Unique Number: 002722

TEST REPORT

Product Name : ICT/ITE POWER SUPPLY
Model Number : GTM41133-9016-1.0-T3A, GTM41133-9016-4.0-T3A, GTM41133-9024-5.0-T3A, GTM41133-9048-T3A

Prepared for : GlobTek, Inc.
Address : 186 Veterans Dr. Northvale, NJ 07647 USA

Prepared by : EMTEK (SHENZHEN) CO., LTD.
Address : Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

Tel: (0755) 26954280
Fax: (0755) 26954282

Report Number : ENS2110260185E00101R
Date(s) of Tests : November 04, 2021 to November 16, 2021
Date of issue : November 17, 2021

TABLE OF CONTENT

TEST REPORT DESCRIPTION

Applicant	:	GlobTek, Inc.
Manufacturer	:	GlobTek, Inc.
Trade Mark	:	G GlobTek, Inc.
EUT	:	ICT/ITE POWER SUPPLY
Model Number	:	GTM41133-9016-1.0-T3A, GTM41133-9016-4.0-T3A, GTM41133-9024-5.0-T3A, GTM41133-9048-T3A
Unique Number	:	002722
Rating	:	Input: 100-240V~, 50-60Hz, 1.5A GTM41133-9016-1.0-T3A Output: 15V⎓ 6A GTM41133-9016-4.0-T3A Output: 12V⎓ 7.5A GTM41133-9024-5.0-T3A Output: 19V⎓ 4.73A GTM41133-9048-T3A Output: 48V⎓ 1.875A, 90W

Measurement Procedure Used:

SANS 2332:2017/CISPR 32:2015
SANS 61000-3-2:2009/IEC 61000-3-2:2014, SANS 61000-3-3:2009/IEC 61000-3-3:2013
SANS 2335:2018/CISPR35:2016
(SANS 61000-4-2:2009/IEC 61000-4-2:2008,
SANS 61000-4-3:2008/IEC 61000-4-3:2006+A1:2007+A2:2010,
SANS 61000-4-4:2011/IEC 61000-4-4:2012, SANS 61000-4-5: 2006/IEC 61000-4-5:2014+A1:2017,
SANS 61000-4-6:2017/IEC 61000-4-6:2013, SANS 61000-4-8: 2009/IEC 61000-4-8:2009,
SANS 61000-4-11:2005/IEC 61000-4-11:2004+A1:2017)

The device described above is tested by EMTEK (SHENZHEN) CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and EMTEK (SHENZHEN) CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the SANS 2332/CISPR 32, SANS 61000-3-2/IEC 61000-3-2, SANS 61000-3-3/IEC 61000-3-3 and SANS 2335/CISPR 35 requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of EMTEK (SHENZHEN) CO., LTD.

Date of Test	:	November 04, 2021 to November 16, 2021
Prepared by	:	Jessie Hu Jessie Hu/Editor
Reviewer	:	Kaimin Guo Kaimin Guo/Supervisor
Approved & Authorized Signer	:	Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2110260185E00101R	/	Original Report

1. DESCRIPTION OF STANDARDS AND RESULTS (EUT)

EMISSION			
Description of Test Item	Standard	Limits	Results
Conducted Emissions From the AC Mains Power Ports	**SANS 2332:2017/CISPR 32:2015**	Class B	Pass
Asymmetric mode conducted emissions at Wired network ports	**SANS 2332:2017/CISPR 32:2015**	Class B	N/A
Radiated emissions at frequencies up to 1 GHz	**SANS 2332:2017/CISPR 32:2015**	Class B	Pass
Radiated emissions at frequencies above 1 GHz	**SANS 2332:2017/CISPR 32:2015**	Class B	N/A
Harmonic Current Emissions	**SANS 61000-3-2:2009/IEC 61000-3-2:2014**	Class A	Pass
Voltage Fluctuation and Flicker	**SANS 61000-3-3:2009/IEC 61000-3-3:2013**	Section 5	Pass

IMMUNITY				
Description of Test Item		Basic Standard	Performance Criteria	Results
Electrostatic Discharge	Enclosure ports	**SANS 61000-4-2:2009/IEC 61000-4-2:2008**	B	Pass
Continuous RF electromagnetic field disturbances	Enclosure ports	**SANS 61000-4-3:2008/IEC 61000-4-3:2006+A1:2007+A2:2010**	A	Pass
Electrical fast transients/burst	AC mains power ports	**SANS 61000-4-4:2011/IEC 61000-4-4:2012**	B	Pass
	Analogue/digital data ports		N/A	N/A
	DC network power ports		N/A	N/A
Surges	AC mains power ports	**SANS 61000-4-5:2006/IEC 61000-4-5:2014+A1:2017**	B	Pass
	Analogue/digital data ports		N/A	N/A
	DC network power ports		N/A	N/A
Continuous induced RF disturbances	AC mains power ports	**SANS 61000-4-6:2017/IEC 61000-4-6:2013**	A	Pass
	Analogue/digital data ports		N/A	N/A
	DC network power ports		N/A	N/A
Power frequency magnetic field	Enclosure ports	**SANS 61000-4-8:2009/IEC 61000-4-8:2009**	A	Pass
Voltage dips and interruptions	AC mains power ports	**SANS 61000-4-11:2005/IEC 61000-4-11:2004+A1:2017**	B,C	Pass
Note: N/A is an abbreviation for Not Applicable.				

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	ICT/ITE POWER SUPPLY
Model Number	:	GTM41133-9016-1.0-T3A, GTM41133-9016-4.0-T3A, GTM41133-9024-5.0-T3A, GTM41133-9048-T3A
Applicant	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Manufacturer	:	GlobTek, Inc.
Address	:	186 Veterans Dr. Northvale, NJ 07647 USA
Factory	:	GlobTek (Suzhou) Co., Ltd
Address	:	Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China
Date of Received	:	November 04, 2021
Date of Test	:	November 04, 2021 to November 16, 2021

2.2. Independent Operation Modes

A. ON
   1. Full Load

2.3. Test Manner

Details of EUT Test Modes:

Test Items	Test Voltage	Function Type	Worst case
Conducted disturbance at mains Terminals	AC 220V/50Hz	Mode A	Mode A
Radiated emissions at frequencies up to 1 GHz	AC 220V/50Hz	Mode A	Mode A
Harmonic Current Emissions	AC 220V/50Hz	Mode A	\
Voltage Fluctuation and Flicker	AC 220V/50Hz	Mode A	\
Electrostatic Discharge	AC 220V/50Hz	Mode A	\
Continuous RF electromagnetic field disturbances	AC 220V/50Hz	Mode A	\
Electrical fast transients/burst	AC 220V/50Hz	Mode A	\
Surges	AC 220V/50Hz	Mode A	\
Continuous induced RF disturbances	AC 220V/50Hz	Mode A	\
Power frequency magnetic field	AC 220V/50Hz	Mode A	\
Voltage dips and interruptions	AC 220V/50Hz	Mode A	\

2.4. Description of Support Device

N/A

2.5. Description of Test Facility

Site Description
EMC Lab. : **Accredited by CNAS**
The Certificate Registration Number is L2291.
The Laboratory has been assessed and proved to be in compliance with CNAS-CL01 (identical to ISO/IEC 17025:2017)

Accredited by FCC
Designation Number: CN1204
Test Firm Registration Number: 882943

Accredited by A2LA
The Certificate Number is 4321.01.

Accredited by Industry Canada
The Conformity Assessment Body Identifier is CN0008

Name of Firm : EMTEK (SHENZHEN) CO., LTD.
Site Location : Building 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2.6. Measurement Uncertainty

Test Item		Uncertainty
Conducted Emission Uncertainty	:	2.08dB(9k~150kHz Conduction 1#) 2.40dB(150k-30MHz Conduction 1#)
Radiated Emission Uncertainty (3m 3# Chamber)	:	4.40dB (30M~1GHz Polarize: H) 5.04dB (30M~1GHz Polarize: V)
Uncertainty for Flicker test	:	0.07%
Uncertainty for Harmonic test	:	1.8%
Uncertainty for C/S Test	:	1.45dB(Using CDN Test)
Uncertainty for R/S Test	:	2.10dB(80MHz-200MHz) 1.76dB(200MHz-1000MHz)
Uncertainty for ESD Test	:	6%
Uncertainty for test site temperature and humidity	:	0.6℃ 4%

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Conducted Emissions at the AC Mains Power Ports

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	EMI Test Receiver	Rohde & Schwarz	ESCI	101384	May 15, 2021	1 Year
☑	AMN	Rohde & Schwarz	ENV216	101161	May 15, 2021	1 Year
☑	AMN	Kyoritsu	KNW-407	8-1492-9	May 15, 2021	1 Year

3.2. For Radiated Emission Measurement (3m)

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	EMI Test Receiver	Rohde & Schwarz	ESU 26	100154	May 15, 2021	1 Year
☑	Pre-Amplifier	Lunar EM	LNA10M1G-40	J1011130912001	May 15, 2021	1 Year
☑	Bilog Antenna	Schwarzbeck	VULB9163	659	Aug. 22, 2021	2 Year

3.3. For Harmonic Current / Flicker Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	45KVA AC Power source	Teseq	NSG 1007-45/45KVA	1305A02873	May 16, 2021	1 Year
☑	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	June 10, 2021	1 Year
☑	Impedance network	Teseq	INA2197/37A	1305A02873	June 10, 2021	1 Year
☑	Impedance network	Teseq	INA 2196/75A	1305A02874	June 10, 2021	1 Year
☐	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	June 10, 2021	1 Year

3.4. For Electrostatic Discharge Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	ESD Tester	TESEQ AG	NSG 438A	130	July 07, 2021	1 Year

3.5. For Continuous RF Electromagnetic Field Disturbances Immunity

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Power Amplifier	MILMEGA	AS0102-55	1018770	May 15, 2021	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	34236	May 16, 2021	1 Year
☑	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 15, 2021	1 Year
☑	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	811	N/A	N/A
☑	Signal Generator	Agilent	N5181A	MY50145187	May 15, 2021	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 15, 2021	1 Year
☑	Broad-Band Horn Antenna	SCHWARZBECK	STLP 9149	9149-227	N/A	N/A
☑	Field Strength Meter	DARE	RSS1006A	10I00037SNO22	May 16, 2021	1 Year
☑	Multi-function interface system	DARE	CTR1009B	12I00250SNO72	N/A	N/A
☑	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A
☑	Power Amplifier	MILMEGA	AS1860-50	1059346	May 15, 2021	1 Year
☑	Power Amplifier	MILMEGA	80RF1000-175	1059345	May 15, 2021	1 Year

3.6. For Electrical Fast Transient / Burst Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Burst Tester	HAEFELY	PEFT4010	080981-16	May 16, 2021	1 Year
☐	Coupling Clamp	HAEFELY	IP-4A	147147	May 16, 2021	1 Year

3.7. For Surge Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Controller	HAEFELY	Psurge 8000	174031	May 16, 2021	1 Year
☑	Impulse Module	HAEFELY	PIM 100	174124	May 16, 2021	1 Year
☑	Coupling Decoupling	HAEFELY	PCD 130	172181	May 16, 2021	1 Year
☐	Coupling Module	HAEFELY	PCD122	174354	May 16, 2021	1 Year
☐	Impulse Module	HAEFELY	PIM 120	174435	May 16, 2021	1 Year
☐	Coupling Module	HAEFELY	PCD 126A	174387	May 16, 2021	1 Year
☐	Impulse Module	HAEFELY	PIM 110	174391	May 16, 2021	1 Year
☐	Impulse Module	HAEFELY	PIM 150	178707	May 16, 2021	1 Year
☐	Impulse Module	PMI	PCDN8	190422	May 16, 2021	1 Year

3.8. For Continuous Induced RF Disturbances Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Continuous Wave Simulator	EMTEST	CWS500C	0900-12	May 15, 2021	1 Year
☐	CDN	EMTEST	CDN-M2	510010010010	May 16, 2021	1 Year
☑	CDN	EMTEST	CDN-M3	0900-11	May 15, 2021	1 Year
☐	EM Injection Clamp	EMTEST	F-2031-23MM	368	May 15, 2021	1 Year
☑	Attenuator	EMTEST	100W 6dB DC-3G	/	May 15, 2021	1 Year
☐	Signal Generator	R&S	SMB100A	103041	May 15, 2021	1 Year
☑	CDN	LUTHI	CDN L-801 M2/M3	2606	May 15, 2021	1 Year

3.9. For Power Frequency Magnetic Field Immunity Test

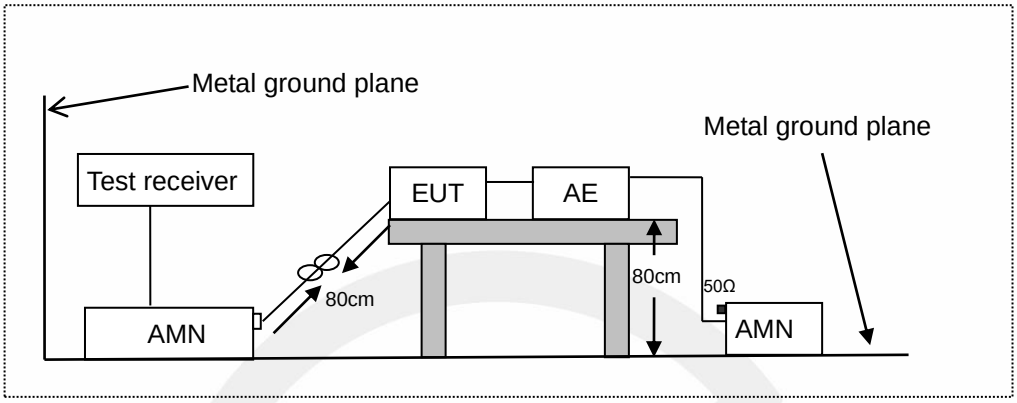
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Magnetic Field Tester	HAEFELY	MAG100	250040.1	May 15, 2021	1 Year

3.10. For Voltage Dips and Interruptions Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	45KVA AC Power source	Teseq	NSG 1007-45/45KVA	1305A02873	May 16, 2021	1 Year
☐	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	June 10, 2021	1 Year
☐	Impedance network	Teseq	INA2197/37A	1305A02873	June 10, 2021	1 Year
☐	Impedance network	Teseq	INA 2196/75A	1305A02874	June 10, 2021	1 Year
☑	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	June 10, 2021	1 Year

4. CONDUCTED EMISSIONS FROM THE AC MAINS POWER PORTS

4.1. Block Diagram of Test Setup



AMN: Artificial Mains Network
AE: Associated equipment
EUT: Equipment under test

4.2. Limits

SANS 2332/CISPR 32

Frequency range MHz	Coupling device	Detector type / bandwidth	Class B limits dB(μV)
0.15 to 0.5	AMN	Quasi Peak / 9 kHz	66 to 56
0.5 to 5			56
5 to 30			60
0.15 to 0.5	AMN	Average / 9 kHz	56 to 46
0.5 to 5			46
5 to 30			50

4.3. Test Procedure

The EUT was placed on a desk 0.8 m height from the metal ground plane and 0.4 m from the conducting wall of the shielding room and it was kept at least 0.8 m from any other grounded conducting surface. The size of the table will nominally be 1.5 m x1.0 m.

The rear of the arrangement shall be flush with the back of the supporting tabletop unless that would not be possible or typical of normal use.

All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units.

Connect EUT to the power mains through a artificial mains network (AMN). Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle

no longer than 0.4 m, so that its length is shortened to 1 m.

All the support units are connecting to the other AMN.

The AMN provides 50 ohm coupling impedance for the measuring instrument.

The CISPR states that the AMN with 50 ohm and 50 microhenry should be used.

Both sides of AC line were checked for maximum conducted interference.

The frequency range from 150 kHz to 30 MHz was sweep.

Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

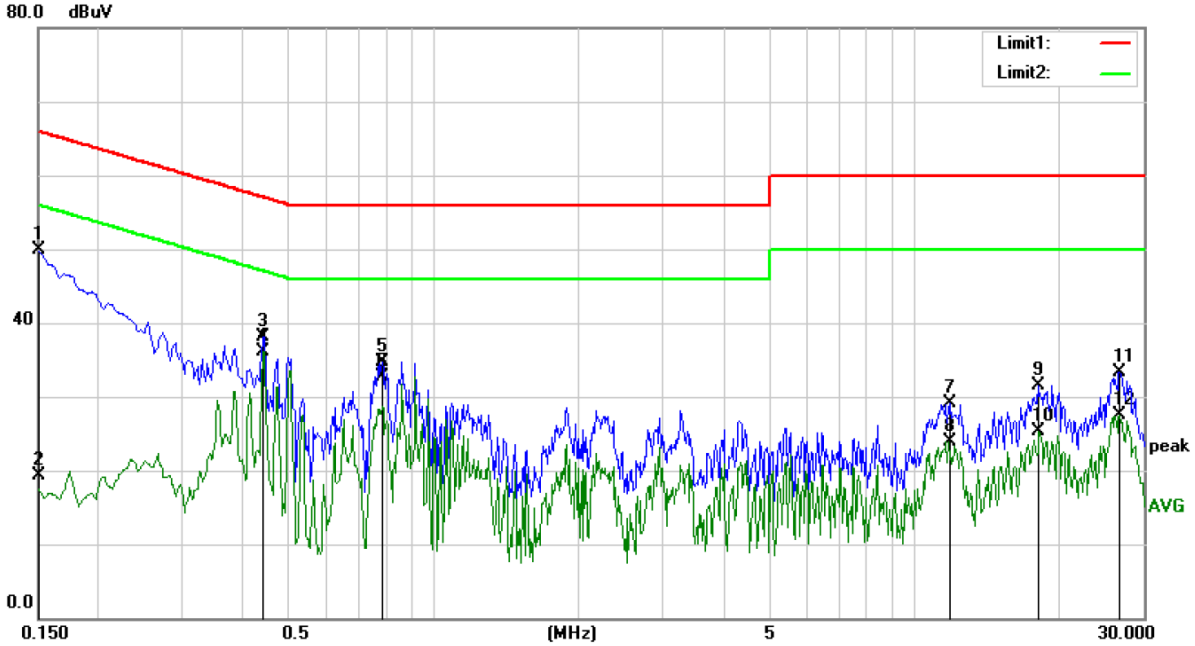
Test results were obtained from the following equation:
Emission Level (dBμV) = AMN Factor (dB) + Cable Loss (dB) + Reading (dBμV)
Margin (dB) = Emission Level (dBμV) - Limit (dBμV)

4.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.

