ICES-003 Test Report

Certificate No.	:	TB171017114
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	:	ICES-003 Issue 6: 2016 Class B
Test Methods	:	ANSI C63.4: 2014
Conclusions	:	**Compliance**

In the configuration tested, the EUT complied with the standards specified above

Test/Witness Engineer : Rebecca

Approved & Authorized :

ICES-003

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.

1A/F., Bldg.6, Yusheng Industrial Zone, The National Road No.107 Xixiang Section 467, Xixiang, Bao'an, Shenzhen, China
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Contents

Revision History

Report No.	Version	Description	Issued Date
TB-IC156753	Rev.01	Initial issue of report	2017-10-27

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)	:	T-1
Model Difference	:	**/**
Power Supply	:	DC 5V
Remark: /		

1.3 Description of Test Mode

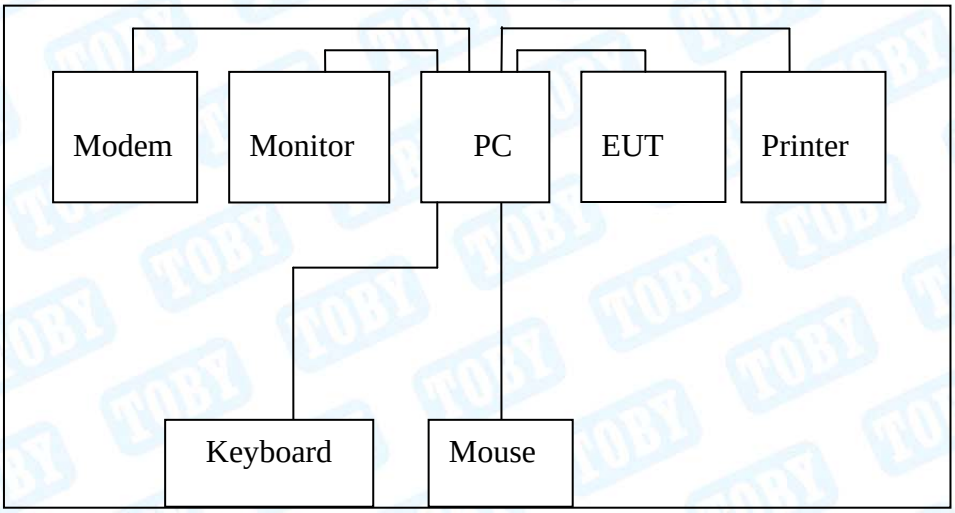
To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration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

For Conducted Test	
Final Test Mode	**Description**
Mode 1	N/A

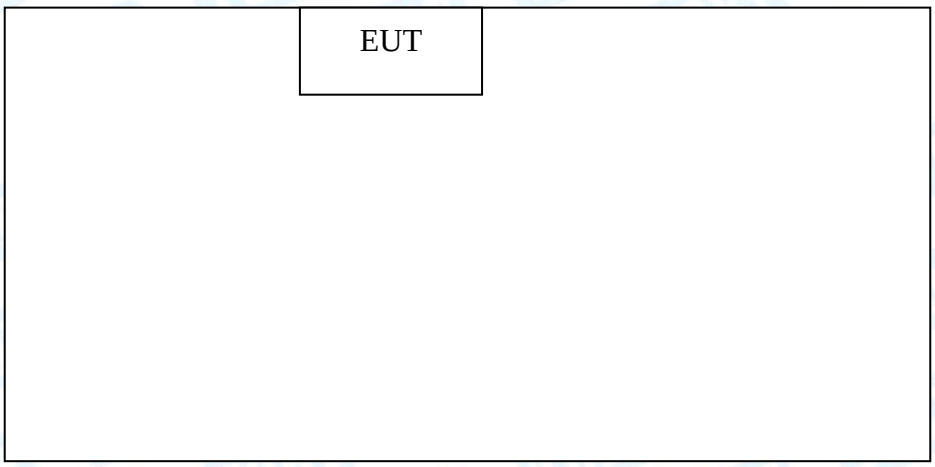
For Radiated Test	
Final Test Mode	**Description**
Mode 1	Charging Mode
Mode 2	Normal Mode

1.4 Block Diagram Showing The Configuration of System Tested

Mode 1



Mode 2



1.5 Description of Support Units

The EUT has been tested as an independent unit.

1.6 Test standards

The objective is to determine compliance with ICES-003, Class B, and section 6.1, 6.2 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 ± 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 %.

