

# CERIO Outdoor AP 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 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.

## 3. Test Date and Personnel

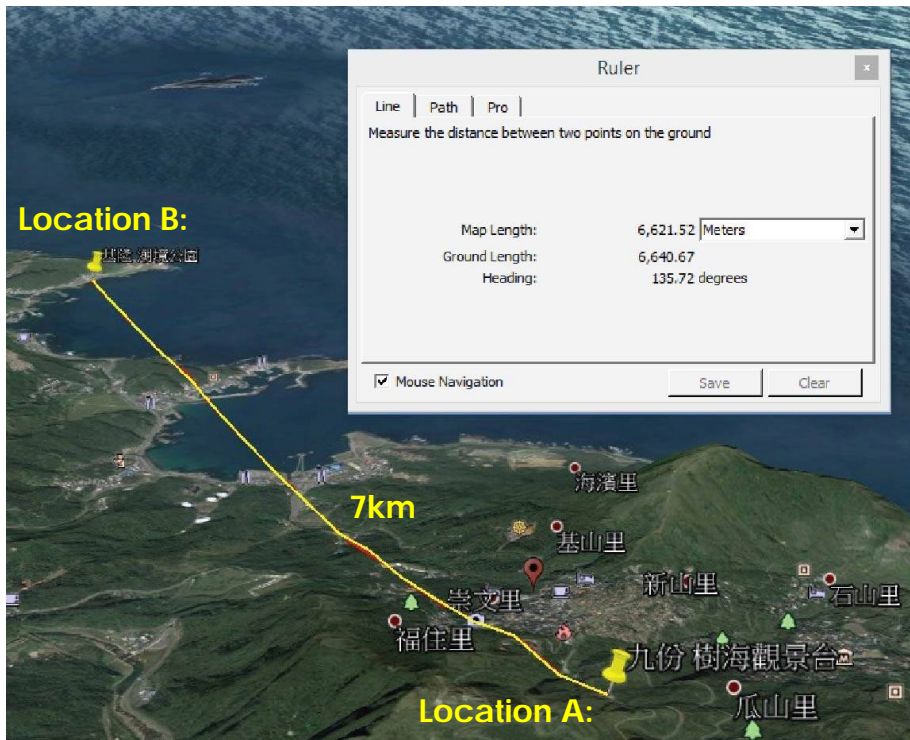
Date	2015 / 06 / 19			
Test Personnel				
				

## 4. Test Environment

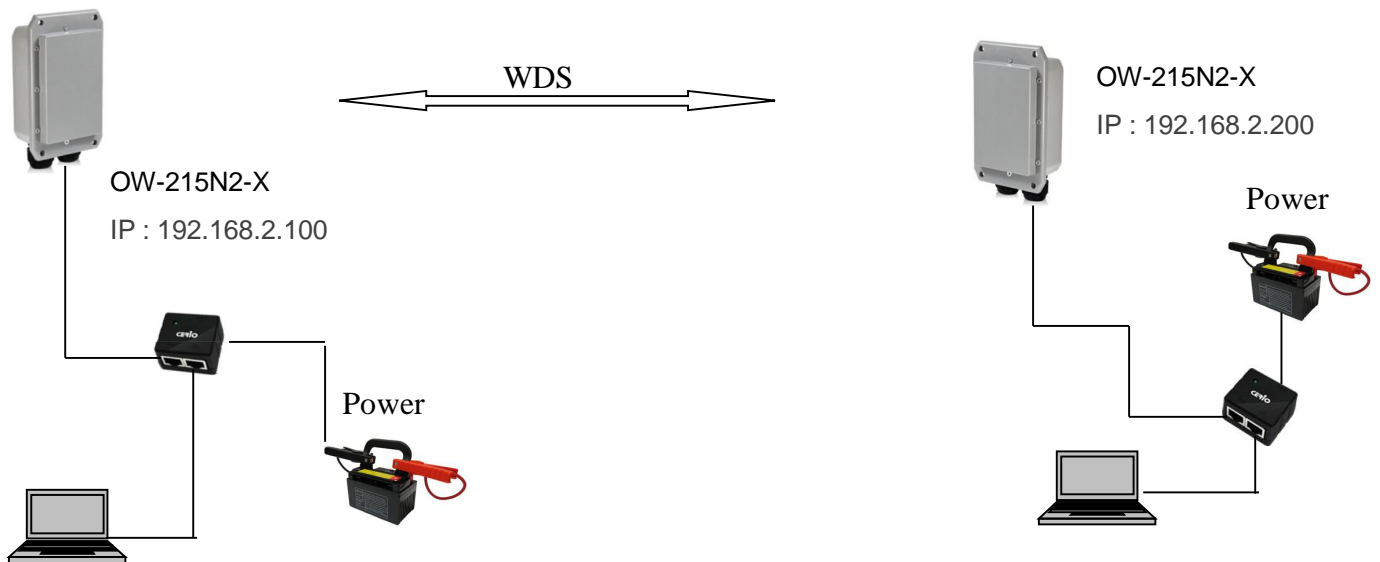
Location A: Elevated Scenic Lookout

Location B: Chaojing Park

The distance from Location A to Location B is roughly 6.62km, determined by Google Earth. However, due to substantial differences in elevation, we estimate the distance to be approximately 7km.



