

Eight Discipline Report (8D Report)

To:	8D report No.: CPCQ0910
From: : Chicony Power Technology	RMA claim No.: N/A
CC : N/A	Chicony P/N: A045R00CH
	Customer P/N:
Submit date: 2015/9/15	Product description: 45W adapter
Receive date: 2015/9/3	Defect D/C or Lot No.: 1507 Fail sample: WEJZB0BGC8X33N (Version 0B) Pass sample: WEJZB0BGC8X346 (Version 0B)
Subject : 45W adapter sample fail in conduction test.	
D1.) 問題解決成員: Use Team Approach	
主持者 (Team Leader) : Henry_Zhang 內部成員 (Internal Team Members): <div style="text-align: center; margin-top: 10px;"> CQS: Xiaoyue_Wang PE: XP_Zhao RD: Brandon/Frankly/Jackson QE&IPQC: BL_Zhang IE: Hunter_Liao </div> 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.)	
Customer feedback information: Customer claimed that CPT 45W adapter failed in conduction test on 9/3. Customer P/N: CPT P/N: A045R00CH Defect S/N : Fail sample: WEJZB0BGC8X33N (Version 0B) Pass sample: WEJZB0BGC8X346 (Version 0B)	

Fail sample

Pass sample

The test data show as below:

Fail sample: (WEJZB0BGC8X33N Version 0B): The test margin just 3.11dB at 534kHz.



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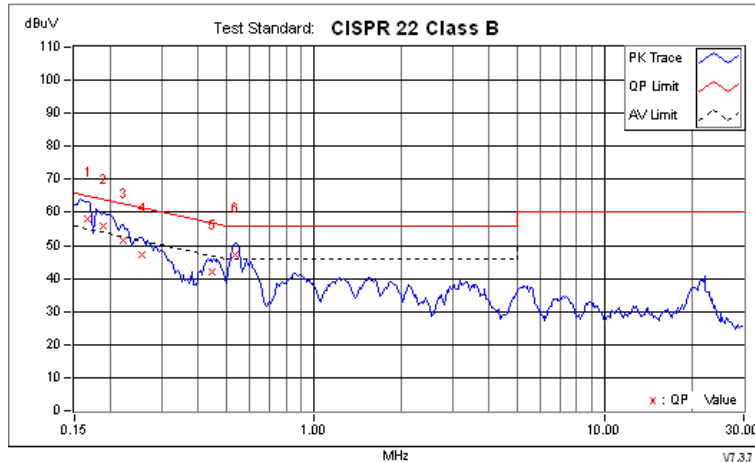
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Brand / Model : Miramax
Test Mode : FULL SYSTEM , RUN WINEMC
Power Source : AC 230V/50Hz
Remark :
Sample No. : ADAPTER :HSTNN-CA40 NO. 2
Tested by : ED LIN

Location: Conduction 9 Date: 2015/8/31 Time: 下午 06:52:44 Phase: L1

Temperatuer (C): 25 Humidity (%): 75 Approved by:



	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	Notes
1	0.16562	10.23	47.90	36.30	58.13	46.53	65.18	55.18	-7.05	-8.65	
2	0.18906	10.24	45.75	37.91	55.99	48.15	64.08	54.08	-8.09	-5.93	
3	0.22031	10.24	41.29	33.81	51.53	44.05	62.81	52.81	-11.27	-8.75	
4	0.25547	10.25	36.90	29.95	47.15	40.20	61.58	51.58	-14.43	-11.38	
5	0.44688	10.29	31.73	26.35	42.02	36.64	56.93	46.93	-14.92	-10.30	
+6	0.53409	10.30	37.01	32.59	47.31	42.89	56.00	46.00	-8.69	-3.11	

Pass sample: WEJZB0BGC8X346 (Version 0B): The test margin just 6.88dB at 537kHz.

