Eight Discipline Report (8D Report)

To:	8D report No.:
From:：**Chicony Power Technology**	RMA claim No.: **N/A**
CC：	Chicony Power P/N:
	Customer P/N:
Submit date: **2023/7/14**	Product description: **65W PD**
Receive date: **2023/7/24**	Defect D/C or Lot No.:
Subject：客戶 7/14 反應 sample 樣機測試殼溫 fail (Thermal, 點膠/Glue)	

D1.) 問題解決成員:Use Team Approach

主持者 (Team Leader)：**Edward Ho**

內部成員 (Internal Team Members):

RD: Will Wu

外部成員 (External Team Member):

D2.)問題說明:Problem Description:

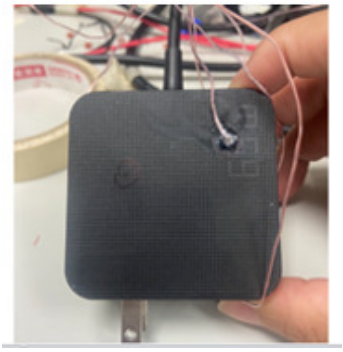
(**Note**: Use **who**, **what**, **when**, **where**, **why**, **how**, **how many** to specify the Customer's problem.)

2023/7/14 客戶告知:

下面為 WM 機種殼溫測試數值，發現 Top 面 ΔT>40 度，Fail

請確認量測的熱點是否不是最 worst，fail 的部分盡快釐清

	100V	ΔT
1. TOP	67.4	40.7
2. Right	63.3	36.6
3. Inlet	62.8	36.1
4. Output	62.3	35.6
5. Left	58.8	32.1
6. Bottom	65.1	38.4
Amb	26.7	



D3.)內部或客戶的暫時解決辦法及實施日期:Implement and Verify Containment Action:

(**Note**: Internal / external containment action effectiveness and date.)

1. **從客戶端拿到了樣機並做進一步分析**

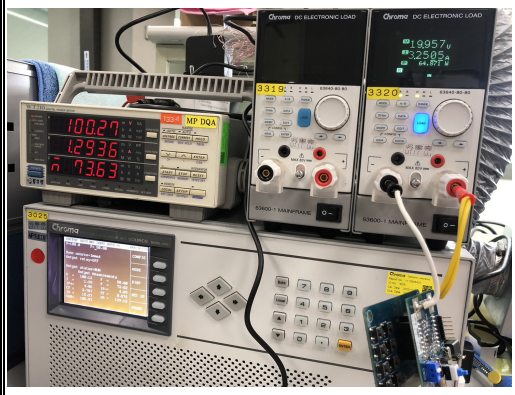
Date:2023/7/17

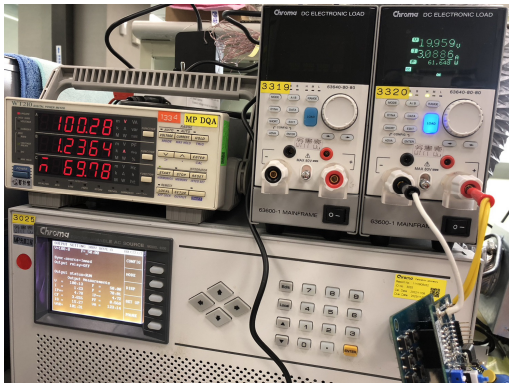
D4.)不良原因確認: Define and Verify Root Causes:

(Note: Identify and verify all suspect causes, which needs explain why the problem occurred.**)**

1. 樣機100%load 、95%load效率測試，線端效率無異常。

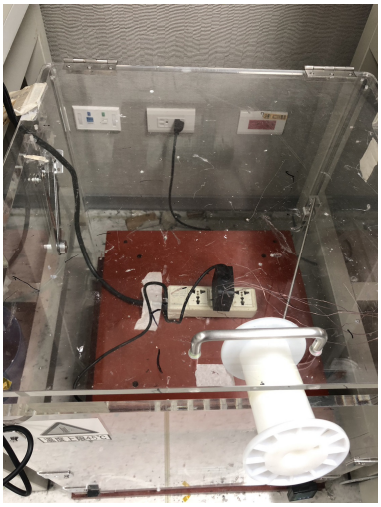
100%load 效率: 88.1% **95%load 效率: 88.34%**





