

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.: AR2

Trade Mark: AromaTru

FCC ID: 2A2J6-AR2

IC: 27564-AR2

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.225
RSS-Gen Issue 5
RSS-210 Issue 10

Date of sample receipt: February 28, 2022

Date of Test: February 28, 2022-March 03, 2022

Date of report issued: March 04, 2022

Test Result : PASS

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

Authorized Signature:



Robinson Luo

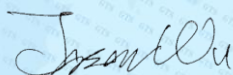
Laboratory Manager

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	March 04, 2022	Original

Prepared By:

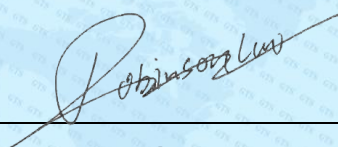


Date:

March 04, 2022

Project Engineer

Check By:



Date:

March 04, 2022

Reviewer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
4.1 MEASUREMENT UNCERTAINTY	4
5 GENERAL INFORMATION	5
5.1 GENERAL DESCRIPTION OF EUT	5
5.2 TEST MODE	6
5.3 TEST FACILITY	7
5.4 TEST LOCATION	7
5.5 DESCRIPTION OF SUPPORT UNITS	7
6 TEST INSTRUMENTS LIST	8
7 TEST RESULTS AND MEASUREMENT DATA	10
7.1 ANTENNA REQUIREMENT:	10
7.2 CONDUCTED EMISSIONS	11
7.3 FIELD STRENGTH OF FUNDAMENTAL EMISSIONS AND MASK MEASUREMENT	14
7.4 RADIATED EMISSION	20
7.5 CHANNEL BANDWIDTH AND 99% OCCUPIED BANDWIDTH	37
7.6 FREQUENCY STABILITY MEASUREMENT	40
8 TEST SETUP PHOTO	42
9 EUT CONSTRUCTIONAL DETAILS	42

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203 RSS-Gen 6.8	Pass
AC Power Line Conducted Emission	15.207 RSS-Gen 8.8	Pass
Field Strength of Fundamental Emissions and Mask Measurement	15.225(a)(b)(c) RSS-210 B.6	Pass
Radiated Emission	15.225(d)&15.209 RSS-210 B.6& RSS-Gen Clause 8.9&8.10	Pass
20dB Emission Bandwidth	15.225&15.215	Pass
99% Occupied Bandwidth	RSS-Gen 6.7	Pass
Frequency Stability Measurement	15.225(e) RSS-210 B.6	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	9kHz-30MHz	3.1dB	(1)
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.:	AR2
Serial No.:	21AR2
Hardware Version:	HW-V105.00
Software Version:	SW-V1.XX
Test sample(s) ID:	GTS202202000120-1
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: AC100-240V, 50/60Hz, 0.5A Output: DC5.0V, 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)	52.35	53.26	51.14
ANT 2:			
Axis	X	Y	Z
Field Strength(dBuV/m)	54.17	55.66	53.21
ANT 3:			
Axis	X	Y	Z
Field Strength(dBuV/m)	55.15	56.62	54.27
ANT 4:			
Axis	X	Y	Z
Field Strength(dBuV/m)	54.36	55.09	53.24
ANT 1+2+3+4:			
Axis	X	Y	Z
Field Strength(dBuV/m)	56.31	57.60	55.24
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	June. 24 2021	June. 23 2022
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 24 2021	June. 23 2022
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 24 2021	June. 23 2022
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 24 2021	June. 23 2022
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 24 2021	June. 23 2022
9	Coaxial Cable	GTS	N/A	GTS211	June. 24 2021	June. 23 2022
10	Coaxial cable	GTS	N/A	GTS210	June. 24 2021	June. 23 2022
11	Coaxial Cable	GTS	N/A	GTS212	June. 24 2021	June. 23 2022
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 24 2021	June. 23 2022
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 24 2021	June. 23 2022
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 24 2021	June. 23 2022
15	Band filter	Amindeon	82346	GTS219	June. 24 2021	June. 23 2022
16	Power Meter	Anritsu	ML2495A	GTS540	June. 24 2021	June. 23 2022
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 24 2021	June. 23 2022
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 24 2021	June. 23 2022
19	Splitter	Agilent	11636B	GTS237	June. 24 2021	June. 23 2022
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 24 2021	June. 23 2022
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 17 2021	Oct. 16 2022
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 17 2021	Oct. 16 2022
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 17 2021	Oct. 16 2022
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 24 2021	June. 23 2022

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.15 2019	May.14 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	June. 24 2021	June. 23 2022
4	ENV216 2-L-V-NETZNACHB.DE	ROHDE&SCHWARZ	ENV216	GTS226	June. 24 2021	June. 23 2022
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	KTJ	TA328	GTS233	June. 24 2021	June. 23 2022
8	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	June. 24 2021	June. 23 2022
9	ISN	SCHWARZBECK	NTFM 8158	GTS565	June. 24 2021	June. 23 2022
10	High voltage probe	SCHWARZBECK	TK9420	GTS537	July. 09 2021	July. 08 2022

