

CERIO Outdoor AP 5 KM Throughput Test Report

Model No.

OW-215N2-X

1. Test Product model.




OW-215N2-X



2. Introduction

The purpose of conducting this test was to determine the average throughput and signal stability of Cerio's OW-215N2-X Outdoor Access Point at a distance of 5km. The test specifically measured point-to-point WDS connections set through Cerio's CenOS 3.0 Software Bundle. The test was conducted between two units of OW-215N2-X operating under 802.11an standards.

3. Test Date and Personnel

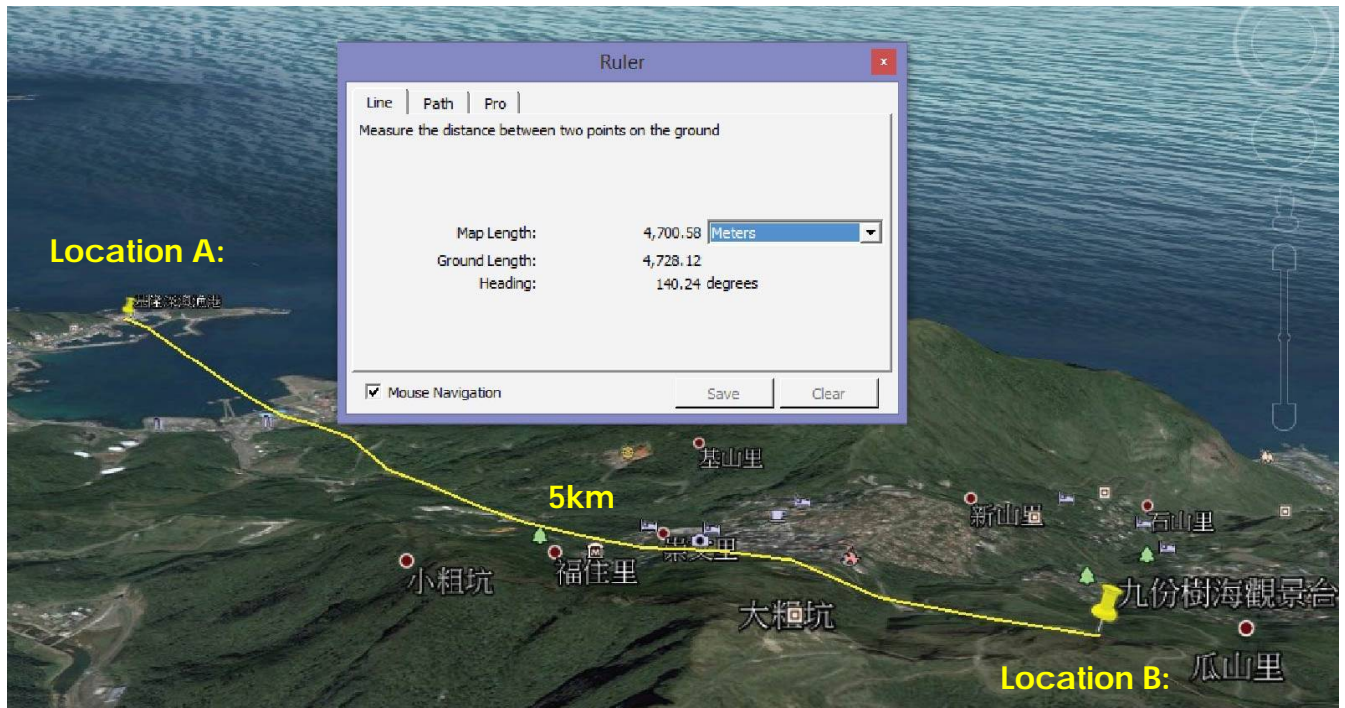
Date	2015 / 06 / 19			
Test Personnel				
				

4. Test Environment

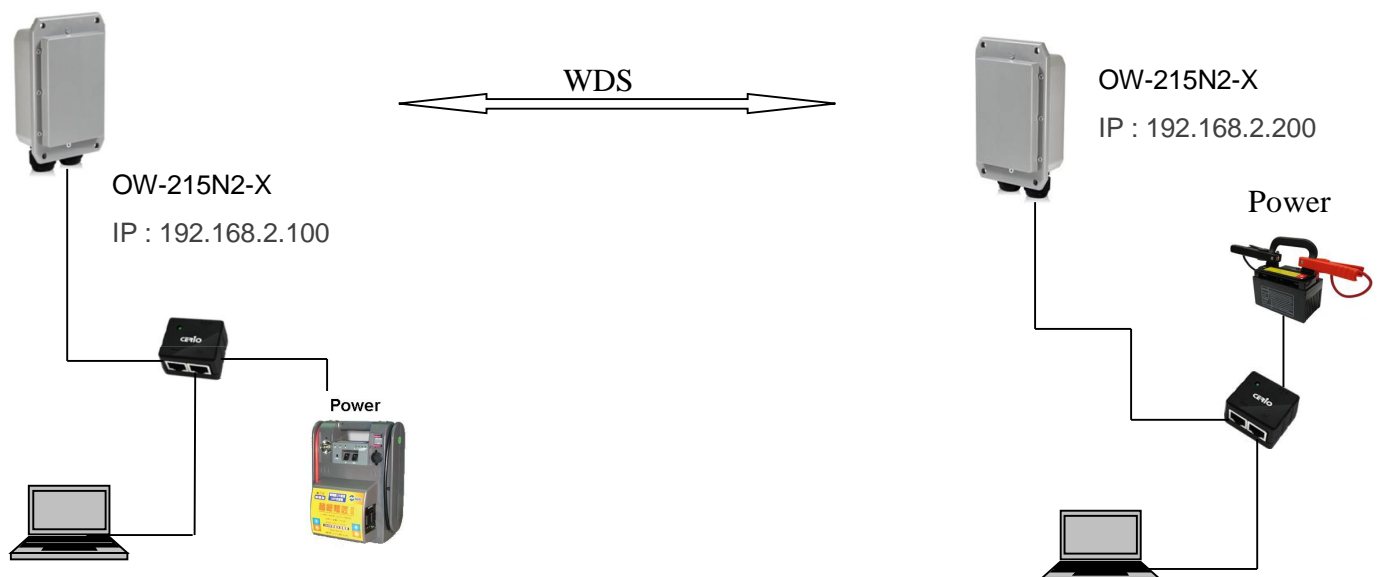
Location A: Shen'ao Fishing Port

Location B: Elevated Scenic Lookout

The distance from Location A to Location B is roughly 4.7km, determined by Google Earth. However, due to substantial differences in elevation, we estimate the distance to be approximately 5km.



5. System Network Configuration



6. OW-215N2-X UI Screen