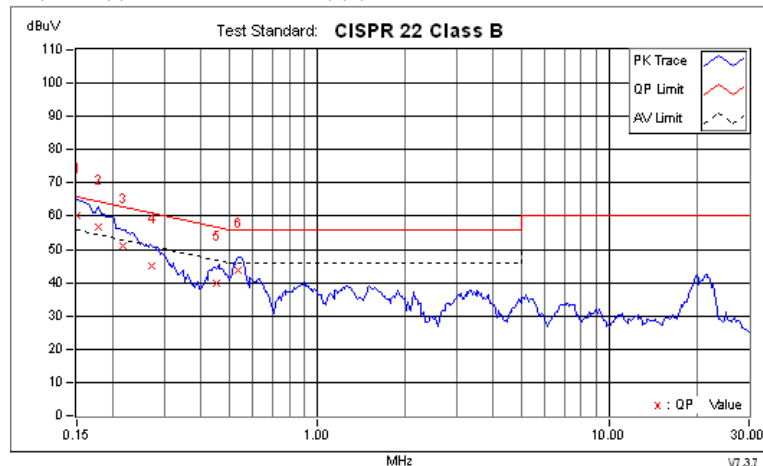


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Brand / Model : Miramax
Test Mode : FULL SYSTEM , RUN VMNEMC
Power Source : AC 230V/50Hz
Remark :
Sample No. ADAPTER :HSTNN-CA40 NO.5
Tested by : ED.LIN

Location: Conduction 9 Date: 2015/8/31 Time: 下午 07:26:33 Phase: L1
Temperatuer (C): 25 Humidity (%): 75 Approved by:



	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	Notes
+1	0.15001	10.23	49.85	35.98	60.08	46.21	66.00	56.00	-5.92	-9.79	
2	0.17734	10.23	46.31	34.17	56.54	44.40	64.61	54.61	-8.07	-10.21	
3	0.21641	10.24	40.95	29.37	51.19	39.61	62.96	52.96	-11.76	-13.34	
4	0.27109	10.25	34.69	24.54	44.94	34.79	61.08	51.08	-16.14	-16.29	
5	0.46078	10.29	29.63	23.80	39.92	34.09	56.86	46.86	-16.94	-12.77	
6	0.53672	10.30	33.24	28.82	43.54	39.12	56.00	46.00	-12.46	-6.88	

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.)

We carry back 1pcs failed sample & 1pcs pass sample for analysis.

Owner: CPT Date: 2014.9.4

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.)

Analysis and findings:

We retest the failed sample & pass sample with dummy load in 3rd party EMI Lab. And the margin has 4.31dB at 470kHz (AV) in fail sample and 9.91dB at 495kHz (AV) in pass sample. The test results are shown as below:

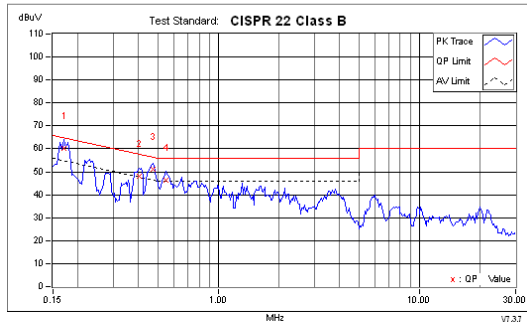


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Brand / Model: A045R00CH-HV01
Test Mode: FULL LOAD
Power Source: AC 230V/50Hz
Remark:
Sample No. 2
Tested by: KEN LEE

Location: Conduction 9 Date: 2015/9/9 Time: 下午 03:01:13 Phase: N
Temperature (C): 24 Humidity (%): 68 Approved by:



No.	Frequency MHz	Corr Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	Notes
+1	0.16953	10.23	49.91	31.11	60.14	41.41	64.98	-46.46	-4.84	-5.05	
2	0.40391	10.29	37.94	30.62	48.23	40.91	57.77	-47.77	-9.54	-6.86	
3	0.47031	10.30	40.83	31.90	51.13	42.20	59.51	-48.51	-5.38	-4.31	
4	0.54891	10.31	35.82	26.23	46.13	36.54	56.00	-46.00	-9.87	-9.46	

Fail sample

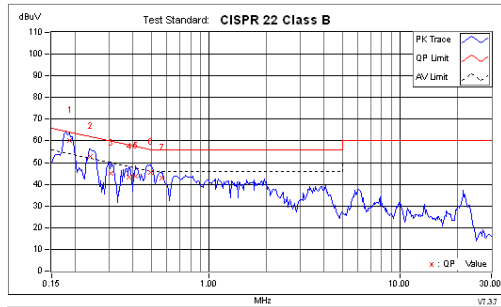


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Brand / Model: A045R00CH-HV01
Test Mode: Full load
Power Source: AC 230V/50Hz
Remark:
Sample No. 5
Tested by: KEN LEE

Location: Conduction 9 Date: 2015/9/9 Time: 下午 05:40:28 Phase: N
Temperature (C): 24 Humidity (%): 68 Approved by:

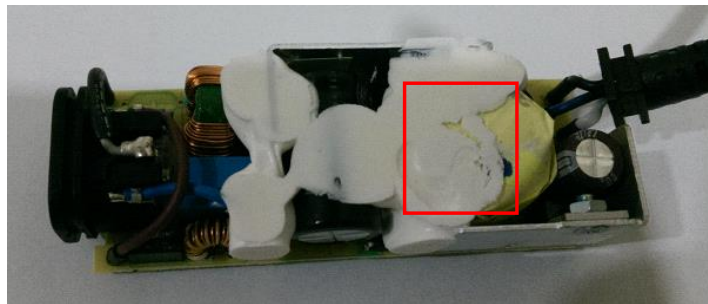


No.	Frequency MHz	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	Notes
+1	0.18516	10.24	49.94	38.70	60.18	48.94	64.25	54.25	-6.03	-5.31	
2	0.23984	10.26	42.74	30.52	53.00	40.78	62.10	52.10	-6.10	-11.32	
3	0.30825	10.27	34.55	22.82	44.83	33.09	60.07	50.07	-15.24	-16.98	
4	0.38047	10.29	32.99	22.82	43.28	33.21	58.27	48.27	-14.99	-15.06	
5	0.41172	10.29	33.30	22.82	43.59	33.11	57.61	47.61	-14.02	-14.50	
6	0.49488	10.31	35.29	25.87	45.60	36.18	56.09	46.09	-10.46	-9.91	
7	0.56406	10.32	32.76	22.75	43.08	33.07	56.00	46.00	-12.92	-12.93	

Pass sample

Defect Symptom Verification:

- (1) After retest the defective adapters, we disassemble the sample case and find the glue deviation on transformer T1 (more glue on T1 for Fail Sample).



Glue in Fail Sample



Glue in Pass Sample

We remove the glue on the transformer of fail sample and retest it. The test margin becomes to 10.65dB at 466kHz.



Modified Fail Sample

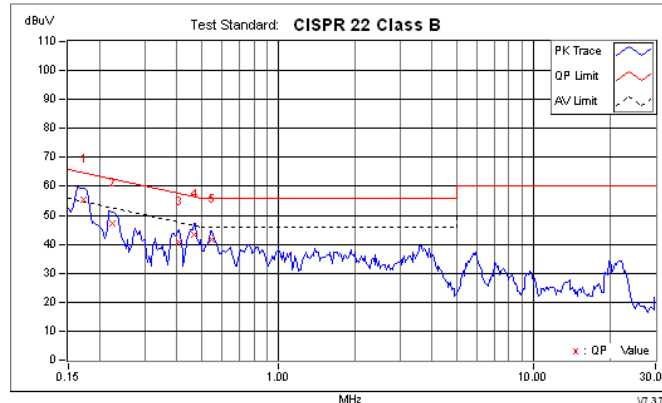


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Brand / Model : A045R00CH-HW01
Test Mode : Full load
Power Source : AC 230V/50Hz
Remark : remove T1 potting
Sample No. : 2
Tested by : KEN LEE

