

Report NO: 10P0A0019_I

ENP-7025B of AGP-3175 Power Electronics Test Report

| | | | | |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------------|
| Summary | <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail Note : There are <u>0</u> defect(s) not list in the report, please check it in the DTS Website. <input type="checkbox"/> Pass with Deviation Comment: | | | |
| Test Result Summary | | | | |
| | Critical | Major | Minor | Enhancement |
| Defect Found | 0 | 0 | 0 | 0 |
| Defect Unsolved | 0 | 0 | 0 | 0 |

Issue date

12/09/2010

Approval

Jansin Lee

Test Engineer

Sean Hsu

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1. Project

ENP-7025B AC-DC Power for AGP-3175

2. Power Manufacturer

Enhance Electronics Co.,LTD

3. Team Member

PM : Alex Hsueh ; H/W : Jack Peng

4. Test Equipment

- 4.1. PCB : IMBI-QM57 A0.1 (BIOS 0.1)
- 4.2. CPU : Intel Celeron P4500 1.87GHz
- 4.3. Memory : DSL DDR3-1066 1GB
- 4.4. HDD : Seagate , M/N : ST3160318AS , 160GB
- 4.5. Power Supply : Enhance Model : ENP-7025B O/P : 250W
- 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 : 90VAC~264VAC / 47Hz~63Hz

| Parameter | Min | Nom. | Max | Peak | Unit |
|-----------|-----|------|-----|------|------|
| +3.3V | 0.1 | - | 13 | | Amps |
| +5V | 0.2 | - | 14 | | Amps |
| +12V1 | 0.6 | - | 18 | 20 | Amps |
| +12V2 | 0.6 | - | 18 | 20 | Amps |
| -12V | 0.0 | - | 0.3 | | Amps |
| +5Vsb | 0.0 | - | 2 | 2.5 | Amps |

6. Test Item

| Test Item | Test Condition / Specification | | Sanction | |
|--------------------------------|-------------------------------------------------|-------------------|---------------|--------|
| | | | Measured | Result |
| 6.1. AC Input Current | I/P:115VAC | 3.5A | 2.68A | PASS |
| 6.2. MAX Inrush Current | I/P:115VAC | A | 10.15A | - |
| | I/P:230VAC | A | 12.8A | - |
| 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 | - | - |
| | Switching Time: 0.5 Sec MIN Load / Full Load | @115VAC □ON □ OFF | - | - |
| | Switching Time: 0.5 Sec MIN Load / Full Load | @230VAC □ON □ OFF | - | - |
| | Switching Time: 0.5 Sec MIN Load / Full Load | @264VAC □ON □ OFF | - | - |
| 6.5. Efficiency | I/P:115VAC FULL LOAD | @80%Min | 82.001% | PASS |
| | I/P:230VAC FULL LOAD | @80%Min | 84.501% | PASS |
| 6.6. Line Regulation | I/P:90VAC~264VAC | <±5%(3.3V) | 0% | PASS |
| | | <±5%(5V) | 0% | PASS |
| | | <±5%(12V) | 0.016% | PASS |
| | | <±10%(-12V) | 0.267% | PASS |
| | | <±5%(5VSB) | 0.004% | PASS |
| 6.7. Load Regulation | I/P:115VAC O/P:20%LOAD~FULL LOAD | <±5%(3.3V) | 1.742/-0.606% | PASS |
| | | <±5%(5V) | 1.3/-1.85% | PASS |
| | | <±5%(12V) | 1.83/1.08% | PASS |
| | | <±10%(-12V) | -1.108/-0.5% | PASS |
| | | <±5%(5VSB) | 0.1/-0.176% | PASS |
| 6.8. Over-Voltage Protection | I/P:230VAC O/P:MIN LOAD | V1 : 4.3(MAX) | - | - |
| | | V2 : 7(MAX) | - | - |
| | | V3 : 15.6(MAX) | - | - |
| 6.9. Over-Circuit Protection | O/P: 3.3V | A(MAX) | - | - |
| | O/P: 5V | A(MAX) | - | - |
| | O/P: 12V | A(MAX) | - | - |
| 6.10. Over-Load Protection | I/P:115VAC O/P:MIN LOAD | 110~150% | 135.6% | PASS |
| | I/P:230VAC O/P:MIN LOAD | 110~150% | 133.9% | PASS |
| 6.11. Short Circuit Protect | I/P:115VAC O/P:MIN LOAD | 5V&GND Short | - | PASS |
| | I/P:230VAC O/P:MIN LOAD | 5V&GND Short | - | PASS |