GTM41133-9016-1.0-T3A



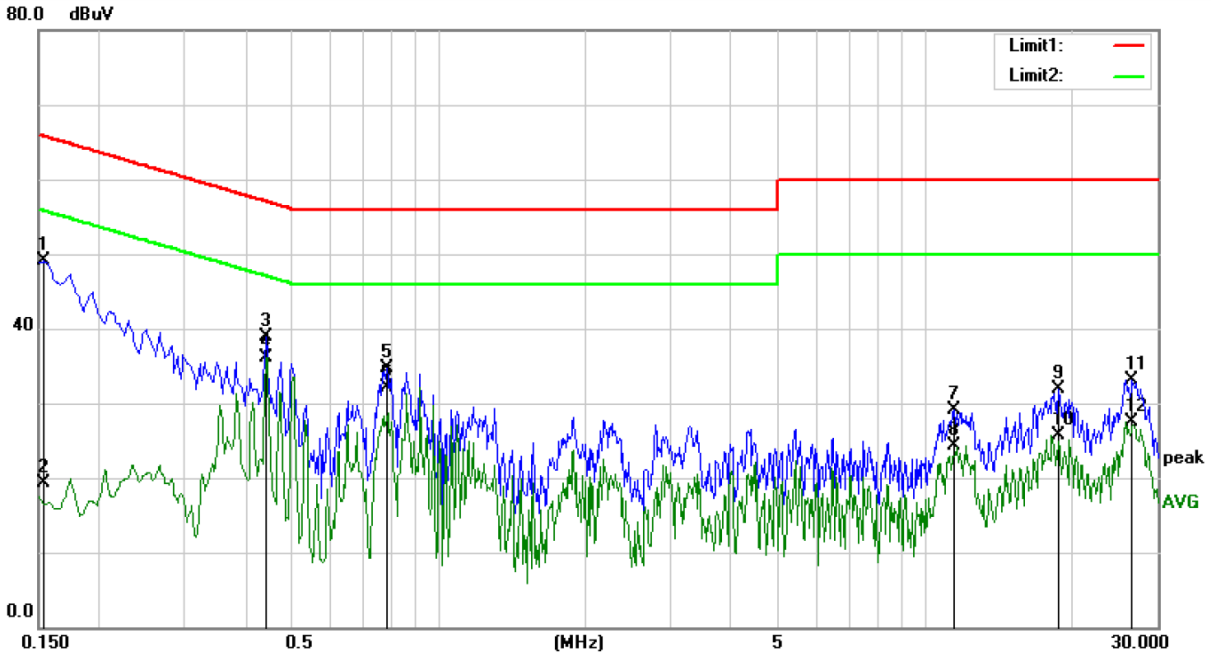
Site Conduction #1 Phase: *L1* Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.36	9.58	49.94	66.00	-16.06	QP	
2		0.1500	9.78	9.58	19.36	56.00	-36.64	AVG	
3		0.4420	28.90	9.30	38.20	57.02	-18.82	QP	
4	*	0.4420	26.79	9.30	36.09	47.02	-10.93	AVG	
5		0.7820	25.21	9.45	34.66	56.00	-21.34	QP	
6		0.7820	23.28	9.45	32.73	46.00	-13.27	AVG	
7		11.8940	18.87	10.15	29.02	60.00	-30.98	QP	
8		11.8940	13.82	10.15	23.97	50.00	-26.03	AVG	
9		18.0940	21.31	10.17	31.48	60.00	-28.52	QP	
10		18.0940	15.04	10.17	25.21	50.00	-24.79	AVG	
11		26.7420	23.08	10.24	33.32	60.00	-26.68	QP	
12		26.7420	17.17	10.24	27.41	50.00	-22.59	AVG	



Site Conduction #1 Phase: *N* Temperature: 22.8

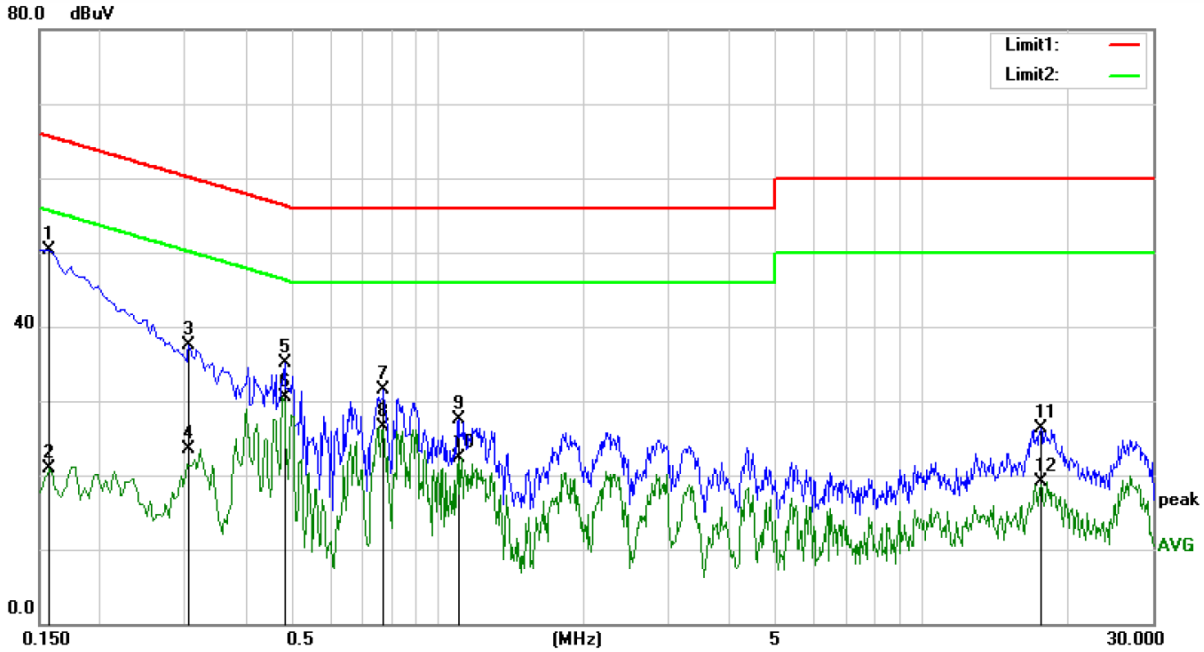
Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1540	39.44	9.57	49.01	65.78	-16.77	QP	
2		0.1540	9.73	9.57	19.30	55.78	-36.48	AVG	
3		0.4420	29.69	9.30	38.99	57.02	-18.03	QP	
4	*	0.4420	26.86	9.30	36.16	47.02	-10.86	AVG	
5		0.7820	25.31	9.45	34.76	56.00	-21.24	QP	
6		0.7820	22.72	9.45	32.17	46.00	-13.83	AVG	
7		11.4620	19.01	10.15	29.16	60.00	-30.84	QP	
8		11.4620	14.10	10.15	24.25	50.00	-25.75	AVG	
9		18.7940	21.69	10.17	31.86	60.00	-28.14	QP	
10		18.7940	15.48	10.17	25.65	50.00	-24.35	AVG	
11		26.6940	22.93	10.24	33.17	60.00	-26.83	QP	
12		26.6940	17.23	10.24	27.47	50.00	-22.53	AVG	

GTM41133-9016-4.0-T3A



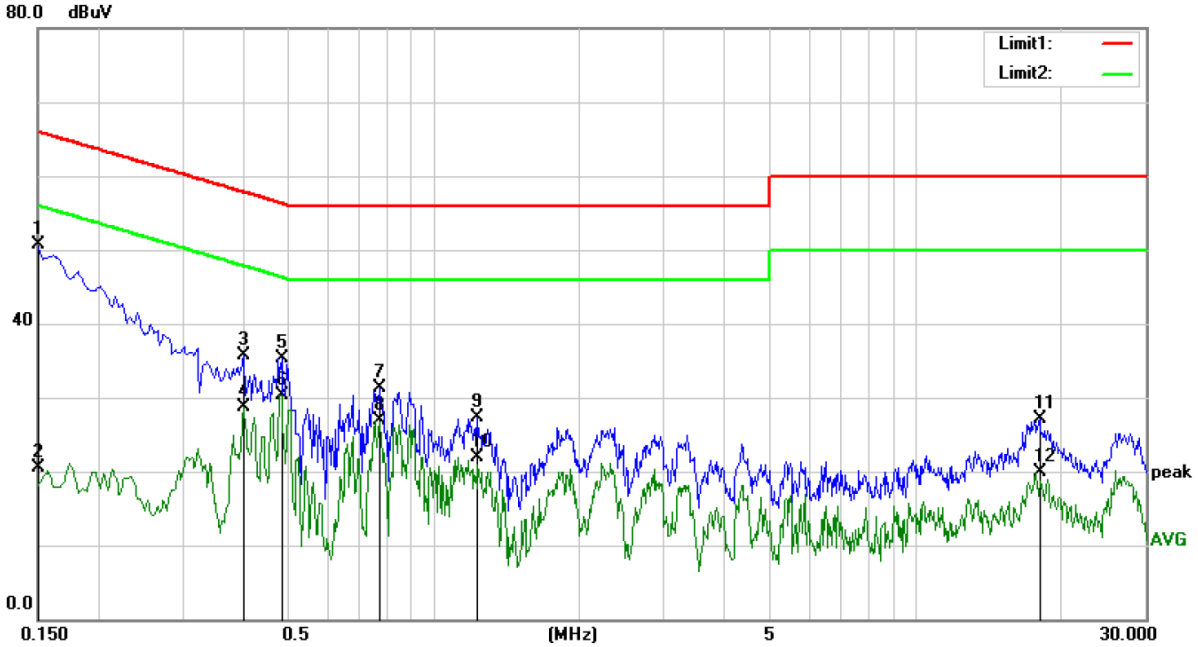
Site Conduction #1 Phase: *L1* Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1580	40.76	9.55	50.31	65.57	-15.26	QP	
2		0.1580	11.36	9.55	20.91	55.57	-34.66	AVG	
3		0.3060	28.26	9.29	37.55	60.08	-22.53	QP	
4		0.3060	14.19	9.29	23.48	50.08	-26.60	AVG	
5		0.4820	25.77	9.26	35.03	56.30	-21.27	QP	
6		0.4820	21.15	9.26	30.41	46.30	-15.89	AVG	
7		0.7740	22.07	9.43	31.50	56.00	-24.50	QP	
8		0.7740	17.05	9.43	26.48	46.00	-19.52	AVG	
9		1.1020	17.63	9.90	27.53	56.00	-28.47	QP	
10		1.1020	12.39	9.90	22.29	46.00	-23.71	AVG	
11		17.6420	16.22	10.17	26.39	60.00	-33.61	QP	
12		17.6420	8.85	10.17	19.02	50.00	-30.98	AVG	



Site Conduction #1 Phase: *N* Temperature: 22.8

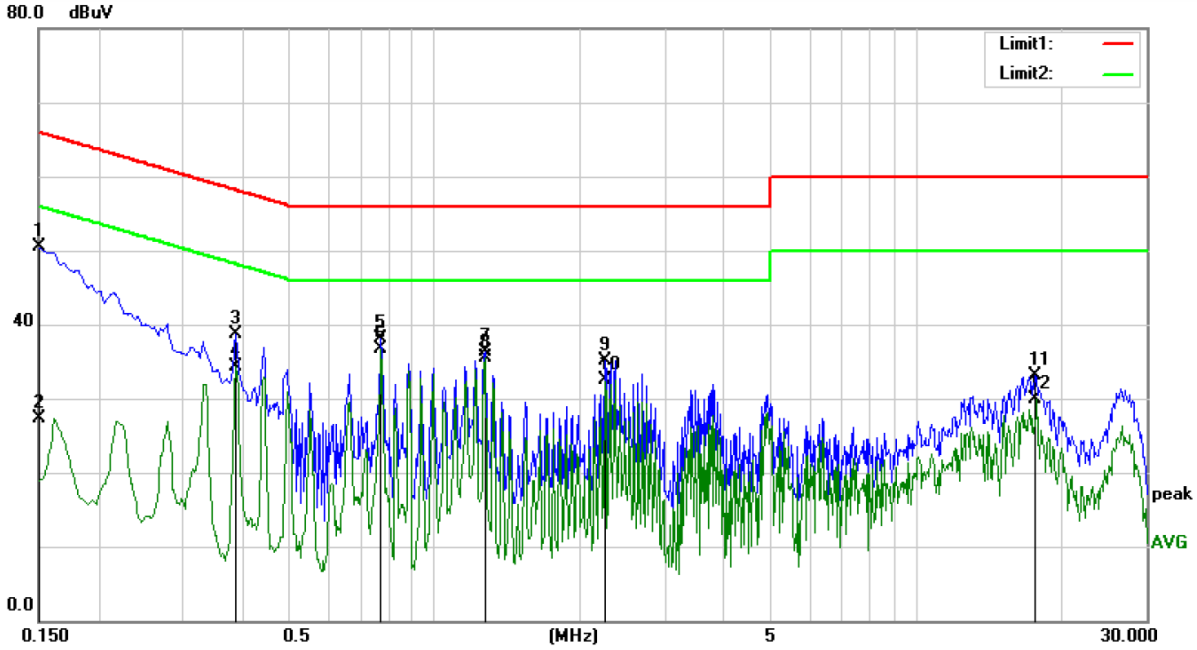
Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	41.13	9.58	50.71	66.00	-15.29	QP	
2		0.1500	10.91	9.58	20.49	56.00	-35.51	AVG	
3		0.4020	26.39	9.33	35.72	57.81	-22.09	QP	
4		0.4020	19.34	9.33	28.67	47.81	-19.14	AVG	
5		0.4820	26.05	9.26	35.31	56.30	-20.99	QP	
6		0.4820	21.12	9.26	30.38	46.30	-15.92	AVG	
7		0.7740	21.85	9.43	31.28	56.00	-24.72	QP	
8		0.7740	17.54	9.43	26.97	46.00	-19.03	AVG	
9		1.2300	17.49	9.91	27.40	56.00	-28.60	QP	
10		1.2300	11.94	9.91	21.85	46.00	-24.15	AVG	
11		18.1340	16.85	10.17	27.02	60.00	-32.98	QP	
12		18.1340	9.66	10.17	19.83	50.00	-30.17	AVG	

GTM41133-9024-5.0-T3A



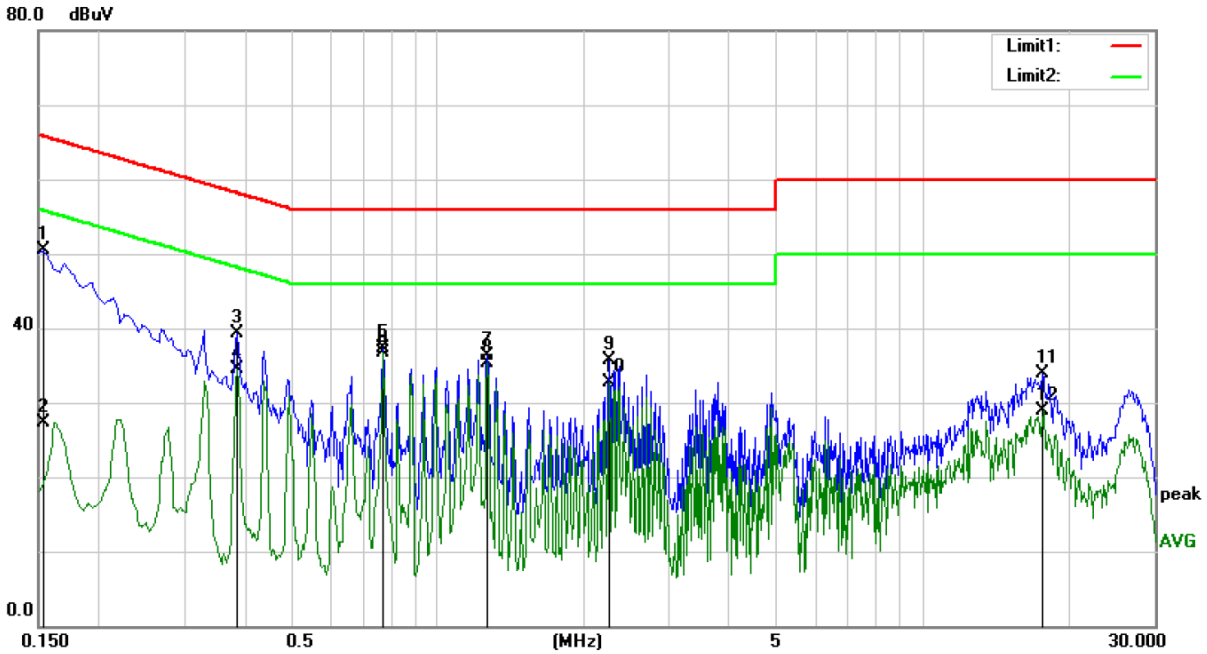
Site Conduction #1 Phase: *L1* Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	40.93	9.58	50.51	66.00	-15.49	QP	
2		0.1500	17.70	9.58	27.28	56.00	-28.72	AVG	
3		0.3860	29.47	9.32	38.79	58.15	-19.36	QP	
4		0.3860	25.02	9.32	34.34	48.15	-13.81	AVG	
5		0.7740	28.58	9.43	38.01	56.00	-17.99	QP	
6	*	0.7740	27.35	9.43	36.78	46.00	-9.22	AVG	
7		1.2700	26.31	9.91	36.22	56.00	-19.78	QP	
8		1.2700	25.51	9.91	35.42	46.00	-10.58	AVG	
9		2.2580	25.19	9.94	35.13	56.00	-20.87	QP	
10		2.2580	22.53	9.94	32.47	46.00	-13.53	AVG	
11		17.6180	22.98	10.17	33.15	60.00	-26.85	QP	
12		17.6180	19.65	10.17	29.82	50.00	-20.18	AVG	



Site Conduction #1 Phase: N Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1540	40.91	9.57	50.48	65.78	-15.30	QP	
2		0.1540	17.78	9.57	27.35	55.78	-28.43	AVG	
3		0.3860	29.99	9.32	39.31	58.15	-18.84	QP	
4		0.3860	25.17	9.32	34.49	48.15	-13.66	AVG	
5		0.7740	27.95	9.43	37.38	56.00	-18.62	QP	
6	*	0.7740	27.30	9.43	36.73	46.00	-9.27	AVG	
7		1.2660	26.39	9.91	36.30	56.00	-19.70	QP	
8		1.2660	25.35	9.91	35.26	46.00	-10.74	AVG	
9		2.2540	25.69	9.94	35.63	56.00	-20.37	QP	
10		2.2540	22.80	9.94	32.74	46.00	-13.26	AVG	
11		17.5900	23.69	10.17	33.86	60.00	-26.14	QP	
12		17.5900	18.70	10.17	28.87	50.00	-21.13	AVG	

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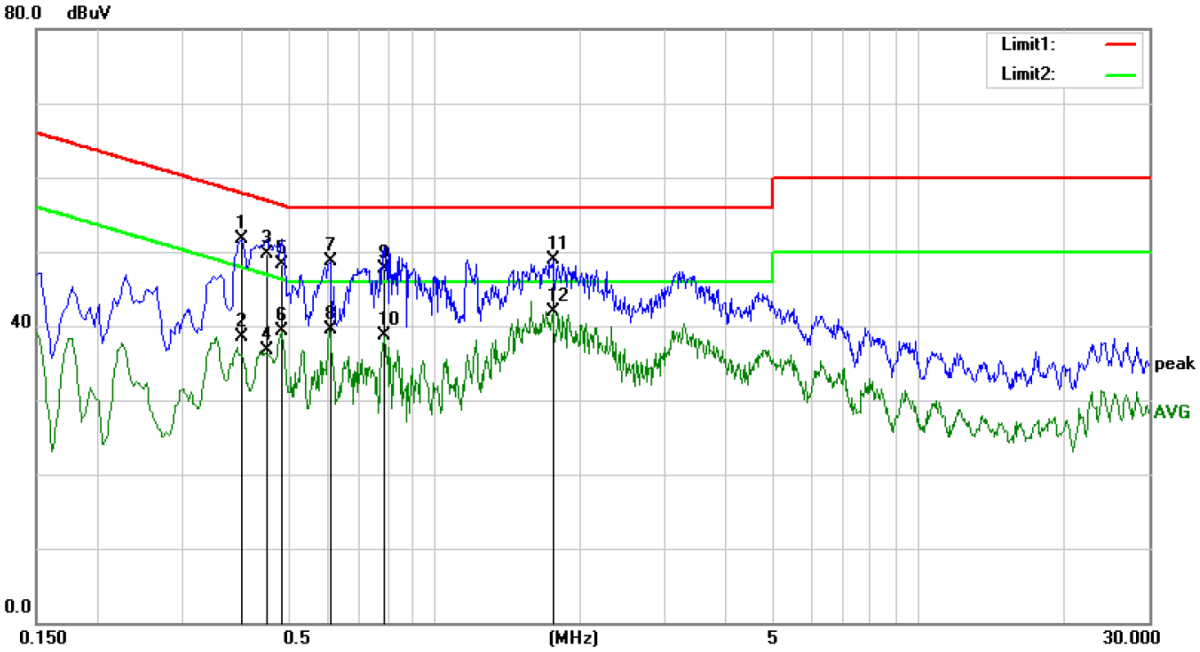


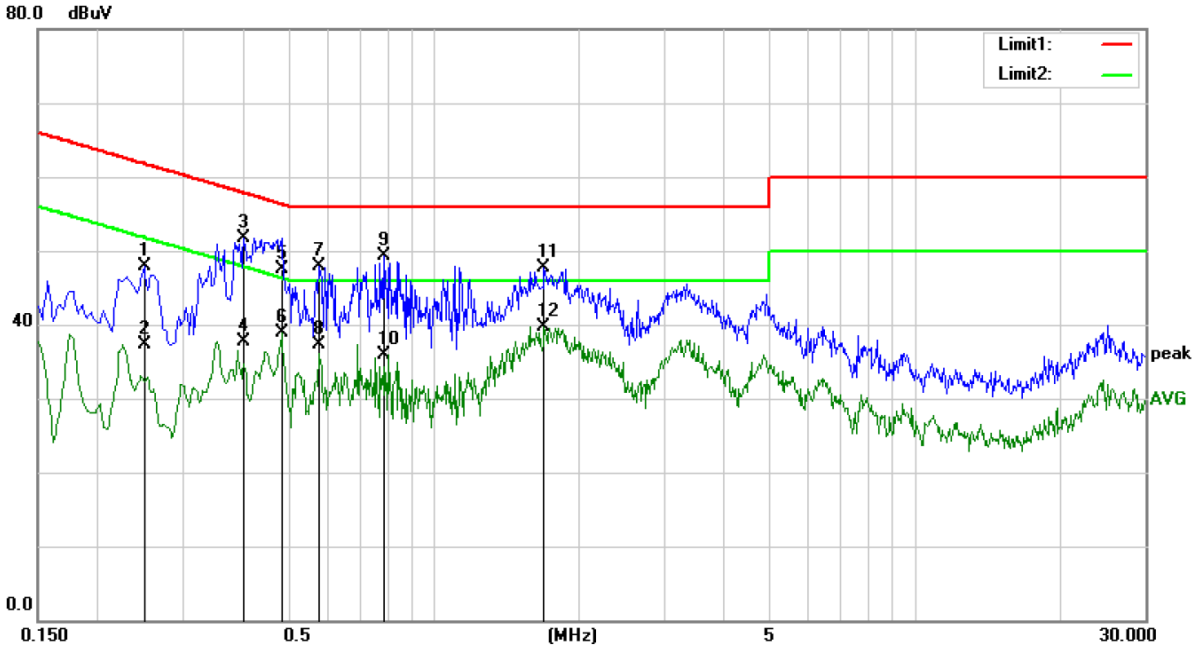
Site Conduction #1 Phase: *L1* Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.3980	42.32	9.33	51.65	57.90	-6.25	QP	
2		0.3980	29.10	9.33	38.43	47.90	-9.47	AVG	
3		0.4500	40.51	9.29	49.80	56.88	-7.08	QP	
4		0.4500	27.46	9.29	36.75	46.88	-10.13	AVG	
5		0.4820	39.04	9.26	48.30	56.30	-8.00	QP	
6		0.4820	30.03	9.26	39.29	46.30	-7.01	AVG	
7		0.6100	39.38	9.27	48.65	56.00	-7.35	QP	
8		0.6100	30.16	9.27	39.43	46.00	-6.57	AVG	
9		0.7860	38.35	9.45	47.80	56.00	-8.20	QP	
10		0.7860	29.29	9.45	38.74	46.00	-7.26	AVG	
11		1.7540	38.96	9.93	48.89	56.00	-7.11	QP	
12	*	1.7540	32.04	9.93	41.97	46.00	-4.03	AVG	



