

FCC Part 15B

Measurement and Test Report

For

GlobTek, Inc.

186 Veterans Dr. Northvale, NJ 07647 USA

FCC Rule(s): FCC Part 15 Subpart B

Product Description: X-plore 8000 Multi-Unit Charger

Tested Model: GT-93600SHG3050

Report No.: STR18048059E-3

Sample Receipt Date: 2018-04-08

Tested Date: 2018-04-09 to 2018-04-13

Issued Date: 2018-04-13

Tested By: Gan Li / Engineer *Gan Li*

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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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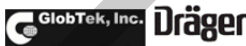
1. GENERAL INFORMATION

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 Multi-Unit Charger
Trade Name:	
Model No.:	GT-93600SHG3050
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:	AC 100-240V
Rated Current:	1.5A
Rated Power:	/
Power Adapter Model:	/
Lowest Internal Frequency:	/
Highest Internal Frequency:	Below 108MHz
Classification of ITE:	Class B

1.2 Test Standards

The following report is prepared on behalf of the GlobTek, Inc. in accordance with Part 2, Subpart J, and Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective is to determine compliance with FCC Part 15, Subpart B, and section 15.205, 15.107, and 15.109 rules.

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

1.3 Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

1.4 Test Facility

FCC – Registration No.: 125990

Shenzhen SEM Test Technology Co., Ltd. Laboratory has been recognized to perform compliance testing on equipment subject to the Commissions Declaration Of Conformity (DOC). The Designation Number is CN5010, and Test Firm Registration Number is 125990.

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.

1.5 EUT Setup and Operation Mode

The equipment under test (EUT) was configured to measure its highest possible emission 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	Charging	/

EUT Cable List and Details

Cable Description	Length (M)	Shielded/Unshielded	With Core/Without Core
AC Cable	1	Shielded	Without Core

Auxiliary Equipment List and Details

Description	Manufacturer	Model	Serial Number
Battery	Drager	X-plore 8000	/

Special Cable List and Details

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

1.6 Measurement Uncertainty

Measurement uncertainty		
Parameter	Conditions	Uncertainty
Conducted Emissions	Conducted	9-150kHz ± 3.74 dB
		0.15-30MHz ± 3.34 dB
Radiated Emissions	Radiated	30-200MHz ± 4.52 dB
		0.2-1GHz ± 5.56 dB
		1-6GHz ± 3.84 dB
		6-18GHz ± 3.92 dB

1.7 Test Equipment List and Details

Description	Manufacturer	Model	Serial No.	Cal Date	Due Date
Spectrum Analyzer	Agilent	E4407B	MY41440400	2017-06-12	2018-06-11
Spectrum Analyzer	Rohde & Schwarz	FSP30	836079/035	2017-06-12	2018-06-11
EMI Test Receiver	Rohde & Schwarz	ESVB	825471/005	2017-06-12	2018-06-11
Amplifier	Agilent	8447F	3113A06717	2017-06-12	2018-06-11
Amplifier	C&D	PAP-1G18	2002	2017-06-12	2018-06-11
Broadband Antenna	Schwarz beck	VULB9163	9163-333	2017-06-08	2018-06-07
Horn Antenna	ETS	3117	00086197	2017-06-08	2018-06-07
Loop Antenna	Schwarz beck	FMZB 1516	9773	2017-06-08	2018-06-07
EMI Test Receiver	Rohde & Schwarz	ESPI	101611	2017-06-12	2018-06-11
L.I.S.N	Schwarz beck	NSLK8126	8126-224	2017-06-12	2018-06-11
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100911	2017-06-12	2018-06-11

2. SUMMARY OF TEST RESULTS

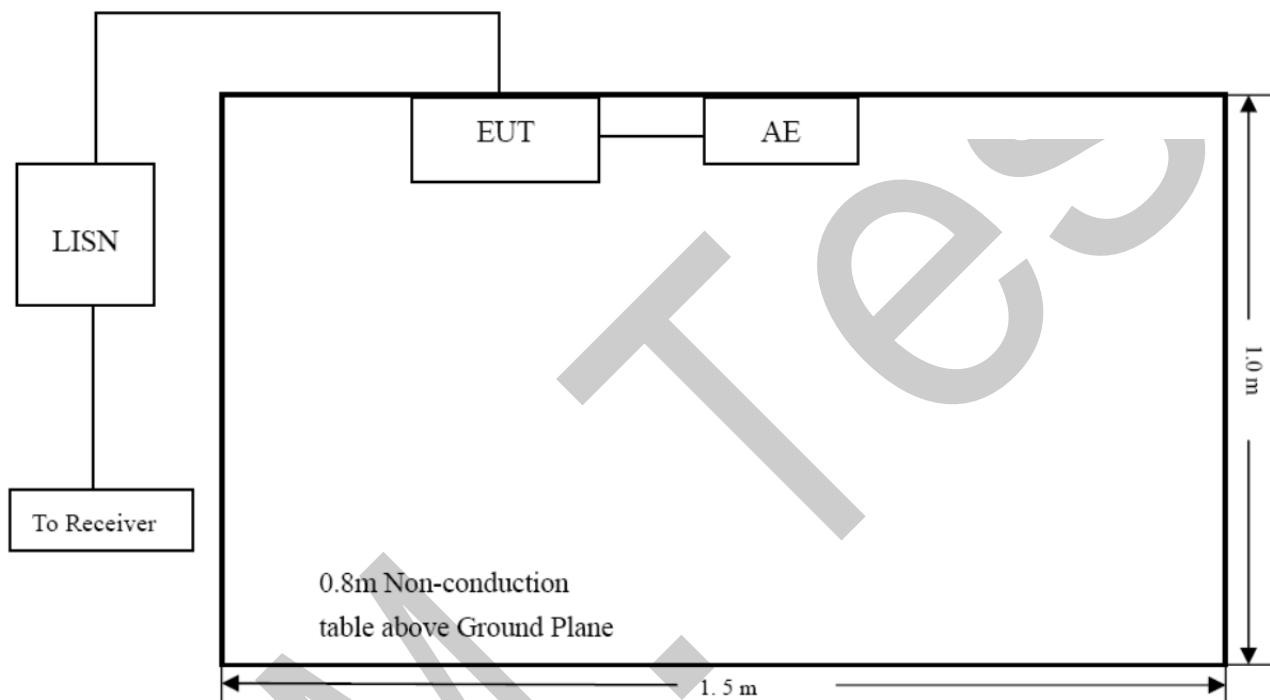
Description of Test	Result
§ 15.107 (a) Conducted Emission	Compliant
§ 15.109(a) Radiated Emission	Compliant