| | | | | |
|------------------------------------|---------------------------------------------------------------------------|----------------------------------|----------------------------------------------------------------------|------|
| 6.12. Ripple & Noise | I/P:115VAC O/P:FULL LOAD | $\leq 50\text{mv}(3.3\text{V})$ | 48.1mv | PASS |
| | | $\leq 50\text{mv}(5\text{V})$ | 23.1mv | PASS |
| | | $\leq 120\text{mv}(12\text{V})$ | 39.4mv | PASS |
| | | $\leq 120\text{mv}(-12\text{V})$ | 52.5mv | PASS |
| | I/P:230VAC O/P:FULL LOAD | $\leq 50\text{mv}(5\text{VSB})$ | 45.0mv | PASS |
| | | $\leq 50\text{mv}(3.3\text{V})$ | 49.2mv | PASS |
| | | $\leq 50\text{mv}(5\text{V})$ | 25.6mv | PASS |
| | | $\leq 120\text{mv}(12\text{V})$ | 40.5mv | PASS |
| 6.13. Setup Time | I/P:115VAC O/P:FULL LOAD | S(MAX)(5V) | 245ms | - |
| | I/P:230VAC O/P:FULL LOAD | S(MAX) (5V) | 212.5ms | - |
| 6.14. Hold up Time | I/P:115VAC O/P:FULL LOAD | 16mS(MIN) (5V) | 18.3ms | PASS |
| | I/P:230VAC O/P:FULL LOAD | 16mS(MIN) (5V) | 17.9ms | PASS |
| 6.15. Rise Time | I/P:115VAC O/P:FULL LOAD | 20mS(MAX) (5V) | 19.1ms | PASS |
| | I/P:230VAC O/P:FULL LOAD | 20mS(MAX) (5V) | 18.7ms | PASS |
| 6.16. 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 |
| 6.17. 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 |
| 6.18. Remote ON/OFF | Simulate TTL signal to test this function | | - | |
| 6.19. Power Good Signal | Shall go high level with a delay of100~500ms | | 315ms | PASS |
| 6.20. Power On In Low Temperature | I/P:115VAC (0 $^{\circ}$ C) After 2HR Power On | | | PASS |
| 6.21. Power On In High Temperature | I/P:115VAC (40 $^{\circ}$ C)After 2HR Power On | | | PASS |
| 6.22. Room Burn-in test | I/P:115VAC O/P: FULL LOAD TA:25 $^{\circ}$ C BURN-IN DURATION : 2 hour | | | PASS |
| 6.23. On/Off Cycling | Times / on: 20 sec / off: 10 sec | | | - |
| 6.24. Power Consumption Test | No Run Prime95 | I/P: 100 VAC 0.6A 59.8 W | O/P: 3.3V/1.09A 5V/2.14A 12V/2.9A -12V/0.05A 5VSB/0.04A | PASS |
| | Run Prime95 | I/P: 100 VAC 0.77A 76.9 W | O/P: 3.3V/1.08A 5V/2.33A 12V/4.42A -12V/0.05A 5VSB/0.04A | PASS |

