MEASUREMENT REPORT

FCC Part 15B

FCC ID:	2ACVFM-8B
Applicant:	Shenzhen ChangTaiWei Electronic CO., LTD
Application Type:	Certification
Product:	Walkie Talkie
Model No.:	M-8
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

Revision History

Report No.	Version	Description	Issue Date	Note
2102RSU070-U3	Rev. 01	Initial Report	03-30-2021	Valid

CONTENTS

Description Page

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-8
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

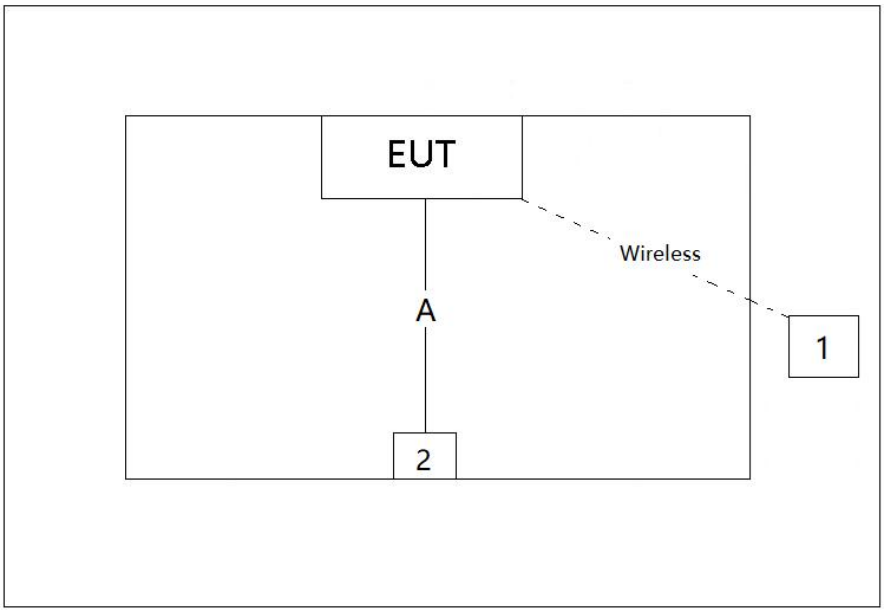
2.2. Test Mode

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

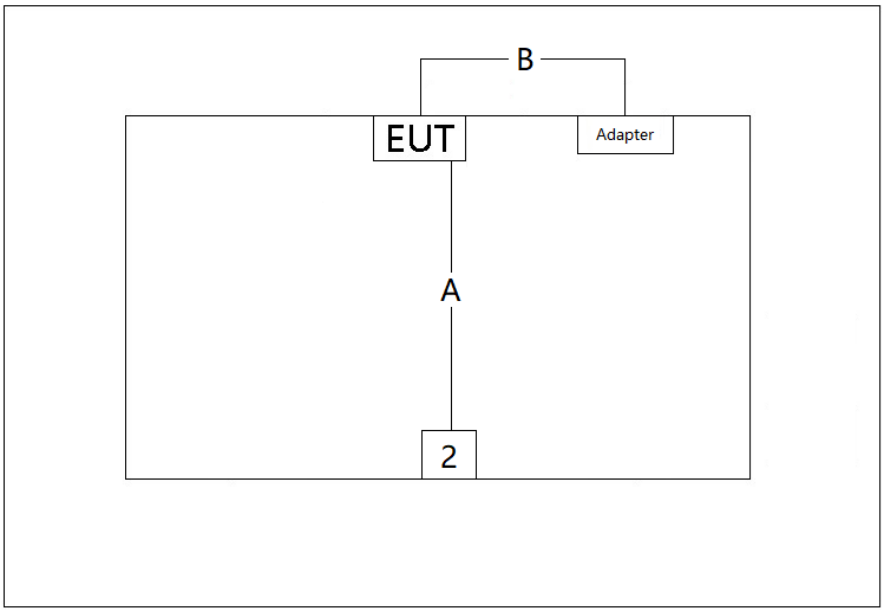
2.3. Configuration of Tested System

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-8
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

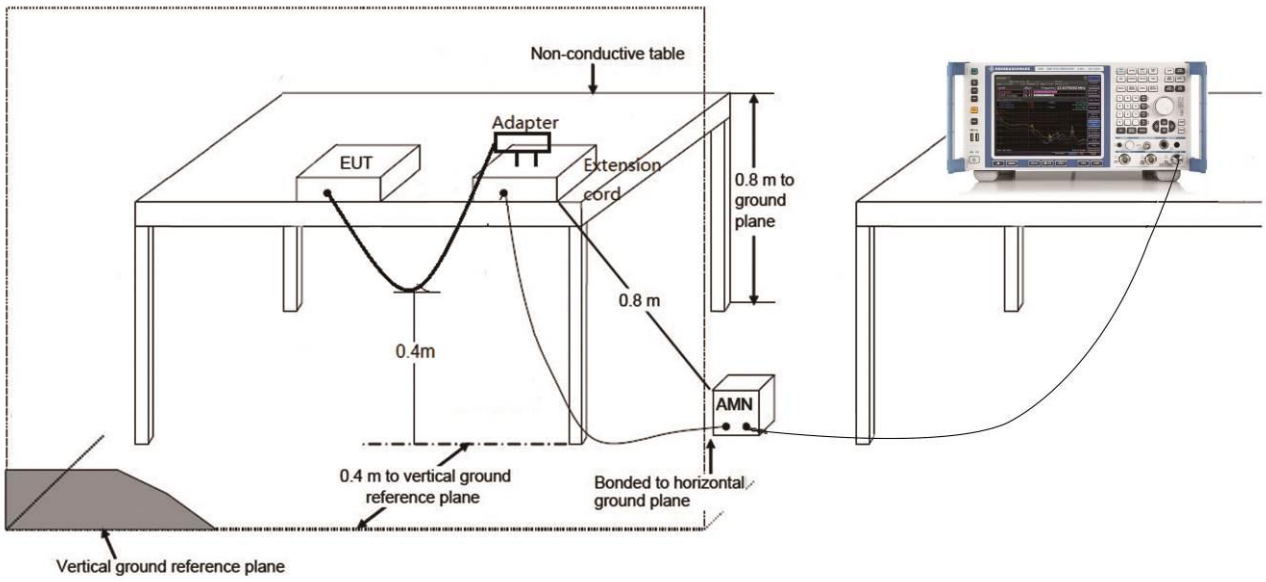
FCC Part Section(s)	Test Description	Test Result
15.107	Conducted Emissions	Pass
15.109	Radiated Emissions	Pass

