

TEST REPORT

Performance of external power supplies

Report Reference No...... : SZES160900367801

Tested by (name + signature) : James Jiang

Approved by (+ signature) : Henry Zheng

Date of issue..... : 2016-09-27

Total number of pages..... : 14 Pages



Testing Laboratory : **SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch**

Address..... : No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057

Applicant's name..... : GlobTek, Inc.

Address..... : 186 Veterans Dr. Northvale
NJ 07647
U.S.A.

Test specification:

Test method..... : ☐ 10 CFR Part 430 Appendix Z to Subpart B—Uniform Test Method for Measuring the Energy Consumption of External Power Supplies

☒ CAN/CSA C381.1-08: Test method for calculating the energy efficiency of single-voltage external ac-dc and ac-ac power supplies

Test requested..... : ☐ DoE: Energy conservation standards specified in the Code of Federal Regulations, 10 CFR 430.32(w)

☐ Canada Ontario: Green Energy Act, 2009, ONTARIO REGULATION 404/12, energy efficiency — appliances and products, Schedule 7, clause 6 for External power supply
☒ NRCan: Amendment 11 to the Energy Efficiency Regulations for External Power Supplies, published in the Canada Gazette, Part II on October 12, 2011

Non-standard test method..... : None

Test Report Form No...... : DOE_PS_C

Test Report Form(s) Originator : SGS-CSTC

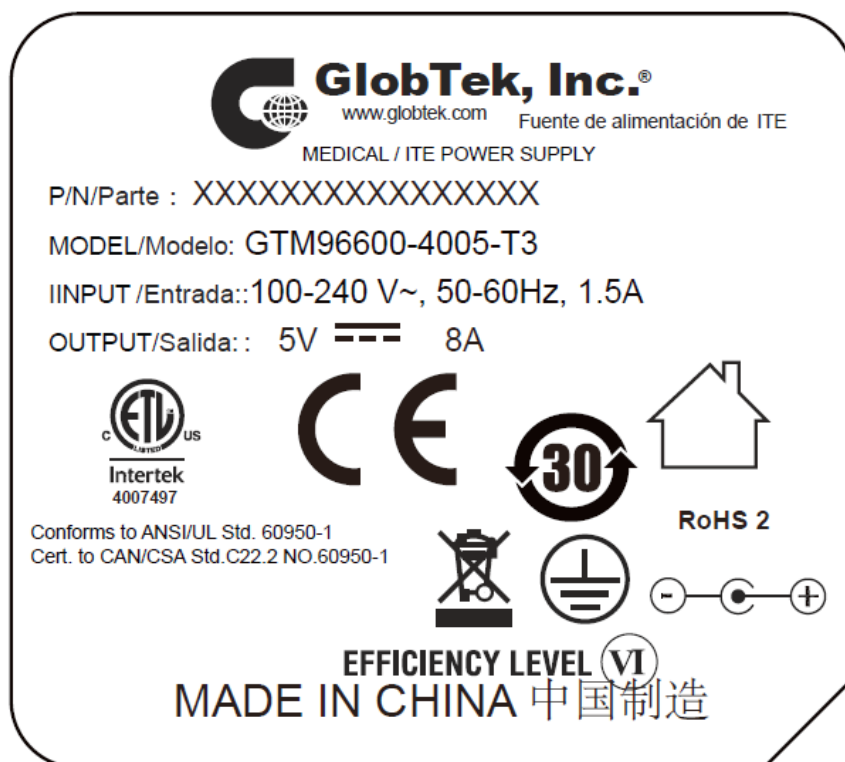
Master TRF..... : 2016-06

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| | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|------------------|
| Test item description: | | ITE Power Supply |
| Type of appliance | AC-DC Power Supply | |
| Trademark / brand | GlobTek, Inc. | |
| Model and / or type reference | GTM96600-4005-T3 | |
| Serial number | N/A | |
| Rating(s) | Input: 100-240 V~, 50-60 Hz, 1,5 A | |
| | Output: 5 V $\overline{\text{---}}$, 8 A | |
| Manufacturing site (factory) | GlobTek (Suzhou) Co., Ltd. | |
| | Building 4, 76 JinLing East Road, Suzhou Industrial Park, Suzhou, 215021, JiangSu, China | |
| Test item particulars: | | |
| Type of plug / inlet | Class I inlet | |
| Plug configuration | The plug is separate from the EUT | |
| Length of power cord, if any | N/A | |
| Output cord length | 117 cm | |
| Output plug type | Single pin type | |
| Output voltage type | Single-Voltage output | |
| Modification to connectors for testing.... | Yes | |
| With built in switch | No | |
| Product powered by EUT | Not known | |
| Other features..... | Not known | |
| Summary of testing: | | |
| The submitted samples complied with | | |
| <input type="checkbox"/> DoE: Energy conservation standards specified in the Code of Federal Regulations, 10 CFR 430.32(w) | | |