3. Conducted Emissions

3.1 Test Procedure

Test is conducting under the description of ANSI C63.4-2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

3.2 Basic Test Setup Block Diagram



3.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	52%
ATM Pressure:	1011 mbar

3.4 Summary of Test Results/Plots

According to the data in section 3.6, the EUT complied with the FCC Part 15.107(a) Conducted margin for a Class B device, with the *worst* margin reading of:

-11.49 dB at 0.1700 MHz in the Neutral, QP detector, 0.15-30MHz

3.5 Conducted Emissions Test Data

Plot of Conducted Emissions Test Data

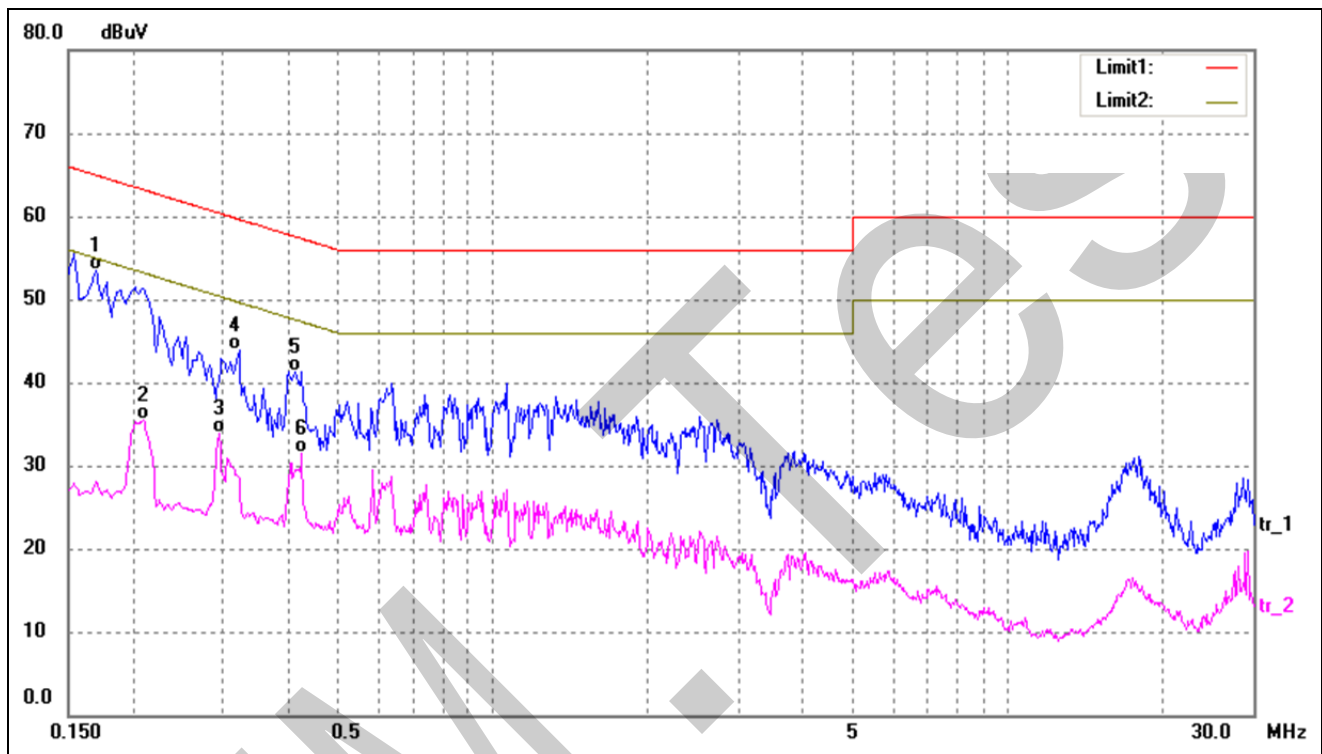
EUT: X-plore 8000 Multi-Unit Charger

Tested Model: GT-93600SHG3050

Operating Condition: TM1

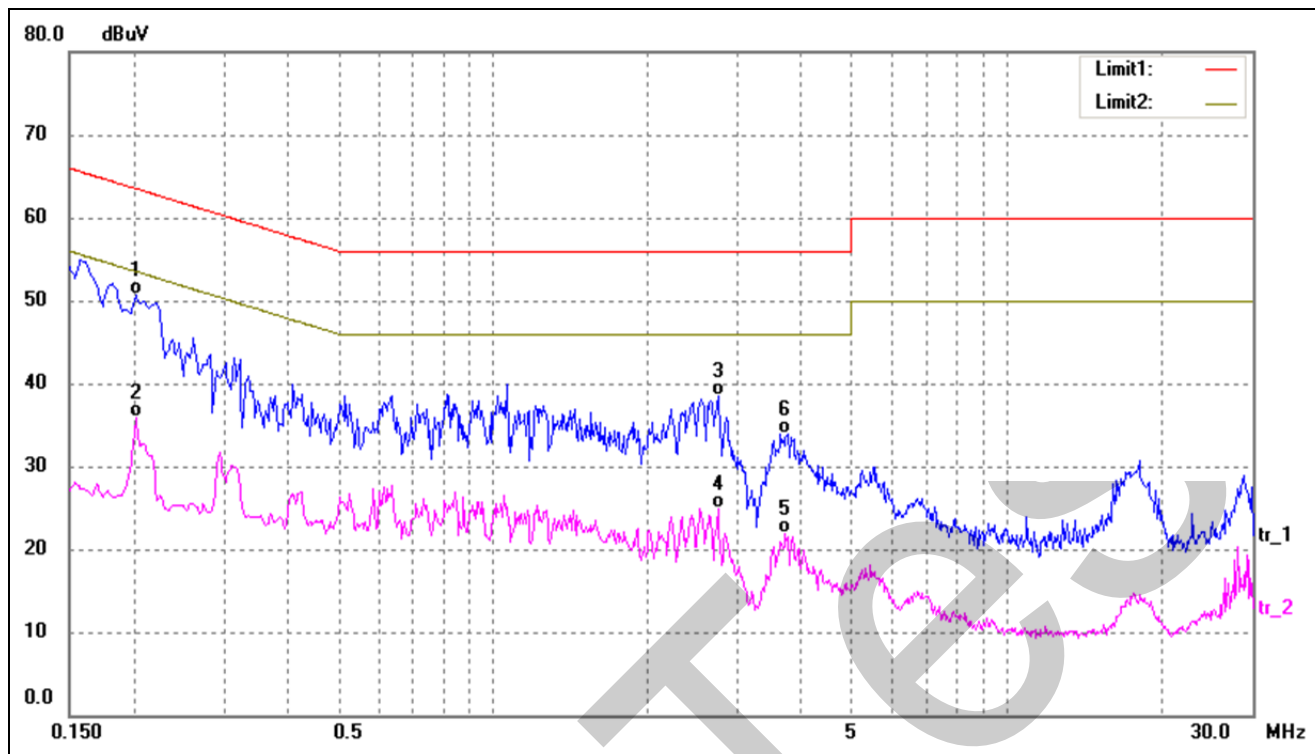
Comment: AC 120V/60Hz

Test Specification: Neutral



