

EMC
Measurement and Test Report
For
GlobTek, Inc.
186 Veterans Dr. Northvale, NJ 07647 USA

Test Standards:	<u>AS/NZS CISPR 32:2013</u>	
Product Description:	<u>X-PLORE 8000 STANDARD CHARGER EX</u>	
Tested Model:	<u>GT-93036SHG3050</u>	
Report No.:	<u>STR17018135C</u>	
Tested Date:	<u>2017-01-13 to 2017-01-18</u>	
Issued Date:	<u>2017-01-19</u>	
Tested By:	<u>Jeffry Zhang / Engineer</u>	<i>Jeffry Zhang</i>
Reviewed By:	<u>Silin Chen / EMC Manager</u>	<i>Silin Chen</i>
Approved & Authorized By:	<u>Jandy So / PSQ Manager</u>	<i>Jandy So</i>
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Note: This test report is limited to the above client company and the product model only. It may not be duplicated without prior permitted by Shenzhen SEM.Test Technology Co., Ltd.

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1. GENERAL INFORMATION

1.1 Product Description for Equipment Under Test (EUT)

Client Information

Applicant: GlobTek, Inc.
 Address of applicant: 186 Veterans Dr. Northvale, NJ 07647 USA

 Manufacturer: 1. GlobTek, Inc.
 2. GlobTek (Suzhou)Co., Ltd
 Address of manufacturer: 1.186 Veterans Dr. Northvale, NJ 07647 USA
 2. Building 4, No. 76, Jin Ling East Rd., Suzhou Industrial Park, Suzhou, JiangSu 215021, China

General Description of EUT	
Product Name:	X-PLORE 8000 STANDARD CHARGER EX
Trade Name:	
Model No.:	GT-93036SHG3050
Adding Model(s):	/
<i>Note: The test data is gathered from a production sample, provided by the manufacturer.</i>	

Technical Characteristics of EUT	
Rated Voltage:	Input: AC 100-240V, 50-60Hz Output: DC 16V
Rated Current:	Input: 1.5A; Output: 3.75A
Rated Power:	60W
Power Adaptor Model:	GTM91099-6024-8.0-T2
Charge Model:	GT93036SHC5012G3050R
Highest Internal Frequency:	Below 108MHz
Classification of Equipment:	Class B

1.2 Test Standards

The following report is prepared on behalf of the GlobTek, Inc. in accordance with AS/NZS CISPR 32, Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

The objective of the manufacturer is to demonstrate compliance with the standards AS/NZS CISPR 32 for Information Technology Equipment.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product maybe which result in lowering the emission/immunity should be checked to ensure compliance has been maintained.

1.3 Test Methodology

All measurements contained in this report were conducted with the standards AS/NZS CISPR 32 for Information Technology Equipment, and all related testing and measurement techniques intentional standards.

1.4 Test Facility

FCC – Registration No.: 934118

Shenzhen SEM.Test Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files and the Registration is 934118.

Industry Canada (IC) Registration No.: 11464A

The 3m Semi-anechoic chamber of Shenzhen SEM.Test Technology Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 11464A.

CNAS Registration No.: L4062

Shenzhen SEM.Test Technology Co., Ltd. is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L4062. All measurement facilities used to collect the measurement data are located at 1/F, Building A, Hongwei Industrial Park, Liuxian 2nd Road, Bao'an District, Shenzhen, P.R.C (518101).

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission/immunity level. The test modes were adapted according to the operation manual for use, more detailed description as follows:

Test Mode List:

Test Mode	Description	Remark
TM1	Working	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
DC Cable	1.8	Unshielded	With Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
/	/	/	/

Special Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AC Power Cable	1.0	Unshielded	Without Core

1.6 Test Equipment List and Details

No.	Description	Manufacturer	Model	Serial No.	Cal Date	Due. Date
SEMT-1031	Spectrum Analyzer	Rohde & Schwarz	FSP	836079/035	2016-06-04	2017-06-03
SEMT-1039	EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2016-06-04	2017-06-03
SEMT-1008	Amplifier	Agilent	8447F	3113A06717	2016-06-04	2017-06-03
SEMT-1043	Amplifier	C&D	PAP-1G18	2002	2016-06-04	2017-06-03
SEMT-1068	Broadband Antenna	Schwarz beck	VULB9163	9163-333	2016-06-04	2017-06-03
SEMT-1042	Horn Antenna	ETS	3117	00086197	2016-06-04	2017-06-03
SEMT-1069	Loop Antenna	Schwarz beck	FMZB 1516	9773	2016-06-04	2017-06-03
SEMT-1001	EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2016-06-04	2017-06-03
SEMT-1002	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2016-06-04	2017-06-03
SEMT-1003	AC LISN	Schwarz beck	NSLK8126	8126-224	2016-06-04	2017-06-03
SEMT-1005	Clamp	Schwarz beck	MDS21	3809	2016-06-04	2017-06-03
SEMT-1014	Loop Antenna	EVERFINE	LLA-2	711001	2016-06-04	2017-06-03

2. SUMMARY OF TEST RESULTS

Standards	Description of Test Item	Result
AS/NZS CISPR 32	Conducted Emission	Compliant
	Radiated Emission	Compliant

