5G2 AX2400 for OW-500 (6N00) with 5GHz Panel Antenna for ANT-14AD(14dBi) 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 (6N00) + external 5GHz 2x2 MIMO long-distance antenna (ANT-14AD) and set to run on 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-500-6N00 + External 5GHz 2x2 MIMO Long Range Antenna (ANT-14AD) devices paired for 802.11ax operation.

3. Test Date and Personnel

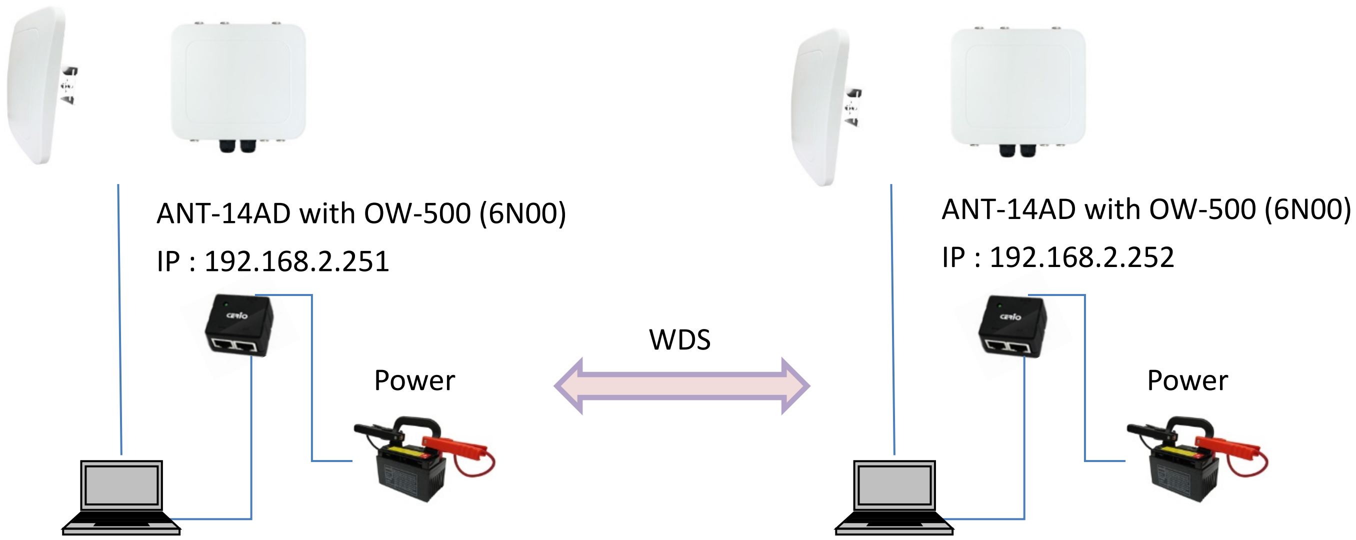
Date: 2025.4.11				
Tester				
	4/11		4.11	4.11
	Kay		Judy	Eric

4. Test Environment

Location A: Second nuclear power plant breakwater.
Location B: Yehliu Tunnel entrance platform.

