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TEST REPORT

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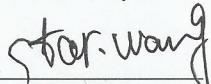
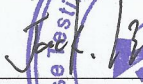
South African Bureau of Standards
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Application Number: 000660

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1	Report No.	KST75501807224Q		
2	Applicant	▪ Name	GlobTek, Inc.	
		▪ Address	186 Veterans Dr. Northvale, NJ 07647, USA	
		▪ Contact Person	Mike Krakovyak	
		▪ Telephone No	(201)784-1000 Ext: 106	▪ Fax No (201)784-01111
3	Manufacturer	▪ Name	GlobTek, Inc.	
		▪ Address	186 Veterans Dr. Northvale, NJ 07647, USA	
		▪ Telephone No	(201)784-1000 Ext: 106	▪ Fax No (201)784-01111
4	Factory	▪ Name	GlobTek (Suzhou) Co., Ltd	
		▪ Address	Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China	
5	Use of Report	☆SANS 61000-4-3:2008/IEC61000-4-3:2008		
6	Kind of Product	ITE Power Supply		
7	Model Name	GT-21097-3005		
8	Variant Model	GT-21097-5012, GT-21097-5015, GT-21097-5024		
9	Trade Mark			
10	Receipt date	July 27, 2018		
11	Test Period	July 27, 2018		
12	Issue Date	Aug 15, 2018		
13	Test Standard(method) used	☆SANS 61000-4-3:2008/IEC61000-4-3:2008		
14	Test Results	Compliance		

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
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Conformation	Tested by  Star.Wang/EMC Test Engineer	Approved by  Jack.Li/EMC Supervisor
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REPORT REVISION HISTORY

Date	Revision	Page No

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1.0 General Product Description

1.0.1 Product Specification

No.	ITEM	APPLICATION
1	Test Sample	ITE Power Supply
2	Model	GT-21097-3005
3	Variant Model/Type No.	GT-21097-5012, GT-21097-5015, GT-21097-5024
4	Application Number	000660
5	Dimensions (W x L x H)	60mm*118mm*33± 0.5mm
6	Maximum Clock Frequency	<108MHz
7	S/N	RoHS706149102/16

1.0.2 Electrical Ratings

GT-21097-3005 output: 5V, 5A

GT-21097-5012 output: 12V, 4.17A

GT-21097-5024 output: 24V, 2.1A

GT-21097-5015 output: 15V, 3.3A

1.0.3 Test Voltage & Frequency

Unless indicated otherwise on the individual data sheet or test results, the test voltage and frequency was as indicated below.

Power supply voltage ☒ 230V/50 Hz / 1 ϕ ☐ 115V/60Hz / 1 ϕ
 ☐ 400V/50 Hz 3PE ☐ 400V/50 Hz 3NPE
 ☐ 12 V DC ☐ 24 V DC

1.1 Model Differences

These models have different output current, transformer(only for the secondary winding turns) details

see below:GT-21097-3005 output: 5V, 5A; GT-21097-5012 output: 12V, 4.17A,

GT-21097-5024 output: 24V, 2.1A; GT-21097-5015 output: 15V,3.3A,

Voltage range	Transformer model
3-7.5V	04B273
7.6-12.9V	04B167
13-18V	04B173
18.1-20V	04B172
20.1-24V	04B171
24.1-35.9V	04B212
36-48V	04B171

1.2 Device Modifications

The following modifications were necessary for compliance:

Not applicable

1.3 Difference Table between Basic Model and Variant Models

Model Name		Different Items		
GT-21097-3005	Basic Model	output current	Transformer	N/A
GT-21097-5012	N/A	output current	Transformer	N/A
GT-21097-5015	N/A	output current	Transformer	N/A
GT-21097-5024	N/A	output current	Transformer	N/A

1.4 EUT Configuration(s)

[See Appendix A](#) for individual test set-up configuration(s). The following peripheral devices and/or interface cables were connected during the measurement:

☒ Peripheral Devices

Device	Model No.	Serial No.	Manufacturer
Slide rheostat	KST-EE104	/	/
Slide rheostat	KST-EE108	/	/
Slide rheostat	KST-EE110	/	/

