

CERIO Outdoor AP

7KM Throughput Test Report

[802.11 b/g/n]



By



OW-300N2-A2 + ANT-19FN-P2
Antenna

**(UI 韌體關閉內建天線能力，選擇開啟外接
N-Type 外接 19dbi 面板指向天線進行測試)**

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1. Test Date and Personnel

Date	2016 / 05 / 02			
Test Personnel				
				

2. Introduction

CERIO進階的 **OW-300N2-A2** Outdoor AP 主要將原先**OW-300N2**與**OW-310N2**整合為一機，重點將是此款Outdoor AP的天線設計內建指向天線和外接天線兩種類型(可2選1切換)，讓使用者可以依造需求直接切換要使用的天線。

同時此測試主要也是證明 CERIO 開發的 AP 是一步步的在進化，讓方便性更為提高，減少了架設成本，更能呈現出 AP 最完美的訊號輸出穩定效果，展現出 CERIO 開發團隊的用心。

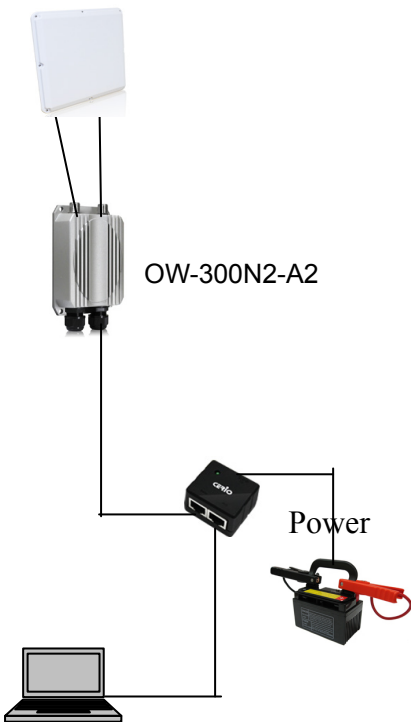
3. Test Environment

A 點, 東北角濱海 (跳石海岸)
B 點：東北角濱海 (野柳漁港)
從 A 點到 B 點實際距離 7 公里



4. System Network Configuration

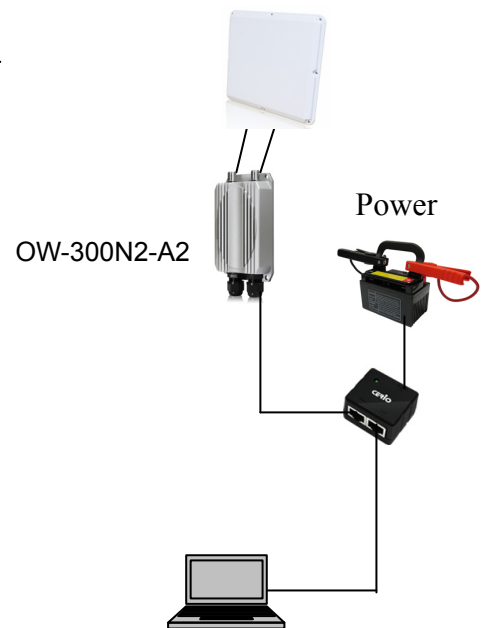
ANT-19FN-P2



WDS



ANT-19FN-P2



5. Throughput test

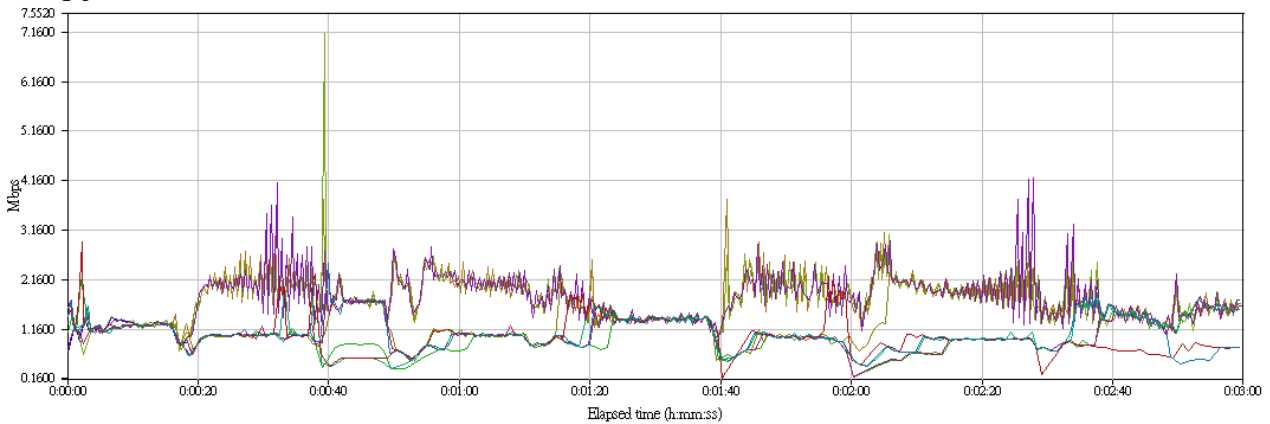
OW-300N2-A2 + ANT-19FN-P2 (TX + RX)

Channel	Up/down load	Throughput (Mbps)		
		Average	Min.	Max.
