MEASUREMENT REPORT

FCC Part 15B

FCC ID:	2ACVFM-900B
Applicant:	Shenzhen ChangTaiWei Electronic CO., LTD
Application Type:	Certification
Product:	Walkie Talkie
Model No.:	M-900
FCC Rule Part(s):	FCC Part 15 Subpart B: 2021, Class B
Test Procedure(s):	ANSI C63.4: 2014
Result:	Complies
Test Date:	March 17 ~ 19, 2021

Reviewed By: Vincent Yu

Approved By: Robin Wu

ACCREDITED
TESTING LABORATORY
CERTIFICATE #3628.02

The test results relate only to the samples tested.
This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.4-2014. Test results reported herein relate only to the item(s) tested.
The test report shall not be reproduced except in full without the written approval of MRT Technology (Shenzhen) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
2102RSU072-U2	Rev. 01	Initial Report	03-30-2021	Valid

CONTENTS

1. GENERAL INFORMATION

1.1. Applicant

Shenzhen ChangTaiWei Electronic CO., LTD

5/F.,6 Block, XinGu Industrial Zone, GuShu Village, XiXiang Town, BaoAn District, Shenzhen City, China

1.2. Manufacturer

Shenzhen ChangTaiWei Electronic CO., LTD

5/F.,6 Block, XinGu Industrial Zone, GuShu Village, XiXiang Town, BaoAn District, Shenzhen City, China

1.3. Testing Facility

☐	**Test Site – MRT Suzhou Laboratory**	
	Laboratory Location (Suzhou - Wuzhong)	
	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China	
	Laboratory Location (Suzhou - SIP)	
	4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China	
	Laboratory Accreditations	
	A2LA: 3628.01	CNAS: L10551
	FCC: CN1166	ISED: CN0001
	VCCI: R-20025, G-20034, C-20020, T-20020	
☒	**Test Site – MRT Shenzhen Laboratory**	
	Laboratory Location (Shenzhen)	
	1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China	
	Laboratory Accreditations	
	A2LA: 3628.02	CNAS: L10551
	FCC: CN1284	ISED: CN0105
☐	**Test Site – MRT Taiwan Laboratory**	
	Laboratory Location (Taiwan)	
	No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.)	
	Laboratory Accreditations	
	TAF: L3261-190725	
	FCC: 291082, TW3261	ISED: TW3261

2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	Walkie Talkie
Model No.:	M-900
Frequency Range:	462.5625 ~ 462.7125MHz (1~7 channel) 467.5625 ~ 467.7125MHz (8~14 channel) 462.5500 ~ 462.7250MHz (15~22 channel)
Working Voltage:	3.6V ~ 4.5V
Type of Modulation:	FM
Antenna Type:	Spring antenna / Internal
Accessory	
Adapter:	Model No.: W&T-AD1806a050120UU Input: 100-240V ~ 50/60Hz 0.25A Output: 5V⎓1.2A

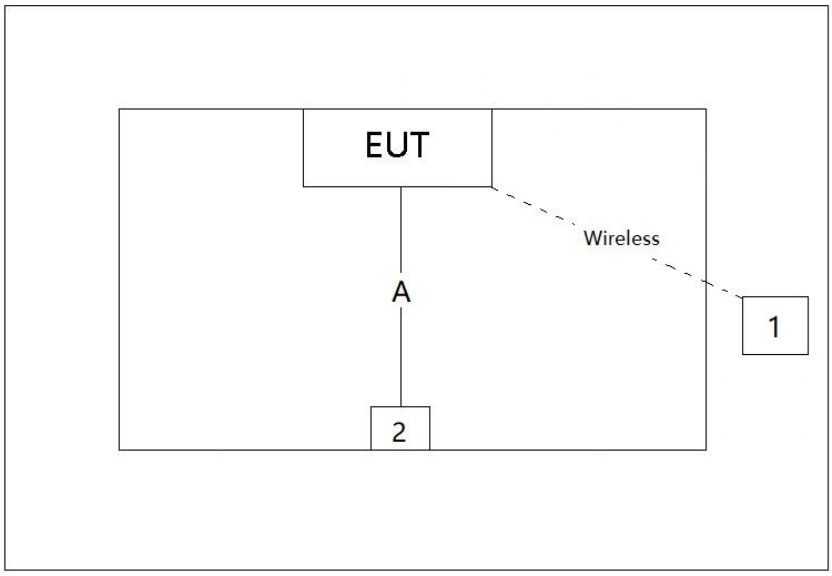
2.2. Test Mode

Test Mode
Mode 1: Receiver Mode. Mode 2: Charging Mode.

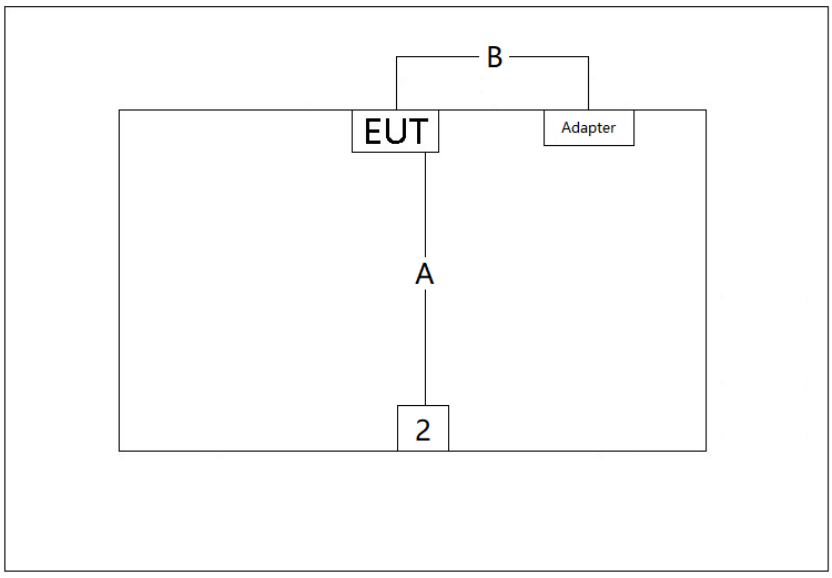
2.3. Configuration of Tested System

ANSI C63.4:2014 was used to reference the appropriate EUT setup for radiated emissions testing and AC line conducted emission testing.