N/A: not applicable

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3. Conducted Emission

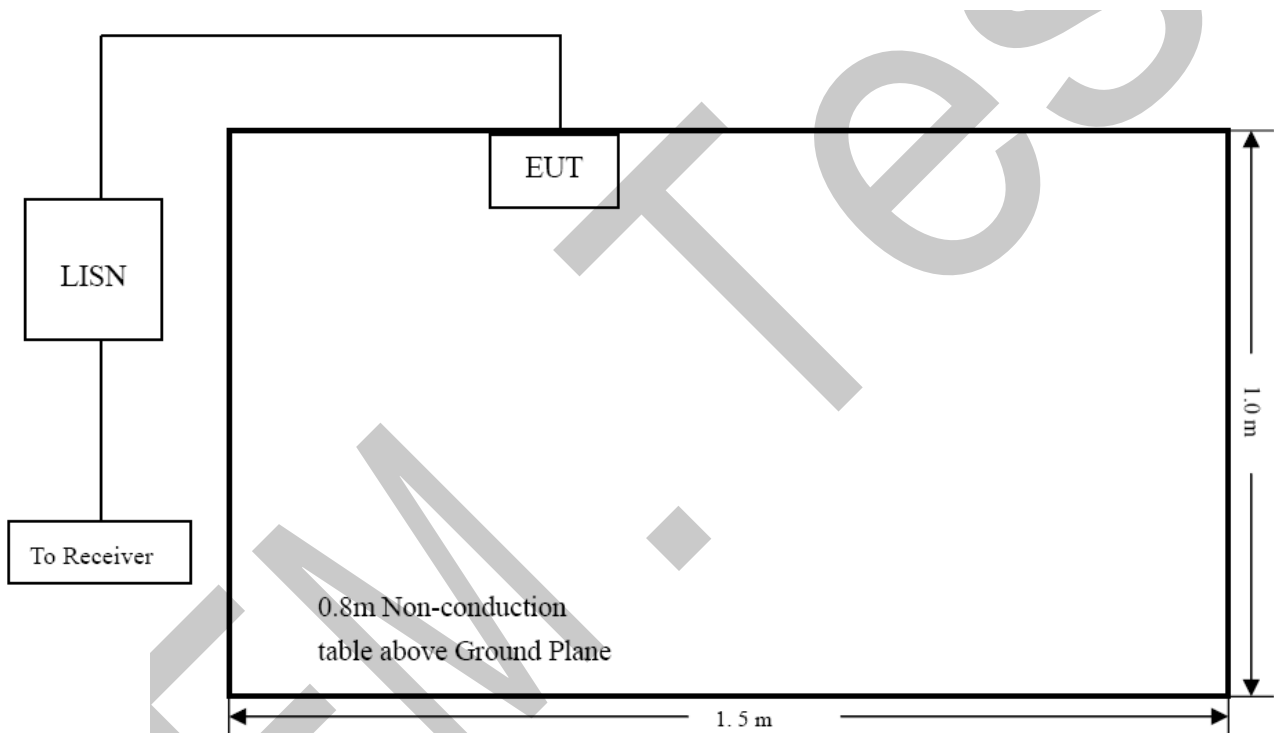
3.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ± 2.88 dB.

3.2 Test Procedure

Test is conducting under the description of AS/NZS CISPR 32 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.

3.3 Basic Test Setup Block Diagram



3.4 Environmental Conditions

Temperature:	22 ° C
Relative Humidity:	55 %
ATM Pressure:	1015 mbar

3.5 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the AS/NZS CISPR 32 Conducted margin for a Class B device, with the *worst* margin reading of:

-13.19 dB at 0.1820 MHz in the Line mode, QP detector, 0.15-30MHz

3.6 Conducted Emissions Test Data

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Plot of Conducted Emissions Test Data

