Unique Number: 003917

TEST REPORT

Product Name : **ICT/ITE POWER SUPPLY**

Model Number : **GT-43004P15024-T3, GT-43004P15024-T3A, GT-43004P12012-T3, GT-43004P12016-T3**

Prepared for : GlobTek, Inc.
Address : 186 VETERANS DRIVE NORTHVALE NJ 07647 United States of America

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

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Fax: (0755) 26954282

Report Number : ENS2304260212E00101R
Date(s) of Tests : April 26, 2023 to May 19, 2023
Date of issue : May 20, 2023

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APPENDIX A: Photos of EUT (6 Pages)
APPENDIX B: Critical Component List(9 Pages)

TEST REPORT DESCRIPTION

Applicant	:	GlobTek, Inc.
Manufacturer	:	GlobTek, Inc.
Trade Mark	:	G GlobTek, Inc.
EUT	:	ICT/ITE POWER SUPPLY
Model Number	:	GT-43004P15024-T3, GT-43004P15024-T3A, GT-43004P12012-T3, GT-43004P12016-T3
Unique Number	:	003917

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	:	April 26, 2023 to May 19, 2023
Prepared by	:	Jessie Hu/Editor
Reviewer	:	Kaimin Guo/Supervisor
Approved & Authorized Signer	:	Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
Ver.1.0	ENS2304260212E00101R	/	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	:	GT-43004P15024-T3, GT-43004P15024-T3A, GT-43004P12012-T3, GT-43004P12016-T3 (Note: These models are identical in circuitry and electrical, mechanical and physical construction; the only differences are the model number. for trading purpose. We prepare GT-43004P15024-T3 and GT-43004P12012-T3 for test.)
Rating	:	GT-43004P15024-T3 Input: 100-240V ~, 50-60Hz, 2.0A Output: 24.0V⎓6.25A, 150.0W GT-43004P12012-T3 Input: 100-240V ~, 50-60Hz, 2.0A Output: 12V⎓10A GT-43004P15024-T3A Input: 100-240V ~, 50-60Hz, 2.0A Output: 24.0V⎓6.25A, 150.0W GT-43004P12016-T3 Input: 100-240V ~, 50-60Hz, 2.0A Output: 16V⎓7.5A, 120W
Applicant	:	GlobTek, Inc.
Address	:	186 VETERANS DRIVE NORTHVALE NJ 07647 United States of America
Manufacturer	:	GlobTek, Inc.
Address	:	186 VETERANS DRIVE NORTHVALE NJ 07647 United States of America
Factroy	:	GlobTek (Suzhou) Co., Ltd.
Address	:	Building 4, No. 76 JinLing East Road, Suzhou Industrial Park, Suzhou, JiangSu, 215021, China
Date of Received	:	April 26, 2023
Date of Test	:	April 26, 2023 to May 19, 2023

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.1
Radiated emissions at frequencies up to 1 GHz	AC 220V/50Hz	Mode A	Mode A.1
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 1# Chamber)	:	4.46dB (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 13, 2023	1 Year
☑	AMN	Rohde & Schwarz	ENV216	101161	May 13, 2023	1 Year
☑	AMN	Kyoritsu	KNW-407	8-1492-9	May 11, 2023	1 Year

3.2. For Radiated Emission Measurement (3m)

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Pre-Amplifier	HP	8447F	2944A07999	May 13, 2023	1 Year
☑	EMI Test Receiver	Rohde & Schwarz	ESCI	101414	May 13, 2023	1 Year
☑	Bilog Antenna	Schwarzbeck	VULB9163	712	July 05, 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 13, 2023	1 Year
☑	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	May 13, 2023	1 Year
☑	Impedance network	Teseq	INA2197/37A	1305A02873	May 13, 2023	1 Year
☑	Impedance network	Teseq	INA 2196/75A	1305A02874	May 13, 2023	1 Year
☐	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	May 13, 2023	1 Year

3.4. For Electrostatic Discharge Immunity Test

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	ESD Tester	EMTEST	Dito	CR46527B	Nov. 01, 2022	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 13, 2023	1 Year
☑	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 13, 2023	1 Year
☑	Log.-Per. Antenna	SCHWARZBECK	STLP 9129-7/16	3050	N/A	N/A
☑	Signal Generator	Agilent	N5181A	MY50145187	May 13, 2023	1 Year
☑	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 13, 2023	1 Year
☑	Field Strength Meter	DARE	RSS1006A	10I00037SNO22	May 23, 2022	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 13, 2023	1 Year
☑	Power Amplifier	Vectawave	VBA 1000-600C	133627	Oct. 31, 2022	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 15, 2023	1 Year
☐	Coupling Clamp	HAEFELY	IP-4A	147147	May 11, 2023	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 10, 2023	1 Year
☑	Impulse Module	HAEFELY	PIM 100	174124	May 10, 2023	1 Year
☑	Coupling Decoupling	HAEFELY	PCD 130	172181	May 10, 2023	1 Year
☐	Coupling Module	HAEFELY	PCD122	174354	May 10, 2023	1 Year
☐	Impulse Module	HAEFELY	PIM 120	174435	May 10, 2023	1 Year
☐	Coupling Module	HAEFELY	PCD 126A	174387	May 10, 2023	1 Year
☐	Impulse Module	HAEFELY	PIM 110	174391	May 10, 2023	1 Year
☐	Impulse Module	HAEFELY	PIM 150	178707	May 15, 2023	1 Year
☐	Impulse Module	PMI	PCDN8	190422	May 10, 2023	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 11, 2023	1 Year
☐	CDN	EMTEST	CDN-M2	510010010010	May 10, 2023	1 Year
☑	CDN	EMTEST	CDN-M3	0900-11	May 10, 2023	1 Year
☐	EM Injection Clamp	EMTEST	F-2031-23MM	368	May 10, 2023	1 Year
☑	Attenuator	EMTEST	100W 6dB DC-3G	/	May 11, 2023	1 Year
☐	Signal Generator	R&S	SMB100A	103041	May 11, 2023	1 Year
☑	CDN	LUTHI	CDN L-801 M2/M3	2606	May 10, 2023	1 Year

3.9. For Power Frequency Magnetic Field Immunity Test

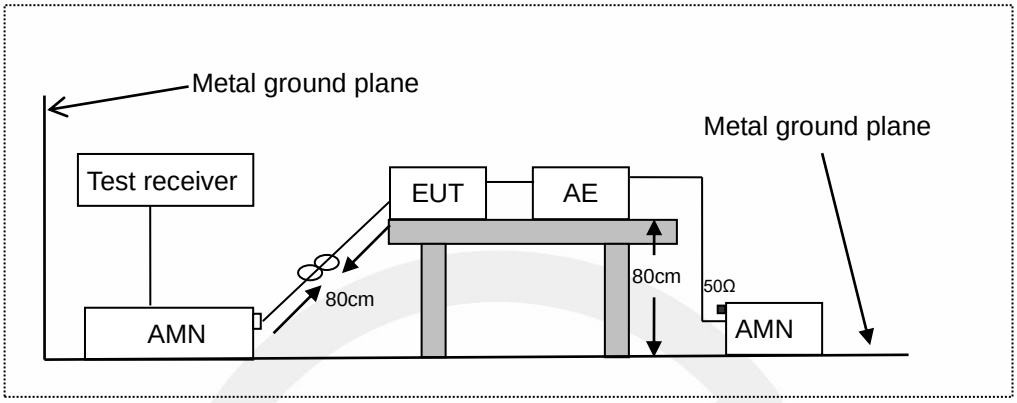
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
☑	Magnetic Field Tester	HAEFELY	MAG100	250040.1	May 10, 2023	1 Year

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 13, 2023	1 Year
☐	Signal conditioning Unit	Teseq	CCN 1000-3	1305A02873	May 13, 2023	1 Year
☐	Impedance network	Teseq	INA2197/37A	1305A02873	May 13, 2023	1 Year
☐	Impedance network	Teseq	INA 2196/75A	1305A02874	May 13, 2023	1 Year
☑	Profline 2100 AC Switching Unit	Teseq	NSG 2200-3	A22714	May 13, 2023	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.

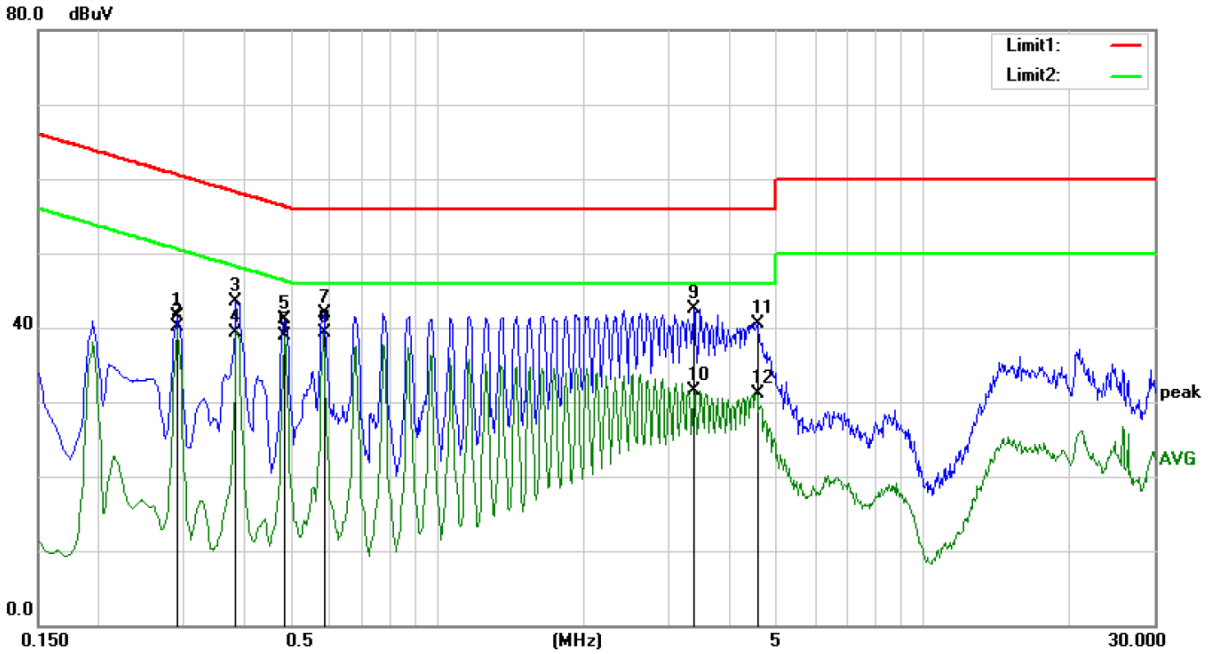
Set the test-receiver system to quasi peak detect function and average detect function, and to measure the conducted emissions values.

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.



Site Conduction #1 Phase: *L1* Temperature: 21.9

Limit: (CE)CISRP32 CLASS B_QP Power: AC 220V/50Hz Humidity: 58 %

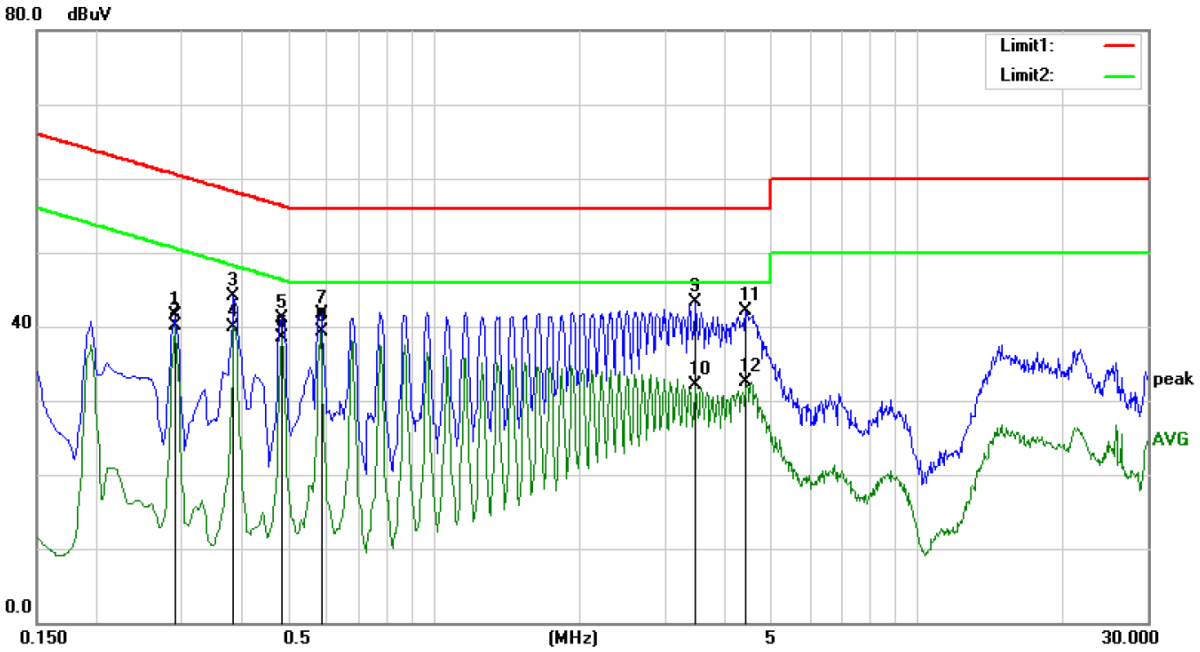
M/N: GT-43004P15024-T3

Mode: FULL LOAD

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2900	31.93	9.53	41.46	60.52	-19.06	QP	
2		0.2900	30.65	9.53	40.18	50.52	-10.34	AVG	
3		0.3850	33.94	9.54	43.48	58.17	-14.69	QP	
4		0.3850	29.85	9.54	39.39	48.17	-8.78	AVG	
5		0.4850	31.51	9.53	41.04	56.25	-15.21	QP	
6		0.4850	29.41	9.53	38.94	46.25	-7.31	AVG	
7		0.5850	32.41	9.53	41.94	56.00	-14.06	QP	
8	*	0.5850	29.69	9.53	39.22	46.00	-6.78	AVG	
9		3.3800	32.93	9.56	42.49	56.00	-13.51	QP	
10		3.3800	22.03	9.56	31.59	46.00	-14.41	AVG	
11		4.5500	30.96	9.57	40.53	56.00	-15.47	QP	
12		4.5500	21.52	9.57	31.09	46.00	-14.91	AVG	

