

CERIO Corporation

CS-1008G-8P

Basic test report

| | | | |
|--------------|-------------|-------------|----------------|
| Product Name | CS-1008G-8P | Date | 2017 / 04 / 25 |
| H/W Version | A1 | S/W Version | N/A |
| Tested | Danny | | |

| Item | Test description | Result | Other |
|------|----------------------------------|--------|-------|
| 1 | 傳輸穩定性測試 | | |
| 1.1 | 網路線 100M 長度測試 Gigabit 穩定性及吞吐量 | Pass | |
| 1.2 | 網路線 100M 長度測試 10Mbps 穩定性及吞吐量 | Pass | |
| 1.3 | 電壓/頻率變化測試 | Pass | |
| 2 | PoE 供電測試 | Pass | |
| 3 | 切換 10Mbps 速率測試 280M 網路線 | | |
| 3.1 | 測試資料傳送穩定性及吞吐量 | Pass | |
| 3.2 | 連接 PoE 設備(AP)測試資料傳送+PoE 的穩定性及吞吐量 | Pass | |
| 4 | 總結 | | |

測試目的

- a. CS-1008-8P 透過 RJ-45 100M 長度使用 Gigabit 速率測試 PoE + data 是否穩定
- b. CS-1008-8P 透過 cat.6 的 RJ-45 280M 長度使用 10Mbps 速率測試 PoE + data 是否穩定

測試使用線材

- a. 網路線及水晶頭使用 cat6 規格
- b. 將購買的 305M 直接裁切至 280M, 並打上 cat 6 水晶頭進行測試



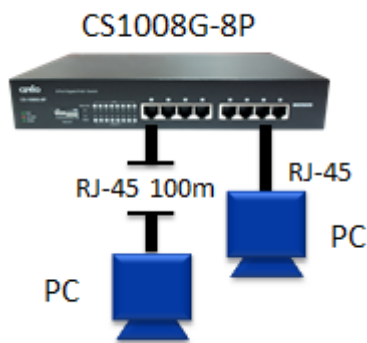
1. 傳輸穩定性測試

- (1) 使用 Chariot 軟體進行 Throughput 測試, CS-1008G-8P 驗證傳輸速率及穩定性
- (2) 透過 SPIRENT 設備驗證 CS-1008G-8P 穩定性

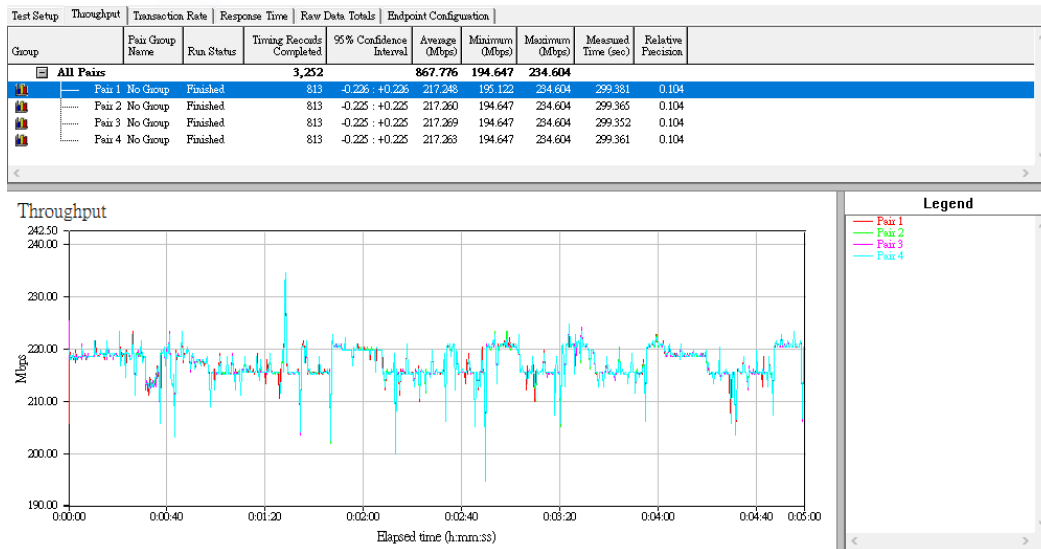
1.1 網路線 100M 長度測試 Gigabit 穩定性及吞吐量

利用 Chariot 測試 CS-1008G-8P Giga Port 傳輸品質(不同網卡有不同的速率質), 此測試主要驗證 CS-1008G-8P 在傳送 Giga 封包的穩定性

