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CERIO Outdoor AP
1.9KM using Built-in Patch Antenna
Throughput Test Report
Model No. [OW-300N2-A2]

Tested using built-in 10dBi Panel Antenna

(Select Antenna options in software UI)

1. Test Product model.

OW-300N2-A2 eXtreme Power 11n 2.4GHz 2x2 Outdoor Access Point (1000mW)

2. Introduction

Cerio's OW-300N2-A2 Outdoor AP integrated our original OW-300 series conveniently into one device. By combining two antenna options into a single device, this versatile access point can be perfect for a wide range of deployment environments and applications.

This test is representative of our dedication to product development and progression. Regarding our product design, we are constantly working towards improved performance and usability. This progressive mentality has been key to our success in the enterprise wireless market.
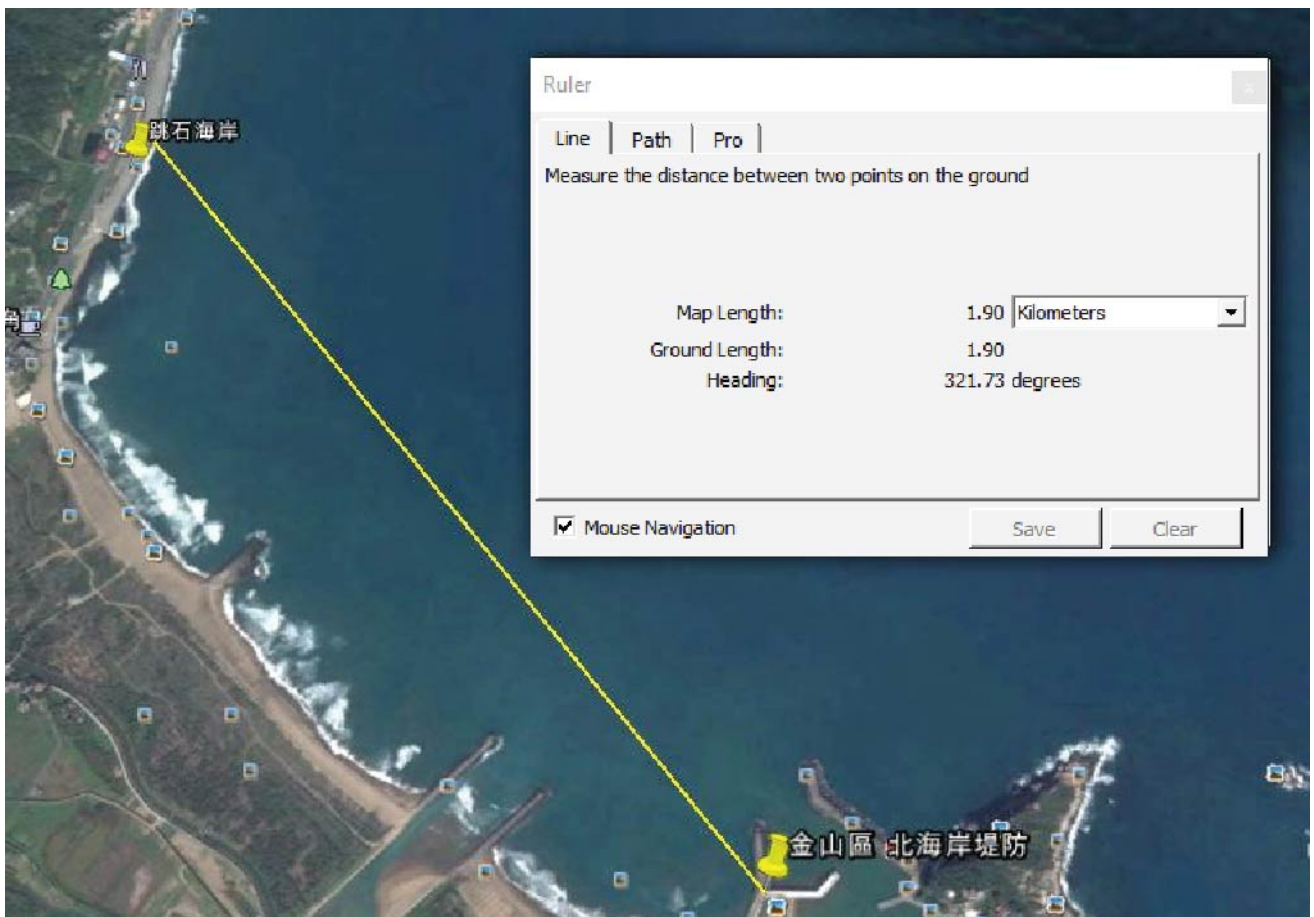
3. Test Date and Personnel