5.2. Conducted Emission Measurement

5.2.1.Test Limit

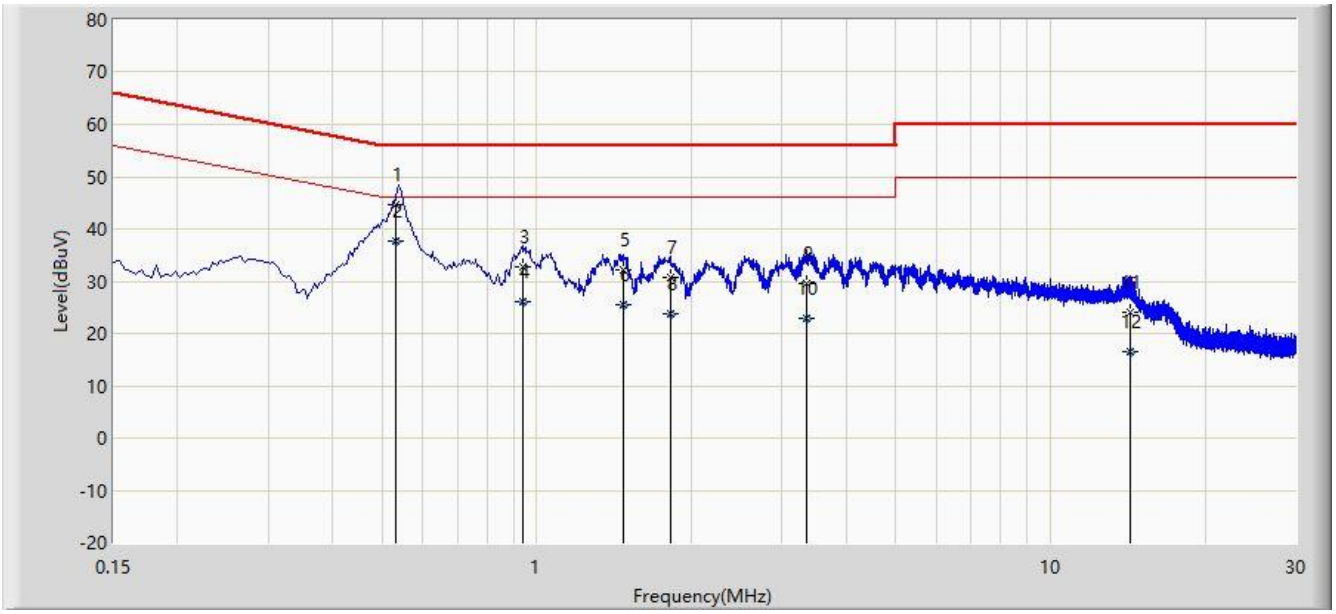
FCC Part 15.107 Limit		
Frequency (MHz)	QP (dBμV)	AV (dBμV)
0.15 ~ 0.50	66 ~ 56	56 ~ 46
0.50 ~ 5.0	56	46
5.0 ~ 30	60	50
Note 1: The lower limit shall apply at the transition frequencies. Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.		

5.2.2.Test Setup



5.2.3.Test Result

Site: NS-SR2	Time: 2021/03/19 - 16:31
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	

