

EMC TEST REPORT

For

GLOBTEK INC.

LED Driver

Model No: GTH51085CC-1404, GTH51085CC-2804,
GTH51085CC-0412, GTH51085CC-3711

Prepared for : GLOBTEK INC.
Address : 186 veterans Dr. Northvale, NJ07647 U.S.A.

Report Number : E0811640E
Date of Report : November 20, 2008

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TEST REPORT DESCRIPTION

Applicant : GLOBTEK INC.

EUT : LED Driver

Model No. : GTH51085CC-1404, GTH51085CC-2804, GTH51085CC-0412,
GTH51085CC-3711.

Power Supply : AC 100~240V 50/60Hz

Measurement Procedure Used:

EN55015: 2006
EN61000-3-2: 2006, EN61000-3-3: 1995+A1: 2001+A2: 2005
EN61547: 1996+A1: 2000 (EN61000-4-2: 1995+A1: 1998+A2: 2001, EN61000-4-3: 2006,
EN61000-4-4: 2004, EN61000-4-5: 2006, EN61000-4-6: 1996+A1:2001, EN61000-4-8:
1993+A1: 2001, EN61000-4-11: 2004)

The device described above is tested by Dongguan EMTEK Co., Ltd. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and Dongguan EMTEK Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT to be technically compliant with the EN55015, EN61000-3-2, EN61000-3-3 and EN61547 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of Dongguan EMTEK Co., Ltd.

Date of Report: November 20, 2008

Prepared by: _____
(Engineer)

Reviewer: _____
(Quality Manager)

Approved & Authorized Signer: _____
(Manager)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Remark : This report is based on original report E0805651E. Both reports are the same except model number and applicant.

EUT : LED Driver

Model Number : GTH51085CC-1404, GTH51085CC-2804, GTH51085CC-0412, GTH51085CC-3711.

Trade Mark : Globtek, Inc.

Power Supply : AC 100~240V 50/60Hz

Applicant : GLOBTEK INC.

Address : 186 veterans Dr. Northvale, NJ07647 U.S.A.

Date of sample receiver : May 15, 2008

1.2. Description of Test Facility

Site Description

EMC Lab. : Accredited by CNAS, 2007.07.27
The certificate is valid until 2012.07.26
The Laboratory has been assessed and proved to be in compliance with
CNAS/CL01:2005
The Certificate Registration Number is L3150

Accredited by TUV Rheinland Shenzhen 2008.5
The certificate is valid until 2009.12
The Laboratory has been assessed according to the requirements
ISO/IEC 17025:2005

Accredited by FCC, Nov. 05 2008
The Certificate Number is 247565.

Accredited by Industry Canada, January 8, 2003
The Certificate Registration Number. is 46405-4480

Name of Firm : Dongguan EMTEK Co., Ltd.
Site LocatiOn : No.281, Guantai Road, Nancheng District, Dongguan,
Guangdong, China

1.3. Measurement Uncertainty

Conducted Emission Uncertainty : $\pm 1.2656\text{dB}$

Radiated Emission Uncertainty : $\pm 1.4118\text{dB}$

Disturbance Power Uncertainty : $\pm 1.6656\text{dB}$

2. MEASURING DEVICES AND TEST EQUIPMENT

2.1 For Power Line Conducted Emission

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------------------|---------------|-----------|------------|--------------|---------------|
| 1 | EMI Test Receiver | ROHDE&SCHWARZ | ESCI | 100137 | May 29, 2008 | 1 Year |
| 2 | LISN | ROHDE&SCHWARZ | ENV216 | 100017 | May 29, 2008 | 1 Year |
| 3 | Conical Housing | EMTEK | N/A | N/A | May 29, 2008 | N/A |
| 4 | Voltage Probe | SCHWARZBECK | EZ-17 | 100213 | May 29, 2008 | 1 Year |
| 5 | 50 Ω Coaxial Switch | ANRITSU CORP | MP59B | 6100175589 | May 29, 2008 | 1 Year |

2.2 For Magnetic Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------|------------------------|-----------|------------|--------------|---------------|
| 1. | Test Receiver | Rohde & Schwarz | ESCS30 | 828985/018 | May 29, 2008 | 1 Year |
| 2. | Loop Antenna | Laplace Instrument Ltd | RF300 | 8006 | May 29, 2008 | 1 Year |
| 3. | Pulse Limiter | Rohde & Schwarz | ESH3-Z2 | 100006 | May 29, 2008 | 1 Year |
| 4. | RF Cable | FUJIKURA | RG-55/U | LISN Cable | May 29, 2008 | 1 Year |
| 5. | Coaxial Switch | Anritsu | MP59B | M73989 | May 29, 2008 | 1 Year |

2.3 For Harmonic Current / Flicker Measurement

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-----------------------------|--------------|-----------|-------------|--------------|---------------|
| 1. | Power Frequency Test System | EM TEST | DPA500 | V0526100506 | May 29, 2008 | 1 Year |
| 2. | PC | EM TEST | ACS500 | V0526100507 | N/A | N/A |

2.4 For Electrostatic Discharge Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|------------|--------------|-----------|-------------|--------------|---------------|
| 1. | ESD Tester | EM TEST | ESD 30C | V0526100500 | May 29, 2008 | 1 Year |

2.5 For RF Strength Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------------------|--------------|------------|------------|--------------|---------------|
| 1. | Signal Generator | HP | 8648A | 3625U00573 | May 29, 2008 | 1 Year |
| 2. | Amplifier | A&R | 500A100 | 17034 | May 29, 2008 | 1 Year |
| 3. | Amplifier | A&R | 100W/1000M | 17028 | May 29, 2008 | 1 Year |
| 4. | Isotropic Field Monitor | A&R | FM2000 | 16829 | May 29, 2008 | 1 Year |
| 5. | Isotropic Field Probe | A&R | FP2000 | 16755 | May 29, 2008 | 1 Year |
| 6. | Biconic Antenna | EMCO | 3108 | 9507-2534 | May 29, 2008 | 1 Year |
| 7. | Log-periodic Antenna | A&R | AT1080 | 16812 | May 29, 2008 | 1 Year |
| 8. | PC | N/A | 486DX2 | N/A | N/A | N/A |

2.6 For Electrical Fast Transient/Burst Immunity Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|----------------|--------------|-----------|-------------|--------------|---------------|
| 1. | Burst Tester | EM TEST | UCS500M6B | V0526100502 | May 29, 2008 | 1 Year |
| 2. | Coupling Clamp | EM TEST | HFK | 0605-10 | May 29, 2008 | 1 Year |

2.7 For Surge Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|--------------|--------------|------------|-------------|--------------|---------------|
| 1. | Surge Tester | EM TEST | VCS500-M6T | V0526100503 | May 29, 2008 | 1 Year |

2.8 For Injected Currents Susceptibility Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|---------------------|--------------|-------------|------------|--------------|---------------|
| 1. | Simulator | EMTEST | CWS500C | 0900-12 | May 29, 2008 | 1 Year |
| 2. | CDN | EMTEST | CDN-M2 | 5100100100 | May 29, 2008 | 1 Year |
| 3. | CDN | EMTEST | CDN-M3 | 0900-11 | May 29, 2008 | 1 Year |
| 4. | Injection CLED LAMP | EMTEST | F-2031-23MM | 368 | May 29, 2008 | 1 Year |
| 5. | Attenuator | EMTEST | ATT6 | 0010222A | May 29, 2008 | 1 Year |

2.9 For Magnetic Field Immunity Test

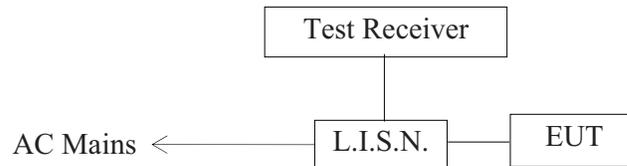
| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-----------------------|--------------|-----------|------------|--------------|---------------|
| 1. | Magnetic Field Tester | HAEFELY | MAG100 | 250040.1 | May 29, 2008 | 1 Year |
| 2. | AC Transformer | CHOKUN | TDGC2J-5 | N/A | N/A | N/A |

