

NCC RADIO TEST REPORT

Product name	Active Speaker
Applicant	Adam Hall GmbH
Manufacture	Adam Hall GmbH
Factory	Soundking Electronics and Sound Co., LTD
Rating(s)	AC 100~240V, 50/60Hz 150W Max
Trademark	
Model and/or type reference	LDICOA12ABT, LDICOA15ABT
Standard	LP0002:2018
Test Result	PASS

Date of receipt : 2019-11-11
Date of Issue : 2019-12-02

signature :



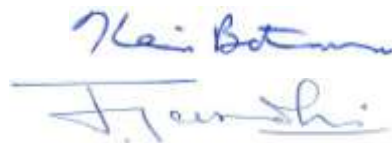
NCC RADIO TEST REPORT

Report Reference No. M80620J873

Compiled by (+ signature)..... Kevin Bothmann

Approved by (+ signature) Jay Gandhi

Date of issue..... 2019-12-02



Applicant's name Adam Hall GmbH

Address Adam-Hall-Str.1, 61267 Neu-Anspach, Germany

Manufacture's Name..... Adam Hall GmbH

Address Adam-Hall-Str.1, 61267 Neu-Anspach, Germany

Test specification:

Standard LP0002: 2018

Test procedure EIA 603 、 ANSI 、 FCC/47 CFR/2.1046 、 2.1047 、 2.1049 、 2.1051 、 2.1053 and 2.1055

Non-standard test method..... N/A

Test item description

Product name : Active Speaker

Brand name :



Model and/or type reference : LDICOA12ABT, LDICOA15ABT

Rating(s)..... : AC 100~240V, 50/60Hz 150W Max

Testing Laboratory information:

Testing Laboratory Name : Electro Magnetic Test, Inc.

Address : 1547 Plymouth Street, Mountain View, CA 94043

CAB Identifier Number : US0036

Tel...... : (650) 965-4000

Fax : (650) 965-3000

E-mail : jgandhi@emtlabs.com

Testing.....

Date of receipt of test item Nov. 11, 2019

Date (s) of performance of tests..... Nov. 11 ~ Nov. 25, 2019

Date of Issue..... Dec. 02, 2019

Test Result..... **Pass**

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Electro Magnetic Test, Inc., which is an independent testing and consulting firm. The test report is based on testing performed Electro Magnetic Test, Inc. personnel according to the measurement procedure described in the test specification given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced in any form unless done so in full.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Federal Government.

Electro Magnetic Test, Inc. is recognized by the following agencies for performing EMI/EMC testing:

COUNTRY	AGENCY	IDENTIFYING #
USA	Federal Communications Commission (FCC) (EMT's test site is recognized by the FCC)	Registration Number: 90576
USA, Canada, Taiwan, Australia/New Zealand, European Community	National Voluntary Lab Accreditation Program (NVLAP) (EMT is accredited by NVLAP. A copy of the NVLAP Scope Of Accreditation is available upon request.)	Lab Code: 200147-0
Canada	Industry Canada	File No.: IC 2804
Japan	Voluntary Control Council For Interference (VCCI)	A-0118
	Open Field Test Site "A"	-
	Mains Conducted Emissions Test Site "A"	-
	Telecom Conducted Emissions Test Site "A"	-
	3 Meter Semi-Anechoic Chamber Site "E"	-
	3 Meter Semi-Anechoic Chamber Site "E" (1GHz – 6GHz)	-
	Mains Conducted Emissions Test Site "E"	-
	Telecom Conducted Emissions Test Site "E"	-
Korea	Ministry of Information and Communication's Radio Research Laboratory (RRL) under the Asia Pacific Economic Cooperation (APEC) Mutual Recognition Arrangement (A copy of the Scope Of Accreditation is available upon request)	US0036
Taiwan	Bureau Of Standards, Metrology and Inspection (BSMI)	Reference Number: SL2-IN-E-1024
Australia / New Zealand	Australian Communications Authority (AUSTEL)	*

***THESE AGENCIES DO NOT ISSUE AN IDENTIFYING NUMBER TO TEST LABS.**

Table of Contents	Page
GENERAL REPORT SUMMARY	3
1 . SUMMARY OF TEST RESULTS	6
1.1 MEASUREMENT UNCERTAINTY	7
2 . GENERAL INFORMATION	8
2.1 GENERAL DESCRIPTION OF EUT	8
2.2 DESCRIPTION OF TEST MODES	10
2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING	10
2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED	11
2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)	12
3 . EMC EMISSION TEST	15
3.1 CONDUCTED EMISSION MEASUREMENT	15
3.1.1 POWER LINE CONDUCTED EMISSION LIMITS	15
3.1.2 TEST PROCEDURE	16
3.1.3 DEVIATION FROM TEST STANDARD	16
3.1.4 TEST SETUP	16
3.1.5 TEST RESULTS	17
3.2 RADIATED EMISSION MEASUREMENT	19
3.2.1 RADIATED EMISSION LIMITS	19
3.2.2 TEST PROCEDURE	20
3.2.3 TEST SETUP	21
3.2.4 EUT OPERATING CONDITIONS	21
3.2.5 TEST RESULTS (BELOW 30MHZ)	22
3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)	22
3.2.7 TEST RESULTS (ABOVE 1000 MHZ)	30
3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)	42
4 . OCCUPIED BANDWIDTH TEST	47
4.1 APPLIED PROCEDURES / LIMIT	47
4.1.1 TEST PROCEDURE	47
4.1.2 TEST SETUP	47
4.1.3 EUT OPERATION CONDITIONS	47
4.1.4 TEST RESULTS	48
5 . POWER DENSITY	50
5.1 APPLIED PROCEDURES / LIMIT	50
5.1.1 TEST PROCEDURE	50
5.1.2 TEST SETUP	50
5.1.3 EUT OPERATION CONDITIONS	50

Table of Contents	Page
5.1.4 TEST RESULTS	51
6 . PEAK OUTPUT POWER TEST	53
6.1 APPLIED PROCEDURES / LIMIT	53
6.1.1 TEST PROCEDURE	53
6.1.2 DEVIATION FROM STANDARD	53
6.1.3 TEST SETUP	53
6.1.4 EUT OPERATION CONDITIONS	53
6.1.5 TEST RESULTS	54
7 . ANTENNA CONDUCTED SPURIOUS EMISSION	56
7.1 APPLIED PROCEDURES / LIMIT	56
7.1.1 TEST PROCEDURE	56
7.1.2 TEST SETUP	56
7.1.3 EUT OPERATION CONDITIONS	56
7.1.4 TEST RESULTS	57
8. ANTENNA REQUIREMENT	59
8.1 STANDARD REQUIREMENT	59
8.2 EUT ANTENNA	59
9. EUT TEST PHOTO	60
10. APPENDIX-Photographs of EUT Constructional Details	

11. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

LP0002 : 2018 revised			
Standard Section	Test Item	Judgment	Remark
2.3	Conducted Emission	PASS	None
3.10.1(5)/2.8	Radiated Spurious Emission	PASS	None
3.10.1(2)	Peak Output Power	PASS	None
3.10.1(6.2.1)	6dB Occupied Bandwidth	PASS	None
3.10.1(6.2.2)	Power Density	PASS	None
3.10.1(5)/2.8	Restricted Bands	PASS	None
3.10.1(3)	Antenna Requirement	PASS	None

NOTE:

- (1) "N/A" denotes test is not applicable in this Test Report
- (2) The product support for low energy function only.

1.1 1.1 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately **95** %.

No.	Item	Uncertainty
1	Conducted Emission Test	1.38dB
2	Radiated Emission Test	3.17dB
3	RF power,conducted	0.16dB
4	Spurious emissions,conducted	0.21dB
5	All emissions,radiated(<1G)	4.68dB
6	All emissions,radiated(>1G)	4.89dB

22. GENERAL INFORMATION

2.1 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Active Speaker	
Brand Name		
Model Name	LDICOA12ABT	
Derivative Model	LDICOA15ABT	
Model difference	These models are identical in function with the main test model, the circuit principle and PCB Layout are the same, the power supply part is the same, the main test model and the derivative model LDICOA15ABT are different in size.	
OEM Brand/Model Name	N/A	
Product Description	The EUT is a Active Speaker.	
	Operation Frequency:	2402~2480 MHz
	Modulation Type:	GFSK
	Bit Rate of Transmitter	2Mbps
	Number Of Channel	40
	Antenna Designation:	Please see Note 3.
	Antenna Gain(Peak)	0dBi
	Output Power:	2.169dBm
Channel List	Please refer to the Note 2.	
Power Rating	AC 110V/60Hz	
Connecting I/O Port(s)	Please refer to the User's Manual	
Products Covered	N/A	
EUT Modification(s)	N/A	

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 2.

Description of Channel:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2402	21	2442
02	2404	22	2444
03	2406	23	2446
04	2408	24	2448
05	2410	25	2450
06	2412	26	2452
07	2414	27	2454
08	2416	28	2456
09	2418	29	2458
10	2420	30	2460
11	2422	31	2462
12	2424	32	2464
13	2426	33	2466
14	2428	34	2468
15	2430	35	2470
16	2432	36	2472
17	2434	37	2474
18	2436	38	2476
19	2438	39	2478
20	2440	40	2480

- 3.

Table for Filed Antenna

	Manufacturer	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	Bolutek Electronical Technology(HK) Co.,Limited.	SPK-8635	PCB Antenna	N/A	0dBi	N/A

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generated from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possibly have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	GFSK

For Conducted Emission	
Final Test Mode	Description
Mode 1	GFSK

For Radiated Emission	
Final Test Mode	Description
Mode 1	GFSK

Note:

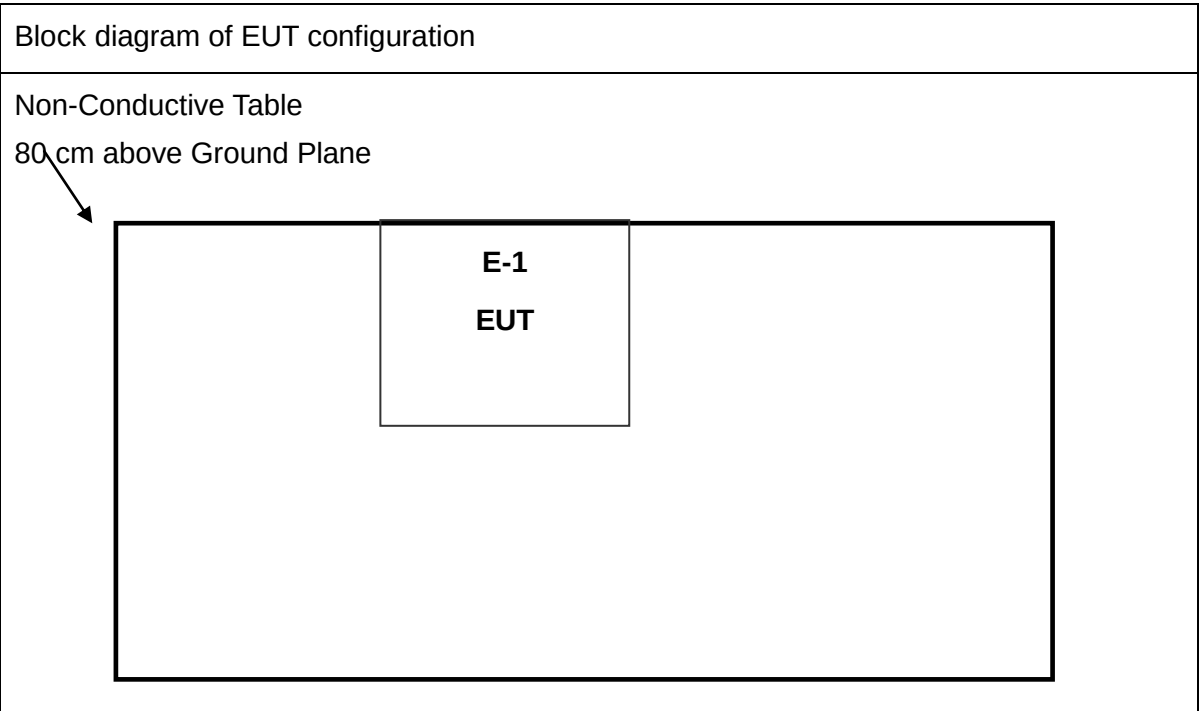
- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) For all tests the worst-case was selected as the table above, the data of the worst-case is shown in the report.

2.3 TABLE OF PARAMETERS OF TEST SOFTWARE SETTING

During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters.

Test software Version	Test program:		
Frequency	2402 MHz	2440 MHz	2480 MHz
Parameters(1Mbps)	Default	Default	Default

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED



2.5 DESCRIPTION OF SUPPORT UNITS (CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.	Note
E-1	Active Speaker		LDICOA12ABT	N/A	N/A	EUT
E-2	AUX IN Cable	YUYANG	DC 3.5*1000mm	N/A	N/A	Provided by lab
E-3	AC Cable	nanfang	NF-006+NF007	N/A	N/A	Provided by lab
E-4	XLR Cable	DONGHEE	RG6	N/A	N/A	Provided by lab
E-5	Cell phone	HUAWEI	VKY-AL00	N/A	N/A	Provided by lab

Item	Shielded Type	Ferrite Core	Length	Note

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”; “NO” means “unshielded” or “without ferrite core”
- (4) In this case, the applicant does not provide the accessories with EUT. The accessories are provided by the laboratory for inspection

2.5.1 EQUIPMENTS LIST FOR ALL TEST ITEMS

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
Spectrum Analyzer	Hewlett Packard	8566B	3013A07296	April 29, 2019	1 Year
RF Preselector	Hewlett Packard	85685A	3010A01157	April 29, 2019	1 Year
Quasi-Peak Adapter	Hewlett Packard	85650	2521A00584	April 29, 2019	1 Year
Preamplifier	Com Power	PA-102	1482	April 29, 2019	1 Year
RF Attenuator	Mini-Circuits	CAT-10	Asset #1000	December 8, 2018	1 Year
LISN	Com Power	LI-200	12012	September 10, 2019	1 Year
LISN	Com Power	LI-200	12214	September 10, 2019	1 Year
LISN	Com Power	LI-200	1767	September 10, 2019	1 Year
LISN	Com Power	LI-200	1768	September 10, 2019	1 Year
Biconical Antenna	Com Power	AB-100	01557	December 29, 2018	1 Year
Log Periodic Antenna	Com Power	AL-100	16037	December 22, 2018	1 Year
Horn Antenna	Com Power	AHA-118	711054	December 22, 2018	1 Year
Antenna Mast	Com Power	AM-400	N/A	N/A	N/A
Turntable	Com Power	TT-100	N/A	N/A	N/A
Computer	Dell, Inc.	DHS	DNSV641	N/A	N/A
Printer	Hewlett Packard	C8124A	CN39B2234T	N/A	N/A
Plotter	Hewlett Packard	7470A	2308A96499	N/A	N/A

EMI Test Equipment (Continued)

EQUIPMENT TYPE	MANU-FACTURER	MODEL NUMBER	SERIAL NUMBER	CAL. DATE	CAL. CYCLE
EMI Receiver	Rohde & Schwarz	ESU40	100127	June 12, 2019	1 Year
BiConiLog Antenna	ETS-Lindgren	3142D	00102183	August 14, 2019	1 Year
Horn Antenna	ETS-Lindgren	3117	00109294	May 6, 2019	1 Year
Preamplifier	Rohde & Schwarz	TS-PR18	100056	June 12, 2019	1 Year
Antenna Mast	ETS-Lindgren	2175	00095727	N/A	N/A
Turntable	ETS-Lindgren	2187-3.0	00118231	N/A	N/A
Computer	Acer	Aspire 8930	85100050123	N/A	N/A
Multi-Function Controller	ETS-Lindgren	2090	00102270	N/A	N/A
Loop Antenna	ARA	PLA-1030/B	1029	May 19, 2019	1 Year

33. EMC EMISSION TEST

3.1 3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 3.3.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBUV)		Class B (dBUV)		Standard
	Quasi-peak	Average	Quasi-peak	Average	
0.15 -0.5			66 - 56 *	56 - 46 *	CISPR
0.50 -5.0			56.00	46.00	CISPR
5.0 -30.0			60.00	50.00	CISPR

0.15 -0.5			66 - 56 *	56 - 46 *	LP0002
0.50 -5.0			56.00	46.00	LP0002
5.0 -30.0			60.00	50.00	LP0002

Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

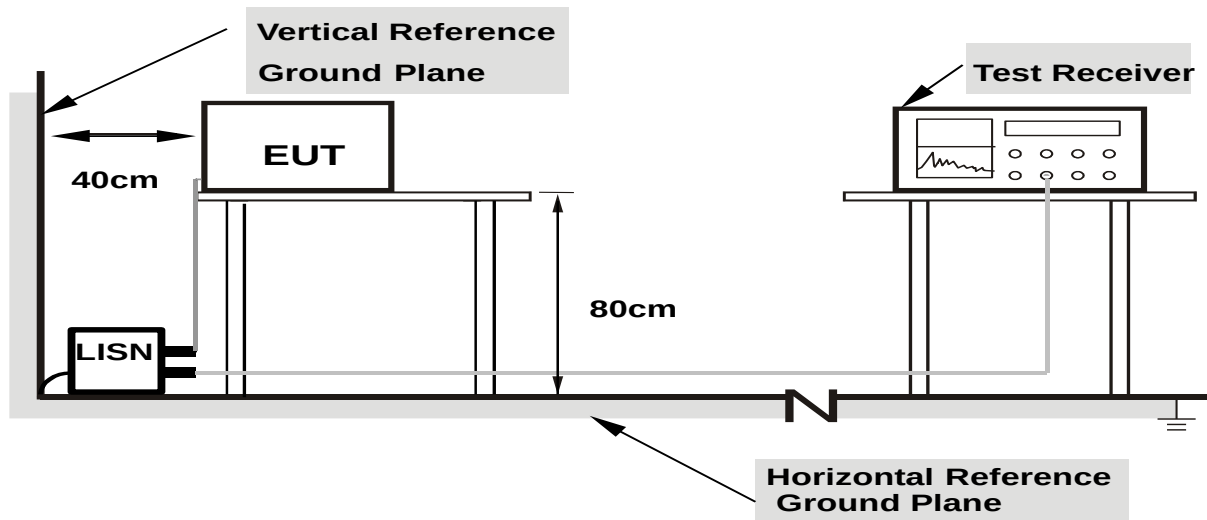
Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

