

FCC Part 15B Test Report

Certificate No. : TB171017113
Applicant : BIOMEDIS TECHNOLOGIES CO., LIMITED
Equipment Under Test (EUT)
EUT Name : TRINITY
Model No. : T-1
Serial Model No. : N/A
Brand Name : N/A
Receipt Date : 2017-10-23
Test Date : 2017-10-23 to 2017-10-27
Issue Date : 2017-10-27
Standards : FCC Part 15:2016 Subpart B
Conclusions : **PASS**

In the configuration tested, the EUT complied with the standards specified above
The EUT technically complies with the FCC requirements

Test/Witness Engineer :



Approved & Authorized :



This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in the report.

Contents

CONTENTS.....2

1. GENERAL INFORMATION.....4

1.1 Client Information.....4

1.2 General Description of EUT (Equipment Under Test)4

1.3 Description of Test Mode.....5

1.4 Block Diagram Showing The Configuration of System Tested.....5

1.5 Description of Support Units6

1.6 Test standards.....6

1.7 Test Facility.....6

1.8 Measurement Uncertainty7

2. TEST SUMMARY.....8

3. TEST EQUIPMENT USED9

4. CONDUCTED EMISSION TEST10

4.1 Test Standard and Limit.....10

4.2 Test Setup.....10

4.3 Test Procedure.....11

4.4 Test Data.....11

5. RADIATED EMISSION TEST12

5.1 Test Standard and Limit.....12

5.2 Test Setup.....12

5.3 Test Procedure.....13

5.4 Test Data.....13

6. PHOTOGRAPHS - CONSTRUCTIONAL DETAILS14

7. PHOTOGRAPHS - TEST SETUP18

ATTACHMENT B--RADIATED EMISSION TEST DATA19

1. General Information

1.1 Client Information

Applicant	:	BIOMEDIS TECHNOLOGIES CO., LIMITED
Address	:	Unit E223, 3/F Wing Tat Comm, Bldg 97 Bonham Strand East, Sheung Wan, Hong Kong.
Manufacturer	:	BIOMEDIS TECHNOLOGIES CO., LIMITED
Address	:	Unit E223, 3/F Wing Tat Comm, Bldg 97 Bonham Strand East, Sheung Wan, Hong Kong.

1.2 General Description of EUT (Equipment Under Test)

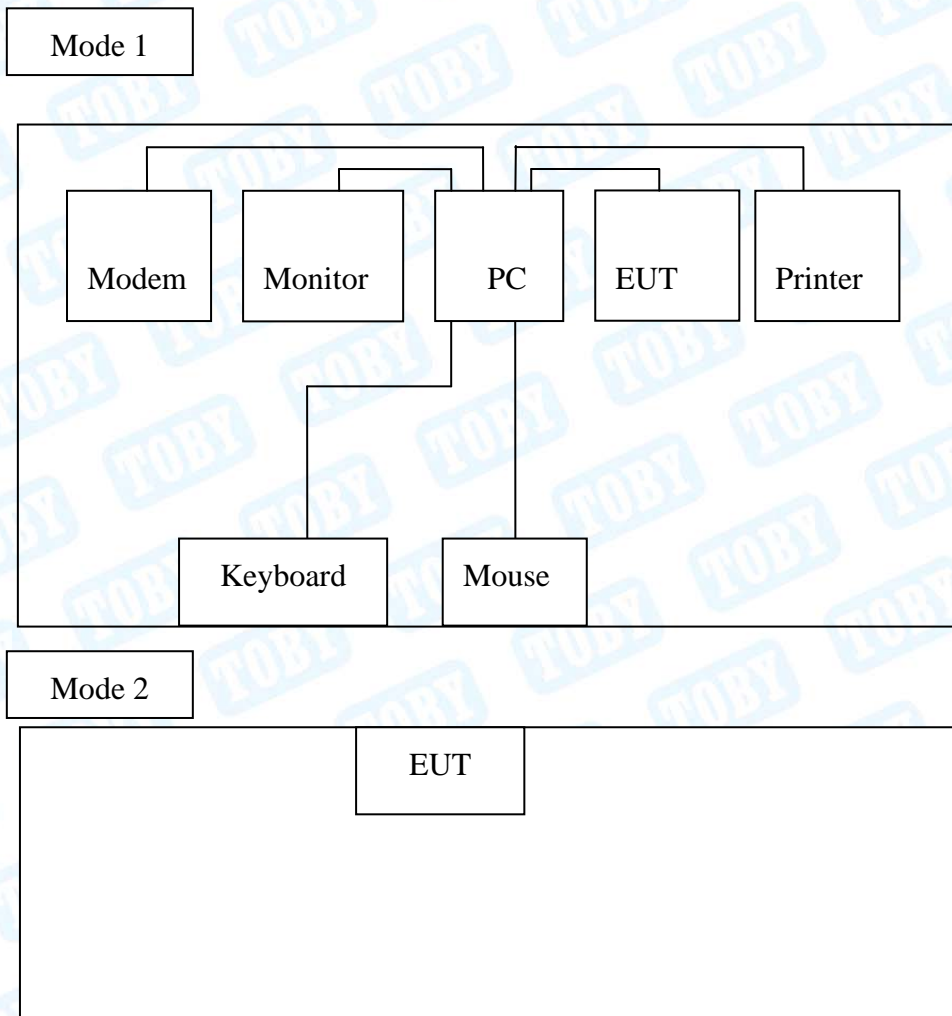
EUT Name	:	TRINITY
Model(s)	:	N/A
Model Difference	:	/
Power Supply	:	DC 5V
Equipment	:	<input type="checkbox"/> Class A <input checked="" type="checkbox"/> Class B
<p>Remark: /</p> <p>Class A Equipment: the Equipment is not intended primarily for use in a residential environment.</p> <p>Class B Equipment: the Equipment is intended primarily for use in a residential environment.</p>		

