

FCC PART 15B

TEST REPORT

For

MPOW TECHNOLOGY CO.,LIMITED

FLAT/RM 605 6/F FA YUEN COMMERCIAL BUILDING 75-77 FA YUEN STREET
MONGKOK KL HONG KONG

Test Model: BH503A

Report Type: Original Report		Product Type: MPOW FLAME SOLO TRUEWIRELESS EARBUDS	
Test Engineer:	Barry Yang, Fred Li	<i>Fred Li Barry Yang</i>	
Report Number:	RDG201207005-00B		
Report Date:	2020-12-31		
Reviewed By:	Ivan Cao Assistant Manager	<i>Ivan Cao</i>	
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) No.12, Pulong East 1 st Road, Tangxia Town, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn		

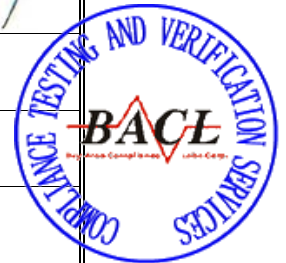


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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

EUT Name:	MPOW FLAME SOLO TRUEWIRELESS EARBUDS
EUT Model:	BH503A
Highest Operation Frequency:	2480 MHz
Rated Input Voltage:	5V DC from adapter & 3.7VDC from battery
Serial Number:	RDG201207005-RF-S1
EUT Received Date:	2020.12.8
EUT Received Status:	Good

Objective

This report is prepared on behalf of **MPOW TECHNOLOGY CO., LIMITED** in accordance with FCC Part 15B Part 2, Part J, and Part 15, Subpart A and B of the Federal Communications Commission's rules..

The objective is to determine the compliance of EUT with: FCC Part 15B.

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.

Measurement Uncertainty

Parameter	Measurement Uncertainty
Unwanted Emissions, radiated	30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical 1G~6GHz: 4.45 dB, 6G~13GHz: 5.23 dB
Temperature	±1 °C
Humidity	±5%
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0022.

Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol “△”. Customer model name, addresses, names, trademarks etc. are not considered data.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

This report cannot be reproduced except in full, without prior written approval of the Company.

This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk “★”.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in Downloading mode.

Test model: M1: charging M2: operating

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

The software "Winthrax.exe" was used during test.

Local Support Equipment List and Details

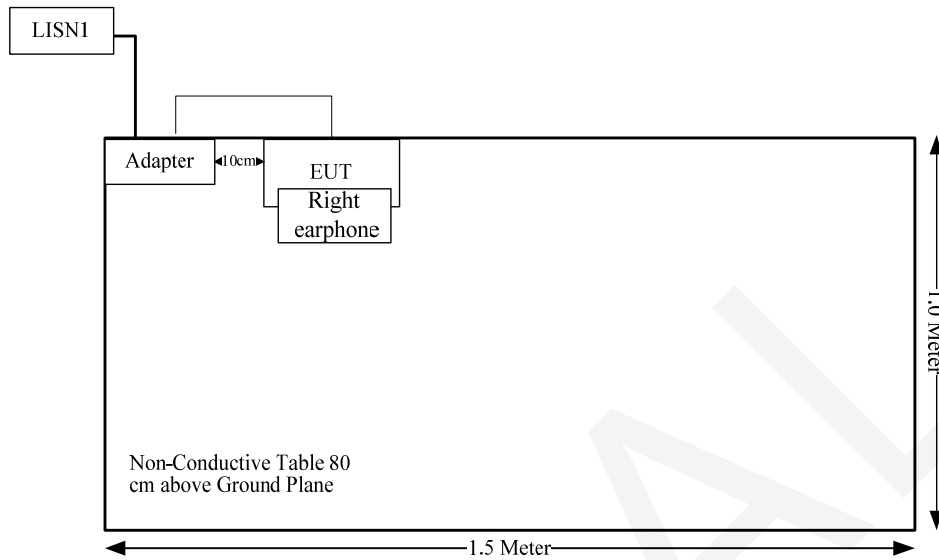
Manufacturer	Description	Model	Serial Number
Vietnam Honor High Tech Company Limited	adapter	ADS-10LA-06 050 10EPCU	000051

Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB-C Cable	yes	no	0.9	USB Port of adapter	Type-C port of EUT

Block Diagram of Test Setup

M1



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted emissions					
R&S	LISN	ENV 216	101614	2020-09-12	2021-09-12
R&S	EMI Test Receiver	ESCI	101121	2020-07-07	2021-07-07
MICRO-COAX	Coaxial Cable	C-NJNJ-50	C-0200-01	2020-09-05	2021-09-05
R&S	Test Software	EMC32	Version 9.10.00	N/A	N/A
Radiated emissions Below 1GHz					
Sunol Sciences	Antenna	JB3	A060611-2	2020-08-25	2023-08-25
R&S	EMI Test Receiver	ESCI	100224	2020-09-12	2021-09-12
Unknown	Coaxial Cable	C-NJNJ-50	C-1000-01	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-02	2020-09-05	2021-09-05
Unknown	Coaxial Cable	C-NJNJ-50	C-0530-01	2020-09-24	2021-09-24
Sonoma	Amplifier	310N	185914	2020-10-13	2021-10-13
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Radiated emissions Above 1GHz					
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12
Agilent	Spectrum Analyzer	E4440A	SG43360054	2020-07-07	2021-07-07
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2020-09-05	2021-09-05
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2020-09-05	2021-09-05
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A
Sinoscite	Bandstop Filters	BSF5150-5850MN-0899-003	0899003	2020-05-06	2021-05-06

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Environmental Conditions

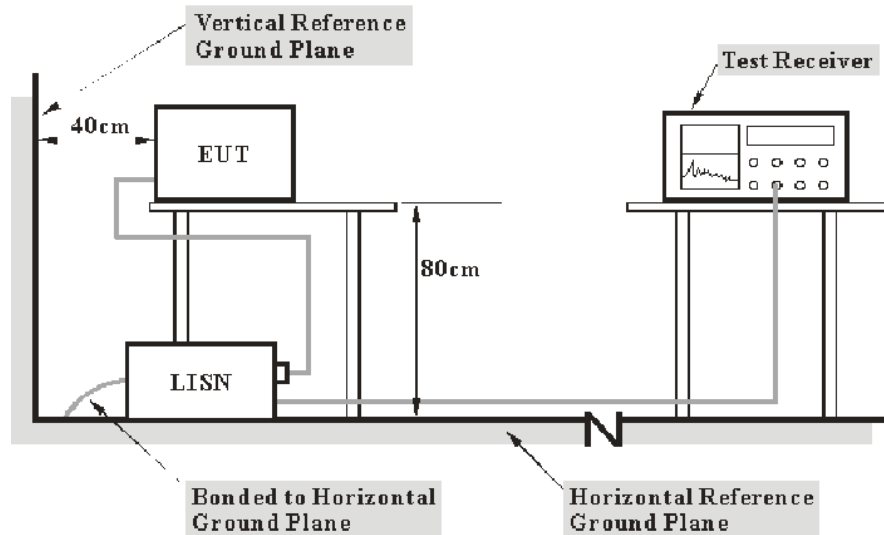
Test Item:	Conducted emissions	Radiated emissions (Below 1GHz)	Radiated emissions (Above 1GHz)
Temperature:	23.5°C	22.5 °C	20.4C
Relative Humidity:	64%	38%	35%
ATM Pressure:	101.0kPa	101.3kPa	102.0kPa
Tester:	Barry Yang	Fred Li	Fred Li
Test Date:	2020-12-11	2020-12-26	2020-12-16

SUMMARY OF TEST RESULTS**FCC Part 15B**

Clause	Description of Test	Test Result
§15.107	Conducted emissions	Compliance
§15.109	Radiated emissions	Compliance

FCC PART 15B §15.107 – CONDUCTED EMISSIONS

EUT Setup



- Note: 1. Support units were connected to second LISN.
 2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.4-2014 measurement procedure. The specification used was with the FCC Part 15 B Class B limits.

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

The adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W
150 kHz – 30 MHz	9 kHz

Test Procedure

During the conducted emission test, the adapter or EUT was connected to the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result (QuasiPeak or Average) = Meter Reading + Corr.

