

TEST REPORT

Applicant: Ideal Living LLC

Address of Applicant: 14724 Ventura Blvd, Suite 200, Sherman Oaks, California 91403, United States

Manufacturer: Ideal Living LLC

Address of Manufacturer: 14724 Ventura Blvd, Suite 200, Sherman Oaks, California 91403, United States

Factory: Zhangzhou iHastek Inc.

Address of Factory: No. 10, Jinda Road, Wanlida Industry Zone, Jinfeng Industrial Estate, Zhangzhou, Fujian, China

Equipment Under Test (EUT)

Product Name: AromaTru

Model No.: ART1, ART2

Trade Mark: AromaTru

FCC ID: 2A2J6-ART12

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.225

Date of sample receipt: September 26, 2022

Date of Test: September 27, 2022-November 07, 2022

Date of report issued: November 07, 2022

Test Result : PASS

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

Authorized Signature:



Robinson Liu

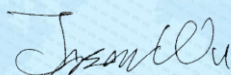
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	November 07, 2022	Original

Prepared By:

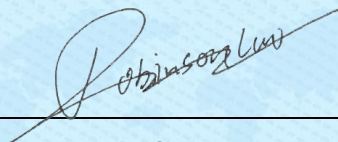


Date:

November 07, 2022

Project Engineer

Check By:



Date:

November 07, 2022

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	Pass
Field Strength of Fundamental Emissions and Mask Measurement	15.225(a)(b)(c)	Pass
Radiated Emission	15.225(d)&15.209	Pass
20dB Emission Bandwidth	15.225&15.215	Pass
Frequency Stability Measurement	15.225(e)	Pass

Remark:

1. Pass: The EUT complies with the essential requirements in the standard.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	AromaTru
Model No.:	ART1, ART2
Remark: All models have the similar construction design, critical components and material expect the model name and resistance RS-10 and RS-5 parameters.	
Serial No.:	ART12
Test sample(s) ID:	GTS202209000195-1
Sample(s) Status	Engineered sample
Operation Frequency:	13.56MHz
Channel Number:	1
Modulation:	ASK
Antenna type:	PCB Antenna
Antenna gain:	ANT 1: 3dBi ANT 2: 3dBi ANT 3: 3dBi ANT 4: 3dBi
Power supply:	Class 2 Power Supply Model: XH0500-3000L Input: AC 100-240V, 50/60Hz, 0.5A Output: DC 5.0V, 3.0A

5.2 Test mode

Transmitter mode	Keep the EUT in continuously transmitting.		
Pre-test mode.			
GTS has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:			
ANT 1:			
Axis	X	Y	Z
Field Strength(dBuV/m)	51.35	52.38	50.46
ANT 2:			
Axis	X	Y	Z
Field Strength(dBuV/m)	52.34	53.63	51.22
ANT 3:			
Axis	X	Y	Z
Field Strength(dBuV/m)	51.27	52.87	50.29
ANT 4:			
Axis	X	Y	Z
Field Strength(dBuV/m)	51.27	52.61	50.35
ANT 1+2+3+4:			
Axis	X	Y	Z
Field Strength(dBuV/m)	52.23	53.54	51.32
Final Test Mode:			
According to ANSI C63.4 standards, the test results are both the “worst case” and “worst setup”: Y axis (see the test setup photo)			

5.3 Test Facility

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

- **FCC —Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.4 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

5.5 Description of Support Units

None.

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 30, 2021	Nov. 29, 2022
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 16, 2022	Oct. 15, 2023
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 16, 2022	Oct. 15, 2023
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 16, 2022	Oct. 15, 2023
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

Conducted Emission						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Shielding Room	ZhongYu Electron	7.3(L)x3.1(W)x2.9(H)	GTS252	May 14, 2022	May 13, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 24, 2022	April 23, 2023
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June 23, 2022	June 22, 2023
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	April 22, 2022	April 21, 2023
5	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Thermo meter	JINCHUANG	GSP-8A	GTS639	April 28, 2022	April 27, 2023
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 15, 2022	April 14, 2023
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 22, 2022	April 21, 2023
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 22, 2022	April 21, 2023

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

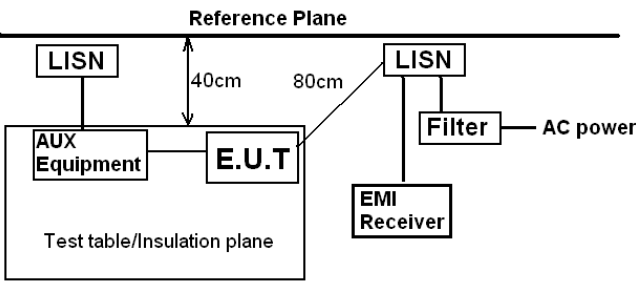
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

7 Test results and Measurement Data

7.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.	
EUT Antenna:	
The are antennas PCB antenna, reference to the appendix II for details	

7.2 Conducted Emissions

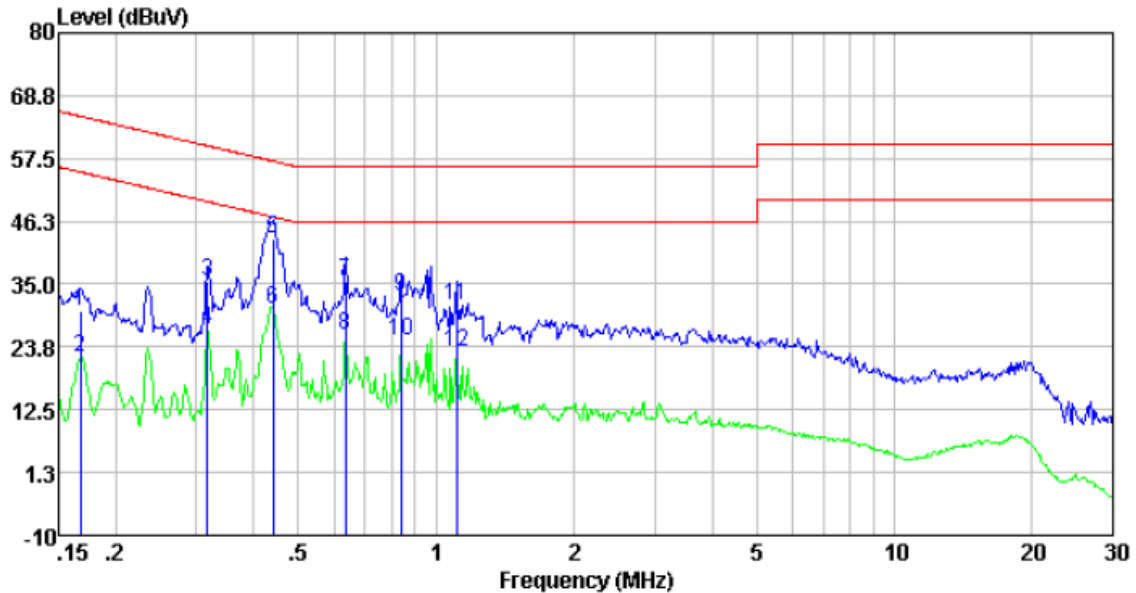
Test Requirement:	FCC Part15 C Section 15.207					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	150KHz to 30MHz					
Class / Severity:	Class B					
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=auto					
Limit:	Frequency range (MHz)		Limit (dBuV)			
			Quasi-peak		Average	
	0.15-0.5		66 to 56*		56 to 46*	
	0.5-5		56		46	
	5-30		60		50	
* Decreases with the logarithm of the frequency.						
Test setup:						
	<i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

Measurement data:

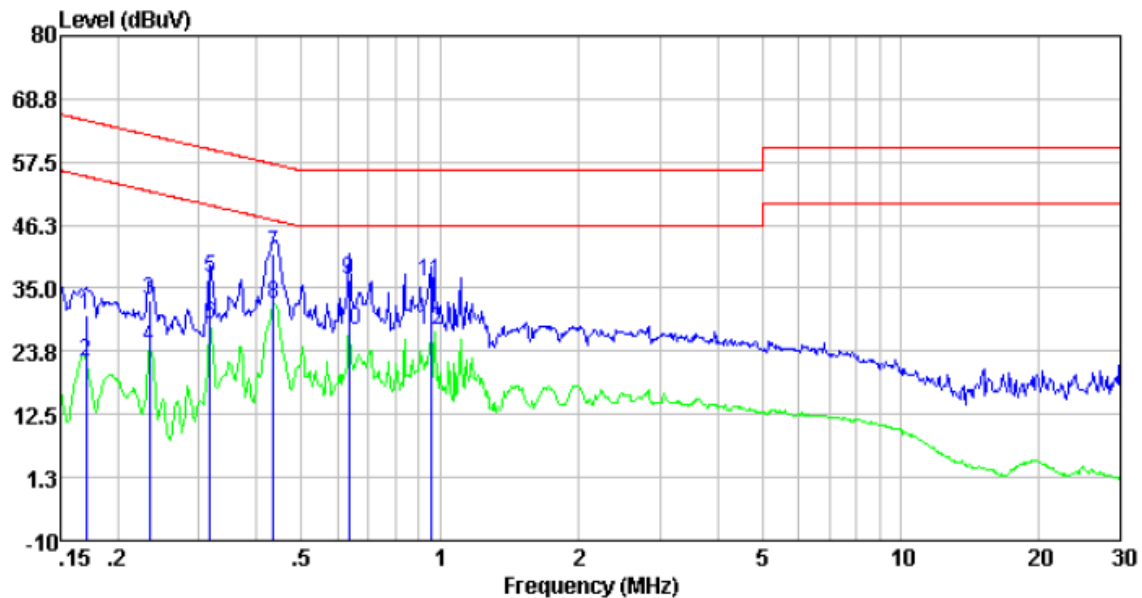
Model No.: ART1

Line:



Freq	Reading	LISN/ISN	Cable		Limit	Over	
	level	factor	loss	Level	level	limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.17	20.02	10.10	0.01	30.13	65.08	-34.95	QP
0.17	11.80	10.10	0.01	21.91	55.08	-33.17	Average
0.32	25.50	9.98	0.01	35.49	59.80	-24.31	QP
0.32	16.87	9.98	0.01	26.86	49.80	-22.94	Average
0.44	33.20	9.97	0.01	43.18	57.07	-13.89	QP
0.44	20.43	9.97	0.01	30.41	47.07	-16.66	Average
0.63	25.37	9.96	0.02	35.35	56.00	-20.65	QP
0.63	15.92	9.96	0.02	25.90	46.00	-20.10	Average
0.84	22.71	9.96	0.03	32.70	56.00	-23.30	QP
0.84	14.75	9.96	0.03	24.74	46.00	-21.26	Average
1.11	21.34	9.94	0.03	31.31	56.00	-24.69	QP
1.11	12.97	9.94	0.03	22.94	46.00	-23.06	Average

