SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION Co., Ltd.

Declaration of Conformity

Certification number: CTE10070012

Issue date: Jul 15, 2010

In accordance with the following Applicable Directives:

2004/108/EC

Electromagnetic Compatibility

The equipment, as described herewith, was tested pursuant to applicable test procedure and complies with the requirements of:

EN 61000-6-2: 2005

EN 61000-6-4: 2007

EN 61000-3-2: 2006+A1: 2009+A2: 2009

EN 61000-3-3: 2008

The test results are traceable to the international or national standards.

Applicant:	**GlobTek, Inc.** 186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer 1:	**GlobTek, Inc.** 186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer 2:	**GlobTek (Suzhou) Co., Ltd** Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China
Equipment under test:	**Battery Charging System**
Model/Type reference:	**GS-2066-CC**
Laboratory Name:	**Shenzhen Huatongwei International Inspection Co., Ltd** Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China Tel: 86-755-26748058 Fax: 86-755-26748005 Http: //www.szhtw.com.cn E-mail: master@szhtw.com.cn

Note:

The certification is only valid for the equipment and configuration described, in conjunction with the test data detailed above.

The CE mark as shown beside can be used, under the responsibility of the manufacturer, after completion of an EC Directive of Conformity and compliance with all relevant EC Directive.

Authorized by:

For and on behalf of
Shenzhen Huatongwei International Inspection Co., Ltd.

Authorized Signature(s)

CNASL1225

Shenzhen Huatongwei International Inspection Co., Ltd.
Keji S,12th , Road, Hi-tech Industrial Park, Shenzhen, Guangdong, China
Phone:86-755-26748099 Fax:86-755-26748089 http://www.szhtw.com.cn

TEST REPORT

EN 61000-6-4: 2007
Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-6-2: 2005
Electromagnetic compatibility (EMC) -- Part 6-2: Generic standards - Immunity for industrial environments

Report Reference No.....:	**TRE10070012**
Compiled by (position+printed name+signature)..:	File administrators Melllen Lee
Supervised by (position+printed name+signature)..:	Technique principal Tony Jiang
Approved by (position+printed name+signature)..:	Manager Jimmy Li
Date of issue.....:	Jul 15, 2010
Testing Laboratory Name .....:	**Shenzhen Huatongwei International Inspection Co., Ltd**
Address.....:	Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Testing location/ procedure .....:	Full application of Harmonised standards ☒ Partial application of Harmonised standards ☐ Other standard testing methods ☐
Applicant's name.....:	**GlobTek, Inc.**
Address.....:	186 Veterans Dr. Northvale, NJ 07647 USA
Test specification:	
Standard .....:	**EN 61000-6-2: 2005** **EN 61000-6-4: 2007** **EN 61000-3-2: 2006+A1: 2009+A2: 2009** **EN 61000-3-3: 2008**
Test Report Form No.....:	HTWEMCCE_1A
TRF Originator.....:	Shenzhen Huatongwei International Inspection CO., Ltd
Master TRF.....:	Dated 2006-06

Test item description ..... :	Battery Charging System
Manufacturer 1 .....:	GlobTek, Inc.
Manufacturer 2 .....:	GlobTek (Suzhou) Co., Ltd
Model/Type reference.....:	GS-2066-CC
Listed Model .....:	/
Ratings.....:	100-240Vac 50-60Hz
Result.....:	**Positive**

EMC -- T E S T R E P O R T

Test Report No. :	TRE10070012	Jul 15, 2010 Date of issue

Equipment under Test	:	Battery Charging System
Model /Type	:	GS-2066-CC
Listed Models	:	/
Applicant	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer 1	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer 2	:	GlobTek (Suzhou) Co., Ltd
Address	:	Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China

Test Result according to the standards on page 4:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Contents

1. TEST STANDARDS

The tests were performed according to following standards:

EN 61000-6-2: 2005 Electromagnetic compatibility (EMC) -- Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-6-4: 2007 Electromagnetic compatibility (EMC) -- Part 6-4: Generic standards - Emission standard for industrial environments
EN 61000-3-2:2006+A1: 2009+A2: 2009 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)
EN 61000-3-3:2008 Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current $\leqslant$ 16 A per phase and not subject to conditional connection

2 . SUMMARY

2.1. General Remarks

Date of receipt of test sample : Jul 08, 2010

Testing commenced on : Jul 08, 2010

Testing concluded on : Jul 15, 2010

2.2. Equipment Under Test

Power supply system utilised

Power supply voltage : ■ 230V / 50 Hz o 115V / 60Hz
o 12 V DC o 24 V DC
o Other (specified in blank below)

/

2.3. Short description of the Equipment under Test (EUT)

The EUT is a Battery Charging System.

Serial number: Prototype

2.4. EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

Test program (customer specific)

Emissions tests……..: According to EN 61000-6-4, searching for the highest disturbance.
Immunity tests ……..: According to EN 61000-6-2, searching for the highest susceptivity.
Harmonic current……... : According to EN 61000-3-2, searching for the highest disturbance.
Voltage fluctuation……. : According to EN 61000-3-3, searching for the highest disturbance.

2.5. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

■ - supplied by the manufacturer

o - supplied by the lab

o Power cord	Length(m) :	1.5
	Shield :	Unshielded
	Detachable :	Detachable
o Power cable	Length(m) :	2.0
	Shield :	Unshielded
	Detachable :	Undetachable

2.6. Performance level

The test results shall be classified in terms of the loss of function or degradation of performance of the equipment under test relative to a performance criteria defined by its manufacturer or the requestor of the test, or agreed between the manufacturer and the purchaser of the product. Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

— essential operational modes and states;
— tests of all peripheral access(hard disks, floppy disks, printers, keyboard, mouse, etc.);
— quality of software execution
— quality of data display and transmission
— quality of speech transmission

Definition related to the performance level:

■ based on the used product standard
o based on the declaration of the manufacturer, requestor or purchaser

Criterion A:

The apparatus shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

Criterion B:

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the apparatus is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the apparatus if used as intended.

Criterion C:

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of the controls, or by any operation specified in the instructions for use.

3. TEST ENVIRONMENT

3.1. Address of the test laboratory

Shenzhen Huatongwei International Inspection Co., Ltd
Keji Nan No.12 Road, Hi-tech Park, Shenzhen, China
Phone: 86-755-26715686 Fax: 86-755-26748089

3.2. Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1225

Shenzhen Huatongwei International Inspection Co., Ltd has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: March 30, 2009. Valid time is until March 29, 2012.

A2LA-Lab Cert. No. 2243.01

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until Sept 30, 2011.

FCC-Registration No.: 662850

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 662850, Renewal date Jul 01, 2009.

IC-Registration No.: 5377A

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on February 13, 2011.

ACA

Shenzhen Huatongwei International Inspection Co., Ltd, EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

VCCI

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) and Shielded Room (8m×4m×3m) of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2484. Date of Registration: December 20, 2009. Valid time is until December 19, 2012.

Main Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-2726. Date of Registration: December 20, 2009. Valid time is until December 19, 2012.

IECEE CB

Shenzhen Huatongwei International Inspection Co Ltd has been assessed and determined to fully comply with the requirements of ISO/IEC 17025: 2005-05, The Basic Rules, IECEE 01: 2008-11 and Rules of Procedure IECEE 02: 2008-10, and the relevant IECEE CB-Scheme Operational Documents.
It is therefore entitled to operate as a CB Testing Laboratory under the responsibility of Nemko A/S. This certificate remains valid until December 3rd 2012 at which time it will be reissued by the IECEE Executive Secretary upon successful completion of the normally scheduled 3-year Reassessment Program administered by the IECEE CB Scheme.

DNV

Shenzhen Huatongwei International Inspection Co Ltd has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025(2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until 09 July, 2010.

3.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	22-25 ° C
Humidity:	40-54 %
Atmospheric pressure:	950-1050mbar

3.4. Test Description

Emission Measurement		
Radiated Emission	EN 61000-6-4: 2007	PASS
Conducted Disturbance	EN 61000-6-4: 2007	PASS
Harmonic Current	EN 61000-3-2: 2006+A1: 2009+A2: 2009	PASS
Voltage Fluctuation and Flicker	EN 61000-3-3: 2008	PASS
Immunity Measurement		
Electrostatic Discharge	EN 61000-6-2: 2005 IEC 61000-4-2: 2008	PASS
RF Field Strength Susceptibility	EN 61000-6-2: 2005 IEC 61000-4-3: 2010	PASS
Electrical Fast Transient/Burst Test	EN 61000-6-2: 2005 IEC 61000-4-4: 2004	PASS
Surge Test	EN 61000-6-2: 2005 IEC 61000-4-5: 2005	PASS
Conducted Susceptibility Test	EN 61000-6-2: 2005 IEC 61000-4-6: 2008	PASS
Power Frequency Magnetic Field Susceptibility Test	EN 61000-6-2: 2005 IEC 61000-4-8: 2009	PASS
Voltage Dips and Interruptions Test	EN 61000-6-2: 2005 IEC 61000-4-11: 2004	PASS

Note: “N/A” means “not applicable”.

The measurement uncertainty is not included in the test result.