Note:

Corr. = Cable loss + Factor of coupling device

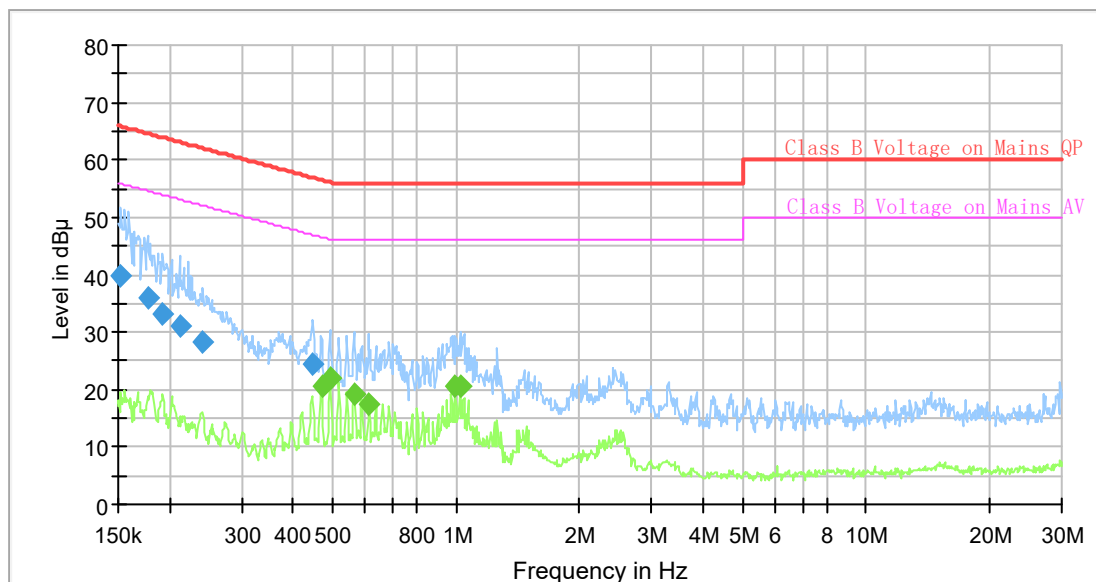
The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Result

Test Data

Please refer to following table and plots:

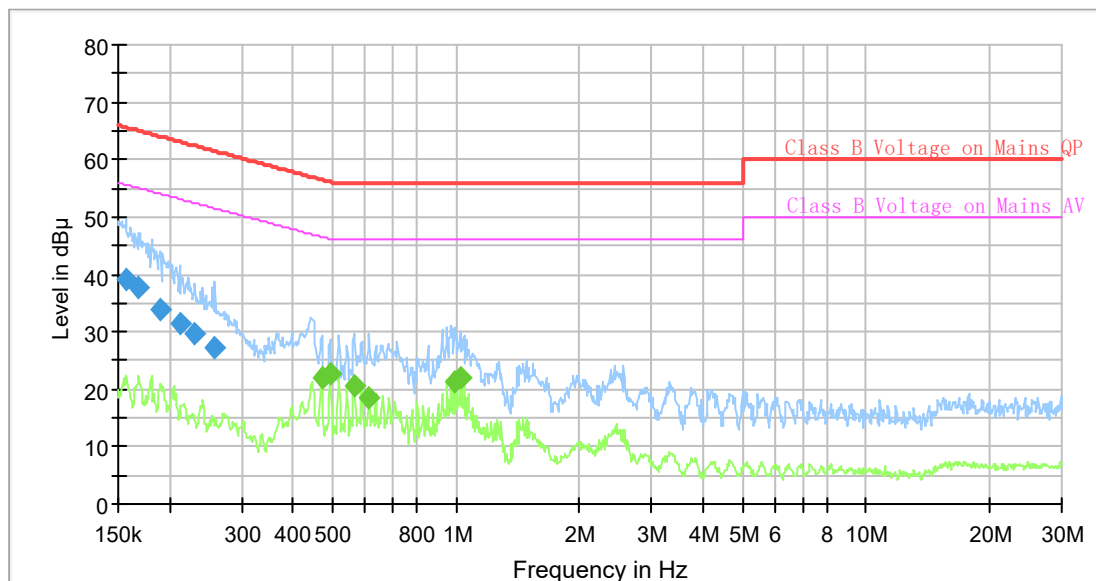
Port: L
Test Mode: M1: charging
Power Source: AC 120V/60Hz
Note:



Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.152261	39.66	---	65.88	26.22	9.000	L1	9.6
0.176836	36.04	---	64.63	28.59	9.000	L1	9.6
0.192484	33.20	---	63.93	30.73	9.000	L1	9.6
0.211616	31.07	---	63.14	32.07	9.000	L1	9.6
0.240917	28.45	---	62.06	33.61	9.000	L1	9.6
0.447156	24.47	---	56.93	32.46	9.000	L1	9.6
0.470023	---	20.72	46.51	25.79	9.000	L1	9.6
0.494060	---	21.95	46.10	24.15	9.000	L1	9.6
0.565280	---	19.22	46.00	26.78	9.000	L1	9.6
0.612239	---	17.58	46.00	28.42	9.000	L1	9.6
0.998148	---	20.45	46.00	25.55	9.000	L1	9.7
1.023352	---	20.60	46.00	25.40	9.000	L1	9.7

Port: N
 Test Mode: M1: charging
 Power Source: AC 120V/60Hz
 Note:



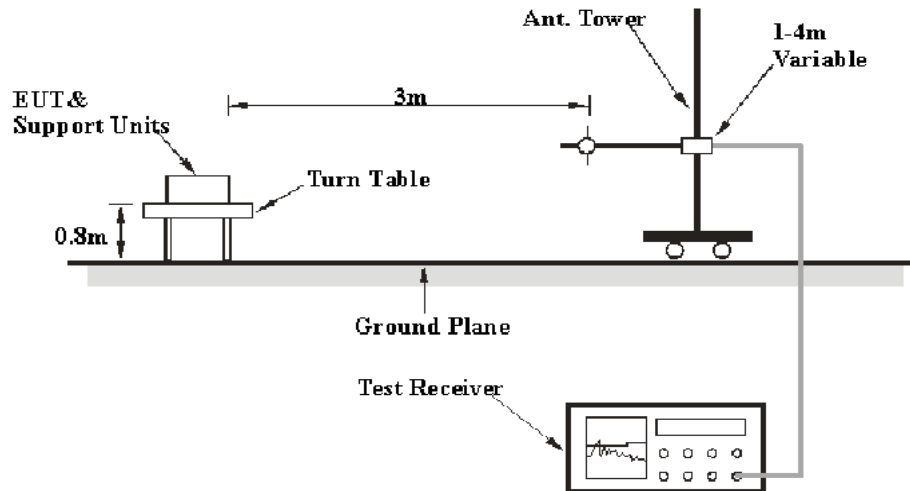
Final Result

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Bandwidth (kHz)	Line	Corr. (dB)
0.156887	39.24	---	65.63	26.39	9.000	N	9.6
0.168233	37.56	---	65.05	27.49	9.000	N	9.6
0.190573	33.99	---	64.01	30.02	9.000	N	9.6
0.211616	31.30	---	63.14	31.84	9.000	N	9.6
0.230342	29.53	---	62.44	32.91	9.000	N	9.6
0.258340	27.39	---	61.48	34.09	9.000	N	9.6
0.470023	---	22.17	46.51	24.34	9.000	N	9.6
0.494060	---	22.72	46.10	23.38	9.000	N	9.6
0.565280	---	20.50	46.00	25.50	9.000	N	9.6
0.615300	---	18.35	46.00	27.65	9.000	N	9.6
0.998148	---	21.30	46.00	24.70	9.000	N	9.6
1.023352	---	22.00	46.00	24.00	9.000	N	9.6

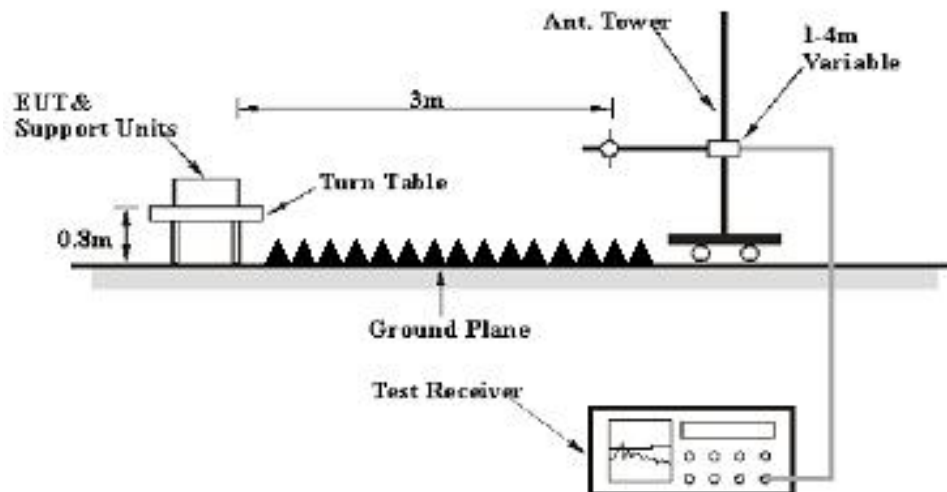
FCC PART 15B §15.109 – RADIATED EMISSIONS

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed at the 3 meters distance, above 1GHz were performed at the 3 meters, using the setup accordance with the ANSI C63.4-2014. The specification used was the FCC Part 15.109 Class B limits.