The screenshot shows a web browser window with two tabs labeled 'OW-215N2-X'. The address bar displays 'http://192.168.2.100/#'. The browser's toolbar includes various icons and links such as '2.254', '2.253', '1.254', '1.253', '2.1', '2.200', 'Yahoo', 'Yahoo!拍賣', 'CERIO FB', and '討論社群'. The main content area features the 'CERIO' logo and a navigation menu with 'System', 'Wireless', 'Advance', 'Utilities', and 'Status'. The 'WDS Link Status' section is active, displaying a table with the following data:

#	MAC Address	RSSI	TX/RX Rate	TX/RX SEQ	TX/RX Bytes
1	8c4d:ea:04:ba:ff	23	162M / 162M	40865 / 21760	55.9 M / 2.7 M

The screenshot shows a web browser window with two tabs labeled 'OW-215N2-X'. The address bar displays 'http://192.168.2.200/#'. The browser's toolbar includes various icons and links such as '2.254', '2.253', '1.254', '1.253', '2.1', '2.200', 'Yahoo', 'Yahoo!拍賣', 'CERIO FB', and '討論社群'. The main content area features the 'CERIO' logo and a navigation menu with 'System', 'Wireless', 'Advance', 'Utilities', and 'Status'. The 'WDS Link Status' section is active, displaying a table with the following data:

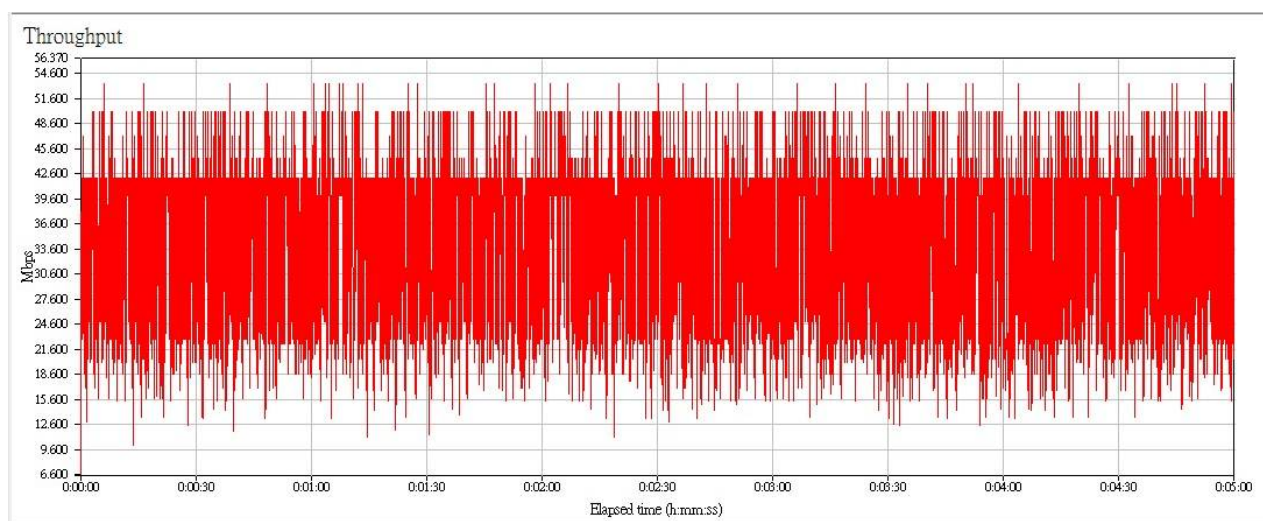
#	MAC Address	RSSI	TX/RX Rate	TX/RX SEQ	TX/RX Bytes
1	8c4d:ea:04:ba:f7	24	162M / 162M	1423 / 832	1008.3 K / 636.2 K