3.5. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 „Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements“ and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.24dB	(1)
Conducted Disturbance	0.15~30MHz	3.39dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

3.6. Equipments Used during the Test

Radiated Emission					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA-BROADBAND ANTENNA	ROHDE & SCHWARZ	HL562	100015	2009/05
2	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESI 26	100009	2009/11
3	RF TEST PANEL	ROHDE & SCHWARZ	TS / RSP	335015/ 0017	2009/11
4	TURNTABLE	ETS	2088	2149	2009/11
5	ANTENNA MAST	ETS	2075	2346	2009/11
6	EMI TEST SOFTWARE	ROHDE & SCHWARZ	ESK1	N/A	2009/11

Conducted Disturbance					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100038	2009/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2009/11
3	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100044	2009/11
4	EMI Test Software	ROHDE & SCHWARZ	ESK1	N/A	2009/11

Harmonic Current					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	2009/11
2	Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	2009/11

Voltage Fluctuation and Flicker					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Purified Power Source	CALIFORNIA INSTRUMENTS	HFS500	54513	2009/11
2	Harmonic And Flicker Analyzer	EM TEST	DPA503S1	0500-10	2009/11

Electrostatic Discharge					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	EM TEST	DITOC0103Z	0301-04	2009/11

RF Field Strength Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	IFR	2032	203002/100	2009/11
2	AMPLIFIER	AR	150W1000	301584	2009/11
3	DUAL DIRECTIONAL COUPLER	AR	DC6080	301508	2009/11
4	POWER HEAD	AR	PH2000	301193	2009/11
5	POWER METER	AR	PM2002	302799	2009/11
6	TRANSMITTING AERIAL	AR	AT1080	28570	2009/11
7	POWER AMPLIFIER	AR	25S1G4A	0325511	2009/11
8	DUAL DIRECTIONAL COUPLER	AR	DC7144A	0325100	2009/11
9	TRANSMITTING AERIAL	AR	AT4002A	0324848	2009/11

Electrical Fast Transient/Burst					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2009/11
2	Coupling Clamp	EM TEST	HFK	1501-14	2009/11

Surge					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA COMPACT SIMULATOR	EM TEST	UCS500M6	0500-19	2009/11

Conducted Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal Generator	IFR	2023A	202304/060	2009/11
2	Amplifier	AR	75A250	302205	2009/11
3	Dual Directional Coupler	AR	DC2600	302389	2009/11
4	6db Attenuator	EMTEST	ATT6/75	0010230A	2009/11
5	EM CLAMP	LÜTHI	EM101	335625	2009/11
6	CDN	EMTEST	CDN M3	0802-03	2009/11

Power Frequency Magnetic Field Susceptibility					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ULTRA COMPACT SIMULATOR	EM TEST	UCS500M6	202304/060	2009/11
2	MOTOR DRIVEN VOLTAGE TRANSFORMER	EM TEST	MV2616	302205	2009/11
3	CURRENT TRANSFORMER	EM TEST	MC2630	302389	2009/11
4	MAGNETIC COIL	EM TEST	MS100	0010230A	2009/11

Voltage Dips and Interruptions					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Ultra Compact Simulator	EM TEST	UCS500M6	0500-19	2009/11
2	Motor Driven Voltage Transformer	EM TEST	MV2616	0301-11	2009/11

4. TEST CONDITIONS AND RESULTS

4.1. Radiated Emission

For test instruments and accessories used see section 3.6.

4.1.1. Description of the test location

Test location: Shielded room No. 4

4.1.2. Limits of disturbance(Class A)

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dBμV/m)
30 ~ 230	3	50
230 ~ 1000	3	57

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the test instrument antenna and the closest point of any part of the E.U.T.

4.1.3. Description of the test set-up

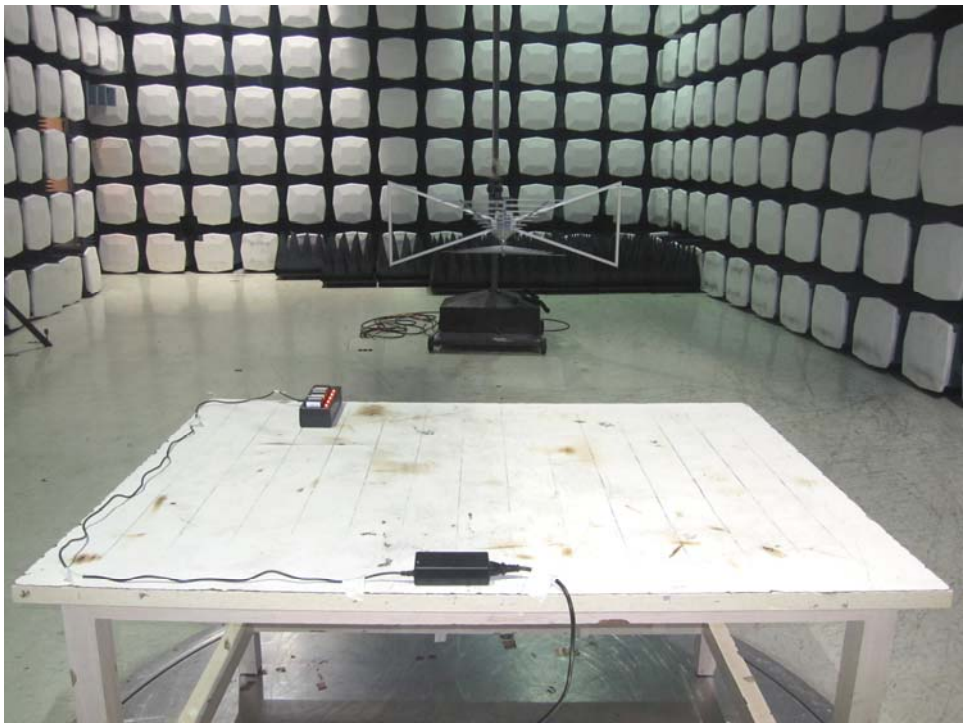
4.1.3.1. Operating Condition

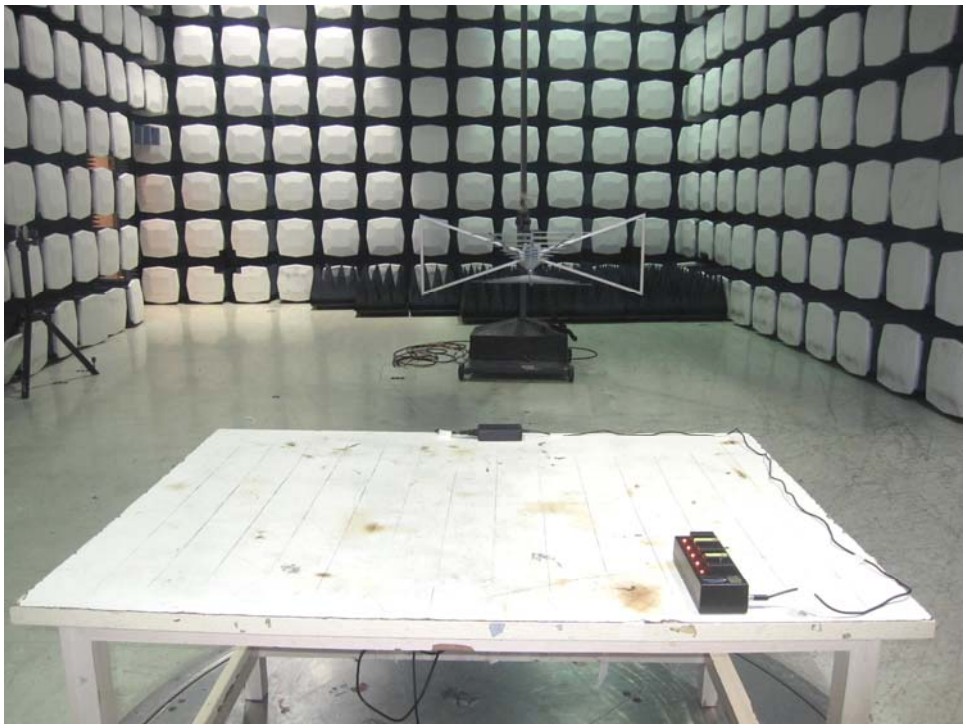
The EUT is charging during the test, and the results of the maximum emanation are recorded.

4.1.3.2. Test Configuration and Procedure

EUT is tested in Semi-Anechoic Chamber. EUT is placed on a nonmetal table which is 0.8 meter above a grounded turntable. The turntable can rotate 360 degrees to determine the azimuth of the maximum emission level. EUT is set 3 meters away from the center of receiving antenna, and the antenna can move up and down from 1 to 4 meter to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set on the test.

4.1.3.3. Photos of the test set-up





4.1.4. Test result

The requirements are **Fulfilled**

Band Width: 120KHz

Frequency Range: 30MHz to 1000MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).
Margin=Limit—Level, Level=read values＋transducer, Transducer=Antenna Factor＋Pre-Amplifier Factor＋Cable loss (with 6dB Attenuator)