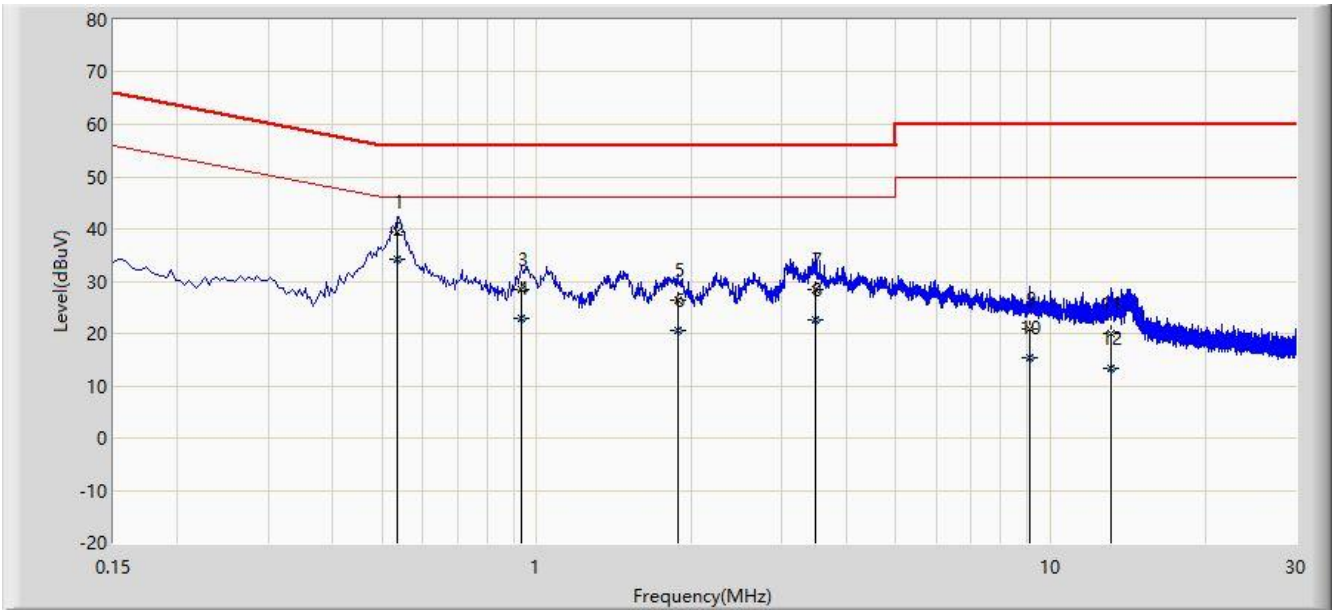


No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV)	Factor (dB)	Type
1			0.531	44.667	34.689	-11.333	56.000	9.978	QP
2		*	0.531	37.549	27.572	-8.451	46.000	9.978	AV
3			0.938	32.832	23.018	-23.168	56.000	9.813	QP
4			0.938	25.947	16.133	-20.053	46.000	9.813	AV
5			1.474	32.316	22.586	-23.684	56.000	9.730	QP
6			1.474	25.455	15.725	-20.545	46.000	9.730	AV
7			1.822	30.683	20.969	-25.317	56.000	9.714	QP
8			1.822	23.877	14.163	-22.123	46.000	9.714	AV
9			3.342	29.421	19.712	-26.579	56.000	9.709	QP
10			3.342	22.823	13.114	-23.177	46.000	9.709	AV
11			14.262	24.132	14.236	-35.868	60.000	9.896	QP
12			14.262	16.396	6.500	-33.604	50.000	9.896	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 - 16:40
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			0.534	39.550	29.564	-16.450	56.000	9.987	QP
2		*	0.534	34.239	24.252	-11.761	46.000	9.987	AV
3			0.934	28.413	18.591	-27.587	56.000	9.822	QP
4			0.934	22.784	12.962	-23.216	46.000	9.822	AV
5			1.882	26.255	16.547	-29.745	56.000	9.708	QP
6			1.882	20.508	10.799	-25.492	46.000	9.708	AV
7			3.478	28.283	18.566	-27.717	56.000	9.717	QP
8			3.478	22.478	12.761	-23.522	46.000	9.717	AV
9			9.122	21.002	11.183	-38.998	60.000	9.818	QP
10			9.122	15.232	5.413	-34.768	50.000	9.818	AV
11			13.102	19.945	10.040	-40.055	60.000	9.905	QP
12			13.102	13.229	3.324	-36.771	50.000	9.905	AV

