



FCC PART15B TEST REPORT

For

FCC ID:	2AJ84SSG-T6L
Product Name:	Security alarm system
Trademark:	N/A
Model Number:	SSG-T6-L SSG-T0, SSG-T0-L, SSG-T0 plus, SSG-T1, SSG-T2, SSG-T3, SSG-T4, SSG-T5, SSG-T6, SSG-T7, SSG-T8, SSG-T9, SSG-T10, SSG-T11, SSG-T12, SSG-T13, SSG-T14, SSG-T15, SSG-T16, SSG-T17, SSG-T18, SSG-T19, SSG-T20, SSG-T30, SSG-T40, SSG-T50, SSG-T60, SSG-T70, SSG-T90, SSG-T100.
Prepared For :	Shenzhen Security Group Corp.,Ltd.
Address :	Building 9, No.18 ,North Area Of Makan Industrial Park, Xili Town, Nanshan District, 518055, Shenzhen, China
Prepared By :	Shenzhen BCTC Technology Co., Ltd.
Address :	A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
Test Date:	Apr. 06 - Apr. 13, 2017
Date of Report :	Apr. 13, 2017
Report No.:	BCTC-FY160902603-1E



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TEST REPORT DECLARATION

Applicant : Shenzhen Security Group Corp.,Ltd.

Address : Building 9, No.18 ,North Area Of Makan Industrial Park, Xili Town,
Nanshan District, 518055, Shenzhen, China

EUT Description : Security alarm system

Model Number : SSG-T6-L

Serial Model : SSG-T0, SSG-T0-L, SSG-T0 plus, SSG-T1, SSG-T2, SSG-T3, SSG-T4, SSG-T5,
SSG-T6, SSG-T7, SSG-T8, SSG-T9, SSG-T10, SSG-T11, SSG-T12, SSG-T13,
SSG-T14, SSG-T15, SSG-T16, SSG-T17, SSG-T18, SSG-T19, SSG-T20,
SSG-T30, SSG-T40, SSG-T50, SSG-T60, SSG-T70, SSG-T90, SSG-T100.

Model Difference : All the model are the same circuit and RF module, except model names.

Operation Frequency : 433.92MHz (Receiver)

Rating(s) : Main unit: DC3.7V From Battery and DC12V From Adapter
External adaptor: Input: AC100-240V~ 50/60Hz
Output: DC12V=== 1A

Test Standards:

FCC Part 15 B: 2016
ANSI C63.4-2014

The EUT described above is tested by US to determine the maximum emission levels emanating from the EUT, the maximum emission levels are compared to the FCC Part 15 B Subpart Class B limits.

The measurement results are contained in this test report and Shenzhen BCTC Technology Co., Ltd. is assumed of full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT is to be technically compliant with the FCC requirements. This report applies to above tested sample only and shall not be reproduced in part without written approval of Shenzhen BCTC Technology Co., Ltd.

Prepared by(Engineer): Eric Yang

Reviewer(Supervisor): Jade Yang

Approved(Manager): Carson Zhang





1. GENERAL INFORMATION

1.1. Report information

- 1.1.1. This report is not a certificate of quality; it only applies to the sample of the specific product/equipment given at the time of its testing. The results are not used to indicate or imply that they are application to the similar items. In addition, such results must not be used to indicate or imply that BCTC approves recommends or endorses the manufacture, supplier or use of such product/equipment, or that BCTC in any way guarantees the later performance of the product/equipment.
- 1.1.2. The sample/s mentioned in this report is/are supplied by Applicant, BCTC therefore assumes no responsibility for the accuracy of information on the brand name, model number, origin of manufacture or any information supplied.
- 1.1.3. Additional copies of the report are available to the Applicant at an additional fee. No third part can obtain a copy of this report through BCTC, unless the applicant has authorized BCTC in writing to do so.

1.2. Measurement Uncertainty

Available upon request.

1.3. Test Facility

Site Description	
Name of Firm	: Shenzhen BCTC Technology Co., Ltd.
Site Location	: A. Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
FCC Registration No.	: 187086

1.4. Test Uncertainty

Conducted Emission Uncertainty	= $\pm 2.66\text{dB}$
Radiated Emission Uncertainty	= $\pm 4.15\text{dB}$



2. PRODUCT DESCRIPTION

2.1.EUT Description

Description : **Security alarm system**

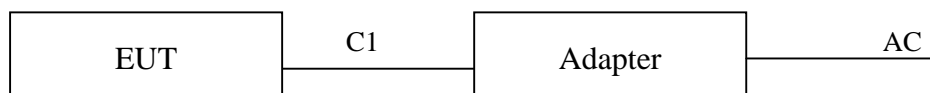
Applicant : **Shenzhen Security Group Corp.,Ltd.**
Building 9, No.18 ,North Area Of Makan Industrial Park, Xili
Town, Nanshan District, 518055, Shenzhen, China