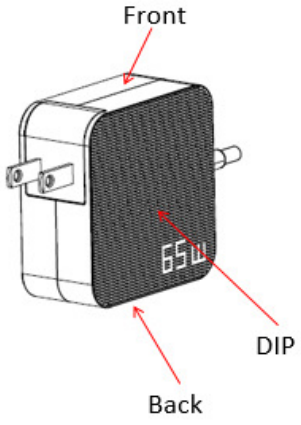
2. 殼溫測試

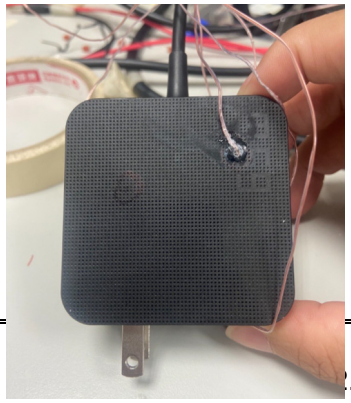
1.	**Equipment :**	
	(1)	AC Source : Chroma 6512
	(2)	DC Load : Chroma 63630-80-60
	(3)	Thermal Recorder : Keysight 34970A
2.	**Test Condition :**	
	(1)	Input Voltage : 100Vac
	(2)	Input Frequency : 50Hz
	(3)	Load Condition : 95% Load
	(4)	Temperature : 25℃.
3.	**Spec. :**	
	3.6 CASE TEMPERATURE RISE:	
	At input voltage 100Vac/240Vac 50Hz, case temperature rises≦40℃ at 95% loading.	



3. 殼溫測試結果，與客戶反應的狀況一致。

CPT 測試 fail 面：SMD **客戶測試 fail 面：Top**





CPT測試數據	
Input Power	100V / 50Hz 69.00W
Load	19.95V / 3.082A 61.39W

Location	Temp (℃)	ΔT(℃)
DIP	60.8	36.6
Front	52.2	28.0
AC	60.1	36.0
DC	61.8	37.7
Back	57.4	33.2
SMD	66.3	42.1
Ambient	24.2	

客戶測試數據	
Input Power	100V / 50Hz
Load	20V / 95%載

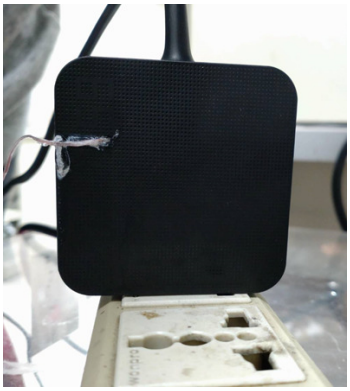
Location	Temp (℃)	ΔT(℃)
Top	67.4	40.7
Right	63.3	36.6
Inlet	62.8	36.1
Output	62.3	35.6
Left	58.8	32.1
Bottom	65.1	38.4
Ambient	26.7	

1. 升溫線架設方式驗證：

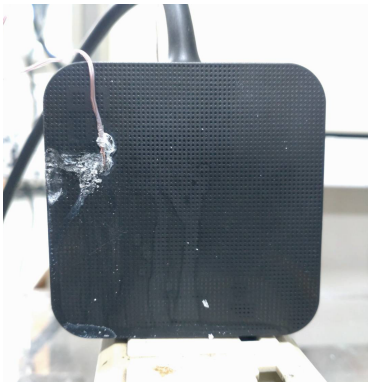
升溫線架設方式會影響殼溫的測試結果，差異約在 3.7 度左右。

依照結果推估原因，應該是升溫線的感測端垂直平貼熱源，又因熱空氣上升，導致升溫線偵測端受熱，所以偵測的溫度較高。

另外固定升溫線點膠的膠量過多，也會造成升溫線偵測端產生積熱現象。



升溫線往水平方向架設



升溫線往垂直方向架設

Original(線往Back side)	
Input Power	100V / 50Hz 69.66W
Load	19.95V /3.0872A 61.65W

