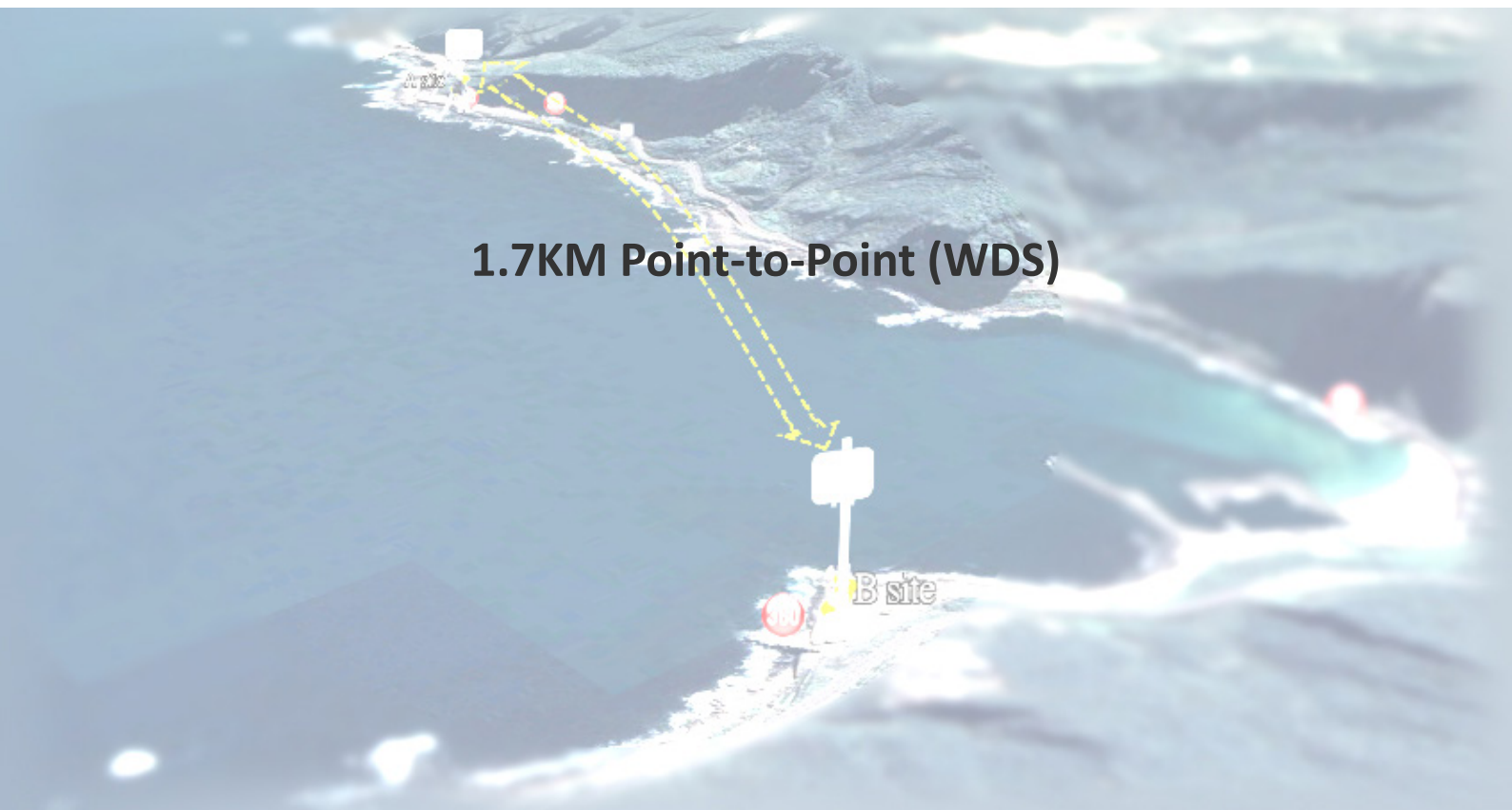


Throughput test report Of Cerio's OW-408 A1



1. Test Product model.

OW-408 A1



2. Introduction

The purpose of conducting this test was to determine the average throughput and signal stability of Cerio's new products Outdoor Access Point at a distance of 1.7km.