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



Site Conduction #1 Phase: *N* Temperature: 21.9

Limit: (CE)CISRP32 CLASS B_QP Power: AC 220V/50Hz Humidity: 58 %

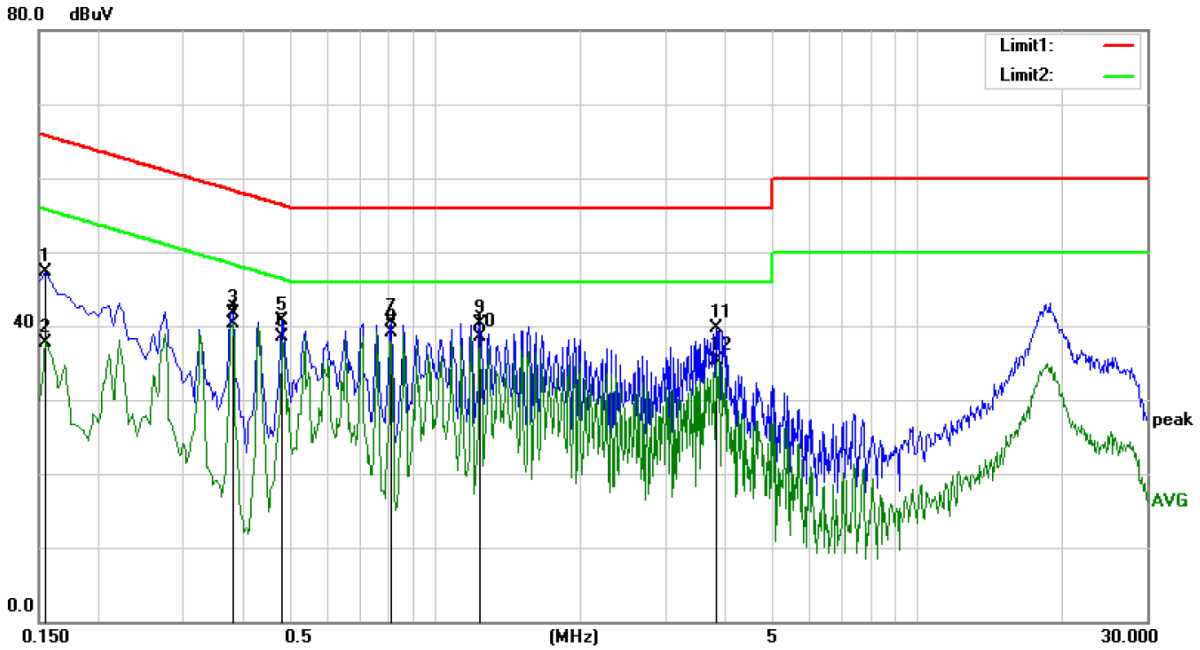
M/N: GT-43004P15024-T3

Mode: FULL LOAD

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2900	31.89	9.53	41.42	60.52	-19.10	QP	
2		0.2900	30.67	9.53	40.20	50.52	-10.32	AVG	
3		0.3850	34.58	9.54	44.12	58.17	-14.05	QP	
4		0.3850	30.41	9.54	39.95	48.17	-8.22	AVG	
5		0.4850	31.67	9.53	41.20	56.25	-15.05	QP	
6		0.4850	29.06	9.53	38.59	46.25	-7.66	AVG	
7		0.5850	32.08	9.53	41.61	56.00	-14.39	QP	
8	*	0.5850	29.69	9.53	39.22	46.00	-6.78	AVG	
9		3.4750	33.79	9.56	43.35	56.00	-12.65	QP	
10		3.4750	22.49	9.56	32.05	46.00	-13.95	AVG	
11		4.4200	32.56	9.57	42.13	56.00	-13.87	QP	
12		4.4200	22.85	9.57	32.42	46.00	-13.58	AVG	

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



Site Conduction #1 Phase: *L1* Temperature: 21.9

Limit: (CE)CISRP32 CLASS B_QP Power: AC 220V/50Hz Humidity: 58 %

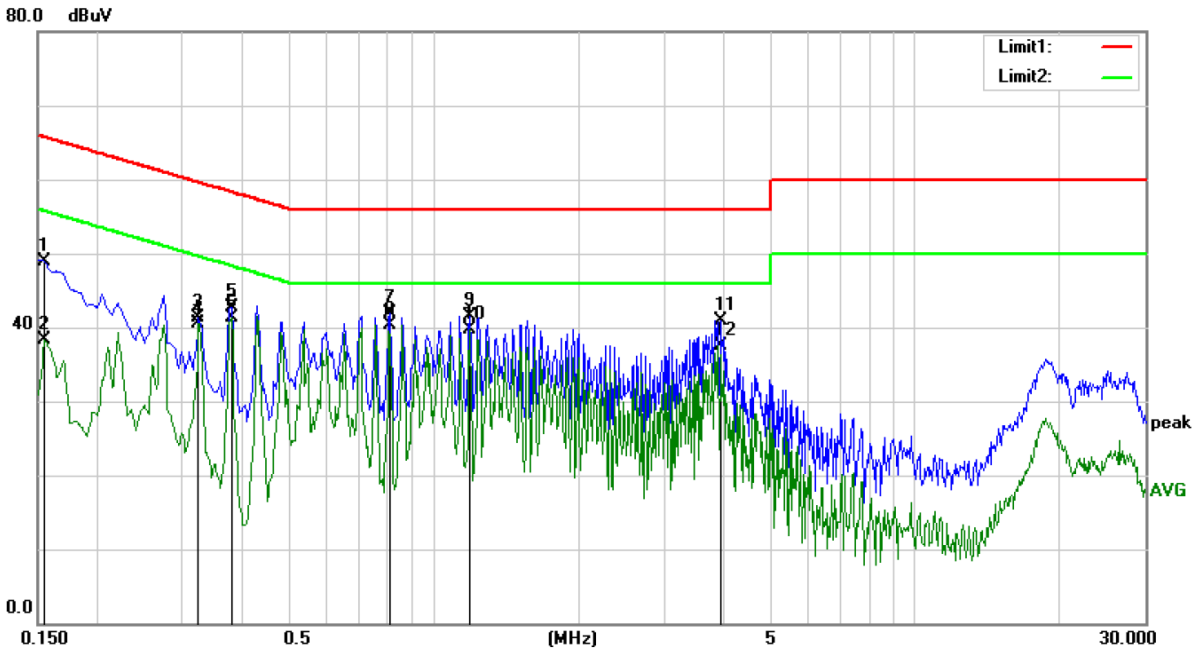
M/N: GT-43004P12012-T3

Mode: FULL LOAD

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	37.75	9.53	47.28	65.73	-18.45	QP	
2		0.1550	28.27	9.53	37.80	55.73	-17.93	AVG	
3		0.3800	32.14	9.54	41.68	58.28	-16.60	QP	
4		0.3800	30.70	9.54	40.24	48.28	-8.04	AVG	
5		0.4800	31.08	9.53	40.61	56.34	-15.73	QP	
6		0.4800	28.93	9.53	38.46	46.34	-7.88	AVG	
7		0.8100	30.99	9.54	40.53	56.00	-15.47	QP	
8	*	0.8100	29.54	9.54	39.08	46.00	-6.92	AVG	
9		1.2400	30.68	9.55	40.23	56.00	-15.77	QP	
10		1.2400	28.98	9.55	38.53	46.00	-7.47	AVG	
11		3.8350	30.15	9.56	39.71	56.00	-16.29	QP	
12		3.8350	25.66	9.56	35.22	46.00	-10.78	AVG	

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



Site Conduction #1 Phase: N Temperature: 21.9

Limit: (CE)CISRP32 CLASS B_QP Power: AC 220V/50Hz Humidity: 58 %

M/N: GT-43004P12012-T3

Mode: FULL LOAD

Note:

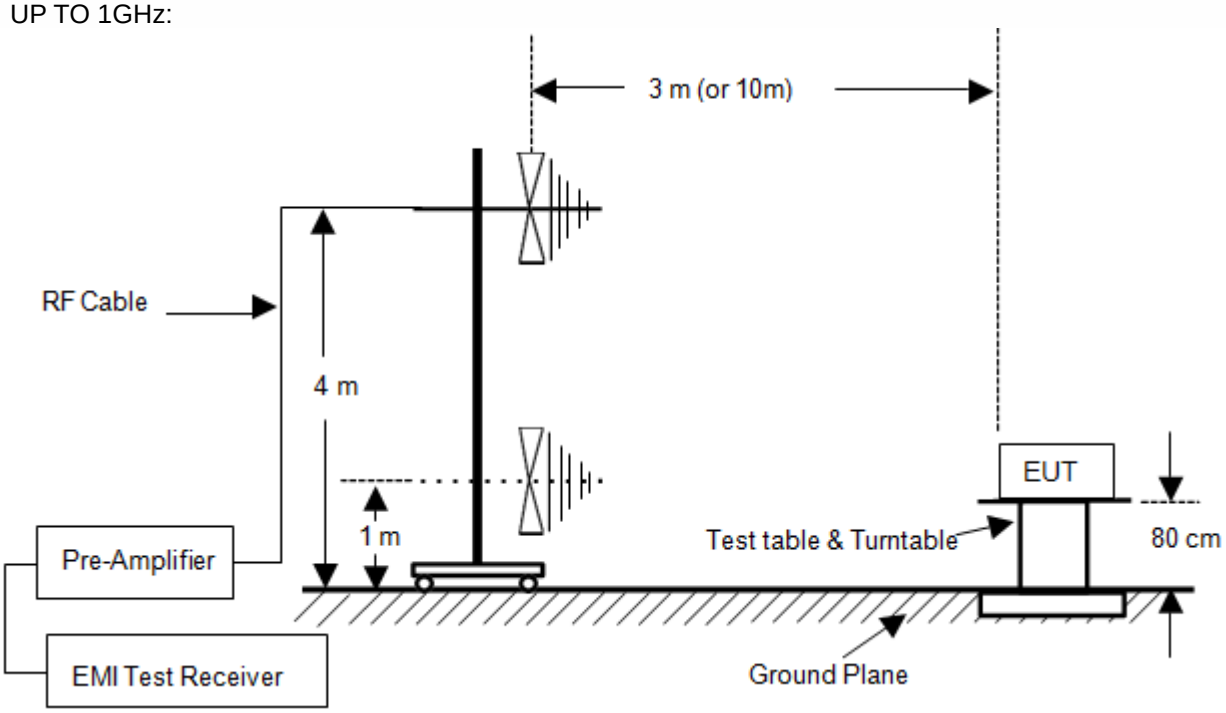
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	39.45	9.53	48.98	65.73	-16.75	QP	
2		0.1550	28.81	9.53	38.34	55.73	-17.39	AVG	
3		0.3250	31.77	9.53	41.30	59.58	-18.28	QP	
4		0.3250	31.01	9.53	40.54	49.58	-9.04	AVG	
5		0.3800	33.22	9.54	42.76	58.28	-15.52	QP	
6		0.3800	31.72	9.54	41.26	48.28	-7.02	AVG	
7		0.8100	32.28	9.54	41.82	56.00	-14.18	QP	
8	*	0.8100	30.69	9.54	40.23	46.00	-5.77	AVG	
9		1.1850	31.90	9.55	41.45	56.00	-14.55	QP	
10		1.1850	30.16	9.55	39.71	46.00	-6.29	AVG	
11		3.9400	31.44	9.56	41.00	56.00	-15.00	QP	
12		3.9400	27.88	9.56	37.44	46.00	-8.56	AVG	

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

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.

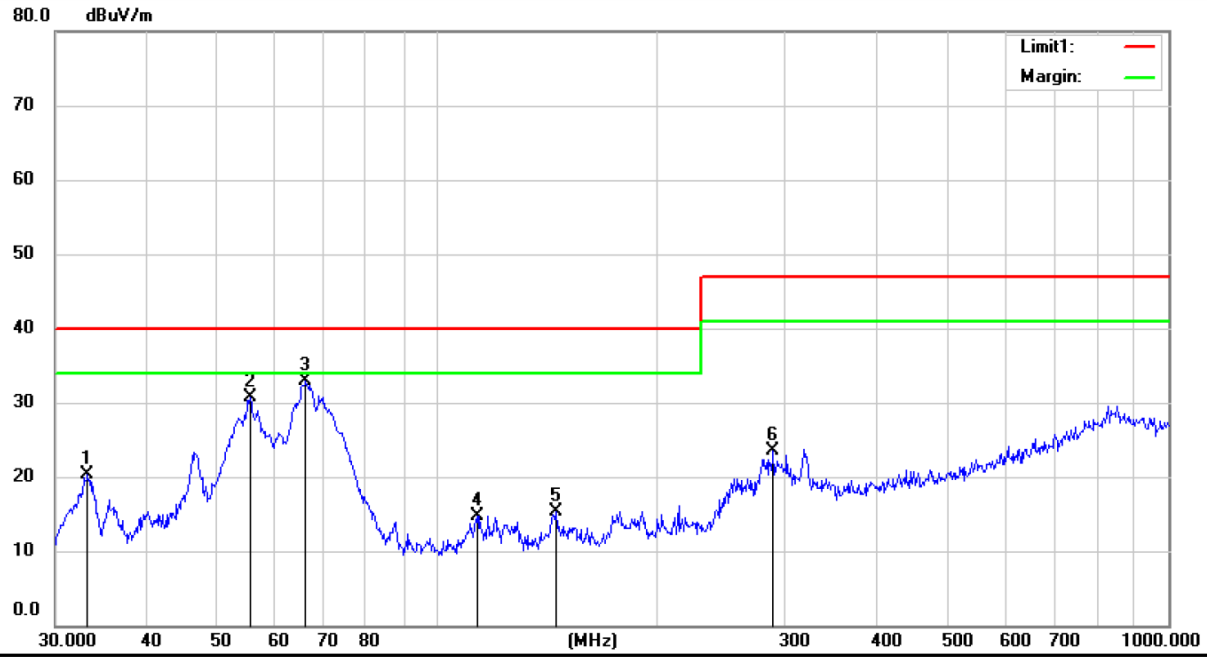
The bandwidth of the Receiver is set at 120 kHz.

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.