☒ Cable Description

No.	From		To		Type of Cable		
	Device	I/O Port	Device	I/O Port	Length (m)	Shielded or Unshielded	Ferrite Core [Y/N]
1	EUT	AC POWER	AC Main	-	1.5m	U	N
2		-	-	DC Outptu	1.75m	U	Y

* Shielded or Unshielded : Unshielded=U, Shielded=S



1.5 Test Software

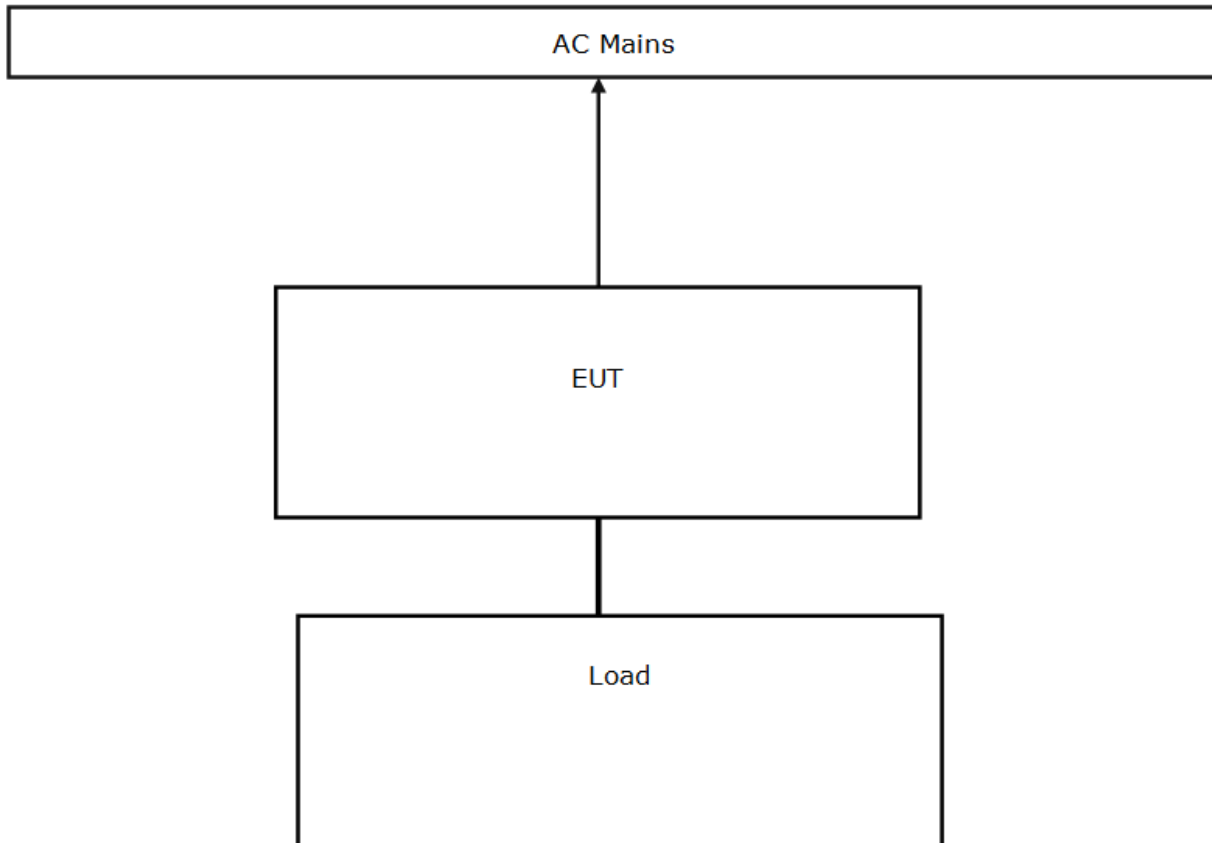
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1.6 EUT Operating Mode(s)

Equipment under test was operated during the measurement under the following conditions:

Operating Mode	Function	Test Item
1	Full Load	Article 3.1

1.7 Configuration





1.8 Calibration Details of Equipment Used for Measurement

Test equipment and test accessories are calibrated on regular basis. [The maximum time between calibrations is one year or what is recommended by the manufacturer](#), whichever is less. All test equipment calibrations are traceable, therefore, all test data recorded in this report is traceable.

