



SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION Co., Ltd.

## Declaration of Conformity

Certification number: CTE09120017

Issue date: Dec 17, 2009

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 60601-1-2: 2007**

**EN 55022: 2006+A1: 2007**

**EN 55024: 1998+A1: 2001+A2: 2003**

**EN 61000-3-2: 2006**

**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:**

**Medical power supply/I.T.E power supply**

**Model number:**

**GTM91110PWWVVV-X.X-FAW-S (GT: GLOBTEK series, M: Medical grade, replace "M" with "-" (Dash) for IT grade. 91110P: family designator. WWW: Rated output Wattage, Max. is 240W. VV: Rated output Voltage, from 12 Volts to 55 Volts, X.X: output voltage deviation from standard model by subtracting or adding X.X volts from standard output voltage, FAW: "F" for open frame, "A" for airflow, "W" for Class II units, NO "A" for convection cooling)**

**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.

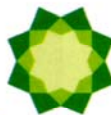


For and on behalf of  
Shenzhen Huatongwei International Inspection Co., Ltd.

Authorized by:

Authorized Signature(s)





## TEST REPORT

EN 55022: 2006+A1: 2007

EN 55024: 1998+A1: 2001+A2: 2003

EN 60601-1-2: 2007

(EN 55011: 2007, EN 61000-3-2: 2006 EN 61000-3-3: 2008, IEC 61000-4-2: 2008, IEC 61000-4-3: 2008, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2009, IEC 61000-4-11: 2004)

Report Reference No.....: TRE09120017

Compiled by

( position+printed name+signature)...: File administrators Mellen Lee

Supervised by

( position+printed name+signature)...: Technique principal Byron Lai

Approved by

( position+printed name+signature)...: Manager Jimmy Li

Date of issue.....: Dec 17, 2009

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 60601-1-2: 2007(EN 55011: 2007, EN 61000-3-2: 2006, EN 61000-3-3: 2008, IEC 61000-4-2: 2008, IEC 61000-4-3: 2008, IEC 61000-4-4: 2004, IEC 61000-4-5: 2005, IEC 61000-4-6: 2008, IEC 61000-4-8: 2001, IEC 61000-4-11: 2004)  
EN 55022: 2006+A1: 2007 EN 55024: 1998+A1: 2001+A2: 2003

Test Report Form No.....: HTWEMCCE\_1A

TRF Originator.....: Shenzhen Huatongwei International Inspection CO., Ltd

Master TRF.....: Dated 2006-06

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Test item description .....: Medical power supply/I.T.E power supply

Manufacturer 1 .....: GlobTeck, Inc.

Manufacturer 2 .....: GlobTek (Suzhou) Co., Ltd

Model/Type reference.....: GTM91110PWWWVV-X.X-FAW-S (GT: GLOBTEK series, M: Medical grade, replace "M" with "-"(Dash) for IT grade. 91110P: family designator. WWW: Rated output Wattage, Max. is 240W. VV: Rated output Voltage, from 12 Volts to 55 Volts, X.X: output voltage deviation from standard model by subtracting or adding X.X volts from standard output voltage, FAW: "F" for open frame, "A" for airflow, "W" for Class II units, NO "A" for convection cooling)

Ratings.....: 100-240V 4.0A Max. 240W 50-60Hz Load: 240W

Result.....: Positive

**EMC -- TEST REPORT**

<b>Test Report No. :</b> TRE09120017	Dec 17, 2009 Date of issue
--------------------------------------	-------------------------------

Equipment under Test : Medical power supply/I.T.E power supply

Type / Model : GTM91110PWWWVV-X.X-FAW-S (GT: GLOBTEK series, M: Medical grade, replace "M" with "-"(Dash) for IT grade. 91110P: family designator. WWW: Rated output Wattage, Max. is 240W. VV: Rated output Voltage, from 12 Volts to 55 Volts, X.X: output voltage deviation from standard model by subtracting or adding X.X volts from standard output voltage, FAW: "F" for open frame, "A" for airflow, "W" for Class II units, NO "A" for convection cooling)

Listed Models : /

**Applicant** : GlobTeck, Inc.

Address : 186 Veterans Dr. Northvale, NJ 07647 USA

**Manufacturer 1** : GlobTeck, 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

<b>Test Result</b> according to the standards on page 4:	<b>Positive</b>
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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.

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## **1. TEST STANDARDS**

The tests were performed according to following standards:

[EN 60601-1-2: 2007](#) Medical electrical equipment – Part 1-2: General requirements for safety – Collateral standard: Electromagnetic compatibility – Requirements and tests  
[EN 55022: 2006+A1: 2007](#) Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement  
[EN 55024: 1998+A1: 2001+A2: 2003](#) Information technology equipment – Immunity characteristics – Limits and methods of measurement  
[EN 61000-3-2: 2006](#) 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  $\leq 16$  A per phase and not subject to conditional connection



## 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 55022 and EN 60601-1-2, searching for the highest disturbance.

Immunity tests .....: According to EN 55024 and EN 60601-1-2, searching for the highest susceptibility.

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 Multimeter

Manufacturer : MASTECH

M/N : MS8221A

## 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: August 02, 2007. 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 Dec 31, 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 July 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<sup>th</sup>, 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, 2006. Valid time is until December 19, 2009.

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, 2006. Valid time is until December 19, 2009.

**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:	<u>15-35 ° C</u>
Humidity:	<u>30-60 %</u>
Atmospheric pressure:	<u>950-1050mbar</u>

### 3.4. Test Description

Emission Measurement		
Radiated Emission	EN 60601-1-2: 2007 EN 55011: 2007 EN 55022: 2006+A1: 2007	PASS
Conducted Disturbance	EN 60601-1-2: 2007 EN 55011: 2007 EN 55022: 2006+A1: 2007	PASS
Harmonic Current	EN 60601-1-2: 2007 EN 61000-3-2: 2006	PASS
Voltage Fluctuation and Flicker	EN 60601-1-2: 2007 EN 61000-3-3: 2008	PASS
Immunity Measurement		
Electrostatic Discharge	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-2: 2008	PASS
RF Field Strength Susceptibility	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-3: 2008	PASS
Electrical Fast Transient/Burst Test	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-4: 2004	PASS
Surge Test	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-5: 2005	PASS
Conducted Susceptibility Test	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-6: 2008	PASS
Power Frequency Magnetic Field Susceptibility Test	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-8: 2009	PASS
Voltage Dips and Interruptions Test	EN 60601-1-2: 2007 EN 55024: 1998+A1: 2001+A2: 2003 IEC 61000-4-11: 2004	PASS

Remark: 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	4.22dB	(1)
Conducted Disturbance	0.15~30MHz	3.29dB	(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	ESCI	100106	2009/11
2	Artificial Mains	ROHDE & SCHWARZ	ESH2-Z5	100028	2009/11
3	Pulse Limiter	ROHDE & SCHWARZ	ESH3-Z2	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 B)

Limits below 1GHz

Frequency (MHz)	Distance (Meters)	Field Strengths Limits (dB $\mu$ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

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

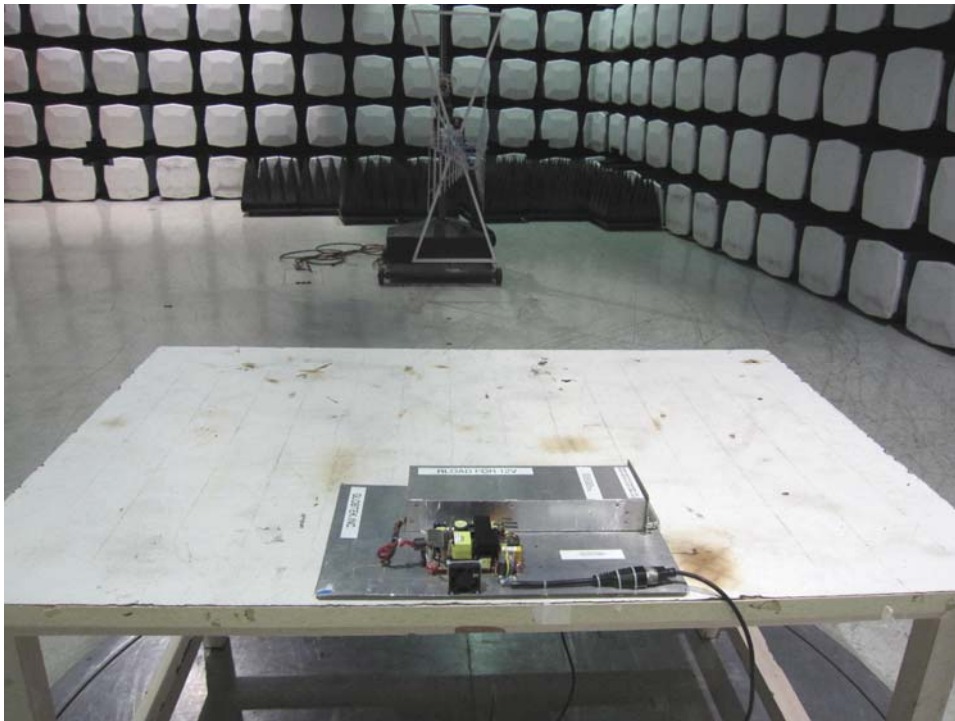
##### 4.1.3.1. Operating Condition

The EUT is full load 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

Band Width: 1MHz

Frequency Range: 1GHz to 6GHz

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

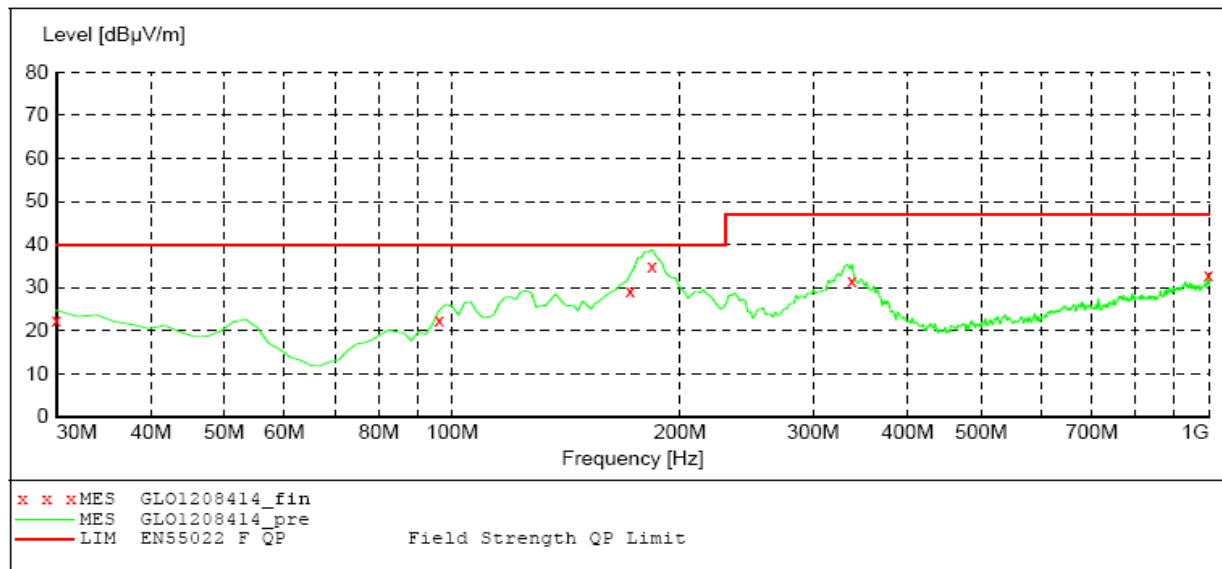
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**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
 M/N:GTM91110PWWWV-V-X.X-FAW-S 12V CLASSII  
 Manufacturer: GlobTek, Inc.  
 Operating Condition: FULL LOAD  
 Test Site: 3M CHAMBER  
 Operator: Peter  
 Test Specification: AC 230V/50Hz  
 Comment:  
 Start of Test: 12/8/2009 / 7:14:12PM

**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 09	

**MEASUREMENT RESULT: "GLO1208414\_fin"**

12/8/2009 7:16PM

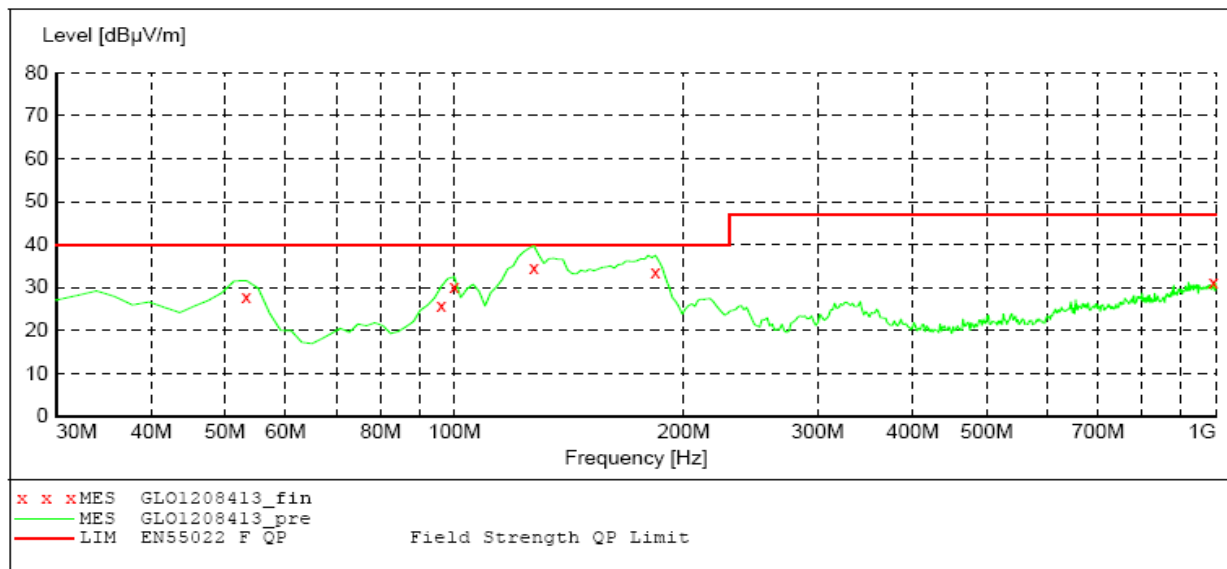
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	22.70	-4.7	40.0	17.3	QP	300.0	29.00	HORIZONTAL
96.092184	23.70	-13.8	40.0	16.3	QP	300.0	211.00	HORIZONTAL
171.903808	29.10	-17.3	40.0	10.9	QP	300.0	63.00	HORIZONTAL
183.567134	35.90	-16.5	40.0	4.1	QP	100.0	272.00	HORIZONTAL
337.134269	31.40	-10.2	47.0	15.6	QP	100.0	170.00	HORIZONTAL
998.056112	32.80	3.5	47.0	14.2	QP	300.0	359.00	HORIZONTAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 12V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 7:12:01PM