Connection Diagram (Mode 1)



Connection Diagram (Mode 2)



Cable Type		Cable Description
A	Audio Cable	Non-Shielding, < 1.0m
B	USB Cable	Non-Shielding, < 1.5m

2.4. Test System Details

Product		Manufacturer	Model No.
1	Walkie Talkie	Shenzhen ChangTaiWei Electronic CO., LTD	M-900
2	Headset	Shenzhen ChangTaiWei Electronic CO., LTD	N/A

2.5. Test Procedure

1	Setup the EUT and simulators as shown on above.
2	Mode 1: Make the EUT working on receiver mode. Mode 2: Make the EUT charging by adapter.
3	Begin to test.

2.6. EMI Suppression Device(s)/Modifications

No EMI suppression device(s) were added and/or no modifications were made during testing.

3. TEST EQUIPMENT CALIBRATION DATE

Conducted Emission (NS-SR2)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESL3	MRTSUE06575	1 year	2021/07/09
Two-Line V-Network	R&S	ENV216	MRTSUE06578	1 year	2021/07/09
Two-Line V-Network	R&S	ENV216	MRTSUE06577	1 year	2021/07/09
8-WIRE ISN	R&S	ENY81	MRTSUE06579	1 year	2021/07/09
8-WIRE ISN for CAT6	R&S	ENY81-CA6	MRTSUE06580	1 year	2021/06/23
Temperature/Humidity Meter	DELI	NO.8813	MRTSUE06587	1 year	2021/07/08
Shielding Anechoic Chamber	BOOMWAVE	SR2	MRTSUE06551	5 year	2024/06/04

Radiated Emission (NS- AC1)

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cal. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06575	1 year	2021/07/09
EXA Signal Analyzer	Keysight	N9010A	MRTSUE06195	1 year	2021/04/14
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06573	1 year	2021/07/03
Broad-Band Horn Antenna	Schwarzbeck	9120D	MRTSUE06572	1 year	2021/07/03
Horn Antenna	Schwarzbeck	BBHA 9170	MRTSUE06292	1 year	2021/10/24
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06574	1 year	2021/07/13
Thermal Hygrometer	DELI	NO.8813	MRTSUE06588	1 year	2021/07/08
Anechoic Chamber	BOOMWAVE	AC1	MRTSUE06496	1 year	2021/07/25

Software	Version	Function
EMI Software	V3	EMI Test Software

4. MEASUREMENT UNCERTAINTY

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k = 2.

Conducted Emission Measurement
The maximum measurement uncertainty is evaluated as: 9kHz~150kHz: 3.74dB 150kHz~30MHz: 3.44dB
Radiated Emission Measurement
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 5.04dB 300MHz~1GHz: 4.95dB 1GHz~40GHz: 6.40dB Vertical: 30MHz~300MHz: 5.24dB 300MHz~1GHz: 6.03dB 1GHz~40GHz: 6.40dB

5. TEST RESULT

5.1. Summary

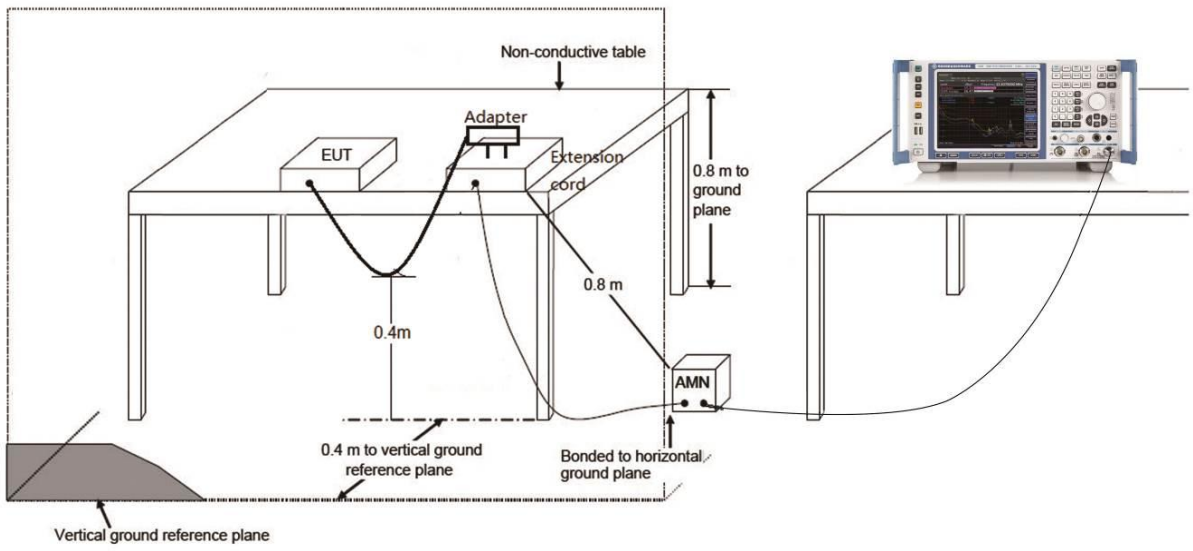
FCC Part Section(s)	Test Description	Test Result
15.107	Conducted Emissions	Pass
15.109	Radiated Emissions	Pass