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

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

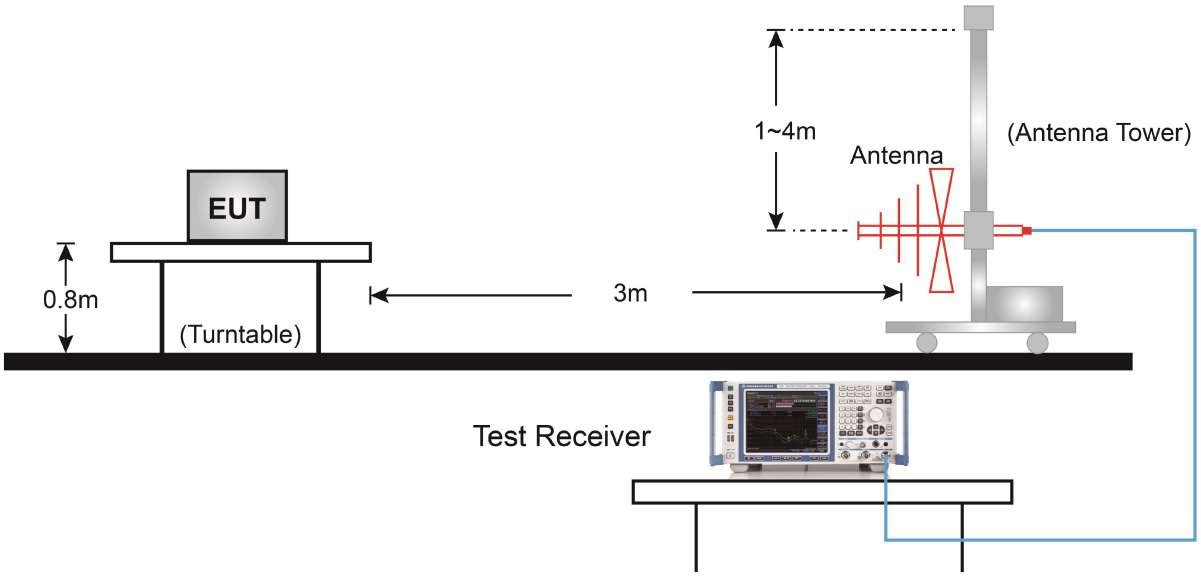
5.3. Radiated Emission Measurement

5.3.1.Test Limit

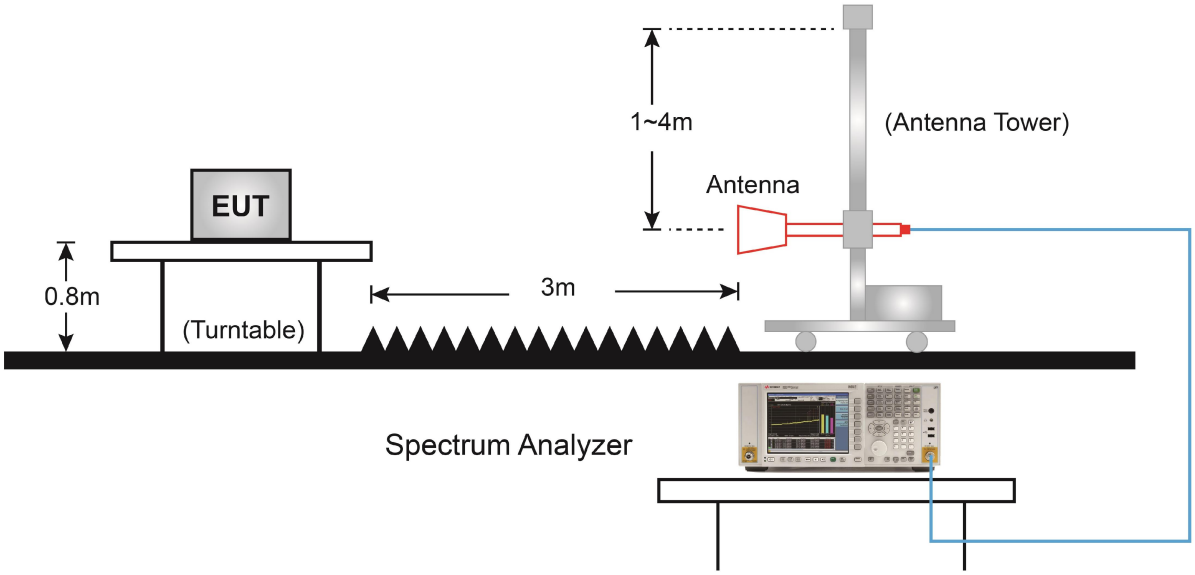
FCC Part 15.109 Limit		
Frequency (MHz)	Distance (m)	Level (dBμV/m)
30 - 88	3	40
88 - 216	3	43.5
216 - 960	3	46
Above 960	3	54
Note 1: The lower limit shall apply at the transition frequency. Note 2: Distance refers to the distance in meters between the measuring instrument antenna and the closed point 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:

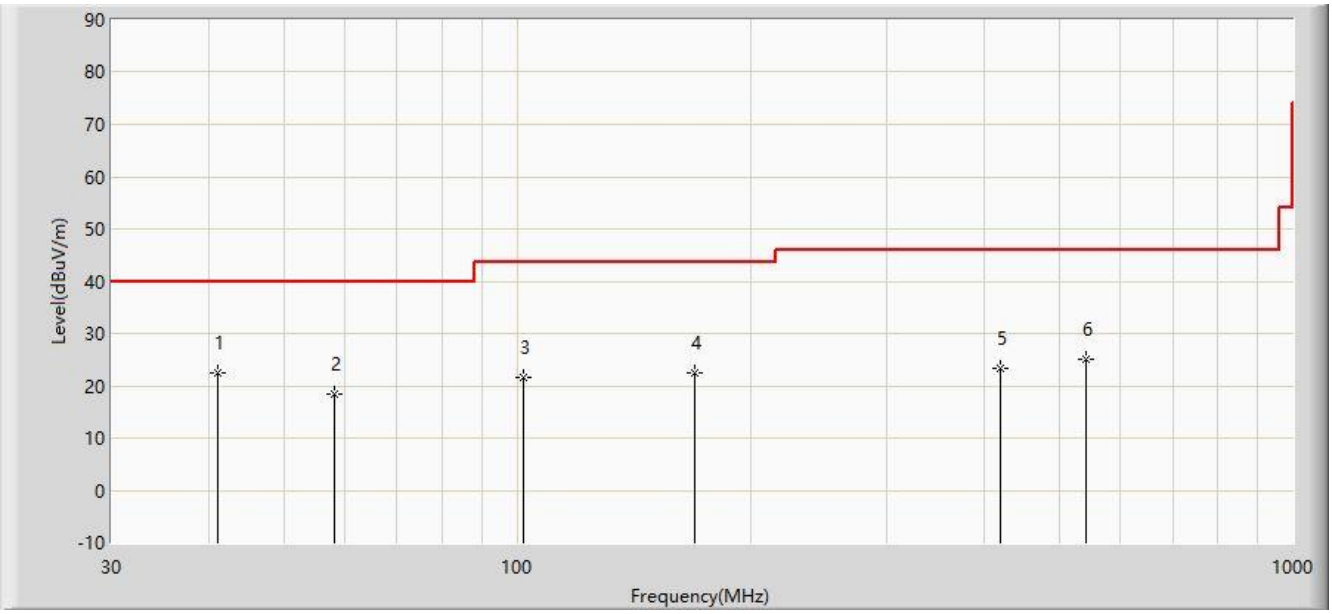


Above 1GHz Test Setup:



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	



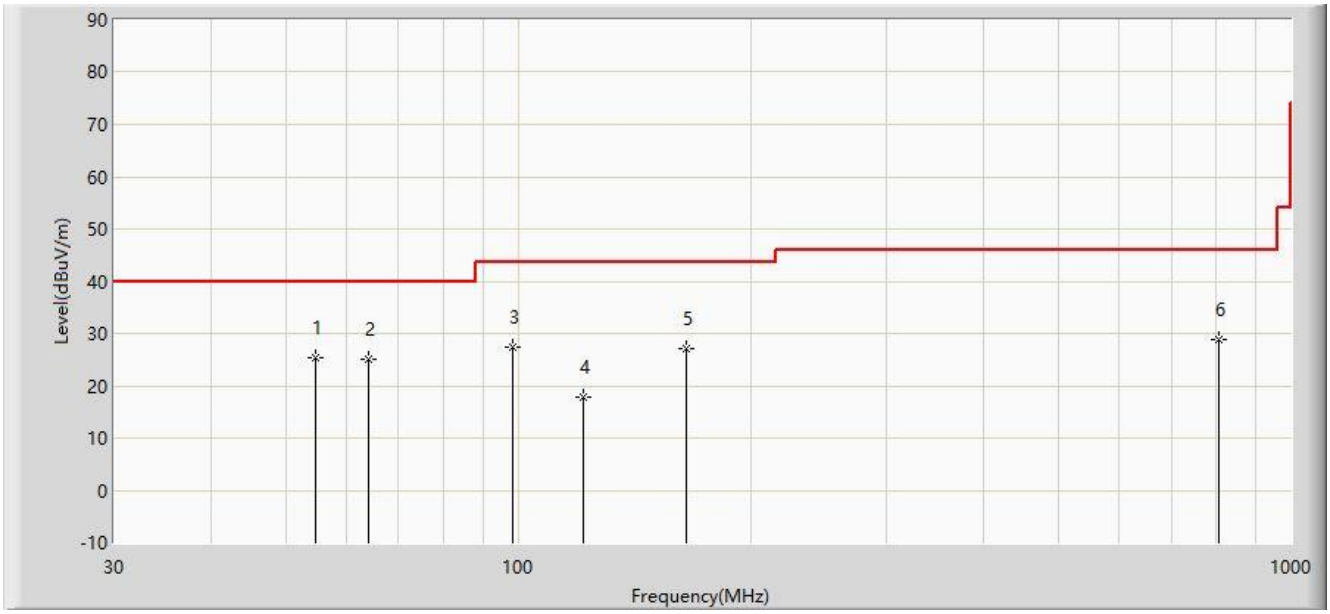
No	Flag	Mark	Frequency (MHz)	Measure Level (dBµV/m)	Reading Level (dBµV)	Margin (dB)	Limit (dBµV/m)	Factor (dB)	Type
1		*	41.155	22.543	4.032	-17.457	40.000	18.512	PK
2			58.130	18.518	-0.380	-21.482	40.000	18.898	PK
3			101.780	21.598	3.603	-21.902	43.500	17.995	PK
4			169.195	22.606	7.533	-20.894	43.500	15.073	PK
5			420.425	23.341	1.538	-22.659	46.000	21.803	PK
6			540.705	25.209	1.686	-20.791	46.000	23.522	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	



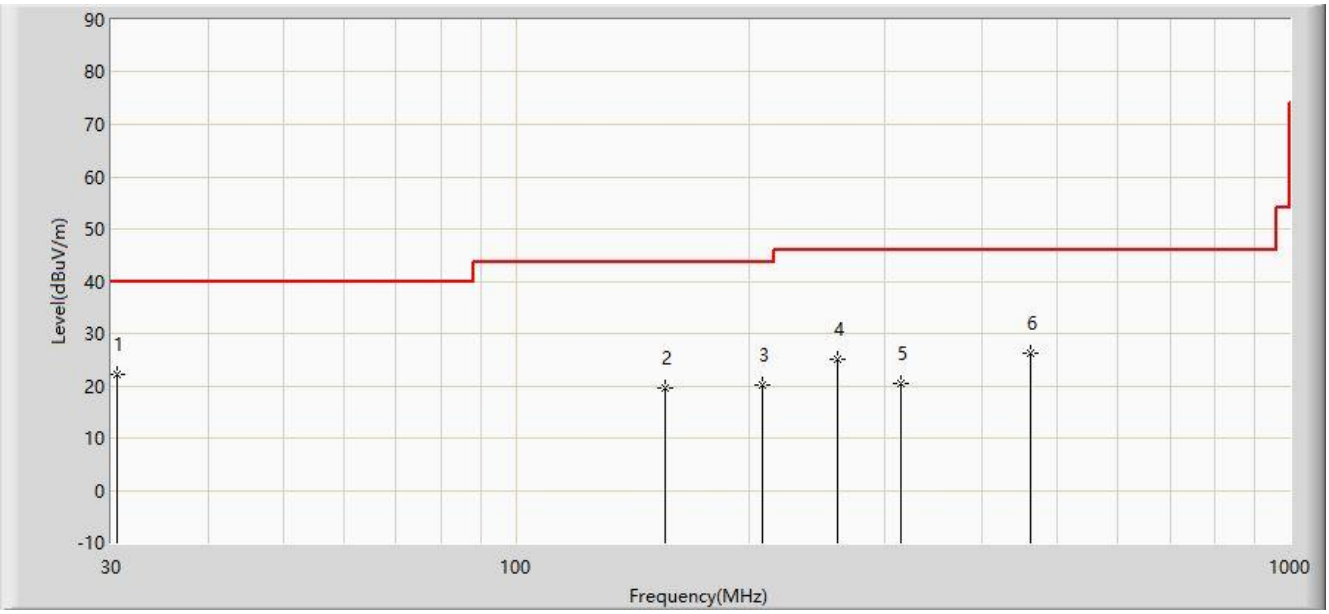
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	54.735	25.453	5.752	-14.547	40.000	19.701	PK
2			63.950	24.951	7.189	-15.049	40.000	17.762	PK
3			98.385	27.463	9.904	-16.037	43.500	17.559	PK
4			121.180	17.961	2.190	-25.539	43.500	15.771	PK
5			165.315	27.157	12.245	-16.343	43.500	14.912	PK
6			806.000	28.984	1.588	-17.016	46.000	27.396	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	