2.10 For Voltage Dips and Interruptions Test

| Item | Equipment | Manufacturer | Model No. | Serial No. | Last Cal. | Cal. Interval |
|------|-------------|--------------|-----------|------------|--------------|---------------|
| 1. | Dips Tester | HAEFELY | Pline1610 | 083732-18 | May 29, 2008 | 1 Year |

3. POWER LINE CONDUCTED MEASUREMENT

3.1 Block Diagram of Test Setup



(EUT: LED Driver)

3.2 Conducted Power Line Emission Measurement Standard and Limits

3.2.1 Standard:

EN55015: 2006

3.2.2 Limits

| Frequency | At mains terminals (dB μ V) | |
|------------------|---------------------------------|---------------|
| | Quasi-peak Level | Average Level |
| 9KHz ~ 50KHz | 110 | -- |
| 50KHz ~ 150KHz | 90 ~ 80* | -- |
| 150KHz ~ 0.5MHz | 66 ~ 56* | 56 ~ 46* |
| 0.5MHz ~ 2.51MHz | 56 | 46 |
| 2.51MHz ~ 3.0MHz | 73 | 63 |
| 3.0MHz ~ 5.0MHz | 56 | 46 |
| 5.0MHz ~ 30MHz | 60 | 50 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

3.3 EUT Configuration on Measurement

The configuration of the EUT is same as Section 1.1.

3.4 Operating Condition of EUT

- 3.4.1 Setup the EUT as shown in Section 3.1.
- 3.4.2 Turn on the power of all equipments.
- 3.4.3 Let the EUT work in test mode (ON) and measure it.

3.5 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground and connected to the AC mains through a Line Impedance Stabilization Network (L.I.S.N.). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are checked to find out the maximum conducted emission according to the EN55015 regulations during conducted emission measurement. And the voltage probe had been used for the load terminals measurement according to the EN55015 standard.

The bandwidth of the test receiver (R&S ESCI) is set at 200Hz in 9K~150KHz range and 9KHz in 150K~30MHz range.

The frequency range from 9KHz to 30MHz is checked.

All the test results are listed in Section 3.6. The scanning waveform is put in Appendix I.

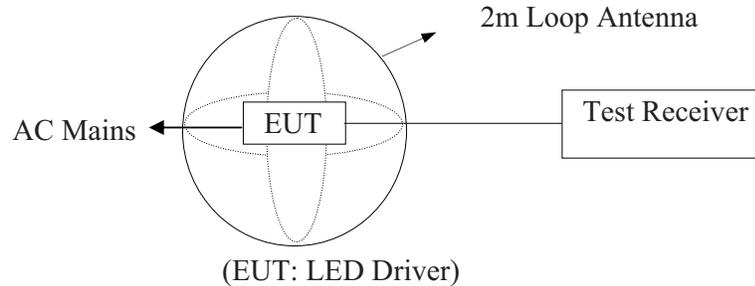
3.6 Measurement Results

PASS.

The frequency range from 9KHz to 30MHz is investigated.

4. MAGNETIC FIELD EMISSION MEASUREMENT

4.1 Block Diagram of Test Setup



4.2 Magnetic Field Emission Measurement Standard and Limits

4.2.1 Test Standard

EN55015: 2006

4.2.2 Test Limits

| Frequency | Limits for loop diameter (dB μ A) |
|-----------------|---------------------------------------|
| | 2m |
| 9KHz ~ 70KHz | 88 |
| 70KHz ~ 150KHz | 88 ~ 58* |
| 150KHz ~ 2.2MHz | 58 ~ 26* |
| 2.2MHz ~ 3.0MHz | 58 |
| 3.0MHz ~ 30MHz | 22 |

1. At the transition frequency the lower limit applies.
2. * decreasing linearly with logarithm of the frequency.

4.3 EUT Configuration on Measurement

The configuration of the EUT is same as Section 1.1.

4.4 Operating Condition of EUT

Same as conducted measurement which is listed in Section 3.4, except the test set up replaced by Section 4.1.

4.5 Test Procedure

The EUT is placed on a wood table in the center of a loop antenna. The induced current in the loop antenna is measured by means of a current probe and the test receiver.

Three field components are checked by means of a coaxial switch.

The frequency range from 9KHz to 30MHz is investigated. The receiver is measured with the quasi-peak detector. For frequency band 9KHz to 150KHz, the bandwidth of the field strength meter (R&S test receiver ESCS30) is set at 200Hz. For frequency band 150KHz to 30MHz, the bandwidth is set at 9KHz.

All the test results are listed in Section 4.6, and all the scanning waveform is put in Appendix II.

4.6 Test Results

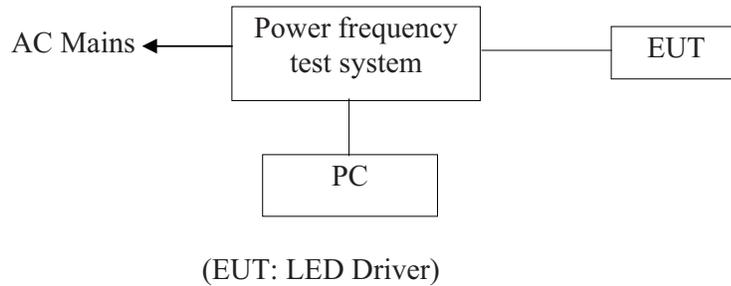
PASS.

These test result outsourced to Shenzhen EMTEK Co., Ltd.

The frequency range from 9KHz to 30MHz is investigated.

5. HARMONIC CURRENT MEASUREMENT

5.1 Block Diagram of Test Setup



5.2 Measuring Standard

EN61000-3-2: 2006 Class C

5.3 Operating Condition of EUT

- 5.3.1 Setup the EUT as shown in Section 5.1.
- 5.3.2 Turn on the power of all equipments.
- 5.3.2 Let the EUT work in test mode (ON) and measure it.

5.4 Test Results

PASS.

Please see the attached pages.

Test Report

| | |
|-------------------|---|
| Report title: | Harmonics |
| Company Name: | EMTEK |
| Date of test: | 11:46 21.May 2008 |
| Tester: | lori |
| Standard used: | EN/IEC 61000-3-2 Equipment class C<= 25W (3. and 5. harm.) |
| Observation time: | 1s |
| Windows width: | 16 periods - (EN/IEC 61000-4-7 Edition 1991) |
| Customer: | GLOBTEK INC. |
| E. U. T.: | LED Driver |
| M/N: | GTH51085CC-0412 |

| Test Result | |
|--------------------|---|
| E. U. T.: | PASS (Wave form of the input current PASS) |
| Power Source: | PASS |

Harmonic current results

| Hn | I _{eff} [A] | I _{eff} [%] | Limit [%] | Result |
|----|----------------------|----------------------|-----------|--------|
| 1 | 36.693E-3 | 100.000 | | |
| 2 | 576.681E-6 | 1.572 | | PASS |
| 3 | 28.612E-3 | 77.975 | 86.00 | PASS |
| 4 | 174.943E-6 | 0.477 | | PASS |
| 5 | 19.288E-3 | 52.565 | 61.00 | PASS |
| 6 | 106.331E-6 | 0.290 | | PASS |
| 7 | 11.152E-3 | 30.394 | | PASS |
| 8 | 327.139E-6 | 0.892 | | PASS |
| 9 | 7.237E-3 | 19.722 | | PASS |
| 10 | 365.579E-6 | 0.996 | | PASS |
| 11 | 6.676E-3 | 18.195 | | PASS |
| 12 | 194.468E-6 | 0.530 | | PASS |
| 13 | 6.077E-3 | 16.561 | | PASS |
| 14 | 182.790E-6 | 0.498 | | PASS |
| 15 | 4.833E-3 | 13.171 | | PASS |
| 16 | 383.331E-6 | 1.045 | | PASS |
| 17 | 3.978E-3 | 10.840 | | PASS |
| 18 | 257.219E-6 | 0.701 | | PASS |
| 19 | 4.032E-3 | 10.988 | | PASS |
| 20 | 122.992E-6 | 0.335 | | PASS |
| 21 | 3.714E-3 | 10.121 | | PASS |
| 22 | 188.254E-6 | 0.513 | | PASS |
| 23 | 3.134E-3 | 8.541 | | PASS |
| 24 | 304.486E-6 | 0.830 | | PASS |
| 25 | 3.062E-3 | 8.345 | | PASS |
| 26 | 144.153E-6 | 0.393 | | PASS |
| 27 | 2.951E-3 | 8.043 | | PASS |
| 28 | 137.083E-6 | 0.374 | | PASS |
| 29 | 2.799E-3 | 7.627 | | PASS |
| 30 | 191.131E-6 | 0.521 | | PASS |
| 31 | 2.511E-3 | 6.844 | | PASS |
| 32 | 117.811E-6 | 0.321 | | PASS |
| 33 | 2.541E-3 | 6.925 | | PASS |
| 34 | 156.598E-6 | 0.427 | | PASS |
| 35 | 2.492E-3 | 6.791 | | PASS |
| 36 | 59.236E-6 | 0.161 | | PASS |
| 37 | 2.185E-3 | 5.954 | | PASS |
| 38 | 69.810E-6 | 0.190 | | PASS |
| 39 | 2.199E-3 | 5.993 | | PASS |
| 40 | 71.192E-6 | 0.194 | | PASS |