1.3 Description of Test Mode

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 follow was evaluated respectively.

For Conducted Test	
Final Test Mode	Description
Mode 1	N/A
For Radiated Test	
Final Test Mode	Description
Mode 1	Charging Mode
Mode 2	Normal Mode

1.4 Block Diagram Showing The Configuration of System Tested



1.5 Description of Support Units

Name	Model	S/N	Manufacturer	Used “√”
Printer	HP1505n	VNF3G06957	HP	√
Modem	RX304Xv2	----	ASUS	√
LCD Monitor	E170Sc	----	DELL	√
PC	OPTIPLEX380	----	DELL	√
Keyboard	L100	U01C	DELL	√
Mouse	M-UARDEL7	----	DELL	√

1.6 Test standards

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

1.7 Test Facility

The testing report were performed by the Shenzhen Toby Technology Co., Ltd., in their facilities located at 1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, Guangdong, China. At the time of testing, the following bodies accredited the Laboratory:

CNAS (L5813)

The Laboratory has been accredited by CNAS to ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories for the competence in the field of testing. And the Registration No.: CNAS L5813.

FCC List No.: (811562)

The Laboratory is listed in the United States of American Federal Communications Commission (FCC), and the registration number is 811562.

IC Registration No.: (11950A-1)

The Laboratory has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing. The site registration: Site# 11950A-1.

1.8 Measurement Uncertainty

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

Test	Parameters	Expanded Uncertainty (U_{Lab})	Expanded Uncertainty (U_{Cispr})
Conducted Emission	Level Accuracy: 9kHz~150kHz 150kHz to 30MHz	± 3.42 dB ± 3.42 dB	± 4.0 dB ± 3.6 dB
Radiated Emission	Level Accuracy: 30MHz to 1000 MHz	± 4.40 dB	± 5.2 dB
Radiated Emission	Level Accuracy: Above 1000MHz	± 4.20 dB	N/A

2. Test Summary

Test Items	Test Requirement	Test Method	Result
Conducted Emission	FCC Part 15:2016 Subpart B	ANSI C63.4	N/A
Radiated Emission	FCC Part 15:2016 Subpart B	ANSI C63.4	Pass

Note: N/A is an abbreviation for Not Applicable.

3. Test Equipment Used

Radiation Emission Test					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal.Due Date
Spectrum Analyzer	Agilent	E4407B	MY45106456	Jul. 20, 2017	Jul. 19, 2018
EMI Test Receiver	Rohde & Schwarz	ESCI	101165	Jul. 20, 2017	Jul. 19, 2018
Bilog Antenna	ETS-LINDGREN	3142E	00117537	Mar.25, 2017	Mar. 24, 2018
Bilog Antenna	ETS-LINDGREN	3142E	00117542	Mar.25, 2017	Mar. 24, 2018
Horn Antenna	ETS-LINDGREN	3117	00143207	Mar.24, 2017	Mar. 23, 2018
Horn Antenna	ETS-LINDGREN	3117	00143209	Mar.24, 2017	Mar. 23, 2018
Pre-amplifier	HP	11909A	185903	Mar.24, 2017	Mar. 23, 2018
Pre-amplifier	HP	8449B	3008A00849	Mar.25, 2017	Mar. 24, 2018
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar. 24, 2017	Mar. 23, 2018
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Mar. 24, 2017	Mar. 23, 2018
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

4. Conducted Emission Test

4.1 Test Standard and Limit

4.1.1 Test Standard

FCC Part 15 B: 2016

4.1.2 Test Limit

Conducted Emission Test Limit (Class A)