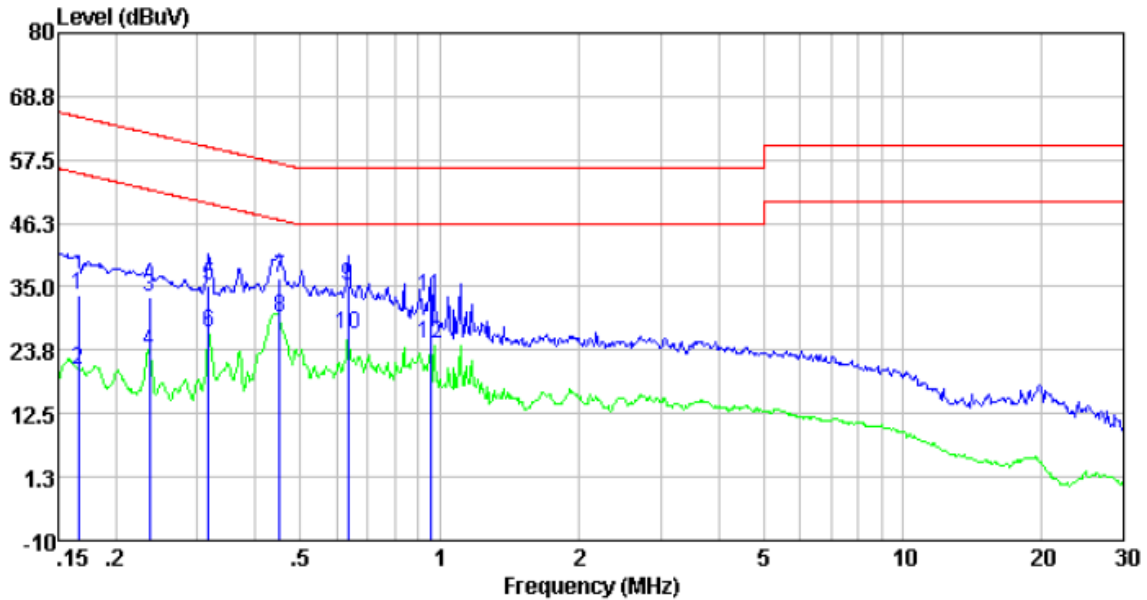
Neutral:



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.17	20.21	10.12	0.01	30.34	64.94	-34.60	QP
0.17	11.69	10.12	0.01	21.82	54.94	-33.12	Average
0.23	22.65	10.03	0.01	32.69	62.30	-29.61	QP
0.23	14.40	10.03	0.01	24.44	52.30	-27.86	Average
0.32	26.97	9.97	0.01	36.95	59.80	-22.85	QP
0.32	18.41	9.97	0.01	28.39	49.80	-21.41	Average
0.44	31.17	9.96	0.01	41.14	57.15	-16.01	QP
0.44	22.23	9.96	0.01	32.20	47.15	-14.95	Average
0.63	26.63	9.96	0.02	36.61	56.00	-19.39	QP
0.63	17.54	9.96	0.02	27.52	46.00	-18.48	Average
0.95	26.11	9.96	0.03	36.10	56.00	-19.90	QP
0.95	17.46	9.96	0.03	27.45	46.00	-18.55	Average

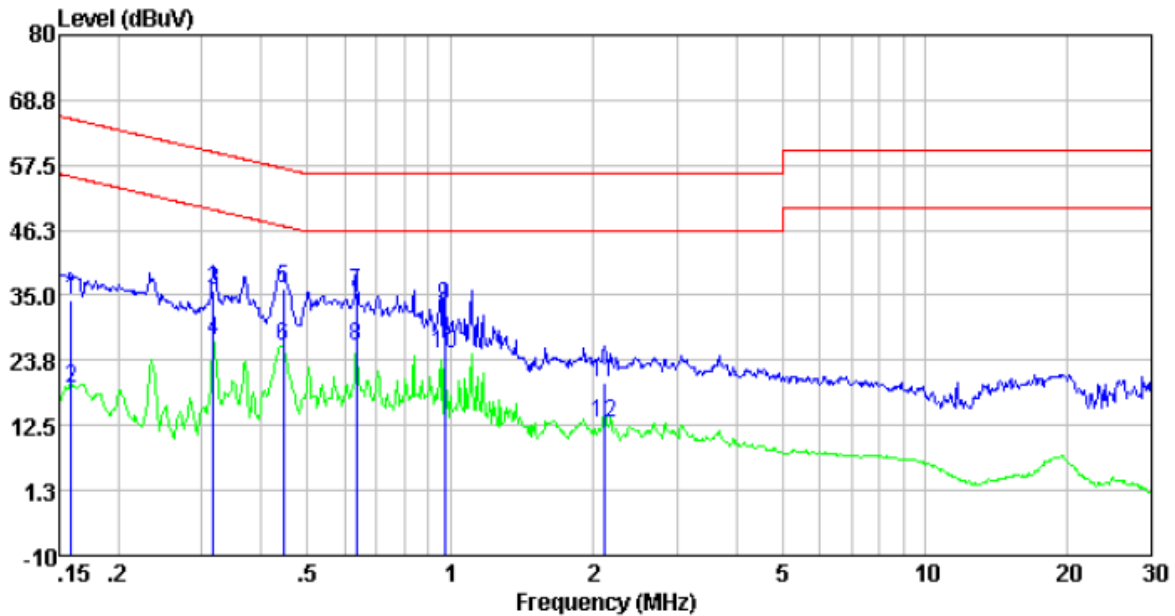
Model No.: ART2

Line:



Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.17	23.42	10.10	0.01	33.53	65.16	-31.63	QP
0.17	10.14	10.10	0.01	20.25	55.16	-34.91	Average
0.24	23.28	10.02	0.01	33.31	62.22	-28.91	QP
0.24	13.35	10.02	0.01	23.38	52.22	-28.84	Average
0.32	25.22	9.98	0.01	35.21	59.80	-24.59	QP
0.32	16.92	9.98	0.01	26.91	49.80	-22.89	Average
0.45	26.66	9.96	0.01	36.63	56.85	-20.22	QP
0.45	19.46	9.96	0.01	29.43	46.85	-17.42	Average
0.63	25.22	9.96	0.02	35.20	56.00	-20.80	QP
0.63	16.54	9.96	0.02	26.52	46.00	-19.48	Average
0.95	23.23	9.96	0.03	33.22	56.00	-22.78	QP
0.95	15.04	9.96	0.03	25.03	46.00	-20.97	Average

Neutral:

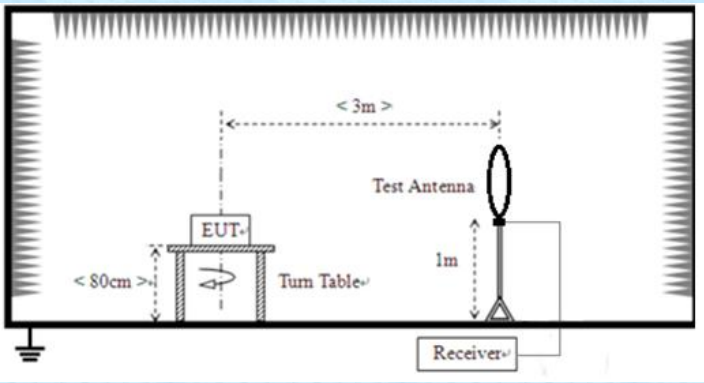


Freq	Reading	LISN/ISN	Cable	Level	Limit	Over	Remark
MHz	dBuV	factor	loss	dBuV	dBuV	dB	
0.16	24.07	10.14	0.01	34.22	65.52	-31.30	QP
0.16	8.75	10.14	0.01	18.90	55.52	-36.62	Average
0.32	25.80	9.97	0.01	35.78	59.80	-24.02	QP
0.32	17.37	9.97	0.01	27.35	49.80	-22.45	Average
0.44	26.04	9.96	0.01	36.01	56.98	-20.97	QP
0.44	16.08	9.96	0.01	26.05	46.98	-20.93	Average
0.63	25.50	9.96	0.02	35.48	56.00	-20.52	QP
0.63	16.13	9.96	0.02	26.11	46.00	-19.89	Average
0.97	23.11	9.96	0.03	33.10	56.00	-22.90	QP
0.97	14.83	9.96	0.03	24.82	46.00	-21.18	Average
2.11	10.00	9.82	0.05	19.87	56.00	-36.13	QP
2.11	3.09	9.82	0.05	12.96	46.00	-33.04	Average

Notes:

1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss

7.3 Field Strength of Fundamental Emissions and Mask Measurement

Test Requirement:	FCC Part15 C Section 15.225(a)(b)(c)
Test Method:	ANSI C63.10:2013 & ANSI C63.4: 2014
Test site:	Measurement Distance: 3m
Receiver setup:	RBW=9KHz, VBW=30KHz, Sweep time=Auto
limit:	FCC Part 15.225 & 15.209 RSS-210, Annex B.6 RSS-Gen, Section 8.9
Test setup:	 The diagram illustrates the test setup for field strength measurement. It shows an Equipment Under Test (EUT) placed on a Turn Table at a height of less than 80cm. A Test Antenna is positioned 3m away from the EUT at a height of 1m. A Receiver is connected to the Test Antenna.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

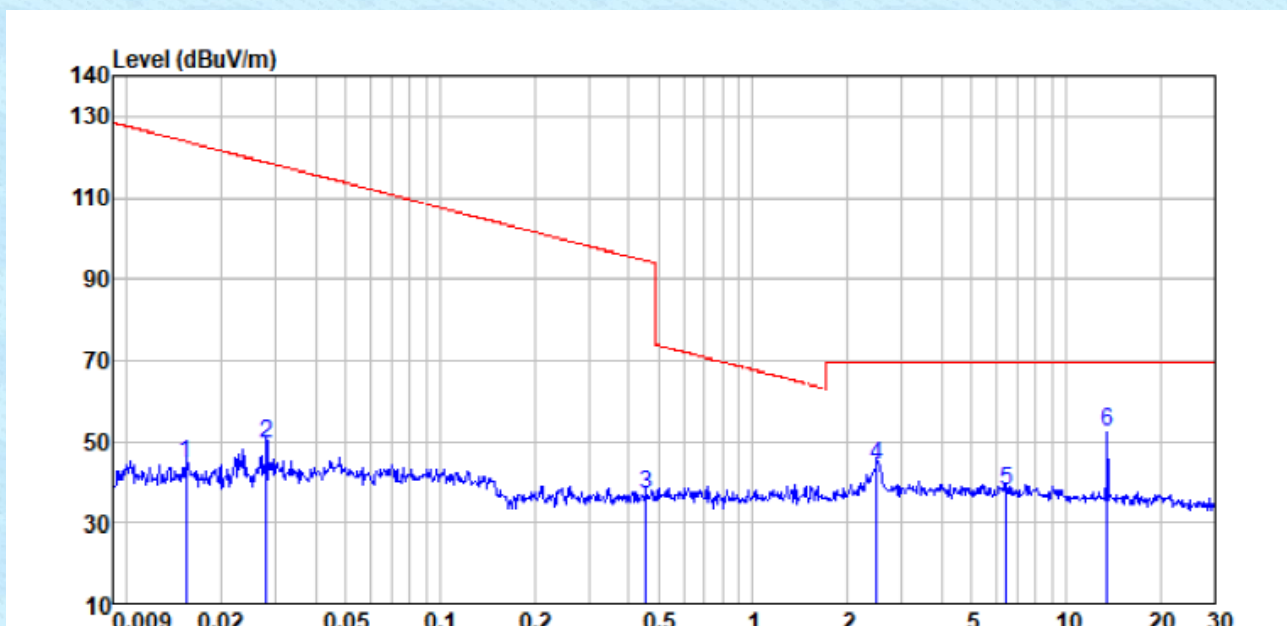
Measurement data:

ANT 1:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
13.56	31.30	20.57	0.51	52.38	94.00	-41.62	QP

Test plot as follows:

Test data combines x, y, z-axis

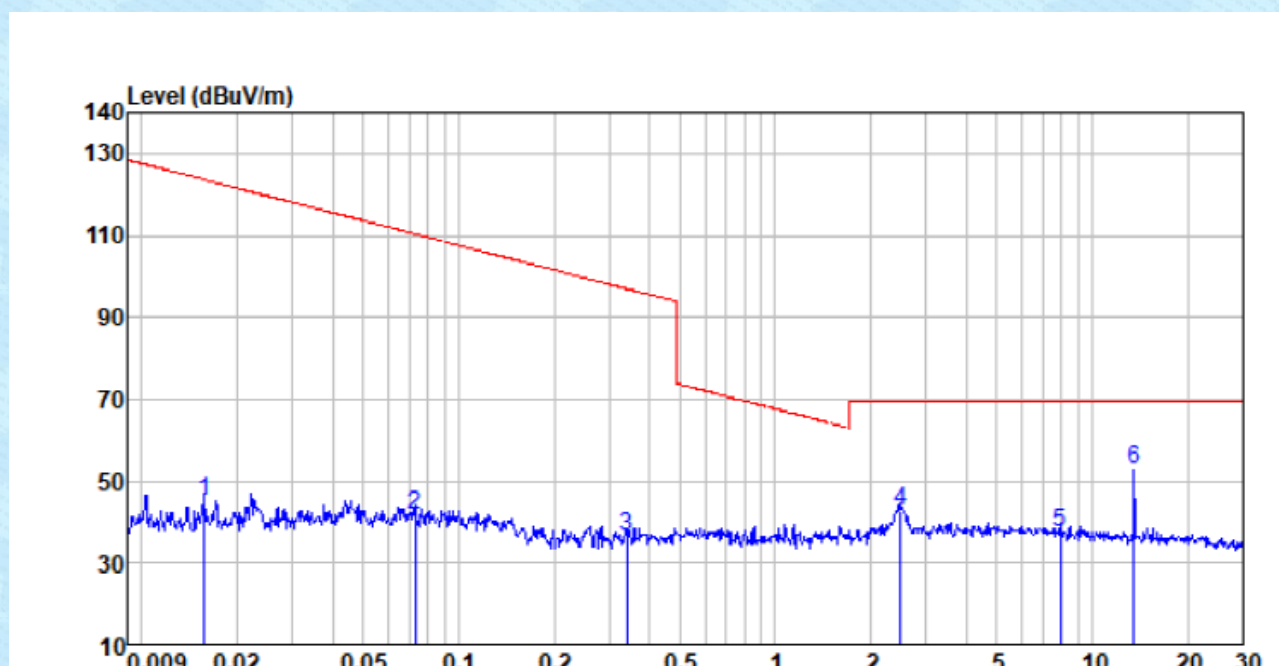


ANT 2:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
13.56	32.55	20.57	0.51	53.63	94.00	-40.37	QP

Test plot as follows:

Test data combines x, y, z-axis

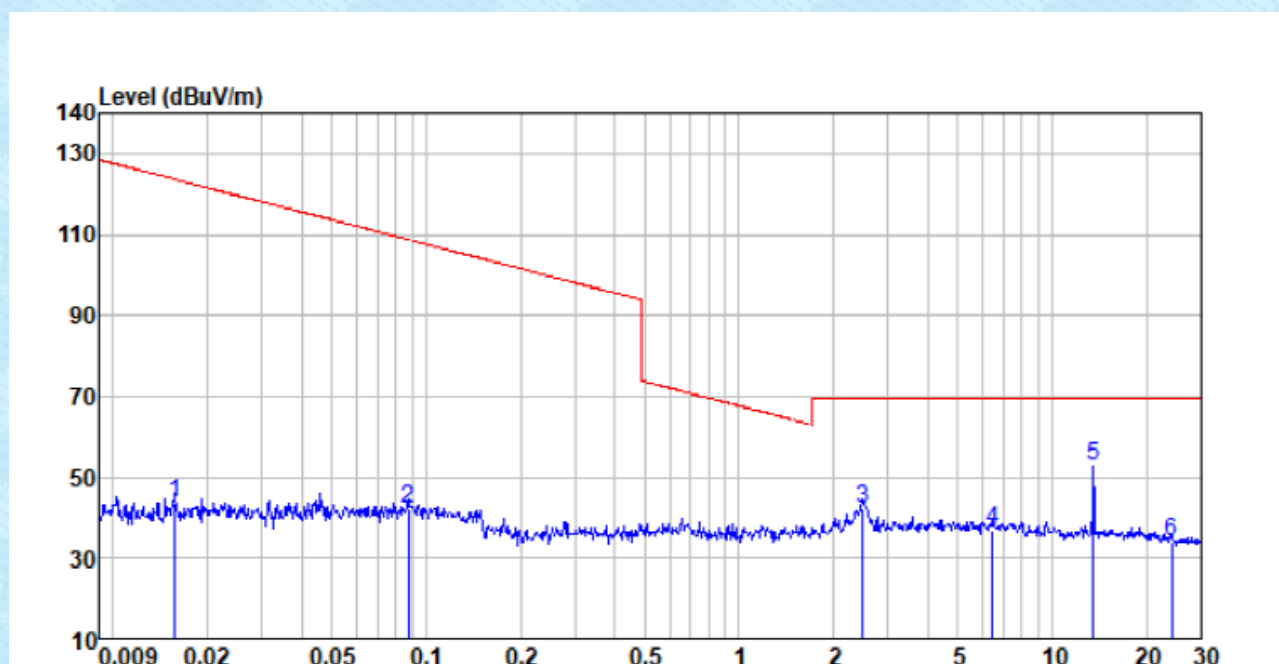


ANT 3:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
13.56	31.79	20.57	0.51	52.87	94.00	-41.13	QP

Test plot as follows:

Test data combines x, y, z-axis

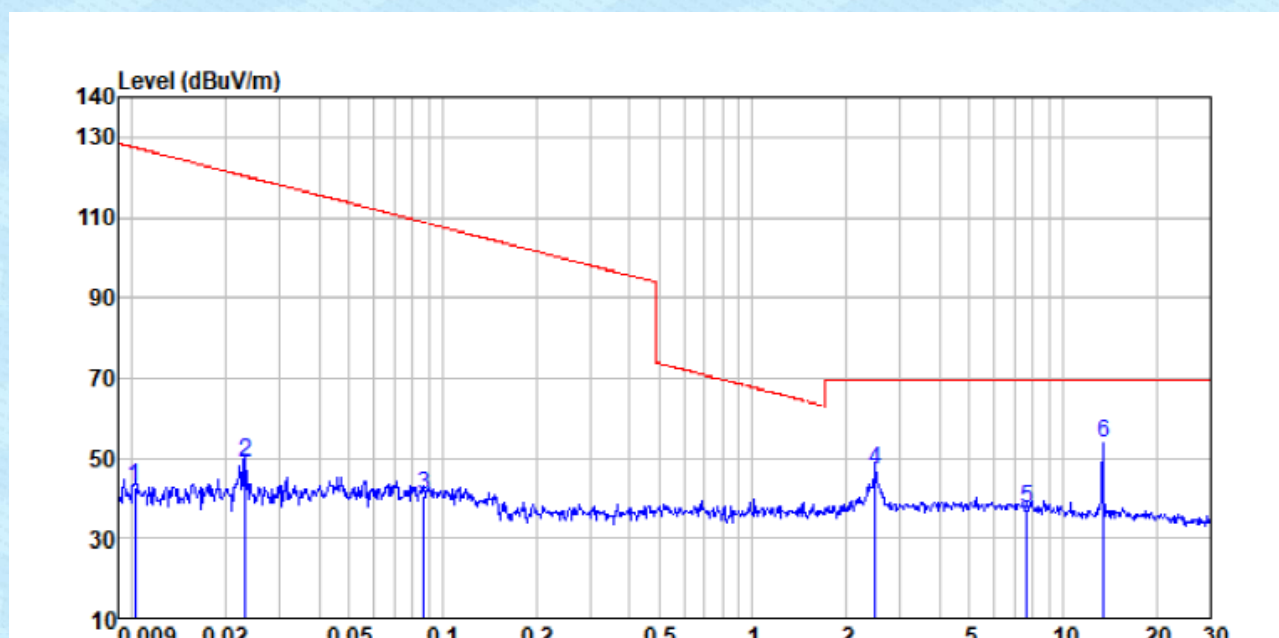


ANT 4:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
13.56	31.53	20.57	0.51	52.61	94.00	-41.39	QP

Test plot as follows:

Test data combines x, y, z-axis

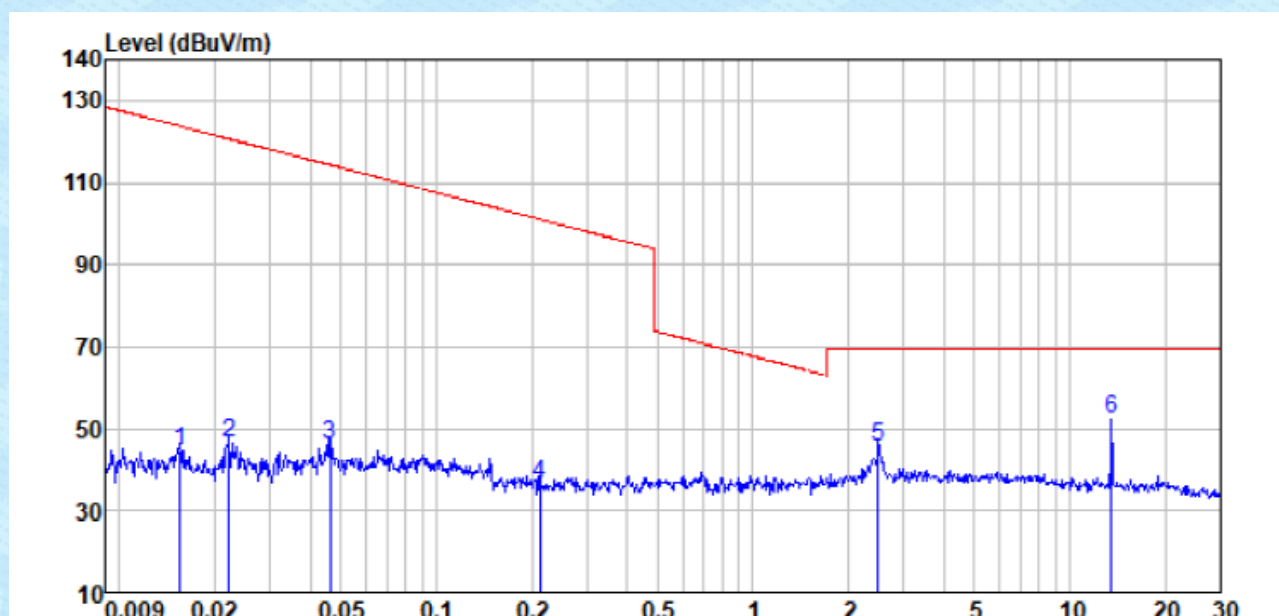


ANT 1+2+3+4:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Remark
13.56	30.94	20.57	0.51	52.02	94.00	-41.98	QP