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.1700	33.49	19.98	53.47	64.96	-11.49	QP
2	0.2100	15.66	19.89	35.55	53.21	-17.66	AVG
3	0.2940	14.04	19.80	33.84	50.41	-16.57	AVG
4	0.3220	24.14	19.77	43.91	59.66	-15.75	QP
5	0.4140	21.58	19.71	41.29	57.57	-16.28	QP
6	0.4260	11.84	19.71	31.55	47.33	-15.78	AVG

Test Specification: Line



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1*	0.2020	30.76	19.90	50.66	63.53	-12.87	QP
2	0.2020	15.94	19.90	35.84	53.53	-17.69	AVG
3	2.7380	19.11	19.38	38.49	56.00	-17.51	QP
4	2.7380	5.58	19.38	24.96	46.00	-21.04	AVG
5	3.7140	2.49	19.33	21.82	46.00	-24.18	AVG
6	3.7460	14.60	19.33	33.93	56.00	-22.07	QP

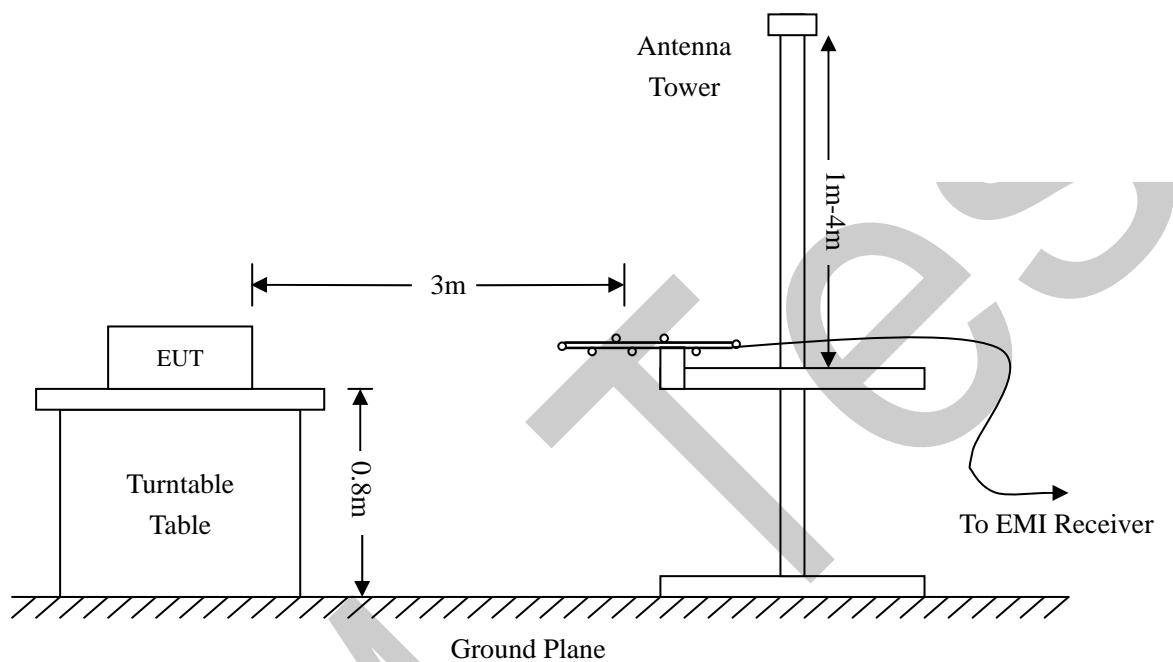
4. RADIATED EMISSION

4.1 Test Procedure

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15.109 Limit.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.