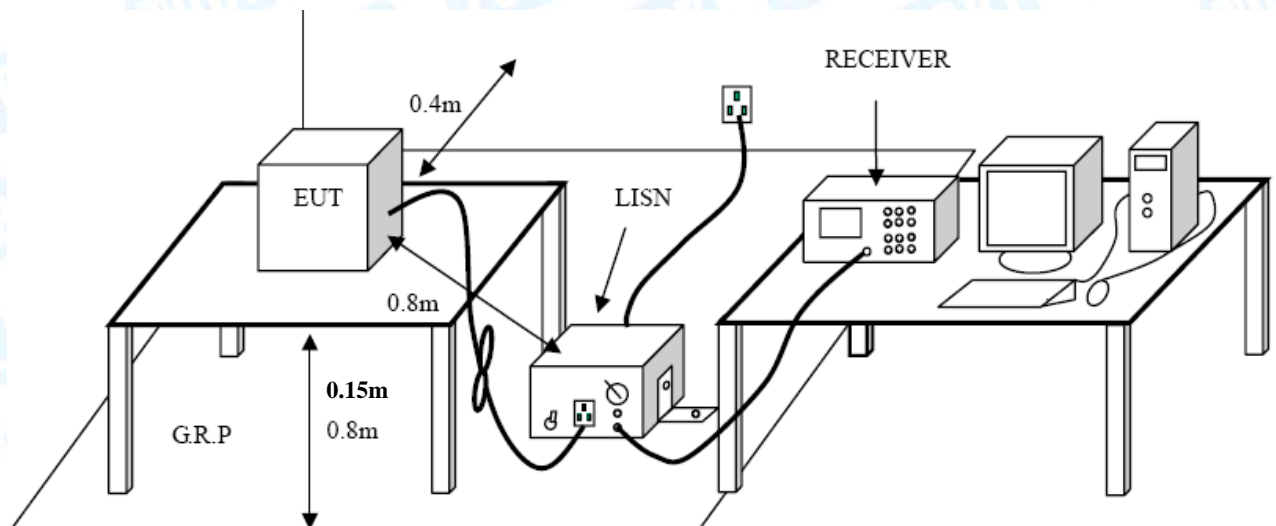
Frequency (MHz)	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
0.15~0.50	79	66
0.50~30	73	60

Conducted Emission Test Limit (Class B)

Frequency (MHz)	Maximum RF Line Voltage (dB μ V)	
	Quasi-peak Level	Average Level
0.15~0.5	66 ~ 56 *	56 ~ 46 *
0.50~5	56	46
5~30	60	50

*decreasing linearly with logarithm of the frequency

4.2 Test Setup



4.3 Test Procedure

The EUT was placed 0.15 meters from the horizontal 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.

The cables shall be insulated (by up to 15 cm) from the horizontal ground reference plane, and shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

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.

LISN at least 80 cm from nearest part of EUT chassis.

The bandwidth of EMI test receiver is set at 9kHz, and the test frequency band is from 0.15MHz to 30MHz.

4.4 Test Data

This test is not applicable.

