



MEASUREMENT REPORT

FCC Part 15 Subpart B / ICES-003

FCC ID: FHO-E1802
IC: 10912A-E1802
Applicant: IKEA of Sweden AB

Application Type: Certification
Product: Radio DÅNDIMPEN
Model No.: E1802
Brand Name: IKEA
FCC Rule Part(s): FCC Part 15 Subpart B: 2018 Class B
ISED Rule Part(s): ICES-003 Issue 6
Test Procedure(s): ANSI C63.4: 2014
Result: Complies
Test Date: September 23 ~ 27, 2019

Reviewed By


(Kevin Guo)

Approved By


(Robin Wu)



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 (Suzhou) Co., Ltd.

Revision History

Report No.	Version	Description	Issue Date	Note
1906WSU019-U3	Rev. 01	Initial report	11-18-2019	Valid

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§2.1033 General Information

Applicant:	IKEA of Sweden AB
Applicant Address:	SE-343 81, Älmhult, Sweden
Manufacturer:	IKEA of Sweden AB
Manufacturer Address:	SE-343 81, Älmhult, Sweden
Test Site:	MRT Technology (Suzhou) Co., Ltd
Test Site Address:	D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China
Test Device Serial No.:	N/A ☐ Production ☒ Pre-Production ☐ Engineering

Test Facility / Accreditations

Measurements were performed at MRT Laboratory located in Tian'edang Rd., Suzhou, China.

- MRT facility is a FCC registered (MRT Reg. No. 893164) test facility with the site description report on file and has met all the requirements specified in ANSI C63.4-2014.
- MRT facility is an IC registered (MRT Reg. No. 11384A-1) test laboratory with the site description on file at Industry Canada.
- MRT facility is a VCCI registered (R-20025, G-20034, C-20020, T-20020) test laboratory with the site description on file at VCCI Council.
- MRT Lab is accredited to ISO 17025 by the American Association for Laboratory Accreditation (A2LA) under the American Association for Laboratory Accreditation Program (A2LA Cert. No. 3628.01) in EMC, Telecommunications, Radio and SAR testing.



1. INTRODUCTION

1.1. Scope

Measurement and determination of electromagnetic emissions (EMC) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission and the Industry Canada Certification and Engineering Bureau.

1.2. MRT Test Location

The map below shows the location of the MRT LABORATORY, its proximity to the Taihu Lake. These measurement tests were conducted at the MRT Technology (Suzhou) Co., Ltd. Facility located at D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China. The measurement facility compliant with the test site requirements specified in ANSI C63.4-2014.



2. PRODUCT INFORMATION

2.1. Equipment Description

Product Name:	Radio DÅNDIMPEN
Model No.:	E1802
Brand Name:	IKEA
Bluetooth Version:	V4.2 (Only support Bluetooth v3.0+HS)

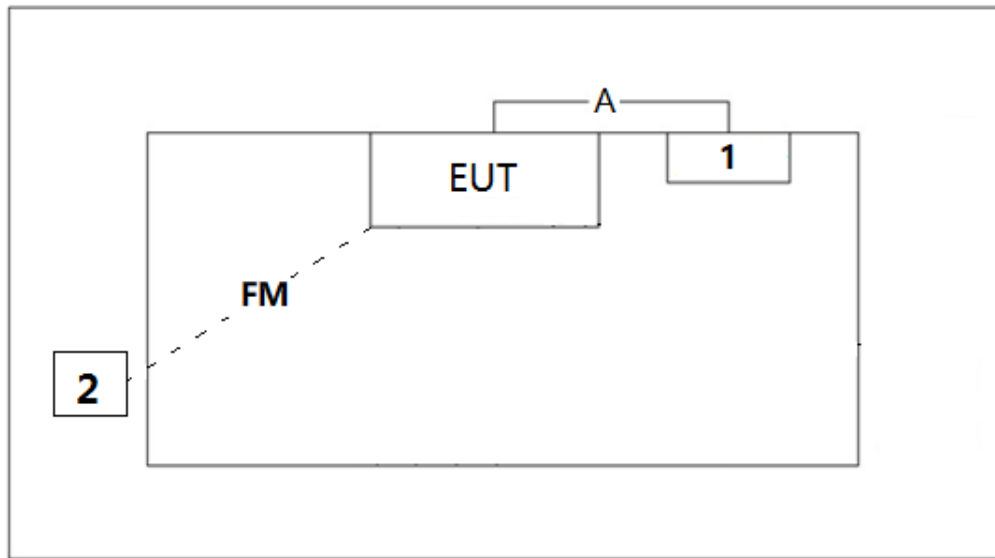
2.2. Test Mode

EMI Mode	Mode 1: Powered by adapter & Connect to mobile phone through Bluetooth and play music
	Mode 2: Powered by USB adapter & FM receiver
	Mode 3: Powered by Battery & Connect to mobile phone through Bluetooth and play music
	Mode 4: Powered by Battery & FM receiver

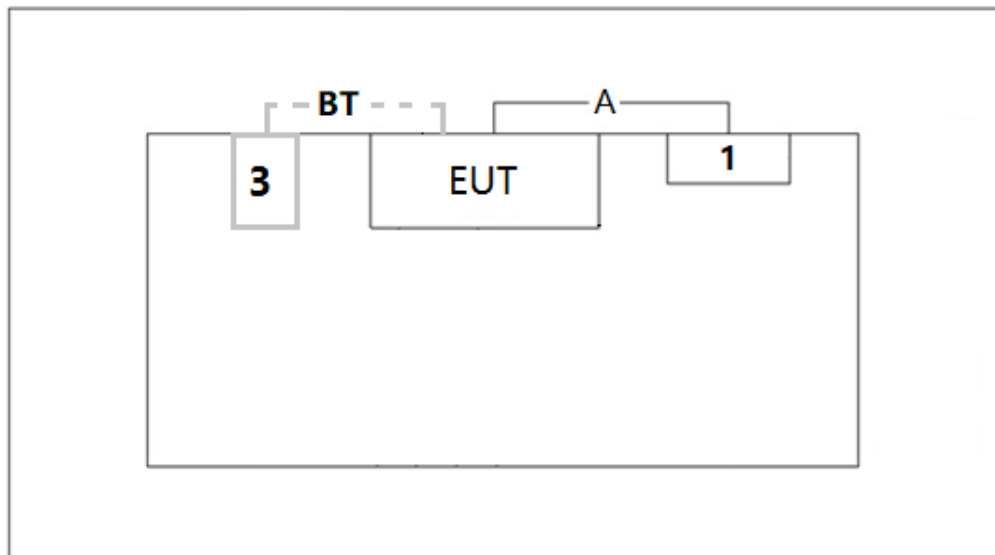
2.3. Configuration of Tested System

The **Radio DĀNDIMPEN** was tested per the guidance FCC Part 15 Subpart B: 2018 Class B, CES-003 Issue 6 and ANSI C63.4: 2014 was used to reference the appropriate EUT setup for radiated spurious emissions testing and AC line conducted testing.

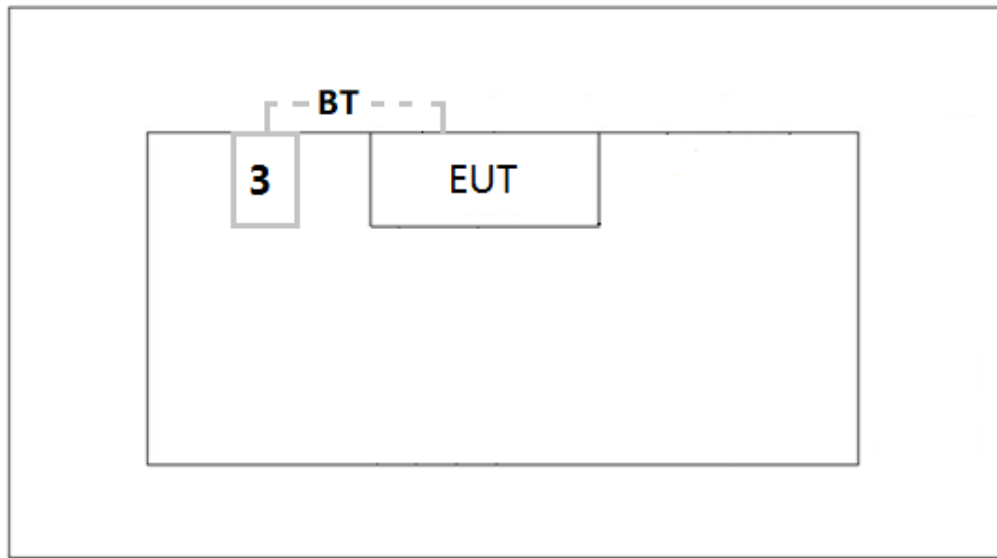
Connection Diagram (Mode 1)



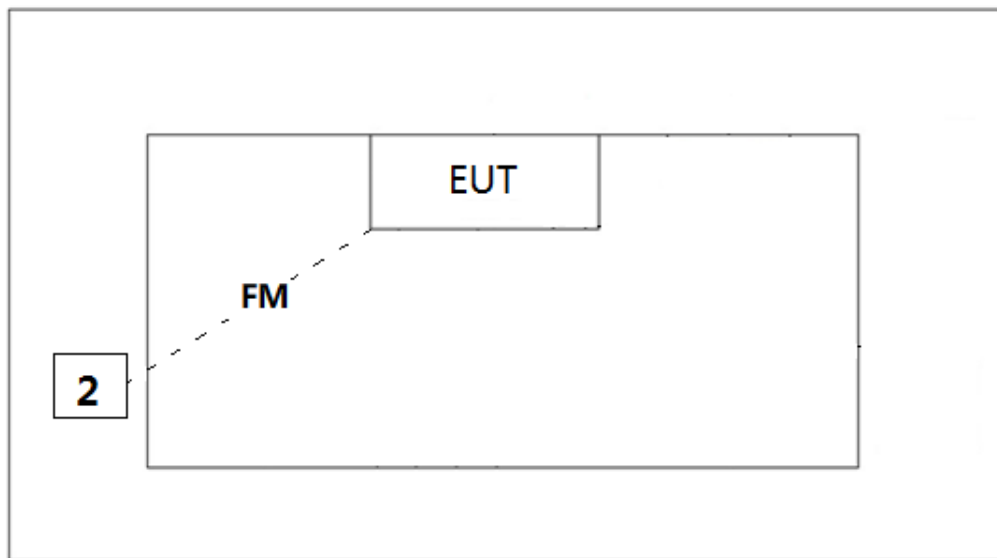
Connection Diagram (Mode 2)



Connection Diagram (Mode 3)



Connection Diagram (Mode 4)



Signal Cable Type		Signal Cable Description
A	USB Cable	Non-Shielding, 1.50m

2.4. Test System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product	Manufacturer	Model No.	Serial No.	Power Cord
1 Adapter	Pico	HUUS090200-K00	N/A	N/A
2 Vector Signal Generator	ROHDE&SCHWARZ	SMBA100A	N/A	N/A
3 Mobile Phone	Apple	Iphone 6s	N/A	N/A

Note: USB adapter is provided by MRT.

2.5. Test Procedure

1	Setup the EUT and simulators as shown on above.
2	Configure the EUT according to test mode of section 2.1.
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. DESCRIPTION OF TEST

3.1. Evaluation Procedure

The measurement procedures described in the American National Standard for Methods of Measurement of Radio-Noise Emission from Low-Voltage Electrical Equipment in the Range of 9kHz to 18GHz (ANSI C63.4-2014) was used in the measurement of the device.

