NO.L3098

TEST REPORT

For Electromagnetic Interference of

FCC ID: RO6-SPORT

Report Reference No. ..... : 14FAB04057 11

Date of issue..... : 2014-09-02

Testing Laboratory ..... : ATT Product Service Co., Ltd.

Address ..... : No. 3, ChangLianShan Industrial Park, ChangAn Town, DongGuan City, GuangDong, China.

Applicant's name..... : IZZO Golf

Address ..... : 1635 Commons Pkwy Macedon, NY 14502-9191

Manufacturer..... : Season Components Company Ltd.

Test specification:

Test item description ..... : Swami Sport

Trade Mark ..... : --

Model/Type reference ..... : A44000

Ratings ..... : Rechargeable battery 3.7Vd.c 900mAh; with micro USB port

Responsible Engineer

Rock Huang

（Rock Huang/ Engineer）

Approved by

（Tomy Wu /EMC Manager）

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1. CERTIFICATION

Testing Laboratory.....:	ATT Product Service Co., Ltd.
Address .....:	No. 3, ChangLianShan Industrial Park, ChangAn Town, DongGuan City, GuangDong, China.
Applicant's name.....:	IZZO Golf
Address .....:	1635 Commons Pkwy Macedon, NY 14502-9191
Manufacturer.....:	Season Components Company Ltd.
Address.……:	Jun Da Lu,DongKeng,Dongguan,Guangdong,China
Factory……..:	Season Components Company Ltd.
Address.……:	Jun Da Lu,DongKeng,Dongguan,Guangdong,China
Test specification:	
Test item description.....:	Swami Sport
Trade Mark.....:	--
Model/Type reference .....:	A44000
Test Sample:	A44000
Ratings .....:	Rechargeable battery 3.7Vd.c 900mAh; with micro USB port
Tested Power:	DC 5V via USB port supply
Standards .....:	FCC Part 15 Subpart B

The device described above was tested by ATT Product Service Co., Ltd to determine the maximum emission levels emanated from the device and severity levels of the device endure and its performance criterion. The measurement results are contained in this test report and ATT Product Service Co., Ltd assumes full responsibility for the accuracy and completeness of these measurements. This report shows the EUT is technically compliance with the Part 15 Subpart B, ANSI C63.4 official requirements. This report applies to the above sample only and shall not be reproduced in part without written approval of ATT Product Service Co., Ltd.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

EMC Emission				
Standard	Test Item	Limit	Judgment	Remark
FCC Part 15 B	Conducted Emission	Clause 15.107	PASS	ANSI C63.4:2009
	Radiated Emission	Clause 15.109	PASS	ANSI C63.4:2009

2.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %.

A. Conducted Measurement :

Test Site	Method	Measurement Frequency Range	U，(dB)	NOTE
C01	ANSI	150 KHz ~ 30MHz	2.44	

B. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U，(dB)	NOTE
R03	ANSI	30MHz ~ 200MHz	V	3.42	
		30MHz ~ 200MHz	H	3.52	
		200MHz ~ 1,000MHz	V	3.52	
		200MHz ~ 1,000MHz	H	3.54	

2.2 DESCRIPTION OF TEST MODES AND ASSISTANT EQUIPMENT FOR TEST

2.2.1 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.

Pretest Mode	Description
Mode 1	Data Transmitting

For Conducted Test	
Final Test Mode	Description
Mode 1	Data Transmitting

For Radiated Test	
Final Test Mode	Description
Mode 1	Data Transmitting

2.3 EQUIPMENT USED DURING TESTING:

Product Type*	Device	Manufacturer	Model No.	FCCID / FCC DOC	Comments
AE	Notebook Computer	lenovo	7457	FCC DOC approved	7457A82
AE	Mouse	DELL	MSU1175	FCC DOC approved	13A00303345DN
AE	Printer	Epson	P952B	FCC DOC approved	AXQ0018586
AE	Headphone	Senicc	ST-2688	--	150 cm non-shielding

*Note: Use abbreviations:

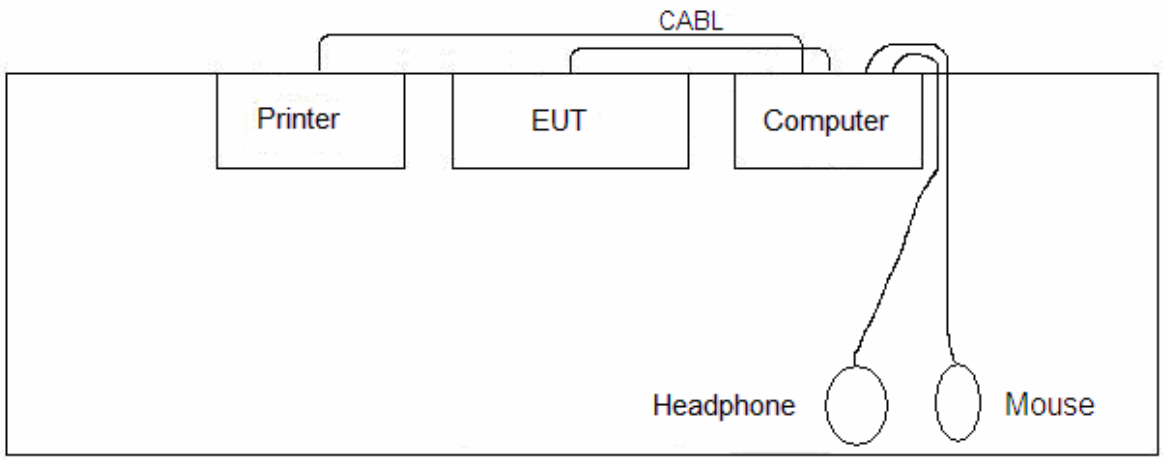
EUT - Equipment Under Test,

AE - Auxiliary/Associated Equipment, or

SIM - Simulator (Not Subjected to Test)

CABL – Connecting cables

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



3. EMC EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 POWER LINE CONDUCTED EMISSION (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

Note:

(1) The tighter limit applies at the band edges.

