



全漢企業股份有限公司

驗證測試報告

版本 : 1
 測試編號 : V121414
 Model Name : FSP600-50ARN
 測試項目 : 單項測試
 測試結果 :
 專案負責人 : 黃文昇
 研發部門 : 台灣全漢/研發一處
 客戶 : FS GMBH



Tested by	Checked by	Approved by
黃文昇	黃文昇	魏敬堯
	產品驗證專用章	



Verification Test Report

Document Name: 開關電源 FSP600-50ARN 驗證測試報告 Switch Power Supply FSP600-50ARN Verification Test Report	Customer: FSP GMBH	Revision: 1
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TEST ITEM:

- 1.. ACOUSTIC TEST
2. EFFICIENCY TEST

TEST SAMPLE:

Model Name	Part No.	Qty	Remark
FSP600-50ARN	9PA6005800	1PCS	FAN: YATELOON D12SM-12 (M-GP1)

TEST STANDARD:

ISO7779 2 rd Edition 1999.08.01 for acoustic test.

TEST RESULT:

REF

Approved By: Jason Wei 2012/11/20	Checked By: Brian Lin 2012/11/20	Prepared By: Wensheng
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Test Equipment:

Item	Brand	Model	Q'ty	Remark
Electronic Load	CHROMA	63030/63010	8	
AC Source	CHROMA	6530	1	
Semi-Anechoic Chamber	Free Field Acoustic	N/A	1	
Microphone	B&K	4190-L-001	1	
Acoustic Analyzer	B&K	2827-002	1	

ACOUSTIC TEST

1. Test Specification:

N/A

2. Test Condition:

- ✧ Ambient Temperature: 25°C
- ✧ Input voltage: 230Vac/50Hz
- ✧ Background Noise: 17.3 dB
- ✧ Load Condition:

Output	Output Load (A)								Remark
	+5V	+12V1	+12V2	+12V3	+12V4	-12V	+3.3V	+5Vsb	
Min.	1.00	1.00	1.00	1.00	1.00	0.00	1.50	0.00	57.95
20%	2.68	1.97	1.97	1.97	1.97	0.05	2.68	0.51	120.01
40%	5.36	3.94	3.94	3.94	3.94	0.10	5.36	1.03	240.03
60%	8.05	5.91	5.91	5.91	5.91	0.16	8.05	1.54	360.04
80%	10.73	7.88	7.88	7.88	7.88	0.21	10.73	2.06	480.06
Max.	13.41	9.85	9.85	9.85	9.85	0.26	13.41	2.57	600.07

Note: Warm Up Time → 15~20Minutes/Load Condition.