6	UP + Down	11.702	0.174	7.143
6	Down	19.578	0.271	25.807
6	up	5.397	0.071	5.714

測試上/下載之平均數據圖(up+down load)

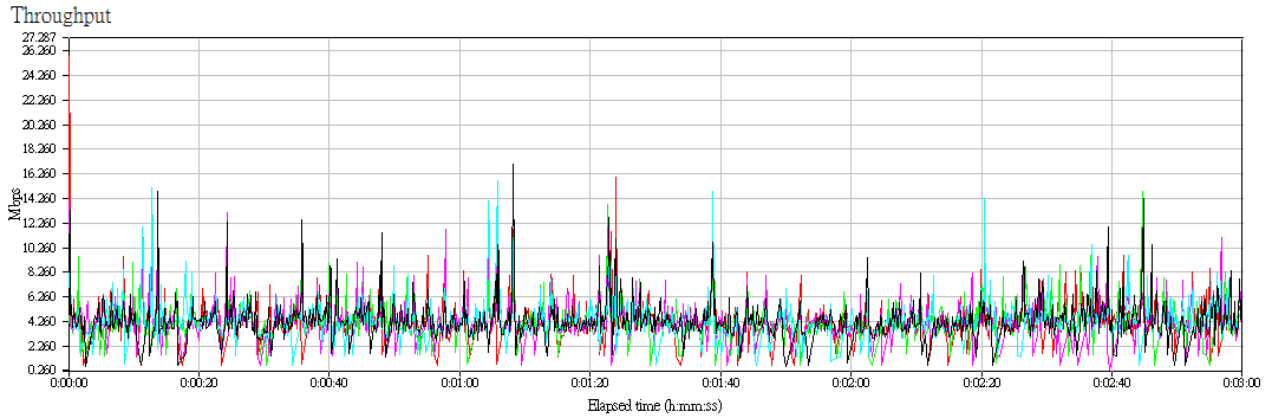
Test Setup		Throughput	Transaction Rate	Response Time	Raw Data Totals	Endpoint Configuration				
Group	Pair Group Name	Run Status	Timing Records Completed	95% Confidence Interval	Average (Mbps)	Minimum (Mbps)	Maximum (Mbps)	Measured Time (sec)	Relative Precision	
All Pairs			2,632		11.702	0.174	7.143			
	Pair 6	No Group Finished	292	n/a	1.308	0.520	2.768	179.288	n/a	
	Pair 7	No Group Finished	387	n/a	1.725	0.658	3.792	179.486	n/a	
	Pair 8	No Group Running	27	n/a	1.170	0.710	1.404	18.467	n/a	
	Pair 9	No Group Finished	386	n/a	1.728	0.659	7.143	179.272	n/a	
	Pair 10	No Group Finished	387	n/a	1.727	0.786	4.211	179.276	n/a	
	Pair 11	No Group Finished	221	n/a	0.965	0.202	2.151	179.412	n/a	
	Pair 12	No Group Finished	340	n/a	1.068	0.201	2.454	179.381	n/a	