a. 測試架構示意圖



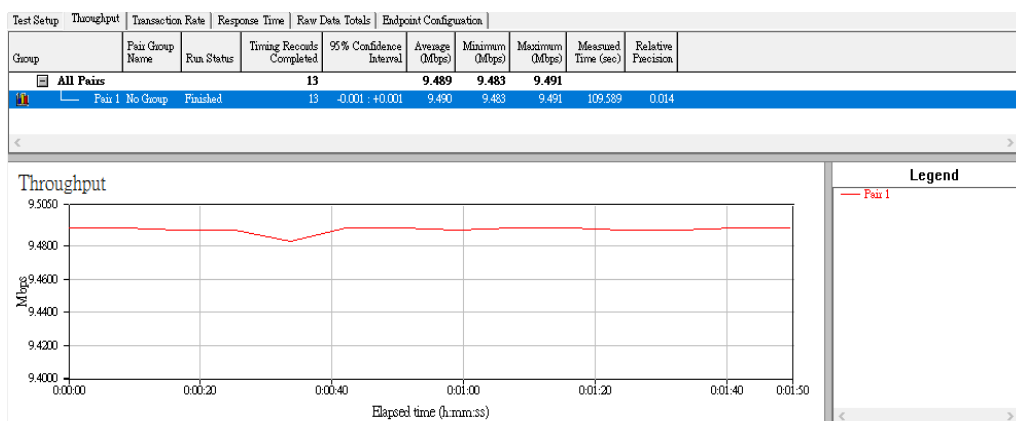
- b. 利用 Chariot 進行封包傳送得出數據如下, 發現 CS-1008G-8P 在 Giga 高速傳輸資訊時, 穩定性非常好, 且並無任何掉包問題。如下圖數據



由上圖得出平均速率約為 868 Mbps

1.2 網路線 100M 長度測試 10Mbps 穩定性及吞吐量

當切換為 10Mbps 測試單一速率, 驗證 10Mbps 是否功能確實, 並確認傳輸穩定性



以上發現在 jump 切換 10Mbps 後, 確實有將速率固定至約 10Mbps 且穩定性非常好

1.3 電壓/頻率變化測試

主要驗證 CS-1008G-8P 的測試電壓和頻率最大和最小值並可以正常工作。

測試設備：

CS-1008G-8P x 1

T Packet generator SPIRENT (SPT-9000A) x1

AC Power Source (EXTECH 6600) x1

測試時間：

1 小時（更換條件，關機，然後開機）

測試電壓/頻率：

90V / 47Hz，90V / 63Hz，264V / 47Hz，264V / 63Hz

測試程序：

- 1) 將 CS-1008G-8P 的所有端口連接到 SPIRENT。
- 2) 根據條件調整交流電源。
- 3) 讓 CS-1008G-8P 在每個條件下全負載一小時，更改條件時，關閉 CS-1008G-8P 電源，然後開機。
- 4) 觀察 CS-1008G-8P 並記錄結果。

[90V/47Hz]

The screenshot displays the Spirent TestCenter interface. The top section shows the 'Test Configuration' window with a tree view on the left and a table of test configurations on the right. The table lists 8 ports, each configured with a 'Port Based' scheduling mode, a duration of 3600 seconds, a burst size of 1, and a load of 100%. The bottom section shows the 'Basic Traffic Results' window, which contains two tables: 'Port Traffic and Counters' and 'Streams > Detailed Stream Results'.

| Port Name | 1 Rate (bps) | Rx L1 Rate (bps) | Generator Count (Frames) | Generator Sig Count (Frames) | Rx Sig Count (Frames) | Total Tx Rate (fps) | Total Rx Rate (fps) |
|------------|--------------|------------------|--------------------------|------------------------------|-----------------------|---------------------|---------------------|
| Port //3/1 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/2 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/3 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/4 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/5 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/6 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/7 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/8 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |

| Name/ID | Tx Port Name | Rx Port Name | Aggregated Rx Port Count | Tx Count (Frames) |
|------------|--------------|--------------|--------------------------|-------------------|
| Stream0loc | Port //3/1 | Port //3/2 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/2 | Port //3/1 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/3 | Port //3/4 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/4 | Port //3/3 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/5 | Port //3/6 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/6 | Port //3/5 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/7 | Port //3/8 | 1 | 5,357,142,858 |
| Stream0loc | Port //3/8 | Port //3/7 | 1 | 5,357,142,858 |

Validation Errors: Log - 257 messages. Basic Traffic Results 1 Basic Traffic Results 2

Generator on Port //3/6 is stopped

[90V/63Hz]

Untitled.tcc - Spirent TestCenter

File Edit View Tools Actions Help

Test Configuration

- Spirent TestCenter
 - All Ports
 - All Devices (Hosts, Routers, ...)
 - All Multicast Groups
 - All Profiles
 - All Traffic Generators
 - All Stream Blocks
 - All Traffic Analyzers
 - Ports
 - Port //3/1
 - Port //3/2
 - Port //3/3
 - Port //3/4
 - Port //3/5
 - Port //3/6
 - Port //3/7
 - Port //3/8
 - Settings