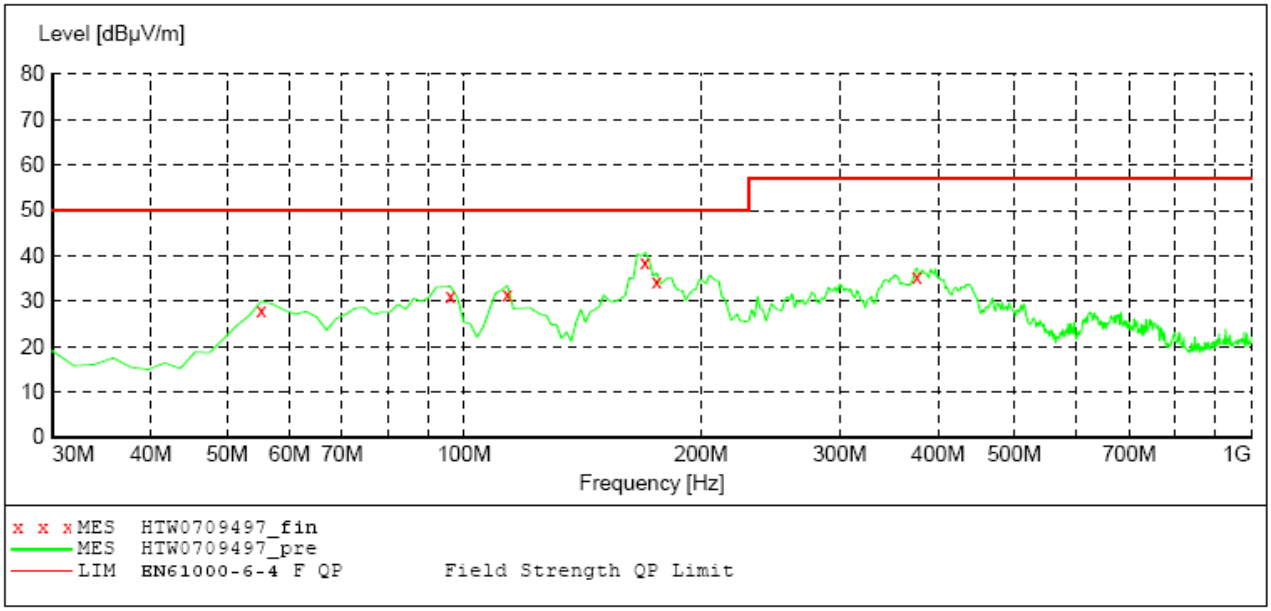
SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

RADIATED EMISSION EN61000-6-4

```
EUT:                    Battery Charging System M/N:GS-2066-CC
Manufacturer:           GlobTek,Inc.
Operating Condition:    CHARGING
Test Site:              3M CHAMBER
Operator:               IVAN
Test Specification:     AC 230V/50Hz
Comment:
Start of Test:          7/9/2010 / 10:22:28PM
```

SCAN TABLE: "test Field(30M-1G)QP"

```
  Short Description:              Field Strength(30M-1G)
  Start       Stop        Step        Detector  Meas.     IF       Transducer
  Frequency   Frequency   Width                 Time      Bandw.
  30.0 MHz    1.0 GHz     60.0 kHz    QuasiPeak 1.0 s     120 kHz HL562 10
```



MEASUREMENT RESULT: "HTW0709497_fin"

7/9/2010 10:35PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
55.270000	28.00	-23.9	50.0	22.0	QP	300.0	127.00	HORIZONTAL
96.090000	31.30	-20.1	50.0	18.7	QP	300.0	59.00	HORIZONTAL
113.580000	31.40	-19.3	50.0	18.6	QP	300.0	194.00	HORIZONTAL
169.950000	38.70	-23.8	50.0	11.3	QP	300.0	228.00	HORIZONTAL
175.790000	34.20	-23.3	50.0	15.8	QP	100.0	66.00	HORIZONTAL
376.010000	35.20	-15.7	57.0	21.8	QP	100.0	355.00	HORIZONTAL

SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD

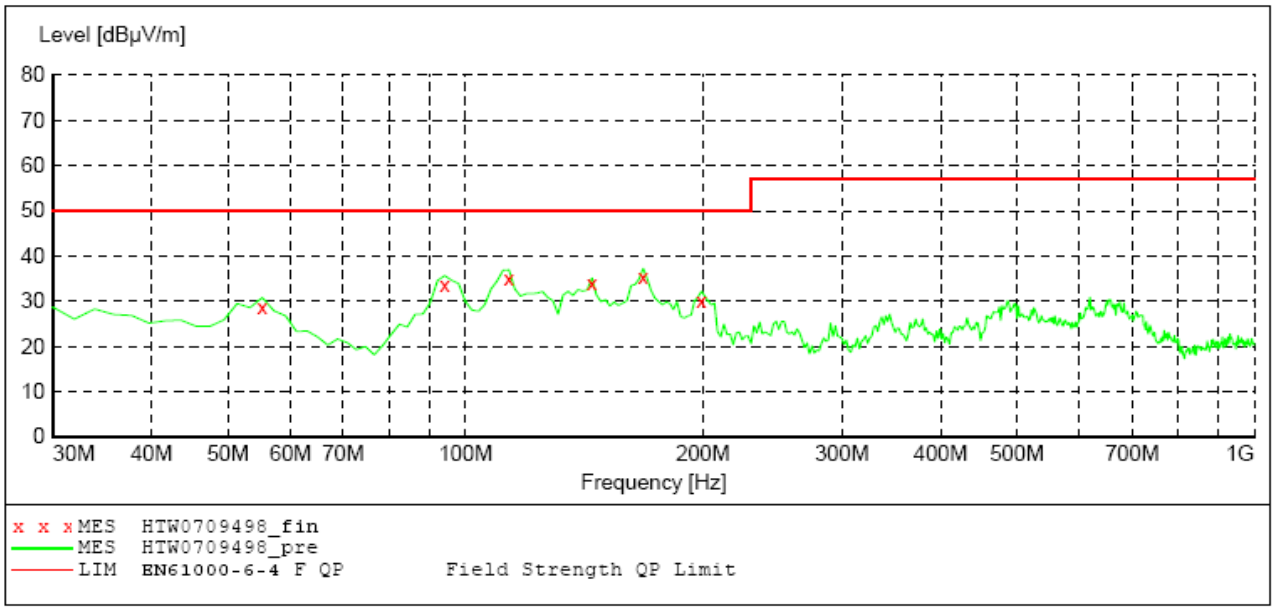
RADIATED EMISSION EN61000-6-4

```
EUT:                    Battery Charging System M/N:GS-2066-CC
Manufacturer:           GlobTek,Inc.
Operating Condition:    CHARGING
Test Site:              3M CHAMBER
Operator:               IVAN
Test Specification:     AC 230V/50Hz
Comment:
Start of Test:          7/9/2010 / 10:36:44PM
```

SCAN TABLE: "test Field(30M-1G)QP"

Short Description: Field Strength(30M-1G)

Start Frequency	Stop Frequency	Step Width	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 10



MEASUREMENT RESULT: "HTW0709498_fin"

7/9/2010 10:50PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
55.270000	28.80	-23.9	50.0	21.2	QP	100.0	95.00	VERTICAL
94.140000	33.70	-20.1	50.0	16.3	QP	100.0	130.00	VERTICAL
113.580000	35.00	-19.3	50.0	15.0	QP	100.0	164.00	VERTICAL
144.680000	34.10	-22.0	50.0	15.9	QP	100.0	265.00	VERTICAL
168.010000	35.30	-23.8	50.0	14.7	QP	100.0	95.00	VERTICAL
199.110000	30.20	-21.3	50.0	19.8	QP	100.0	231.00	VERTICAL

4.2. Conducted disturbance

For test instruments and accessories used see section 3.6.

4.2.1. Description of the test location

Test location: Shielded room No. 3

4.2.2. Limits of disturbance

Limit of conducted disturbance at the mains ports(Class A)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150～0.500	79	66
0.5000~30.000	73	60

Note: (1) The tighter limit shall apply at the edge between two frequency bands.

4.2.3. Description of the test set-up

4.2.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum emanation are recorded.

4.2.3.2. Test Configuration and Procedure

EUT is placed on a nonmetal table which is 0.8 meter above the grounded reference plane. Connect the power line of the EUT to the LISN which is connected to receiver by coaxial line, then disturbance signals of the neutral line and live line can be detected by the receiver.

4.2.3.3. Photo of the test set-up

4.2.4. Test result

The requirements are **Fulfilled**

Band Width: 9KHz

Frequency Range: 150KHz to 30MHz

Remarks: The limits are kept. For detailed results, please see the following page(s).
Margin=Limit—Level, Level=read values＋transducer, Transducer=Insertion loss of LISN＋Cable loss＋Insertion loss of Pulse limiter

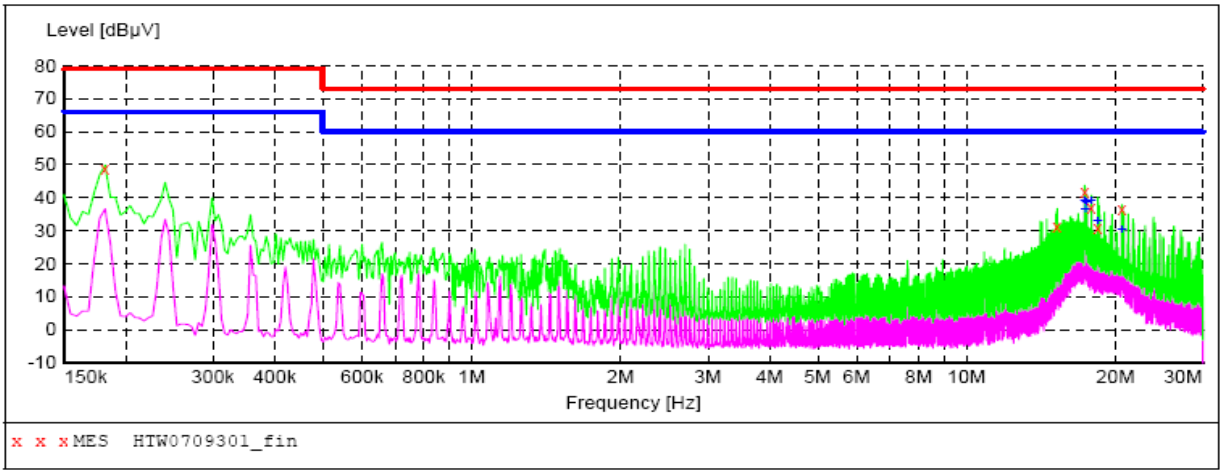
Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test EN61000-6-4

```
EUT:                    Battery Charging System M/N:GS-2066-CC
Manufacturer:           GlobTek,Inc.
Operating Condition:    CHARGING
Test Site:              3# SHIELDED ROOM
Operator:               JONY
Test Specification:     AC 230V/50Hz
Comment:
Start of Test:          7/9/2010 / 8:47:07AM
```