Deviation from measurement procedure.....None

3.2. AC Line Conducted Emissions

The line-conducted facility is located inside an 8'x4'x4' shielded enclosure. A 1m x 2m wooden table 80cm high is placed 40cm away from the vertical wall and 80cm away from the sidewall of the shielded room. Two 10kHz-30MHz, 50Ω/50uH Line-Impedance Stabilization Networks (LISNs) are bonded to the shielded room floor. Power to the LISNs is filtered by external high-current high-insertion loss power line filters. These filters attenuate ambient signal noise from entering the measurement lines. These filters are also bonded to the shielded enclosure.

The EUT is powered from one LISN and the support equipment is powered from the second LISN. If the EUT is a DC-powered device, power will be derived from the source power supply it normally will be powered from and this supply line(s) will be connected to the second LISN. All interconnecting cables more than 1 meter were shortened to a 1 meter length by non-inductive bundling (serpentine fashion) and draped over the back edge of the test table. All cables were at least 40cm above the horizontal reference ground-plane. Power cables for support equipment were routed down to the second LISN while ensuring that that cables were not draped over the second LISN.

Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The RF output of the LISN was connected to the receiver and exploratory measurements were made to determine the frequencies producing the maximum emission from the EUT. The receiver was scanned from 150 kHz to 30 MHz. The detector function was set to peak mode for exploratory measurements while the bandwidth of the analyzer was set to 9 kHz. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Each emission was also maximized by varying: power lines, the mode of operation or resolution, clock or data exchange speed, scrolling H pattern to the EUT and/or support equipment whichever determined the worst-case emission. Once the worst case emissions have been identified, the one EUT cable configuration/arrangement and mode of operation that produced these emissions are used for final measurements on the same test site.

3.3. Radiated Emissions

The radiated test facilities consisted of an indoor 3 meter semi-anechoic chamber used for final measurements and exploratory measurements, when necessary. The measurement area is contained within the semi-anechoic chamber which is shielded from any ambient interference. For measurements above 1GHz absorbers are arranged on the floor between the turn table and the antenna mast in such a way so as to maximize the reduction of reflections. For measurements below 1GHz, the absorbers are removed. An MF Model 210SS turntable is used for radiated measurement. It is a continuously rotatable, remote controlled, metallic turntable and 2 meters (6.56 ft.) in diameter. The turn table is flush with the raised floor of the chamber in order to maintain its function as a ground plane. An 80cm high PVC support structure is placed on top of the turntable.

For all measurements, the spectrum was scanned through all EUT azimuths and from 1 to 4 meter receive antenna height using a broadband antenna from 30 MHz up to the upper frequency shown in 15.33(b)(1) depending on the highest frequency generated or used in the device or on which the device operates or tunes. For frequencies above 1GHz, linearly polarized double ridge horn antennas were used. For frequencies below 30 MHz, a calibrated loop antenna was used. When exploratory measurements were necessary, they were performed at 1 meter test distance inside the semi-anechoic chamber using broadband antennas, broadband amplifiers, and spectrum analyzers to determine the frequencies and modes producing the maximum emissions. Sufficient time for the EUT, support equipment, and test equipment was allowed in order for them to warm up to their normal operating condition. The test set-up was placed on top of the 0.8 meter high, 1 x 1.5 meter table. The EUT, support equipment, and interconnecting cables were arranged and manipulated to maximize each emission. Appropriate precaution was taken to ensure that all emissions from the EUT were maximized and investigated. The system configuration, mode of operation, if applicable, turntable azimuth, and receive antenna height was noted for each frequency found.

Final measurements were made in the semi-anechoic chamber using calibrated, linearly polarized broadband and horn antennas. The test setup was configured to the setup that produced the worst case emissions. The spectrum analyzer was set to investigate all frequencies required for testing to compare the highest radiated disturbances with respect to the specified limits. The turntable containing the EUT was rotated through 360 degrees and the height of the receive antenna was varied 1 to 4 meters and stopped at the azimuth and height producing the maximum emission. Each emission was maximized by changing the orientation of the EUT through three orthogonal planes and changing the polarity of the receive antenna, whichever produced the worst-case emissions. According to 3dB beam-width of horn antenna, the horn antenna should be always directed to the EUT when rising height.

4. TEST EQUIPMENT CALIBRATION DATE

Conducted Emissions - SR2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR3	MRTSUE06185	1 year	2020/04/15
Two-Line V-Network	R&S	ENV 216	MRTSUE06002	1 year	2020/06/13
Two-Line V-Network	R&S	ENV 216	MRTSUE06003	1 year	2020/06/13
Thermohygrometer	Testo	608-H1	MRTSUE06404	1 year	2020/08/08
Shielding Anechoic Chamber	Mikebang	Chamber-SR2	MRTSUE06214	N/A	N/A

Radiated Emissions - AC1

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	MRTSUE06001	1 year	2020/08/01
PXA Signal Analyzer	Keysight	9030B	MRTSUE06395	1 year	2020/09/03
Bilog Period Antenna	Schwarzbeck	VULB 9168	MRTSUE06172	1 year	2020/03/31
Broad Band Horn Antenna	Schwarzbeck	BBHA 9120D	MRTSUE06023	1 year	2019/10/20
Broadband Coaxial Preamplifier	Agilent	83017A	MRTSUE06076	1 year	2019/11/16
Digital Thermometer & Hygrometer	Testo	608-H1	MRTSUE06403	1 year	2020/08/08
Anechoic Chamber	TDK	Chamber-AC1	MRTSUE06213	1 year	2020/04/30

Radiated Emissions - AC2

Instrument	Manufacturer	Type No.	Asset No.	Cali. Interval	Cali. Due Date
Spectrum Analyzer	Keysight	N9038A	MRTSUE06125	1 year	2020/08/01
Bilog Period Antenna	Schwarzbeck	VULB 9162	MRTSUE06022	1 year	2019/10/19
Horn Antenna	Schwarzbeck	BBHA9120D	MRTSUE06171	1 year	2019/11/09
Broadband Coaxial Preamplifier	Schwarzbeck	BBV 9718	MRTSUE06176	1 year	2019/11/16
Temperature/Humidity Meter	Minggao	ETH529	MRTSUE06170	1 year	2019/12/13
Anechoic Chamber	RIKEN	Chamber-AC2	MRTSUE06213	1 year	2020/04/30

Software	Version	Function
e3	V 8.3.5	EMI Test Software

5. 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 $k = 2$.

AC Conducted Emission Measurement - SR2
Measuring Uncertainty for a Level of Confidence of 95% ($U=2Uc(y)$): 150kHz~30MHz: 2.42dB
Radiated Disturbance - AC1
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 4.07dB 300MHz~1GHz: 3.63 dB Vertical: 30MHz~300MHz: 4.18 dB 300MHz~1GHz: 3.60 dB
Radiated Disturbance - AC1
The maximum measurement uncertainty is evaluated as: Horizontal: 1GHz~6GHz: 4.16 dB Vertical: 1GHz~6GHz: 4.76 dB
Radiated Disturbance - AC2
The maximum measurement uncertainty is evaluated as: Horizontal: 30MHz~300MHz: 3.75dB 300MHz~1GHz: 3.53 dB Vertical: 30MHz~300MHz: 3.86 dB 300MHz~1GHz: 3.53 dB The maximum measurement uncertainty is evaluated as: Horizontal: 1GHz~18GHz: 4.28dB Vertical: 1GHz~18GHz: 4.33 dB

6. TEST RESULT

6.1. Summary

FCC Part Section(s)	IC Part Section(s)	Test Description	Test Result
15.107	ICES-003 Issue 6	Conducted Emissions	Pass
15.109	ICES-003 Issue 6	Radiated Emissions	Pass

6.2. Conducted Emission Measurement

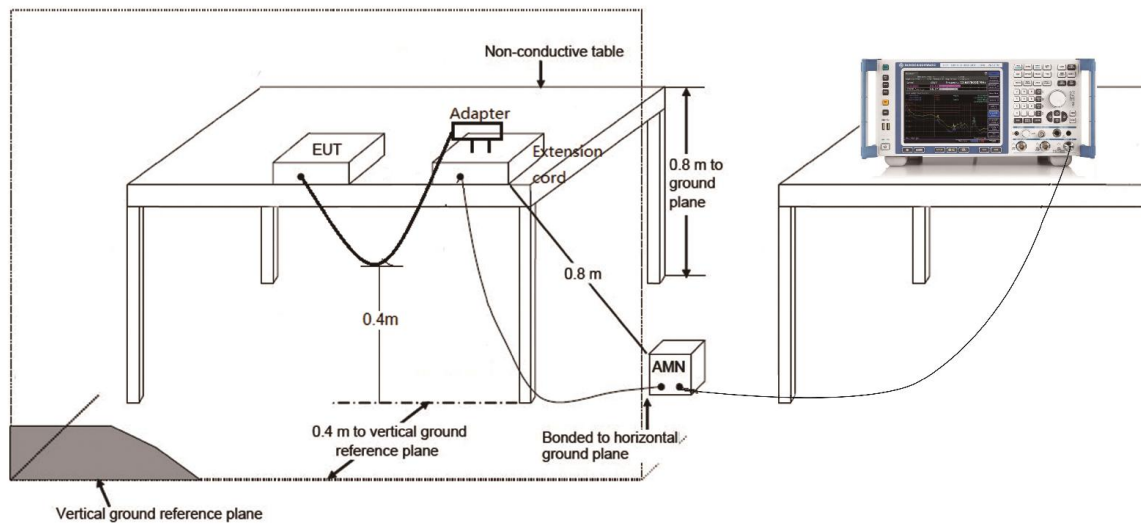
6.2.1. Test Limit

FCC Part 15.107 & ICES-003 Limits		
Frequency (MHz)	QP (dB μ V)	AV (dB μ V)
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.

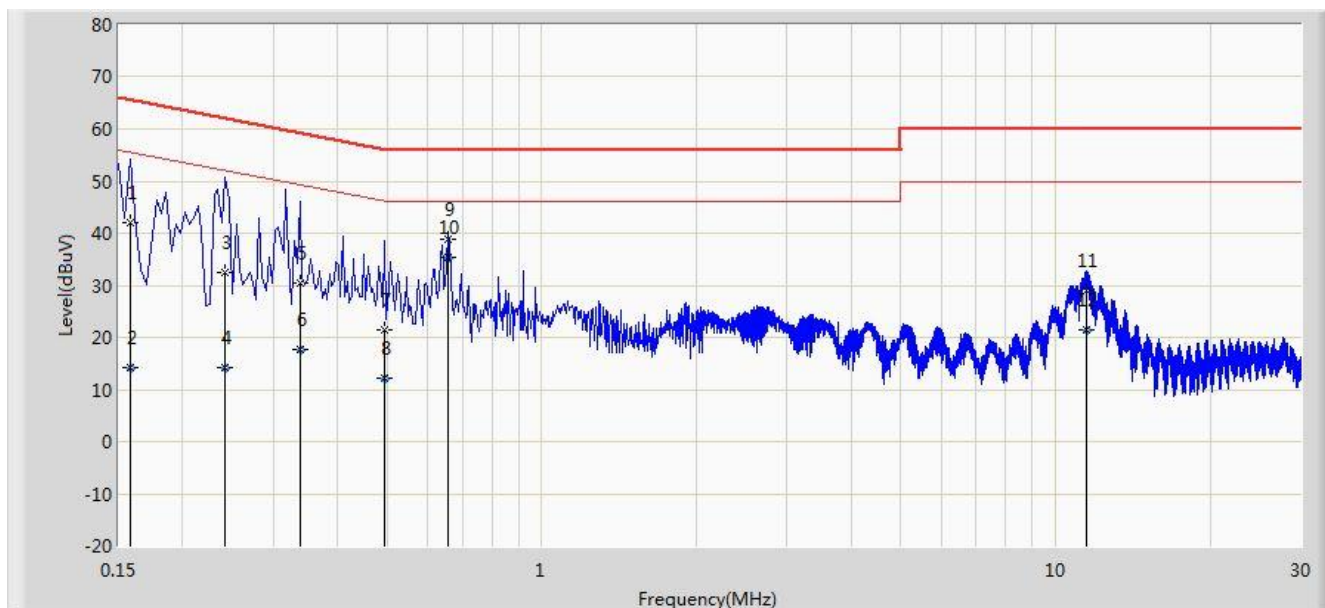
Note 2: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.