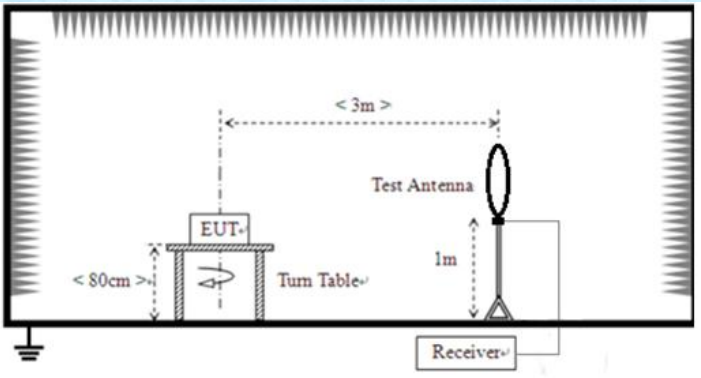
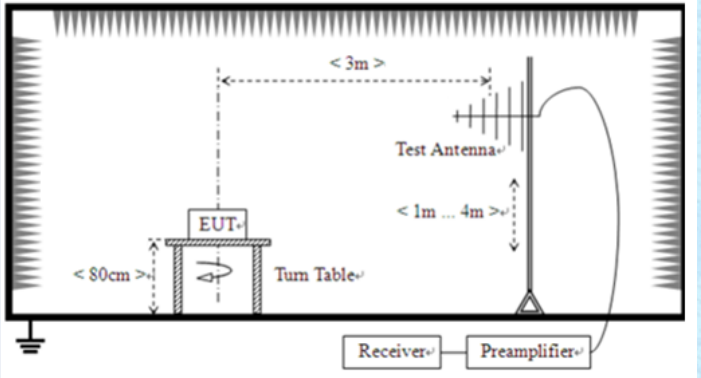
Test plot as follows:

Test data combines x, y, z-axis



7.4 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.225(d) and 15.209																												
Test Method:	ANSI C63.10: 2013 & ANSI C63.4: 2014																												
Test Frequency Range:	9KHz to 1000MHz																												
Test site:	Measurement Distance: 3m																												
Receiver setup:	Frequency	Detector	RBW	VBW	Remark																								
	9kHz-150kHz	Quasi-peak	200Hz	300Hz	Quasi-peak Value																								
	150kHz-30MHz	Quasi-peak	9kHz	10kHz	Quasi-peak Value																								
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak Value																								
FCC Limit:	<table><tr><th>Frequency (MHz)</th><th>Field strength (microvolts/meter)</th><th>Measurement distance (meters)</th></tr><tr><td>0.009-0.490</td><td>2400/F(kHz)</td><td>300</td></tr><tr><td>0.490-1.705</td><td>24000/F(kHz)</td><td>30</td></tr><tr><td>1.705-30.0</td><td>30</td><td>30</td></tr><tr><td>30-88</td><td>100**</td><td>3</td></tr><tr><td>88-216</td><td>150**</td><td>3</td></tr><tr><td>216-960</td><td>200**</td><td>3</td></tr><tr><td>Above 960</td><td>500</td><td>3</td></tr></table>					Frequency (MHz)	Field strength (microvolts/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
	Frequency (MHz)	Field strength (microvolts/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 emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.																												
IC Limit:	Table 5 – General field strength limits at frequencies above 30 MHz																												
	<table><tr><th>Frequency (MHz)</th><th>Field strength (µV/m at 3 m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 – 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table>					Frequency (MHz)	Field strength (µV/m at 3 m)	30 – 88	100	88 – 216	150	216 – 960	200	Above 960	500														
	Frequency (MHz)	Field strength (µV/m at 3 m)																											
	30 – 88	100																											
	88 – 216	150																											
	216 – 960	200																											
	Above 960	500																											
	Table 6 – General field strength limits at frequencies below 30 MHz																												
	<table><tr><th>Frequency</th><th>Magnetic field strength (H-Field) (µA/m)</th><th>Measurement distance (m)</th></tr><tr><td>9 - 490 kHz ¹</td><td>6.37/F (F in kHz)</td><td>300</td></tr><tr><td>490 - 1705 kHz</td><td>63.7/F (F in kHz)</td><td>30</td></tr><tr><td>1.705 - 30 MHz</td><td>0.08</td><td>30</td></tr></table>					Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)	9 - 490 kHz ¹	6.37/F (F in kHz)	300	490 - 1705 kHz	63.7/F (F in kHz)	30	1.705 - 30 MHz	0.08	30												
	Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)																										
9 - 490 kHz ¹	6.37/F (F in kHz)	300																											
490 - 1705 kHz	63.7/F (F in kHz)	30																											
1.705 - 30 MHz	0.08	30																											
Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.																													
Test setup:	Below 30MHz																												

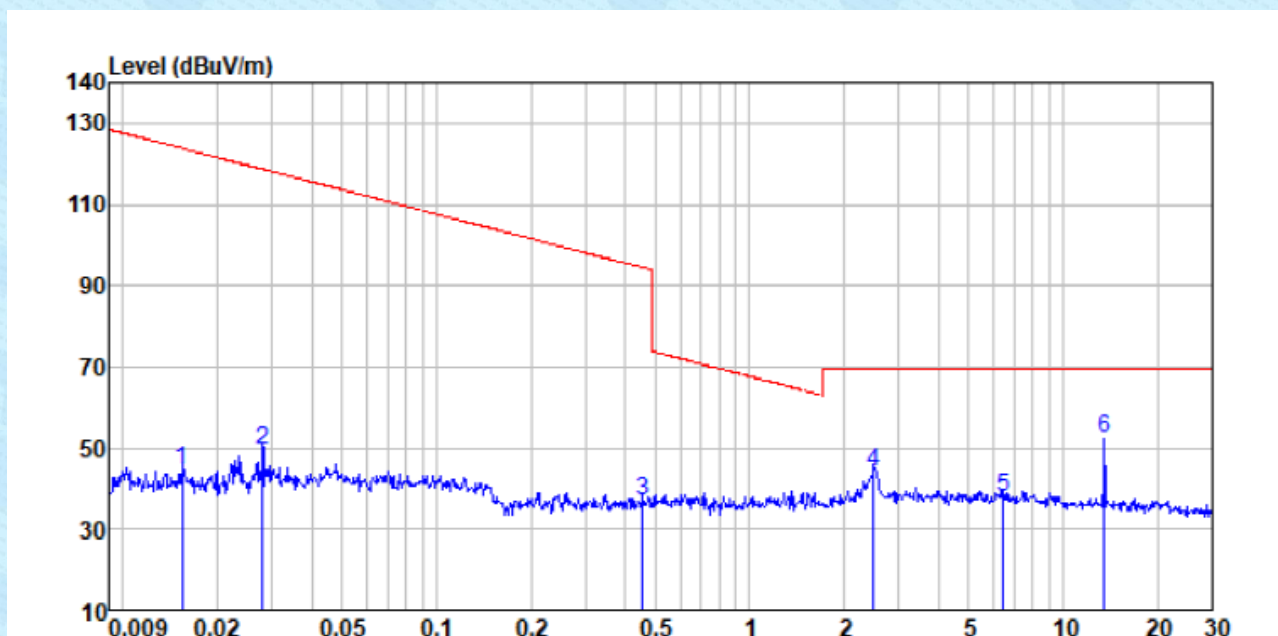
						
	Above 30MHz					
						
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Measurement data:

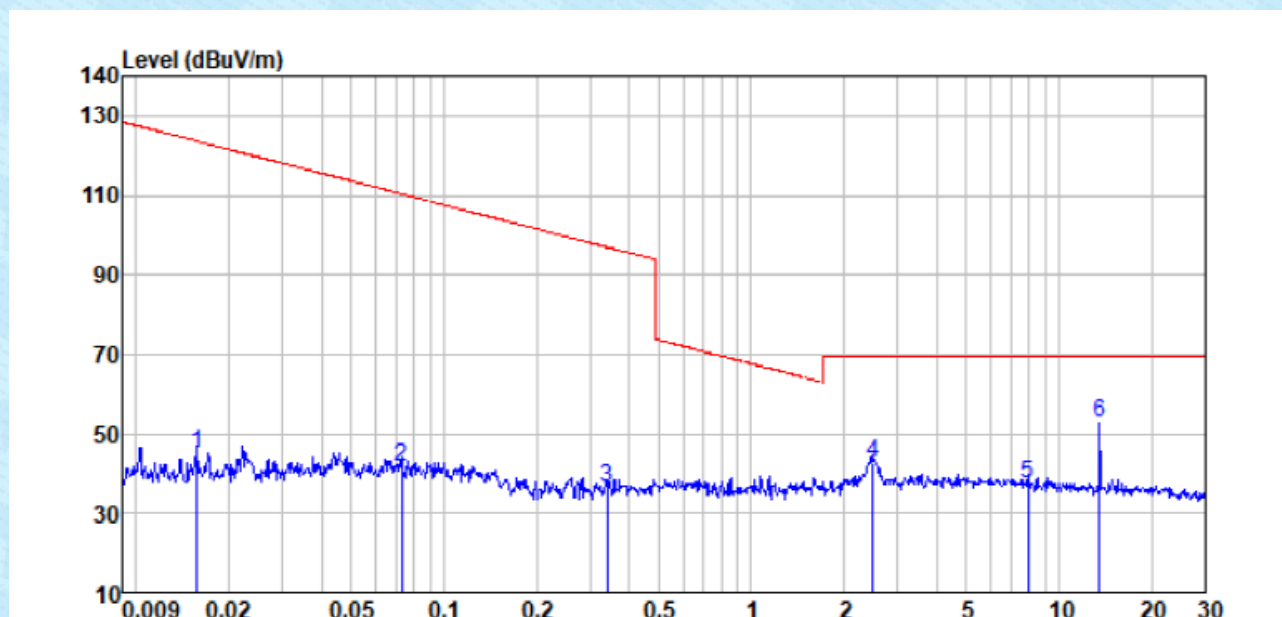
■ 9kHz~30MHz

Test data combines x, y, z-axis; the radiation emission more than 20dB below the limit