SCAN TABLE: "Voltage (9K-30M)FIN"

Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0709301_fin"

7/9/2010 8:49AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	48.70	10.1	79	30.3	QP	N	GND
15.225000	31.30	10.7	73	41.7	QP	N	GND
17.322000	41.80	10.8	73	31.2	QP	N	GND
17.857500	37.00	10.8	73	36.0	QP	N	GND
18.406500	30.90	10.8	73	42.1	QP	N	GND
20.589000	36.40	10.8	73	36.6	QP	N	GND

MEASUREMENT RESULT: "HTW0709301_fin2"

7/9/2010 8:49AM

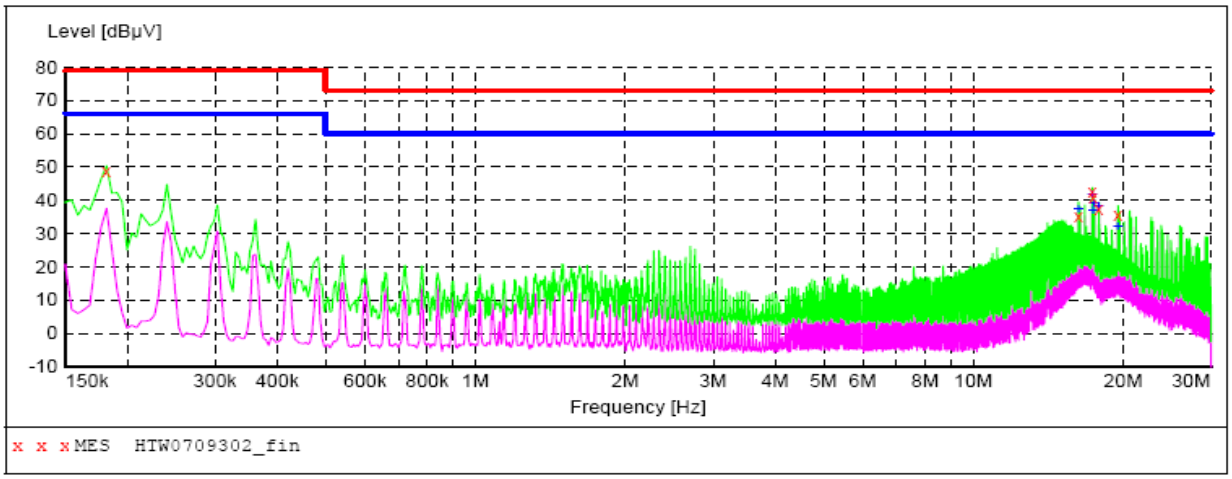
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
17.322000	39.10	10.8	60	20.9	AV	N	GND
17.398500	36.50	10.8	60	23.5	AV	N	GND
17.479500	38.50	10.8	60	21.5	AV	N	GND
17.853000	39.20	10.8	60	20.8	AV	N	GND
18.420000	32.80	10.8	60	27.2	AV	N	GND
20.589000	30.20	10.8	60	29.8	AV	N	GND

Shenzhen Huatongwei International Inspection CO.,Ltd

Voltage Mains Test EN61000-6-4

EUT: Battery Charging System M/N:GS-2066-CC
Manufacturer: GlobTek,Inc.
Operating Condition: CHARGING
Test Site: 3# SHIELDED ROOM
Operator: JONY
Test Specification: AC 230V/50Hz
Comment:
Start of Test: 7/9/2010 / 8:50:18AM

SCAN TABLE: "Voltage (9K-30M)FIN"
Short Description: 150K-30M Voltage



MEASUREMENT RESULT: "HTW0709302_fin"

7/9/2010 8:52AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.181500	48.80	10.1	79	30.2	QP	L1	GND
16.251000	35.10	10.7	73	37.9	QP	L1	GND
17.331000	42.70	10.8	73	30.3	QP	L1	GND
17.389500	40.80	10.8	73	32.2	QP	L1	GND
17.853000	37.30	10.8	73	35.7	QP	L1	GND
19.500000	35.50	10.8	73	37.5	QP	L1	GND

MEASUREMENT RESULT: "HTW0709302_fin2"

7/9/2010 8:52AM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
16.246500	37.30	10.7	60	22.7	AV	L1	GND
17.331000	41.70	10.8	60	18.3	AV	L1	GND
17.394000	36.70	10.8	60	23.3	AV	L1	GND
17.470500	39.10	10.8	60	20.9	AV	L1	GND
17.848500	38.30	10.8	60	21.7	AV	L1	GND
19.500000	32.00	10.8	60	28.0	AV	L1	GND

4.3. Harmonic current

For test instruments and accessories used see section 3.6.

4.3.1. Description of the test location

Test location: Shielded room No. 2

4.3.2. Limits of Harmonic Current

Test configuration and procedure see clause 7.1 of standard EN 61000-3-2: 2006+A1: 2009+A2: 2009.

4.3.3. Description of the test set-up

4.3.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum emanation are recorded.

4.3.3.2. Test Configuration and Procedure

Test configuration and procedure see clause 6.2.2 and Appendix C of standard EN 61000-3-2: 2006+A1: 2009+A2: 2009.

4.3.3.3. Photo of the test set-up

4.3.4. Test result

The requirements are **Fulfilled**

Remarks: The limits are kept. For detailed results, please see the following page(s).

Test Report of HTW

Standard used:	EN/IEC 61000-3-2 Ed.3 Quasi-stationary Equipment class A <= 150% of the limit
Observation time:	150s
Windows width:	10 periods – (IEC 61000-4-7 Edition 2009)
Customer:	GlobTek, Inc.
Mains supply voltage:	AC 230V/50Hz CHARGING
E. U. T.:	Battery Charging System M/N:GS-2066-CC
Tester:	Sam
Date of test:	9:01 9.Jul 2010

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

E. U. T. Result

Check harmonics 2..40 [exception odd 21..39]:

Harmonic(s) > 150%:	
Order (n):	None
Harmonic(s) with average > 100%:	
Order (n):	None

Check odd harmonics 21..39:

All Partial Odd Harmonics below partial limits.	
Harmonic(s) > 150%:	
Order (n):	None
Harmonic(s) with average > 150%:	
Order (n):	None

Power Source Result

First dataset out of limit:	
DS (time):	None
Harmonic(s) out of limit:	
Order (n):	None

Average harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	125.006E-3			
2	1.421E-3	0.132	1.08	PASS
3	110.846E-3	4.819	2.30	PASS
4	1.609E-3	0.374	430.00E-3	PASS
5	105.643E-3	9.267	1.14	PASS
6	1.482E-3	0.494	300.00E-3	PASS
7	98.534E-3	12.797	770.00E-3	PASS
8	1.632E-3	0.710	230.00E-3	PASS
9	89.520E-3	22.380	400.00E-3	PASS
10	1.469E-3	0.798	184.00E-3	PASS
11	79.175E-3	23.992	330.00E-3	PASS
12	1.438E-3	0.938	153.33E-3	PASS
13	67.842E-3	32.306	210.00E-3	PASS
14	1.303E-3	0.991	131.43E-3	PASS
15	56.141E-3	37.427	150.00E-3	PASS
16	1.216E-3	1.058	115.00E-3	PASS
17	44.524E-3	33.641	132.35E-3	PASS
18	1.102E-3	1.078	102.22E-3	PASS
19	33.557E-3	28.337	118.42E-3	PASS
20	892.246E-6	0.970	92.00E-3	PASS
21	23.579E-3	14.672	160.71E-3	PASS
22	743.325E-6	0.889	83.64E-3	PASS
23	15.104E-3	10.292	146.74E-3	PASS
24	642.820E-6	0.839	76.66E-3	PASS
25	8.690E-3	6.437	135.00E-3	PASS
26	445.178E-6	0.629	70.77E-3	PASS
27	5.730E-3	4.584	124.99E-3	PASS
28	509.042E-6	0.775	65.71E-3	PASS
29	6.641E-3	5.706	116.39E-3	PASS
30	532.272E-6	0.868	61.33E-3	PASS
31	8.127E-3	7.465	108.87E-3	PASS
32	426.498E-6	0.742	57.50E-3	PASS
33	8.991E-3	8.791	102.27E-3	PASS
34	568.837E-6	1.051	54.12E-3	PASS
35	8.875E-3	9.203	96.44E-3	PASS
36	482.715E-6	0.944	51.11E-3	PASS
37	7.929E-3	8.693	91.21E-3	PASS
38	456.563E-6	0.943	48.42E-3	PASS
39	6.425E-3	7.424	86.53E-3	PASS
40	453.686E-6	0.986	46.00E-3	PASS