Site Conduction #1 Phase: *N* Temperature: 22.8

Limit: (CE)CISPR 32 class B_QP Power: AC 220V/50Hz Humidity: 48 %

Mode: full load

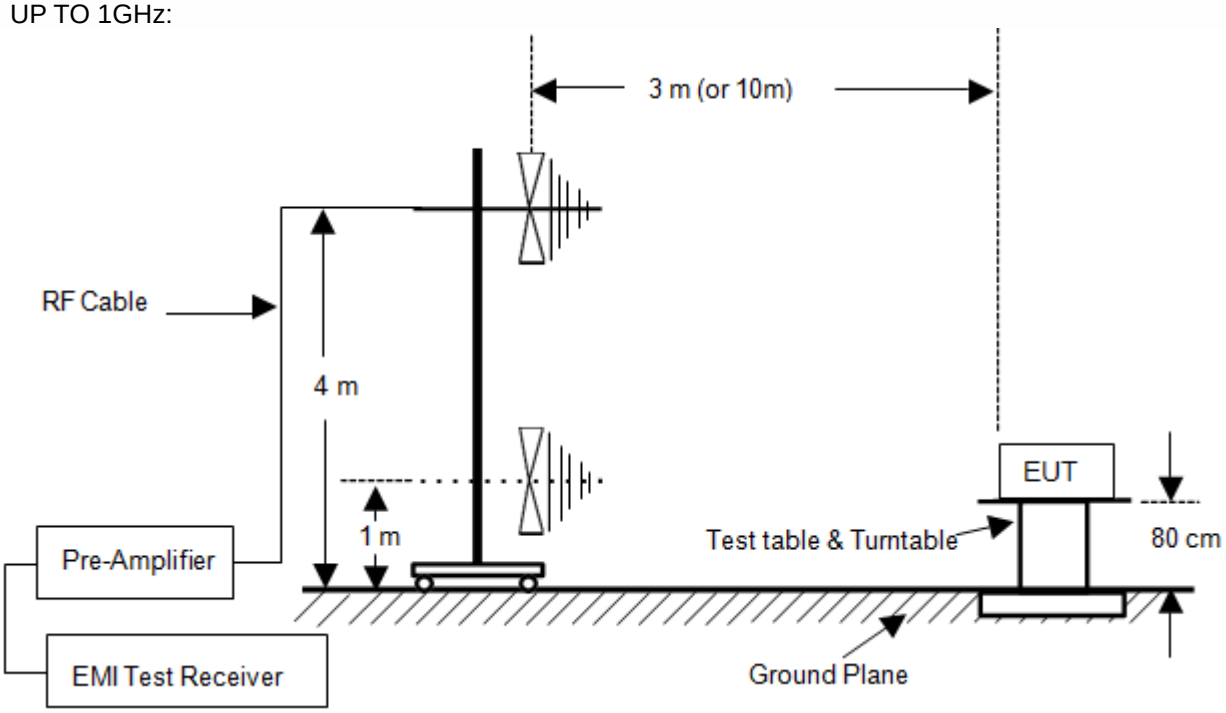
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2500	38.57	9.36	47.93	61.76	-13.83	QP	
2		0.2500	27.85	9.36	37.21	51.76	-14.55	AVG	
3	*	0.4020	42.46	9.33	51.79	57.81	-6.02	QP	
4		0.4020	28.31	9.33	37.64	47.81	-10.17	AVG	
5		0.4820	38.34	9.26	47.60	56.30	-8.70	QP	
6		0.4820	29.60	9.26	38.86	46.30	-7.44	AVG	
7		0.5780	38.61	9.26	47.87	56.00	-8.13	QP	
8		0.5780	27.96	9.26	37.22	46.00	-8.78	AVG	
9		0.7860	39.79	9.45	49.24	56.00	-6.76	QP	
10		0.7860	26.51	9.45	35.96	46.00	-10.04	AVG	
11		1.6900	37.86	9.93	47.79	56.00	-8.21	QP	
12		1.6900	29.85	9.93	39.78	46.00	-6.22	AVG	

5. RADIATED EMISSION MEASUREMENT (UP TO 1GHz)

5.1. Block Diagram of Test Setup

UP TO 1GHz:



5.2. Measuring Standard

SANS 2332/CISPR 32

Frequency range MHz	Measurement			Class B limits dB(μV/m)
	Facility	Distance (m)	Detector type / bandwidth	
30 to 230	OATS/SAC	10	Quasi Peak / 120 kHz	30
230 to 1 000				37
30 to 230	OATS/SAC	3		40
230 to 1 000				47

5.3. Test Procedure

The EUT was placed on a non-conductive table whose total height equaled 80cm. All units of equipment forming the system under test (includes the EUT as well as connected peripherals and associated equipment or devices) shall be arranged such that a nominal 0.1 m separation is achieved between the neighboring units. Where the mains cable supplied by the manufacturer is longer than 1 m, the excess should be folded at the centre into a bundle no longer than 0.4 m, so that its length is shortened to 1 m.

The EUT was set 3 meters (or 10 meters) away from the receiving antenna that was mounted on a non-conductive mast. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level.

The turntable can rotate 360 degree to determine the position of the maximum emission level.

The initial testing identified the frequency that has the highest disturbance relative to the limit while operating the EUT in typical modes of operation and cable positions in a test setup representative of typical system configuration.

The identification of the frequency of highest emission with respect to the limit was found by investigating emissions at a number of significant frequencies. The probable frequency of maximum emission had been found and that the associated cable and EUT configuration and mode of operation had been identified.

The bandwidth of the Receiver is set at 120 kHz.

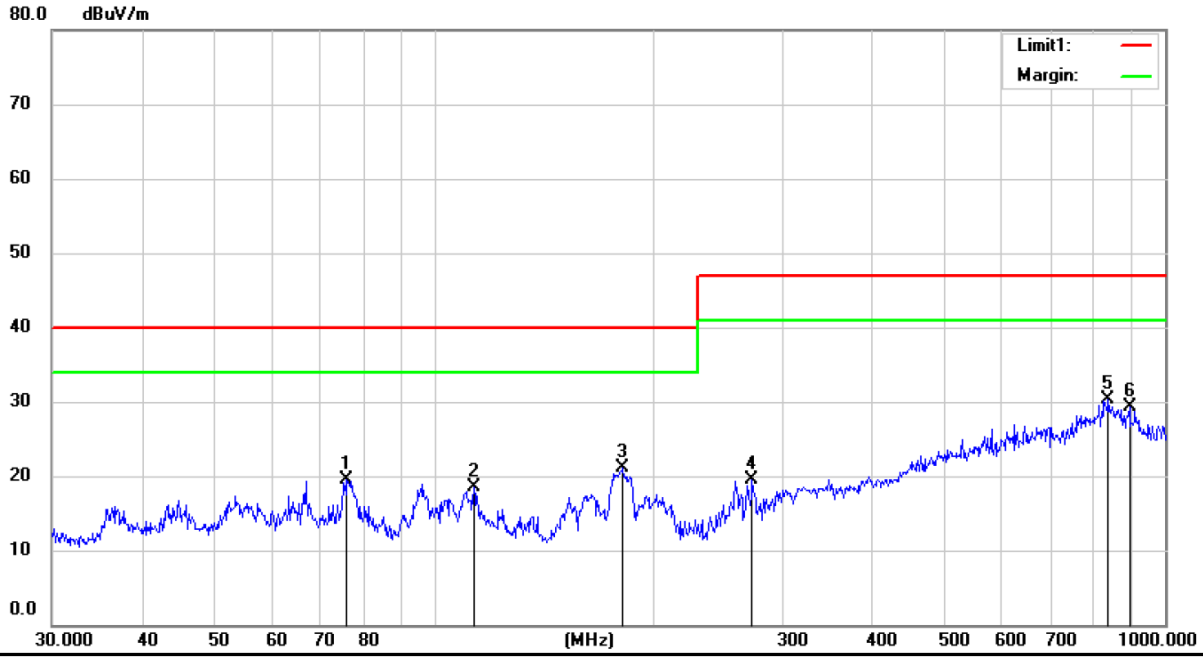
Test results were obtained from the following equation:
Emission level (dBμV/m) = Antenna Factor -Amp Factor +Cable Loss + Reading
Margin (dB) = Emission Level (dBμV/m) - Limit (dBμV/m)

5.4. Measuring Results

PASS.

All the modes were tested and the data of the worst modes are attached the following pages.

GTM41133-9016-1.0-T3A



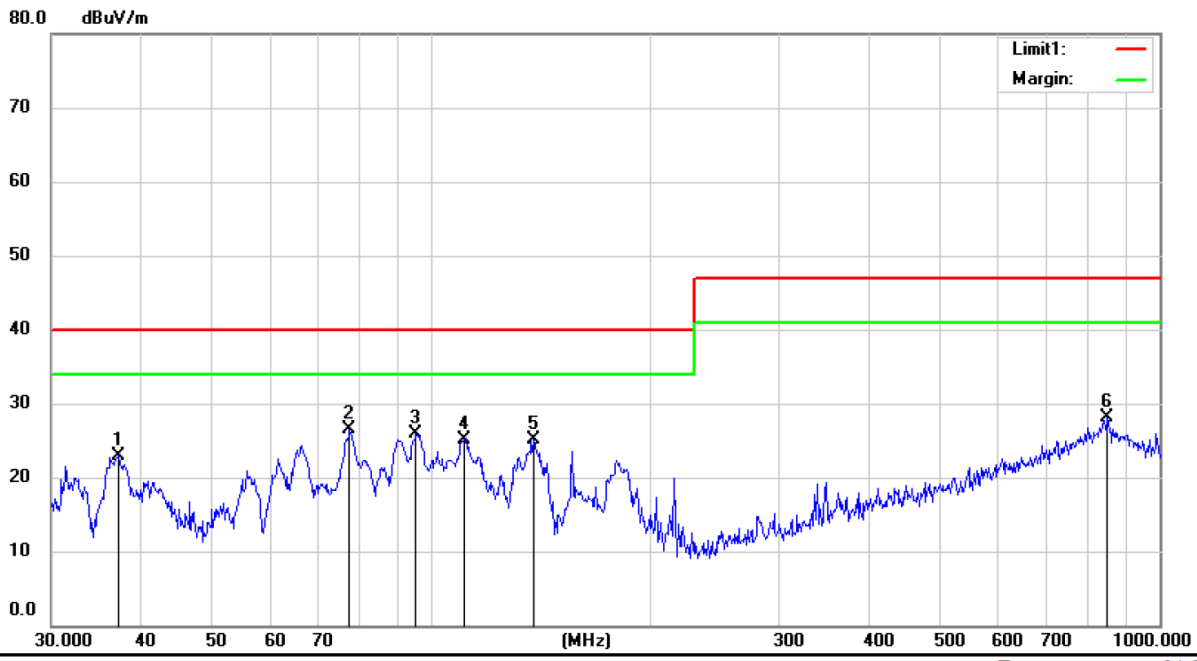
Site 3m Chamber #3 Polarization: ***Horizontal*** Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB Power: AC 220V/50Hz Humidity: 61 %

Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		76.2442	36.60	-17.19	19.41	40.00	-20.59	QP			
2		113.4355	35.85	-17.40	18.45	40.00	-21.55	QP			
3		181.3470	38.43	-17.36	21.07	40.00	-18.93	QP			
4		273.1383	33.33	-13.85	19.48	47.00	-27.52	QP			
5	*	836.5376	29.28	0.93	30.21	47.00	-16.79	QP			
6		896.0534	29.71	-0.48	29.23	47.00	-17.77	QP			



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB Power: AC 220V/50Hz Humidity: 61 %

Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		37.1680	39.04	-16.11	22.93	40.00	-17.07	QP			
2	*	77.1045	43.83	-17.33	26.50	40.00	-13.50	QP			
3		95.3935	43.38	-17.54	25.84	40.00	-14.16	QP			
4		110.9570	42.58	-17.52	25.06	40.00	-14.94	QP			
5		138.2418	42.66	-17.61	25.05	40.00	-14.95	QP			
6		849.2465	27.12	1.08	28.20	47.00	-18.80	QP			

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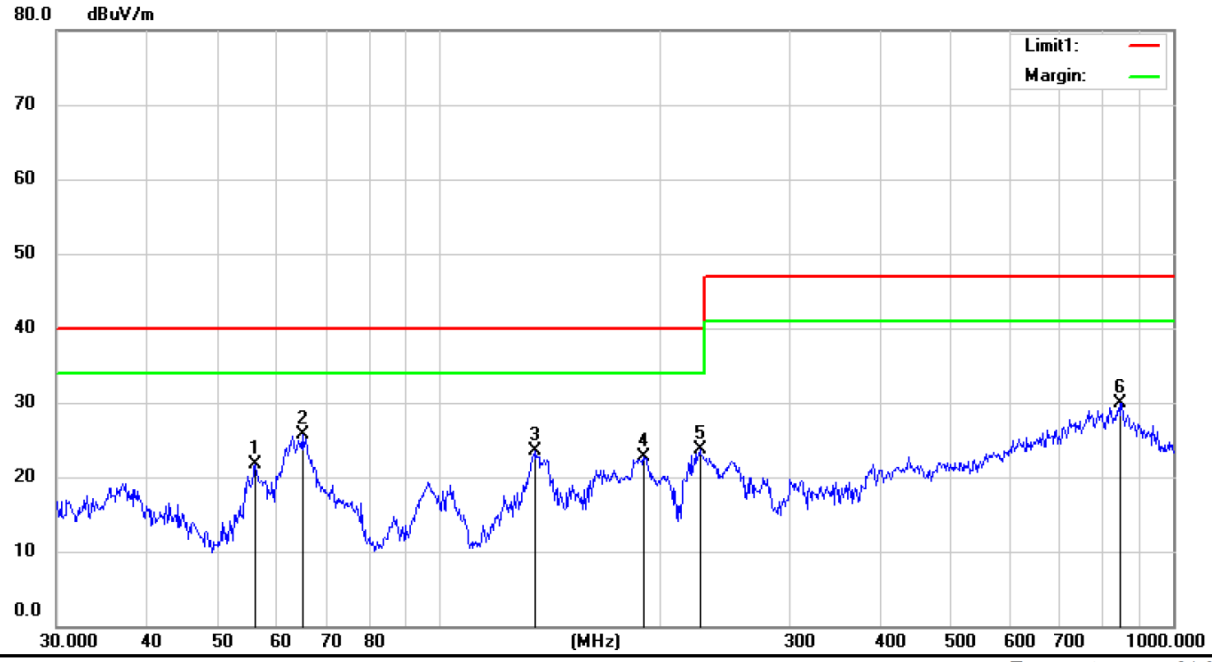
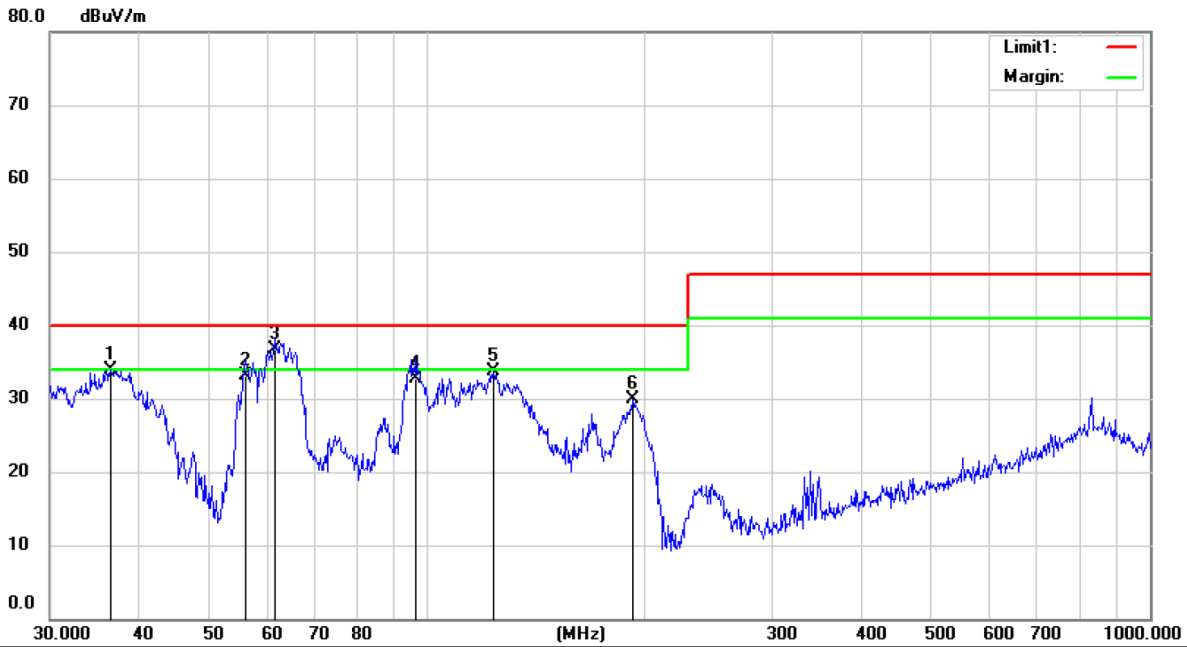


Site 3m Chamber #3	Polarization:	***Horizontal***	Temperature:	21.6 C
Limit: (RE)CISPR32 ClassB	Power:	AC 220V/50Hz	Humidity:	61 %
Mode:Full Load				
Note:				

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		56.1384	36.44	-14.71	21.73	40.00	-18.27	QP			
2	*	65.0232	40.49	-14.86	25.63	40.00	-14.37	QP			
3		135.2688	40.89	-17.45	23.44	40.00	-16.56	QP			
4		190.3382	39.96	-17.26	22.70	40.00	-17.30	QP			
5		226.7346	40.02	-16.24	23.78	40.00	-16.22	QP			
6		849.5445	28.80	1.08	29.88	47.00	-17.12	QP			



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB Power: AC 220V/50Hz Humidity: 61 %

Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		36.4325	50.16	-16.19	33.97	40.00	-6.03	QP			
2		56.0990	47.80	-14.70	33.10	40.00	-6.90	QP			
3	*	61.4540	51.43	-14.73	36.70	40.00	-3.30	QP			
4		96.6732	50.27	-17.57	32.70	40.00	-7.30	QP			
5		123.6117	51.23	-17.53	33.70	40.00	-6.30	QP			
6		193.0268	47.02	-17.04	29.98	40.00	-10.02	QP			

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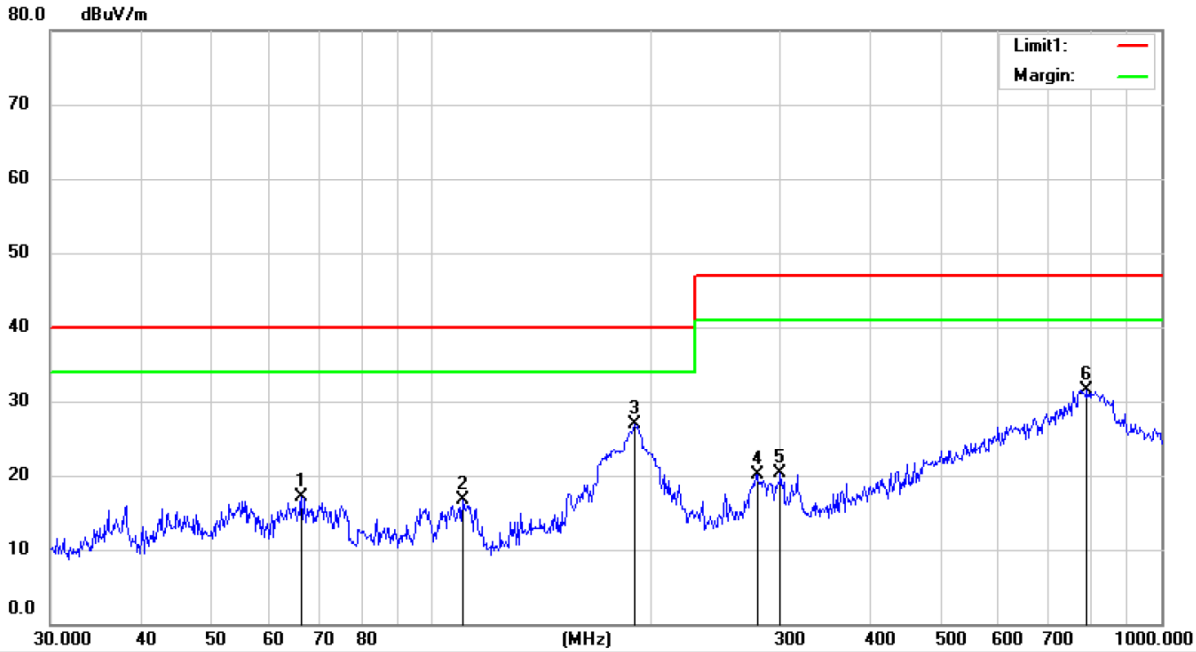
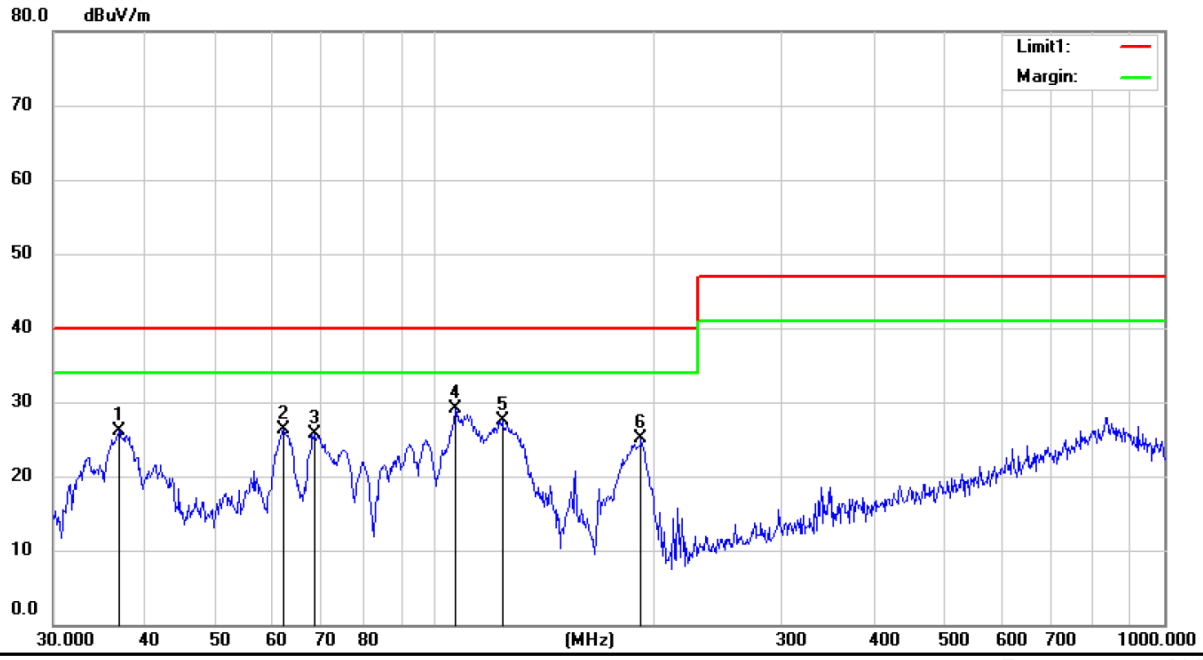