Power and THD results

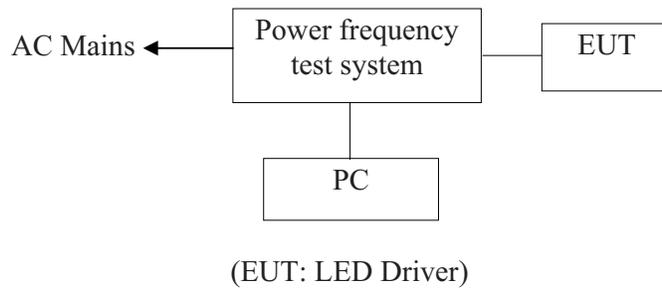
| | | | |
|-------------------|----------|-------------------|---------|
| True power P: | 5.536W | Apparent power S: | 11.99VA |
| Reactive power Q: | 10.64var | Power factor: | 0.462 |
| THD (U): | 0.001 | THD (I): | 1.872 |
| Crest Factor (U): | 1.414 | Crest Factor (I): | 3.996 |

Harmonic voltage results

| Hn | Ueff [V] | Ueff [%] | Limit [%] | Result |
|----|-----------|----------|-----------|--------|
| 1 | 230.59 | 100.257 | | |
| 2 | 25.20E-3 | 0.011 | 0.2 | PASS |
| 3 | 75.97E-3 | 0.033 | 0.9 | PASS |
| 4 | 31.18E-3 | 0.014 | 0.2 | PASS |
| 5 | 47.76E-3 | 0.021 | 0.4 | PASS |
| 6 | 35.43E-3 | 0.015 | 0.2 | PASS |
| 7 | 91.53E-3 | 0.040 | 0.3 | PASS |
| 8 | 27.85E-3 | 0.012 | 0.2 | PASS |
| 9 | 36.26E-3 | 0.016 | 0.2 | PASS |
| 10 | 4.76E-3 | 0.002 | 0.2 | PASS |
| 11 | 55.57E-3 | 0.024 | 0.1 | PASS |
| 12 | 8.53E-3 | 0.004 | 0.1 | PASS |
| 13 | 57.78E-3 | 0.025 | 0.1 | PASS |
| 14 | 17.40E-3 | 0.008 | 0.1 | PASS |
| 15 | 48.93E-3 | 0.021 | 0.1 | PASS |
| 16 | 29.18E-3 | 0.013 | 0.1 | PASS |
| 17 | 110.57E-3 | 0.048 | 0.1 | PASS |
| 18 | 8.66E-3 | 0.004 | 0.1 | PASS |
| 19 | 19.41E-3 | 0.008 | 0.1 | PASS |
| 20 | 19.64E-3 | 0.009 | 0.1 | PASS |
| 21 | 72.11E-3 | 0.031 | 0.1 | PASS |
| 22 | 14.56E-3 | 0.006 | 0.1 | PASS |
| 23 | 52.96E-3 | 0.023 | 0.1 | PASS |
| 24 | 6.67E-3 | 0.003 | 0.1 | PASS |
| 25 | 47.45E-3 | 0.021 | 0.1 | PASS |
| 26 | 7.93E-3 | 0.003 | 0.1 | PASS |
| 27 | 67.06E-3 | 0.029 | 0.1 | PASS |
| 28 | 3.84E-3 | 0.002 | 0.1 | PASS |
| 29 | 11.05E-3 | 0.005 | 0.1 | PASS |
| 30 | 7.17E-3 | 0.003 | 0.1 | PASS |
| 31 | 65.16E-3 | 0.028 | 0.1 | PASS |
| 32 | 5.83E-3 | 0.003 | 0.1 | PASS |
| 33 | 13.83E-3 | 0.006 | 0.1 | PASS |
| 34 | 10.54E-3 | 0.005 | 0.1 | PASS |
| 35 | 48.73E-3 | 0.021 | 0.1 | PASS |
| 36 | 10.43E-3 | 0.005 | 0.1 | PASS |
| 37 | 28.25E-3 | 0.012 | 0.1 | PASS |
| 38 | 3.94E-3 | 0.002 | 0.1 | PASS |
| 39 | 34.17E-3 | 0.015 | 0.1 | PASS |
| 40 | 14.00E-3 | 0.006 | 0.1 | PASS |

6. VOLTAGE FLUCTUATIONS & FLICKER MEASUREMENT

6.1 Block Diagram of Test Setup



6.2 Measuring Standard

EN61000-3-3: 1995+A1: 2001+A2: 2005

6.3 Operating Condition of EUT

- 6.3.1 Setup the EUT as shown in Section 6.1.
- 6.3.2 Turn on the power of all equipments.
- 6.3.2 Let the EUT work in test mode (on/off) and measure it.

6.4 Test Results

PASS.

Please refer to the following pages.

Test Report

| | |
|--------------------|--------------------------------|
| Report title: | Flicker |
| Company Name: | EMTEK |
| Date of test: | 11:59 21.May 2008 |
| Tester: | lori |
| Standard used: | EN/IEC 61000-3-3 Flicker |
| Short time (Pst): | 10 min |
| Observation time: | 10 min (1 Flicker measurement) |
| Flickermeter: | 230V / 50Hz |
| Flicker Impedance: | Zref (IEC 60725) |
| Customer: | GLOBTEK INC. |
| E. U. T.: | LED Driver |
| M/N: | GTH51085CC-0412 |

| | |
|-------------|------|
| Test Result | PASS |
|-------------|------|

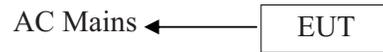
Maximum Flicker results

| | EUT values | Limit | Result |
|----------|-------------------|--------------|---------------|
| Pst | 0.028 | 1.00 | PASS |
| Plt | 0.028 | 0.65 | PASS |
| dc [%] | 0.005 | 3.30 | PASS |
| dmax [%] | 0.211 | 4.00 | PASS |
| dt [s] | 0.000 | 0.50 | PASS |

7. ELECTROSTATIC DISCHARGE TEST

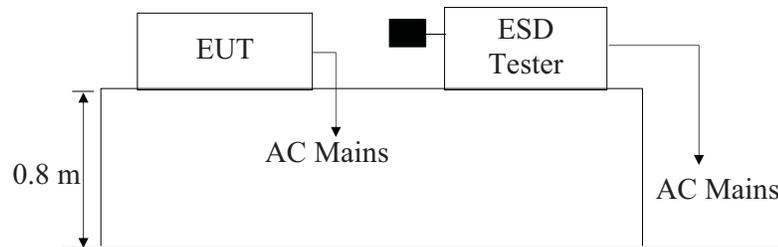
7.1 Block Diagram of Test Setup

7.1.1 Block Diagram of the EUT



(EUT: LED Driver)

7.1.2 Block Diagram of ESD Test Setup



(EUT: LED Driver)

7.2 Test Standard

EN61547: 1996+A1: 2000 (EN61000-4-2: 1995+A1: 1998+A2: 2001, Severity Level: Air Discharge: Level 3, ± 8 KV Contact Discharge: Level 2, ± 4 KV)