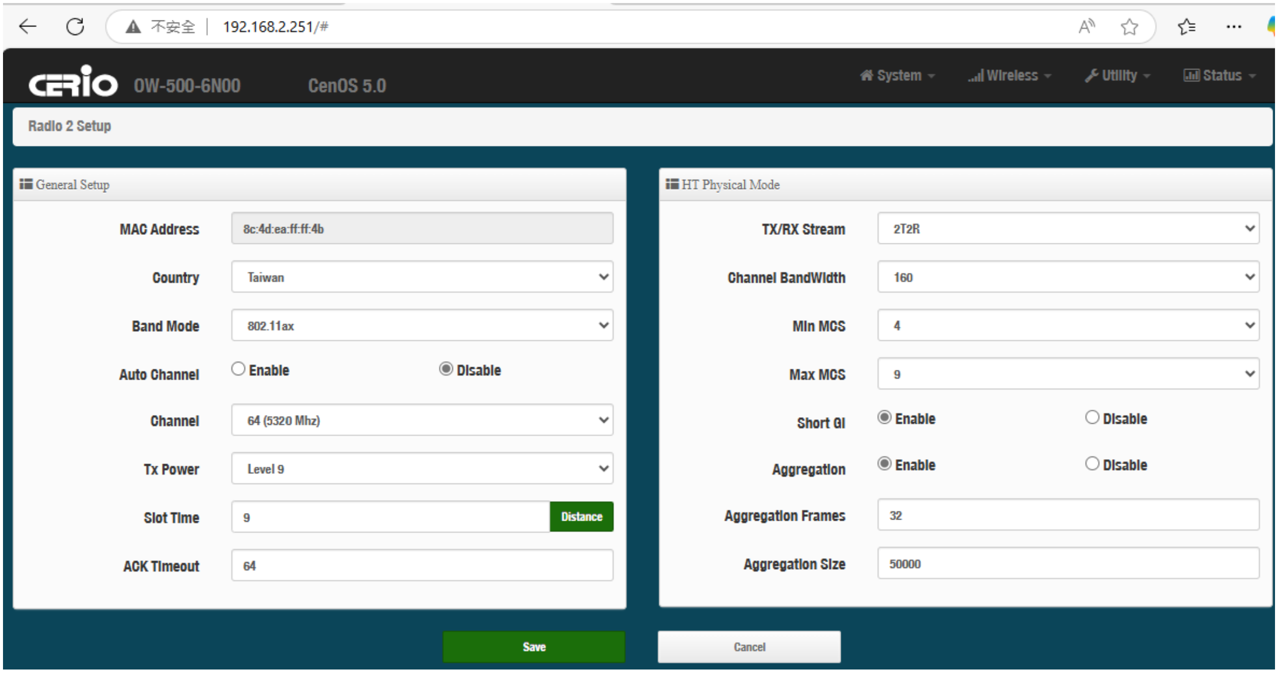
The distance from Location A to Location B is roughly 2178.24m, determined by Google Earth.

