DIVA Labs.

ECR (Engineering Change Request)

Proposed Change : ☐1. Design modification 設計修改 ☐2. Material change 材料變更 ☐3. Manufacturer change 製造商變更 ☐4. Factory change 工廠變更 ☐5. Process sequency change 工序變更 ☐6. Equipment / Tooling change 設備/ 模具變更 ☐7. Process / Method / Condition change 加工流程/方法/條件變更 ■8.Add second source 新增替代料 ☐9. Others 其他：_____

Initiator : Teny 0105 1030

Reason for Change : Due to failure cases and lead time concerns of MDS-250 IC133, Delta has introduce a second source to mitigate supply and quality risks. Power has no differences in appearance, and the version number remains unchanged. The DIVA part number will be revised to differentiate between the new and original materials.

EC No : EC251203 01

Model / Part No. : RUP2433AMI、RUP2732CMI、RUP2732CMI_CTD、RUP2433AMI_D CL-R813BN0EA (EU)、CL-R813BN0JA (JP)、CL-R813BN0UA (US)

Issue Date : 2025/12/11

Requester Dept. : DV11S006

Implementation Type : ☐1. Immediately Change 立即切換 ■2. Running Change 自然切換 ☐3. Other 其他：_____

Customer Approval : (confirmed by PM) ☐Needed ■Not needed

Material Change Description (Please add pages as needed if the provided space is insufficient.)
物料變更說明（如不敷使用請逕行增頁）

No.	Subassembly		Part No.	Description	Q'ty	Location	Stock	Remark
1	2AAD5620031 ✓ 2AAD5360031 ✓ 2AAD6590031 ✓	B						1st:3ZAD24V1111 ×2 2nd:3ZAD24V1112 ×1
		A	3ZAD24V1112	PSU (24V10.41A,MDS-250APB24 AB,IC133 ST)	1			
2	2AAD5620131 ✓ 2AAD5620231 ✓ 2AAD5360131 ✓	B						1st:3ZAD24V1111 ×2 2nd:3ZAD24V1112 ×1
		A	3ZAD24V1112	PSU (24V10.41A,MDS-250APB24 AB,IC133 ST)	1			
3	2AAD6130031 ✓	B						1st:3ZAD24V1111 ×2 2nd:3ZAD24V1112 ×1
		A	3ZAD24V1112	PSU (24V10.41A,MDS-250APB24 AB,IC133 ST)	1			

Comments 會簽意見

1st: 3ZAD24V1112
2nd: 3ZAD24V1111 (ZB)
物料主附替換 Teny.

R&D		Department 會簽部門								Approval
Initiator	Initiator's Direct Supervisor	DQE	PM	Sales	PE	PMC	SCM	PD	QA	R&D Director
Teny 12/11 1030	Jay 12/12 1615	12/12	12/12 1615	12/12 16:30	12/12 1615	12/12 1615	12/12 1430	12/16 0830	12/31	0102 1100

ECR (Engineering Change Request)

Engineering Change Assessment Item List 工程變更評估項目清單			
Document	Confirm	Authorized Dept.	Remark
1. Application for Revision of Specification or Drawing(s) for delivery 是否有修改交貨的規格或圖面	☐Yes ■No need	RD	同等品
2. Standards or Regulatories Impact 是否有評估適用之標準或主管機關之相關法規的申請	☐Yes ☑No need	DQE	無影响
3. Change point of PCB mounting PCBA插件位置是否變更	☐Yes ■No need	RD	
4. PCBA Process Changes PCBA製程是否變更	☐Yes (Continue checking below) ☑No	PE	無影响
4-1) Change of Reflow temperature 迴焊溫度是否變更	☐Yes ☐No need		
4-2) Change of bonding temperature 膠合溫度是否變更	☐Yes ☐No need		
4-3) Change of Manual Soldering temperature 人工手焊工具之溫度是否變更	☐Yes ☐No need		
4-4) Change of storage condition after protection humidity package 防潮包裝完成後的儲存條件是否變更	☐Yes ☐No need		
5. Reliability test report (Test result and data) 是否有可靠性測試報告（測試結果及數據）	☑Yes ☐No need	DQE	
6. Process FMEA（Medical only） 是否有進行製程失效模式與效應分析	☐Yes ☑No need	PE	無影响
7. Design FMEA （Medical only） 是否有進行設計失效模式與效應分析	☐Yes ■No need	RD	同等品
8. Risk Management（Medical only） 是否有進行風險管理評估	☐Yes ■No need	RD	同等品
9. Change points due to the modification 是否此修改會延伸導致其他變更點	☐Yes ■No need	RD	

ECR (Engineering Change Request)

Engineering Change Assessment Item List
工程變更評估項目清單

Document	Confirm	Authorized Dept.	Remark
10. Initial Supply Control implements plan or result. 是否有實施供料控制評估	☑Yes ☐No need	PMC	Running change 舊料使用完畢.
10-1) Confirm the work order or order number or date for the implementation start of the engineering change. 確認工程變更開始實施之工單或訂單號碼或日期。	☑Yes ☐No need		FCST 訂單 2026.6.11 (RUP2432AUT) 導入
10-2) Coordinate the handling methods for related products and materials. 協調相關產品及材料處理方法。	☑Yes ☐No need		
10-3) Arrange the production schedule. 處理生產日程之安排。	☑Yes ☐No need		
10-4) Control the changed materials. 變更材料之管制。	☑Yes ☑No need Tony.		
10-5) Establish relevant execution control records for EC materials, register traceability data for each material. 建立有關工程變更物料之相關執行管控記錄、登錄各項物料追溯性資料。	☑Yes ☐No need		系統切換使用替代料. EC延續.
11. Training Requirement 若此一變更影響製程或檢驗，是否需要再做人員訓練	☐Yes ☑No need	PE	無影響
12. Modification contents (For example, the following documents) 是否有評估此變更之各項相關文件（如下） ☑ MDF ☑ DMR ☑ SOP ☐ SIP ☐ QC control plan ☐ Approval Sheet ☐ Engineering Spec ☐ Others	☑Yes ☐No need	QA	

Add 2nd source

Due to the material lead time and single-source concerns, we need to evaluate the possibility of introducing a second source. Since there was a previous case where IC133 was damaged after system integration with the customer's equipment, we will conduct an internal EE evaluation specifically for IC133.

DELTA ELECTRONICS, INC.
SER NO. :

量產變更試作單

ID CODE:
DATE: 2025年9月19日

試做前:

變更類型

☑ 電子類材料

☐ 機構料變更:

☐散熱片 ☐ 風扇 ☐ 線材

變更內容

1.變更原因: 因材料EOL以及single source,故需評估2nd source,以利後續出貨需求

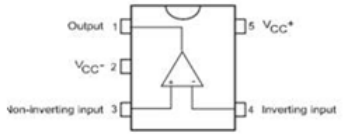
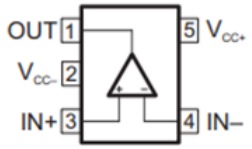
2.變更內容:

Model	Old Material PN	Location	Suggestion PN 1	Description	Suggestion PN 2	Description
MDS-250APB24 A	TI internal and confidential	IC133	internal and confidential	IC OP AMP SOT-23-5P SMD (ST)	internal and confidential	IC OP AMP SOT-23-5P SMD (ST)
	internal and confidential	C115	internal and confidential	CAP AL LD 10V 1500uF M 8*20 TP P3.5	internal and confidential	CAP AL LD 10V 1500uF M 8*20 TP P3.5
	internal and confidential	C116	internal and confidential	CAP AL LD 10V 1500uF M 8*20 TP P3.5	internal and confidential	CAP AL LD 10V 1500uF M 8*20 TP P3.5
	internal and confidential	C102	internal and confidential	CAP AL LD 35V 390uF M 8*20 TP KI5	internal and confidential	CAP AL LD 35V 390uF M 8*20 TP KI5
	internal and confidential	C103	internal and confidential	CAP AL LD 35V 390uF M 8*20 TP KI5	internal and confidential	CAP AL LD 35V 390uF M 8*20 TP KI5

IC133 TI vs ST

◆ Specification

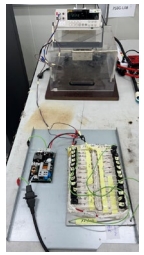
There is no difference in specifications.

Vendor	ST	TEXAS
Vendor PN	TS321ILT	TS321IDBVR
VCC	3 to 30V	3 to 30V
Voltage offset@25℃ (max)	4mV	4mV
Voltage offset@full range(max)	5mV	5mV
TA	-40 to 125℃	-40 to 125℃
Pin Define		

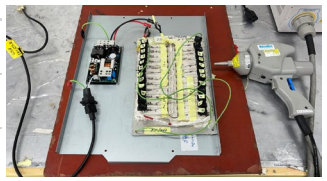
◆ EMC test

Verification performed at 150% the specifications, both test result is pass.

PLD Test (ST & TI)		
Condition	Spec.	Result
Common mode	3kV	PASS
Differential mode	1.5kV	PASS



ESD Test (ST & TI)		
Condition	Spec.	Result
Air Discharge	22.5kV	PASS
Contact Discharge	12kV	PASS



Based on the previous test results after integration with the system, IC133 was found to have damage on Pin 5.
Therefore, a destructive test was conducted by applying external voltage to Pin 5 on both the TI and ST versions.
According to the results:

- For the ST version, the source was damaged when the external voltage on Pin 5 reached 40V
- For the TI version, the source was damaged when the external voltage on Pin 5 reached 36V

Pilot Run Validation Data

The table below shows the results of this bench test. Please refer to the sections highlighted in red for the parts most relevant to this trial build.