Maximum harmonic current results

Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	125.085E-3			
2	3.437E-3	0.212	1.62	PASS
3	110.936E-3	3.216	3.45	PASS
4	3.426E-3	0.531	645.00E-3	PASS
5	105.938E-3	6.195	1.71	PASS
6	3.333E-3	0.741	450.00E-3	PASS
7	99.015E-3	8.573	1.15	PASS
8	3.202E-3	0.928	345.00E-3	PASS
9	90.248E-3	15.041	600.00E-3	PASS
10	3.027E-3	1.097	276.00E-3	PASS
11	80.186E-3	16.199	495.00E-3	PASS
12	2.823E-3	1.228	229.99E-3	PASS
13	69.082E-3	21.931	315.00E-3	PASS
14	2.606E-3	1.322	197.15E-3	PASS
15	57.664E-3	25.628	225.00E-3	PASS
16	2.299E-3	1.333	172.50E-3	PASS
17	46.146E-3	23.245	198.52E-3	PASS
18	2.101E-3	1.370	153.33E-3	PASS
19	35.282E-3	19.863	177.63E-3	PASS
20	1.736E-3	1.258	138.00E-3	PASS
21	25.263E-3	15.720	160.71E-3	PASS
22	1.511E-3	1.205	125.46E-3	PASS
23	16.650E-3	11.346	146.74E-3	PASS
24	1.187E-3	1.032	114.99E-3	PASS
25	9.873E-3	7.314	135.00E-3	PASS
26	1.005E-3	0.947	106.16E-3	PASS
27	6.095E-3	4.876	124.99E-3	PASS
28	921.699E-6	0.935	98.57E-3	PASS
29	7.496E-3	6.441	116.39E-3	PASS
30	864.704E-6	0.940	92.00E-3	PASS
31	8.834E-3	8.114	108.87E-3	PASS
32	898.905E-6	1.042	86.25E-3	PASS
33	9.245E-3	9.040	102.27E-3	PASS
34	898.539E-6	1.107	81.18E-3	PASS
35	8.993E-3	9.326	96.44E-3	PASS
36	902.634E-6	1.177	76.66E-3	PASS
37	8.234E-3	9.027	91.21E-3	PASS
38	825.955E-6	1.137	72.63E-3	PASS
39	6.911E-3	7.986	86.53E-3	PASS
40	766.684E-6	1.111	69.00E-3	PASS

Maximum harmonic voltage results

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	230.30	100.131		
2	154.19E-3	0.067	0.2	PASS
3	445.07E-3	0.194	0.9	PASS
4	54.09E-3	0.024	0.2	PASS
5	21.42E-3	0.009	0.4	PASS
6	47.05E-3	0.020	0.2	PASS
7	59.54E-3	0.026	0.3	PASS
8	30.94E-3	0.013	0.2	PASS
9	35.76E-3	0.016	0.2	PASS
10	20.06E-3	0.009	0.2	PASS
11	53.98E-3	0.023	0.1	PASS
12	17.05E-3	0.007	0.1	PASS
13	45.91E-3	0.020	0.1	PASS
14	14.77E-3	0.006	0.1	PASS
15	47.98E-3	0.021	0.1	PASS
16	18.89E-3	0.008	0.1	PASS
17	36.73E-3	0.016	0.1	PASS
18	17.38E-3	0.008	0.1	PASS
19	42.54E-3	0.018	0.1	PASS
20	16.85E-3	0.007	0.1	PASS
21	24.25E-3	0.011	0.1	PASS
22	15.21E-3	0.007	0.1	PASS
23	24.07E-3	0.010	0.1	PASS
24	12.39E-3	0.005	0.1	PASS
25	9.57E-3	0.004	0.1	PASS
26	16.52E-3	0.007	0.1	PASS
27	14.89E-3	0.006	0.1	PASS
28	13.94E-3	0.006	0.1	PASS
29	18.98E-3	0.008	0.1	PASS
30	14.45E-3	0.006	0.1	PASS
31	16.96E-3	0.007	0.1	PASS
32	13.87E-3	0.006	0.1	PASS
33	22.48E-3	0.010	0.1	PASS
34	8.53E-3	0.004	0.1	PASS
35	19.91E-3	0.009	0.1	PASS
36	10.43E-3	0.005	0.1	PASS
37	22.35E-3	0.010	0.1	PASS
38	9.14E-3	0.004	0.1	PASS
39	14.66E-3	0.006	0.1	PASS
40	10.52E-3	0.005	0.1	PASS

4.4. Voltage Fluctuation and Flicker

For test instruments and accessories used see section 3.6.

4.4.1. Description of the test location

Test location: Test location No. 2

4.4.2. Limit of voltage fluctuation and flicker

Test configuration and procedure see clause 5 of standard EN 61000-3-3: 2008.

4.4.3. Description of the test set-up

4.4.3.1. Operating Condition

The EUT is charging during the test, and the maximum emanating results are recorded.

4.4.3.2. Test Configuration and Procedure

Test configuration and procedure see clause 6 and Annex A or Annex B of standard EN 61000-3-3:2008

4.4.3.3. Photo of the test set-up

4.4.4. Test result

The requirements are **Fulfilled**

Remarks: The limits are kept. For detailed results, please see the following page(s).

Test Report of HTW

Standard used:	EN/IEC 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurement)
Customer:	GlobTek, Inc.
Mains supply voltage:	AC 230V/50Hz CHARGING
E. U. T.:	Battery Charging System
	M/N:GS-2066-CC
Test Time:	9:05 9.Jul 2010
Operator:	Sam

Test Result	PASS

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.207	4.00	PASS
dt [s]	0.000	0.50	PASS

Detail Flicker data

Flicker measurement 1	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.207	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 2	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.072	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 3	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.075	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 4	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.075	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 5	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.071	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 6	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.077	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 7	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.078	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 8	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.073	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 9	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.076	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 10	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.065	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 11	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.073	4.00	PASS
dt [s]	0.000	0.50	PASS

Flicker measurement 12	EUT values	Limit	Result
Pst	0.028	1.00	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.075	4.00	PASS
dt [s]	0.000	0.50	PASS

4.5. Electrostatic discharge

For test instruments and accessories used see section 3.6.

4.5.1. Description of the test location and date

Test location: Shielded room No. 1

Date of test: Jul 13, 2010

Operator: Sam

4.5.2. Severity levels of electrostatic discharge

4.5.2.1. Severity level: Contact Discharge at ±4KV Air Discharge at±8KV

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

4.5.2.2. Performance criterion: **B**

4.5.3. Description of the test set-up

4.5.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

4.5.3.2. Test Configuration and Procedure

Air Discharge:

－This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator 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

Contact Discharge**:**

－All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

Indirect Discharge:

－The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 10 times discharge.

－The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 10 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.5.3.3. Photo of the test set-up

4.5.4. Test specification:

Contact discharge voltage:	■ 2 kV	■ 4 kV	
Air discharge voltage:	■ 2 kV	■ 4 kV	■ 8 kV
Number of discharges:	■ 10	□ 25	
Type of discharge:	Direct discharge	■ Air discharge ■ Contact discharge	
	Indirect discharge	■ Contact discharge	
Polarity:	■ Positive	■ Negative	
Discharge location:	■ see photo documentation of the test set-up		
	■ all external locations accessible by hand		
	■ horizontal coupling plane (HCP)		
	■ vertical coupling plane (VCP)		

4.5.5. Test result

The requirements are **Fulfilled** Performance Criterion: **B**

Remarks: During the test no deviation was detected to the selected operation mode(s).
The light goes out as the contact discharge is performed to the power output port; however, it can be self-recovery.

4.6. Radiated, radio-frequency, electromagnetic field

For test instruments and accessories used see section 3.6.

4.6.1. Description of the test location and date

Test location: Shielded room No. 4

Date of test: Jul 09, 2010

Operator: Sam

4.6.2. Severity levels of radiated, radio-frequency, electromagnetic field

4.6.2.1. Severity level: 10 V/m 3 V/m 1 V/m

Level	Field Strength (V/m)
1.	1
2.	3
3.	10
X	Special

4.6.2.2. Performance criterion**: A**

4.6.3. Description of the test set-up

4.6.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

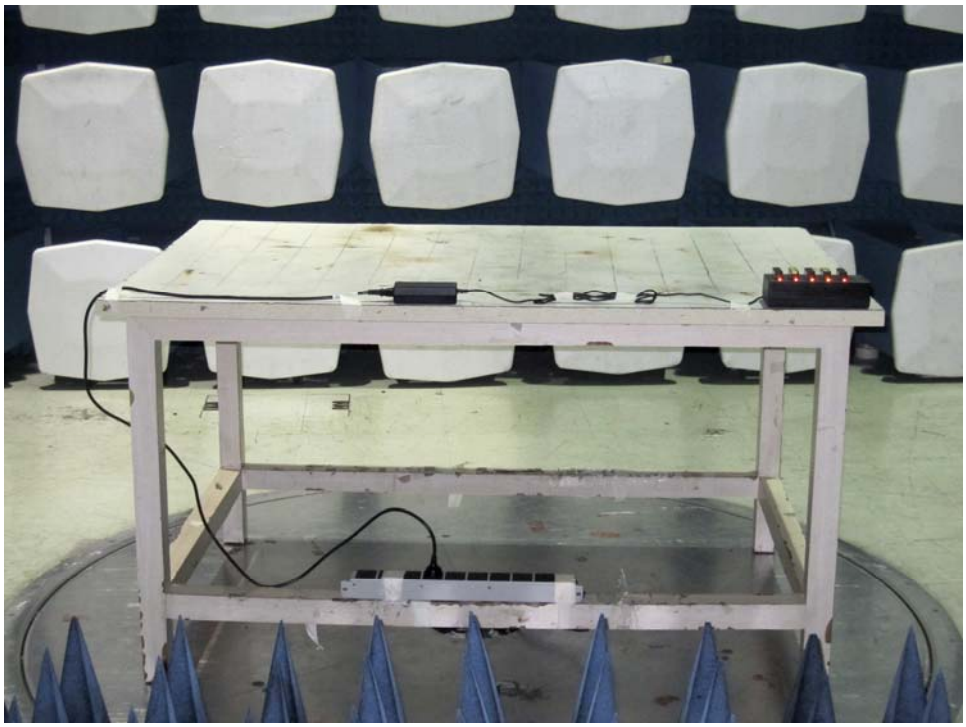
4.6.3.2. Test Configuration and Procedure

EUT and its auxiliary instrument are placed on a turntable which is 0.8 meter above ground. The center of the transmitting antenna mounted on an antenna mast is set 3 meter away from the EUT. During the test, each of the four sides of EUT will face the transmitting antenna with the turntable cycled. Both horizontal and vertical polarization of the antenna are set on test and measured individually.

