

Report NO: 12P0A0011\_I

# FSP120-AAB of AEC-6877 Power Electronics Test Report

Summary	<input checked="" type="checkbox"/> <b>Passed</b> <input type="checkbox"/> <b>Failed</b> <input type="checkbox"/> <b>Passed with Deviation</b> <b>Comment:</b> _____			
<b>Test Result Summary</b>				
	Critical	Major	Minor	Enhancement
Defect Found	0	0	0	0
Defect Unsolved	0	0	0	0

Issue date	Approval	Test Engineer
<b>08/28/2012</b>	<b>Tom Lin</b>	<b>Sean Hsu</b>

## Table of Contents

1. Project.....	3
2. Power Manufacturer .....	3
3. Team Member .....	3
4. Test Equipment .....	3
5. AC Adapter Spec.....	3
6. Test Item.....	4
6.1. AC Input Current.....	4
6.2. MAX Inrush Current .....	4
6.3. Input Frequency & Voltage .....	4
6.4. Switching Test.....	4
6.5. Efficiency.....	4
6.6. Line Regulation.....	4
6.7. Load Regulation .....	4
6.8. Over-Voltage Protection .....	4
6.9. Over-Circuit Protection .....	4
6.10. Over-Load Protection .....	4
6.11. Short Circuit Protect.....	4
6.12. Line Voltage Surge.....	4
6.13. Line Voltage Sag .....	5
6.14. Ripple & Noise.....	5
6.15. Setup Time .....	5
6.16. Hold up Time.....	5
6.17. Rise Time.....	5
6.18. Turn on Overshoot .....	5
6.19. Turn off Undershoot.....	5
6.20. Remote ON/OFF .....	5
6.21. Power Good Signal.....	5
6.22. Power On In Low Temperature .....	5
6.23. Power On In High Temperature .....	5
6.24. Power Consumption Test with DC Power .....	5
6.25. Power Consumption Test with AC Adapter .....	5

**1. Project**

FSP120-AAB AC-DC Adapter for AEC-6877  
BIOS REV. R0.2 (05/18/2012)

**2. Power Manufacturer**

FSP

**3. Team Member**

PM : Alan Chou ; EE : Sion Weng ; ME : Dana Liu

**4. Test Equipment**

- 4.1. CPU Board : AAEON , EMB-QM77 REV.A1.0
- 4.2. CPU : INTEL CORE I7-3610QE 2.3GHz
- 4.3. Memory : SEC , 16GB , M/N : K4B4G0846B
- 4.4. HDD : TOSHIBA , 100GB , M/N : MK1060GSC
- 4.5. AC Adapter : FSP , Model : FSP120-AAB , O/P : 19V/6.32A , 120Wat
- 4.6. LCD Monitor : CHIMEI , Model : A170E2-T08
- 4.7. USB Mouse : LOGITECH , Model : M-BT85
- 4.8. USB Keyboard : LOGITECH , Model : Y-BL49