5.2. Conducted Emission Measurement

5.2.1.Test Limit

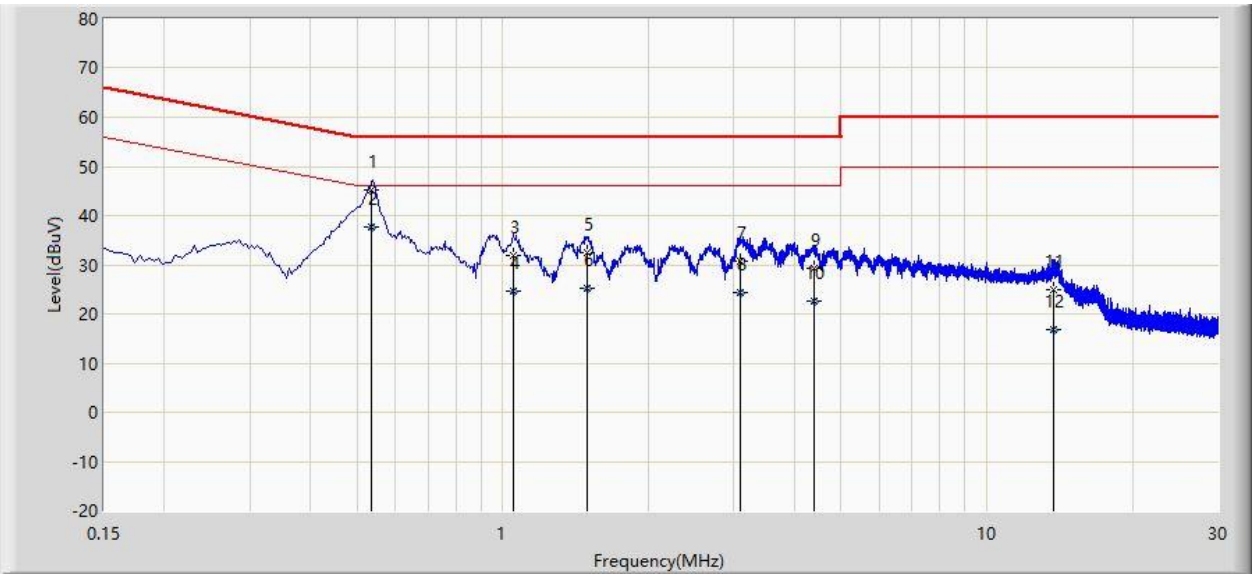
FCC Part 15.107 Limit		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 ~ 0.50	66 ~ 56	56 ~ 46
0.50 ~ 5.0	56	46
5.0 ~ 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

5.2.2.Test Setup



5.2.3.Test Result

Site: NS-SR2	Time: 2021/03/19 - 16:16
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Flag Yang
Probe: ENV216_102493_Filter On	Polarity: Line
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	

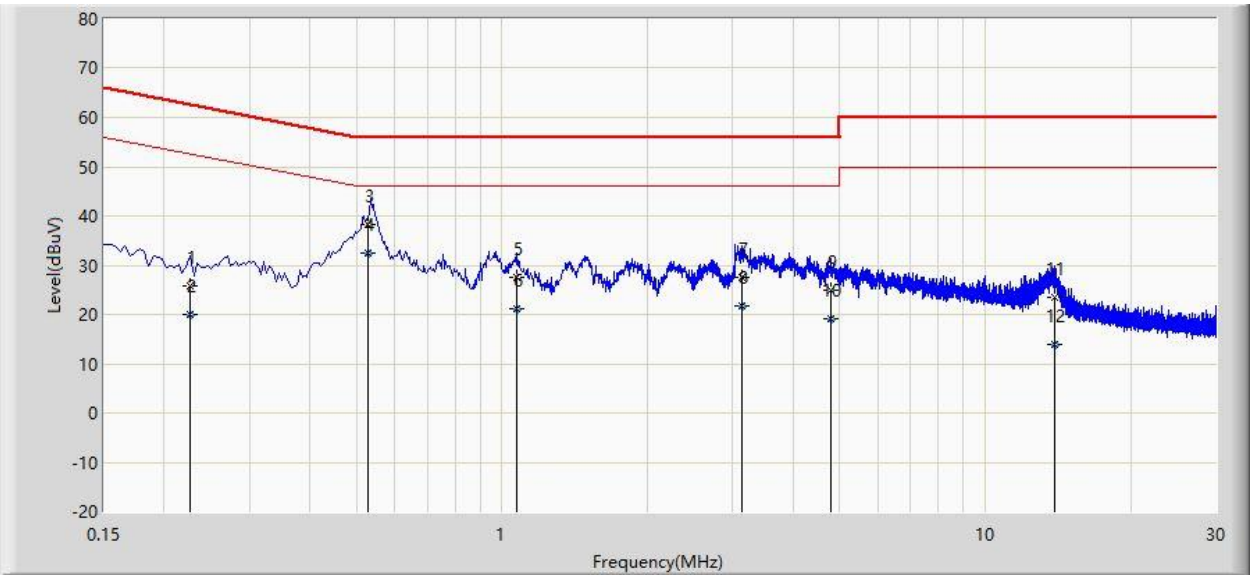


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1			0.536	45.313	35.338	-10.687	56.000	9.975	QP
2		*	0.536	37.793	27.818	-8.207	46.000	9.975	AV
3			1.050	31.907	22.115	-24.093	56.000	9.792	QP
4			1.050	24.647	14.855	-21.353	46.000	9.792	AV
5			1.494	32.480	22.757	-23.520	56.000	9.723	QP
6			1.494	25.136	15.413	-20.864	46.000	9.723	AV
7			3.086	30.817	21.114	-25.183	56.000	9.703	QP
8			3.086	24.353	14.651	-21.647	46.000	9.703	AV
9			4.394	29.278	19.553	-26.722	56.000	9.725	QP
10			4.394	22.512	12.787	-23.488	46.000	9.725	AV
11			13.774	24.793	14.903	-35.207	60.000	9.890	QP
12			13.774	16.685	6.795	-33.315	50.000	9.890	AV