Site 3m Chamber #3	Polarization:	***Horizontal***	Temperature: 21.6 C
Limit: (RE)CISPR32 ClassB	Power:	AC 220V/50Hz	Humidity: 61 %
Mode:Full Load			
Note:			

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		66.3127	32.26	-15.13	17.13	40.00	-22.87	QP			
2		110.2203	34.16	-17.55	16.61	40.00	-23.39	QP			
3	*	190.2715	44.09	-17.27	26.82	40.00	-13.18	QP			
4		279.8275	33.72	-13.63	20.09	47.00	-26.91	QP			
5		301.2110	33.11	-12.83	20.28	47.00	-26.72	QP			
6		791.7285	31.40	0.15	31.55	47.00	-15.45	QP			



Site 3m Chamber #3 Polarization: *Vertical* Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB Power: AC 220V/50Hz Humidity: 61 %

Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		36.9082	42.18	-16.14	26.04	40.00	-13.96	QP			
2		62.1256	40.98	-14.76	26.22	40.00	-13.78	QP			
3		68.5107	41.28	-15.60	25.68	40.00	-14.32	QP			
4	*	107.0962	46.52	-17.37	29.15	40.00	-10.85	QP			
5		123.8286	44.96	-17.54	27.42	40.00	-12.58	QP			
6		192.0142	42.24	-17.12	25.12	40.00	-14.88	QP			

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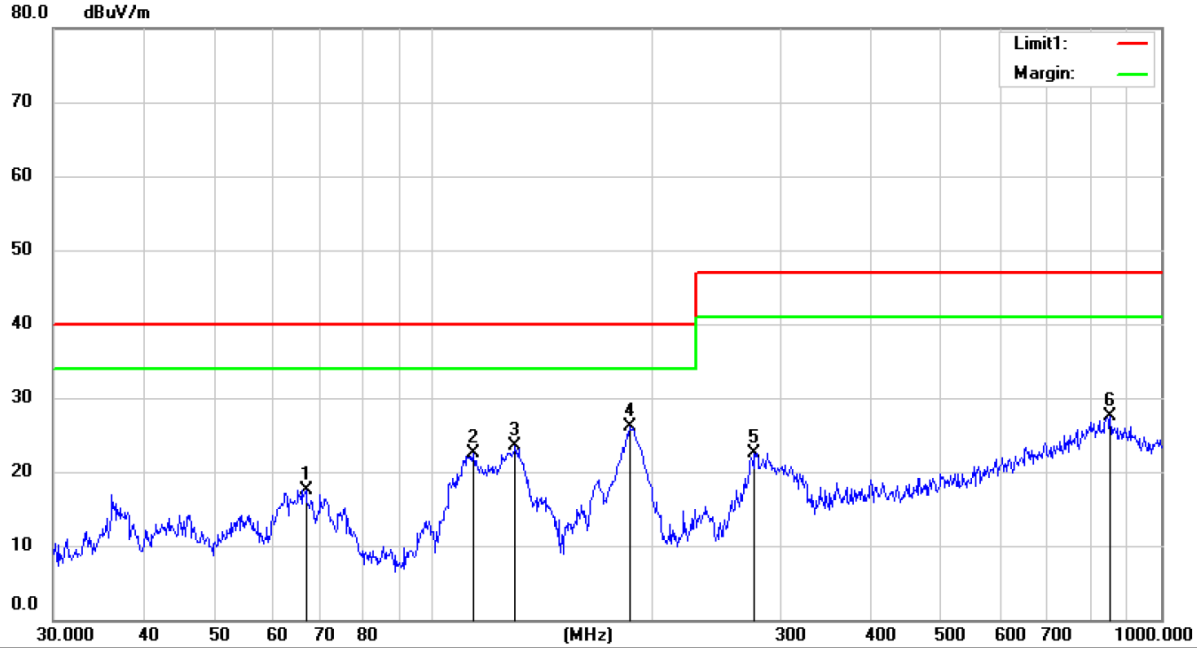


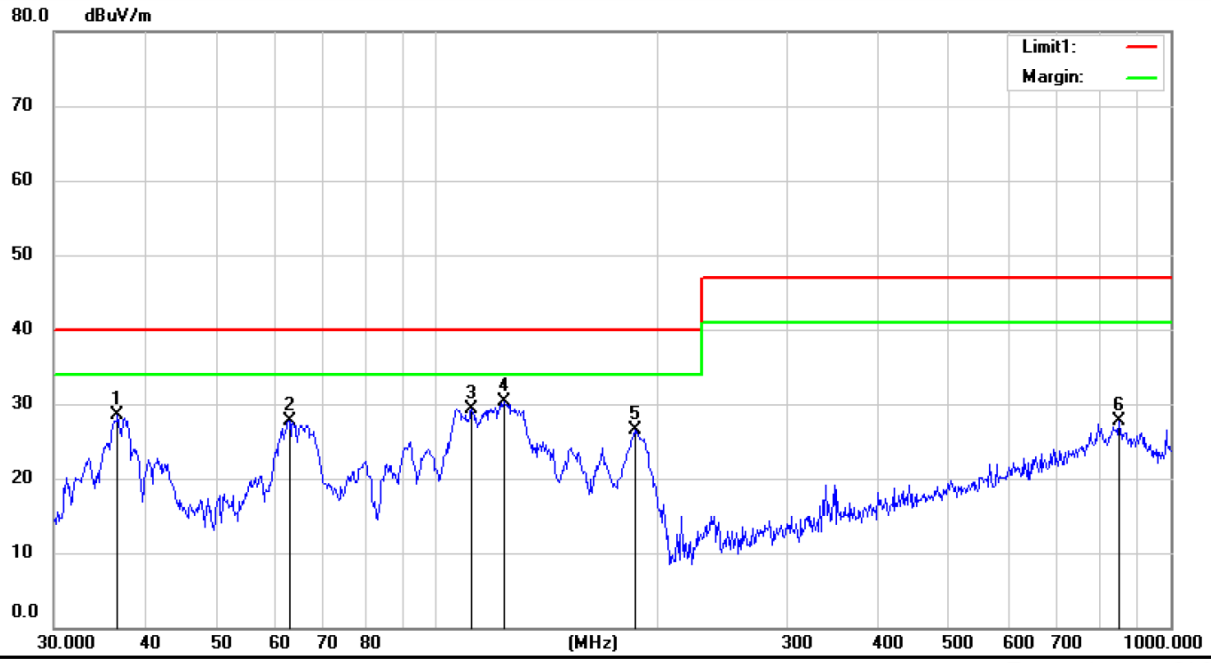
Site 3m Chamber #3 | Polarization: ***Horizontal*** | Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB | Power: AC 220V/50Hz | Humidity: 61 %

Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		66.9434	32.86	-15.27	17.59	40.00	-22.41	QP			
2		113.5151	39.90	-17.40	22.50	40.00	-17.50	QP			
3		129.5131	40.96	-17.46	23.50	40.00	-16.50	QP			
4	*	186.3101	43.24	-17.11	26.13	40.00	-13.87	QP			
5		277.0935	36.18	-13.69	22.49	47.00	-24.51	QP			
6		851.6323	26.58	0.94	27.52	47.00	-19.48	QP			



Site 3m Chamber #3 Polarization: ***Vertical*** Temperature: 21.6 C

Limit: (RE)CISPR32 ClassB Power: AC 220V/50Hz Humidity: 61 %

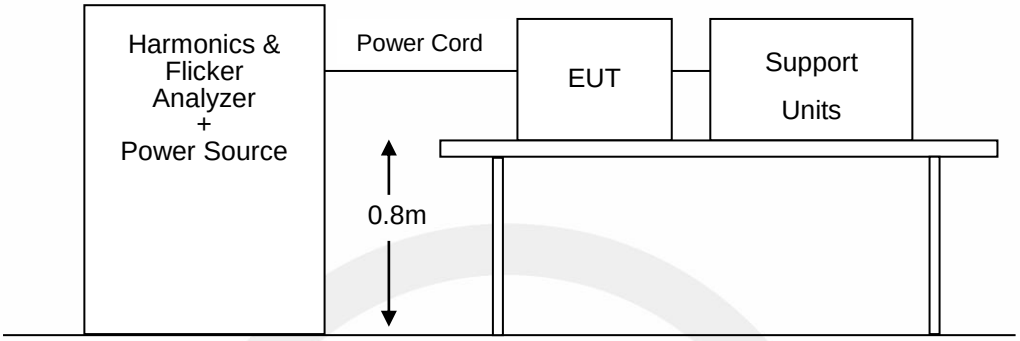
Mode:Full Load

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		36.6760	44.75	-16.16	28.59	40.00	-11.41	QP			
2		62.9370	42.46	-14.78	27.68	40.00	-12.32	QP			
3		111.4640	46.80	-17.49	29.31	40.00	-10.69	QP			
4	*	123.3087	47.90	-17.54	30.36	40.00	-9.64	QP			
5		186.2448	43.53	-17.10	26.43	40.00	-13.57	QP			
6		852.2298	26.77	0.89	27.66	47.00	-19.34	QP			

6. HARMONIC CURRENT EMISSION MEASUREMENT

6.1. Block Diagram of Test Setup



6.2. Standard Limits

SANS 61000-3-2/IEC 61000-3-2, CLASS A
Harmonic current emissions evaluate the potential for the EUT to cause distortion on the AC power lines. It is applicable to electrical and electronic equipment having an input current≤16 A per phase, and intended to be connected to public low-voltage distribution systems

Table 1 - Limits for Class A equipment

Harmonic order n	Maximum permissible harmonic current (A)
Odd harmonics	
3	2.30
5	1.14
7	0.77
9	0.40
11	0.33
13	0.21
$15 \le n \le 39$	$0.15\ \frac{0.15}{n}$
Even harmonics	
2	1.08
4	0.43
6	0.30
$8 \le n \le 40$	$0.23\frac{8}{n}$

6.3. Test Procedure

The measurement of harmonic currents shall be performed as follows: i. For each harmonic order, measure the 1.5 s smoothed r.m.s. harmonic current in each DFT time window as defined in EN / IEC 61000-4-7:2009. ii. Calculate the arithmetic average of the measured values from the DFT time windows, over the entire observation period Short cyclic (T cycle≤2.5 min). Because of synchronisation to meet the requirements for repeatability in 5%.

6.4. Test Results

PASS.

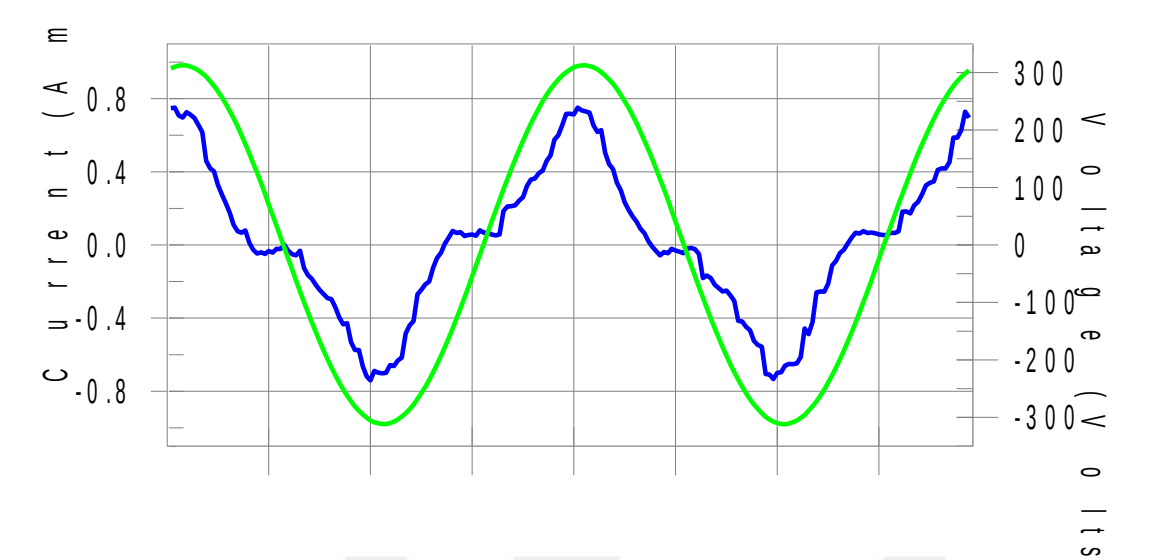
Please see the attached pages.

Harmonics – Class-A (Run time) incl. inter-harmonics

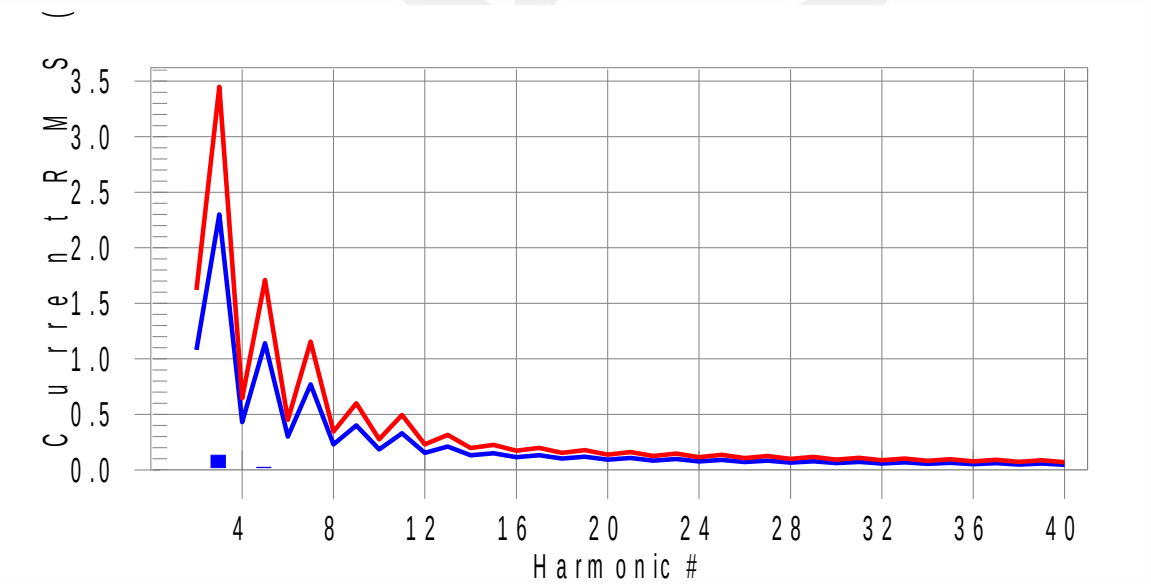
EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:35:17** **End time: 21:38:00**
Test duration (min): 2.5 **Data file name: WIN2105_H-000609.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass **Worst harmonics H33-7.1% of 150% limit, H33-10.3% of 100% limit.**

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:35:17** **End time: 21:38:00**
Test duration (min): 2.5 **Data file name: WIN2105_H-000609.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.135 **I-THD(%): 35.6** **POHC(A): 0.014** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.690	Frequency(Hz):	50.00
I_Peak (Amps):	0.813	I_RMS (Amps):	0.404
I_Fund (Amps):	0.380	Crest Factor:	2.023
Power (Watts):	82.0	Power Factor:	0.922

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.132	2.300	5.7	0.134	3.450	3.9	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.023	1.140	2.0	0.023	1.710	1.3	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.009	0.770	1.2	0.010	1.155	0.8	Pass
8	0.001	0.230	N/A	0.001	0.345	N/A	Pass
9	0.007	0.400	1.7	0.007	0.600	1.2	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.005	0.330	N/A	0.005	0.495	N/A	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.008	0.210	3.8	0.008	0.315	2.6	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.005	0.150	N/A	0.006	0.225	N/A	Pass
16	0.004	0.115	N/A	0.005	0.173	N/A	Pass
17	0.003	0.132	N/A	0.004	0.198	N/A	Pass
18	0.002	0.102	N/A	0.002	0.153	N/A	Pass
19	0.002	0.118	N/A	0.002	0.178	N/A	Pass
20	0.002	0.092	N/A	0.002	0.138	N/A	Pass
21	0.003	0.107	N/A	0.004	0.161	N/A	Pass
22	0.004	0.084	N/A	0.005	0.125	N/A	Pass
23	0.003	0.098	N/A	0.004	0.147	N/A	Pass
24	0.002	0.077	N/A	0.003	0.115	N/A	Pass
25	0.005	0.090	N/A	0.005	0.135	N/A	Pass
26	0.003	0.071	N/A	0.003	0.107	N/A	Pass
27	0.007	0.083	8.9	0.008	0.125	6.3	Pass
28	0.003	0.066	N/A	0.003	0.099	N/A	Pass
29	0.004	0.078	N/A	0.005	0.116	N/A	Pass
30	0.002	0.061	N/A	0.002	0.092	N/A	Pass
31	0.002	0.073	N/A	0.002	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.007	0.068	10.3	0.007	0.102	7.1	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.004	0.064	N/A	0.004	0.096	N/A	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.002	0.061	N/A	0.003	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.002	0.058	N/A	0.002	0.087	N/A	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:35:17** **End time: 21:38:00**
Test duration (min): 2.5 **Data file name: WIN2105_H-000609.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-2 Ed. 5 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	220.690	Frequency(Hz):	50.00
I_Peak (Amps):	0.813	I_RMS (Amps):	0.404
I_Fund (Amps):	0.380	Crest Factor:	2.023
Power (Watts):	82.0	Power Factor:	0.922

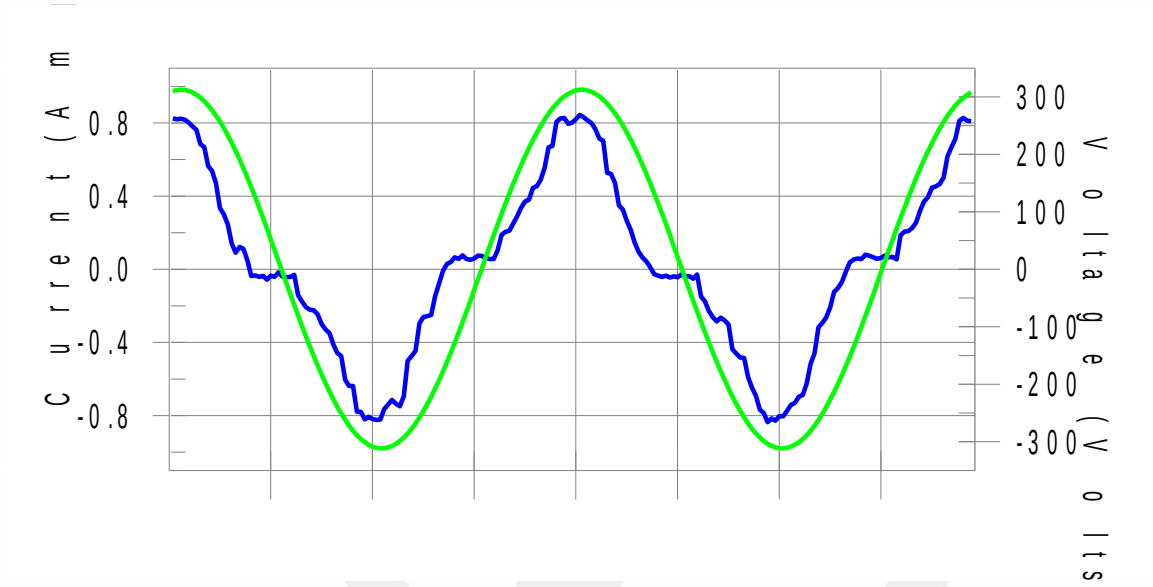
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.086	0.441	19.53	OK
3	0.108	1.986	5.44	OK
4	0.033	0.441	7.47	OK
5	0.038	0.883	4.33	OK
6	0.012	0.441	2.78	OK
7	0.041	0.662	6.17	OK
8	0.017	0.441	3.92	OK
9	0.036	0.441	8.23	OK
10	0.019	0.441	4.21	OK
11	0.038	0.221	17.11	OK
12	0.014	0.221	6.48	OK
13	0.022	0.221	10.19	OK
14	0.015	0.221	6.71	OK
15	0.033	0.221	15.01	OK
16	0.012	0.221	5.36	OK
17	0.018	0.221	8.33	OK
18	0.011	0.221	5.09	OK
19	0.013	0.221	6.07	OK
20	0.017	0.221	7.86	OK
21	0.017	0.221	7.48	OK
22	0.010	0.221	4.40	OK
23	0.020	0.221	8.88	OK
24	0.010	0.221	4.39	OK
25	0.020	0.221	9.23	OK
26	0.012	0.221	5.53	OK
27	0.023	0.221	10.51	OK
28	0.011	0.221	5.09	OK
29	0.013	0.221	6.01	OK
30	0.010	0.221	4.34	OK
31	0.013	0.221	6.04	OK
32	0.009	0.221	4.14	OK
33	0.023	0.221	10.53	OK
34	0.008	0.221	3.85	OK
35	0.014	0.221	6.21	OK
36	0.009	0.221	4.08	OK
37	0.012	0.221	5.51	OK
38	0.011	0.221	4.98	OK
39	0.009	0.221	4.14	OK
40	0.014	0.221	6.32	OK