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	June. 24 2021	June. 23 2022
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 24 2021	June. 23 2022
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 24 2021	June. 23 2022
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 24 2021	June. 23 2022
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 24 2021	June. 23 2022
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 24 2021	June. 23 2022
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 24 2021	June. 23 2022
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 24 2021	June. 23 2022

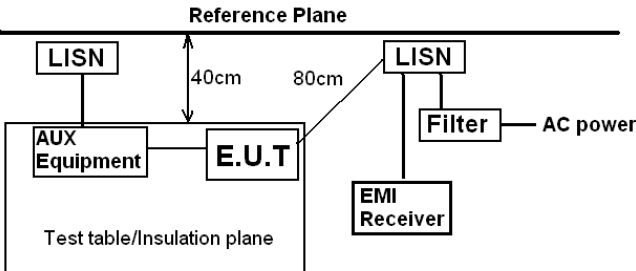
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 24 2021	June. 23 2022
2	Barometer	ChangChun	DYM3	GTS255	June. 24 2021	June. 23 2022

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.	
Standard requirement:	RSS-Gen Section 6.8
A transmitter can only be sold or operated with antennas with which it was approved. When a measurement at the antenna connector is used to determine RF output power, the effective gain of the device's antenna shall be stated, based on measurement or on data from the antenna manufacturer. For transmitters of RF output power of 10 milliwatts or less, only the portion of the antenna gain that is in excess of 6 dBi (6 dB above isotropic gain) shall be added to the measured RF output power to demonstrate compliance with the radiated power limits specified in the applicable standard. For transmitters of output power greater than 10 milliwatts, the total antenna gain shall be added to the measured RF output power to demonstrate compliance to the specified radiated power	
EUT Antenna:	
The are antennas PCB antenna; the best case gain of the are antennas 3dBi. reference to the appendix II for details	

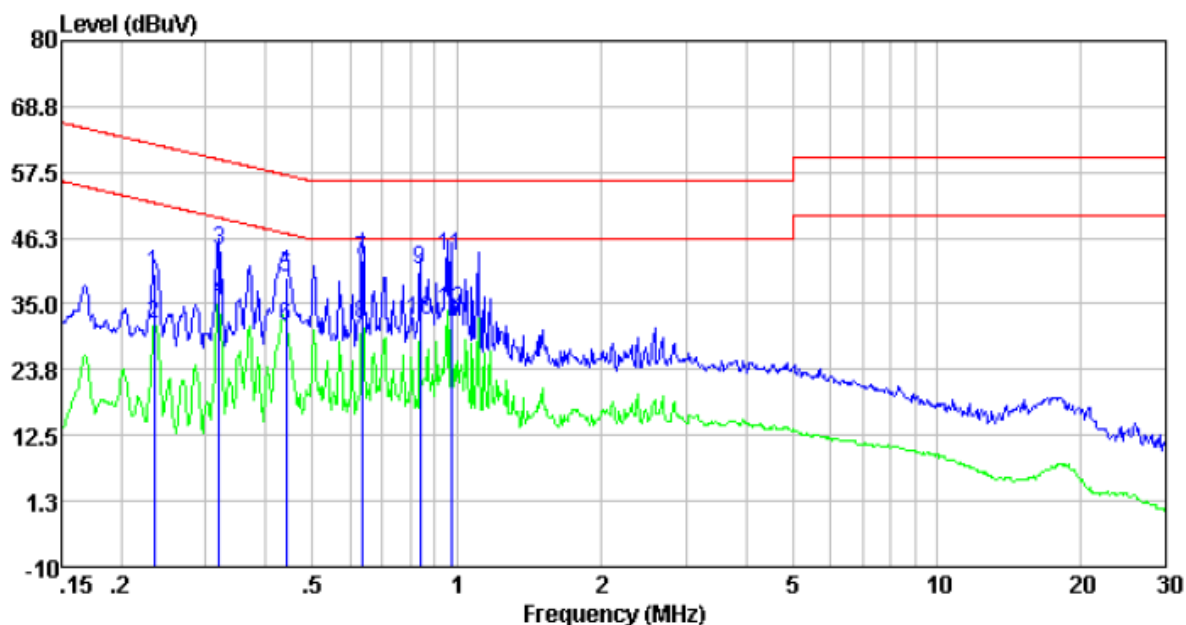
7.2 Conducted Emissions

Test Requirement:	FCC Part15 C Section 15.207 RSS-Gen Section 8.8					
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:	Reference Plane  Test table/Insulation plane <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.