## 5. System Network Configuration



## 6. OW-215N2-X UI Screen

The screenshot shows the CERIO OW-215N2-X WDS Link Status page. The interface includes a navigation menu with 'System', 'Wireless', 'Advance', 'Utilities', and 'Status' options. The main heading is 'WDS Link Status' with a 'Refresh' button. Below the heading, there is a table titled 'WDS Link Status' with the following data:

#	MAC Address	RSSI	TX/RX Rate	TX/RX SEQ	TX/RX Bytes
1	8c4d:ea:04:ba:ff	16	54M / 54M	26242 / 51904	33.4 M / 4.6 M

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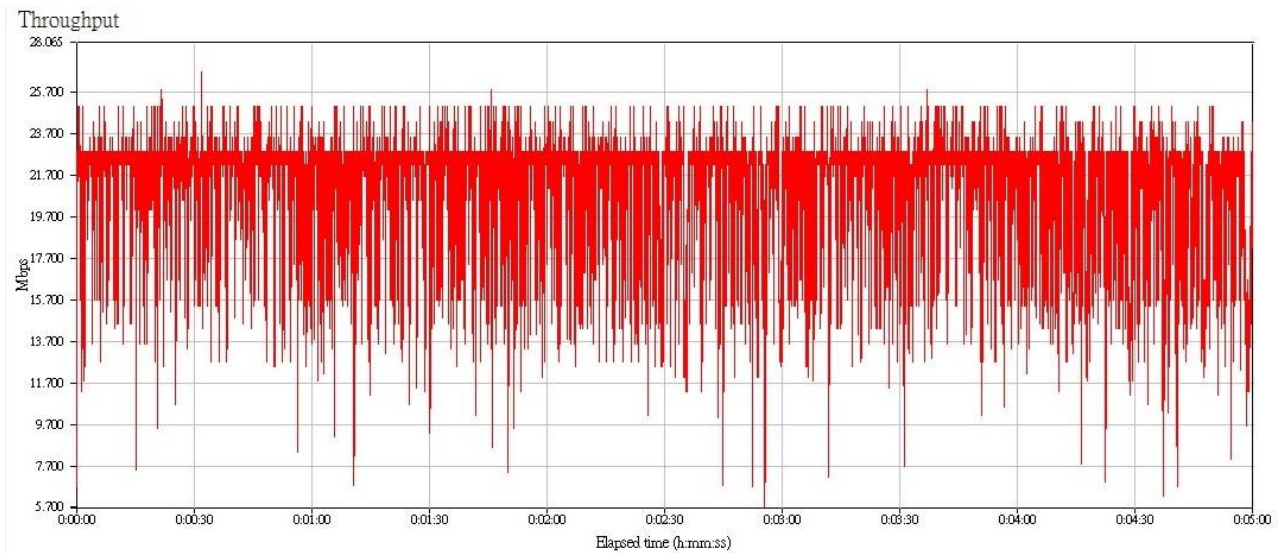
#	MAC Address	RSSI	TX/RX Rate	TX/RX SEQ	TX/RX Bytes
1	8c4d:ea:04:ba:f7	7	6M / 6M	18769 / 28464	6.2 M / 237.9 M