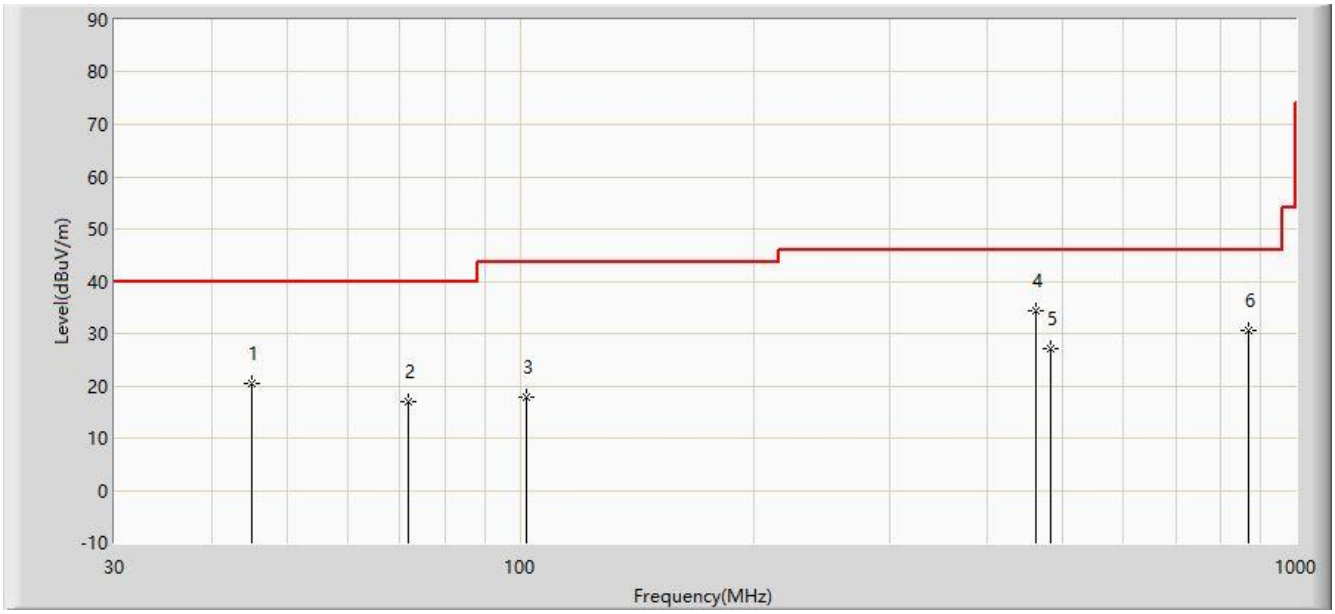
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	30.485	22.130	6.463	-17.870	40.000	15.667	PK
2			155.615	19.704	5.306	-23.796	43.500	14.399	PK
3			207.995	20.075	2.512	-23.425	43.500	17.563	PK
4			259.890	24.998	6.794	-21.002	46.000	18.204	PK
5			314.210	20.530	1.139	-25.470	46.000	19.391	PK
6			462.620	26.261	4.140	-19.739	46.000	22.121	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	



