SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch.

No. 1 Workshop, M-10, Middle section, Science & Technology Park,

Shenzhen, Guangdong, China 518057

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1 COVER PAGE

FCC REPORT

Application No. :	SZEM1805004645CR
Applicant:	NEW AUDIO LLC.
Address of Applicant:	132 W. 31st 7th Floor New York, United States 10001
Manufacturer/ Factory:	NEW AUDIO LLC.
Address of Manufacturer/ Factory:	132 W. 31st 7th Floor New York, United States 10001
Product Name:	MW07 Truewireless Earphone
Model No.(EUT):	MW07
Trade Mark:	Master&Dynamic
FCC ID:	2AGA7MW07R
Standards:	47 CFR Part 15, Subpart C
Date of Receipt:	2018-06-04
Date of Test:	2018-06-12 to 2018-06-20
Date of Issue:	2018-06-25
Test Result:	**PASS ***

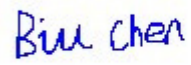
* In the configuration tested, the EUT complied with the standards specified above.

Keny Xu
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.

1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2018-06-25		Original

Authorized for issue by:				
				
		Bill Chen /Project Engineer		
				
		Eric Fu /Reviewer		

2 Test Summary

Test Item	Test Requirement	Test method	Result
Radiated Spurious emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 (2013)	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section	ANSI C63.10 (2013)	PASS

3 Contents

4 General Information

4.1 General Description of EUT

Power supply:	Right ear: Li-ion rechargeable battery DC 3.7V
Cable:	Type C cable:96cm unshielded
Operation Frequency:	10.54MHz
Antenna Type:	Loop Antenna

4.2 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	55 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Tx mode：	Keep the EUT in transmitting mode

4.3 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
Adapter	Apple	A1357 W010A051

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L2929)**

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC

Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• **VCCI**

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• **FCC –Designation Number: CN1178**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• **Industry Canada (IC)**

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

4.9 Equipment List

RE in Chamber					
Test Equipment	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. Date (yyyy-mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018-03-31	2021-03-30
EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2018-04-02	2019-04-01
Trilog-Broadband Antenna (30M-1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-28
Pre-amplifier (9kHz-1GHz)	Sonoma Instrument Co	310N	SEM005-04	2018-04-13	2019-04-12
Loop Antenna (9kHz-30MHz)	ETS-Lindgren	6502	SEM003-08	2017-08-22	2020-08-21
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2017-07-13	2018-07-12

Conducted					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-09-27	2018-09-26
Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2017-09-27	2018-09-26
Measurement Software	JS Tonscend	JS1120-2 BT/WIFI V2.	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-02	2017-07-13	2018-07-12
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2017-09-27	2018-09-26
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2017-09-27	2018-09-26

General used equipment					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-03	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2017-09-29	2018-09-28
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2017-09-29	2018-09-28
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2018-04-08	2019-04-07

5 Test results and Measurement Data

5.1 Radiated Emission

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013
Test Site:	Measurement Distance: 10m (Semi-Anechoic Chamber)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
30MHz-1GHz	Quasi-peak	100kHz	300kHz	Quasi-peak Value
Above 1GHz	Peak	1MHz	3MHz	Peak Value

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Test Procedure:

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 and 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

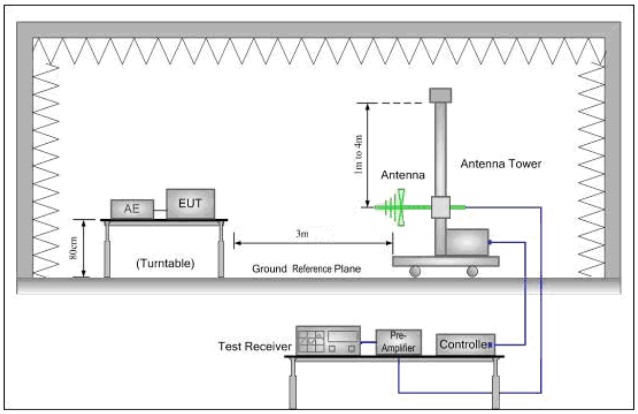
c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

g. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin

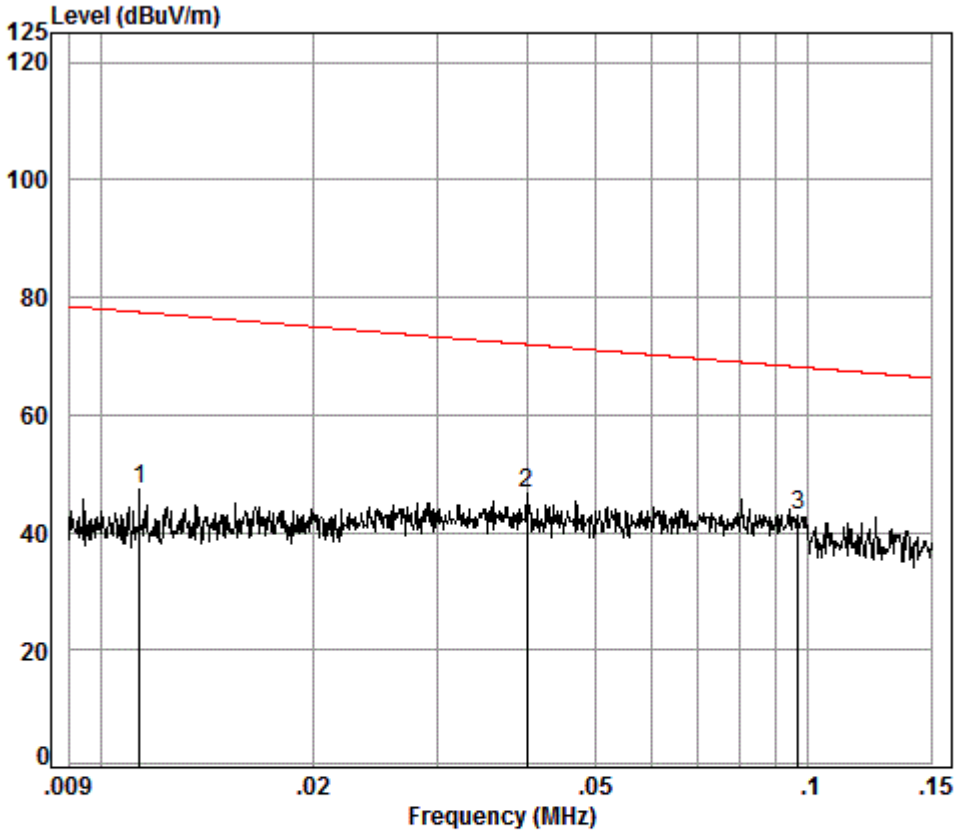
	would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. i. Repeat above procedures until all frequencies measured was complete.
Test Setup:	
 Figure 1. 30MHz to 1GHz	
Instruments Used:	Refer to section 4.10 for details
Test Mode:	NFMI mode
Test Results:	Pass

Field Strength Of The Fundamental Signal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level @10m (dBuV/m)	Level @ 30m (dBuV/m)	Limit Line @ 30m (dBuV/m)	Over Limit (dB)	Polarization
10.54	0.50	10.66	32.90	55.05	33.31	4.69	29.5	-24.81	H
10.54	0.50	10.66	32.90	53.84	32.10	3.48	29.5	-26.02	V