4.2 Test Receiver Setup

Frequency :9kHz-30MHz

RBW=10KHz,

VBW =30KHz

Sweep time= Auto

Trace = max hold

Detector function = peak

Frequency :30MHz-1GHz

RBW=120KHz,

VBW=300KHz

Sweep time= Auto

Trace = max hold

Detector function = peak, QP

Frequency :Above 1GHz

RBW=1MHz,

VBW=3MHz(Peak), 10Hz(AV)

Sweep time= Auto

Trace = max hold

Detector function = peak, AV

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:

$$\text{Corr. Ampl.} = \text{Indicated Reading} - \text{Corr. Factor}$$

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

$$\text{Margin} = \text{Corr. Ampl.} - \text{FCC Part 15.109(a) Limit}$$

4.4 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	55 %
ATM Pressure:	1011 mbar

4.5 Summary of Test Results/Plots

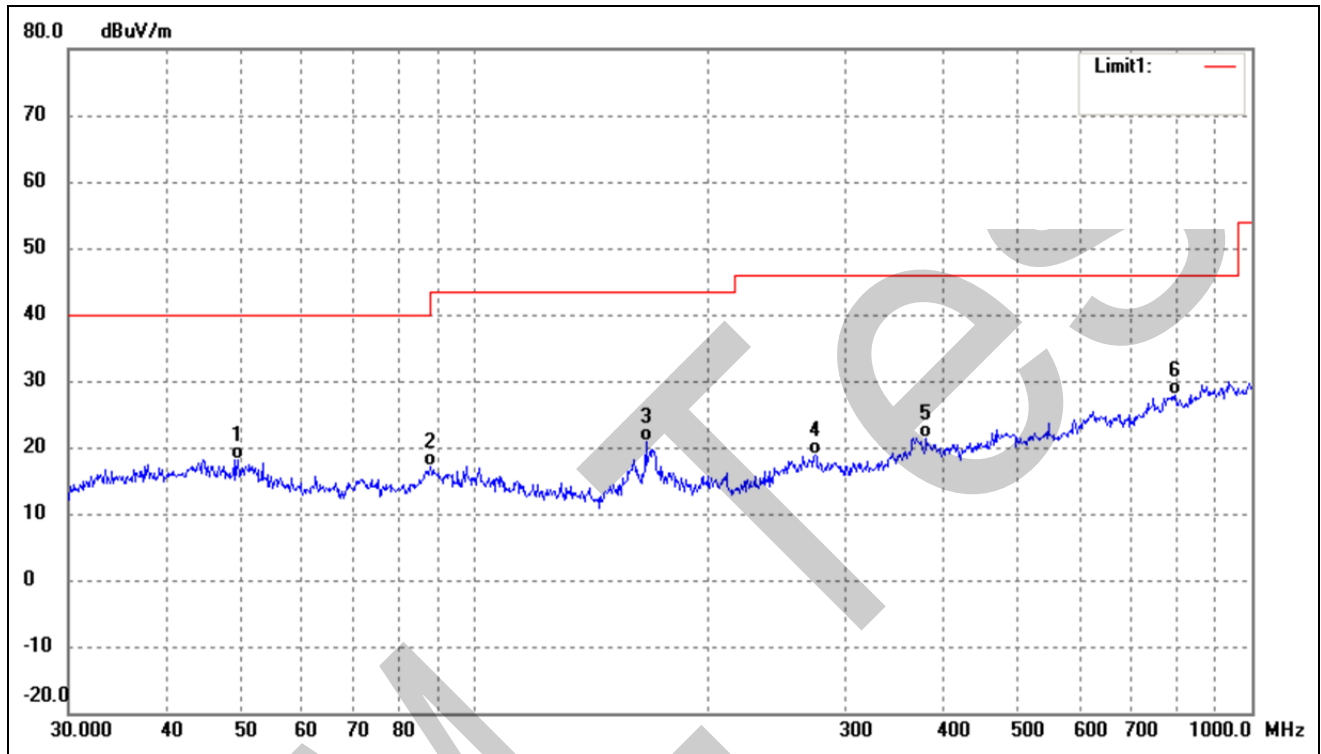
According to the data, the EUT complied with the FCC Part 15.109(a) rule, and had the worst margin of:

-15.15 dB at 63.7588 MHz in the Vertical polarization, 30 MHz to 1 GHz, 3Meters

Plot of Radiated Emissions Test Data

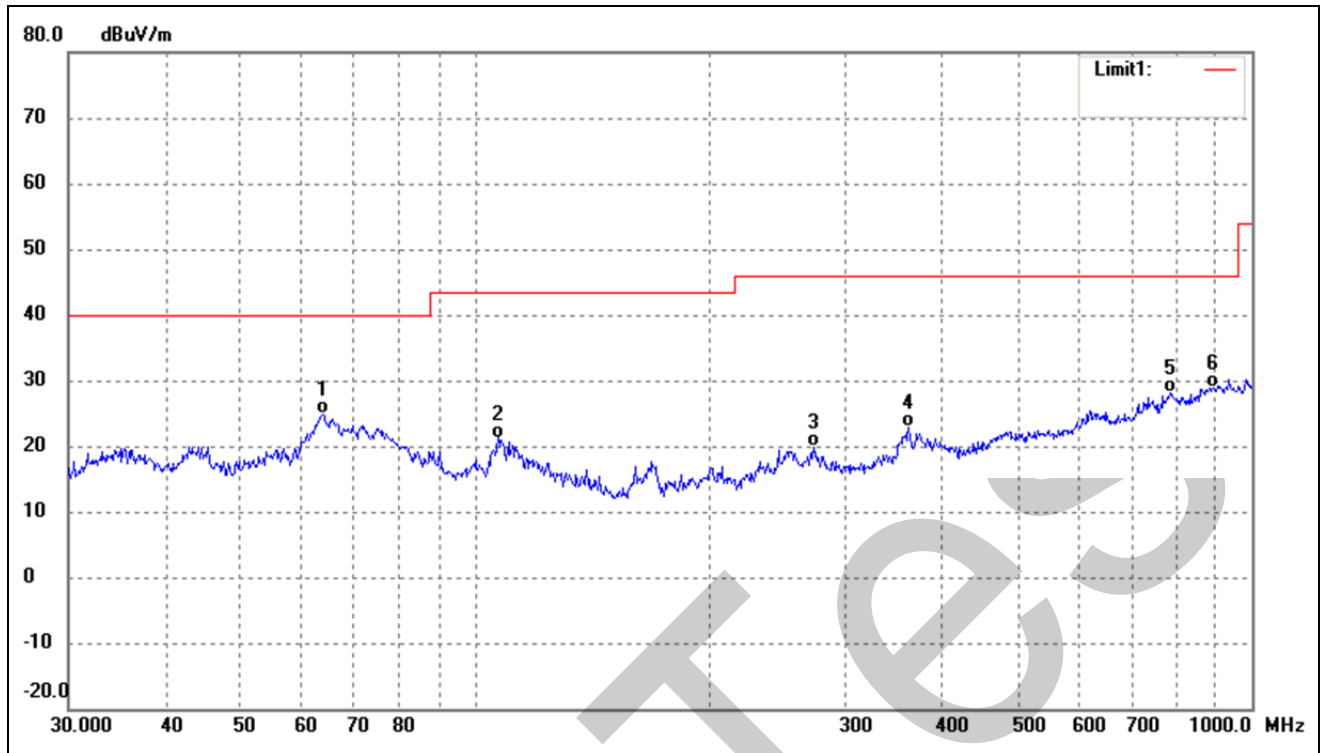
EUT: X-plore 8000 Multi-Unit Charger
Tested Model: GT-93600SHG3050
Operating Condition: TM1
Comment: AC 120V/60Hz