Harmonics – Class-A (Run time) incl. inter-harmonics

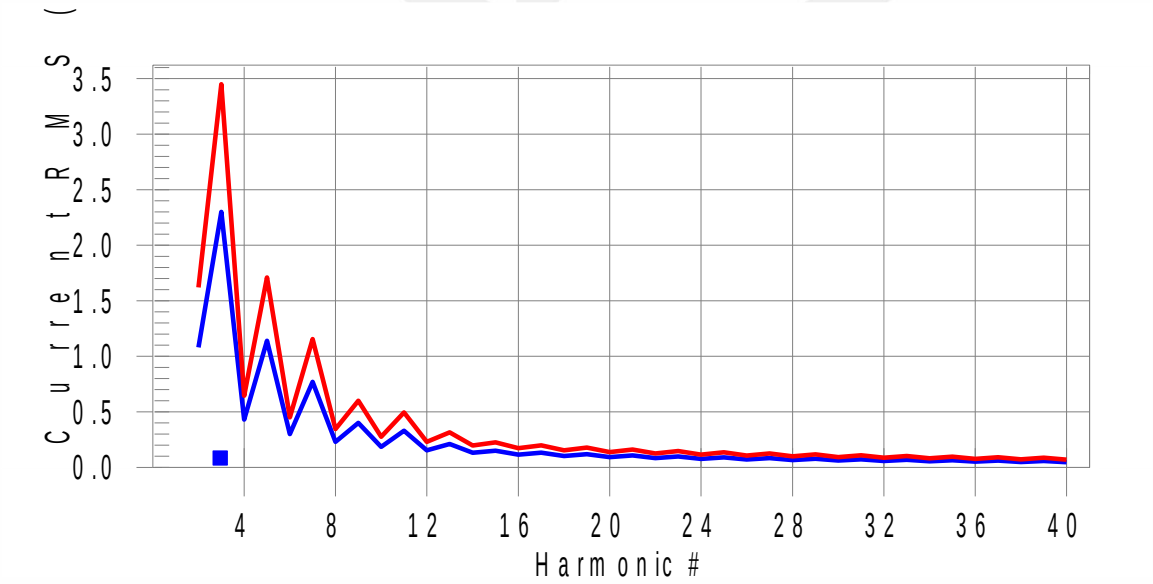
EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:28:06** **End time: 21:30:48**
Test duration (min): 2.5 **Data file name: WIN2105_H-000608.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass **Worst harmonics H35-7.7% of 150% limit, H35-11.4% of 100% limit.**

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:28:06** **End time: 21:30:48**
Test duration (min): 2.5 **Data file name: WIN2105_H-000608.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.151 **I-THD(%): 33.4** **POHC(A): 0.013** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.689	Frequency(Hz):	50.00
I_Peak (Amps):	0.922	I_RMS (Amps):	0.479
I_Fund (Amps):	0.453	Crest Factor:	1.927
Power (Watts):	98.3	Power Factor:	0.933

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.148	2.300	6.4	0.150	3.450	4.3	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.016	1.140	1.4	0.016	1.710	1.0	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.009	0.770	1.2	0.009	1.155	0.8	Pass
8	0.001	0.230	N/A	0.001	0.345	N/A	Pass
9	0.013	0.400	3.2	0.013	0.600	2.2	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.007	0.330	2.2	0.008	0.495	1.5	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.007	0.210	3.3	0.007	0.315	2.3	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.005	0.150	N/A	0.005	0.225	N/A	Pass
16	0.004	0.115	N/A	0.005	0.173	N/A	Pass
17	0.005	0.132	N/A	0.005	0.198	N/A	Pass
18	0.002	0.102	N/A	0.002	0.153	N/A	Pass
19	0.003	0.118	N/A	0.003	0.178	N/A	Pass
20	0.002	0.092	N/A	0.002	0.138	N/A	Pass
21	0.003	0.107	N/A	0.003	0.161	N/A	Pass
22	0.004	0.084	N/A	0.005	0.125	N/A	Pass
23	0.001	0.098	N/A	0.002	0.147	N/A	Pass
24	0.002	0.077	N/A	0.002	0.115	N/A	Pass
25	0.005	0.090	N/A	0.005	0.135	N/A	Pass
26	0.002	0.071	N/A	0.003	0.107	N/A	Pass
27	0.004	0.083	N/A	0.005	0.125	N/A	Pass
28	0.002	0.066	N/A	0.002	0.099	N/A	Pass
29	0.007	0.078	9.4	0.008	0.116	6.6	Pass
30	0.001	0.061	N/A	0.001	0.092	N/A	Pass
31	0.003	0.073	N/A	0.004	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.002	0.068	N/A	0.003	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.007	0.064	11.4	0.007	0.096	7.7	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.002	0.061	N/A	0.002	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.001	0.058	N/A	0.001	0.087	N/A	Pass
40	0.000	0.046	N/A	0.001	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:28:06** **End time: 21:30:48**
Test duration (min): 2.5 **Data file name: WIN2105_H-000608.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-2 Ed. 5 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	220.689	Frequency(Hz):	50.00
I_Peak (Amps):	0.922	I_RMS (Amps):	0.479
I_Fund (Amps):	0.453	Crest Factor:	1.927
Power (Watts):	98.3	Power Factor:	0.933

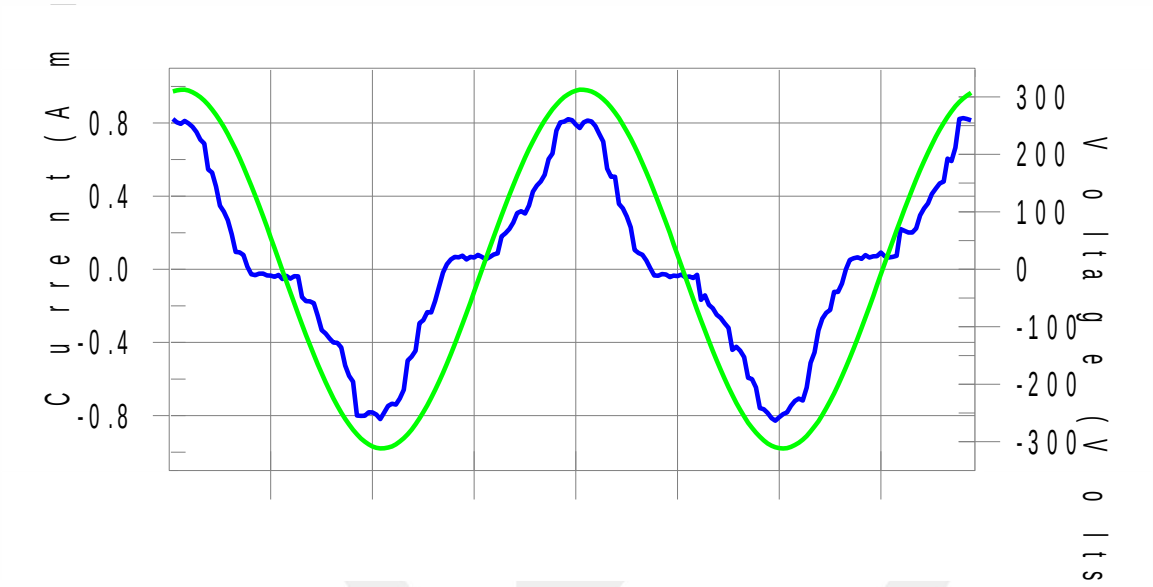
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.087	0.441	19.62	OK
3	0.101	1.986	5.09	OK
4	0.030	0.441	6.84	OK
5	0.040	0.883	4.53	OK
6	0.013	0.441	2.85	OK
7	0.043	0.662	6.56	OK
8	0.017	0.441	3.95	OK
9	0.039	0.441	8.89	OK
10	0.017	0.441	3.95	OK
11	0.038	0.221	17.25	OK
12	0.015	0.221	6.96	OK
13	0.023	0.221	10.55	OK
14	0.014	0.221	6.47	OK
15	0.033	0.221	14.95	OK
16	0.012	0.221	5.29	OK
17	0.022	0.221	10.02	OK
18	0.011	0.221	4.95	OK
19	0.017	0.221	7.63	OK
20	0.017	0.221	7.79	OK
21	0.016	0.221	7.39	OK
22	0.010	0.221	4.62	OK
23	0.016	0.221	7.14	OK
24	0.011	0.221	4.82	OK
25	0.021	0.221	9.30	OK
26	0.012	0.221	5.63	OK
27	0.018	0.221	8.38	OK
28	0.012	0.221	5.28	OK
29	0.023	0.221	10.57	OK
30	0.012	0.221	5.56	OK
31	0.020	0.221	9.06	OK
32	0.010	0.221	4.63	OK
33	0.012	0.221	5.45	OK
34	0.009	0.221	3.90	OK
35	0.024	0.221	11.05	OK
36	0.010	0.221	4.34	OK
37	0.014	0.221	6.51	OK
38	0.009	0.221	4.18	OK
39	0.010	0.221	4.42	OK
40	0.013	0.221	5.90	OK

Harmonics – Class-A (Run time) incl. inter-harmonics

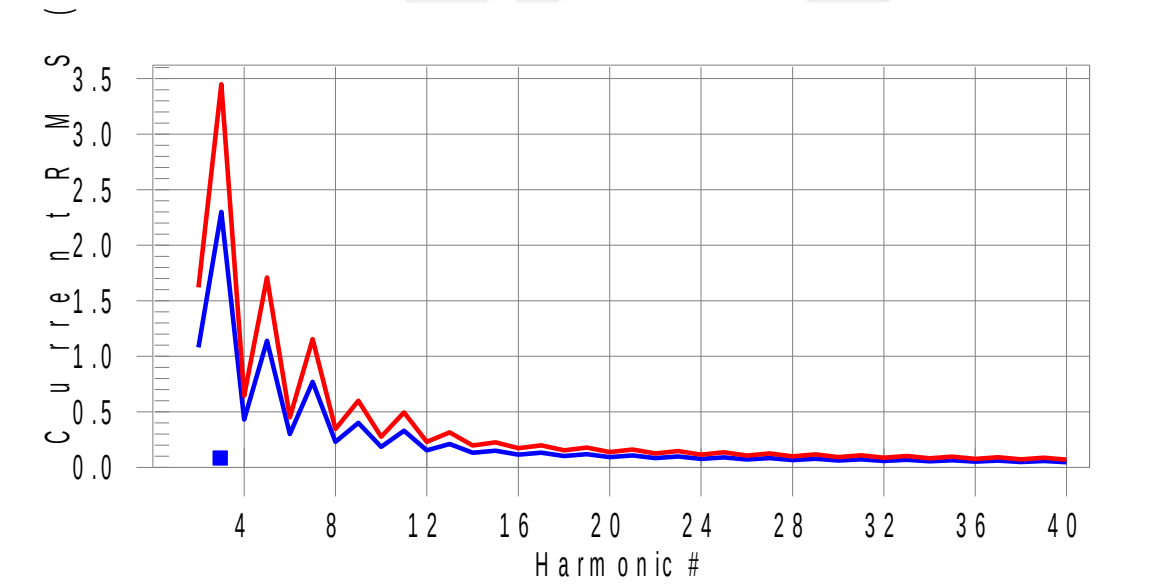
EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:44:30** **End time: 21:47:13**
Test duration (min): 2.5 **Data file name: WIN2105_H-000610.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass **Worst harmonics H35-7.6% of 150% limit, H35-11.2% of 100% limit.**

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:44:30** **End time: 21:47:13**
Test duration (min): 2.5 **Data file name: WIN2105_H-000610.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.151 **I-THD(%): 33.5** **POHC(A): 0.014** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.696	Frequency(Hz):	50.00
I_Peak (Amps):	0.922	I_RMS (Amps):	0.475
I_Fund (Amps):	0.450	Crest Factor:	1.960
Power (Watts):	97.6	Power Factor:	0.932

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.001	1.080	N/A	0.002	1.620	N/A	Pass
3	0.148	2.300	6.4	0.149	3.450	4.3	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.016	1.140	1.4	0.017	1.710	1.0	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.009	0.770	1.1	0.009	1.155	0.8	Pass
8	0.001	0.230	N/A	0.001	0.345	N/A	Pass
9	0.013	0.400	3.2	0.013	0.600	2.2	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.007	0.330	2.2	0.008	0.495	1.6	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.007	0.210	3.4	0.007	0.315	2.3	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.005	0.150	N/A	0.005	0.225	N/A	Pass
16	0.004	0.115	N/A	0.005	0.173	N/A	Pass
17	0.005	0.132	N/A	0.005	0.198	N/A	Pass
18	0.002	0.102	N/A	0.003	0.153	N/A	Pass
19	0.003	0.118	N/A	0.004	0.178	N/A	Pass
20	0.002	0.092	N/A	0.003	0.138	N/A	Pass
21	0.003	0.107	N/A	0.003	0.161	N/A	Pass
22	0.005	0.084	N/A	0.005	0.125	N/A	Pass
23	0.002	0.098	N/A	0.002	0.147	N/A	Pass
24	0.002	0.077	N/A	0.002	0.115	N/A	Pass
25	0.005	0.090	N/A	0.005	0.135	N/A	Pass
26	0.002	0.071	N/A	0.002	0.107	N/A	Pass
27	0.004	0.083	N/A	0.004	0.125	N/A	Pass
28	0.002	0.066	N/A	0.002	0.099	N/A	Pass
29	0.007	0.078	9.6	0.008	0.116	6.7	Pass
30	0.002	0.061	N/A	0.002	0.092	N/A	Pass
31	0.003	0.073	N/A	0.004	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.002	0.068	N/A	0.003	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.007	0.064	11.2	0.007	0.096	7.6	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.003	0.061	N/A	0.003	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.002	0.058	N/A	0.002	0.087	N/A	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:44:30** **End time: 21:47:13**
Test duration (min): 2.5 **Data file name: WIN2105_H-000610.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-2 Ed. 5 & IEC/EN61000-4-7 Ed. 2.1

Highest parameter values during test:

Voltage (Vrms):	220.696	Frequency(Hz):	50.00
I_Peak (Amps):	0.922	I_RMS (Amps):	0.475
I_Fund (Amps):	0.450	Crest Factor:	1.960
Power (Watts):	97.6	Power Factor:	0.932

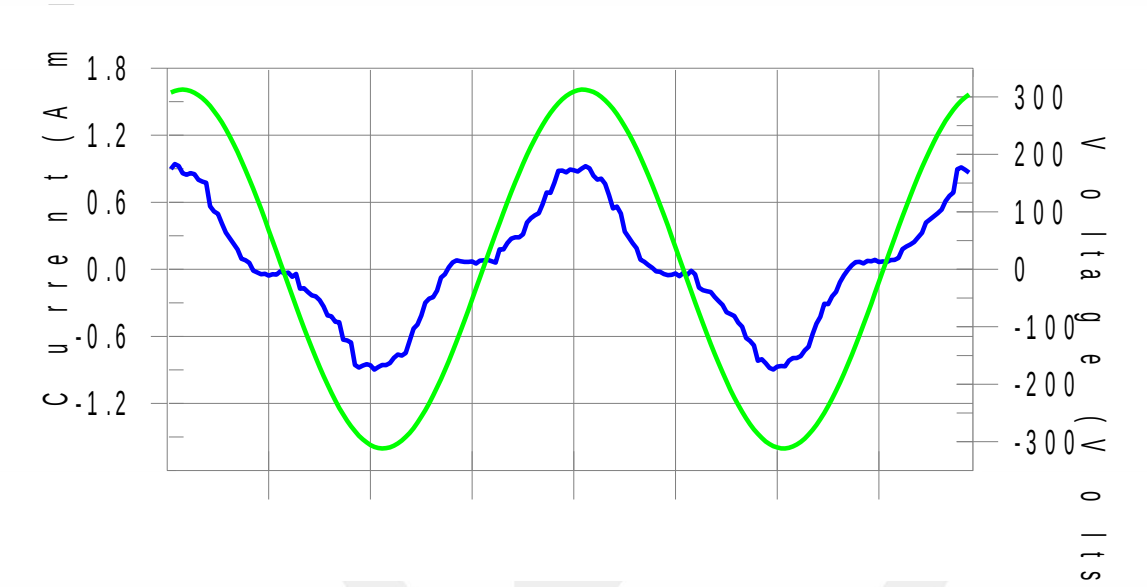
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.088	0.441	20.05	OK
3	0.110	1.986	5.53	OK
4	0.033	0.441	7.52	OK
5	0.039	0.883	4.47	OK
6	0.013	0.441	3.04	OK
7	0.042	0.662	6.30	OK
8	0.017	0.441	3.93	OK
9	0.038	0.441	8.59	OK
10	0.017	0.441	3.75	OK
11	0.039	0.221	17.71	OK
12	0.014	0.221	6.31	OK
13	0.024	0.221	11.06	OK
14	0.013	0.221	5.92	OK
15	0.030	0.221	13.38	OK
16	0.014	0.221	6.51	OK
17	0.023	0.221	10.52	OK
18	0.012	0.221	5.24	OK
19	0.016	0.221	7.07	OK
20	0.016	0.221	7.26	OK
21	0.017	0.221	7.56	OK
22	0.010	0.221	4.54	OK
23	0.016	0.221	7.09	OK
24	0.011	0.221	4.90	OK
25	0.022	0.221	9.85	OK
26	0.012	0.221	5.42	OK
27	0.016	0.221	7.23	OK
28	0.012	0.221	5.60	OK
29	0.023	0.221	10.26	OK
30	0.010	0.221	4.71	OK
31	0.019	0.221	8.49	OK
32	0.010	0.221	4.73	OK
33	0.012	0.221	5.35	OK
34	0.010	0.221	4.71	OK
35	0.022	0.221	10.03	OK
36	0.012	0.221	5.25	OK
37	0.014	0.221	6.39	OK
38	0.009	0.221	4.27	OK
39	0.011	0.221	4.83	OK
40	0.013	0.221	6.01	OK

Harmonics – Class-A (Run time) incl. inter-harmonics

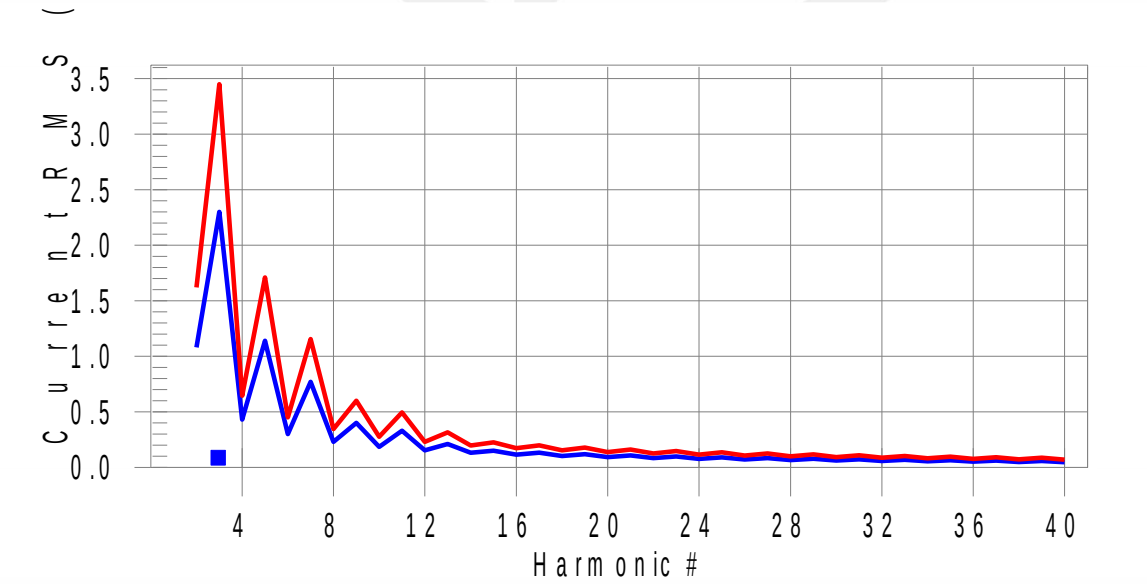
EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:21:20** **End time: 21:24:02**
Test duration (min): 2.5 **Data file name: WIN2105_H-000607.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**

Current & voltage waveforms



Harmonics and Class A limit line **European Limits**



Test result: Pass **Worst harmonics H27-8.5% of 150% limit, H27-12% of 100% limit.**