3.1.2 3.3.2 TEST PROCEDURE

- a. The EUT was placed 0.4 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.1.3 3.1.3 DEVIATION FROM TEST STANDARD

No deviation

3.1.4 3.1.4 TEST SETUP

Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

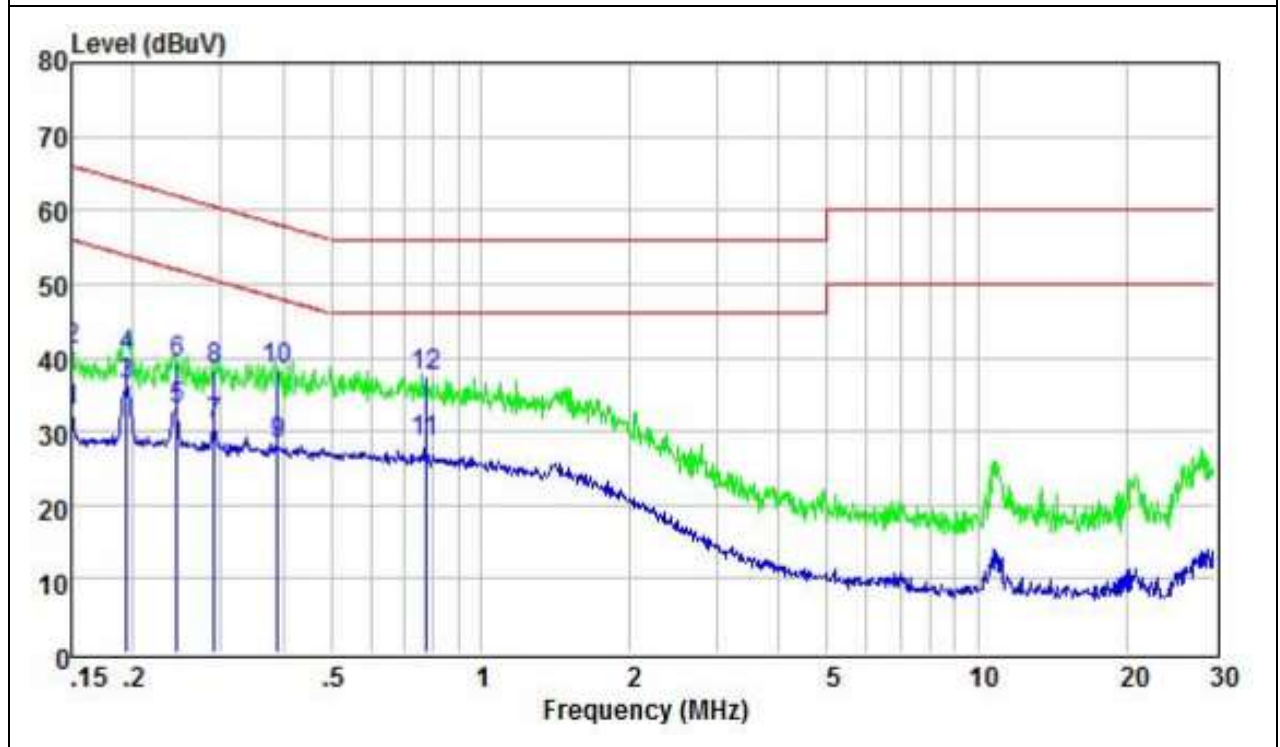
3.1.5 TEST RESULTS

EUT :	Active Speaker	Model Name. :	LDICOA12ABT
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2019-11-12
Test Mode :	Normal	Phase :	L
Test Voltage :	AC 110V/60Hz		

Frequency	Factor	Meter Reading (dBμV)		Emission Level (dBμV)		Limits (dBμV)		Margin (dB)	
(MHz)	(dB)	QP	Average	QP	Average	QP	Average	QP	Average
0.150	9.63	31.37	23.16	41.00	32.79	66.00	56.00	-25.00	-23.21
0.193	9.64	30.36	26.57	40.00	36.21	63.89	53.89	-23.89	-17.68
0.244	9.63	29.63	23.24	39.26	32.87	61.95	51.95	-22.69	-19.08
0.291	9.62	28.80	21.26	38.42	30.88	60.50	50.50	-22.08	-19.62
0.391	9.67	28.60	18.53	38.27	28.20	58.03	48.03	-19.76	-19.83
0.775	9.63	27.82	19.04	37.45	28.67	56.00	46.00	-18.55	-17.33

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss + Pulse limit.
3. '*' means the worst case

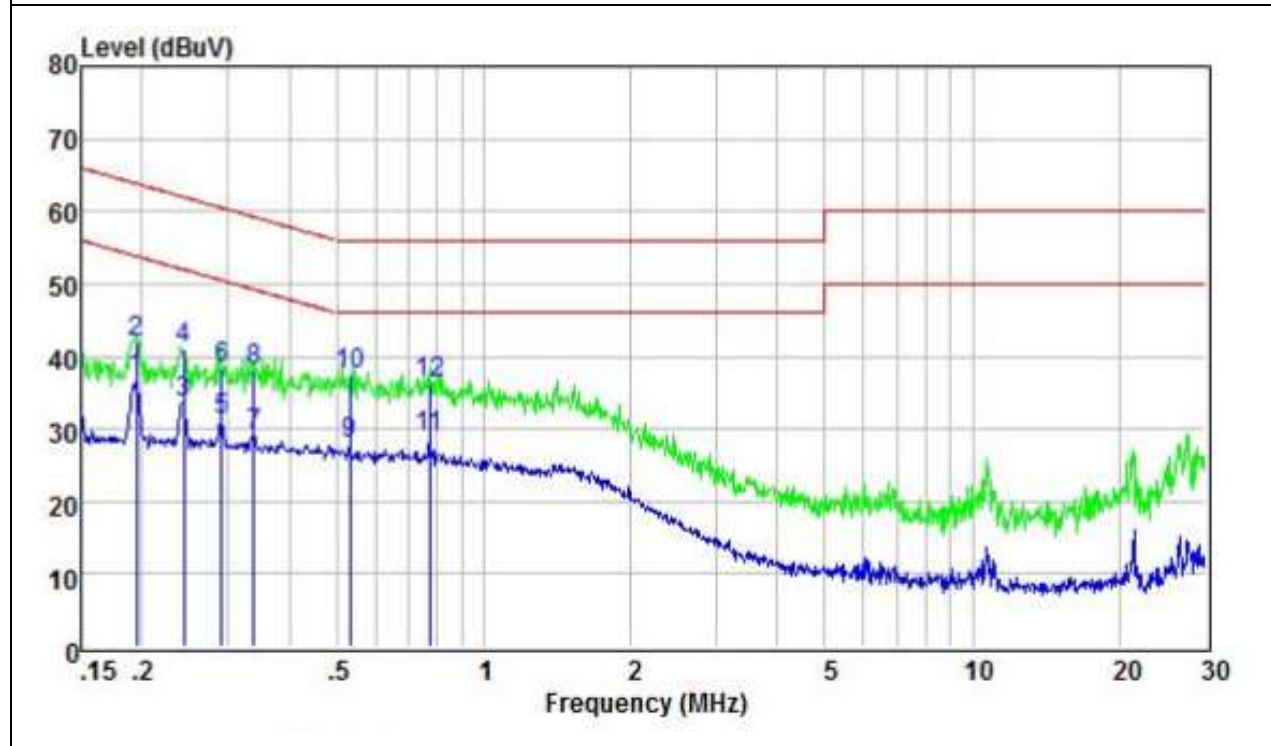


EUT :	Active Speaker	Model Name. :	LDICOA12ABT
Temperature :	26 °C	Relative Humidity :	54%
Pressure :	1010hPa	Test Date :	2019-11-12
Test Mode :	Normal	Phase :	N
Test Voltage :	AC 110V/60Hz		

Frequency	Factor	Meter Reading (dBμV)		Emission Level (dBμV)		Limits (dBμV)		Margin (dB)	
(MHz)	(dB)	QP	Average	QP	Average	QP	Average	QP	Average
0.194	9.63	32.47	27.42	42.00	36.95	63.84	53.84	-21.84	-16.89
0.243	9.64	31.37	24.00	40.90	33.53	62.00	52.00	-21.10	-18.47
0.291	9.63	28.94	21.70	38.49	31.25	60.50	50.50	-22.01	-19.94
0.339	9.62	28.61	19.70	38.19	29.28	59.22	49.22	-21.03	-19.94
0.532	9.67	27.86	18.22	37.49	27.85	56.00	46.00	-18.51	-18.15
0.775	9.63	26.66	19.16	36.29	28.79	60.00	50.00	-19.71	-17.21

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss + Pulse limit.
3. '*' means the worst case



3.2 3.2 RADIATED EMISSION MEASUREMENT

3.2.1 3.2.1 RADIATED EMISSION (Frequency Range 9kHz-1000MHz)

LIMITS

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 2.7, then the 2.8 limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBuV/m) (at 3M)		Class B (dBuV/m) (at 3M)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80	60	74	54

Notes:

- (1) The limit for radiated test was performed according to LP0002.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

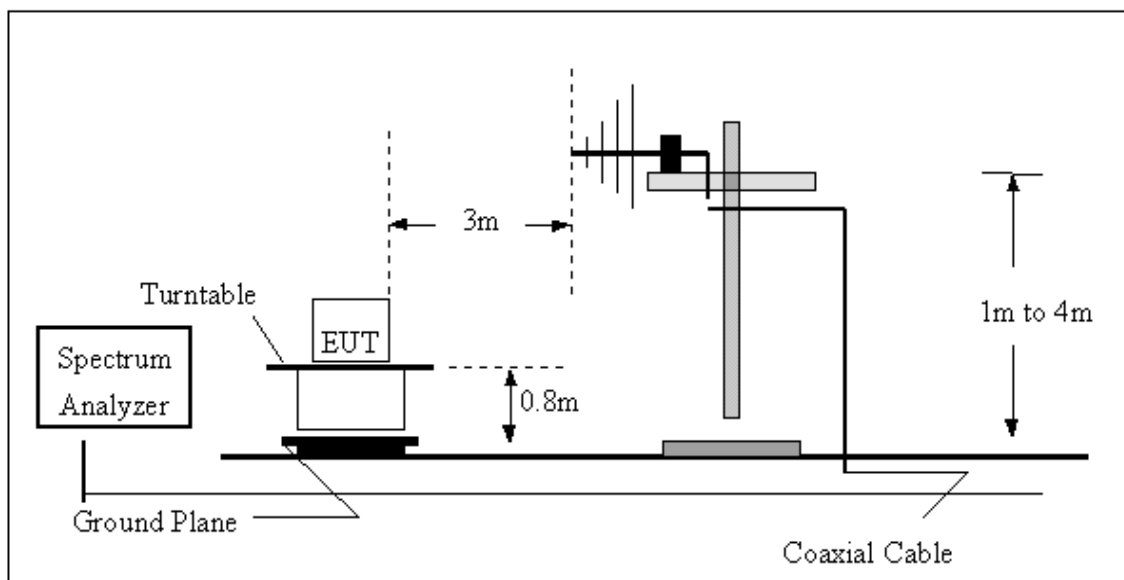
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.2.2 3.2.2 TEST PROCEDURE

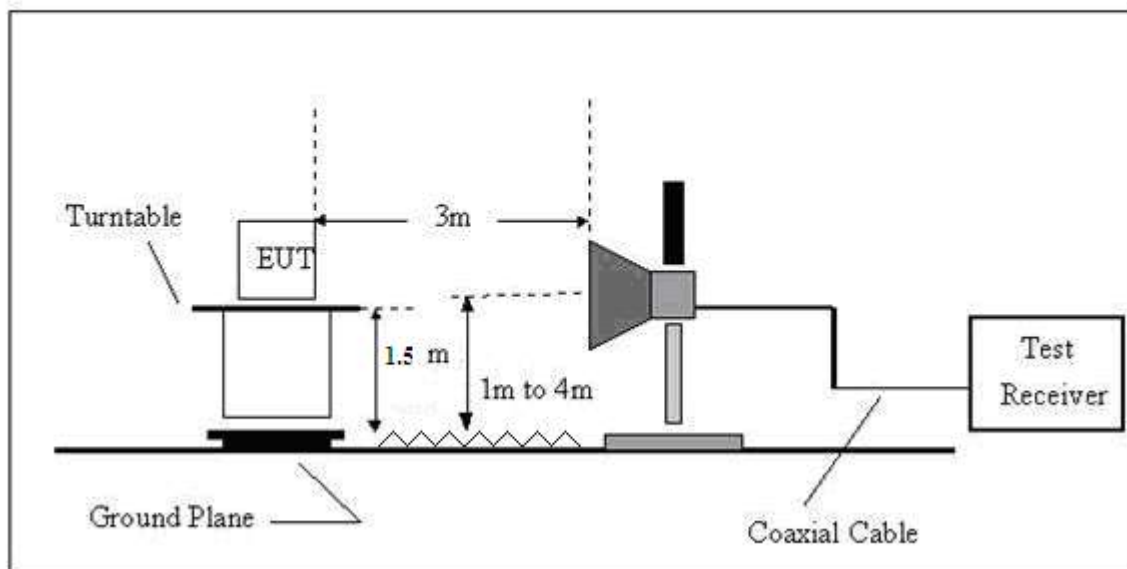
- The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- For the actual test configuration, please refer to the related Item –EUT Test Photos.

3.2.3 3.2.3 TEST SETUP

(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



(B) Radiated Emission Test Set-Up Frequency Above 1 GHz



3.2.4 3.2.4 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

3.2.5 3.3.5 TEST RESULTS (BELOW 30MHZ)

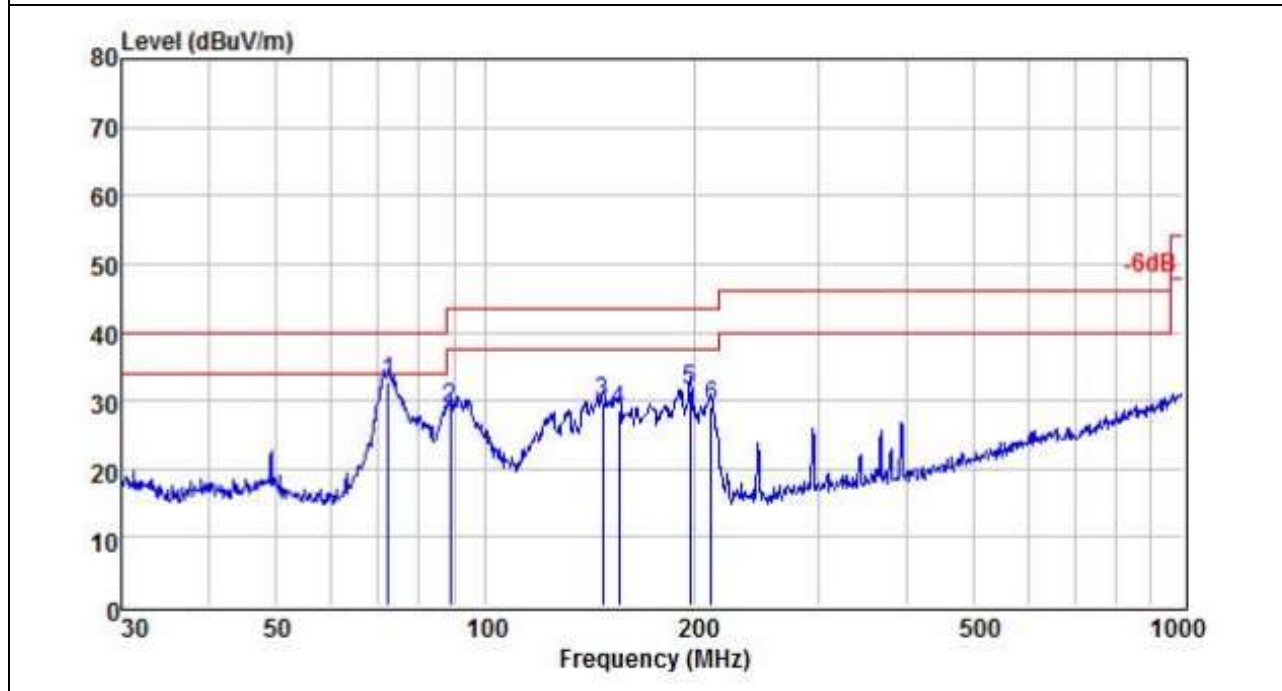
There is not detected below 30MHz.