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	ICES-003 Class B	ANSI C63.4	N/A
Radiated Emission	ICES-003 Class 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	100010/007	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	8447B	3008A00849	Mar.25, 2017	Mar. 24, 2018
Cable	HUBER+SUHNER	100	SUCOFLEX	Mar.25, 2017	Mar. 24, 2018
Signal Generator	Rohde & Schwarz	SML03	IKW682-054	Mar.25, 2017	Mar. 24, 2018
Positioning Controller	ETS-LINDGREN	2090	N/A	N/A	N/A

4. Conducted Emission Test

4.1 Test Standard and Limit

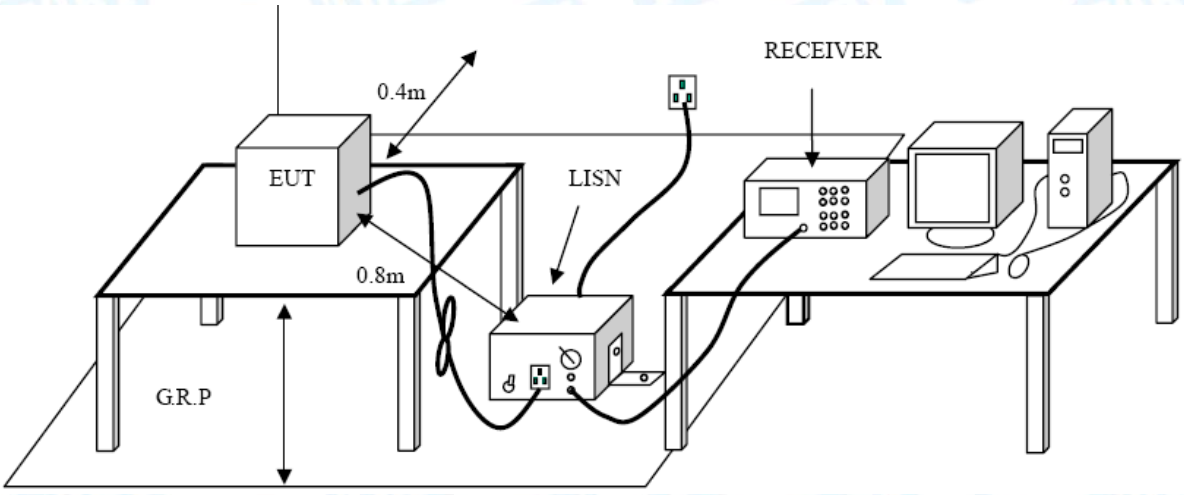
4.1.1Test Standard

ICES-003 Issue 6: 2016 Clause 6.1

4.1.2 Test Limit

Conducted Emission Test Limit (Class A)		
Frequency (MHz)	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
0.15 to 0.5	79	66
0.5 to 30	73	60
Conducted Emission Test Limit (Class B)		
Frequency (MHz)	Maximum RF Line Voltage (dBμV)	
	Quasi-peak Level	Average Level
0.15 to 0.5	66 ~ 56 *	56 ~ 46 *
0.5 to 5	56	46
5 to 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