Bench Test Report

Model Name:MDS-250APB24 AB Stage:MP Applation:	Customer:STD Rev: S02 ID Code:	ES:07 F/W:	Class level: PWB PN:internal and confidential	

NO.	Function Block	Test Items	Quantity	Result	Remark
1	Input	Inrush Current	15pcs	PASS	
2		Efficiency	15pcs	PASS	
3		Power Factor(PF)	15pcs	PASS	
4		Light Load Power Consumption (Power saving)	15pcs	PASS	
16	Output	No load	15pcs	PASS	
17		Voltage Regulation	15pcs	PASS	
20		Output ripple and noise	15pcs	PASS	
22		Dynamic Loading Response	15pcs	PASS	
24		Output voltage no load to full load	15pcs	PASS	
25		Peak/Surge load test	15pcs	PASS	
27		Turn on delay time	15pcs	PASS	
28		Rise time & Fall time	15pcs	PASS	
29		Hold up time	15pcs	PASS	
30		Remote On/Off Timing	15pcs	PASS	
31		Remote Sense Test	15pcs	PASS	
32		Singal Rise/Fall Time	15pcs	PASS	
33		Power turn on and off	15pcs	PASS	
34		Overshoot Measurement	15pcs	PASS	
35		Undershoot Measurement	15pcs	PASS	
36		Line transient	15pcs	PASS	
37		Power Good Test	15pcs	PASS	
48	Protection	Short protection	15pcs	PASS	
49		OVP Value	15pcs	PASS	
51		OCP Value	15pcs	PASS	
56	EMC	EMI	5pcs	PASS	
57		EFT	5pcs	PASS	
58		Surge (Bi wave)	5pcs	PASS	
59		ESD	5pcs	PASS	
60		Voltage Dips	5pcs	PASS	
61		Harmonic Current	5pcs	PASS	
62	Safety	Leakage Current	15pcs	PASS	
63		AC/DC Withstanding	15pcs	PASS	
64		Insulation Resistance	15pcs	PASS	
67	Environmental	Operation on High/ low temperature(ATS)	5pcs	PASS	
68		Operation on High Humidity	5pcs	PASS	
69		Turn on Immediately after Storage	5pcs	PASS	

Conclusion: PASS Tester: MINGCHENG.LEE

Date: 2025/10/20 Approved: DENNY.GONG

鈺緯科技開發股份有限公司

設計變更審查會議記錄

會議名稱	ECN/ECR	日期	2025/12/10	時間	17:00-17:30	地點	801 會議室
會議種類	例會						
主席	Terry	與會人員	Ryan, Kevin, Terry, Hsuan, Sandra				
會議記錄	Terry	缺席人員	無				

主席指示事項：

No	工作項目	負責人
1.	MDS-250APB24 AB 增加新料號，區分新、舊料	Tony

決議事項：

No	工作項目	負責人	狀態
1.	發行 EC	Tony	

追蹤事項：

No	工作項目	負責人	完成日期	狀態	
1.	無				

會議記錄內容：*(XXX)紅色部分表示該事項負責人

變更號碼：

機種名稱: RUP24、27，CL-R813 機種

設計變更原因：增加 2nd

設計變更描述: 同等品

導入時程：Normal

客戶審查：No Needed

一. 研發課評估:

單位	審查內容	附加文件
EE :	評估變更不會造成硬體安全性影響	Delta 驗證報告
FW:	與 FW 設計無關,不會造成軟體安全性影響	無
ME:	變更處不影響 ME，並不會造成產品功能，性能及安全	無
SW:	與 SW 設計無關,不會造成軟體安全性影響	無
DQE:	此變更不會造成產品功能,性能及安全性影響,評估後無需進行相關驗證.	安規部門評估: 無法規問題

二 結論:

1. 開發單位各部門評估後,此設計變更不會對產品預期用途造成影響,
   設計變更風險審查於風險評估報告中呈現

功能	設計變更內容無關功能影響
性能	設計變更內容,無關產品性能影響
可用性	無影響,沒有使用上的風險
安全性	組裝方式沒有改變, 沒有安全性風險,
法規	經審查,沒有影響法規內容

DIVA displays better.

CE、RE Test for RUP2433AMI

SUBJECT:

Customer Name:	PHILIPS	Model Name:	RUP2433AMI
Sample Phase:	MP	New Parts Approval	☑ Yes ☐ No
PM Approve	Ryan	EE Approve	Ben
ME Approve	Laslie	Tech. Reviewer:	Rongchi
Measurement Condition			
Test Laboratory	SUD	Test site	CE room 966 chamber
Test Rule	CE	Frequency Range	0.15~30 MHz 30 ~1000 MHz
Test Mode	DVI+DP mode	Test Result	☑ PASS ☐ Fail
Resolution:	1920*1080 / 60 Hz	Pattern:	COLOR BAR
Test PC	DIVA_ pc NVIDIA 1060TI	Test peripheral	N/A
Key Component list:			
Main Board:	2AAD536R038 3PD536F011A	Power Board:	DELTA, 24V 10.41A MDS-250APB24 AB
Scalar :	RTD2785	driver Board:	2AAD482R03Q
PCB layers	4	Firmware ver.:	RUP2433AMI_220314R0V01
Panel No.	AUO G238HAN01.3	Cable	DVI/DP 1.8m cable

Test Summary

DELTA Power update

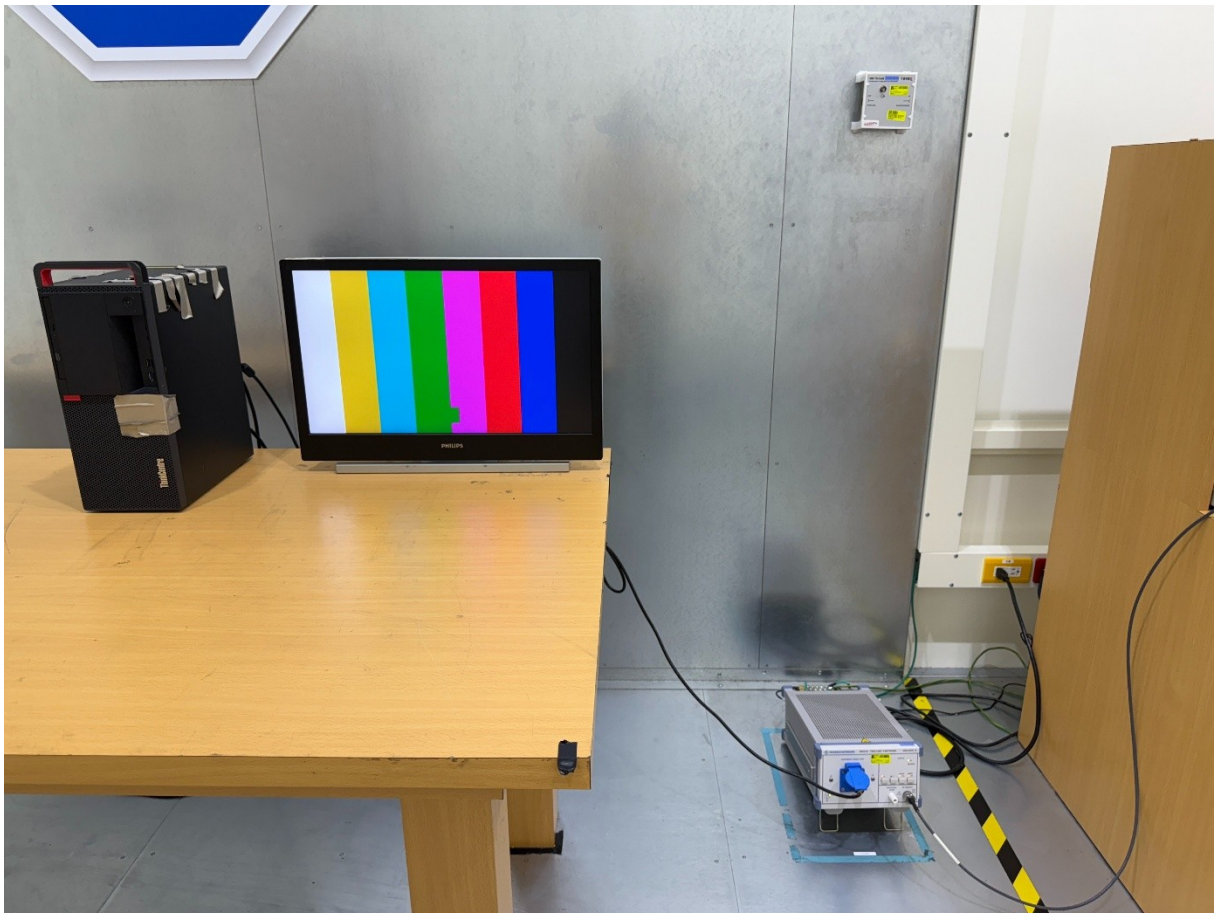
CE Class B PASS, under 13.29 dB

RE Class B PASS, under 6.79 dB

Issuer: Eric	Date: 2025/08/07

DIVA displays better.

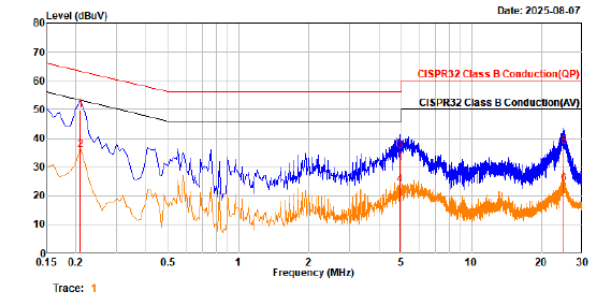
2-1. CE Test Setup：



displays better.

2-2. CE Test Data：

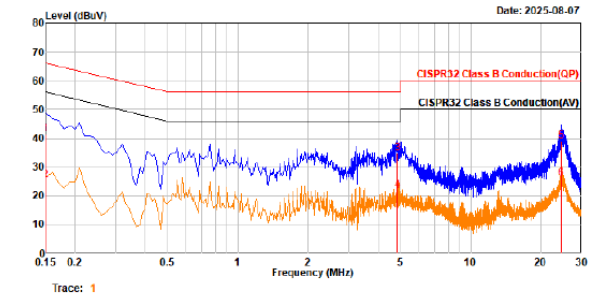
TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333,Taiwan(R.O.C.)