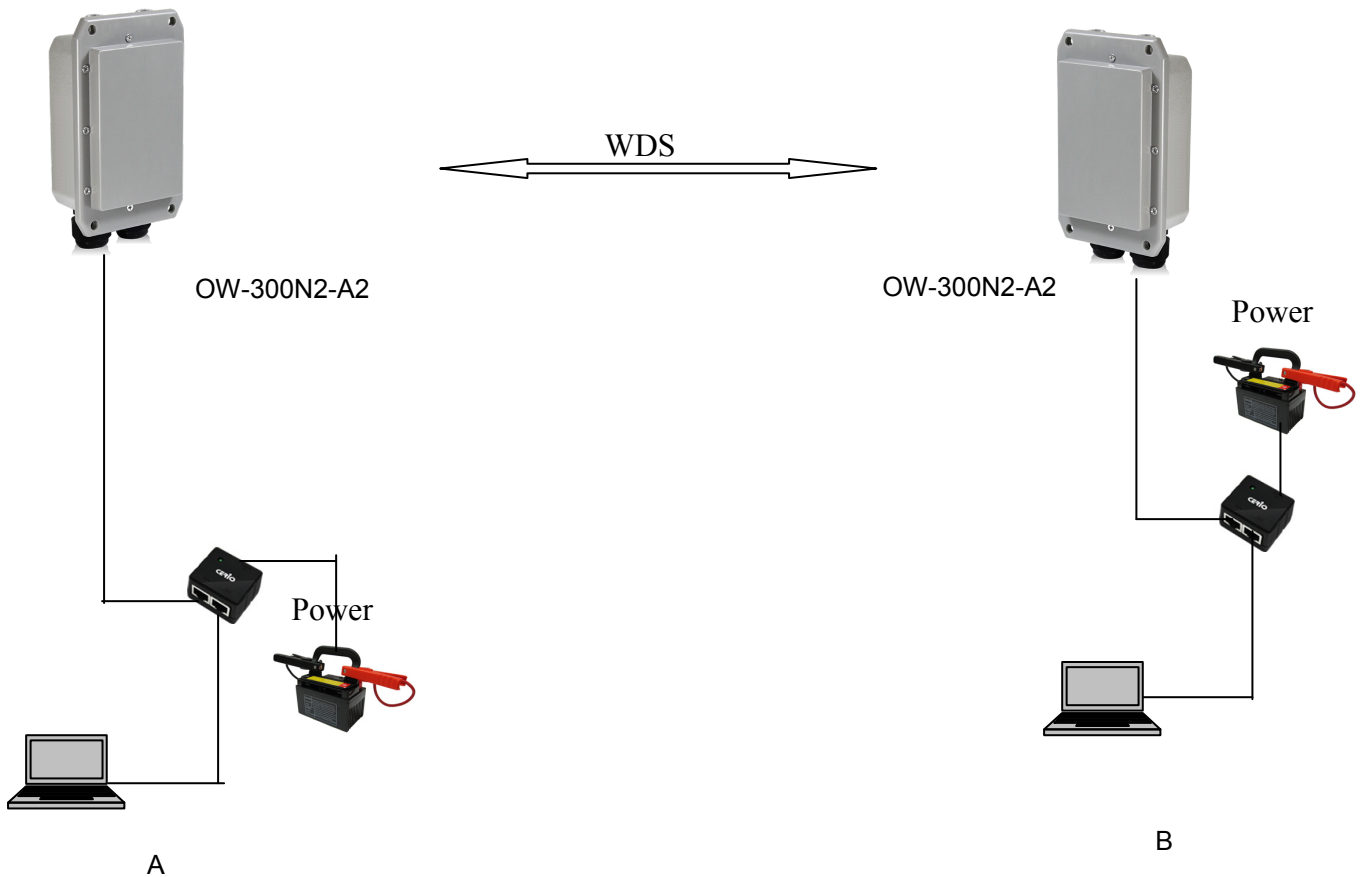| Date	2016 / 05 / 02			
Test Personnel				

4. Test Environment

Location A: Tiao Shi Coast

Location B: Jinshan North Shore

The distance from Location A to Location B is approximately 1.9km, determined by Google Earth. There are no substantial variations of elevator to factor in.
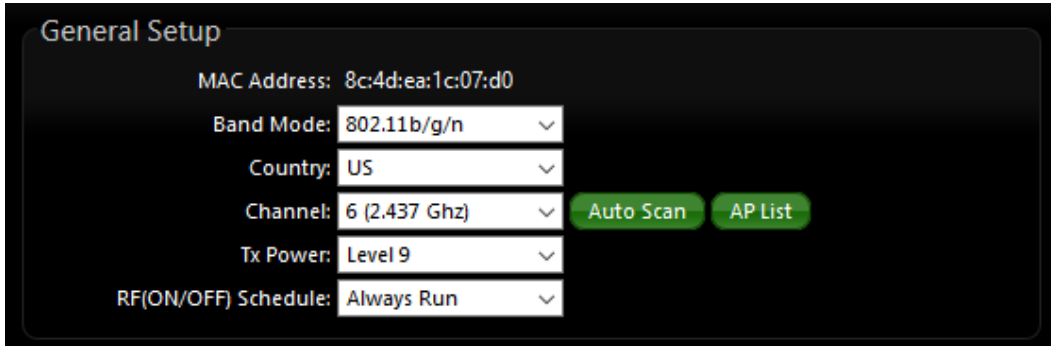
CERIO Test Report

5. Wireless Network Configuration

The connection between point A and point B in this network structure utilizes WDS Bridge mode. Our test results are based off this operation mode, and records transmission rates and transmission throughput statuses for data analysis.

6. Throughput test

GUI Setting of Channel 6:

※ OW-300N2-A2 (TX+RX) Throughput

Channel	Up/down load	Throughput (Mbps)		
		Average	Min.	Max.
6	UP + Down	**51.812**	2.210	16.667
6	Down	**76.372**	0.707	72.728
6	up	**30.242**	0.245	25.000

Average throughput test results (Upload and Download)