| <input type="checkbox"/> Canada Ontario: Green Energy Act, 2009, ONTARIO REGULATION 404/12, energy efficiency — appliances and products, Schedule 7, clause 6 for External power supply. | | |
| <input checked="" type="checkbox"/> NRCan: Amendment 11 to the Energy Efficiency Regulations for External Power Supplies, published in the Canada Gazette, Part II on October 12, 2011 | | |
| <input checked="" type="checkbox"/> Other: International Efficiency Marking Protocol for External Power Supplies Version 3.0, September 2013 - Level VI | | |
| When determining the test conclusion, the Measurement Uncertainty of test has been considered. | | |
| Measurements of power of 0,50 W or greater was made with an uncertainty of less than or equal to 2 % at the 95 % confidence level. | | |
| Measurements of power of less than 0,50 W was made with an uncertainty of less than or equal to 0,01 W at the 95 % confidence level. | | |

Copy of marking plate:



Remark: the above marking plate is only a draft artwork to show the product ratings and model No.

Testing:

Date of receipt of test item..... : 2016-09-20

Date (s) of performance of tests..... : 2016-09-23

General remarks:

The test results presented in this report relate only to the object tested.

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TEST DESCRIPTION**Preparing for test:**

- a. The built in switch was in the "on" position.
- b. The metering equipments were connected to the output and the efficiency was measured from the core immediately adjacent to the output connector.

Load condition:

A set of variable resistive loads was used to load the power supply to provide all active mode load conditions.

Test Conditions for Measurement:

1. The EUT was operated at 100%, 75%, 50%, 25%, 0% of nameplate current output for at least 30 minutes, at rated voltage and frequency.
2. After the warm up period, the input power was monitor for a period of 5 minutes. Under the stable power level condition was established as per standard, the measurement was recorded at the end of the 5 minutes period.
3. If input power is not stable over a 5 minutes period, the average power over the time for both input and output were measured.
4. Efficiency measurement was conducted in sequence from load condition 1 to load condition 5 as per standard.
5. Efficiency was calculated by dividing the measured active output power at the given load condition by the active ac input power measured at that load condition. Then the average efficiency was calculated and reported as the arithmetic mean of the efficiency values calculated.