Start Traffic Stop Traffic Manual Schedule

| Tx State | Port Name | Scheduling Mode | Duration Mode | Duration | Burst Size | Inter Frame Gap | Inter Frame Gap Unit | Load Mode | Load Unit | Load | Random Min Load | Random Load |
|----------|------------|-----------------|---------------|----------|------------|-----------------|----------------------|-----------|-------------|------|-----------------|-------------|
| ▶ | Port //3/1 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/2 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/3 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/4 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/5 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/6 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/7 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/8 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |

Basic Traffic Results 1

Port Traffic and Counters > Basic Traffic Results Change Result View 1 of 1

| Port Name | L1 Rate (bps) | Rx L1 Rate (bps) | Generator Count (Frames) | Generator Sig Count (Frames) | Rx Sig Count (Frames) | Total Tx Rate (fps) | Total Rx Rate (fps) | G |
|--------------|---------------|------------------|--------------------------|------------------------------|-----------------------|---------------------|---------------------|---|
| Port //3/1 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/2 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/3 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/4 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| ▶ Port //3/5 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/6 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/7 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/8 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |

Streams > Detailed Stream Results Change Result View 1 of 1

Select Rx Ports: All Ports Select Tx Ports: All Ports Change Counter Mode:

| Name/ID | Tx Port Name | Rx Port Names | Aggregated Rx Port Count | Tx Count (Frames) |
|--------------|--------------|---------------|--------------------------|-------------------|
| StreamBloc | Port //3/1 | Port //3/2 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/2 | Port //3/1 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/3 | Port //3/4 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/4 | Port //3/3 | 1 | 5,357,142,858 |
| ▶ StreamBloc | Port //3/5 | Port //3/6 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/6 | Port //3/5 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/7 | Port //3/8 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/8 | Port //3/7 | 1 | 5,357,142,858 |

Validation Errors Log - 287 messages Basic Traffic Results 1 Basic Traffic Results 2

Generator on Port //3/6 is stopped

[264V/47Hz]

Untitled.tcc - Spirent TestCenter

File Edit View Tools Actions Help

Test Configuration

- Spirent TestCenter
 - All Ports
 - All Devices (Hosts, Routers, ...)
 - All Multicast Groups
 - All Profiles
 - All Traffic Generators
 - All Stream Blocks
 - All Traffic Analyzers
 - Ports
 - Port //3/1
 - Port //3/2
 - Port //3/3
 - Port //3/4
 - Port //3/5
 - Port //3/6
 - Port //3/7
 - Port //3/8
 - Settings

Start Traffic Stop Traffic Manual Schedule

| Tx State | Port Name | Scheduling Mode | Duration Mode | Duration | Burst Size | Inter Frame Gap | Inter Frame Gap Unit | Load Mode | Load Unit | Load | Random Min Load | Random Load |
|----------|------------|-----------------|---------------|----------|------------|-----------------|----------------------|-----------|-------------|------|-----------------|-------------|
| ▶ | Port //3/1 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/2 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/3 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/4 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/5 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/6 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/7 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |
| | Port //3/8 | Port Based | Seconds | 3600 | 1 | | | Fixed | Percent (%) | 100 | | |

Basic Traffic Results 1

Port Traffic and Counters > Basic Traffic Results Change Result View 1 of 1

| Port Name | L1 Rate (bps) | Rx L1 Rate (bps) | Generator Count (Frames) | Generator Sig Count (Frames) | Rx Sig Count (Frames) | Total Tx Rate (fps) | Total Rx Rate (fps) | G |
|--------------|---------------|------------------|--------------------------|------------------------------|-----------------------|---------------------|---------------------|---|
| Port //3/1 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/2 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/3 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/4 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| ▶ Port //3/5 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/6 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/7 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |
| Port //3/8 | 0 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 5,357,142,858 | 0 | 0 | 0 |