5. Radiated Emission Test

5.1 Test Standard and Limit

5.1.1 Test Standard

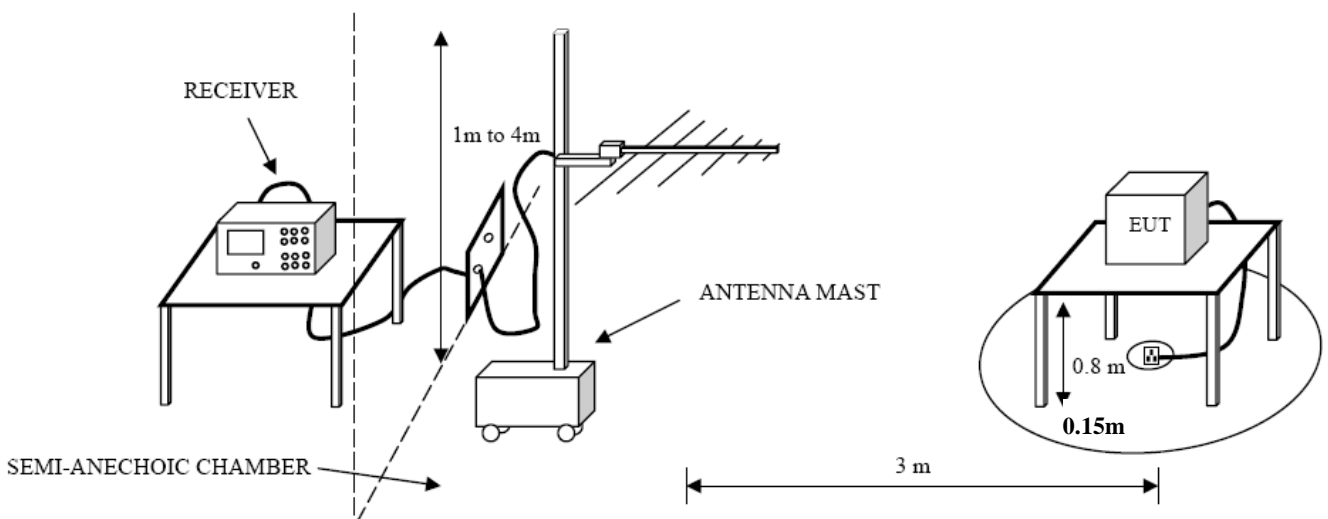
FCC Part 15 B: 2016

5.1.2 Test Limit

Radiated Emission Test Limit (Class A)	
Frequency MHz	Field Strengths Limits dB(μV/m)
30 ~ 88	49.0
88 ~ 216	53.5
216 ~ 960	56.4
960 ~ 1000	59.5
Radiated Emission Test Limit (Class B)	
Frequency MHz	Field Strengths Limits dB(μV/m)
30 ~ 88	40.0
88 ~ 216	43.5
216 ~ 960	46.0
960 ~ 1000	54.0

* The lower limit shall apply at the transition frequency.
* The test distance is 3m.

5.2 Test Setup



5.3 Test Procedure

The EUT was placed on the top of a rotating table which is 0.15 meters above the ground. EUT is set 3.0 meters away from the receiving antenna that mounted on a antenna tower. The table was rotated 360 degrees to determine the position of the highest radiation, the antenna can be moved up and down between 1.0 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

Measurements shall be made with a quasi-peak measuring receiver in the frequency range 30MHz to 1000MHz. 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.

5.4 Test Data

Please refer to the Attachment B.