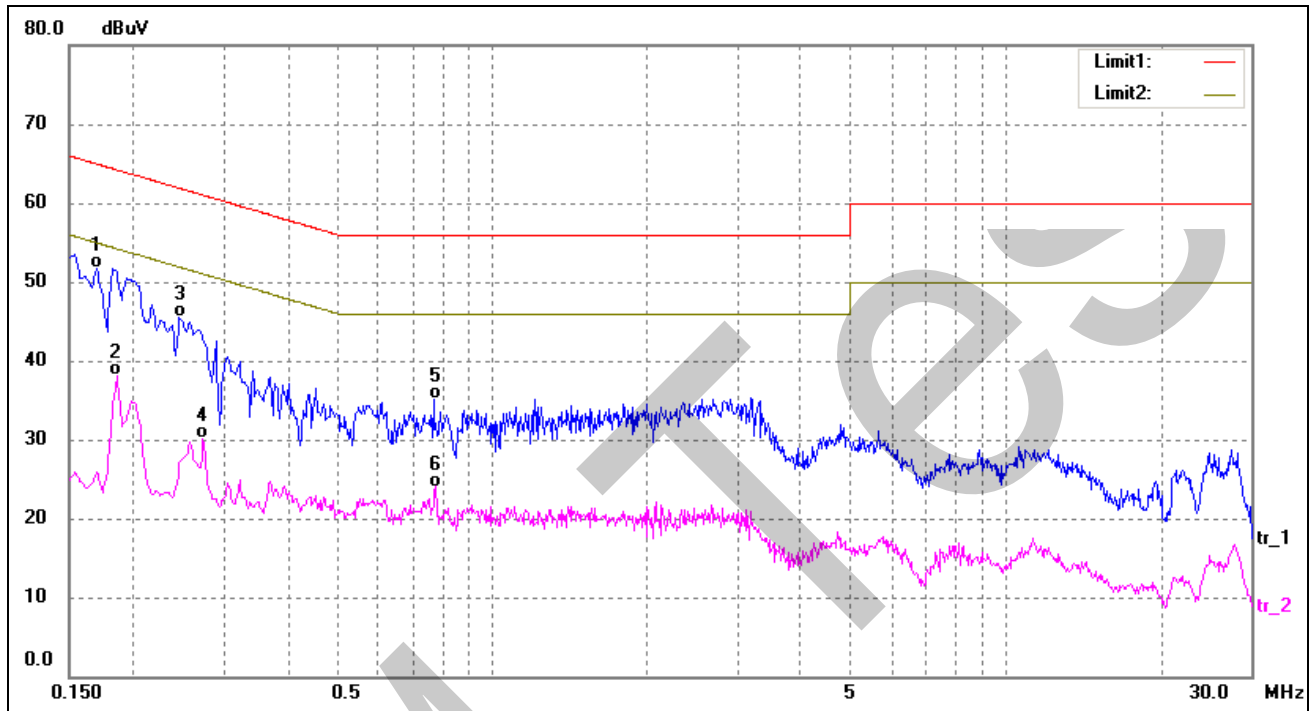
EUT: X-PLORE 8000 STANDARD CHARGER EX

Tested Model: GT-93036SHG3050

Operating Condition: TM1

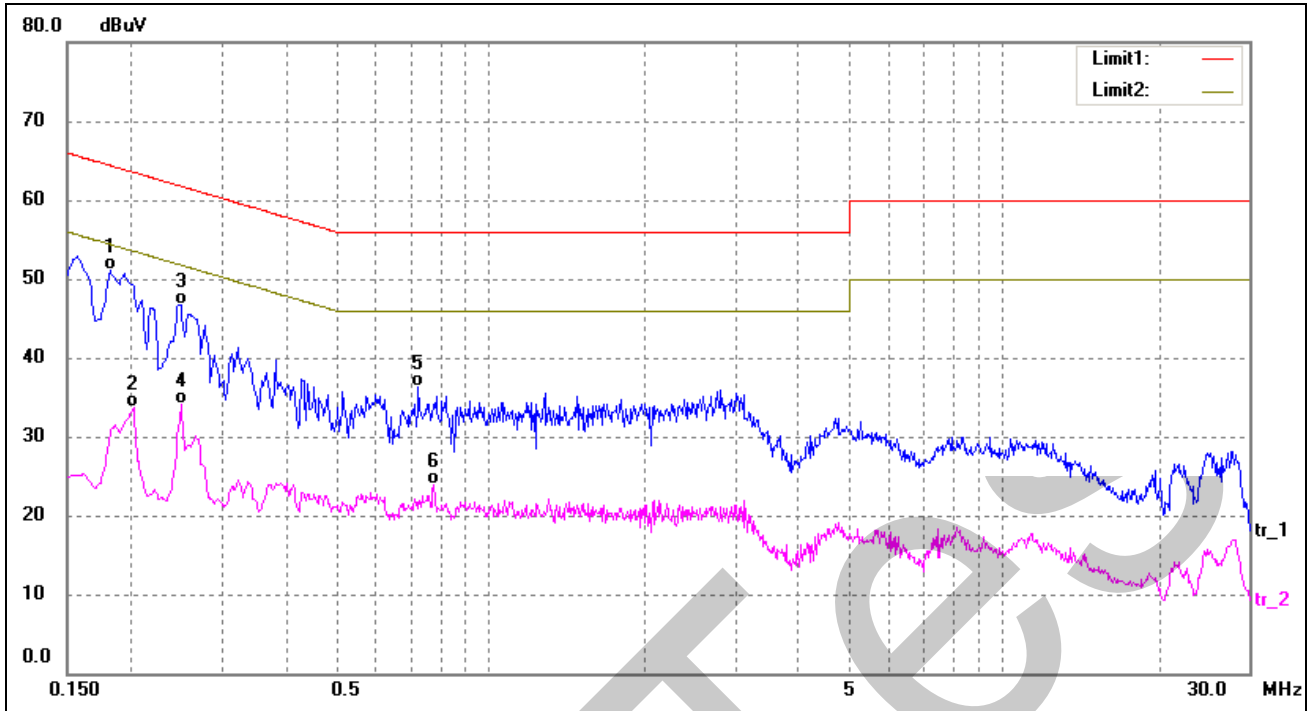
Comment: AC 230V/50Hz

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1700	41.85	9.83	51.68	64.96	-13.28	QP
2	0.1860	28.32	9.81	38.13	54.21	-16.08	AVG
3	0.2460	35.69	9.80	45.49	61.89	-16.40	QP
4	0.2740	20.35	9.80	30.15	51.00	-20.85	AVG
5	0.7700	25.27	9.78	35.05	56.00	-20.95	QP
6	0.7780	14.22	9.78	24.00	46.00	-22.00	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1820	41.38	9.82	51.20	64.39	-13.19	QP
2	0.2020	23.97	9.80	33.77	53.53	-19.76	AVG
3	0.2500	36.89	9.80	46.69	61.76	-15.07	QP
4	0.2500	24.30	9.80	34.10	51.76	-17.66	AVG
5	0.7260	26.53	9.78	36.31	56.00	-19.69	QP
6	0.7780	14.17	9.78	23.95	46.00	-22.05	AVG

