

# **CERIO Outdoor AP 1.7KM 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 1.7km. 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. We conducted this test at relatively short distances of 1.7km to provide users with data rates during shorter deployment, as well as to be used as a reference comparison to longer distances of 10km or 35km.

### 3. Test Date and Personnel

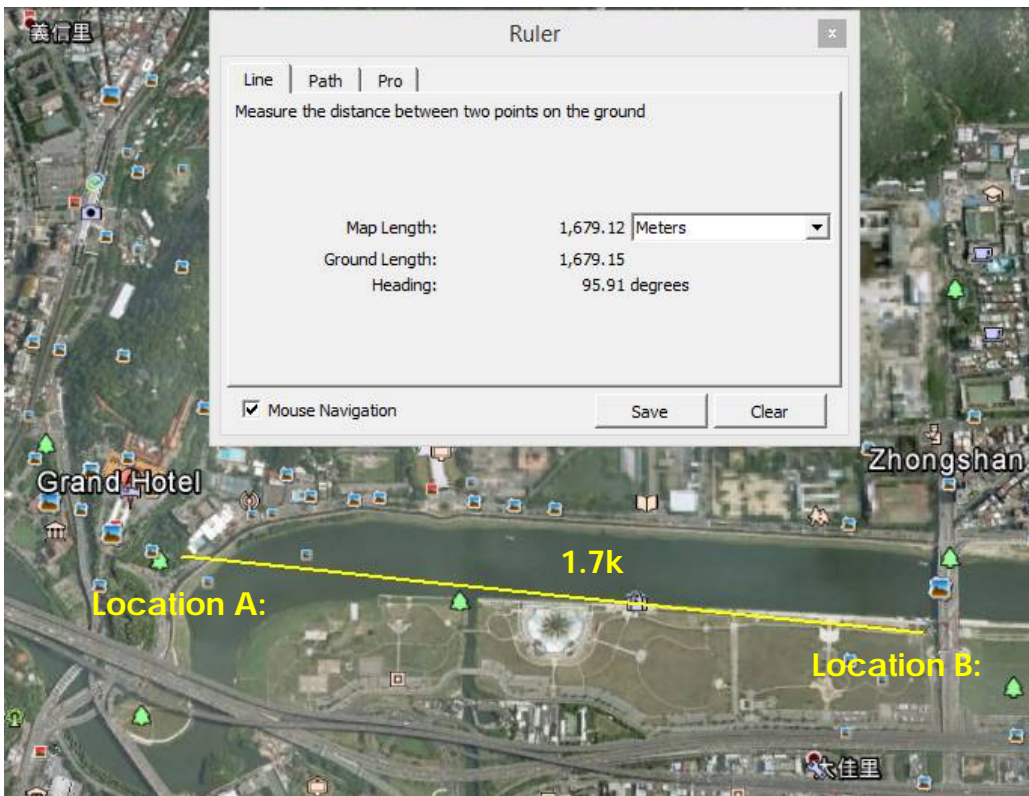
Date	2014 / 02 / 05			
Test Personnel				
		Andy	Pearson	