**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 09

**MEASUREMENT RESULT: "GLO1208413\_fin"**

12/8/2009 7:13PM

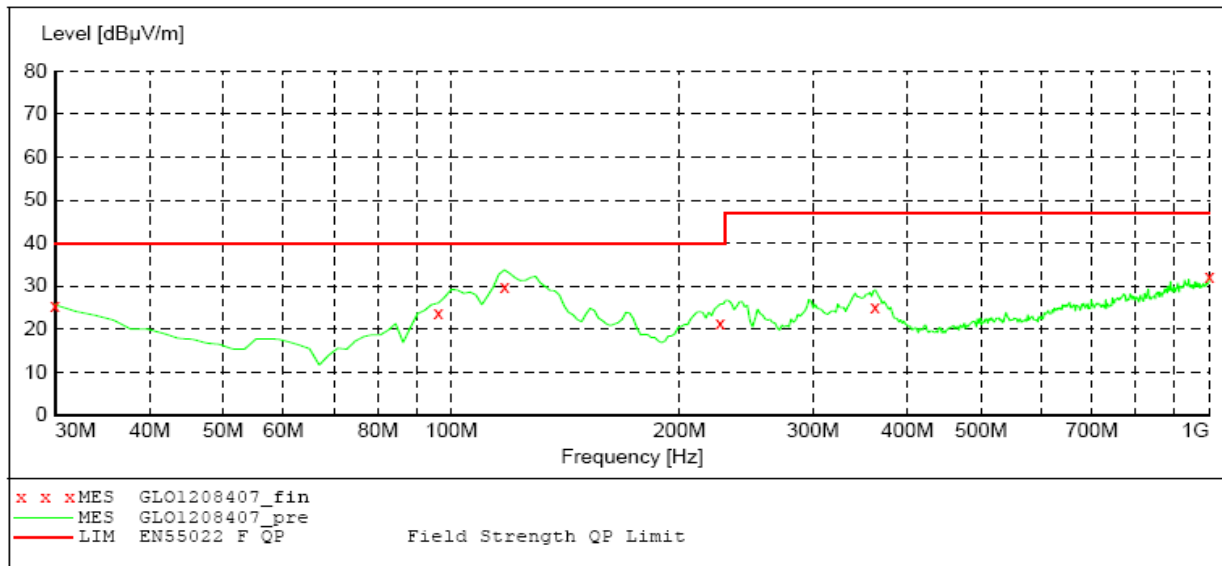
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
53.326653	28.60	-17.1	40.0	11.4	QP	100.0	197.00	VERTICAL
96.092184	26.20	-13.8	40.0	13.8	QP	100.0	136.00	VERTICAL
99.979960	31.50	-13.8	40.0	8.5	QP	100.0	109.00	VERTICAL
127.194389	34.70	-13.7	40.0	5.3	QP	100.0	22.00	VERTICAL
183.567134	33.50	-16.5	40.0	6.5	QP	100.0	42.00	VERTICAL
992.224449	31.30	3.4	47.0	15.7	QP	100.0	122.00	VERTICAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWWVV-X.X-FAW-S 18V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:47:40PM

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

Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 09

**MEASUREMENT RESULT: "GLO1208407\_fin"**

12/8/2009 5:49PM

Frequency MHz	Level dBµV/m	Transd dB	Limit dBµV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	25.60	-4.7	40.0	14.4	QP	300.0	54.00	HORIZONTAL
96.092184	24.10	-13.8	40.0	15.9	QP	300.0	13.00	HORIZONTAL
117.474950	30.80	-12.8	40.0	9.2	QP	300.0	61.00	HORIZONTAL
226.332665	21.80	-13.6	40.0	18.2	QP	100.0	124.00	HORIZONTAL
362.404810	26.10	-9.5	47.0	20.9	QP	100.0	23.00	HORIZONTAL
1000.000000	32.10	3.6	47.0	14.9	QP	100.0	57.00	HORIZONTAL

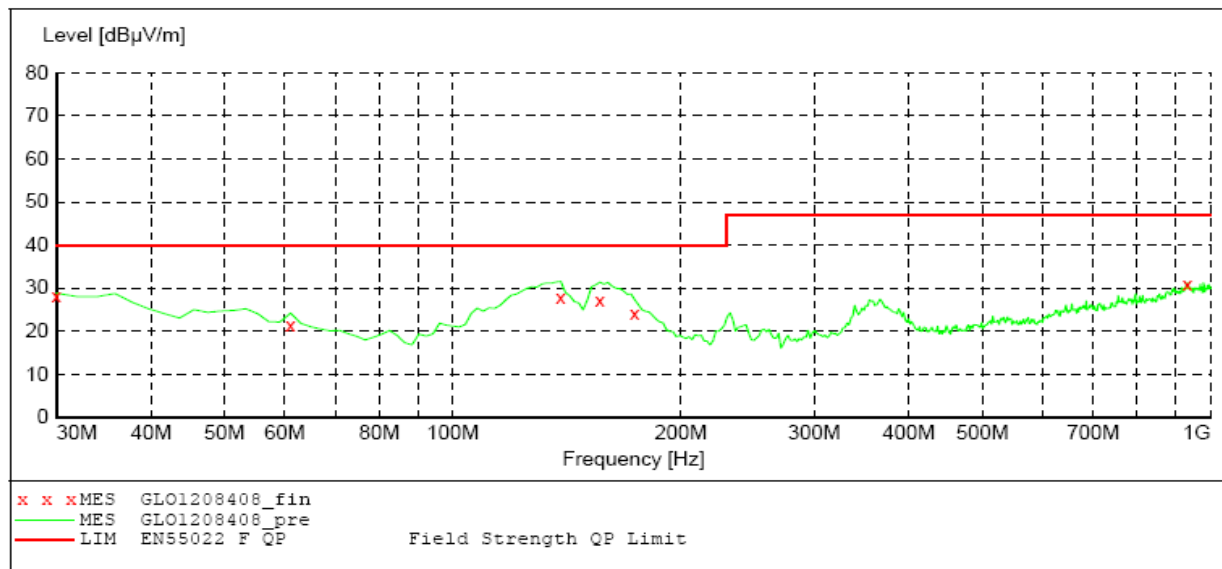


**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 18V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:49:48PM

**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 09

**MEASUREMENT RESULT: "GLO1208408\_fin"**

12/8/2009 5:51PM

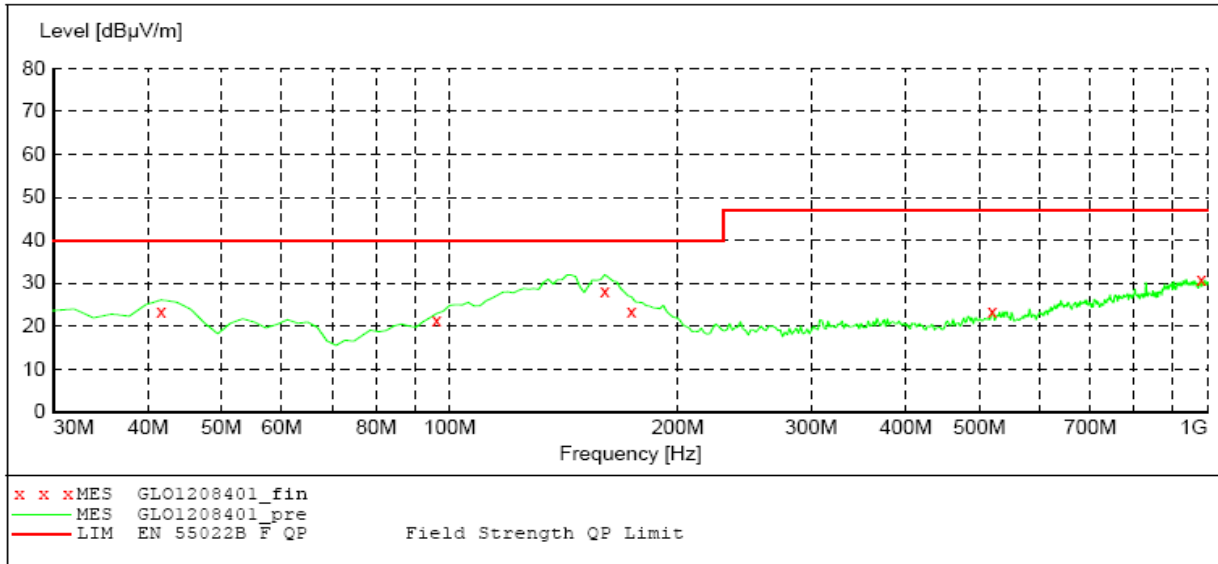
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	28.80	-4.7	40.0	11.2	QP	100.0	308.00	VERTICAL
61.102204	21.20	-18.9	40.0	18.8	QP	100.0	250.00	VERTICAL
138.857715	28.60	-15.1	40.0	11.4	QP	100.0	308.00	VERTICAL
156.352705	28.40	-16.6	40.0	11.6	QP	100.0	290.00	VERTICAL
173.847695	24.30	-17.1	40.0	15.7	QP	100.0	275.00	VERTICAL
931.963928	31.30	2.6	47.0	15.7	QP	100.0	182.00	VERTICAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM911110PWWVVV-X.X-FAW-S 24V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:30:02PM

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

Short Description:		Field Strength(30M-1G)				
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer
Frequency	Frequency	Width				
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 09

**MEASUREMENT RESULT: "GLO1208401\_fin"**

12/8/2009 5:31PM

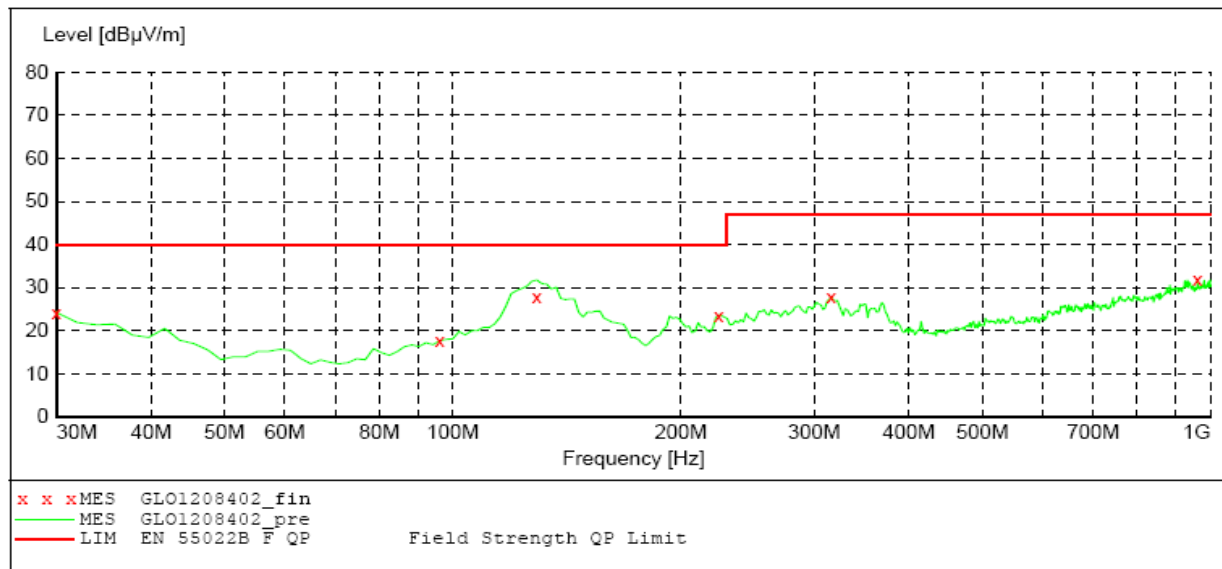
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
41.663327	24.10	-11.2	40.0	15.9	QP	100.0	76.00	VERTICAL
96.092184	21.90	-13.8	40.0	18.1	QP	100.0	236.00	VERTICAL
160.240481	28.00	-16.7	40.0	12.0	QP	100.0	303.00	VERTICAL
173.847695	23.80	-17.1	40.0	16.2	QP	100.0	271.00	VERTICAL
519.859719	23.40	-5.9	47.0	23.6	QP	100.0	70.00	VERTICAL
980.561122	31.00	3.1	47.0	16.0	QP	100.0	316.00	VERTICAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWWV-V-X.X-FAW-S 24V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:31:51PM