7. Throughput test

OW-215N2-X

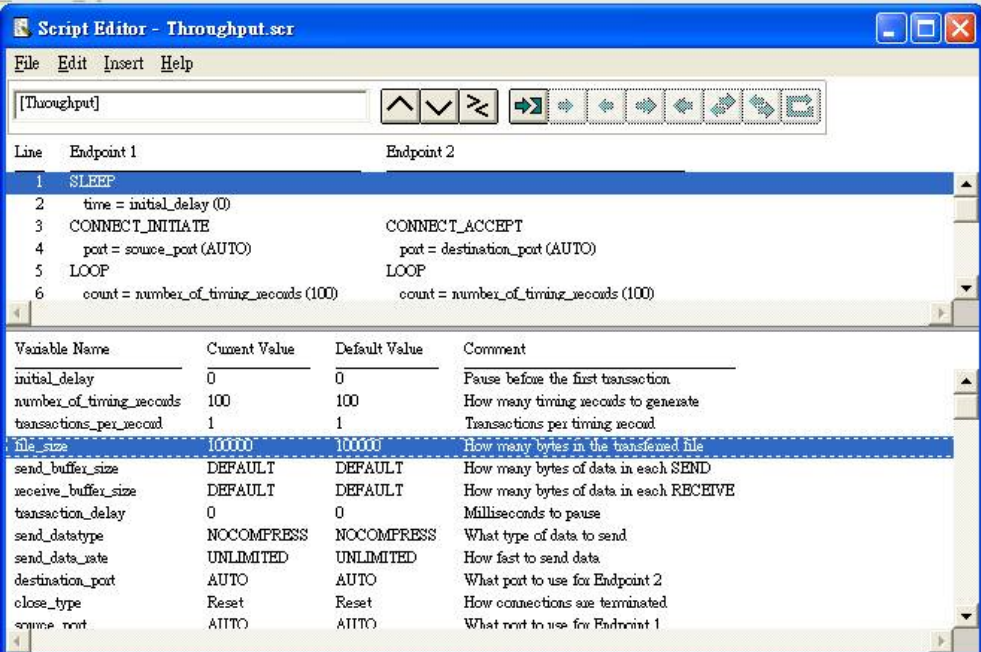
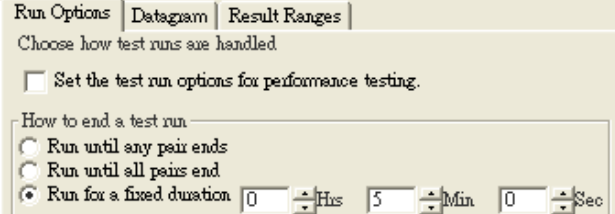
	Average(Mbps)	Minimum (Mbps)	Maximum(Mbps)
Throughput	32.57	6.612	53.334

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			12,213		32.570	6.612	53.334			
Pair 1	No Group	Finished: Warning(s)	12,213	-0.202 : +0.202	33.404	6.612	53.334	292.497	0.605	