Trace: 1
Site : Shielded Room A
Condition: CISPR32 Class B Conduction(QP) LISN ENV216_101517_20241022 Line
Engineer : Bob Fang
Ambient : 24.4C 66%
:
Model No : RUP2433AMI
Power : 230V/50Hz
Test Mode: 1920*1080/60Hz, DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.210	40.51	49.93	9.62	63.22	-13.29	QP
2	0.210	26.41	36.03	9.62	53.22	-17.19	Average
3	4.912	25.92	35.60	9.68	56.00	-20.40	QP
4	4.912	14.05	23.73	9.68	46.00	-22.27	Average
5	24.893	27.50	37.11	9.61	60.00	-22.89	QP
6	24.893	14.58	24.19	9.61	50.00	-25.81	Average

TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333,Taiwan(R.O.C.)

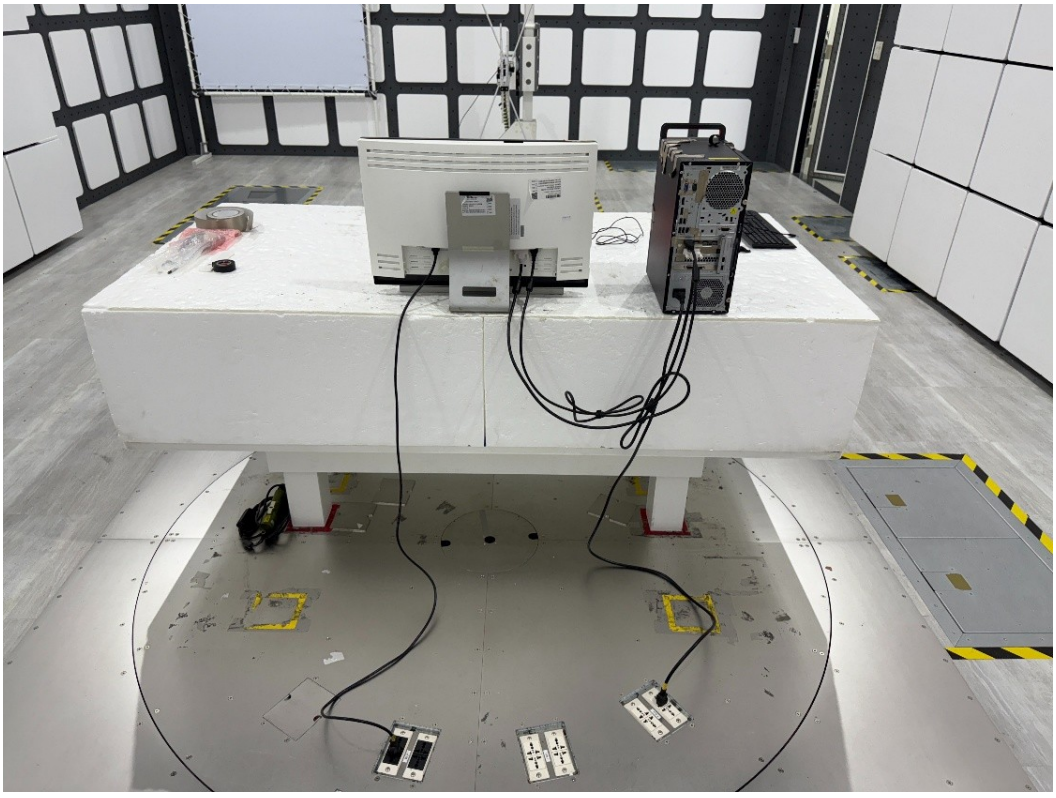


Trace: 1
Site : Shielded Room A
Condition: CISPR32 Class B Conduction(QP) LISN ENV216_101517_20241022 Neutral
Engineer : Bob Fang
Ambient : 24.4C 66%
:
Model No : RUP2433AMI
Power : 230V/50Hz
Test Mode: 1920*1080/60Hz, DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.150	31.69	41.32	9.63	65.98	-24.66	QP
2	0.150	15.58	25.21	9.63	55.98	-30.77	Average
3	4.849	25.15	34.83	9.68	56.00	-21.17	QP
4	4.849	12.08	21.76	9.68	46.00	-24.24	Average
5	24.473	29.23	38.96	9.73	60.00	-21.04	QP
6	24.473	16.33	26.06	9.73	50.00	-23.94	Average

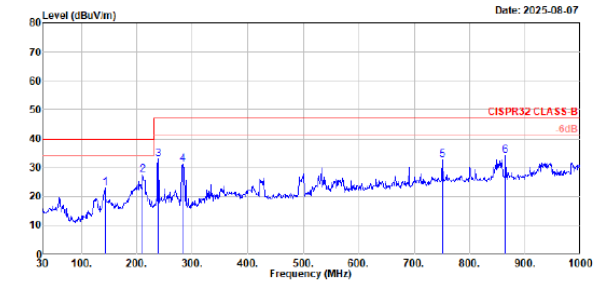
3-1. RE Test Setup：





3-2. RE Test Data：

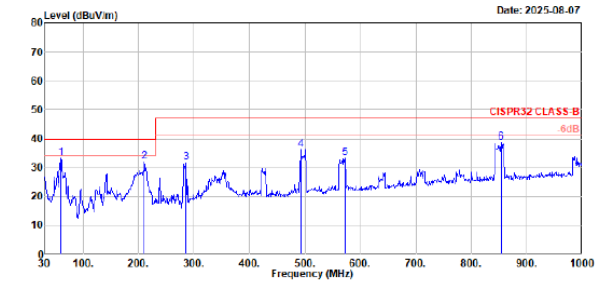
TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333008,Taiwan(R.O.C.)



Site : CHAMBER A
Condition: CISPR32 CLASS-B Horizontal
Engineer : Bob Fang
Ambient : 20.6C 73%
:
Applicant: DIVA
Model No : RUP2433AMI
Power : 230V/50Hz
Test Mode: 1920*1080/60Hz ,DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	APos	TPos	Over Limit	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	cm	deg	dB	
1	142.520	47.46	22.82	-24.64	40.00	200	72	-17.18	Peak
2	210.420	54.61	27.42	-27.19	40.00	100	360	-12.58	Peak
3	238.550	59.09	32.97	-26.12	47.00	100	360	-14.03	Peak
4	282.200	54.88	31.09	-23.79	47.00	100	0	-15.91	Peak
5	750.710	45.68	32.52	-13.16	47.00	100	252	-14.48	Peak
6	864.200	46.29	34.23	-12.06	47.00	100	34	-12.77	Peak

TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333008,Taiwan(R.O.C.)



Site : CHAMBER A
Condition: CISPR32 CLASS-B Vertical
Engineer : Bob Fang
Ambient : 20.6C 73%
:
Applicant: DIVA
Model No : RUP2433AMI
Power : 230V/50Hz
Test Mode: 1920*1080/60Hz ,DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	APos	TPos	Over Limit	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	cm	deg	dB	
1	60.070	57.32	33.21	-24.11	40.00	100	138	-6.79	Peak
2	210.420	59.04	31.85	-27.19	40.00	100	104	-8.15	Peak
3	286.080	55.41	31.74	-23.67	47.00	199	0	-15.26	Peak
4	491.720	54.75	36.33	-18.42	47.00	100	36	-10.67	Peak
5	572.230	49.84	33.15	-16.69	47.00	100	29	-13.85	Peak
6	853.530	50.90	38.75	-12.15	47.00	100	0	-8.25	Peak

END

DIVA displays better.

CE、RE Test for RUP2732CMI

SUBJECT:

Customer Name:	PHILIPS	Model Name:	RUP2732CMI
Sample Phase:	MP	New Parts Approval	☑ Yes ☐ No
PM Approve	Ryan	EE Approve	Ben
ME Approve	Laslie	Tech. Reviewer:	Rongchi
Measurement Condition			
Test Laboratory	SUD	Test site	CE room 966 chamber
Test Rule	CE	Frequency Range	0.15~30 MHz 30 ~1000 MHz
Test Mode	DVI+DP mode	Test Result	☑ PASS ☐ Fail
Resolution:	2560*1440 / 60 Hz	Pattern:	Color bar
Test PC	DIVA_ pc NVIDIA 1060TI	Test peripheral	N/A
Key Component list:			
Main Board:	2AAD536R038 3PD536F011A	Power Board:	DELTA, 24V 10.41A MDS-250APB24 AB
Scalar :	RTD2785	driver Board:	2AAD482R03Q
PCB layers	4	Firmware ver.:	RUP2732CMI_240813R0V01
Panel No.	INX 27” R270KCJ-L03	Cable	DVI 2.25m cable DP 1.8m cable