In order to judge the performance of the EUT, a set of monitor system is used.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.6.3.3. Photo of the test set-up



4.6.4. Test specification:

Frequency range:	■ 80 MHz to 1000 MHz
Field strength:	■ 10 V/m
Frequency range:	■ 1400 MHz to 2000 MHz
Field strength:	■ 3 V/m
Frequency range:	■ 2000 MHz to 2700 MHz
Field strength:	■ 1 V/m
EUT - antenna separation:	■ 3 m
Modulation:	■ AM: 80 % ■ sinusoidal 1000Hz
Frequency step:	■ 1 % with 3 s dwell time
Antenna polarisation:	■ horizontal ■ vertical

4.6.5. Test result

The requirements are **Fulfilled** Performance Criterion: **A**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.7. Electrical fast transients / Burst

For test instruments and accessories used see section 3.6.

4.7.1. Description of the test location and date

Test location: Shielded room No. 1

Date of test: Jul 12, 2010

Operator: Sam

4.7.2. Severity levels of electrical fast transients / Burst

4.7.2.1. Severity level: ±2000V for AC power supply lines

Open circuit output test voltage and repetition rate of the impulses				
Level	On power port, PE		On I/O signal, data and control ports	
	V peak(KV)	Repetition rate (KHz)	Voltage peak	Repetition rate (KHz)
1.	0.5	5 or 100	0.25	5 or 100
2.	1	5 or 100	0.5	5 or 100
3.	2	5 or 100	1	5 or 100
4.	4	5 or 100	2	5 or 100
X	Special	Special	Special	Special

4.7.2.2. Performance criterion: **B**

4.7.3. Description of the test set-up

4.7.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

4.7.3.2. Test Requirements

EUT and its simulators shall be placed 0.1m high above the ground reference plane which is a minimum 1m*1m with minimum 0.65mm thickness. 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.

4.7.3.3. Test Configuration and Procedure

For AC power input lines**:**

—EUT is connected to coupling/decoupling network which couples the EFT signal to power input lines. During the test, both polarities of the test voltage should be applied and the duration of the test can't be less than 1mins.

For Signal Line and Control Line**:**

—Coupling clamp is directly placed on the ground reference plane with its metallic bottom contacting the plane. The signal lines and control lines of EUT are put through the coupling clamp which couples the EFT signal to these lines. During the test, both polarities of the test voltage should be applied and the duration of the test can't be less than 1mins.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.7.3.4. Photo of the test set-up

4.7.4. Test specification:

Coupling network:	■ 0.5 kV	■ 1 kV	■ 2 kV
Coupling clamp:	□ 0.5 kV	□ 1 kV	
Burst frequency:	■ 5.0 kHz		
Coupling duration:	■ 60 s		
Polarity:	■ positive	■ negative	

4.7.5. Coupling points

Cable description: AC power line : L, N, L+N, PE, L-PE, N-PE, L-N-PE

Screening:	o screened	■ unscreened
Status:	o passive	■ active
Signal transmission:	■ analogue	o digital
Length:	■ 1.5 m	

4.7.6. Test result

The requirements are **Fulfilled** Performance Criterion: **B**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.8. Surge

For test instruments and accessories used see section 3.6.

4.8.1. Description of the test location and date

Test location: Shielded room No. 1

Date of test: Jul 12, 2010

Operator: Sam

4.8.2. Severity levels of surge

4.8.2.1. Severity level: Line to line: ±1KV Line to earth: ±2KV

Level	Test Voltage (KV)
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

4.8.2.2. Performance Criterion: **B**

4.8.3. Description of the test set-up

4.8.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

4.8.3.2. Test Configuration and Procedure

In this test, the 1.2/50us& 8/20us surge generator must be used for AC power ports. The voltage for line to earth coupling mode is twice of that for line to line. At least 5 positive and 5 negative (polarity) surge signal with a maximum 1/min repetition rate are injected to AC power lines from 4 different phase angles (0°, 90°, 180°, 270°) during the test.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.8.3.3. Photo of the test set-up

4.8.4. Test specification:

Pulse amplitude-Power line sym.: Source impedance: 2 Ω + 18µF	■ 0.5 kV	■ 1 kV	□ 2 kV	□ 4 kV
Pulse amplitude-Power line unsym: Source impedance: 12 Ω + 9µF	■ 0.5 kV	■ 1 kV	■ 2 kV	□ 4 kV
Number of surges:	■ 5 Surges/Phase angle			
Phase angle:	■ 0 °	■ 90 °	■ 180 °	■ 270 °
Repetition rate:	■ 60 s			
Polarity:	■ positive		■ negative	

4.8.5. Coupling points

Cable description: AC power line: L-N, L-PE, N-PE

Screening:	o screened	■ unscreened
Status:	o passive	■ active
Signal transmission:	■ analogue	o digital
Length:	■ 1.5 m	

4.8.6. Test result

The requirements are **Fulfilled** Performance Criterion: **B**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.9. Conducted disturbances induced by radio-frequency fields

For test instruments and accessories used see section 3.6.

4.9.1. Description of the test location and date

Test location: Shielded room No. 2

Date of test: Jul 10, 2010

Operator: Sam

4.9.2. Severity levels of conducted disturbances induced by radio-frequency fields discharge

4.9.2.1. Severity Level: 10V

Level	Field Strength （V）
1.	1
2.	3
3.	10
X	Special

4.9.2.2. Performance Criterion: **A**

4.9.3. Description of the test set-up

4.9.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

4.9.3.2. Test Configuration and Procedure

For AC power input lines**:**

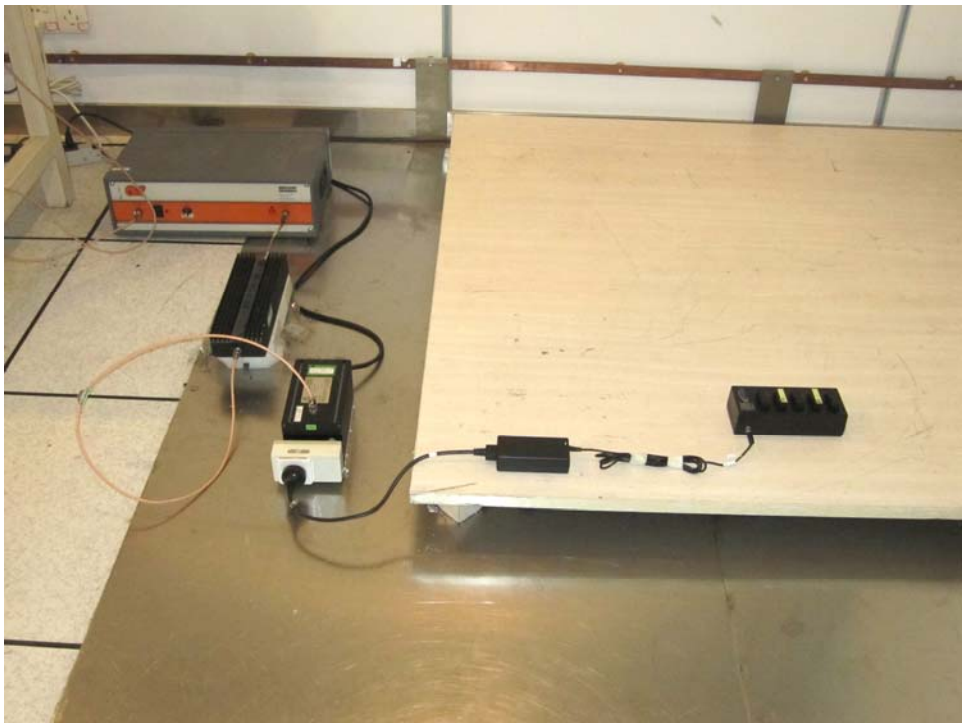
—EUT is placed on an insulating support of 0.1m high above a ground reference plane. It must be 0.3m away the CDN (coupling and decoupling network) of which the bottom is made of metallic material and placed directly on the ground plane. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible). The disturbance signal amplified by amplifier is injected to EUT through CDN.

For Signal Line and Control Line**:**

—EUT is placed on an insulating support of 0.1m high above a ground reference plane. The EM clamp is directly placed on the ground reference plane with its metallic bottom contacting the plane. Cables between EUT and auxiliary equipment are put through the EM clamp. The disturbance signal amplified by amplifier is injected to EUT through EM clamp.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.9.3.3. Photo of the test set-up



4.9.4. Test specification:

Frequency range:	■ 0.15 MHz to 80 MHz
Test voltage:	■ 10 V
Modulation:	■ AM: 80 % ■ sinusoidal 1000Hz
Frequency step:	■ 1 % with 3 s dwell time

4.9.5. Coupling points

Cable description : AC power line

Screening:	o screened	■ unscreened
Status:	o passive	■ active
Signal transmission:	■ analogue	o digital
Length:	■ 1.5 m	

4.9.6. Test result

The requirements are **Fulfilled** Performance Criterion: **A**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.10. Magnetic Field Immunity

For test instruments and accessories used see section 3.6.