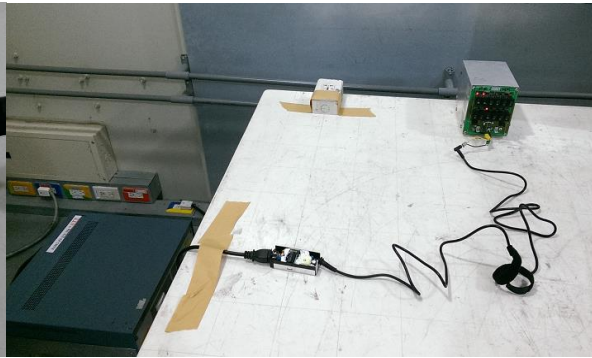
Location : Conduction 9 Date : 2015/9/9 Time : 下午 05:33:24 Phase : N
Temperatuer (C) : 24 Humidity (%) : 68 Approved by :



No.	Frequency MHz	Corr. Factor dB	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
			QP	AV	QP	AV	QP	AV	QP	AV	
+1	0.17215	10.24	46.37	37.10	55.61	47.34	64.86	54.86	-9.25	-7.52	
2	0.22422	10.26	37.06	29.40	47.31	39.66	62.66	52.66	-15.35	-13.01	
3	0.40781	10.29	30.42	22.93	40.71	33.22	57.69	47.69	-16.98	-14.47	
4	0.46641	10.30	33.15	25.63	43.45	35.93	56.58	46.58	-13.13	-10.65	
5	0.54737	10.31	31.07	22.89	41.38	33.20	56.00	46.00	-14.62	-12.80	

(2)Comparing more glue on the transformer with & without top side shielding, the test results as show in below:

(a)More glue on the transformer without top side shielding: The test margin has 12.47dB at 498kHz.