(2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

3.1.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Pulse Limiter	MTS-systemtechnik	MTS-IMP-136	261115-010-0024	12/21/2014
2	EMI Test Receiver	R&S	ESCI	101308	12/21/2014
3	LISN	AFJ	LS16	16011103219	12/21/2014
4	LISN	SCHWARZBECK	NSLK 8127	8127-432	12/22/2014

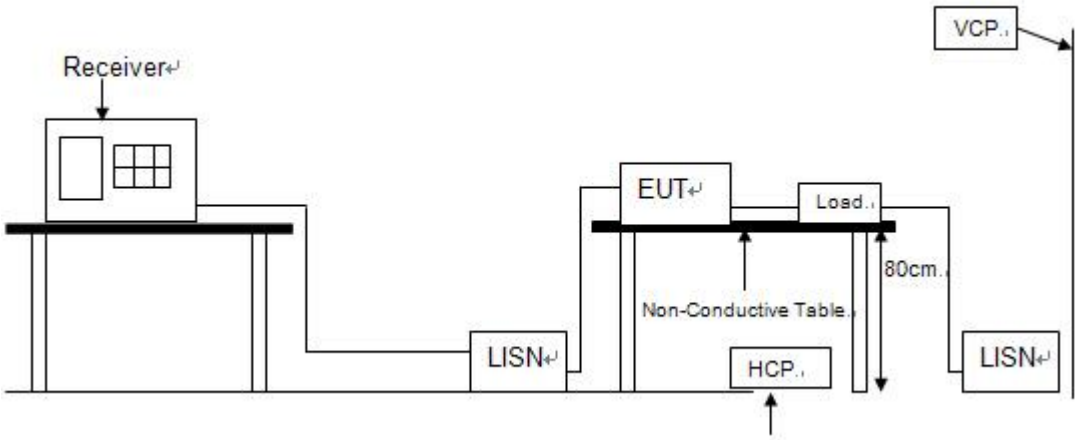
3.1.3 TEST PROCEDURE

a. The EUT was placed 0.8 meters from the horizontal reference ground plane and 0.4meters from vertical reference ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
d. LISN at least 80 cm from nearest part of EUT chassis.
e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation

3.1.5 TEST SETUP



3.1.6 EUT OPERATING CONDITIONS

The EUT exercise program used during radiated and/or conducted emission measurement was designed to exercise the various system components in a manner similar to a typical use.

3.1.7 **TEST RESULTS**

EUT：	Swami Sport	**Model No. ：**	A44000
Temperature：	24℃	**Relative Humidity:**	55 %
Pressure：	1008 hPa	**Test Power ：**	DC 5V via PC input AC 120V 60Hz
Test Mode ：	Data Transmitting		

Remark

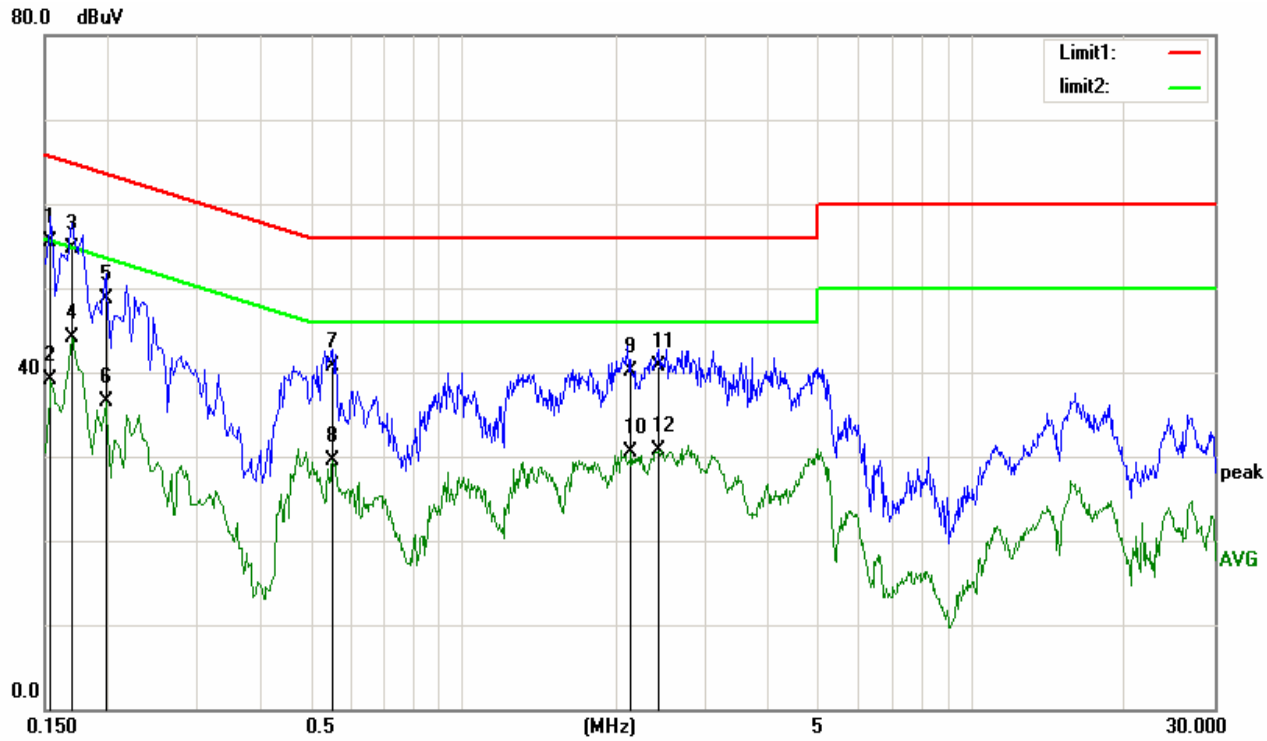
(1) Reading in which marked as QP means measurements by using are Quasi-Peak Mode with Detector BW=9KHz；SPA setting in RBW=10KHz,VBW =10KHz, Sweep. Time = 0.3 sec./MHz. Reading in which marked as AV means measurements by using are Average Mode with instrument setting in RBW=1MHz,VBW=10Hz, Sweep. Time =0.3 sec./MHz.

(2) All readings are QP Mode value unless otherwise stated AVG in column of 『Note』. If the QP Mode Measured value compliance with the QP Limits and lower than AVG Limits, the EUT shall be deemed to meet both QP & AVG Limits and then only QP Mode was measured, but AVG Mode didn't perform. In this case, a " * " marked in AVG Mode column of Interference Voltage Measured.

(3) Measuring frequency range from 150KHz to 30MHz.