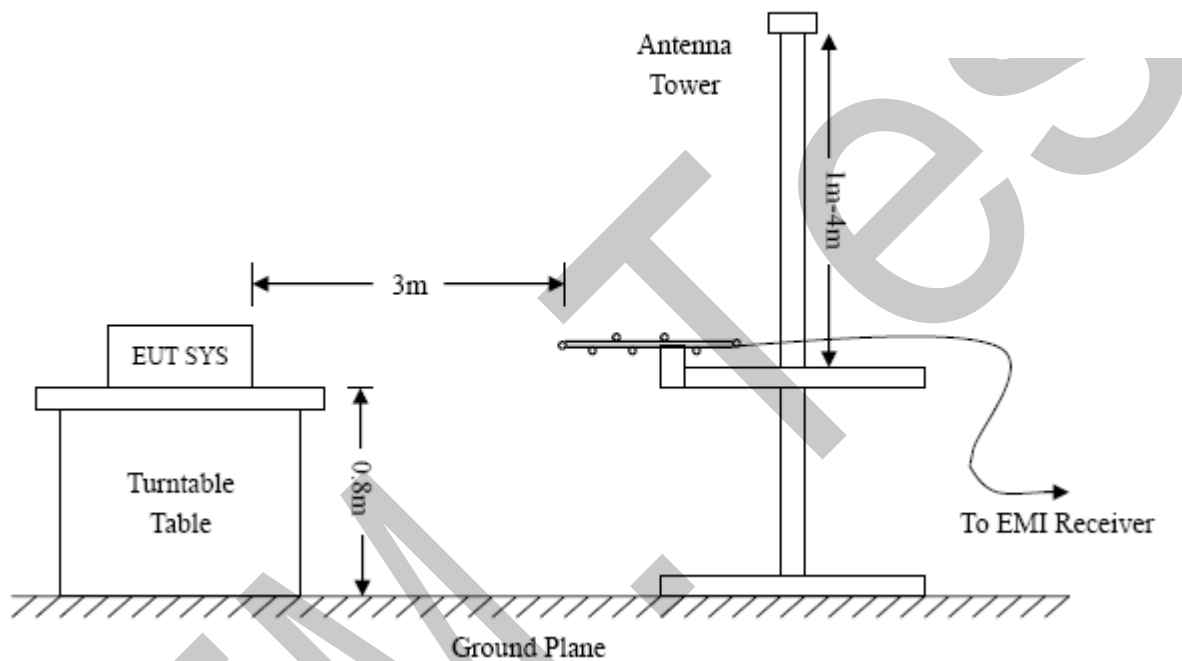
4. Radiated Emission

4.1 Measurement Uncertainty

Base on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any radiation emissions measurement is ± 5.10 dB.

4.2 Test Procedure

Test is conducting under the description of AS/NZS CISPR 32 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement.



4.3 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and the Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

$$\text{Corr. Ampl.} = \text{Indicated Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of $-6\text{dB}\mu\text{V}$ means the emission is $6\text{dB}\mu\text{V}$ below the maximum limit for Class B device. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Corr. Ampl.} - \text{AS/NZS CISPR 32 Class B Limit}$$

4.4 Environmental Conditions

Temperature:	23° C
Relative Humidity:	53%
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

According to the data in section 4.5, the EUT complied with the AS/NZS CISPR 32 Class B standards, and had the worst margin is:

-7.78 dB at 58.8185 MHz in the Vertical polarization, 30 MHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