Throughput



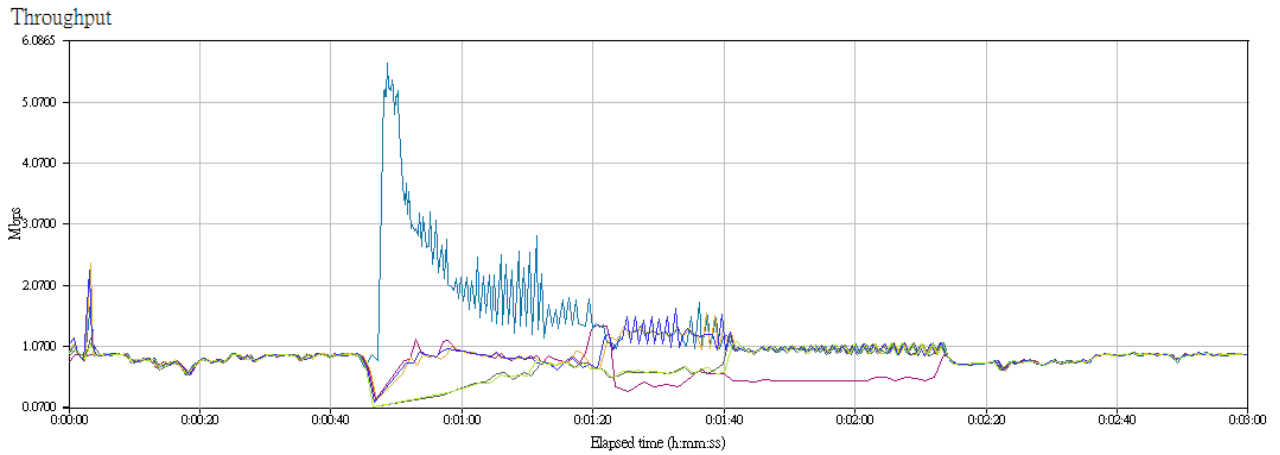
測試下載之平均數據圖(down load)

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			4,405		19.578	0.271	25.807			
	Pair 1	No Group Finished	871	-0.161 : +0.161	3.890	0.694	25.807	179.140	4.142	
	Pair 2	No Group Finished	888	-0.153 : +0.153	3.960	0.676	14.815	179.390	3.854	
	Pair 3	No Group Finished	859	-0.191 : +0.191	3.828	0.271	14.286	179.533	4.977	
	Pair 4	No Group Finished	898	-0.133 : +0.133	4.004	0.707	15.686	179.422	3.321	
	Pair 5	No Group Finished	889	-0.161 : +0.161	3.962	0.570	17.021	179.486	4.075	