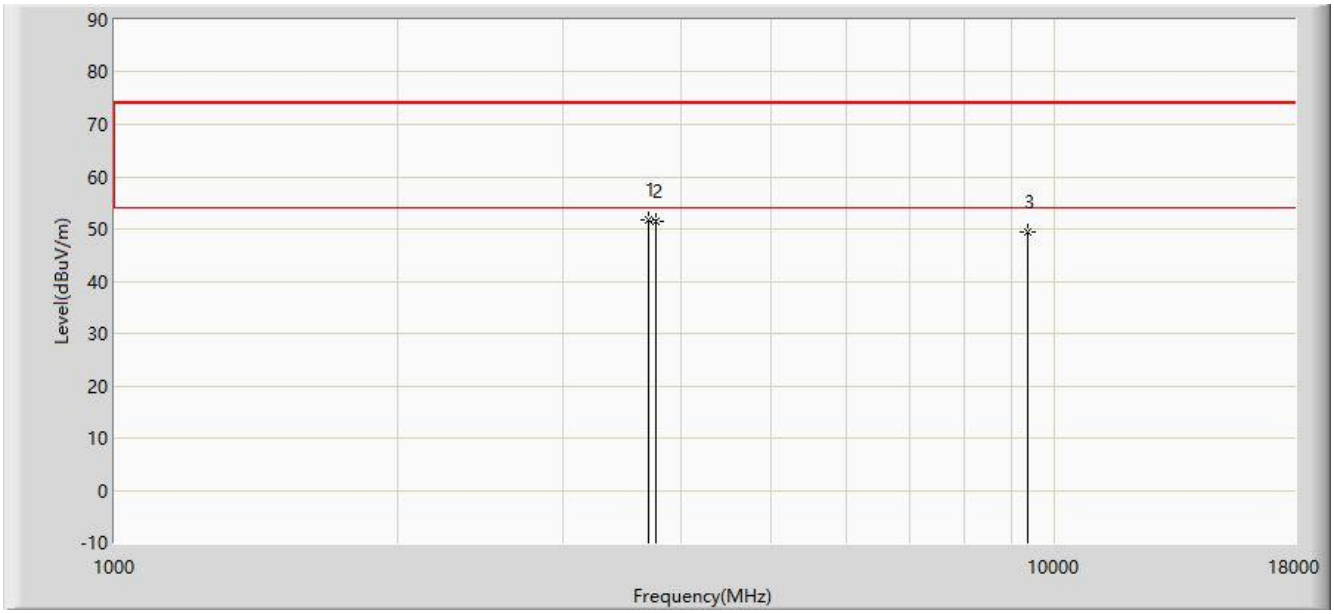
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			45.035	20.497	1.581	-19.503	40.000	18.916	PK
2			71.710	16.944	1.705	-23.056	40.000	15.239	PK
3			101.780	17.759	-0.236	-25.741	43.500	17.995	PK
4		*	462.620	34.353	12.232	-11.647	46.000	22.121	PK
5			482.020	27.084	4.819	-18.916	46.000	22.265	PK
6			869.535	30.682	2.302	-15.318	46.000	28.380	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	



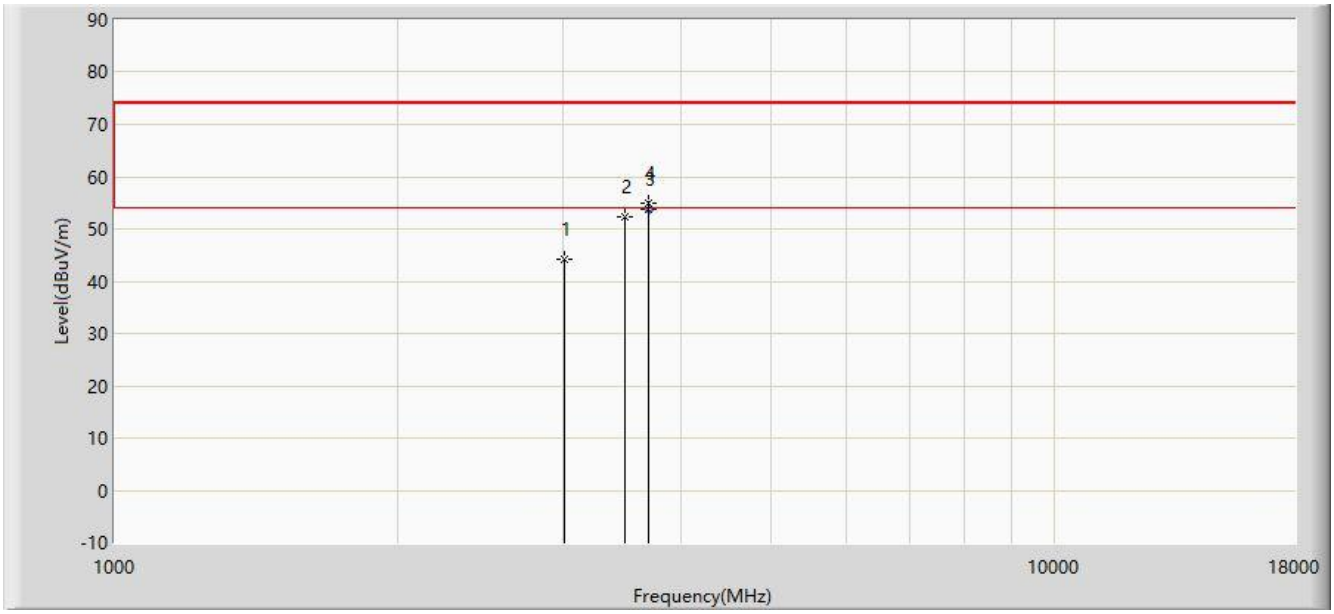
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1		*	3703.000	51.867	51.999	-22.133	74.000	-0.132	PK
2			3771.000	51.474	51.466	-22.526	74.000	0.009	PK
3			9355.500	49.344	36.451	-24.656	74.000	12.893	PK