**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 09

**MEASUREMENT RESULT: "GLO1208402\_fin"**

12/8/2009 5:33PM

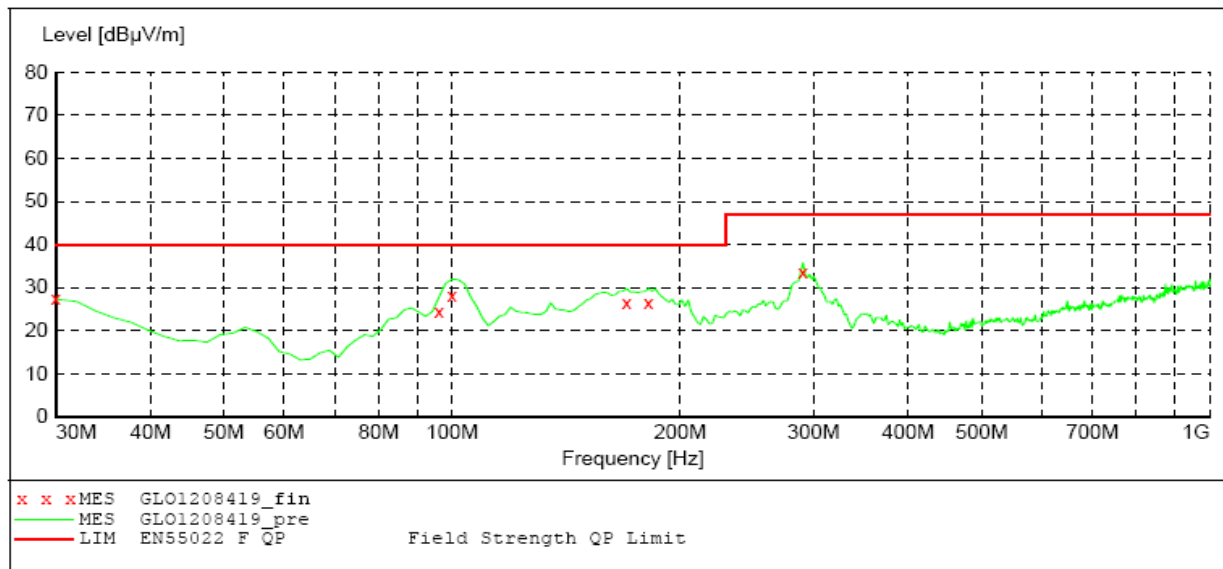
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	24.20	-4.7	40.0	15.8	QP	100.0	339.00	HORIZONTAL
96.092184	17.60	-13.8	40.0	22.4	QP	300.0	253.00	HORIZONTAL
129.138277	27.80	-14.0	40.0	12.2	QP	300.0	63.00	HORIZONTAL
224.388778	23.60	-13.8	40.0	16.4	QP	100.0	147.00	HORIZONTAL
315.751503	27.70	-10.8	47.0	19.3	QP	100.0	313.00	HORIZONTAL
961.122244	31.70	2.7	47.0	15.3	QP	300.0	348.00	HORIZONTAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 B**

EUT: Medical power supply/I.T.E power supply  
 M/N:GTM91110PWWVV-X.X-FAW-S 55V CLASSII  
 Manufacturer: GlobTek, Inc.  
 Operating Condition: FULL LOAD  
 Test Site: 3M CHAMBER  
 Operator: Peter  
 Test Specification: AC 230V/50Hz  
 Comment:  
 Start of Test: 12/8/2009 / 9:41:03PM

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

Short Description:		Field Strength(30M-1G)					
Start	Stop	Step	Detector	Meas. Time	IF Bandw.	Transducer	
Frequency	Frequency	Width					
30.0 MHz	1.0 GHz	60.0 kHz	QuasiPeak	1.0 s	120 kHz	HL562 09	

**MEASUREMENT RESULT: "GLO1208419\_fin"**

12/8/2009 9:42PM

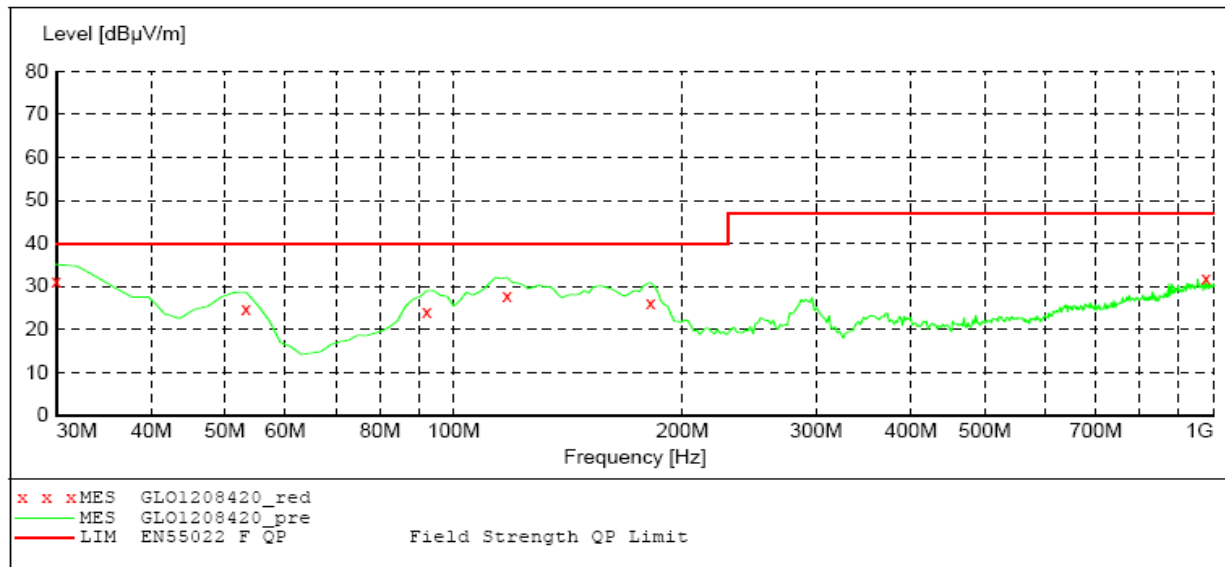
Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	27.30	-4.7	40.0	12.7	QP	300.0	28.00	HORIZONTAL
96.092184	24.80	-13.8	40.0	15.2	QP	300.0	122.00	HORIZONTAL
99.979960	28.00	-13.8	40.0	12.0	QP	300.0	162.00	HORIZONTAL
169.959920	27.80	-17.5	40.0	12.2	QP	300.0	88.00	HORIZONTAL
181.623246	27.80	-16.6	40.0	12.2	QP	100.0	102.00	HORIZONTAL
290.480962	33.80	-11.0	47.0	13.2	QP	100.0	196.00	HORIZONTAL

**SHENZHEN HUATONGWEI INTERNATIONAL INSPECTION CO.,LTD****RADIATED EMISSION EN55022/55011 B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWWVV-X.X-FAW-S 55V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3M CHAMBER  
Operator: Peter  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 9:45:38PM

**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 09

**MEASUREMENT RESULT: "GLO1208420\_red"**

12/8/2009 9:47PM

Frequency MHz	Level dBμV/m	Transd dB	Limit dBμV/m	Margin dB	Det.	Height cm	Azimuth deg	Polarization
30.000000	31.10	-4.7	40.0	8.9	QP	100.0	90.00	VERTICAL
53.326653	24.60	-17.1	40.0	15.4	QP	100.0	76.00	VERTICAL
92.204409	24.00	-14.0	40.0	16.0	QP	100.0	124.00	VERTICAL
117.474950	28.10	-12.8	40.0	11.9	QP	100.0	43.00	VERTICAL
181.623246	26.90	-16.6	40.0	13.1	QP	100.0	49.00	VERTICAL
976.673347	31.90	2.9	47.0	15.1	QP	100.0	165.00	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 B)

Frequency Range (MHz)	Limits (dBuV)	
	Quasi-Peak	Average
0.150~0.500	66~56	56~46
0.5000~5.000	56	46
5.000~30.000	60	50

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 full load 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 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

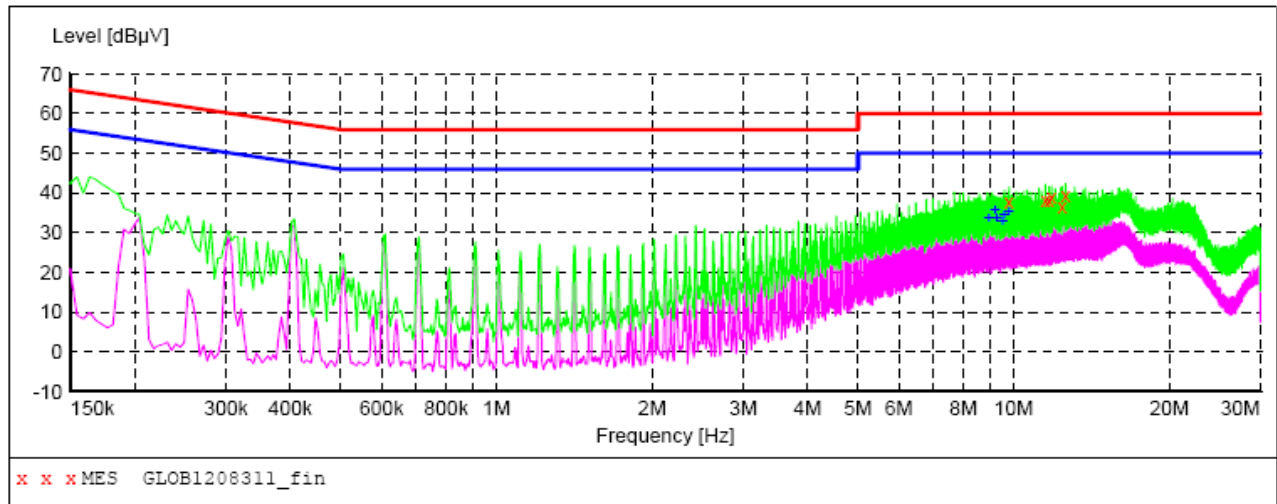
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**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 12V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:02:02PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208311\_fin"**

12/8/2009 5:04PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
9.789000	37.70	10.6	60	22.3	QP	L1	GND
11.517000	38.10	10.6	60	21.9	QP	L1	GND
11.710500	38.10	10.6	60	21.9	QP	L1	GND
11.841000	38.80	10.6	60	21.2	QP	L1	GND
12.417000	36.50	10.6	60	23.5	QP	L1	GND
12.606000	39.20	10.6	60	20.8	QP	L1	GND

**MEASUREMENT RESULT: "GLOB1208311\_fin2"**

12/8/2009 5:04PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
8.961000	33.50	10.6	50	16.5	AV	L1	GND
9.213000	35.50	10.6	50	14.5	AV	L1	GND
9.280500	33.60	10.6	50	16.4	AV	L1	GND
9.537000	32.90	10.6	50	17.1	AV	L1	GND
9.600000	34.30	10.6	50	15.7	AV	L1	GND
9.789000	35.40	10.6	50	14.6	AV	L1	GND

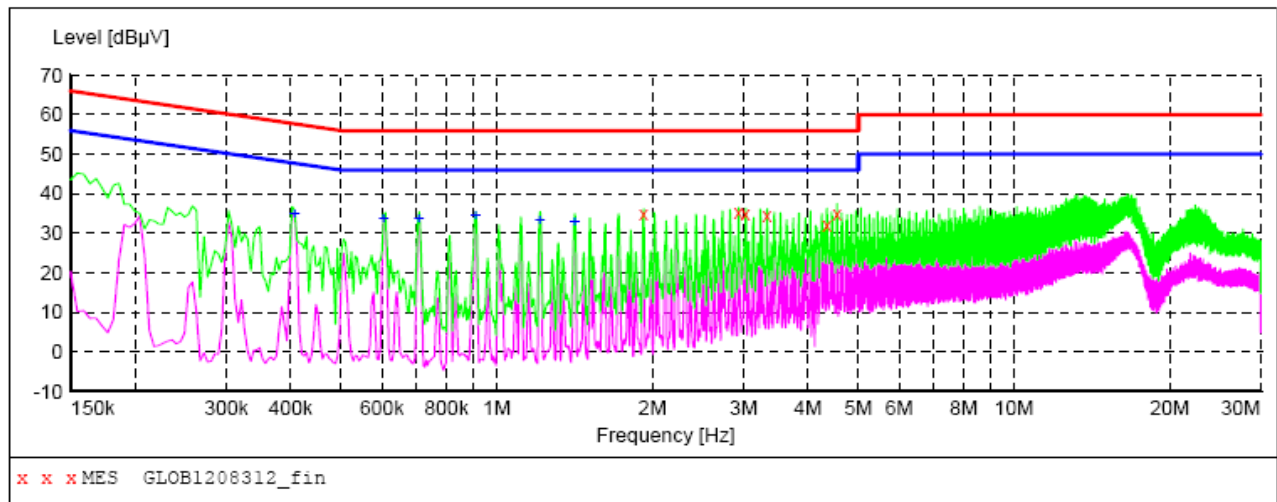


**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 12V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:06:40PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208312\_fin"**

12/8/2009 5:09PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
1.923000	34.90	10.3	56	21.1	QP	N	GND
2.935500	35.10	10.4	56	20.9	QP	N	GND
3.030000	34.80	10.4	56	21.2	QP	N	GND
3.331500	34.60	10.4	56	21.4	QP	N	GND
4.348500	32.00	10.4	56	24.0	QP	N	GND
4.546500	34.70	10.4	56	21.3	QP	N	GND

