Eight Discipline Report (8D Report)

To:	8D report No.:
From:：	RMA claim No.:
CC：	Chicony Power P/N: **N025A001Q-CT01**
	Customer P/N:
Submit date: **2020/12/03**	Product description:
Receive date: **2020/12/03**	
Subject：磁鐵影響電源運作 (永久磁鐵占用鐵芯磁路造成變壓器飽和觸發電源保護) 磁鐵, 磁路, 鐵芯, 磁飽和 [磁件]	

D1.) 問題解決成員:Use Team Approach

主持者 (Team Leader)：

內部成員 (Internal Team Members):

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.)

20W Power flicker Issue

After assembling the magnet, the power module will cause LED turn off or flicking.

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

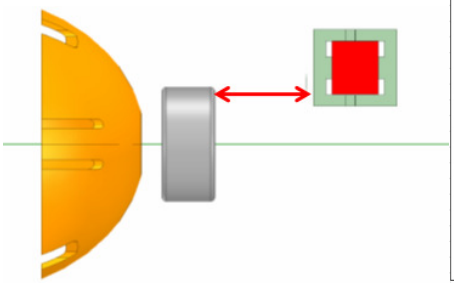
(Note: Internal / external containment action effectiveness and date.**)**

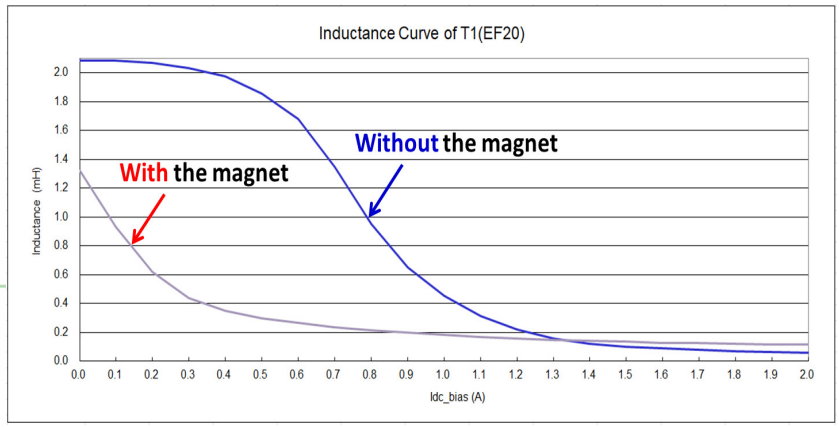
1. **FAE of CPT got this PSU from customer for further analysis.**
2. **CPT send 1pc PSU to customer for exchange.**

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

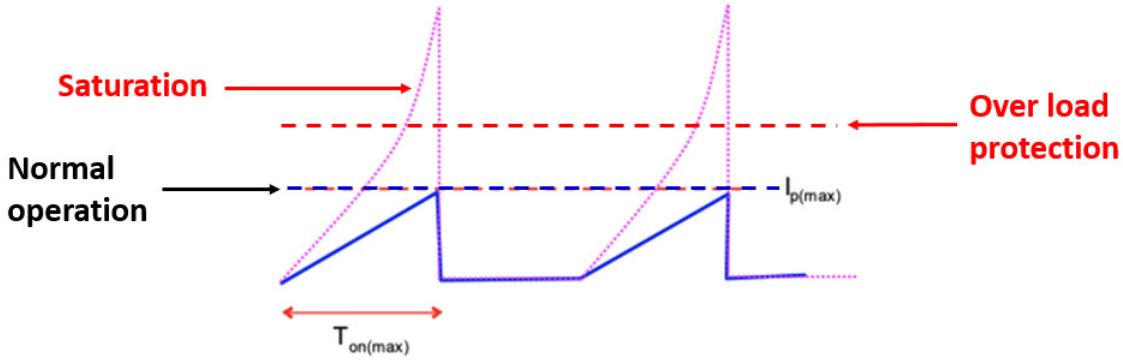
(Note: Identify and verify all suspect causes, which needs explain why the problem occurred.**)**

