

FSP120-AAB of AEC-6940
Power Electronics Test Report

Report NO.: 10P0A0005_I

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Approved By

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1. Project

FSP120-AAB AC-DC Adapter for AEC-6940

2. Power Manufacturer

FSP

3. Team Member

PM : Linux Wang ; PPC H/W : Kevin Liu

4. Test Equipment

4.1. CPU Board : COM-45SP REV.A1.0 BIOS: 0.6(11/13/2009)

4.2. I/O Board : AEC-6940 REV.A 0.2

4.3. CPU : Intel Core 2 Duo P9600 2.66GHz

4.4. Memory : DSL DDR3 1066 2GB / SEC K4B1G08460 * 2

4.5. SATA HDD : Seagate ST980817SM / 80GB

4.6. AC Adapter : FSP120-AAB O/P: 19V/6.32A

4.7. LCD Monitor : CHIMEI , Model : A170E2-T08

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

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

5. Photos of Product

Fig.5.1. —Photos



6. Test Item

| Test Item | Test Condition / Specification | | Sanction | |
|--------------------------------|---|--|----------|--------|
| | | | Measured | Result |
| 6.1. AC Input Current | I/P:90VAC | A | 1.53A | - |
| 6.2. MAX Inrush Current | I/P:115VAC | A | 11.7A | - |
| | I/P:230VAC | A | 18.3A | - |
| 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 FULL LOAD | @86%Min | 86.678% | PASS |
| | I/P:115VAC FULL LOAD | @86%Min | 88.115% | PASS |
| | I/P:230VAC FULL LOAD | @86%Min | 89.422% | PASS |
| | I/P:264VAC FULL LOAD | @86%Min | 89.106% | PASS |
| 6.6. Line Regulation | I/P:90VAC~264VAC | <±1% | 0.421% | PASS |
| 6.7. Load Regulation | I/P:115VAC O/P:MINLOAD~FULL LOAD | <±5% | 1.105 | PASS |
| | I/P:230VAC O/P:MINLOAD~FULL LOAD | <±5% | 1.473 | PASS |
| 6.8. Over-Voltage Protection | I/P:230VAC O/P:MIN LOAD | V1 : (MAX) | - | - |
| 6.9. Over-Circuit Protection | O/P: 19V | A(MAX) | 8.58A | - |
| 6.10. Over-Load Protection | I/P:90VAC O/P:MIN LOAD | % | 136.008 | - |
| | I/P:115VAC O/P:MIN LOAD | % | 134.58 | - |
| | I/P:230VAC O/P:MIN LOAD | % | 150.416 | - |
| | I/P:264VAC O/P:MIN LOAD | % | 152.00 | - |
| 6.11. Short Circuit Protect | I/P:115VAC O/P:MIN LOAD | 19V&GND Short | - | PASS |
| | I/P:230VAC O/P:MIN LOAD | 19V&GND Short | - | PASS |
| 6.12. Line Voltage Surge | 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 |
| 6.13. Line Voltage Sag | 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 198VDC | - | PASS |
| 6.14. Ripple & Noise | I/P:115VAC O/P:FULL LOAD | ≤ 300mv | 121.9 | PASS |
| | I/P:230VAC O/P:FULL LOAD | ≤ 300mv | 106.3 | PASS |
| 6.15. Setup Time | I/P:115VAC O/P:FULL LOAD | mS(MAX) | 175 | - |
| | I/P:230VAC O/P:FULL LOAD | mS(MAX) | 176.75 | - |
| 6.16. Hold up Time | I/P:115VAC O/P:FULL LOAD | 8mS(MIN) | 31.1 | PASS |
| | I/P:230VAC O/P:FULL LOAD | 8mS(MIN) | 29.8 | PASS |
| 6.17. Rise Time | I/P:115VAC O/P:FULL LOAD | mS(MAX) | 12.8 | - |
| | I/P:230VAC O/P:FULL LOAD | mS(MAX) | 12.6 | - |
| 6.18. Turn on Overshoot | 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 |
| 6.19. Turn off Undershoot | Turn off undershoot shall not exceed 10% over nominal voltages | | - | PASS |
| | Turn off undershoot shall not exceed 10% over nominal voltages | | - | PASS |

| | | | | |
|--|---|-------------|--------------|------------------------|
| 6.20. Remote ON/OFF | Simulate TTL signal to test this function | | | - |
| 6.21. Power Good Signal | Shall go high level with a delay of 100~500ms | | | - |
| 6.22. Power On In Low Temperature | I/P: 115VAC (0℃) After 2HR Power On | | | - |
| 6.23. Power On In High Temperature | I/P: 115VAC (50℃) After 2HR Power On | | | - |
| 6.24. Room Burn-in test | I/P: 115VAC O/P: FULL LOAD TA: 25℃ BURN-IN DURATION : 2 hour | | | PASS |
| 6.25. On/Off Cycling | Times / on: 20 sec / off: 10 sec | | | - |
| 6.26. System Power Consumption Test (DC-DC Power Board) | No Run Prime95 | I/P: 9VDC | 1.69A 15.21W | PASS |
| | Run Prime95 | I/P: 9VDC | 4.7A 42.3W | PASS |
| | No Run Prime95 | I/P: 30VDC | 0.63A 18.9W | PASS |
| | Run Prime95 | I/P: 30VDC | 1.55A 46.5W | PASS |
| 6.27. Power Consumption Test | No Run Prime95 | I/P: 100VAC | 0.31A 28W | O/P: 19V/1.21A PASS |
| | Run Prime95 | I/P: 100VAC | 0.7A 65.72W | O/P: 19V/2.84A PASS |

7. Test Result and Observation

No fault was found during the test