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:21:20** **End time: 21:24:02**
Test duration (min): 2.5 **Data file name: WIN2105_H-000607.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.157 **I-THD(%): 31.4** **POHC(A): 0.016** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.689	Frequency(Hz):	50.00
I_Peak (Amps):	0.984	I_RMS (Amps):	0.524
I_Fund (Amps):	0.499	Crest Factor:	1.881
Power (Watts):	108.4	Power Factor:	0.940

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	1.080	N/A	0.002	1.620	N/A	Pass
3	0.154	2.300	6.7	0.155	3.450	4.5	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.013	1.140	1.2	0.014	1.710	0.8	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.010	0.770	1.4	0.011	1.155	0.9	Pass
8	0.001	0.230	N/A	0.001	0.345	N/A	Pass
9	0.013	0.400	3.3	0.014	0.600	2.3	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.008	0.330	2.4	0.008	0.495	1.6	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.005	0.210	N/A	0.005	0.315	N/A	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.008	0.150	5.0	0.008	0.225	3.6	Pass
16	0.004	0.115	N/A	0.005	0.173	N/A	Pass
17	0.004	0.132	N/A	0.005	0.198	N/A	Pass
18	0.002	0.102	N/A	0.002	0.153	N/A	Pass
19	0.003	0.118	N/A	0.003	0.178	N/A	Pass
20	0.002	0.092	N/A	0.002	0.138	N/A	Pass
21	0.006	0.107	5.3	0.007	0.161	4.1	Pass
22	0.004	0.084	N/A	0.005	0.125	N/A	Pass
23	0.002	0.098	N/A	0.002	0.147	N/A	Pass
24	0.002	0.077	N/A	0.002	0.115	N/A	Pass
25	0.004	0.090	N/A	0.004	0.135	N/A	Pass
26	0.003	0.071	N/A	0.003	0.107	N/A	Pass
27	0.010	0.083	12.0	0.011	0.125	8.5	Pass
28	0.003	0.066	N/A	0.004	0.099	N/A	Pass
29	0.003	0.078	N/A	0.004	0.116	N/A	Pass
30	0.002	0.061	N/A	0.002	0.092	N/A	Pass
31	0.005	0.073	7.4	0.006	0.109	5.1	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.004	0.068	N/A	0.004	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.004	0.064	N/A	0.005	0.096	N/A	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.003	0.061	N/A	0.003	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.005	0.058	N/A	0.005	0.087	N/A	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass

Voltage Source Verification Data (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:21:20** **End time: 21:24:02**
Test duration (min): 2.5 **Data file name: WIN2105_H-000607.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
Measured source distortion is within the requirements of the standards
Measurements are compliant with IEC/EN61000-3-2 Ed. 5 & IEC/EN61000-4-7 Ed. 2.1

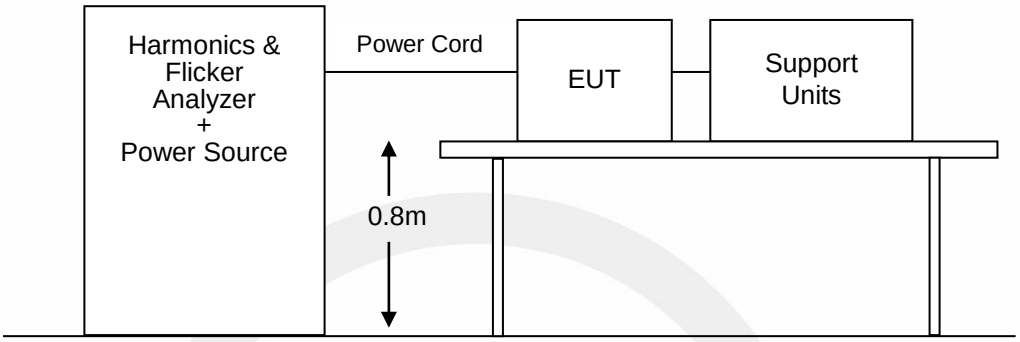
Highest parameter values during test:

Voltage (Vrms):	220.689	Frequency(Hz):	50.00
I_Peak (Amps):	0.984	I_RMS (Amps):	0.524
I_Fund (Amps):	0.499	Crest Factor:	1.881
Power (Watts):	108.4	Power Factor:	0.940

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.090	0.441	20.35	OK
3	0.102	1.986	5.13	OK
4	0.029	0.441	6.63	OK
5	0.042	0.883	4.77	OK
6	0.013	0.441	2.89	OK
7	0.045	0.662	6.78	OK
8	0.018	0.441	4.01	OK
9	0.039	0.441	8.83	OK
10	0.017	0.441	3.91	OK
11	0.038	0.221	17.22	OK
12	0.014	0.221	6.19	OK
13	0.024	0.221	10.99	OK
14	0.014	0.221	6.36	OK
15	0.032	0.221	14.51	OK
16	0.011	0.221	5.20	OK
17	0.021	0.221	9.41	OK
18	0.012	0.221	5.24	OK
19	0.013	0.221	6.09	OK
20	0.017	0.221	7.79	OK
21	0.020	0.221	9.27	OK
22	0.010	0.221	4.45	OK
23	0.014	0.221	6.19	OK
24	0.010	0.221	4.46	OK
25	0.018	0.221	8.35	OK
26	0.013	0.221	6.04	OK
27	0.029	0.221	13.07	OK
28	0.010	0.221	4.52	OK
29	0.015	0.221	6.66	OK
30	0.010	0.221	4.40	OK
31	0.022	0.221	9.84	OK
32	0.009	0.221	4.17	OK
33	0.015	0.221	7.02	OK
34	0.009	0.221	4.26	OK
35	0.022	0.221	9.76	OK
36	0.010	0.221	4.40	OK
37	0.015	0.221	6.73	OK
38	0.010	0.221	4.37	OK
39	0.019	0.221	8.58	OK
40	0.012	0.221	5.58	OK

7. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Standard Limits

SANS 61000-3-3/IEC 61000-3-3 Limits
The objective of voltage changes, voltage fluctuations and flicker in public low voltage supply systems during equipment with rated current≤16 A per phase, ensures that home appliances and certain other electrical equipment do not adversely affect lighting equipment when connected to the same power system.
Voltage Fluctuation and Flicker Limits:
— the value of Pst shall not be greater than 1.0;
— the value of Plt shall not be greater than 0.65;
— the value of d(t) during a voltage change shall not exceed 3.3 % for more than 500 ms;
— the relative steady-state voltage change, dc, shall not exceed 3.3 %;
— the maximum relative voltage change, dmax, shall not exceed 4.0 %;

7.3. Test Procedure

The total impedance of the test circuit, excluding the appliance under test, but including the internal impedance of the supply source, shall be equal to the reference impedance. The stability and tolerance of the reference impedance shall be adequate to ensure that the overall accuracy of 8% is achieved during the whole assessment procedure.

7.4. Test Results

PASS.

Please see the attached page.

Unique Number: 002722

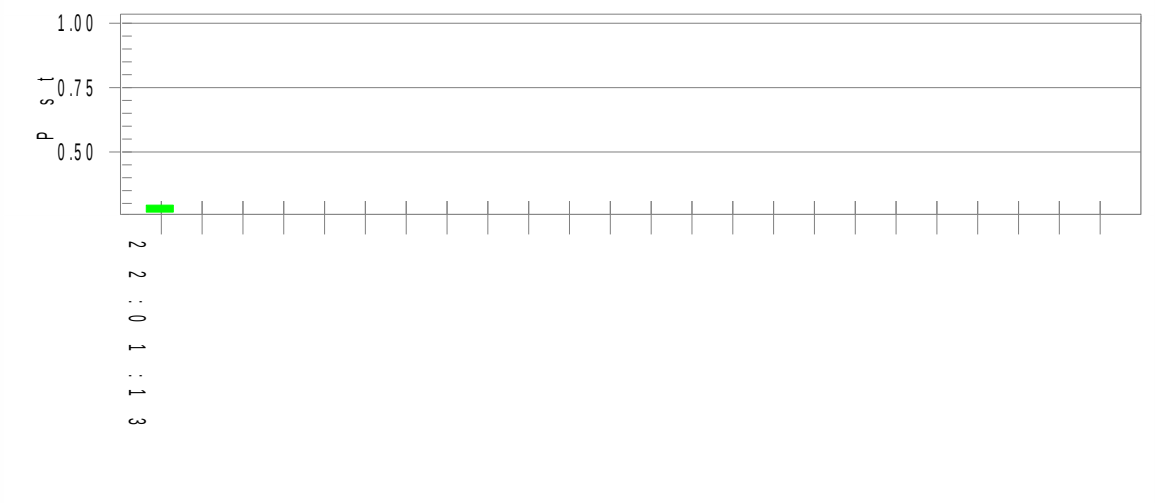
GTM41133-9016-1.0-T3A

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 21:50:52** **End time: 22:01:19**
Test duration (min): 10 **Data file name: WIN2105_F-000612.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Parameter values recorded during the test:

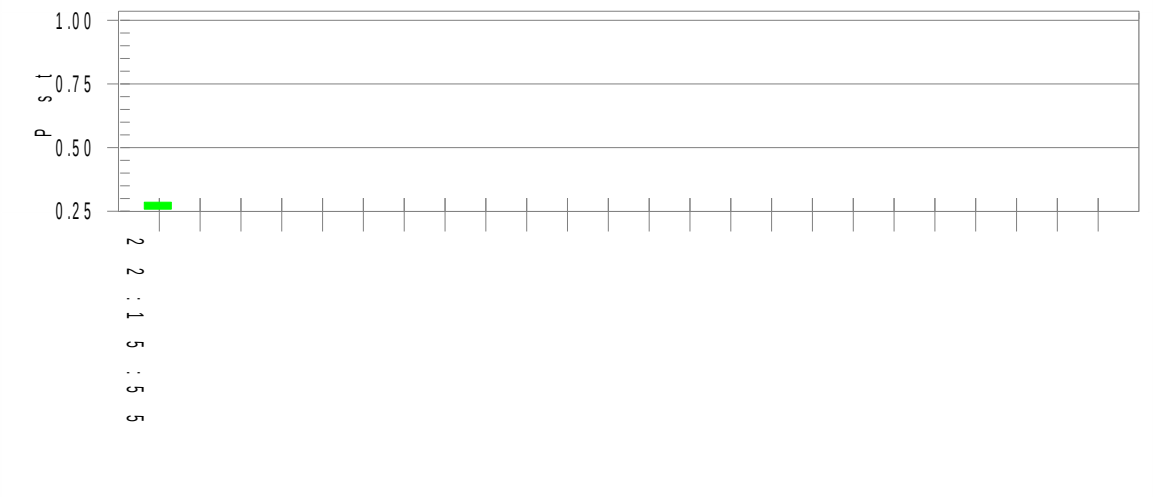
Vrms at the end of test (Volt):	**220.63**			
T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**-0.05**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.293**	**Test limit:**	**1.000**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ICT/ITE POWER SUPPLY **Tested by: ZKT**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 22:05:34** **End time: 22:16:01**
Test duration (min): 10 **Data file name: WIN2105_F-000613.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**220.62**			
T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**-0.05**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.285**	**Test limit:**	**1.000**	**Pass**

Unique Number: 002722

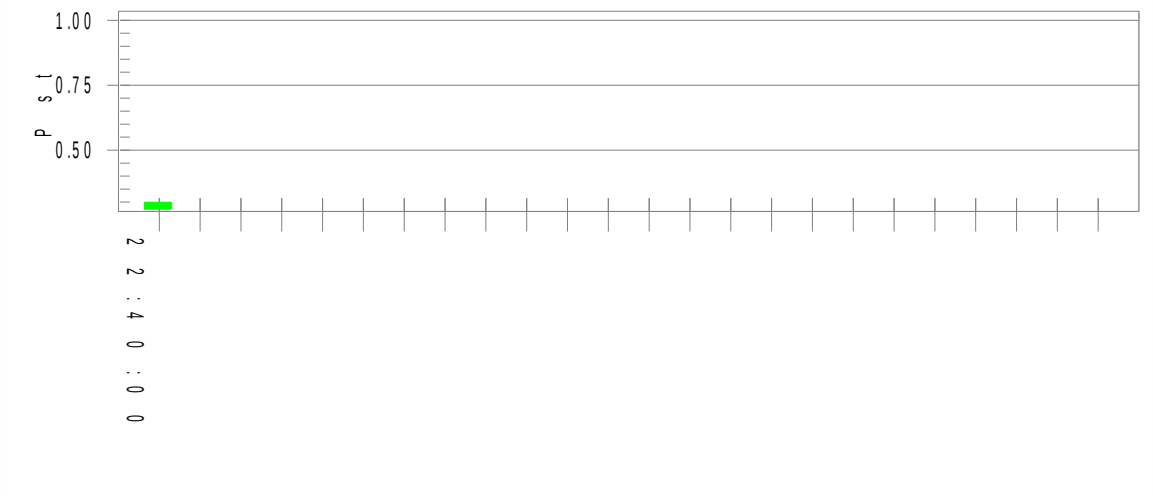
GTM41133-9024-5.0-T3A

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ITC ITE POWER SUPPLY **Tested by: ZKT**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 22:29:39** **End time: 22:40:06**
Test duration (min): 10 **Data file name: WIN2105_F-000615.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**220.59**			
T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.07**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.299**	**Test limit:**	**1.000**	**Pass**

Unique Number: 002722

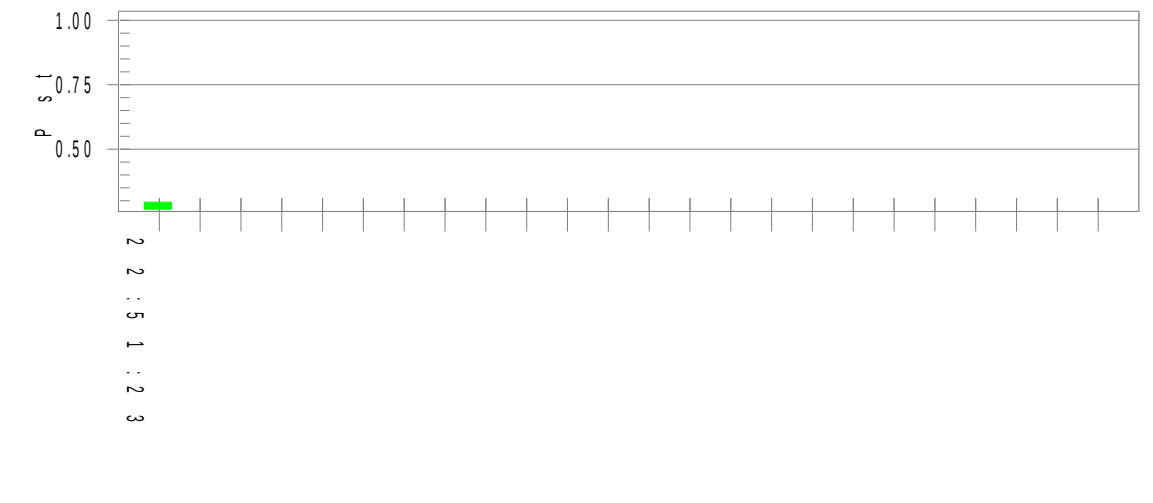
GTM41133-9048-T3A

Flicker Test Summary per EN/IEC61000-3-3 Ed. 3.0 (2013) (Run time)

EUT: ITC ITE POWER SUPPLY **Tested by: ZKT**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2021/11/5 **Start time: 22:41:02** **End time: 22:51:29**
Test duration (min): 10 **Data file name: WIN2105_F-000616.cts_data**
Comment: FULL LOAD
Customer: GlobTek, Inc.

Test Result: Pass **Status: Test Completed**

Pst_i and limit line **European Limits**



Parameter values recorded during the test:

Vrms at the end of test (Volt):	**220.58**			
T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**-0.03**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.294**	**Test limit:**	**1.000**	**Pass**

8. IMMUNITY PERFORMANCE CRITERIA DESCRIPTION

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 level by its manufacturer or the requestor of the test, or the agreed between the manufacturer and the purchaser of the product.

Definition related to the performance level:
1. Based on the used product standard
2. Based on the declaration of the manufacturer, requestor or purchaser

SANS 2335/CISPR 35:

Performance criterion A
The equipment shall continue to operate as intended without operator intervention. No degradation of performance, loss of function or change of operating state 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 criterion B
During the application of the disturbance, degradation of performance is allowed. However, no unintended change of actual operating state or stored data is allowed to persist after the test.
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), or recovery time, 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.

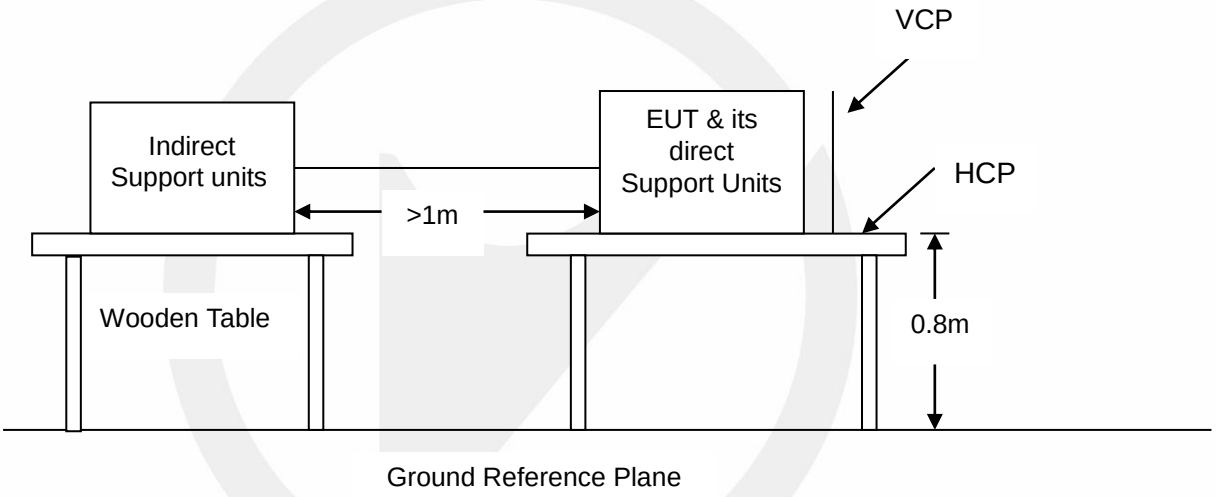
Performance criterion C
Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

9. ELECTROSTATIC DISCHARGE

9.1. Test Specification

Test Standard	:	SANS 2335/CISPR 35
Basic Standard	:	IEC 61000-4-2
Performance criterion	:	B
Test level	:	±8.0kV (Air discharge) ±4.0kV (Contact discharge)

9.2. Block Diagram of Test Setup



9.3. Test Procedure

a. In the case of air discharge testing, the climatic conditions shall be within the following ranges:
- ambient temperature: 15°C to 35°C;
- relative humidity : 30% to 60%;
- atmospheric pressure : 86 kPa (860 mbar) to 106 kPa (1060 mbar)

b. Test programs and software shall be chosen so as to exercise all normal modes of operation of the EUT. The use of special exercising software is encouraged, but permitted only where it can be shown that the EUT is being comprehensively exercised.

c. In the case of contact discharges, the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

d. In the case of painted surface covering a conducting substrate, the following procedure shall be adopted : - If the coating is not declared to be an insulating coating by the equipment manufacturer, then the pointed tip of the generator shall penetrate the coating so as to make contact with the conducting substrate. - Coating declared as insulating by the manufacturer shall only be submitted to the air discharge. - The contact discharge test shall not be applied to such surfaces.

e. In the case of air discharges, the round discharge tip of the discharge electrode shall be approached as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator (discharge electrode) shall be removed from the EUT. The generator is then retriggered for a new single discharge. This procedure shall be repeated until the discharges are completed. In the case of an air discharge test, the discharge switch, which is used for contact discharge, shall be closed.

f. The test voltage shall be increased from the minimum to the selected test severity level, in order to determine any threshold of failure. The final test level should not exceed the product specification value in order to avoid damage to the equipment.
g. The test shall be performed with both air discharge and contact discharge. The test shall be performed with single discharges. On each pre-selected point at least 10 single discharges (in the most sensitive polarity) shall be applied. For the time interval between successive single discharges an initial value of 1 s is recommended. Longer intervals may be necessary to determine whether a system failure has occurred.
h. Ensure that the applied charge on the EUT has been dis-charged before next ESD pulse.