Site 3m Chamber #1 | Polarization: ***Horizontal*** | Temperature: 26 C

Limit: (RE)CISRP32 CLASS B | Power: AC 220V/50Hz | Humidity: 60 %

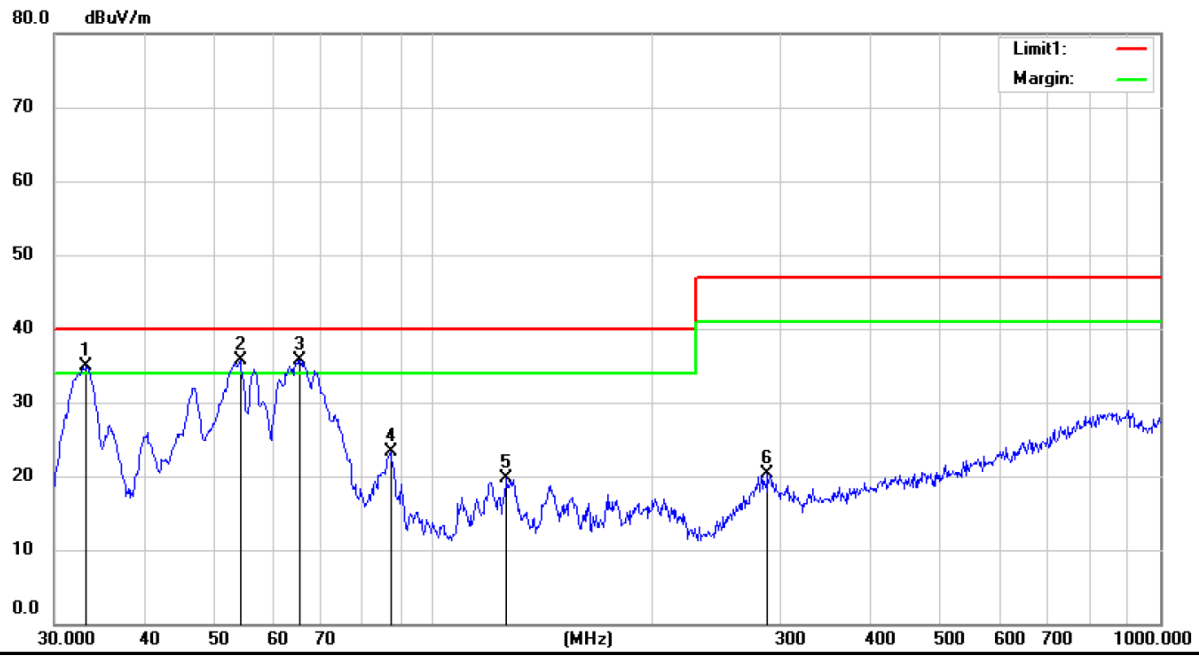
M/N: GT-43004P15024-T3

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		33.3133	35.80	-15.41	20.39	40.00	-19.61	QP			
2		55.4147	43.83	-13.20	30.63	40.00	-9.37	QP			
3	*	66.0342	46.46	-13.62	32.84	40.00	-7.16	QP			
4		113.6645	30.51	-15.73	14.78	40.00	-25.22	QP			
5		145.5418	30.88	-15.67	15.21	40.00	-24.79	QP			
6		288.6223	34.59	-11.18	23.41	47.00	-23.59	QP			

*:Maximum data x:Over limit !:over margin Operator: LYX



Site 3m Chamber #1 Polarization: ***Vertical*** Temperature: 26 C

Limit: (RE)CISRP32 CLASS B Power: AC 220V/50Hz Humidity: 60 %

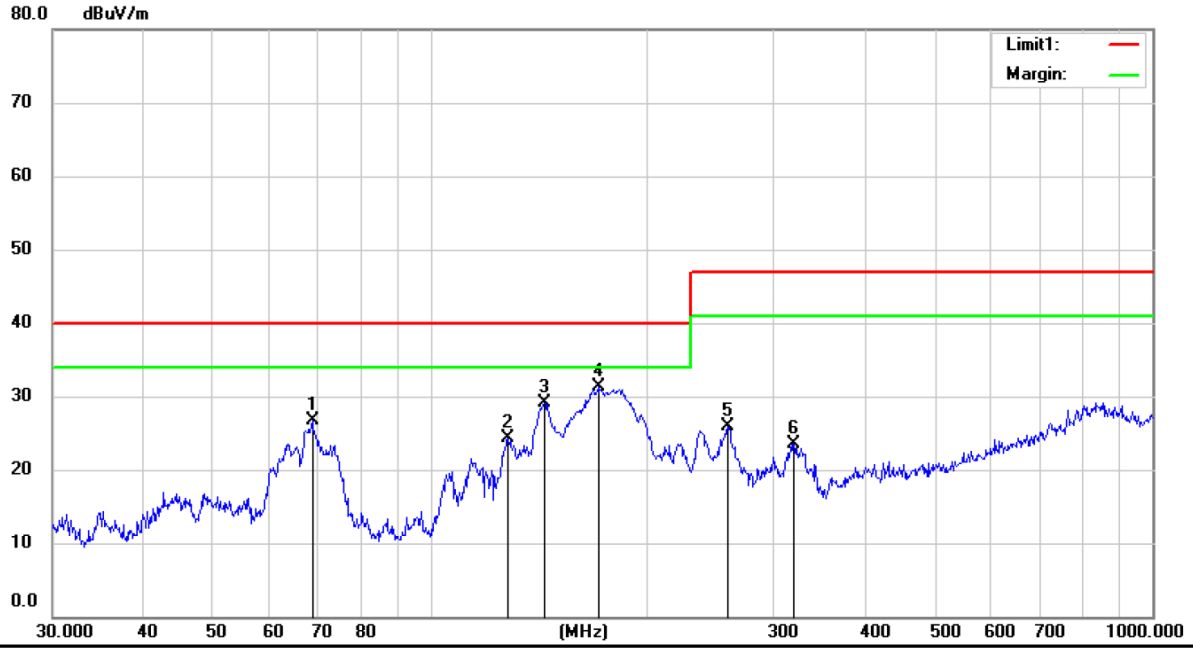
M/N: GT-43004P15024-T3

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	!	33.2258	50.24	-15.42	34.82	40.00	-5.18	QP			
2	!	54.1897	48.89	-13.28	35.61	40.00	-4.39	QP			
3	*	65.4866	49.23	-13.50	35.73	40.00	-4.27	QP			
4		87.3411	40.20	-16.83	23.37	40.00	-16.63	QP			
5		125.9415	35.61	-15.86	19.75	40.00	-20.25	QP			
6		287.9904	31.58	-11.25	20.33	47.00	-26.67	QP			

*:Maximum data x:Over limit !:over margin Operator: LYX



Site 3m Chamber #1 Polarization: ***Horizontal*** Temperature: 26 C

Limit: (RE)CISRP32 CLASS B Power: AC 220V/50Hz Humidity: 60 %

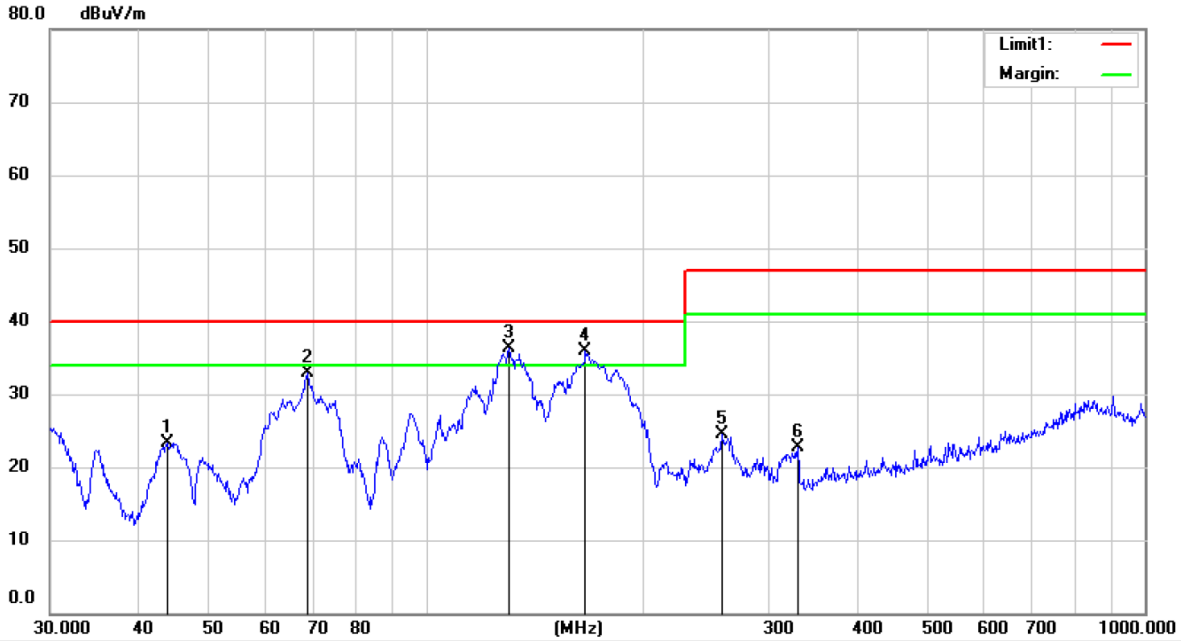
M/N: GT-43004P12012-T3

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		68.8118	40.87	-14.25	26.62	40.00	-13.38	QP			
2		128.5066	40.30	-15.94	24.36	40.00	-15.64	QP			
3		143.8926	44.87	-15.82	29.05	40.00	-10.95	QP			
4	*	171.1673	46.82	-15.54	31.28	40.00	-8.72	QP			
5		258.6663	38.56	-12.57	25.99	47.00	-21.01	QP			
6		318.8170	34.08	-10.50	23.58	47.00	-23.42	QP			

*:Maximum data x:Over limit !:over margin Operator: LYX



Site 3m Chamber #1 Polarization: ***Vertical*** Temperature: 26 C

Limit: (RE)CISRP32 CLASS B Power: AC 220V/50Hz Humidity: 60 %

M/N: GT-43004P12012-T3

Mode: FULL LOAD

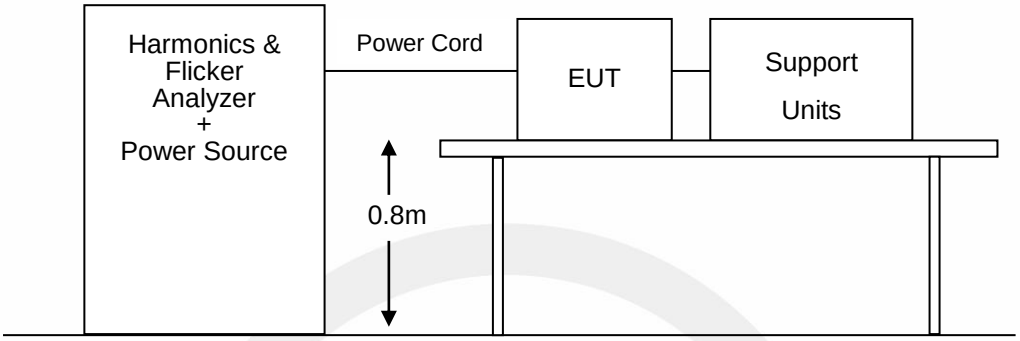
Note:

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		43.7352	37.11	-13.80	23.31	40.00	-16.69	QP			
2		68.3908	47.15	-14.16	32.99	40.00	-7.01	QP			
3	*	130.6077	52.33	-15.96	36.37	40.00	-3.63	QP			
4	!	166.8707	51.63	-15.74	35.89	40.00	-4.11	QP			
5		258.4397	37.06	-12.58	24.48	47.00	-22.52	QP			
6		329.0390	32.73	-9.97	22.76	47.00	-24.24	QP			

*:Maximum data x:Over limit !:over margin Operator: LYX

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.

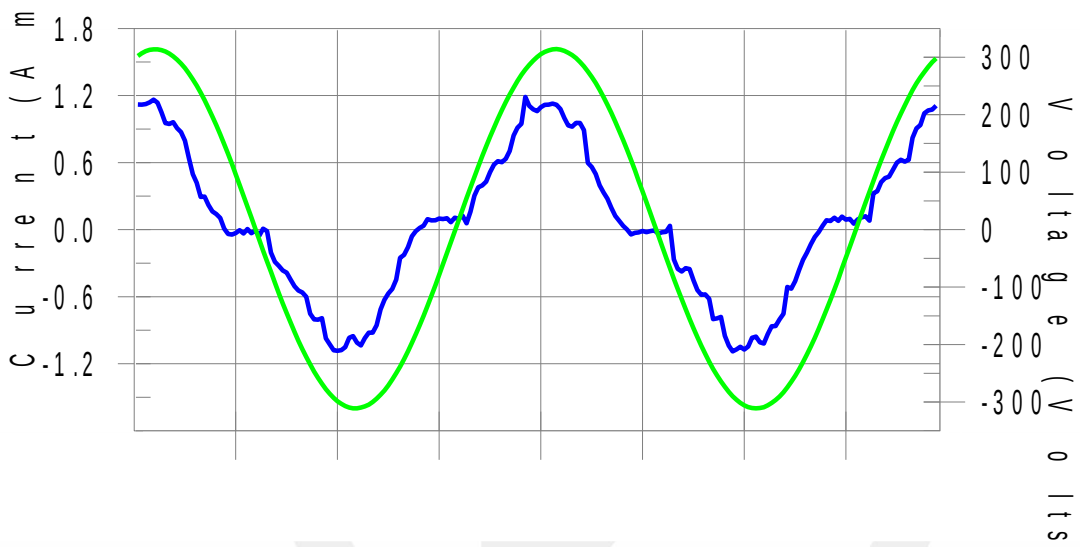
Please see the attached pages.

Harmonics – Class-A per IEC 61000-3-2 (Run time) incl. inter-harmonics

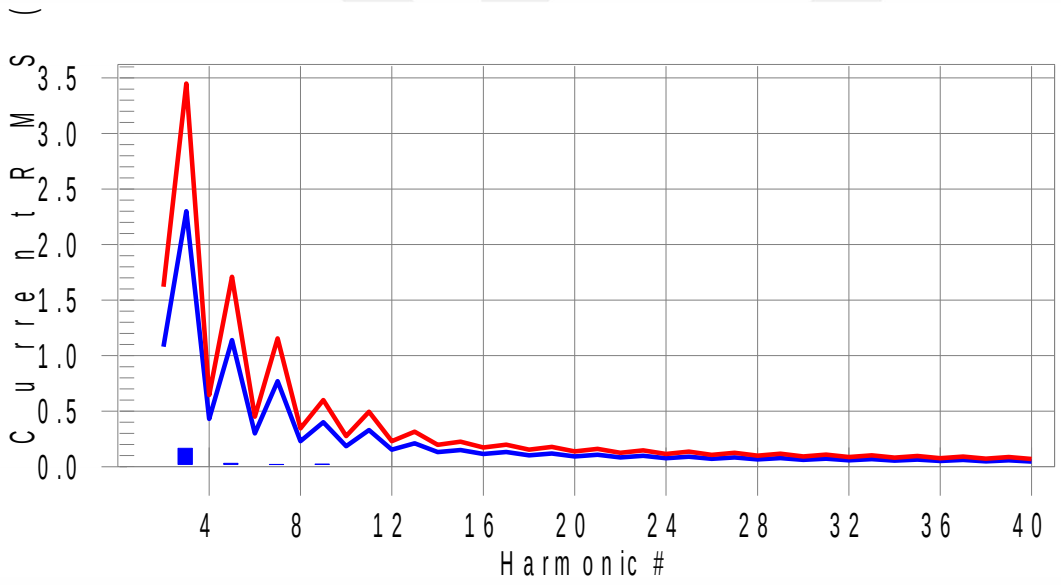
EUT: ICT/ITE POWER SUPPLY(GT-43004P15024-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 1:15:30** **End time: 1:18:12**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000204.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

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

Current & voltage waveforms



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



Test result: Pass Worst harmonics H23-10.1% of 150% limit, H31-12.5% of 100% limit.