4.10.1. Description of the test location and date

Test location: Shielded room No. 1

Date of test: Jul 12, 2010

Operator: Sam

4.10.2. Severity levels of magnetic field immunity

Severity Level: 30A/m

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

4.10.3. Description of the test set-up

4.10.3.1. Operating Condition

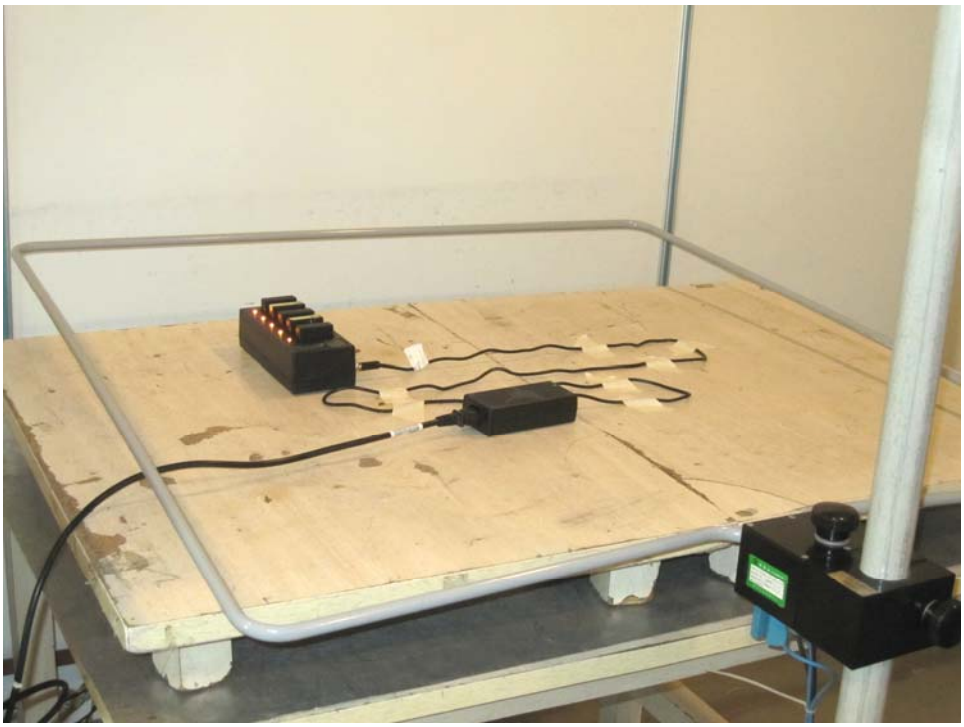
The EUT is charging during the test, and the results of the maximum susceptivity are recorded.

4.10.3.2. Test Configuration and Procedure:

EUT is placed on an insulating support of 0.1m high above a table of 0.8m high. There is a minimum 1m*1m ground metallic plane put on this table. EUT is put in the center of the magnetic coil then three orientations of the magnetic coil, X, Y and Z, shall be rotated in order to expose the EUT to the difference polarization magnetic field.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

4.10.3.3. Photo of the test set-up



4.10.4. Test specification:

Test frequency:	■ 50 Hz		
Continuous field:	■ 30A/m		
Test duration:	■ 5 m		
Antenna factor:	0.917 A/m		
Axis:	■ x-axis	■ y-axis	■ z-axis

4.10.5. Test result

The requirements are **Fulfilled** Performance Criterion: **A**

Remarks: During the test no deviation was detected to the selected operation mode(s).

4.11. Voltage Dips and Interruptions

For test instruments and accessories used see section 3.6.

4.11.1. Description of the test location and date

Test location: Shielded room No. 1

Date of test: Jul 10, 2010

Operator: Sam

4.11.2. Severity levels of voltage dips and interruptions

Test Level (%Ut)	Voltage Dip And Short Interruptions (%Ut)	Performance Criterion	Duration (In Period)
0	100	B	1
40	60	C	10
70	30	C	25
0	100	C	250

4.11.3. Description of the test set-up

4.11.3.1. Operating Condition

The EUT is charging during the test, and the results of the maximum susceptive results are recorded.

4.11.3.2. Test Configuration and Procedure

EUT is connected to the simulator according to the test photo. When conducting this test ,the power supply shall be set at the minimum and maximum rated input voltages and test voltage changes shall be step changes and start at the phase angle of 0°and 180°

4.11.3.3. Photo of the test set-up

4.11.4. Test specification:

Nominal Mains Voltage (V_N):	■ 230 V AC
Number of voltage fluctuations:	■ 3
Level of reduction(dip) / duration:	■ 30 % / 500ms ■ 60 % / 200ms ■ 0% / 20ms
Nominal Mains Voltage (V_N):	■ 230 V AC
Number of Interruptions:	■ 3
Duration of the Interruption:	■ 5000 ms

4.11.5. Test result

The requirements are **Fulfilled**
Performance Criterion **See section 4.11.2**

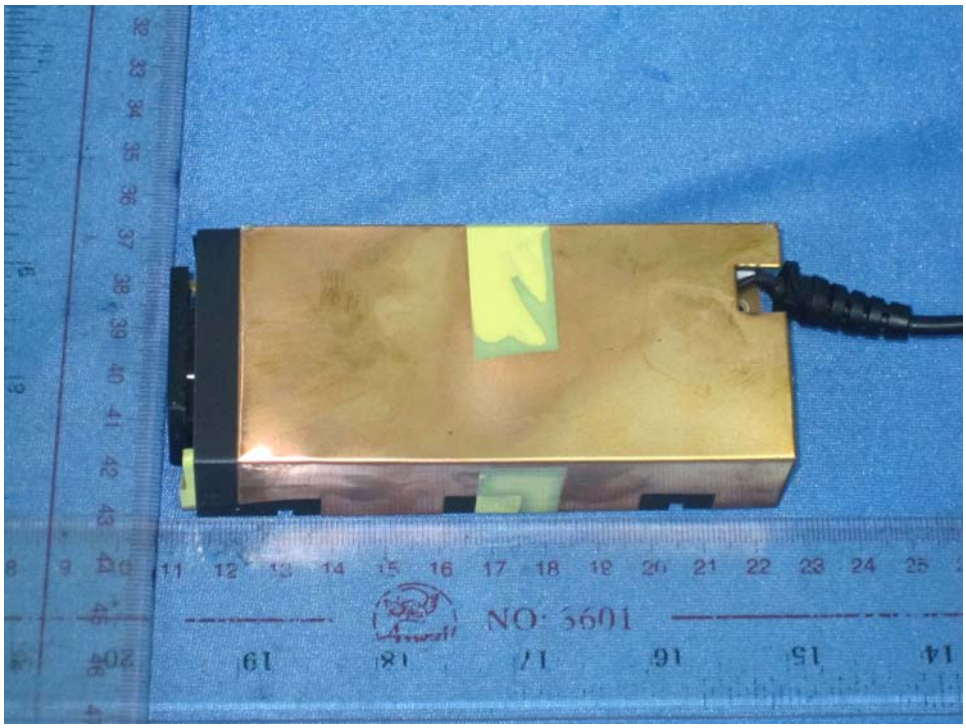
Remarks: During the test no deviation was detected to the selected operation mode(s).

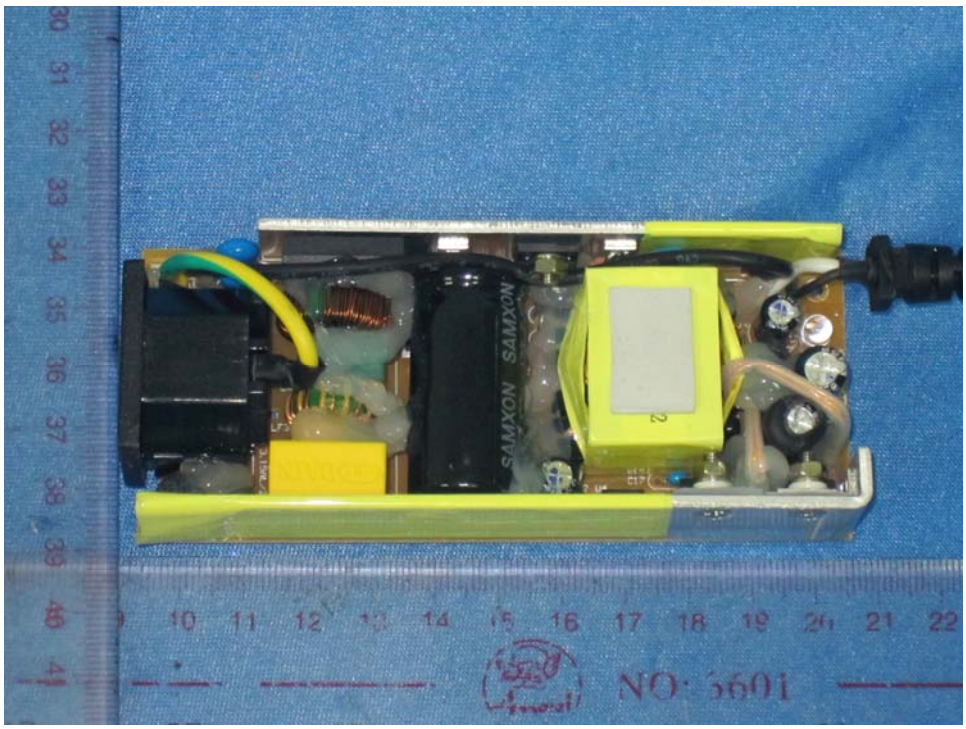
5. External and Internal Photos of the EUT