Manufacturer : **Shenzhen Security Group Corp.,Ltd.**
Building 9, No.18 ,North Area Of Makan Industrial Park, Xili
Town, Nanshan District, 518055, Shenzhen, China

Model Number : **SSG-T6-L**

2.2.Block Diagram of EUT Configuration

Conducted Emission Test



Radiated Spurious Emission Test



2.3.Block Diagram of EUT Configuration

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Note
E-1	Security alarm system	N/A	SSG-T6-L	N/A	EUT
E-2	Adapter	N/A	SD10120200100	N/A	Input:100-240V~ 50/60Hz Output: 12V---1A

Item	Shielded Type	Ferrite Core	Length	Note
C1	NO	NO	2.0M	DC cable unshielded



Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.4.Test Conditions

Temperature: 23~25℃

Relative Humidity: 55~63 %



3. TEST RESULTS SUMMARY

Table 1 Test Results Summary

Test Items	Test Results
Conducted disturbance	Pass
Radiated disturbance	Pass

Remark: "N/A" means "Not applicable."

3.1 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

For Conducted & Radiated Emission	
Final Test Mode	Description
Mode 1	433.92MHz Receive Mode

Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) Fully-charged battery is used during the test



4. TEST EQUIPMENT USED

Radiation Test equipment

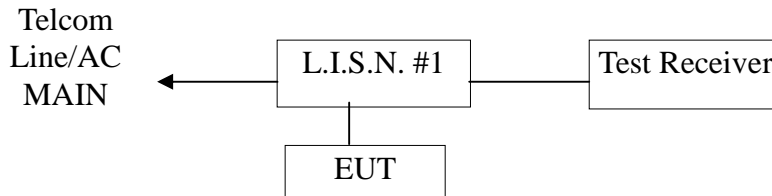
Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Spectrum Analyzer (9kHz-26.5GHz)	Agilent	E4407B	MY45108040	2016.08.27	2017.08.26
2	Test Receiver (9kHz-7GHz)	R&S	ESPI	101318	2016.08.27	2017.08.26
3	Bilog Antenna (30MHz-1GHz)	R&S	VULB 9168	VULB91 68-438	2016.08.27	2017.08.26
4	Horn Antenna (1GHz-18GHz)	SCHWARZBECK	BBHA9120D	1201	2016.09.03	2017.09.03
5	Horn Antenna (14GHz-40GHz)	SCHWARZBECK	BBHA 9170	9170-181	2016.09.03	2017.09.03
6	Amplifier (9KHz-6GHz)	SCHWARZBECK	BBV9744	9744-0037	2016.08.27	2017.08.26
7	Amplifier (1GHz-18GHz)	SCHWARZBECK	BBV9718	9718-309	2016.08.27	2017.08.26
8	Amplifier (18GHz-40GHz)	SCHWARZBECK	BBV 9721	9721-205	2016.08.27	2017.08.26
9	Loop Antenna (9KHz-30MHz)	SCHWARZBECK	FMZB1519B	00014	2016.09.03	2017.09.03
10	RF cables1 (9kHz-1GHz)	R&S	R203	R20X	2016.08.27	2017.08.26
11	RF cables2 (1GHz-40GHz)	R&S	R204	R21X	2016.08.27	2017.08.26
12	Antenna connector	Florida RF Labs	N/A	RF 01#	2016.08.27	2017.08.26
13	Power Metter	ANRITSU	ML2487A	6K00001568	2016.08.27	2017.08.26
14	Power Sensor (AV)	ANRITSU	ML2491A	030989	2016.08.27	2017.08.26
15	Signal Analyzer 9kHz-26.5GHz	Agilent	N9010A	MY48030494	2016.08.27	2017.08.26
16	Test Receiver 20kHz-40GHz	R&S	ESU 40	100376	2016.08.27	2017.08.26
17	D.C. Power Supply	LongWei	PS-305D	010964729	2016.08.27	2017.08.26

Conduction Test equipment

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	Test Receiver	R&S	ESCI	1166.5950K03-1 01165-ha	2016.08.27	2017.08.26
2	LISN	SCHWARZBECK	NSLK8127	8127739	2016.08.27	2017.08.26
3	LISN	R&S	NSLK8126	8126487	2016.08.27	2017.08.26
4	RF cables	R&S	R204	R20X	2016.08.27	2017.08.26
5	Attenuator	R&S	ESH3-Z2	143206	2016.08.27	2017.08.26

5. CONDUCTED EMISSION TEST

5.1. Block Diagram of Test Setup



(EUT: Security alarm system)

5.2. Test Standard

FCC Part 15 B: 2015

5.3. Conducted Emission Limit (Class B)

Frequency MHz	Limits dB(μV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66 ~ 56*	56 ~ 46*
0.50 ~ 5.00	56	46
5.00 ~ 30.00	60	50

Notes: 1. *Decreasing linearly with logarithm of frequency.