**MEASUREMENT RESULT: "GLOB1208312\_fin2"**

12/8/2009 5:09PM

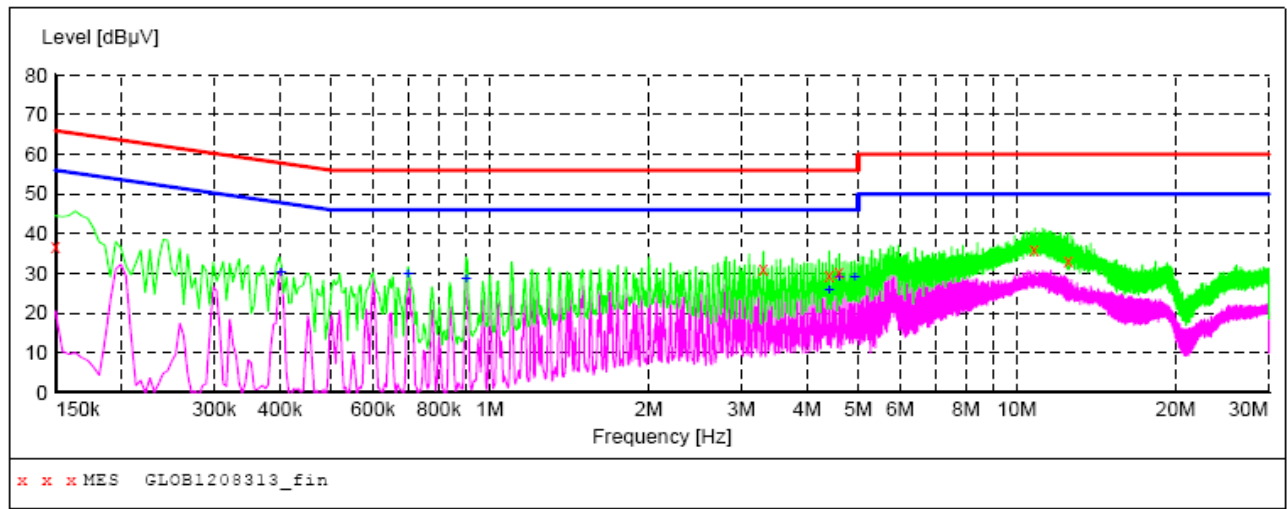
Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.406500	34.70	10.2	48	13.0	AV	N	GND
0.604500	33.50	10.2	46	12.5	AV	N	GND
0.708000	33.60	10.2	46	12.4	AV	N	GND
0.910500	34.50	10.2	46	11.5	AV	N	GND
1.212000	33.40	10.3	46	12.6	AV	N	GND
1.414500	33.00	10.3	46	13.0	AV	N	GND

**Shenzhen Huatongwei International Inspection CO., Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N: GTM91110PWWVV-X.X-FAW-S 18V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:12:22PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208313\_fin"**

12/8/2009 5:14PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.150000	36.70	10.2	66	29.3	QP	N	GND
3.300000	31.00	10.4	56	25.0	QP	N	GND
4.402500	29.40	10.4	56	26.6	QP	N	GND
4.596000	30.20	10.4	56	25.8	QP	N	GND
10.779000	35.80	10.6	60	24.2	QP	N	GND
12.507000	33.30	10.6	60	26.7	QP	N	GND

**MEASUREMENT RESULT: "GLOB1208313\_fin2"**

12/8/2009 5:14PM

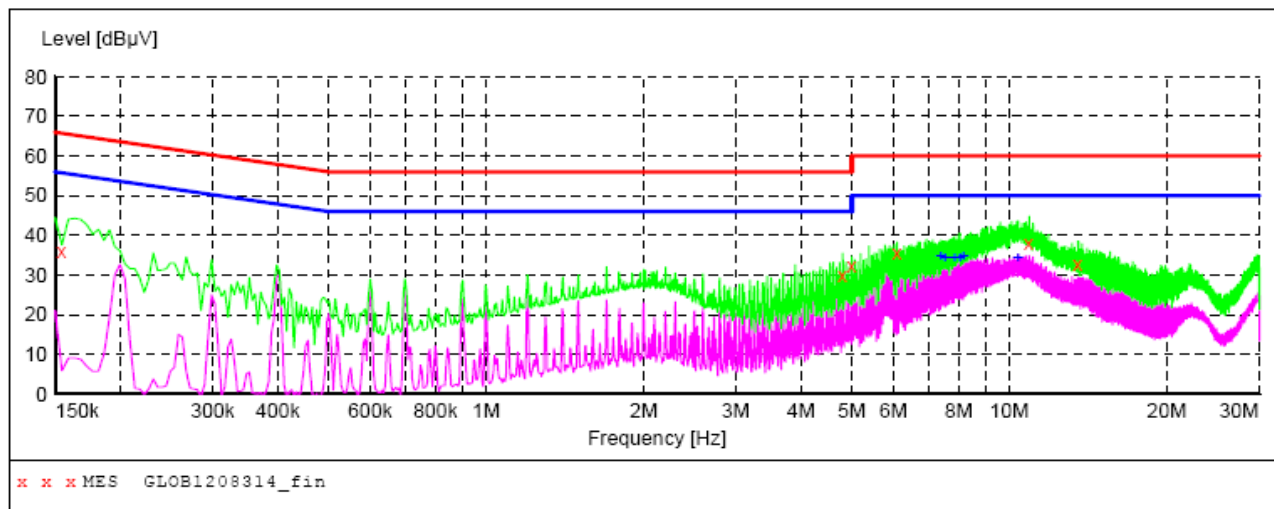
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.402000	30.30	10.2	48	17.5	AV	N	GND
0.699000	29.90	10.2	46	16.1	AV	N	GND
0.901500	28.70	10.2	46	17.3	AV	N	GND
4.402500	25.80	10.4	46	20.2	AV	N	GND
4.600500	29.20	10.4	46	16.8	AV	N	GND
4.924500	29.20	10.4	46	16.8	AV	N	GND

**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 18V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:16:50PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208314\_fin"**

12/8/2009 5:19PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.154500	36.00	10.2	66	29.8	QP	L1	GND
4.798500	29.80	10.4	56	26.2	QP	L1	GND
4.996500	32.30	10.4	56	23.7	QP	L1	GND
6.099000	35.60	10.4	60	24.4	QP	L1	GND
10.878000	37.90	10.6	60	22.1	QP	L1	GND
13.501500	32.90	10.6	60	27.1	QP	L1	GND

**MEASUREMENT RESULT: "GLOB1208314\_fin2"**

12/8/2009 5:19PM

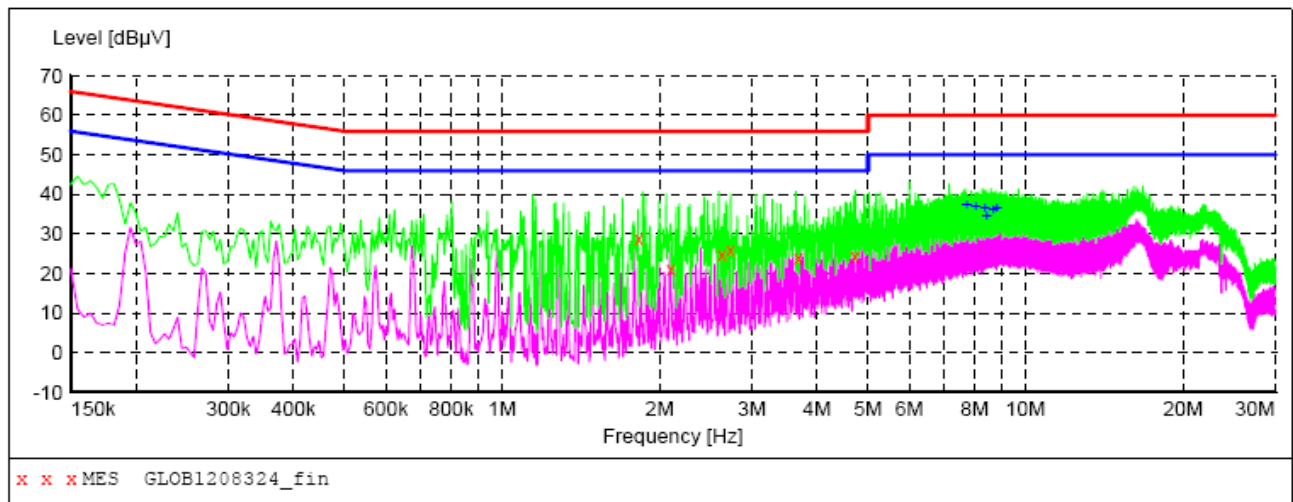
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
7.399500	34.60	10.5	50	15.4	AV	L1	GND
7.530000	34.30	10.5	50	15.7	AV	L1	GND
7.854000	34.20	10.5	50	15.8	AV	L1	GND
8.047500	34.50	10.5	50	15.5	AV	L1	GND
8.178000	34.60	10.5	50	15.4	AV	L1	GND
10.383000	34.40	10.6	50	15.6	AV	L1	GND

**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWV-V-X.X-FAW-S 24V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/9/2009 / 9:21:06AM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208324\_fin"**

12/9/2009 9:26AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
1.824000	29.00	10.3	56	27.0	QP	L1	GND
2.103000	21.20	10.4	56	34.8	QP	L1	GND
2.629500	24.70	10.4	56	31.3	QP	L1	GND
2.728500	25.90	10.4	56	30.1	QP	L1	GND
3.687000	23.90	10.4	56	32.1	QP	L1	GND
4.726500	24.30	10.4	56	31.7	QP	L1	GND

**MEASUREMENT RESULT: "GLOB1208324\_fin2"**

12/9/2009 9:26AM

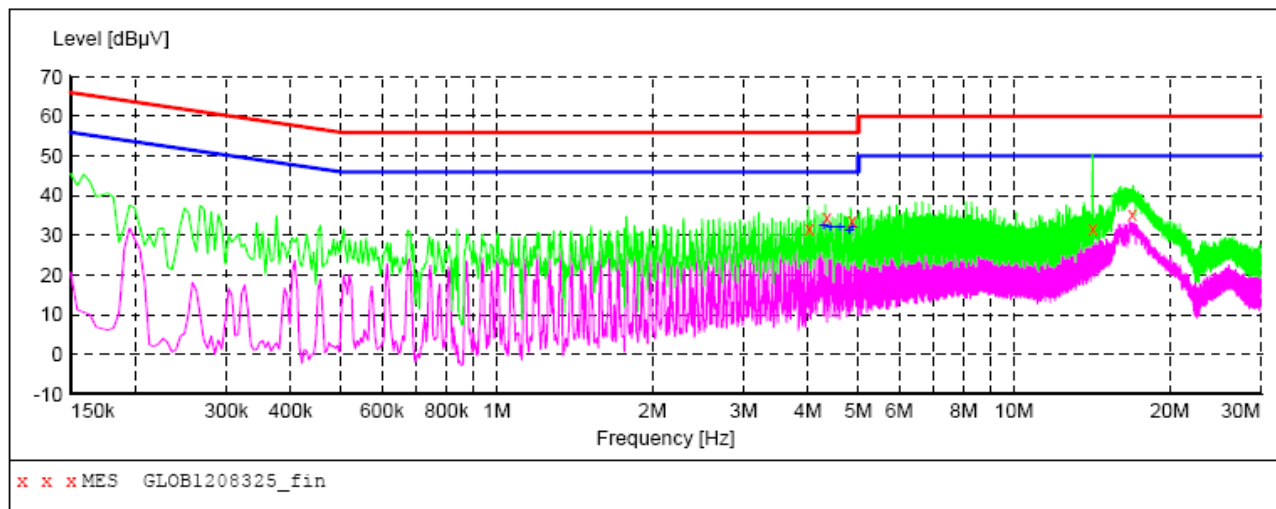
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
7.719000	37.30	10.5	50	12.7	AV	L1	GND
8.043000	36.90	10.5	50	13.1	AV	L1	GND
8.367000	36.70	10.6	50	13.3	AV	L1	GND
8.430000	34.60	10.6	50	15.4	AV	L1	GND
8.691000	36.10	10.6	50	13.9	AV	L1	GND
8.821500	36.40	10.6	50	13.6	AV	L1	GND

**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVVV-X.X-FAW-S 24V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/9/2009 / 9:26:41AM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208325\_fin"**

12/9/2009 9:30AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
4.024500	31.80	10.4	56	24.2	QP	N	GND
4.348500	34.60	10.4	56	21.4	QP	N	GND
4.870500	33.80	10.4	56	22.2	QP	N	GND
14.217000	31.80	10.6	60	28.2	QP	N	GND
16.948500	35.10	10.8	60	24.9	QP	N	GND

**MEASUREMENT RESULT: "GLOB1208325\_fin2"**

12/9/2009 9:30AM

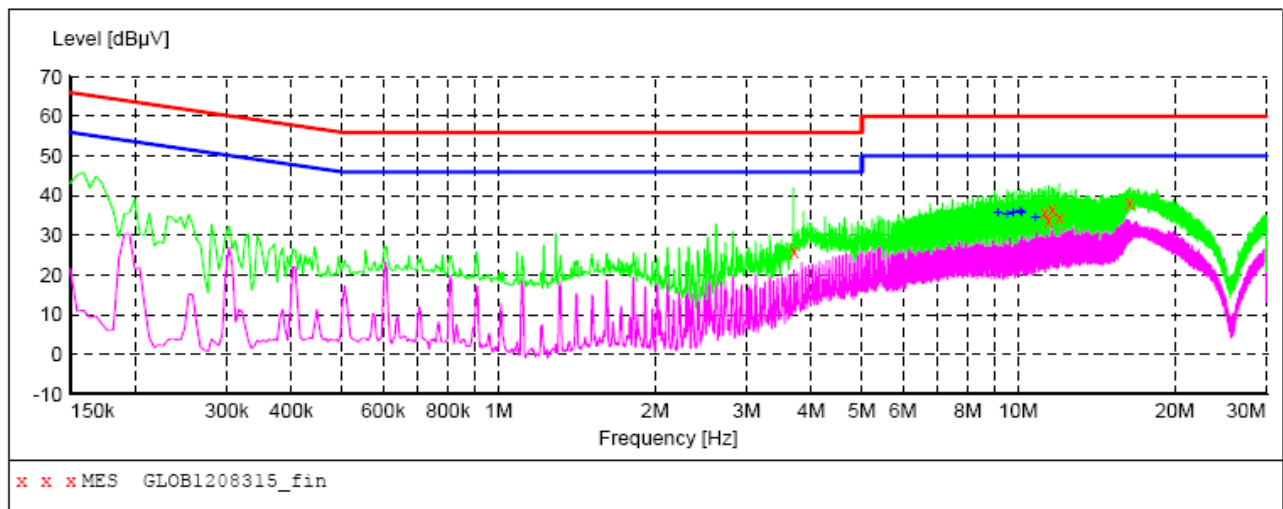
Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
4.285500	32.30	10.4	46	13.7	AV	N	GND
4.416000	32.00	10.4	46	14.0	AV	N	GND
4.609500	31.90	10.4	46	14.1	AV	N	GND
4.803000	31.10	10.4	46	14.9	AV	N	GND
4.870500	32.10	10.4	46	13.9	AV	N	GND

