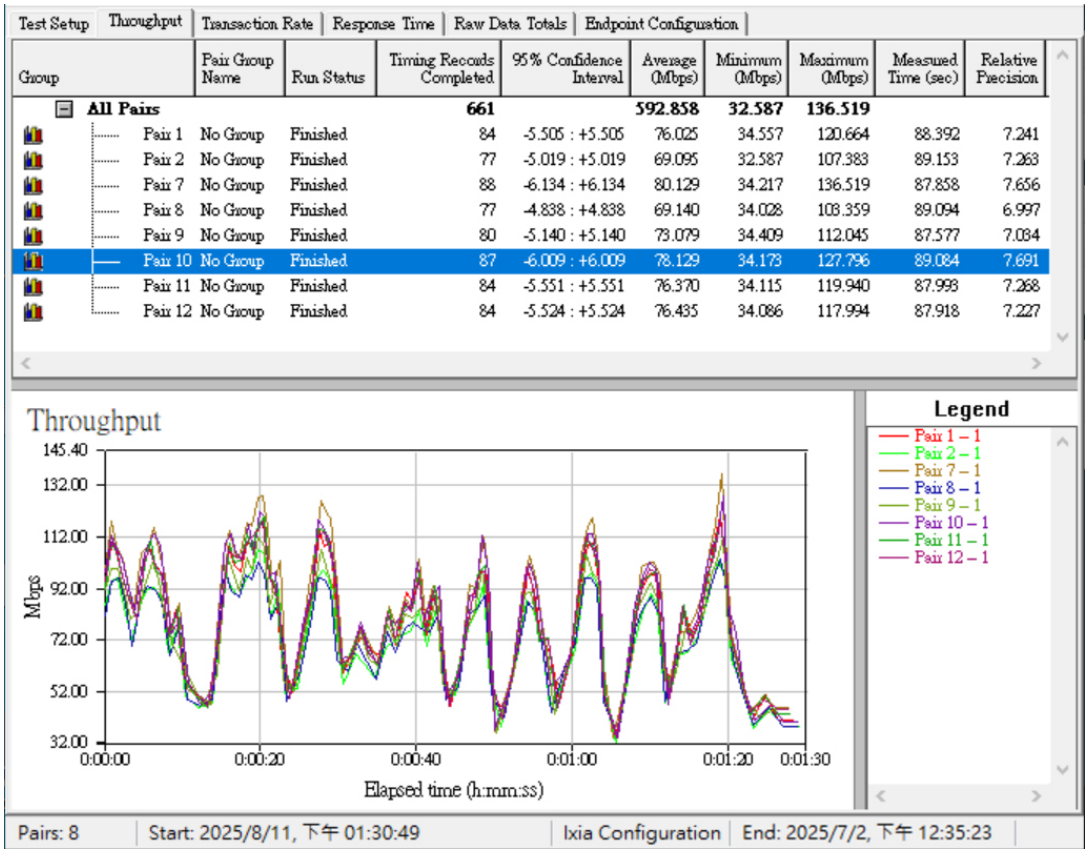


6. OW-500 (4N18) UI Screen

Location A：MAC Address and WDS



Band Mode	Channel	Throughput	Antenna
802.11ax	60	592.858Mbps	Built-in 5GHz-18dBi



5G2_18dBi_CH60

7. TEST Tools

Test Equipment			
Notebook	Lenovo ThinkPad E14 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 OW-500 (4N18) eXtreme High Power WiFi6 Tri-Radio Outdoor PoE Bridge/AP (+18dBi Patch ANT) x2
Test Software and setting information	
Application tools	Chariot Version 6.7
Running time	90 sec
software	CenOS 5.0 Layer2 Softcore Core Firmware version : Pme-CPE-IPQ60XX-CERIO V0.0.2/20250205
Operation mode	Using Access Point mode with WDS function
Radio/Bandwidth / Channel	Radio1 (5G2 2X2) / HE160 / CH60

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 (4N18) at Radio 2(5G2) 5GHz distance of 2 km. At this time, the antenna used for this test is a built-in patch antenna (18dBi) to verify its functionality.

For long distances, higher-gain antennas should be used, and built-in antennas offer superior transmission performance over external antennas. Antenna orientation adjustment helps improve transmission quality and throughput. As a result, optimal and efficient data transmission speeds of up to 592.858Mbps are achieved. Our transmission performance is extremely stable, delivering impressive 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.