5.4. EUT Configuration on Test

The following equipments are installed on conducted emission test to meet Part 15 B requirement and operating in a manner, which tends to maximize its emission characteristics in a normal application.

5.4.1. Security alarm system

Model Number: SSG-T6-L

5.5. Operating Condition of EUT

5.5.1. Setup the EUT and simulators as shown in Section 5.1.

5.5.2. Turn on the power of all equipments.

5.5.3. Let the EUT work in test modes (EUT Working) and test it.



5.6.Test Procedure

The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI test receiver (R&S Test Receiver ESHS30) is used to test the emissions form both sides of AC line. The bandwidth of EMI test receiver is set at 9kHz.

The bandwidth of the test receiver (R&S Test Receiver ESCI) is set at 10KHz.

5.7.Test Result

PASS

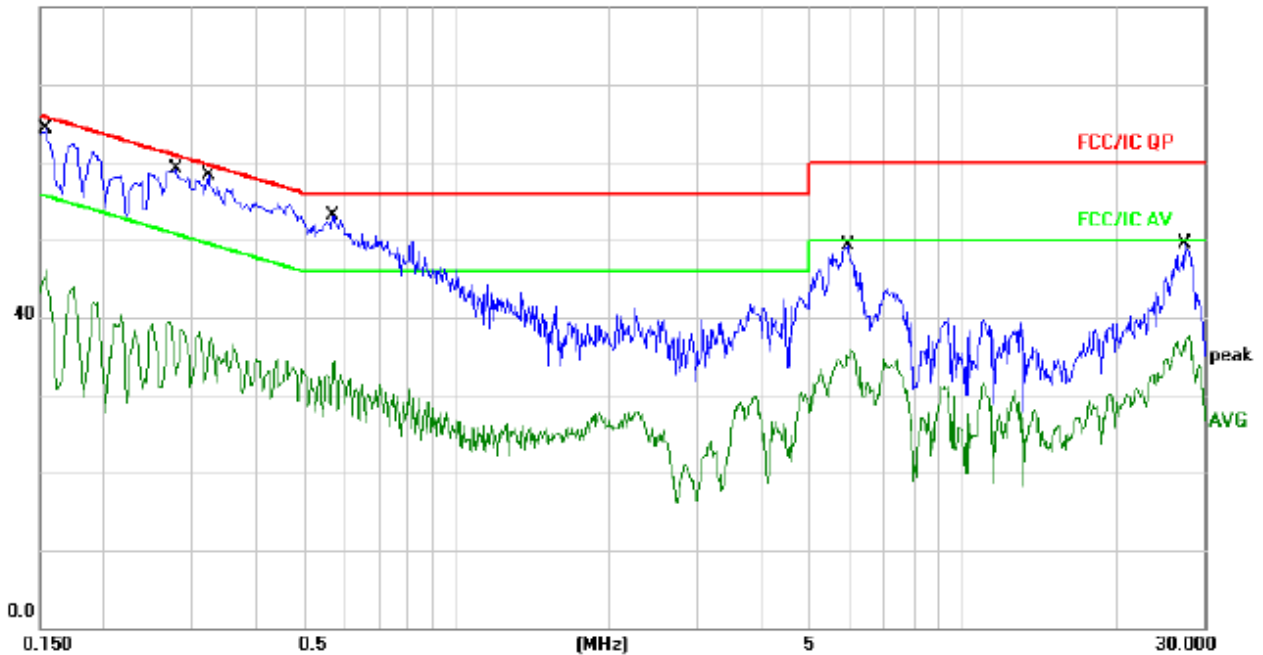
Please refer to the following page.

We pretest AC 120V and AC 240V, the worst voltage was AC 120V and the data recording in the report.