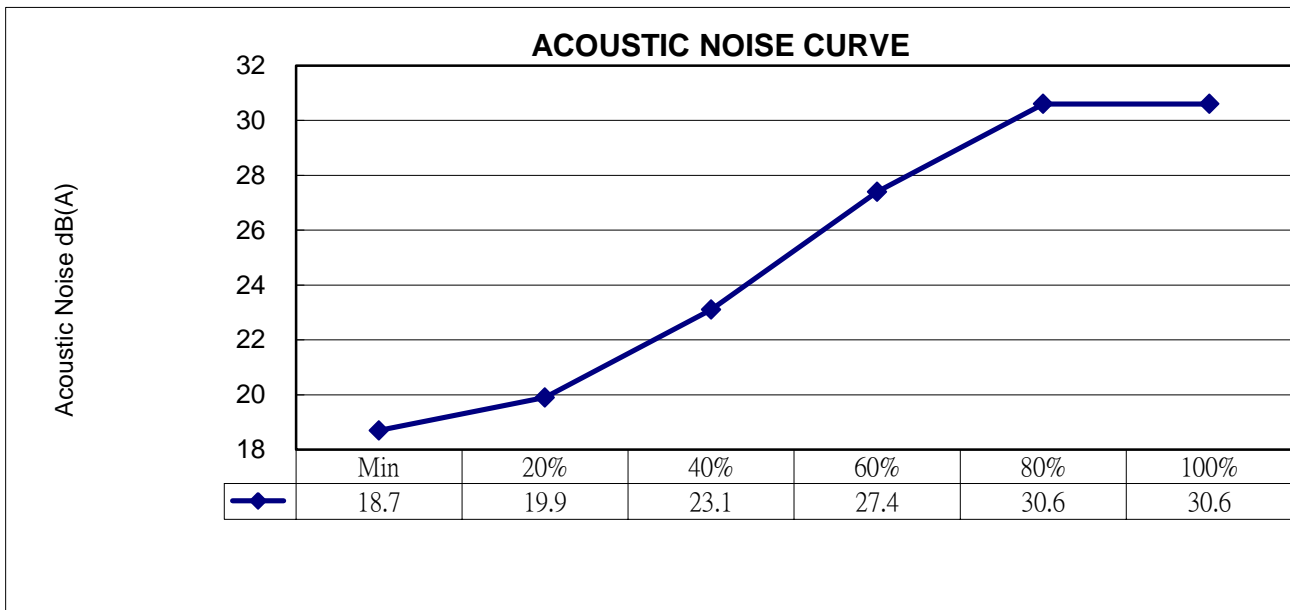
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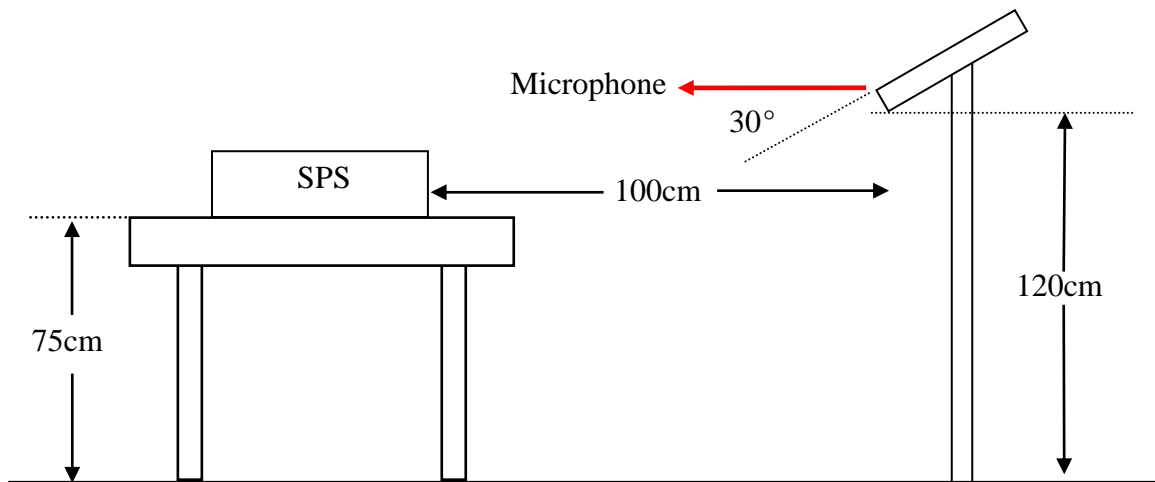
3. Test Record:

Output Power	Min	20%	40%	60%	80%	100%	Remark
Acoustic Noise dB(A)	18.7	19.9	23.1	27.4	30.6	30.6	REF
Fan Voltage	5.09	6.01	7.7	9.76	11.42	11.42	REF

4. Test Acoustic Noise Curve:



5. Acoustic Noise Position Drawing:





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EFFICIENCY TEST

STEP.1(UUT Test seq.1) : Hold On Adjust Test(Full-115) ----- PASS

STEP.2(UUT Test seq.2) : Input Output Test(Full-115) ----- PASS

Vin (V)= 230.00
Fin (Hz)= 50.00
Delay Time (ms)= 2000.00

Load Name	Loading (A/Ohm/V)
+5V	14.840
+12V1	9.580
+12V2	9.580
-12V	0.270
+3.3V	14.840
+5Vsb	2.740
+12V3	9.580
+12V4	9.580