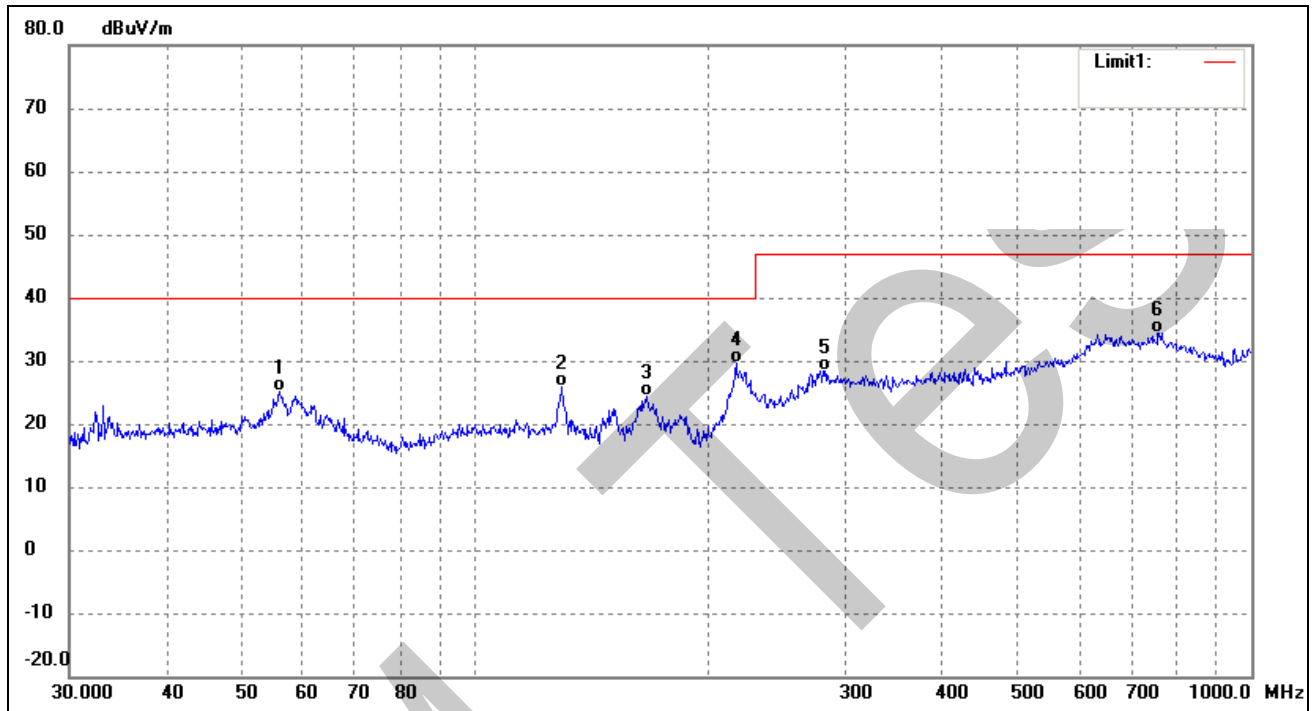
EUT: X-PLORE 8000 STANDARD CHARGER EX

Tested Model: GT-93036SHG3050

Operating Condition: TM1

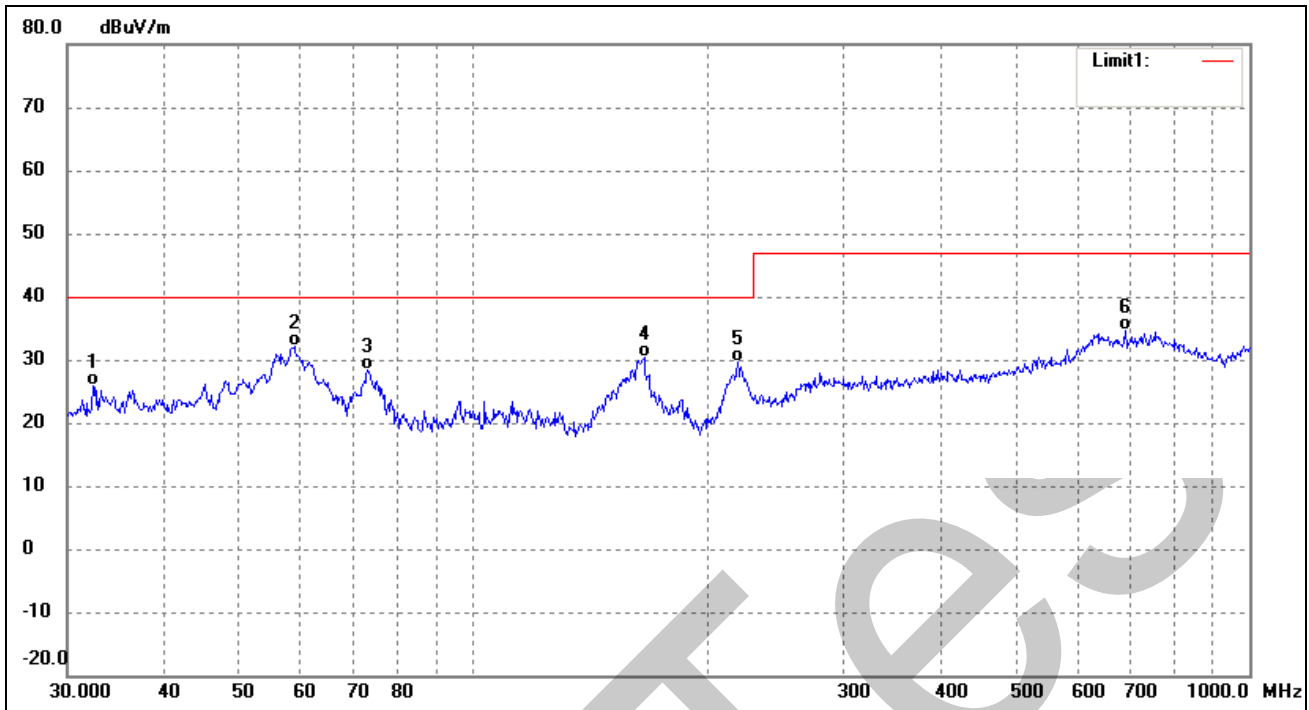
Comment: AC 230V/50Hz

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	56.0007	8.41	16.81	25.22	40.00	-14.78	233	100	QP
2	129.4678	10.04	15.83	25.87	40.00	-14.13	99	100	QP
3	166.0680	10.20	14.25	24.45	40.00	-15.55	55	100	QP
4	216.7828	10.85	18.79	29.64	40.00	-10.36	104	100	QP
5	281.9946	5.33	23.02	28.35	47.00	-18.65	215	100	QP
6	758.0408	4.46	30.03	34.49	47.00	-12.51	138	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree ()	Height (cm)	Remark
1	32.4059	10.42	15.56	25.98	40.00	-14.02	196	100	QP
2	58.8185	15.41	16.81	32.22	40.00	-7.78	296	100	AVG
3	73.1025	14.00	14.31	28.31	40.00	-11.69	67	100	QP
4	166.0680	16.09	14.25	30.34	40.00	-9.66	110	100	QP
5	219.0753	10.28	19.28	29.56	40.00	-10.44	99	100	QP
6	691.9867	5.03	29.58	34.61	47.00	-12.39	94	100	QP