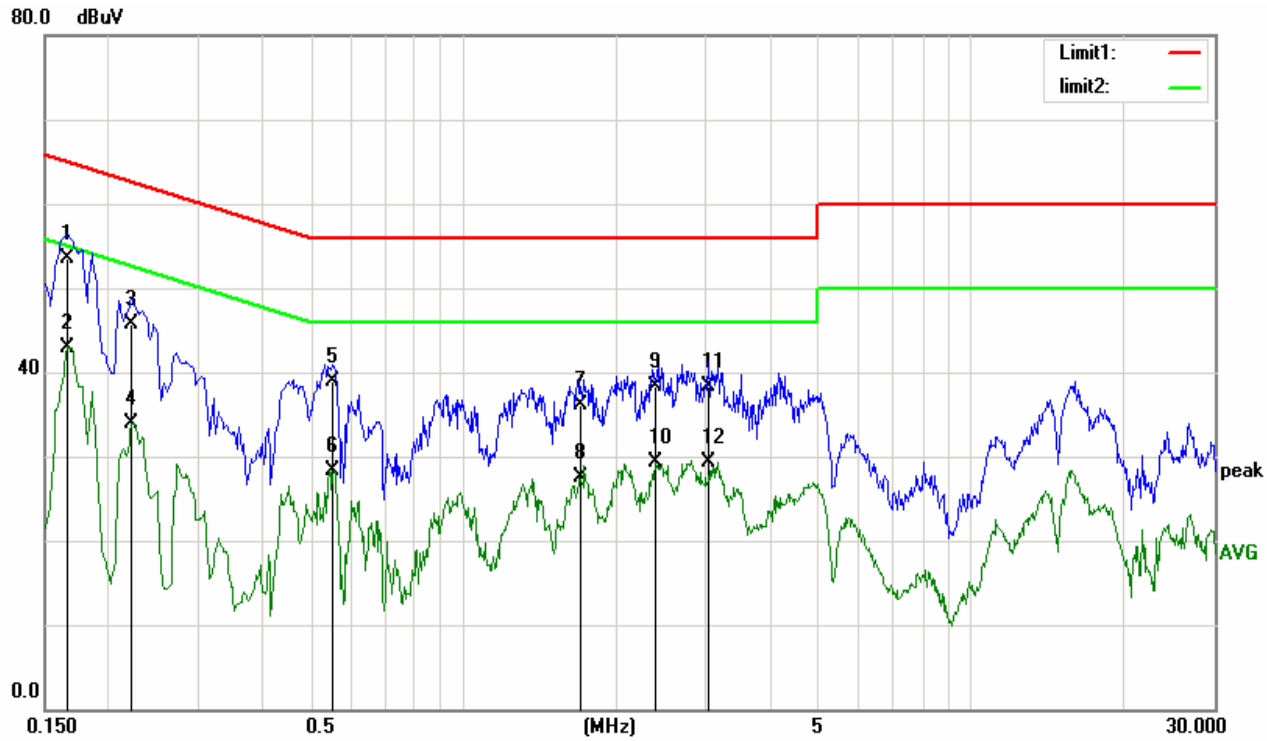
(4) Measurement result=Reading + Correct.

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Probe:	**N**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Standard:	**(CE)FCC PART 15 class B_QP**	**Test Result:**	**Pass**
Test Mode:	**Data Transmitting**	**Test By:**	**Vito**
Note:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1539	44.11	11.44	55.55	65.78	-10.23	QP
2	0.1539	27.61	11.44	39.05	55.78	-16.73	AVG
3	0.1700	43.30	11.33	54.63	64.96	-10.33	QP
4	0.1700	32.79	11.33	44.12	54.96	-10.84	AVG
5	0.1980	37.49	11.14	48.63	63.69	-15.06	QP
6	0.1980	25.29	11.14	36.43	53.69	-17.26	AVG
7	0.5540	30.49	10.16	40.65	56.00	-15.35	QP
8	0.5540	19.25	10.16	29.41	46.00	-16.59	AVG
9	2.1380	29.93	10.11	40.04	56.00	-15.96	QP
10	2.1380	20.40	10.11	30.51	46.00	-15.49	AVG
11	2.4300	30.68	10.12	40.80	56.00	-15.20	QP
12	2.4300	20.53	10.12	30.65	46.00	-15.35	AVG

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Probe:	**L1**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Standard:	**(CE)FCC PART 15 class B_QP**	**Test Result:**	**Pass**
Test Mode:	**Data Transmitting**	**Test By:**	**Vito**
Note:			



No.	Frequency (MHz)	Reading (dBuV)	Correct Factor(dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Remark
1	0.1660	42.15	11.36	53.51	65.15	-11.64	QP
2	0.1660	31.64	11.36	43.00	55.15	-12.15	AVG
3	0.2220	34.66	10.97	45.63	62.74	-17.11	QP
4	0.2220	23.01	10.97	33.98	52.74	-18.76	AVG
5	0.5540	28.82	10.16	38.98	56.00	-17.02	QP
6	0.5540	18.19	10.16	28.35	46.00	-17.65	AVG
7	1.6940	25.97	10.11	36.08	56.00	-19.92	QP
8	1.6940	17.48	10.11	27.59	46.00	-18.41	AVG
9	2.3940	28.16	10.12	38.28	56.00	-17.72	QP
10	2.3940	19.21	10.12	29.33	46.00	-16.67	AVG
11	3.0340	28.14	10.14	38.28	56.00	-17.72	QP
12	3.0340	19.13	10.14	29.27	46.00	-16.73	AVG

3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT (Below 1000MHz)

FREQUENCY RANGE OF RADIATED MEASUREMENT

☒FCC Class B Limit at 3m

Frequency	Distance	Field Strength	
MHz	Meter	μV/m	dBμV/m
30 to 88	3	100	40.0
88 to 216	3	150	43.5
216 to 960	3	200	46.0
Above 960	3	500	54.0

3.2.2 MEASUREMENT INSTRUMENTS LIST

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Log-Bicon Antenna	SCHWARZBECK	VULB9168	VULB9168-192	12/27/2014
2	Pre-Amplifier	HP	8447F	3113A05680	12/21/2014
3	EMI Test Receiver	R&S	ESCI	101307	12/21/2014
4	Spectrum Analyzer	Agilent	E4407B	US40240708	07/13/2015
5	Horn Antenna	Schwarzbeck	BBHA 9120D	BBHA 9120D 1065	12/21/2014
6	Pre-Amplifier	CY	EMC011830	980136	12/22/2014
7	Turn Table	UC	UC3000	N/A	N/A
8	Antenna Mast	UC	UC3000	N/A	N/A

Remark: ” N/A” denotes No Model No. / Serial No. and No Calibration specified.