1.9 Test Facility

The measurement facility is KeySense Testing& Certification International Co., Ltd.
Address: 1-3/F Lab Building, No. 29 District, Zhongkai Hi-Tech Industrial Development Park, Huizhou, Guangdong, China
The sites are constructed in conformance with the requirements of CISPR 16-1-4.

1.10 Laboratory Accreditations and Listings

Country	Agency	Scope of Accreditation	Registration Number	CNAS Logo	Laboratory Logo
China	CNAS	EMI (Electromagnetic Interference / Emission) EMS (Electromagnetic Susceptibility / Immunity)	CNAS L9678		

1.11 Measurement Uncertainty(95% confidence levels, k=2)

Test Item	Uncertainty
Uncertainty for Radio frequency Continuous radiated disturbance	Ur = 13%

2.0 EMC Test Regulations/Standards

The tests were performed according to following regulations:

SANS 61000-4-3:2008/IEC61000-4-3:2008

2.1 Immunity Test Regulations/Standards **SANS 61000-4-3:2008/IEC61000-4-3:2008**

Testing and measurement techniques Radiated, radio frequency, electromagnetic field immunity test

2.2 Purpose of Test

To determine whether the equipment under test fulfils the immunity requirements of the standards.

2.3 Summary of Test Results

IMMUNITY		
Description of Test Item	Basic Standard	Results
Radio frequency Continuous radiated disturbance	☆ SANS 61000-4-3:2008/IEC 61000-4-3:2008	PASS
N/A is an abbreviation for Not Applicable.		

3.0 Immunity Test Result

Description of Performance Criteria:

Performance criteria A

During and 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 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.

Performance criteria 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, after the application of the phenomena 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.

During the test, degradation of performance is allowed. However, no change of operating state or stored data is allowed to persist after the test.

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.

Performance criteria C

During and after testing, a temporary loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions.

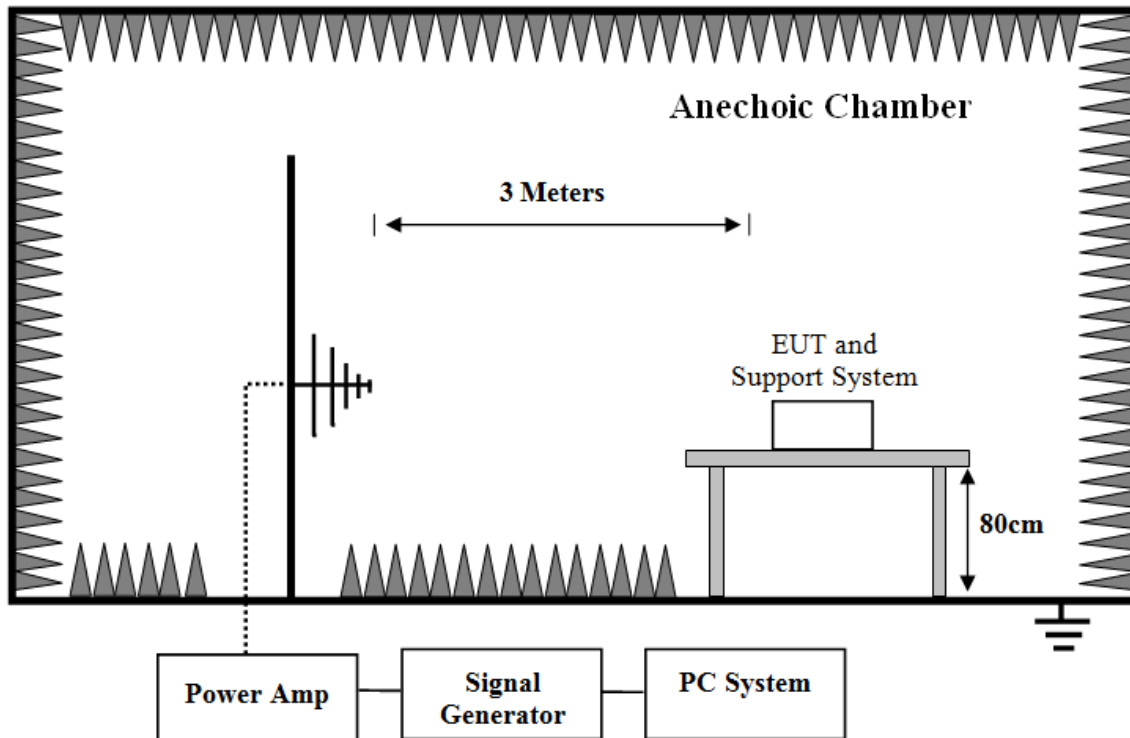
Functions, and/or information stored in non-volatile memory, or protected by a backup, shall not be lost.