Test Summary

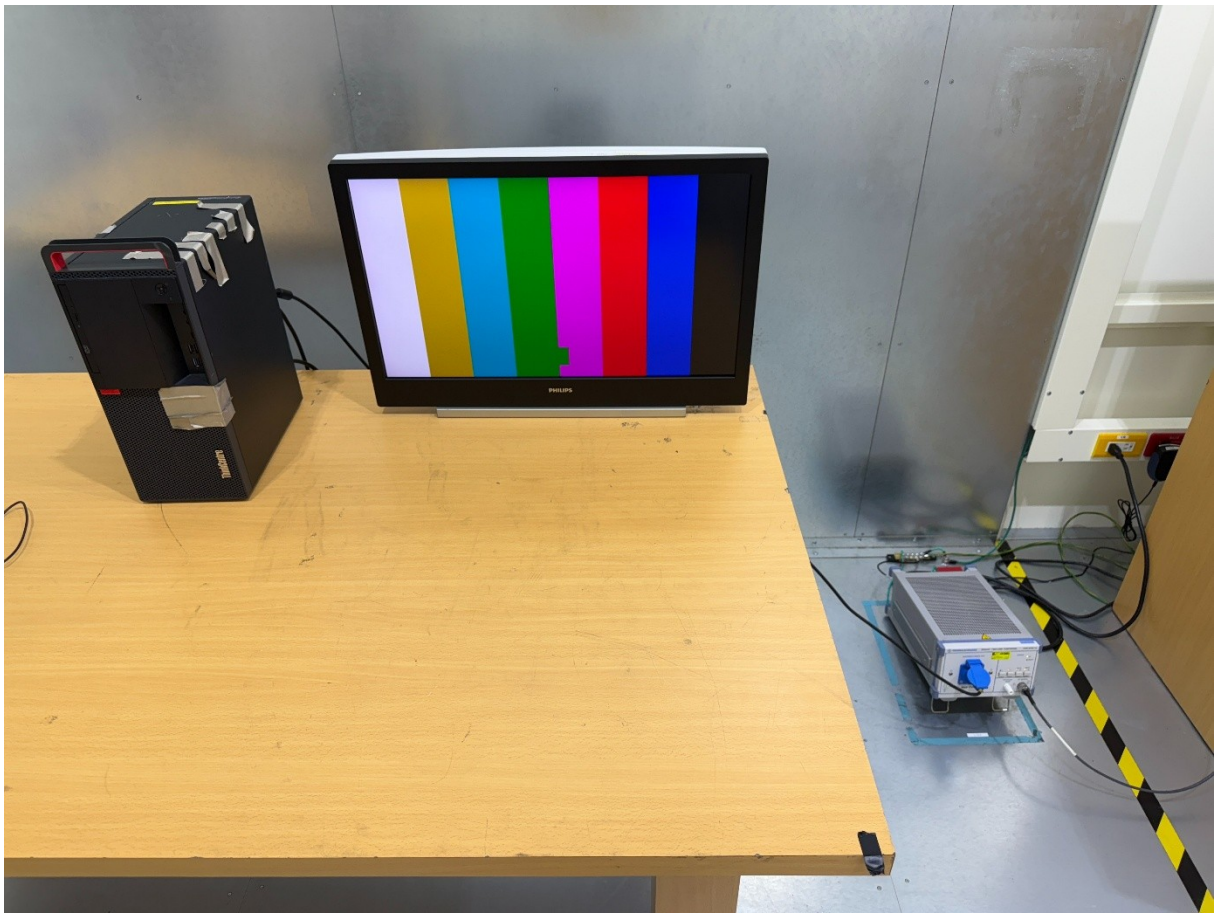
DELTA Power update

CE Class B PASS, under 10.40 dB

RE Class B PASS, under 7.32 dB

Issuer: Eric	Date: 2025/08/07

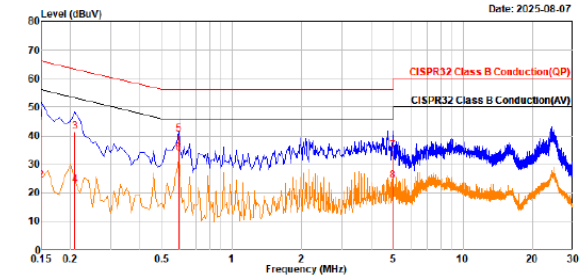
2-1. CE Test Setup：



displays better.

2-2. CE Test Data：

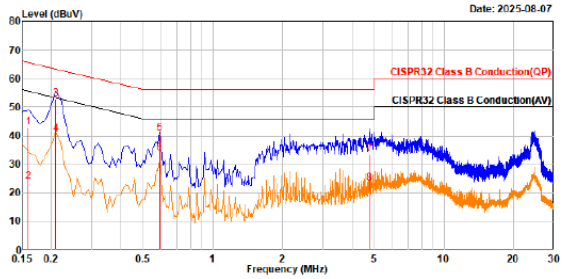
TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333,Taiwan(R.O.C.)



Trace: 1
Site : Shielded Room A
Condition: CISPR32 Class B Conduction(QP) LISN ENV216_101517_20241022 Line
Engineer : Bob Fang
Ambient : 24.4C 66%
:
Model No : RUP2732CMI
Power : 230V/50Hz
Test Mode: 2560*1440/60Hz, DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.150	35.90	45.53	9.63	66.00	-20.47	QP
2	0.150	14.44	24.07	9.63	56.00	-31.93	Average
3	0.210	31.69	41.31	9.62	63.21	-21.90	QP
4	0.210	13.02	22.64	9.62	53.21	-30.57	Average
5	0.550	30.91	40.53	9.62	56.00	-15.47	QP
6	0.550	24.21	33.83	9.62	46.00	-12.17	Average
7	4.980	25.10	34.78	9.68	56.00	-21.22	QP
8	4.980	14.60	24.28	9.68	46.00	-21.72	Average

TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333,Taiwan(R.O.C.)

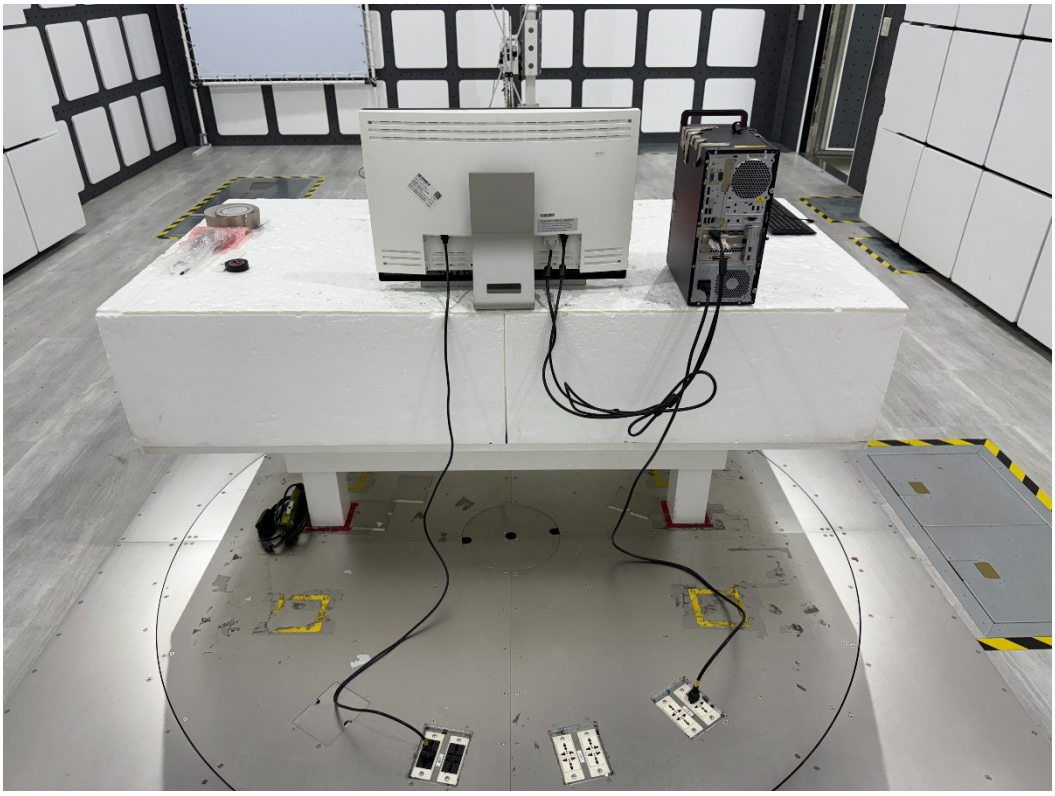


Trace: 1
Site : Shielded Room A
Condition: CISPR32 Class B Conduction(QP) LISN ENV216_101517_20241022 Neutral
Engineer : Bob Fang
Ambient : 24.4C 66%
:
Model No : RUP2732CMI
Power : 230V/50Hz
Test Mode: 2560*1440/60Hz, DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	Over Limit	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	
1	0.160	33.19	42.82	9.63	65.47	-22.65	QP
2	0.160	14.08	23.71	9.63	55.47	-31.76	Average
3	0.210	43.19	52.81	9.62	63.21	-10.40	QP
4	0.210	30.75	40.37	9.62	53.21	-12.84	Average
5	0.591	31.24	40.86	9.62	56.00	-15.14	QP
6	0.591	24.32	33.94	9.62	46.00	-12.06	Average
7	4.763	23.95	33.63	9.68	56.00	-22.37	QP
8	4.763	13.57	23.25	9.68	46.00	-22.75	Average

3-1. RE Test Setup：

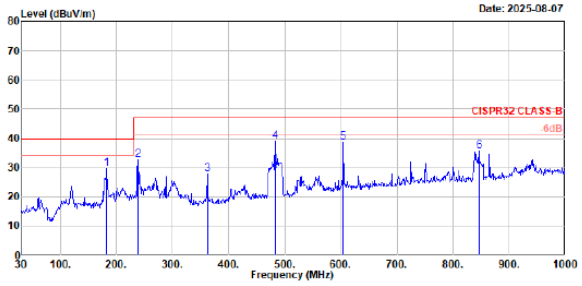




displays better.

3-2. RE Test Data：

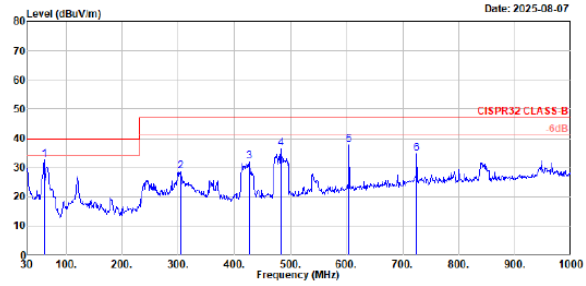
TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333008,Taiwan(R.O.C.)



Site : CHAMBER A
Condition: CISPR32 CLASS-B Horizontal
Engineer : Bob Fang
Ambient : 20.6C 73%
:
Applicant: DIVA
Model No : RUP2732CMI
Power : 230V/50Hz
Test Mode: 2560*1440/60Hz ,DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	APos	TPos	Over Limit	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	cm	deg	dB	
1	182.290	55.24	29.53	-25.71	40.00	200	0	-10.47	Peak
2	238.550	58.66	32.54	-26.12	47.00	100	315	-14.46	Peak
3	361.740	49.56	27.91	-21.65	47.00	100	313	-19.09	Peak
4	482.990	57.42	38.88	-18.54	47.00	100	51	-8.12	Peak
5	604.240	54.48	38.69	-15.79	47.00	100	31	-8.31	Peak
6	845.770	47.99	35.76	-12.23	47.00	100	201	-11.24	Peak

TÜV SÜD Asia Ltd. Taiwan Branch
No. 31,Dinghu Rd.,Guishan Dist.,
Taoyuan City 333008,Taiwan(R.O.C.)