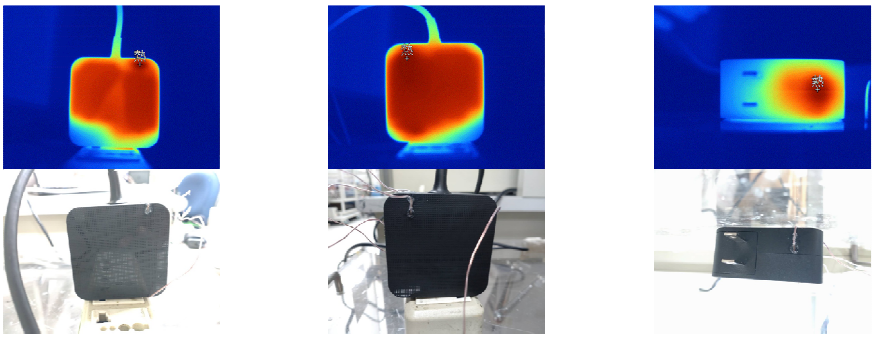
Location	Temp (℃)	ΔT(℃)
SMD	60.3	35.3
Ambient	25.0	

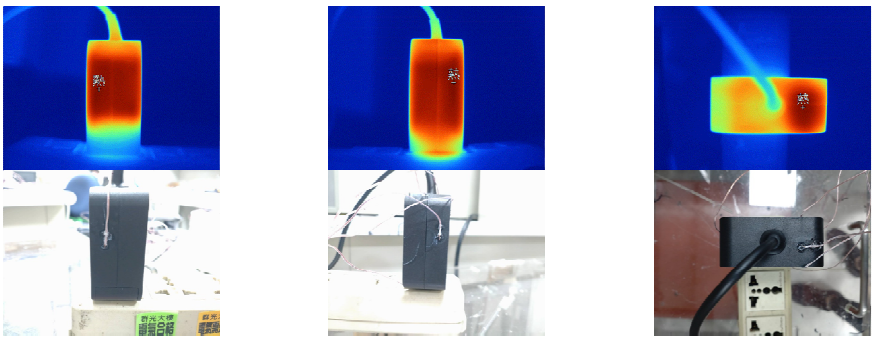
客戶(線往DC side)	
Input Power	100V / 50Hz 69.66W
Load	19.95V /3.0872A 61.65W

Location	Temp (℃)	ΔT(℃)
SMD	63.9	39.0
Ambient	24.9	

2. 解決對策：增加 Shielding 和 Case 之間點膠面積

3. 溫升線點線方式和 IR 測試點





4. 增加 Shielding 和 Case 之間點膠面積驗證結果

Original

100V/50Hz	
Input Power	100V / 50Hz
	69.00W
Load	19.95V /3.082A
	61.39W

Location	Temp (℃)	ΔT(℃)
DIP	60.8	35.3
SMD	67.6	42.1
Front	55.7	30.2
Back	63.7	38.2
AC	60.6	35.1
DC	60.8	35.2
Ambient	25.5	

Improved

100V/50Hz	
Input Power	100V / 50Hz
	69.00W
Load	19.96V /3.082A
	61.66W

Location	Temp (℃)	ΔT(℃)
DIP	57.7	32.9
SMD	59.3	34.5
Front	56.1	31.3
Back	59.7	34.9
AC	57.4	32.6
DC	62.1	37.3
Ambient	24.8	

SMD Side 殼溫改善了7.6度

➢ 結論：

1.CPT 將樣機重新測試，殼溫一樣 Fail.

2.驗證升溫線不同架設方式，殼溫測試結果差異約 3.7 度。

3.增加 Shielding 和 Case 之間的點膠面積，並重新驗證殼溫，測試結果均符合客戶規格。

D5.)改善措施:Corrective Action Verification:

(Note: Be make sure the corrective actions is effective in process as well as able to fix the customer complaint problem**)**

1. 增加 Shielding 和 Case 之間的點膠面積，並重新驗證殼溫，測試結果均符合客戶規格。

Date:2023/08/18

D6.)改善措施實施日期:Implement Permanent Corrective Actions:

(Note: Be provide the phase-in date or lot# of corrective actions **implementation** in process**)**

Immediately

D7.)預防再發生措施:Prevent Recurrence:

(Note: Modified the management, operating systems, practices, and procedures to prevent recurrence for the problems as well as lessons learned cases**.)**

Same as D5
D8.)確認並感謝問題解決成員:Check and Congratulate the Team: **(Note:** Recognize the collective efforts of the team.**)**
Thanks to you all！！！ **RD: Chris Wu**

Signature **Team Leader**:	**Edward_Ho**
	Name – Title
Signature by Approver:	**Mark_Meng**
	Name-Title