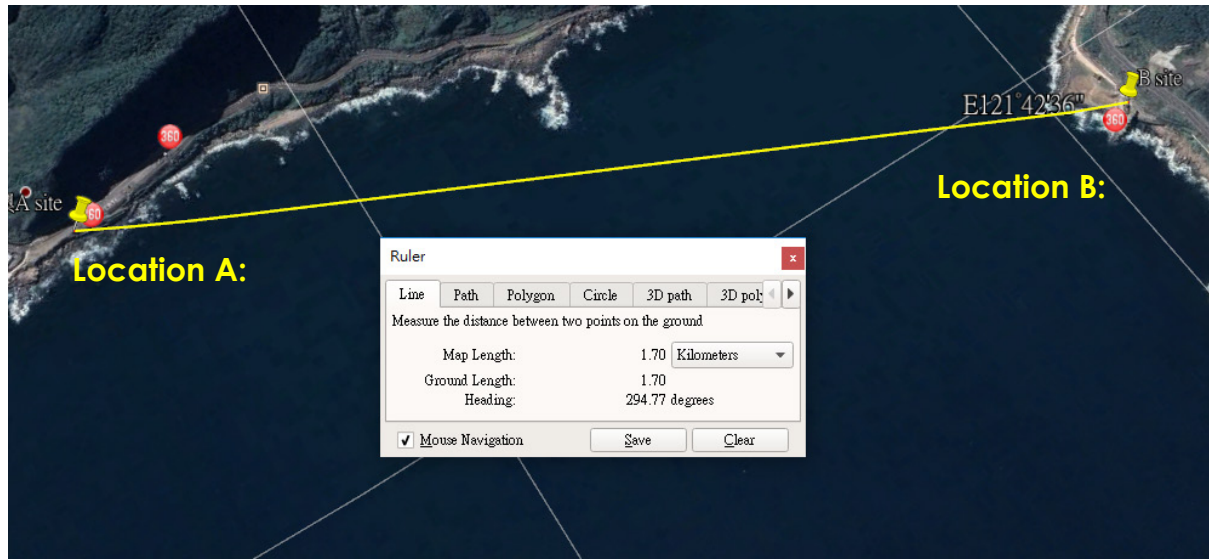
The test specifically measured point-to-point WDS connections set through Cerio's CenOS 5.0 Software Bundle. Test was conducted between two units of OW-408 A1 operating under 5GHz 802.11ac and 2.4GHz 802.11n standards (1.7Km).

3. Test Date and Personnel

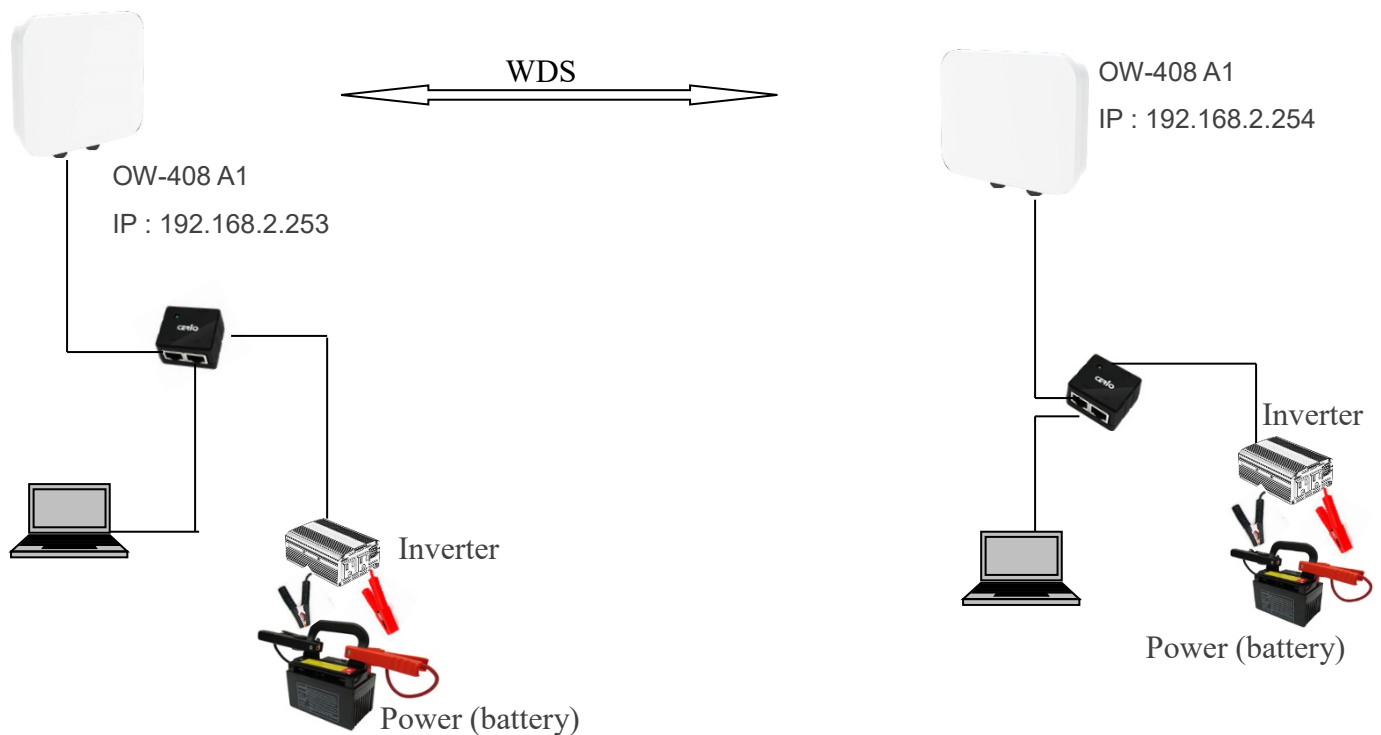
Test Date	2018 / 05 / 04		
Tested products	OW-408 A1		
Test purposes	Throughput test of 1.7Km Long-distance 1. Test 2.4G 2. Test 5G		
Test Personnel			
		Kong E/C	Sheng E/C