6.2.2. Test Setup



6.2.3. Test Result of Conducted Emissions

Site: SR2	Time: 2019/09/25 - 14:12
Limit: FCC_Part15.107_CE_AC Power_ClassB	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Radio DÄNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

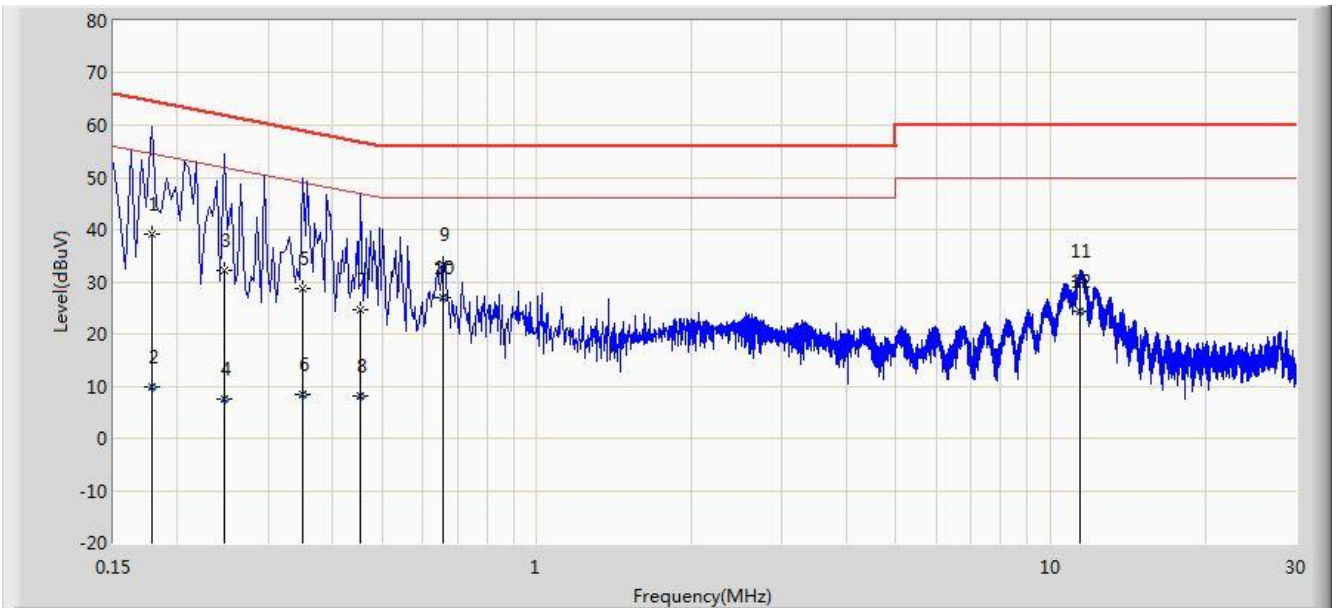


No	Flag	Mark	Frequency (MHz)	Measure Level (dBμV)	Reading Level (dBμV)	Margin (dB)	Limit (dBμV)	Factor (dB)	Type
1			0.158	42.086	31.775	-23.482	65.568	10.311	QP
2			0.158	14.145	3.834	-41.424	55.568	10.311	AV
3			0.242	32.410	22.452	-29.617	62.027	9.958	QP
4			0.242	14.197	4.240	-37.830	52.027	9.958	AV
5			0.338	30.438	20.403	-28.814	59.252	10.034	QP
6			0.338	17.580	7.545	-31.672	49.252	10.034	AV
7			0.494	21.580	11.423	-34.520	56.100	10.158	QP
8			0.494	12.230	2.072	-33.870	46.100	10.158	AV
9			0.658	38.934	28.849	-17.066	56.000	10.085	QP
10		*	0.658	35.497	25.412	-10.503	46.000	10.085	AV
11			11.458	29.102	19.004	-30.898	60.000	10.098	QP
12			11.458	21.592	11.494	-28.408	50.000	10.098	AV

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

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

Site: SR2	Time: 2019/09/25 - 14:18
Limit: FCC_Part15.107_CE_AC Power_ClassB	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

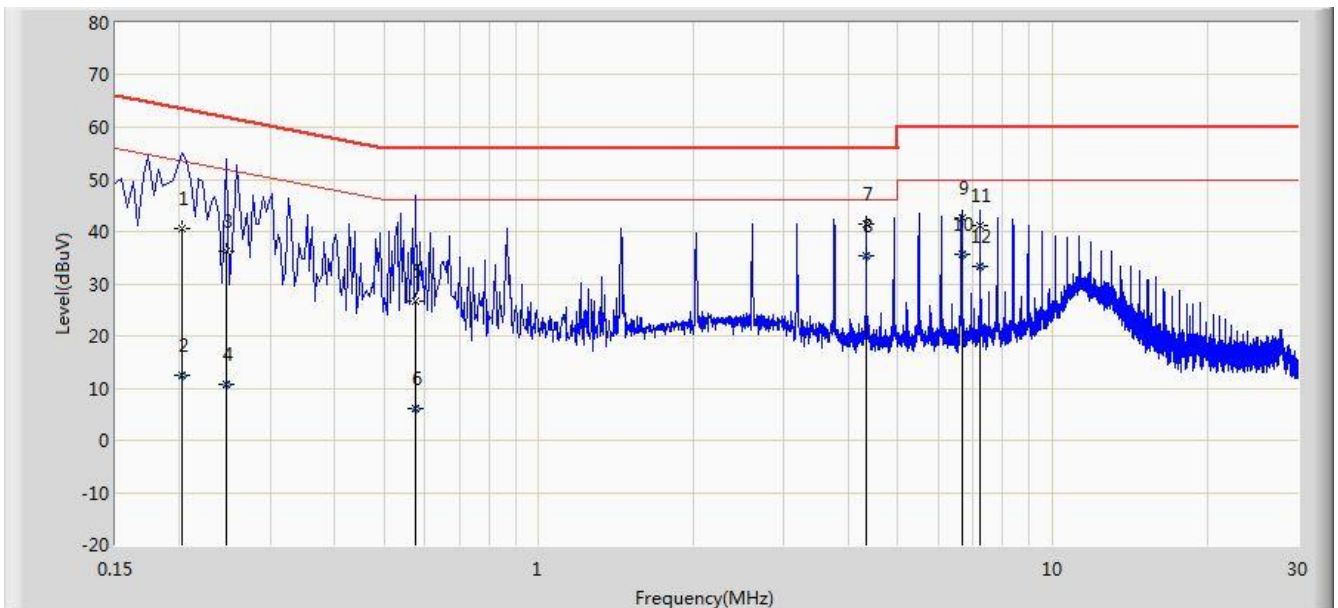


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.178	39.011	28.961	-25.568	64.578	10.049	QP
2			0.178	9.848	-0.201	-44.730	54.578	10.049	AV
3			0.246	32.096	22.098	-29.795	61.891	9.998	QP
4			0.246	7.580	-2.418	-44.311	51.891	9.998	AV
5			0.350	28.827	18.752	-30.135	58.962	10.074	QP
6			0.350	8.498	-1.577	-40.465	48.962	10.074	AV
7			0.454	24.777	14.625	-32.024	56.802	10.153	QP
8			0.454	8.038	-2.114	-38.763	46.802	10.153	AV
9			0.658	33.423	23.324	-22.577	56.000	10.099	QP
10		*	0.658	26.971	16.872	-19.029	46.000	10.099	AV
11			11.434	30.001	19.876	-29.999	60.000	10.125	QP
12			11.434	24.205	14.080	-25.795	50.000	10.125	AV

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

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

Site: SR2	Time: 2019/09/25 - 13:59
Limit: FCC_Part15.107_CE_AC Power_ClassB	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Line
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	

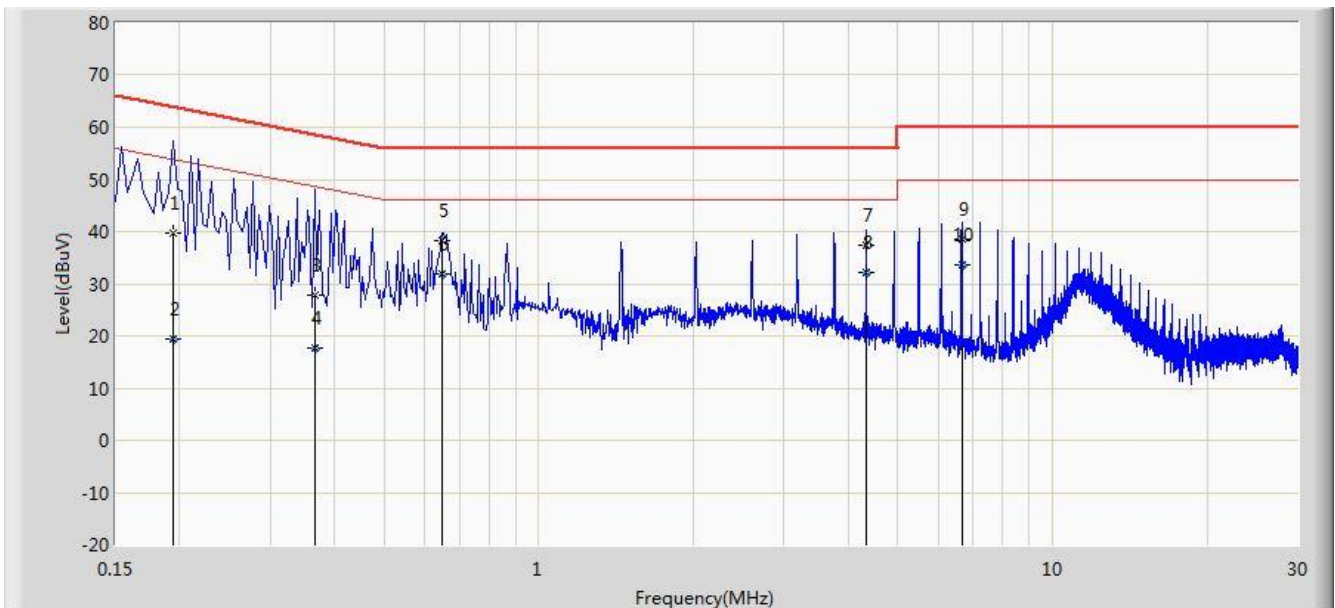


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.202	40.593	30.600	-22.935	63.528	9.993	QP
2			0.202	12.493	2.500	-41.035	53.528	9.993	AV
3			0.246	36.250	26.290	-25.641	61.891	9.961	QP
4			0.246	10.864	0.903	-41.028	51.891	9.961	AV
5			0.574	26.728	16.600	-29.272	56.000	10.128	QP
6			0.574	6.028	-4.100	-39.972	46.000	10.128	AV
7			4.338	41.350	31.370	-14.650	56.000	9.980	QP
8		*	4.338	35.237	25.257	-10.763	46.000	9.980	AV
9			6.650	42.515	32.365	-17.485	60.000	10.150	QP
10			6.650	35.701	25.551	-14.299	50.000	10.150	AV
11			7.226	41.160	30.998	-18.840	60.000	10.162	QP
12			7.226	33.447	23.285	-16.553	50.000	10.162	AV