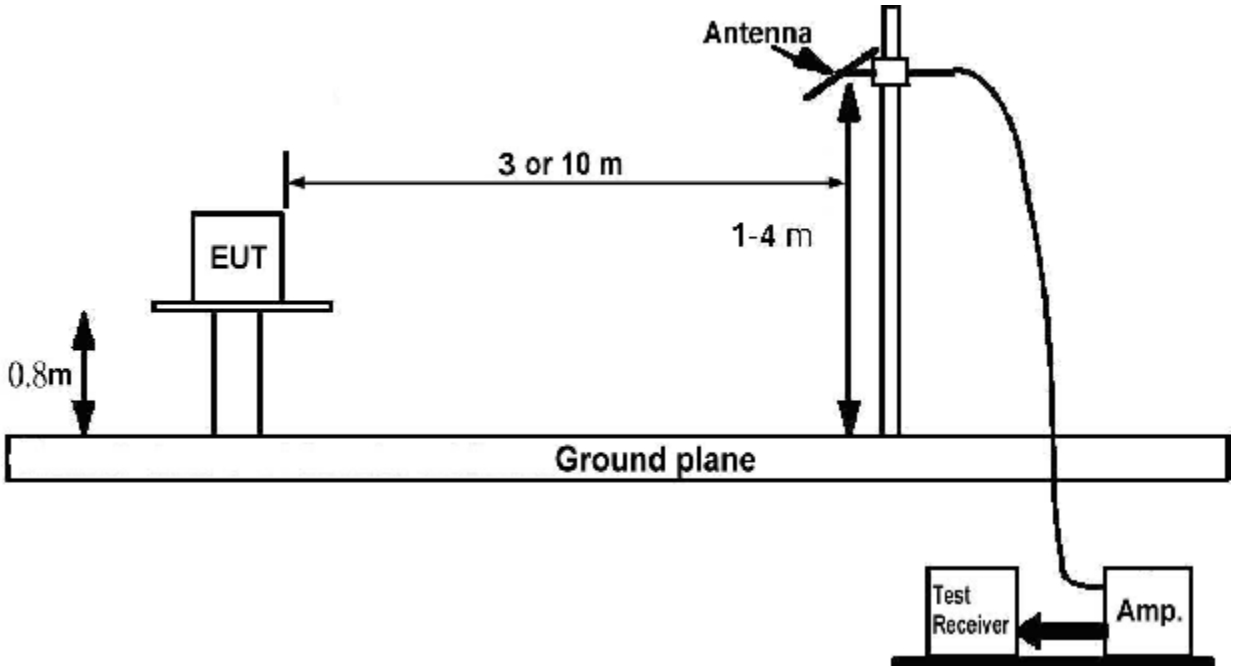
3.2.3 TEST PROCEDURE

a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m or 10 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

3.2.5 TEST SETUP



3.2.6 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of **2.2** Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.7 **TEST RESULTS**

EUT：	Swami Sport	**Model No. ：**	A44000
Temperature：	24℃	**Relative Humidity：**	55 %
Pressure：	1008 hPa	**Test Power ：**	5Vd.c via PC input AC 120V 60Hz
Test Mode ：	Data Transmitting		

Remark：

(1) Reading in which marked as QP or Peak means measurements by using are Quasi-Peak Mode or Peak Mode with Detector BW=120KHz；SPA setting in RBW=120KHz, VBW =120KHz, Sweep. Time = 0.3 sec./MHz.

(2) All readings are Peak unless otherwise stated QP in column of 『Note』. Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measurement didn't perform.

(3) The higest internal source of the EUT is 1.55GHz.

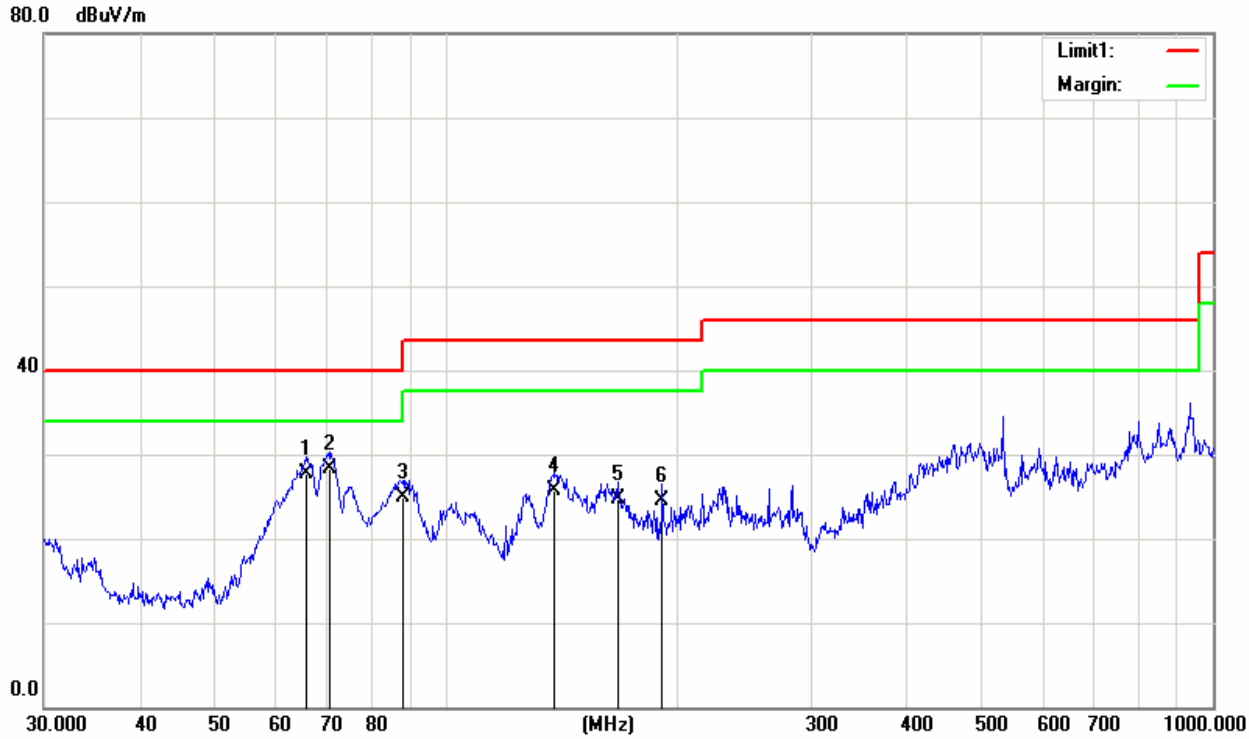
(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table.

(5) Measurement result=Reading + Correct.

(6) For emissions above 1GHz, both Peak and Average level were measured with Spectrum Analyzer, and the RBW is set at 1MHz VBW is set at 3MHz.