Test Specification: Horizontal



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	49.5328	28.74	-10.69	18.05	40.00	-21.95	121	100	QP
2	87.7248	31.42	-14.28	17.14	40.00	-22.86	10	100	QP
3	166.0680	35.56	-14.79	20.77	43.50	-22.73	326	100	QP
4	274.1939	28.59	-9.68	18.91	46.00	-27.09	209	100	QP
5	381.2487	28.48	-7.04	21.44	46.00	-24.56	154	100	QP
1	49.5328	28.74	-10.69	18.05	40.00	-21.95	111	100	QP

Test Specification: Vertical



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Degree (°)	Height (cm)	Remark
1	63.7588	39.50	-14.65	24.85	40.00	-15.15	99	100	QP
2	107.1337	33.47	-12.22	21.25	43.50	-22.25	251	100	QP
3	273.2341	29.47	-9.70	19.77	46.00	-26.23	162	100	QP
4	361.7139	30.73	-7.82	22.91	46.00	-23.09	39	100	QP
5	785.0935	27.67	0.40	28.07	46.00	-17.93	210	100	QP
6	890.7278	27.51	1.43	28.94	46.00	-17.06	116	100	QP

EXHIBIT 1 - PRODUCT LABELING

Proposed FCC 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. Where the EUT is constructed in two or more sections connected by wires and marketed together, the above statement is required to be affixed only to the main control unit. When the EUT is so small or for such use that it is not practicable to place the statement on it, the above information shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed.