3.1 Radio Frequency Electromagnetic Field Immunity Test

3.1.1 Test Date

2018-07-27

3.1.2 Block Diagram of Test Setup



3.1.3 Test Location

3m Chamber

3.1.4 Radio Frequency Electromagnetic Field Immunity Test levels

Level	Test field strength V/m
1	1
2	3
3	10
4	30
X	Special
Note: X is an open test level and the associated field strength may be any value. This level may be given in the product standard.	

3.1.5 Test Procedure

The field sensor is placed on the EUT table (0.8 meter above the ground) which is 3 meters away from the transmitting antenna. Through the signal generator, power amplifier and transmitting antenna to produce a uniformity field strength (3V/m measured by field sensor) around the EUT table from frequency range specified and records the signal generator's output level at the same time for whole measured frequency range. Then, put EUT and its simulators on the EUT turn table and keep them 3 meters away from the transmitting antenna which is mounted on an antenna tower and fixes at 1 meter height above the ground. Using the recorded signal generator's output level to measure the EUT from frequency range specified and both horizontal & vertical polarization of antenna must be set and measured. Each of the four sides of EUT must be faced this transmitting antenna and measures individually

All the scanning conditions are as follows :

Test Level	
Frequency	80-1000MHz
Test level	3V/m
Antenna polarization	Horizontal & Vertical
Modulation	80%, 1kHz Amplitude Modulation
Steps increment	1%

3.1.6 Test Equipment

Name of Equipment	Model No.	Manufacturer	Serial No.	Due Date	Applied
Signal generator	SMC100A	R&S	105651	2019-03-06	Yes
Power amplifier	MT400	PRANA	1507-1746	2019-03-06	Yes
Trilog-boardband antenna	STLP 9128 E	Schwarzbeck	9128ES-136	2018-10-27	Yes
Power meter	NRP2	R&S	105155	2019-03-06	Yes

3.1.7 Test Software

RS

3.1.8 Climate Condition

Temperature: 22°C
Relative Humidity: 65%
Atmospheric Pressure: 1004Pa



■ Operating Mode 1

▪ Test Data & Graph

EUT: ITE Power Supply					
M/N: GT-21097-3005, GT-21097-5012, GT-21097-5015, GT-21097-5024					
Test Voltage: AC 230V/50Hz					
Test Engineer: Star					
Required Performance: A			Actual Performance: A		
Frequency Range : 80 MHz -1000MHz			Test Level: 3V/m		
Modulation: <input type="checkbox"/> Pulse <input type="checkbox"/> none <input checked="" type="checkbox"/> AM 1 kHz 80%					
EUT Position	Polarization: Horizontal		Polarization: Vertical		Result (Pass / Fail)
	Required	Observation	Required	Observation	
Front	A	A	A	A	Pass
Right	A	A	A	A	Pass
Rear	A	A	A	A	Pass
Left	A	A	A	A	Pass
Performance: There was no change compared with initial operation during the test.					