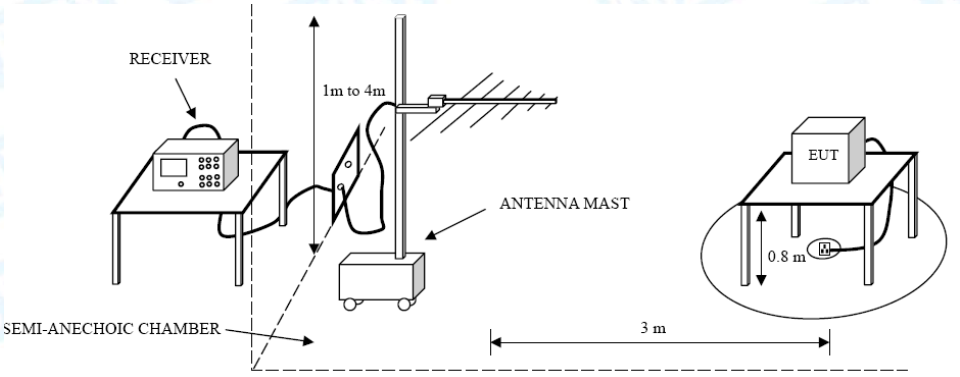
ICES-003 Issue 6: 2016 Clause 6.2

5.1.2 Test Limit

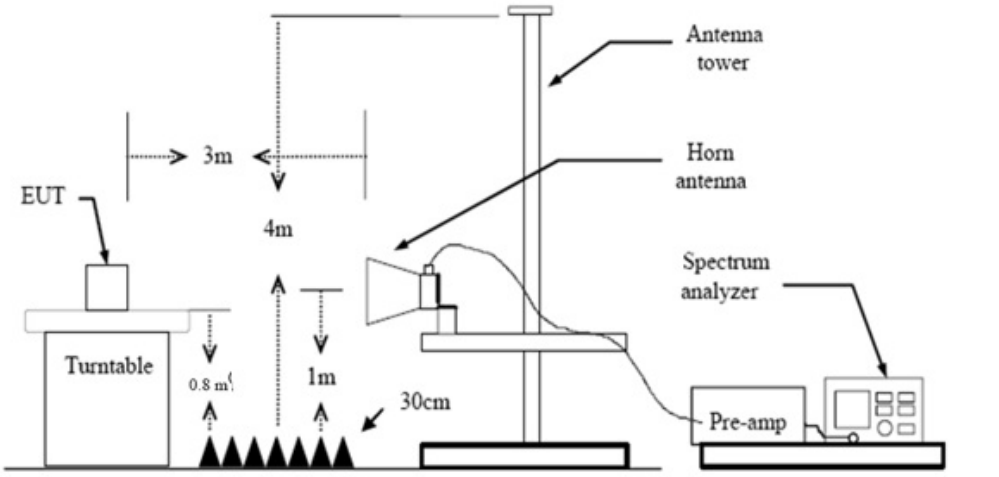
Radiated Emission Test Limit bellow 1 GHz (Class A)	
Frequency MHz	**Field Strengths Limits dB(μV/m)**
30 ~ 88	49.0
88 ~ 216	53.5
216 ~ 960	56.4
960 ~ 1000	59.5
Radiated Emission Test Limit bellow 1 GHz (Class B)	
Frequency MHz	**Field Strengths Limits dB(μV/m)**
30 ~ 88	40.0
88 ~ 216	43.5
216 ~ 960	46.0
960 ~ 1000	54.0
* The lower limit shall apply at the transition frequency.	
* The test distance is 3m.	

Radiated Emission Test Limit above 1 GHz (Class A)		
Frequency (MHz)	**Field Strengths Limits (dBμV/m)**	
	Linear Average Detector	Peak Detector
>1000	59.5	79.5
Radiated Emission Test Limit above 1 GHz (Class B)		
Frequency (MHz)	**Field Strengths Limits (dBμV/m)**	
	Linear Average Detector	Peak Detector
>1000	54	74

5.2 Test Setup



Below 1G



Above 1G

5.3 Test Procedure

The EUT was placed on the top of a rotating table which is 0.8 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