Site : CHAMBER A
Condition: CISPR32 CLASS-B Vertical
Engineer : Bob Fang
Ambient : 20.6C 73%
:
Applicant: DIVA
Model No : RUP2732CMI
Power : 230V/50Hz
Test Mode: 2560*1440/60Hz ,DVI+DP
Note : DELTA POWER UPDATE

	Freq	Read Level	Level	Factor	Limit Line	APos	TPos	Over Limit	Remark
	MHz	dBuV	dBuV/m	dB/m	dBuV/m	cm	deg	dB	
1	61.840	56.99	32.68	-24.31	40.00	100	173	-7.32	Peak
2	303.540	51.90	28.72	-23.18	47.00	200	360	-18.28	Peak
3	426.730	51.64	31.99	-19.65	47.00	100	0	-15.01	Peak
4	482.990	54.97	36.43	-18.54	47.00	200	318	-10.57	Peak
5	604.240	53.68	37.89	-15.79	47.00	100	187	-9.11	Peak
6	724.520	48.29	34.57	-13.72	47.00	100	180	-12.43	Peak

END

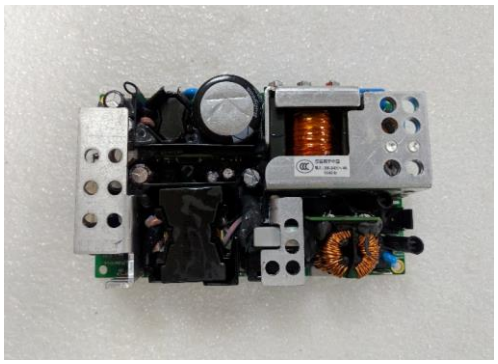
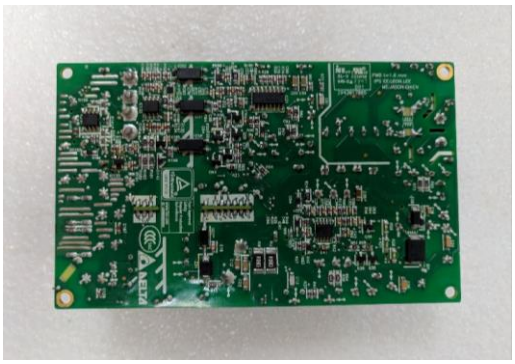
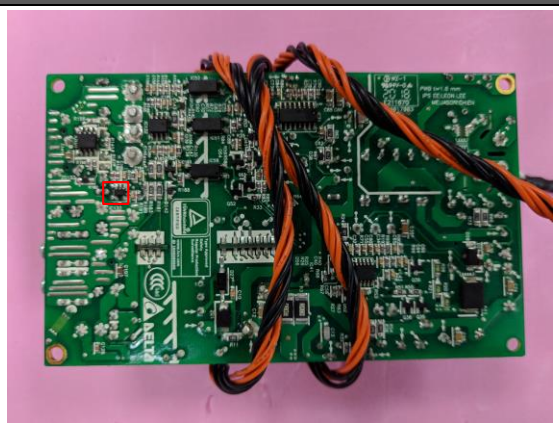
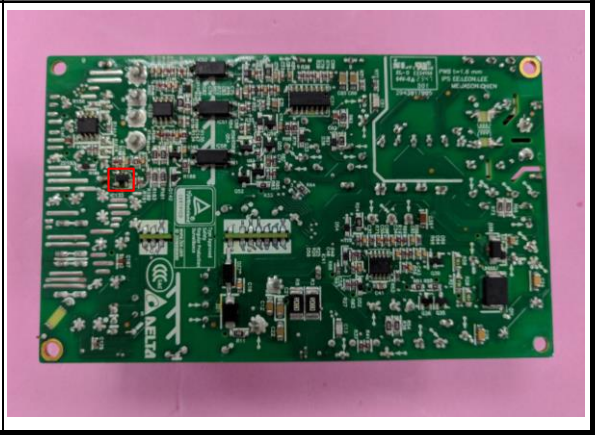
Product Validation Report

Product Name	**: PSU (24V10.41A,MDS-250APB24) For IC 133**
Model Name	**: PSU (24V10.41A,MDS-250APB24) For IC 133**
Product Stage	**: PP**
Product No.	**: N/A**
Revision	**: 0**

Prepared By : Jack Lu **Date : 2025/08/18**

Approved By : Roy Lin **Date : 2025/08/18**

Index & Content			
Part	**Test Item**	**Descriptions**	**Result**
Reliability	1. Power On/Off Test	To check that there is no part breakage, deterioration or variation of characteristics, or other abnormalities when the power supply is turned on/off as assumed to occur during product usage.	PASS
Reliability	2. Burn In Test	Test and verify monitor's stability.	PASS
Reliability	3. Temperature Cycle Operation Test	To evaluate whether the functions are maintained in a stable condition when the product is operated in a temperature cycle environment.	PASS
Reliability	4. High Temp and High Humidity Operation Test	To evaluate whether the functions are maintained in a stable condition when the product is operated in the high temperature and high humidity environment.	PASS
Reliability	5. Low Temperature Storage Test	To check that the initial performance and structure of the product are maintained after the exposure to the high temperature environment to which it may be exposed during.its storage and transportation.	PASS
Reliability	6. High Temperature Storage Test	To check that the initial performance and structure of the product are maintained after the exposure to the high temperature environment to which it may be exposed during its storage and transportation.	PASS

Delta Power Board 250W Power For IC 133	
Visual Appearance Front	Visual Appearance Back
	
Power Board Old IC133 : TI TS321	Power Board New IC133 : ST TS321
	

1. Power On/Off Test

Test Engineer	Jack Lu	Date	2025/8/4~2025/8/18	Stage	Result
				PP	PASS

Test Propose

To check that there is no part breakage, deterioration or variation of characteristics, or other abnormalities when the power supply is turned on/off as assumed to occur during product usage.

Evaluation Environment

Temperature	25°C / 45°C
Relative Humidity	50%±10%(RH)

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
OS	Windows 10 Pro - 64bit		
Test Equipment	6700 SERIES PROGRAMMABLE ACPOWER SOURCE Model NUMBER6705	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

Test Standard

Power On/Off Test Specification

Criteria

No breakage or obvious performance deterioration shall be found during or after the test.

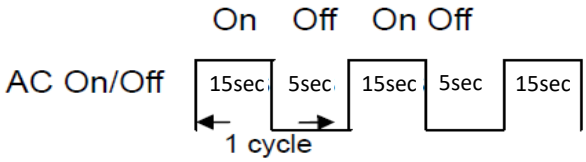
Power On/Off Test

Test Procedure	Result	Note
1. Connect the test machine to the switch box and set AC voltage 110V/60Hz.	Pass	
2. Confirm set the power on/off test tool , boot for 15 seconds, shut down for 5 seconds.	Pass	
3. Check the power switch for 48 hours or more.	Pass	
4. After the test, check if the display function and picture normal.	Pass	

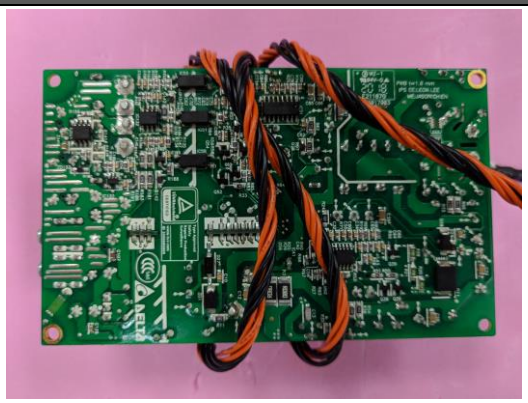
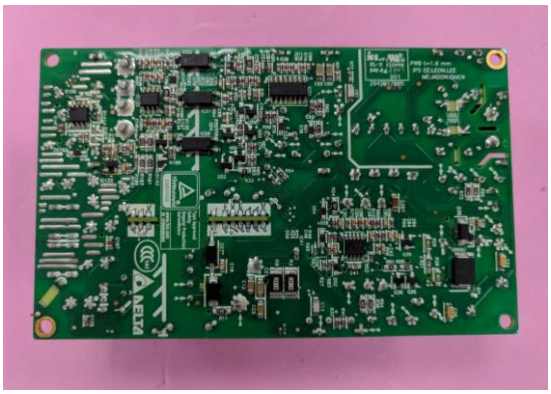
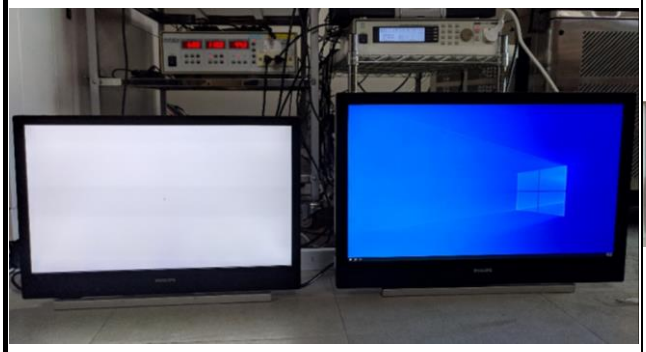
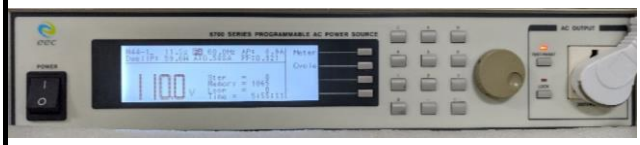
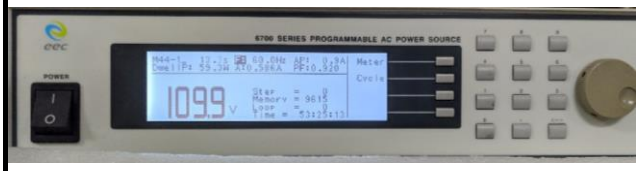
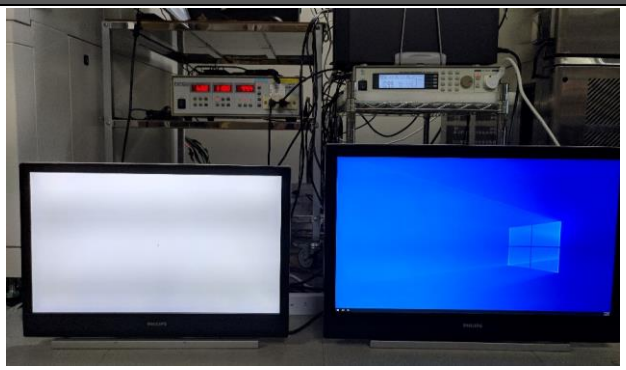
Test Condition

Applied Voltage	110V/60Hz	Brightness	350cd/m²	Sample Condition	Operation Normal
Test Pattern	General Pattern	Test Duration	48 hours	Power On/Off Cycle	Power On 15 sec / Off 5 sec
Condition	Carry out this at the voltage rated in the applicable specification, for 9,000 times or more for each.				