Streams > Detailed Stream Results Change Result View 1 of 1

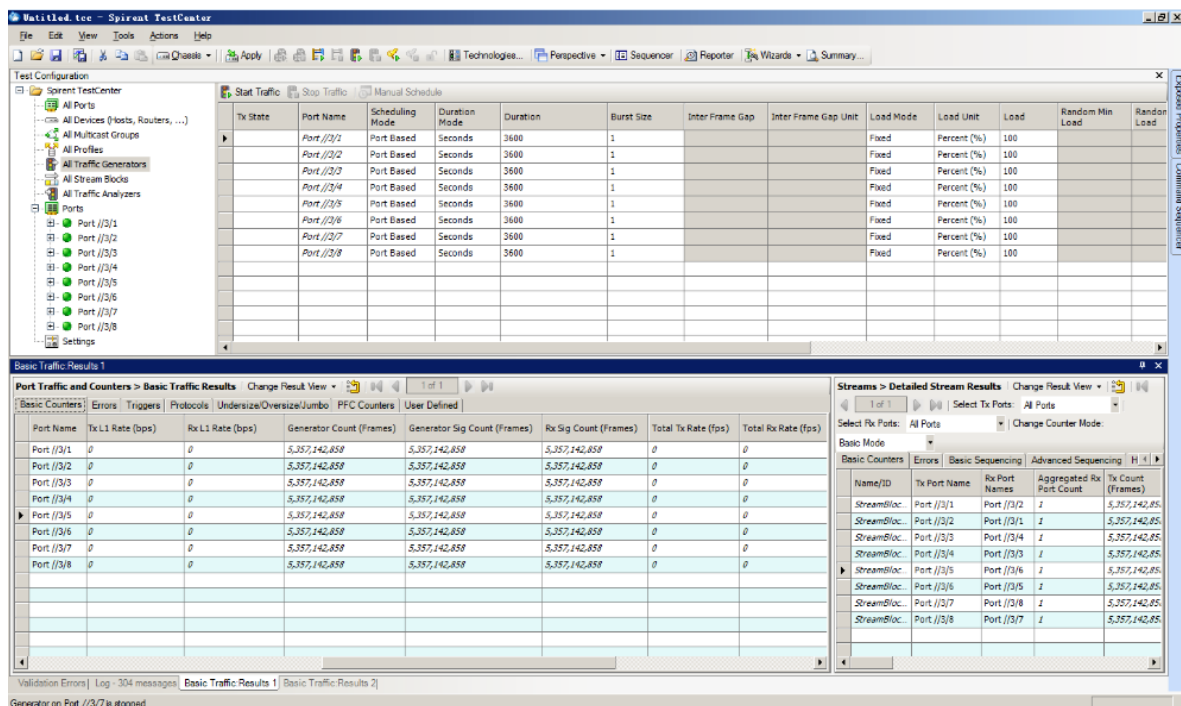
Select Rx Ports: All Ports Select Tx Ports: All Ports Change Counter Mode:

| Name/ID | Tx Port Name | Rx Port Names | Aggregated Rx Port Count | Tx Count (Frames) |
|--------------|--------------|---------------|--------------------------|-------------------|
| StreamBloc | Port //3/1 | Port //3/2 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/2 | Port //3/1 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/3 | Port //3/4 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/4 | Port //3/3 | 1 | 5,357,142,858 |
| ▶ StreamBloc | Port //3/5 | Port //3/6 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/6 | Port //3/5 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/7 | Port //3/8 | 1 | 5,357,142,858 |
| StreamBloc | Port //3/8 | Port //3/7 | 1 | 5,357,142,858 |

Validation Errors Log - 287 messages Basic Traffic Results 1 Basic Traffic Results 2

Generator on Port //3/6 is stopped

[264V/63Hz]