Measurement Result

| Test result (Sample # 1) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 21,9 | 21,9 | 21,9 | 21,9 | 21,9 |
| Input Voltage (V~) | 115,1 | 115,1 | 115,1 | 115,1 | 115,1 |
| Input frequency (Hz) | 60 | 60 | 60 | 60 | 60 |
| Measured Input Power (W) | 47,00 | 34,70 | 23,11 | 11,54 | 0,03 |
| True Power Factor | 0,488 | 0,459 | 0,421 | 0,367 | 0,011 |
| THD (%) | 0,047 | 0,040 | 0,033 | 0,025 | 0,019 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 5,00 | 5,04 | 5,10 | 5,16 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 40,00 | 30,24 | 20,41 | 10,32 | |
| Power Consumed by UUT (W) | 7,00 | 4,46 | 2,70 | 1,22 | |
| Calculated Efficiency (%) | 85,11 | 87,15 | 88,32 | 89,43 | |
| Average Efficiency (%) | 87,50 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Test result (Sample # 2) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 21,9 | 21,9 | 21,9 | 21,9 | 21,9 |
| Input Voltage (V~) | 115,0 | 115,1 | 115,1 | 115,1 | 115,1 |
| Input frequency (Hz) | 60 | 60 | 60 | 60 | 60 |
| Measured Input Power (W) | 47,12 | 34,80 | 23,16 | 11,59 | 0,02 |
| True Power Factor | 0,490 | 0,460 | 0,422 | 0,367 | 0,009 |
| THD (%) | 0,051 | 0,040 | 0,035 | 0,023 | 0,018 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 5,01 | 5,06 | 5,11 | 5,16 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 40,06 | 30,34 | 20,44 | 10,32 | |
| Power Consumed by UUT (W) | 7,06 | 4,45 | 2,72 | 1,27 | |
| Calculated Efficiency (%) | 85,02 | 87,18 | 88,26 | 89,04 | |
| Average Efficiency (%) | 87,37 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Test result (Sample # 3) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 21,9 | 21,9 | 21,9 | 21,9 | 21,9 |
| Input Voltage (V~) | 115,0 | 115,1 | 115,1 | 115,1 | 115,1 |
| Input frequency (Hz) | 60 | 60 | 60 | 60 | 60 |
| Measured Input Power (W) | 47,00 | 34,72 | 23,11 | 11,57 | 0,02 |
| True Power Factor | 0,491 | 0,461 | 0,423 | 0,369 | 0,009 |
| THD (%) | 0,046 | 0,041 | 0,033 | 0,024 | 0,023 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 4,98 | 5,03 | 5,09 | 5,15 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 39,81 | 30,19 | 20,35 | 10,29 | |
| Power Consumed by UUT (W) | 7,19 | 4,53 | 2,76 | 1,27 | |
| Calculated Efficiency (%) | 84,70 | 86,95 | 88,06 | 88,94 | |
| Average Efficiency (%) | 87,16 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Test result (Sample # 1) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 22,0 | 22,0 | 22,0 | 22,0 | 22,0 |
| Input Voltage (V~) | 230,2 | 230,2 | 230,2 | 230,2 | 230,2 |
| Input frequency (Hz) | 50 | 50 | 50 | 50 | 50 |
| Measured Input Power (W) | 46,27 | 34,62 | 23,15 | 11,59 | 0,03 |
| True Power Factor | 0,371 | 0,349 | 0,324 | 0,289 | 0,003 |
| THD (%) | 0,031 | 0,029 | 0,025 | 0,026 | 0,023 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 5,00 | 5,05 | 5,10 | 5,16 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 40,02 | 30,30 | 20,41 | 10,31 | |
| Power Consumed by UUT (W) | 6,25 | 4,33 | 2,73 | 1,27 | |
| Calculated Efficiency (%) | 86,49 | 87,52 | 88,16 | 88,96 | |
| Average Efficiency (%) | 87,78 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Test result (Sample # 2) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 22,0 | 22,0 | 22,0 | 22,0 | 22,0 |
| Input Voltage (V~) | 230,2 | 230,2 | 230,2 | 230,2 | 230,2 |
| Input frequency (Hz) | 50 | 50 | 50 | 50 | 50 |
| Measured Input Power (W) | 46,36 | 34,70 | 23,20 | 11,63 | 0,03 |
| True Power Factor | 0,371 | 0,348 | 0,323 | 0,288 | 0,003 |
| THD (%) | 0,027 | 0,029 | 0,028 | 0,026 | 0,026 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 5,01 | 5,06 | 5,11 | 5,16 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 40,07 | 30,35 | 20,43 | 10,32 | |
| Power Consumed by UUT (W) | 6,28 | 4,35 | 2,76 | 1,31 | |
| Calculated Efficiency (%) | 86,43 | 87,46 | 88,06 | 88,74 | |
| Average Efficiency (%) | 87,67 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Test result (Sample # 3) | | | | | |
|------------------------------|-------|-------|-------|-------|-------|
| Rated Load | 100% | 75% | 50% | 25% | 0 |
| Ambient Temperature (°C) | 22,0 | 22,0 | 22,0 | 22,0 | 22,0 |
| Input Voltage (V~) | 230,2 | 230,2 | 230,2 | 230,2 | 230,2 |
| Input frequency (Hz) | 50 | 50 | 50 | 50 | 50 |
| Measured Input Power (W) | 46,24 | 34,63 | 23,15 | 11,62 | 0,03 |
| True Power Factor | 0,373 | 0,350 | 0,325 | 0,292 | 0,003 |
| THD (%) | 0,028 | 0,023 | 0,021 | 0,017 | 0,018 |
| Maximum No Load Power (W) | | | | | 0,1 |
| Measured Output Voltage (V) | 4,98 | 5,03 | 5,09 | 5,15 | |
| Measured Output Current (mA) | 8000 | 6000 | 4000 | 2000 | |
| Active Output Power (W) | 39,82 | 30,20 | 20,35 | 10,29 | |
| Power Consumed by UUT (W) | 6,41 | 4,43 | 2,80 | 1,33 | |
| Calculated Efficiency (%) | 86,12 | 87,21 | 87,90 | 88,55 | |
| Average Efficiency (%) | 87,45 | | | | |
| Minimum Efficiency (%) | 86,07 | | | | |
| Result | PASS | | | | |