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

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

Site: SR2	Time: 2019/09/25 - 14:04
Limit: FCC_Part15.107_CE_AC Power_ClassB	Engineer: Liz Yuan
Probe: ENV216_101683_Filter On	Polarity: Neutral
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV)	Factor (dB)	Type
1			0.194	39.731	29.709	-24.133	63.864	10.021	QP
2			0.194	19.541	9.520	-34.322	53.864	10.021	AV
3			0.366	27.941	17.854	-30.650	58.591	10.087	QP
4			0.366	17.560	7.473	-31.032	48.591	10.087	AV
5			0.650	38.142	28.038	-17.858	56.000	10.103	QP
6			0.650	32.010	21.906	-13.990	46.000	10.103	AV
7			4.341	37.288	27.300	-18.712	56.000	9.989	QP
8		*	4.341	32.088	22.100	-13.912	46.000	9.989	AV
9			6.650	38.611	28.448	-21.389	60.000	10.163	QP
10			6.650	33.610	23.447	-16.390	50.000	10.163	AV

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

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

6.3. Radiated Emission Measurement

6.3.1. Test Limit

FCC Part 15.109 Limits		
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 (µV/m)		

6.3.2. Test Frequency selected

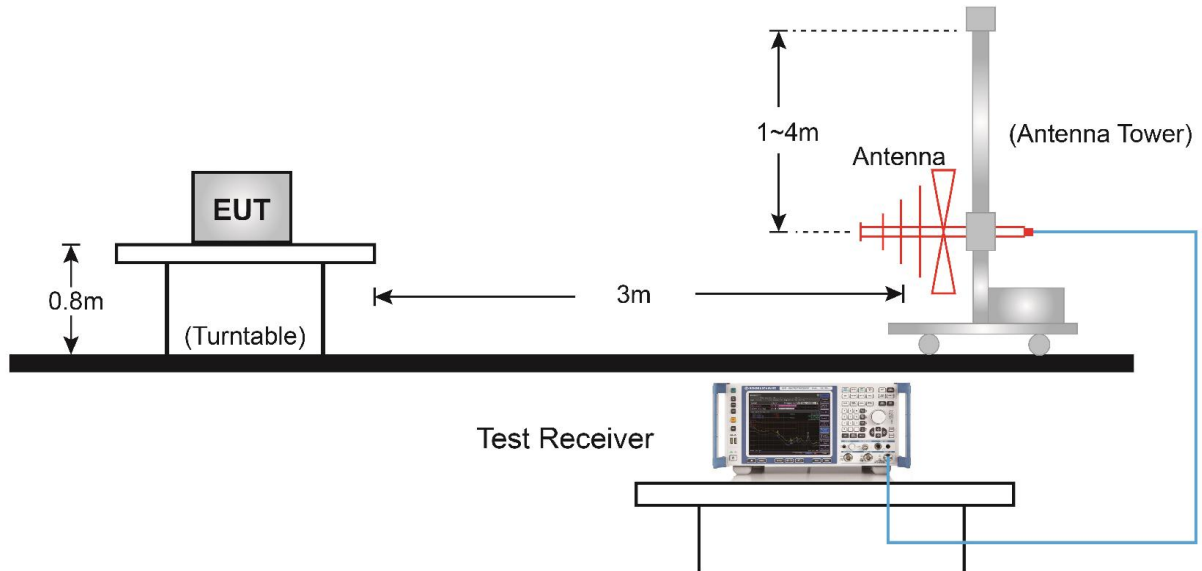
For an unintentional radiator, including a digital device, the spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement range (MHz)
Below 1.705	30
1.705 - 108	1000
108 - 500	2000
500 - 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

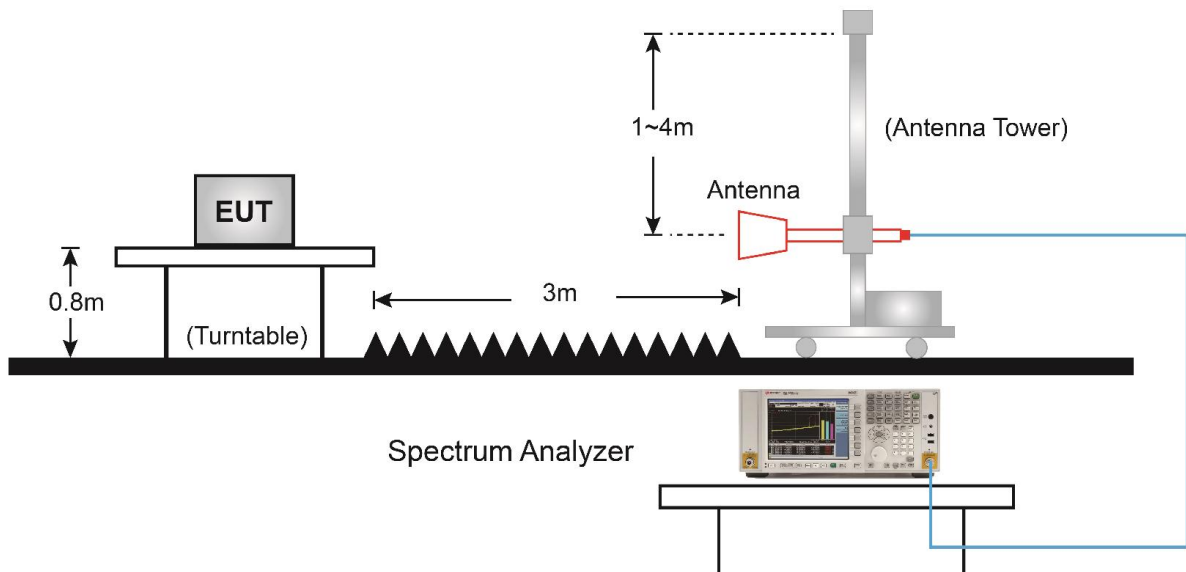
Note: Highest frequency generated or used in this device is 2480MHz.

6.3.3. Test Setup

Below 1GHz Test Setup:

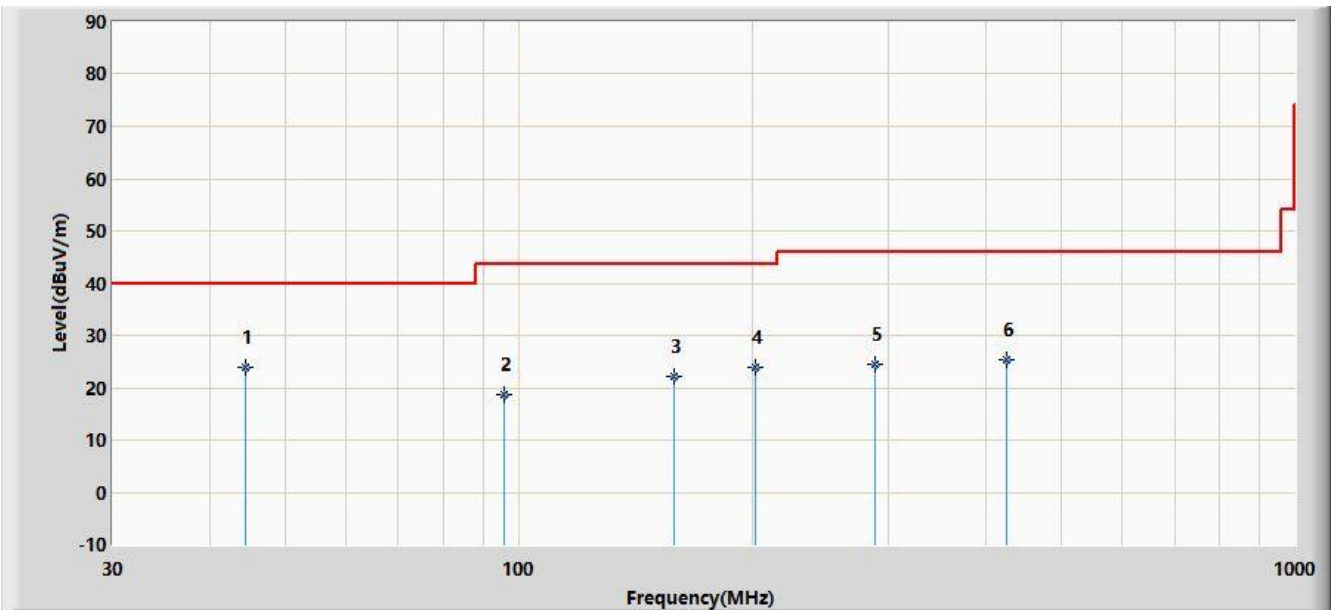


Above 1GHz Test Setup:



6.3.4. Test Result of Radiated Emissions

Site: AC2	Time: 2019/09/27 - 19:47
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

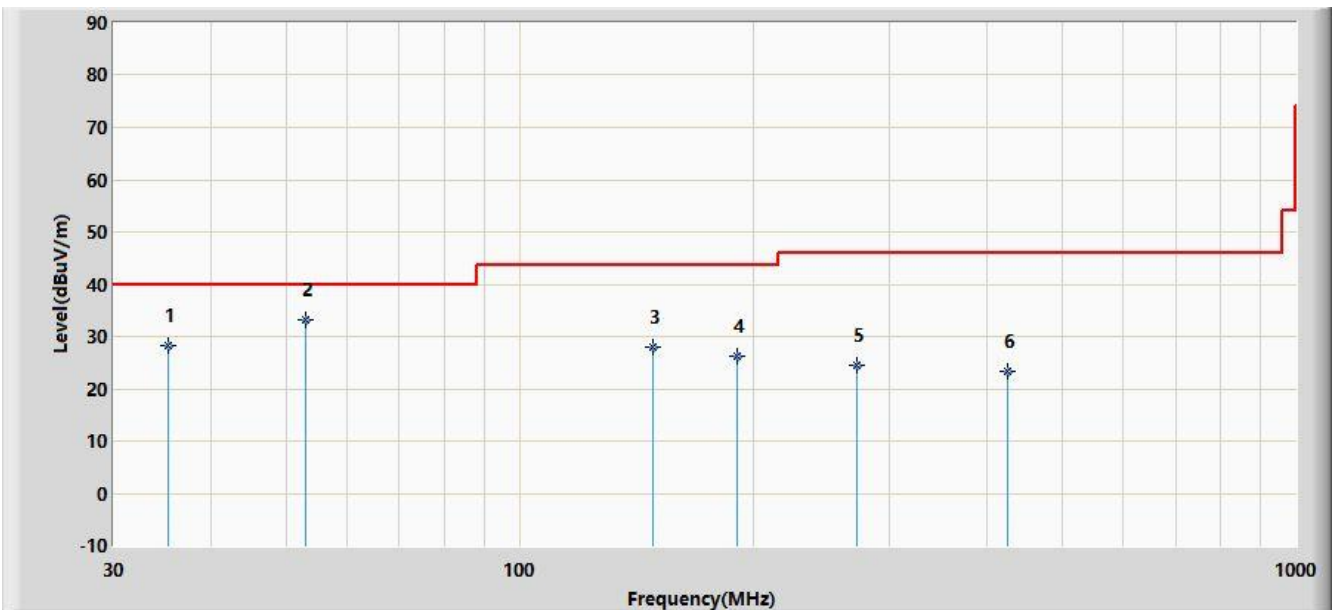


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	44.550	24.041	9.403	-15.959	40.000	14.638	QP
2			95.960	18.671	6.337	-24.829	43.500	12.334	QP
3			159.010	22.254	12.620	-21.246	43.500	9.635	QP
4			202.175	23.837	11.722	-19.663	43.500	12.116	QP
5			288.505	24.374	10.283	-21.626	46.000	14.091	QP
6			425.760	25.468	8.699	-20.532	46.000	16.769	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:47
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