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY(GT-43004P15024-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 1:15:30** **End time: 1:18:12**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000204.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.174 **I-THD(%): 27.1** **POHC(A): 0.025** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.922	Frequency(Hz):	50.00
I_Peak (Amps):	1.251	I_RMS (Amps):	0.668
I_Fund (Amps):	0.642	Crest Factor:	1.917
Power (Watts):	138.5	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	0.003	1.620	N/A	Pass
3	0.166	2.300	7.2	0.170	3.450	4.9	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.030	1.140	2.7	0.031	1.710	1.8	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.020	0.770	2.7	0.023	1.155	2.0	Pass
8	0.002	0.230	N/A	0.002	0.345	N/A	Pass
9	0.022	0.400	5.5	0.023	0.600	3.8	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.002	0.330	N/A	0.004	0.495	N/A	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.007	0.210	3.1	0.008	0.315	2.4	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.009	0.150	6.3	0.010	0.225	4.6	Pass
16	0.002	0.115	N/A	0.003	0.173	N/A	Pass
17	0.007	0.132	5.4	0.008	0.198	4.0	Pass
18	0.003	0.102	N/A	0.007	0.153	N/A	Pass
19	0.011	0.118	9.4	0.012	0.178	6.8	Pass
20	0.002	0.092	N/A	0.003	0.138	N/A	Pass
21	0.008	0.107	7.7	0.010	0.161	6.4	Pass
22	0.002	0.084	N/A	0.003	0.125	N/A	Pass
23	0.012	0.098	12.3	0.015	0.147	10.1	Pass
24	0.004	0.077	N/A	0.007	0.115	N/A	Pass
25	0.010	0.090	11.7	0.011	0.135	8.4	Pass
26	0.003	0.071	N/A	0.004	0.107	N/A	Pass
27	0.007	0.083	8.5	0.009	0.125	7.2	Pass
28	0.003	0.066	N/A	0.003	0.099	N/A	Pass
29	0.008	0.078	10.6	0.011	0.116	9.7	Pass
30	0.002	0.061	N/A	0.002	0.092	N/A	Pass
31	0.009	0.073	12.5	0.011	0.109	9.7	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.004	0.068	N/A	0.008	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.003	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	0.006	0.061	10.3	0.007	0.091	7.9	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.004	0.058	N/A	0.006	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(GT-43004P15024-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 1:15:30** **End time: 1:18:12**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000204.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

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

Highest parameter values during test:

Voltage (Vrms):	220.922	Frequency(Hz):	50.00
I_Peak (Amps):	1.251	I_RMS (Amps):	0.668
I_Fund (Amps):	0.642	Crest Factor:	1.917
Power (Watts):	138.5	Power Factor:	0.940

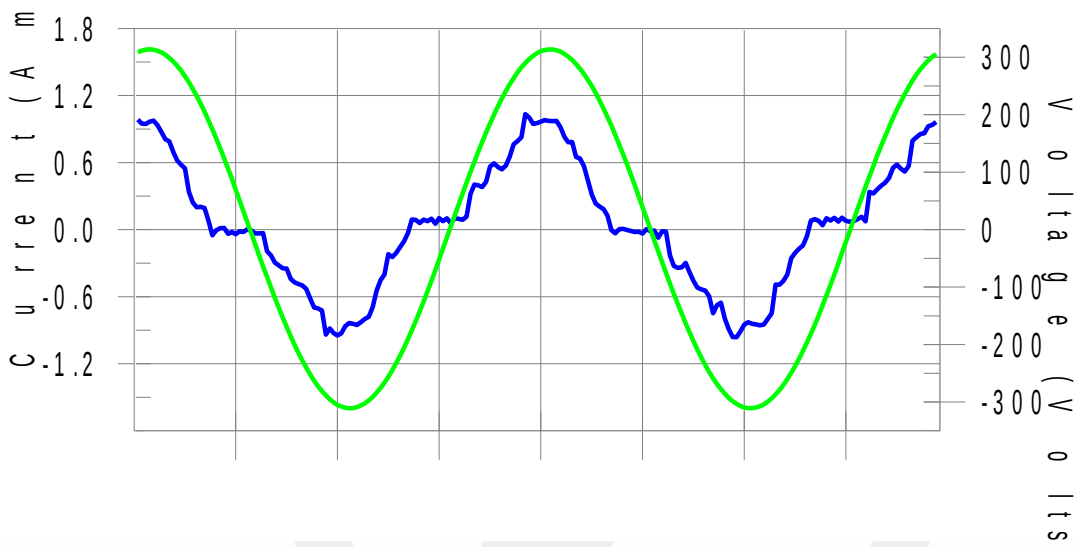
Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.079	0.442	17.99	OK
3	0.113	1.988	5.70	OK
4	0.023	0.442	5.25	OK
5	0.035	0.884	3.97	OK
6	0.004	0.442	1.00	OK
7	0.036	0.663	5.38	OK
8	0.011	0.442	2.41	OK
9	0.025	0.442	5.61	OK
10	0.007	0.442	1.59	OK
11	0.022	0.221	9.89	OK
12	0.005	0.221	2.28	OK
13	0.017	0.221	7.88	OK
14	0.006	0.221	2.84	OK
15	0.027	0.221	12.15	OK
16	0.004	0.221	1.78	OK
17	0.013	0.221	6.03	OK
18	0.003	0.221	1.30	OK
19	0.011	0.221	5.12	OK
20	0.008	0.221	3.71	OK
21	0.019	0.221	8.76	OK
22	0.002	0.221	1.13	OK
23	0.026	0.221	11.55	OK
24	0.003	0.221	1.50	OK
25	0.010	0.221	4.46	OK
26	0.004	0.221	1.92	OK
27	0.017	0.221	7.60	OK
28	0.005	0.221	2.16	OK
29	0.021	0.221	9.42	OK
30	0.004	0.221	1.62	OK
31	0.022	0.221	9.92	OK
32	0.003	0.221	1.16	OK
33	0.016	0.221	7.25	OK
34	0.003	0.221	1.33	OK
35	0.007	0.221	3.37	OK
36	0.002	0.221	0.97	OK
37	0.017	0.221	7.82	OK
38	0.002	0.221	1.02	OK
39	0.014	0.221	6.30	OK
40	0.007	0.221	3.00	OK

Harmonics – Class-A per IEC 61000-3-2 (Run time) incl. inter-harmonics

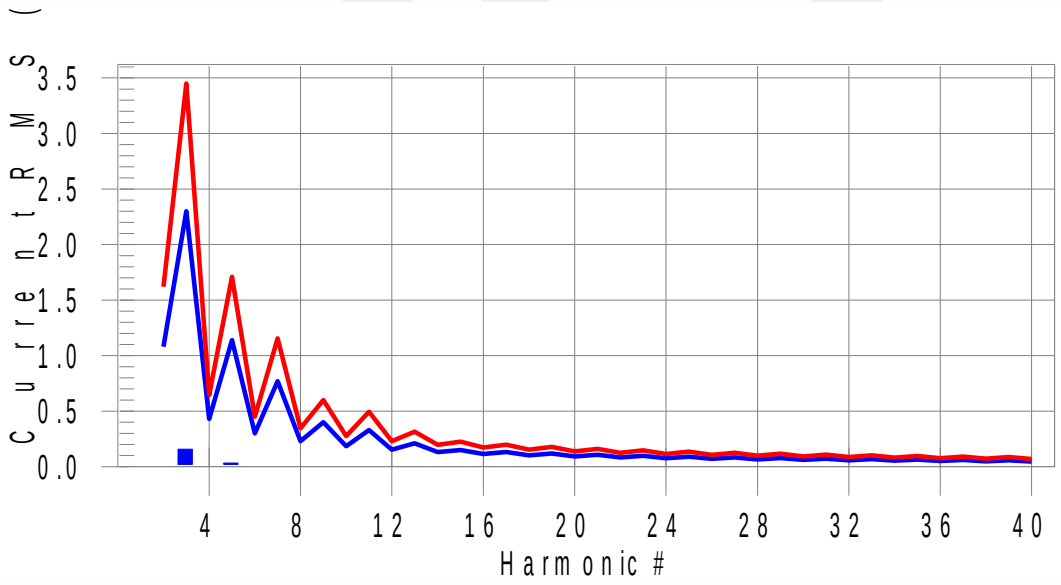
EUT: ICT/ITE POWER SUPPLY(GT-43004P12012-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 0:57:18** **End time: 1:00:01**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000203.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

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

Current & voltage waveforms



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



Test result: Pass **Worst harmonics H21-10.7% of 150% limit, H21-13% of 100% limit.**

Current Test Result Summary (Run time)

EUT: ICT/ITE POWER SUPPLY(GT-43004P12012-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 0:57:18** **End time: 1:00:01**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000203.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

Test Result: Pass **Source qualification: Normal**
THC(A): 0.165 **I-THD(%): 30.9** **POHC(A): 0.025** **POHC Limit(A): 0.251**

Highest parameter values during test:

V_RMS (Volts):	220.929	Frequency(Hz):	50.00
I_Peak (Amps):	1.137	I_RMS (Amps):	0.564
I_Fund (Amps):	0.536	Crest Factor:	2.068
Power (Watts):	114.8	Power Factor:	0.923

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	1.080	N/A	0.003	1.620	N/A	Pass
3	0.157	2.300	6.8	0.161	3.450	4.7	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.033	1.140	2.9	0.033	1.710	2.0	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.014	0.770	1.8	0.015	1.155	1.3	Pass
8	0.002	0.230	N/A	0.002	0.345	N/A	Pass
9	0.014	0.400	3.6	0.016	0.600	2.7	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.004	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	0.013	0.210	6.3	0.014	0.315	4.4	Pass
14	0.002	0.131	N/A	0.002	0.197	N/A	Pass
15	0.007	0.150	4.8	0.008	0.225	3.5	Pass
16	0.001	0.115	N/A	0.002	0.173	N/A	Pass
17	0.007	0.132	4.9	0.008	0.198	3.8	Pass
18	0.002	0.102	N/A	0.003	0.153	N/A	Pass
19	0.012	0.118	10.0	0.014	0.178	8.0	Pass
20	0.002	0.092	N/A	0.002	0.138	N/A	Pass
21	0.014	0.107	13.0	0.017	0.161	10.7	Pass
22	0.001	0.084	N/A	0.002	0.125	N/A	Pass
23	0.007	0.098	6.8	0.008	0.147	5.4	Pass
24	0.003	0.077	N/A	0.003	0.115	N/A	Pass
25	0.011	0.090	12.4	0.013	0.135	9.9	Pass
26	0.003	0.071	N/A	0.003	0.107	N/A	Pass
27	0.008	0.083	9.3	0.010	0.125	8.2	Pass
28	0.003	0.066	N/A	0.003	0.099	N/A	Pass
29	0.010	0.078	12.6	0.010	0.116	8.8	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	0.003	0.068	N/A	0.005	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.008	0.064	13.0	0.009	0.096	9.7	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.004	0.061	N/A	0.005	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.003	0.058	N/A	0.003	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(GT-43004P12012-T3) **Tested by: YJ**
Test category: Class-A (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 0:57:18** **End time: 1:00:01**
Test duration (min): 2.5 **Data file name: CTSMXL_H-000203.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

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

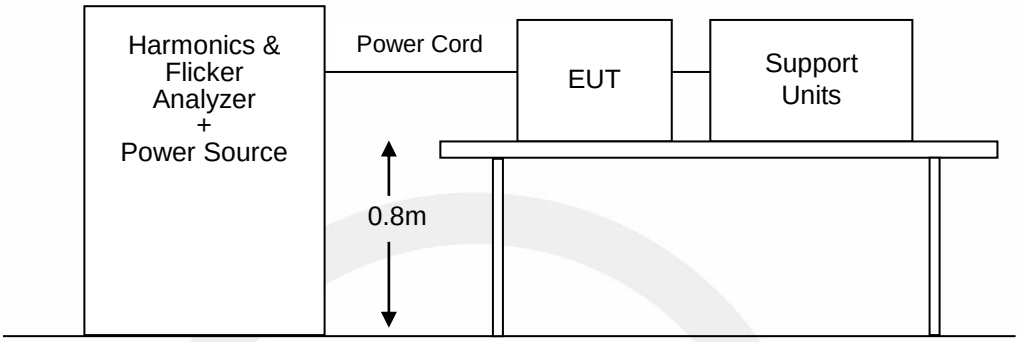
Highest parameter values during test:

Voltage (Vrms):	220.929	Frequency(Hz):	50.00
I_Peak (Amps):	1.137	I_RMS (Amps):	0.564
I_Fund (Amps):	0.536	Crest Factor:	2.068
Power (Watts):	114.8	Power Factor:	0.923

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.082	0.442	18.50	OK
3	0.111	1.988	5.57	OK
4	0.022	0.442	5.04	OK
5	0.030	0.883	3.42	OK
6	0.004	0.442	0.93	OK
7	0.035	0.663	5.31	OK
8	0.011	0.442	2.47	OK
9	0.029	0.442	6.64	OK
10	0.007	0.442	1.61	OK
11	0.025	0.221	11.30	OK
12	0.006	0.221	2.53	OK
13	0.025	0.221	11.10	OK
14	0.007	0.221	3.01	OK
15	0.025	0.221	11.26	OK
16	0.004	0.221	1.91	OK
17	0.012	0.221	5.49	OK
18	0.003	0.221	1.50	OK
19	0.023	0.221	10.59	OK
20	0.007	0.221	3.36	OK
21	0.028	0.221	12.89	OK
22	0.003	0.221	1.44	OK
23	0.012	0.221	5.25	OK
24	0.004	0.221	1.70	OK
25	0.021	0.221	9.54	OK
26	0.005	0.221	2.12	OK
27	0.019	0.221	8.52	OK
28	0.004	0.221	2.01	OK
29	0.019	0.221	8.72	OK
30	0.003	0.221	1.48	OK
31	0.008	0.221	3.84	OK
32	0.003	0.221	1.45	OK
33	0.013	0.221	5.94	OK
34	0.003	0.221	1.30	OK
35	0.022	0.221	10.11	OK
36	0.002	0.221	1.00	OK
37	0.014	0.221	6.26	OK
38	0.003	0.221	1.46	OK
39	0.006	0.221	2.73	OK
40	0.006	0.221	2.49	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.

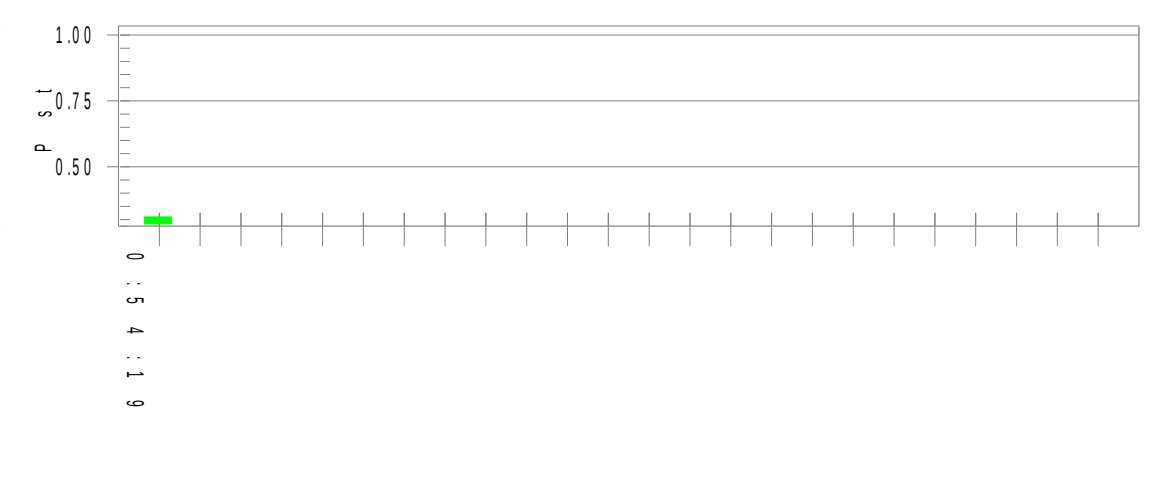
Please see the attached page.