CS-1008G-8P 的結果沒有任何錯誤和丟包。

2. PoE 供電測試

驗證 CS-1008G-8P 可以滿足 802.3 PD 標準。

測試架構示意圖

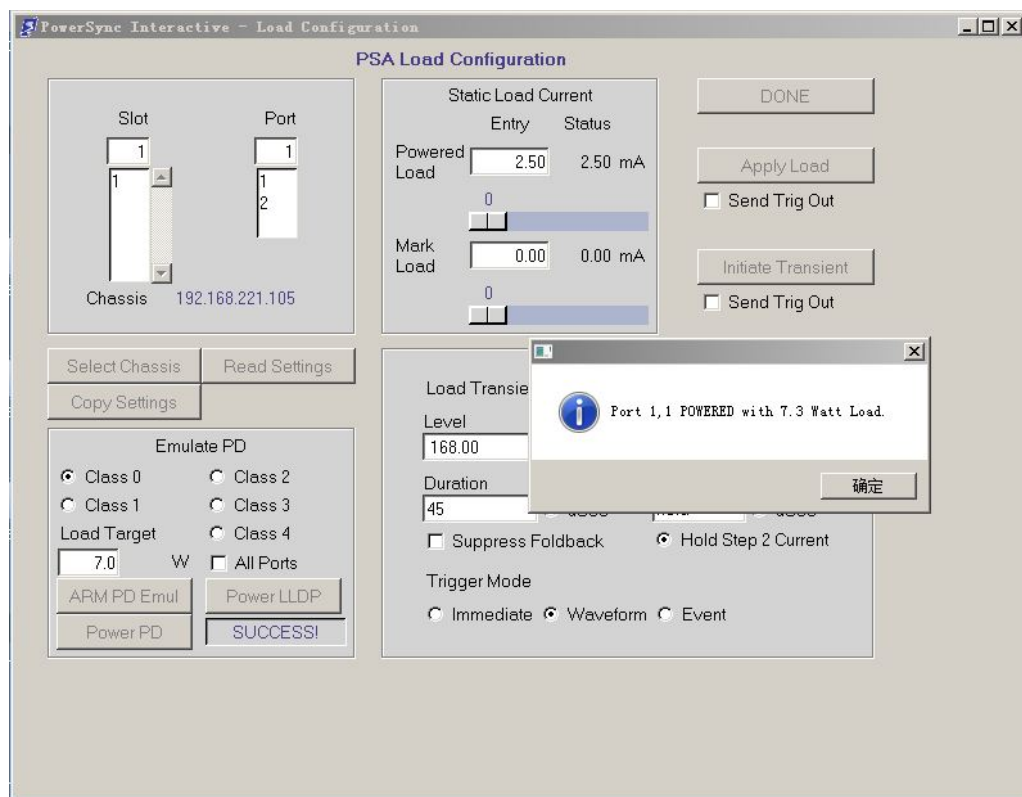


測試程序:

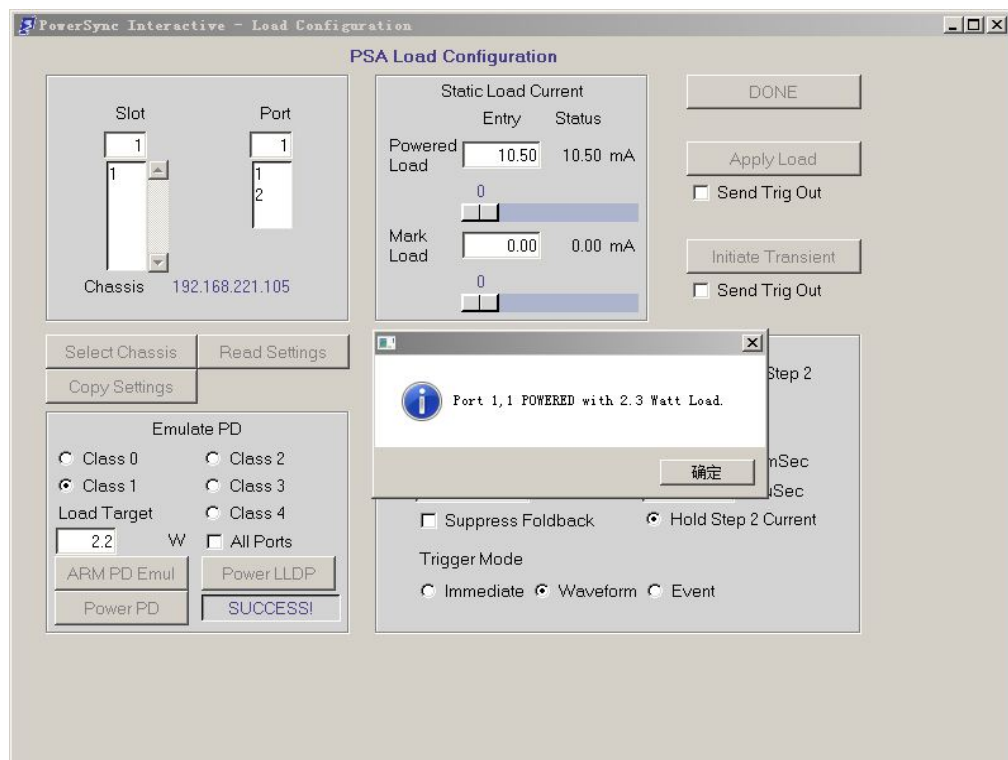
1. 根據設置連接 CS-1008G-8P。
2. 將測試類別，Class 0 更改為 Class 4。
3. 開始測試並記錄結果。