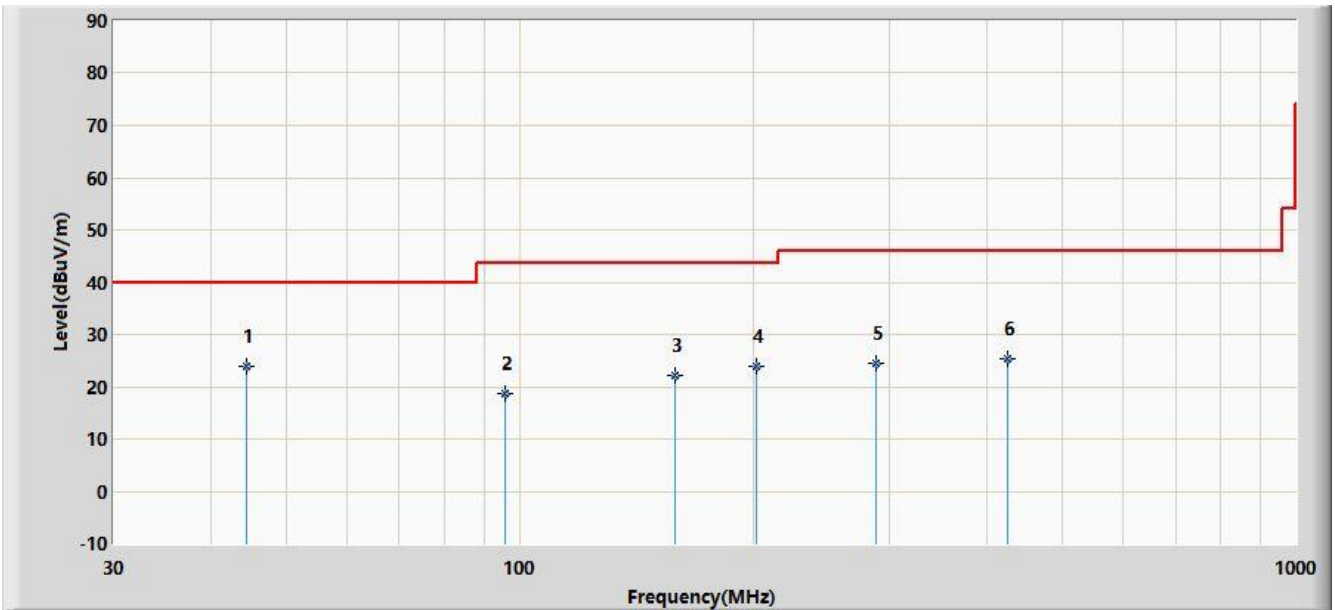


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			35.335	28.290	15.346	-11.710	40.000	12.943	QP
2		*	53.010	33.226	18.440	-6.774	40.000	14.786	QP
3			148.340	28.087	18.786	-15.413	43.500	9.302	QP
4			191.020	26.150	14.483	-17.350	43.500	11.667	QP
5			271.530	24.619	10.782	-21.381	46.000	13.837	QP
6			425.760	23.341	6.572	-22.659	46.000	16.769	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:47
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	

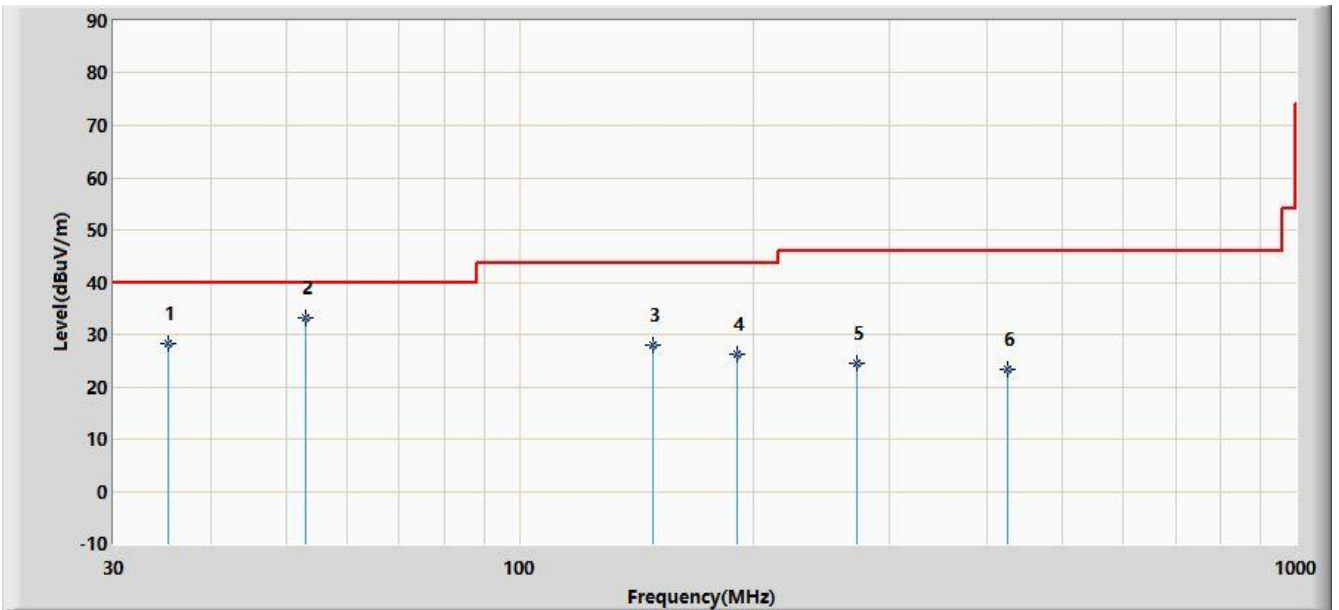


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	44.550	24.041	9.403	-15.959	40.000	14.638	QP
2			95.960	18.671	6.337	-24.829	43.500	12.334	QP
3			159.010	22.254	12.620	-21.246	43.500	9.635	QP
4			202.175	23.837	11.722	-19.663	43.500	12.116	QP
5			288.505	24.374	10.283	-21.626	46.000	14.091	QP
6			425.760	25.468	8.699	-20.532	46.000	16.769	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:47
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	

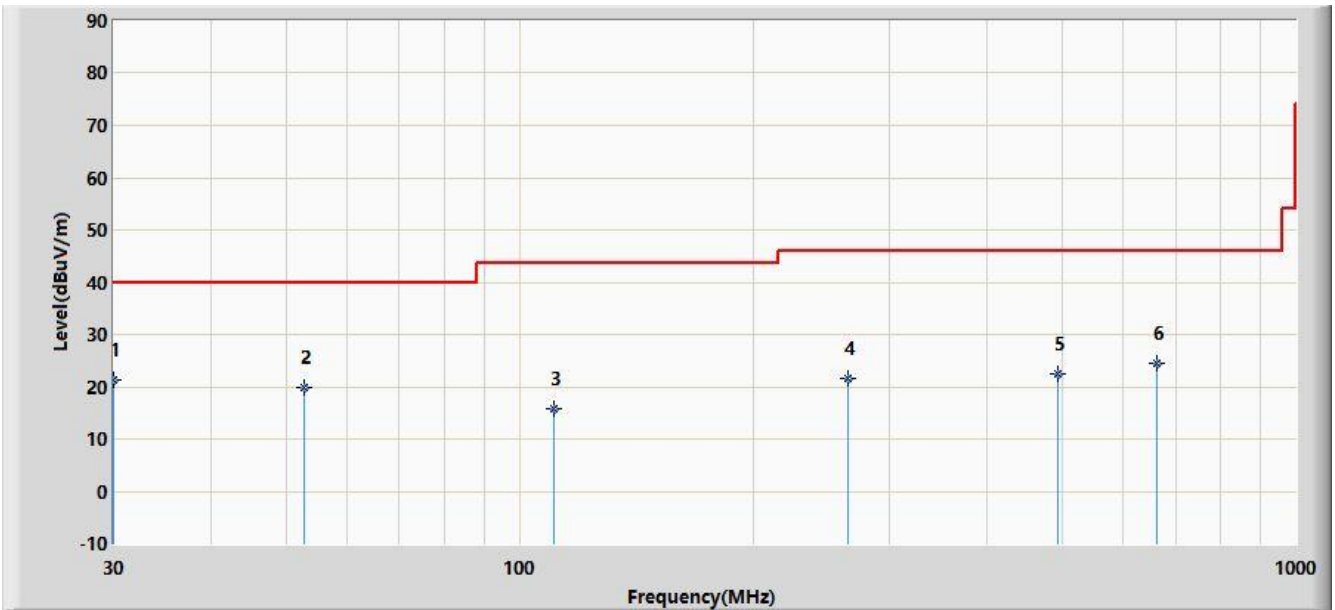


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			35.335	28.290	15.346	-11.710	40.000	12.943	QP
2		*	53.010	33.226	18.440	-6.774	40.000	14.786	QP
3			148.340	28.087	18.786	-15.413	43.500	9.302	QP
4			191.020	26.150	14.483	-17.350	43.500	11.667	QP
5			271.530	24.619	10.782	-21.381	46.000	13.837	QP
6			425.760	23.341	6.572	-22.659	46.000	16.769	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:56
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: Radio DÃNDIMPEN	Power: By Battery
Test Mode 3	