**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVV-X.X-FAW-S 55V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:23:21PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208315\_fin"**

12/8/2009 5:25PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
3.705000	25.90	10.4	56	30.1	QP	L1	GND
11.242500	35.80	10.6	60	24.2	QP	L1	GND
11.431500	33.60	10.6	60	26.4	QP	L1	GND
11.625000	36.50	10.6	60	23.5	QP	L1	GND
12.007500	34.60	10.6	60	25.4	QP	L1	GND
16.354500	38.00	10.7	60	22.0	QP	L1	GND

**MEASUREMENT RESULT: "GLOB1208315\_fin2"**

12/8/2009 5:25PM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
9.136500	35.60	10.6	50	14.4	AV	L1	GND
9.519000	35.40	10.6	50	14.6	AV	L1	GND
9.775500	35.90	10.6	50	14.1	AV	L1	GND
10.095000	36.00	10.6	50	14.0	AV	L1	GND
10.158000	35.90	10.6	50	14.1	AV	L1	GND
10.797000	34.50	10.6	50	15.5	AV	L1	GND

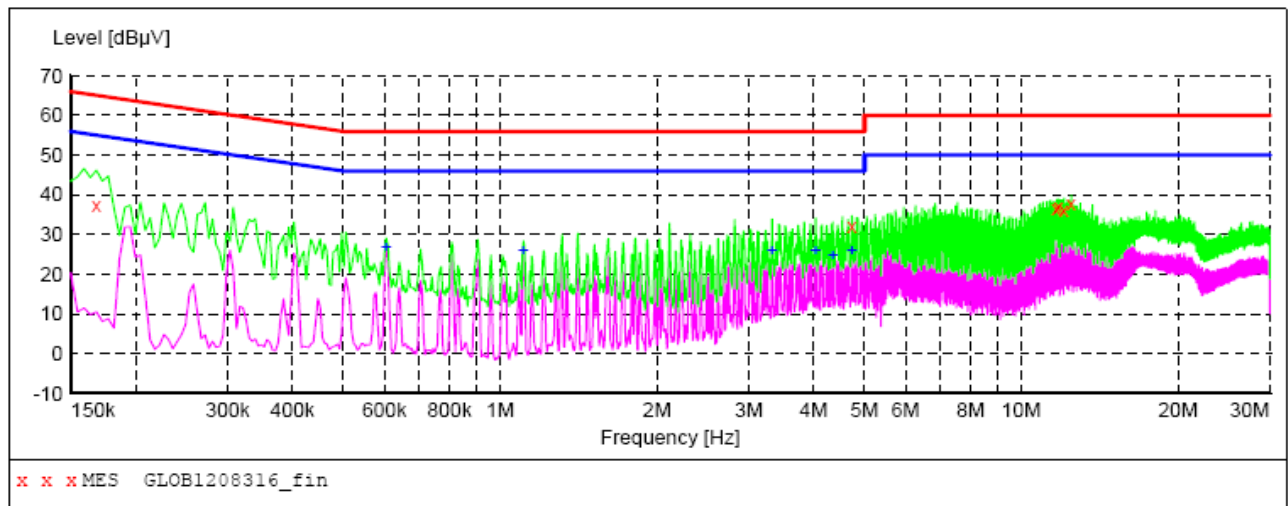


**Shenzhen Huatongwei International Inspection CO.,Ltd****Voltage Mains Test EN 55022/55011 CLASS B**

EUT: Medical power supply/I.T.E power supply  
M/N:GTM91110PWWVV-X.X-FAW-S 55V CLASSII  
Manufacturer: GlobTek, Inc.  
Operating Condition: FULL LOAD  
Test Site: 3# SHIELDED ROOM  
Operator: TONY  
Test Specification: AC 230V/50Hz  
Comment:  
Start of Test: 12/8/2009 / 5:26:14PM

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

Short Description: 150K-30M Voltage

**MEASUREMENT RESULT: "GLOB1208316\_fin"**

12/8/2009 5:28PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.168000	37.40	10.2	65	27.7	QP	N	GND
4.731000	32.10	10.4	56	23.9	QP	N	GND
11.670000	36.60	10.6	60	23.4	QP	N	GND
11.769000	37.10	10.6	60	22.9	QP	N	GND
12.084000	36.20	10.6	60	23.8	QP	N	GND
12.471000	37.70	10.6	60	22.3	QP	N	GND

**MEASUREMENT RESULT: "GLOB1208316\_fin2"**

12/8/2009 5:28PM

Frequency MHz	Level dBµV	Transd dB	Limit dBµV	Margin dB	Detector	Line	PE
0.604500	26.90	10.2	46	19.1	AV	N	GND
1.108500	26.10	10.3	46	19.9	AV	N	GND
3.322500	25.80	10.4	46	20.2	AV	N	GND
4.029000	25.80	10.4	46	20.2	AV	N	GND
4.348500	24.80	10.4	46	21.2	AV	N	GND
4.735500	25.80	10.4	46	20.2	AV	N	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.

#### 4.3.3. Description of the test set-up

##### 4.3.3.1. Operating Condition

The EUT is full load 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.

##### 4.3.3.3. Photo of the test set-up



#### 4.3.4. Test result

The test results are **passed**

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



## **Test Report of HTW**

Standard used:	EN 61000-3-2: 2006 Quasi-Stationary – Equipment class A
Observation time:	150s
Windows width:	10 periods – (EN/IEC 61000-4-7 Edition 2002+A1: 2008)
Customer:	GlobTek, Inc.
Mains supply voltage:	AC 230V/50Hz FULL LOAD
Ambient Temperature:	23°C
Humidity:	51%
Barometric Pressure:	1017mbar
E. U. T.:	Medical power supply/I.T.E power M/N:GTM91110PWWVVV-X.X-FAW-S 12V CLASSII
Date of test:	10:23 8.Dec 2009
Tester:	Tony

### **Test Result**

E. U. T.:	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	I <sub>eff</sub> [A]	% of Limit	Limit [A]	Result
1	1.206			
2	356.604E-6	0.033	1.08	PASS
3	112.144E-3	4.876	2.30	PASS
4	265.195E-6	0.062	430.00E-3	PASS
5	21.463E-3	1.883	1.14	PASS
6	262.074E-6	0.087	300.00E-3	PASS
7	8.744E-3	1.136	770.00E-3	PASS
8	198.684E-6	0.086	230.00E-3	PASS
9	3.755E-3	0.939	400.00E-3	PASS
10	189.049E-6	0.103	184.00E-3	PASS
11	2.272E-3	0.689	330.00E-3	PASS
12	186.896E-6	0.122	153.33E-3	PASS
13	2.414E-3	1.149	210.00E-3	PASS
14	223.882E-6	0.170	131.43E-3	PASS
15	2.790E-3	1.860	150.00E-3	PASS
16	194.795E-6	0.169	115.00E-3	PASS
17	3.234E-3	2.443	132.35E-3	PASS
18	207.572E-6	0.203	102.22E-3	PASS
19	3.391E-3	2.863	118.42E-3	PASS
20	175.655E-6	0.191	92.00E-3	PASS
21	3.472E-3	2.161	160.71E-3	PASS
22	175.726E-6	0.210	83.64E-3	PASS
23	3.462E-3	2.359	146.74E-3	PASS
24	178.387E-6	0.233	76.66E-3	PASS
25	3.477E-3	2.576	135.00E-3	PASS
26	228.247E-6	0.323	70.77E-3	PASS
27	3.149E-3	2.519	124.99E-3	PASS
28	194.239E-6	0.296	65.71E-3	PASS
29	3.157E-3	2.712	116.39E-3	PASS
30	179.509E-6	0.293	61.33E-3	PASS
31	2.991E-3	2.747	108.87E-3	PASS
32	207.184E-6	0.360	57.50E-3	PASS
33	2.870E-3	2.806	102.27E-3	PASS
34	173.004E-6	0.320	54.12E-3	PASS
35	2.705E-3	2.805	96.44E-3	PASS
36	172.064E-6	0.337	51.11E-3	PASS
37	2.468E-3	2.706	91.21E-3	PASS
38	177.215E-6	0.366	48.42E-3	PASS
39	2.430E-3	2.808	86.53E-3	PASS
40	210.281E-6	0.457	46.00E-3	PASS

**Maximum harmonic current results**

Hn	I <sub>eff</sub> [A]	% of Limit	Limit [A]	Result
1	1.206			
2	599.196E-6	0.037	1.62	PASS
3	112.279E-3	3.254	3.45	PASS
4	396.596E-6	0.061	645.00E-3	PASS
5	21.606E-3	1.264	1.71	PASS
6	352.607E-6	0.078	450.00E-3	PASS
7	8.801E-3	0.762	1.15	PASS
8	252.971E-6	0.073	345.00E-3	PASS
9	3.922E-3	0.654	600.00E-3	PASS
10	236.040E-6	0.086	276.00E-3	PASS
11	2.331E-3	0.471	495.00E-3	PASS
12	277.943E-6	0.121	229.99E-3	PASS
13	2.549E-3	0.809	315.00E-3	PASS
14	295.042E-6	0.150	197.15E-3	PASS
15	2.908E-3	1.292	225.00E-3	PASS
16	262.165E-6	0.152	172.50E-3	PASS
17	3.322E-3	1.674	198.52E-3	PASS
18	252.728E-6	0.165	153.33E-3	PASS
19	3.466E-3	1.951	177.63E-3	PASS
20	240.109E-6	0.174	138.00E-3	PASS
21	3.591E-3	2.235	160.71E-3	PASS
22	264.298E-6	0.211	125.46E-3	PASS
23	3.548E-3	2.418	146.74E-3	PASS
24	274.421E-6	0.239	114.99E-3	PASS
25	3.559E-3	2.637	135.00E-3	PASS
26	302.037E-6	0.285	106.16E-3	PASS
27	3.396E-3	2.717	124.99E-3	PASS
28	266.072E-6	0.270	98.57E-3	PASS
29	3.214E-3	2.762	116.39E-3	PASS
30	247.306E-6	0.269	92.00E-3	PASS
31	3.063E-3	2.813	108.87E-3	PASS
32	254.924E-6	0.296	86.25E-3	PASS
33	2.943E-3	2.878	102.27E-3	PASS
34	257.638E-6	0.317	81.18E-3	PASS
35	2.761E-3	2.863	96.44E-3	PASS
36	237.094E-6	0.309	76.66E-3	PASS
37	2.636E-3	2.890	91.21E-3	PASS
38	301.091E-6	0.415	72.63E-3	PASS
39	2.575E-3	2.975	86.53E-3	PASS
40	308.319E-6	0.447	69.00E-3	PASS

**Maximum harmonic voltage results**

Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	229.84	99.932		
2	147.41E-3	0.064	0.2	PASS
3	438.02E-3	0.190	0.9	PASS
4	53.34E-3	0.023	0.2	PASS
5	25.20E-3	0.011	0.4	PASS
6	43.49E-3	0.019	0.2	PASS
7	24.75E-3	0.011	0.3	PASS
8	24.40E-3	0.011	0.2	PASS
9	21.76E-3	0.009	0.2	PASS
10	21.91E-3	0.010	0.2	PASS
11	17.30E-3	0.008	0.1	PASS
12	17.48E-3	0.008	0.1	PASS
13	19.17E-3	0.008	0.1	PASS
14	14.69E-3	0.006	0.1	PASS
15	15.57E-3	0.007	0.1	PASS
16	18.82E-3	0.008	0.1	PASS
17	17.70E-3	0.008	0.1	PASS
18	15.71E-3	0.007	0.1	PASS
19	17.26E-3	0.008	0.1	PASS
20	15.35E-3	0.007	0.1	PASS
21	15.88E-3	0.007	0.1	PASS
22	8.59E-3	0.004	0.1	PASS
23	14.38E-3	0.006	0.1	PASS
24	10.07E-3	0.004	0.1	PASS
25	15.67E-3	0.007	0.1	PASS
26	16.82E-3	0.007	0.1	PASS
27	11.66E-3	0.005	0.1	PASS
28	12.31E-3	0.005	0.1	PASS
29	13.30E-3	0.006	0.1	PASS
30	12.91E-3	0.006	0.1	PASS
31	12.74E-3	0.006	0.1	PASS
32	10.63E-3	0.005	0.1	PASS
33	13.98E-3	0.006	0.1	PASS
34	8.41E-3	0.004	0.1	PASS
35	8.76E-3	0.004	0.1	PASS
36	7.96E-3	0.003	0.1	PASS
37	11.53E-3	0.005	0.1	PASS
38	6.90E-3	0.003	0.1	PASS
39	8.74E-3	0.004	0.1	PASS
40	11.84E-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: Shielded room No. 2

##### 4.4.2. Limits 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 full load during the test, and the results of the maximum emanation 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 61000-3-3 Flicker
Short time (Pst):	10 min
Observation time:	120 min (12 Flicker measurements)
Customer:	GlobTek, Inc.
Flickermeter:	AC 230V/50Hz
E. U. T.:	Medical power supply/I.T.E power M/N:GTM91110PWWVVV-X.X-FAW-S 12V CLASSII
Date of test:	9:59 8.Dec 2009
Tester:	TONY

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 [%]	0.073	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 [%]	0.064	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 [%]	0.068	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 [%]	0.071	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 [%]	0.073	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 [%]	0.066	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 [%]	0.068	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 [%]	0.066	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 [%]	0.068	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 [%]	0.068	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 [%]	0.063	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 [%]	0.065	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 [%]	0.070	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: Dec 10, 2009

Operator: Tony

### 4.5.2. Severity levels of electrostatic discharge

4.5.2.1. Severity level: Contact Discharge at  $\pm 6\text{KV}$

Air Discharge at  $\pm 8\text{KV}$  (Criterion B)

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 full load during the test, and the results of the maximum susceptibility are recorded.