Note: Measure Level (dBµV) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

Site: NS-SR2	Time: 2021/03/19 - 16:24
Limit: FCC_Part15.107_CE_AC Power_Class B	Engineer: Flag Yang
Probe: ENV216_102493_Filter On	Polarity: Neutral
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1			0.226	25.748	16.004	-36.847	62.595	9.744	QP
2			0.226	19.999	10.254	-32.597	52.595	9.744	AV
3			0.527	38.304	28.314	-17.696	56.000	9.990	QP
4		*	0.527	32.603	22.613	-13.397	46.000	9.990	AV
5			1.070	27.416	17.634	-28.584	56.000	9.782	QP
6			1.070	21.253	11.471	-24.747	46.000	9.782	AV
7			3.126	27.599	17.892	-28.401	56.000	9.707	QP
8			3.126	21.770	12.063	-24.230	46.000	9.707	AV
9			4.802	24.997	15.267	-31.003	56.000	9.730	QP
10			4.802	19.044	9.314	-26.956	46.000	9.730	AV
11			13.898	23.575	13.651	-36.425	60.000	9.924	QP
12			13.898	14.019	4.095	-35.981	50.000	9.924	AV

Note: Measure Level (dBµV) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + LISN Factor (dB)

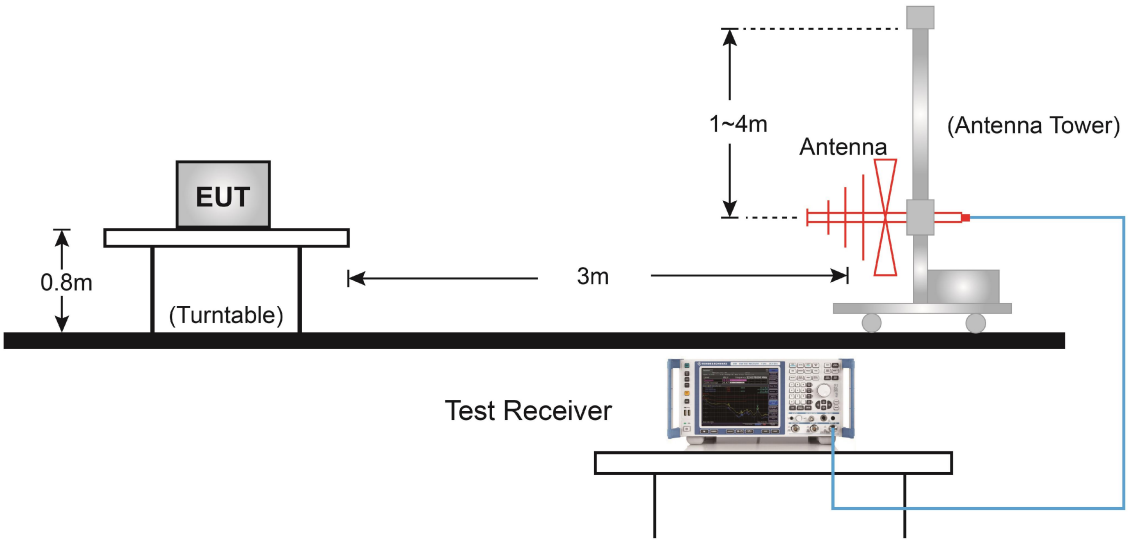
5.3. Radiated Emission Measurement

5.3.1.Test Limit

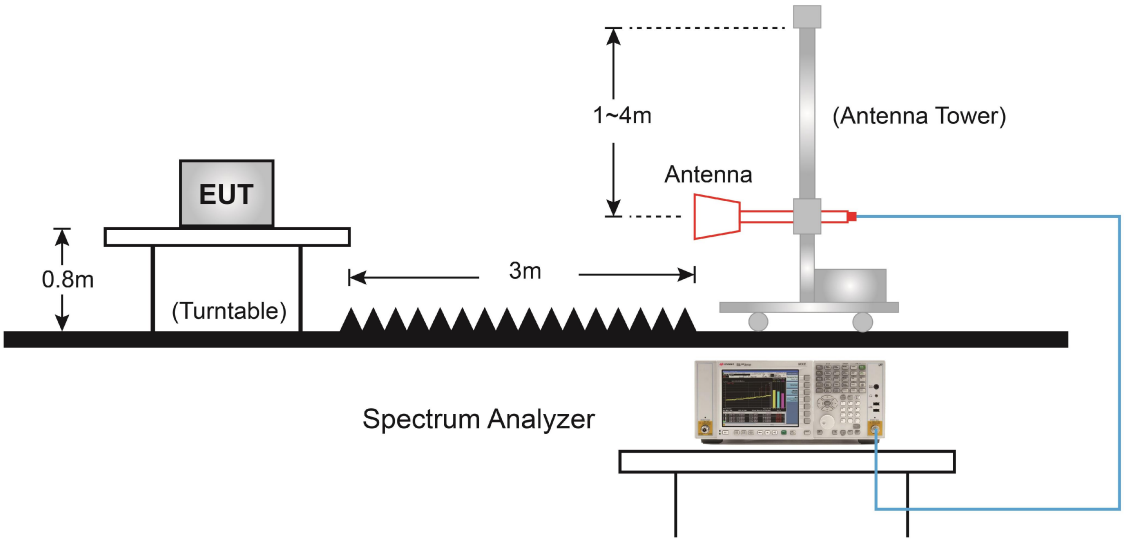
FCC Part 15.109 Limit		
Frequency (MHz)	Distance (m)	Level (dBμV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54
Note 1: The lower limit shall apply at the transition frequency. Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. Note 3: E field strength (dBμV/m) = 20 log E field strength (uV/m)		

5.3.2.Test Setup

Below 1GHz Test Setup:

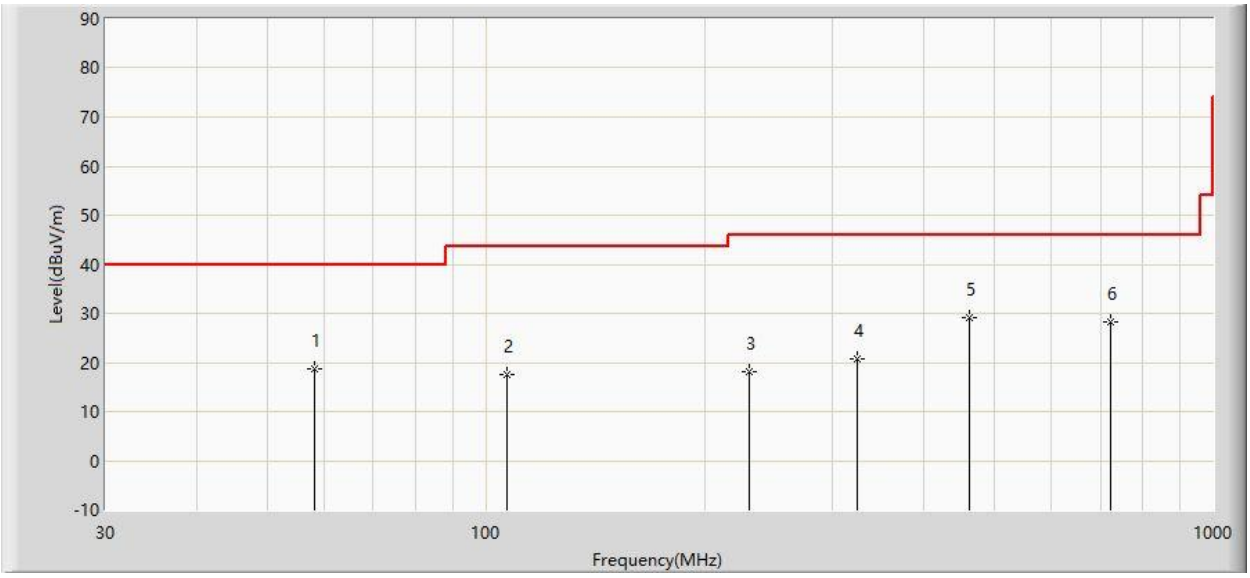


Above 1GHz Test Setup:



5.3.3.Test Result

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Horizontal
EUT: Walkie Talkie	Power: By Battery
Test Mode 1	



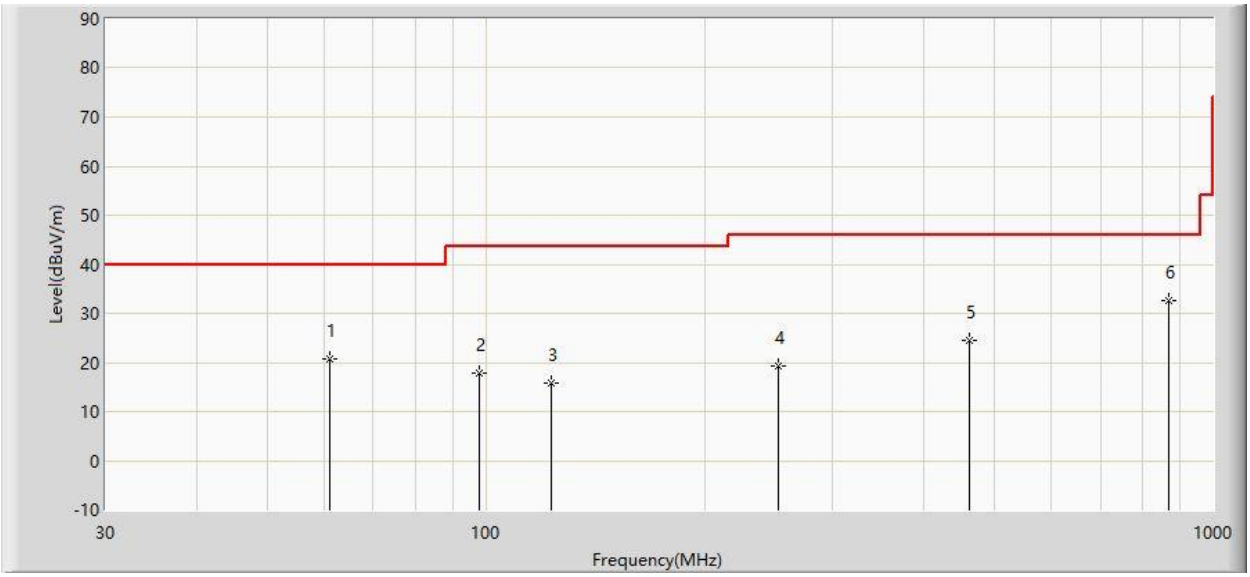
No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1			58.130	18.614	-0.284	-21.386	40.000	18.898	PK
2			107.115	17.564	-0.533	-25.936	43.500	18.096	PK
3			230.790	18.152	0.365	-27.848	46.000	17.787	PK
4			323.910	20.766	1.163	-25.234	46.000	19.603	PK
5		*	462.620	28.994	6.873	-17.006	46.000	22.121	PK
6			724.520	28.193	1.858	-17.807	46.000	26.335	PK

Note 1: Measure Level (dBµV/m) = Reading Level (dBµV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Vertical
EUT: Walkie Talkie	Power: By Battery
Test Mode 1	