6. Photographs - Constructional Details

Photo 1 Appearance of EUT



Photo 2 Appearance of EUT



Photo 3 Internal of EUT

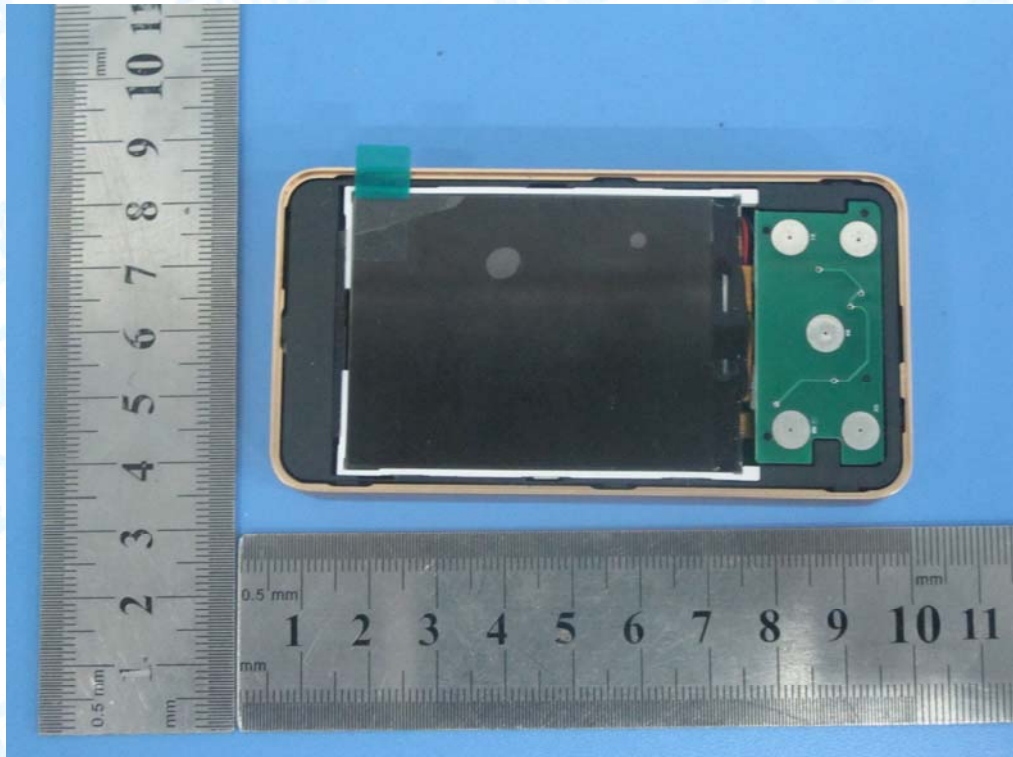


Photo 4 Internal of EUT

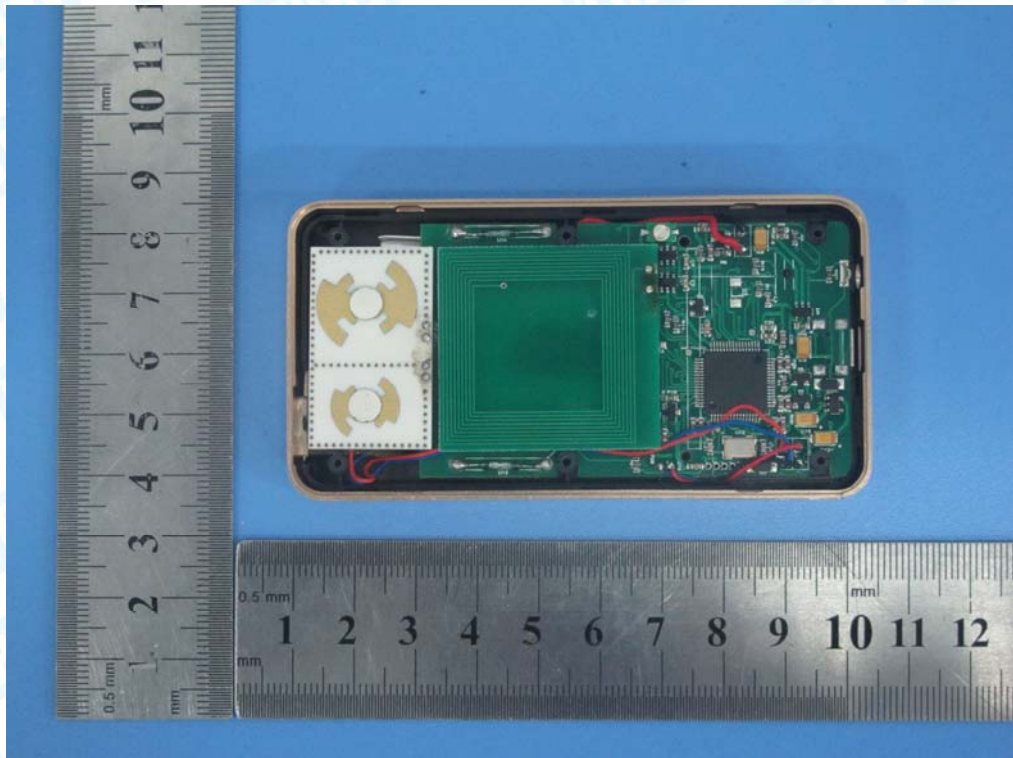


Photo 5 Appearance of PCB

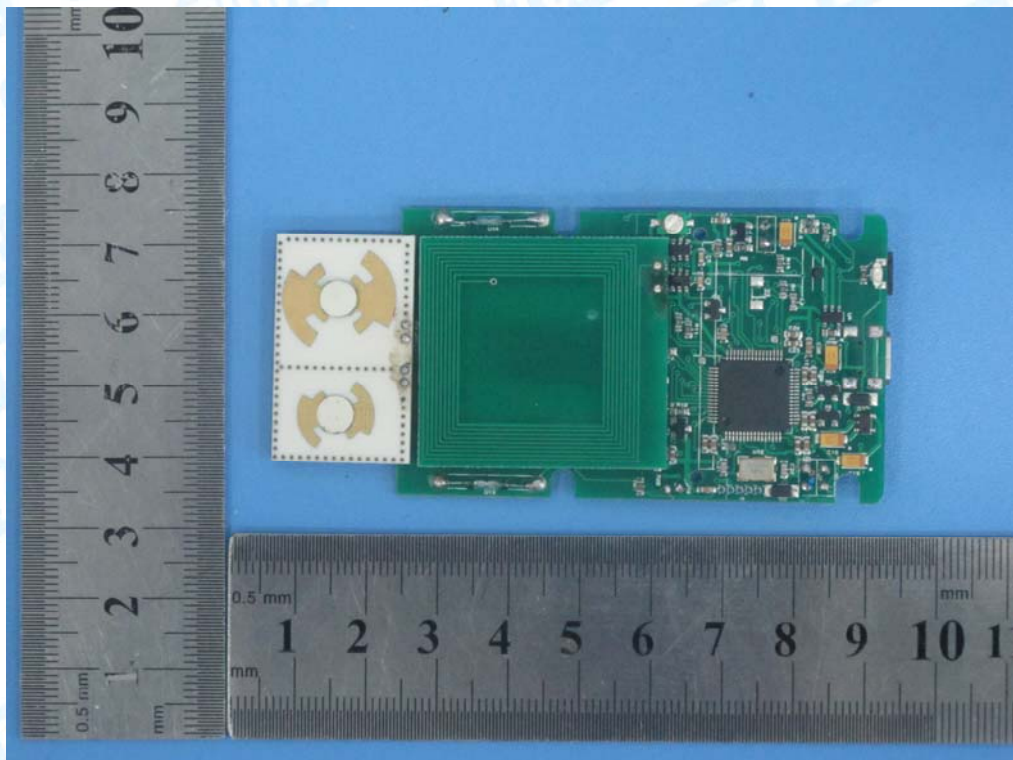


Photo 6 Appearance of PCB

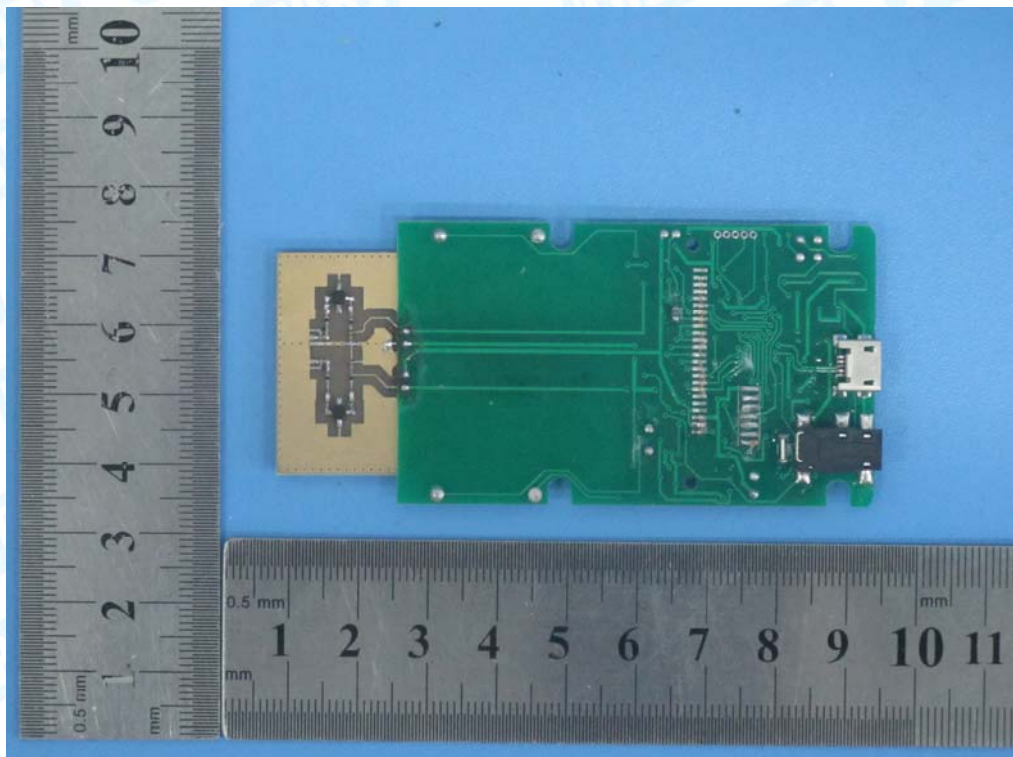


Photo 7 Appearance of Battery



7. Photographs - Test Setup

Radiated Emission Test Setup---Below 1G