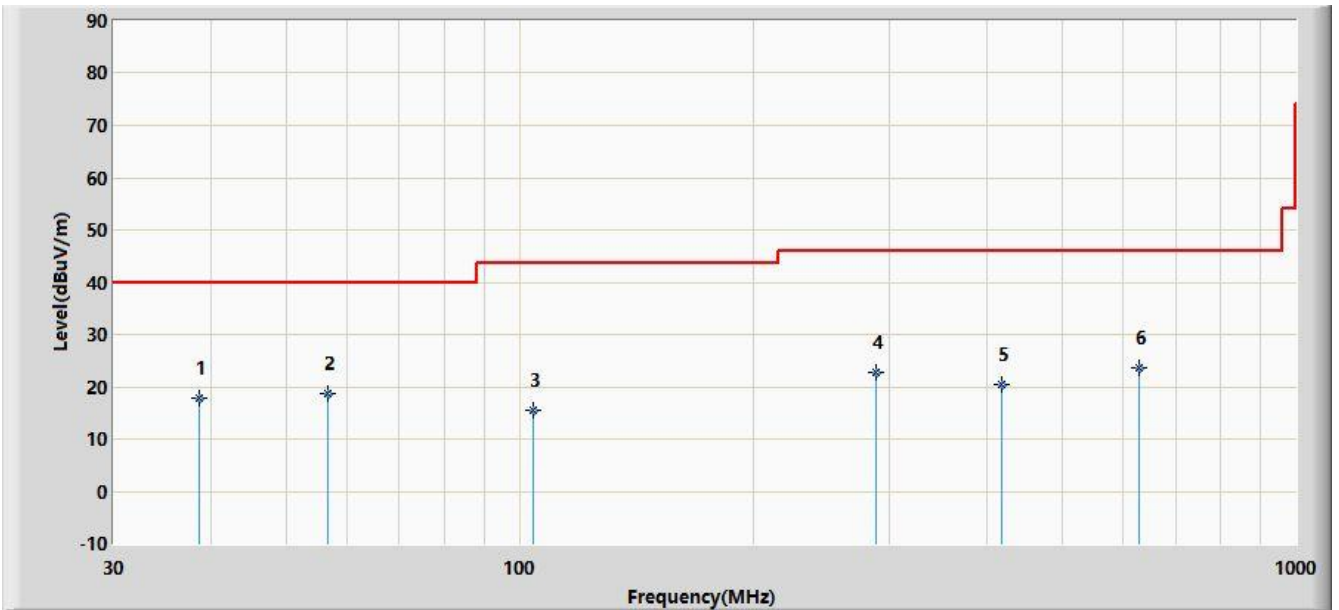


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1		*	30.000	21.212	9.243	-18.788	40.000	11.969	QP
2			52.795	19.889	5.100	-20.111	40.000	14.790	QP
3			110.995	15.734	3.127	-27.766	43.500	12.608	QP
4			264.740	21.704	7.968	-24.296	46.000	13.736	QP
5			493.175	22.561	4.683	-23.439	46.000	17.878	QP
6			661.470	24.540	4.077	-21.460	46.000	20.462	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:56
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 3	

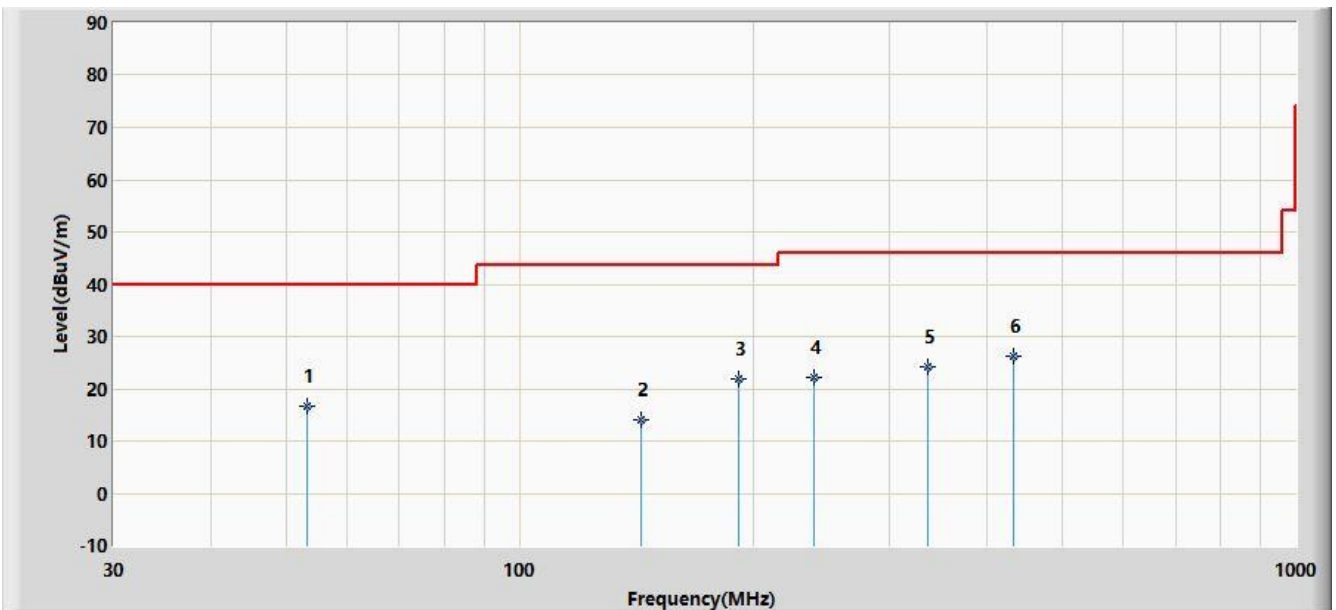


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			38.730	17.810	4.263	-22.190	40.000	13.547	QP
2		*	56.675	18.819	4.497	-21.181	40.000	14.322	QP
3			104.205	15.399	2.401	-28.101	43.500	12.998	QP
4			287.535	22.761	8.690	-23.239	46.000	14.072	QP
5			418.000	20.293	3.608	-25.707	46.000	16.685	QP
6			627.035	23.654	3.676	-22.346	46.000	19.978	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 4	

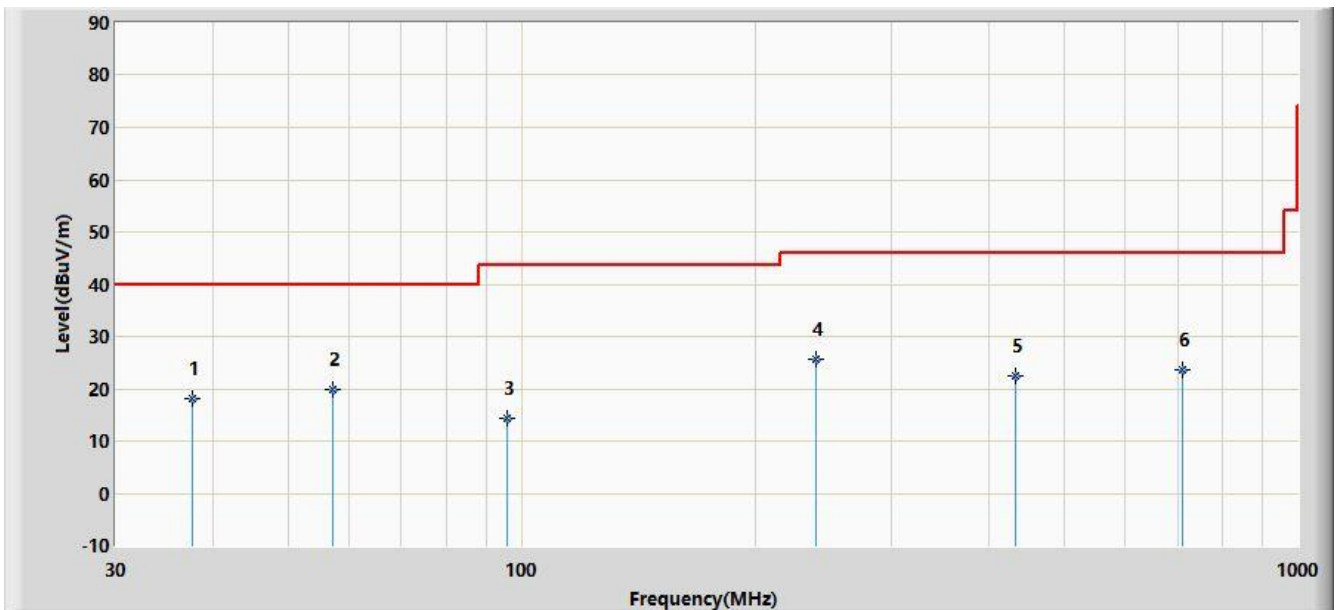


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			53.280	16.611	1.830	-23.389	40.000	14.781	QP
2			143.490	14.028	4.739	-29.472	43.500	9.289	QP
3			191.505	21.992	10.297	-21.508	43.500	11.695	QP
4			240.005	22.243	9.052	-23.757	46.000	13.191	QP
5			336.305	24.061	8.779	-21.939	46.000	15.282	QP
6		*	432.065	26.256	9.420	-19.744	46.000	16.837	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: VULB9162_0.03-8GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 4	

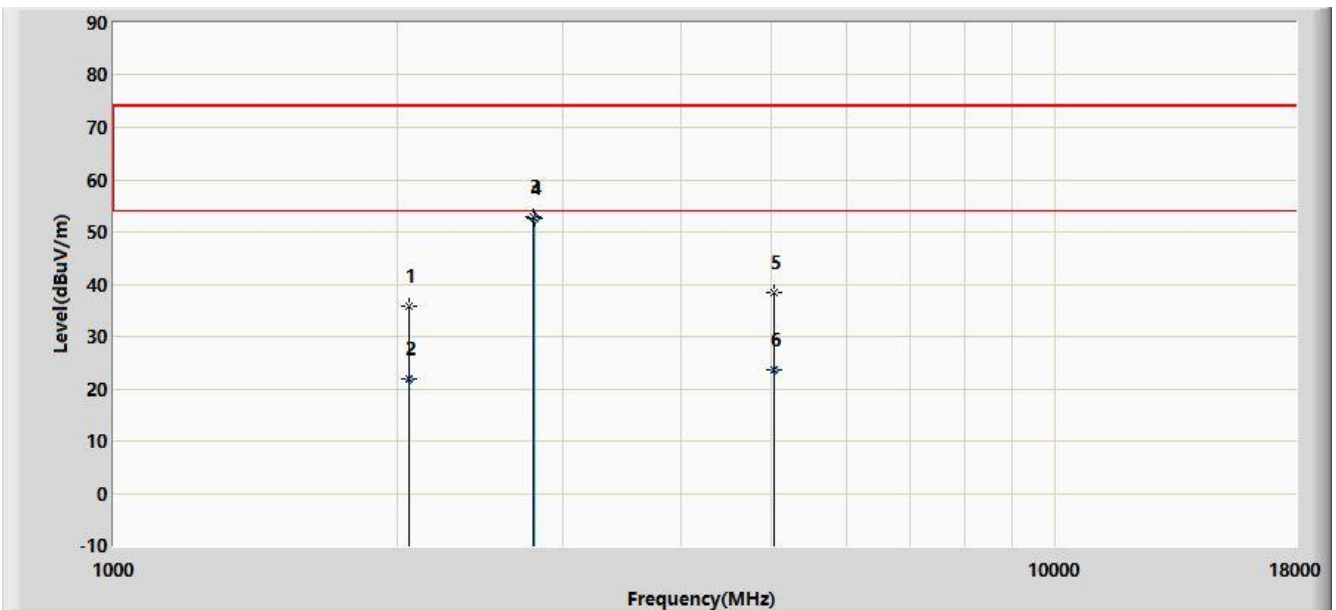


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			37.760	18.025	4.658	-21.975	40.000	13.367	QP
2		*	57.160	19.875	5.630	-20.125	40.000	14.245	QP
3			95.960	14.442	2.108	-29.058	43.500	12.334	QP
4			240.005	25.727	12.536	-20.273	46.000	13.191	QP
5			432.065	22.602	5.766	-23.398	46.000	16.837	QP
6			709.000	23.539	2.251	-22.461	46.000	21.289	QP

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Radio DĂNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