## 7. Throughput test

### OW-215N2-X

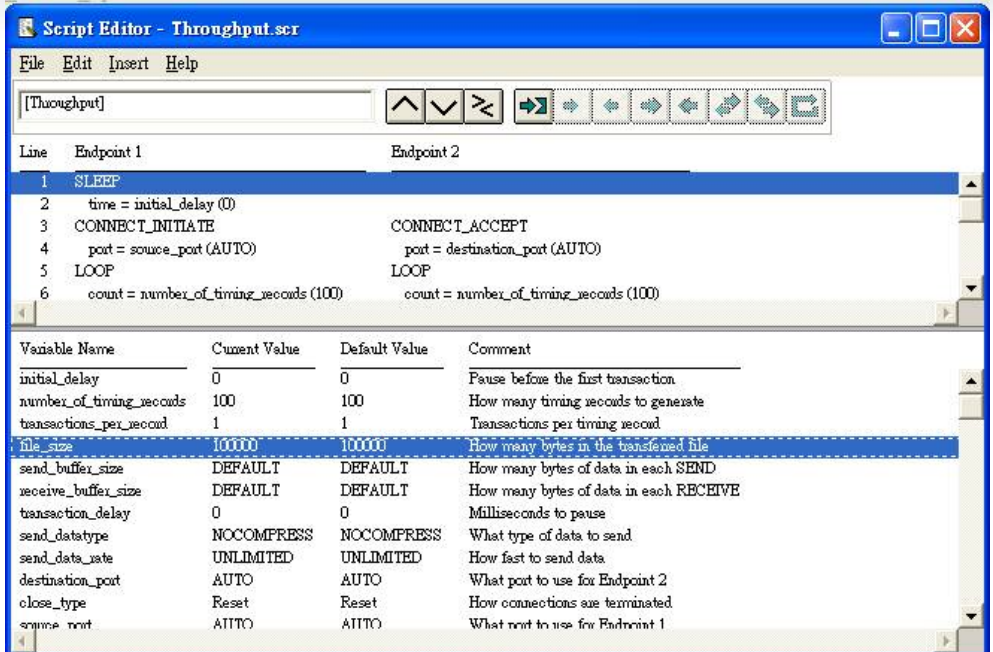
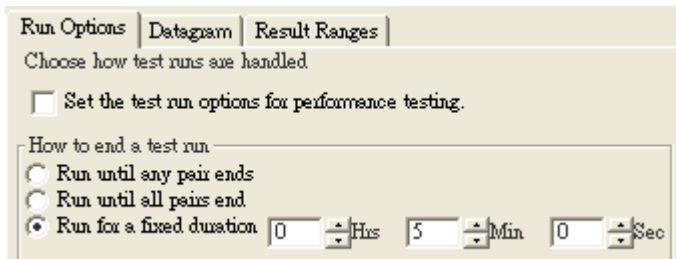
	Average(Mbps)	Minimum (Mbps)	Maximum(Mbps)
Throughput	20.453	5.755	26.667

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			7,669		20.453	5.755	26.667			
	Pair 1 No Group	Finished	7,669	-0.095 : +0.095	20.725	5.755	26.667	296.080	0.457	



## 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" data-bbox="454 548 1452 873"> <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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9. On-site status:

Location A:



Location B:



## **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 7km tests, we conclude that our transmission performance is extremely stable, with significant throughput levels at long distance connections. Users can also use 48V PoE Bridge to power a subsequent device such as an IP Camera or additional Access Point. 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.