4.0 APPENDIX A - Test Setup Photos

4.1 Radio Frequency Electromagnetic Field Immunity Test Photos





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Critical Component List

No	Parts, Components	Location Number	Model	Specification	Manufacturer	Factory	Use Option	Remark
1	Y-Capacitor	CY1,CY2	KX,KH	Min.AC250V max.4700pF Min.Y2 Min.85°C	Murata	/	yes	/
	(alternative)	CY1,CY2	AC	Min.AC250V max.4700pF Min.Y2 Min.85°C	WALSIN	/	yes	/
	(alternative)	CY1,CY2	SF,SB,SE	Min.AC250V max.4700pF Min.Y2 Min.85°C	Success Electronics Co., Ltd	/	yes	/
	(alternative)	CY1,CY2	CS,CD	Min.AC250V max.4700pF Min.Y2 Min.85°C	TDK	/	yes	/
	(alternative)	CY1,CY2	CD,CE	Min.AC250V max.4700pF Min.Y2 Min.85°C	STE	/	yes	/
	(alternative)	CY1,CY2	WD,KL	Min.AC250V max.4700pF Min.Y2 Min.85°C	Welson	/	yes	/
	(alternative)	CY1,CY2	DJ,DY	Min.AC250V max.4700pF Min.Y2 Min.85°C	Zhi Wei	/	yes	/
	(alternative)	CY1,CY2	JD	Min.AC250V max.4700pF Min.Y2 Min.85°C	Jyh Chung Electronic Co.,Ltd	/	yes	/
	(alternative)	CY1,CY2	JX-series	Min.AC250V max.4700pF Min.Y2 Min.85°C	Jerro Electronics Corp.	/	yes	/
2	Bridging Capacitor	CY3	KX	Min.AC250V max.4700pF Min.Y2 Min.85°C	Murata	/	yes	/
	(alternative)	CY3	AH	Min.AC250V max.4700pF Min.Y2 Min.85°C	WALSIN	/	yes	/



	(alternative)	CY3	SB,SE	Min.AC250V max.4700pF Min.Y2 Min.85°C	Success	/	yes	/
	(alternative)	CY3	CD	Min.AC250V max.4700pF Min.Y2 Min.85°C	TDK	/	yes	/
	(alternative)	CY3	CD	Min.AC250V max.4700pF Min.Y2 Min.85°C	STE	/	yes	/
	(alternative)	CY3	WD	Min.AC250V max.4700pF Min.Y2 Min.85°C	Welson	/	yes	/
	(alternative)	CY3	DJ	Min.AC250V max.4700pF Min.Y2 Min.85°C	Zhi Wei	/	yes	/
3	X-Capacitor	C24	RE	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Okaya	/	yes	/
	(alternative)	C24	MPX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Europtronic		yes	/
	(alternative)	C24	PHE830M	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Rifa	/	yes	/
	(alternative)	C24	F1772	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	VISHAY	/	yes	/
	(alternative)	C24	HQX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	U.T.X	/	yes	/
	(alternative)	C24	CT	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	CTX	/	yes	/
	(alternative)	C24	MPX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	STE	/	yes	/
	(alternative)	C24	MPX,NPX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Dain	/	yes	/



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	(alternative)	C24	MPX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Sinhua Electronics	/	yes	/
	(alternative)	C24	MPX	Min.250VAC,Max.0.47uF,min.10 0°C(Min.X2)	Jiangsu Xinhua Huayu	/	yes	/
4	Inductor(optional) No bob bin	L2	04C117	130°C Min.,20µH	SYN/GlobTek	/	yes	/
5	Transformer	T1 (3-7.5V)	04B273	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (7.6-12.9V)	04B167	ClassB	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (13-18V)	04B173	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (18.1-20V)	04B172	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (20.1-24V)	04B171	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (24.1-35.9V)	04B212	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/
	Transformer	T1 (36-48V)	04B171	Class B	GlobTek/SYN/BOAM/ HAOPUWEI	/	yes	/

END OF REPORT

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