5. System Network Configuration

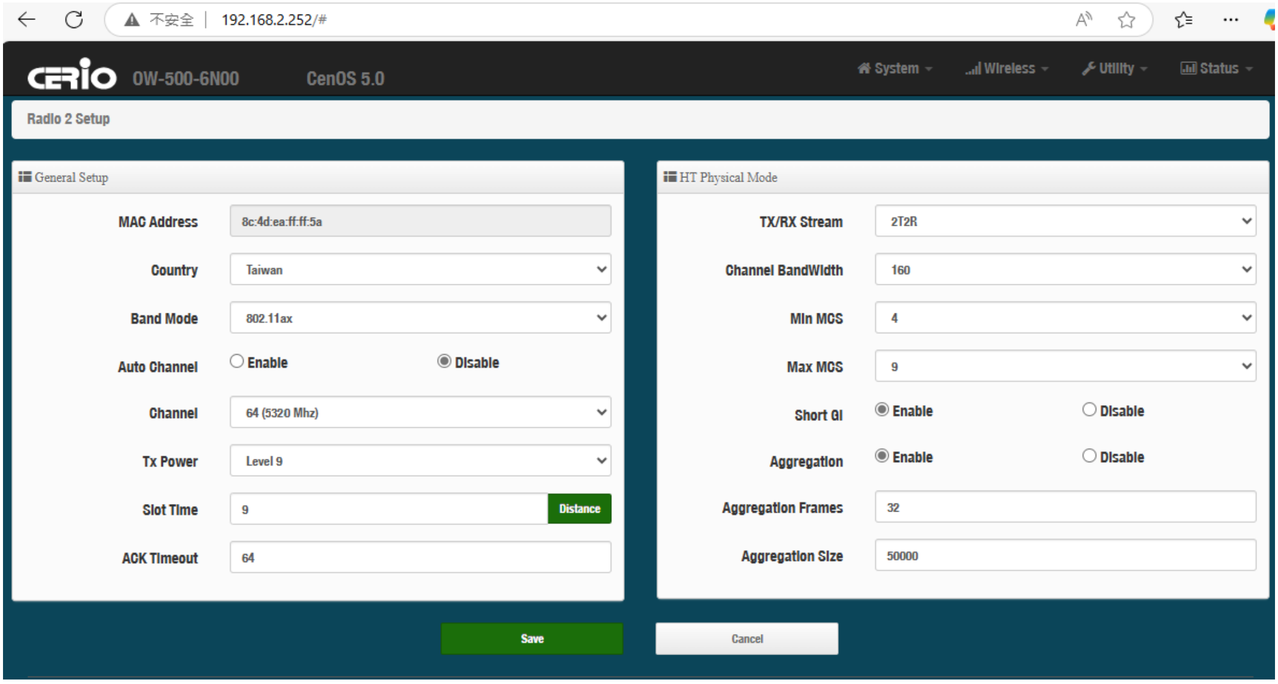


6. OW-500 (6N00) UI Screen

Location A：MAC Address and WDS



Location B：MAC Address and WDS



Band Mode	Channel	Throughput(Mbps)	Antenna
802.11ax	64	415.441	ANT-14AD

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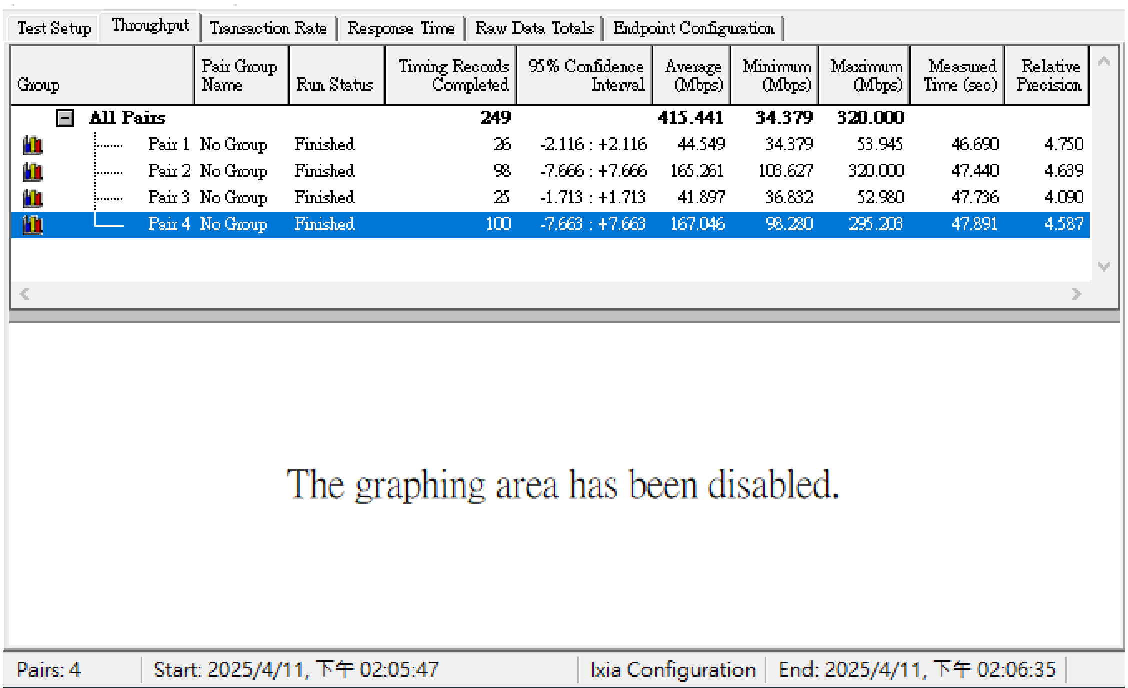

Test Setup | Throughput | Transaction Rate | Response Time | Raw Data Totals | Endpoint Configuration