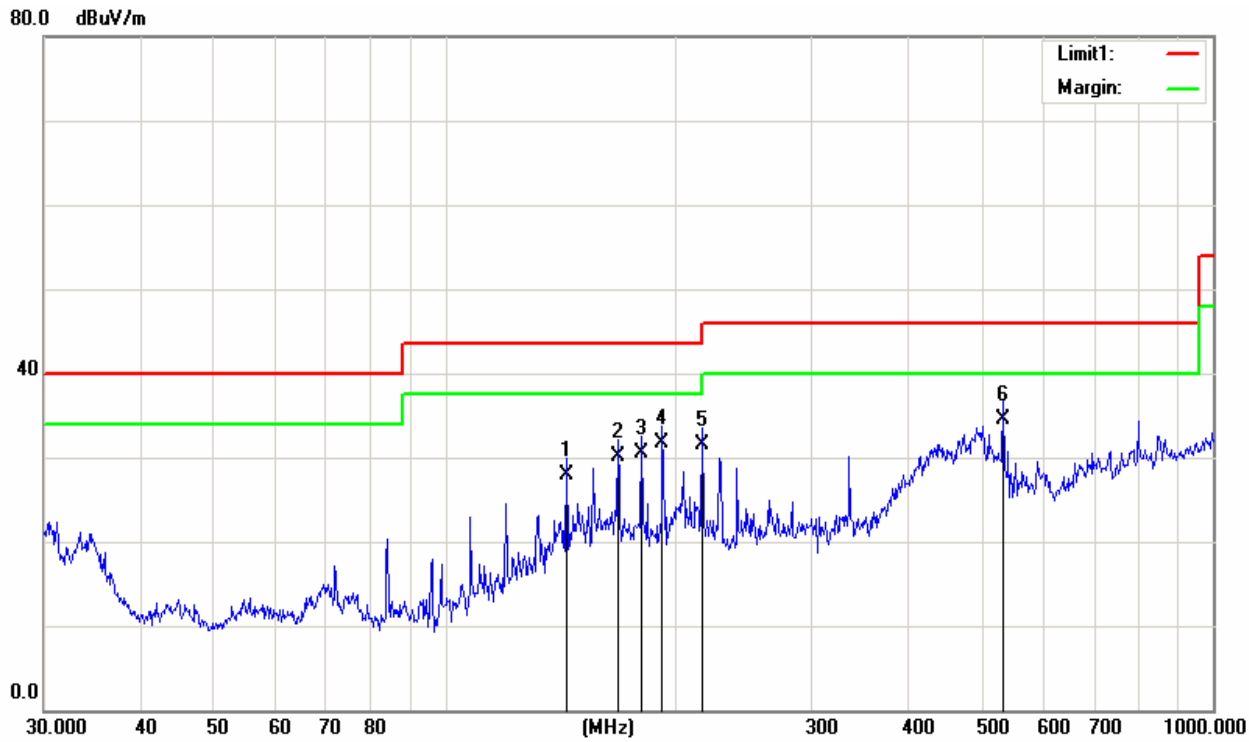
(7) For final emissions measurements at each frequency of interest, the EUT were rotated and the antenna height was varied between 1m and 4m in order to maximize the emission. Measurementsin both horizontal and vertical polaritieswere made and the data was recorded. In order to find the maximum emission, the relative positions of equipments and all of the interface cables were changed according to C63.4 on Radiated Emission test.

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Distance:	**3m**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Polarization:	**Vertical**	**Test Result:**	**Pass**
Standard:	**(RE)FCC PART 15 class B 3m**	**Test By:**	**Vito**
Test Mode:	**Data Transmitting**		
Note:			



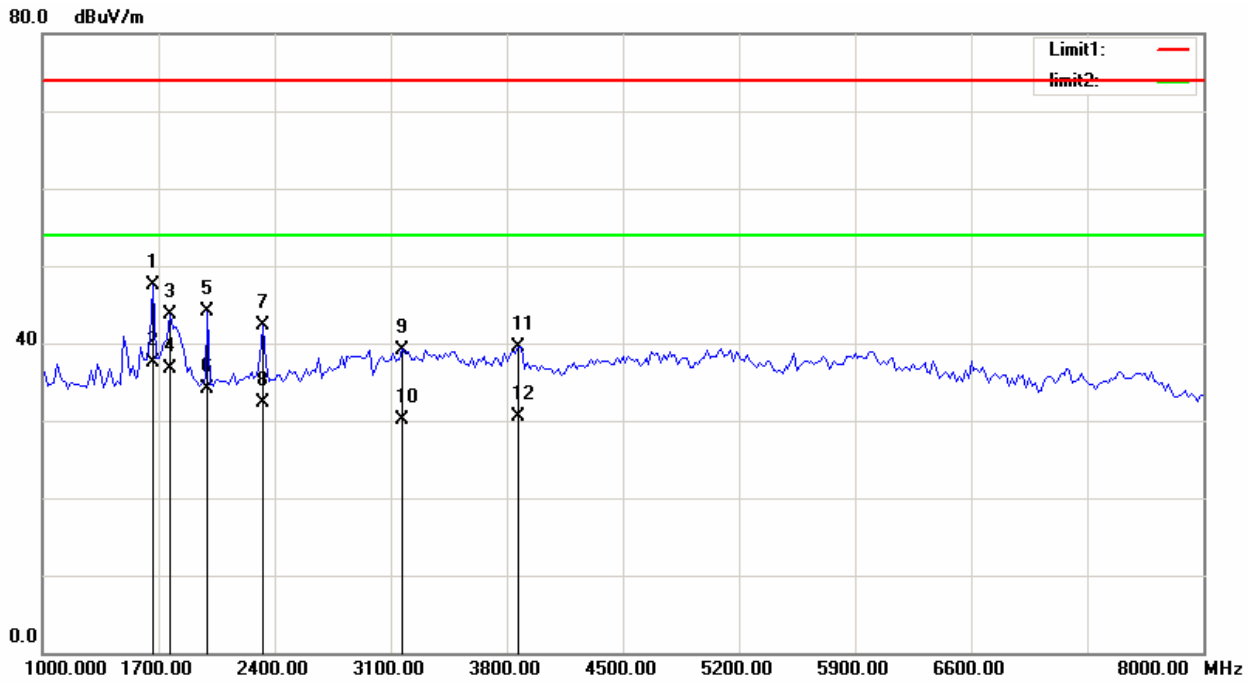
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	66.0340	39.79	-12.09	27.70	40.00	-12.30	QP
2	70.8315	42.07	-13.76	28.31	40.00	-11.69	QP
3	88.0327	38.50	-13.51	24.99	40.00	-15.01	QP
4	138.8735	37.94	-12.14	25.80	43.50	-17.70	QP
5	167.8241	33.06	-8.32	24.74	43.50	-18.76	QP
6	191.7450	34.20	-9.76	24.44	43.50	-19.06	QP

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Distance:	**3m**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Polarization:	**Horizontal**	**Test Result:**	**Pass**
Standard:	**(RE)FCC PART 15 class B 3m**	**Test By:**	**Vito**
Test Mode:	**Data Transmitting**		
Note:			