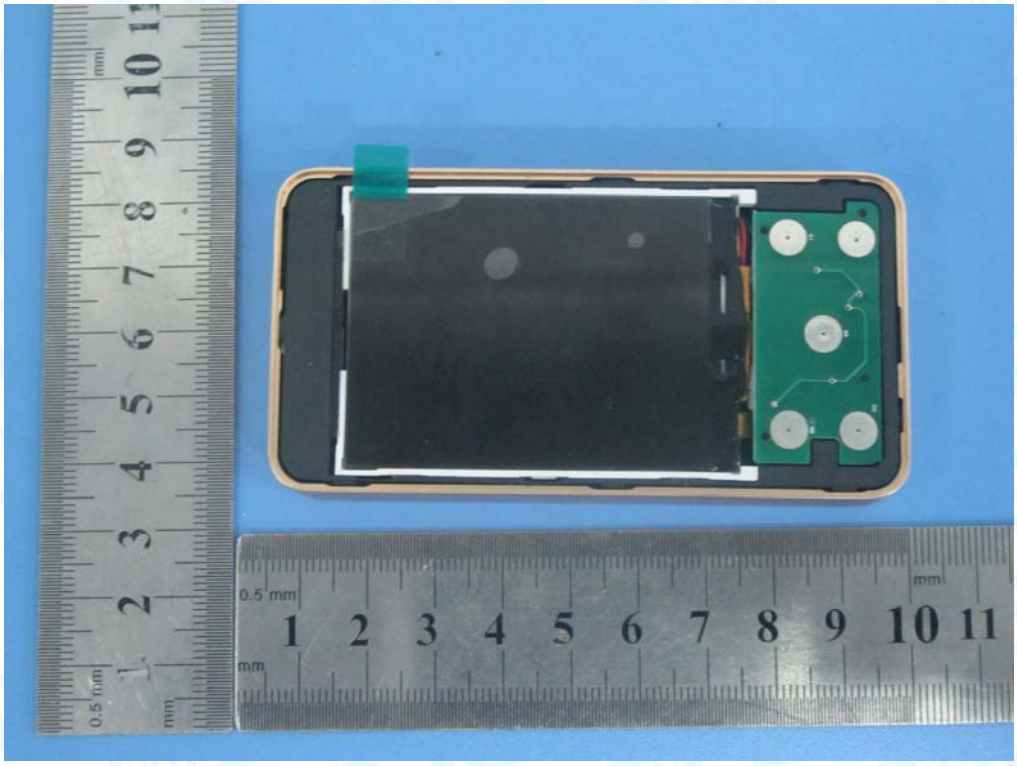


Photo 4 Internal of EUT

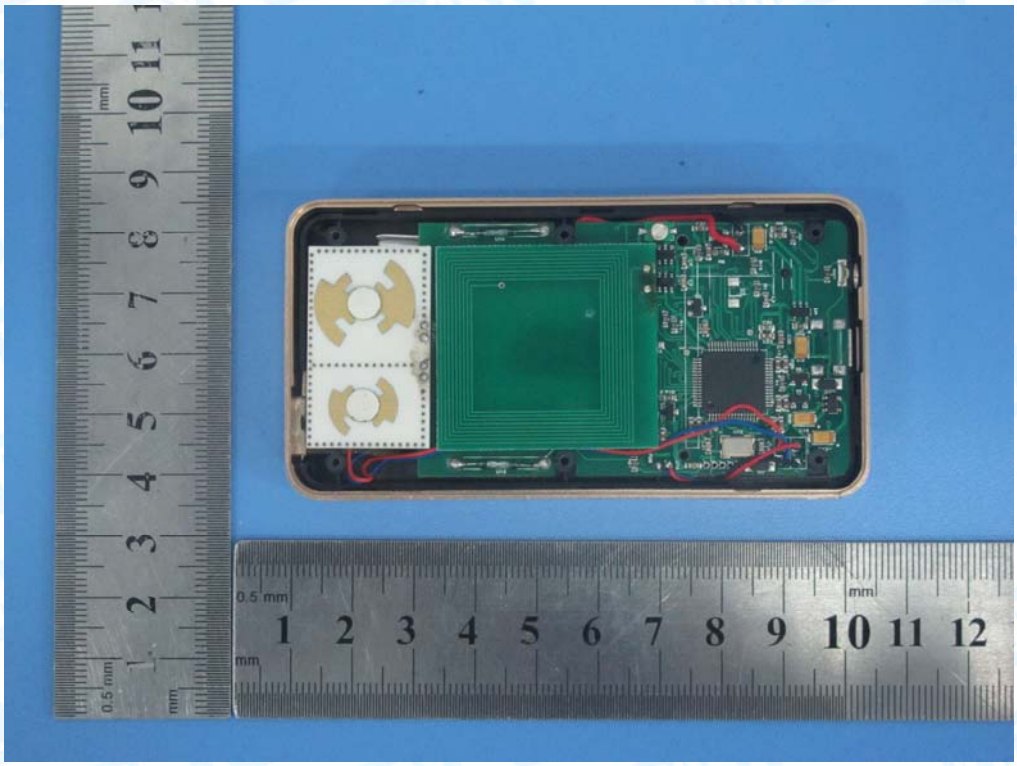