Test Process



Function Check		Before Test	After Test	Note
Power Management	Check Power On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power DC On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power Saving On/Off 10 times and Operation Normal	Pass	Pass	
Display Screen Check	Check Not abnormal screen	Pass	Pass	
	Check Not black screen	Pass	Pass	
	Check Not noise screen	Pass	Pass	
	Check Not flicker screen	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Old IC 133 : TI TS321	PSU New IC 133 : ST TS321	
		
Before Test	Test Condition	Note
		
Power On/Off Test Precess		Note
Power On Test Condition	Power Off Test Condition	
		
Power On/Off Test Cycle (9,615 times)	After Test	Note
		

2. Burn In Test

Test Engineer	Jack Lu	Date	2025/8/7~2025/8/11	Stage	Result
				PP	PASS

Test Propose

Test and verify the monitor' burn in test stability.

Evaluation Environment

Temperature	25ºC / 45ºC
Relative Humidity	50%±10%(RH)

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
OS	Windows 10 Pro - 64bit		
Test Equipment	EXTECH AC POWER SOURCE CFW-105	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

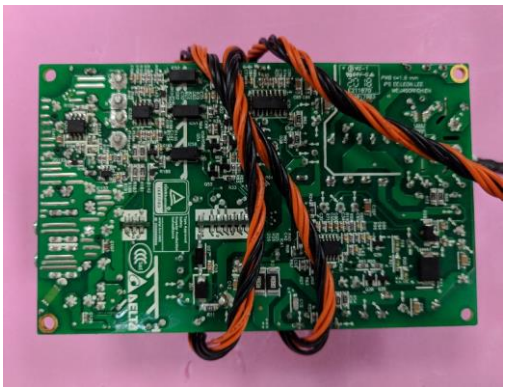
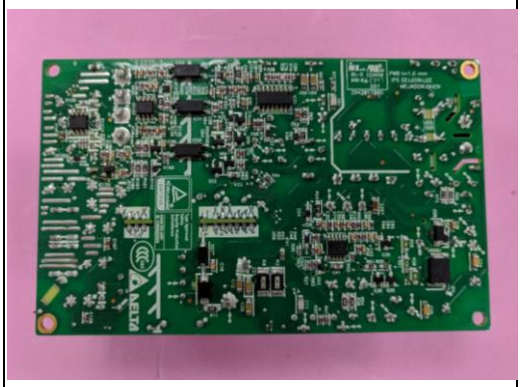
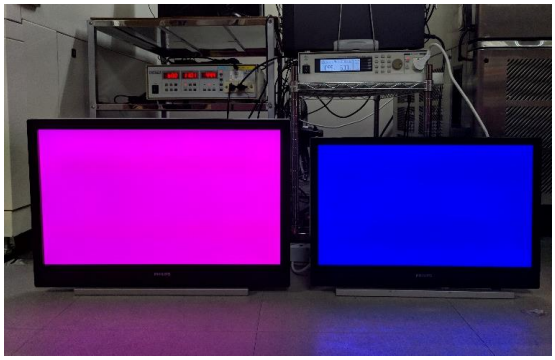
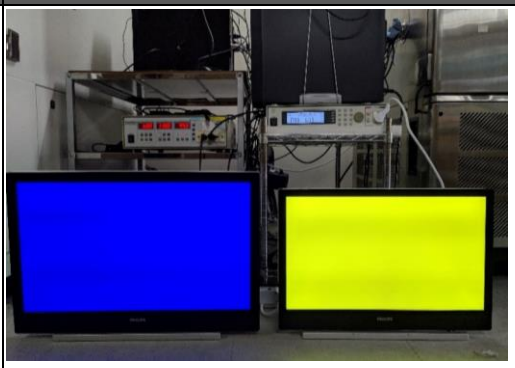
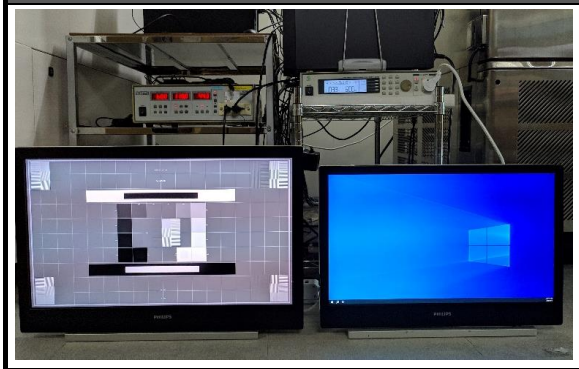
Test Standard

Burn In Test Specification

Criteria

1. No any failure during the test
2. Document everything.

Burn In Test							
Test Procedure						**Result**	**Note**
1. Confirm set the monitor to burn in mode.						**Pass**	
2. Make sure burn in mode works on monitor.						**Pass**	
3. Check that there's no abnormal screen happen during the burn in test.						**Pass**	
4. After test, check the function and operation normal.						**Pass**	
Test Condition							
Temperature	25ºC	**Applied Voltage**	110V/60Hz	**Brightmess**	Max		
Test Pattern	Burn In Pattern	**Test Duration**	24 hours				
Function Check						**Before Test**	**After Test**	**Note**
Power Management	Check Power On/Off and Opertion Normal					**Pass**	**Pass**	
	Check Power DC On/Off and Operation Normal					**Pass**	**Pass**	
	Check Power Saving On/Off and Operation Normal					**Pass**	**Pass**	
Display Screen Check	Check Not abnormal screen					**Pass**	**Pass**	
	Check Not black screen					**Pass**	**Pass**	
	Check Not noise screen					**Pass**	**Pass**	
	Check Not flicker screen					**Pass**	**Pass**	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Old IC133 : TI TS321	PSU New IC133 : ST TS321	
		
Before Test	**Test Condition**	**Note**
		
During The Test	**After Test**	**Note**
		The color will change during in burn in.
Function Check		**Note**
		

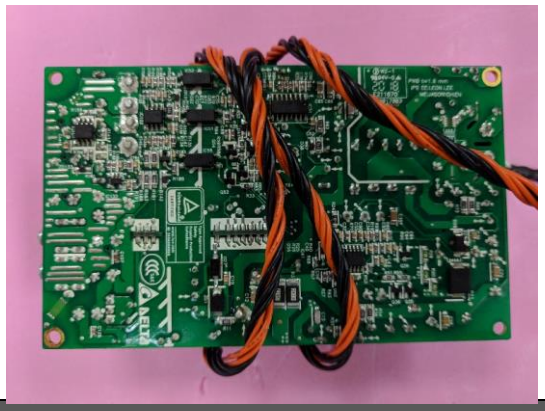
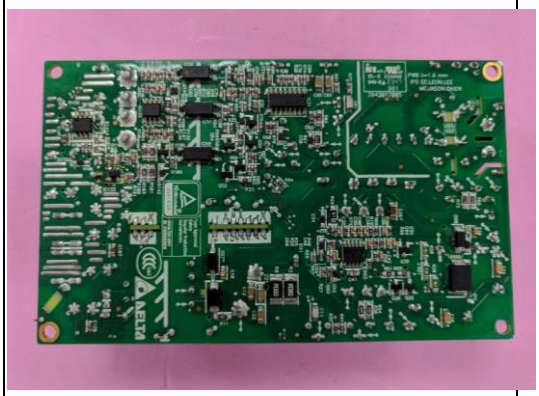
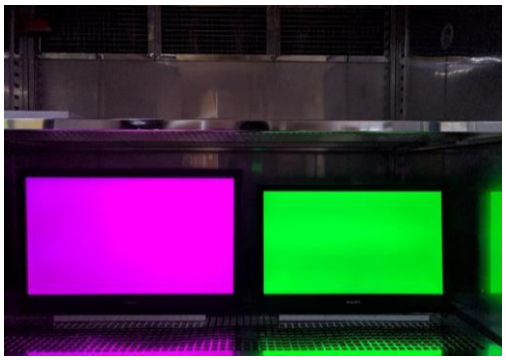
Burn In Test

Test Procedure	Result	Note
1. Confirm set the monitor to burn in mode.	Pass	
2. Make sure burn in mode works on monitor.	Pass	
3. Check that there's no abnormal screen happen during the burn in test.	Pass	
4. After test, check the function and operation normal.	Pass	

Test Condition

Temperature	45ºC	**Applied Voltage**	110V/60Hz	**Brightmess**	Max
Test Pattern	Burn In Pattern	**Test Duration**	24 hours		

Function Check		Before Test	After Test	Note
Power Management	Check Power On/Off and Opertion Normal	Pass	Pass	
	Check Power DC On/Off and Operation Normal	Pass	Pass	
	Check Power Saving On/Off and Operation Normal	Pass	Pass	
Display Screen Check	Check Not abnormal screen	Pass	Pass	
	Check Not black screen	Pass	Pass	
	Check Not noise screen	Pass	Pass	
	Check Not flicker screen	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Old IC133 : TI TS321	PSU New IC133 : ST TS321	
		
Before Test	**Test Condition**	**Note**
		The color will change during in burn in.
Test Condition (1)	**After Test**	**Note**
		
Function Check		**Note**
		

3. Temperature Cycle Operation Test

Test Engineer	Jack Lu	Date	2025/8/12~2025/8/14	Stage	Result
				PP	PASS

Test Propose

To evaluate whether the functions are maintained in a stable condition when the product is operated in a temperature cycle environment.