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: ICT/ITE POWER SUPPLY(GT-43004P15024-T3) **Tested by: YJ**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 0:43:58** **End time: 0:54:26**
Test duration (min): 10 **Data file name: CTSMXL_F-000202.cts_data**
Comment: Full Load
Customer: GlobTek, Inc.

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

Pst and limit line **European Limits**



Parameter values recorded during the test:

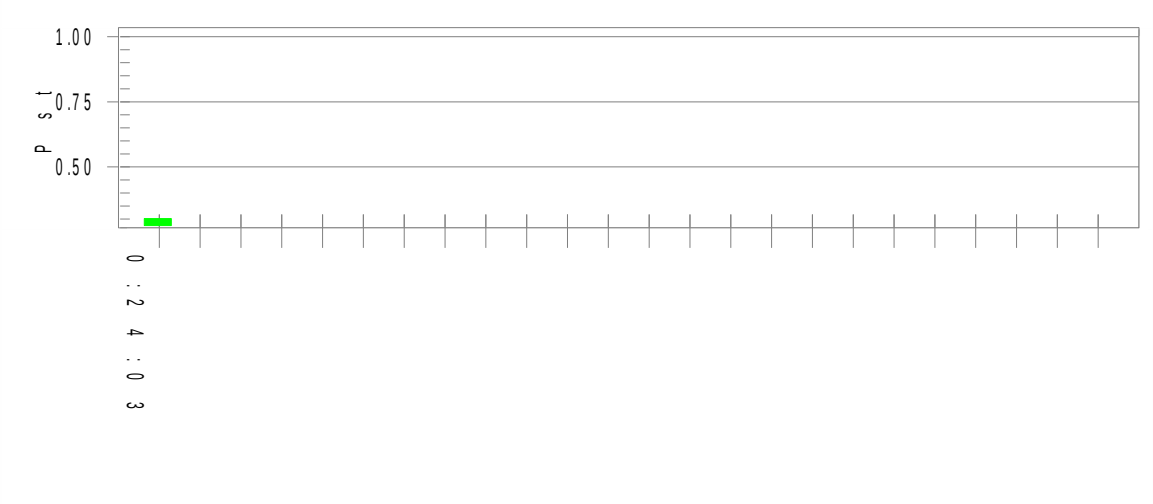
Vrms at the end of test (Volt):	**220.73**			
T-max (mS):	**0.0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**-0.06**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.309**	**Test limit:**	**1.000**	**Pass**

Flicker Test Summary per EN/IEC61000-3-3 (Run time)

EUT: ICT/ITE POWER SUPPLY(GT-43004P12012-T3) **Tested by: YJ**
Test category: All parameters (European limits) **Test Margin: 100**
Test date: 2023/5/11 **Start time: 0:13:42** **End time: 0:24:09**
Test duration (min): 10 **Data file name: CTSMXL_F-000199.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):	**220.72**			
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):	**0.301**	**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.

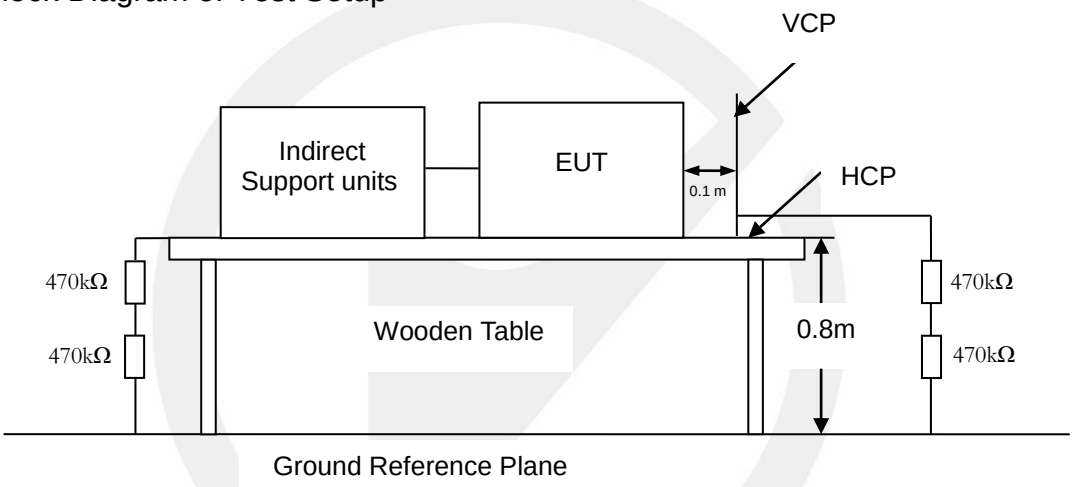
Performance criterion C
Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacturer's instructions. A reboot or re-start operation is allowed. Information stored in non-volatile memory, or 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	:	24.1°C
Humidity	:	53%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

Air Discharge:

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

Contact Discharge

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

Indirect Discharge

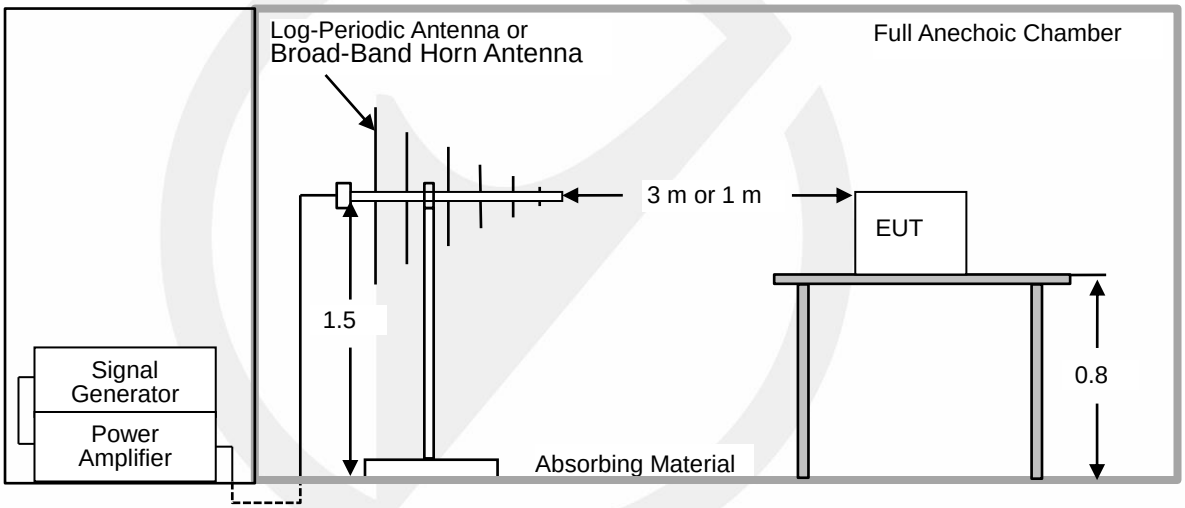
Test Voltage	Location	Actual criterion	Required performance criterion	Result (Pass/Fail)
±2; 4 kV	HCP	A	B	Pass
±2; 4kV	VCP	A	B	Pass

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	:	22.3°C
Humidity	:	51%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

☒ 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

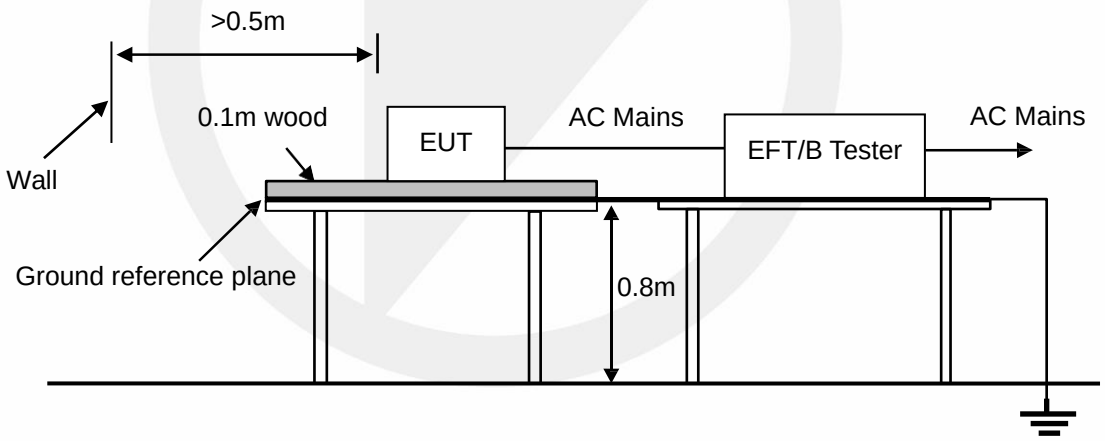
11. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

11.1. Test Specification

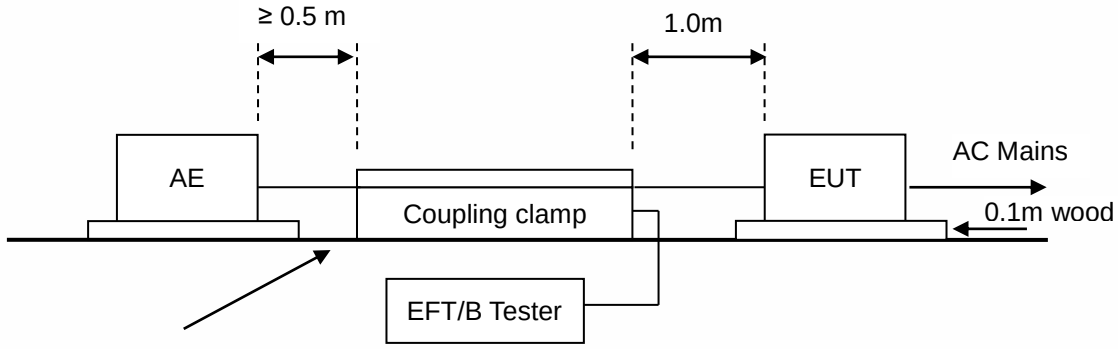
Test standard	:	SANS 2335/CISPR 35
Basic standard	:	IEC 61000-4-4
Performance criterion	:	B
Test level	:	☒1kV, AC mains power ports
		☐0.5kV, DC network power ports
		☐0.5kV, Analogue/digital data ports
Repetition frequency	:	☒5kHz, ☐100kHz(Only xDSL ports)
Tr/Th:	:	5/50ns
Burst period	:	300ms
Test time :	:	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	:	23.7°C
Humidity	:	56%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

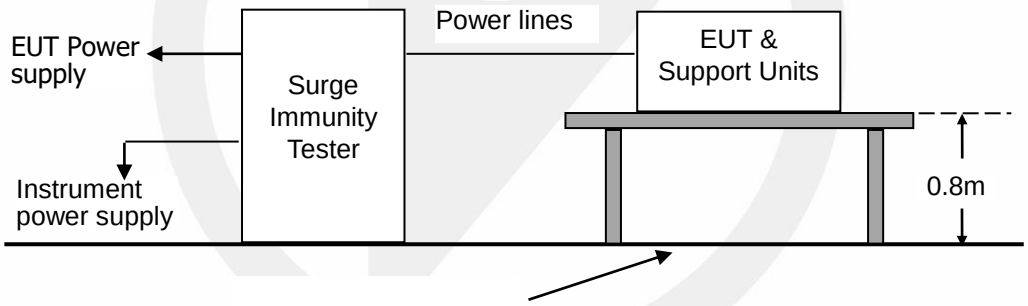
Injection Line	Voltage (kV)	Injected Method	Actual criterion	Required performance criterion	Result (Pass/Fail)
☒ AC mains power ports	± 1	☒ CDN ☐ Direct injection ☐ Capacitive coupling clamp	A	B	Pass
☐ DC network power ports	± 0.5	☐ CDN ☐ Direct injection ☐ Capacitive coupling clamp	N/A	N/A	N/A
☐ Analogue/digital 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	:	23.7°C
Humidity	:	56%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

☒ 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:

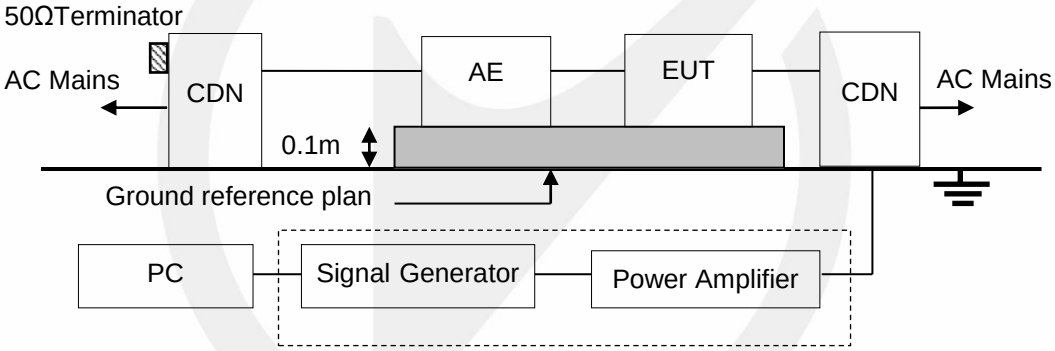
Port type	Coupling Line	Voltage (kV)	Waveform (μs)	Polarity	Actual criterion	Required performance criterion	Result (Pass/Fail)
☐ Unshielded symmetrical (Wired network port)	Lines to ground	0.5, 1	10/700 (5/320)	Pos./ Neg.	N/A	C	N/A
☐ Unshielded symmetrical (.....)	Lines to ground	0.5, 1	10/700 (5/320)	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	:	23.7°C
Humidity	:	56%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