3.2.6 3.2.6 TEST RESULTS (BETWEEN30 – 1000 MHZ)

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	TX	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
72.34	19.56	-13.01	32.57	40.00	-7.43	Quasi-Peak
88.96	16.18	-12.62	28.80	43.50	-14.70	Quasi-Peak
147.40	13.97	-15.63	29.60	43.50	-13.90	Quasi-Peak
155.36	12.82	-15.82	28.64	43.50	-14.86	Quasi-Peak
196.51	19.58	-11.92	31.50	43.50	-12.00	Quasi-Peak
210.79	17.18	-11.82	29.00	43.50	-14.50	Quasi-Peak

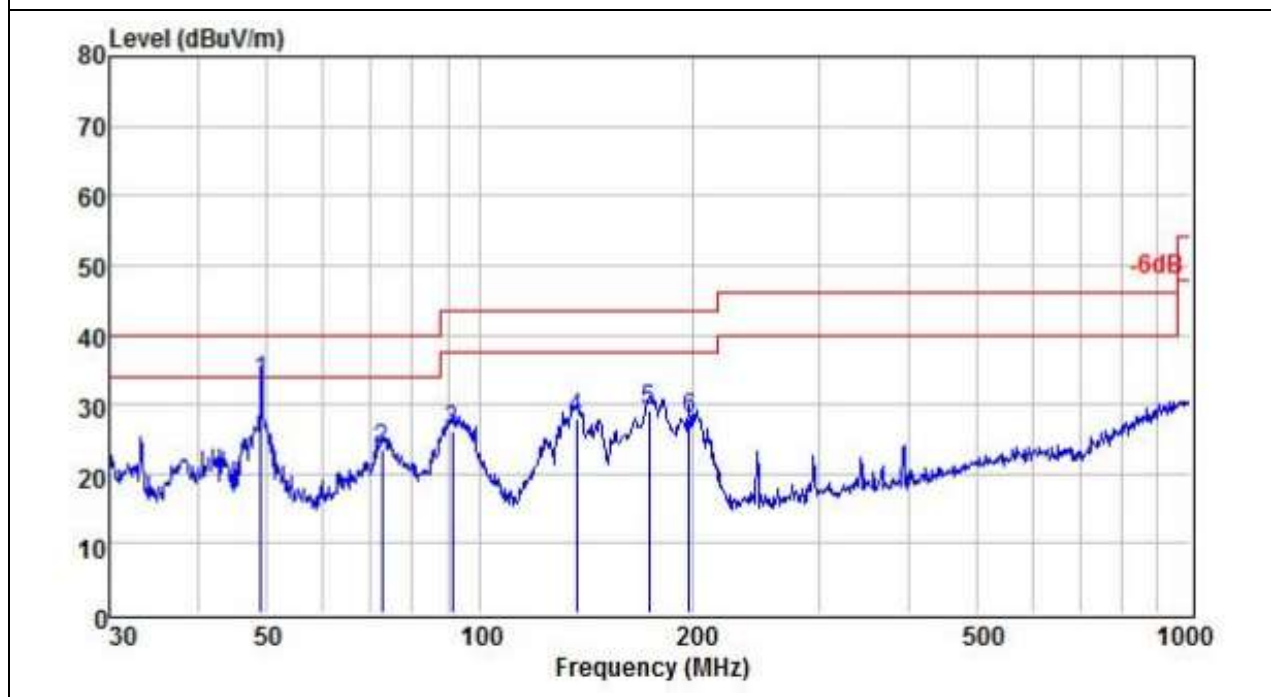
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	TX	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
49.01	20.09	-13.17	33.26	40.00	-6.74	Quasi-Peak
72.59	11.66	-11.76	23.42	40.00	-16.58	Quasi-Peak
91.49	14.65	-11.53	26.18	43.50	-17.32	Quasi-Peak
136.46	12.94	-14.97	27.91	43.50	-15.59	Quasi-Peak
173.21	15.19	-13.91	29.10	43.50	-14.40	Quasi-Peak
197.20	16.02	-11.88	27.90	43.50	-15.60	Quasi-Peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

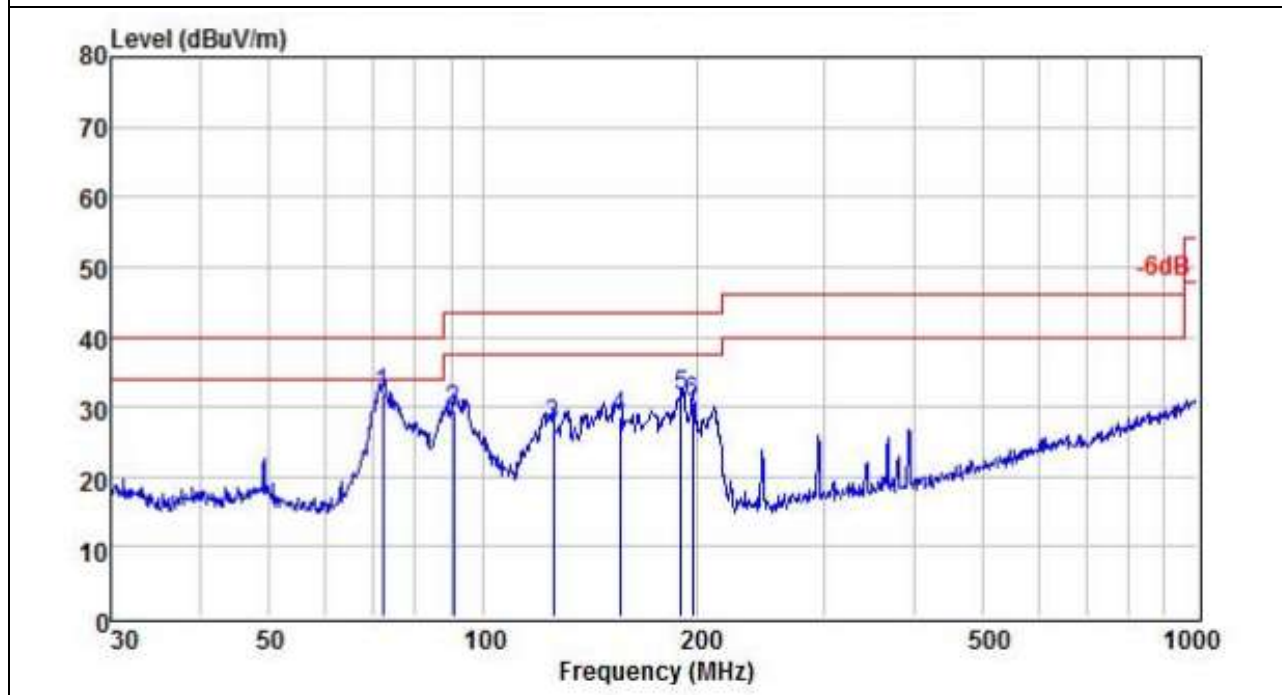


Test result: The unit does meet the NCC requirements.

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-13
Test Mode :	RX	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
72.08	18.60	-13.00	31.86	40.00	-8.14	Quasi-Peak
90.86	17.08	-12.44	29.52	43.50	-13.98	Quasi-Peak
125.45	13.97	-13.37	27.34	43.50	-16.16	Quasi-Peak
155.36	12.82	-15.81	28.64	43.50	-14.86	Quasi-Peak
189.07	19.14	-12.36	31.50	43.50	-12.00	Quasi-Peak
196.51	18.58	-11.92	30.50	43.50	-13.00	Quasi-Peak

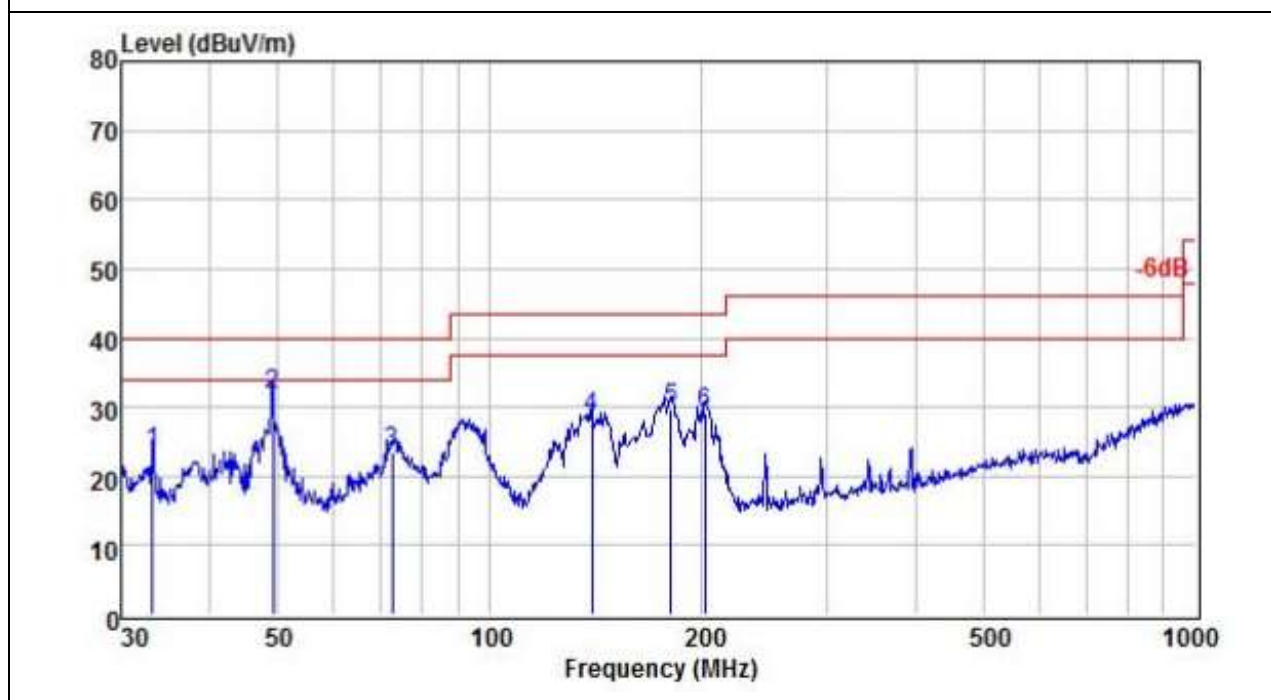
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	RX	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
33.21	9.61	-13.75	23.36	40.00	-16.64	Quasi-Peak
49.19	18.68	-13.16	31.84	40.00	-8.16	Quasi-Peak
72.59	11.66	-11.76	23.42	40.00	-16.58	Quasi-Peak
139.36	13.13	-15.36	28.49	43.50	-15.01	Quasi-Peak
180.65	16.72	-12.90	29.62	43.50	-13.88	Quasi-Peak
202.10	17.34	-11.74	29.08	43.50	-14.42	Quasi-Peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

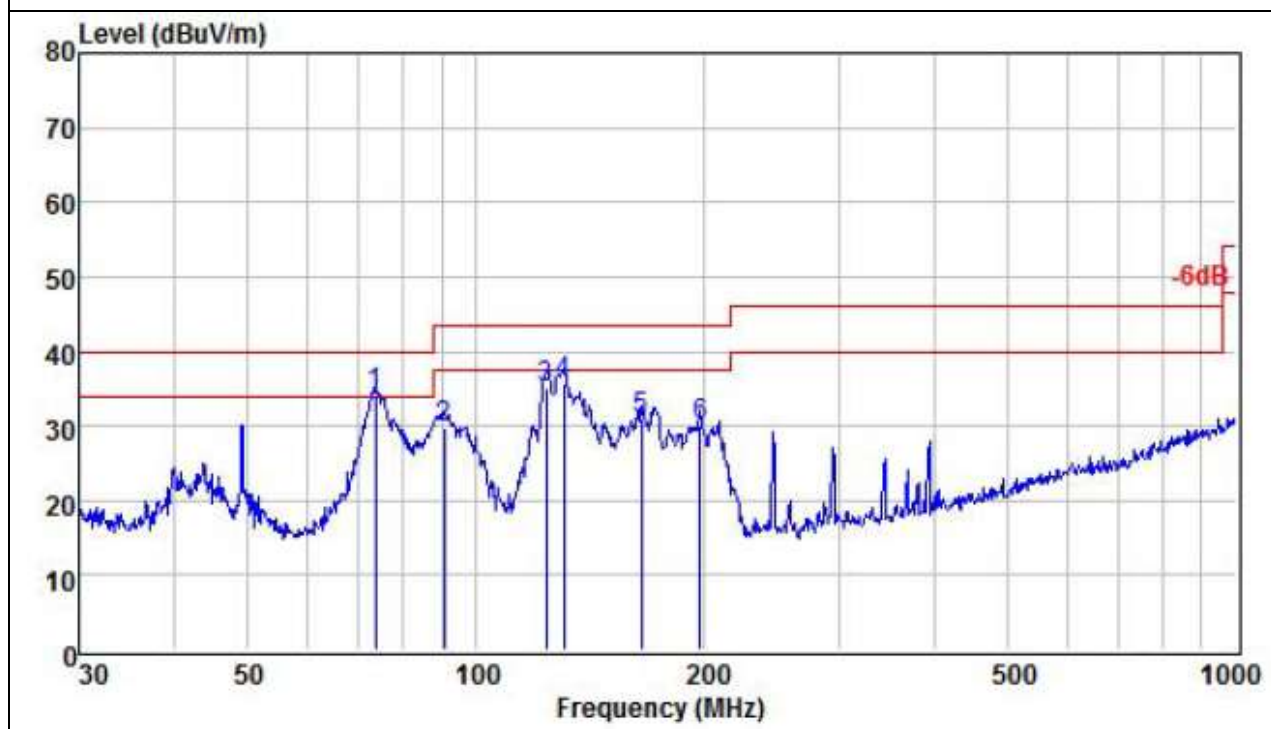


Test result: The unit does meet the NCC requirements.

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-13
Test Mode :	XLR INPUT	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
73.62	21.04	-13.05	34.09	40.00	-5.91	Quasi-Peak
90.86	17.43	-12.44	29.52	43.50	-13.63	Quasi-Peak
123.70	22.05	-13.10	35.15	43.50	-8.35	Quasi-Peak
130.38	21.66	-14.10	35.76	43.50	-7.74	Quasi-Peak
164.91	15.65	-15.14	30.79	43.50	-12.71	Quasi-Peak
197.20	18.30	-11.88	30.18	43.50	-13.32	Quasi-Peak

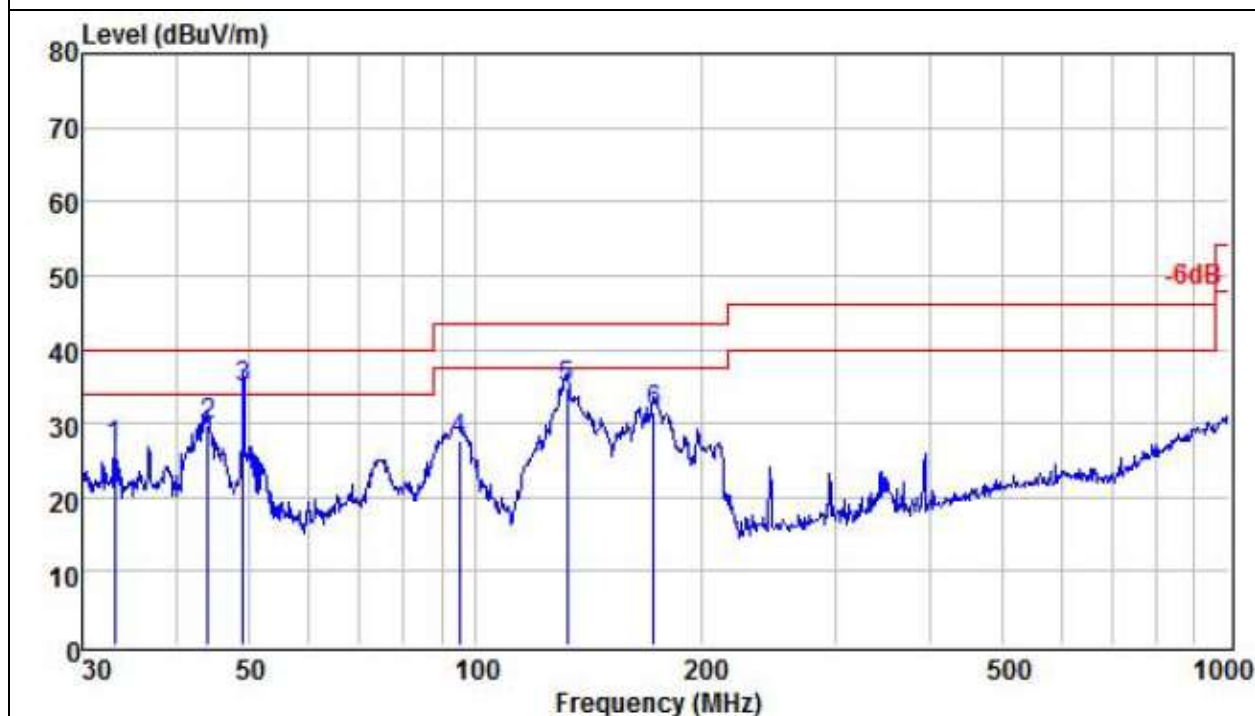
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	XLR INPUT	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
33.09	13.10	-13.80	26.90	40.00	-13.10	Quasi-Peak
44.12	16.37	-13.41	29.78	40.00	-10.22	Quasi-Peak
49.01	21.70	-13.17	34.87	40.00	-5.13	Quasi-Peak
95.09	16.35	-11.45	27.80	43.50	-15.70	Quasi-Peak
132.22	20.52	-14.37	34.89	43.50	-8.61	Quasi-Peak
172.60	17.55	-14.00	31.55	43.50	-11.95	Quasi-Peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.