## 4. Test Environment

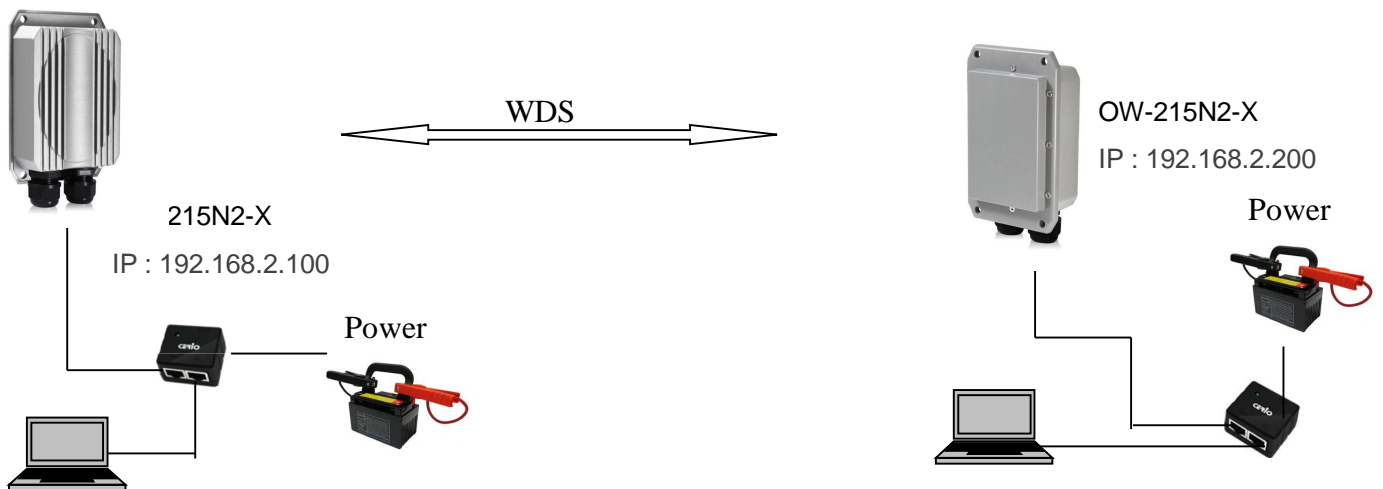
Location A: The GRAND Hotel, Taipei

Location B: DaJia Riverside Park

The distance from Location A to Location B is roughly 1.7km, determined by Google Earth. There are no substantial variations of elevation to factor in.