**Conducted Emission At The Mains Terminals Test Data**

Temperature:	24.5 °C	Relative Humidity:	54%
Pressure:	1009hPa	Phase :	Line
Test Voltage :	AC 120V/60Hz	Test Mode:	Receiver Mode

80.0 dBuV

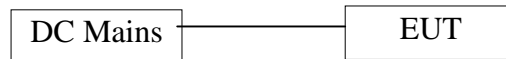


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1		0.1539	54.55	9.67	64.22	65.78	-1.56	QP	
2		0.1539	36.36	9.67	46.03	55.78	-9.75	AVG	
3		0.2779	49.51	9.66	59.17	60.88	-1.71	QP	
4		0.2779	29.83	9.66	39.49	50.88	-11.39	AVG	
5	*	0.3220	48.58	9.66	58.24	59.65	-1.41	QP	
6		0.3220	27.92	9.66	37.58	49.65	-12.07	AVG	
7		0.5700	43.48	9.68	53.16	56.00	-2.84	QP	
8		0.5700	24.69	9.68	34.37	46.00	-11.63	AVG	
9		5.9460	39.60	9.76	49.36	60.00	-10.64	QP	
10		5.9460	26.15	9.76	35.91	50.00	-14.09	AVG	
11		27.4500	39.66	9.87	49.53	60.00	-10.47	QP	
12		27.4500	27.91	9.87	37.78	50.00	-12.22	AVG	

6. RADIATED EMISSION MEASUREMENT

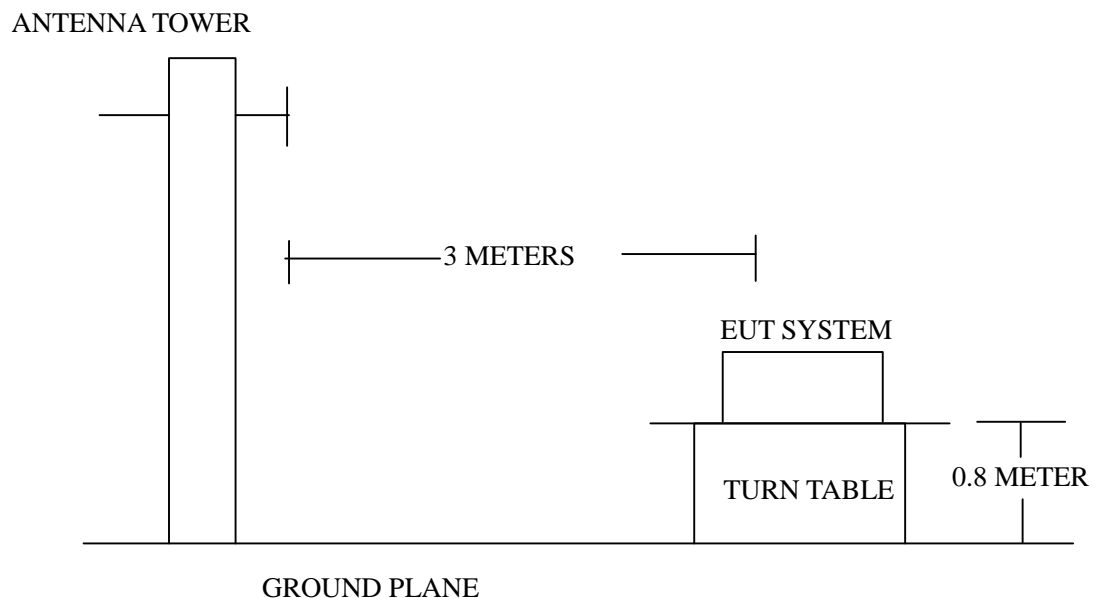
6.1. Block Diagram of Test Setup

6.1.1. Block Diagram of connection between the EUT and the simulators



(EUT: Security alarm system)

6.1.2. Anechoic Chamber Test Setup Diagram



6.2. Test Standard

FCC Part 15 B: 2015

6.3. Radiated Emission Limit(Class B)

FREQUENCY (MHz)	DISTANCE (Meters)	FIELD STRENGTHS LIMITS (dB μ V/m)
30 ~ 88	3	40.0
88 ~ 216	3	43.5
216 ~ 960	3	46.0
960 ~ 1000	3	54.0

Note:(1) The smaller limit shall apply at the edge between two frequency bands.

(2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT or system.



6.4.EUT Configuration on Test

The following equipment are installed on Radiated Emission Measurement to meet the commission requirements and operating regulations in a manner which tends to maximize Its emission characteristics in normal application.

Operating Condition of EUT

6.4.1.Setup the EUT as shown on Section 6.1

6.4.2.Turn on the power of all equipments.

6.4.3.Let the EUT work in test mode(EUT working) and measure it.

6.5.Test Procedure

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can move up and down between 1 to 4 meters to find out the maximum emission level. Broadband antenna (calibrated by dipole antenna) are used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on measurement.

The bandwidth setting on the test receiver is 120 KHz.