測試結果

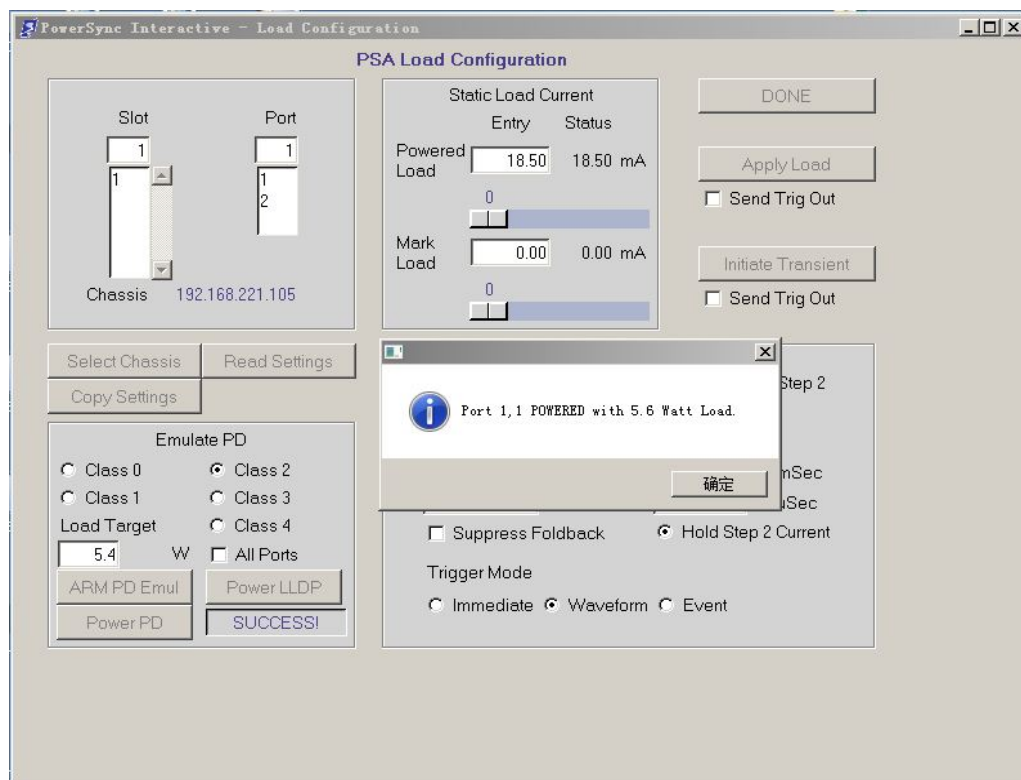
[Class 0]



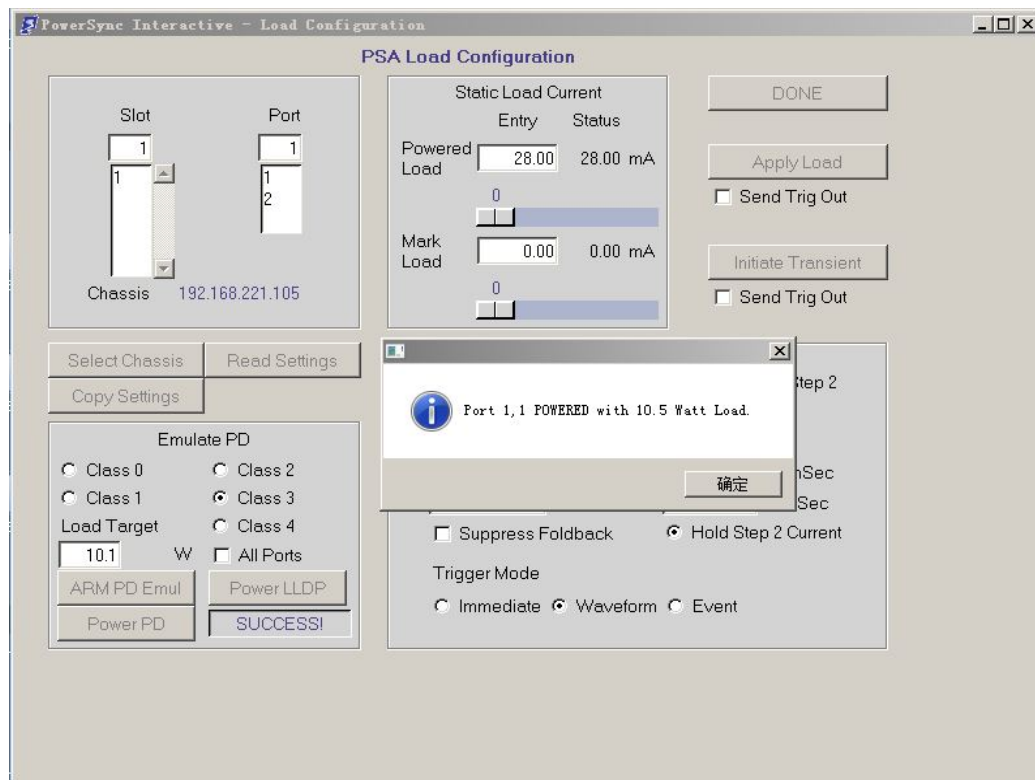
[Class1]