Evaluation Environment

Temperature	0ºC/45ºC/25ºC

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
OS	Windows 10 Pro - 64bit		
Test Equipment	EXTECH AC POWER SOURCE CFW-105	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

Test Standard

Temperature Cycle Operation Test Specification

Criteria

(1) There should be no abnormalities affecting the product's specified functions and performance.
(2) There must not be abnormity of performance, functions, operations and appearance
(3) Follow Engineering Specification & Supplier Requirements Specification.

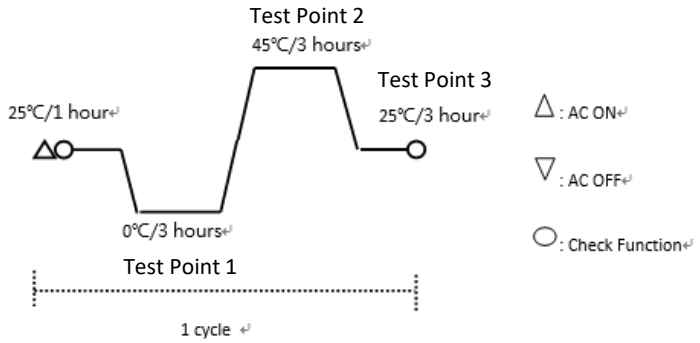
Temperature Cycle Operation Test

Test Procedure	Result	Note
1. Confirm place the test display in the constant chamber and set temperature inside the chamber to the specified temperature.	Pass	
2. Confirm the display backlight is set to the default brightness and the test pattern set to full white pattern.	Pass	
3. Confirm hold the test device in the constant temperature chamber until its temperature reaches the specified temperature.	Pass	
4. After test, function check and operation normal.	Pass	

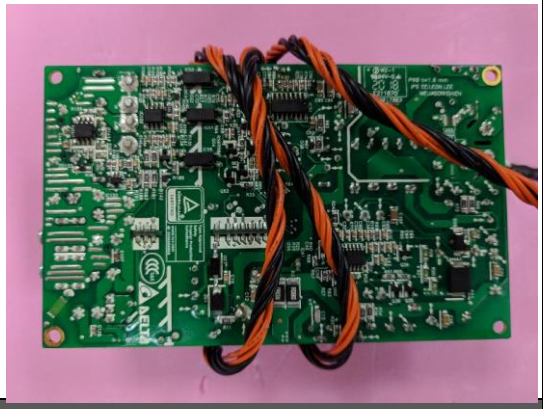
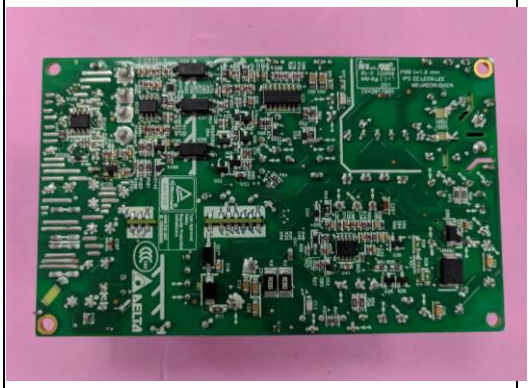
Test Condition

Applied Voltage	110V/60Hz	Temperature	0ºC/45ºC/25ºC	Brightness	350cd/m²
Test Pattern	General Pattern	Dwell Time	3 hours	Test Duration	48 hours
Condition	0°C for 3 hrs and 45°C for 3 hrs and 25°C for 3 hrs Total of 3 cycles				

Test Environment Curve



Function Check		Test Point 1	Test Point 2	Test Point 3	Note
Power Management	Check Power On/Off 10 times and Operation Normal	Pass	Pass	Pass	
	Check Power DC On/Off 10 times and Operation Normal	Pass	Pass	Pass	
	Check Power Saving On/Off 10 times and Operation Normal	Pass	Pass	Pass	
Display Screen Check	Check Not Abnormal Screen	Pass	Pass	Pass	
	Check Not Black Screen	Pass	Pass	Pass	
	Check Not Shutdown	Pass	Pass	Pass	
	Check Not Flicker Screen	Pass	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Power IC133 : TI TS321	PSU New Power IC133 : ST TS321	
		
Before Test	**Before Test (1)**	**Note**
		
Test Condition	**Test Condition (1)**	**Note**
		
Test Condition (2)	**After Test**	**Note**
		

4. High Temperature and High Humidity Operation Test

Test Engineer	Jack Lu	Date	2025/8/11~2025/8/12	Stage	Result
				PP	PASS

Test Propose

To evaluate whether the functions are maintained in a stable condition when the product is operated in the high temperature and high humidity environment.

Evaluation Environment

Temperature	45ºC
Humidity	80%RH

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
OS	Windows 10 Pro - 64bit		
Test Equipment	EXTECH AC POWER SOURCE CFW-105	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

Test Standard

High Temperature and High Humidity Operation Test Specification

Criteria

There should be no abnormalities affecting the product's specified function and performance.

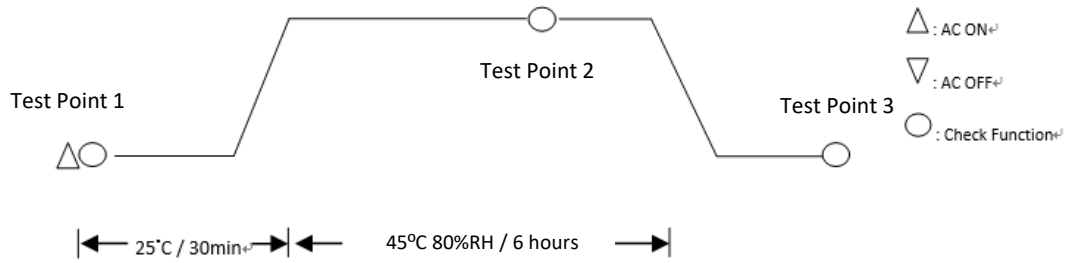
High Temperature and High Humidity Operation Test

Test Procedure	Result	Note
1. Confirm place the test display in the temperature chamber and set temperature inside the chamber to the specified temperature.	Pass	
2. Confirm make sure the display normal and the test pattern is set to the full white pattern.	Pass	
3. Hold the test device in the constant temperature chamber until its temperature reaches the specified temperature.	Pass	
4. Confirm that the screen before the test and after the test and function check should operate normally.	Pass	

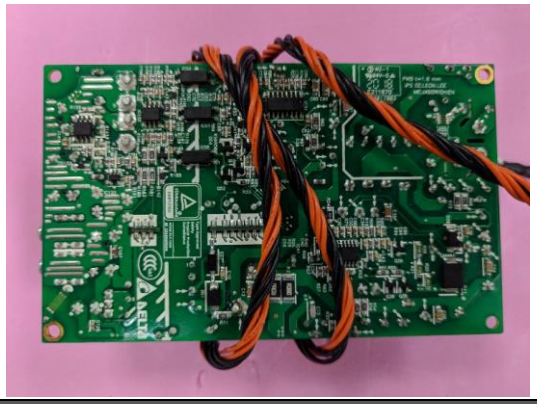
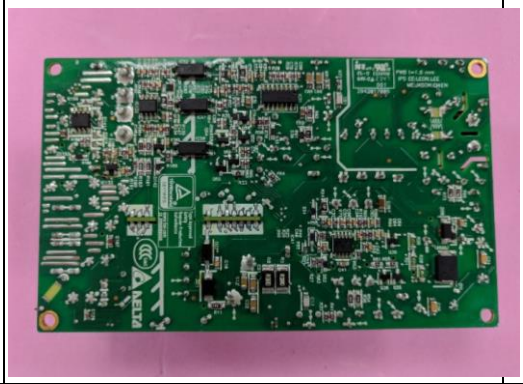
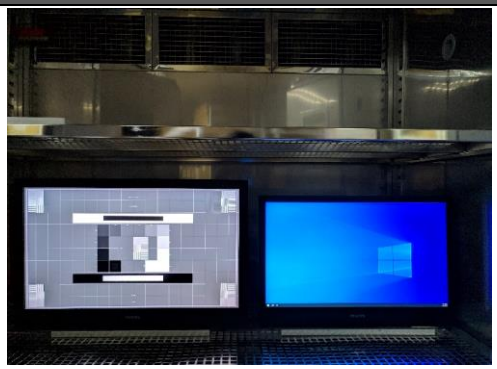
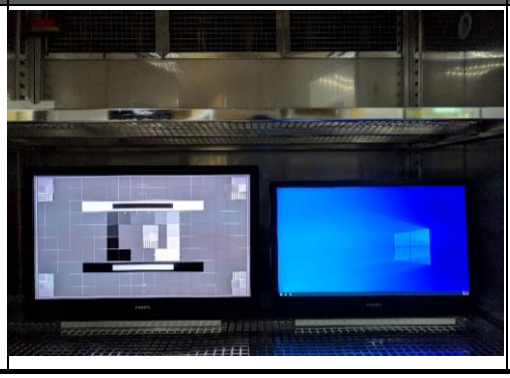
Test Condition

Applied Voltage	110V/60Hz	Brightness	350cd/m²	Temperature	45ºC/80%RH
Test Pattern	General Pattern	Sample Condition	Operation Normal	Test Duration	6 hours

Test Environment Curve



Function Check		Test Point 1	Test Point 2	Test Point 3	Note
Display Screen Check	Check Not Abnormal Screen	Pass	Pass	Pass	
	Check Not Black Screen	Pass	Pass	Pass	
	Check Not Shutdown	Pass	Pass	Pass	
	Check Not Flicker Screen	Pass	Pass	Pass	
Power Management	Check Power On/Off 10 times and Operation Normal	Pass	Pass	Pass	
	Check Power DC On/Off 10 times and Operation Normal	Pass	Pass	Pass	
	Check Power Saving On/Off 10 times and Operation Normal	Pass	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Old IC133 : TI TS321	PSU New IC133 : ST TS321	
		
Before Test	Before Test (1)	Note
		
Test Condition	After Test	Note
		

5. Low Temperature Storage Test

Test Engineer	Jack Lu	Date	2025/8/15~2025/8/18	Stage	Result
				PP	PASS

Test Propose

To check that the initial performance and structure of the product are maintained after the exposure to the high temperature environment to which it may be exposed during its storage and transportation.