7.3 Severity Levels and Performance Criterion

7.3.1 Severity level

| Level Test | Voltage Contact Discharge (KV) | Test Voltage Air Discharge (KV) |
|------------|--------------------------------|---------------------------------|
| 1. | ± 2 | ± 2 |
| 2. | ± 4 | ± 4 |
| 3. | ± 6 | ± 8 |
| 4. | ± 8 | ± 15 |
| X Special | | Special |

7.3.2 Performance criterion: **B**

7.4 EUT Configuration

The configuration of EUT is listed in Section 1.1

7.5 Operating Condition of EUT

7.5.1 Setup the EUT as shown in Section 7.1.

7.5.2 Turn on the power of all equipments.

7.5.3 Let the EUT work in test mode (ON) and measure it.

7.6 Test Procedure

7.6.1 Air Discharge:

This test is done on a non-conductive surfaces. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

7.6.2 Contact Discharge:

All the procedure shall be same as Section 7.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

7.6.3 Indirect discharge for horizontal coupling plane:

At least 20 single discharges shall be applied to the horizontal coupling plane, at points on each side of the EUT. The discharge electrode positions vertically at a distance of 0.1m from the EUT and with the discharge electrode touching the coupling plane.

7.6.4 Indirect discharge for vertical coupling plane:

At least 20 single discharge shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

7.7 Test Results

PASS.

Please refer to the following page.

Electrostatic Discharge Test Results

Dongguan EMTEK Co., Ltd.

| | | |
|--|---|---------------|
| Applicant : GLOBTEK INC. | Test Date : May 16, 2008 | |
| EUT : LED Driver | Temperature : 22°C | |
| M/N : GTH51085CC-0412 | Humidity : 50% | |
| Power Supply : AC 230V / 50Hz | Test Engineer: Iori | |
| Test Mode : ON | CriteriaOn : B | |
| Air Discharge: ±8KV | | |
| Contact Discharge: ±4KV # For each point positive 10 times and negative 10 times | | |
| LocatiOn | Kind A-Air Discharge C-Contact Discharge | Result |
| Slot of EUT 35 points | A | PASS |
| In/output port 14 points | A | PASS |
| HCP | C | PASS |
| VCP of Front | C | PASS |
| VCP of Rear | C | PASS |
| VCP of Left | C | PASS |
| VCP of Right | C | PASS |
| Remark :The EUT mode is change during testing | Test Equipment : ESD Tester (EM TEST, ESD30C) | |

Discharge should be considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

8. RF FIELD STRENGTH SUSCEPTIBILITY TEST

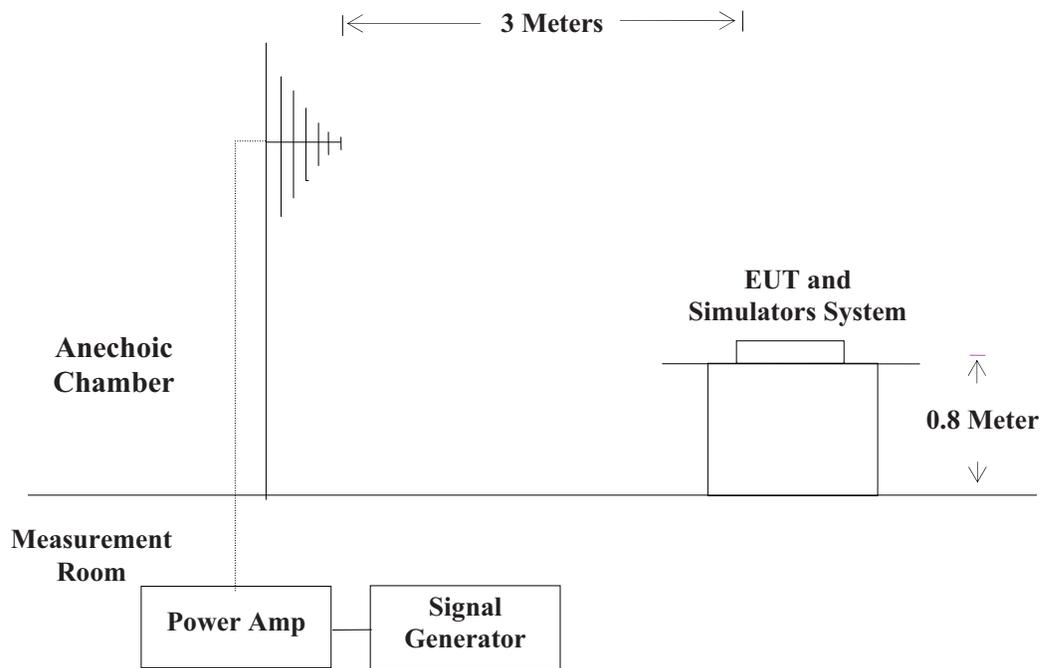
8.1 Block Diagram of Test Setup

8.1.1 Block Diagram of the EUT and the simulators



(EUT: LED Driver)

8.1.2 R/S Test Setup



(EUT: LED Driver)

8.2 Test Standard

EN61547: 1996+A1: 2000
(EN61000-4-3: 2006, Severity Level: 2, 3V / m)

8.3 Severity Levels and Performance Criterion

8.3.1 Severity level

| Level | Field Strength V/m |
|-----------|--------------------|
| 1. 1 | |
| 2. 3 | |
| 3. 10 | |
| X Special | |

8.3.2 Performance criterion : A

8.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

8.5 Operating Condition of EUT

8.5.1 Setup the EUT as shown in Section 8.1.

8.5.2 Turn on the power of all equipments.

8.5.3 Let the EUT work in test mode (ON) and measure it.

8.6 Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. EUT is set 3 meter away from the transmitting antenna which is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna are set on test. Each of the four sides of EUT must be faced this transmitting antenna and measured individually. In order to judge the EUT performance, a CCD camera is used to monitor EUT screen. All the scanning conditions are as follows:

| Condition of Test | Remarks |
|---------------------------|--------------------------|
| 1. Fielded Strength | 3 V/m (Severity Level 2) |
| 2. Radiated Signal | Unmodulated |
| 3. Scanning Frequency | 80 - 1000 MHz |
| 4. Dwell time of radiated | 0.0015 decade/s |
| 5. Waiting Time | 1 Sec. |

8.7 Test Results

PASS.

Please refer to the following page.

RF Field Strength Susceptibility Test Results

Dongguan EMTEK Co., Ltd.

Applicant: GLOBTEK INC.

Test Date : May 19, 2008

EUT : LED Driver

Temperature : 22°C

M/N : GTH51085CC-0412

Humidity : 52%

Field Strength: 3 V/m

Criterion: A

Power Supply: AC 230V/50Hz

Frequency Range: 80 MHz to 1000 MHz

Test Engineer: Iori

Modulation: AM Pulse none 1 KHz 80%

Test Mode : ON

Frequency Rang : 80-1000MHz

| | |
|------------|----------|
| Steps | 1 % |
| Horizontal | Vertical |
| Front PASS | PASS |
| Right PASS | PASS |
| Rear PASS | PASS |
| Left PASS | PASS |

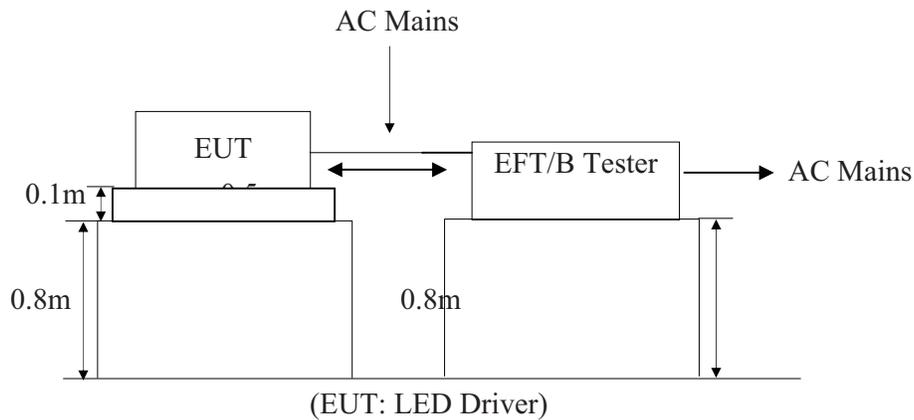
Test Equipment :