EMI Test Receiver Setup

The system was investigated from 30 MHz to 13 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	Peak
	1 MHz	Reduced video bandwidth	/	AVG

Test Procedure

During the radiated emissions, the adapter was connected to the first AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The data was recorded in the Quasi-peak detection mode for below 1 GHz, peak and average detection mode above 1 GHz.

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

Result = Meter Reading + Corrected

Note:

Corrected = Antenna Factor + Cable Loss - Amplifier Gain

or

Corrected = Antenna Factor + Cable Loss + Insertion loss of attenuator - Amplifier Gain

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7 dB means the emission is 7 dB below the limit. The equation for margin calculation is as follows:

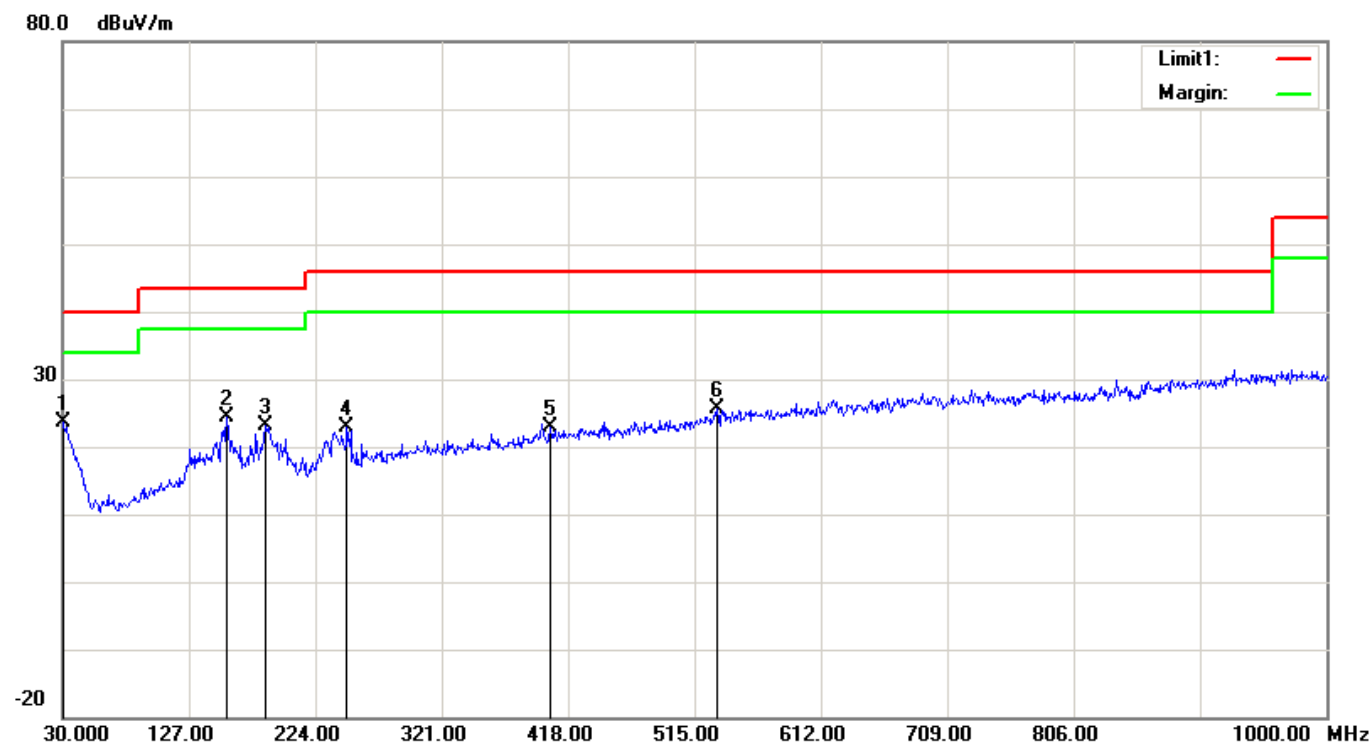
$$\text{Margin} = \text{Limit} - \text{Result}$$

Test Data

Please refer to following table and plots:

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: M1: charging

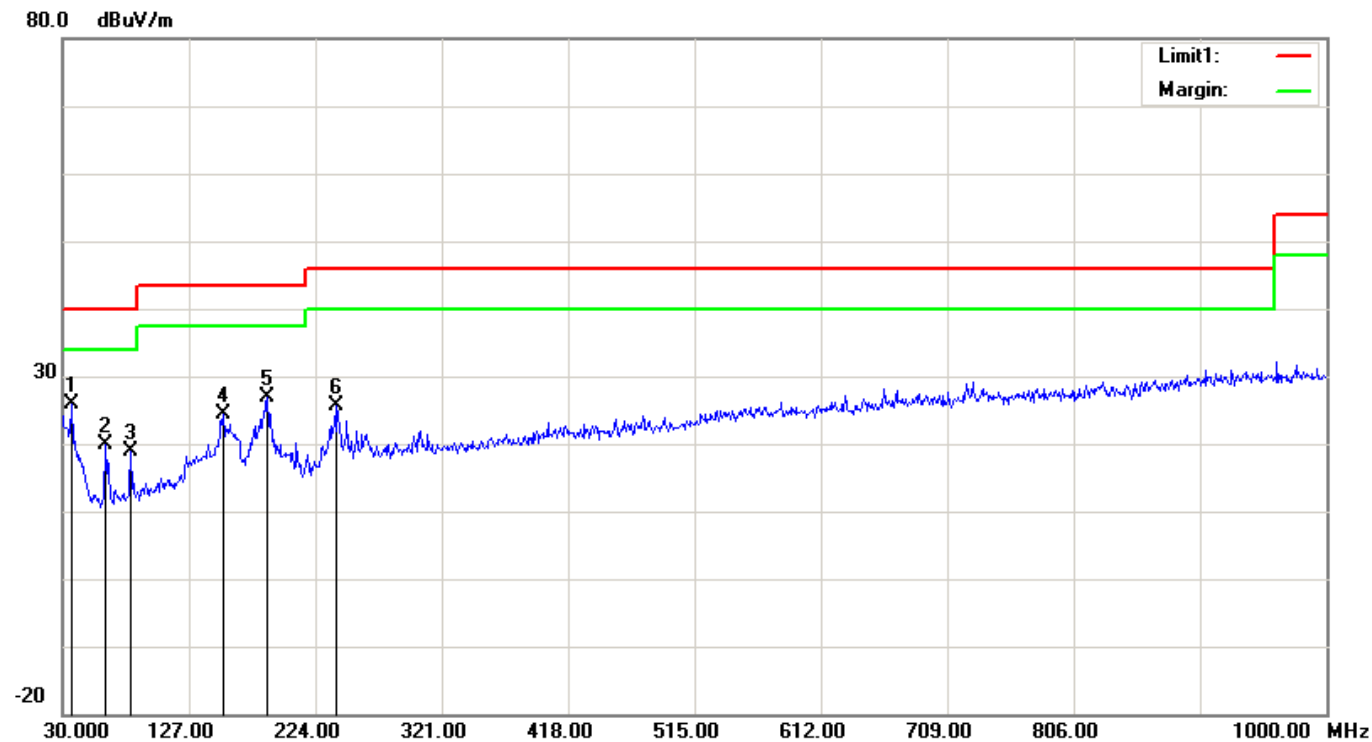
Polarization: Horizontal
Power: DC 5V
Distance: 3 m



No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	30.0000	27.76	peak	-4.10	23.66	40.00	16.34
2	156.1000	33.70	peak	-9.38	24.32	43.50	19.18
3	185.2000	33.14	peak	-10.12	23.02	43.50	20.48
4	248.2500	32.64	peak	-9.79	22.85	46.00	23.15
5	404.4200	27.87	peak	-5.01	22.86	46.00	23.14
6	532.4600	28.01	peak	-2.43	25.58	46.00	20.42