9.4. Test Results

PASS

Temperature	:	25.1°C
Humidity	:	50%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

Air Discharge:

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4; 8 kV	LED/SLOT	A	B	Pass

Contact Discharge

Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4kV	/	/	B	/

Indirect Discharge

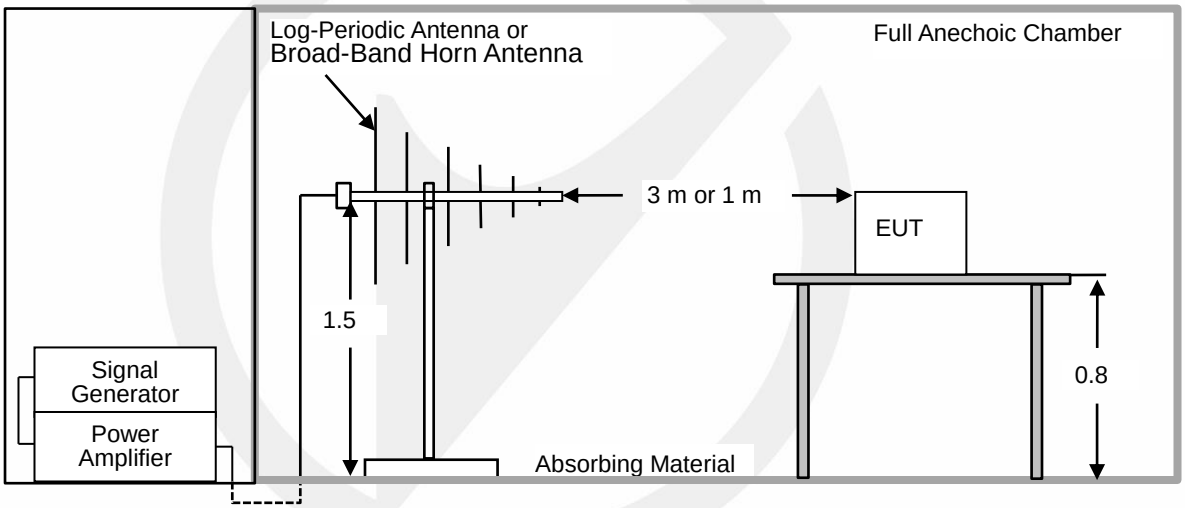
Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4 kV	HCP	A	B	Pass
±2; 4kV	VCP	A	B	Pass

10. CONTINUOUS RF ELECTROMAGNETIC FIELD DISTURBANCES

10.1. Test Specification

Test standard	:	SANS 2335/CISPR 35	
Basic standard	:	IEC 61000-4-3	
Performance criterion	:	A	
Frequency range & Test level	:	☒80M-1000MHz	3V/m
		☒Spot frequency	3V/m
		☐Additional spot frequency	3V/m
Modulation	:	AM, 80%, 1kHz sine-wave	

10.2. Block Diagram of Test Setup



10.3. Test procedure

The procedure defined in this part requires the generation of electromagnetic fields within which the test sample is placed and its operation observed. To generate fields that are useful for simulation of actual (field) conditions may require significant antenna drive power and the resultant high field strength levels. To comply with local regulations and to prevent biological hazards to the testing personnel, it is recommended that these tests be carried out in a shielded enclosure or semi-anechoic chamber.

a. The antenna which is enabling the complete frequency range of 80-1000 MHz is placed 3m (or 1m) away from the equipment. The required field strength is determined by placing the field strength meter(s) on top of or directly alongside the equipment under test and monitoring the field strength meter via a remote field strength indicator outside the enclosure while adjusting the continuous-wave to the antenna.
b. The test is performed with the antenna facing the front and back sides of the EUT with. Both vertical and horizontal polarizations from antenna are tested.

10.4. Test results

PASS

Temperature	:	19.3°C
Humidity	:	58%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

☒ 80M-1000MHz:

Freq. Range (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
80-1000	3V/m	AM, 80%	H / V	0, 90,180, 270	A	A	Pass

☒ Spot frequency:

Freq (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
1800, 2600, 3500, 5000	3V/m	AM, 80%	H / V	0, 90,180, 270	A	A	Pass

☐ Additional spot frequency:

Freq (MHz)	Field	Modulation	Polarity	Position (°)	Actual criterion	Required performance criterion	Result
80, 120, 160, 230, 434, 460, 600, 863, 900	3V/m	AM, 80%	H / V	0, 90,180, 270	N/A	N/A	N/A

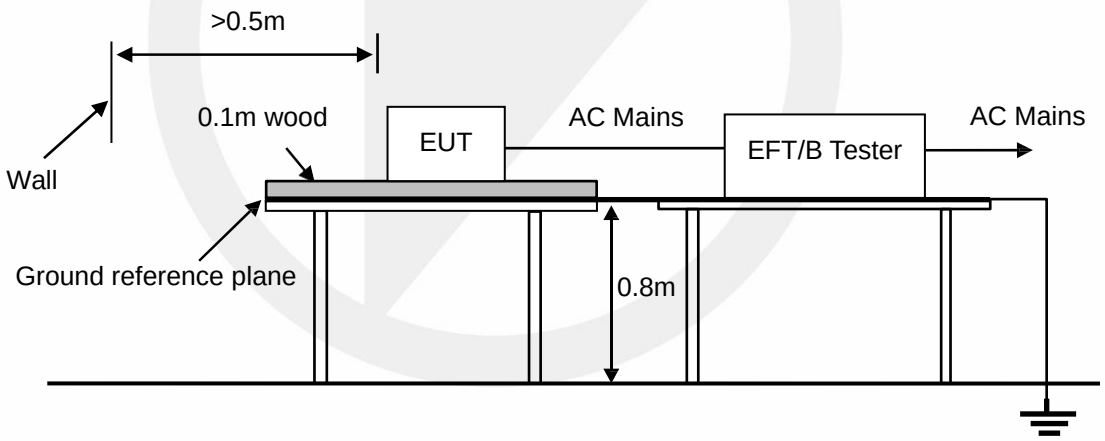
11. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

11.1. Test Specification

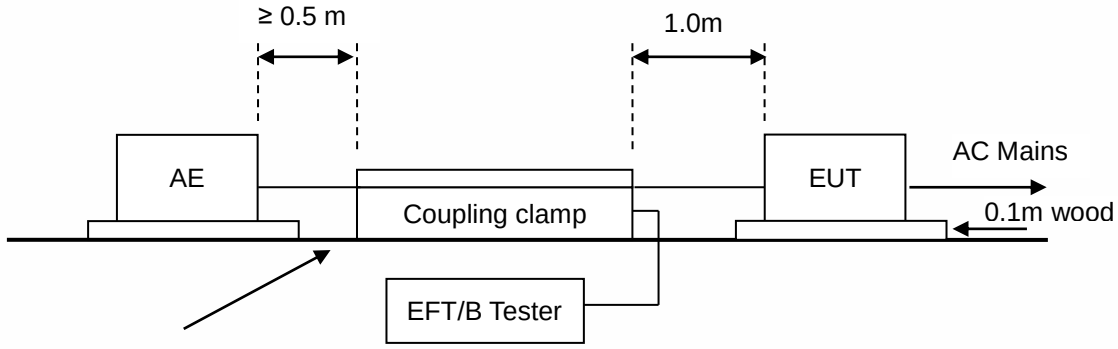
Test standard	:	SANS 2335/CISPR 35
Basic standard	:	IEC 61000-4-4
Performance criterion	:	B
Test level	:	☒1kV, AC mains power ports
		☐0.5kV, DC network power ports
		☐0.5kV, Analogue/digital data ports
Repetition frequency	:	☒5kHz, ☐100kHz(Only xDSL ports)
Tr/Th:	:	5/50ns
Burst period	:	300ms
Test time :	:	120s

11.2. Block Diagram of Test Setup

AC Lines:



Signal lines:



11.3. Test Procedure

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

11.4. Test Results

PASS

Temperature	:	24.1°C
Humidity	:	47%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

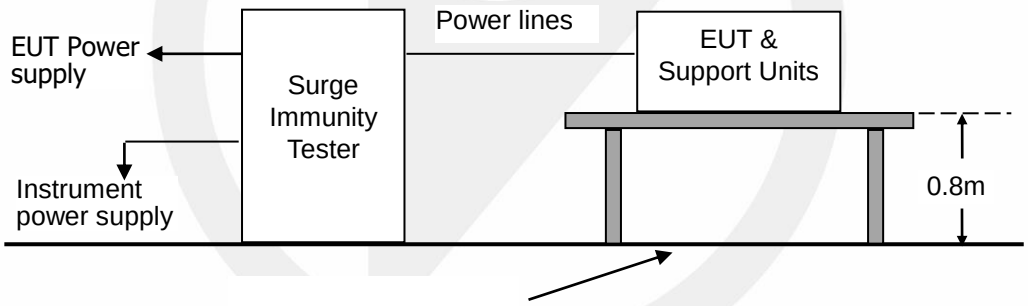
Injection Line	Voltage (kV)	Injected Method	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ AC mains power ports	± 1	☒ CDN ☐ Direct injection ☐ Capacitive coupling clamp	A	B	Pass
☐ DC network power ports	± 0.5	☐ CDN ☐ Direct injection ☐ Capacitive coupling clamp	N/A	N/A	N/A
☐ Analogue/digital data ports (Wired network port)	± 0.5	☐ CDN ☐ Direct injection ☒ Capacitive coupling clamp	N/A	N/A	N/A
☐ Analogue/digital data ports (Broadcast receiver tuner port)	± 0.5	☐ CDN ☐ Direct injection ☒ Capacitive coupling clamp	N/A	N/A	N/A

12. SURGE IMMUNITY TEST

12.1. Test Specification

Test standard	:	SANS 2335/CISPR 35
Basic standard	:	IEC 61000-4-5
Test level	:	☒1kV, Line to Line, AC mains power ports, Criterion B
		☒2kV, Line to Earth, AC mains power ports, Criterion B
		☐0.5kV, Line to Reference ground, DC network power ports, Criterion B
		☐1.0kV, Lines to Ground, Unshielded symmetrical, Criterion C
		☐4.0kV, Lines to Ground, Unshielded symmetrical, Criterion C
		☐0.5kV, Shield to ground, Coaxial or shielded port, Criterion B
Number of surges	:	5 (for each combination of parameters)
Repetition rate	:	1 minute / time
Polarity:	:	Positive / Negative
Phase angle:	:	90º, 270º (Only AC mains power ports)

12.2. Block Diagram of Test Setup



12.3. Test Procedure

This test simulates a lightning event by inducing transients onto the AC/DC power supply lines in common mode (Line to Ground) and differential mode (Line to Line). Each device was tested in a total of two surge configurations: Line to Ground (L-G): Combination Wave, Line to Protective Earth with 9uF and 10Ohm and Neutral to Protective Earth with 9uF and 10Ohm, common mode, generator earthed.
Line to Line (L-L): Combination Wave,
Line to Neutral with 18uF, differential mode, generator floated.
2 ohm : the source impedance of the low-voltage power supply network.
12 ohm : the source impedance of the low-voltage power supply network and ground.

a. If not otherwise specified the surges have to be applied synchronized to the voltage phase at the zero-crossing and the peak value of the a.c. voltage wave (positive and negative).
b. The surges have to be applied line to line and line to earth. When testing line to earth, the test voltage has to be applied successively between each of the lines and earth, if there is no other specification.
c. The test procedure shall also consider the non-linear current-voltage characteristics of the equipment under test. Therefore the test voltage has to be increased by steps up to the test level specified in the product standard or test plan. All lower levels including the selected test level shall be satisfied.
d. For testing the secondary protection, the output voltage of the generator shall be increased up to the worst-case voltage breakdown level (let-through level) of the primary protection.

e. Testing shall be performed according to a Test Plan, which shall be included in the test report.
f. To find all critical points of the duty cycle of the equipment, a sufficient number of positive and negative test pulses shall be applied.

12.4. Test results

PASS

Temperature	:	24.1°C
Humidity	:	47%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

☒ AC mains power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ Line to line	0.5, 1	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass
☒ Line to earth	0.5, 1, 2	1.2/50 (8/20)	Pos./ Neg.	A	B	Pass

☐ DC network power ports:

Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
Line to Reference ground	0.5	1.2/50 (8/20)	Pos./ Neg.	N/A	B	N/A

☐ Analogue/digital data ports:

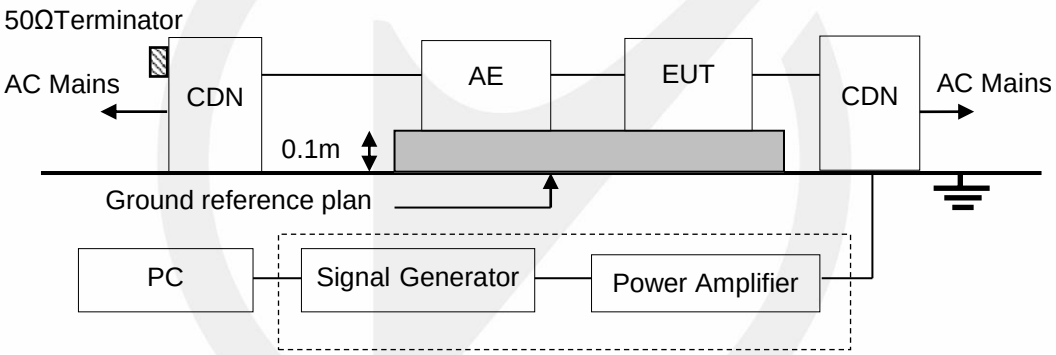
Port type	Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☐ Unshielded symmetrical (Wired network port)	Lines to ground	0.5, 1	10/700 (5/320)	Pos./ Neg.	N/A	C	N/A
☐ Unshielded symmetrical (.....)	Lines to ground	0.5, 1	10/700 (5/320)	Pos./ Neg.	N/A	C	N/A
☐ Unshielded symmetrical	Lines to ground	0.5, 1, 2, 4	10/700 (5/320)	Pos./ Neg.	N/A	C	N/A
☐ Coaxial or shielded (Broadcast receiver tuner port)	Shield to ground	0.5	1.2/50 (8/20)	Pos./ Neg.	N/A	C	N/A
☐ Coaxial or shielded (.....)	Shield to ground	0.5	1.2/50 (8/20)	Pos./ Neg.	N/A	C	N/A

13. CONTINUOUS INDUCED RF DISTURBANCES

13.1. Test Specification

Test standard	:	SANS 2335/CISPR 35
Basic standard	:	IEC 61000-4-6
Performance criterion	:	A
Frequency range & Test level	:	0.15M to 10MHz, 3V 10M to 30MHz, 3V to 1V 30M to 80MHz, 1V
Modulation	:	AM 80%, 1kHz sine-wave
Frequency Step	:	1% of fundamental

13.2. Block Diagram of Test Setup



13.3. Test Procedure

a. The EUT shall be operated within its intended climatic conditions. The temperature and relative humidity should be recorded.
b. The EUT is placed on a 0.1m high test table, and a well grounded cable is connected to metallic plane above the test table.
c. All cables/wires must be laid out on test plate (3cm in thickness),and the EUT is set up on test plate (10 cm in thickness) as shown in test setup photo, and the cables/wires must not be in mid-air, they should be touching the surface of test plate. Ensure that the EUT is properly connected to the accessory equipment.
d. The test shall be performed with the test generator connected to each of the coupling and decoupling devices in turn while the other non-excited RF-input ports of the coupling devices are terminated by a 50 ohm load resistor.
e. The frequency range is swept from 150 kHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF-signal level or to switch coupling devices as necessary. The rate of sweep shall no exceed 1.5 x 10-3 decades/s. Where the frequency is swept incrementally, the step size shall no exceed 1% of the start and thereafter 1% of the preceding frequency value.
f. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies e.g. clock frequency (ies) and harmonics or frequencies of dominant interest shall be analyzed separately.

g. Attempts should be made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility
h. Testing shall be performed according to a Test Plan, which shall be included in the test report.

13.4. Test results

PASS

Temperature	:	24.1°C
Humidity	:	47%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

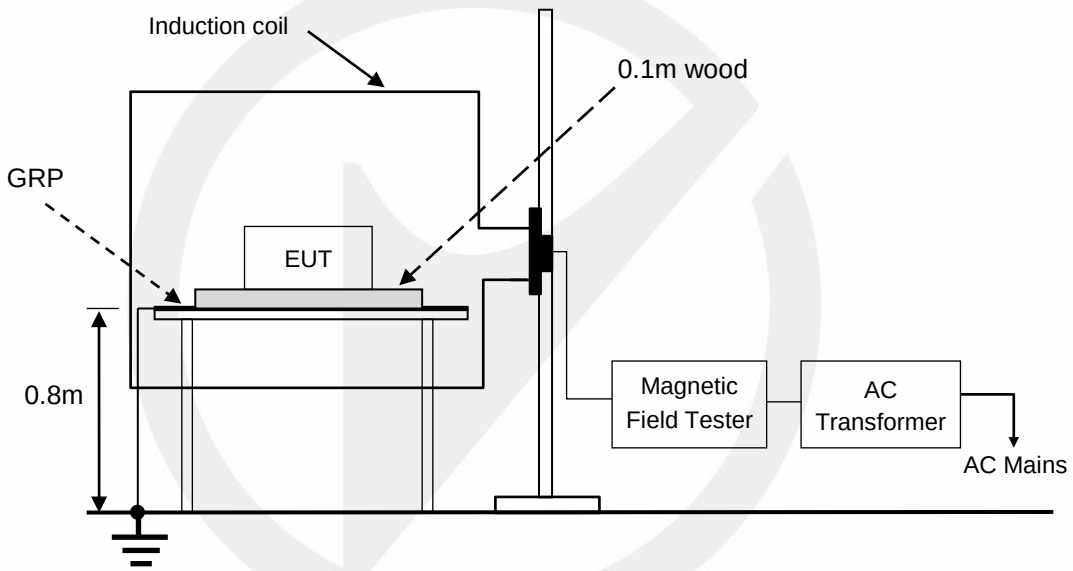
Range (MHz)	Levers (V)	Injection port	Coupling type	Actual criterion	Required performance criterion	Result (Pass/Fail)
0.15-10	3	☒AC mains power ports	☒CDN ☐EM Clamp ☐Current Clamp ☐Direct injection	A	A	Pass
10-30	3-1					
30-80	1					
0.15-10	3	☐DC network power ports	☒CDN ☐EM Clamp ☐Current Clamp ☐Direct injection	N/A	N/A	N/A
10-30	3-1					
30-80	1					
0.15-10	3	☐Analogue/digital data ports (Wired network port)	☐CDN ☒EM Clamp ☐Current Clamp ☐Direct injection	N/A	N/A	N/A
10-30	3-1					
30-80	1					
0.15-10	3	☐Analogue/digital data ports (Broadcast receiver tuner port)	☐CDN ☐EM Clamp ☒Current Clamp ☐Direct injection	N/A	N/A	N/A
10-30	3-1					
30-80	1					
0.15-10	3	☐Analogue/digital data ports (.....)	☐CDN ☐EM Clamp ☒Current Clamp ☐Direct injection	N/A	N/A	N/A
10-30	3-1					
30-80	1					

14. POWER FREQUENCY MAGNETIC FIELD

14.1. Test Specification

Test Standard	:	SANS 2335/CISPR 35
Basic Standard	:	IEC 61000-4-8
Performance criterion	:	A
Test level	:	1A/m

14.2. Block Diagram of Test Setup



GRP: Ground reference plane
EUT: Equipment under test

14.3. Test Procedure

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

14.4. Test Results

PASS

Temperature	:	24.1°C
Humidity	:	47%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

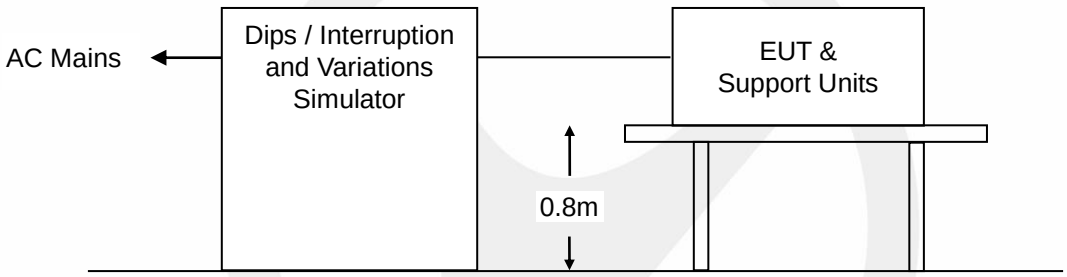
Test Level (A/m)	Frequency	Testing Duration	Coil Orientation	Actual criterion	Required performance criterion	Result (Pass/Fail)
1	☒ 50Hz ☒ 60Hz	5 mins	☒ x-axis ☒ y-axis ☒ z-axis	A	A	Pass

15. VOLTAGE DIPS AND INTERRUPTIONS TEST

15.1. Test Specification

Test standard	:	SANS 2335/CISPR 35
Basic standard	:	IEC 61000-4-11
Test level	:	☒0%, 0.5 period, Criterion B
		☒70%, 25 periods for 50Hz, Criterion C
		☒0%, 250 periods for 50Hz, Criterion C

15.2. Block Diagram of Test Setup



15.3. Test Procedure

a. Where the equipment has a rated voltage the following shall apply - If the voltage range does not exceed 20% of the lower voltage specified for the rated voltage range, a single voltage within that range may be specified as a basis for test level specification.
- In all other cases, the test procedure shall be applied for both the lowest and highest voltages declared in the voltage range.
b. Test Conditions
- Select operated voltage and frequency of EUT - Test of interval : 10 sec.
- Level and duration : Sequence of 3 dips/interrupts.
- Voltage rise (and fall) time : 1.5 μs.