Proposed Label Location on EUT

FCC Label Location

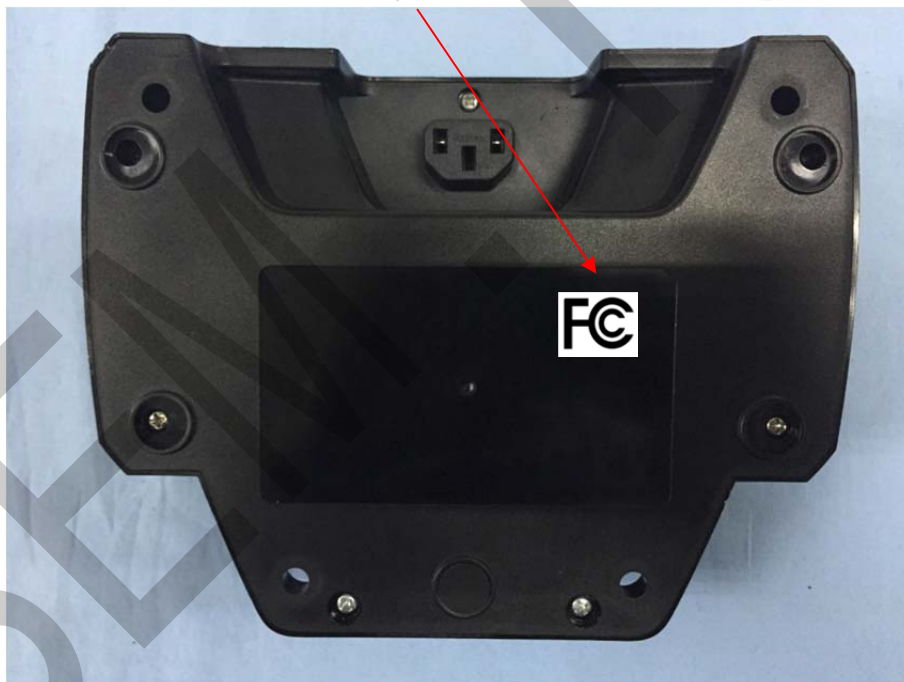


EXHIBIT 2 - EUT PHOTOGRAPHS

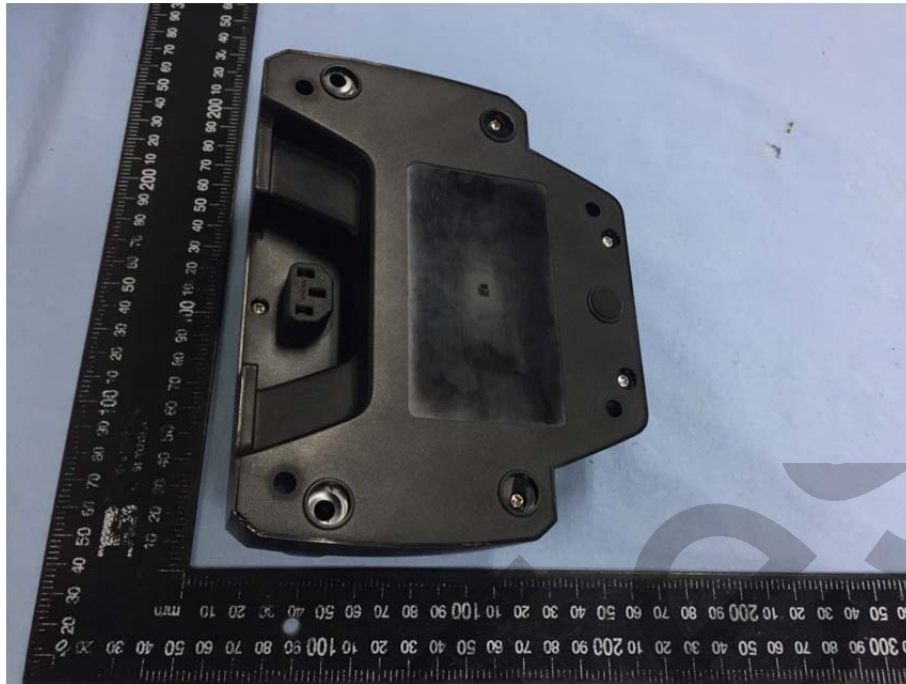
EUT View 1



EUT View 2

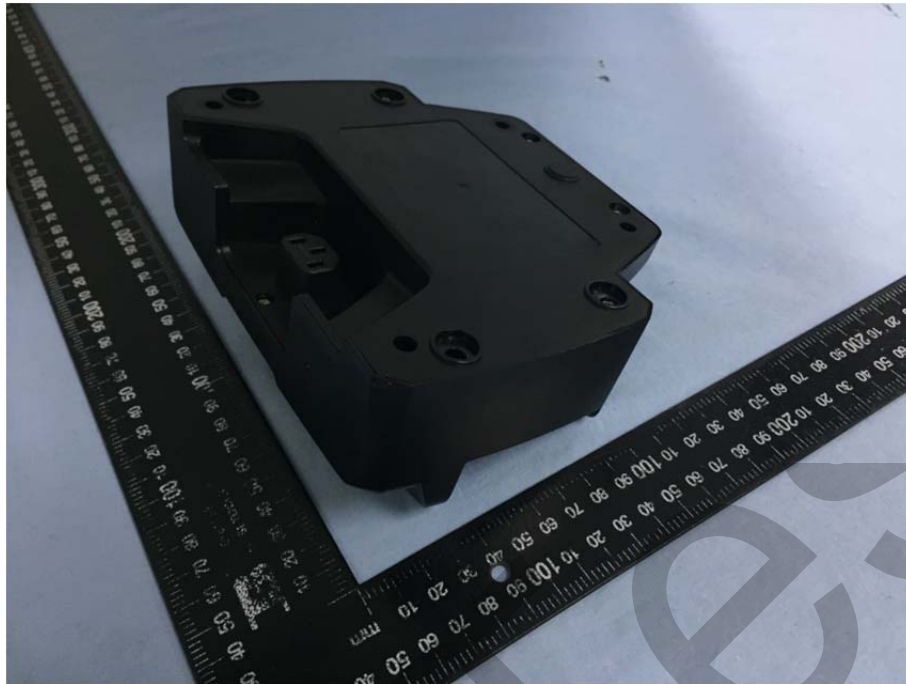


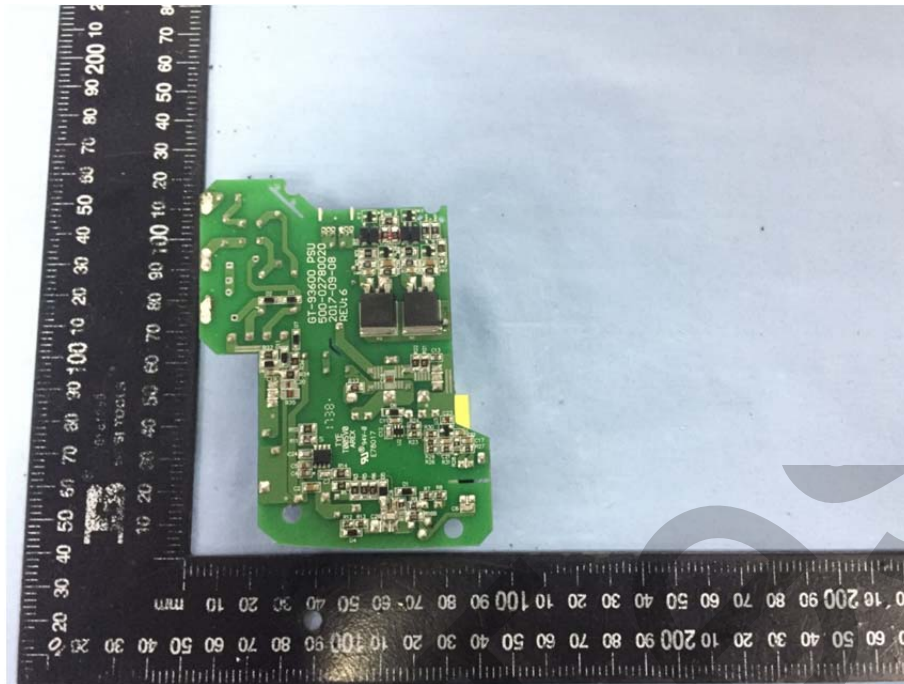
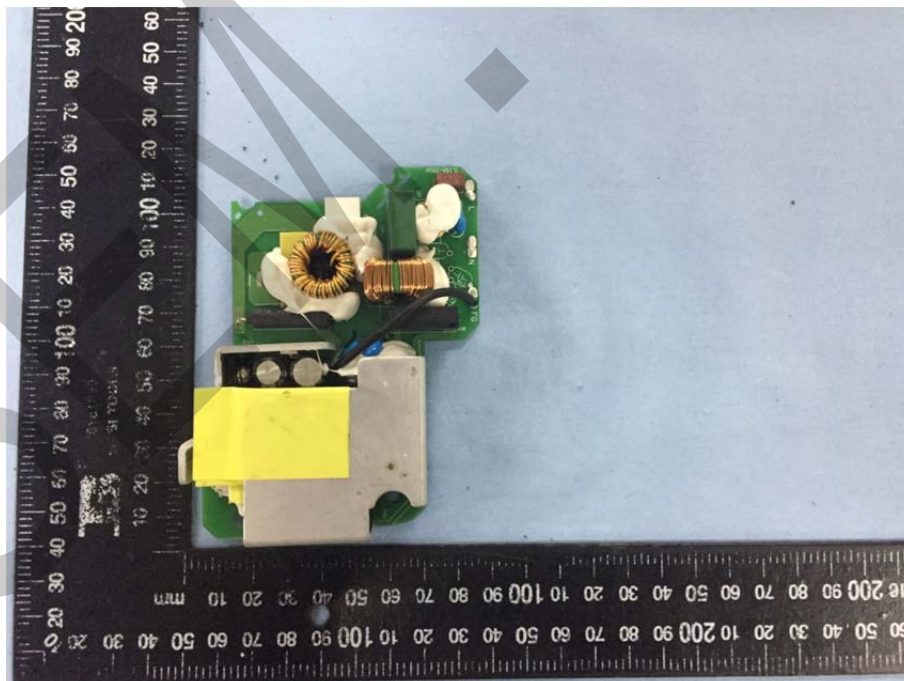
EUT View 3