The distance from magnet to Transformer(T1) is 21.0185mm

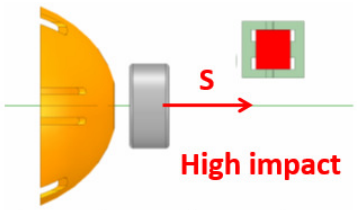


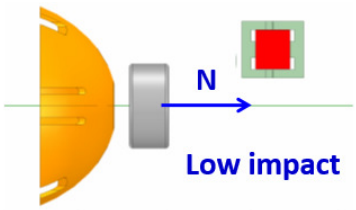


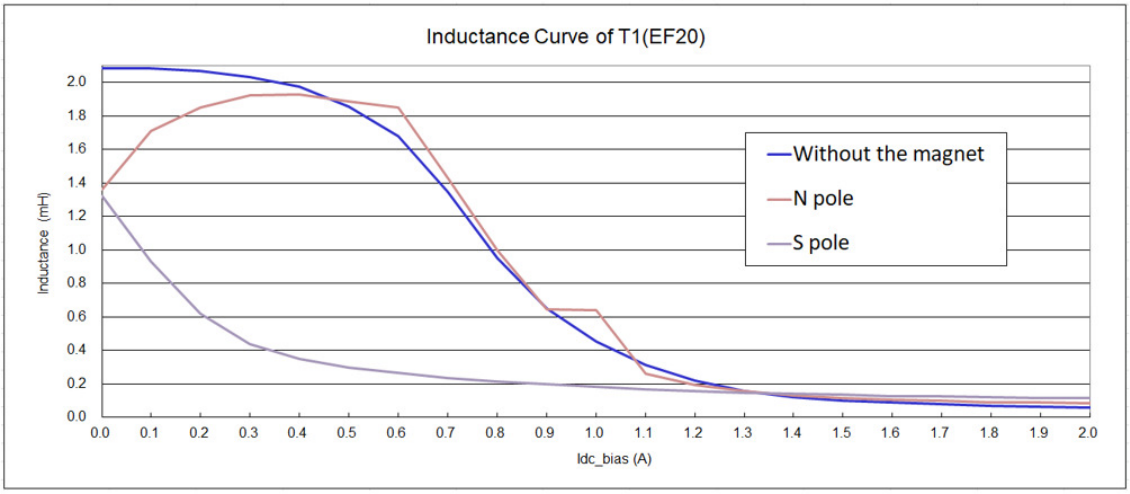
- **Transformer saturation and magnetic coupling risk.**
  - **Transformer inductance value suddenly drop and peak current will become non-linear increase.**
  - **Control IC trigger over load protection induce power turn off or auto retry.**



- **Inductance comparison**

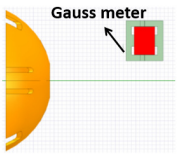




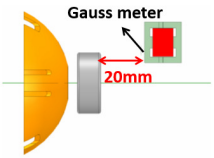


- **Magnet Distance**

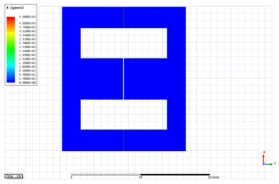
- Model 1 : without the magnet



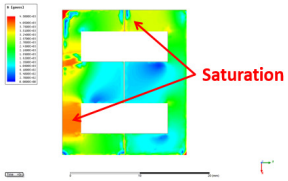
- Model 2 : distance 20mm



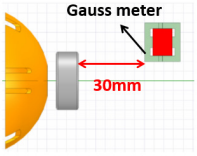
- Model 1 : without the magnet



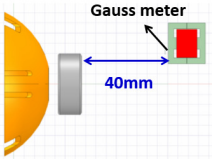
- Model 2 : distance 20mm



- Model 3 : distance 30mm



- Model 4 : distance 40mm



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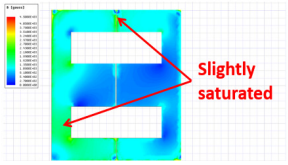