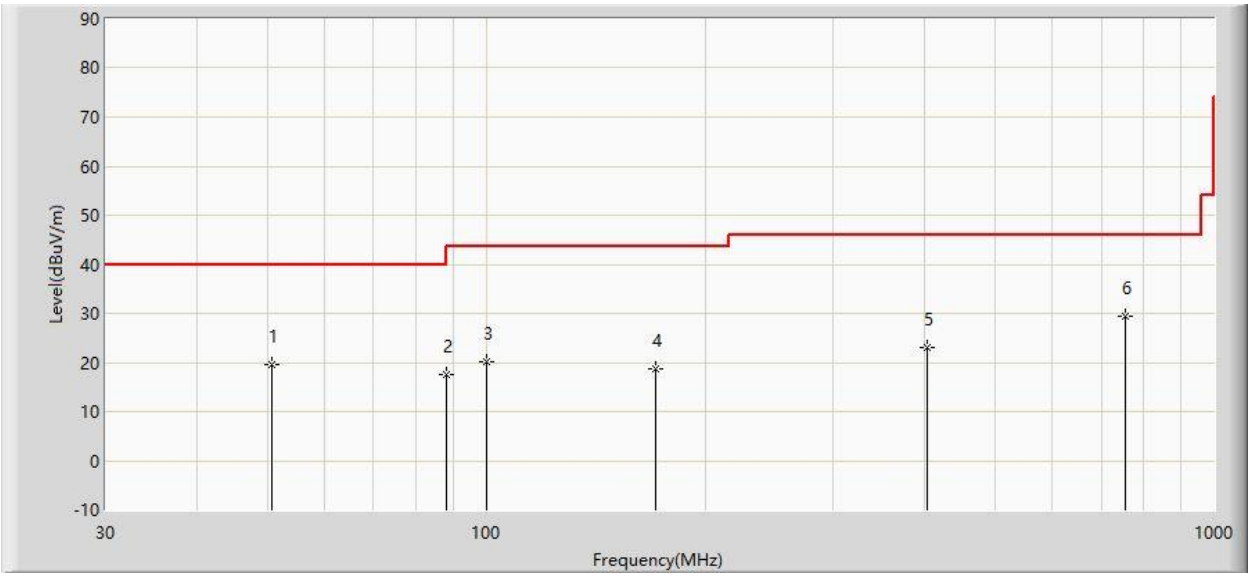
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			61.040	20.736	2.519	-19.264	40.000	18.217	PK
2			97.900	17.684	0.232	-25.816	43.500	17.452	PK
3			123.120	15.677	0.254	-27.823	43.500	15.423	PK
4			252.615	19.132	1.092	-26.868	46.000	18.041	PK
5			462.620	24.529	2.408	-21.471	46.000	22.121	PK
6		*	868.565	32.605	4.232	-13.395	46.000	28.373	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Horizontal
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	



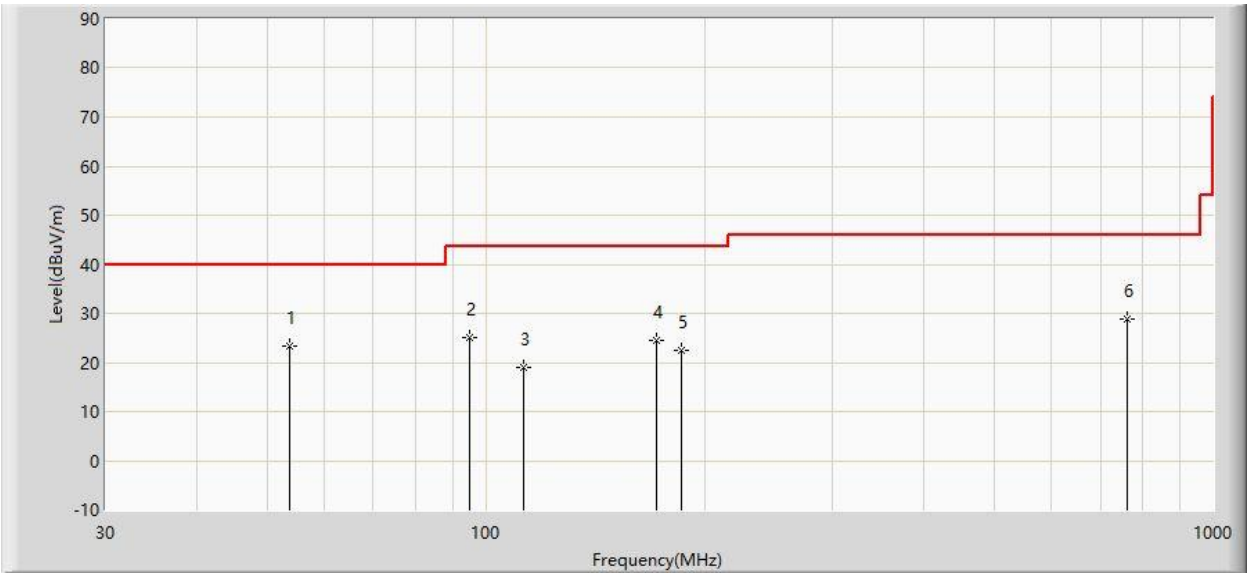
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			50.855	19.624	0.135	-20.376	40.000	19.489	PK
2			88.200	17.647	2.256	-25.853	43.500	15.391	PK
3			100.325	20.289	2.373	-23.211	43.500	17.917	PK
4			170.650	18.839	3.716	-24.661	43.500	15.123	PK
5			403.450	22.919	1.244	-23.081	46.000	21.675	PK
6		*	757.015	29.528	2.638	-16.472	46.000	26.890	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_VULB9162	Polarity: Vertical
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	