	Max	Min	Reading
Vinrms (V)	*****	*****	229.75
Iinrms (A)	*****	*****	2.92
Iinpk+ (A)	*****	*****	4.47
Iinpk- (A)	*****	*****	4.49
Pin (W)	*****	*****	665.15
Pout (W)	*****	*****	588.50
PF (0~1)	*****	*****	0.9920
Eff (%)	*****	85.00	88.48

Load Name	Vout Max	Vout Min	Vout (V)	Iout Max	Iout Min	Iout (A)
+5V	5.250	4.750	4.945	*****	*****	14.764
+12V1	12.600	11.400	12.057	*****	*****	9.572
+12V2	12.600	11.400	12.035	*****	*****	9.519
-12V	-13.200	-10.800	-11.830	*****	*****	0.268
+3.3V	3.465	3.135	3.227	*****	*****	14.779
+5Vsb	5.250	4.750	4.925	*****	*****	2.743
+12V3	12.600	11.400	12.025	*****	*****	9.561
+12V4	12.600	11.400	12.035	*****	*****	8.822

STEP.3(UUT Test seq.3) : Hold On Adjust Test(Typ-115) ----- PASS

STEP.4(UUT Test seq.4) : Input Output Test(Typ-115) ----- PASS

Vin (V)= 230.00
Fin (Hz)= 50.00
Delay Time (ms)= 2000.00



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Load Name	Loading (A/Ohm/V)
+5V	7.420
+12V1	4.790
+12V2	4.790
-12V	0.140
+3.3V	7.420
+5Vsb	1.370
+12V3	4.790
+12V4	4.790

	Max	Min	Reading
Vinrms (V)	*****	*****	230.22
Iinrms (A)	*****	*****	1.44
Iinpk+ (A)	*****	*****	2.23
Iinpk- (A)	*****	*****	2.40
Pin (W)	*****	*****	324.81
Pout (W)	*****	*****	295.75
PF (0~1)	*****	*****	0.9790
Eff (%)	*****	88.00	91.05

Load Name	Vout Max	Vout Min	Vout (V)	Iout Max	Iout Min	Iout (A)
+5V	5.250	4.750	5.003	*****	*****	7.389
+12V1	12.600	11.400	12.123	*****	*****	4.778
+12V2	12.600	11.400	12.095	*****	*****	4.753
-12V	-13.200	-10.800	-11.677	*****	*****	0.139
+3.3V	3.465	3.135	3.280	*****	*****	7.401
+5Vsb	5.250	4.750	4.992	*****	*****	1.371
+12V3	12.600	11.400	12.092	*****	*****	4.776
+12V4	12.600	11.400	12.087	*****	*****	4.376

STEP.5(UUT Test seq.5) : Hold On Adjust Test(Light-115) ----- PASS

STEP.6(UUT Test seq.6) : Input Output Test(Light-115) ----- PASS

Vin (V)= 230.00
Fin (Hz)= 50.00
Delay Time (ms)= 2000.00

Load Name	Loading (A/Ohm/V)
+5V	2.970
+12V1	1.920
+12V2	1.920
-12V	0.050
+3.3V	2.970



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+5Vsb 0.550
+12V3 1.920
+12V4 1.920

	Max	Min	Reading
Vinrms (V)	*****	*****	230.48
Iinrms (A)	*****	*****	0.61
Iinpk+ (A)	*****	*****	1.03
Iinpk- (A)	*****	*****	1.06
Pin (W)	*****	*****	132.49
Pout (W)	*****	*****	118.67
PF (0~1)	*****	*****	0.9400
Eff (%)	*****	85.00	89.57

Load Name	Vout Max	Vout Min	Vout (V)	Iout Max	Iout Min	Iout (A)
+5V	5.250	4.750	5.037	*****	*****	2.953
+12V1	12.600	11.400	12.145	*****	*****	1.914
+12V2	12.600	11.400	12.113	*****	*****	1.903
-12V	-13.200	-10.800	-11.632	*****	*****	0.049
+3.3V	3.465	3.135	3.307	*****	*****	2.959
+5Vsb	5.250	4.750	5.030	*****	*****	0.549
+12V3	12.600	11.400	12.118	*****	*****	1.914
+12V4	12.600	11.400	12.118	*****	*****	1.747