Photo 5 Appearance of PCB

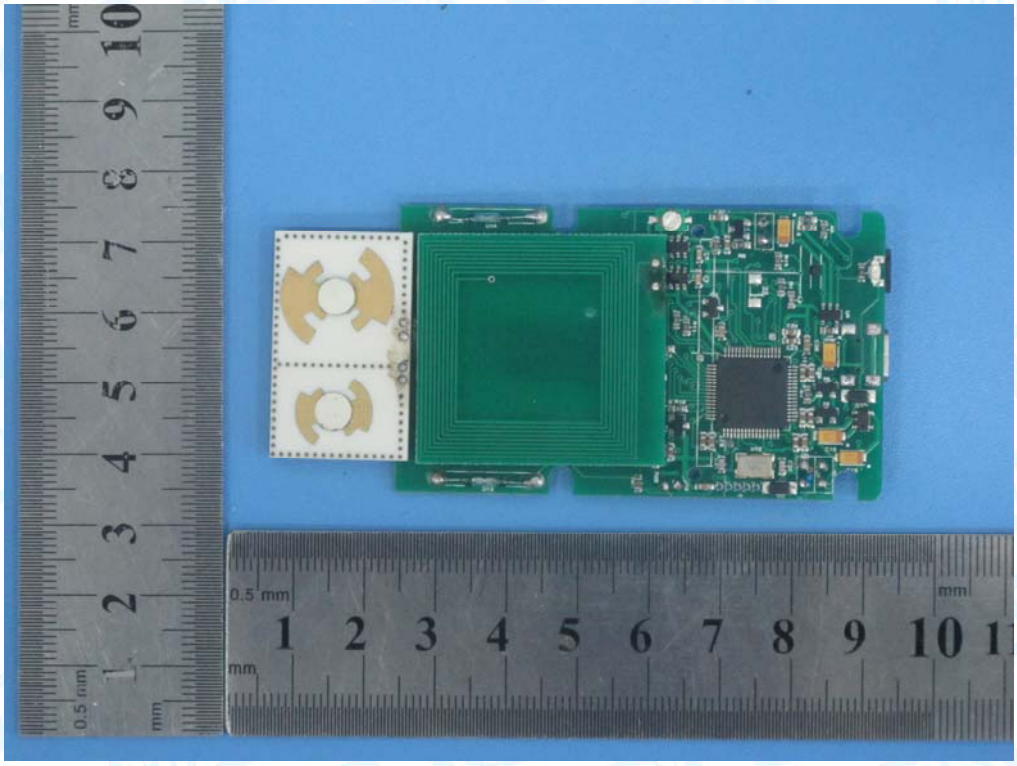


Photo 6 Appearance of PCB