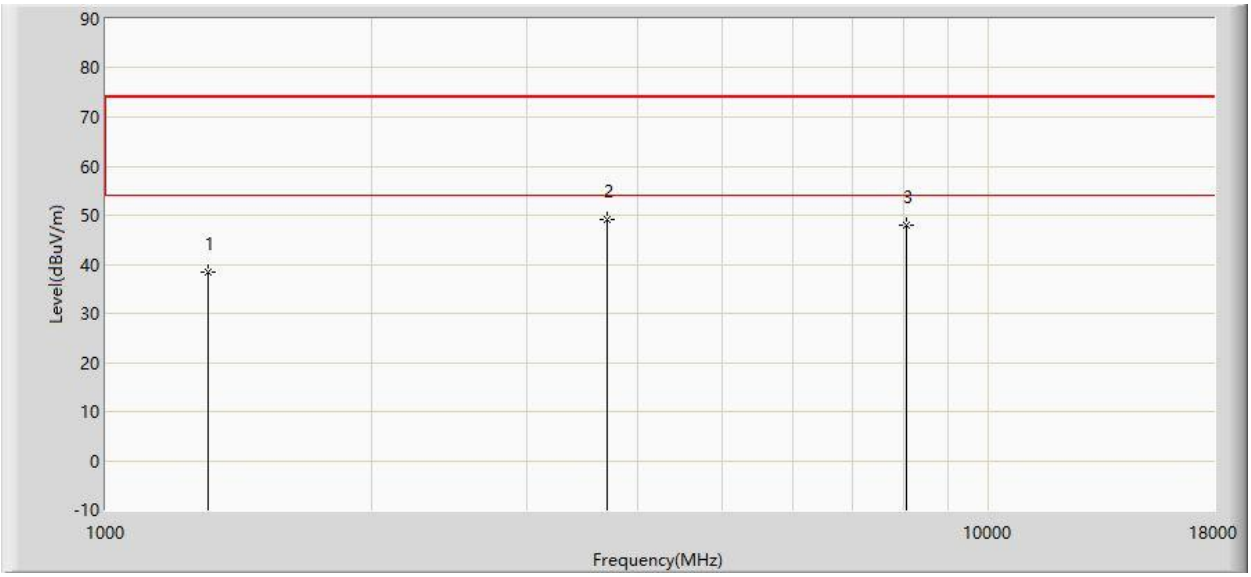
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	53.765	23.290	3.613	-16.710	40.000	19.677	PK
2			94.990	24.957	8.155	-18.543	43.500	16.802	PK
3			112.935	18.918	1.739	-24.582	43.500	17.179	PK
4			171.620	24.420	9.277	-19.080	43.500	15.143	PK
5			185.685	22.443	6.277	-21.057	43.500	16.167	PK
6			763.320	28.806	1.857	-17.194	46.000	26.949	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m).

Note 2: QP measurement was not performed when peak measure level was lower than the QP limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Walkie Talkie	Power: By Battery
Test Mode 1	



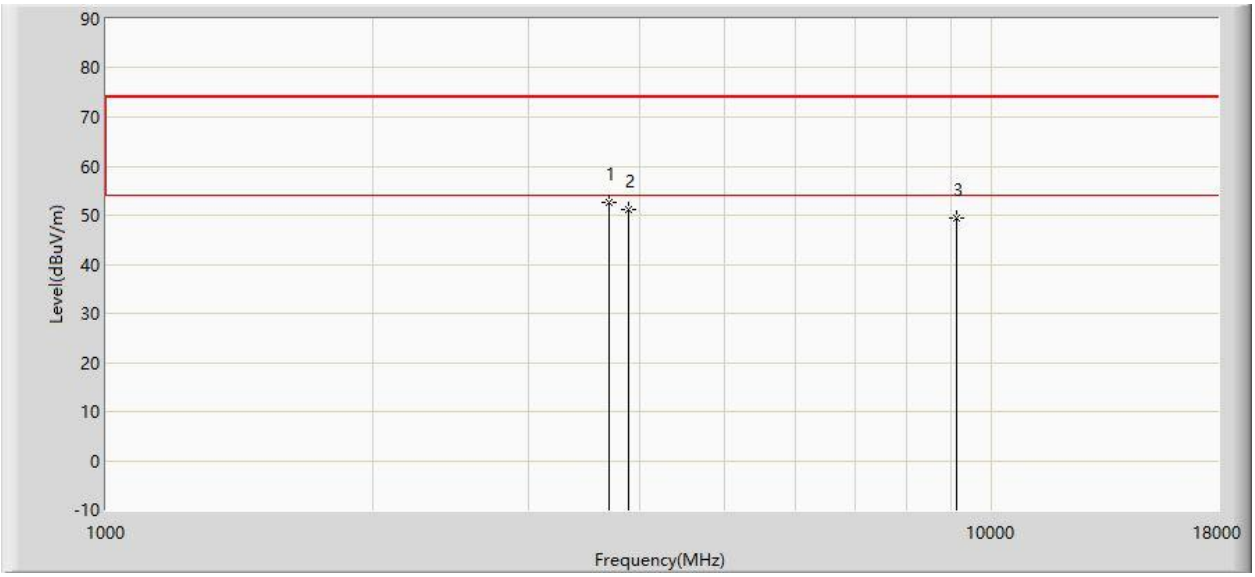
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			1306.000	38.359	42.788	-35.641	74.000	-4.429	PK
2		*	3703.000	49.024	49.156	-24.976	74.000	-0.132	PK
3			8080.500	48.108	36.847	-25.892	74.000	11.261	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Note 2: Average measurement was not performed when peak measure level was lower than the average limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Walkie Talkie	Power: By Battery
Test Mode 1	