1. Signal Generator : 2031 (MARCONI)
2. Power Amplifier : 500A/ 100; 100W/1000M (A&R)
3. Power Antenna : 3108 (EMCO)/ AT-1080 (A&R)
4. Field Monitor : FM2000 (A&R)

Note:

9. ELECTRICAL FAST TRANSIENT/BURST TEST

9.1 Block Diagram of Test Setup



9.2 Test Standard

EN61547: 1996+A1: 2000
 (EN61000-4-4: 2004, Severity Level, Level 2 : 1KV)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity level

| Open Circuit Output Test Voltage $\pm 10\%$ | | |
|---|-----------------------|---|
| Level | On Power Supply Lines | On I/O (Input/Output) Signal data and control lines |
| 1. | 0.5 KV | 0.25 KV |
| 2. | 1 KV | 0.5 KV |
| 3. | 2 KV | 1 KV |
| 4. | 4 KV | 2 KV |
| X Special | | Special |

9.3.2 Performance criterion : **B**

9.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

9.5 Operating Condition of EUT

9.5.1 Setup the EUT as shown in Section 9.1.

9.5.2 Turn on the power of all equipments.

9.5.3 Let the EUT work in test mode (ON) and measure it.

9.6 Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

9.6.1 For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

9.6.2 For signal lines and control lines ports:

No I/O ports. It's unnecessary to test.

9.6.3 For DC output line ports:

It's unnecessary to test.

9.7 Test Results

PASS.

Please refer to the following page.

Electrical Fast Transient/Burst Test Results

Dongguan EMTEK Co., Ltd.

| | | | |
|---|--|---|------------|
| Standard : | <input type="checkbox"/> IEC 61000-4-4 <input checked="" type="checkbox"/> EN 61000-4-4 | Result : <input checked="" type="checkbox"/> PASS / <input type="checkbox"/> FAIL | |
| Applicant : <u>GLOBTEK INC.</u> | | | |
| EUT : <u>LED Driver</u> | | | |
| M/N : <u>GTH51085CC-0412</u> | | | |
| Input Voltage: <u>AC 230V/ 50Hz</u> | | | |
| Criterion : <u>B</u> | | | |
| Ambient Condition : <u>22</u> °C <u>50%</u> RH | | | |
| Operation Mode : ON | | | |
| Line : <input checked="" type="checkbox"/> AC Mains | | Line : <input type="checkbox"/> Signal <input type="checkbox"/> I/O Cable | |
| Coupling : <input checked="" type="checkbox"/> Direct | | Coupling : <input type="checkbox"/> Capacitive | |
| Test Time : <u>120s</u> | | | |
| Line | Test Voltage | Result (+) | Result (-) |
| L | 1KV | PASS | PASS |
| N 1KV | | PASS | PASS |
| PE | | | |
| L · N | 1KV PASS | | PASS |
| L · PE | | | |
| N · PE | | | |
| L · N · PE | | | |
| Signal Line | | | |
| DC Line | | | |
| Note: | | | |
| Test Equipment | | Burst Tester Model : UCS500M6B | |

10. SURGE IMMUNITY TEST

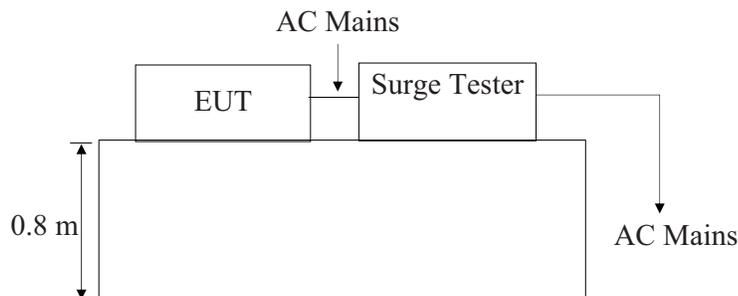
10.1 Block Diagram of Test Setup

10.1.1 Block Diagram of the EUT



(EUT: LED Driver)

10.1.2 Surge Test Setup



(EUT: LED Driver)

10.2 Test Standard

EN61547: 1996+A1: 2000

(EN61000-4-5: 2006, Severity Level : Line to Line: Level 2 , 1.0KV,
Line To Earth: Level 3 , 2.0KV)

10.3 Severity Levels and Performance Criterion

10.3.1 Severity level

| Severity Level | Open-Circuit Test Voltage KV |
|----------------|---------------------------------|
| 1 | 0.5 |
| 2 | 1.0 |
| 3 | 2.0 |
| 4 | 4.0 |
| * | Special |

10.3.2 Performance criterion : C

10.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

10.5 Operating Condition of EUT

- 10.5.1 Setup the EUT as shown in Section 10.1.
- 10.5.2 Turn on the power of all equipments.
- 10.5.3 Let the EUT work in test mode (ON) and measure it.

10.6 Test Procedure

- 1) Set up the EUT and test generator as shown on Section 10.1.2.
- 2) For line to line coupling mode, provide a 1.0KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
- 3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
- 4) Different phase angles are done individually.
- 5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

10.7 Test Results

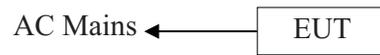
PASS.

Please refer to the following page.

11 . INJECTED CURRENTS SUSCEPTIBILITY TEST

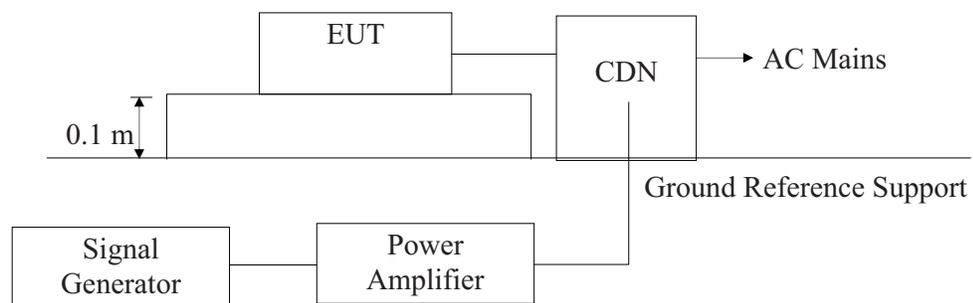
11.1 Block Diagram of Test Setup

11.1.1 Block Diagram of the EUT



(EUT: LED Driver)

11.1.2 Block Diagram of Test Setup



(EUT: LED Driver)

11.2 Test Standard

EN61547: 1996+A1: 2000

(EN61000-4-6: 1996+A1: 2001, Severity Level: 3V (rms), 0.15MHz ~ 80MHz)

11.3 Severity Levels and Performance Criterion

11.3.1 Severity level

| Level | Field Strength V |
|-----------|------------------|
| 1. 1 | |
| 2. 3 | |
| 3. 10 | |
| X Special | |

11.3.2 Performance criterion: A

11.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

11.5 Operating Condition of EUT

11.5.1 Setup the EUT as shown in Section 11.1.

11.5.2 Turn on the power of all equipments.

11.5.3 Let the EUT work in test mode (ON) and measure it.

11.6 Test Procedure

- 1) Set up the EUT, CDN and test generators as shown on Section 11.1.2.
- 2) Let the EUT work in test mode and measure it.
- 3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
- 4) The disturbance signal described below is injected to EUT through CDN.
- 5) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
- 6) The frequency range is swept from 150KHz to 80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1KHz sine wave.
- 7) The rate of sweep shall not exceed 1.5×10^{-3} decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
- 8) Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

11.7 Test Results

PASS.

Please refer to the following page.