The EUT is tested in Anechoic Chamber. The frequency range from 30MHz to 1000MHz is checked. All the test results are listed in Section 6.6.

6.6.Test Result

PASS

Please refer to the following pages.



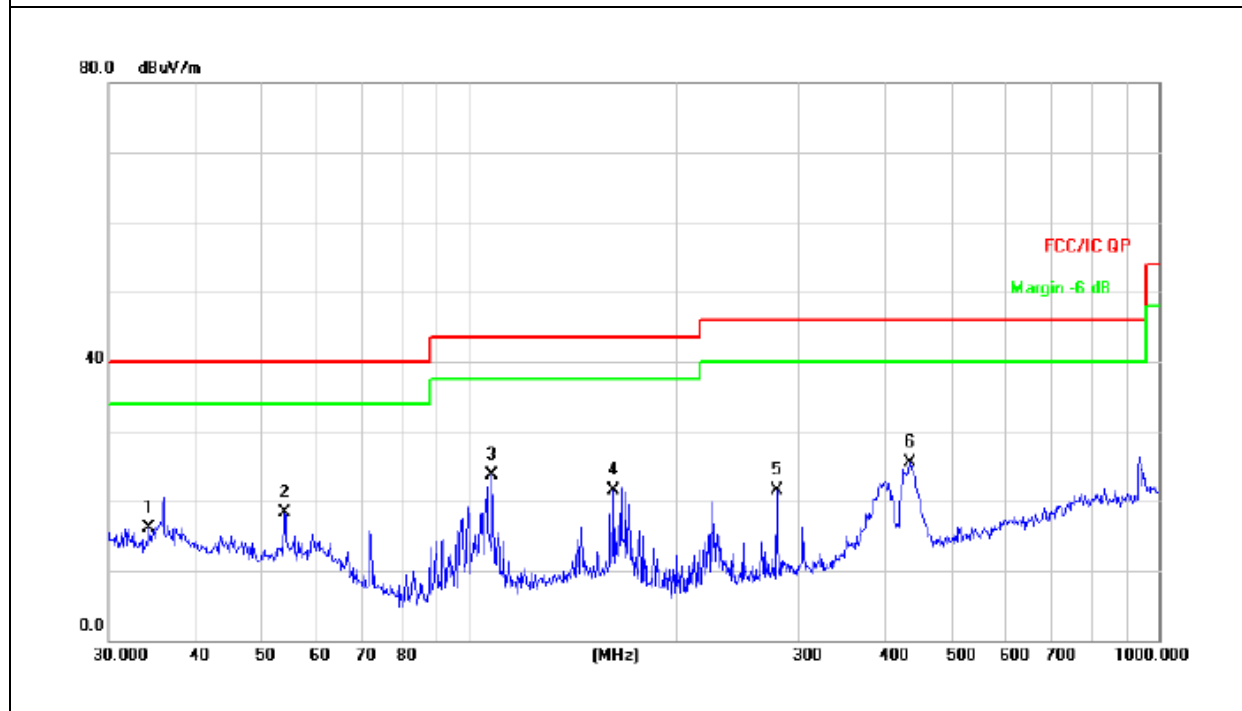
Radiated Spurious Emission (Between 30MHz – 1GHz)

Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 3.7V		
Test Mode : (Worst)	Receive mode		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
34.2760	24.59	-8.47	16.12	40.00	-23.88	QP
53.8818	29.20	-10.93	18.27	40.00	-21.73	QP
107.8877	39.41	-15.75	23.66	43.50	-19.84	QP
162.0414	34.55	-13.00	21.55	43.50	-21.95	QP
279.0436	34.70	-13.13	21.57	46.00	-24.43	QP
435.5898	34.88	-9.31	25.57	46.00	-20.43	QP

Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



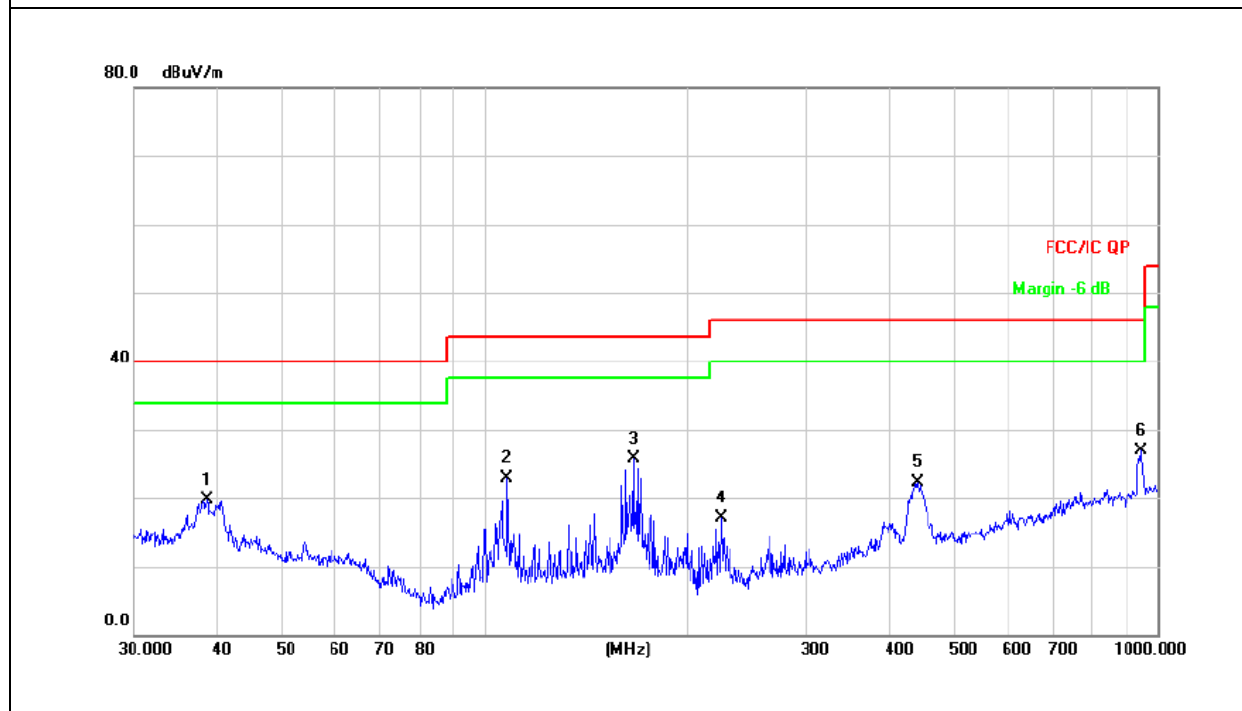


Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 3.7V		
Test Mode : (Worst)	Receive mode		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
38.4809	28.54	-8.78	19.76	40.00	-20.24	QP
107.8877	38.82	-15.83	22.99	43.50	-20.51	QP
166.0680	38.86	-13.23	25.63	43.50	-17.87	QP
224.5193	32.46	-15.37	17.09	46.00	-28.91	QP
440.1963	31.50	-9.19	22.31	46.00	-23.69	QP
945.4399	27.42	-0.56	26.86	46.00	-19.14	QP

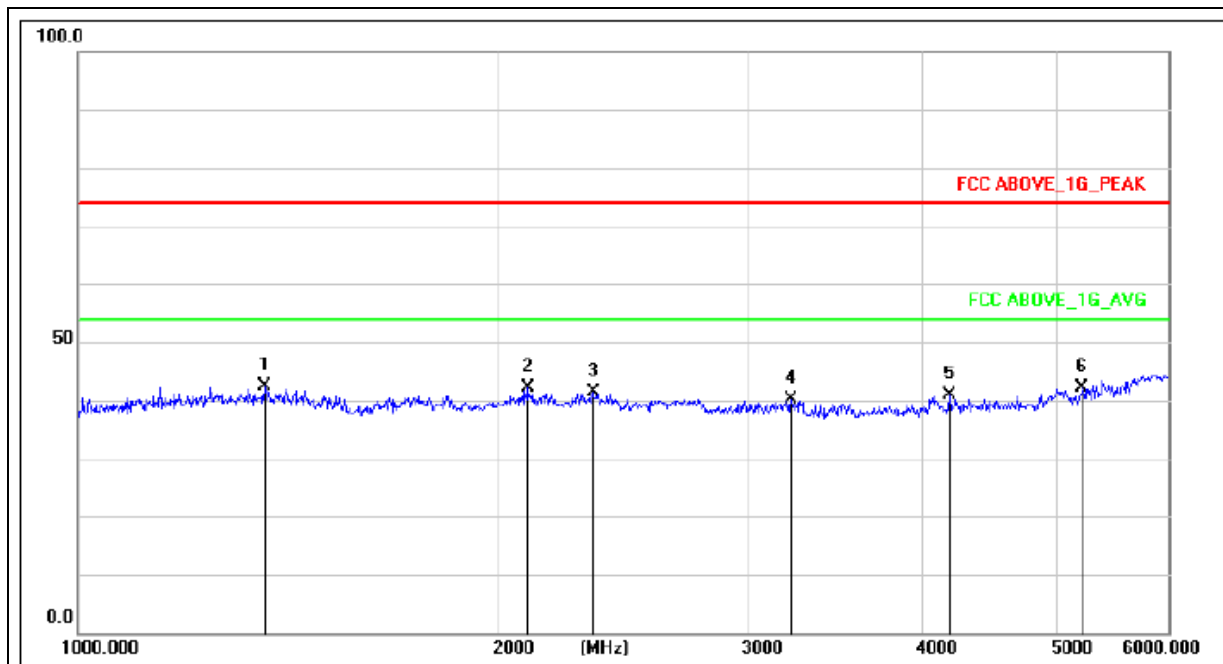
Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.



