

Eight Discipline Report (8D Report)

То:	8D report No.:		
From: : Chicony Power Technology	RMA claim No.: N/A		
cc :	Chicony Power P/N: A180AP01Q-FW01		
	Customer P/N: PK37A019500		
Submit date: 2023/6/28	Product description: 180W PD		
Receive date: 2023/6/16	Defect D/C or Lot No.:		

Subject:客戶反饋搭配系統測試 RE,在 61MHz 頻段 margin 不足

(EMI RE, 點膠/Glue)

D1.) 問題解決成員:Use Team Approach

主持者 (Team Leader): Cf Liu

內部成員 (Internal Team Members):

CQS: Jack Wang

QE: Kitty Zhang

MFG: Xiaohui Du

PE: Yong Liu

Sales: Gordon Wang

RD: Chris 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.)

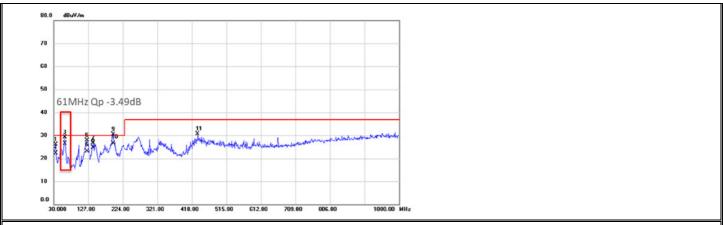
2023/6/16 仁實告知目前 10M 場地 30MHz~1GHz 的輻射測試在低頻 30MHz~230MHz 之間會看到 power noise,

拔掉電源會降下去。

其中在 61MHz 的 peak 較高,Qp 抓起來會沒達到客戶 spec (Qp -4dB 以下),如下圖所示。 傳導測項則是 pass。 https://fr.mw/FRANCNCH713174002G

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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.)

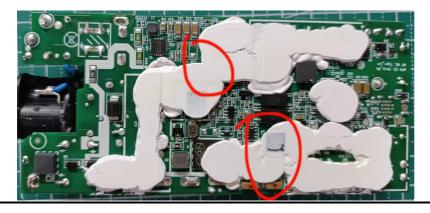
- 1. 從客戶端拿到了樣機並做進一步分析
- 2. 將一台 EMI RE 好的樣機給客戶進行更換

Date:2023/6/19

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.)

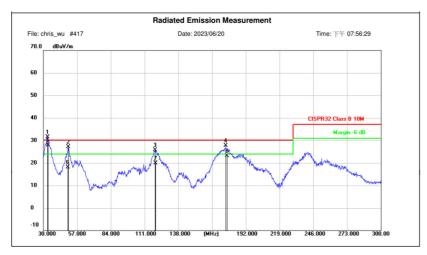
- 1. 透過追蹤我們SFCS中的SN(FRANCNCH713174002G),該樣機通過了生產線中的所有測試站。
- 2. 在群電內部實驗室測試此樣機的EMIRE,發現在50MHz頻段確實比較差。
- 3. 打開外殼,觀察元件面跟銲錫面,元件面及銲錫面看起來無異常,且銲接面銲接良好但有發現銲錫面點膠未按照生產注意事項點膠,以至於紅圈處(AHB circuit與PFC circuit; 一次側與二次側)的膠有連起來,導致EMI_RE變差。





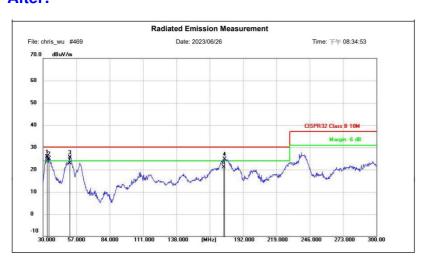
4. 將紅圈處的膠挖起來再進行驗證,EMI_RE 50MHz頻段約好2~3dB PK

Before:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Tower (cm)	Table (deg.)	Remark
1*	33.2400	57.64	-26.22	31.42	30.00	1.42	peak	100	45	
2!	49.9800	54.37	-27.25	27.12	30.00	-2.88	peak	100	184	
3!	119.3700	56.88	-31.15	25.73	30.00	-4.27	peak	100	87	
4!	176.0700	51.54	-23.93	27.61	30.00	-2.39	peak	100	343	
5!	33.5147	54.18	-26.19	27.99	30.00	-2.01	QP	100	45	

After:



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Measurement (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Tower (cm)	Table (deg.)	Remark
1*	33.2400	51.89	-26.22	25.67	30.00	-4.33	peak	100	56	
2!	34.8600	50.98	-26.04	24.94	30.00	-5.06	peak	100	88	
3!	51.6000	52.77	-27.29	25.48	30.00	-4.52	peak	100	228	
4!	176.8800	48.60	-23.97	24.63	30.00	-5.37	peak	100	35	
5	33.4848	49.83	-26.20	23.63	30.00	-6.37	QP	100	56	
6	33.2466	50.00	-26.22	23.78	30.00	-6.22	QP	100	88	
7	51.6999	50.25	-27.29	22.96	30.00	-7.04	QP	100	228	
8	176.2556	45.12	-23.94	21.18	30.00	-8.82	QP	100	35	



➢ 結論:

1. 透過上述分析,我們得出結論主要是膠與零件相連在一起便增加了零件間的耦合強度又因為膠連到的地方為紅框處這2個地方,1).AHB circuit 與 PFC circuit; 2).一次側與二次側,這2個地方的切換頻率相差約1倍使得這個切換開關雜訊被這個增大的耦合強度耦合到外部造成 EMI 變差。

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. 把紅圈處的膠挖掉後再用Dummy load驗證EMI_RE在頻段約50MHz可看到有明顯降低
- 2. 要求工廠務必按照生產注意事項裡的點膠方式作業



Date:2023/06/28

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

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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!!!

CQS: Jack Wang QE: Kitty Zhang MFG: Xiaohui Du PE: Yong Liu Sales: Gordon Wang

RD: Chris Wu

Signature	Cf_Liu
Team Leader:	
	Name – Title
Signature by Approver:	Wade_Lo
	Name-Title