4. Test Environment

The distance from Location A to Location B is roughly 1.7km, determined by Google Earth



5. System Network Configuration



6. Test Tools and other information

Test Equipment			
Notebook	HP 242 G1 x1 HP ProBook 430 G2 x1	System OS	Windows 10 (x64)
Power (battery)	4		
Inverter	DC to AC 350W Inverter x2		
Tripod	2		
PoE Injector	Gigabit Injector (PoE-PE03GE-24W) x2		
RJ-45 Cables	Cat.5e x 6		
Antenna	2x2 Built-in 8dBi (2.4G + 5G) Dual Antennas		
Test products	OW-408 A1 x2		
Test Software and product setup information			
Application tools	Chariot Version 6.7		
Running time	60 sec		
OW-408 A1 software OS	CenOS 5.0 Firmware v1.0.0		
OW-408 A1 setting	Use WDS function (Point-to-Point)		
Radio and channel testing	2.4G test channel 10 (2457Mhz) 5G test channel: 52 (5260Mhz)/ 100 (5500Mhz)/ 157 (5785Mhz)		

7. 2.4GHz point-to-point(WDS) for Throughput test

Successful connection screen of WDS (2.4GHz point-to-point)

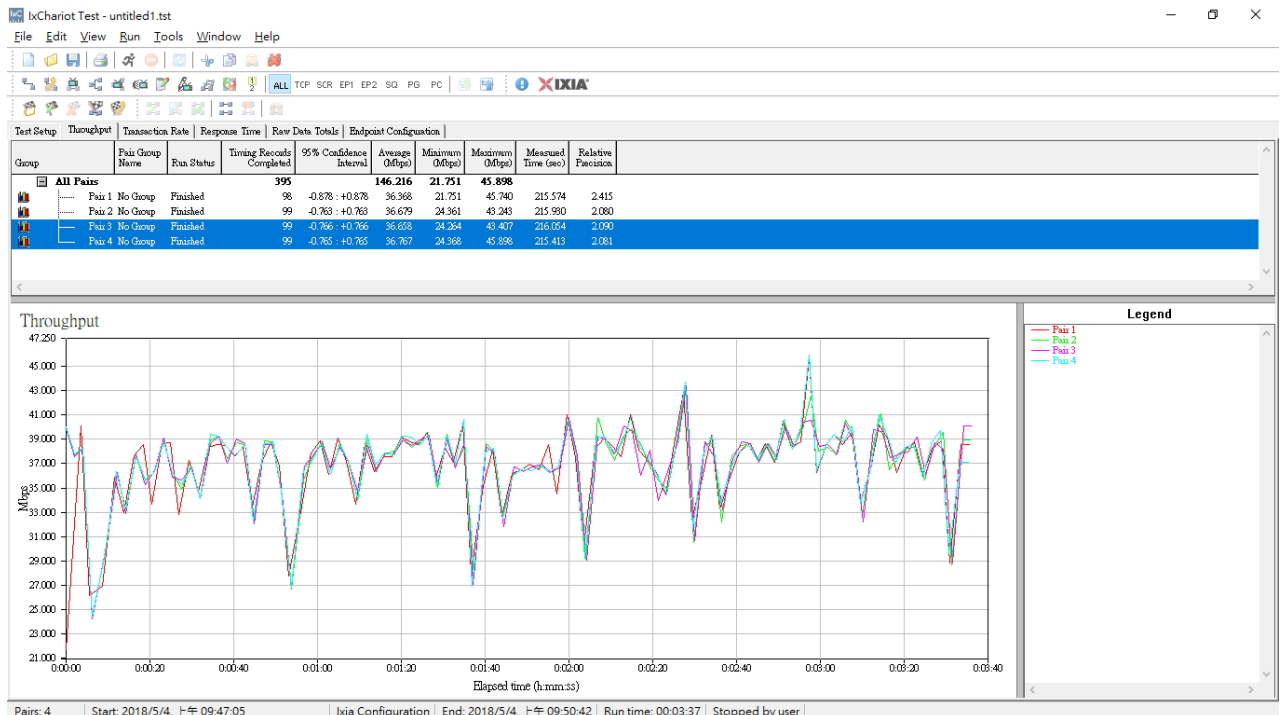
WDS Status		
Radio Client		
MAC Address	Rate(RX/TX)	RSSI
8c:4d:ea:05:1c:6d	130Mb / 130Mb	22
Radio Client		
MAC Address	Rate(RX/TX)	RSSI
-	-	-
Refresh		