15.4. Test results

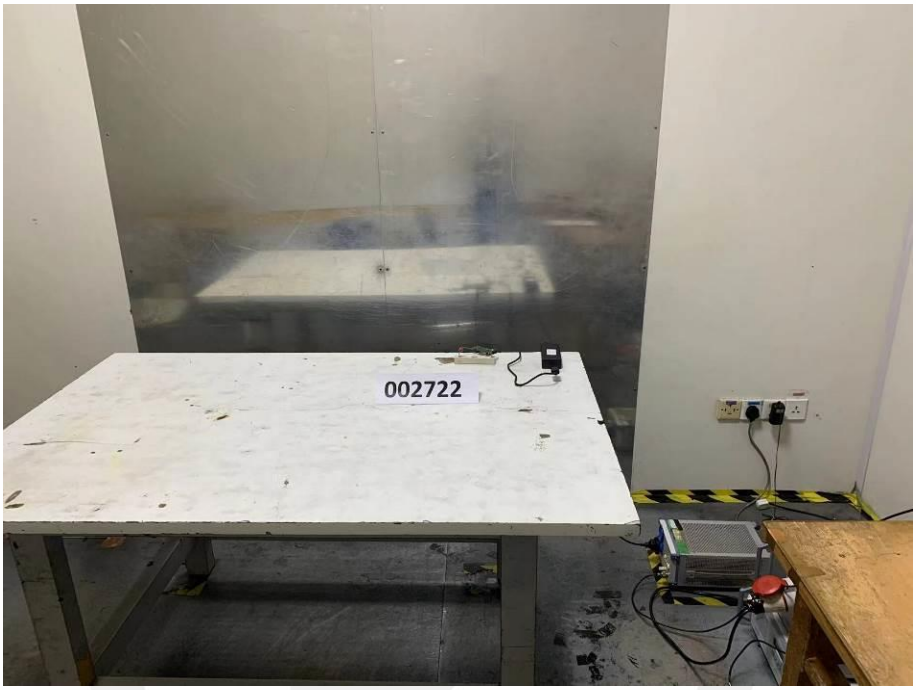
PASS

Temperature	:	24.1°C
Humidity	:	47%
Atmospheric Pressure	:	101kpa
Test Engineer	:	ZKT
Test Date	:	2021-11-05

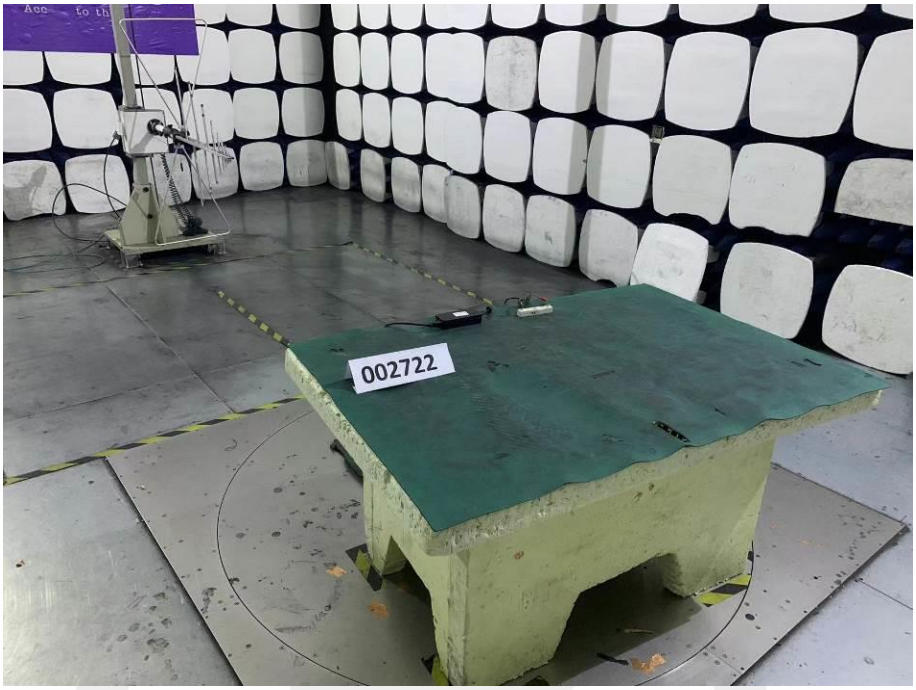
	Test Level (% UT)	Phase angle (°)	Input Voltage (V)	Freq (Hz)	Duration (periods)	Actual criterion	Required performance criterion	Result (Pass /Fail)
☒Voltage dips	0%	0º, 180º	AC 220V	50	0.5	A	B	Pass
☒Voltage dips	70%	0º, 180º	AC 220V	50	25	A	C	Pass
☒Voltage interruptions	0%	0º, 180º	AC 220V	50	250	B	C	Pass

16. PHOTOGRAPHS

16.1. Photos of Conducted Emissions from the AC Mains Power Ports



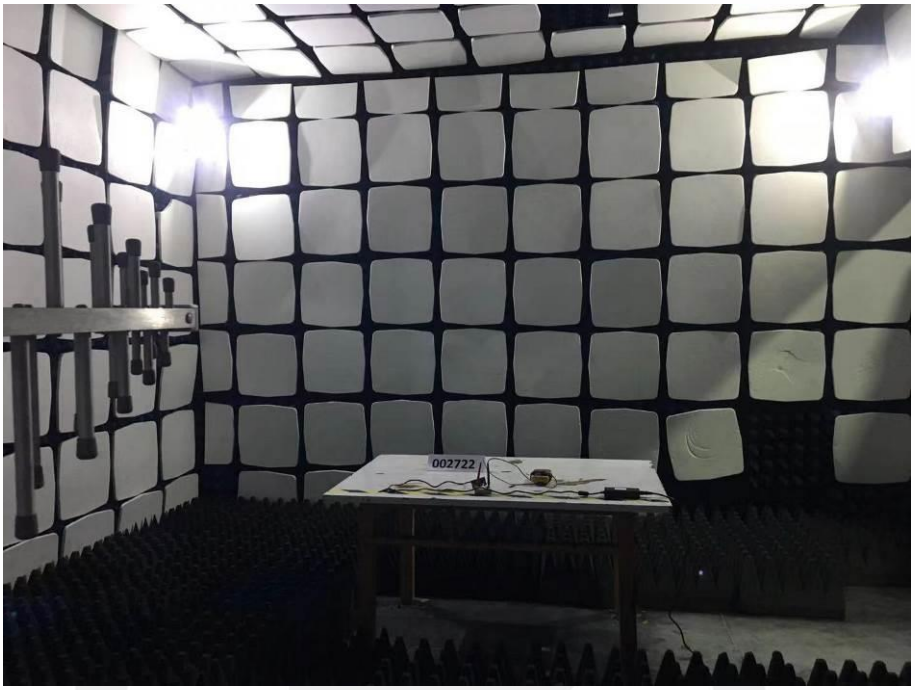
16.2.Photos of Radiation Emission Measurement



16.3.Photo of Harmonic / Flicker Measurement

16.4.Photo of Electrostatic Discharge Test

16.5.Photo of Continuous RF Electromagnetic Field Disturbances



16.6.Photos of Electrical Fast Transient / Burst Test

16.7.Photos of Surge Test

16.8.Photos of Continuous Induced RF Disturbances Test

16.9.Photo of Power Frequency Magnetic Field Test

16.10.Photo of Voltage Dips and Interruption Immunity Test

APPENDIX A: Photos of EUT

GTM41133-9016-1.0-T3A

GTM41133-9016-4.0-T3A


GlobTek, Inc.
www.globtek.com
MEDICAL / ITE POWER SUPPLY
电源供应器 電源アダプター
P/N(料号/品番): TR9LE7500CCP-NM(RVB)
MODEL(型号/形式): GTM41133-9016-4.0-T3A
INPUT(输入/入力):100-240V~,50-60Hz,1.5A
OUTPUT(输出/出力): 12V ⎓ 7.5A
Conforms to ANSI/AAMI Std.ES60601-1:2005
Cert. to CAN/CSA Std.C22.2 NO.60601-1:08
Conforms to ANSI/UL Std. 60950-1
Cert. to CAN/CSA Std.C22.2 NO.60950-1
Intertek
4007497
EFFICIENCY LEVEL V
IP21
RoHS 2
GlobTek, Inc.
MADE IN CHINA
中国制造

GTM41133-9024-5.0-T3A

GTM41133-9048-T3A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电源供应器/電源アダプター
P/N（料号/品番）：TR9LX1875LCPNMEDRVB
MODEL（型号/形式）：GTM41133-9048-T3A
INPUT（输入/入力）：100-240V,50-60Hz,1.5A
OUTPUT（输出/出力）：48V ⎓ 1.875A,90W
RECOGNIZED COMPONENT
Intertek 4007497
Conforms to ANSI/AAMI Std.ES60601-1
Cert. to CAN/CSA Std.C22.2 NO.60601-1
Conforms to ANSI/UL Std. 60950-1
Cert. to CAN/CSA Std.C22.2 NO.60950-1
Intertek
IEC/EN60601-1
IEC/EN60950-1
1O139
GlobTek, Inc.
IP21 RoHS 2 EFFICIENCY LEVEL V
MADE IN CHINA 中国制造
RoHS5577651021/7

APPENDIX B: Critical Cmponent List

Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity.
Enclosure (all parts)	SABIC INNOVATIVE PLASTICS B V	SE1X, SE1	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	CX7211	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 90°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	945	PC, Min. V-0, Min. thickness: 2.0mm, 120°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC INNOVATIVE PLASTICS B V	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E45329
Alt. use	SABIC JAPAN L L C	SE1X, SE1	PPE+PS, Min. V-1, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	C2950	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 105°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	CX7211	PC/ABS, Min. V-0, Min. thickness: 2.0mm, 90°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	945	PC, Min. V-0, Min. thickness: 2.0mm, 120°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	SABIC JAPAN L L C	HF500R	PC, V-0, Min. thickness: 2.0mm, 125°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E207780
Alt. use	COVESTRO DEUTSCHLAND AG [PC RESINS]	6485+	PC, V-0, Min. thickness: 2.0mm, 115°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41613
Alt. use	TEIJIN CHEMICALS LTD	LN-1250P LN-1250G	PC, Min. V-0, Min. thickness: 2.0mm, 115°C	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E50075
PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2 T2A T2B T4	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E154355
Alt. use	YUANMAN PRINTED CIRCUIT CO LTD	1V0	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested within appliance UL E74757
Alt. use	SUZHOU XINKE ELECTRONICS CO LTD	XK-2 XK-1	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested within appliance UL E231590
Alt. use	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1 2V0 FR4	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E243157

Alt. use	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested within appliance UL E229877
Alt. use	CHEERFUL ELECTRONIC (HK) LTD	02 03 03A	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E199724
Alt. use	JIANGSU DIFEIDA ELECTRONICS CO LTD	DFD-1	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested within appliance UL E213009
Alt. use	DONGGUAN DAYSUN ELECTRONIC CO LTD	DS2	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E251754
Alt. use	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E251781
Alt. use	DAFENG AREX ELECTRONICS TECHNOLOGY CO LTD	02V0 03V0 04V0	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E186016
Alt. use	BRITE PLUS ELECTRONICS (SUZHOU) CO LTD	DKV0-3A DGV0-3A	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E177671
Alt. use	KUOTIANG ENT LTD	C-2 C-2A	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E227299
Alt. use	SHENZHEN TONGCHUANGXIN ELECTRONICS CO LTD	TCX	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E250336
Alt. use	PACIFIC WIN INDUSTRIAL LTD	PW-02 PW-03	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E228070
Alt. use	SHANGHAI H-FAST ELECTRONICS CO LTD	211001	Min. 1.6 mm thickness, min. V-0, 130°C	IEC 60950-1 UL 796	Tested with appliance UL E337862
Fuse (F1, F2) (F2 optional)	Conquer Electronics Co., Ltd.	MST series	T4AL, 250VAC,	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017118 UL E82636
Alt. use	Ever Island Electric Co., Ltd. And Walter Electric	2010	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40018781 UL E220181
Alt. use	Zhongshan Lanbao Electrical Appliances Co., Ltd.	RTI-10 Serie(s)	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017009 UL E213695
Alt. use	Bel Fuse Ltd.	RST-Serie(s)	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40011144 UL E20624
Alt. use	Cooper Bussmann LLC	SS-5	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40015513 UL E19180

Alt. use	Dongguan Better	932	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40033369 UL E300003
Alt. use	Shenzhen Lanson Electronics Co. Ltd.	SMT	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40012592 UL E221465
Alt. use	Conquer Electronics Co., Ltd.	MET series	T4AL, 250VAC	IEC 60127-1 IEC 60127-3 UL 248-1 UL 248-14	VDE 40017157 UL E82636
X capacitor (CX1)	Cheng Tung Industrial Co., Ltd.	CTX	Max 0.47μF, Min.300V,105°C X1 or X2	IEC/EN 60384-14 UL 1414	VDE 40022642 UL E193049
Alt. use	Tenta Electric Industrial Co. Ltd.	MEX	Max 0.47μF, Min.250V,100°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 119119 UL E222911
Alt. use	JOEY ELECTRONICS (DONG GUAN) CO LTD	MPX	Max 0.47μF, Min.300V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032481 UL E216807
Alt. use	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40015608 UL E183780
Alt. use	Yuon Yu Electronics Co. Ltd.	MPX	Max 0.47μF, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40032392 UL E200119
Alt. use	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	Max 0.47μF, Min.300V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40014686 UL E237560
Alt. use	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX	Max 0.47μF, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40022417 UL E311166
Alt. use	Dain Electronics Co., Ltd.	MEX	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Dain Electronics Co., Ltd.	MPX	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Dain Electronics Co., Ltd.	NPX	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018798 UL E147776
Alt. use	Shenzhen Jinghao Capacitor Co., Ltd.	CBB62B	Max 0.47μF, Min.250V,110°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40018690 UL E252286
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	MKP	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036065 UL E357475
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	MPX	Max 0.47μF, Min.250V,110°C X1 or X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036065 UL E357475

Alt. use	Carli Electronics Co., Ltd.	MPX	Max 0.47µF, Min.250V,100°C X2	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40008520 UL E120045
Y capacitor (CY1, CY2) (Optional)	TDK Corporation	CD	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40029780 UL E37861
Alt. use	Success Electronics Co., Ltd.	SE	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037211 VDE 40020002 UL E114280
Alt. use	Success Electronics Co., Ltd.	SB	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40037221 VDE 40020001 UL E114280
Alt. use	Murata Mfg. Co., Ltd.	KX	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 25/125/21/B	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40002831 UL E37921
Alt. use	Walsin Technology Corp.	AH	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 25/125/21/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001804 UL E146544
Alt. use	Haohua Electronic Co.	CT7	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40003902 UL E233106
Alt. use	Xiangtai Electronic (Shenzhen) Co., Ltd.	YO-series	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40036880 UL E319473
Alt. use	JUHONG ELECTRONICS LTD	JB- series	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40035339 UL E253194
Alt. use	JYA-NAY Co., Ltd.	JN	Y1, AC250V, max. 2200pF (for class I models), max. 1500pF (for class II models), 30/125/56/C	IEC/EN 60384-14 UL 60384-14 UL 1414	VDE 40001831 UL E201384

Photo coupler (U4)	Everlight Electronics Co., Ltd.	EL817	Dti=0.5mm Int. , dcr=6.0mm EXT.dcr=7.7mm, thermal cycling test,110oC Reinforced insulation	IEC/EN 60747-5-2	VDE 132249
Alt. use	COSMO ELECTRONICS CORP	K1010	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115°C Reinforced insulation	IEC/EN 60747-5-2	VDE 101347
Alt. use	COSMO Electronics Corporation	KP1010	Dti=0.6mm Int. , dcr=4.0mm EXT.dcr=5.0mm, thermal cycling test,115oC Reinforced insulation	IEC/EN 60747-5-2	VDE 101347
Alt. use	Lite-On Technology Corporation	LTV-817	Dti=0.8mm Int. , EXT.dcr=7.8mm, thermal cycling test,110oC Reinforced insulation	IEC/EN 60747-5-2	VDE40015248
Alt. use	Fairchild Semiconductor Pte Ltd	H11A817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7.0/ 7.0 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40026857
Alt. use	Fairchild Semiconductor Pte Ltd	FOD817B	Insulation voltage: 850V; Transient overvoltage: 6000V; CTI175; Int. Cr/ Ext. Cr: ≥7.0/ 7.0 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40026857
Alt. use	SHARP CORP ELECTRONIC COMPONENTS AND DEVICES BU	PC817	Insulation voltage: 890V; Transient overvoltage: 9000V Int. Cr/ Ext. Cr: 7.62/ 7.62 mm; 30/110/21 Reinforced insulation	IEC/EN 60747-5-2	VDE 40008087
Alt. use	Bright Led Electronics Corp.	BPC-817 A/B/C/D/L	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240
Alt. use	Bright Led Electronics Corp.	BPC-817 M	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240
Alt. use	Bright Led Electronics Corp.	BPC-817 S	Dti=0.4mm EXT. dcr=7.0mm, thermal cycling test,110°C Reinforced insulation	IEC/EN 60747-5-2	VDE 40007240

Alt. use	TOSHIBA ELECTRONIC DEVICES & STORAGE CORPORATION	TLP781F	Dti > 0.4mm, Ext cr > 8.0mm, Isolation 3000Vac min., 110°C min., Thermal cycling test Reinforced insulation	IEC/EN 60747-5-2	VDE 40021173
Internal earthing wire	Interchangeable	Interchangeable	Min. 20 AWG, Min. 300V, Min. 80°C	UL 758	Tested with appliance UL approved
Power supply cord	Longwell Company Song Gang Factory	PVC insulated cable	Rated Voltages Upto and Including 1100 V	IS 694:2010	BIS CM/L-4009846
Plug	Longwell Company Song Gang Factory	LP-67	AC 250V,10A	IS 1293:2005	BIS CM/L-4009947
Connector	Longwell Company	LS-18	AC 250V,2.5A	IEC/ EN 60320-1: 2001+ A1:2007	VDE 40028166
Appliance inlet CN1 Class I units	Zhejiang LECI Electronics	DB-14	250 Vac; 10A; 3 pins , 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40032137 UL E302229
Alt. use	Tecx-Unions Technology Corp	TU-301-S TU-301-SP	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	ENEC00647 UL E220004
Alt. use	Rich Bay Co Ltd	R-301SN	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40030228 UL E184638
Alt. use	Sun Fair Electric Wire & Cable (HK) Co Ltd	SS-120	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40034447 UL E226643
Alt. use	Inalways Corp.	0711	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	ENEC2010084 UL E94191
Alt. use	Zhe Jiang BeiErjia	ST-A01-003J	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40013388 UL E225980
Alt. use	Rong Feng IndustrialCo., Ltd.	SS-120	250 Vac; 10A; 3 pins, 75°C, C14 type	IEC/EN 60320-1 UL 498	VDE 40028101 UL E102641
(T1)	GlobTek / BOAM / HAOPUWEI	TF081(12.0-14.9V) TF082(13.4-14.9V) TF083(15-18.9V) TF084(17.0-18.9V) TF085(19.0-23.9V) TF086(21.5-23.9V) TF087(24.0-31.9V) TF088(27.6-31.9V) TF089(32.0-41.9V) TF090(36.5-41.9V) TF092(48.0-54.0V)	Class B, with critical component listed below	IEC 60950-1	Tested with appliance
- Insulation system used in T1	GlobTek	GTX-130-TM	Class 130 (B)	IEC 60950-1	Tested with appliance

Alt. use	Haopuwei	GTX-130-TM	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	Haopuwei	ZT-130	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	BOAM	BOAM-01	Class 130 (B)	IEC 60950-1	Tested with appliance
Alt. use	BOAM	B1	Class 130 (B)	IEC 60950-1	Tested with appliance
- Magnet wire	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U (UL E201757)	MW28-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	BOLUO COUNTY XIN LONG ELECTRICIAN DATA CO LTD	2UEW-F (UL E229423)	MW 79-C, 155°C	IEC 60950-1	Tested with appliance
Alt. use	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWS/U (UL E201757)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JUNG SHING WIRE CO LTD	UEW-4 (UL E174837)	MW75C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JUNG SHING WIRE CO LTD	UEY-2 (UL E174837)	MW28-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130 (UL E335065)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130 (UL E158909)	MW75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB (UL E206882)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	JIANGSU DARTONG M & E CO LTD	UEW (UL E237377)	MW 75-C, 130°C	IEC 60950-1	Tested with appliance
Alt. use	SHANDONG SAINT ELECTRIC CO LTD	UEW/130 (UL E194410)	MW75#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW (UL E222214)	MW 79#, 130°C	IEC 60950-1	Tested with appliance
Alt. use	NINGBO JINTIAN NEW MATERIAL CO LTD	2UEW (UL E227047)	MW 75-C, 130°C	IEC 60950-1	Tested with appliance
-Triple-insulated wire (Secondary)	Great Leoflon Industrial Co., Ltd.	TRW (B) Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 136581 UL E211989
Alt. use	COSMOLINK CO. Ltd.	TIW-M Serie(s)	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 138053 UL E213764
- Alt. use	Furukawa Electric Co., Ltd. Electronics & Automotive Systems Company Global Business Development Division	TEX-E	Class B, reinforced insulation	IEC 60950-1 UL 2353 UL 60601-1	VDE 006735 UL E206440

- Alt. use	TOTOKU ELECTRIC CO LTD	TIW-2	Reinforced insulation, rated 130° C (Class B)	IEC 60950-1 UL 2353 UL 60601-1	VDE 40005152 UL E249037
- Alt. use	E&B TECHNOLOGY CO LTD	E&B-XXXB E&B-XXXB-1	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40023473 UL E315265
Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TIW	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	Tested with appliance UL E249037
- Alt. use	SHENZHEN JIUDING NEW MATERIAL CO LTD	DTIW-B	Reinforced insulation, Class B	IEC 60950-1 UL 2353 UL 60601-1	VDE 40037495 UL E357999
-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	CHANG CHUN PLASTICS CO LTD	4130	V-0, 140°C, thickness 0.74 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E59481
- Alt. use	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E41429
- Alt. use	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC 60950-1 UL 94 UL 746 A/B/C/D	Tested with appliance UL E42956
-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F-1 1350T-1 44	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E17385
- Alt. use	BONDTEC PACIFIC CO LTD	370S(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E175868
- Alt. use	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO LTD	PZ CT WF	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E165111
- Alt. use	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246950
- Alt. use	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX(a)(b)	Min.130°C	IEC 60950-1 UL 510	Tested with appliance UL E246820
-PTFE tubing	GREAT HOLDING INDUSTRIAL CO LTD	TFT / TFS	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E156256
-Alt. use	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	WF	600V, 200°C	IEC 60950-1	Tested with appliance UL E203950
-Alt. use	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-TT-T / CB-TT-S	Min. 300V, 200°C	IEC 60950-1	Tested with appliance UL E180908

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