Below 30MHz

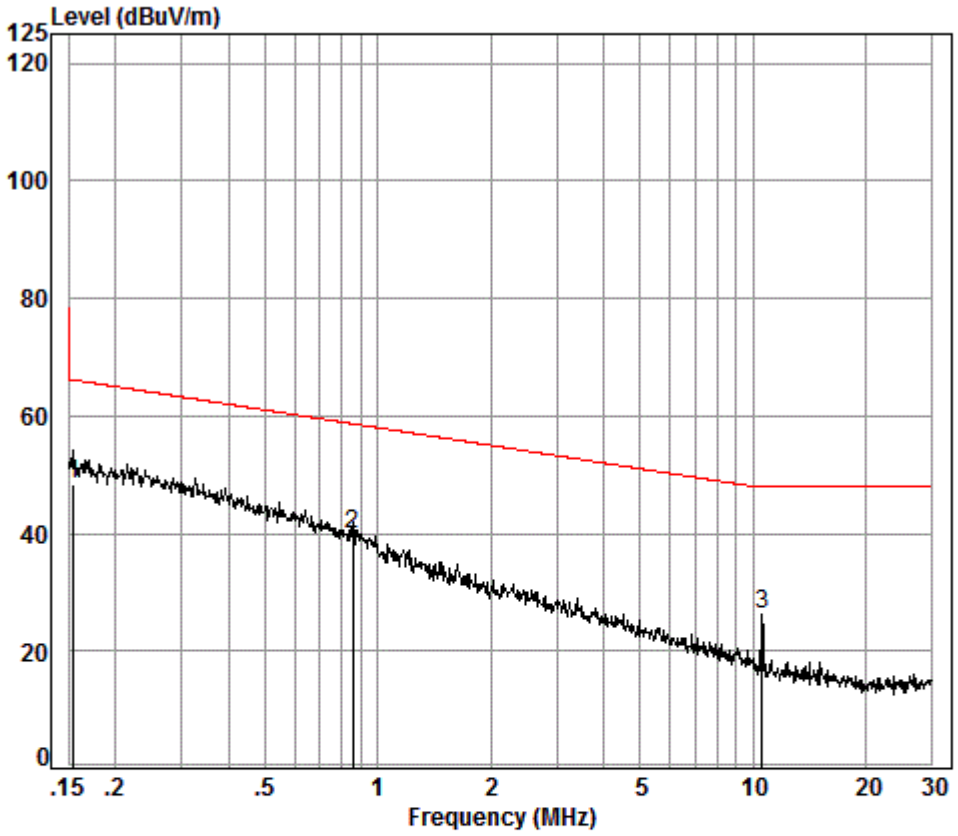
QP value:0.009MHz-0.15MHz



Condition: 10m
Job No. : 04645CR
Test Mode: TX(NFMI)

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	0.01	0.28	18.52	0.00	28.38	47.18	77.50	-30.32
2	0.04	0.14	13.03	0.00	33.43	46.60	72.00	-25.40
3 pp	0.10	0.05	12.01	0.00	30.80	42.86	68.16	-25.30