4.5.3.2. Test Configuration and Procedure:

Direct Discharge:

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:

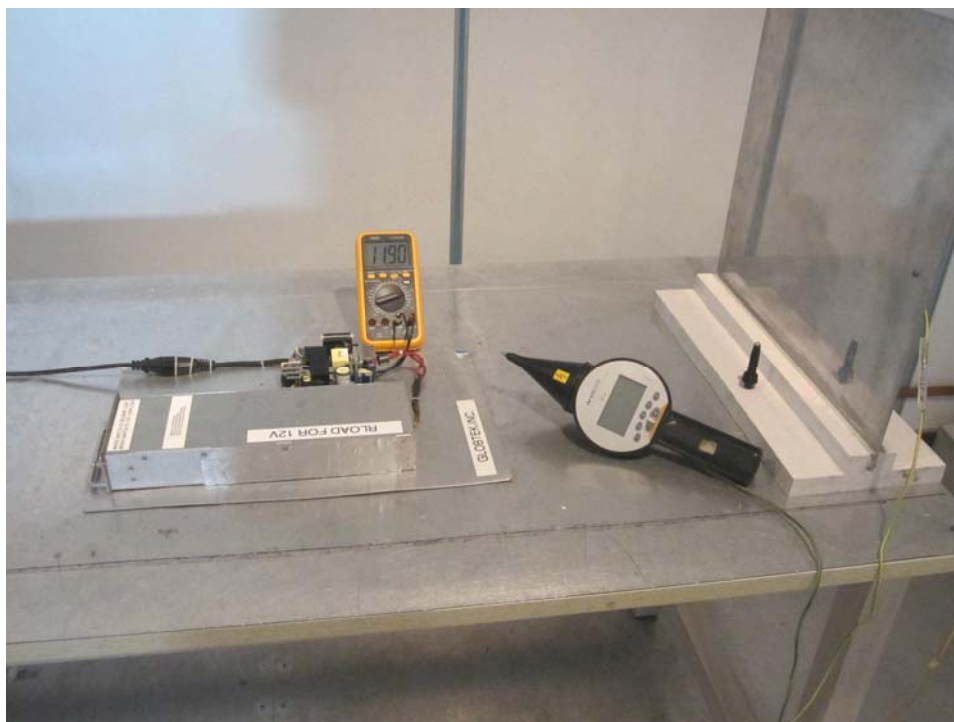
- All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

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 nce criterion.

#### 4.5.3.3. Photo of the test set-up



#### 4.5.4. Test specification:

<u>Contact discharge voltage:</u>	<input checked="" type="checkbox"/> 2 kV	<input checked="" type="checkbox"/> 4 kV	<input checked="" type="checkbox"/> 6 kV
<u>Number of discharges:</u>	<input type="checkbox"/> 10	<input checked="" type="checkbox"/> 25	
<u>Air discharge voltage:</u>	<input checked="" type="checkbox"/> 2 kV	<input checked="" type="checkbox"/> 4 kV	<input checked="" type="checkbox"/> 6 kV <input checked="" type="checkbox"/> 8 kV
<u>Number of discharges:</u>	<input checked="" type="checkbox"/> 10	<input type="checkbox"/> 25	
<u>Type of discharge:</u>	Direct discharge	<input checked="" type="checkbox"/> Air discharge	
		<input checked="" type="checkbox"/> Contact discharge	
	Indirect discharge	<input checked="" type="checkbox"/> Contact discharge	
<u>Polarity:</u>	<input checked="" type="checkbox"/> Positive	<input checked="" type="checkbox"/> Negative	
<u>Discharge location:</u>	<input checked="" type="checkbox"/> see photo documentation of the test set-up <input checked="" type="checkbox"/> all external locations accessible by hand <input checked="" type="checkbox"/> Horizontal coupling plane (HCP) <input checked="" type="checkbox"/> 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).

#### 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: Dec 10, 2009

Operator: Tony

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

4.6.2.1. Severity level: 3 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 full load during the test, and the results of the maximum susceptibility are recorded.

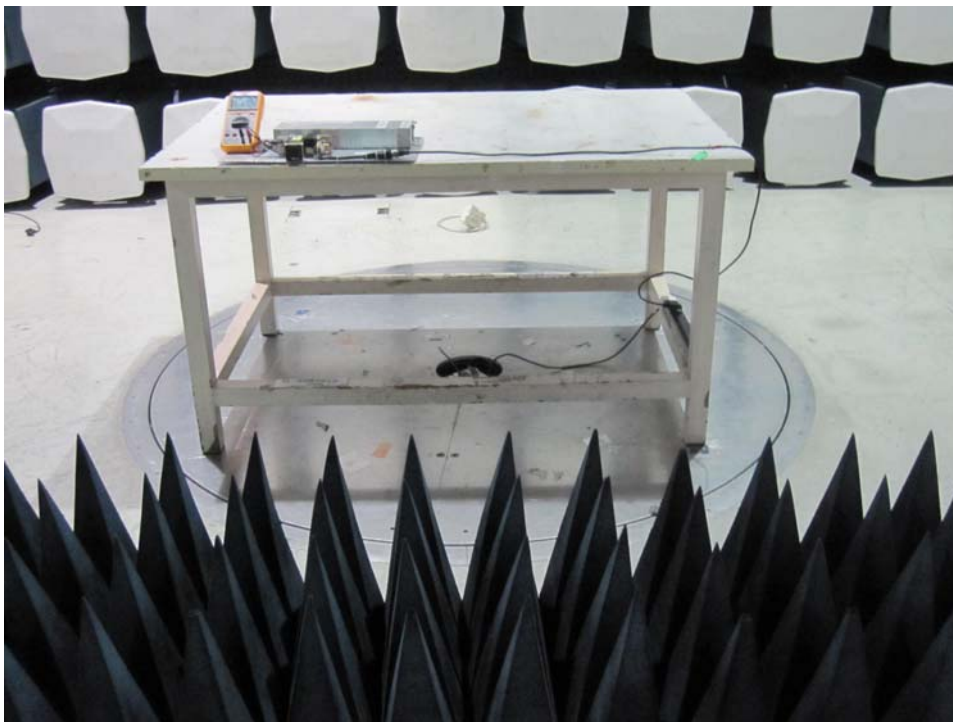
4.6.3.2. Test Configuration and Procedure

EUT is placed on a table 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 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 2500 MHz

Field strength:

- 3 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: Dec 10, 2009

Operator: Tony

##### 4.7.2. Severity levels of electrical fast transients / Burst

4.7.2.1. Severity level:  $\pm 1000V$   $\pm 2000V$  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 full load during the test, and the results of the maximum susceptibility are recorded.

4.7.3.2. Test Configuration and Procedure

For AC power input ports:

—The 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.

Without signal / control lines and DC power lines, The EUT is unnecessary to test on these mentioned ports.

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

4.7.3.3. Photo of the test set-up



#### 4.7.4. Test specification:

Coupling network: ☐ 0.5 kV ☒ 1 kV ☒ 2 kV ☐ 4 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

Screening:	<input type="radio"/> screened	<input checked="" type="radio"/> unscreened
Status:	<input type="radio"/> passive	<input checked="" type="radio"/> active
Signal transmission:	<input checked="" type="radio"/> analogue	<input type="radio"/> digital
Length:	<input checked="" type="radio"/> 0.8 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: Dec 10, 2009

Operator: Tony

### 4.8.2. Severity levels of surge

4.8.2.1. Severity level: Line to line:  $\pm 1\text{KV}$

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

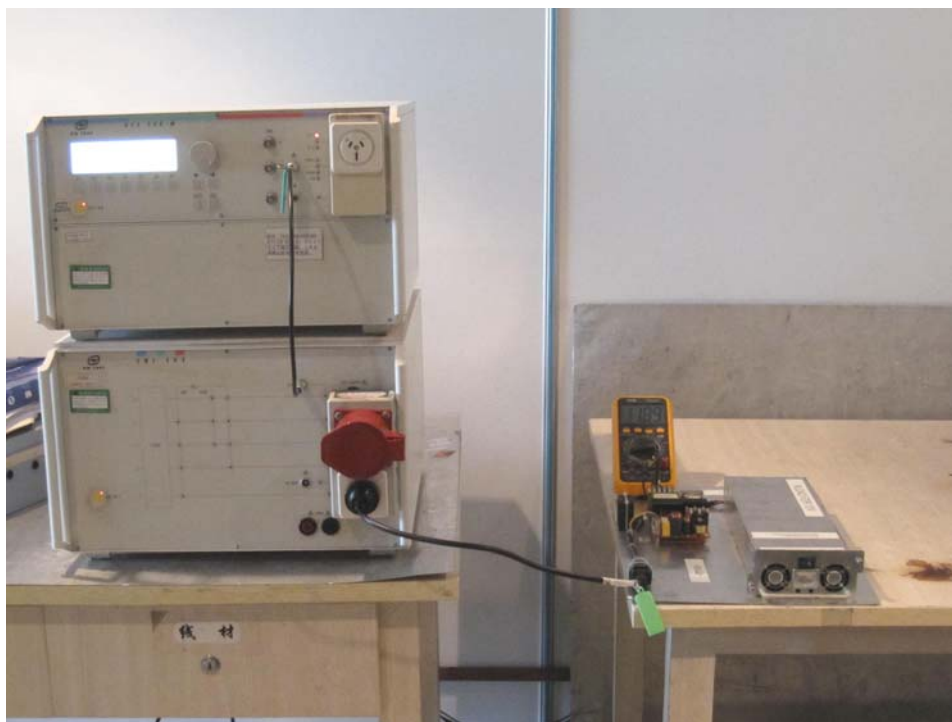
The EUT is full load during the test, and the results of the maximum susceptibility are recorded.

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 1 time more than 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 angle (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:  $2\ \Omega + 18\mu\text{F}$

☐ 0.5 kV    ☒ 1 kV    ☐ 2 kV    ☐ 4 kV

Pulse amplitude-Power line unsym.:

Source impedance:  $12\ \Omega + 9\mu\text{F}$

☐ 0.5 kV    ☐ 1 kV    ☐ 2 kV    ☐ 4 kV

Signal line:

☐ 0.5 kV    ☐ 1 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

Screening:

☐ screened

☒ unscreened

Status:

☐ passive

☒ active

Signal transmission:

☒ analogue

☐ digital

Length:

☒ 0.8 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: Dec 10, 2009

Operator: Tony

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

4.9.2.1. Severity Level: 3V

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 full load during the test, and the results of the maximum susceptibility are recorded.

4.9.3.2. Test Configuration and Procedure

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.

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:
- ☒ 3 V
- Modulation:
- ☒ AM: 80 %
- ☒ sinusoidal 1000Hz
- Frequency step:
- ☒ 1 % with 3 s dwell time

4.9.5. Coupling points

Cable description :	<u>AC power line</u>	
Screening:	<input type="radio"/> screened	<input checked="" type="checkbox"/> unscreened
Status:	<input type="radio"/> passive	<input checked="" type="checkbox"/> active
Signal transmission:	<input checked="" type="checkbox"/> analogue	<input type="radio"/> digital
Length:	<input checked="" type="checkbox"/> 0.8 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: Dec 10, 2009

Operator: Tony

##### 4.10.2. Severity levels of magnetic field immunity

4.10.2.1. Severity Level: 1A/m 3A/m

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

4.10.2.2. Performance Criterion: **A**

##### 4.10.3. Description of the test set-up

4.10.3.1. Operating Condition

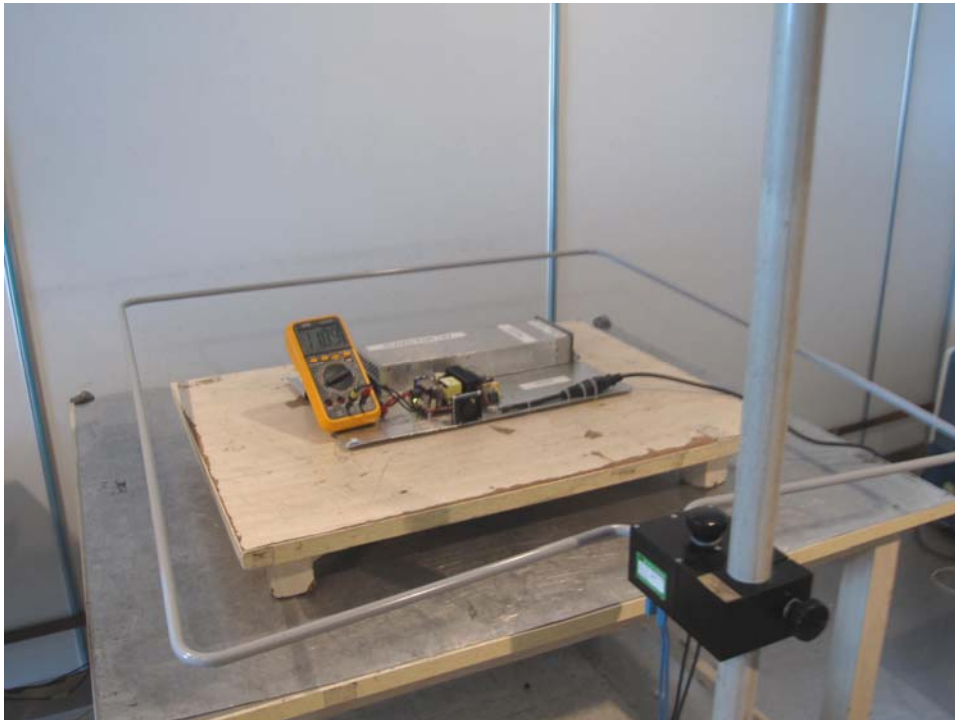
The EUT is full load during the test, and the results of the maximum susceptibility are recorded.