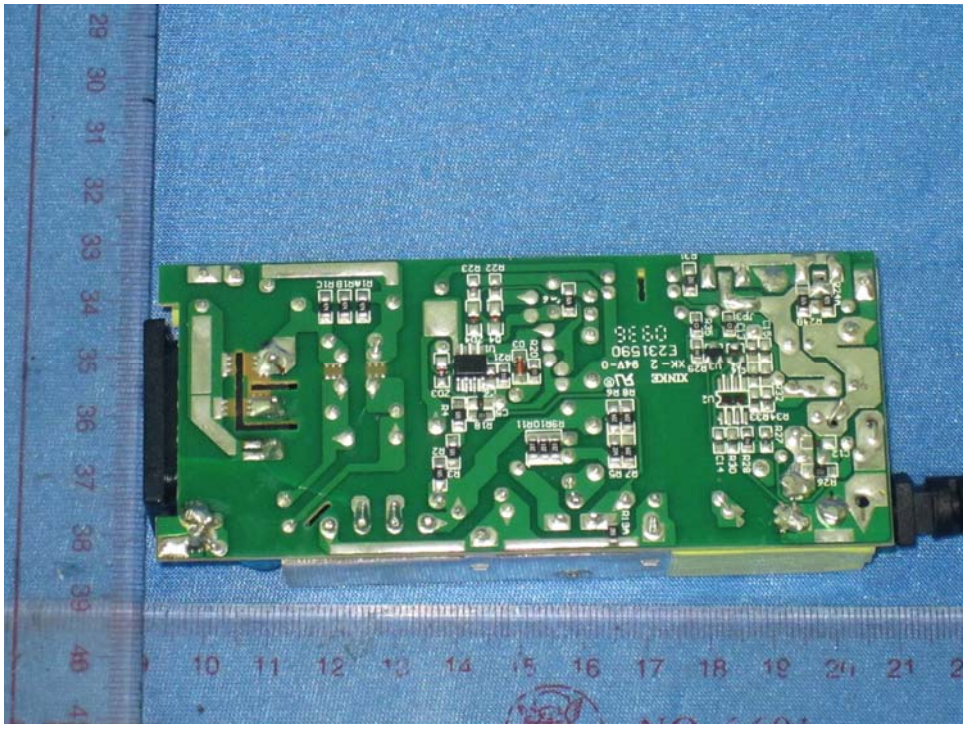
5.1. External photos of the EUT


GlobTek, Inc.
ITE POWER SUPPLY (电源适配器)
PART NO (料号): GS-2066PS
MODEL (型号): GT-81081-6012-T3
INPUT (输入): 100-240V~1.5A, 50/60Hz
OUTPUT (输出): +12V ⎓ 5.0A
OUTPUT POWER (输出功率): 60W MAX
EFFICIENCY LEVEL IV III 115V
LEVEL 3
I.T.E. POWER SUPPLY
N4282
Q050856
LISTED
6D44
E170507
S/N:
MADE IN CHINA
1010

5.2. Internal photos of the EUT

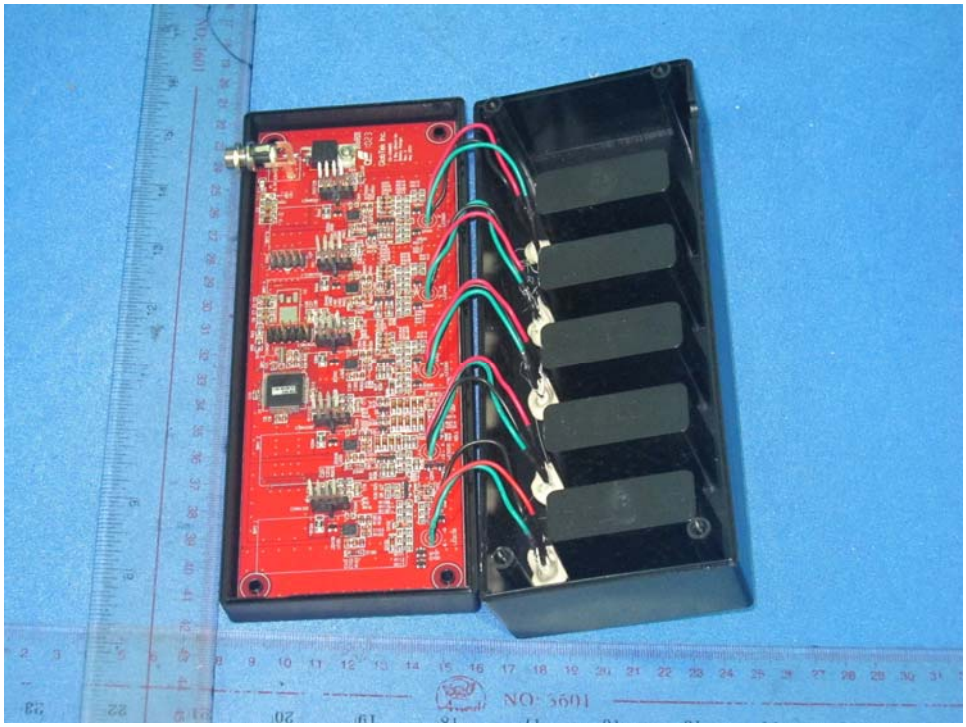


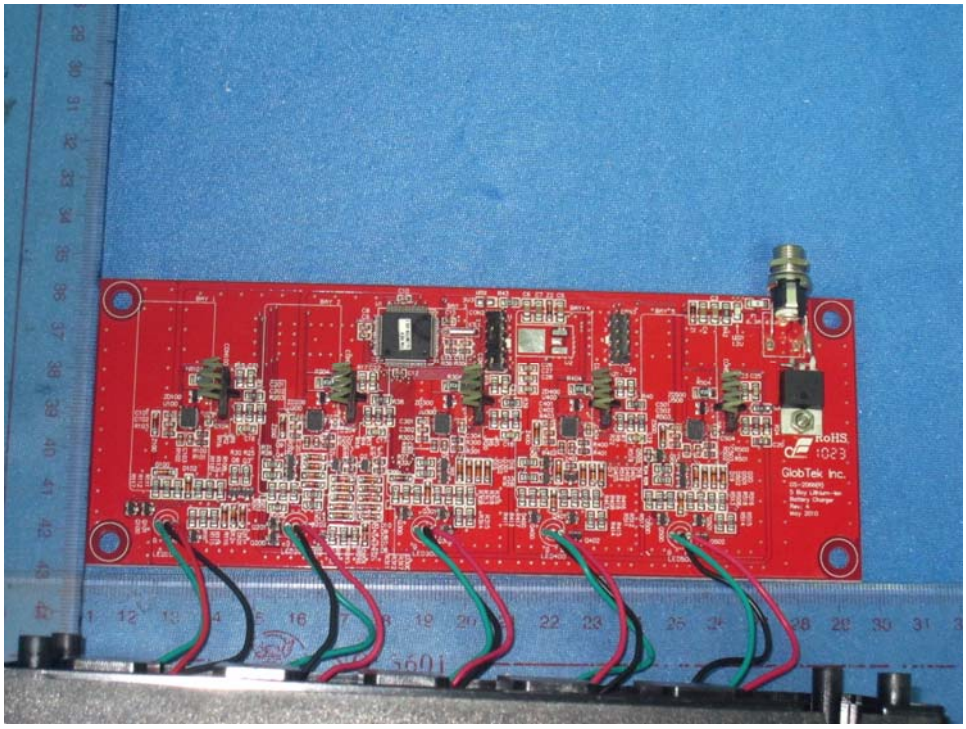


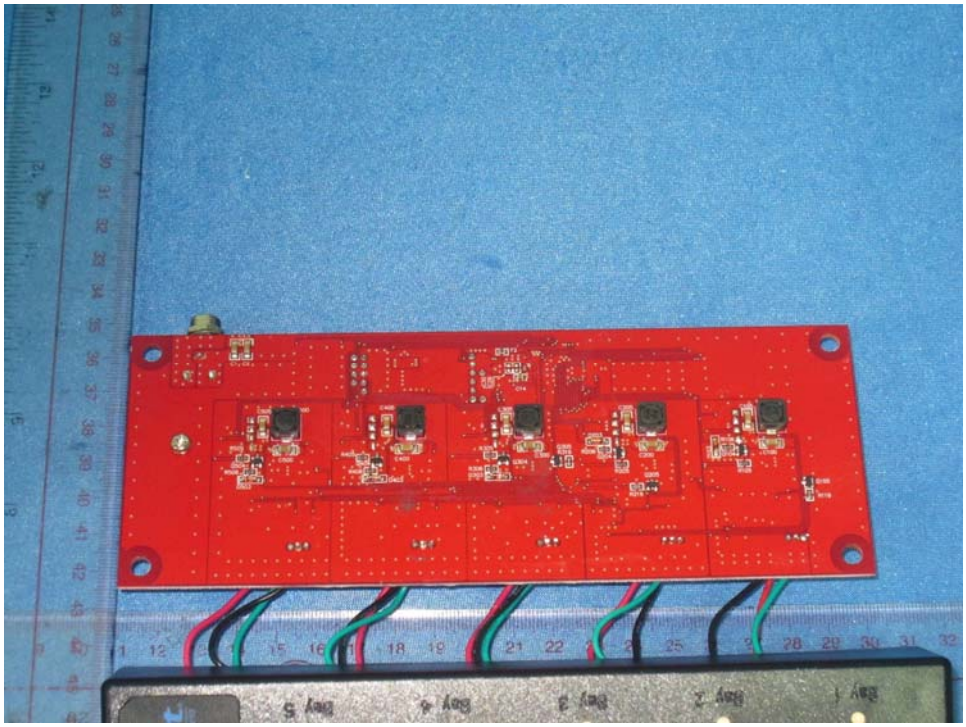



tempest
Pre-Charging
Normal Charging
Charge Complete
Battery Fault
deli


GlobTek, Inc.
5 Bay Lithium-Ion Battery Charger
PART NO(料号): GS-2066(R)
INPUT(输入):12Vdc 5A
OUTPUT(输出): 4.2V 0.75A Per Bay
OUTPUT POWER(输出功率):
3.15W Per Bay, 15.75W Total Power
RoHS
S/N:
RoHS000158101/07
MADE IN CHINA 中国制造







..... End Of Report.....