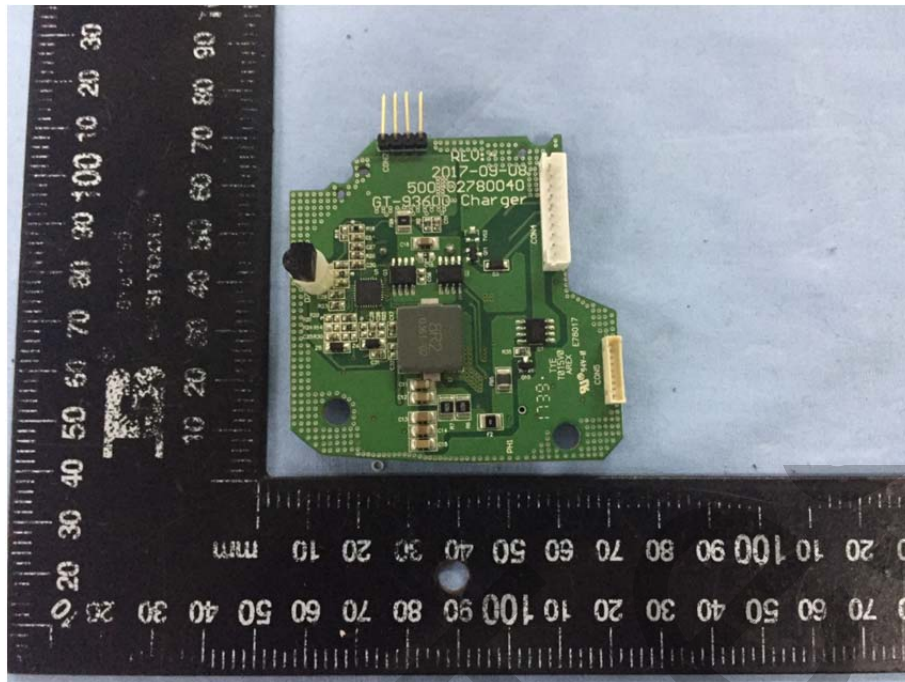
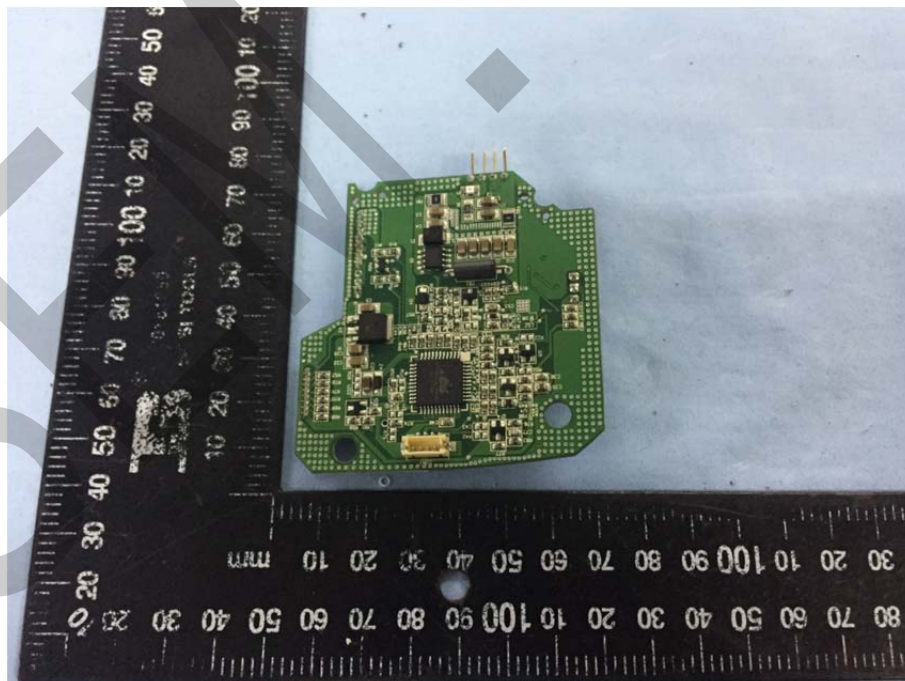