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 two orientations of the magnetic coil, horizontal and vertical, 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 ☒ 60 Hz  
Continuous field: ☒ 1 A/m ☒ 3 A/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: Dec 10, 2009

Operator: Tony

##### 4.11.2. Severity levels of voltage dips and interruptions

Test Level (%Ut)	Voltage Dip And Short Interruptions (%Ut)	Performance Criterion	Duration (In Period)	Phase angle (°)
0	100	B	0.5	0°, 45°, 90°, 135°, 180°, 225°, 270°
40	60	C	5	0°, 45°, 90°, 135°, 180°, 225°, 270°
70	30	C	25	0°, 45°, 90°, 135°, 180°, 225°, 270°
0	100	C	250	0°, 45°, 90°, 135°, 180°, 225°, 270°

##### 4.11.3. Description of the test set-up

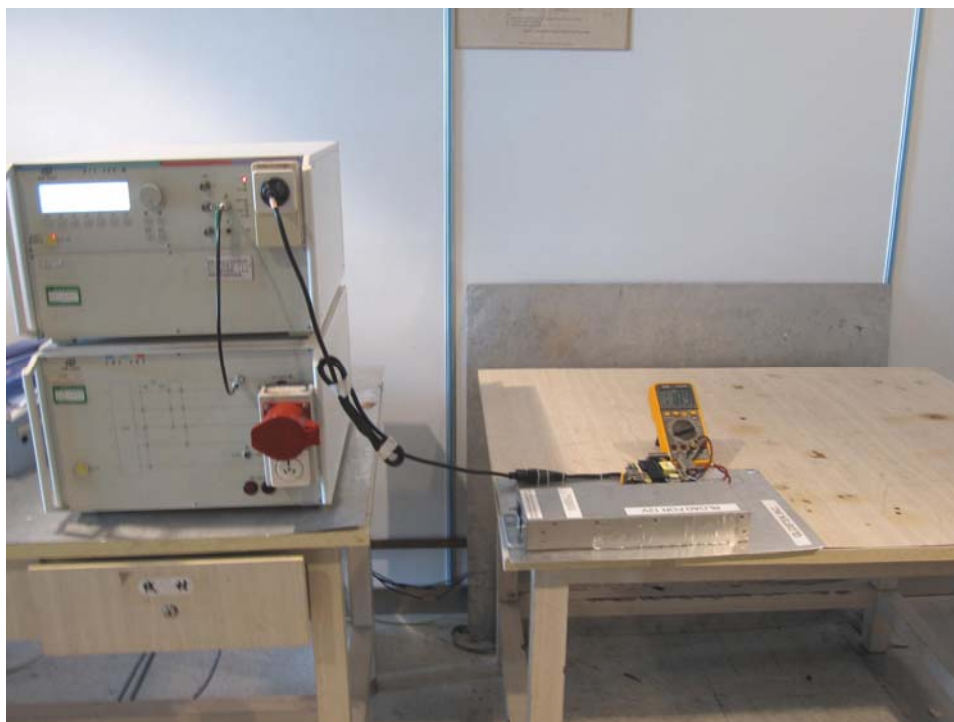
###### 4.11.3.1. Operating Condition

The EUT is full load during the test, and the results of the maximum susceptibility are recorded.

###### 4.11.3.2. Test Configuration and Procedure

EUT is connected to the simulator according to the setup outline of 12.3. When conducting the test level of 0.5 period duration, make sure that it shall 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:

■ 100 % / 5000ms    ■ 60 % / 100ms    ■ 30 % / 500ms  
■ 100 % / 10ms

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**

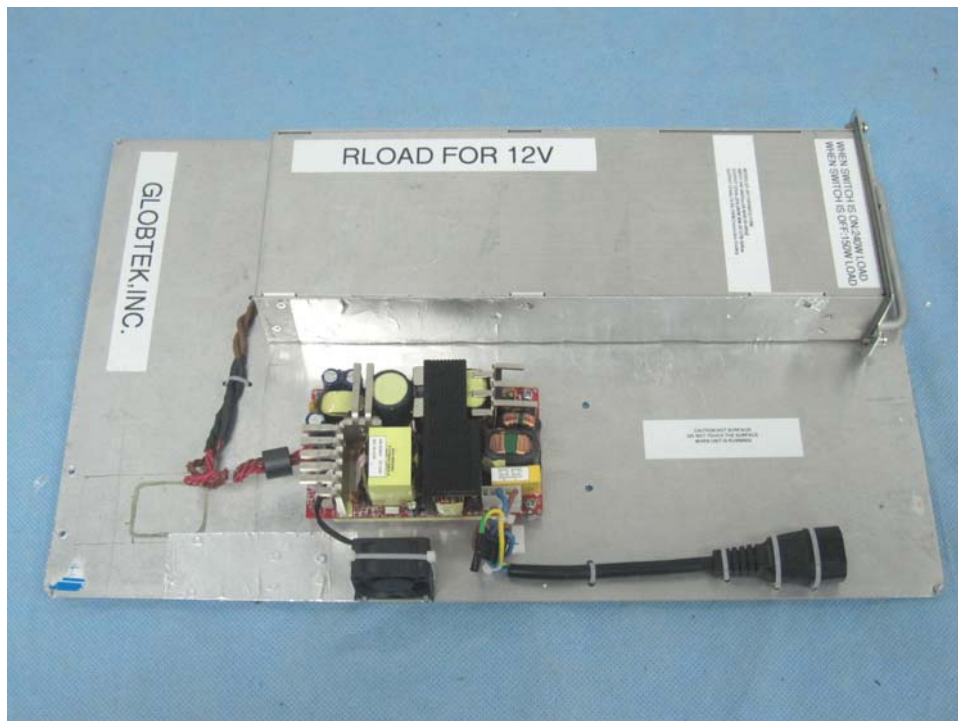
Performance Criterion **See section 4.11.2**

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

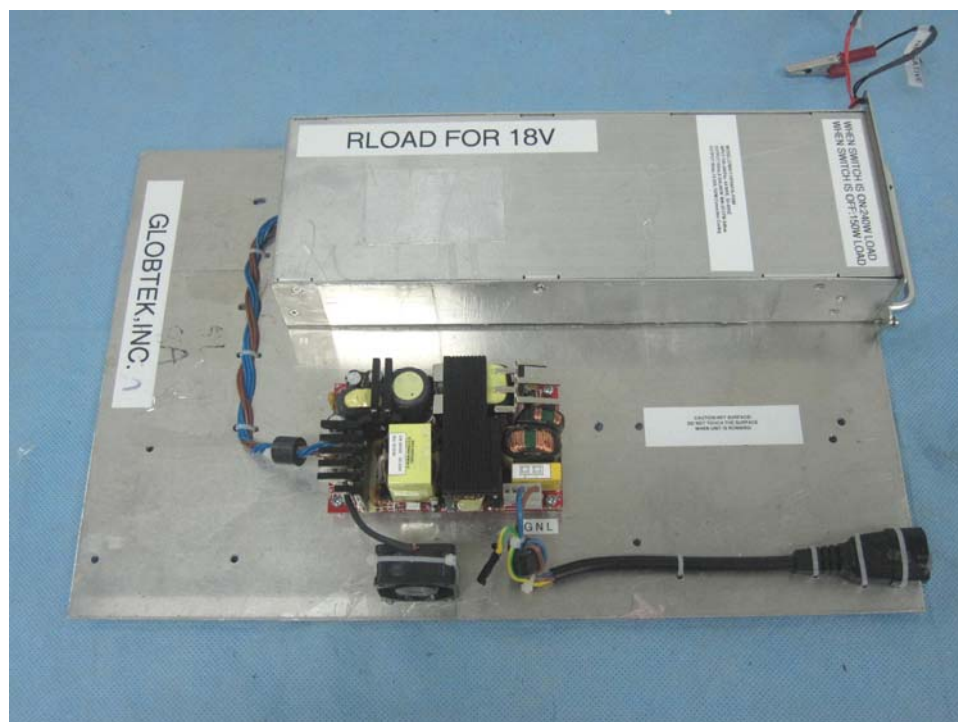
## 5. External and Internal Photos of the EUT

### 5.1. External photos of the EUT

12V:

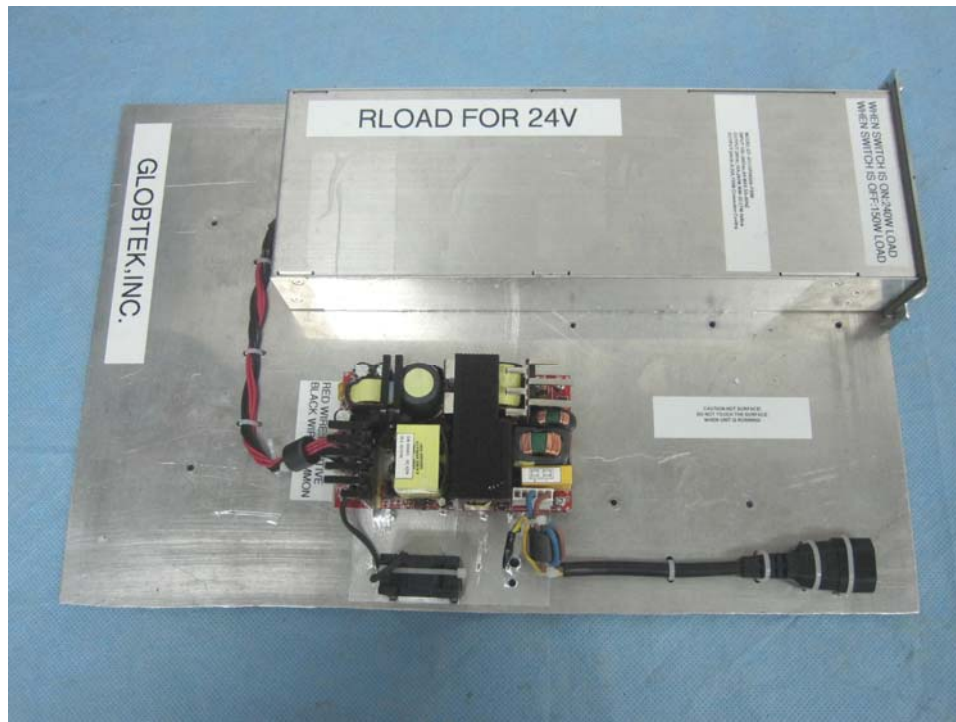


18V:

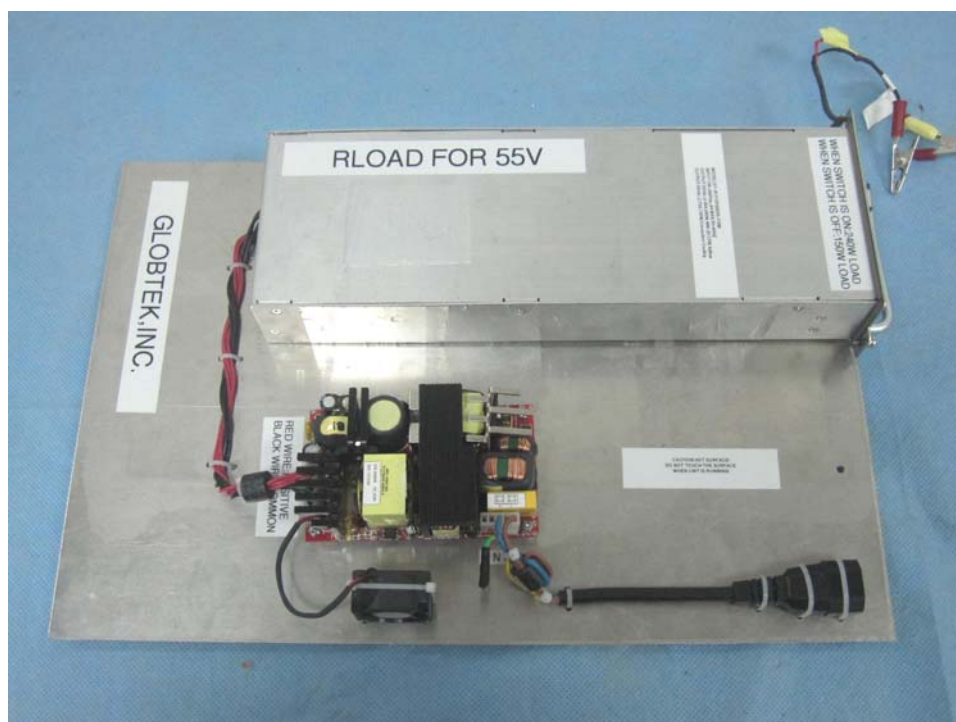




24V:



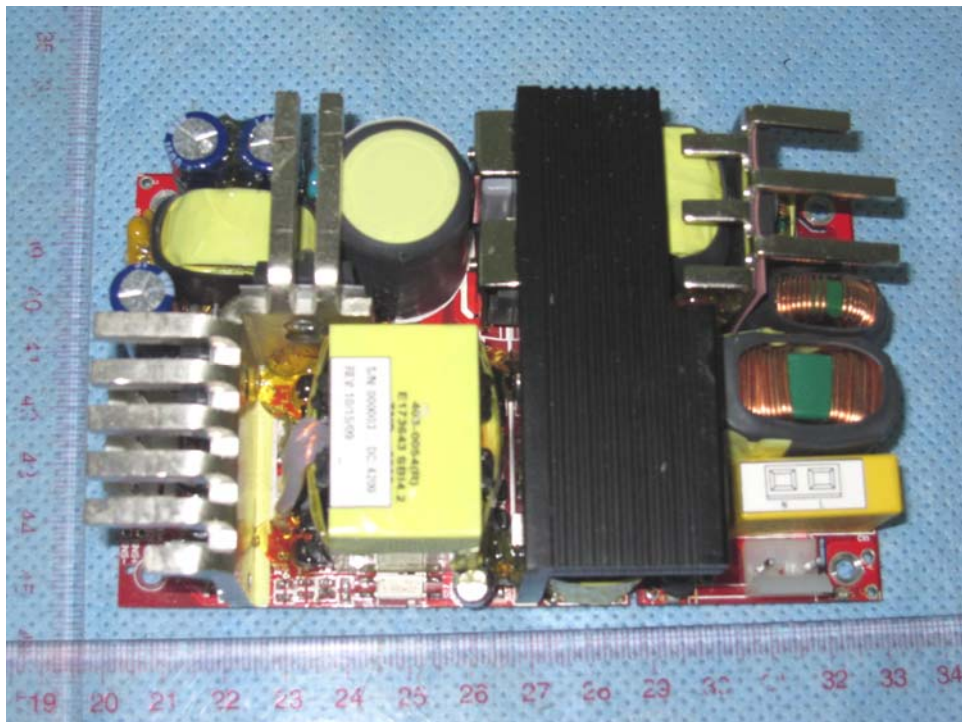
55V:





## 5.2. Internal photos of the EUT

12V:









18V:



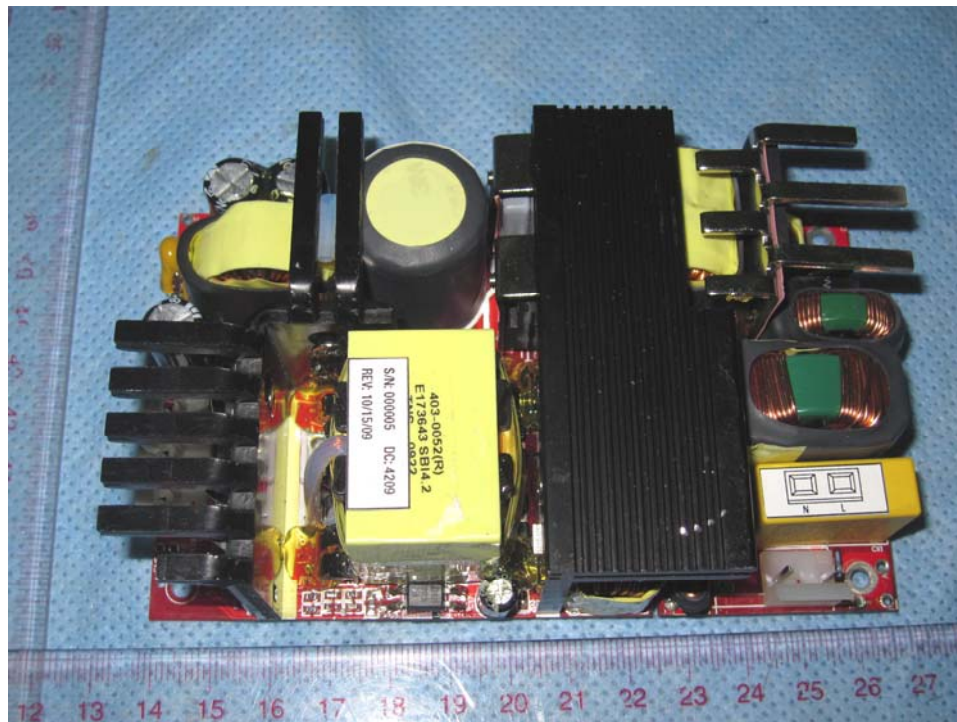


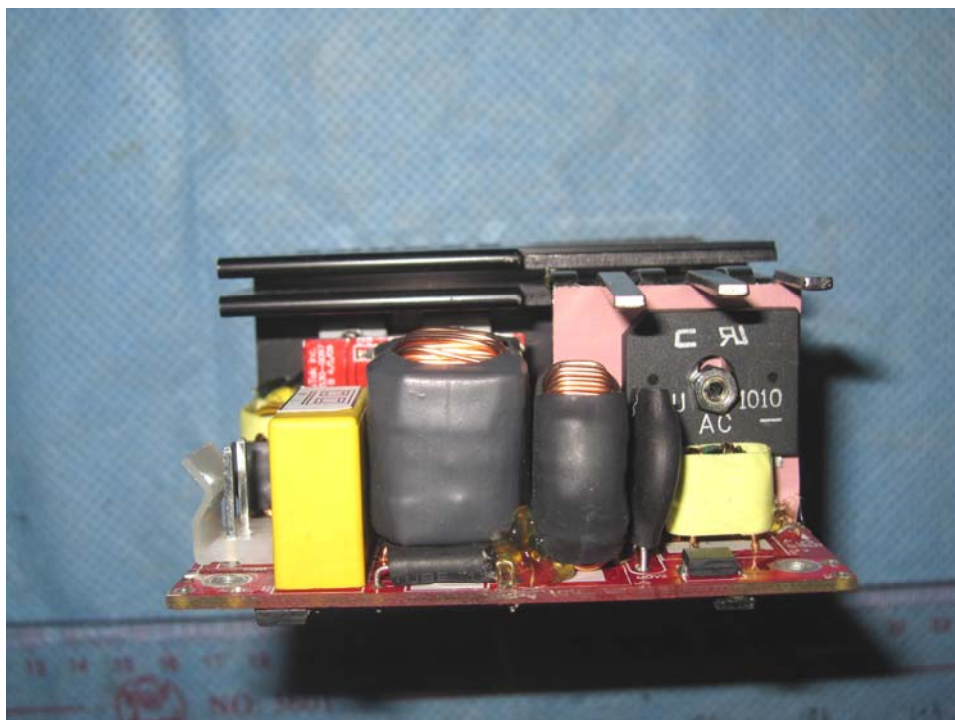




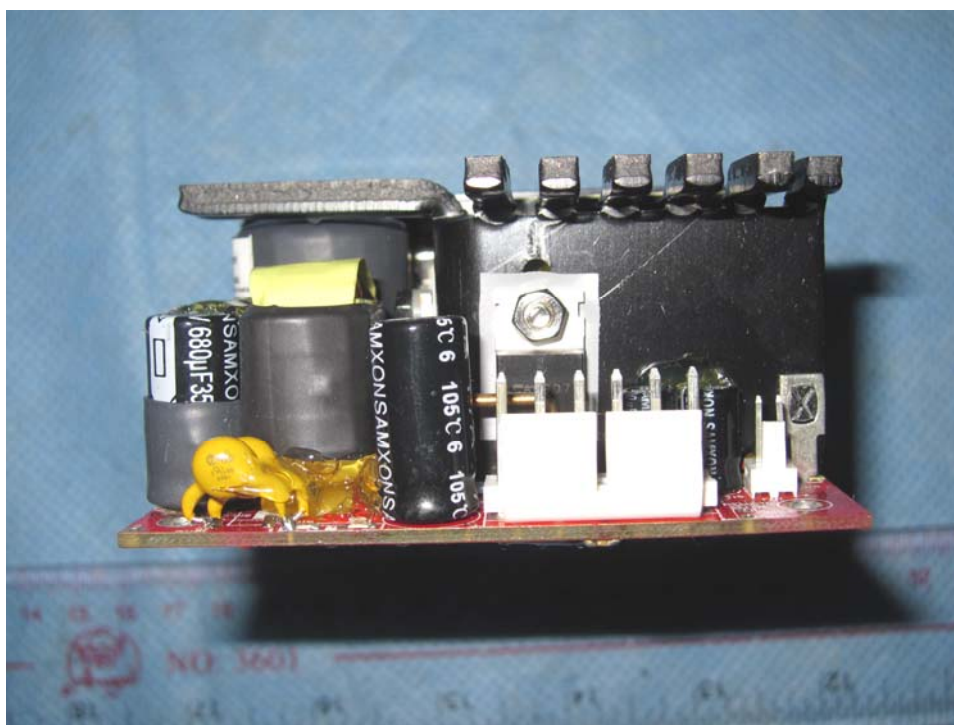


24V:





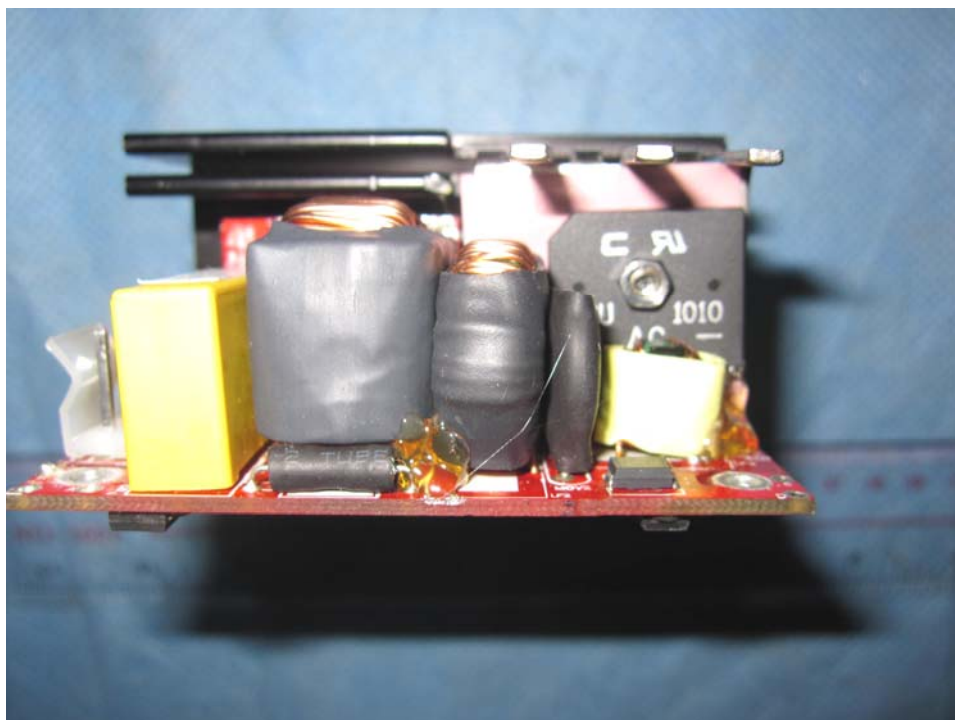
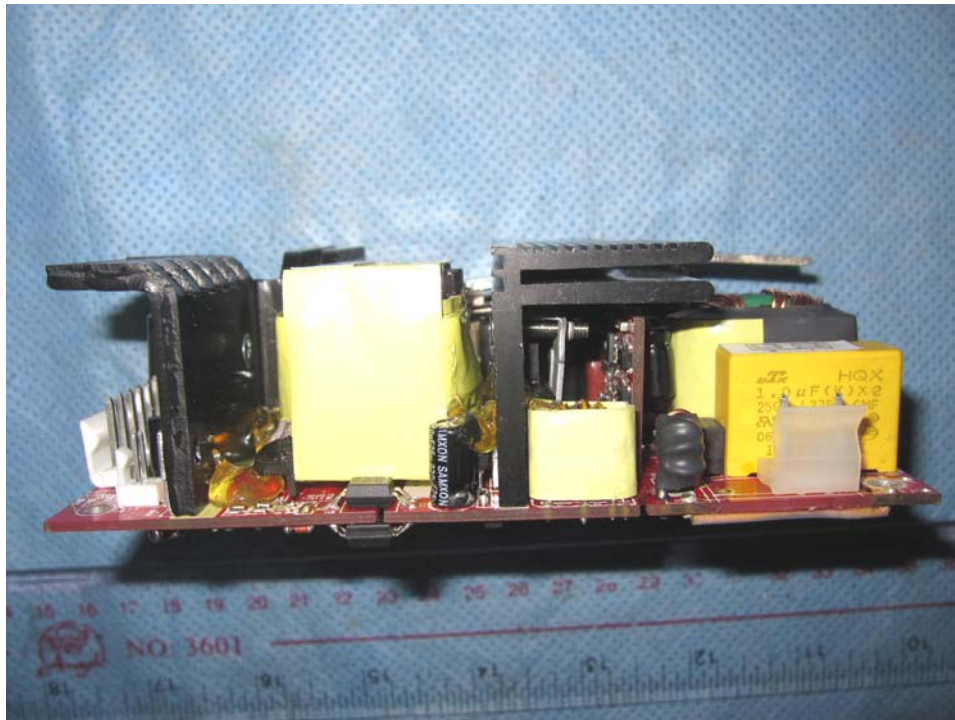




55V:









.....End of Report.....