Throughput test (2Tx+2Rx) of 2.4GHz

Test Channel: 10 (2457Mhz)

Set 2Tx and 2Rx running throughput

Throughput	146.216 Mbps
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8. 5GHz point-to-point(WDS) for Throughput test

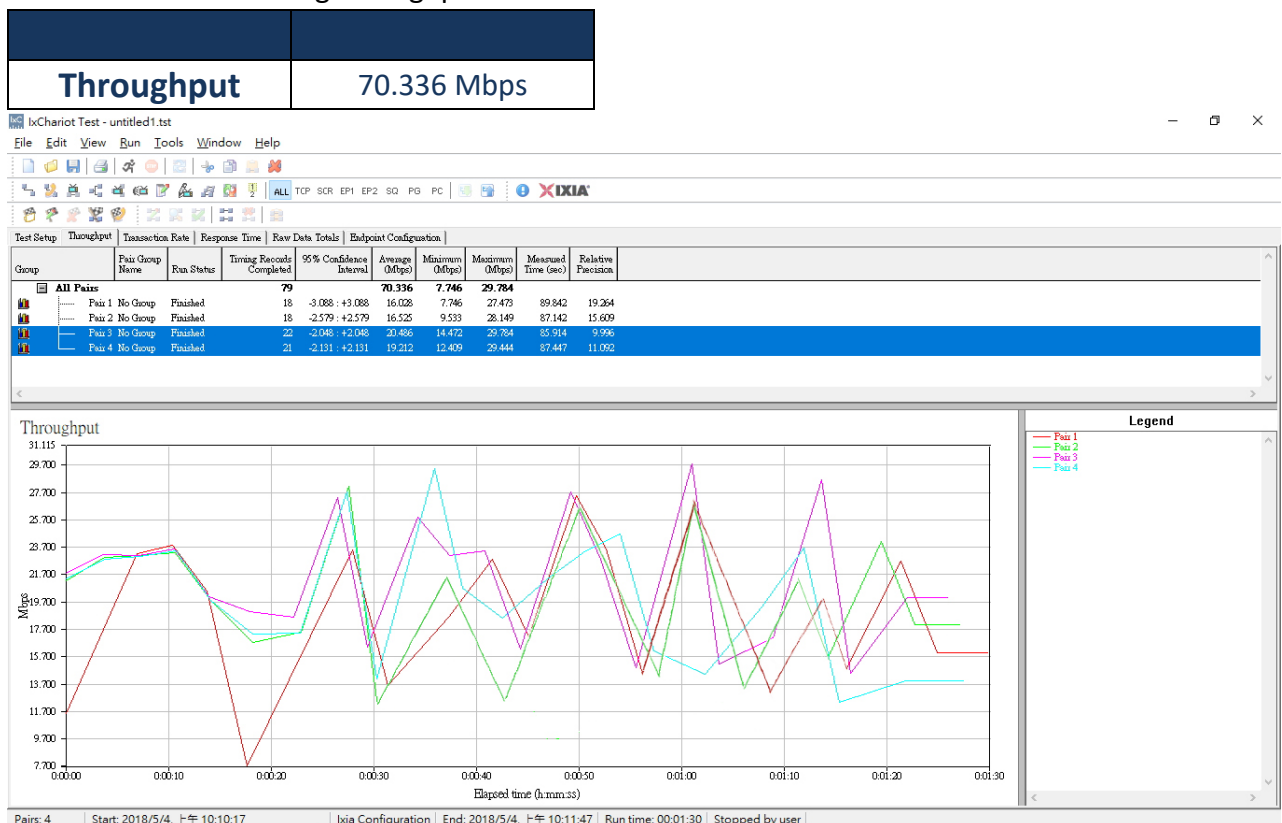
8.1 Successful connection screen of WDS used CH 52