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	



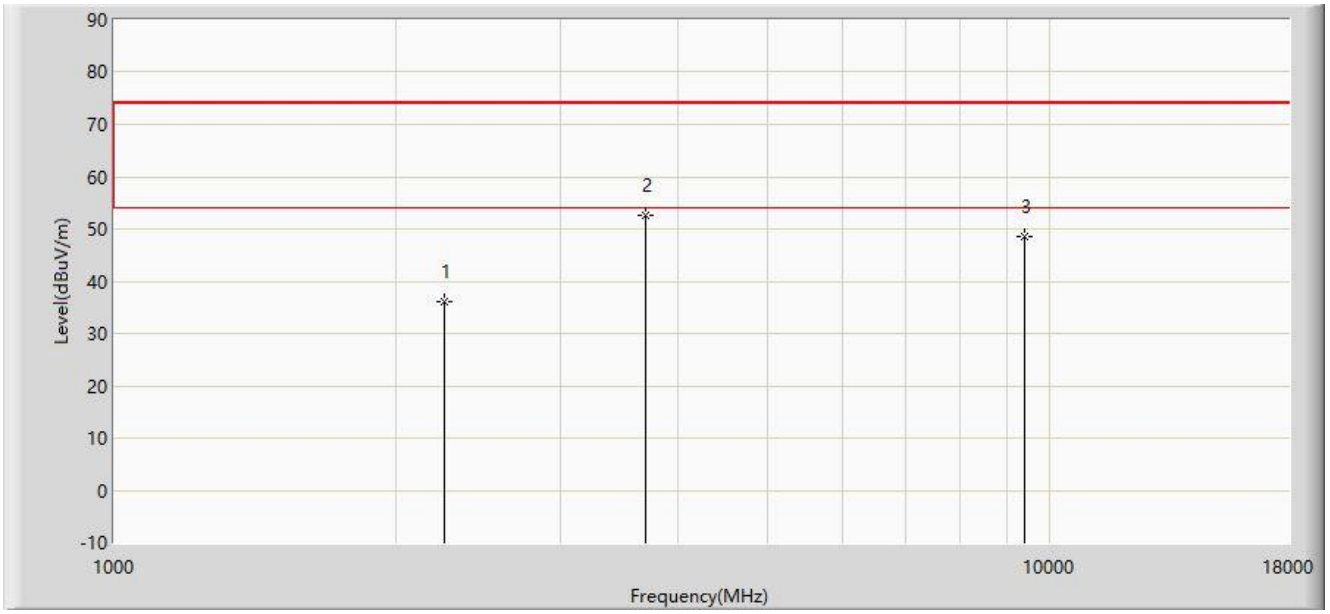
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			3014.500	44.216	46.191	-29.784	74.000	-1.975	PK
2			3490.500	52.235	53.053	-21.765	74.000	-0.818	PK
3		*	3699.427	53.845	53.969	-0.155	54.000	-0.124	AV
4			3703.000	54.914	55.046	-19.086	74.000	-0.132	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	



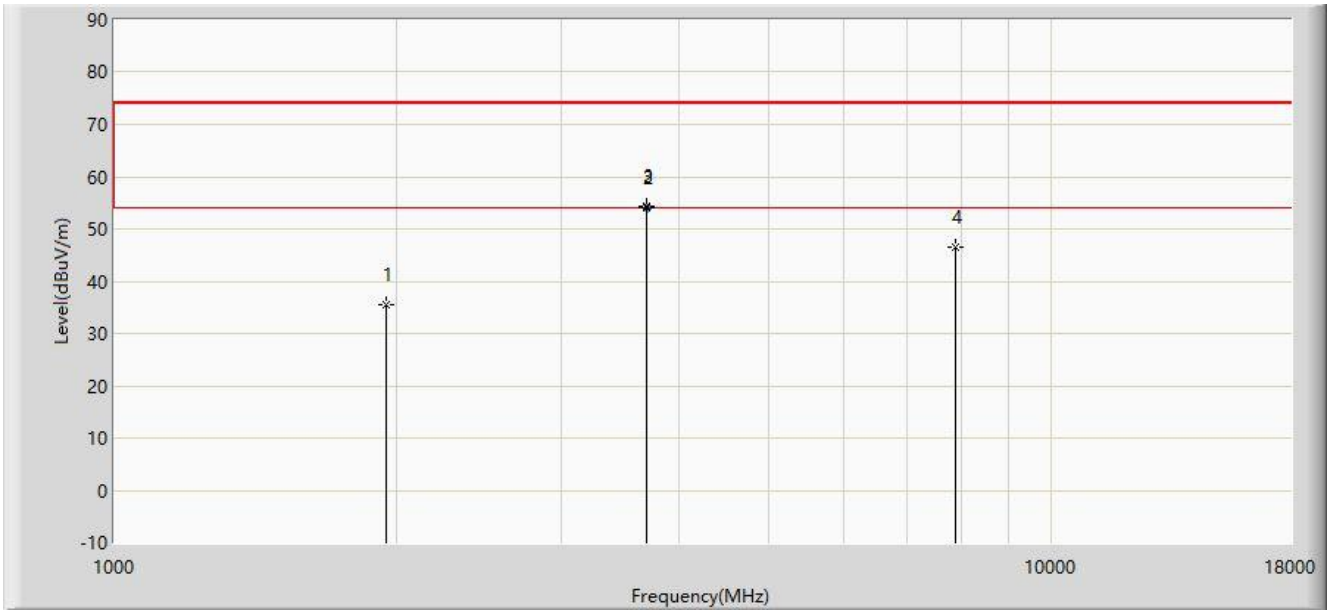
No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV/m)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV/m)	Factor (dB)	Type
1			2258.000	36.220	37.595	-37.780	74.000	-1.375	PK
2		*	3703.000	52.616	52.748	-21.384	74.000	-0.132	PK
3			9389.500	48.685	35.577	-25.315	74.000	13.108	PK

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			1952.000	35.531	39.498	-38.469	74.000	-3.968	PK
2		*	3699.412	53.939	54.063	-0.061	54.000	-0.124	AV
3			3703.000	54.478	54.610	-19.522	74.000	-0.132	PK
4			7893.500	46.384	35.511	-27.616	74.000	10.873	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.

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The End

Appendix A - Test Setup Photograph

Refer to “2102RSU070-UT” file.

Appendix B - EUT Photograph

Refer to “2102RSU070-UE” file.