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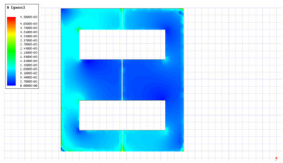
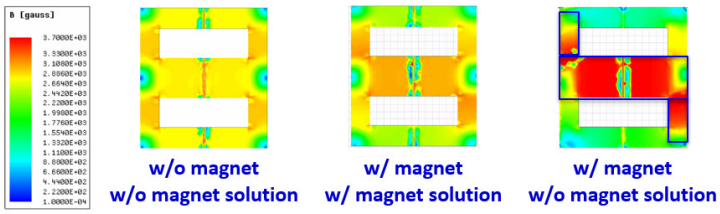
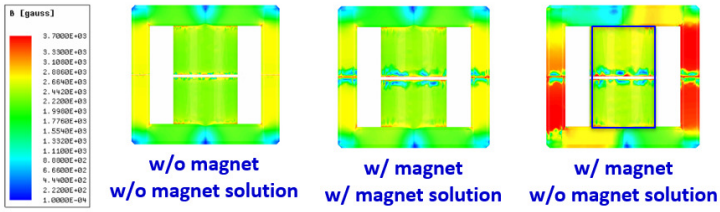


- **N polarity of the magnet towards Transformer.**
- **The magnet is as far away from the transformer as possible.**
- **In order to make the magnetic field strength on the transformer <5 Gauss, we add a U-shaped iron to the magnet, and add a magnetic shielding between the magnet and the Power module.**

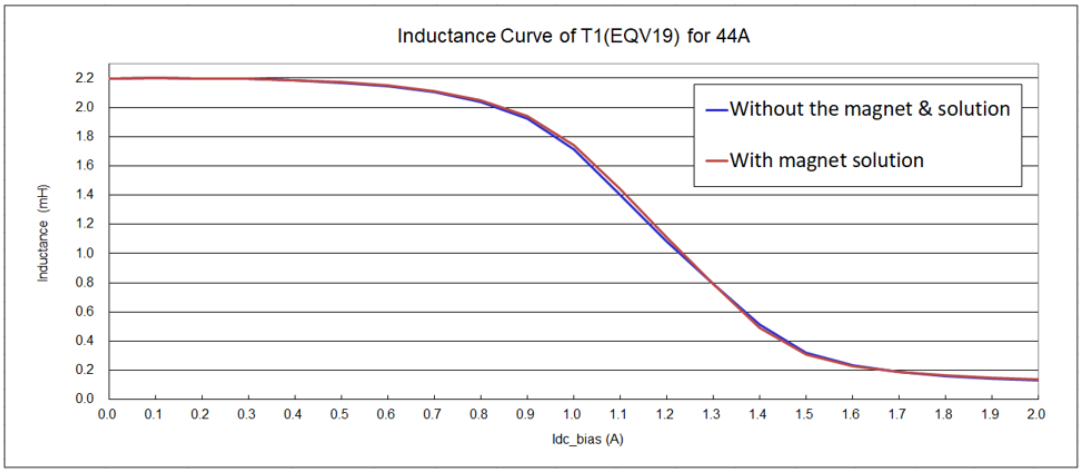
- **Change core type from EF20 to EQV19 and reduce saturation impact by Magnet.**
  - **EF20 (Horizontal type)**



  - **EQV19 (Vertical type)**



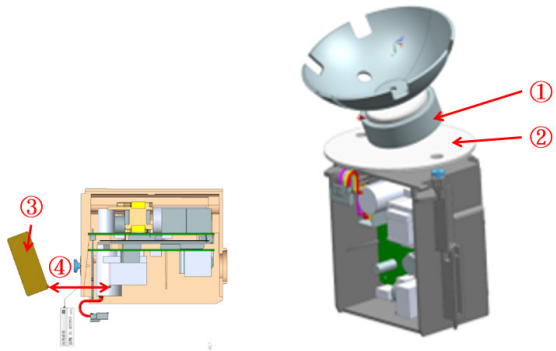
- **Measuring Inductance**



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. **Add U-shaped iron = 3mm**
2. **Add magnetic shielding = 1.5mm**
3. **Magnet tilt angle = 20º**
4. **The distance from magnet to Transformer = 31mm**
5. **The measured value = 106 Gauss**



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

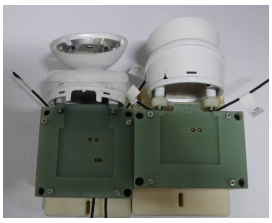
(Note: Be provide the phase-in date or lot# of corrective actions **implementation** in process**)**

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**.)**

1. **Transformer(T1) need to be inspected with magnet solution.**
2. **Make a magnet fixture for IQC inspection, as below.**



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！！！

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