QP value:0.15MHz-30MHz

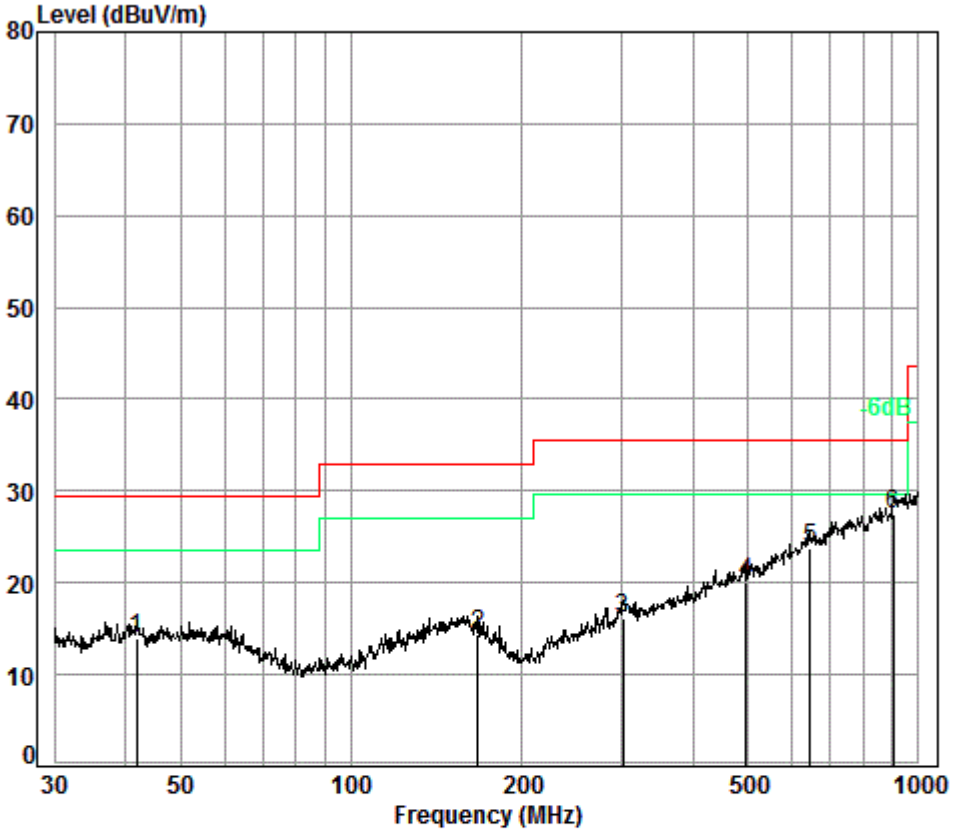


Condition: 10m
Job No. : 04645CR
Test Mode: TX(NFMI)

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	0.15	0.07	11.72	0.00	36.41	48.20	66.13	-17.93
2	0.86	0.20	12.00	0.00	27.74	39.94	58.68	-18.74
3	10.56	0.50	10.66	0.00	15.05	26.21	48.00	-21.79

QP value: 30MHz~1GHz

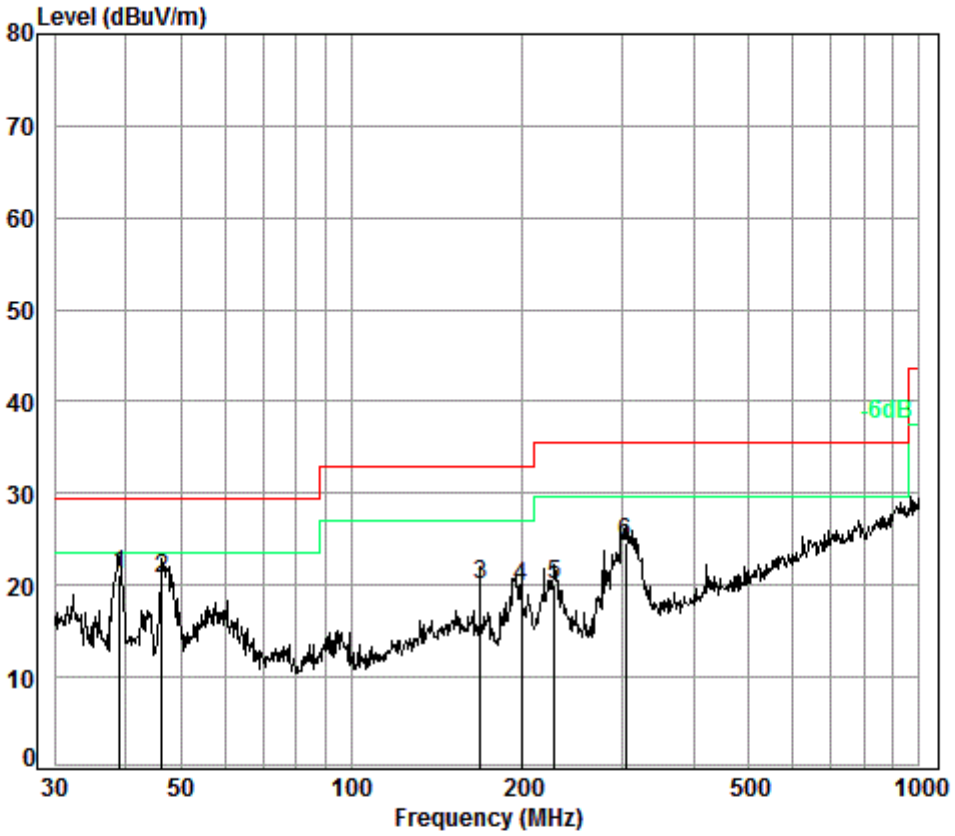
Horizontal



Condition: 10m HORIZONTAL
Job No. : 04645CR
Test Mode: TX(NFMI)

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	41.86	6.80	13.16	32.54	26.47	13.89	29.50	-15.61
2	167.24	7.50	12.68	32.52	26.72	14.38	33.00	-18.62
3	301.42	8.06	12.70	32.44	27.78	16.10	35.60	-19.50
4	497.68	8.59	16.76	32.42	27.19	20.12	35.60	-15.48
5	645.12	9.01	19.48	32.40	27.72	23.81	35.60	-11.79
6 pp	903.31	9.50	22.27	31.51	27.12	27.38	35.60	-8.22