Injected Currents Susceptibility Test Results

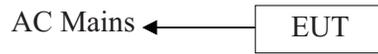
Dongguan EMTEK Co., Ltd.

| Applicant : <u>GLOBTEK INC.</u> | | | Test Date : <u>May 19, 2008</u> | |
|---|-------------------|----------|---------------------------------|--------|
| EUT : <u>LED Driver</u> | | | Temperature : <u>22°C</u> | |
| M/N : <u>GTH51085CC-0412 Hum</u> | | | idity : <u>50%</u> | |
| Power Supply : <u>AC 230V/50Hz</u> | | | Test Engineer : <u>Iori</u> | |
| Test Mode : <u>ON</u> | | | | |
| Frequency Range (MHz) | Injected Position | Strength | Criterion | Result |
| 0.15 ~ 80 | AC Mains | 3V(rms) | A | PASS |
| | | | | |
| Test Mode : _____ | | | | |
| Frequency Range (MHz) | Injected Position | Strength | Criterion | Result |
| | | | | |
| | | | | |
| Remark : 1. Modulation Signal:1KHz 80% AM Measurement Equipment : Simulator: CWS 500C (SWITZERLAND EMTEST) CDN : <input checked="" type="checkbox"/> CDN-M2 (SWITZERLAND EMTEST) <input type="checkbox"/> CDN-M3 (SWITZERLAND EMTEST) | | | Note: | |

12. MAGNETIC FIELD IMMUNITY TEST

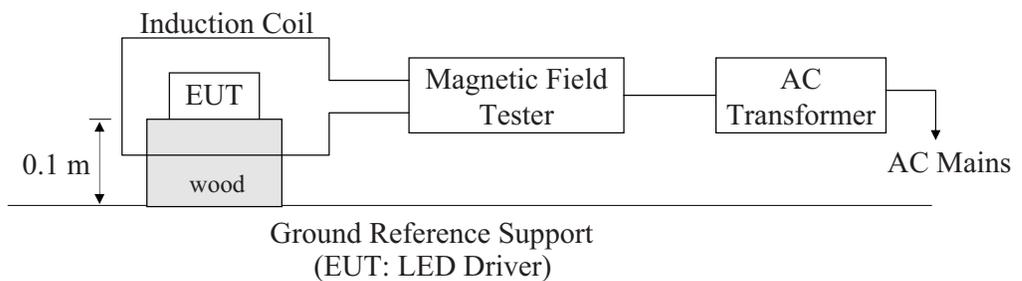
12.1 Block Diagram of Test Setup

12.1.1 Block Diagram of the EUT



(EUT: LED Driver)

12.1.2 Block Diagram of Test Setup



12.2 Test Standard

EN61547: 1996+A1: 2000 (EN61000-4-8: 1993+A1: 2001, Severity Level 2: 3A/m)

12.3 Severity Levels and Performance Criterion

12.3.1 Severity level

| Level | Magnetic Field Strength A/m |
|-----------|-----------------------------|
| 1. 1 | |
| 2. 3 | |
| 3. 10 | |
| 4. 30 | |
| 5. 100 | |
| X Special | |

12.3.2 Performance criterion: A

12.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

12.5 Operating Condition of EUT

12.5.1 Setup the EUT as shown in Section 12.1.

12.5.2 Turn on the power of all equipments.

12.5.3 Let the EUT work in test mode (ON) and measure it.

12.6 Test Procedure

The EUT is placed in the middle of a induction coil (1*1m), under which is a 1*1*0.1m (high)table, this small table is also placed on a larger table,0.8 m above the ground. X, Y and Z polarization of the induction coil are set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

12.7 Test Results

PASS.

Please refer to the following page.

Magnetic Field Immunity Test Results

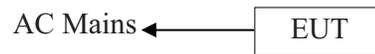
Dongguan EMTEK Co., Ltd.

| | | | | |
|--|------------------|------------------|--|--------|
| Applicant : <u>GLOBTEK INC.</u> EUT : <u>LED Driver</u> M/N : <u>GTH51085CC-0412 Hum</u> Power Supply : <u>AC 230V/50Hz</u> | | | Test Date : <u>May 19 , 2008</u> Temperature : <u>22°C</u> Humidity : <u>50%</u> Test Engineer: <u>Iori</u> | |
| Test Mode : <u>ON</u> | | | | |
| Test Level | Testing Duration | Coil Orientation | Criterion | Result |
| 3A/m 5 | mins | X | A | PASS |
| 3A/m 5 | mins | Y | A | PASS |
| 3A/m 5 | mins | Z | A | PASS |
| Test Mode : _____ | | | | |
| Test Level | Testing Duration | Coil Orientation | Criterion | Result |
| | | | | |
| | | | | |
| Remark: | | | Test Equipment: Magnetic Field Tester MAG100 AC Transformer TDGC2J-5 | |

13. VOLTAGE DIPS AND INTERRUPTIONS TEST

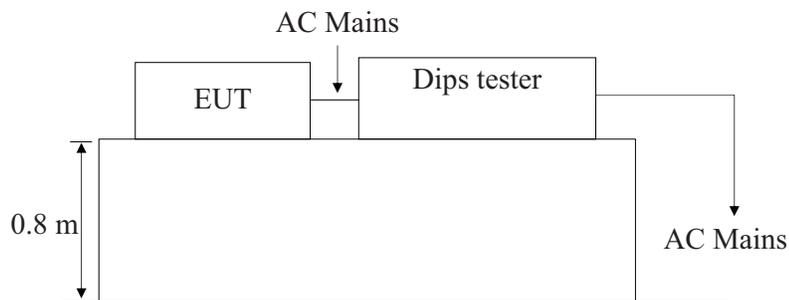
13.1 Block Diagram of Test Setup

13.1.1 Block Diagram of the EUT



(EUT: LED Driver)

13.1.2 Dips Test Setup



(EUT: LED Driver)

13.2 Test Standard

EN61547: 1996+A1: 2000 (EN61000-4-11: 2004)

13.3 Severity Levels and Performance Criterion

13.3.1 Severity level

| Test Level $\%U_T$ | Voltage dip and short interruptions $\%U_T$ | Duration (in period) |
|-----------------------|---|-------------------------|
| 0 100 | | 0.5 |
| | | 1 |
| 40 60 | | 5 |
| | | 10 |
| 70 30 | | 25 |
| | | 50 |
| | | * |

13.3.2 Performance criterion : **B, C**

13.4 EUT Configuration

The configuration of EUT are listed in Section 1.1.

13.5 Operating Condition of EUT

13.5.1 Setup the EUT as shown in Section 13.1.

13.5.2 Turn on the power of all equipments.

13.5.3 Let the EUT work in test mode (ON) and measure it.

13.6 Test Procedure

- 1) Set up the EUT and test generator as shown on Section 13.1.2.
- 2) The interruptions is introduced at selected phase angles with specified duration.
- 3) Record any degradation of performance.

13.7 Test Results

PASS.

Please refer to the following page.

Voltage Dips And Interruptions Test Results

Dongguan EMTEK Co., Ltd.

| Applicant : <u>GLOBTEK INC.</u> | | Test Date : <u>May 19, 2008</u> | | |
|--|--|---------------------------------|---|--------|
| EUT : <u>LED Driver</u> | | Temperature : <u>22°C</u> | | |
| M/N : <u>GTH51085CC-0412 Hum</u> | | umidity : <u>50%</u> | | |
| Power Supply : <u>AC 230V/50Hz</u> | | Test Engineer : <u>Iori</u> | | |
| Test Model : <u>ON</u> | | | | |
| Test Level % U _T | Voltage Dips & Short Interruptions % U _T | Duration (in period) | Criterion <input type="checkbox"/> A <input checked="" type="checkbox"/> B <input checked="" type="checkbox"/> C <input type="checkbox"/> D | Result |
| 70 30 | | 10P | C | PASS |
| 0 100 | | 0.5P | B | PASS |
| Remark: U _T is the rated voltage for the equipment. | | | Test Equipment : Dips Tester PLINE1610 | |