<div> OW-408 A1 CenOS 5.0 </div> <div> System Wireless Utility Status </div>		
WDS Status		
Radio0 Client		
MAC Address	Rate(RX/TX)	RSSI
-	-	-
Radio1 Client		
MAC Address	Rate(RX/TX)	RSSI
8c:4d:ea:05:1c:6e	195Mb / 195Mb	12
Refresh		

Throughput testing (2Tx+2Rx)

Test Channel: 52 (5260Mhz)

Set 2Tx and 2Rx running throughput



8.2 Successful connection screen of WDS used CH 100(DFS)

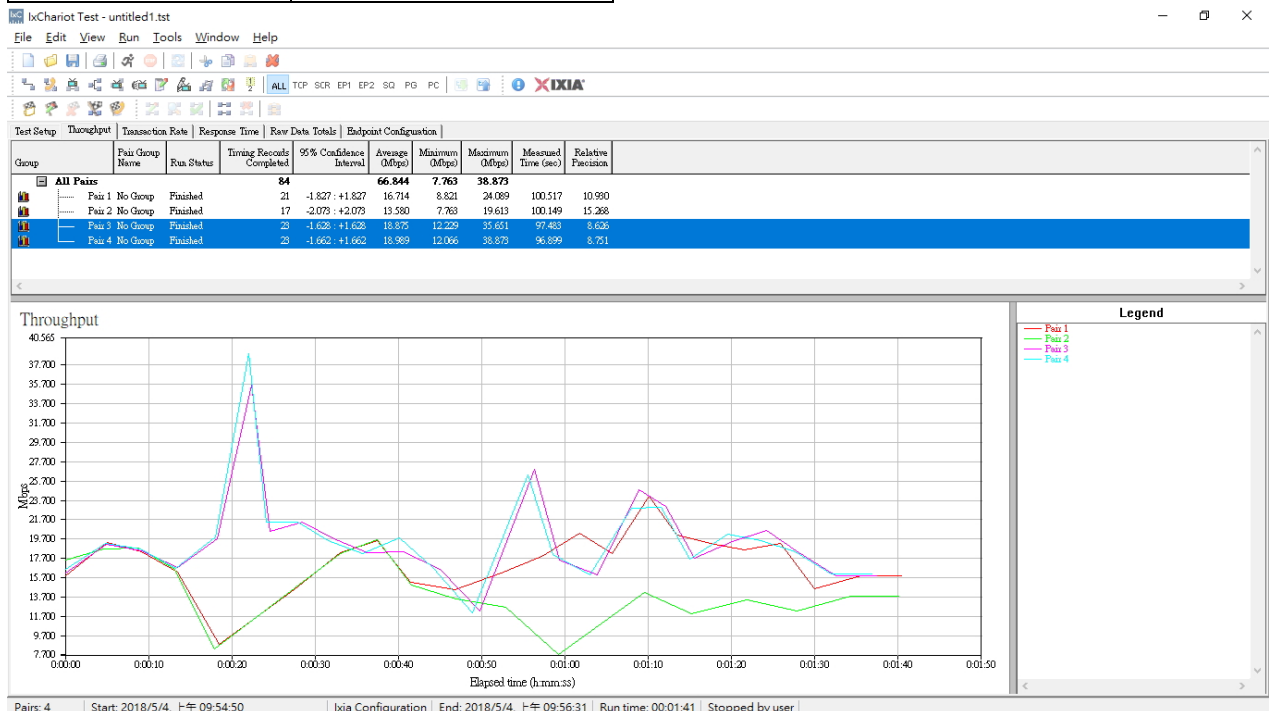
CERIO OW-408 A1 CentOS 5.0 System - Wireless - Utility - Status -		
WDS Status		
Radio0 Client		
MAC Address	Rate(RX/TX)	RSSI
-	-	-
Radio1 Client		
MAC Address	Rate(RX/TX)	RSSI
8c:4d:ea:05:1c:6e	117Mb / 117Mb	12
Refresh		