8. TEST Tools

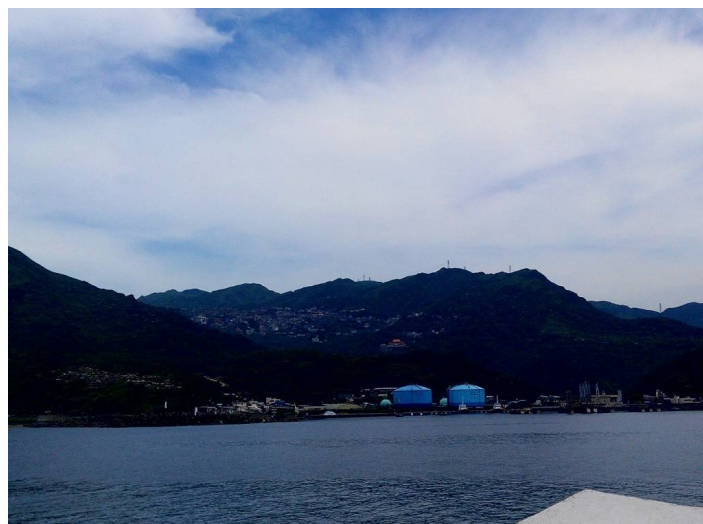
TEST Equipment		
Notebook	HP Pavilion dv4 x2	
Power	350W x 2	
Tripod	3	
Antenna	2x2 Built-in 15dBi Dual-Polarization Directional Antennas	
Test products	OW-215N2-X 500mW	
TEST Software		

<p>Chariot Version 6.7</p>	 <table border="1"> <thead> <tr> <th>Variable Name</th> <th>Current Value</th> <th>Default Value</th> <th>Comment</th> </tr> </thead> <tbody> <tr> <td>initial_delay</td> <td>0</td> <td>0</td> <td>Pause before the first transaction</td> </tr> <tr> <td>number_of_timing_records</td> <td>100</td> <td>100</td> <td>How many timing records to generate</td> </tr> <tr> <td>transactions_per_record</td> <td>1</td> <td>1</td> <td>Transactions per timing record</td> </tr> <tr> <td>file_size</td> <td>100000</td> <td>100000</td> <td>How many bytes in the transferred file</td> </tr> <tr> <td>send_buffer_size</td> <td>DEFAULT</td> <td>DEFAULT</td> <td>How many bytes of data in each SEND</td> </tr> <tr> <td>receive_buffer_size</td> <td>DEFAULT</td> <td>DEFAULT</td> <td>How many bytes of data in each RECEIVE</td> </tr> <tr> <td>transaction_delay</td> <td>0</td> <td>0</td> <td>Milliseconds to pause</td> </tr> <tr> <td>send_datatype</td> <td>NOCOMPRESS</td> <td>NOCOMPRESS</td> <td>What type of data to send</td> </tr> <tr> <td>send_data_rate</td> <td>UNLIMITED</td> <td>UNLIMITED</td> <td>How fast to send data</td> </tr> <tr> <td>destination_port</td> <td>AUTO</td> <td>AUTO</td> <td>What port to use for Endpoint 2</td> </tr> <tr> <td>close_type</td> <td>Reset</td> <td>Reset</td> <td>How connections are terminated</td> </tr> <tr> <td>source_port</td> <td>AUTO</td> <td>AUTO</td> <td>What port to use for Endpoint 1</td> </tr> </tbody> </table>	Variable Name	Current Value	Default Value	Comment	initial_delay	0	0	Pause before the first transaction	number_of_timing_records	100	100	How many timing records to generate	transactions_per_record	1	1	Transactions per timing record	file_size	100000	100000	How many bytes in the transferred file	send_buffer_size	DEFAULT	DEFAULT	How many bytes of data in each SEND	receive_buffer_size	DEFAULT	DEFAULT	How many bytes of data in each RECEIVE	transaction_delay	0	0	Milliseconds to pause	send_datatype	NOCOMPRESS	NOCOMPRESS	What type of data to send	send_data_rate	UNLIMITED	UNLIMITED	How fast to send data	destination_port	AUTO	AUTO	What port to use for Endpoint 2	close_type	Reset	Reset	How connections are terminated	source_port	AUTO	AUTO	What port to use for Endpoint 1
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9. On-site status:

Location A:





Location B:





10. Conclusion

In order to verify our Cerio wireless product performance and instill consumer confidence, we conducted long distance throughput testing for our outdoor wireless access points. We conducted point-to-point testing using our Outdoor Access Point models with built-in dual-polarization directional antennas.

From the results of our OW-215N2-X 5km tests, we conclude that our transmission performance is extremely stable, with significant throughput levels at long distance connections. Our outdoor wireless testing proves to be a very valuable reference tool for users planning on deploying our products in a variety of outdoor environments. (Examples: Remote mountainous areas, long distance network extensions, long distance backhaul, remote surveillance centers)

This test demonstrates confidence in our team's ability to provide quality performance and design. Our unsurpassed experienced creating quality wireless networking hardware and software products allows us to consistently meet user demands and satisfy consumer through our wealth of knowledge and product design.