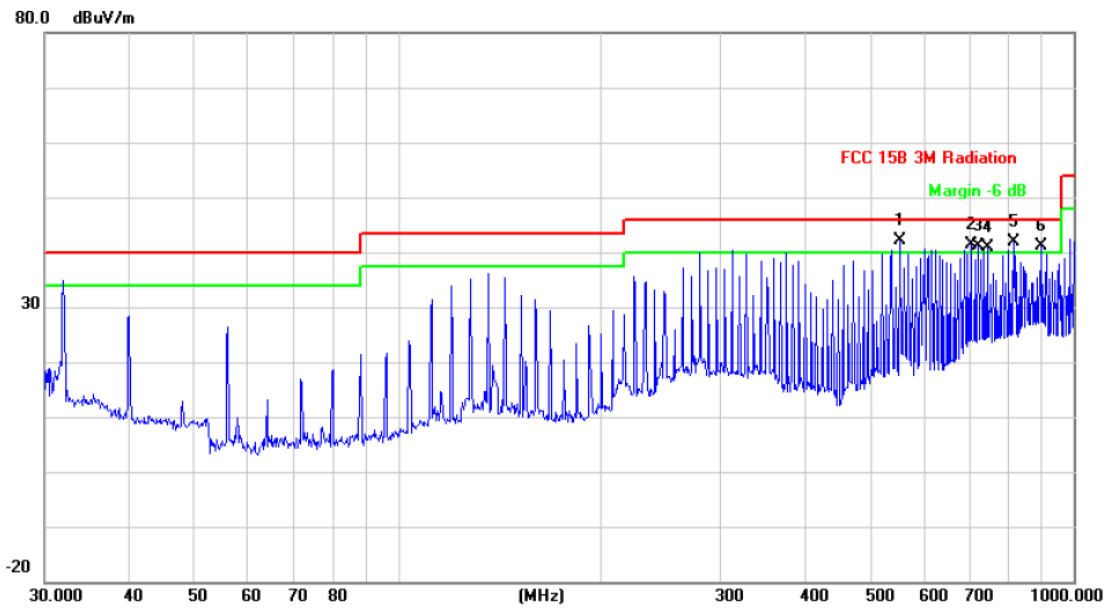
Radiated Emission Test Setup---Below 1G



Attachment B--Radiated Emission Test Data

----Below 1G

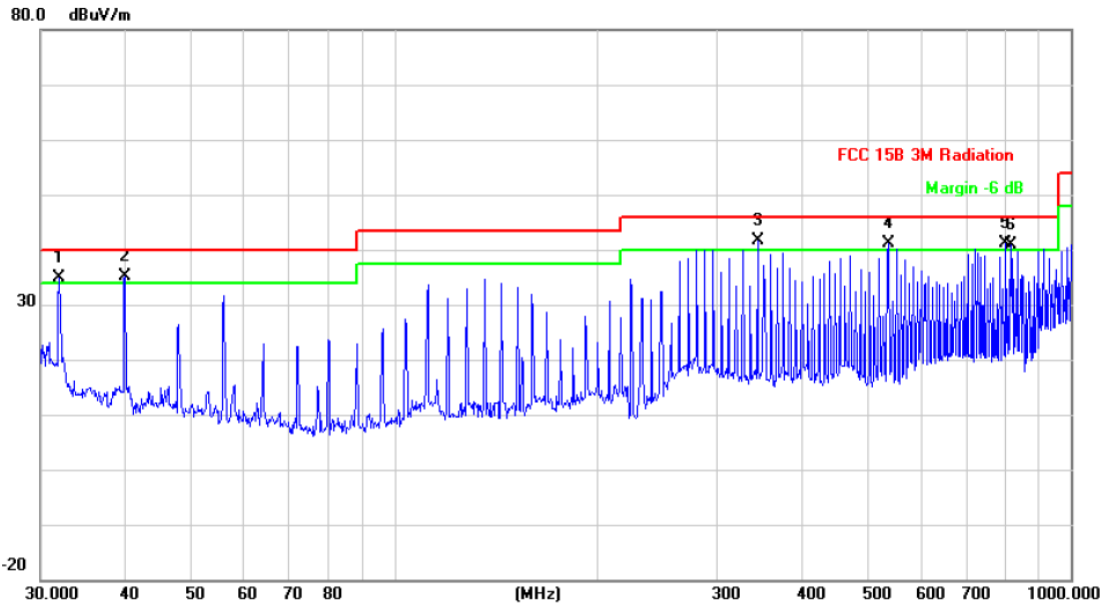
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	*	552.8831	51.66	-9.50	42.16	46.00	-3.84	peak
2	!	704.2259	46.89	-5.49	41.40	46.00	-4.60	peak
3	!	721.7259	47.06	-6.00	41.06	46.00	-4.94	peak
4	!	744.8659	46.78	-6.00	40.78	46.00	-5.22	peak
5	!	815.9678	47.09	-5.11	41.98	46.00	-4.02	peak