**ABOVE 1GHz: (1G-6GHz)**

Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Horizontal
Test Voltage :	DC 3.7V		
Test Mode : (Worst)	Receive mode		



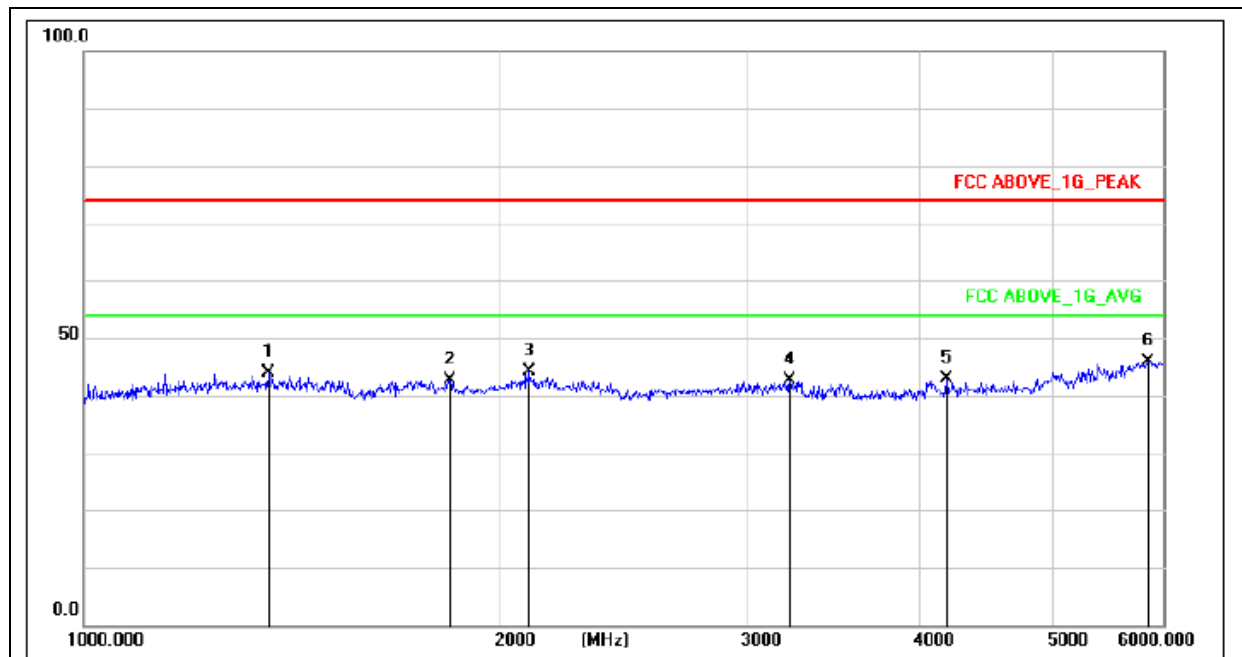
Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1358.513	49.79	-7.31	42.48	74.00	-31.52	peak
2	2095.928	47.54	-5.52	42.02	74.00	-31.98	peak
3	2329.632	45.74	-4.36	41.38	74.00	-32.62	peak
4	3227.832	44.89	-4.69	40.20	74.00	-33.80	peak
5	4185.457	42.52	-1.70	40.82	74.00	-33.18	peak
6	5208.076	41.28	0.91	42.19	74.00	-31.81	peak



Temperature:	25 °C	Relative Humidity:	54%
Pressure:	1010 hPa	Polarization :	Vertical
Test Voltage :	DC 3.7V		
Test Mode : (Worst)	Receive mode		



Remark:

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

No.	Frequency	Reading	Correct	Result	Limit	Margin	Remark
	(MHz)	(dBuV/m)	Factor(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	1358.513	51.29	-7.31	43.98	74.00	-30.02	peak
2	1835.664	49.76	-7.07	42.69	74.00	-31.31	peak
3	2095.928	49.54	-5.52	44.02	74.00	-29.98	peak
4	3227.832	47.39	-4.69	42.70	74.00	-31.30	peak
5	4185.457	44.52	-1.70	42.82	74.00	-31.18	peak
6	5851.364	43.36	2.42	45.78	74.00	-28.22	peak