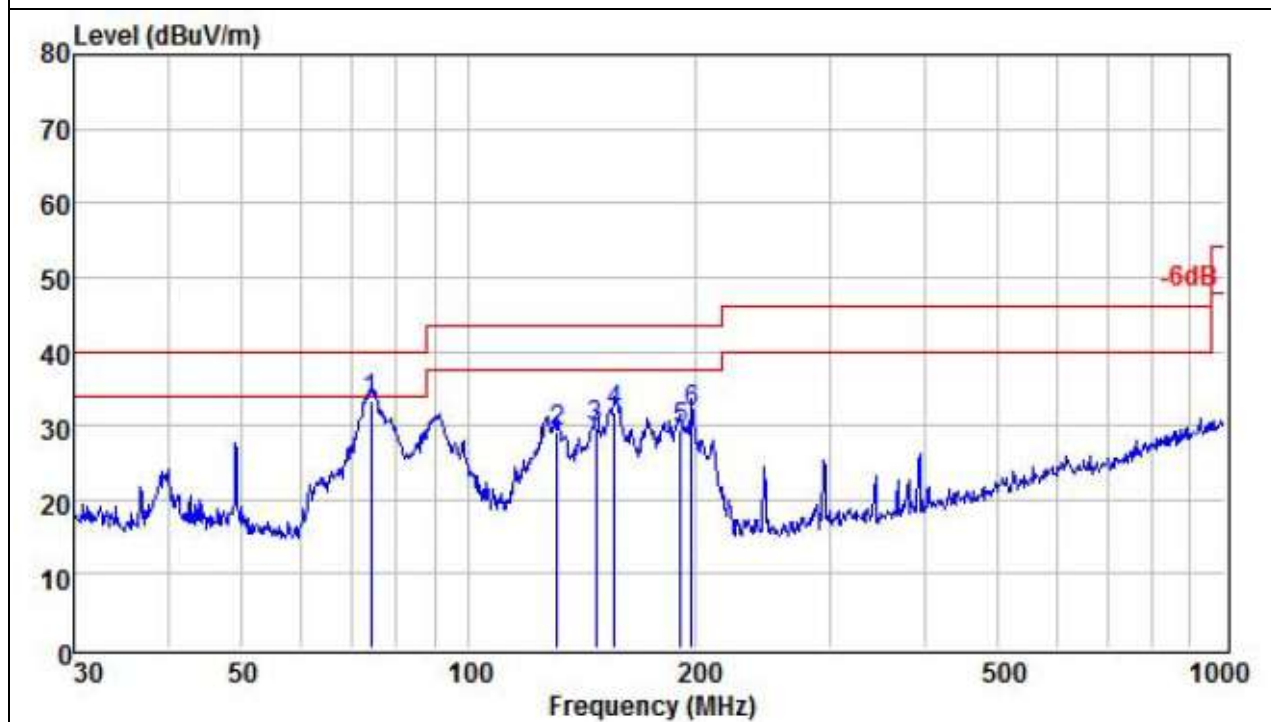


Test result: The unit does meet the NCC requirements.

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-13
Test Mode :	AUX IN	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
74.14	20.29	-13.07	33.36	40.00	-6.64	Quasi-Peak
130.84	15.02	-14.17	29.19	43.50	-14.31	Quasi-Peak
147.40	14.11	-15.63	29.74	43.50	-13.76	Quasi-Peak
155.91	16.12	-15.84	31.96	43.50	-11.54	Quasi-Peak
190.41	17.20	-12.29	29.49	43.50	-14.01	Quasi-Peak
197.20	19.84	-11.88	31.72	43.50	-11.78	Quasi-Peak

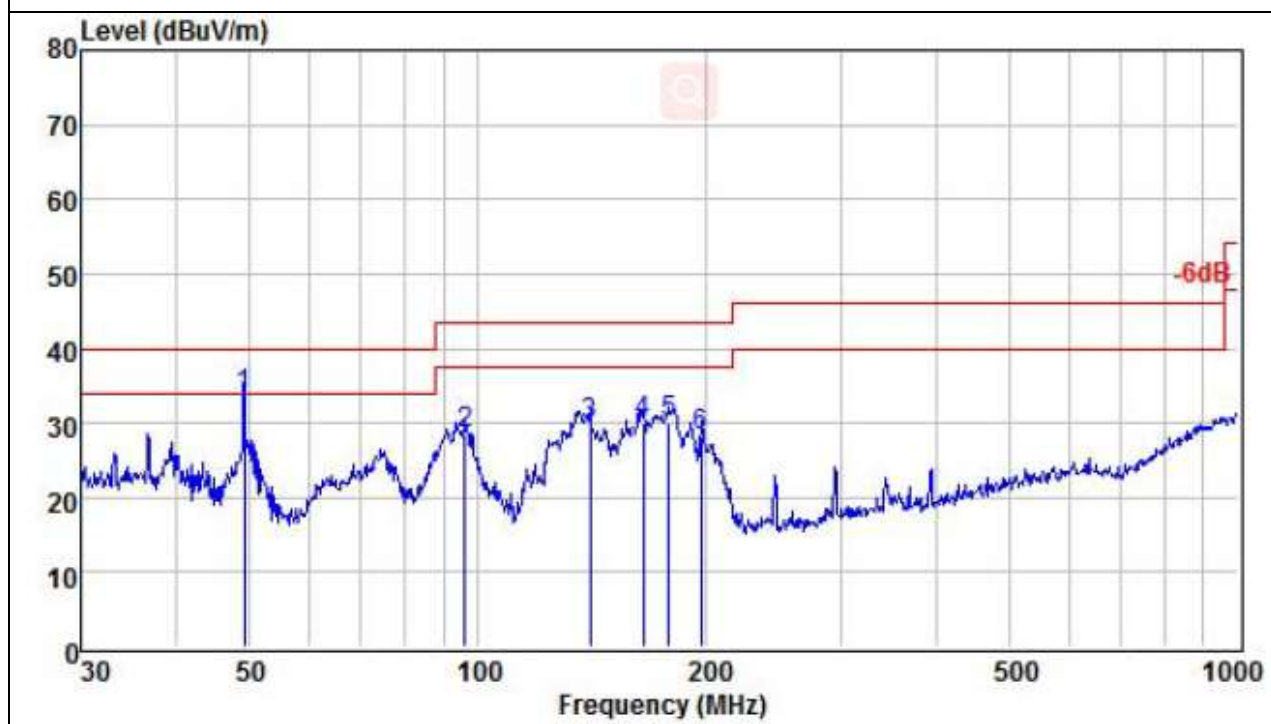
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	AUX IN	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
49.19	20.43	-13.16	33.59	40.00	-6.41	Quasi-Peak
96.10	17.22	-11.44	28.66	43.50	-14.84	Quasi-Peak
140.34	14.31	-15.44	29.75	43.50	-13.75	Quasi-Peak
164.91	14.78	-15.14	29.92	43.50	-13.58	Quasi-Peak
178.13	16.79	-13.20	29.99	43.50	-13.51	Quasi-Peak
196.51	16.29	-11.92	28.21	43.50	-15.29	Quasi-Peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



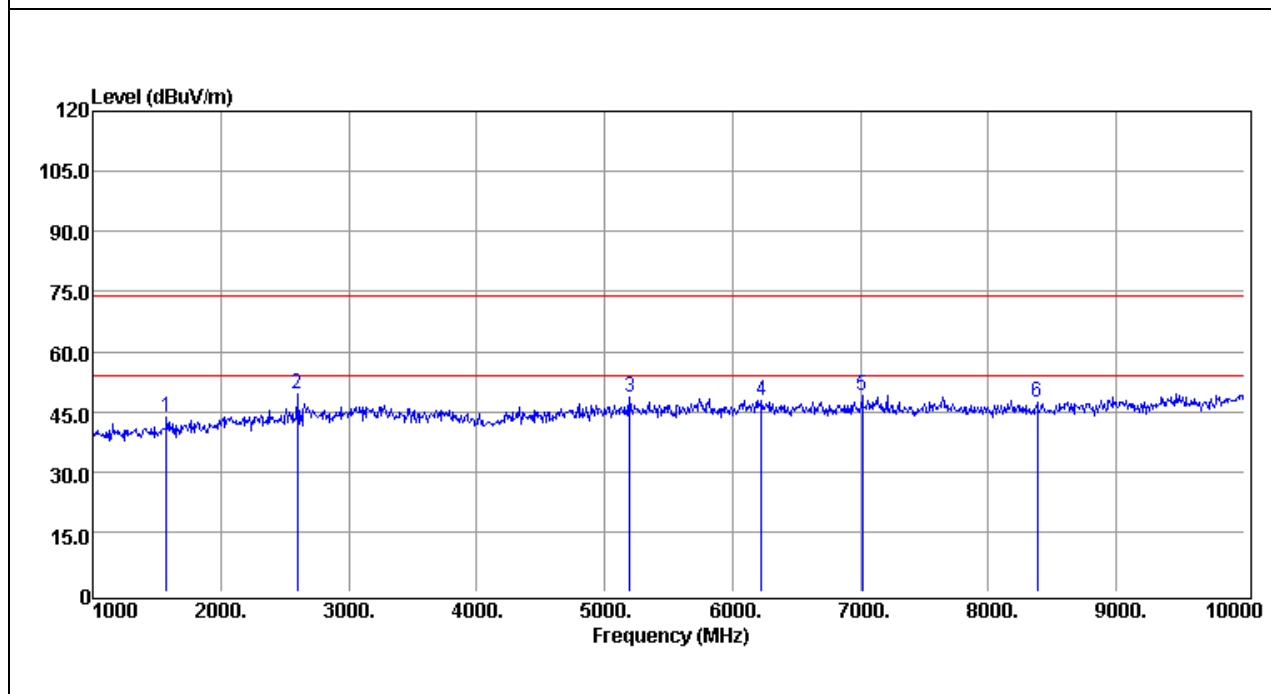
Test result: The unit does meet the NCC requirements.

3.2.7 3.2.7 TEST RESULTS (ABOVE 1000 MHZ)

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2402MHz)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1575.90	41.46	2.13	43.59	74.00	30.41	peak
2604.50	42.39	6.21	48.6	74.00	25.4	peak
5193.80	43.27	5.27	48.54	74.00	25.46	peak
6230.30	45.27	3.74	49.01	74.00	24.99	peak
7014.10	45.11	2.53	47.64	74.00	26.36	peak
8381.20	45.93	1.74	47.67	74.00	26.33	peak

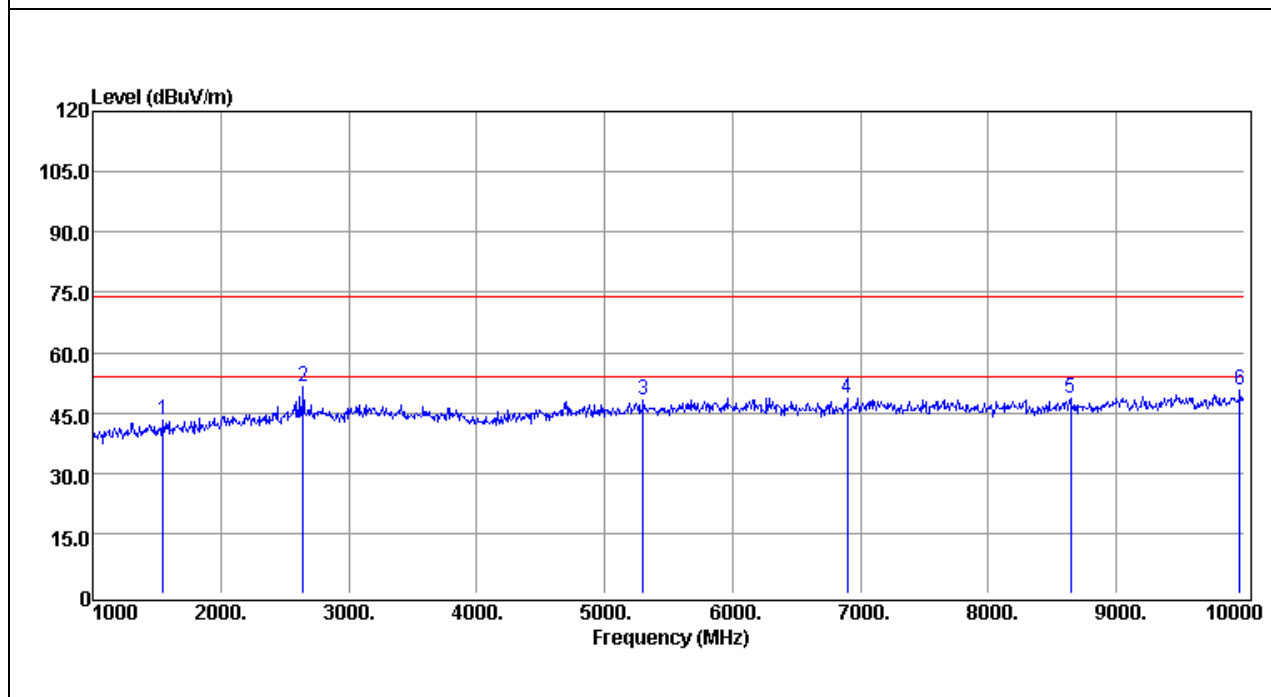
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2402MHz)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

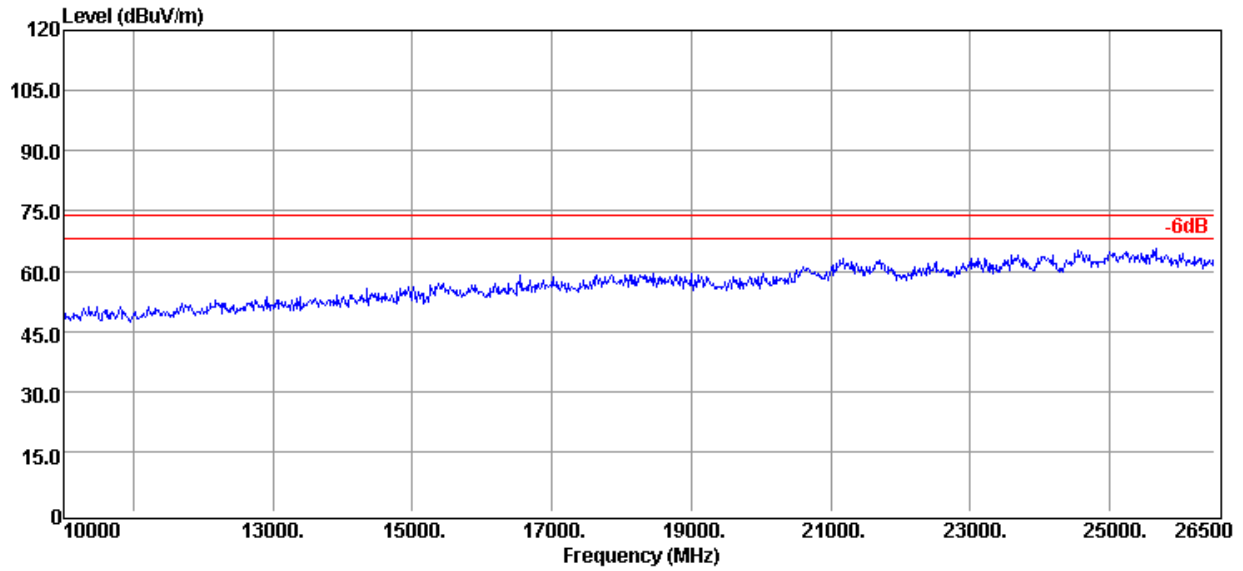
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1550.30	42.03	1.93	43.96	74.00	30.04	peak
2646.20	43.96	6.28	50.24	74.00	23.76	peak
5301.20	41.28	5.49	46.77	74.00	27.23	peak
6894.80	44.76	3.26	48.02	74.00	25.98	peak
8640.30	45.86	2.33	48.19	74.00	25.81	peak
9963.40	46.38	4.53	50.91	74.00	23.09	peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