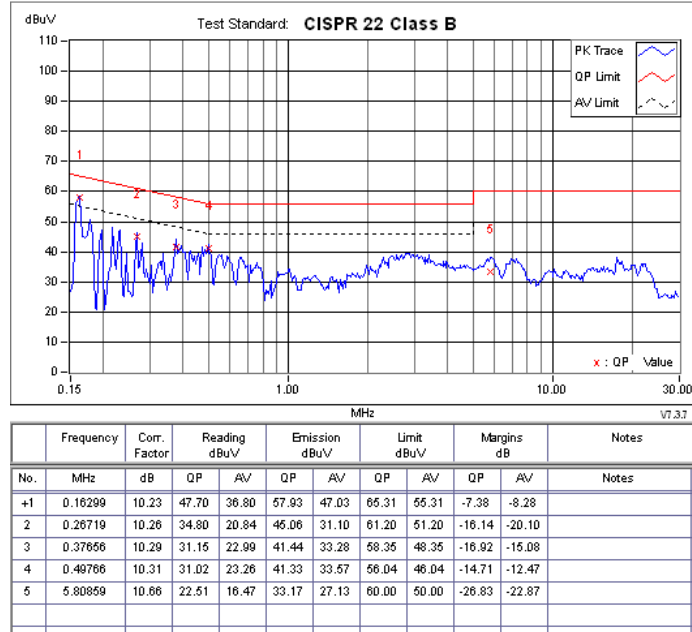


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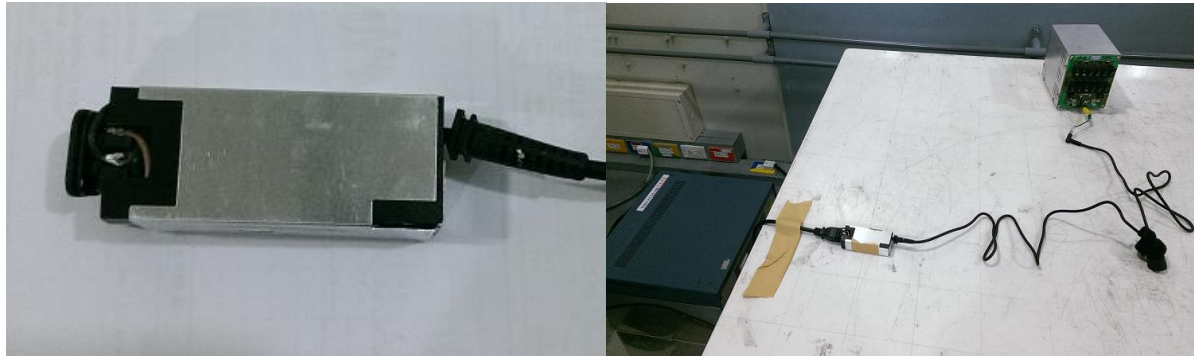
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Brand / Model: A045R00CH
Test Mode: FULL LOAD
Power Source: AC 230V/50Hz
Remark: more glue on T1 and without top side shielding
Sample No. 1
Tested by: KEN LEE

Location: Conduction 9 Date: 2015/9/16 Time: 下午 06:03:39 Phase: N
Temperatur (C): 25 Humidity (%): 75 Approved by:



(b) More glue on the transformer with top side shielding: The test margin has 4.15dB at 548kHz.

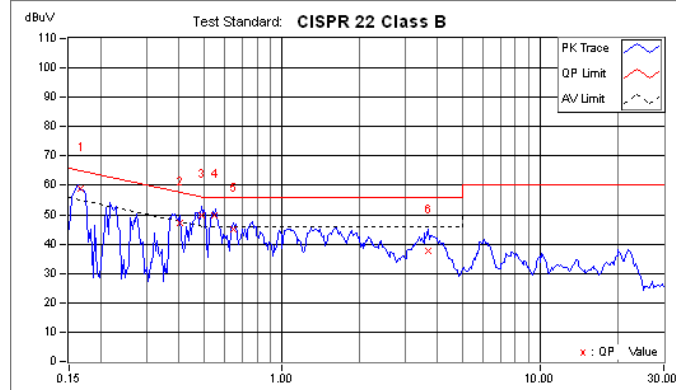


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Brand / Model : A045R00CH
Test Mode : FULL LOAD
Power Source : AC 230V/50Hz
Remark : more glue on T1 and with top side shielding
Sample No. : 1
Tested by : KEN LEE

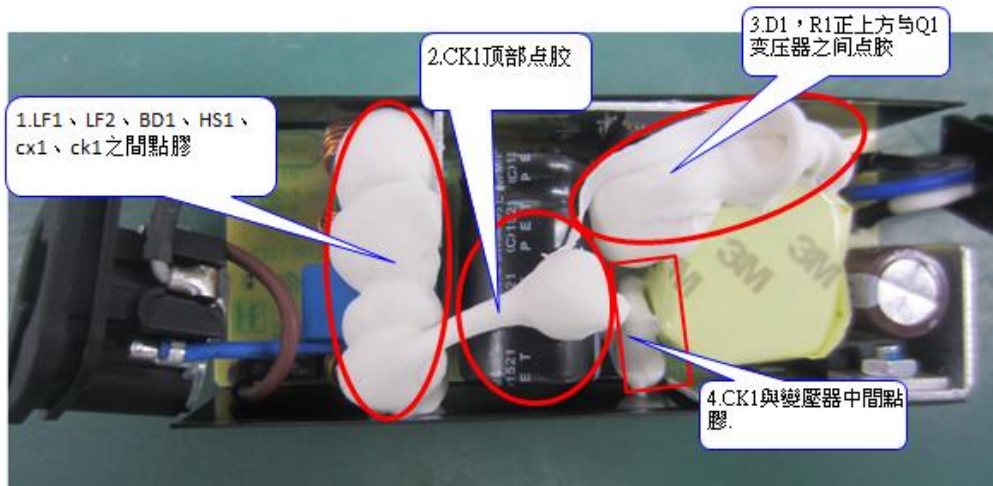
Location: Conduction 9 Date: 2015/9/16 Time: 下午 06:06:20 Phase: N
Temperature (C): 25 Humidity (%): 75 Approved by:



	Frequency	Corr. Factor	Reading dBuV		Emission dBuV		Limit dBuV		Margins dB		Notes
No.	MHz	dB	QP	AV	QP	AV	QP	AV	QP	AV	Notes
+1	0.16554	10.23	48.48	41.44	58.71	51.67	65.18	55.18	-6.47	-3.51	
2	0.40391	10.29	37.10	26.88	47.39	37.17	57.77	47.77	-10.38	-10.60	
3	0.48721	10.30	39.52	31.50	49.82	41.80	56.22	46.22	-6.39	-4.41	
4	0.54852	10.31	39.58	31.54	49.89	41.85	56.00	46.00	-6.11	-4.15	
5	0.64609	10.33	34.50	24.74	44.83	35.07	56.00	46.00	-11.17	-10.93	
6	3.66797	10.61	27.04	20.20	37.65	30.81	56.00	46.00	-18.35	-15.19	

According to above experiment, we infer it should be the deviation glue on transformer T1 causes the EMI issue.

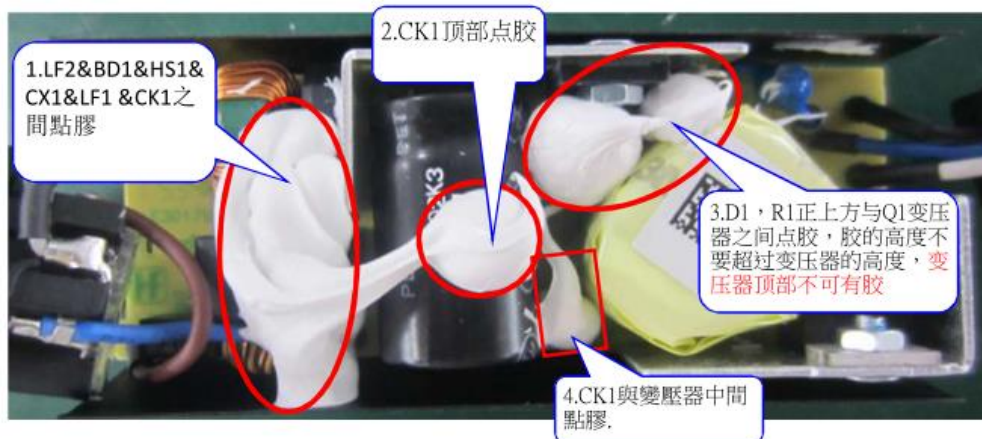
After checking, fail product was testing sample for glue machinery during regular production, and it was considered OK by checking in conformity with below W/I (similar location) – so that this product was leaked out to cause EMI margin issue.



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. In order to further control EMI, W/I will be modified by IE immediately as below in red – Glue on top of transformer is not allowed.**



After modified the W/I, we confirmed 5pcs samples in CQ factory and find it could pass the test. The test report show as below:



A045R00CH-HW01
5pcs verified.pdf

Owner: IE Date: 2014.9.16

- 2. All QC/Eng staffs will check glue by new W/I immediately.**

Owner: IPQC/MFG Date: 2014.9.12

3. EMI test margin of A045R00CH increases from 3dB to 4dB.

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)

Due date: Immediately change in September, 2015.

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.)

The 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 all QIT members.

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