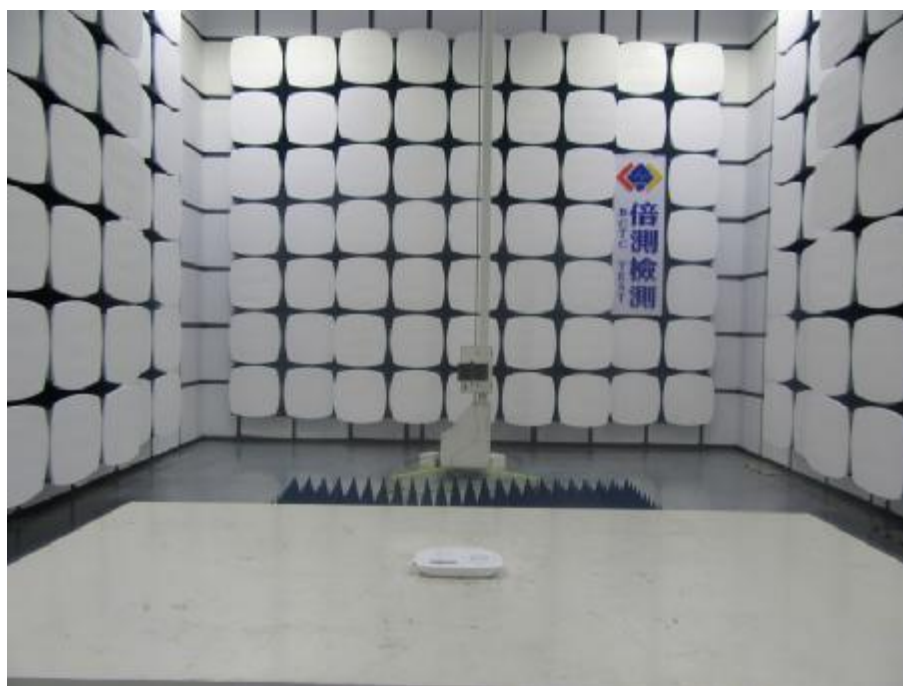
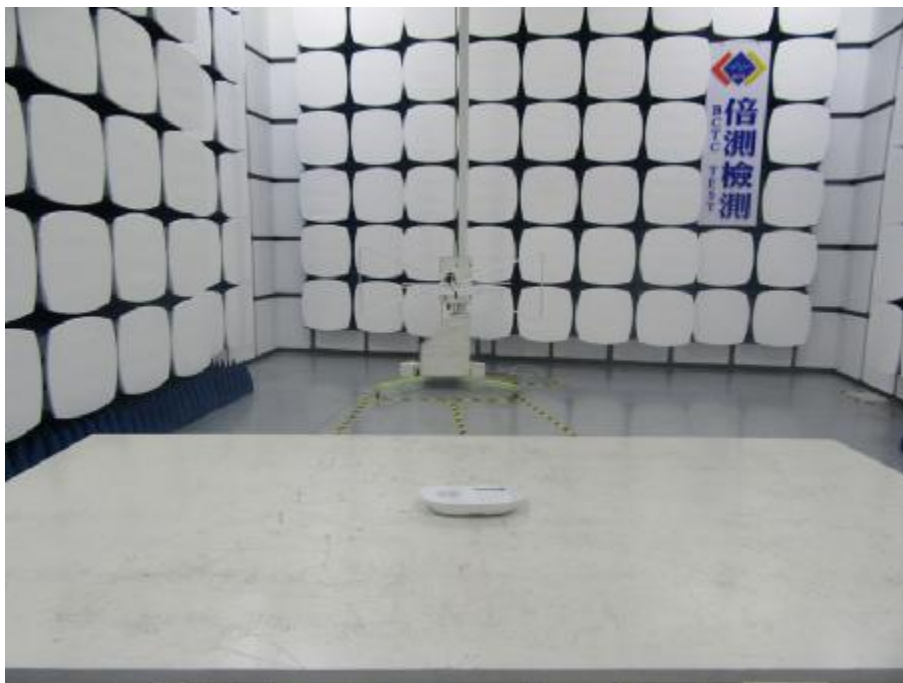


APPENDIX I (TEST PHOTOS OF THE EUT)

Conducted Measurement Photos



Radiated Measurement Photos





APPENDIX II (PHOTOS OF THE EUT)





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