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: M1: charging

Polarization: Vertical
Power: 5V
Distance: 3 m

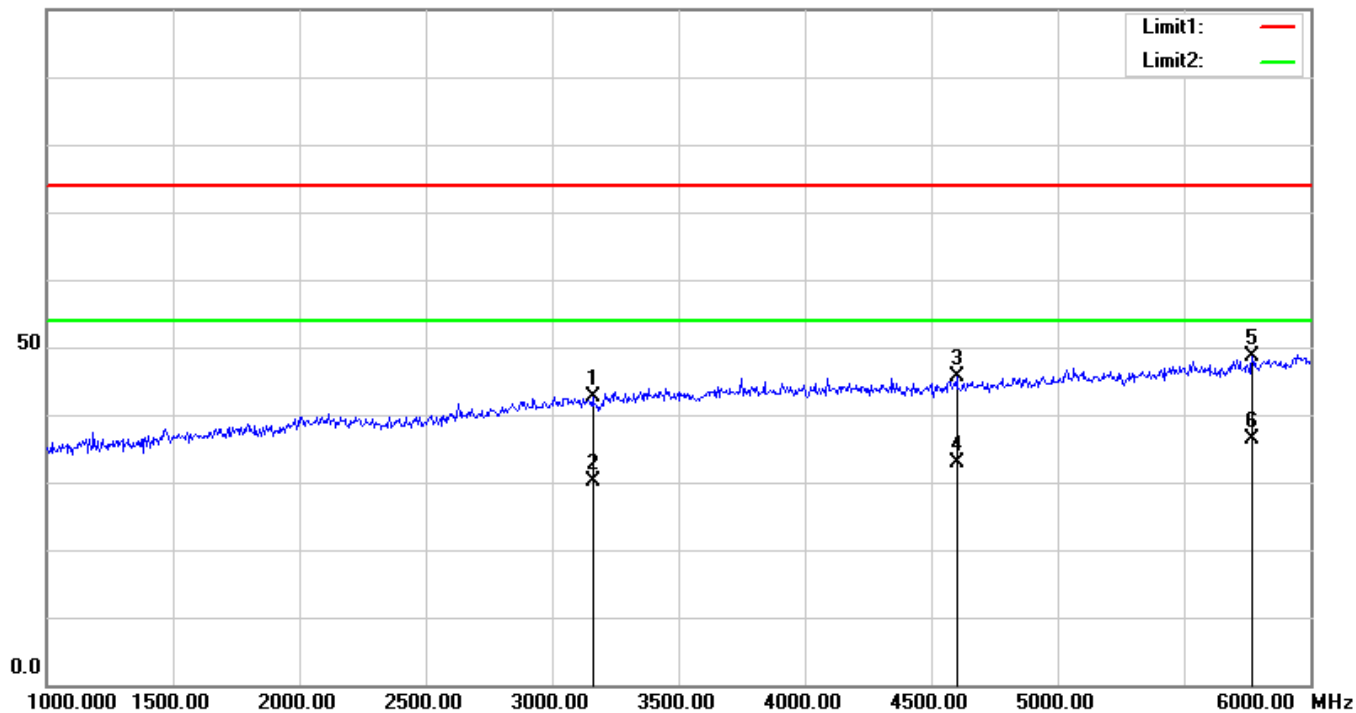


No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	36.7900	33.55	peak	-7.63	25.92	40.00	14.08
2	62.9800	36.37	peak	-16.43	19.94	40.00	20.06
3	82.3800	34.63	peak	-15.68	18.95	40.00	21.05
4	153.1900	33.77	peak	-9.34	24.43	43.50	19.07
5	187.1400	37.08	peak	-10.32	26.76	43.50	16.74
6	239.5200	35.77	peak	-10.05	25.72	46.00	20.28

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: charging

Polarization: Horizontal
Power: DC 5V
Distance: 3m

100.0 dBuV/m

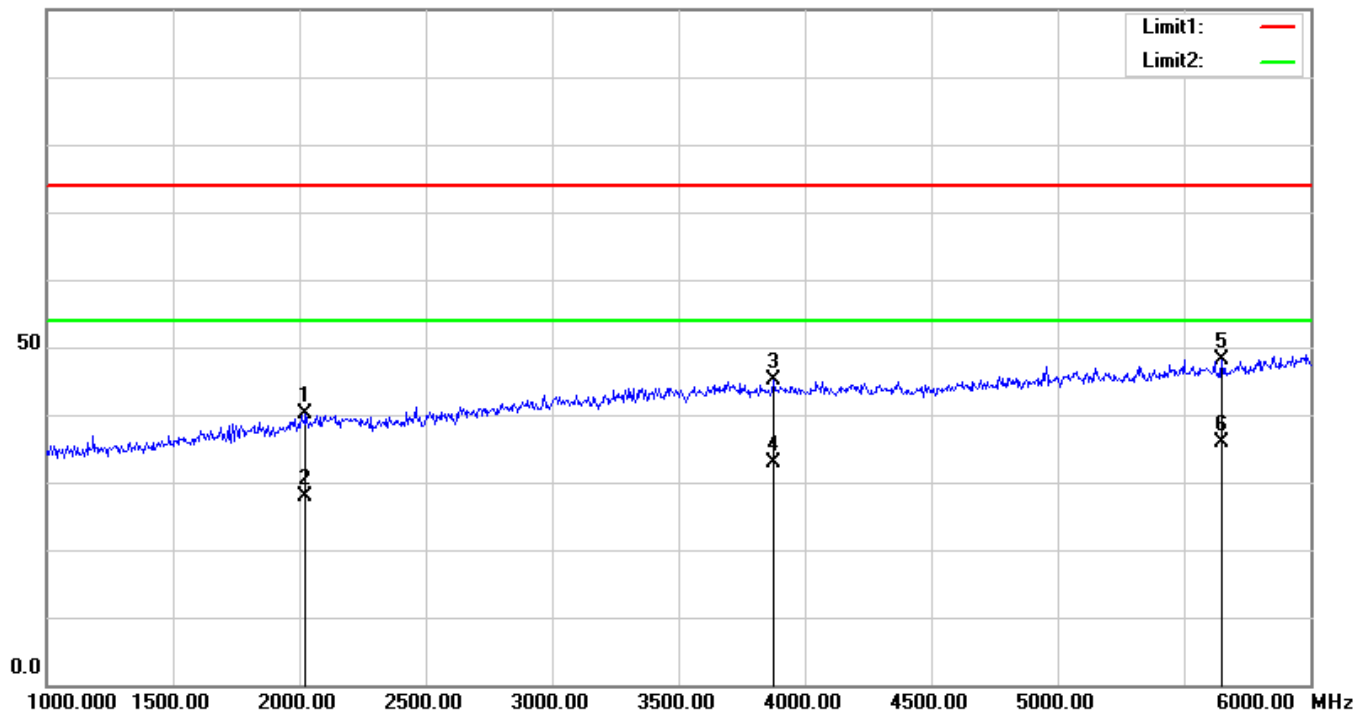


No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	3160.000	35.89	peak	6.78	42.67	74.00	31.33
2	3160.000	23.28	AVG	6.78	30.06	54.00	23.94
3	4600.000	35.70	peak	9.81	45.51	74.00	28.49
4	4600.000	23.19	AVG	9.81	33.00	54.00	21.00
5	5772.500	35.28	peak	13.38	48.66	74.00	25.34
6	5772.500	23.07	AVG	13.38	36.45	54.00	17.55