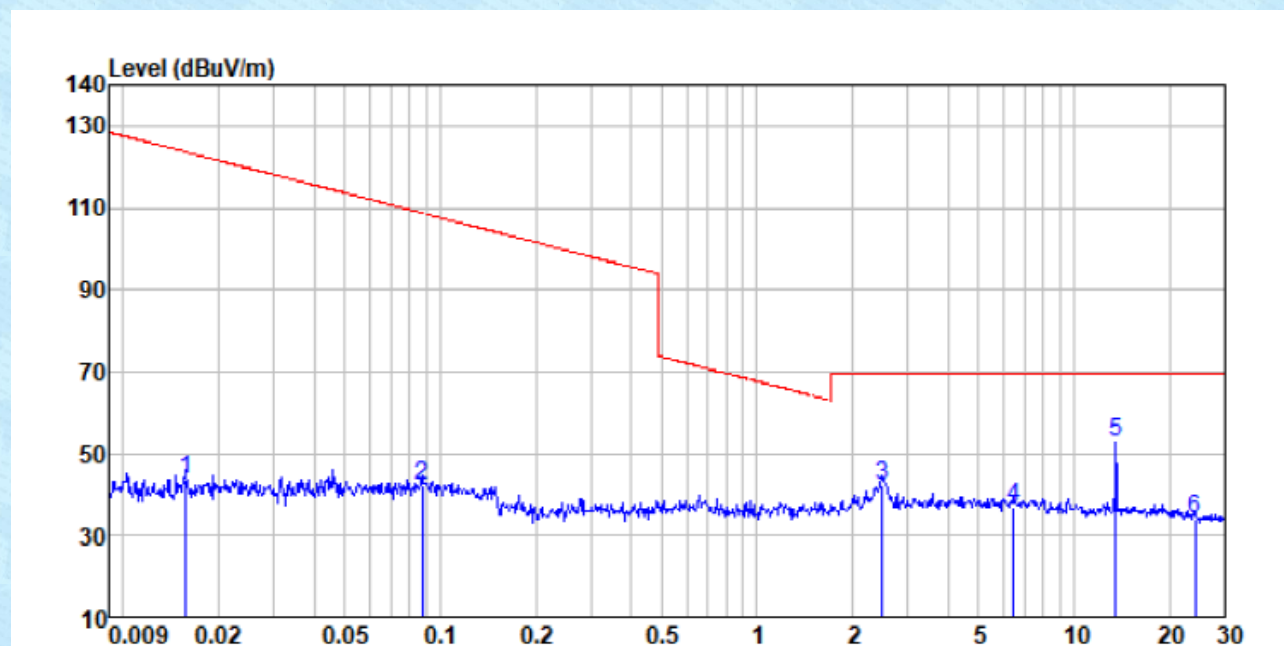
ANT 1:



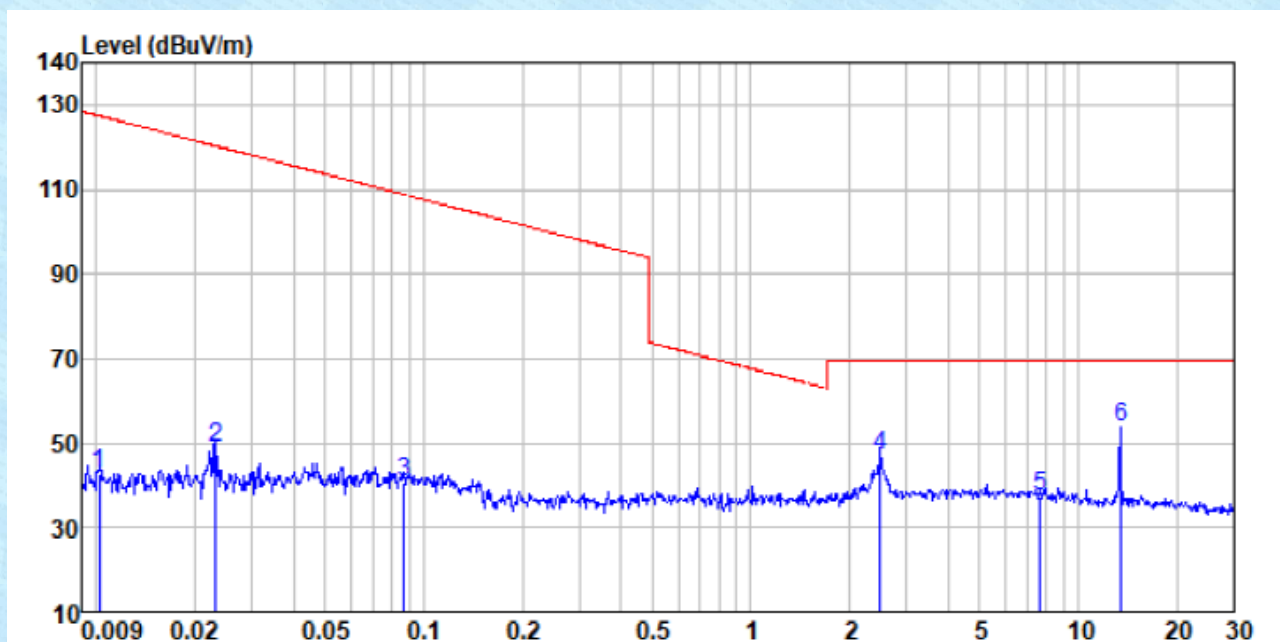
ANT 2:



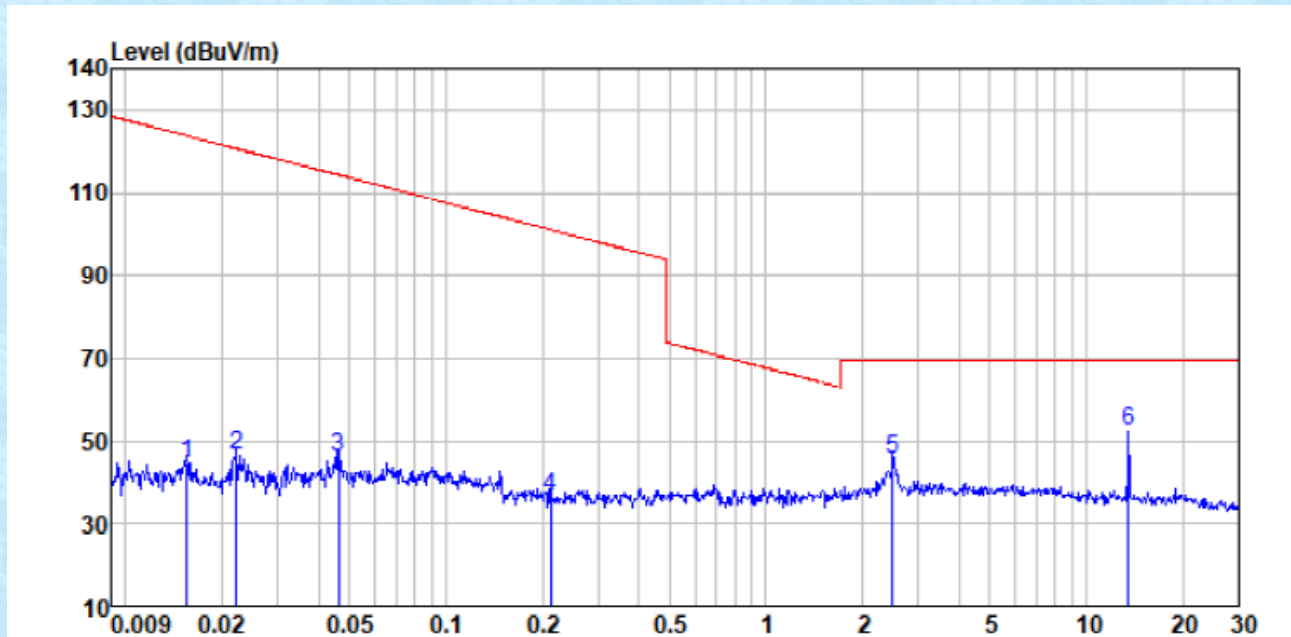
ANT 3:



ANT 4:



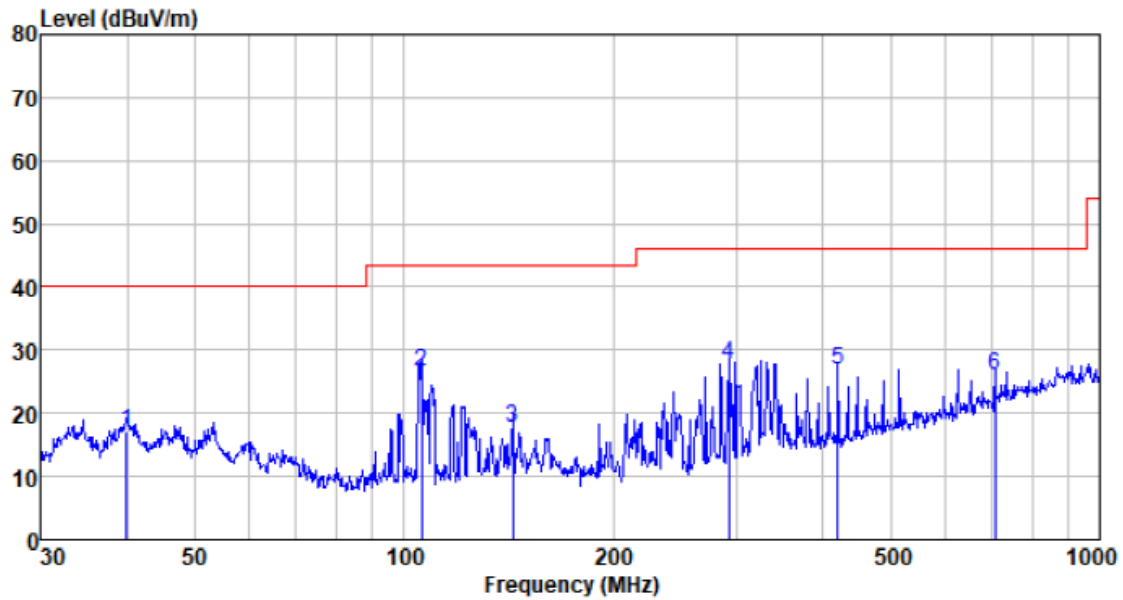
ANT 1+2+3+4:



■ 30MHz~1GHz

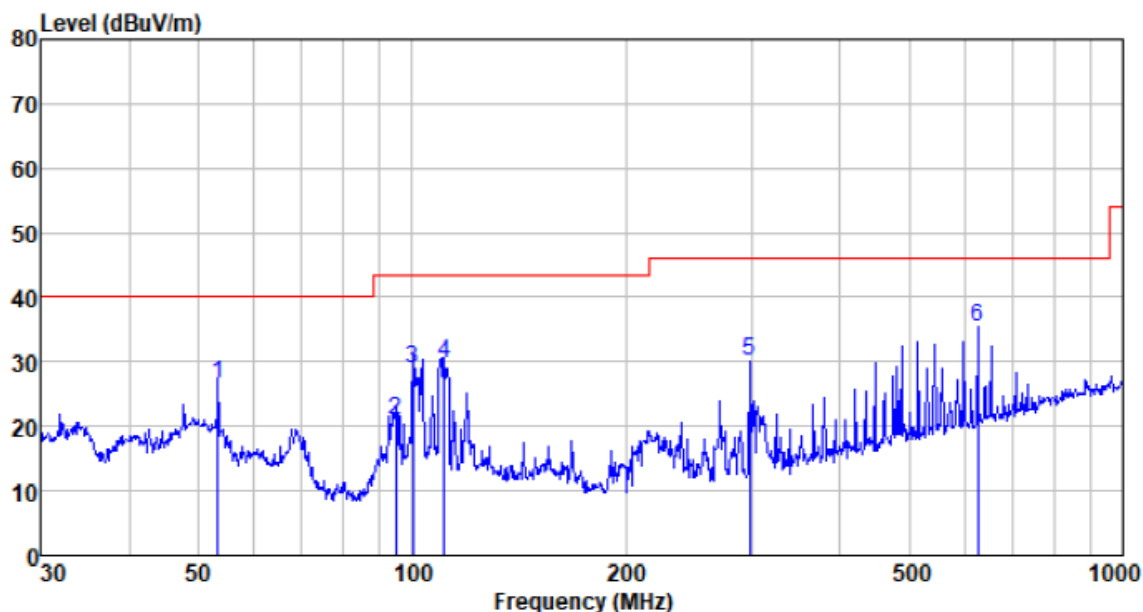
ANT 1:

Horizontal:



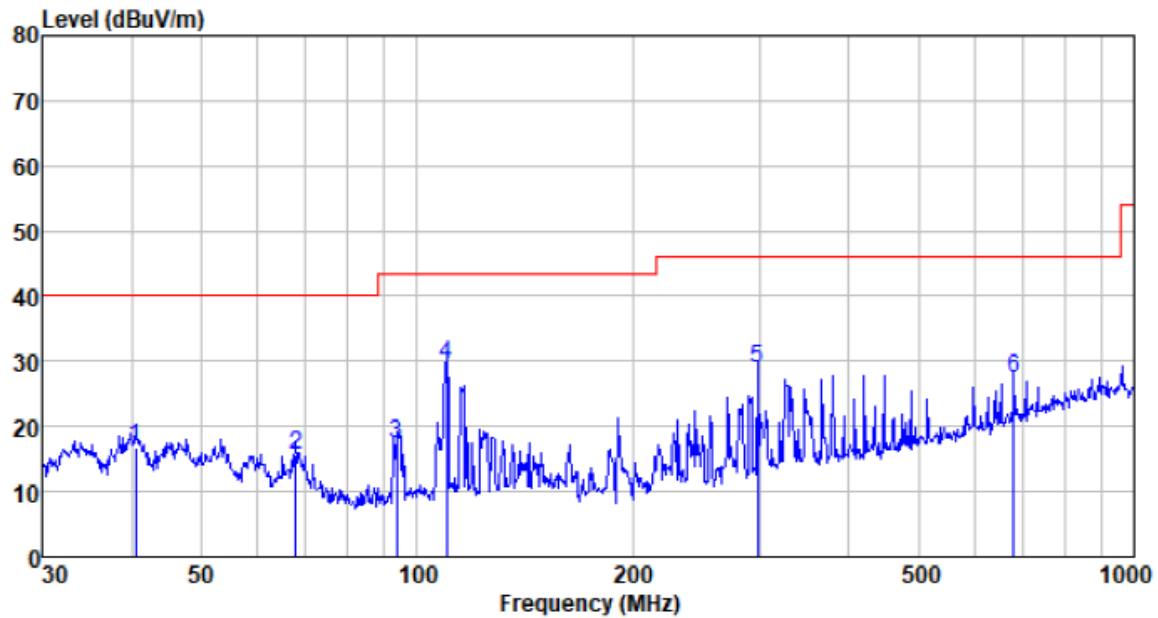
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.854	38.36	13.48	0.66	35.29	17.21	40.00	-22.79	QP
106.013	51.33	10.18	1.25	36.14	26.62	43.50	-16.88	QP
143.326	40.17	12.44	1.53	36.36	17.78	43.50	-25.72	QP
293.084	49.75	12.57	2.32	36.88	27.76	46.00	-18.24	QP
420.580	44.87	16.13	2.95	37.03	26.92	46.00	-19.08	QP
706.700	38.23	20.94	4.12	37.25	26.04	46.00	-19.96	QP

Vertical:



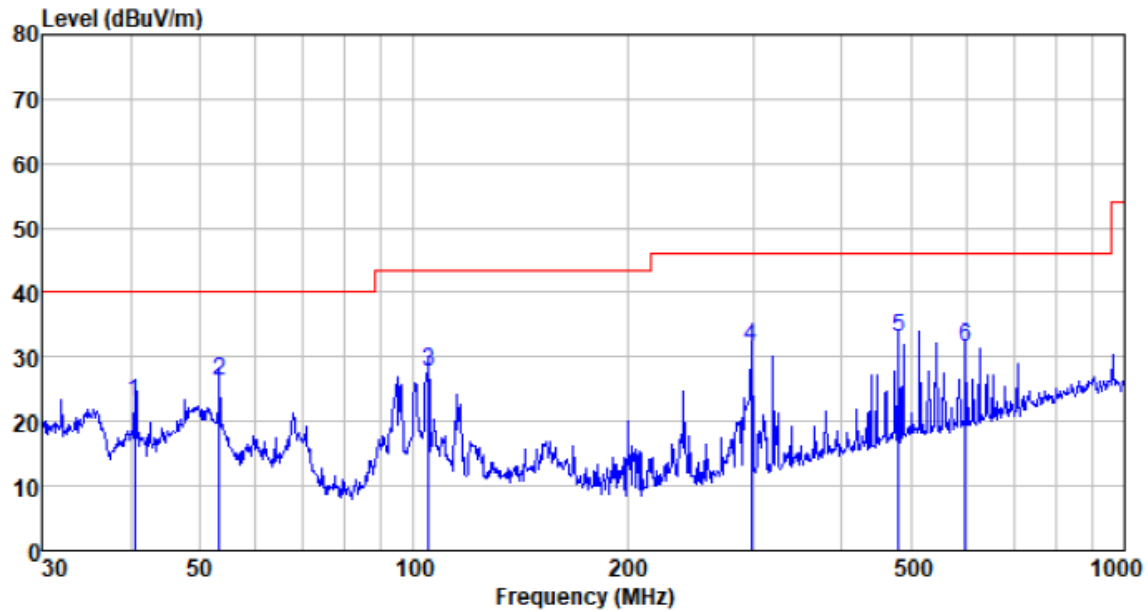
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamplifier factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
53.318	48.32	12.99	0.80	35.65	26.46	40.00	-13.54	QP
94.760	46.87	9.14	1.15	36.06	21.10	43.50	-22.40	QP
100.229	54.22	9.72	1.19	36.10	29.03	43.50	-14.47	QP
110.957	54.01	10.56	1.29	36.18	29.68	43.50	-13.82	QP
298.268	52.20	12.44	2.35	36.90	30.09	46.00	-15.91	QP
625.078	49.02	19.70	3.82	37.20	35.34	46.00	-10.66	QP

ANT 2:
Horizontal:



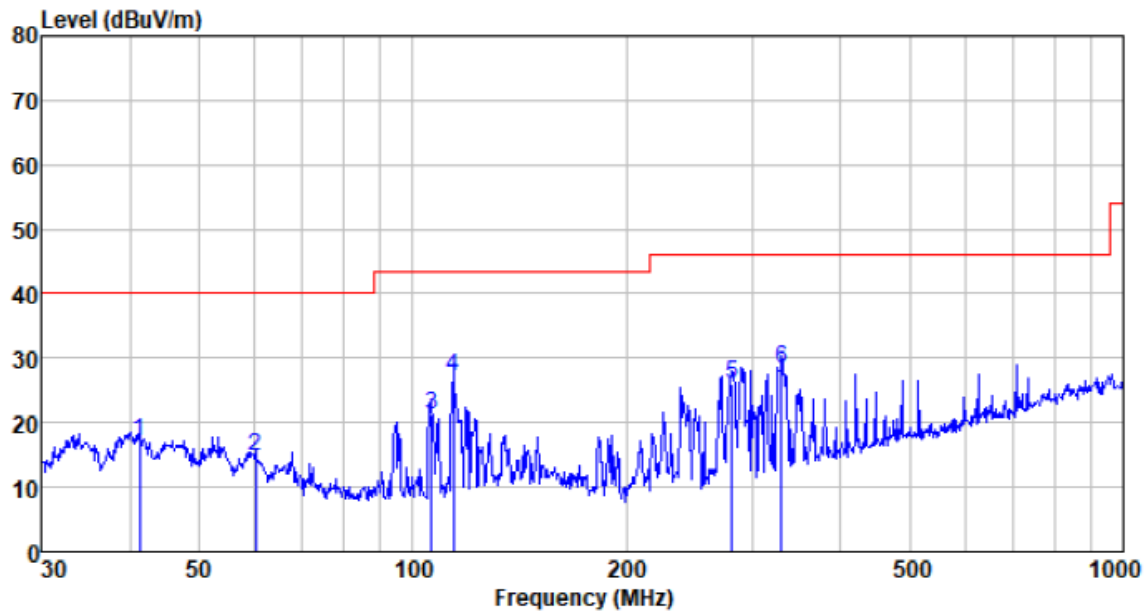
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.559	38.06	13.48	0.67	35.32	16.89	40.00	-23.11	QP
67.675	39.58	10.96	0.92	35.82	15.64	40.00	-24.36	QP
93.768	43.19	9.03	1.14	36.05	17.31	43.50	-26.19	QP
109.796	53.96	10.47	1.28	36.17	29.54	43.50	-13.96	QP
298.268	51.08	12.44	2.35	36.90	28.97	46.00	-17.03	QP
679.960	40.17	20.52	4.01	37.23	27.47	46.00	-18.53	QP

Vertical:



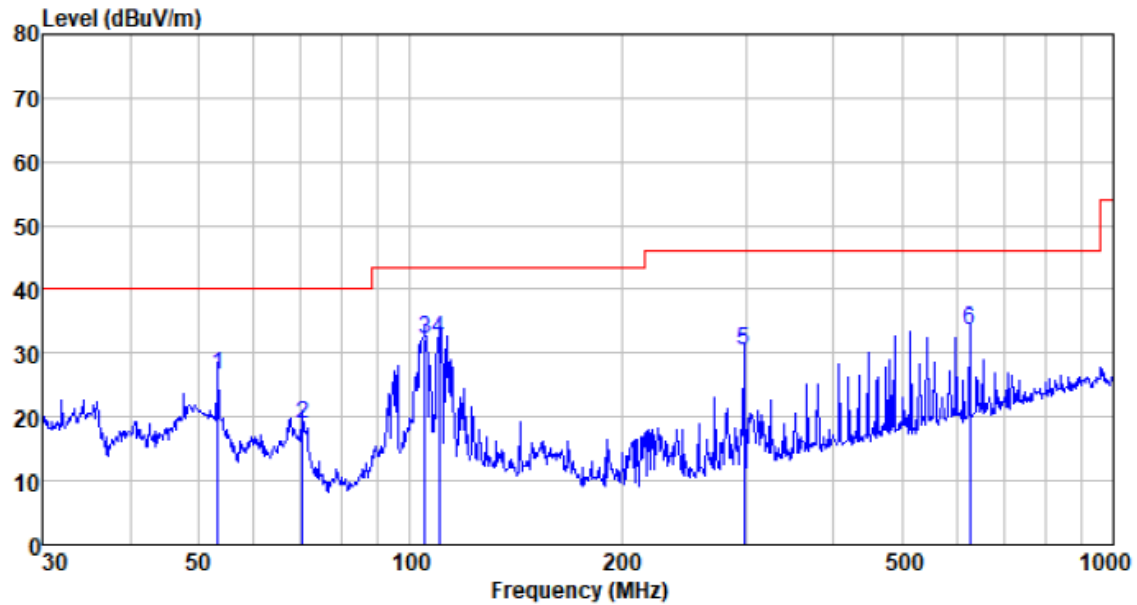
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.559	44.26	13.48	0.67	35.32	23.09	40.00	-16.91	QP
53.318	48.07	12.99	0.80	35.65	26.21	40.00	-13.79	QP
104.903	52.49	10.09	1.23	36.13	27.68	43.50	-15.82	QP
298.268	53.59	12.44	2.35	36.90	31.48	46.00	-14.52	QP
480.528	49.58	17.26	3.22	37.08	32.98	46.00	-13.02	QP
597.223	45.91	19.26	3.71	37.18	31.70	46.00	-14.30	QP

ANT 3:
Horizontal:



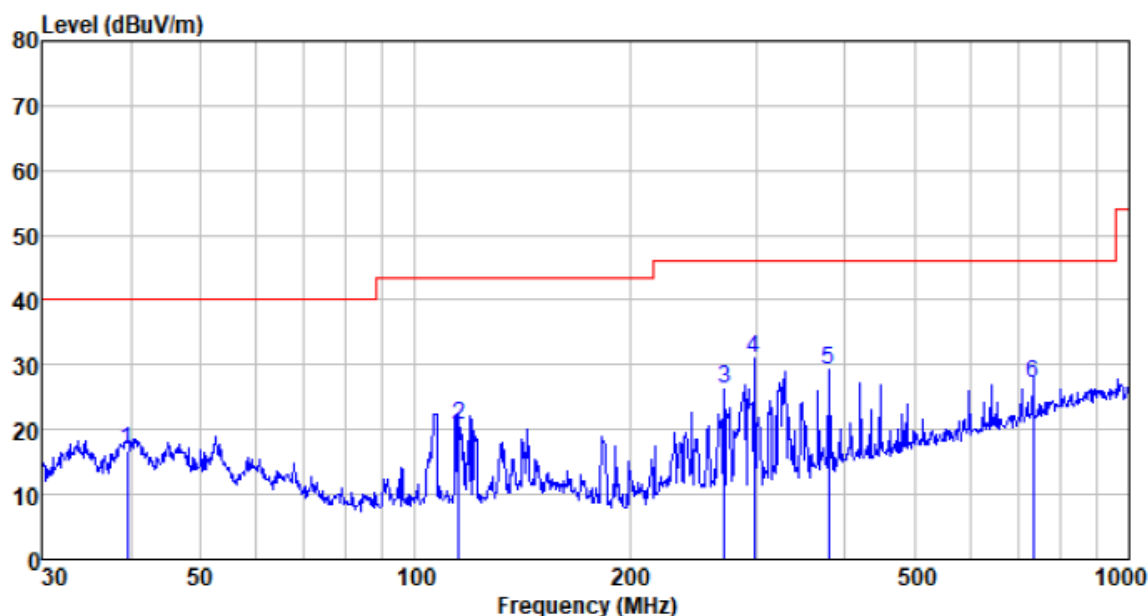
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
41.277	38.26	13.46	0.68	35.34	17.06	40.00	-22.94	QP
60.069	37.03	12.58	0.86	35.73	14.74	40.00	-25.26	QP
106.385	45.98	10.21	1.25	36.15	21.29	43.50	-22.21	QP
114.114	51.28	10.79	1.31	36.20	27.18	43.50	-16.32	QP
281.008	47.62	12.87	2.27	36.85	25.91	46.00	-20.09	QP
330.195	49.28	13.50	2.52	36.94	28.36	46.00	-17.64	QP

Vertical:



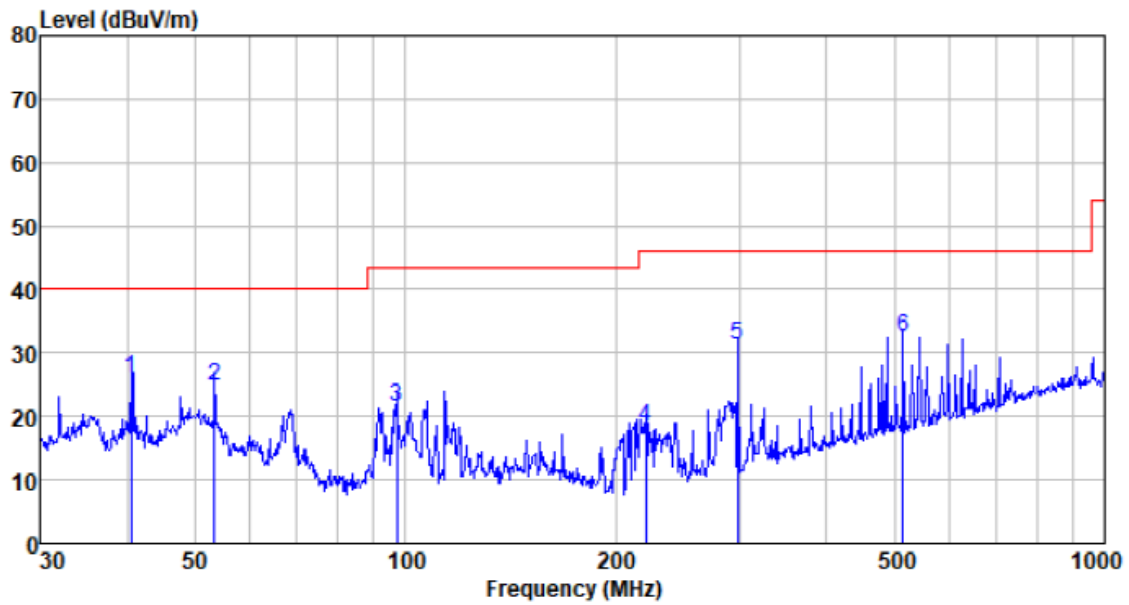
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
53.318	48.43	12.99	0.80	35.65	26.57	40.00	-13.43	QP
70.337	43.30	10.44	0.94	35.85	18.83	40.00	-21.17	QP
104.903	57.06	10.09	1.23	36.13	32.25	43.50	-11.25	QP
109.796	56.61	10.47	1.28	36.17	32.19	43.50	-11.31	QP
298.268	52.38	12.44	2.35	36.90	30.27	46.00	-15.73	QP
625.078	47.46	19.70	3.82	37.20	33.78	46.00	-12.22	QP

ANT 4:
Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
39.576	38.04	13.44	0.66	35.28	16.86	40.00	-23.14	QP
115.321	44.56	10.87	1.32	36.20	20.55	43.50	-22.95	QP
271.325	48.53	12.22	2.23	36.83	26.15	46.00	-19.85	QP
298.268	53.14	12.44	2.35	36.90	31.03	46.00	-14.97	QP
379.914	48.22	15.11	2.76	36.99	29.10	46.00	-16.90	QP
734.491	38.69	21.48	4.22	37.27	27.12	46.00	-18.88	QP

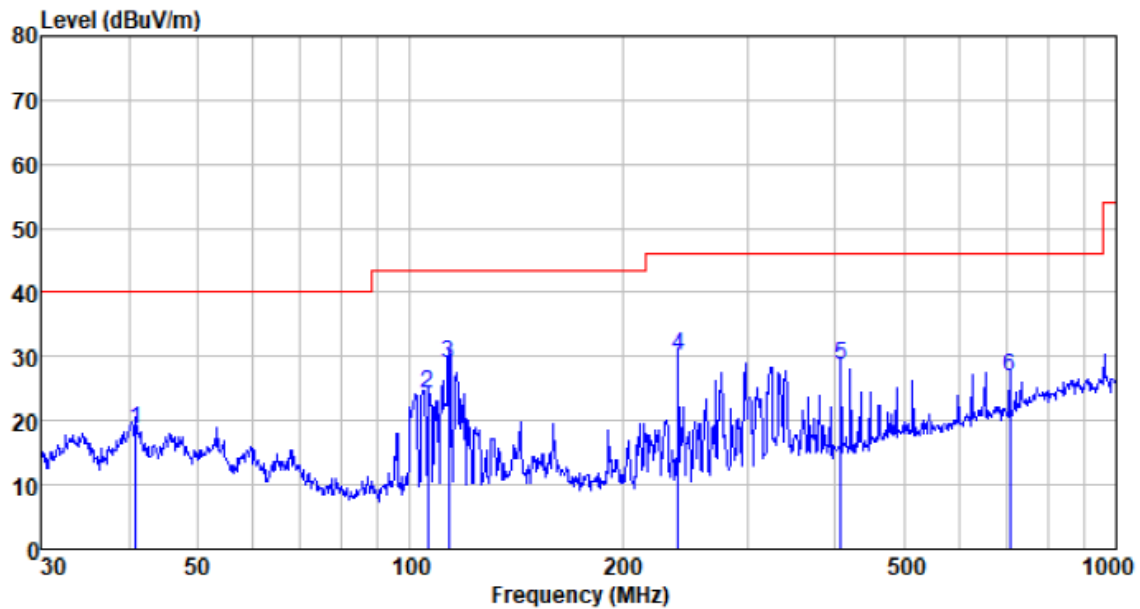
Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.559	47.12	13.48	0.67	35.32	25.95	40.00	-14.05	QP
53.318	46.70	12.99	0.80	35.65	24.84	40.00	-15.16	QP
97.115	47.04	9.39	1.17	36.08	21.52	43.50	-21.98	QP
220.617	42.80	10.34	1.96	36.68	18.42	46.00	-27.58	QP
298.268	53.42	12.44	2.35	36.90	31.31	46.00	-14.69	QP
515.437	48.47	17.88	3.37	37.11	32.61	46.00	-13.39	QP