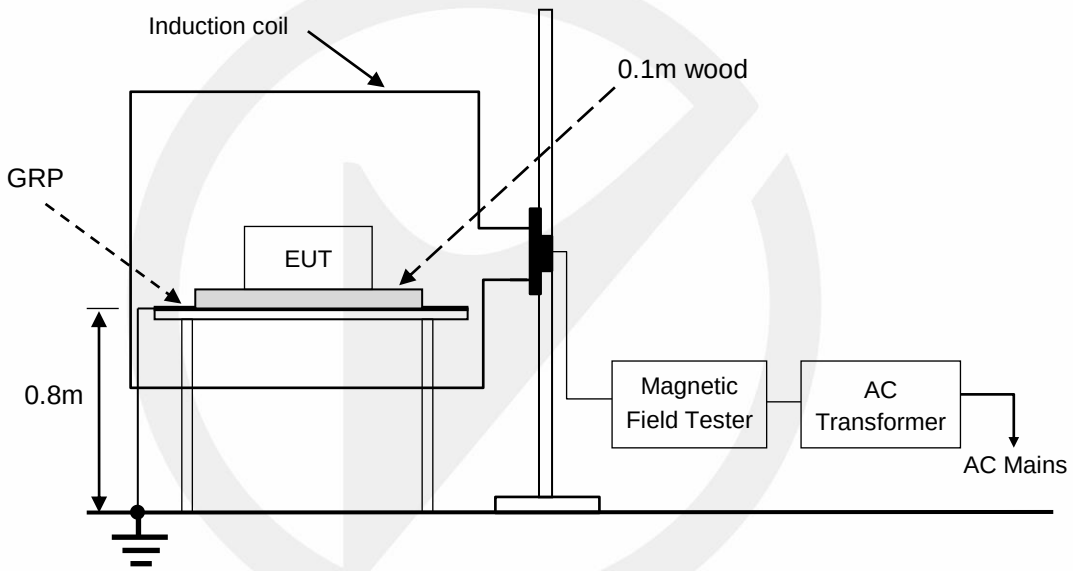
Range (MHz)	Levers (V)	Injection port	Coupling type	Actual criterion	Required performance criterion	Result (Pass/Fail)
0.15-10	3	☒AC mains power ports	☒CDN ☐EM Clamp ☐Current Clamp ☐Direct injection	A	A	Pass
10-30	3-1					
30-80	1					
0.15-10	3	☐DC network power ports	☒CDN ☐EM Clamp ☐Current Clamp ☐Direct 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	:	23.7°C
Humidity	:	56%
Atmospheric Pressure	:	101kpa
Test Engineer	:	YJ
Test Date	:	2023-5-11

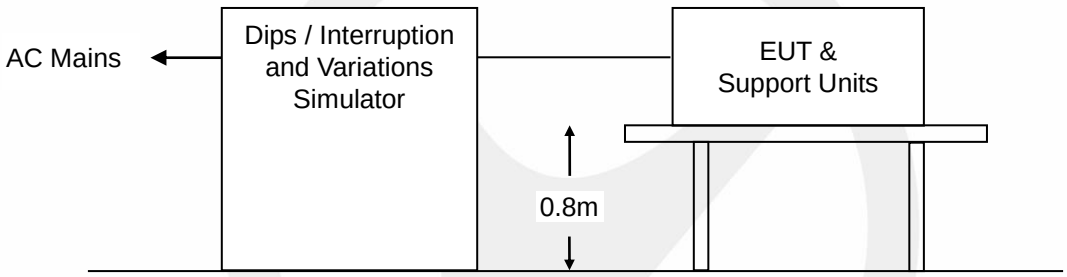
Test Level (A/m)	Frequency	Testing Duration	Coil Orientation	Actual criterion	Required performance criterion	Result (Pass/Fail)
1	☒ 50Hz ☒ 60Hz	5 mins	☒ x-axis ☒ y-axis ☒ z-axis	A	A	Pass

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

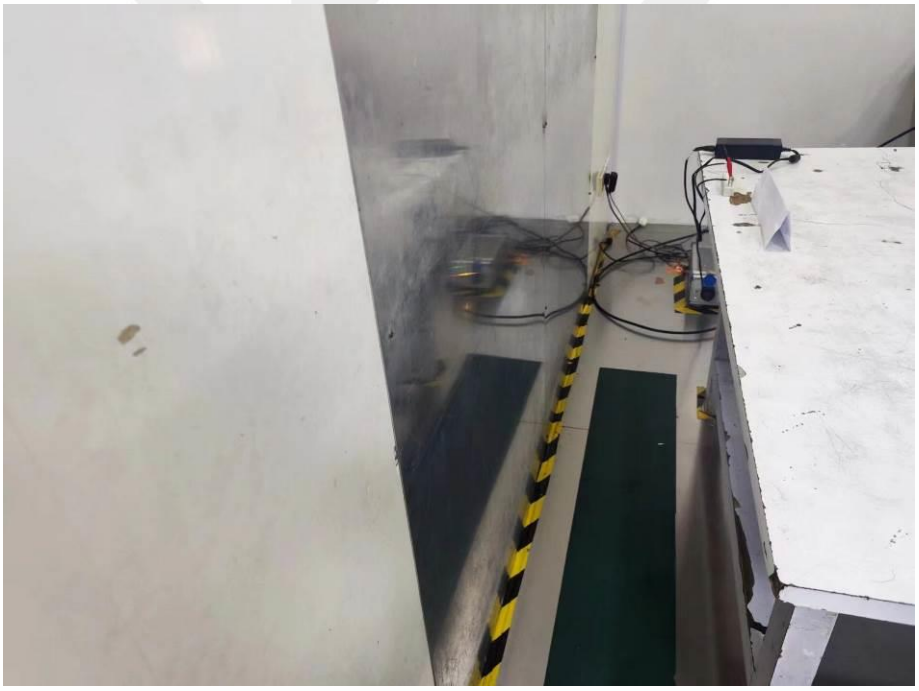
PASS

Temperature : 23.7°C
Humidity : 56%
Atmospheric Pressure : 101kpa
Test Engineer : YJ
Test Date : 2023-5-11

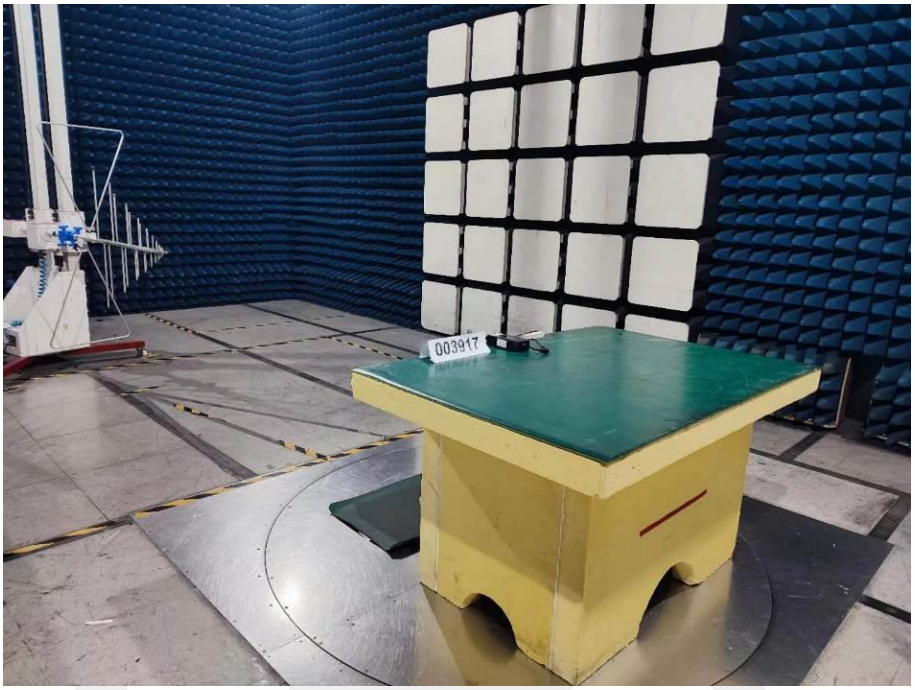
	Test Level (% UT)	Phase angle (°)	Input Voltage (V)	Freq (Hz)	Duration (periods)	Actual criterion	Required performance criterion	Result (Pass /Fail)
☒Voltage dips	0%	0º, 180º	AC 220V	50	0.5	A	B	Pass
☒Voltage dips	70%	0º, 180º	AC 220V	50	25	A	C	Pass
☒Voltage interruptions	0%	0º, 180º	AC 220V	50	250	B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

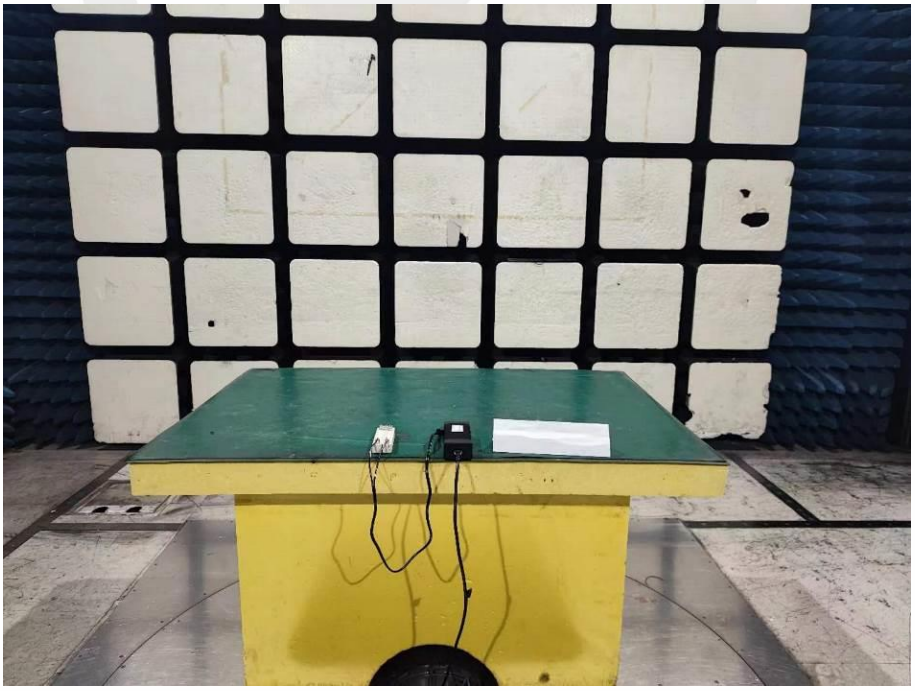
16. PHOTOGRAPHS

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



16.2.Photos of Radiation Emission Measurement

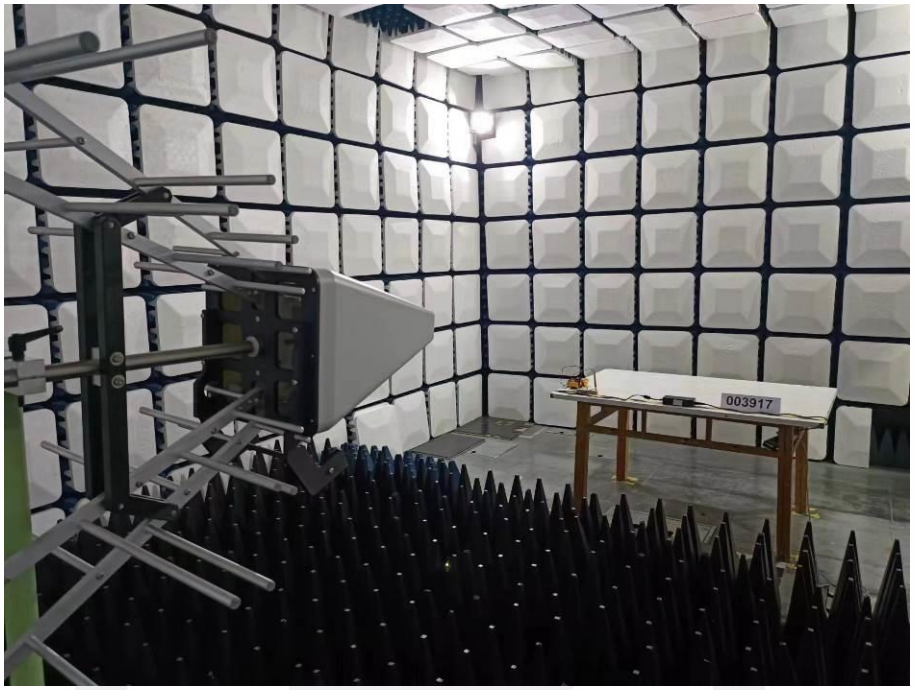




16.3.Photo of Harmonic / Flicker Measurement

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

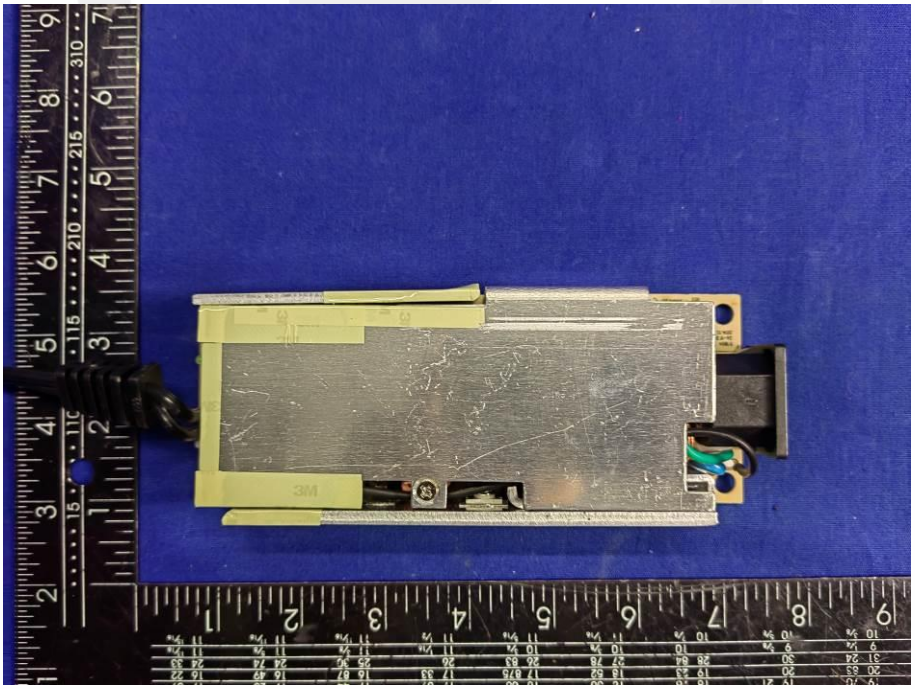
16.8.Photos of Continuous Induced RF Disturbances Test

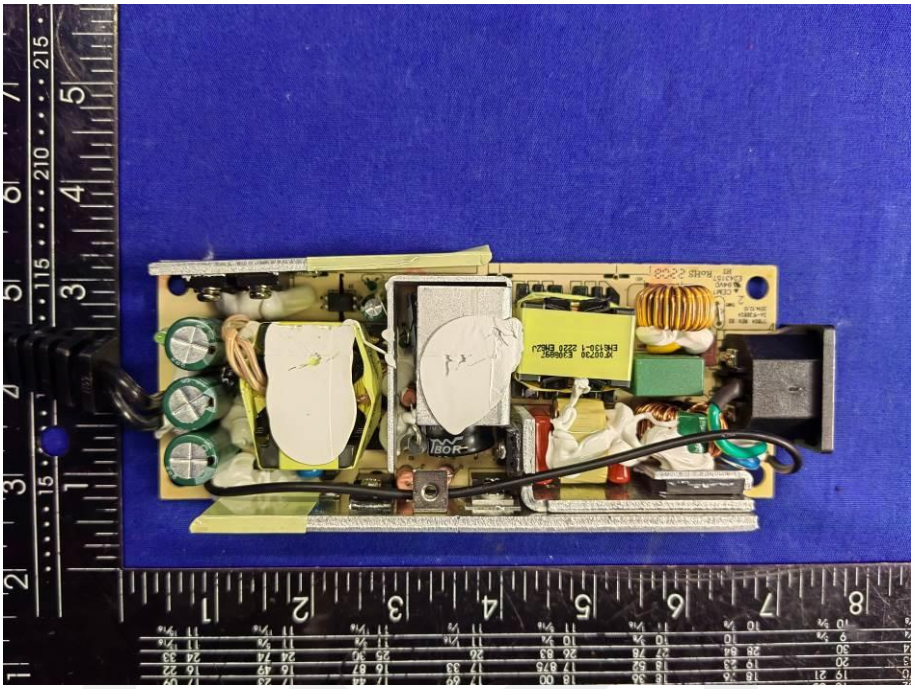
16.9.Photo of Power Frequency Magnetic Field Test