**5. AC Adapter Spec**

AC Input : 100VAC~240VAC / 47Hz~63Hz

DC Output : 19Vdc Min Load : 0A ; Max Load : 6.32A / 120W

## 6. Test Item

Test Item	Test Condition / Specification		Sanction	
			Measured	Result
6.1. AC Input Current	I/P:115VAC	1.7A	1.20A	Passed
6.2. MAX Inrush Current	I/P:115VAC	A	15.5A	N/A
	I/P:230VAC	220A	19.3A	Passed
6.3. Input Frequency & Voltage	I/P:90VAC/47HZ	■ON □ OFF	-	Passed
	I/P:90VAC/63HZ	■ON □ OFF	-	Passed
	I/P:264VAC/47HZ	■ON □ OFF	-	Passed
	I/P:264VAC/63HZ	■ON □ OFF	-	Passed
6.4. Switching Test	Switching Time: 0.5 Sec MIN Load / Full Load	@90VAC ■ON □ OFF	-	Passed
	Switching Time: 0.5 Sec MIN Load / Full Load	@115VAC ■ON □ OFF	-	Passed
	Switching Time: 0.5 Sec MIN Load / Full Load	@230VAC ■ON □ OFF	-	Passed
	Switching Time: 0.5 Sec MIN Load / Full Load	@264VAC ■ON □ OFF	-	Passed
6.5. Efficiency	I/P:90VAC FULL LOAD	@86%Min	87.418%	Passed
	I/P:115VAC FULL LOAD	@86%Min	88.977%	Passed
	I/P:230VAC FULL LOAD	@86%Min	89.984%	Passed
	I/P:264VAC FULL LOAD	@86%Min	89.713%	Passed
6.6. Line Regulation	I/P:90VAC~264VAC	<±1%	-0.942%	Passed
6.7. Load Regulation	I/P:115VAC O/P:MINLOAD~FULL LOAD	<±5%	1.12%	Passed
	I/P:230VAC O/P:MINLOAD~FULL LOAD	<±5%	1.71%	Passed
6.8. Over-Voltage Protection	I/P:230VAC O/P:MIN LOAD	V1 : V (MAX)	-	N/A
6.9. Over-Circuit Protection	O/P: 19V	A(MAX)	8.A	Passed
6.10. Over-Load Protection	I/P:90VAC O/P:MIN LOAD	%	126.00%	N/A
	I/P:115VAC O/P:MIN LOAD	%	124.58%	N/A
	I/P:230VAC O/P:MIN LOAD	%	126.41%	N/A
	I/P:264VAC O/P:MIN LOAD	%	122.00%	N/A
6.11. Short Circuit Protect	I/P:115VAC O/P:MIN LOAD	19V&GND Short	-	Passed
	I/P:230VAC O/P:MIN LOAD	19V&GND Short	-	Passed
6.12. Line Voltage Surge	O/P: FULL LOAD	Surge voltage from 132VAC to 147VAC (0.5sec), back to 132VAC		Passed
	O/P: FULL LOAD	Surge voltage from 264VAC to 293VAC (0.5sec), back to 264VAC		Passed

6.13. Line Voltage Sag	O/P: FULL LOAD	Sag voltage from 108VAC to 80VAC (0.5sec), back to 108VAC	-	Passed
	O/P: FULL LOAD	Sag voltage from 198VAC to 161VAC (0.5sec), back to 198VDC	-	Passed
6.14. Ripple & Noise	I/P:115VAC O/P:FULL LOAD	$\leq 300\text{mv}$	125.9mv	Passed
	I/P:230VAC O/P:FULL LOAD	$\leq 300\text{mv}$	116.3mv	Passed
6.15. Setup Time	I/P:115VAC O/P:FULL LOAD	mS(MAX)	184ms	N/A
	I/P:230VAC O/P:FULL LOAD	mS(MAX)	182ms	N/A
6.16. Hold up Time	I/P:115VAC O/P:FULL LOAD	8mS(MIN)	33.1ms	Passed
	I/P:230VAC O/P:FULL LOAD	8mS(MIN)	80ms	Passed
6.17. Rise Time	I/P:115VAC O/P:FULL LOAD	mS(MAX)	22.59ms	N/A
	I/P:230VAC O/P:FULL LOAD	mS(MAX)	11.22ms	N/A
6.18. Turn on Overshoot	Turn on overshoot shall not exceed 5% over nominal voltages@ 20 % LOAD		-	Passed
	Turn on overshoot shall not exceed 5% over nominal voltages@ 20 % LOAD		-	Passed
6.19. Turn off Undershoot	Turn off undershoot shall not exceed 5% over nominal voltages@ 20 % LOAD		-	Passed
	Turn off undershoot shall not exceed 5% over nominal voltages@ 20 % LOAD		-	Passed
6.20. Remote ON/OFF	Simulate TTL signal to test this function		-	-
6.21. Power Good Signal	Shall go high level with a delay of100~500ms		-	-
6.22. Power On In Low Temperature	I/P:115VAC ( °C) After 2HR Power On		-	-
6.23. Power On In High Temperature	I/P:115VAC ( °C)After 2HR Power On		-	-
6.24. Power Consumption Test with DC Power	No Run Prime95	I/P:9VDC 1.46A 13.2W		Passed
	Run Prime95	I/P:9VDC 6.53A 58.8W		Passed
	No Run Prime95	I/P:30VDC 0.436A 13.08W		Passed
	Run Prime95	I/P:30VDC 1.906A 57.2W		Passed
6.25. Power Consumption Test with AC Adapter	No Run Prime95	I/P:100VAC 0.17A 17W	O/P: 19V/0.69A 13.11W	Passed
	Run Prime95	I/P:100VAC 0.71A 69W	O/P: 19V/3.02A 57.38W	Passed