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: charging

Polarization: Vertical
Power: DC 5V
Distance: 3m

100.0 dBuV/m

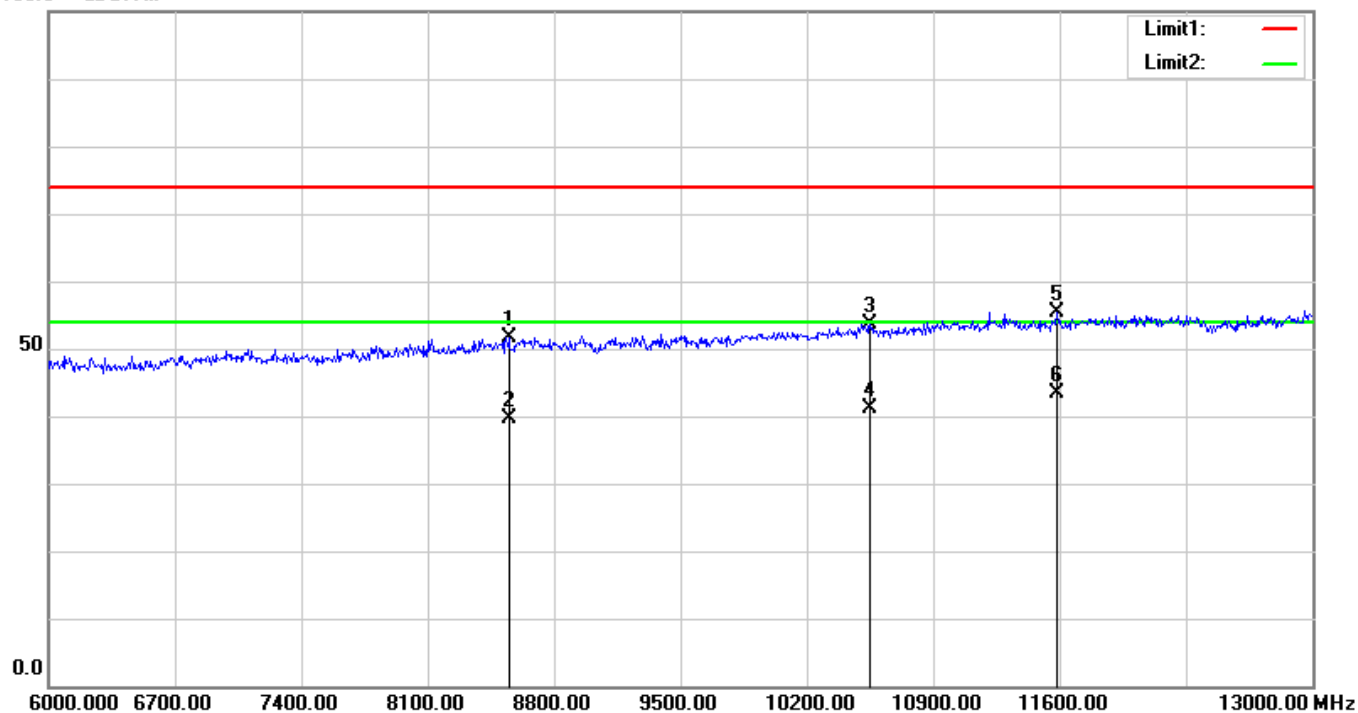


No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	2025.000	36.31	peak	3.73	40.04	74.00	33.96
2	2025.000	24.12	AVG	3.73	27.85	54.00	26.15
3	3877.500	36.17	peak	8.92	45.09	74.00	28.91
4	3877.500	24.06	AVG	8.92	32.98	54.00	21.02
5	5650.000	35.32	peak	12.77	48.09	74.00	25.91
6	5650.000	23.14	AVG	12.77	35.91	54.00	18.09

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: charging

Polarization: Horizontal
Power: DC 5V
Distance: 3m

100.0 dBuV/m

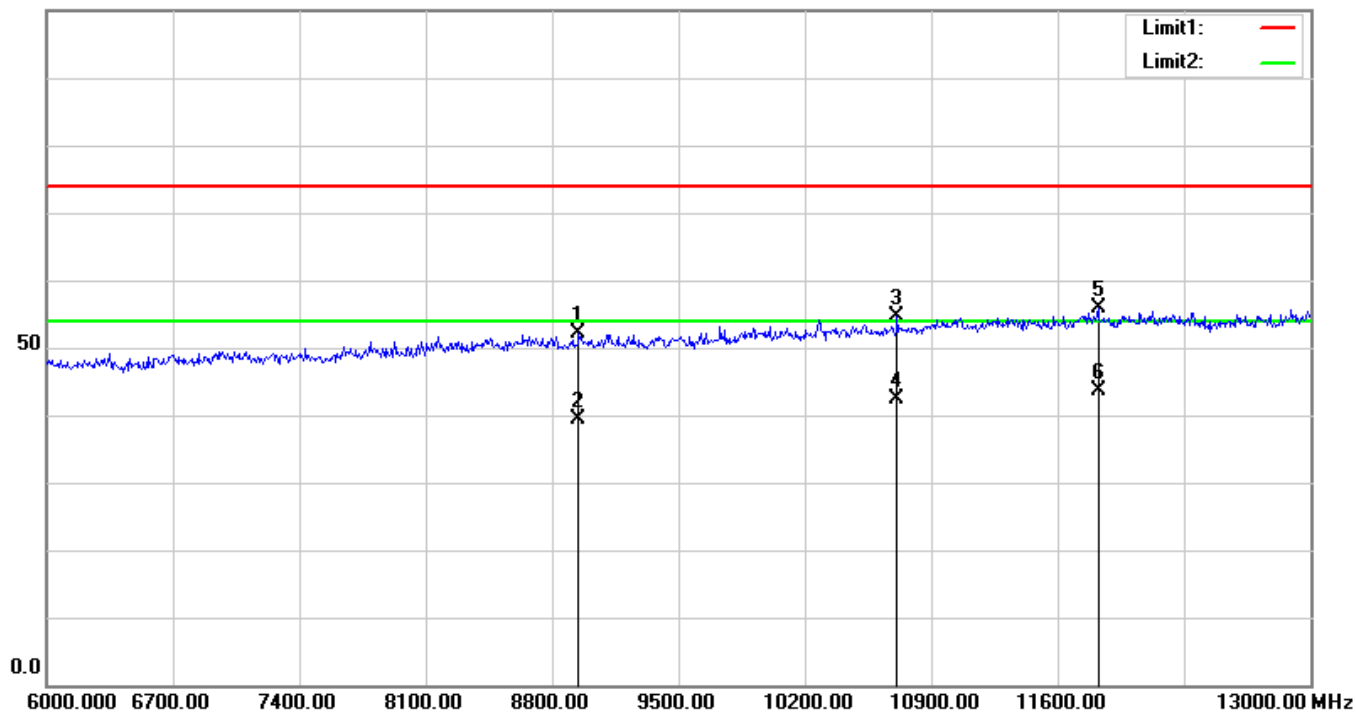


No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	8548.000	35.14	peak	16.57	51.71	74.00	22.29
2	8548.000	23.07	AVG	16.57	39.64	54.00	14.36
3	10553.500	34.45	peak	19.16	53.61	74.00	20.39
4	10553.500	22.09	AVG	19.16	41.25	54.00	12.75
5	11589.500	35.30	peak	20.17	55.47	74.00	18.53
6	11589.500	23.14	AVG	20.17	43.31	54.00	10.69

Condition: FCC Part 15B Class B
EUT: MPOW FLAME SOLO TRUEWIRELESS
EARBUDS
Model: BH503A
Test Mode: charging

Polarization: Vertical
Power: DC 5V
Distance: 3m

100.0 dBuV/m



No.	Frequency (MHz)	Reading (dBuV/m)	Detector	Corrected dB/m	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)
1	8947.000	34.79	peak	17.28	52.07	74.00	21.93
2	8947.000	22.19	AVG	17.28	39.47	54.00	14.53
3	10711.000	35.19	peak	19.33	54.52	74.00	19.48
4	10711.000	23.05	AVG	19.33	42.38	54.00	11.62
5	11824.000	35.54	peak	20.40	55.94	74.00	18.06
6	11824.000	23.16	AVG	20.40	43.56	54.00	10.44