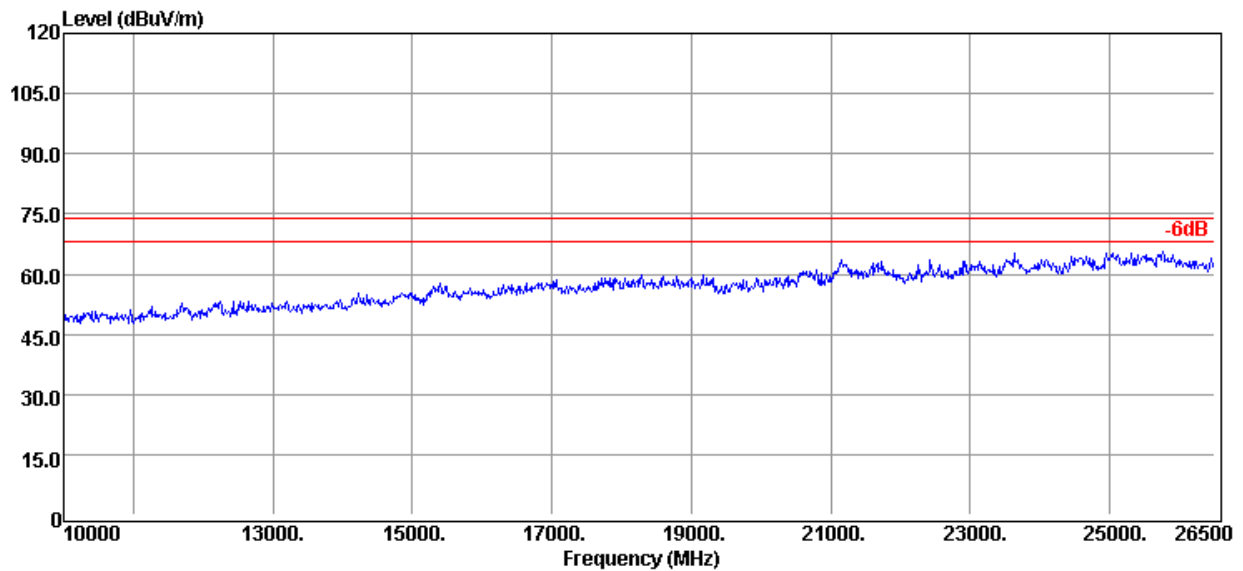
Horizontal

Detect: 10GHz -26.5GHz



Vertical

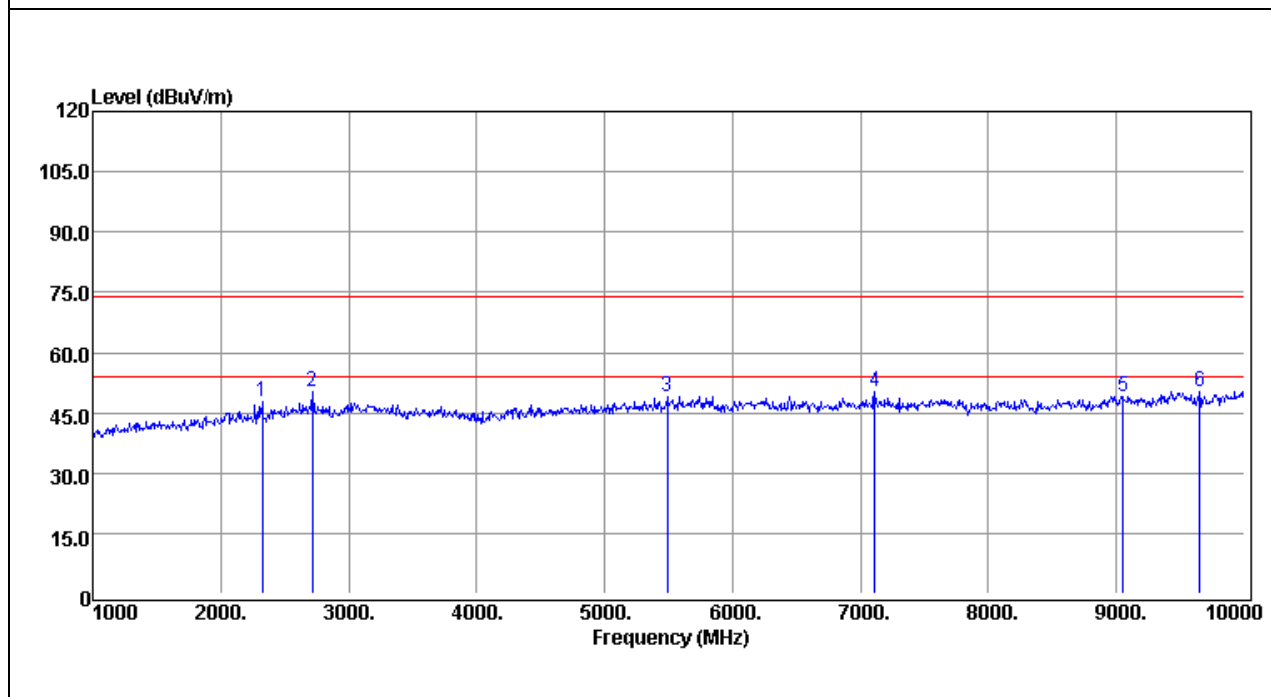
Detect: 10GHz -26.5GHz



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2440MHz)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2322.60	41.35	5.53	46.88	74.00	27.12	peak
2720.40	42.19	6.43	48.62	74.00	25.38	peak
5492.70	43.76	4.67	48.43	74.00	25.57	peak
7112.60	46.29	2.88	49.17	74.00	24.83	peak
9052.20	45.21	2.94	48.15	74.00	25.85	peak
9646.30	46.02	3.86	49.88	74.00	24.12	peak

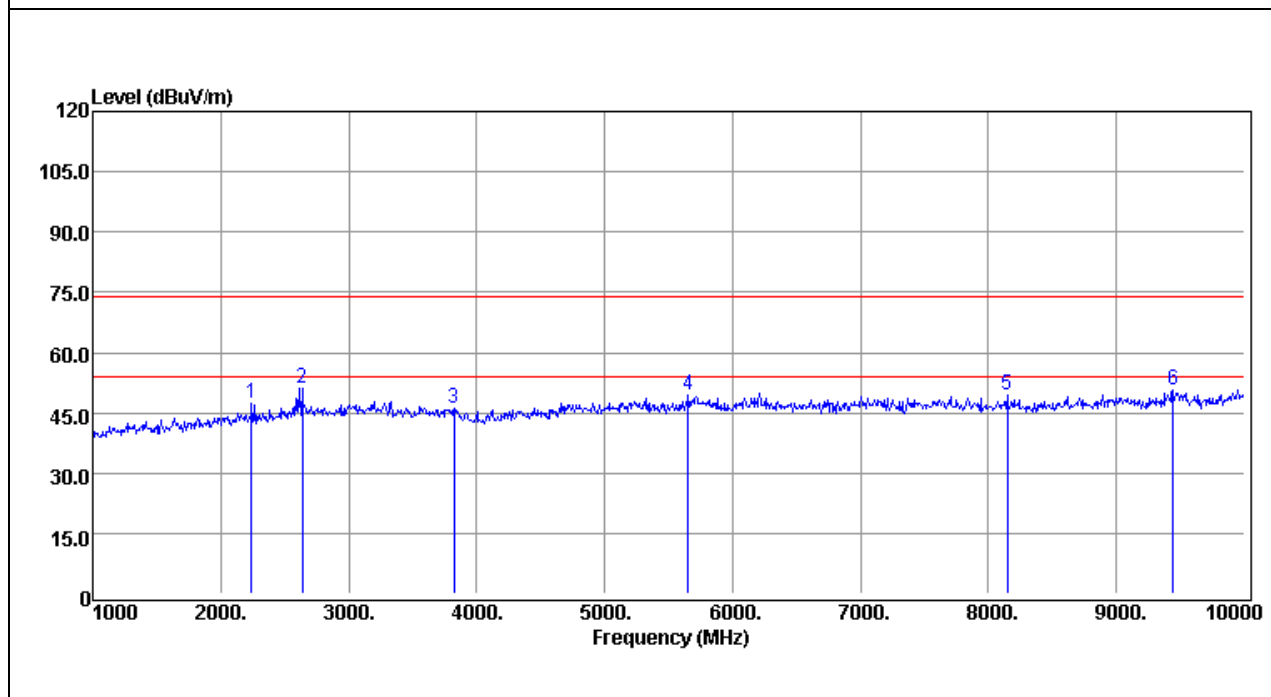
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2440MHz)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

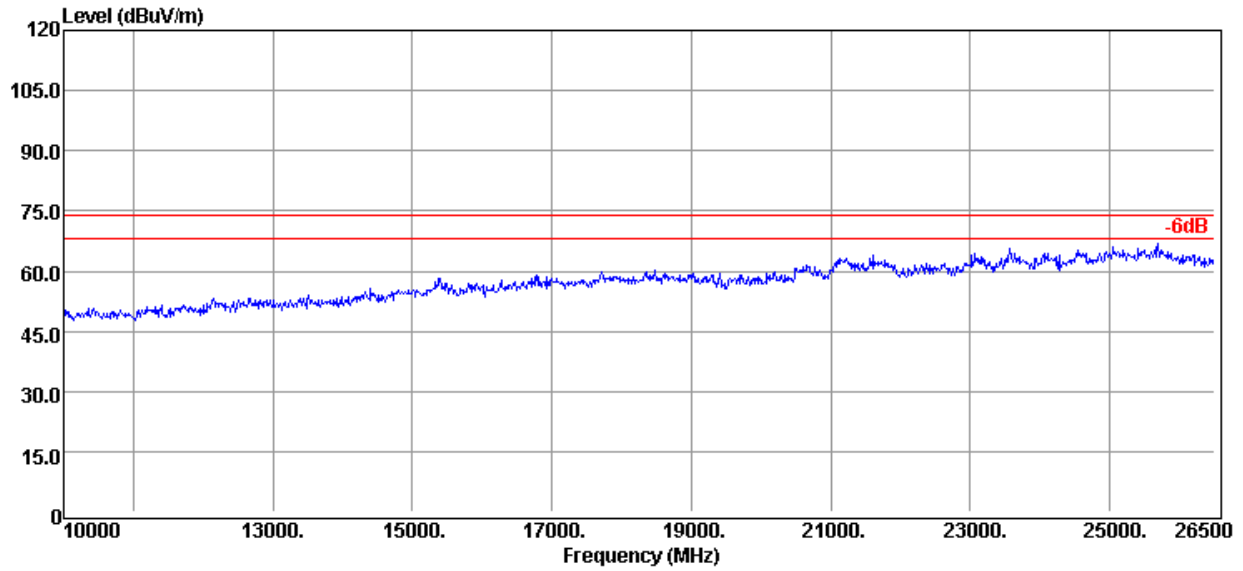
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2241.40	42.35	5.31	47.66	74.00	26.34	peak
2637.80	43.27	6.27	49.54	74.00	24.46	peak
3825.40	39.44	7.68	47.12	74.00	26.88	peak
5650.70	43.18	5.26	48.44	74.00	25.56	peak
8147.60	46.27	1.58	47.85	74.00	26.15	peak
9443.60	45.21	3.57	48.78	74.00	25.22	peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



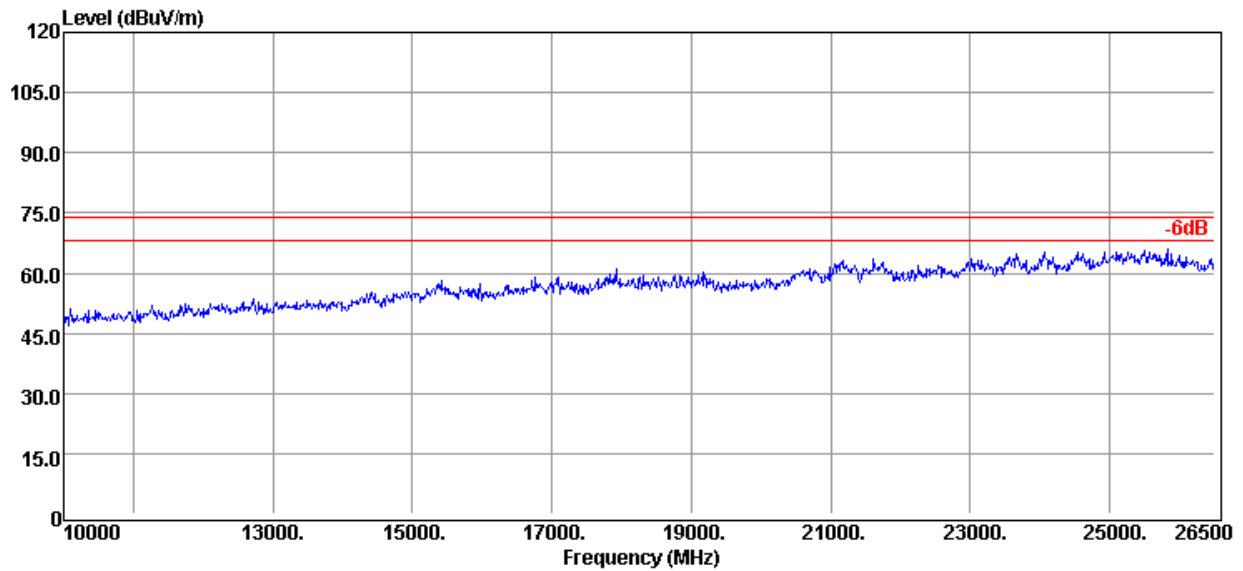
Horizontal

Detect: 10GHz -26.5GHz



Vertical

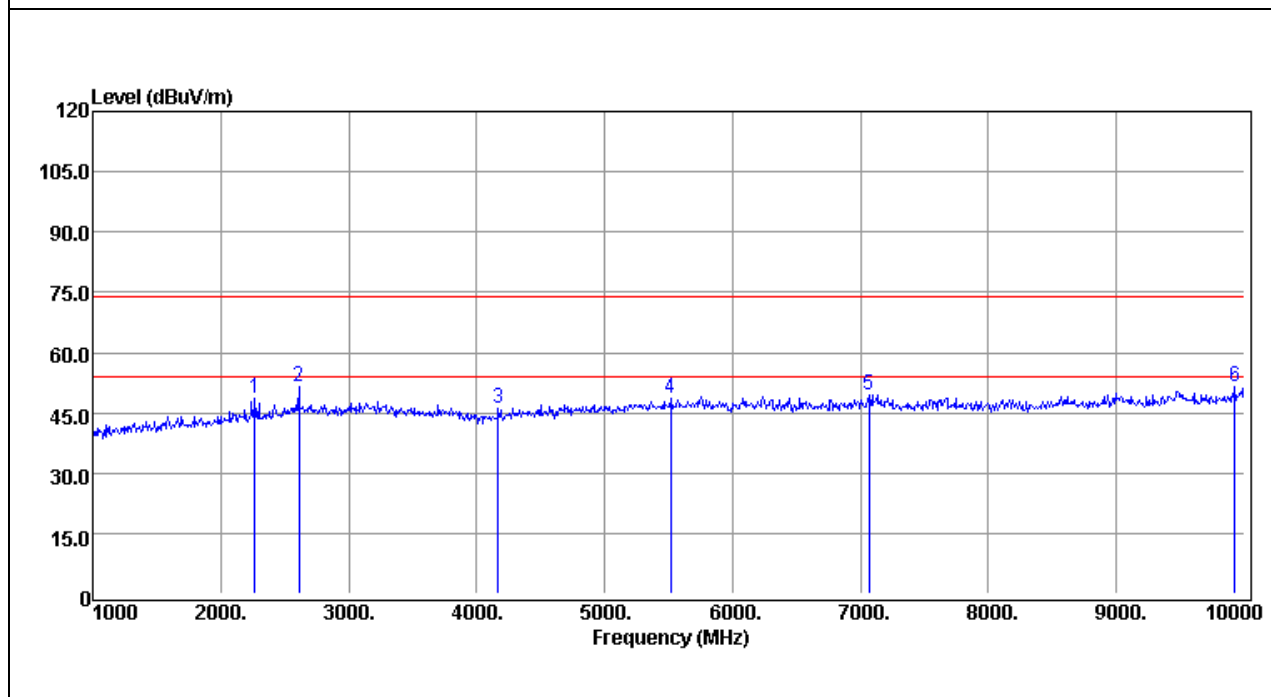
Detect: 10GHz -26.5GHz



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2480MHz)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2270.30	42.58	5.49	48.07	74.00	25.93	peak
2613.60	44.39	6.27	50.66	74.00	23.34	peak
4167.40	37.42	7.95	45.37	74.00	28.63	peak
5519.40	42.38	4.97	47.35	74.00	26.65	peak
7066.20	45.27	2.72	47.99	74.00	26.01	peak
9930.60	44.39	4.36	48.75	74.00	25.25	peak

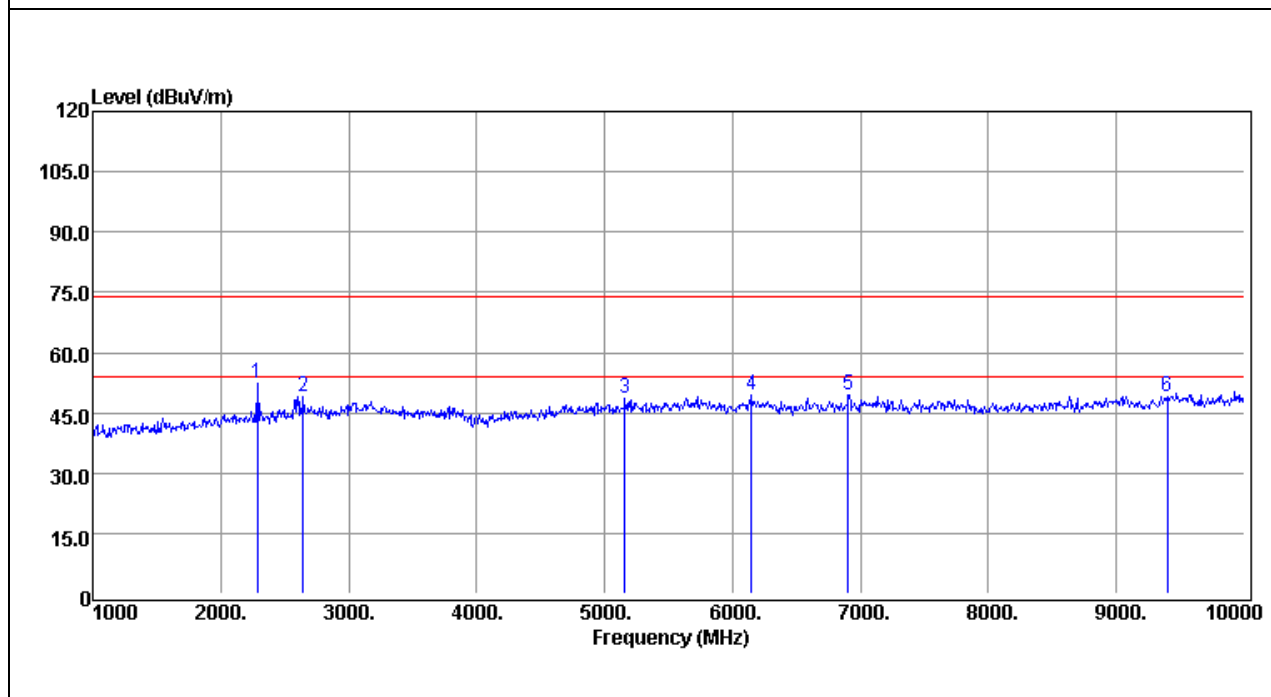
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(TX-2480MHz)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