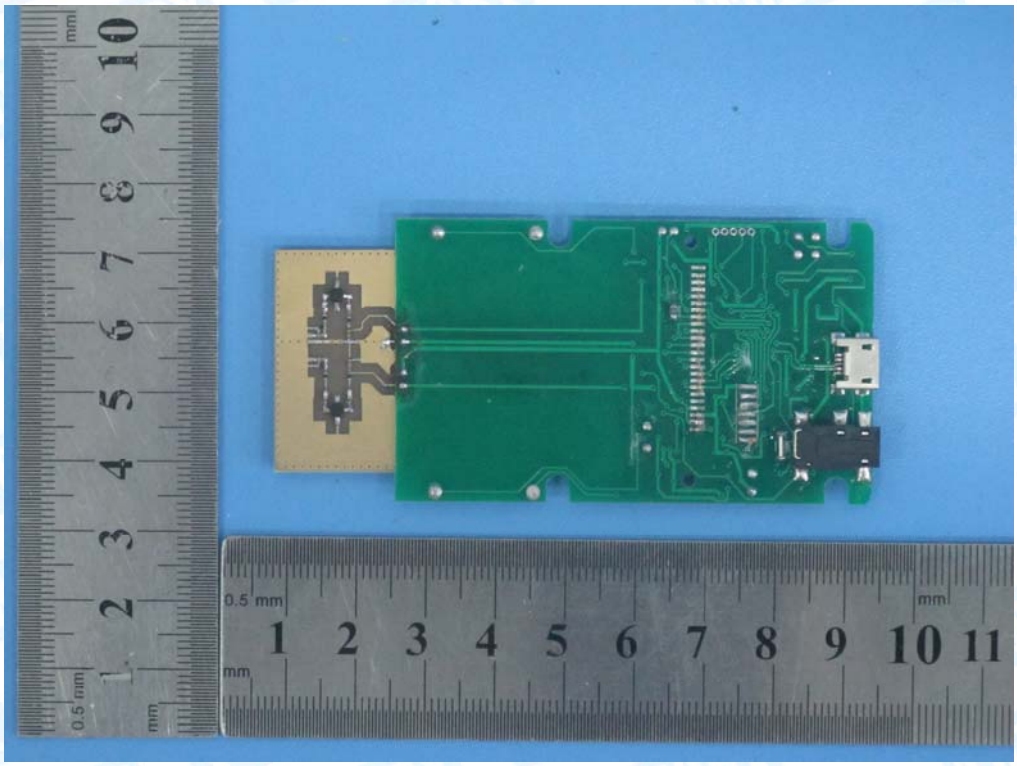
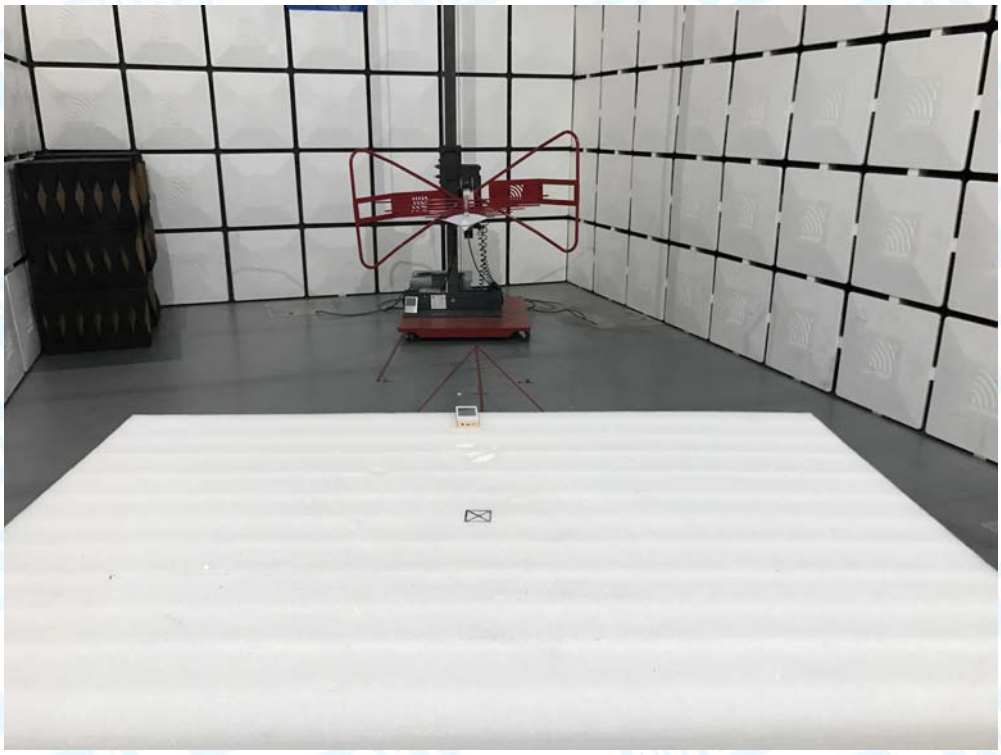