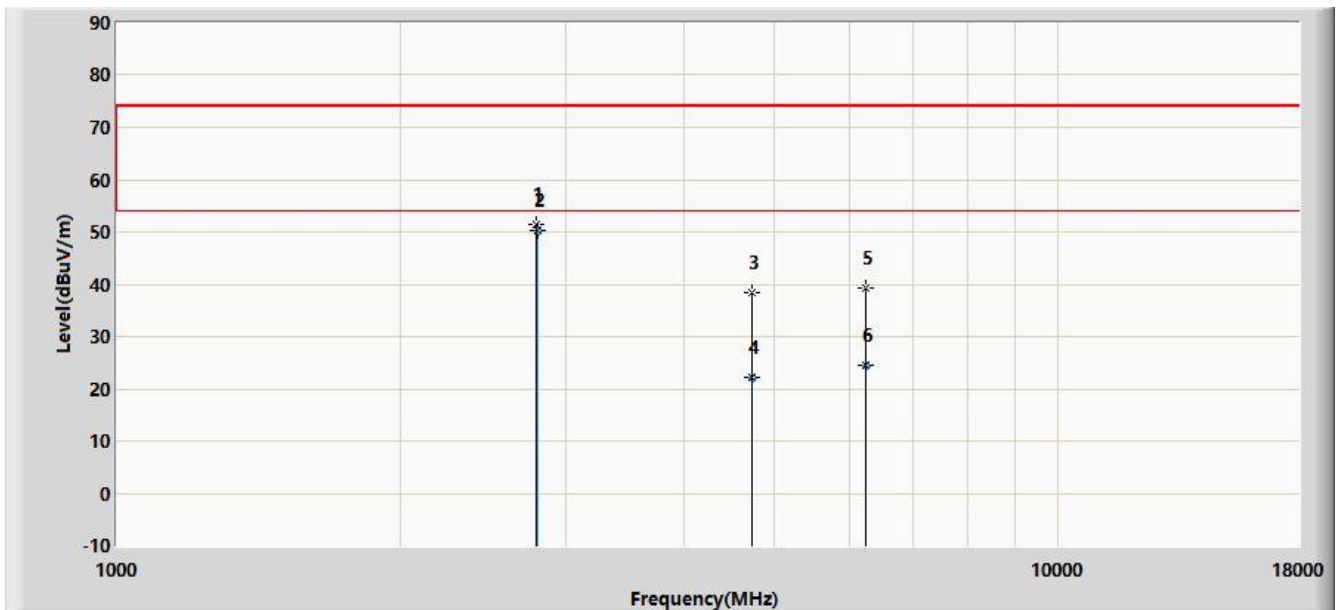


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2062.500	35.750	38.573	-38.250	74.000	-2.822	PK
2			2062.500	21.997	24.820	-32.003	54.000	-2.822	AV
3			2793.500	52.821	54.512	-21.179	74.000	-1.691	PK
4		*	2795.950	52.544	54.240	-1.456	54.000	-1.696	AV
5			5029.000	38.549	34.785	-35.451	74.000	3.764	PK
6			5029.000	23.734	19.970	-30.266	54.000	3.764	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Radio DÃNDIMPEN	Power: AC 120V/60Hz
Test Mode 1	

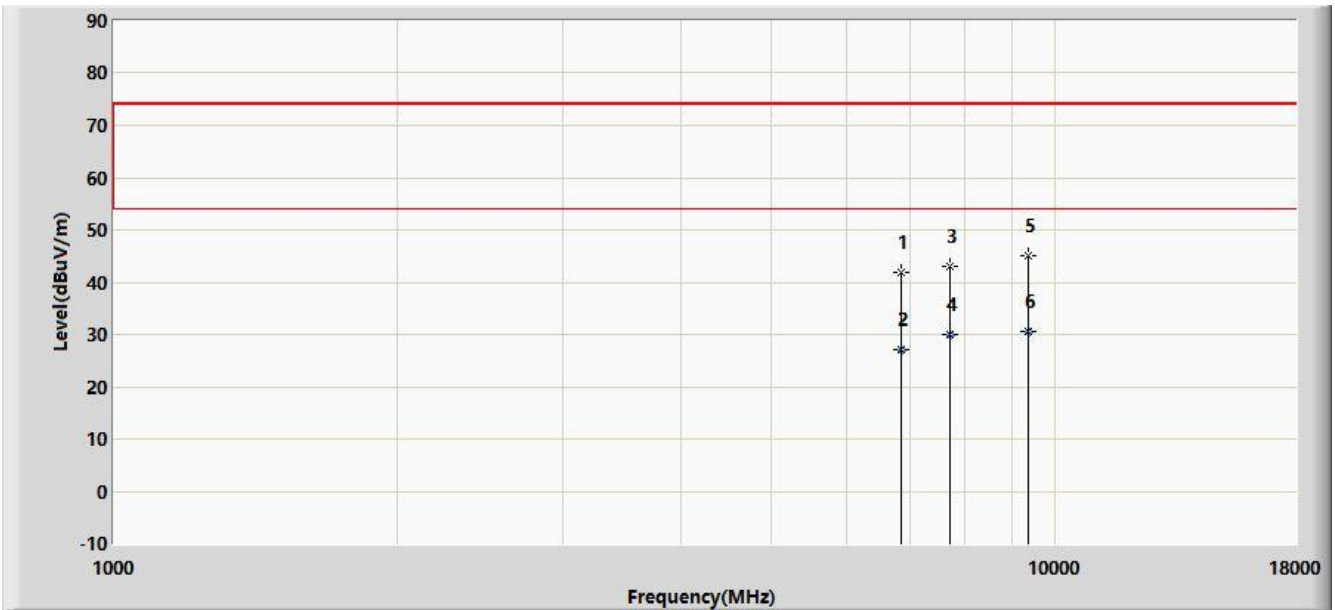


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2793.500	51.381	53.072	-22.619	74.000	-1.691	PK
2		*	2795.962	50.164	51.860	-3.836	54.000	-1.696	AV
3			4731.500	38.300	34.945	-35.700	74.000	3.355	PK
4			4731.500	22.085	18.730	-31.915	54.000	3.355	AV
5			6236.000	39.313	32.359	-34.687	74.000	6.954	PK
6			6236.000	24.384	17.430	-29.616	54.000	6.954	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:51
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	

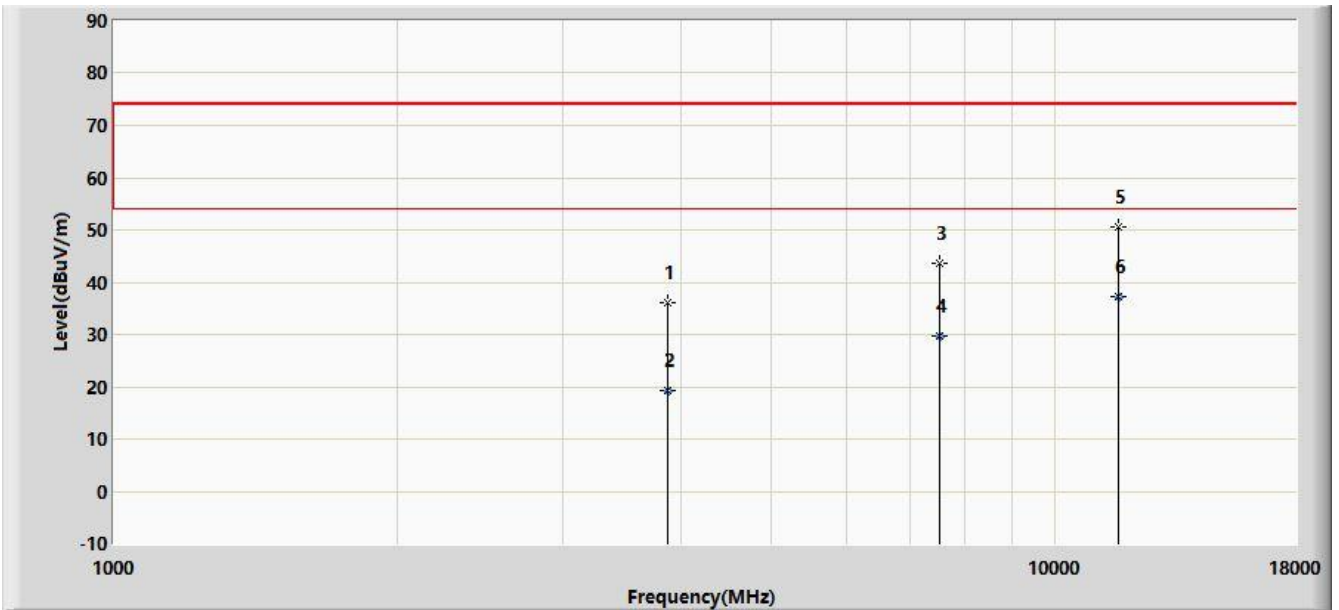


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			6865.000	41.918	32.372	-32.082	74.000	9.546	PK
2			6865.000	27.126	17.580	-26.874	54.000	9.546	AV
3			7732.000	43.148	31.711	-30.852	74.000	11.437	PK
4			7732.000	30.007	18.570	-23.993	54.000	11.437	AV
5			9347.000	45.195	31.789	-28.805	74.000	13.406	PK
6		*	9347.000	30.686	17.280	-23.314	54.000	13.406	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:51
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: AC 120V/60Hz
Test Mode 2	

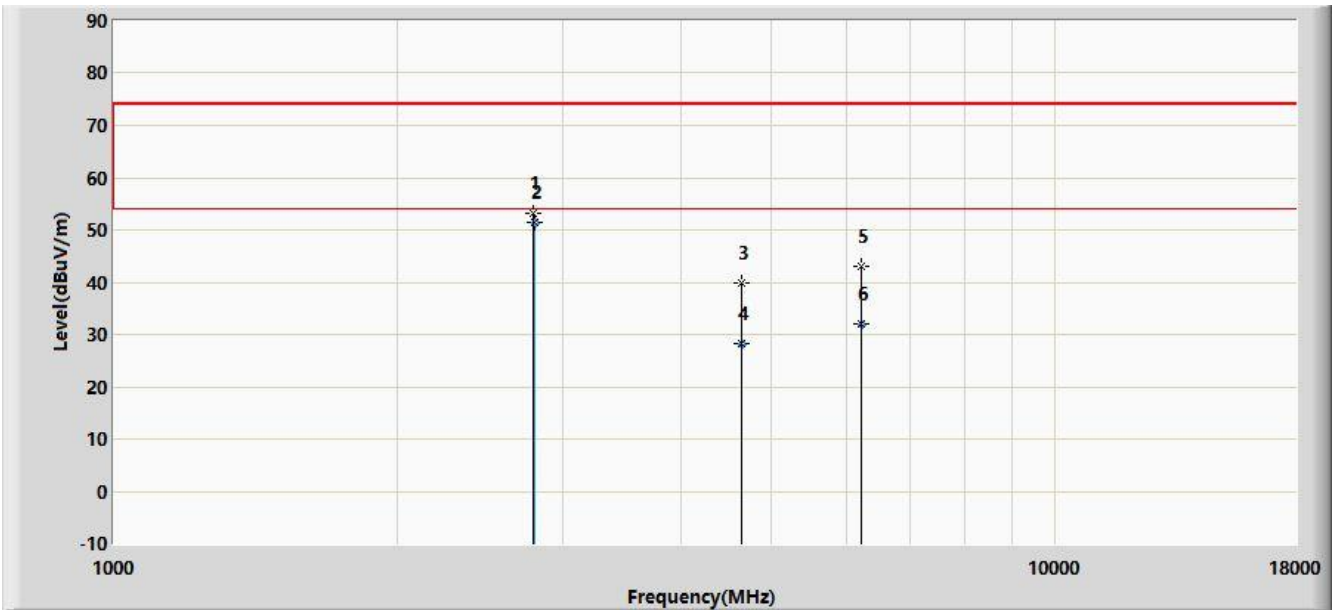


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			3873.000	36.148	36.234	-37.852	74.000	-0.086	PK
2			3873.000	19.194	19.280	-34.806	54.000	-0.086	AV
3			7536.500	43.717	31.972	-30.283	74.000	11.745	PK
4			7536.500	29.805	18.060	-24.195	54.000	11.745	AV
5			11667.500	50.645	31.039	-23.355	74.000	19.605	PK
6		*	11667.500	37.116	17.510	-16.884	54.000	19.605	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 3	