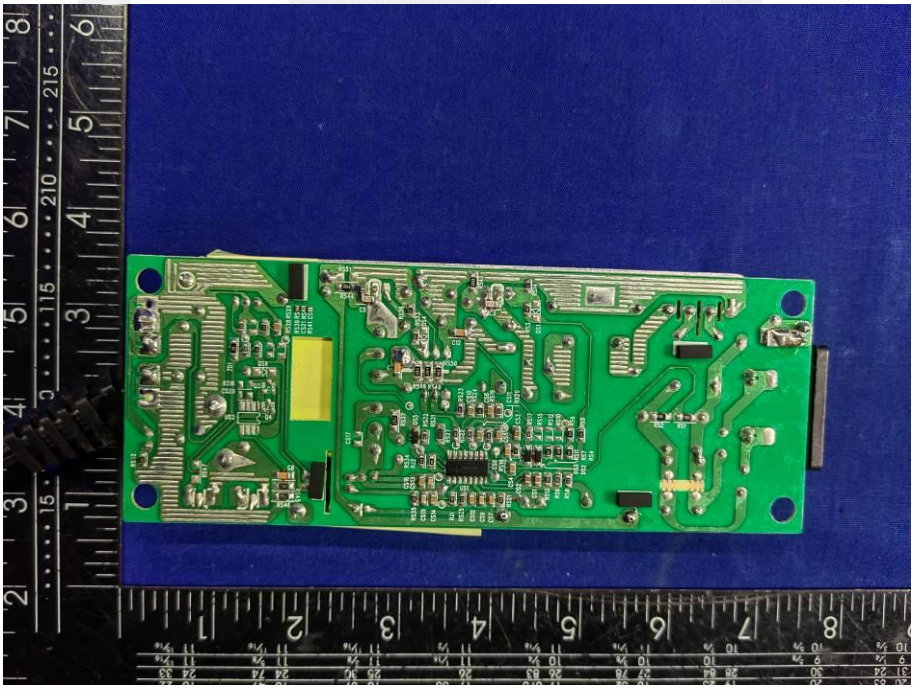
16.10.Photo of Voltage Dips and Interruption Immunity Test

APPENDIX A: Photos of EUT

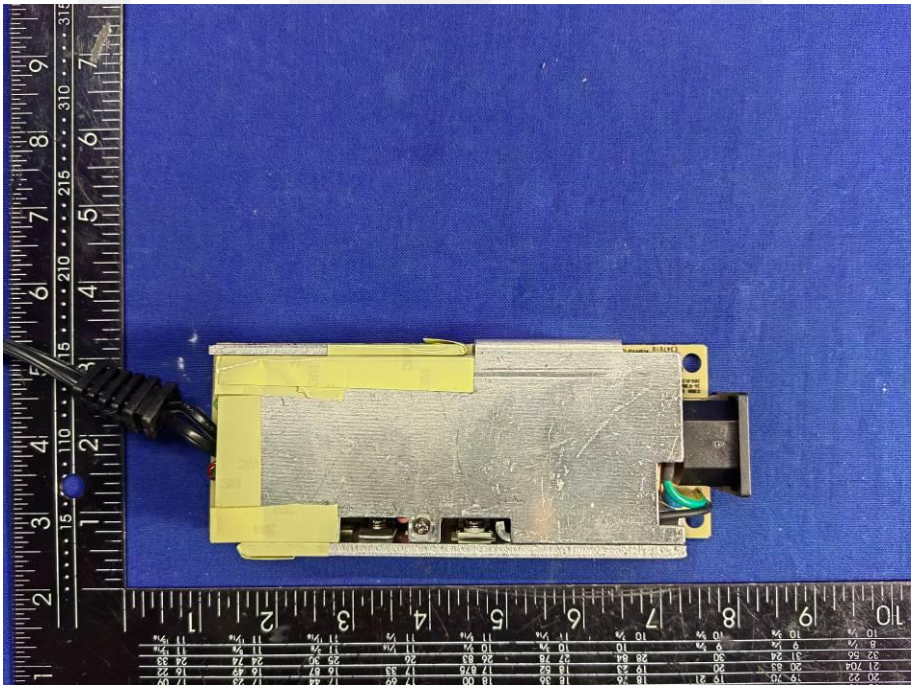
GT-43004P15024-T3

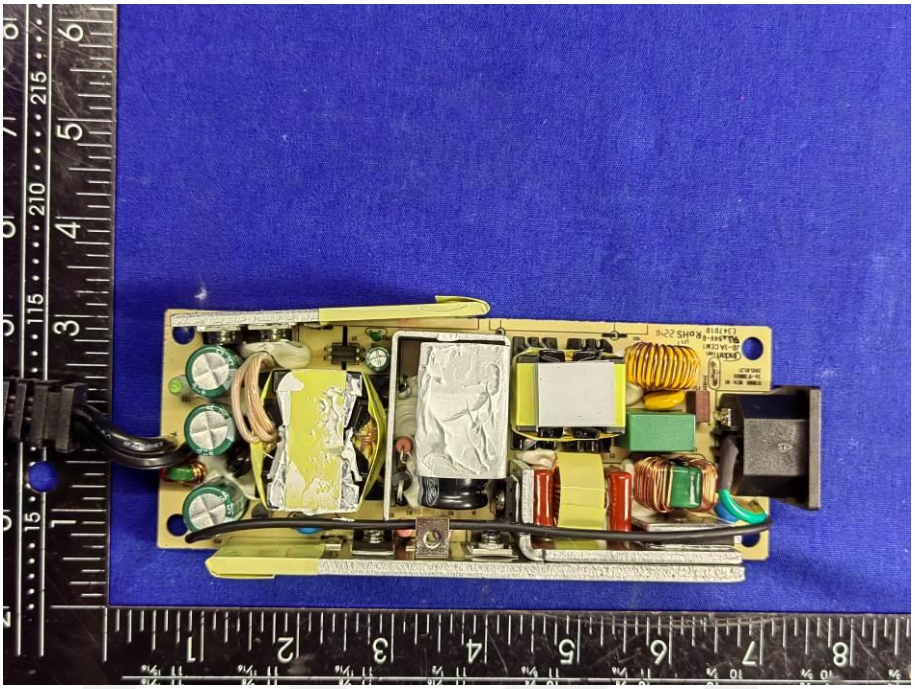


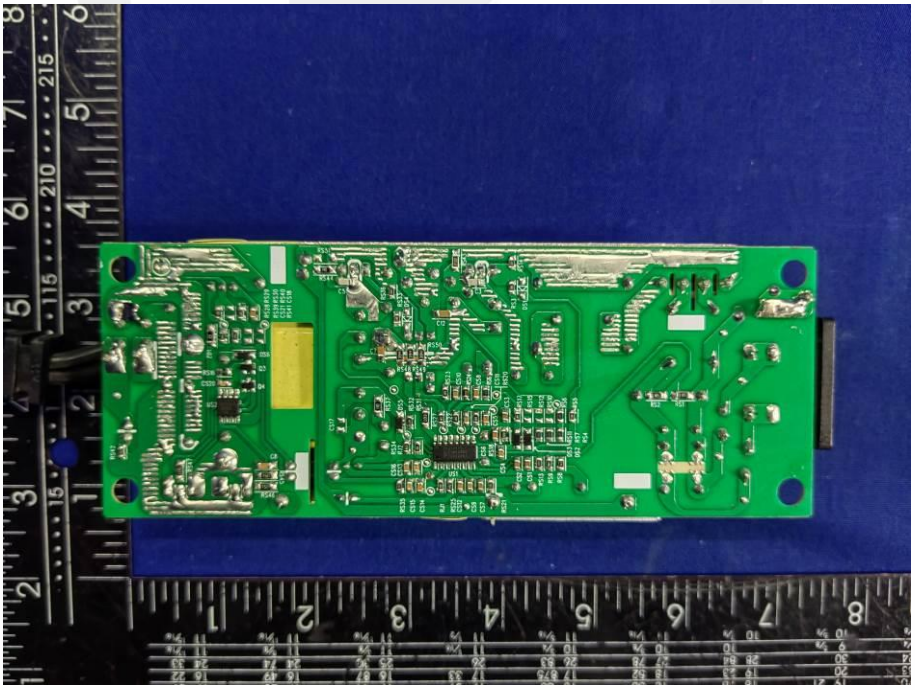




GT-43004P12012-T3





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R32282
EFFICIENCY LEVEL V
MADE IN CHINA Hecho en China
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APPENDIX B: Critical Component List

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
1.	AC inlet for Class I model	Zhejiang LECI Electronics Co., Ltd.	DB-6	2.5A, 250Vac Standard sheet:C6	IEC/EN 60320-1 UL 498	VDE 40032465 UL E302229
2.	Alt.	Rich Bay Co., Ltd.	R-30790	2.5A, 250Vac Standard sheet:C6	IEC/EN 60320- 1 UL 498	VDE 40030381 UL E184638
3.	Alt.	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-02	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320- 1 UL 498	VDE 40034448 UL E226643
4.	Alt.	TECX-UNIONS Technology Corporation	TU-333 series	2.5A, 250Vac Standard sheet: C6	IEC/EN 60320- 1 UL 498	VDE 40005430 UL E100004
5.	Alt.	Rong Feng Industrial Co., Ltd.	RF- 190	2.5A, 250Vac Standard sheet:C6	IEC/EN 60320- 1 UL 498	VDE 40030379 UL E102641
6.	Alt.	Inalways Corporation	0724	2.5A, 250Vac Standard sheet:C6	IEC/EN 60320- 1 UL 498	ENEC 2010080 UL E94191
7.	Alt.	Zhejiang LECI Electronics Co., Ltd.	DB- 14	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	VDE 40032137 UL E302229
8.	Alt.	Rich Bay Co., Ltd.	R-301SN	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	VDE 40030228 UL E184638
9.	Alt.	Sun Fair Electric Wire & Cable (HK)Co. Ltd.	S-03	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	VDE 40034447 UL E226643
10.	Alt.	TECX-UNIONS Technology Corporation	TU-301-S, TU-301-SP	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	VDE 40025582 UL E220004
11.	Alt.	Rong Feng Industrial Co., Ltd.	SS- 120	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	VDE 40028101 UL E102641
12.	Alt.	Inalways Corporation	0711 series	10A, 250Vac Standard sheet: C14	IEC/EN 60320- 1 UL 498	ENEC 2010084 UL E94191
13.	PCB	WALEX ELECTRONIC (WUXI) CO LTD	T2A, T2B, T4, T2	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950- 1 UL 796	UL E154355 Tested with appliance
14.	Alt.	DONGGUAN HE TONG ELECTRONICS CO LTD	CEM1, 2V0, FR4	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950- 1 UL 796	UL E243157 Tested with appliance
15.	Alt.	CHEERFUL ELECTRONIC	03, 03A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950- 1 UL 796	UL E199724 Tested with appliance
16.	Alt.	SHANGHAI AREX PRECISION ELECTRONICCO LTD	02V0, 04V0	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950- 1 UL 796	UL E186016 Tested with appliance
17.	Alt.	KUOTIANG ENT LTD	C-2, C-2A	Min. V-0, min 1.6 mm thickness, 130°C	IEC/EN 60950- 1 UL 796	UL E227299 Tested with appliance

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
18.	Alt.	Interchangeable	Interchangeable	Min. V-0, min 1.6 mm thickness, 130°C	UL 796	UL Approved.
19.	Insulating tape wrapping around the heatsink	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F- 1, 1350T- 1	130°C	IEC/EN 60950-1 UL 510	UL E17385 Tested with appliance
20.	Alt.	BONDTEC PACIFIC CO LTD	370S	130°C	IEC/EN 60950- 1 UL 510	UL E175868 Tested with appliance
21.	Alt.	JINGJIANG YAHUA PRESSURE SENSITIVEGLUE CO LTD	PZ, CT	130°C	IEC/EN 60950- 1 UL 510	UL E165111 Tested with appliance
22.	Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	IEC/EN 60950- 1 UL 510	UL E246950 Tested with appliance
23.	Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	130°C	IEC/EN 60950- 1 UL 510	UL E246820 Tested with appliance
24.	Fuse (FS1)	Conquer Electronics Co., Ltd.	MST	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40017118 UL E82636
25.	Alt.	Suzhou Walter Electronic	2010	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40018781 UL E56092
26.	Alt.	Bel Fuse Ltd.	RST	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40011144 UL E20624
27.	Alt.	Cooper Bussmann LLC	SS-5	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40015513 UL E19180
28.	Alt.	Das & Sons International Ltd.	385T series	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40008524 UL E205718
29.	Alt.	Shenzhen Lanson Electronics Co. Ltd.	SMT	T4A, 250V	IEC/EN 60127-2 UL 248- 1 UL 248- 14	VDE 40012592 UL E221465
30.	X capacitor (CX1) (optional)	Cheng Tung Industrial Co., Ltd.	CTX	X1 or X2, AC310V, Max. 0.47μF, 40/110/21/C	IEC/EN 60384-14 UL 1414	VDE 40022642 UL E193049
31.	Alt.	Tenta Electric Industrial Co. Ltd.	MEX	X1 or X2, AC275V, Max. 0.47μF, 40/100/21/C	IEC/EN 60384-14 UL 1414	VDE 119119 UL E222911

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
32.	Alt.	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	X1 or X2, AC275V, Max. 0.47µF, 40/100/21/C	IEC/EN 60384- 14 UL 1414	VDE 40015608 UL E183780
33.	Alt.	Dain Electronics Co., Ltd.	MPX, MEX, NPX	X1 or X2, AC275V, Max. 0.47µF, 40/100/21/C	IEC/EN 60384- 14 UL 1414	VDE 40018798 UL E147776
34.	Alt.	Sinhua Electronics (Huzhou) Co., Ltd.	MPX	X1 or X2, AC300V, Max. 0.47µF, 40/100/21/C	IEC/EN 60384- 14 UL 1414	VDE 40014686 UL E237560
35.	Alt.	Foshan Shunde Chuang Ge	MKP-X2	X1 or X2, AC275V, Max. 0.47µF, 40/105/21/C	IEC/EN 60384- 14 UL 1414	VDE 40008922 UL E308832
36.	Alt.	Hongzhi Enterprises Ltd.	MPX	X1 or X2, AC275V, Max. 0.47µF, 40/100/56/C	IEC/EN 60384- 14 UL 1414	VDE 40023936 UL E192572
37.	Alt.	Jiangsu Xinghua Huayu Co., Ltd.	MPX	X1 or X2, AC275V, Max. 0.47µF, 40/100/21/C	IEC/EN 60384- 14	VDE 40022417
38.	Varistor (MOV1) (optional)	JOYIN CO LTD	10N471K, 14N471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 005937 UL E325508
39.	Alt.	CENTRA SCIENCE CORP	10D471K, 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40008220 UL E316325
40.	Alt.	THINKING ELECTRONICI NDUSTRIAL CO LTD	TVR10471K, TVR14471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 005944 UL E314979
41.	Alt.	SUCCESS ELECTRONICS CO LTD	SVR10D47 1K, SVR14D47 1K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40030401 UL E330256
42.	Alt.	CERAMATE TECHNICAL CO LTD	GNR10D47 1K, GNR14D47 1K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40031745 UL E315429
43.	Alt.	BRIGHTKING (SHENZHEN) CO LTD	10D471K, 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40027827 UL E327997
44.	Alt.	LIEN SHUN ELECTRONICS CO LTD	10D471K, 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40005858 UL E315524
45.	Alt.	GUANGXI NEW FUTURE INFORMATION INDUSTRY CO LTD	10D471K, 14D471K	Max continuous voltage: 300VAC, 6kV/3kA, 40/85/56,V- 1	IEC 61051-2 UL 1449	VDE 40030322 UL E323753