EXHIBIT A – EUT PHOTOGRAPHS



Right



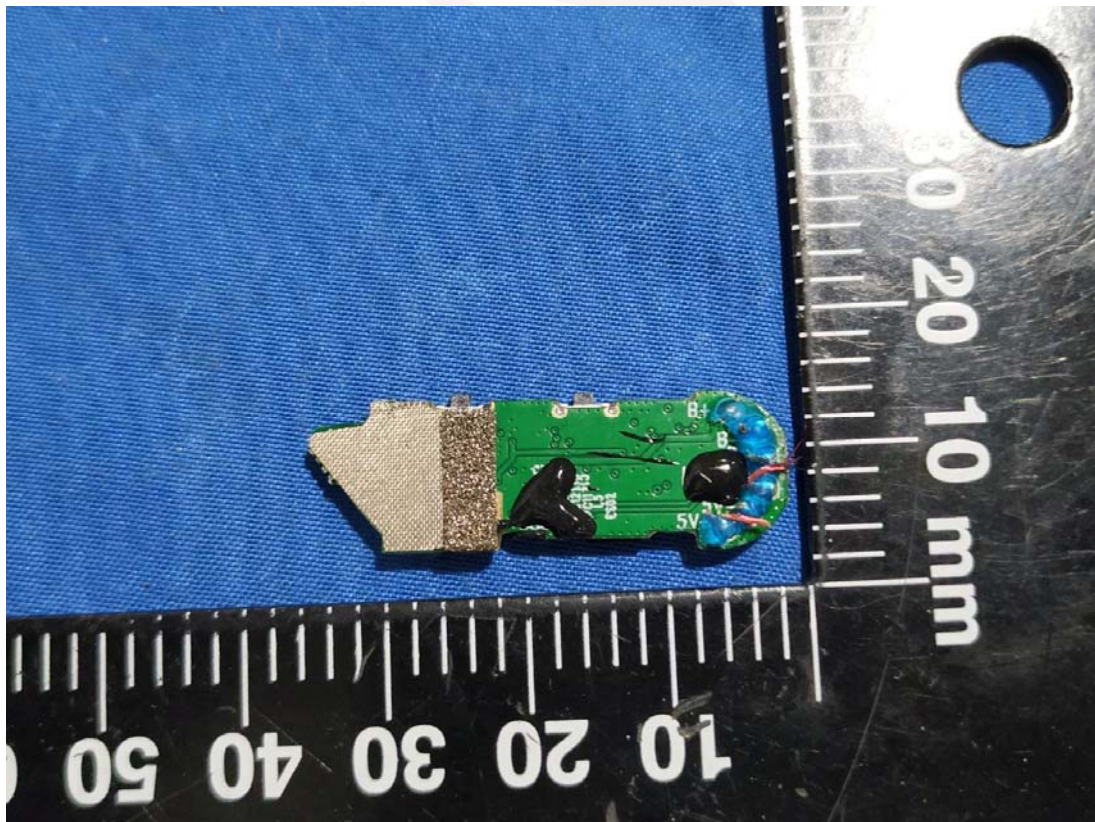


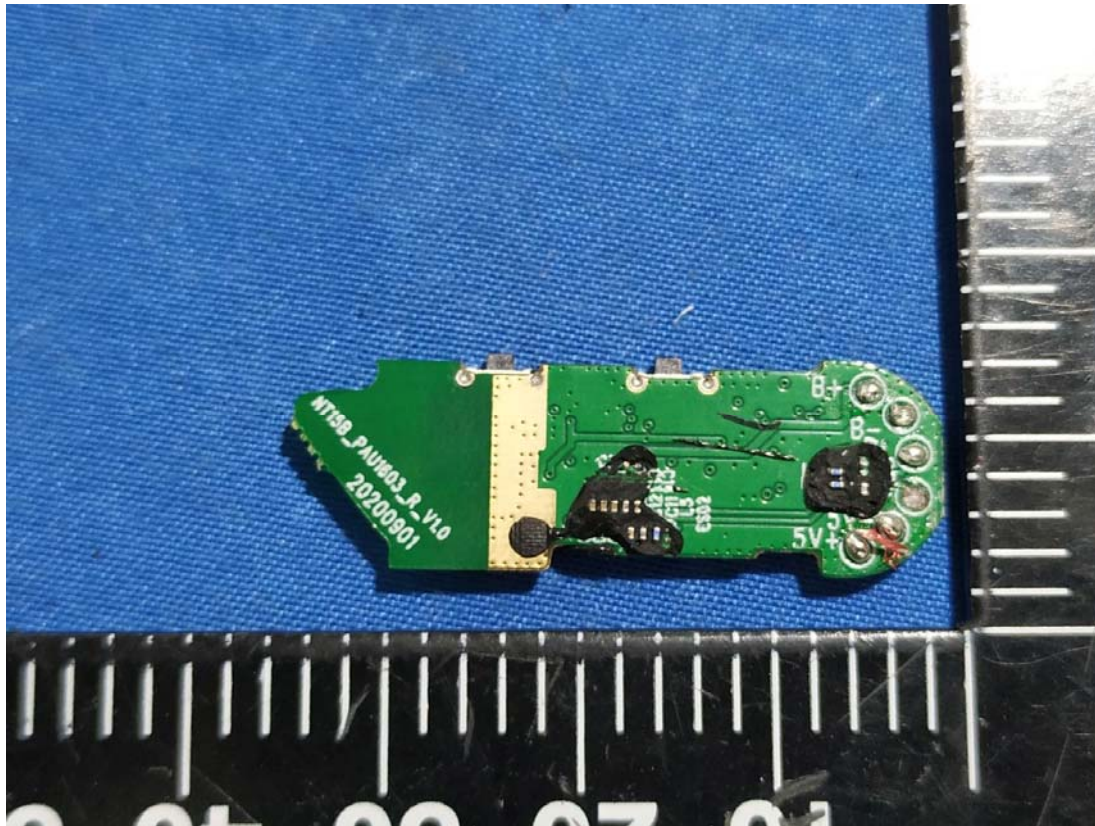


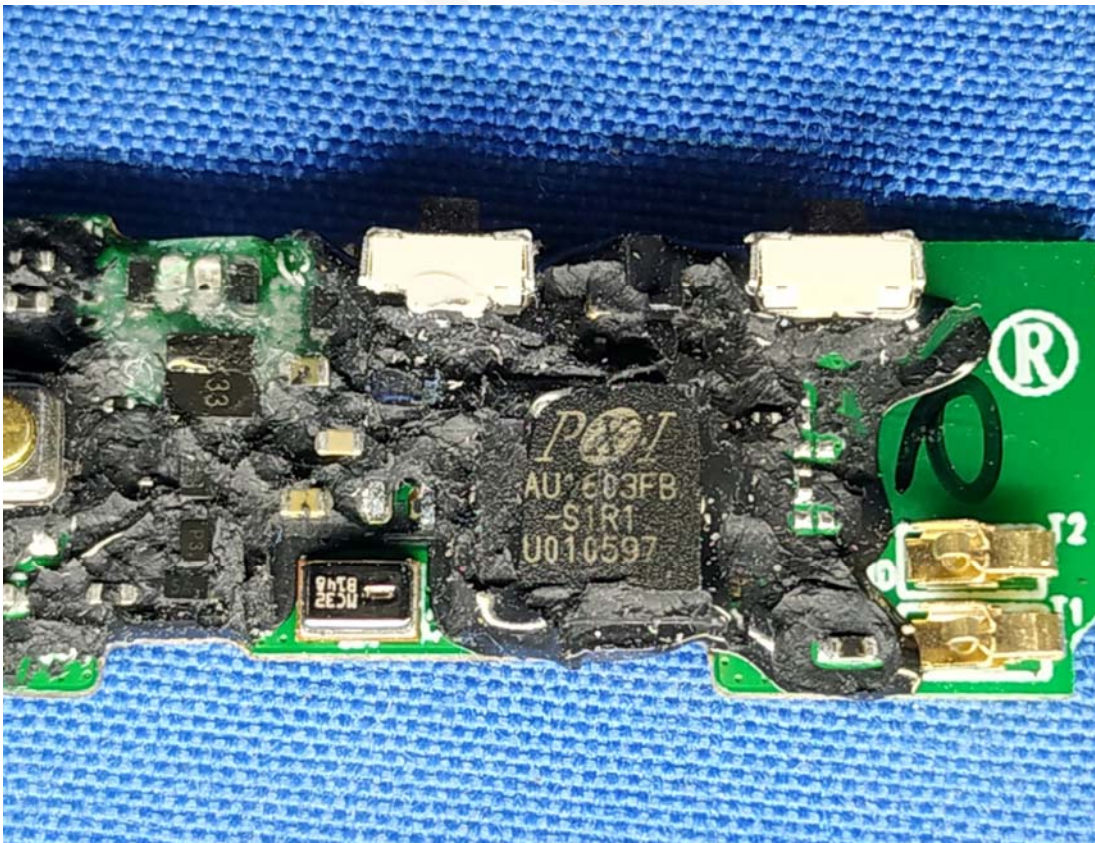
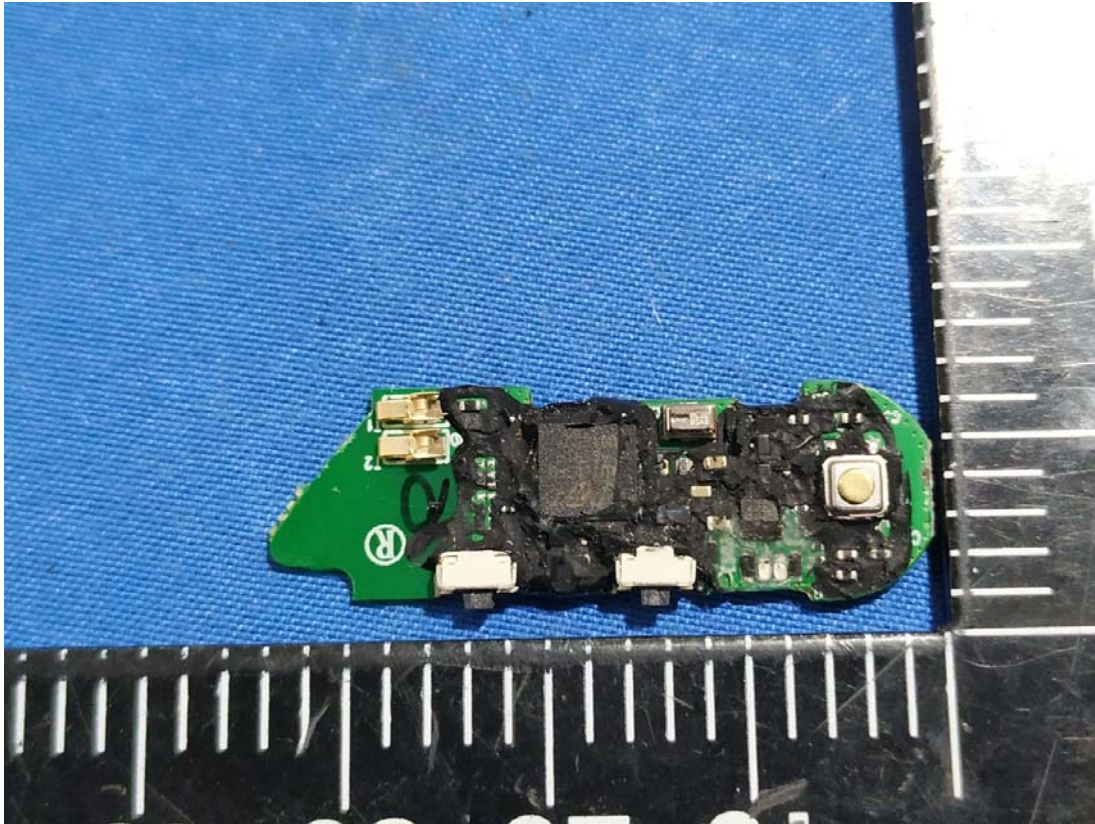