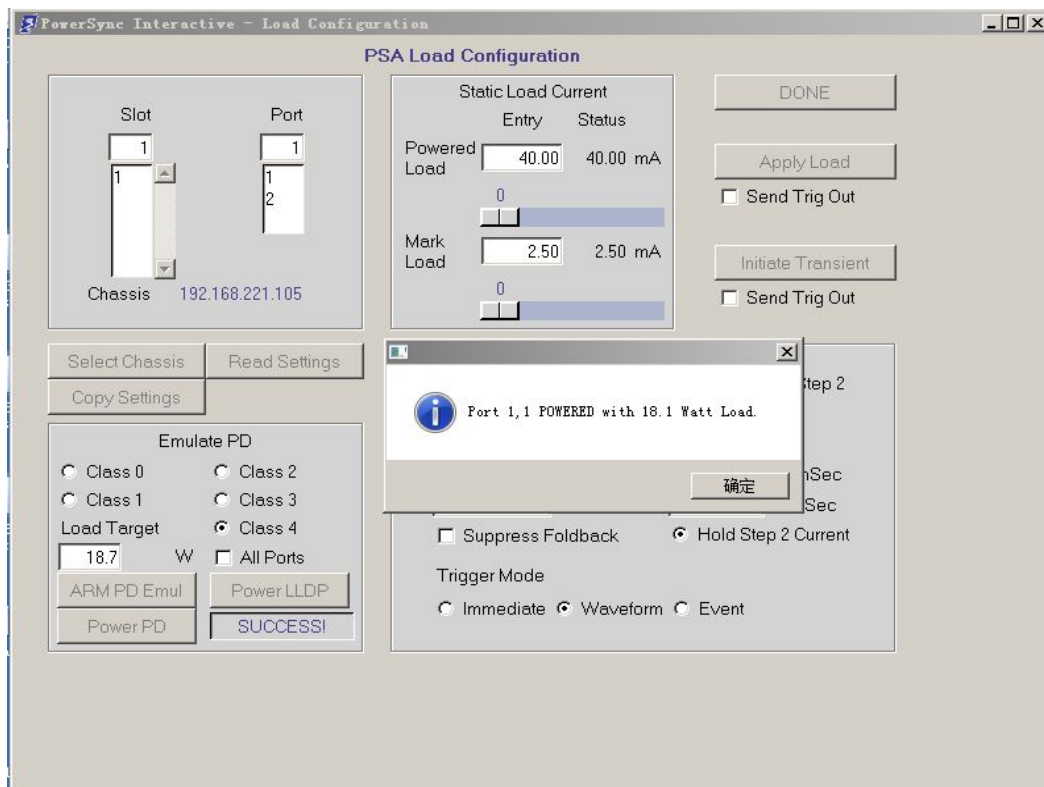
[Class 2]



[Class 3]



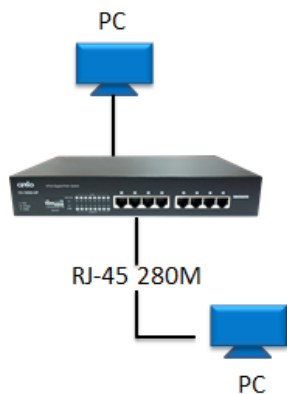
[Class 4]