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
46.	Optocoupler (U1)	LITE-ON Technology Corporation	LTV-817, LTV-817M, LTV-817S	Ext. Cr: min. 8.0 mm; DTI: min. 0.6 mm; Thermal cycling test. Max. operating temp.: 115°C	IEC/EN 60747-5- 2 IEC/EN 60950- 1 UL 1577	VDE 40015248 Semko No. 1119078 UL E113898
47.	Alt.	Everlight Electronics Co., Ltd.	EL817	Ext. Cr: min. 7.7 mm; DTI: min. 0.5 mm; Thermal cycling test. Max. operating temp.: 110°C	IEC/EN 60747-5- 2 IEC/EN 60950- 1 UL 1577	VDE 132249 Nemko No. P11214765/A 1 UL E214129
48.	Alt.	Bright Led Electronics Corp.	BPC-817, BPC-817 M, BPC-817 S	Ext. Cr: min. 7.0 mm; DTI: min. 0.4 mm; Thermal cycling test. Max. operating temp.: 100°C	IEC/EN 60747-5- 2 IEC/EN 60950- 1 UL 1577	VDE 40007240 Semko No. 813247 UL E236324
49.	Inductor (LF1) (Optional)	GlobTek/HAOP UWEI/HEJIA/ BOAM/ENG	NF00109, RC00088	130°C	IEC/EN 60950-1	Tested with appliance
50.	Choke (LF2) (Optional)	GlobTek/HAOP UWEI/HEJIA/ BOAM/ENG	RC00150	130°C	IEC/EN 60950-1	Tested with appliance
51.	Choke (L1)	GlobTek/HAOP UWEI/HEJIA/ BOAM/ENG	RC00085	130°C	IEC/EN 60950-1	Tested with appliance
52.	Choke (L2)	GlobTek/HAOP UWEI/HEJIA/ BOAM/ENG	XF00730	130°C, with bobbin material as T1 transformer.	IEC/EN 60950-1	Tested with appliance
53.	Transformer (T1)	GlobTek/ HAOPUWEI/ HEJIA/ BOAM/ENG	XF00735 for 12- 14.9V, XF00734 for 15- 17.9V, XF00738 for 18-20V, XF00722 for 20. 1-24V	Class B, with insulation system and critical component listed below	IEC/EN 60950-1	Tested with appliance
54.	-Insulation system	GLOBTEK INC	GTX- 130-TM	Class 130(B)	IEC/EN 60601- 1 UL 1446	UL E243347 Tested with appliance
55.	-Alt.	WUXI HAOPUWEI ELECTRONICSC O LTD	ZT- 130	Class 130(B)	IEC/EN 60601- 1 UL 1446	UL E315275 Tested with appliance
56.	-Alt.	SHAN DONG BOAM ELECTRIC CO LTD	BOAM-01	Class 130(B)	IEC/EN 60601- 1 UL 1446	UL E252329 Tested with appliance
57.	-Alt.	ENG ELECTRIC CO LTD	ENG130- 1	Class 130(B)	IEC/EN 60601- 1 UL 1446	UL E308897 Tested with appliance

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
58.	-Magnet wire (Primary)	PACIFIC ELECTRIC WIRE & CABLE (SHENZHEN) CO LTD	UEWN/U	130°C	IEC/EN 60950-1 UL 1446	UL E201757 Tested with appliance
59.	-Alt.	JUNG SHING WIRE CO LTD	UEW-4, UEY-2	130°C	IEC/EN 60950- 1 UL 1446	UL E174837 Tested with appliance
60.	-Alt.	JIANGSU HONGLIU MAGNET WIRE TECHNOLOGY CO LTD	2UEW/130	130°C	IEC/EN 60950- 1 UL 1446	UL E335065 Tested with appliance
61.	-Alt.	CHANGZHOU DAYANG WIRE & CABLE CO LTD	2UEW/130	130°C	IEC/EN 60950- 1 UL 1446	UL E158909 Tested with appliance
62.	-Alt.	WUXI JUFENG COMPOUND LINE CO LTD	2UEWB	130°C	IEC/EN 60950- 1 UL 1446	UL E206882 Tested with appliance
63.	-Alt.	JIANGSU DARTONG M & E CO LTD	UEW	130°C	IEC/EN 60950- 1 UL 1446	UL E237377 Tested with appliance
64.	-Alt.	SHANDONG SAINT ELECTRIC CO LTD	UEW/130	130°C	IEC/EN 60950- 1 UL 1446	UL E194410 Tested with appliance
65.	-Alt.	ZHEJIANG LANGLI ELECTRIC EQUIPMENTS CO LTD	UEW	130°C	IEC/EN 60950- 1 UL 1446	UL E222214 Tested with appliance
66.	-Triple-insulated wire (Secondary)	GREAT LEOFLON INDUSTRIAL CO LTD	TRW(B)	Min. 130°C	IEC/EN 60950-1 UL 2353	UL E211989 Tested with appliance
67.	-Alt.	COSMOLINK CO LTD	TIW-M	Min. 130°C	IEC/EN 60950- 1 UL 2353	UL E213764 Tested with appliance
68.	-Alt.	FURUKAWA ELECTRIC CO LTD	TEX-E	Min. 130°C	IEC/EN 60950- 1 UL 2353	UL E206440 Tested with appliance
69.	-Alt.	TOTOKU ELECTRIC CO LTD	TIW-2	Min. 130°C	IEC/EN 60950- 1 UL 2353	UL E166483 Tested with appliance
70.	-Alt.	E&B TECHNOLOGY CO LTD	E&B-XXXB, E&B-XXXB- 1	Min. 130°C	IEC/EN 60950- 1 UL 2353	UL E315265 Tested with appliance
71.	-Bobbin	CHANG CHUN PLASTICS CO LTD	T375J, T375HF	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E59481 Tested with appliance
72.	-Alt.	SUMITOMO BAKELITE CO LTD	PM-9820	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E41429 Tested with appliance

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
73.	-Alt.	HITACHI CHEMICAL CO LTD	CP-J-8800	V-0, 150°C, thickness 0.45 mm min.	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E42956 Tested with appliance
74.	-Insulating tape	3M COMPANY ELECTRICAL MARKETS DIV (EMD)	1350F- 1, 1350T- 1, 44	Min. 130°C	IEC/EN 60950- 1 UL 510	UL E17385 Tested with appliance
75.	-Alt.	BONDTEC PACIFIC CO LTD	370S	Min. 130°C	IEC/EN 60950- 1 UL 510	UL E175868 Tested with appliance
76.	-Alt.	JINGJIANG YAHUA PRESSURE SENSITIVEG LUE CO LTD	PZ, CT, WF	Min. 130°C	IEC/EN 60950- 1 UL 510	UL E165111 Tested with appliance
77.	-Alt.	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	Min. 130°C	IEC/EN 60950- 1 UL 510	UL E246950 Tested with appliance
78.	-Alt.	CHANG SHU LIANG YI TAPE INDUSTRY CO LTD	LY-XX	Min. 130°C	IEC/EN 60950- 1 UL 510	UL E246820 Tested with appliance
79.	Insulating tube for HS3, HS4 alternate wrapping material	SHENZHEN WOER HEAT-SHRINKABLE MATERIAL CO LTD	RSFR, RSFR-H, RSFR-HPF	600V, 125°C	IEC/EN 60950- 1 UL 224	UL E203950 Tested with appliance
80.	Alt.	QIFURUI ELECTRONICSC O	QFR-h	600V, 125°C	IEC/EN 60950- 1 UL 224	UL E225897 Tested with appliance
81.	Alt.	DONGGUAN SALIPT CO LTD	SALIPT S-901-300, SALIPT S-901-600	Min. 300V, 125°C	IEC/EN 60950- 1 UL 224	UL E209436 Tested with appliance
82.	Alt.	GUANGZHOU KAIHENG ENTERPRISEG ROUP	K-2 (+), K-2 (CB)	Min. 300V, 125°C	IEC/EN 60950- 1 UL 224	UL E214175 Tested with appliance
83.	Alt.	CHANGYUAN ELECTRONICS (SHENZHEN) CO LTD	CB-HFT	Min. 300V, 125°C	IEC/EN 60950- 1 UL 224	UL E180908 Tested with appliance
84.	Insulating sheet	FORMEX,DIV OF IL TOOL WORKS INC, FRMRLY FASTEX, DIV OF IL TOOL WORKS INC	FORMEX GK series	V-0, min. 0.4 mm thickness, 115°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E121855 Tested with appliance
85.	Alt.	SKC CO LTD	SH71S	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E74359 Tested with appliance

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86.	Alt.	TORAY INDUSTRIES INC	Lumirror H10	VTM-2, min. 0.4 mm thickness, 105°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E86511 Tested with appliance
87.	Alt.	SABIC INNOVATIVE PLASTICS US L LC	FR60 series, FR63 series, FR65 series, FR7 series, FR700 series	V-0, min. 0.4 mm thickness, 130°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E121562 Tested with appliance
88.	Alt.	MIANYANG LONGHUA FILM CO LTD	PP-BK-20, PP-BK- 17, PP-BK- 18	VTM-0, min. 0.4 mm thickness, 80°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E254551 Tested with appliance
89.	Alt.	ITW Materials Technology (Shanghai) Co.,LTD	FORMEX- 18, FORMEX- 17	V-0, min. 0.4 mm thickness, 100°C	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E256266 Tested with appliance
90.	Enclosure	SABIC INNOVATIVEP LASTICS BV	945	Min. V- 0 at 1.5 mm thickness	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E45329 Tested with appliance
91.	Alt.	SABIC INNOVATIVE PLASTICS BV	C2950	Min. V-0 at 1.5 Mm thickness	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E45329 Tested with appliance
92.	Alt.	TEIJIN CHEMICALS LTD	LN- 1250P, LN- 1250G	Min. V-0 at 1.5 mm thickness	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E50075 Tested with appliance
93.	Alt.	CHI MEI Corporation	PA-765A	Min. V- 1 at 1.5 mm thickness	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E56070 Tested with appliance
94.	Alt.	CHI MEI Corporation	PC-540	Min. V-0 at 1.5 mm thickness	IEC/EN 60950- 1 UL 94 UL 746 A/B/C/D	UL E56070 Tested with appliance
95.	Earthing wire for Class I model	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E237831 Tested with appliance
96.	Alt.	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E333601 Tested with appliance
97.	Alt.	DONGGUAN CHUANTAI WIRE PRODUCTS CO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E315628 Tested with appliance
98.	Alt.	YONG HAO ELECTRICAL INDUSTRY CO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E240426 Tested with appliance

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
99.	Alt.	DONGGUAN GUNEETAL WIRE & CABLE CO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E204204 Tested with appliance
100.	Alt.	SHENG YU ENTERPRISECO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E219726 Tested with appliance
101.	Alt.	SUZHOU HONGMENG ELECTRONICCO LTD	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E315421 Tested with appliance
102.	Alt.	Suzhou Jiahuishu Electronic Co Ltd	1815, 1015, 1007	Min. 18 AWG, Min. 300V, Min. 80°C	IEC/EN 60950- 1 UL 758	UL E353532 Tested with appliance
103.	Y-Capacitor (CY1)	SUCCESS ELECTRONICS CO LTD	Type Y1: SE, SB	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40020001 VDE40037221 ENEC40037211 ENEC40037213 ENEC40037217 ENEC40037218 ENEC40037221 UL E114280
104.	Alt.	MURATA MFG CO LTD	Type Y1: KX	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40002831 VDE40002790 UL E37921
105.	Alt.	WALSIN TECHNOLOGY CORP	Type Y1: AH	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40001804 VDE40001829 UL E146544
106.	Alt.	JYA-NAY CO LTD	Type Y1: JN	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	ENEC18/HN 69242987 ENEC 18/HN 69242983 UL E201384
107.	Alt.	HAOHUA ELECTRONIC CO	Type Y1: CT7	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40003902 VDE40013601 UL E233106
108.	Alt.	JERRO ELECTRONICS CORP	Type Y1: JX	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40032158 VDE40032160 UL E333001
109.	Alt.	TDK CORP	Type Y1: CD	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40029780 VDE40029781 UL E37861
110.	Alt.	JYH CHUNG ELECTRONICS CO LTD	Type Y1: JD	CY1: max. 2200pF type Y1	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE 137027 VDE 123326 UL E187963

No.	Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity1)
111.	Y-Capacitor (CY2 for Class I) (optional)	SUCCESS ELECTRONICS CO LTD	Type Y1: SE, SB, Type Y2: SF,SE, SB	CY1: max.2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384-14 UL 60384- 14 UL 1414	VDE40020001 VDE40037221 ENEC40037211 ENEC40037213 ENEC40037217 ENEC40037218 ENEC40037221 UL E114280
112.	Alt.	MURATA MFG CO LTD	Type Y1: KX, Type Y2: KH	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40002831 VDE40002790 UL E37921
113.	Alt.	WALSIN TECHNOLOGY CORP	Type Y1: AH, Type Y2: AC	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40001804 VDE40001829 UL E146544
114.	Alt.	JYA-NAY CO LTD	Type Y1: JN, Type Y2: JY	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	ENEC18/HN 69242987 ENEC 18/HN 69242983 UL E201384
115.	Alt.	HAOHUA ELECTRONIC CO	Type Y1: CT7, Type Y2: CT7	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40003902 VDE40013601 UL E233106
116.	Alt.	JERRO ELECTRONICS CORP	Type Y1: JX, Type Y2: JL	CY1: max.2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40032158 VDE40032160 UL E333001
117.	Alt.	TDK CORP	Type Y1: CD, Type Y2: CS	CY1: max.2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE40029780 VDE40029781 UL E37861
118.	Alt.	JYH CHUNG ELECTRONICS CO LTD	Type Y1: JD, Type Y2: JY	CY1: max. 2200pF type Y1; CY2 : max. 3300pF, type Y1 or Y2. min. 250V. 125°C	IEC/EN 60384- 14 UL 60384- 14 UL 1414	VDE 137027 VDE 123326 UL E187963

End of Report

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