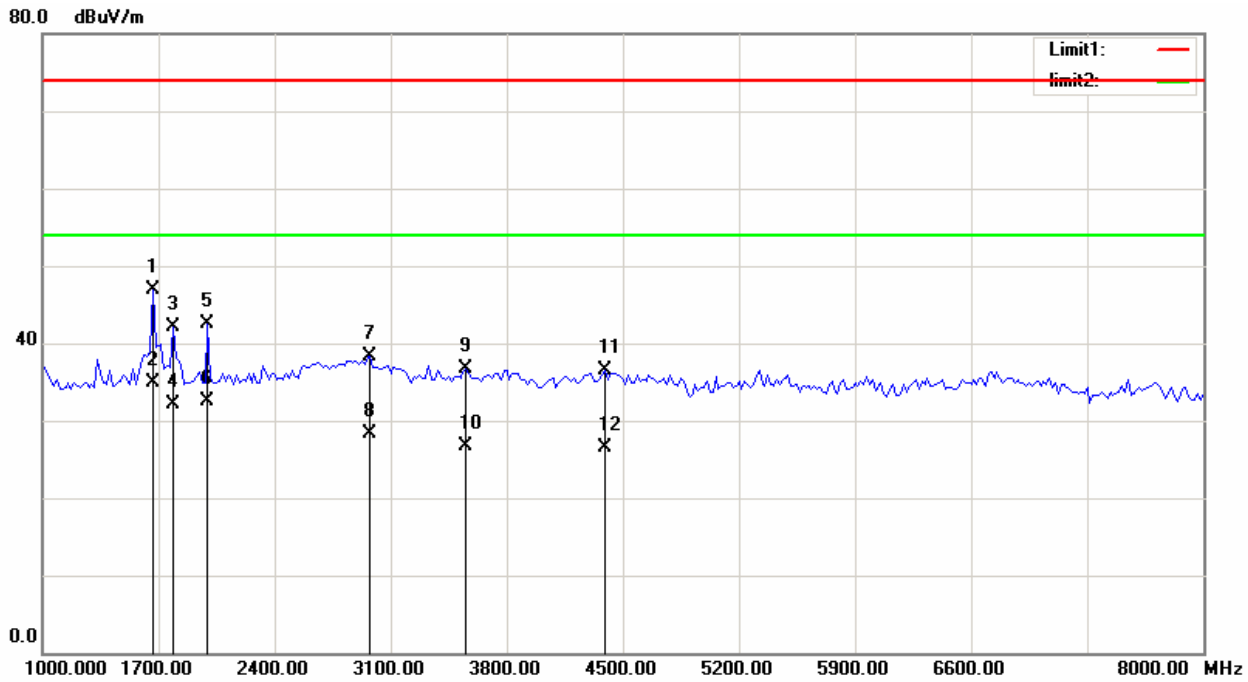
No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	143.8294	40.27	-12.34	27.93	43.50	-15.57	QP
2	167.8243	41.35	-11.32	30.03	43.50	-13.47	QP
3	180.0165	41.92	-11.45	30.47	43.50	-13.03	QP
4	191.7450	44.72	-13.11	31.61	43.50	-11.89	QP
5	216.0240	43.72	-12.31	31.41	43.50	-12.09	QP
6	531.9634	35.18	-0.58	34.60	46.00	-11.40	QP

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Distance:	**3m**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Polarization:	**Vertical**	**Test Result:**	**Pass**
Standard:	**(RE)FCC PART 15 class B 3m**	**Test By:**	**Vito**
Test Mode:	**Data Transmitting**		
Note:			



No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1665.000	50.95	-3.43	47.52	74.00	-26.48	peak
2	1665.000	40.95	-3.43	37.52	54.00	-16.48	AVG
3	1770.000	46.52	-2.81	43.71	74.00	-30.29	peak
4	1770.000	39.52	-2.81	36.71	54.00	-17.29	AVG
5	1997.500	44.59	-0.56	44.03	74.00	-29.97	peak
6	1997.500	34.59	-0.56	34.03	54.00	-19.97	AVG
7	2330.000	42.13	0.10	42.23	74.00	-31.77	peak
8	2330.000	32.13	0.10	32.23	54.00	-21.77	AVG
9	3170.000	36.64	2.56	39.20	74.00	-34.80	peak
10	3170.000	27.64	2.56	30.20	54.00	-23.80	AVG
11	3870.000	34.65	4.82	39.47	74.00	-34.53	peak
12	3870.000	25.65	4.82	30.47	54.00	-23.53	AVG

EUT:	**Swami Sport**	**Model No.:**	**A44000**
Temperature:	**24℃**	**Relative Humidity:**	**55 %**
Distance:	**3m**	**Test Power:**	**DC 5V via PC input AC 120V 60Hz**
Polarization:	**Horizontal**	**Test Result:**	**Pass**
Standard:	**(RE)FCC PART 15 class B 3m**	**Test By:**	**Vito**
Test Mode:	**Data Transmitting**		
Note:			

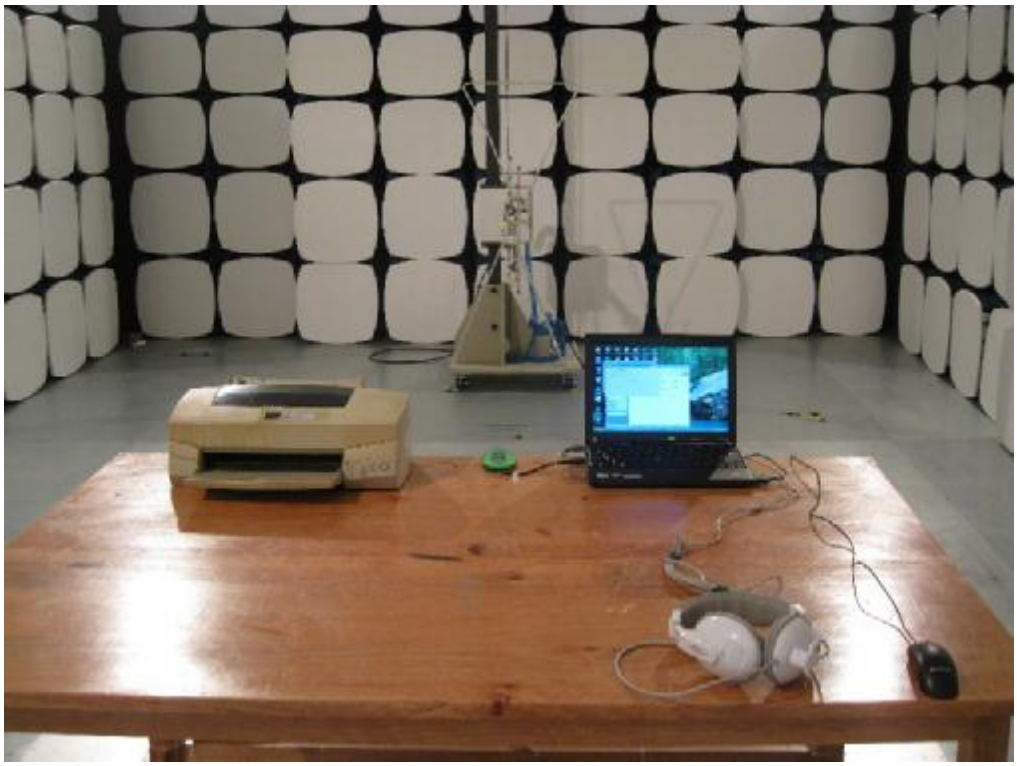


No.	Frequency (MHz)	Reading (dBuV/m)	Correct Factor(dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1665.000	50.24	-3.43	46.81	74.00	-27.19	peak
2	1665.000	38.24	-3.43	34.81	54.00	-19.19	AVG
3	1787.500	44.77	-2.70	42.07	74.00	-31.93	peak
4	1787.500	34.77	-2.70	32.07	54.00	-21.93	AVG
5	1997.500	43.02	-0.56	42.46	74.00	-31.54	peak
6	1997.500	33.02	-0.56	32.46	54.00	-21.54	AVG
7	2977.500	36.40	1.97	38.37	74.00	-35.63	peak
8	2977.500	26.40	1.97	28.37	54.00	-25.63	AVG
9	3555.000	32.83	3.78	36.61	74.00	-37.39	peak
10	3555.000	22.83	3.78	26.61	54.00	-27.39	AVG
11	4395.000	29.94	6.62	36.56	74.00	-37.44	peak
12	4395.000	19.94	6.62	26.56	54.00	-27.44	AVG