Right

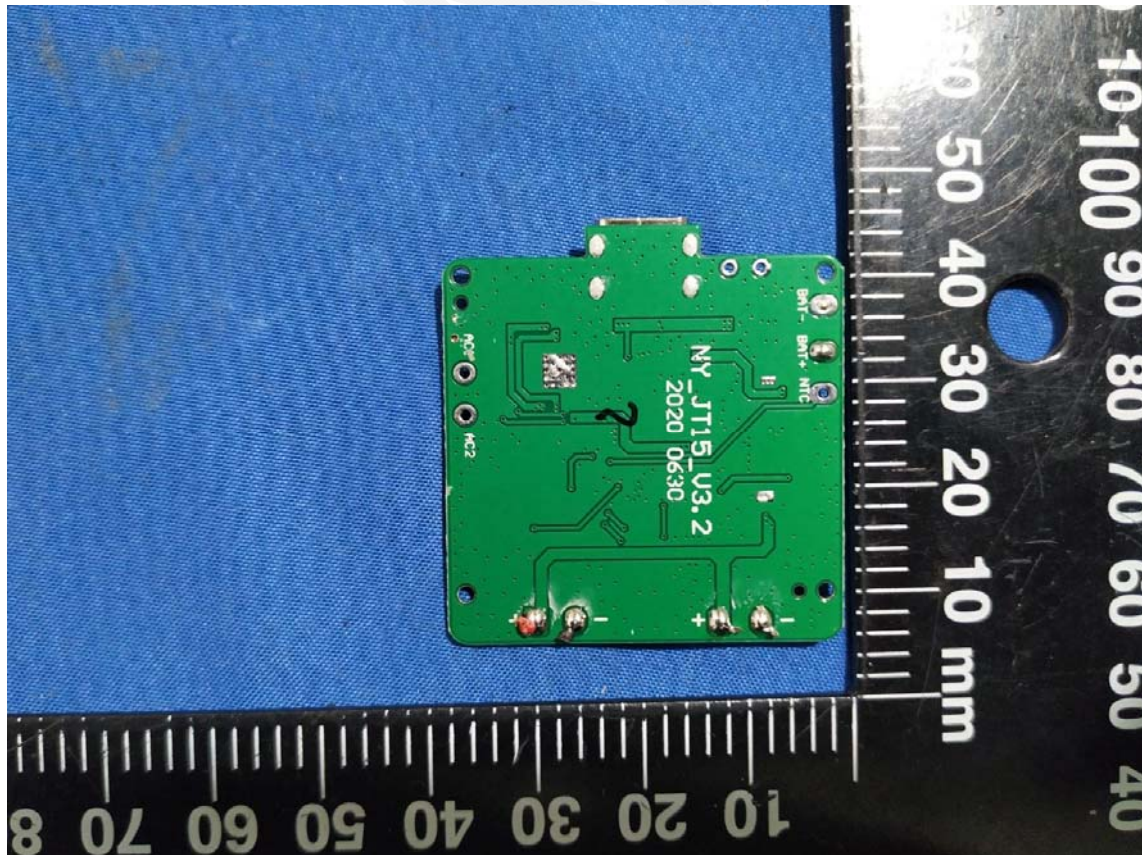


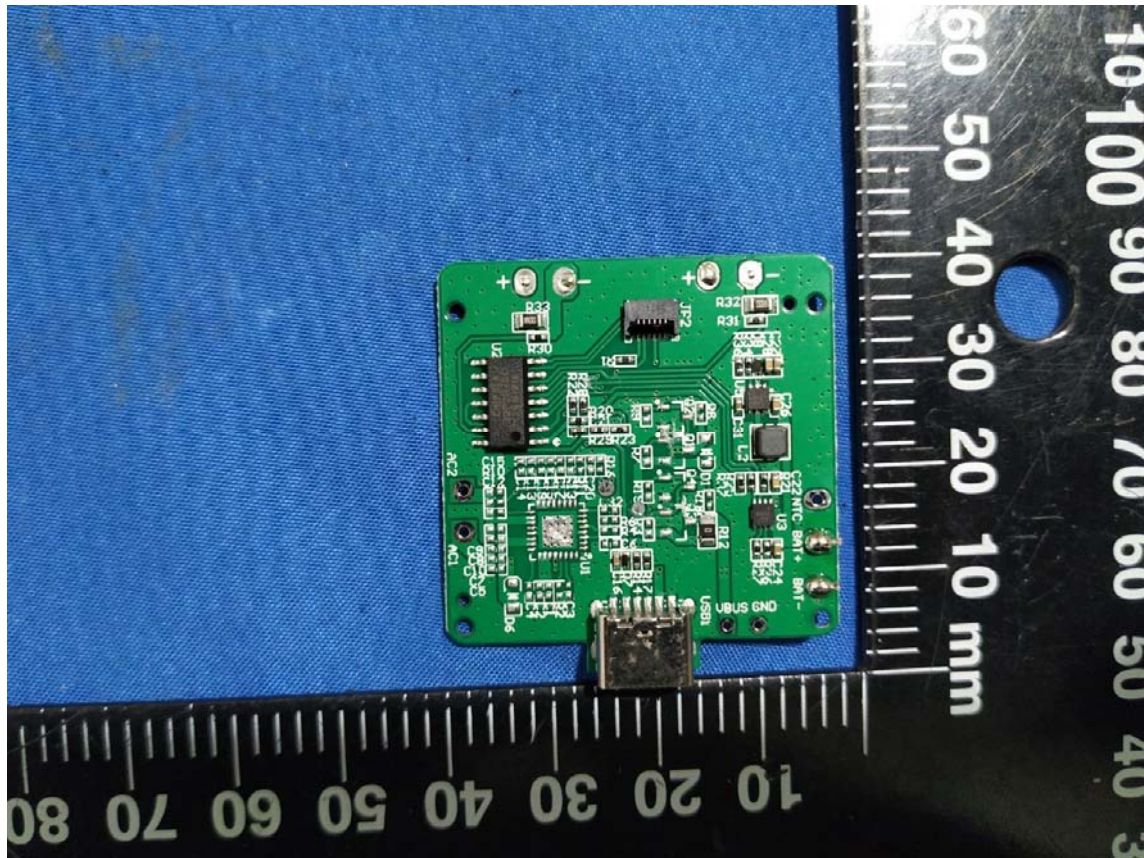




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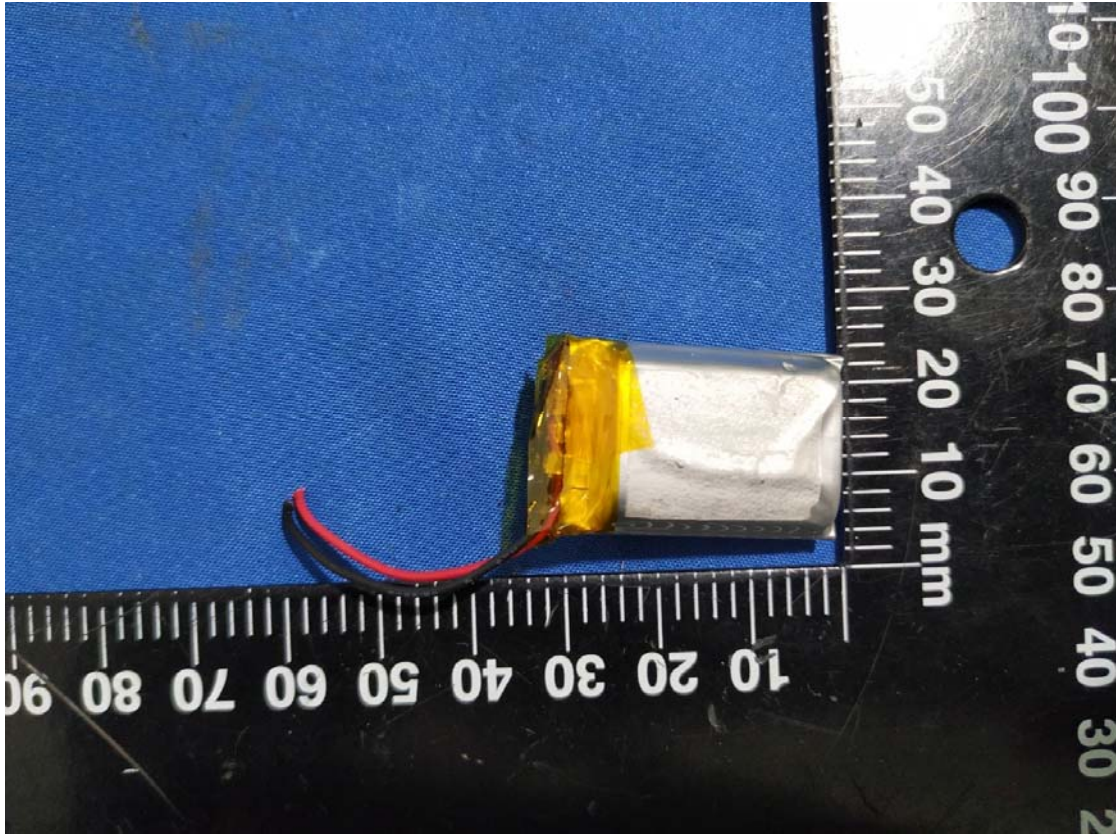


EXHIBIT B – TEST SETUP PHOTOGRAPHS

Conducted Emission -front View



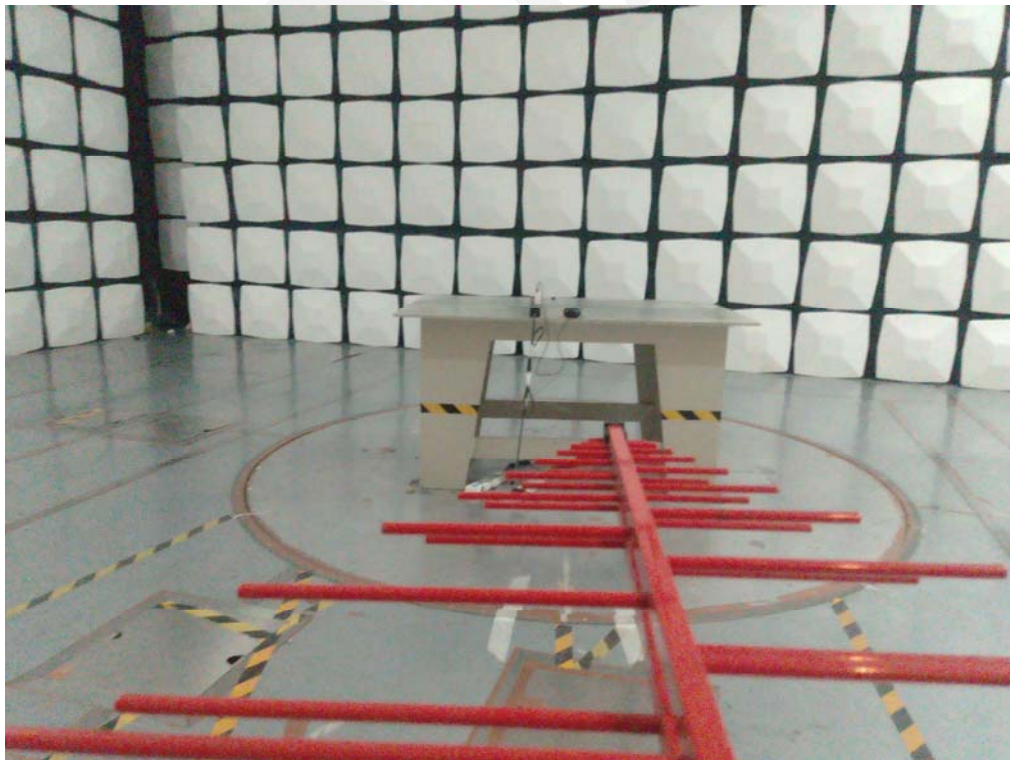