| Table 1 | Test instruments | | | |
|---------------------------------|------------------|-----------|----------------|----------------|
| Name | Brand | Model | Last cal. date | Next cal. date |
| Digital Power Analyzer | YOKOGAWA | WT3000 | 2016-05-11 | 2017-05-11 |
| AC Power supply | KIKUSUI | PCR2000LA | 2016-03-02 | 2017-03-02 |
| Temperature & Humidity Recorder | ZOGLAB | DSR-TH | 2015-07-14 | 2016-07-14 |
| Load Machine | PRODIGIT | 3311F | 2015-12-03 | 2016-12-03 |

Photo documents:

| | |
|------------------|--------------------------------------------------------------------------------------|
| Products General |  |
| Products General |  |
| Products General | |



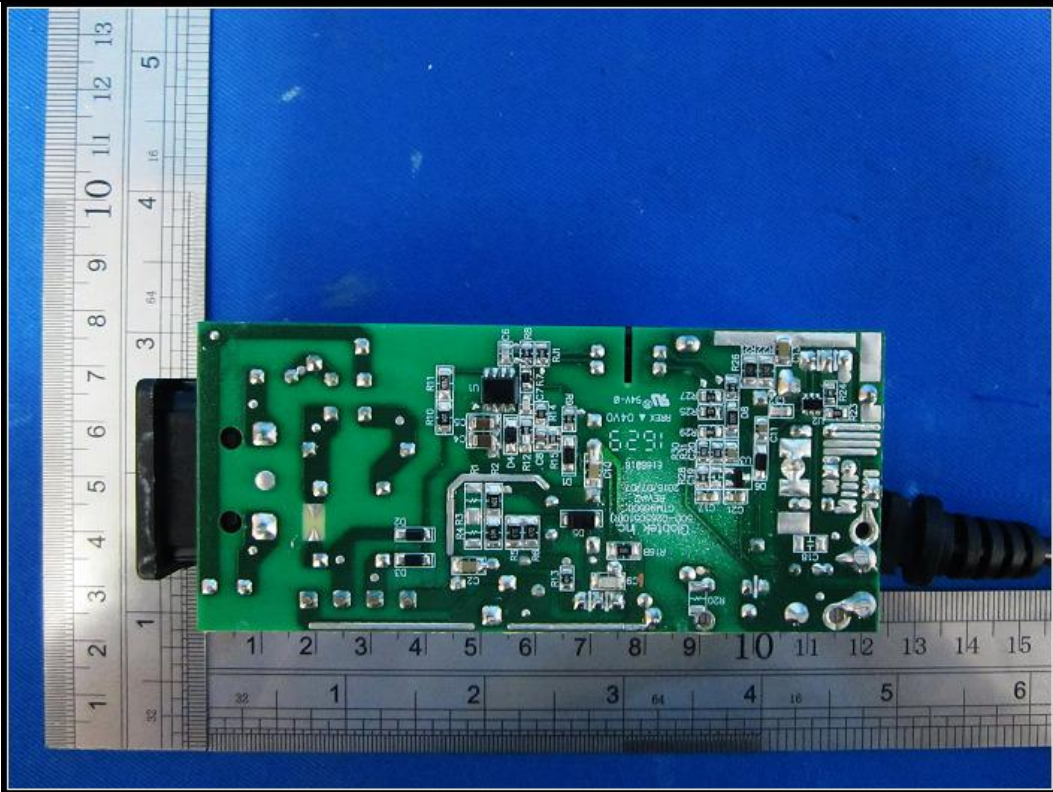
Products General



Internal View



Internal View



--- End of Report ---