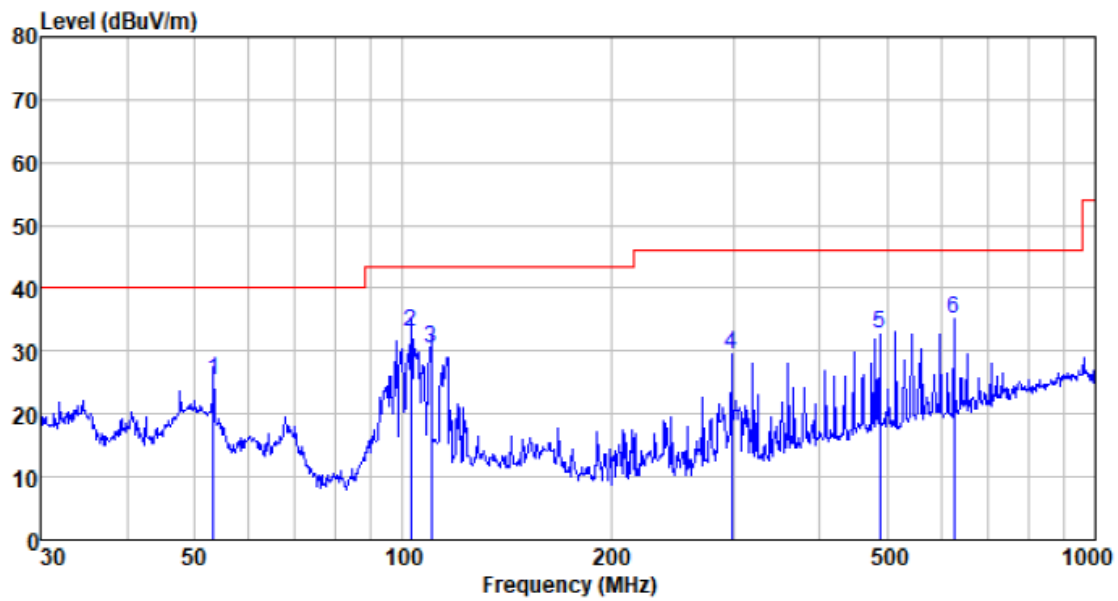
ANT 1+2+3+4:

Horizontal:



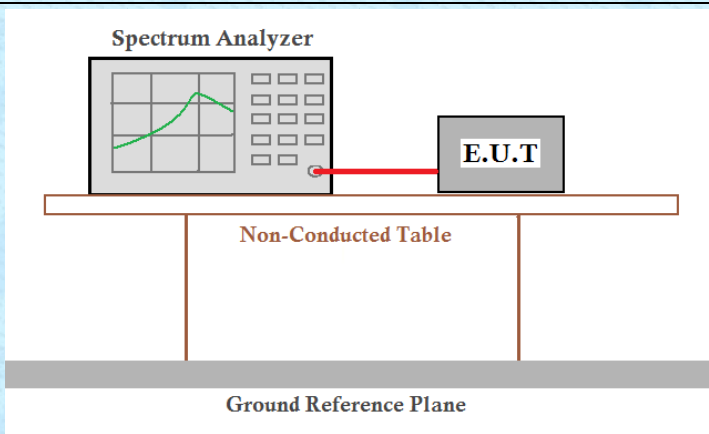
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
40.845	39.73	13.47	0.67	35.33	18.54	40.00	-21.46	QP
106.013	48.83	10.18	1.25	36.14	24.12	43.50	-19.38	QP
113.316	53.16	10.73	1.31	36.19	29.01	43.50	-14.49	QP
239.987	53.29	11.60	2.07	36.74	30.22	46.00	-15.78	QP
407.515	46.95	15.86	2.89	37.02	28.68	46.00	-17.32	QP
706.700	39.10	20.94	4.12	37.25	26.91	46.00	-19.09	QP

Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
53.318	47.22	12.99	0.80	35.65	25.36	40.00	-14.64	QP
102.719	58.06	9.92	1.22	36.12	33.08	43.50	-10.42	QP
109.796	54.78	10.47	1.28	36.17	30.36	43.50	-13.14	QP
298.268	51.63	12.44	2.35	36.90	29.52	46.00	-16.48	QP
489.027	49.09	17.41	3.26	37.09	32.67	46.00	-13.33	QP
625.078	48.95	19.70	3.82	37.20	35.27	46.00	-10.73	QP

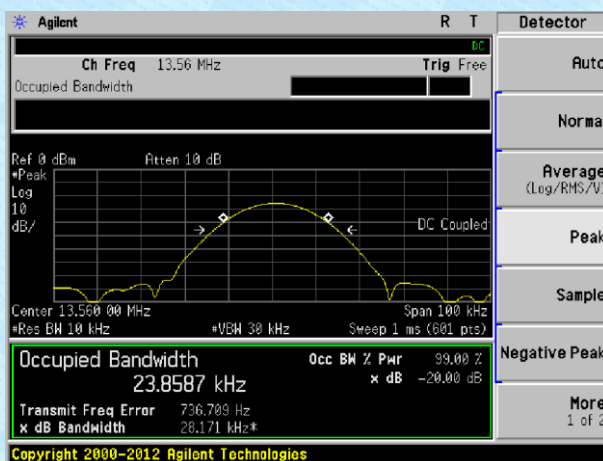
7.5 Channel Bandwidth

Test Requirement:	FCC Part15 C Section 15.225 and 15.215
Test Method:	ANSI C63.10:2013
Limit:	N/A
Test Procedure:	1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points. 4. Read 20dB bandwidth & 99%bandwidth.
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are positioned on a Non-Conducted Table. This table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

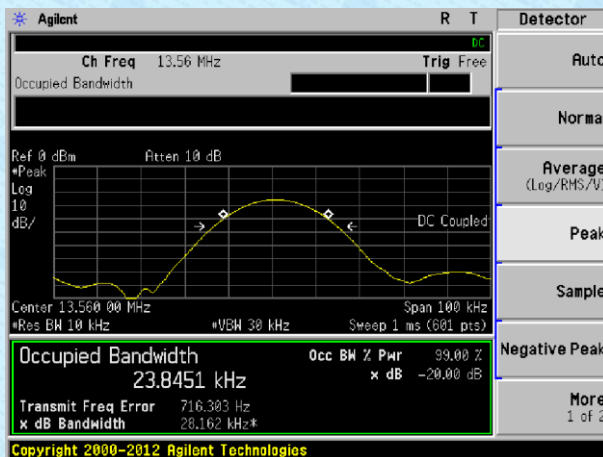
Measurement Data

Test ANT	Test frequency (MHz)	20dB bandwidth(KHz)	Result
1	13.56	28.171	Pass
2		28.162	
3		28.172	
4		28.182	
1+2+3+4		28.162	

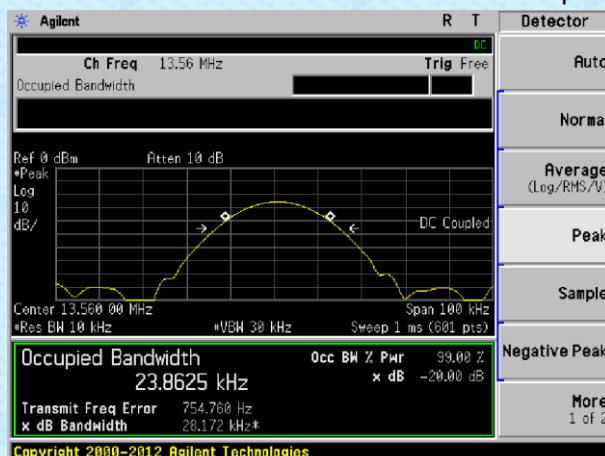
Test plot as follows:



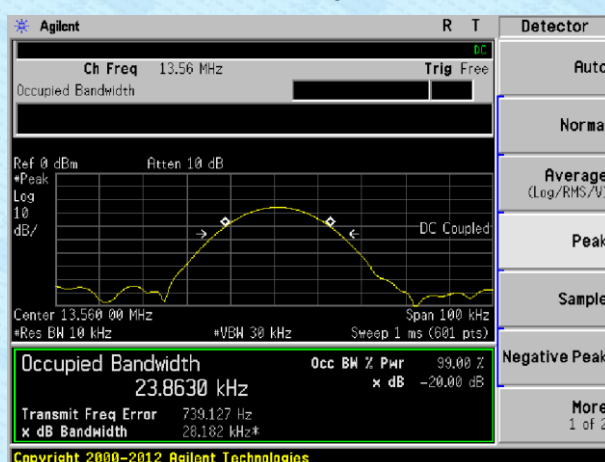
ANT 1



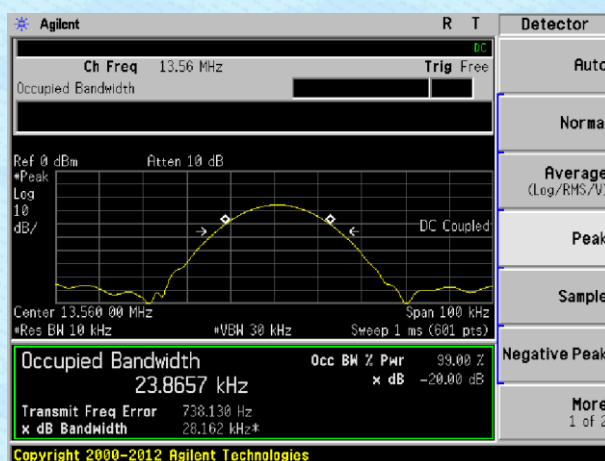
ANT 2



ANT 3

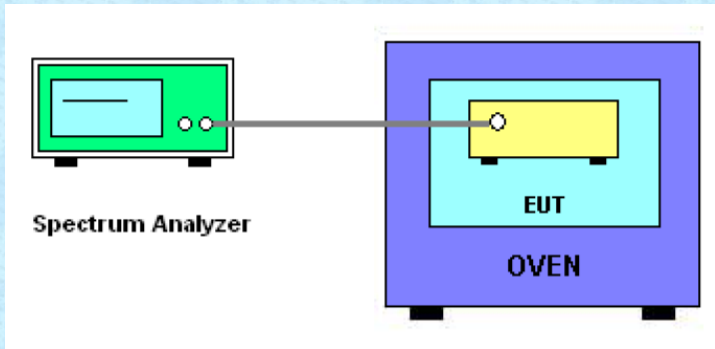


ANT 4



ANT 1+2+3+4

7.6 Frequency Stability Measurement

Test Requirement:	FCC Part15 C Section 15.225 (e)
Test Method:	ANSI C63.10: 2013
Receiver setup:	RBW=1KHz, VBW=1KHz, Sweep time=Auto
Limit:	The frequency tolerance of the carrier signal shall be maintained within $\pm 0.01\%$ of the operating frequency over a temperature variation of -20 degrees to $+50$ degrees C at normal supply voltage, for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.
Test setup:	 The diagram illustrates the test setup. On the left is a green Spectrum Analyzer. A cable connects its output to a yellow EUT (Equipment Under Test) located inside a blue Oven. The labels 'Spectrum Analyzer', 'EUT', and 'OVEN' are placed below their respective components.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

Reference Frequency: 13.56MHz					
Power supplied (Vac)	Temperature (°C)	Frequency error		Limit	Result
		Hz	%		
100	-20	90	0.0007	+/- 0.01%	Pass
	-10	81	0.0006		
	0	69	0.0005		
	10	58	0.0004		
	20	48	0.0004		
	30	57	0.0004		
	40	75	0.0006		
	50	79	0.0006		

Reference Frequency: 13.56MHz					
Temperature (°C)	Power supplied (Vac)	Frequency error		Limit	Result
		Hz	ppm		
20	90	185	0.0013	+/- 0.01%	Pass
	110	125	0.0009		

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

----- End -----