6	!	896.9963	44.77	-3.72	41.05	46.00	-4.95	peak

Emission Level= Read Level+ Correct Factor

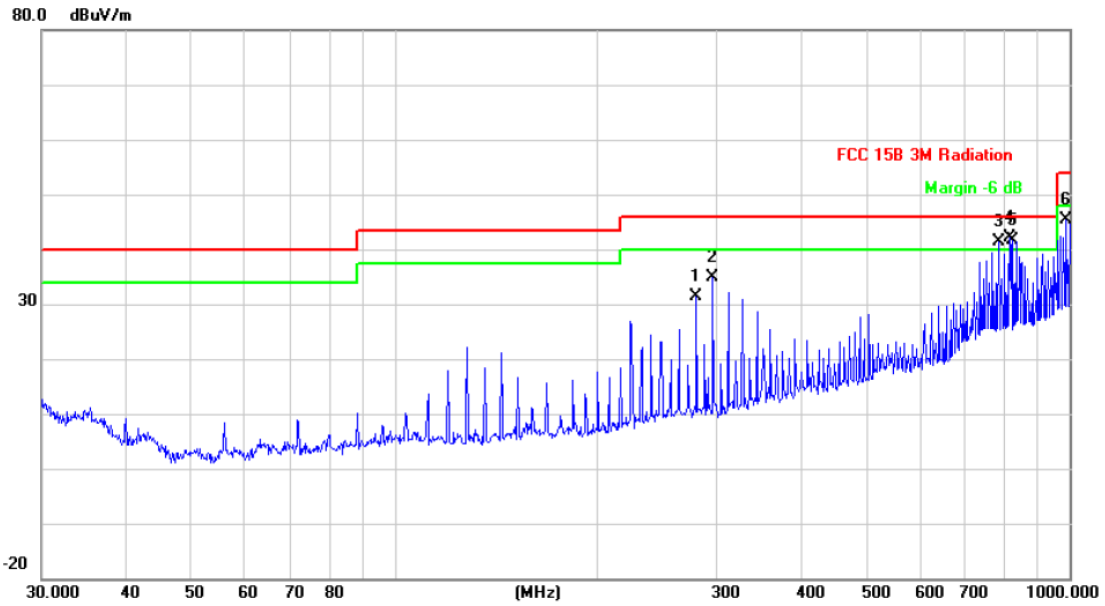
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1	!	31.9542	50.29	-15.35	34.94	40.00	-5.06	peak
2	!	39.9941	55.36	-20.30	35.06	40.00	-4.94	peak
3	*	344.3854	56.15	-14.51	41.64	46.00	-4.36	peak
4	!	537.5891	50.79	-9.55	41.24	46.00	-4.76	peak
5	!	801.7862	46.34	-5.27	41.07	46.00	-4.93	peak
6	!	815.9678	45.99	-5.11	40.88	46.00	-5.12	peak