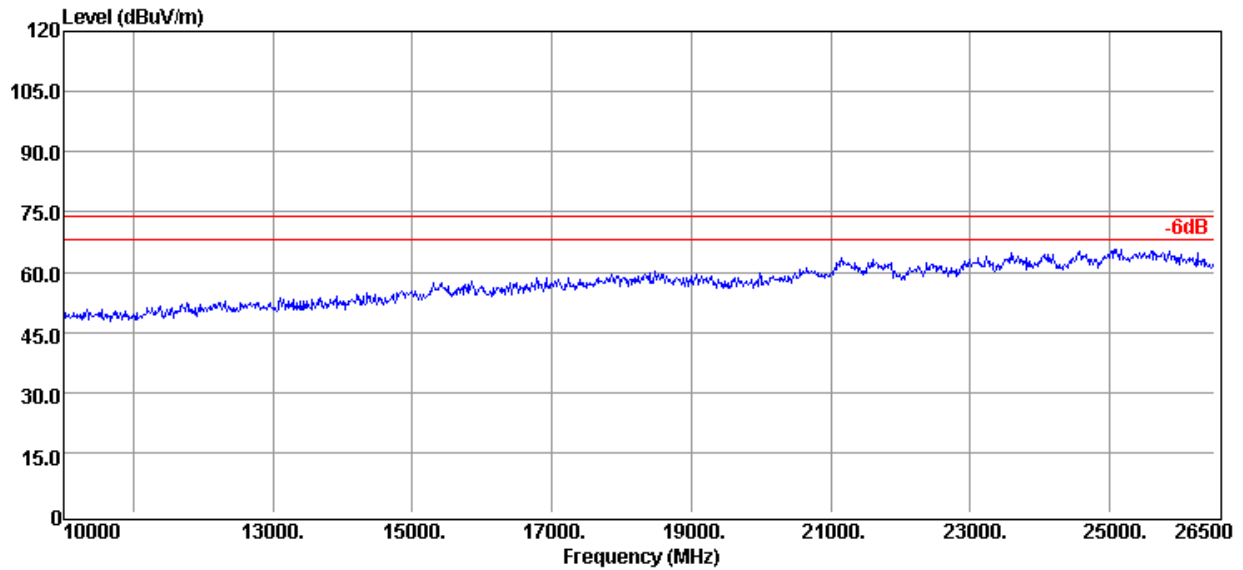
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2289.30	45.37	5.49	50.86	74.00	23.14	peak
2644.40	41.29	6.37	48.88	74.00	25.12	peak
5156.70	42.63	5.27	48.75	74.00	25.25	peak
6146.60	44.27	3.56	49.27	74.00	24.73	peak
6902.20	45.17	3.36	49.49	74.00	24.51	peak
9397.90	44.96	3.60	48.97	74.00	25.03	peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



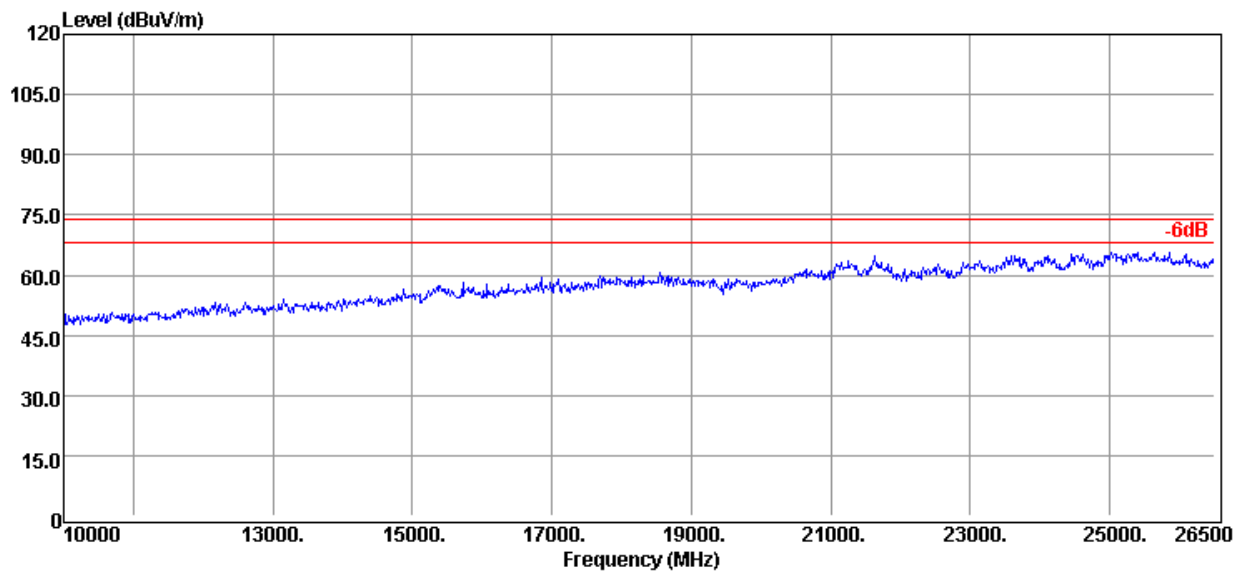
Horizontal

Detect: 10GHz -26.5GHz



Vertical

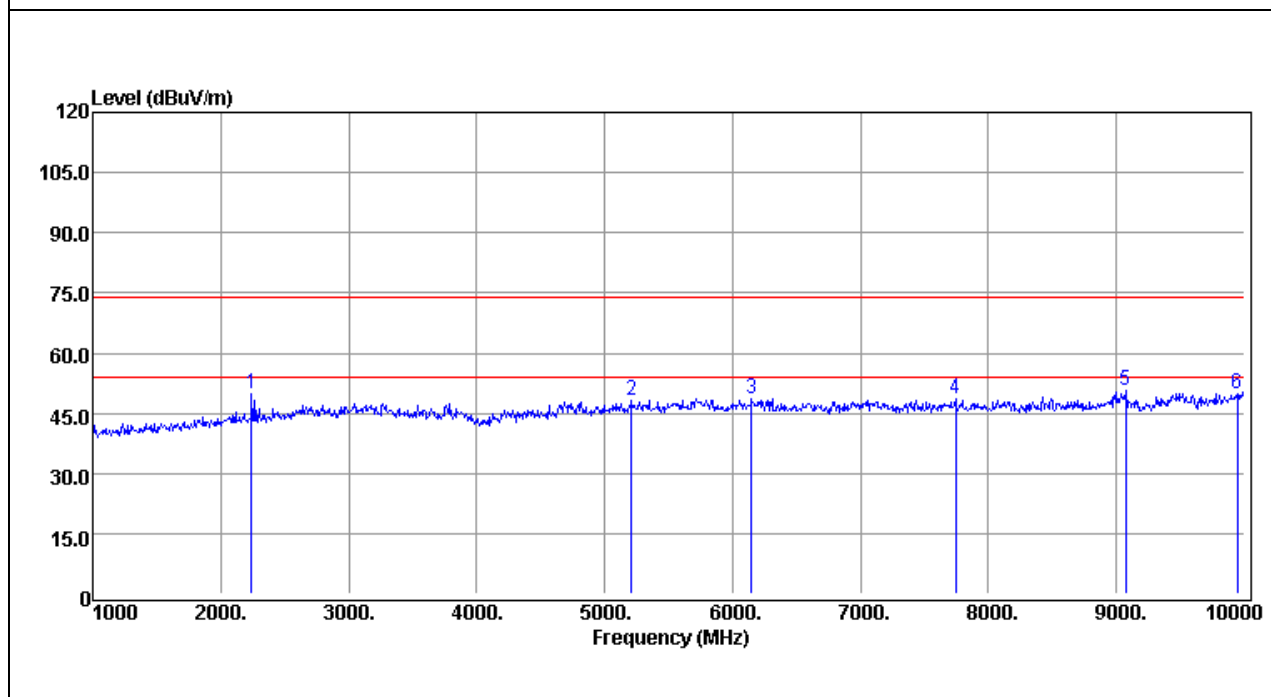
Detect: 10GHz -26.5GHz



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(RX)	Polarization :	Horizontal
Test Power :	AC 110V/60Hz		

Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
2240.30	43.26	5.31	48.57	74.00	25.43	peak
5214.30	41.27	5.27	46.54	74.00	27.46	peak
6147.90	44.29	3.42	47.71	74.00	26.29	peak
7742.50	45.37	1.62	46.99	74.00	27.01	peak
9076.00	46.38	3.27	49.65	74.00	24.35	peak
9947.30	44.29	4.27	48.56	74.00	25.44	peak

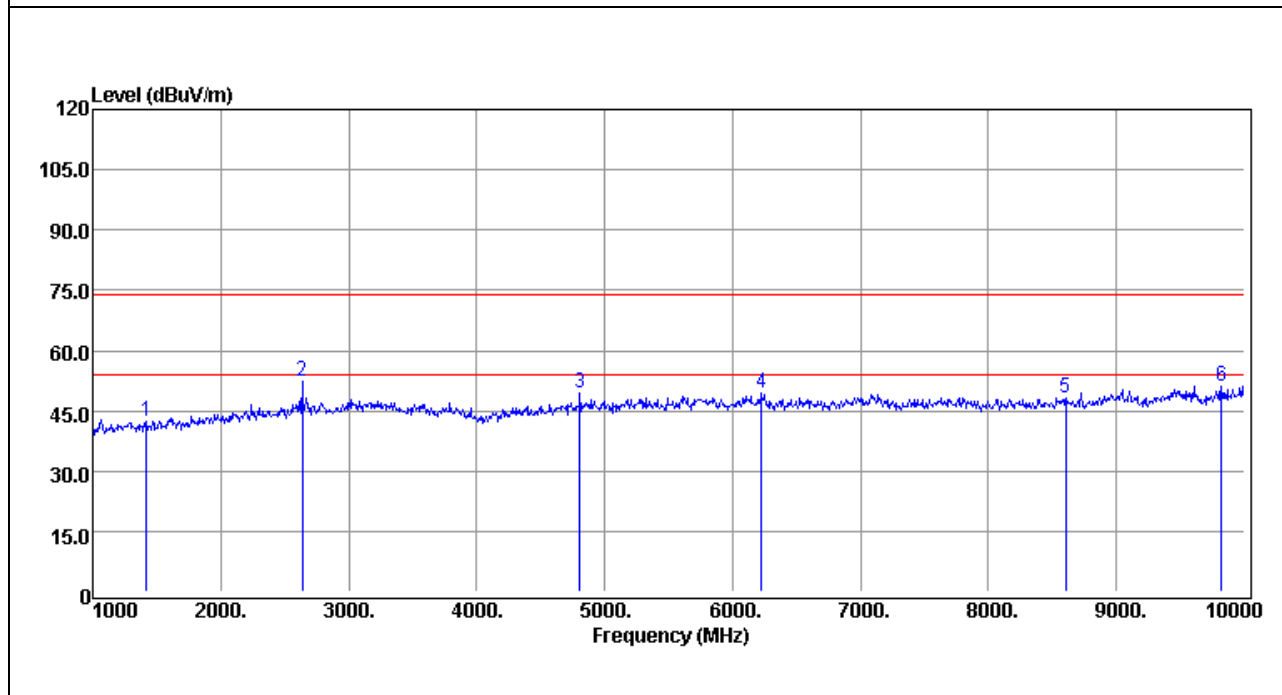
Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Relative Humidity :	54%
Pressure :	1010 hPa	Test Date :	2019-11-19
Test Mode :	Mode1(RX)	Polarization :	Vertical
Test Power :	AC 110V/60Hz		

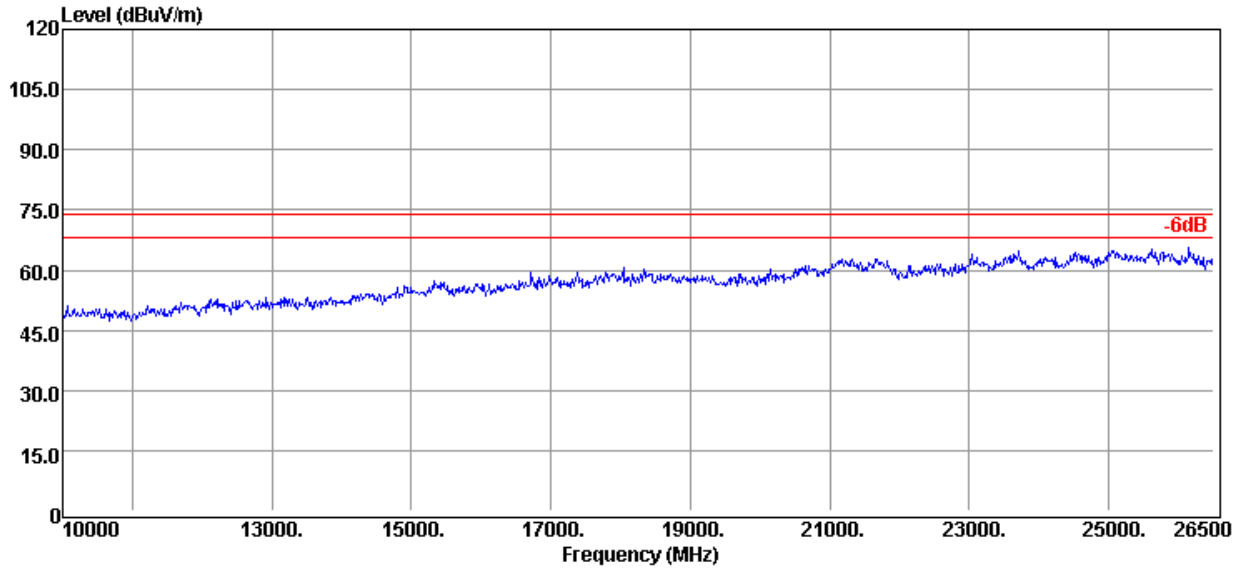
Frequency (MHz)	Meter Reading (dBμV)	Factor (dB)	Emission Level (dBμV/m)	Limits (dBμV/m)	Margin (dB)	Detector Type
1424.60	42.38	1.39	43.77	74.00	30.23	peak
2636.90	44.26	6.24	50.5	74.00	23.50	peak
4806.30	41.27	9.35	50.62	74.00	23.38	peak
6230.50	44.38	3.67	48.05	74.00	25.95	peak
8604.20	45.29	2.53	47.82	74.00	26.18	peak
9823.40	47.29	4.19	51.48	74.00	22.52	peak

Remark: Factor = Antenna Factor + Cable Loss – Pre-amplifier.



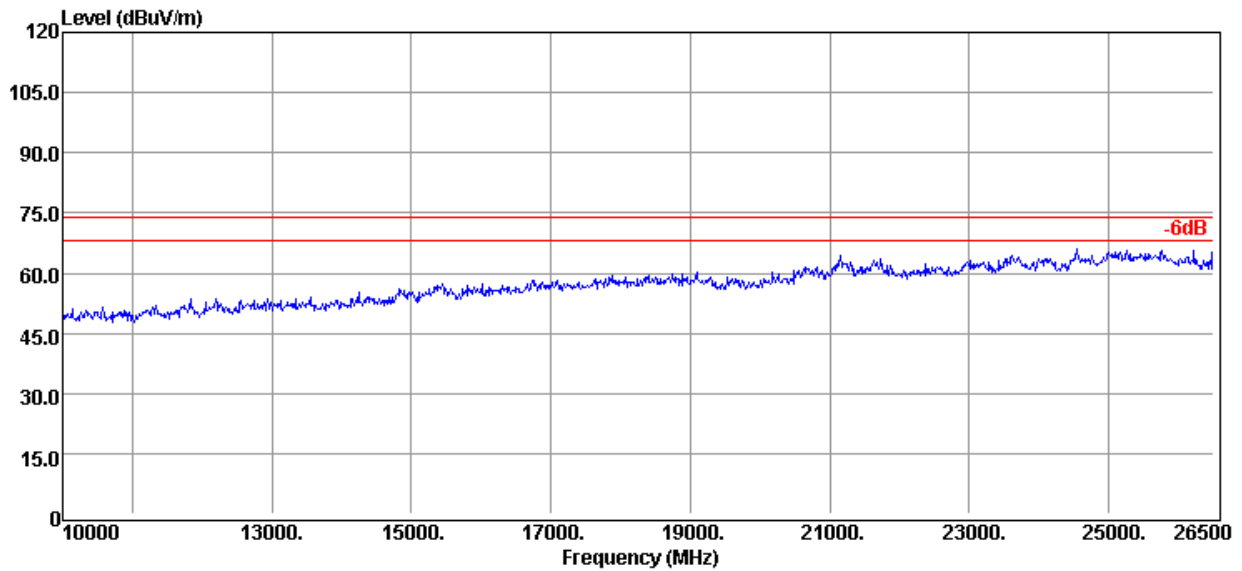
Horizontal

Detect: 10GHz -26.5GHz



Vertical

Detect: 10GHz -26.5GHz



Test result: The unit does meet the NCC requirements.