EXHIBIT 1 - PRODUCT LABELING

Proposed RCM Label Format



Specifications: Text is Black in color and is justified. Labels are printed in indelible ink on permanent adhesive backing or silk-screened onto the EUT or shall be affixed at a conspicuous location on the EUT. The supplier code number is needed which it is registered and DoC by the supplier.

Proposed Label Location on EUT

CE Label Location

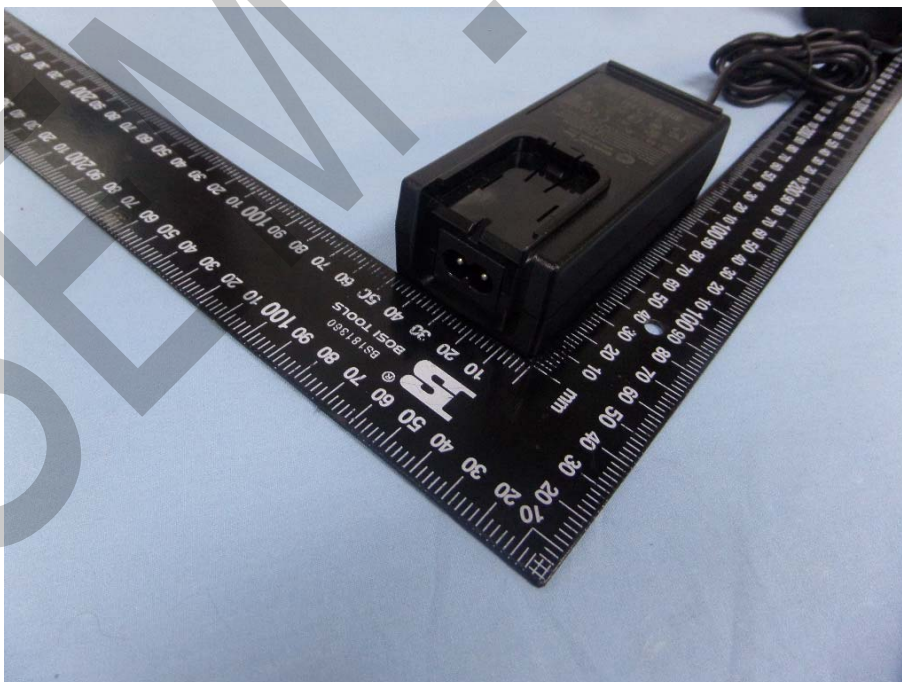