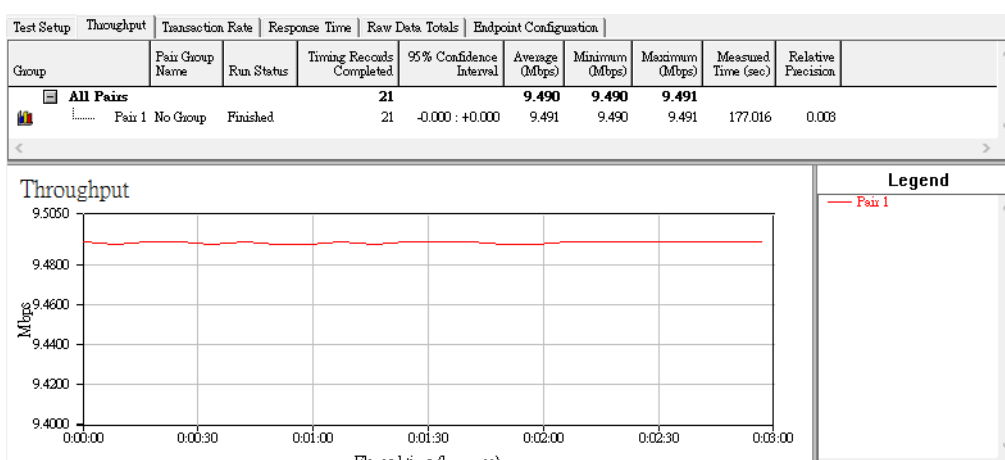


3. 切換 10Mbps 速率測試 280M 網路線

3.1 測試資料傳送穩定性及吞吐量

當切換為 10Mbps 速率並透過 RJ-45 網路線使用 280M 長度, 測試 CS-1008G-8P 吞吐量穩定性。





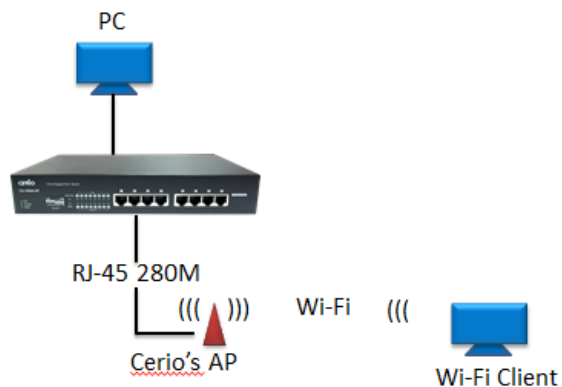
以上數據確實能穩定傳輸資訊

3.2 連接 PoE 設備(AP)測試資料傳送+PoE 的穩定性及吞吐量

測試說明

1. 使用 RJ-45 280M 長路測試 (PoE + Data) 透過 Cerio 的 AP
2. CS-1008G-8P 特定的 Port 切換為 10Mbps 並連接 Cerio 的 PoE AP
3. 驗證穩定性及吞吐量

測試架構

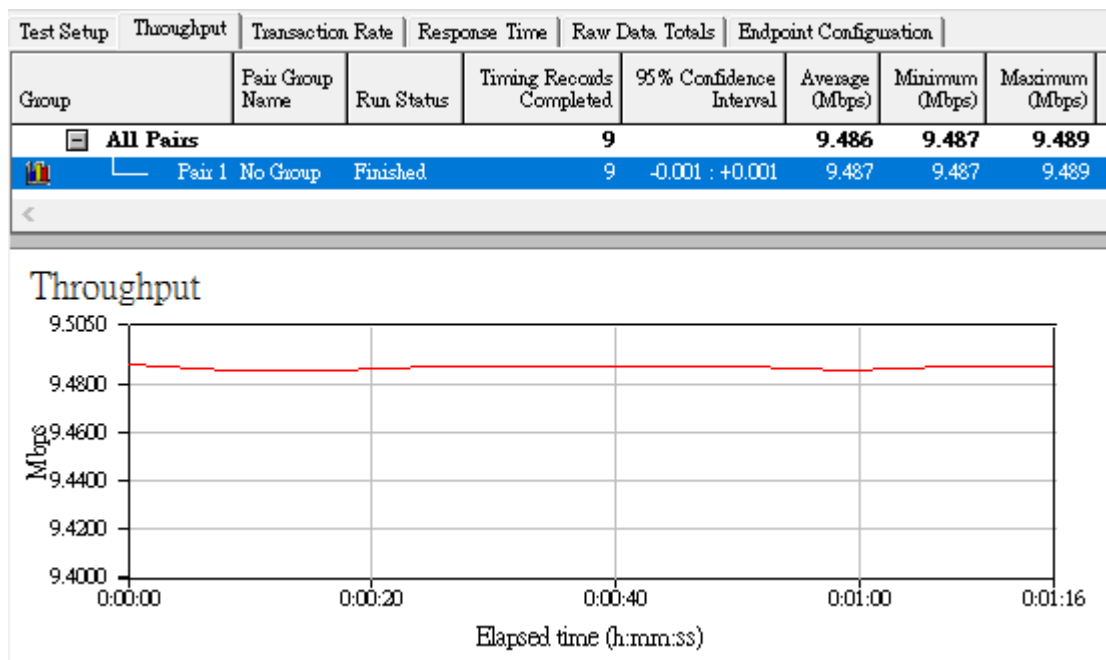


架構說明

當 Wi-Fi 客戶端連接到 Cerio 的 AP 並將數據發送到 PC 時，通過 RJ-45 280M 電纜測試吞吐量和 PoE 是否穩定。



得出數據如下:



以上數據證明切換 10Mbps 後透過 280M 長度傳送 Data + PoE 至 cerio AP, 得出速率固定至約 10Mbps 且穩定性非常好

4. 總結

| | | | |
|--------------------|-----------------|-----------------|-----------------|
| Speed | Giga | 10M | 10M |
| RJ-45 cable length | 100M | 280M | 280M |
| Throughput | Average 868Mbps | Average 9.5Mbps | Average 9.5Mbps |
| Test type | Data | Data | Data + PoE |
| PoE(v) | Max. 55.3 | Max. 54.3 | Max. 54.3 |
| Stability | Pass | Pass | Pass |

以上數據得知當 CS-1008G-8P 切換至 10M 時，可傳送最長 280M 的網路線，在測試報告數據中發現當 jump 啟用 10Mbps 時，則可突破 RJ45 UTP 100 公尺的規範，最長距離可達到 280 公尺，而 280M 使用 802.3at 標準的 PoE 電力輸出使用在 280M 長距離 PoE 傳輸後依然能保持 PoE 54V 幾乎無任何電衰跡象，所以證實 CS-1008G-8P 在 PoE + Data 傳輸穩定性相當高