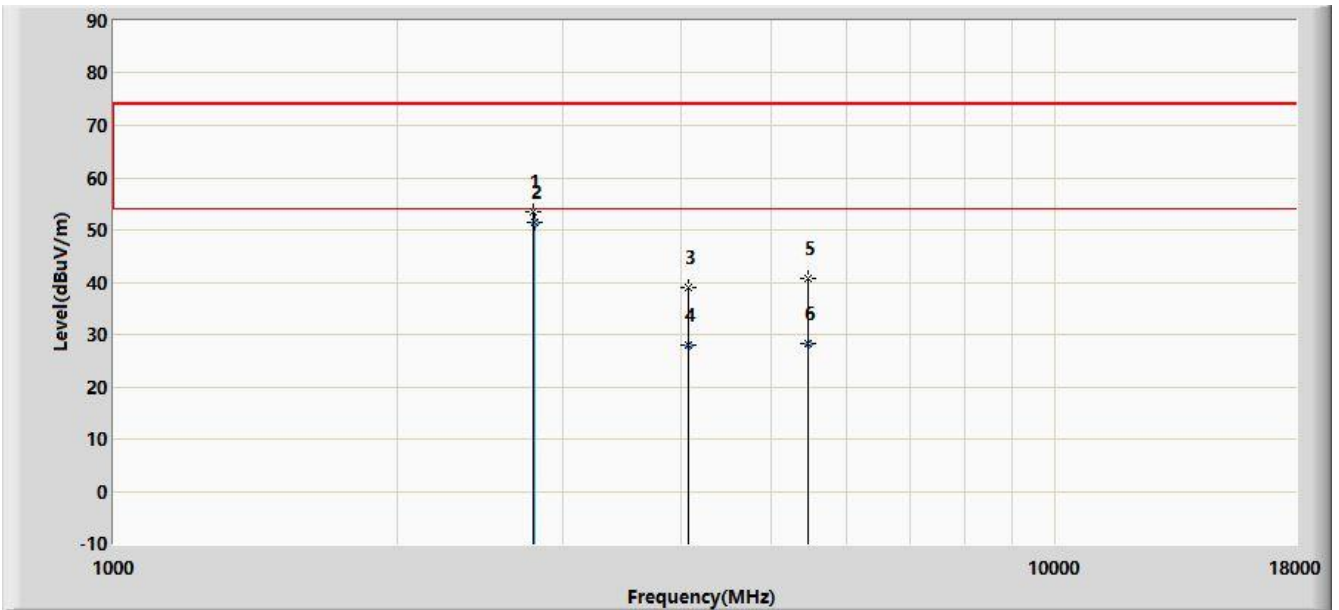


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2793.500	53.322	55.013	-20.678	74.000	-1.691	PK
2		*	2795.950	51.409	53.105	-2.591	54.000	-1.696	AV
3			4638.000	39.780	36.686	-34.220	74.000	3.094	PK
4			4638.330	28.266	25.170	-25.734	54.000	3.095	AV
5			6219.000	43.021	36.296	-30.979	74.000	6.725	PK
6			6219.250	31.898	25.170	-22.102	54.000	6.729	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:56
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Radio DÃNDIMPEN	Power: By Battery
Test Mode 3	

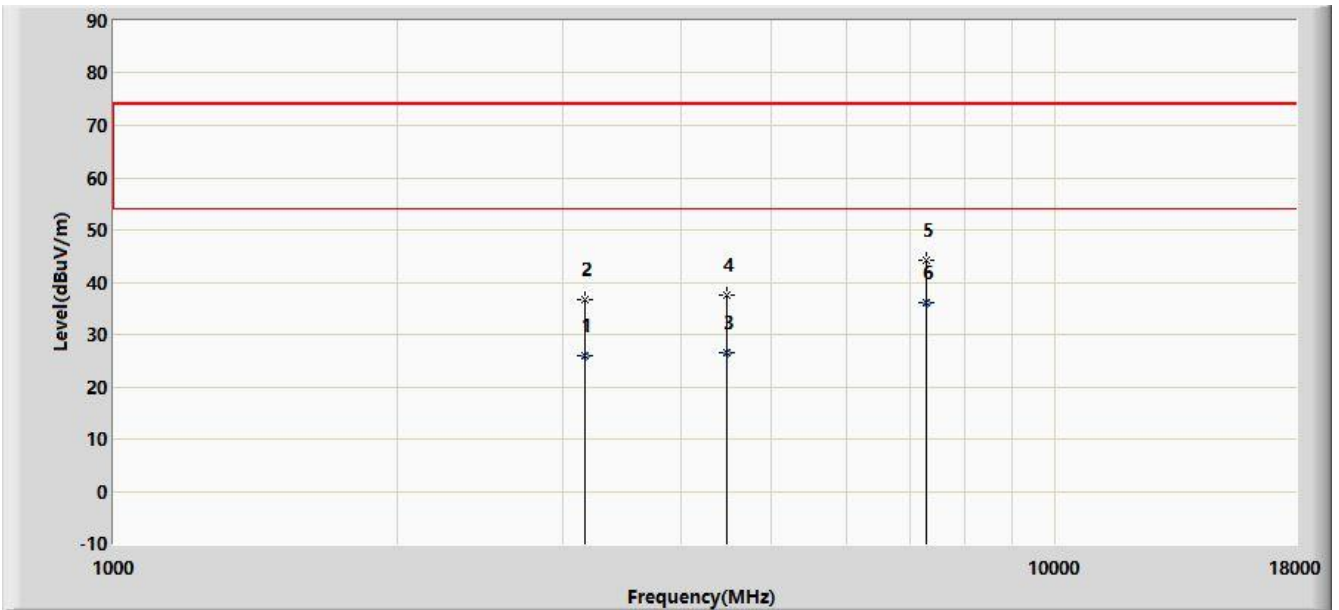


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			2793.500	53.345	55.036	-20.655	74.000	-1.691	PK
2		*	2795.955	51.524	53.220	-2.476	54.000	-1.696	AV
3			4077.000	39.063	38.228	-34.937	74.000	0.835	PK
4			4077.298	27.966	27.130	-26.034	54.000	0.836	AV
5			5462.500	40.821	36.748	-33.179	74.000	4.073	PK
6			5462.650	28.241	24.170	-25.759	54.000	4.071	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Horizontal
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 4	

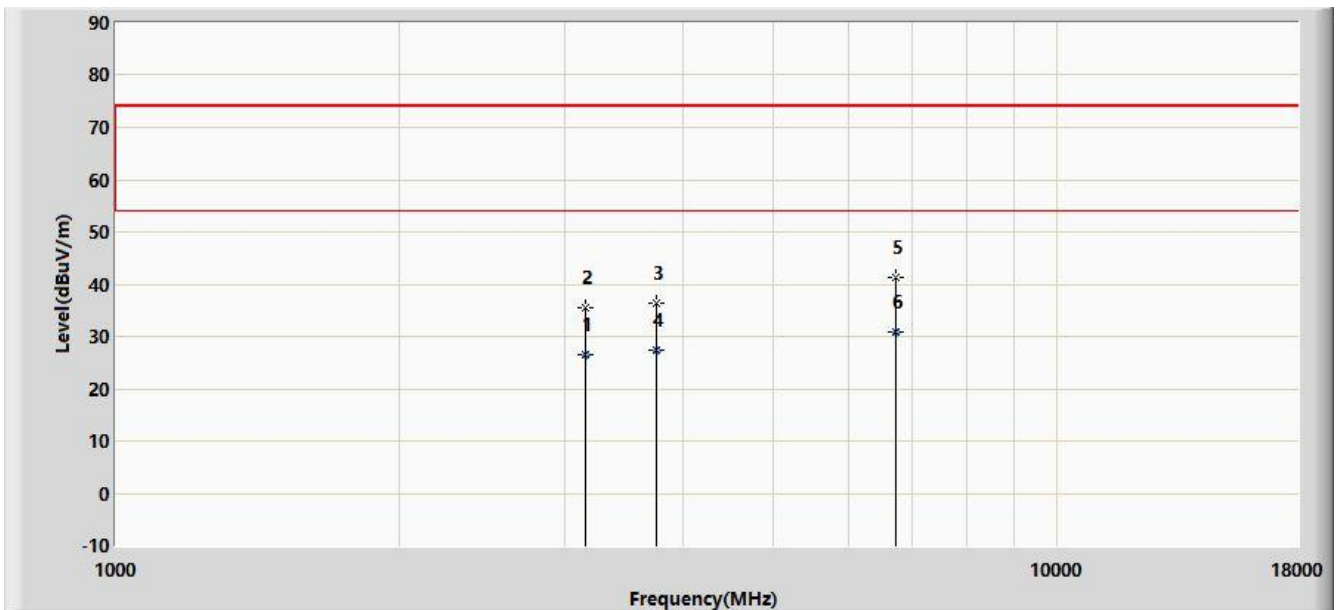


No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			3167.140	25.843	27.470	-28.157	54.000	-1.627	AV
2			3167.500	36.649	38.276	-37.351	74.000	-1.627	PK
3			4476.250	26.467	24.010	-27.533	54.000	2.457	AV
4			4476.500	37.480	35.019	-36.520	74.000	2.462	PK
5			7307.000	44.201	32.342	-29.799	74.000	11.859	PK
6		*	7307.250	36.220	24.360	-17.780	54.000	11.861	AV

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

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

Site: AC2	Time: 2019/09/27 - 19:55
Limit: FCC_Part15.109_RE(3m)_ClassB	Engineer: David Lv
Probe: BBHA9120D_1-18GHz	Polarity: Vertical
EUT: Radio DÂNDIMPEN	Power: By Battery
Test Mode 4	



No	Flag	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Margin (dB)	Limit (dBuV/m)	Factor (dB)	Type
1			3150.198	26.468	28.100	-27.532	54.000	-1.632	AV
2			3150.500	35.503	37.134	-38.497	74.000	-1.632	PK
3			3745.500	36.444	36.875	-37.556	74.000	-0.431	PK
4			3745.580	27.469	27.900	-26.531	54.000	-0.432	AV
5			6746.000	41.444	32.725	-32.556	74.000	8.719	PK
6		*	6746.250	30.756	22.036	-23.244	54.000	8.720	AV

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

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

7. CONCLUSION

The data collected relate only the item(s) tested and show that the device has been tested to comply with the requirements specified in Part 15B of the FCC Rules and ICES-003 Issue 6 of ISED Rules.

_____ The End _____

Appendix A - Test Setup Photograph

Refer to “1906WSU019-UT” file.

Appendix B - EUT Photograph

Refer to “1906WSU019-UE” file.