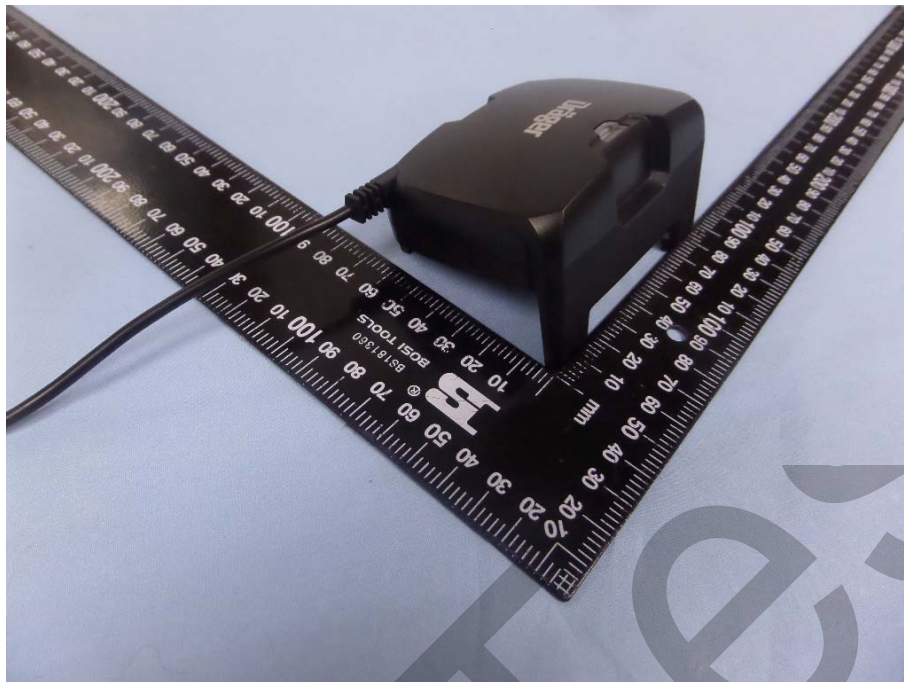
EXHIBIT 2 - EUT PHOTOGRAPHS

EUT View 1



EUT View 2



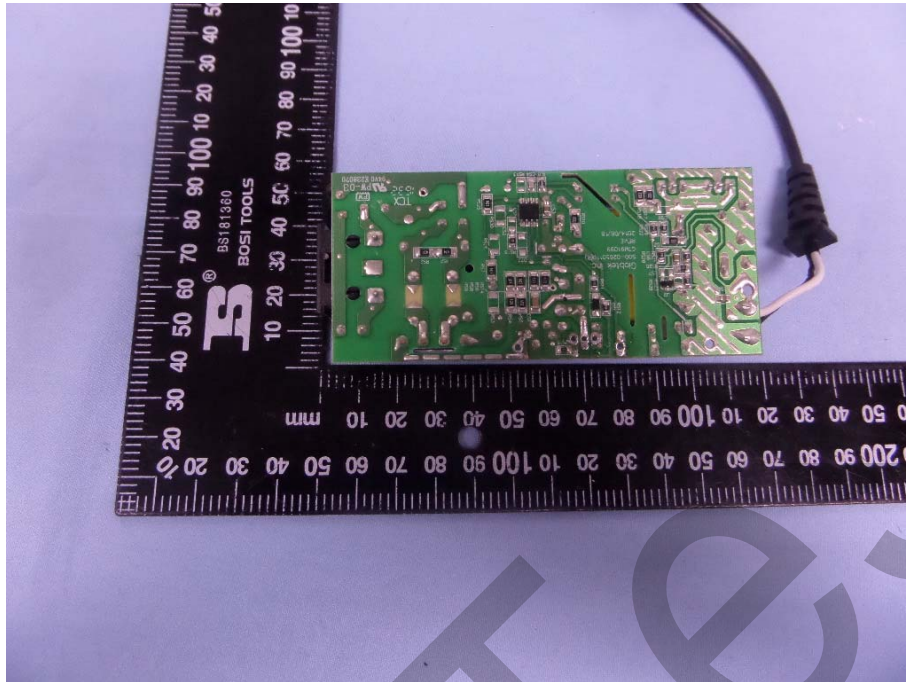
EUT View 5**EUT Housing and Board View 1**

EUT Housing and Board View 2

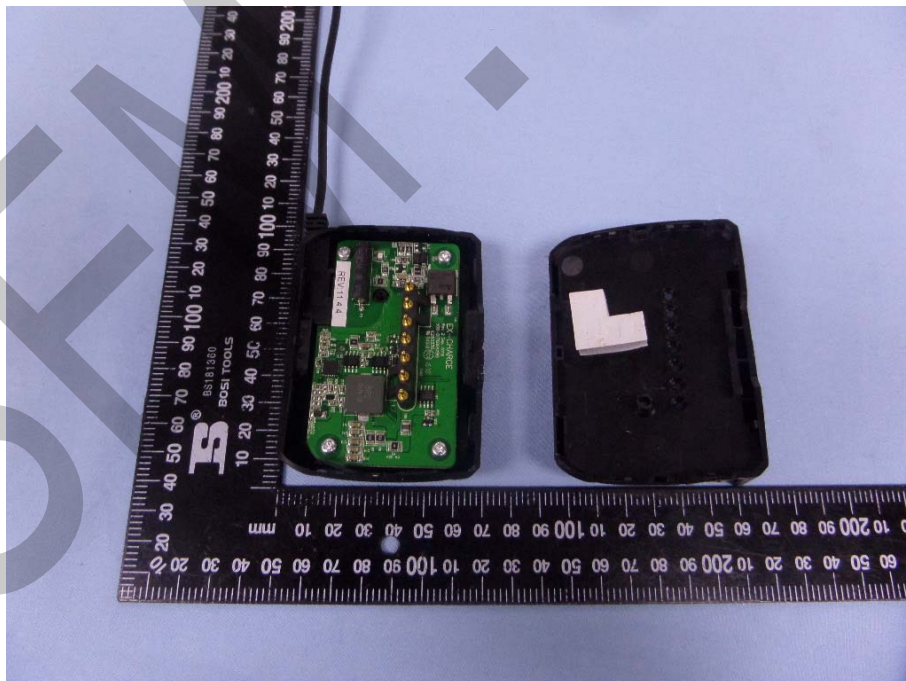
Solder Board-Component View 1

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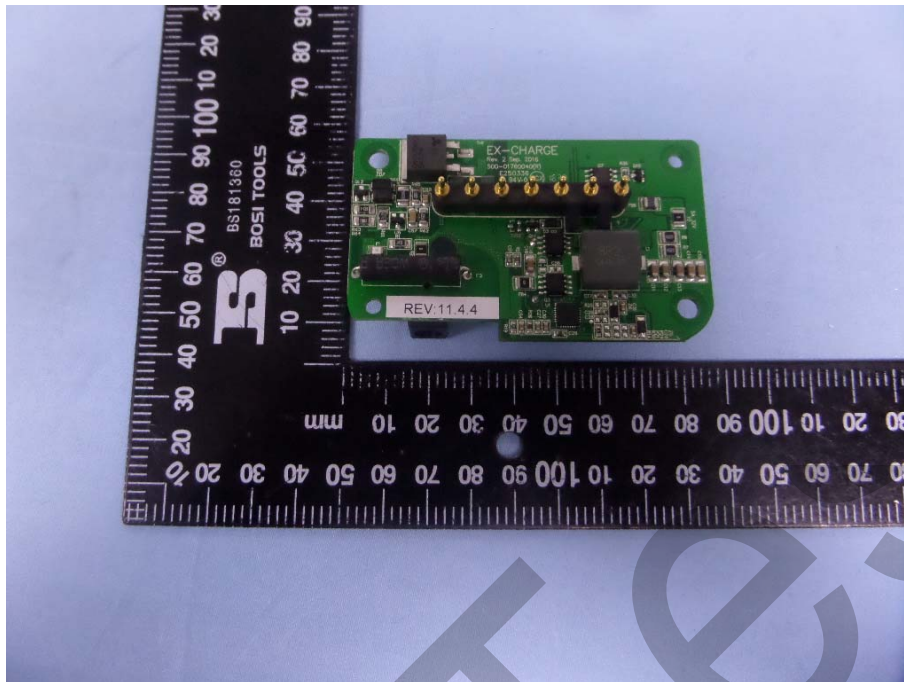
Solder Board-Component View 2