Evaluation Environment

Temperature	-20°C

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
O.S.	Windows 10 Pro - 64bit		
Test Equipment	6700 SERIES PROGRAMMABLE ACPOWER SOURCE Model 6705	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

Test Standard

Low Temperature Storage Test Specification

Criteria

The cosmetic inspection standard shall be satisfied.
There shall be no remarkable deterioration of screen quality, function, and appearance.

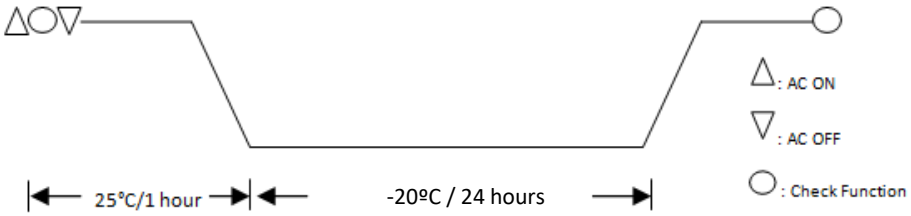
Low Temperature Storage Test

Test Procedure	Result	Note
1. Confirm that the test machine has normal functions and no scratches before non-packaged / non-operation.	Pass	
2. Confirm place the package in chamber and set the specified temperature.	Pass	
3. After test, function check and the screen operation normal.	Pass	

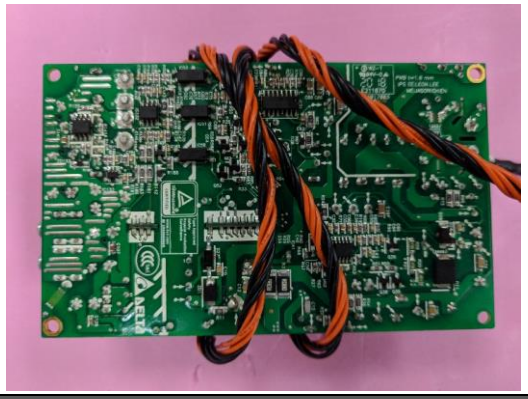
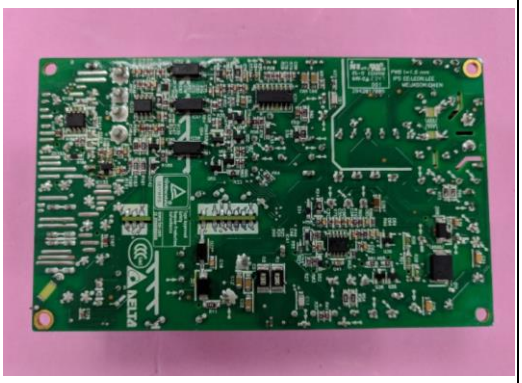
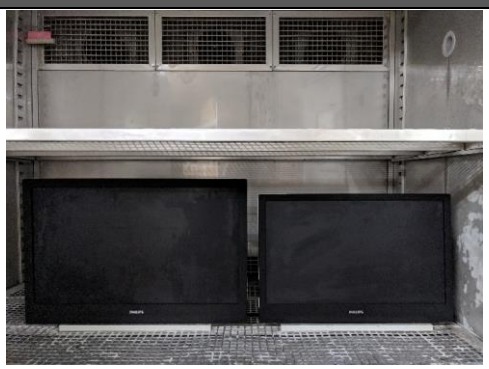
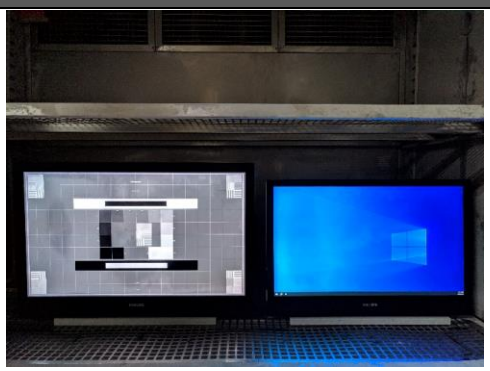
Test Condition

Temperature	-20ºC	Sample Condition	Non-Packaged / Non-Operation	Test Duration	24 hours or more

Test Environment Curve



Function Check		Before Test	After Test	Note
Display Screen Check	Check Not Abnormal Screen	Pass	Pass	
	Check Not Black Screen	Pass	Pass	
	Check Not Shutdown	Pass	Pass	
	Check Not Flicker Screen	Pass	Pass	
Power Management	Check Power On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power DC On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power Saving On/Off 10 times and Operation Normal	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Power IC133 : TI TS321	PSU Power IC133 : ST TS321	
		
Before Test	**Test Condition**	**Note**
		
After Test	**Function Check**	**Note**
		

6. High Temperature Storage Test

Test Engineer	Jack Lu	Date	2025/8/8~2025/8/11	Stage	Result
				PP	#REF!

Test Propose

To check that the initial performance and structure of the product are maintained after the exposure to the high temperature environment to which it may be exposed during its storage and transportation.

Evaluation Environment

Temperature	60ºC
Relative Humidity	50%(RH)

Evaluation Equipment

Processor	Intel® Core ™ i3-3220 CPU @ 3.30GHz		
Graphics Card	NVIDIA Quadro K2000 - Driver 462.96		
OS	Windows 10 Pro - 64bit		
Test Equipment	EXTECH AC POWER SOURCE CFW-105	Chamber TERCHY MHE-1728JDA	N/A

Description of Changes

Reasons For Design Changes	Vender	TI (Old)	ST (New)
	Vender PN	TS321	TS321
	Location	IC133	IC133
	PSU (24V10.41A,MDS-250APB24) Power IC 133 change to ST TS321.		

Evaluation Unit Level

LCD Module	AUO type: G238HAN01.3
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082203050001

Evaluation Unit Level

LCD Module	INNOLUX R270KCJ-L03
F/W Version	240813R0V01
Power Board	3ZAD24V1110
Front Sensor Board	2AAD536R03V
Key Board	2AAD464R037
Main Board	2AAD536R038
USB Hub Board	2AAD462R03U
USB Type A Board	2AAD462R13U
Led Driver Board	2AAD482R03Q
Interface Signal	DVI/DP
Serial Number	D082308070001

Test Standard

High Temperature and Hiigh Humidity Storage Test Specification

Criteria

The cosmetic inspection standard shall be satisfied.
There shall be no remarkable deterioration of screen quality, function, and appearance.

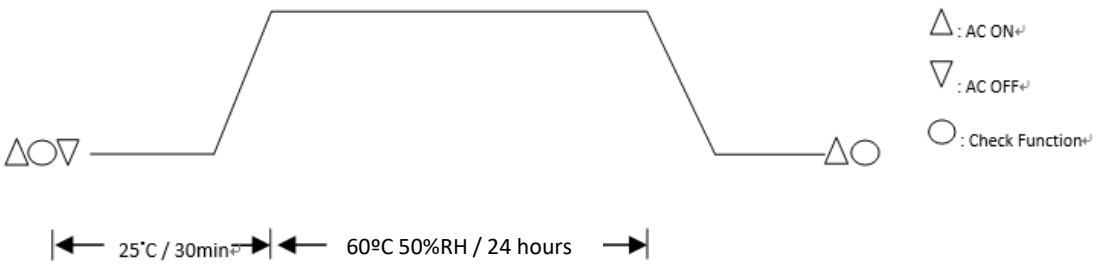
High Temperature Storage Test

Test Procedure	Result	Note
1. Confirm that the test machine has normal functions and no scratches before non-packaged / non-operation.	Pass	
2. Confirm place the package in chamber and set the specified temperature.	Pass	
3. After test, function check and the screen operation normal.	Pass	

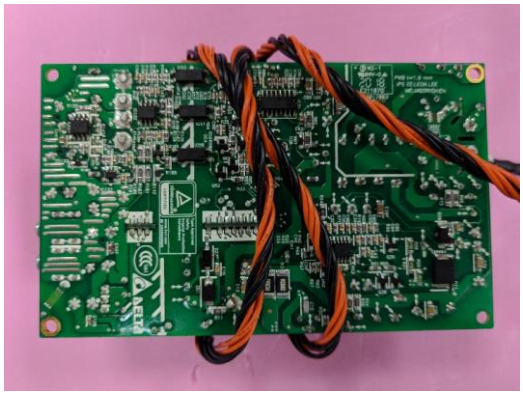
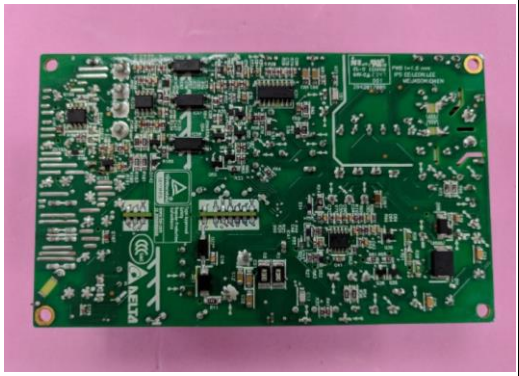
Test Condition

Temperature	60ºC / 50%RH	Sample Condition	Non-Packaged / Non-Operation	Test Duration	24 hours or more

Test Environment Curve



Function Check		Before Test	After Test	Note
Display Screen Check	Check Not Abnormal Screen	Pass	Pass	
	Check Not Black Screen	Pass	Pass	
	Check Not Shutdown	Pass	Pass	
	Check Not Flicker Screen	Pass	Pass	
Power Management	Check Power On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power DC On/Off 10 times and Operation Normal	Pass	Pass	
	Check Power Saving On/Off 10 times and Operation Normal	Pass	Pass	

PHOTO OF TEST		
Delta Power Board 250W Power IC133		Note
PSU Old IC133 : TI TS321	PSU New IC133 : ST TS321	
		
Before Test	Test Condition	Note
		
After Test	Function Check	Note
		