14. PHOTOGRAPH

14.1 Photo of Conducted Emission Measurement



14.2 Photo of Harmonic / Flicker Measurement



14.3 Photo of Electrostatic Discharge Test



14.4 Photo of Electrical Fast Transient /Burst Test



14.5 Photo of Surge Test



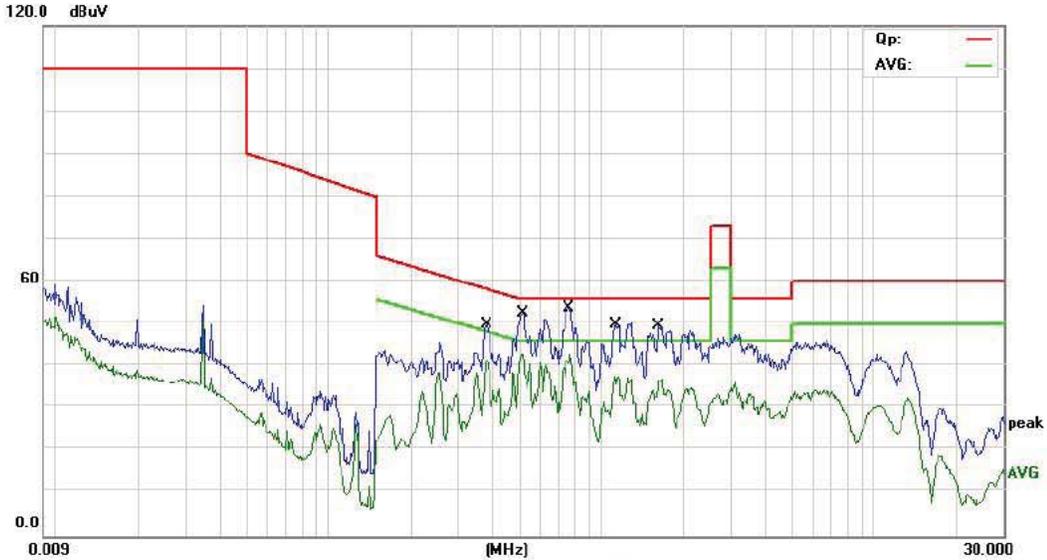
APPENDIX I

Dongguan EMTEK Co., Ltd.
 No.281,Guantai Road, Nancheng Distriet,Dongguan,Guangdong 523077 P.R. China
 www.emtek.com.cn Tel:+86-769-2280 7078 Fax:+86-755-2280 7079



Conducted Emission Measurement

File :LED Driver Data :#3 Date: 2008-5-21 Time: 9:10:21



Site site #1 Phase: **L1** Temperature: 25
 Limit: (CE)EN55015(QP) Power: AC 230V/50Hz Humidity: 60 %
 EUT: LED Driver
 M/N: GTH51085CC-0412
 Mode: ON

| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure- ment dBuV | Limit dBuV | Over dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1 | | 0.3740 | 49.57 | 0.00 | 49.57 | 58.41 | -8.84 | QP | |
| 2 | | 0.3740 | 42.73 | 0.00 | 42.73 | 48.41 | -5.68 | AVG | |
| 3 | | 0.5140 | 52.23 | 0.00 | 52.23 | 56.00 | -3.77 | QP | |
| 4 | * | 0.5140 | 43.59 | 0.00 | 43.59 | 46.00 | -2.41 | AVG | |
| 5 | | 0.7700 | 52.58 | 0.00 | 52.58 | 56.00 | -3.42 | QP | |
| 6 | | 0.7700 | 43.44 | 0.00 | 43.44 | 46.00 | -2.56 | AVG | |
| 7 | | 1.1220 | 48.25 | 0.00 | 48.25 | 56.00 | -7.75 | QP | |
| 8 | | 1.1220 | 38.33 | 0.00 | 38.33 | 46.00 | -7.67 | AVG | |
| 9 | | 1.6380 | 46.58 | 0.00 | 46.58 | 56.00 | -9.42 | QP | |
| 10 | | 1.6380 | 38.06 | 0.00 | 38.06 | 46.00 | -7.94 | AVG | |

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver.

File :LED DriverData :#3

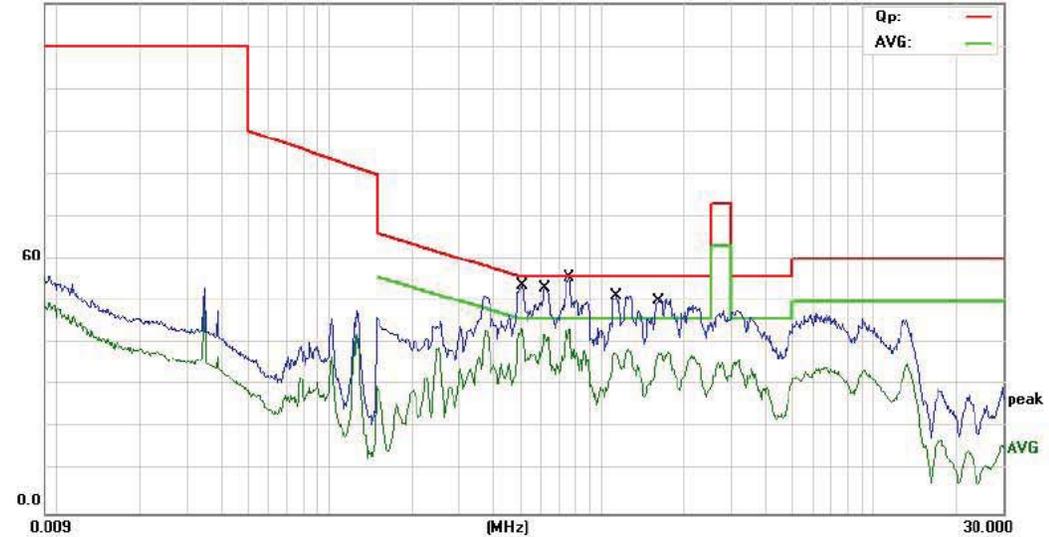
Page: 1

Dongguan EMTEK Co., Ltd.
 No.281,Guantai Road, Nancheng Distriet,Dongguan,Guangdong 523077 P.R. China
 www.emtek.com.cn Tel:+86-769-2280 7078 Fax:+86-755-2280 7079



Conducted Emission Measurement

File :LED Diver Data :#4 Date: 2008-5-21 Time: 9:28:38
 120.0 dBuV



Site site #1 Phase: **N** Temperature: 25
 Limit: (CE)EN55015(QP) Power: AC 230V/50Hz Humidity: 60 %
 EUT: LED Driver
 M/N: GTH51085CC-0412
 Mode: ON

| No. | Mk. | Freq. MHz | Reading Level dBuV | Correct Factor dB | Measure- ment dBuV | Limit dBuV | Over dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1 | | 0.5100 | 52.55 | 0.00 | 52.55 | 56.00 | -3.45 | QP | |
| 2 | | 0.5100 | 44.08 | 0.00 | 44.08 | 46.00 | -1.92 | AVG | |
| 3 | | 0.6180 | 52.83 | 0.00 | 52.83 | 56.00 | -3.17 | QP | |
| 4 | * | 0.6180 | 44.77 | 0.00 | 44.77 | 46.00 | -1.23 | AVG | |
| 5 | | 0.7700 | 53.71 | 0.00 | 53.71 | 56.00 | -2.29 | QP | |
| 6 | | 0.7700 | 43.72 | 0.00 | 43.72 | 46.00 | -2.28 | AVG | |
| 7 | | 1.1460 | 48.53 | 0.00 | 48.53 | 56.00 | -7.47 | QP | |
| 8 | | 1.1460 | 38.37 | 0.00 | 38.37 | 46.00 | -7.63 | AVG | |
| 9 | | 1.6140 | 46.02 | 0.00 | 46.02 | 56.00 | -9.98 | QP | |
| 10 | | 1.6140 | 37.06 | 0.00 | 37.06 | 46.00 | -8.94 | AVG | |

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver.