Emission Level= Read Level+ Correct Factor

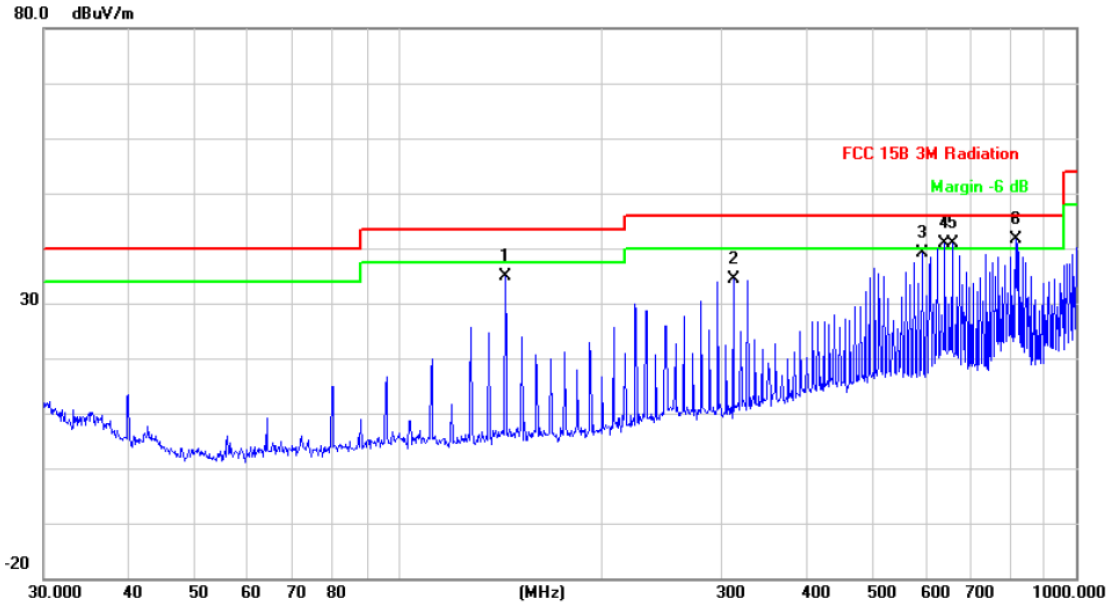
Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		280.0237	48.08	-16.71	31.37	46.00	-14.63	peak
2		296.1836	51.18	-16.37	34.81	46.00	-11.19	peak
3	!	785.0934	46.81	-5.52	41.29	46.00	-4.71	peak
4	*	815.9678	47.31	-5.20	42.11	46.00	-3.89	peak
5	!	824.5968	46.84	-5.11	41.73	46.00	-4.27	peak
6		986.0716	48.48	-3.18	45.30	54.00	-8.70	peak

Emission Level= Read Level+ Correct Factor

Temperature:	25 °C	Relative Humidity:	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Vertical		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB/m	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Detector
1		143.8293	56.14	-21.23	34.91	43.50	-8.59	peak
2		312.1792	50.25	-15.83	34.42	46.00	-11.58	peak
3		593.0497	47.96	-8.74	39.22	46.00	-6.78	peak
4	!	640.6109	48.55	-7.70	40.85	46.00	-5.15	peak
5	!	656.5298	48.27	-7.45	40.82	46.00	-5.18	peak
6	*	815.9678	46.85	-5.20	41.65	46.00	-4.35	peak

Emission Level= Read Level+ Correct Factor

-----END OF REPORT-----