

# FSP060-DBAE1

## with

# PER-V09V

## Power Electronics Test Report

Summary	<input checked="" type="checkbox"/> <b>Pass</b> <input type="checkbox"/> <b>Fail</b> <input type="checkbox"/> <b>Pass 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  
**10/02/2014**

Approval  
**Tom Lin**

Test Engineer  
**Sean Hsu**

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**1. Project**

FSP060-DBAE1 AC-DC Adapter for PER-V09V

**2. Power Manufacturer**

FSP

**3. Team Member**

PM : Jamie Chang ; H/W : Jeff Lee

**4. Test Equipment**

4.1. PCB : FWB-2350 A0.2 REV.R0.5 K235AM05 (07/08/2014)

4.2. CPU : INTEL ATOM C2558 2.4GHz

4.3. Memory : Transcend DDR3-1600 4GB\*2

4.4. HDD : TOSHIBA , MK1060GSC , 100GB

4.5. Mini-PCIe GPU Board : AAEON , PER-V09V

4.6. AC Adapter : FSP , Model : FSP060-DBAE1 , O/P : 12V/5A , 60Watt

4.7. LCD Monitor : CHIMEI , Model : 22SH-L

4.8. USB Mouse : Logitech , Model : M-BT85

4.9. USB Keyboard : Logitech , Model : Y-BL49

**5. AC Adapter Spec**

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

DC Output : 12Vdc Min Load : 0A Full Load : 5A / 60W

## 6. Test Item

Test Item	Test Condition / Specification		Sanction	
			Measured	Result
6.1. AC Input Current	I/P:90VAC	1.5A	1.4A	PASS
6.2. MAX Inrush Current	I/P:115VAC	A	8.54A	-
	I/P:230VAC	A	9.51A	-
6.3. Input Frequency & Voltage	I/P:90VAC/47HZ	■ON □ OFF	-	PASS
	I/P:90VAC/63HZ	■ON □ OFF	-	PASS
	I/P:264VAC/47HZ	■ON □ OFF	-	PASS
	I/P:264VAC/63HZ	■ON □ OFF	-	PASS
6.4. Switching Test	Switching Time: 0.5 Sec MIN Load / Full Load	@90VAC ■ON □ OFF	-	PASS
	Switching Time: 0.5 Sec MIN Load / Full Load	@115VAC ■ON □ OFF	-	PASS
	Switching Time: 0.5 Sec MIN Load / Full Load	@230VAC ■ON □ OFF	-	PASS
	Switching Time: 0.5 Sec MIN Load / Full Load	@264VAC ■ON □ OFF	-	PASS
6.5. Efficiency	I/P:90VAC O/P:5A	@%Min	86.371%	-
	I/P:115VAC O/P:5A	@87%Min	87.386%	PASS
	I/P:230VAC O/P:5A	@87%Min	88.387%	PASS
	I/P:264VAC O/P:5A	@%Min	88.219%	-
6.6. Line Regulation	I/P:90VAC~264VAC	<±3%	0.4%	PASS
6.7. Load Regulation	I/P:115VAC O/P:MIN~FULL LOAD	<±5%	4.375%	PASS
	I/P:230VAC O/P:MIN~FULL LOAD	<±5%	4.483%	PASS
6.8. Over-Voltage Protection	I/P:230VAC O/P:MIN LOAD	V1 : 13~18 (MAX)	-	-
6.9. Over-Current Protection	O/P: 12V	2A(MAX)	6.72A	PASS
6.10. Over-Load Protection	I/P:90VAC O/P:MIN LOAD	200%	124%	PASS
	I/P:115VAC O/P:MIN LOAD	200%	134.4%	PASS
	I/P:230VAC O/P:MIN LOAD	200%	138.4%	PASS
	I/P:264VAC O/P:MIN LOAD	200%	138%	PASS
6.11. Short Circuit Protect	I/P:115VAC O/P:MIN LOAD	12V&GND Short	-	PASS
	I/P:230VAC O/P:MIN LOAD	12V&GND Short	-	PASS

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<b>6.12. Line Voltage Surge</b>	O/P: FULL LOAD	Surge voltage from 132VAC to 147VAC (0.5sec), back to 132VAC	-	PASS
	O/P: FULL LOAD	Surge voltage from 264VAC to 293VAC (0.5sec), back to 264VAC	-	PASS
<b>6.13. Line Voltage Sag</b>	O/P: FULL LOAD	Sag voltage from 108VAC to 80VAC (0.5sec), back to 108VAC	-	PASS
	O/P: FULL LOAD	Sag voltage from 198VAC to 161VAC (0.5sec), back to 198VAC	-	PASS
<b>6.14. Ripple &amp; Noise</b>	I/P:115VAC O/P:FULL LOAD	$\leq 150\text{mv}$	93.8mv	PASS
	I/P:230VAC O/P:FULL LOAD	$\leq 150\text{mv}$	89.1mv	PASS
<b>6.15. Setup Time</b>	I/P:90VAC O/P:FULL LOAD	3S(MAX)	1.27ms	PASS
	I/P:230VAC O/P:FULL LOAD	mS(MAX)	670ms	-
<b>6.16. Hold up Time</b>	I/P:115VAC O/P:FULL LOAD	8mS(MIN)	22ms	PASS
	I/P:230VAC O/P:FULL LOAD	20mS(MIN)	52.4ms	PASS
<b>6.17. Rise Time</b>	I/P:115VAC O/P:FULL LOAD	40mS(MAX)	14.1ms	PASS
	I/P:230VAC O/P:FULL LOAD	mS(MAX)	11.2ms	-
<b>6.18. Turn on Overshoot</b>	Turn on overshoot shall not exceed 10% over nominal voltages@ 20 % LOAD		-	PASS
	Turn on overshoot shall not exceed 10% over nominal voltages@ 20 % LOAD		-	PASS
<b>6.19. Turn off Undershoot</b>	Turn off undershoot shall not exceed 10% over nominal voltages		-	PASS
	Turn off undershoot shall not exceed 10% over nominal voltages		-	PASS
<b>6.20. Remote ON/OFF</b>	Simulate TTL signal to test this function		-	-
<b>6.21. Power Good Signal</b>	Shall go high level with a delay of 100~500ms		-	-
<b>6.22. Power On In Low Temperature</b>	I/P:115VAC ( 0°C ) After 2HR Power On		-	-
<b>6.23. Power On In High Temperature</b>	I/P:115VAC ( °C )After 2HR Power On		-	-
<b>6.24. System Power Consumption Test</b>	No Run Prime95	I/P:100VAC 0.45A 20.1W	O/P: 12V/1.1A 13.2W	PASS
	Run Prime95	I/P:100VAC 0.54A 23.9W	O/P: 12V/1.48A 17.76W	PASS
	Off Mode	I/P:100VAC 0.1A 3.7W	O/P: 12V/0.14A 1.68W	PASS