## 5. System Network Configuration

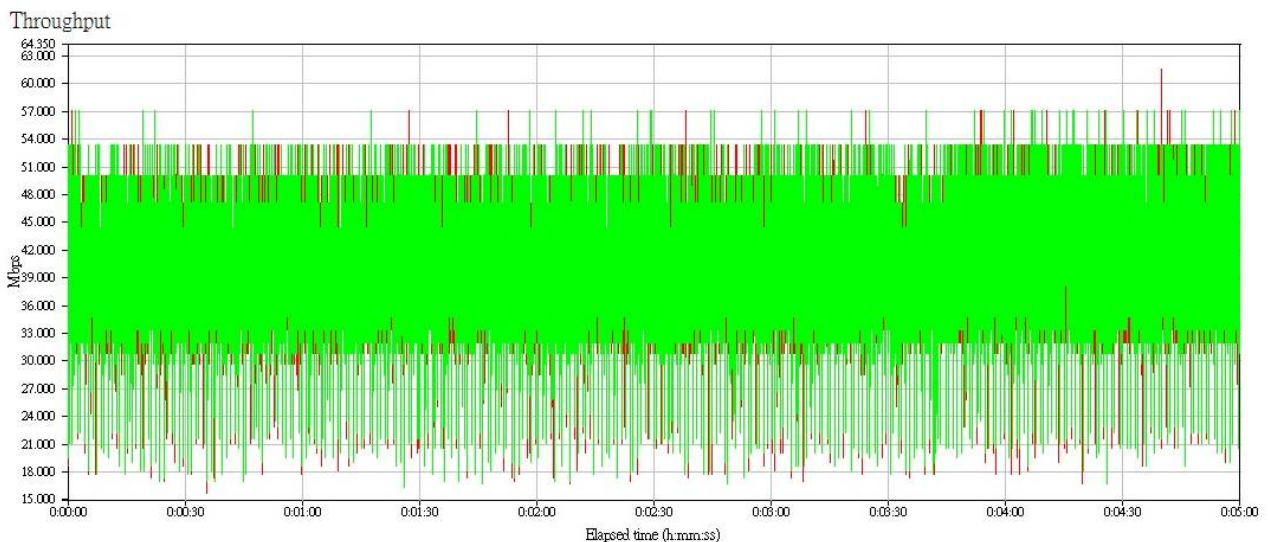


## 6. Throughput test

OW-215N2-X

	Average(Mbps)	Minimum (Mbps)	Maximum(Mbps)
Throughput	76.237	15.686	61.539

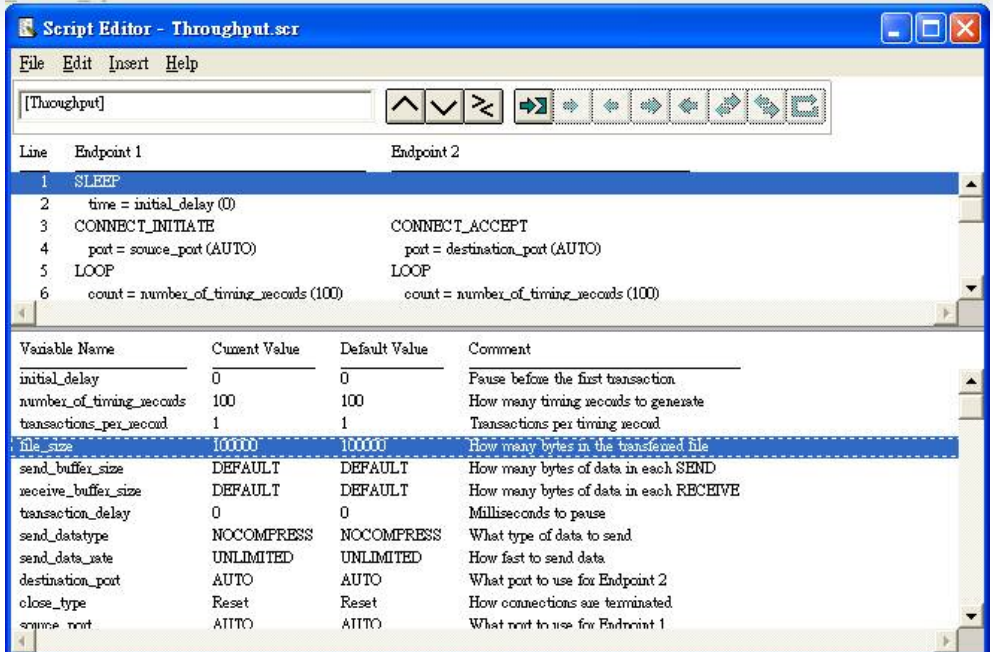
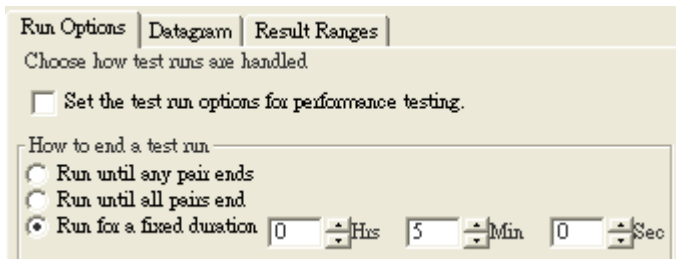
Group	Pair Group Name	Run Status	Timing Records Completed	95% Confidence Interval	Average (Mbps)	Minimum (Mbps)	Maximum (Mbps)	Measured Time (sec)	Relative Precision
All Pairs			28,588		76.237	15.686	61.539		
	Pair 1 No Group	Finished: Warning(s)	14,296	-0.134 : +0.134	39.117	15.686	61.539	292.378	0.342
	Pair 2 No Group	Finished: Warning(s)	14,292	-0.135 : +0.135	39.135	16.327	57.143	292.163	0.345



Pairs: 2 | Start: 7/14/2015, 10:31:57 AM | Ixia Configuration | End: 7/14/2015, 10:36:57 AM | Run time: 00:05:00 | Ran to completion

## 7. TEST Tools

TEST Equipment	
Notebook	HP Pavilion dv4 x2
Power	350W x 2
Tripod	3
Antenna	2x2 Dual-Polarization Directional Antennas
Test products	<b>OW-215N2-X</b> 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>10000</td> <td>10000</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	10000	10000	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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<p>Run</p>	 <p>Run Options   Datagram   Result Ranges</p> <p>Choose how test runs are handled.</p> <p><input type="checkbox"/> Set the test run options for performance testing.</p> <p>How to end a test run:</p> <p><input type="radio"/> Run until any pair ends</p> <p><input type="radio"/> Run until all pairs end</p> <p><input checked="" type="radio"/> Run for a fixed duration: 0 Hrs 5 Min 0 Sec</p>																																																				

## 9 Conclusion

From the results of our OW-215N2-X 1.7km 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)

After conducting our 1.7km point-to-point throughput test of Cerio's OW-215N2-X, we conclude that our signal strength and stability has consistently reached optimum levels. This test demonstrates confidence in our team's ability to provide quality performance and design, which ultimately insures consumer satisfaction.