Photo 7 Appearance of Battery

7. Photographs - Test Setup

Radiated Emission Test Setup—Below 1G

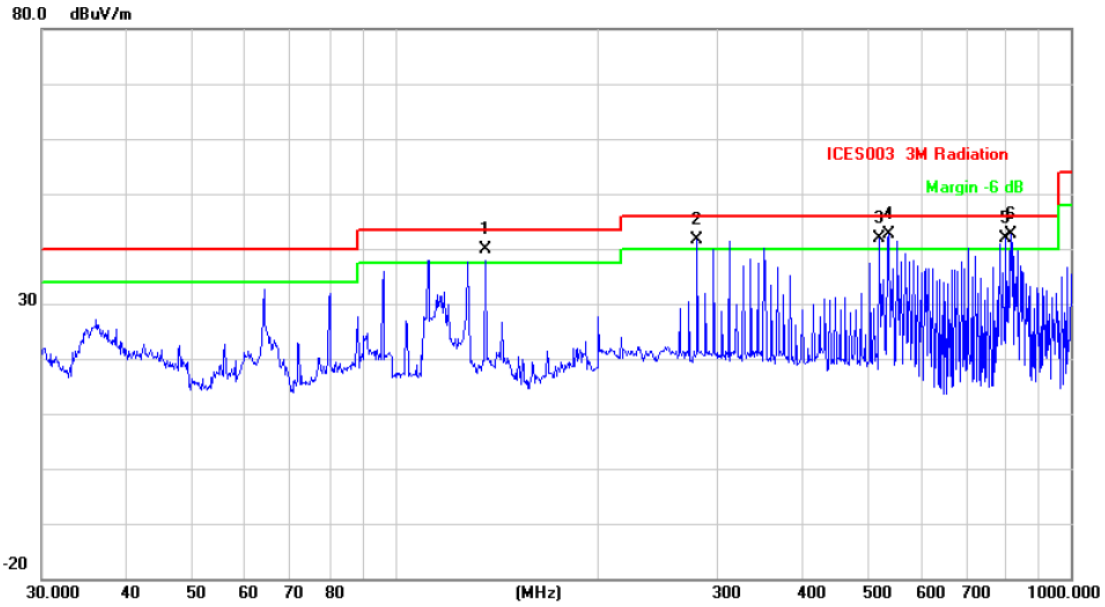
Radiated Emission Test Setup—Below 1G



Attachment B--Radiated Emission Test Data

----Below 1G

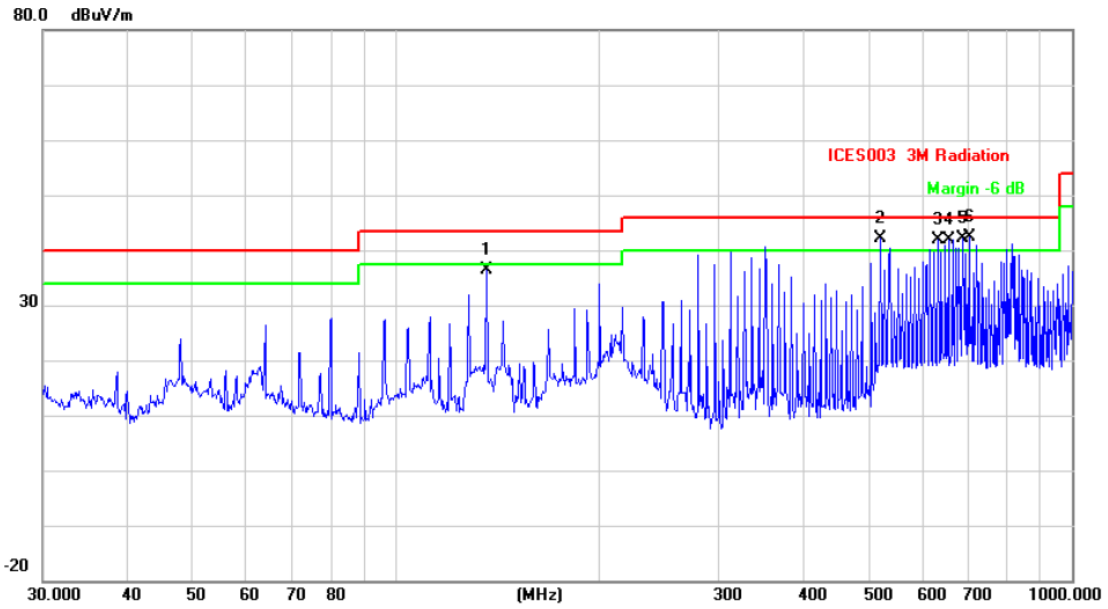
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 5V		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1	!	135.9822	61.91	-21.94	39.97	43.50	-3.53	peak
2	!	280.0237	58.67	-17.05	41.62	46.00	-4.38	peak
3	!	520.8881	51.73	-9.85	41.88	46.00	-4.12	peak
4	*	537.5891	52.30	-9.55	42.75	46.00	-3.25	peak
5	!	801.7862	47.03	-5.27	41.76	46.00	-4.24	peak
6	!	815.9678	47.82	-5.11	42.71	46.00	-3.29	peak

Emission Level= Read Level+ Correct Factor

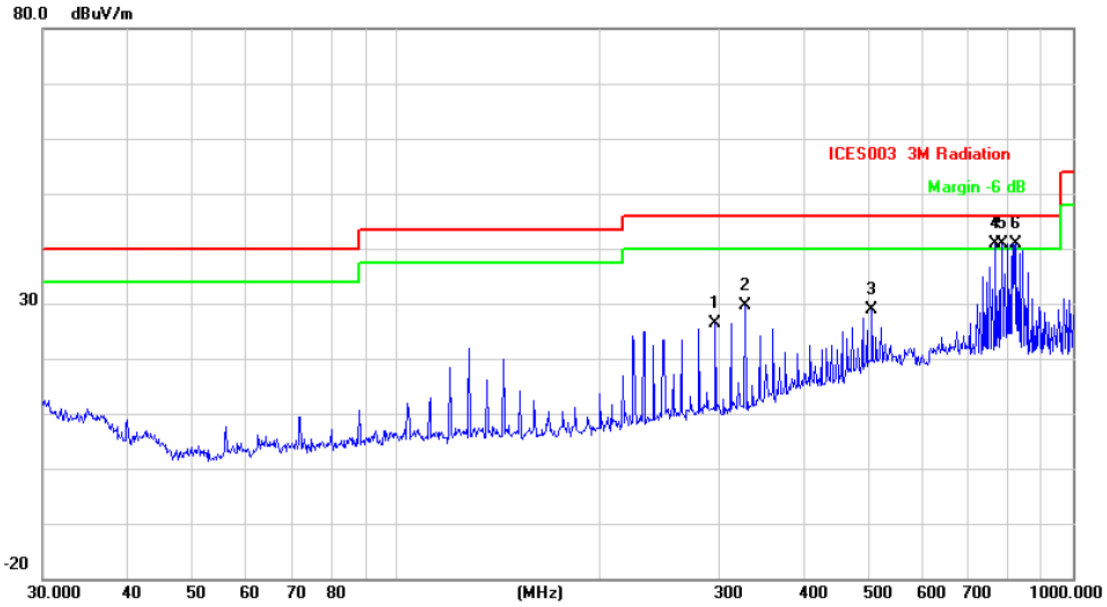
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 5V		
Ant. Pol.	Vertical		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		135.9822	58.21	-21.94	36.27	43.50	-7.23	peak
2	!	520.8881	52.08	-9.85	42.23	46.00	-3.77	peak
3	!	633.9071	49.68	-7.78	41.90	46.00	-4.10	peak
4	!	656.5298	49.47	-7.55	41.92	46.00	-4.08	peak
5	!	689.5643	48.44	-6.20	42.24	46.00	-3.76	peak
6	*	704.2259	48.35	-5.92	42.43	46.00	-3.57	peak