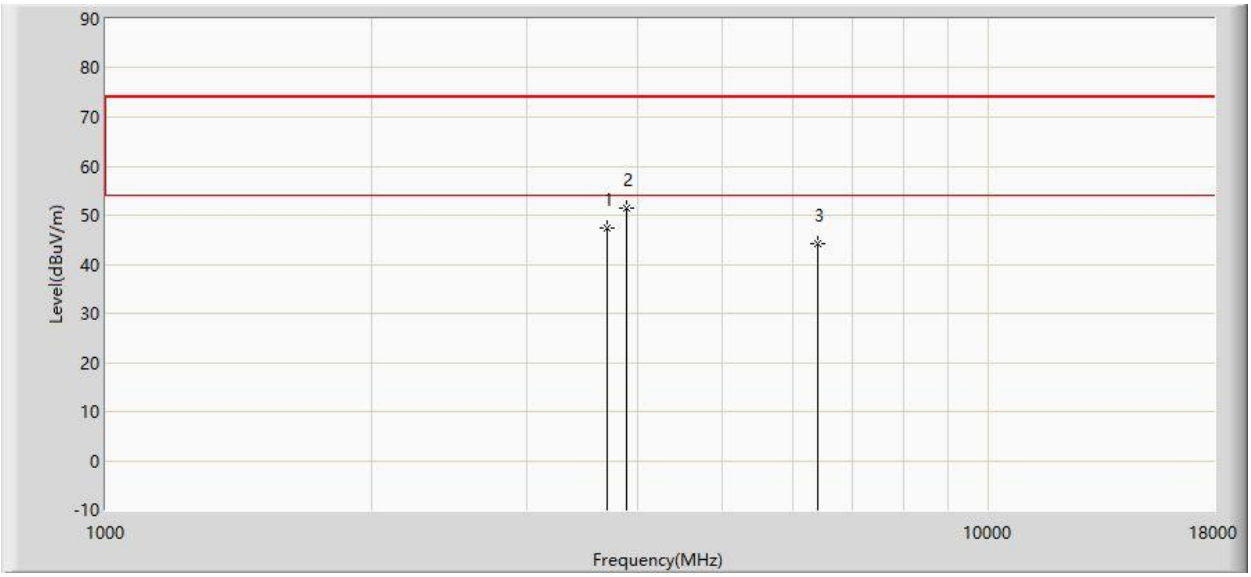
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	3703.000	52.704	52.836	-21.296	74.000	-0.132	PK
2			3890.000	51.285	51.162	-22.715	74.000	0.123	PK
3			9126.000	49.345	36.334	-24.655	74.000	13.011	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Note 2: Average measurement was not performed when peak measure level was lower than the average limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	



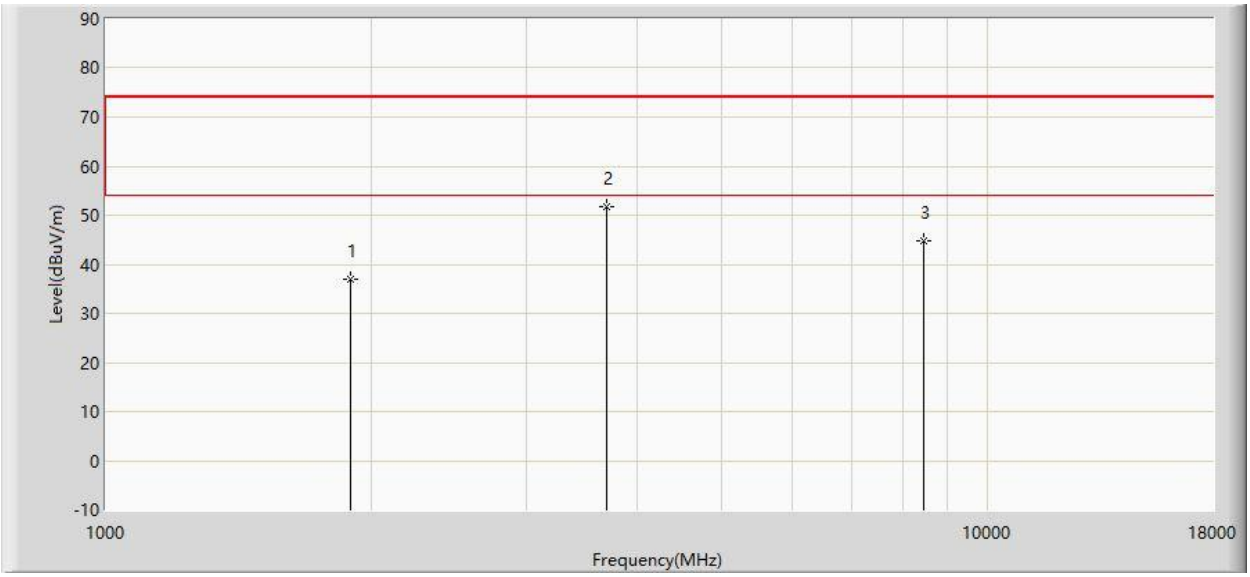
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			3703.000	47.421	47.553	-26.579	74.000	-0.132	PK
2		*	3890.000	51.385	51.262	-22.615	74.000	0.123	PK
3			6397.500	44.089	37.785	-29.911	74.000	6.304	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Note 2: Average measurement was not performed when peak measure level was lower than the average limit.

Site: NS-AC1	Test Date: 2021/03/17
Limit: FCC_Part 15.109_RE(3m)_Class B	Engineer: Flag Yang
Probe: NS-AC1_BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Walkie Talkie	Power: AC 120V/60Hz
Test Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			1892.500	36.820	41.197	-37.180	74.000	-4.376	PK
2		*	3703.000	51.725	51.857	-22.275	74.000	-0.132	PK
3			8463.000	44.688	33.526	-29.312	74.000	11.162	PK

Note 1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB)

Factor (dB) = Cable Loss (dB) + Antenna Factor (dB/m) - Pre_Amplifier Gain (dB).

Note 2: Average measurement was not performed when peak measure level was lower than the average limit.

6. CONCLUSION

The data collected relate only the item(s) tested and show that this device has been tested to comply with the requirements specified in §15.107 / §15.109 of the FCC Rules.

.

The End

Appendix A - Test Setup Photograph

Refer to “2102RSU072-UT” file.

Appendix B - EUT Photograph

Refer to “2102RSU072-UE” file.