Group	Pair Group Name	Run Status	Timing Records Completed	95% Confidence Interval	Average (Mbps)	Minimum (Mbps)	Maximum (Mbps)	Measured Time (sec)	Relative Precision
All Pairs			249		415.441	34.379	320.000		
Pair 1	No Group	Finished	26	-2.116 : +2.116	44.549	34.379	53.945	46.690	4.750
Pair 2	No Group	Finished	98	-7.666 : +7.666	165.261	103.627	320.000	47.440	4.639
Pair 3	No Group	Finished	25	-1.713 : +1.713	41.897	36.832	52.980	47.736	4.090
Pair 4	No Group	Finished	100	-7.663 : +7.663	167.046	98.280	295.203	47.891	4.587

The graphing area has been disabled.

Pairs: 4 | Start: 2025/4/11, 下午 02:05:47 | Ixia Configuration | End: 2025/4/11, 下午 02:06:35

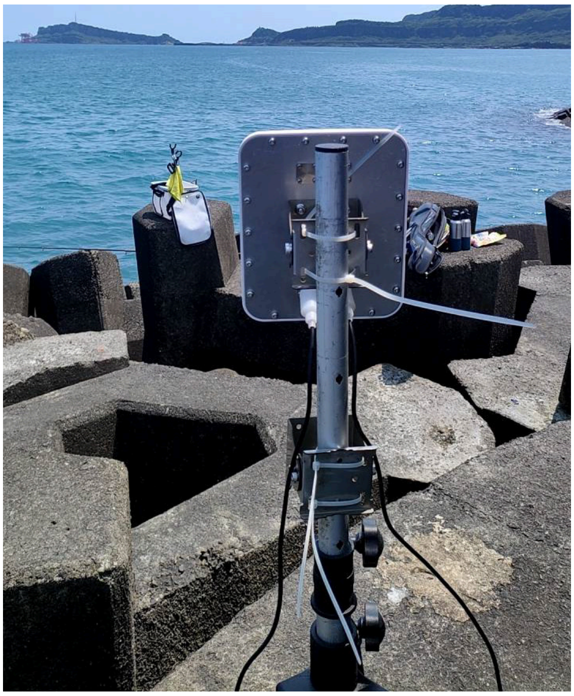
5G2_14dBi_CH64

7. TEST Tools

Test Equipment			
Notebook	DESKTOP-IAEI2Q1 x1 Lenovo X230 x1	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		
RJ-45 Cables	Cat.5e x 4		
RF Cables	LLMR-NNP-1M x2		
Test product	1. External antenna : ANT-14AD x2 2. OW-500 Series eXtreme High Power WiFi6 Tri-Radio Outdoor PoE Bridge/AP x2		
Test Software and setting information			
Application tools	Chariot Version 6.7		
Running time	48 sec		
software	CenOS 5.0 Layer2 Softcore Core Firmware version : Pme-CPE-CERIO V0.02		
Operation mode	Using Access Point mode with WDS function		
Radio/Bandwidth / Channel	Radio2 (5G2 2X2) / HE160 / CH64		

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

The 2KM long-distance test verified the performance of our Cerio newly designed WiFi6 outdoor wireless AP: OW-500 (6N00) at radio 2(5G2), and paired it with the overall long-distance throughput test of our 14dBI polarized outdoor antenna (ANT-14AD).

Based on our 2km test results using a 5GHz 2x2 external antenna (ANT-14AD) paired with an OW-500 (6N00), we concluded that the ANT-14AD effectively boosts the AP's 5GHz transmission performance at a distance of 2km. The maximum transmission rate reached 415.441Mbps. Optimal and efficient data transmission can be achieved by adjusting the transmission direction (horizontally or vertically).

Our outdoor wireless testing is a valuable reference tool for users planning to deploy our products in a variety of outdoor environments.

Our extensive experience enables us to create high-quality wireless networking hardware and software products that consistently meet our customers' needs and provide them with superior products.