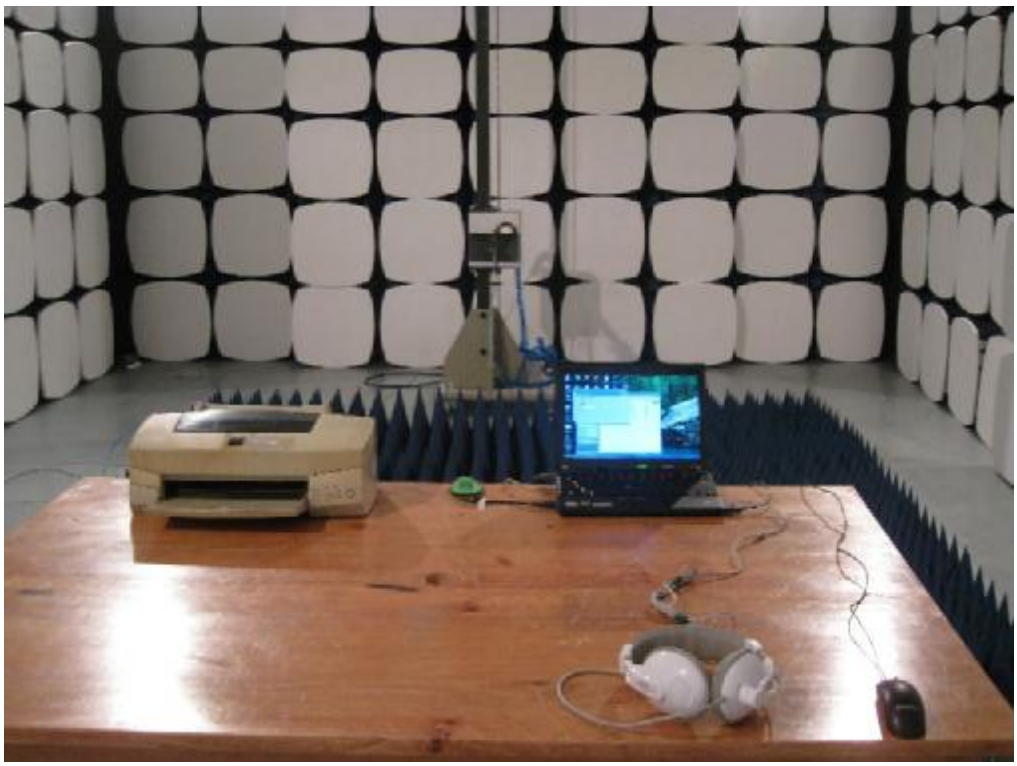
4. **EUT TEST PHOTO**

Conducted Measurement Photos

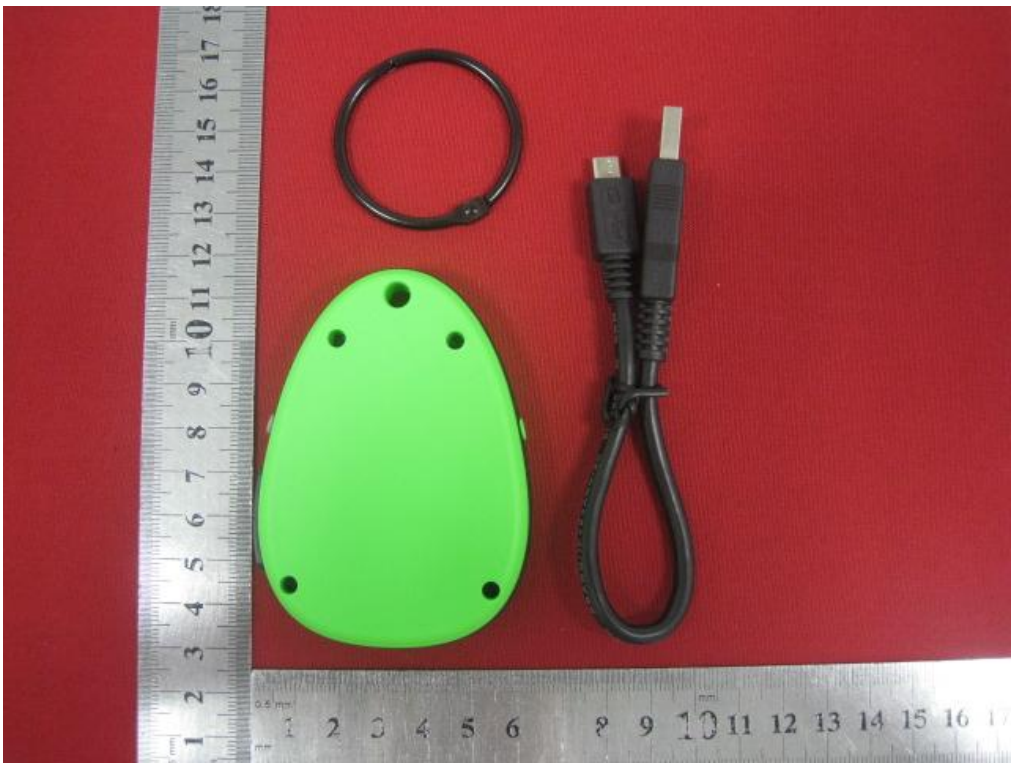
Radiated Measurement Photos (Below 1GHz)