EUT Housing and Board View 1



Solder Board-Component View 1



Solder Board-Component View 2

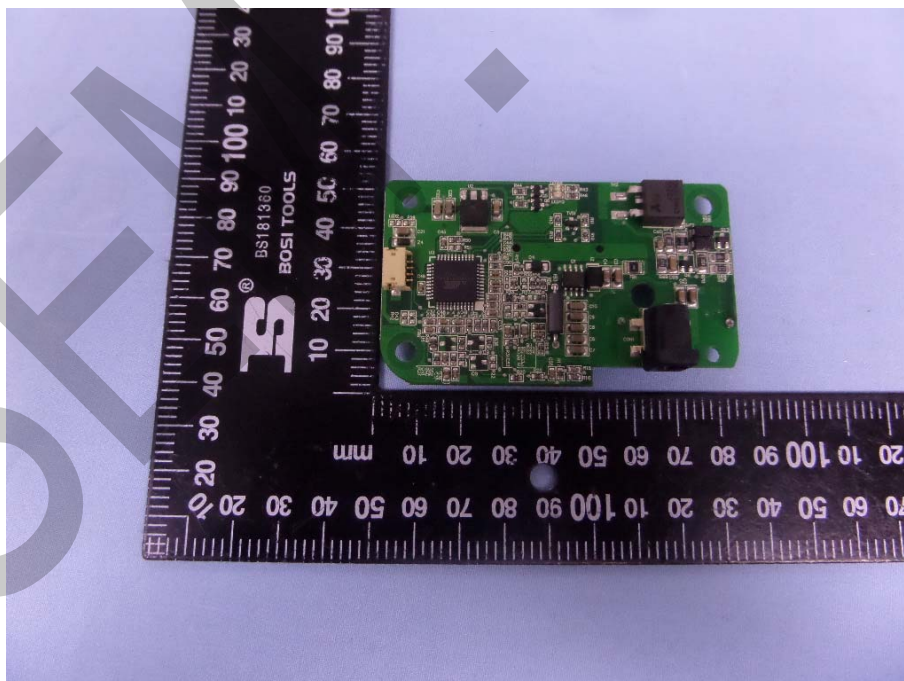
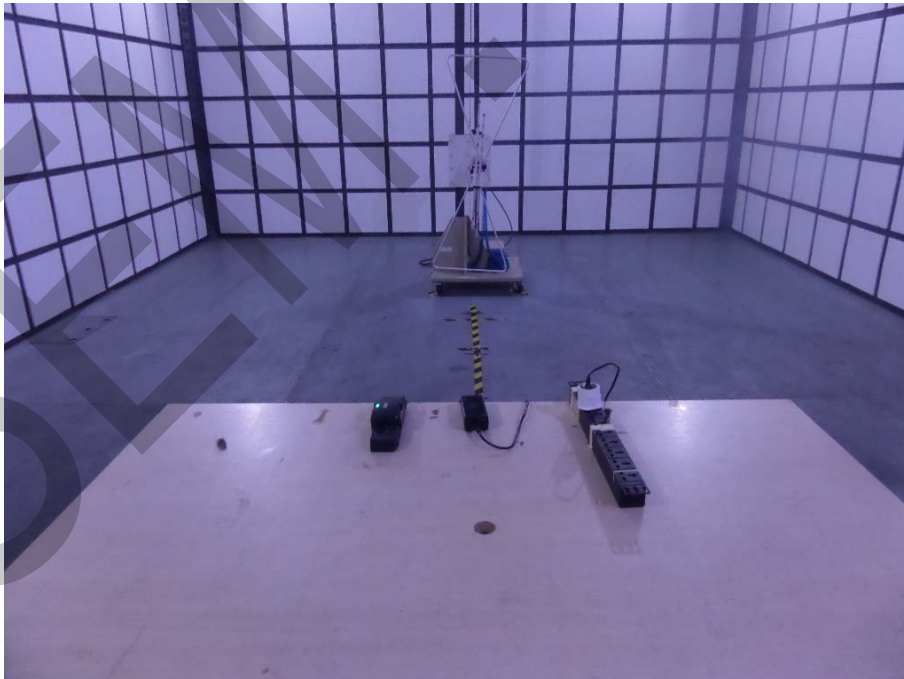


EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conducted Emission Test Setup



Radiation Emission View



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