Throughput test(2Tx+2Rx)

Test Channel: 100 (5500Mhz)

Set 2Tx and 2Rx running throughput

Throughput	66.844 Mbps
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8.3 Successful connection screen of WDS used CH 157

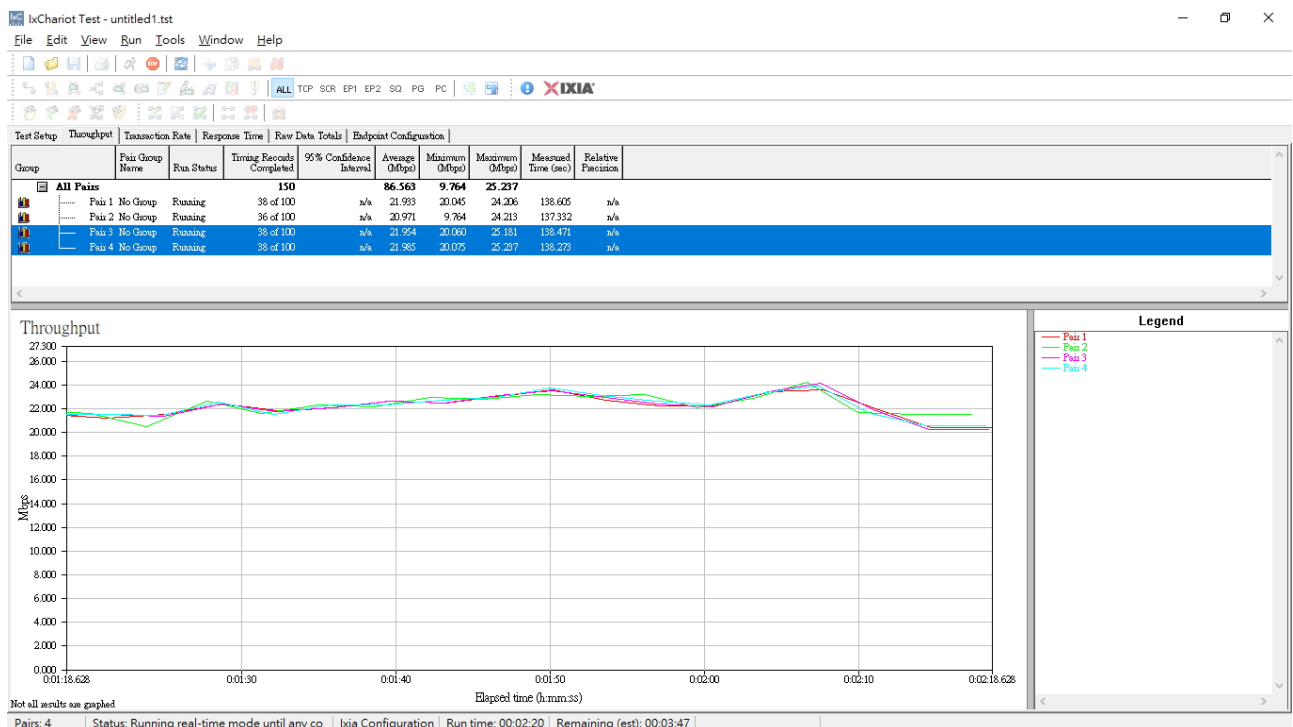
CERIO OW-408 A1 CenOS 5.0 System Wireless Utility Status		
WDS Status		
Radio0 Client		
MAC Address	Rate(RX/TX)	RSSI
-	-	-
Radio1 Client		
MAC Address	Rate(RX/TX)	RSSI
8c:4d:ea:05:1c:6e	195Mb / 195Mb	16
Refresh		

Throughput test

Test Channel: 157 (5785Mhz)

Set 2Tx and 2Rx running throughput

Throughput	86.563 Mbps
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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 8dBi dual-polarization directional antennas.

From the results of our OW-408 A1 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)

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.