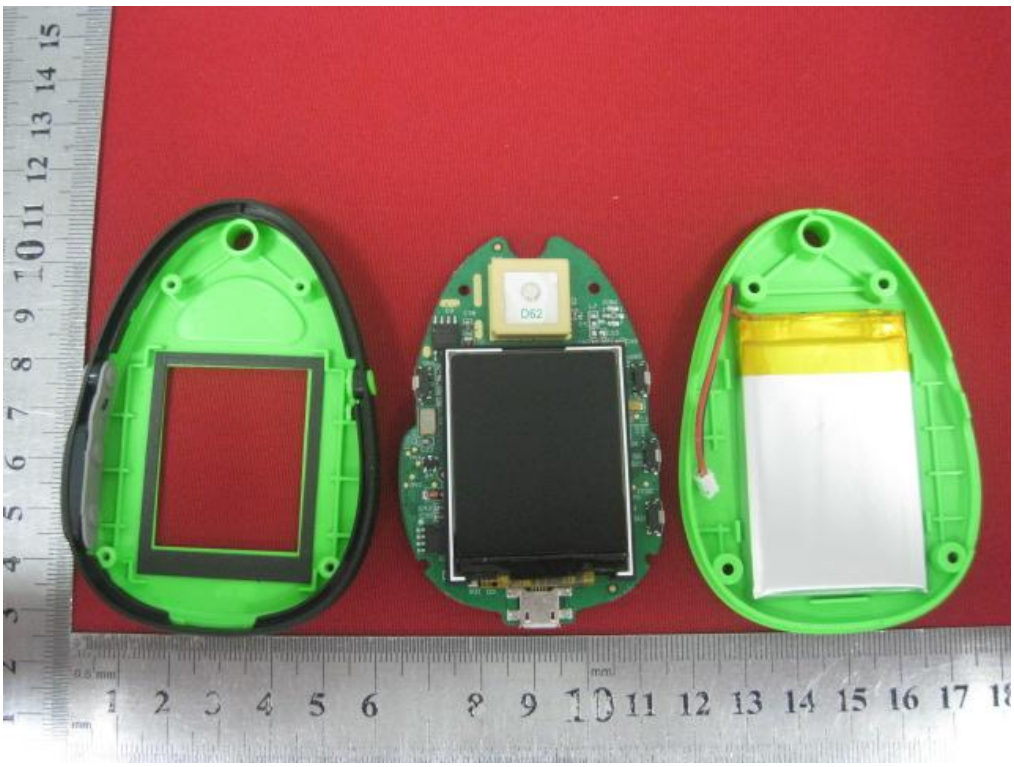


Radiated Measurement Photos (Above 1GHz)

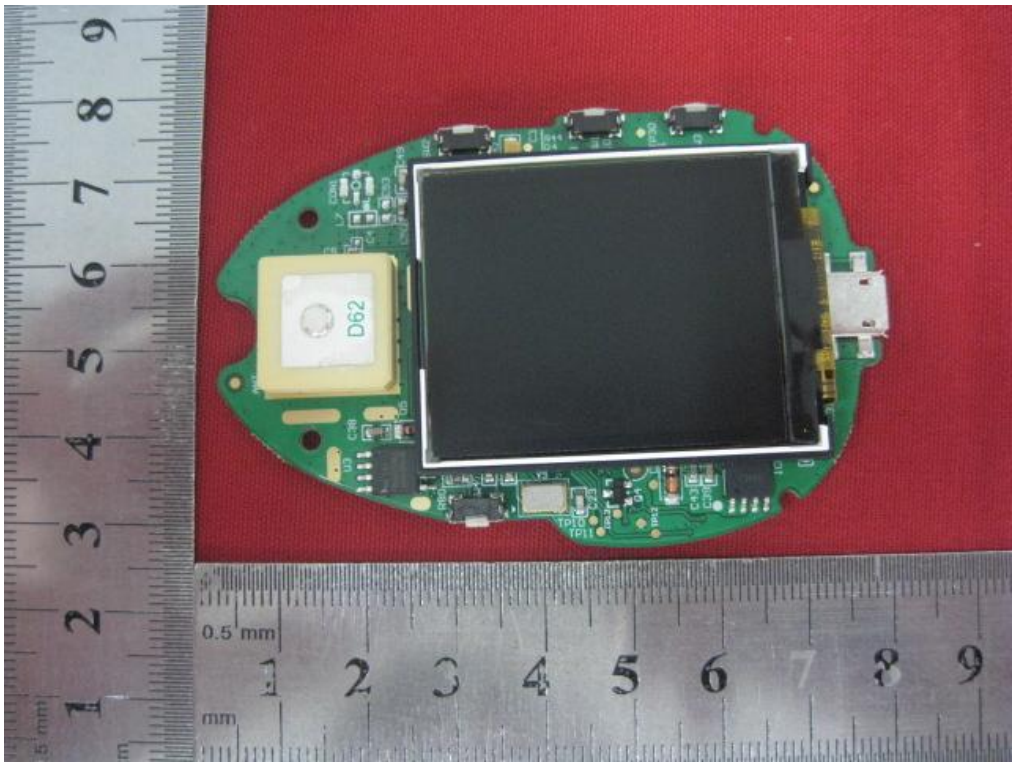


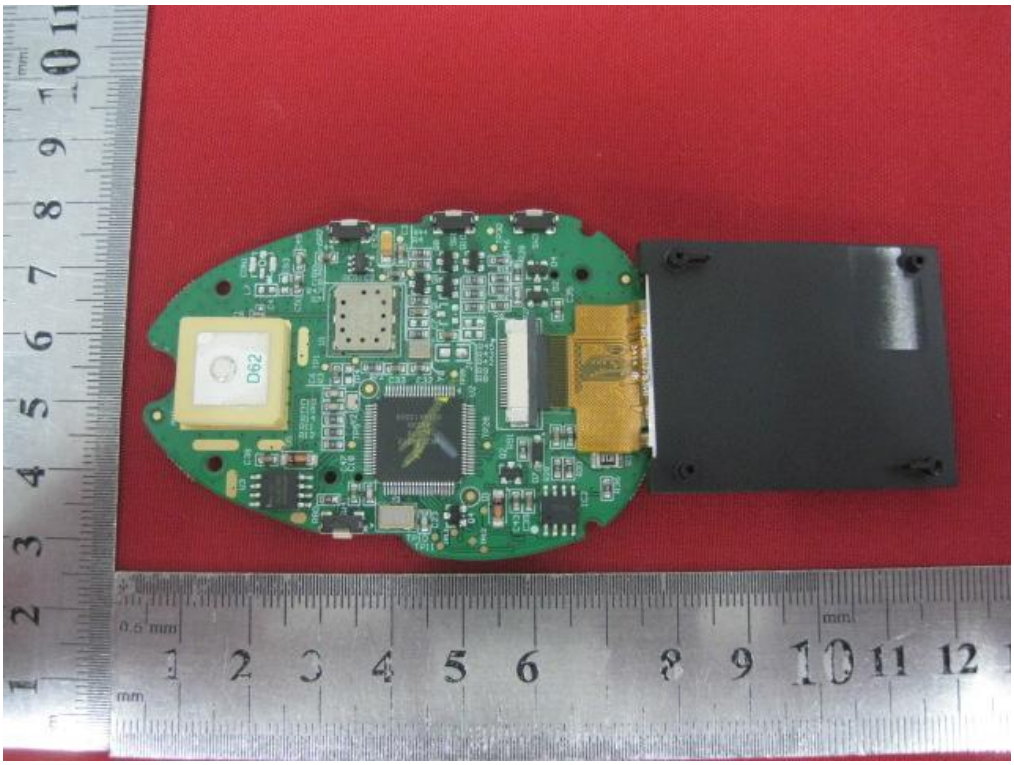
EUT Photo





0.5 mm
mm


D62
0.5 mm
mm



END