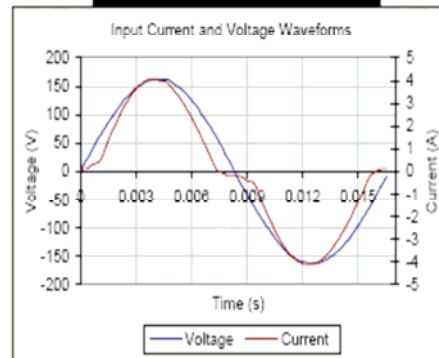
7. 80 PLUS Report

80 PLUS Verification and Testing Report

| | |
|---------------------------------------|---------------|
| TYPICAL EFFICIENCY (50% Load): | 86.11% |
| AVERAGE EFFICIENCY : | 84.41% |
| 80 PLUS COMPLIANT: | YES |



| | |
|---------------|-------------------------------|
| Ecos ID # | 1303 |
| Manufacturer | ENHANCE ELECTRONICS CO., LTD. |
| Model Number | ENP-7025 |
| Serial Number | N/A |
| Year | 2009 |
| Type | FLEX-ATX |
| Test Date | 2/19/2009 |

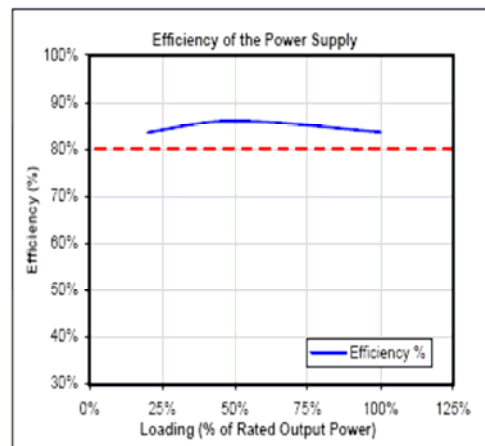
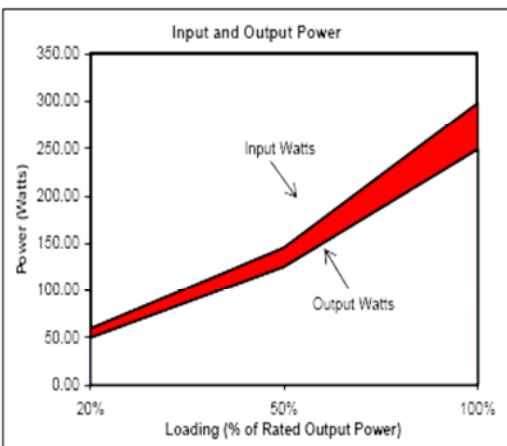


Input AC Current Waveform (ITHD = 24.07%, 50% Load)

| Rated Specifications | Value | Units |
|----------------------|---------|-------|
| Input Voltage | 100-240 | Volts |
| Input Current | 3.5-1.5 | Amps |
| Input Frequency | 60-50 | Hz |
| Rated Output Power | 250 | Watts |

Note: All measurements were taken with input voltage at 115 V nominal and 60 Hz.

| I _{RMS} A | PF | I _{THD} (%) | Load (%) | Fraction of Load | Input Watts | DC Terminal Voltage (V)/ DC Load Current (A) | | | | | Output Watts | Efficiency % |
|-----------------------|--------|----------------------|----------|------------------|-------------|----------------------------------------------|----------|---------|---------|---------|--------------|--------------|
| | | | | | | 12V (cumulative of 12V1, 12V2, etc.) | -12V | 3.3V | 5V* | 5VSB | | |
| 0.53 | 0.9900 | 99.75% | 20% | Light | 59.94 | 12/3.4 | 11.7/0 | 3.4/0.9 | 5.1/0.9 | 5/0.2 | 50.08 | 83.55% |
| 1.31 | 0.9696 | 24.07% | 50% | Typical | 145.81 | 12/8.6 | 11.8/0.1 | 3.3/2.2 | 5.1/2.3 | 5.1/0.5 | 125.55 | 86.11% |
| 2.65 | 0.9773 | 21.00% | 100% | Full | 298.00 | 11.9/17.2 | 11.9/0.1 | 3.3/4.4 | 5.1/4.7 | 5/0.9 | 249.02 | 83.56% |



These tests were conducted by a third party independent testing firm on behalf of the 80 PLUS[®] Program. 80 PLUS is a certification program to promote highly-efficient power supplies (greater than 80% efficiency in the active mode) in technology applications. <http://www.80plus.org/>