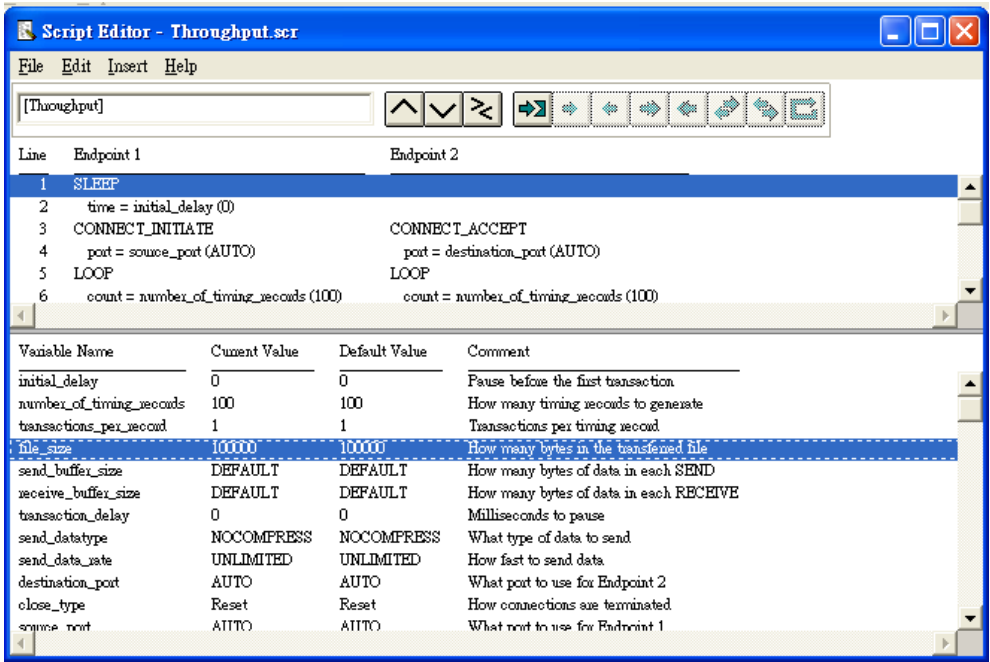


測試上載之平均數據圖(up load)

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			1,214		5.397	0.071	5.714		
	Pair 12 No Group	Finished	173	-0.043 : +0.043	0.771	0.187	1.421	179.529	5.612
	Pair 15 No Group	Finished	270	-0.059 : +0.059	1.204	0.613	5.714	179.343	4.872
	Pair 16 No Group	Finished	178	-0.090 : +0.090	0.793	0.075	1.268	179.680	11.295
	Pair 17 No Group	Finished	208	-0.038 : +0.038	0.929	0.202	2.439	179.085	4.070
	Pair 18 No Group	Finished	208	-0.046 : +0.046	0.925	0.164	2.312	179.804	4.939
	Pair 19 No Group	Finished	177	-0.094 : +0.094	0.790	0.071	1.141	179.248	11.846



6. 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	3	
Antenna	ANT-19FN-P2 x 2 2.4GHz 室外型無線網路指向性面板式 19dBi 可固定式遠距高功率天線	
Test products	OW-300N2-A2 1000mW 11bgn 300Mbps Outdoor Bridge x2	
TEST Software		
Chariot Version 6.7	 <p>The screenshot shows the Chariot Script Editor interface. At the top, there's a menu bar (File, Edit, Insert, Help) and a toolbar with navigation icons. Below that is a script editor area with a text area containing a script for a throughput test. The script includes commands like SLEEP, time = initial_delay (0), CONNECT_INITIATE, port = source_port (AUTO), port = destination_port (AUTO), LOOP, and count = number_of_timing_records (100). Below the script editor is a table of variables with columns for Variable Name, Current Value, Default Value, and Comment. The 'file_size' variable is highlighted in blue. At the bottom, there's a 'Run' button and a duration selector set to 0 hours, 3 minutes, and 0 seconds.</p>	
Run	<input checked="" type="radio"/> Run for a fixed duration <input type="text" value="0"/> Hrs <input type="text" value="3"/> Min <input type="text" value="0"/> Sec	

7. Conclusion

此測試重點除了測試我們 CERIO 訊號穩定性以外，也想突破在 2.4G 1000mW 是否在 7 公里距離 Throughput 能展現多少，在此趟測試後發現，我們所開發的 OW-300N2-A2 1000mW AP 數值及訊號穩定性是展現的非常強穩，在我們的開發團隊上，大家努力的專研設計，不管在技術上，或是品質上，都是值得考驗。

此產品應用主要可以假想 A 點是有上網服務，但 B 點完全無 WiFi 網路服務下，A 點與 B 點可以使用 WDS 做點對點橋接，在 A 點和 B 點全都使用 AP+WDS 功能，讓 B 點的 AP 可以服務附近的無線使用者連接 B 點 AP，再透過到 A 點的無線基地台使用 WiFi 上網。對於網路規劃者是一個不錯的理想產品。如下示意圖