Vertical



Condition: 10m VERTICAL
Job No. : 04645CR
Test Mode: TX(NFMI)

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	39.16	6.78	13.21	32.56	33.66	21.09	29.50	-8.41
2	46.34	6.83	12.87	32.52	33.64	20.82	29.50	-8.68
3	168.41	7.50	12.57	32.52	32.47	20.02	33.00	-12.98
4	199.29	7.60	9.32	32.53	35.49	19.88	33.00	-13.12
5	227.69	7.74	10.64	32.50	34.27	20.15	35.60	-15.45
6	303.54	8.06	12.76	32.44	36.14	24.52	35.60	-11.08

Below 1GHz

The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$L_3 / L_{10} = D_{10} / D_3$

Note:

L_3: Level @ 3m distance. Unit: uV/m;

L_{10}: Level @ 10m distance. Unit: uV/m;

D_3: 3m distance. Unit: m

D_{10}: 10m distance. Unit: m

The level at 3m test distance is below:

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Margin (dB)	Ant. Polarization
41.86	13.89	4.95	16.50	24.35	40.00	-15.65	H
167.24	14.38	5.24	17.45	24.84	43.50	-18.66	H
301.42	16.10	6.38	21.28	26.56	46.00	-19.44	H
497.68	20.12	10.14	33.80	30.58	46.00	-15.42	H
645.12	23.81	15.51	51.69	34.27	46.00	-11.73	H
903.31	27.38	23.39	77.96	37.84	46.00	-8.16	H
39.16	21.09	11.34	37.79	31.55	40.00	-8.45	V
46.34	20.82	10.99	36.63	31.28	40.00	-8.72	V
168.41	20.02	10.02	33.41	30.48	43.50	-13.02	V
199.29	19.88	9.86	32.88	30.34	43.50	-13.16	V
227.69	20.15	10.17	33.91	30.61	46.00	-15.39	V
303.54	24.52	16.83	56.09	34.98	46.00	-11.02	V

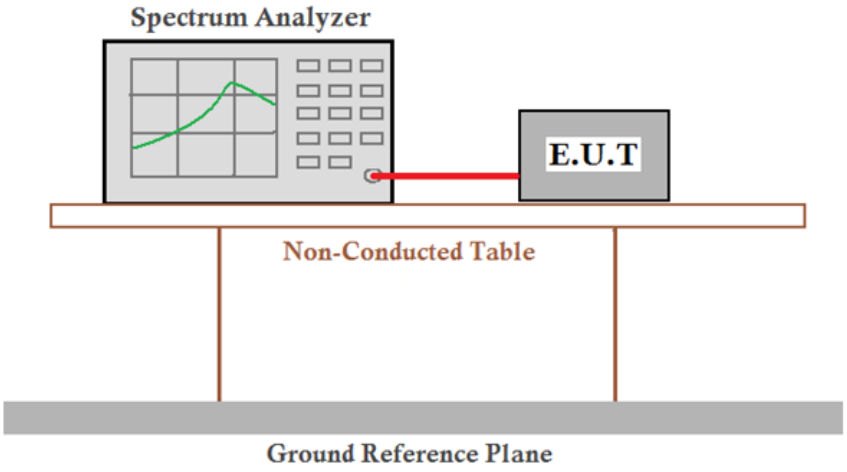
Remark:

1)The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

2)Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

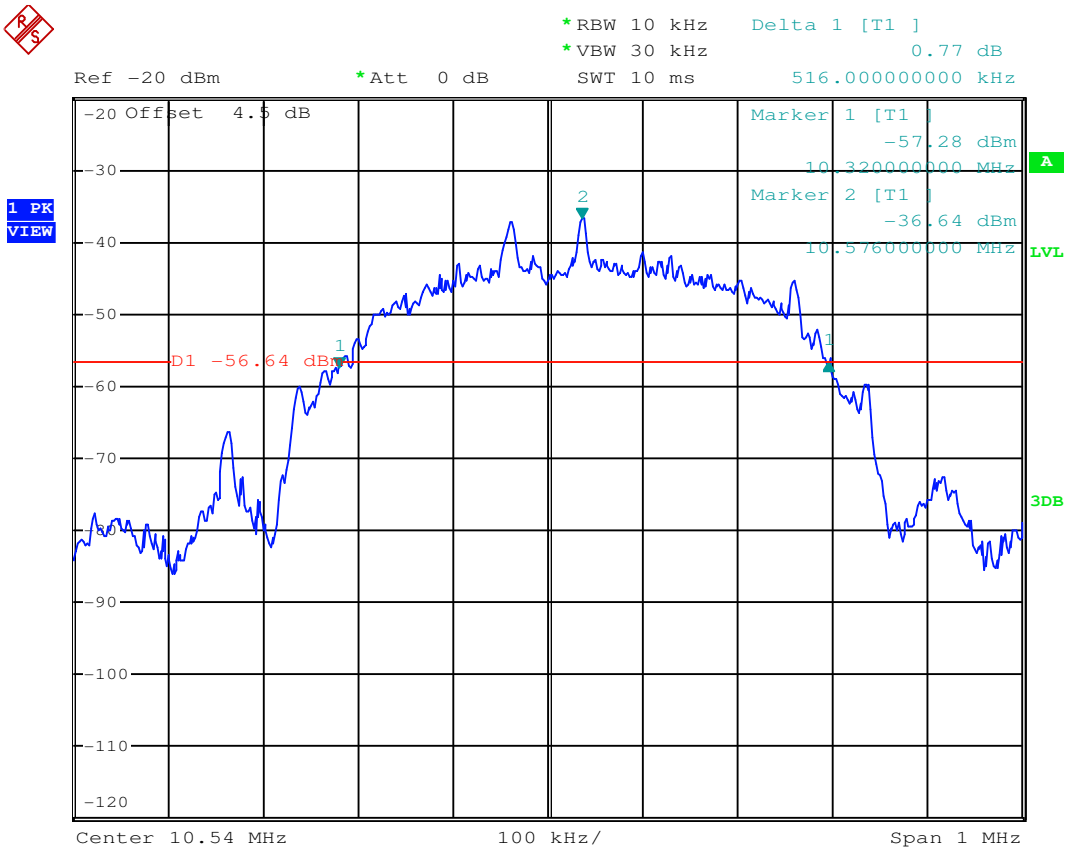
3)Emissions from 9kHz to 30 MHz is too low to be find, so it is not reported.

5.2 20dB Occupy Bandwidth

Test Requirement:	47 CFR Part 15C
Test Method:	ANSI C63.10:2013 Section 7.8.7
Test Setup:	
Limit:	NA
Final Test Mode:	Transmitting mode
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