Emission Level= Read Level+ Correct Factor

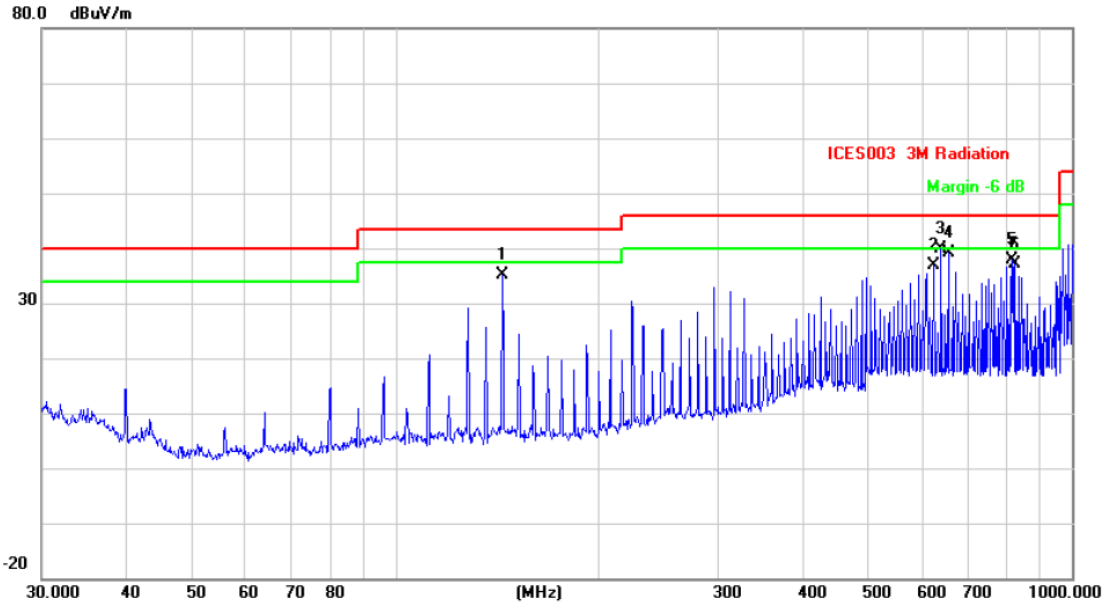
Temperature:	25 ℃	**Relative Humidity:**	55%
Test Voltage:	DC 3.7V		
Ant. Pol.	Horizontal		
Test Mode:	Mode 1		
Remark:			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		296.1836	43.03	-16.55	26.48	46.00	-19.52	peak
2		327.8872	44.82	-15.30	29.52	46.00	-16.48	peak
3		504.7062	38.57	-9.71	28.86	46.00	-17.14	peak
4	*	768.7481	46.54	-5.64	40.90	46.00	-5.10	peak
5	!	785.0933	46.27	-5.37	40.90	46.00	-5.10	peak
6	!	824.5968	45.83	-4.93	40.90	46.00	-5.10	peak

Emission Level= Read Level+ Correct Factor

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



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB	Detector
1		143.8294	56.08	-20.94	35.14	43.50	-8.36	peak
2		625.0779	44.86	-7.88	36.98	46.00	-9.02	peak
3	*	640.6109	47.56	-7.76	39.80	46.00	-6.20	peak
4		656.5299	46.54	-7.53	39.01	46.00	-6.99	peak
5		815.9678	42.94	-5.00	37.94	46.00	-8.06	peak
6		824.5968	41.99	-4.93	37.06	46.00	-8.94	peak

Emission Level= Read Level+ Correct Factor

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