3.2.8 TEST RESULTS (RESTRICTED BANDS REQUIREMENTS)

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Test Data	2019-11-19
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	AC 110V/60Hz
Note :	1. The transmitter was setup to transmit at the lowest channel. Then the field strength was measured at 2310-2390 MHz. 2. The transmitter was setup to transmit at the highest channel. Then the field strength was measured at 2483.5-2500 MHz. 3. The data of 2390MHz and 2483.5MHz was the worst.		

Freq. (MHz) (Peak)	Freq. (MHz) (AV)	Ant.Pol. H/V	Reading		Ant/CF CF(dB)	Act		Limit		Note
			Peak (dBuv)	AV (dBuv)		Peak (dBuv/m)	AV (dBuv/m)	Peak (dBuv/m)	AV (dBuv/m)	
2390.000	2390.000	V	44.26	38.62	5.76	50.02	44.38	74.00	54.00	CH01
2402.340	2402.530	V	89.63	83.17	5.78	---	---	---	---	CH01
2390.000	2390.000	H	42.57	39.67	5.76	48.33	45.43	74.00	54.00	CH01
2402.430	2402.430	H	89.34	85.26	5.78	---	---	---	---	CH01
2479.760	2479.460	V	91.35	85.37	5.93	---	---	---	---	CH40
2483.500	2483.500	V	44.37	39.46	5.93	50.30	45.39	74.00	54.00	CH40
2480.023	2480.025	H	90.36	85.27	5.93	---	---	---	---	CH40
2483.500	2483.500	H	45.38	39.46	5.93	51.31	45.39	74.00	54.00	CH40

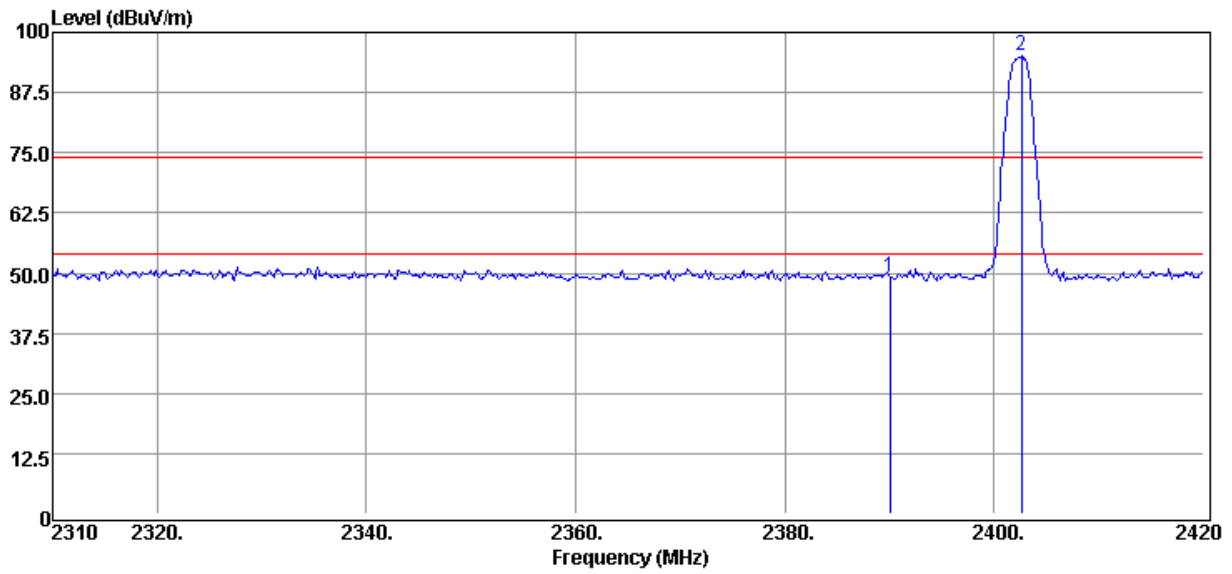
Remark :

- (1) Radiated emissions measured in frequency range above 1000MHz were made with an instrument using Peak detector mode
- (2) EUT Orthogonal Axis :
"X" - denotes Laid on Table ; "Y" - denotes Vertical Stand ; "Z" - denotes Side Stand
- (3) During the measurements above 1 GHz it is taken care of that the EUT is always within the 3 dB cone of radiation BW of the used antenna
- (4) Corr.Factor = Antenna Factor + Cable Loss – Pre-amplifier.

CH-Low (CH01)

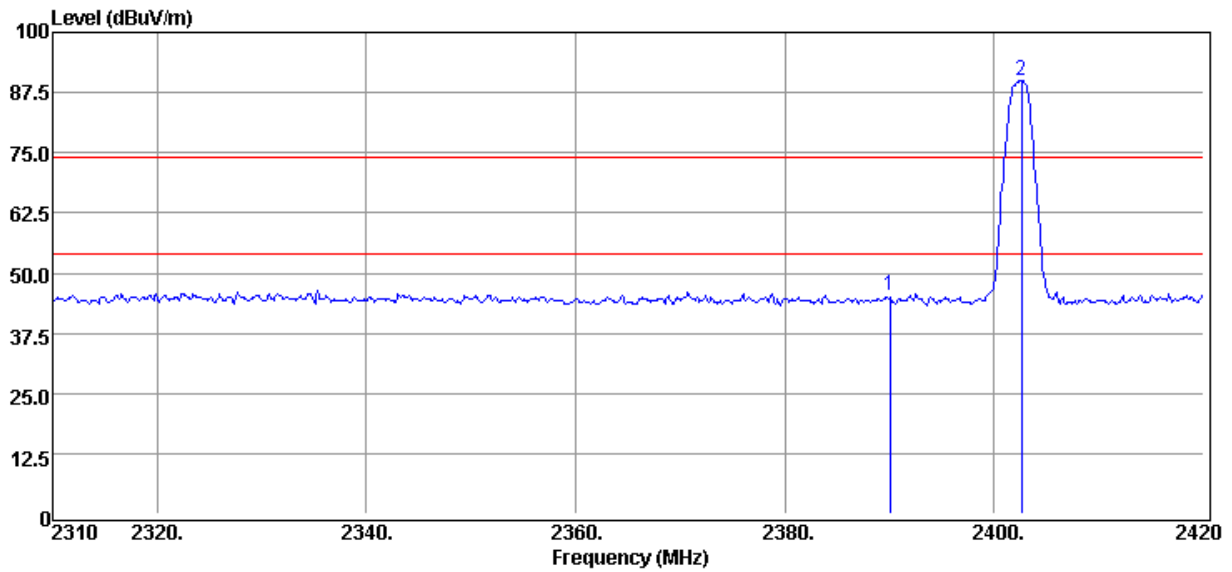
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

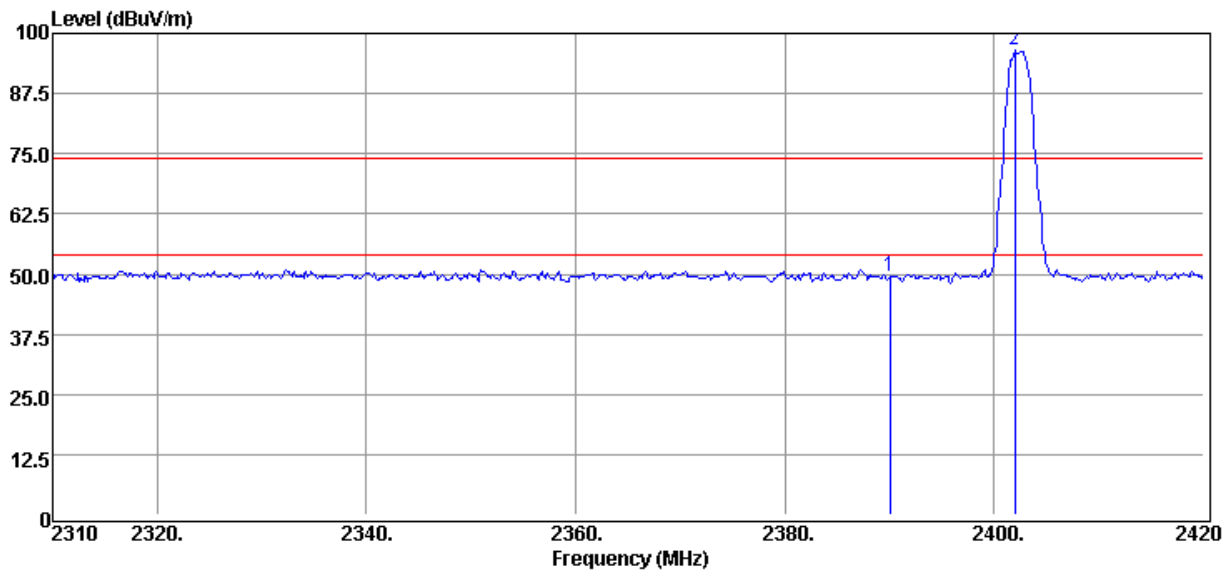
Polarity: Vertical



CH-Low (CH01)

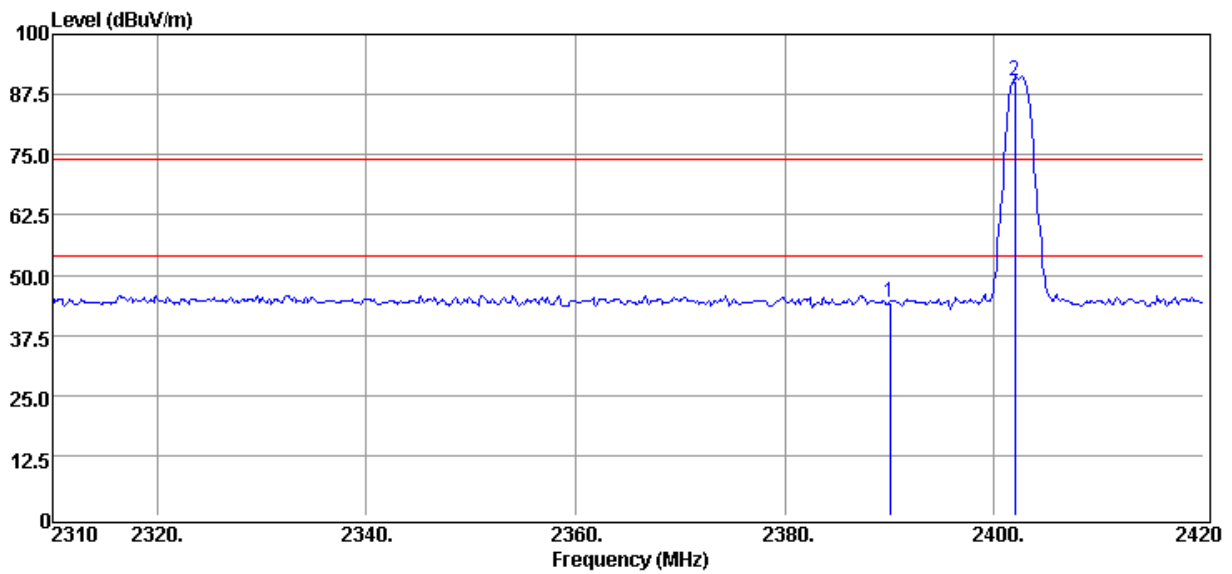
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

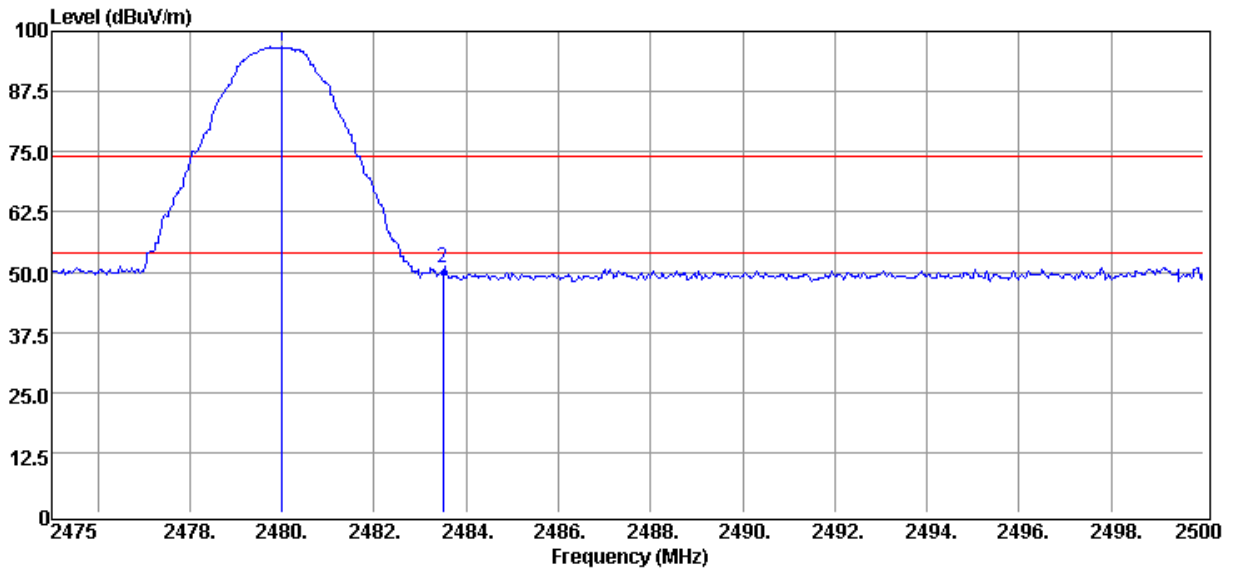
Polarity: Horizontal



CH-High (CH40)

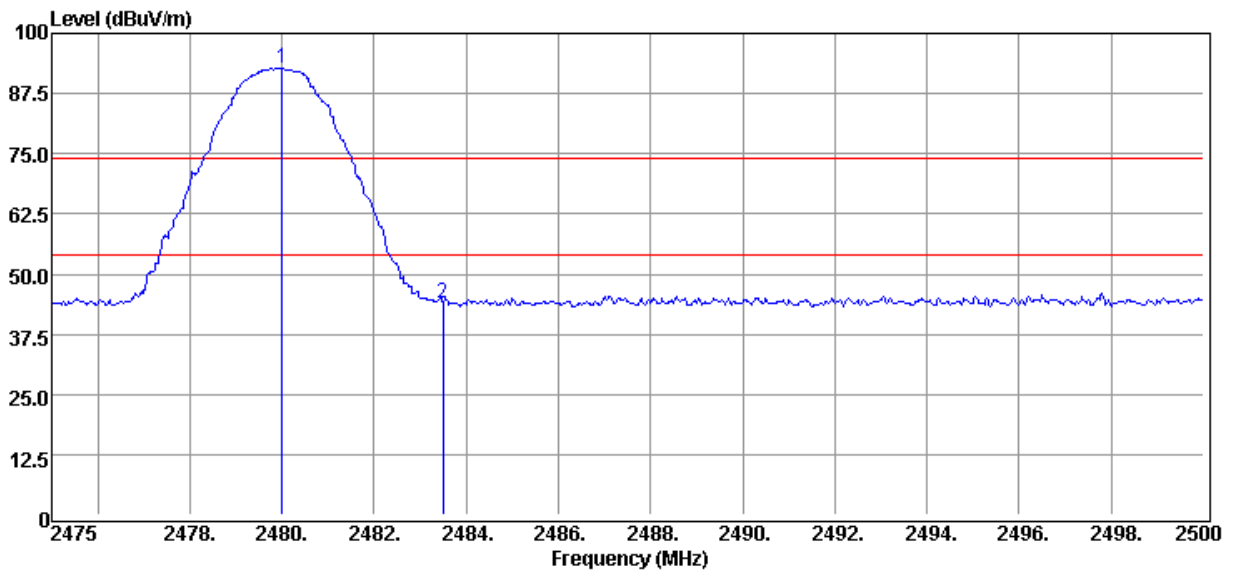
Detector mode: Peak

Polarity: Vertical



Detector mode: Average

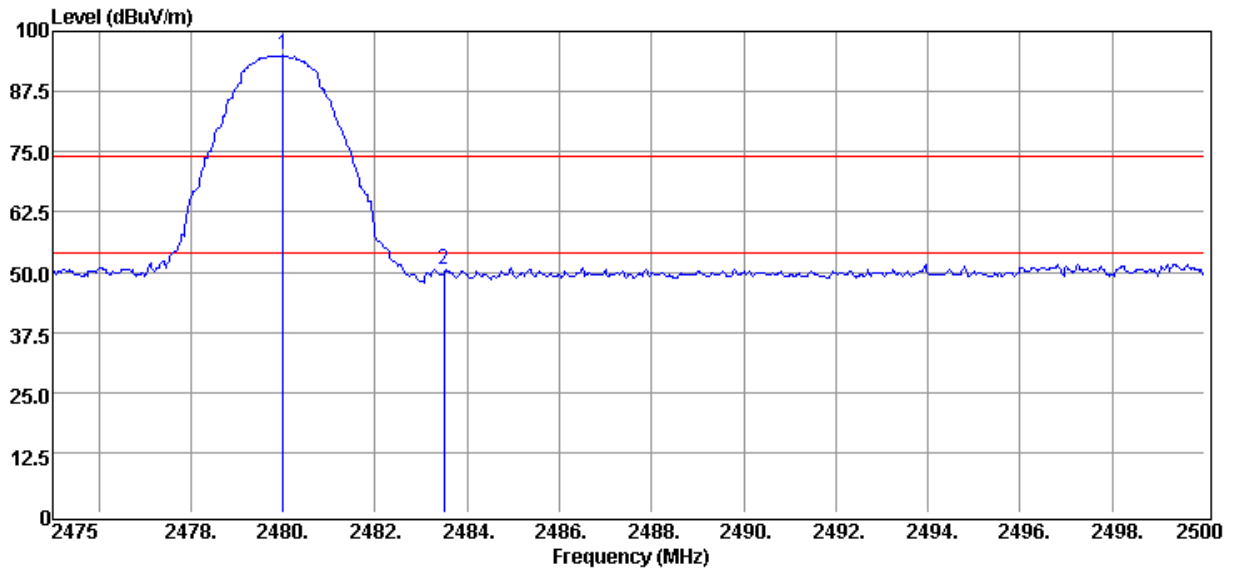
Polarity: Vertical



CH-High (CH40)