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			**11,656**		**51.812**	**2.210**	**16.667**		
Pair 6	No Group	Finished	1,694	-0.056 : +0.056	7.567	3.556	15.686	179.097	0.743
Pair 7	No Group	Finished	1,687	-0.061 : +0.061	7.536	3.463	14.035	179.083	0.805
Pair 8	No Group	Finished	1,693	-0.058 : +0.058	7.564	2.787	13.559	179.066	0.771
Pair 10	No Group	Finished	1,693	-0.059 : +0.059	7.563	2.768	14.286	179.088	0.781
Pair 11	No Group	Finished	1,563	-0.092 : +0.092	6.983	2.326	12.500	179.065	1.324
Pair 12	No Group	Finished	1,660	-0.067 : +0.067	7.416	3.556	11.940	179.081	0.900
Pair 13	No Group	Finished	1,666	-0.065 : +0.065	7.445	2.210	16.667	179.020	0.868
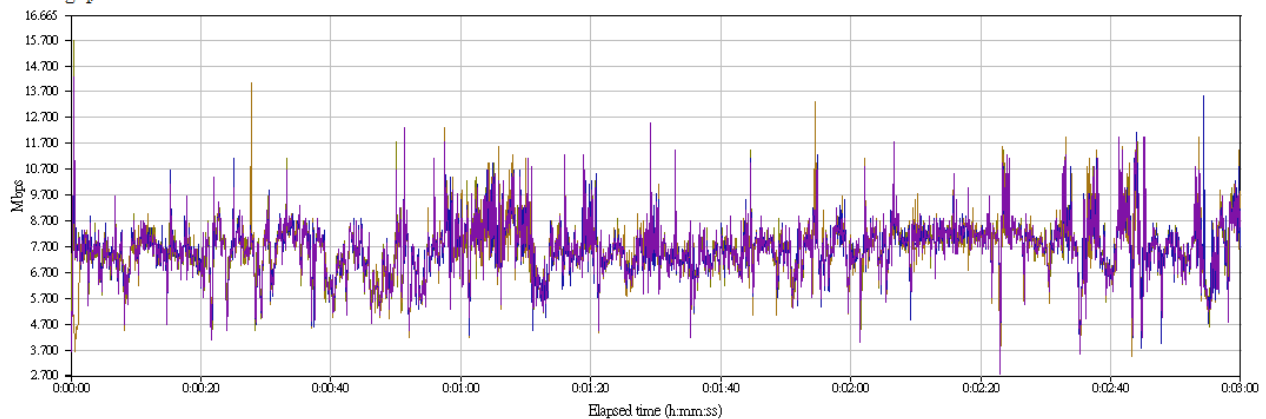
Average throughput test results (Download)
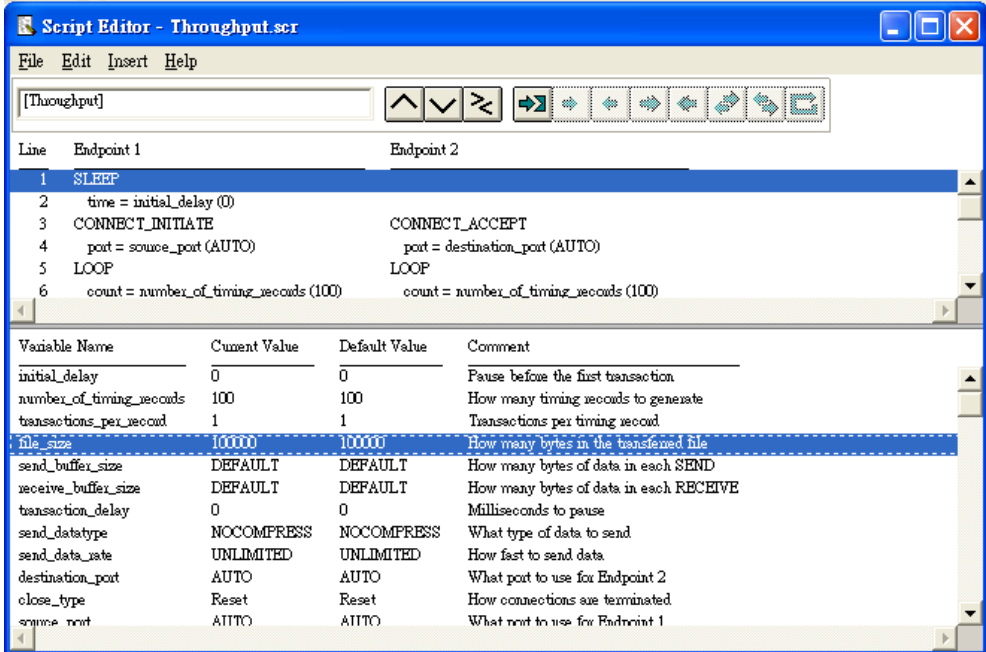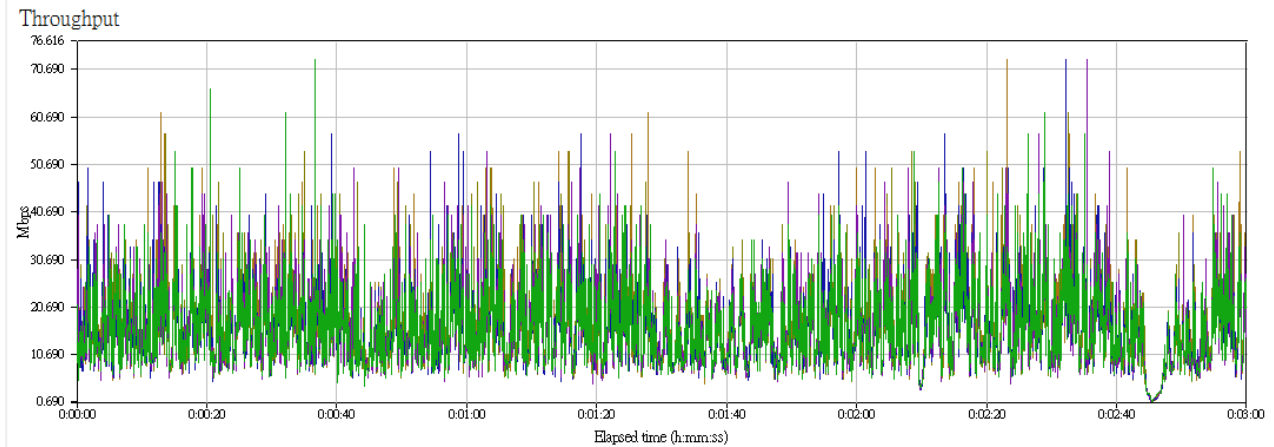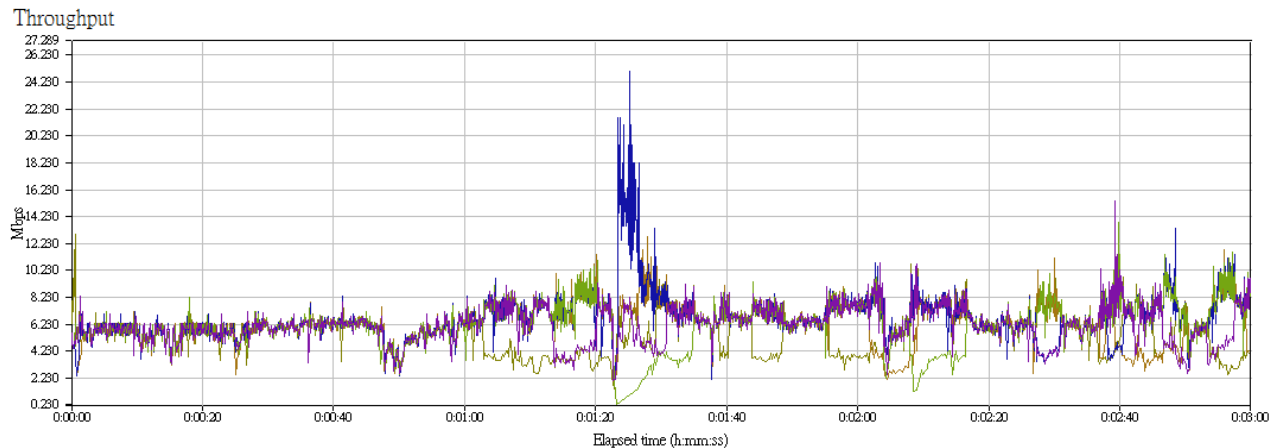
| Test Setup | Throughput | Transaction Rate | Response Time | Raw Data Totals | Endpoint Configuration |