Conducted Emission -Side View



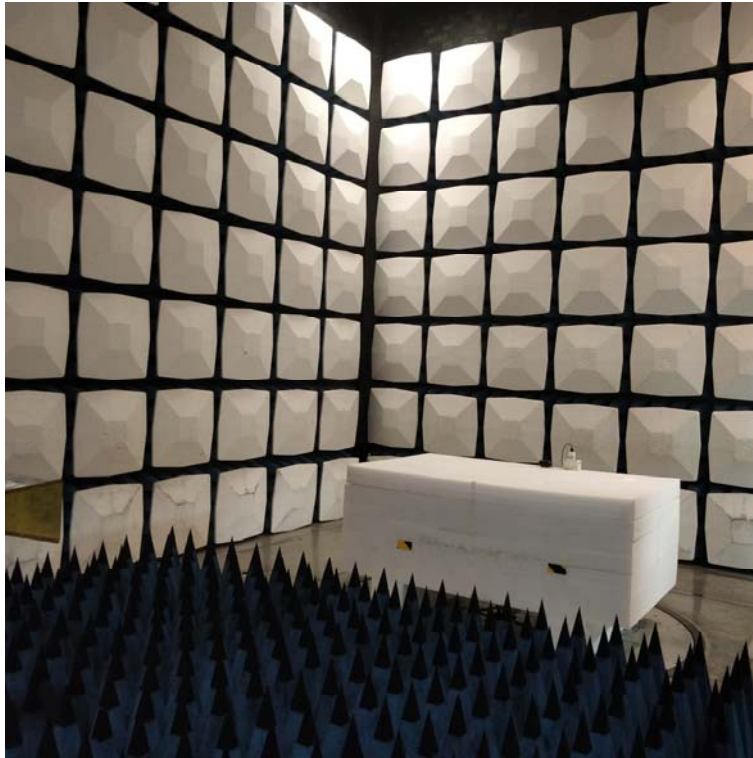
Radiated Emission Below 1G -front View



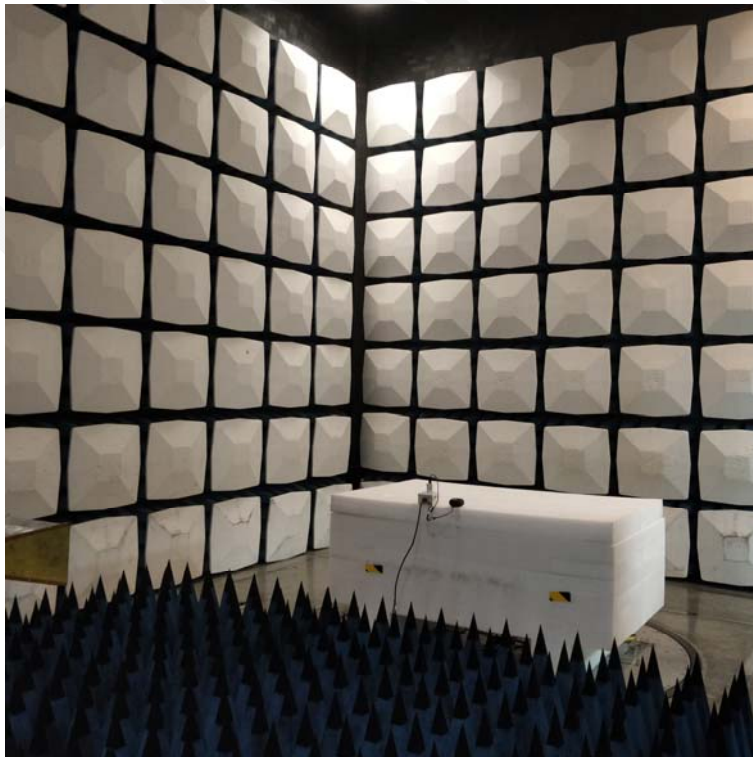
Radiated Emission Below 1G -rear View



Radiated Emission Above 1G -front View



Radiated Emission Above 1G -rear View



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