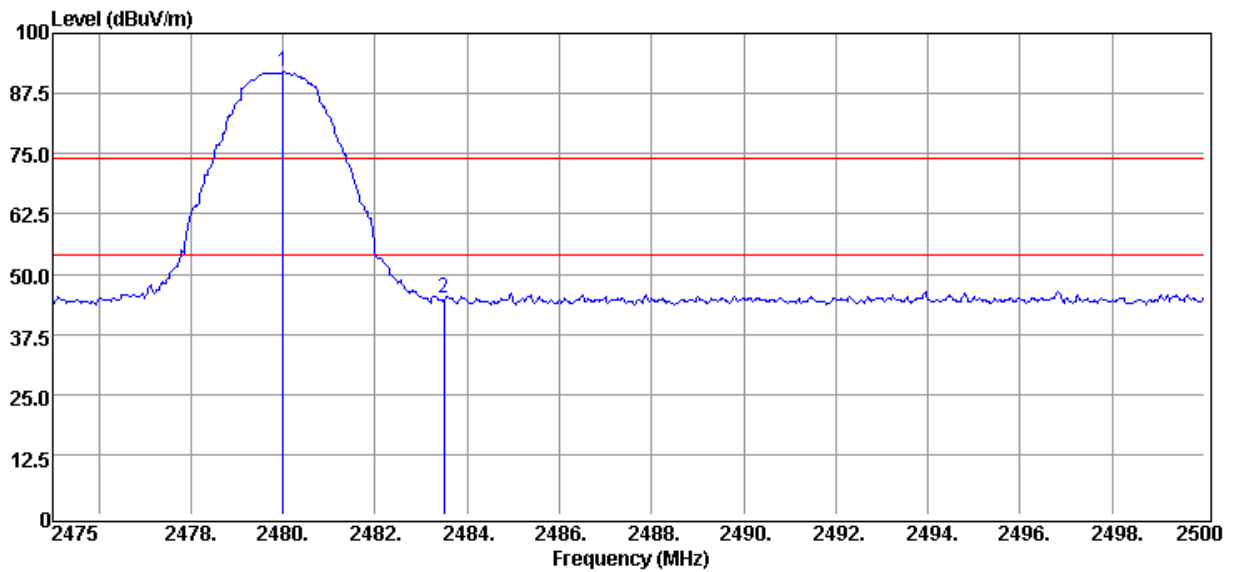
Detector mode: Peak

Polarity: Horizontal



Detector mode: Average

Polarity: Horizontal



Test result: The unit does meet the NCC requirements.

44. OCCUPIED BANDWIDTH TEST

4.1 4.1 APPLIED PROCEDURES / LIMIT

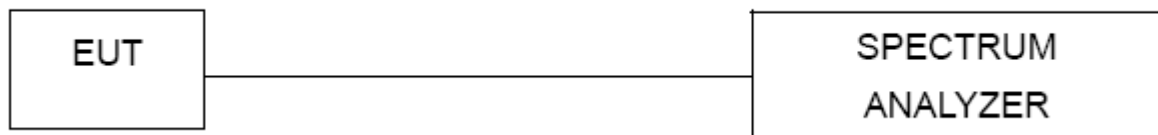
LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(6.2.1)	Bandwidth	$\geq 500\text{KHz}$ (6dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	100 kHz (6dB Bandwidth) / 100 kHz (Channel Separation)
VB	300 kHz (6dB Bandwidth) / 300 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.1 4.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting: RBW= 100KHz, VBW=100KHz, Sweep time = Auto.

4.1.2 4.3 TEST SETUP



4.1.3 4.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

4.1.4 4.5 TEST RESULTS

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Test Data	2019-11-14
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	AC 110V/60Hz

	Test Channel	Frequency (MHz)	6 dB Bandwidth (KHz)	Limit (kHz)
Mode 1	CH01	2402	692.6	≥ 500
	CH20	2440	693.6	≥ 500
	CH40	2480	690.4	≥ 500



CH20 2440MHz



CH40 2480MHz



55. POWER DENSITY

5.1 5.1 APPLIED PROCEDURES / LIMIT

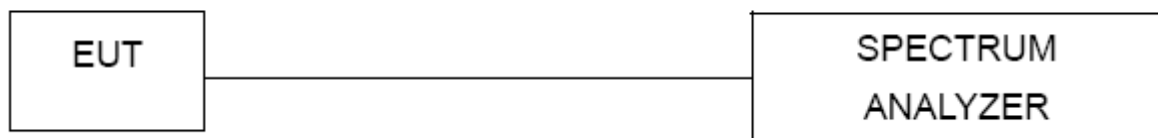
LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(6.2.2)	Power density	8dBm	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	3 kHz
VB	10 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

5.1.1 5.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 3KHz, VBW=10KHz.

5.1.2 5.3 TEST SETUP



5.1.3 5.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

5.1.4 5.5 TEST RESULTS

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Test Data	2019-11-14
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	AC 110V/60Hz

Test Channel	Frequency(MHz)	Power Density(dBm)	LIMIT(dBm)
CH01	2402 MHz	-14.381	8.00
CH20	2440 MHz	-13.383	8.00
CH40	2480 MHz	-13.379	8.00

CH01 2402MHz





66. PEAK OUTPUT POWER TEST

6.1 6.1 APPLIED PROCEDURES / LIMIT

LP0002				
Section	Test Item	Limit	Frequency Range (MHz)	Result
3.10.1(2)	Peak Output Power	1 watt or 30dBm	2400-2483.5	PASS

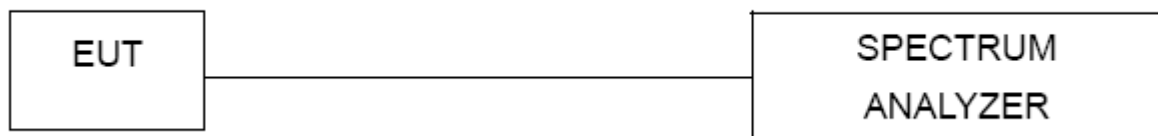
6.1.1 6.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 2 MHz, VBW= 2 MHz, Sweep time = Auto.

6.1.2 6.3 DEVIATION FROM STANDARD

No deviation.

6.1.3 6.4 TEST SETUP



6.1.4 6.5 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

6.1.5 6.6 TEST RESULTS

EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Test Data	2019-11-14
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	AC 110V/60Hz

Test Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit(dBm)	Result
CH01	2402 MHz	2.169	30	PASS
CH20	2440 MHz	1.614	30	PASS
CH40	2480 MHz	1.823	30	PASS



CH20 2440MHz



CH40 2480MHz



77. ANTENNA CONDUCTED SPURIOUS EMISSION

7.1 7.1 APPLIED PROCEDURES / LIMIT

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the modulation products of the spreading sequence, the information sequence and the carrier frequency shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power or shall not exceed the general levels specified in Section 2.8.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

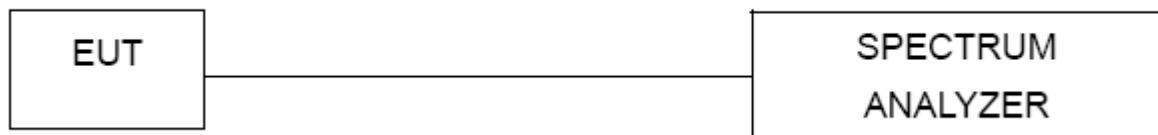
The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 KHz /300 KHz for Peak

7.1.1 7.2 TEST PROCEDURE

- The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- Spectrum Setting : RBW= 100KHz, VBW=300KHz, Sweep time = Auto.

7.1.2 7.3 TEST SETUP



7.1.3 7.4 EUT OPERATION CONDITIONS

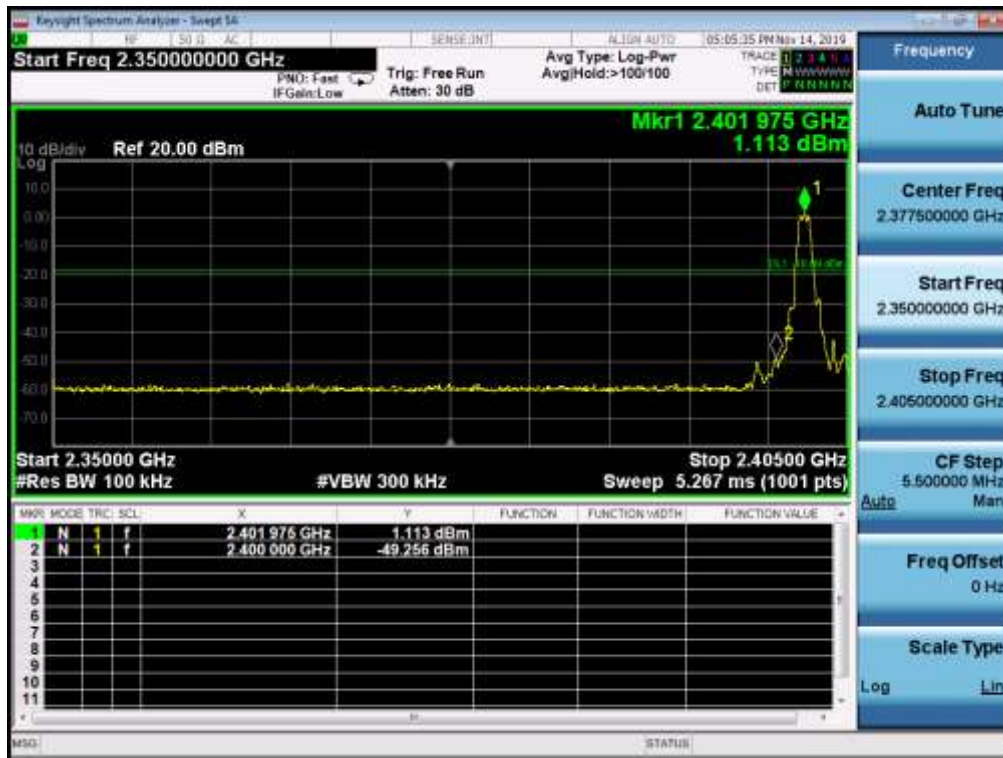
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

7.1.4 7.5 TEST RESULTS

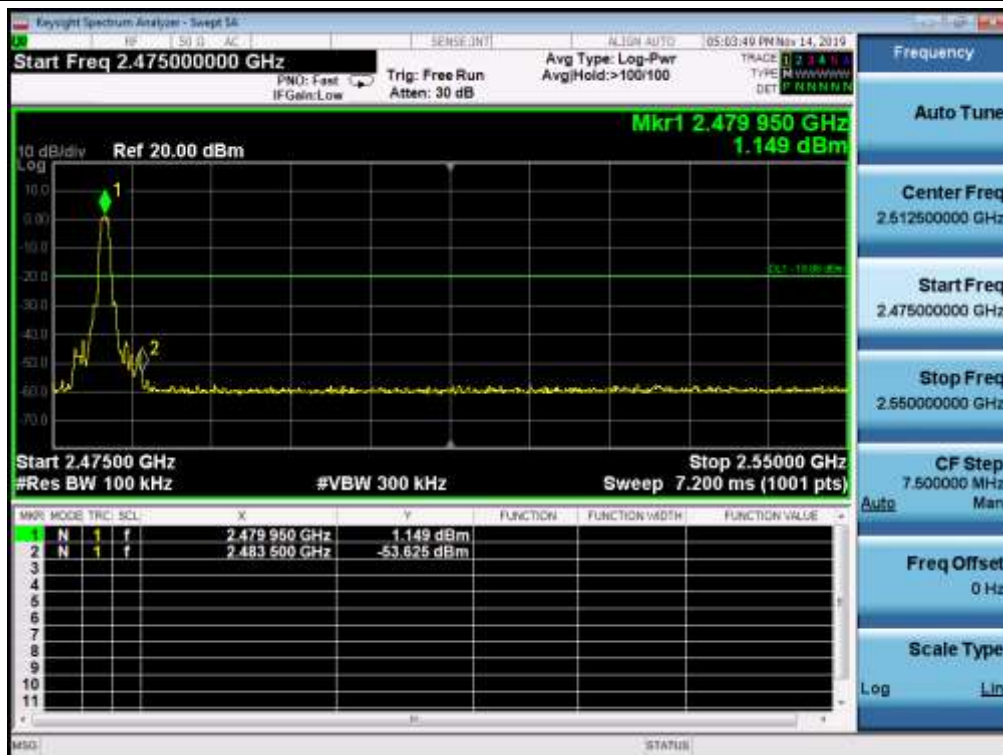
EUT :	Active Speaker	Model Name :	LDICOA12ABT
Temperature :	24 °C	Test Data	2019-11-14
Pressure :	1010 hPa	Relative Humidity :	54%
Test Mode :	Mode 1	Test Voltage :	AC 110V/60Hz

in any 100kHz bandwidth outside the low frequency band	in any 100 kHz bandwidth outside the high frequency band
Pass	Pass
Result	
In any 100kHz bandwidth outside the frequency band, the radio frequency power is at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power.	

CH01 (Lower)



CH40 (Upper)



8. ANTENNA REQUIREMENT

8.1 STANDARD REQUIREMENT

3.10.3.1.1 requirement: Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.

8.2 EUT ANTENNA

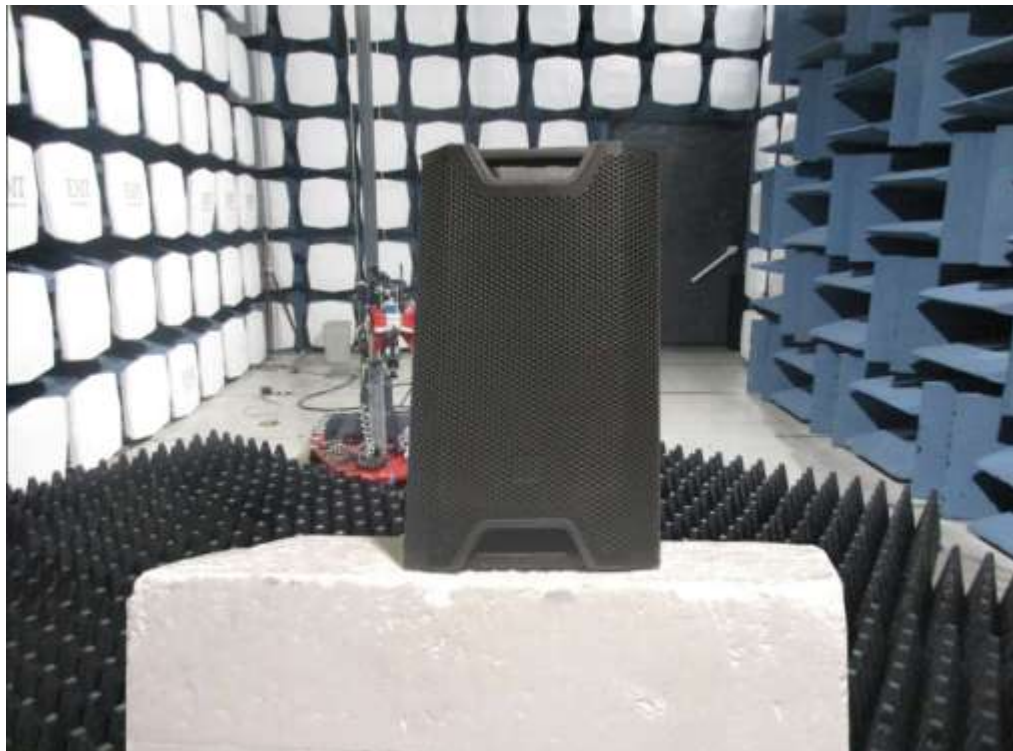
The antenna is a PCB antenna and no consideration of replacement. Antenna max gain is 0dBi from 2.4GHz to 2.5GHz.

9. EUT TEST PHOTO

**Radiated Measurement Photos
30MHz-1GHz**



**Radiated Measurement Photos
1GHz -26.5GHz**



Conducted Measurement Photos