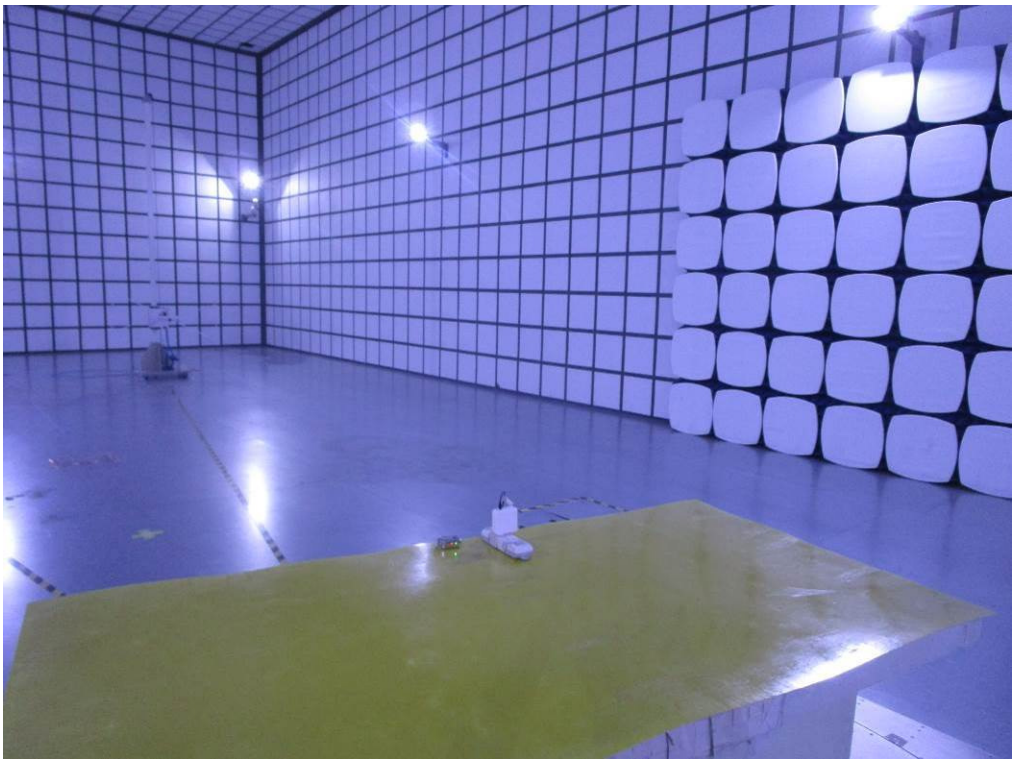
Measurement Data

Test channel	20dB Occupy Bandwidth (kHz)
10.54MHz	516

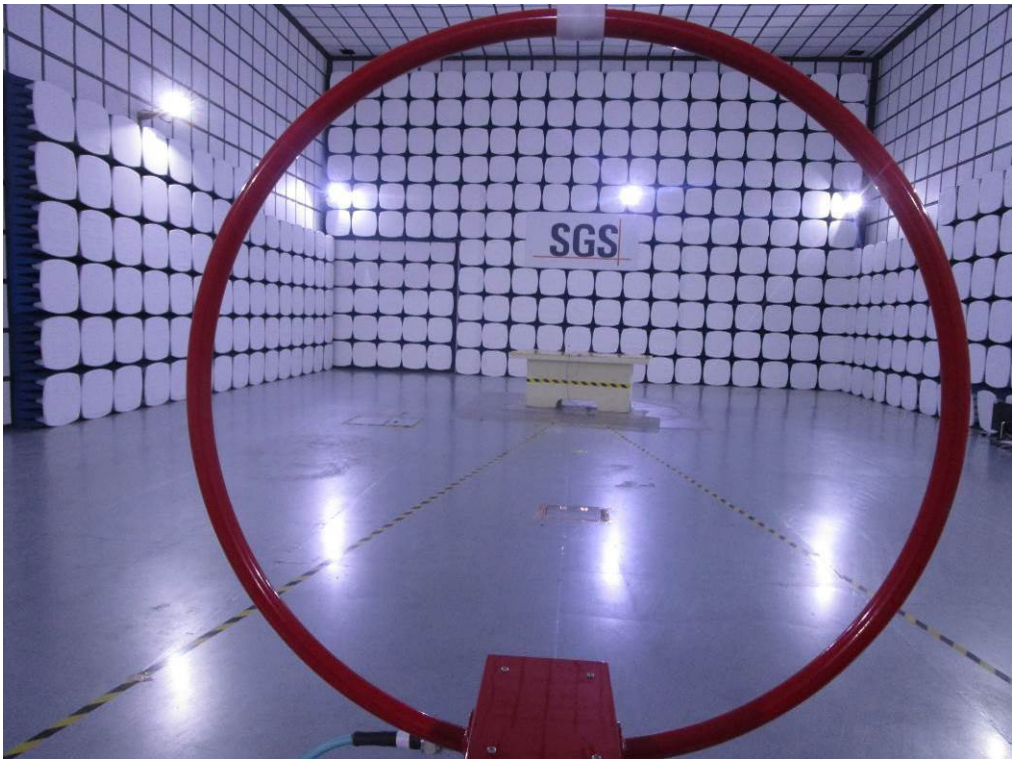


6 Photographs - EUT Test Setup

6.1 Radiatd Emission (30MHz-1000MHz)



6.2 Radiated Spurious Emission (Below 30MHz)



- End of the Report -