File :LED Driver>Data :#4

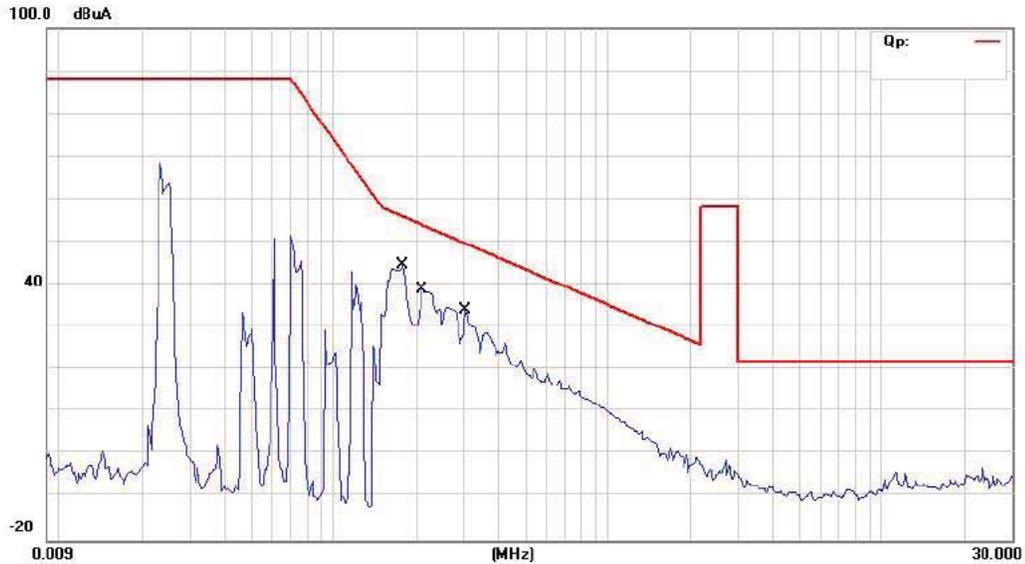
Page: 1

APPENDIX II



Radiated Electromagnetic Disturbance Measurement

File :LED Driver Data :#1 Date: 2008/05/20 Time: 15:11:43



Site site #1 Phase: Temperature: 22
 Limit: (CE)EN55015_Radiated electromagnetic Power: AC 230V/50Hz Humidity: 50 %
 EUT: LED Driver
 M/N: GTH51085CC-0412
 Mode: ON
 Note: LOOP A

| No. | Mk. | Freq. MHz | Reading Level dBuA | Correct Factor dB | Measure- ment dBuA | Limit dBuA | Over dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1 | * | 0.1800 | 44.64 | 0.00 | 44.64 | 55.83 | -11.19 | QP | |
| 2 | | 0.2100 | 39.01 | 0.00 | 39.01 | 53.99 | -14.98 | QP | |
| 3 | | 0.3050 | 34.06 | 0.00 | 34.06 | 49.54 | -15.48 | QP | |

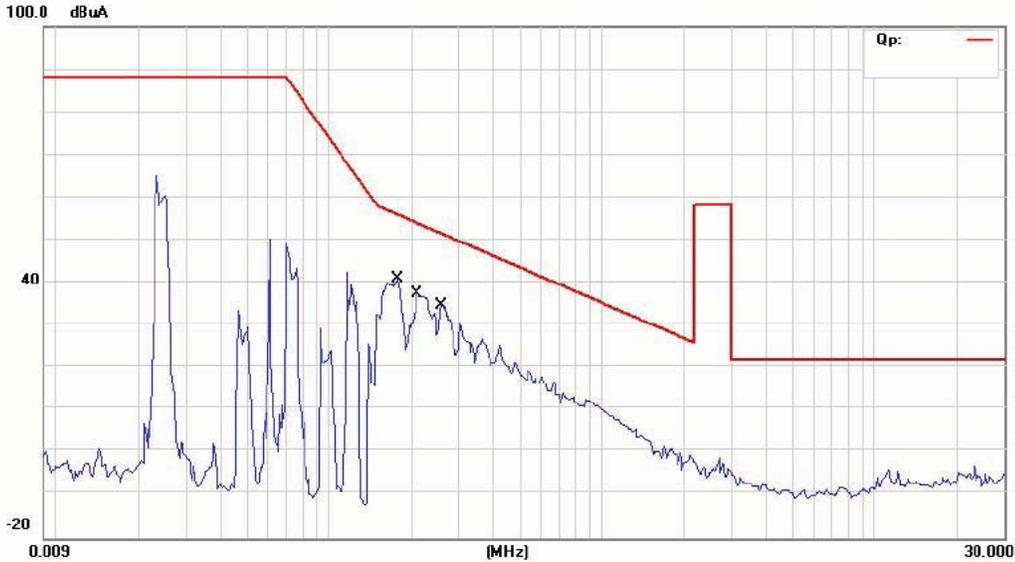
*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

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Radiated Electromagnetic Disturbance Measurement

File :LED Driver Data :#2 Date: 2008/05/20 Time: 15:16:48



Site site #1 Phase: Temperature: 22
 Limit: (CE)EN55015_Radiated electromagnetic Power: AC 230V/50Hz Humidity: 50 %
 EUT: LED Driver
 M/N: GTH51085CC-0412
 Mode: ON
 Note: LOOP B

| No. | Mk. | Freq. MHz | Reading Level dBuA | Correct Factor dB | Measure- ment dBuA | Limit dBuA | Over dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1 | * | 0.1800 | 41.14 | 0.00 | 41.14 | 55.83 | -14.69 | QP | |
| 2 | | 0.2100 | 37.51 | 0.00 | 37.51 | 53.99 | -16.48 | QP | |
| 3 | | 0.2600 | 34.86 | 0.00 | 34.86 | 51.45 | -16.59 | QP | |

*:Maximum data x:Over limit l:over margin Comment: Factor build in receiver. Operator:

File :LED Driver\Data :#2

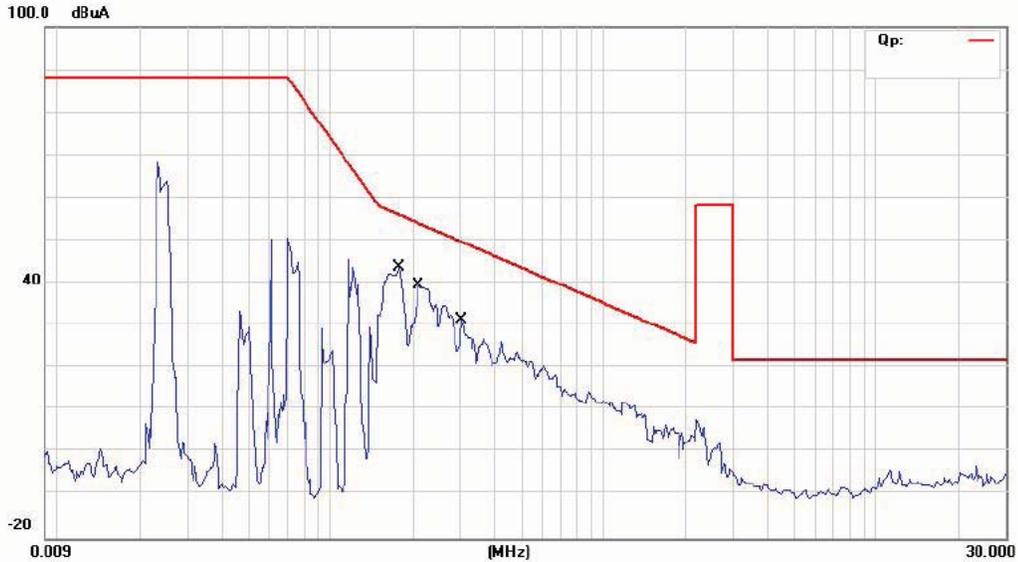
Page: 1

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Radiated Electromagnetic Disturbance Measurement

File :LED Driver Data :#3 Date: 2008/05/20 Time: 15:22:34



Site site #1 Phase: Temperature: 22
 Limit: (CE)EN55015_Radiated electromagnetic Power: AC 230V/50Hz Humidity: 50 %
 EUT: LED Driver
 M/N: GTH51085CC-0412
 Mode: ON
 Note: LOOP C

| No. | Mk. | Freq. MHz | Reading Level dBuA | Correct Factor dB | Measure- ment dBuA | Limit dBuA | Over dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1 | * | 0.1800 | 43.64 | 0.00 | 43.64 | 55.83 | -12.19 | QP | |
| 2 | | 0.2100 | 39.51 | 0.00 | 39.51 | 53.99 | -14.48 | QP | |
| 3 | | 0.3050 | 31.56 | 0.00 | 31.56 | 49.54 | -17.98 | QP | |

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

File :LED Driver\Data :#3

Page: 1

APPENDIX III (Photos of EUT)

General Appearance of the EUT