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**				**17,182**		**76.372**	**0.707**	**72.728**		
	Pair 6	No Group	Finished: Warni…	3,450	-0.317 : +0.317	15.485	0.832	61.539	178.242	2.045
	Pair 7	No Group	Finished: Warni…	3,461	-0.312 : +0.312	15.541	1.078	72.728	178.168	2.005
	Pair 8	No Group	Finished: Warni…	3,430	-0.310 : +0.310	15.398	0.905	72.728	178.207	2.010
	Pair 10	No Group	Finished: Warni…	3,415	-0.317 : +0.317	15.328	0.778	72.728	178.235	2.070
	Pair 11	No Group	Finished: Warni…	3,426	-0.323 : +0.323	15.381	0.707	72.728	178.193	2.100

Throughput

Average throughput test results (Upload)

| 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**				**6,804**		**30.242**	**0.245**	**25.000**		
	Pair 6	No Group	Finished	1,227	-0.091 : +0.091	5.478	1.411	12.903	179.198	1.659
	Pair 7	No Group	Finished	1,391	-0.094 : +0.094	6.211	1.975	12.699	179.159	1.513
	Pair 8	No Group	Finished	1,475	-0.089 : +0.089	6.585	2.162	25.000	179.196	1.344
	Pair 9	No Group	Finished	1,353	-0.232 : +0.232	6.039	0.245	14.546	179.244	3.838
	Pair 10	No Group	Finished	1,358	-0.081 : +0.081	6.062	2.073	15.385	179.212	1.338

Throughput

7. TEST Tools

TEST Equipment		
Notebook	HP Pavilion dv4 x1 RAM : 4G CPU : Intel Core Duo 2.4GHz OS : Windows XP sp3	HP Pavilion dm4-1108TX 4GB DDR3-1333 Intel Core i5 560M 2.66GHz OS : Windows XP sp3
Power	350W x 2	
Tripod	2	
Antenna	2x2 Built-in 10dBi Dual Patch antenna	
Test products	OW-300N2-A2 x 2:1000mW eXtreme Power 11n 300Mbps +10dBi Outdoor Access Point	
TEST Software		
Chariot Version 6.7		
Run	Run for a fixed duration 0 Hrs 3 Min 0 Sec	

8. Conclusion

Our testing of OW-300N2-A2 focuses on the viability and convenience of our new optional antenna PCB design. Our goal was to confirm strong and reliable performance over short distances (1.9km) and longer distances (see 7km test report).From the results of our OW-300N2-A2 1.9km tests, we conclude that our transmission performance is extremely stable, with significant throughput levels over varying long distance connections. Our outdoor wireless testing proves to be a very valuable reference tool for users deploying our products in a variety of outdoor environments.

This product is ideal for expanding a network from a location with internet service access (Location A) to a remote area (Location B) using a WDS + AP Mode connection. Operating best as an AP station or signal extender over the 2.4GHz frequency band, OW-300N2-A2 is the perfect device for network planners wishing to build an expansive Wi-Fi network.