EUT View 4



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

Solder Board-Component View 1**Solder Board-Component View 2**

Solder Board-Component View 3**Solder Board-Component View 4**

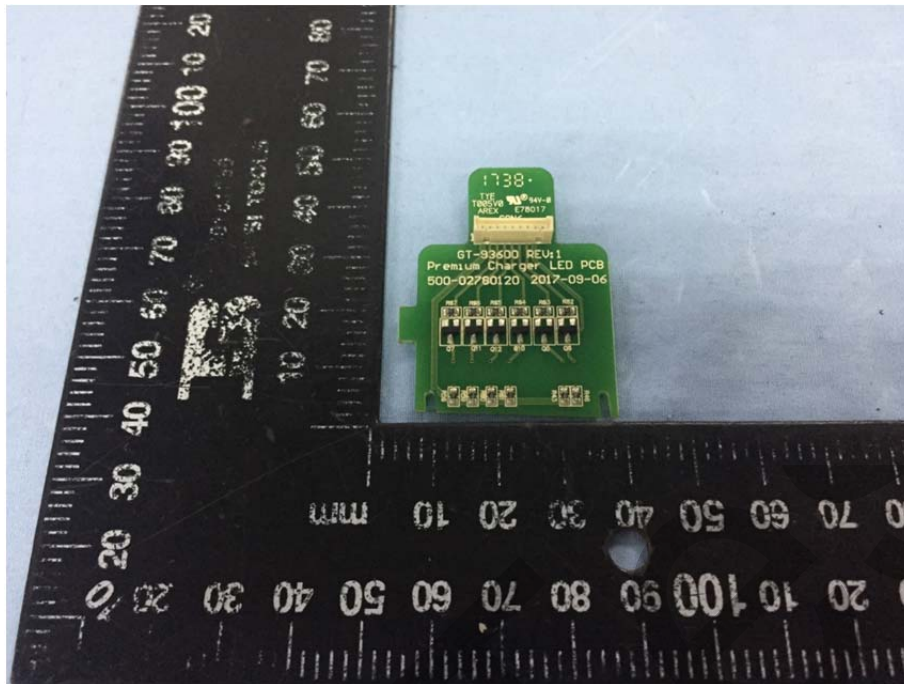
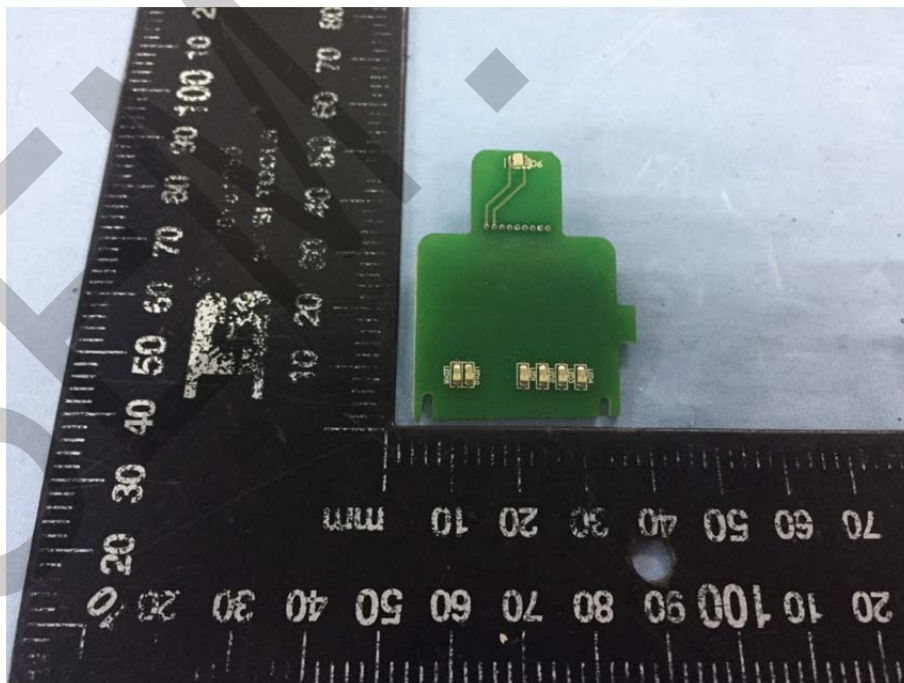
Solder Board-Component View 5**Solder Board-Component View 6**

EXHIBIT 3 - TEST SETUP PHOTOGRAPHS

Conducted Emission Test Setup



Radiation Emission View

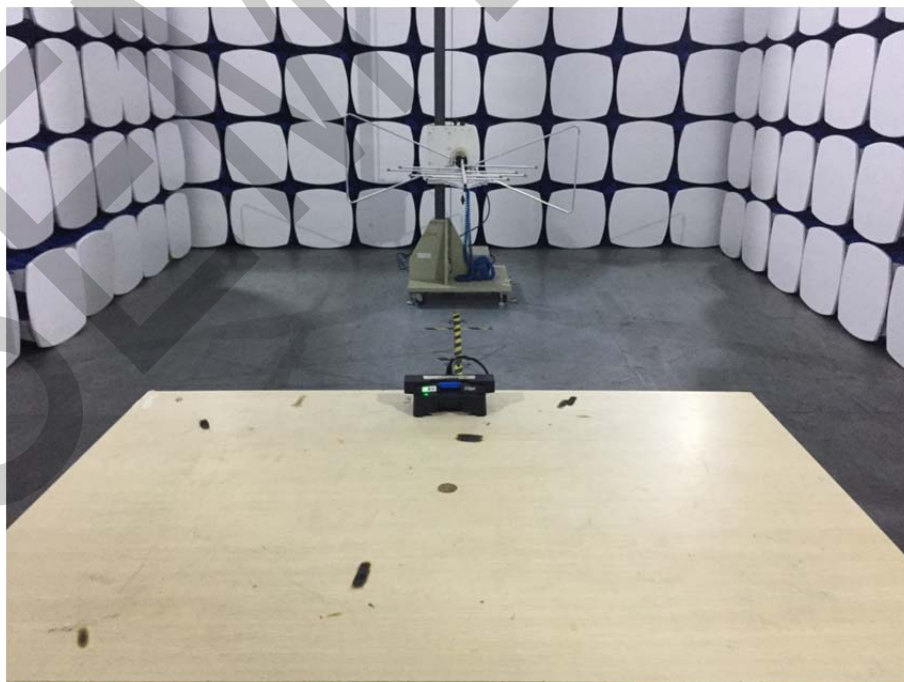


EXHIBIT 4 - USERS MANUAL

Information to Users

According to the FCC Part 15.19, 15.21, and 15.105 rules, for this EUT, the instructions or operation manual furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

FCC Caution

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE 1: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

NOTE 2: Any changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

***** END OF REPORT *****