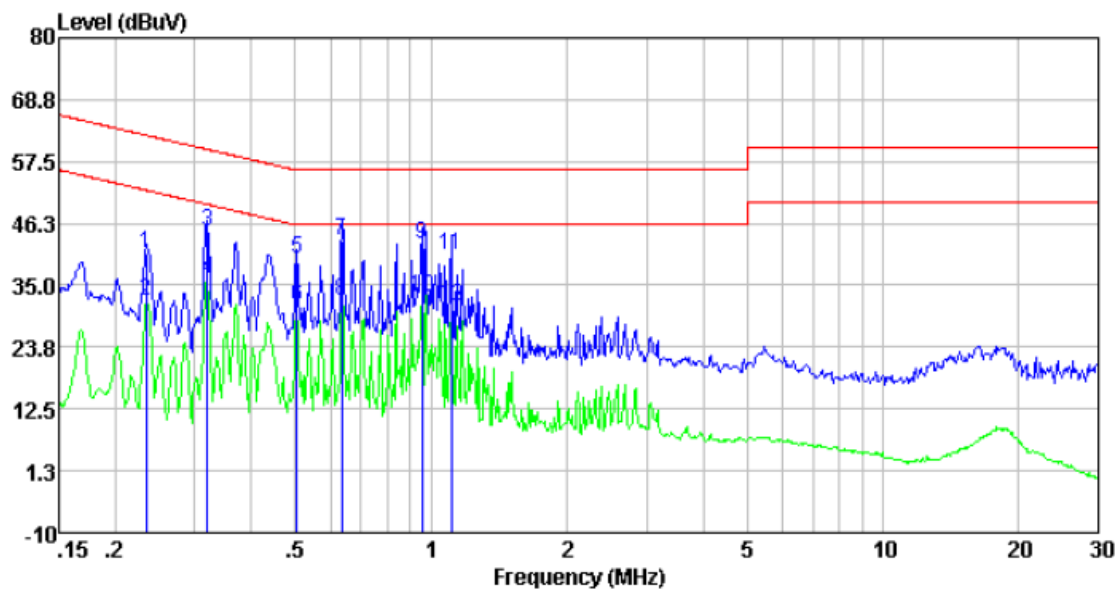
Measurement data:

Line:



Freq	Reading	LISN/ISN	Cable	Level	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.23	29.82	10.40	0.01	40.23	62.30	-22.07	QP
0.23	21.24	10.40	0.01	31.65	52.30	-20.65	Average
0.32	33.89	10.39	0.01	44.29	59.71	-15.42	QP
0.32	25.08	10.39	0.01	35.48	49.71	-14.23	Average
0.44	29.05	10.34	0.01	39.40	57.07	-17.67	QP
0.44	20.76	10.34	0.01	31.11	47.07	-15.96	Average
0.63	32.22	10.28	0.02	42.52	56.00	-13.48	QP
0.63	21.38	10.28	0.02	31.68	46.00	-14.32	Average
0.84	30.59	10.23	0.03	40.85	56.00	-15.15	QP
0.84	22.01	10.23	0.03	32.27	46.00	-13.73	Average
0.97	32.76	10.20	0.03	42.99	56.00	-13.01	QP
0.97	23.71	10.20	0.03	33.94	46.00	-12.06	Average

Neutral:

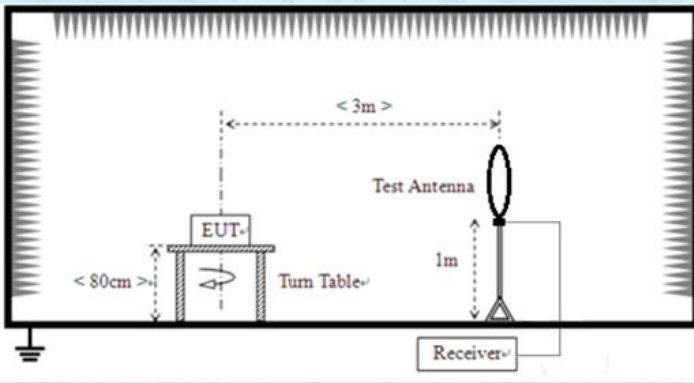


Freq	Reading	LISN/ISN	Cable	Level	Limit	Over	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.23	30.50	10.40	0.01	40.91	62.30	-21.39	QP
0.23	21.87	10.40	0.01	32.28	52.30	-20.02	Average
0.32	34.46	10.39	0.01	44.86	59.71	-14.85	QP
0.32	25.67	10.39	0.01	36.07	49.71	-13.64	Average
0.50	29.42	10.31	0.01	39.74	56.00	-16.26	QP
0.50	20.75	10.31	0.01	31.07	46.00	-14.93	Average
0.63	32.88	10.28	0.02	43.18	56.00	-12.82	QP
0.63	21.86	10.28	0.02	32.16	46.00	-13.84	Average
0.95	32.27	10.21	0.03	42.51	56.00	-13.49	QP
0.95	22.48	10.21	0.03	32.72	46.00	-13.28	Average
1.11	30.16	10.20	0.03	40.39	56.00	-15.61	QP
1.11	21.05	10.20	0.03	31.28	46.00	-14.72	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) RSS-210 b.6& RSS-Gen 8.9& RSS-Gen 8.10
Test Method:	ANSI C63.10:2013 & ANSI C63.4: 2014 &RSS-Gen
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:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

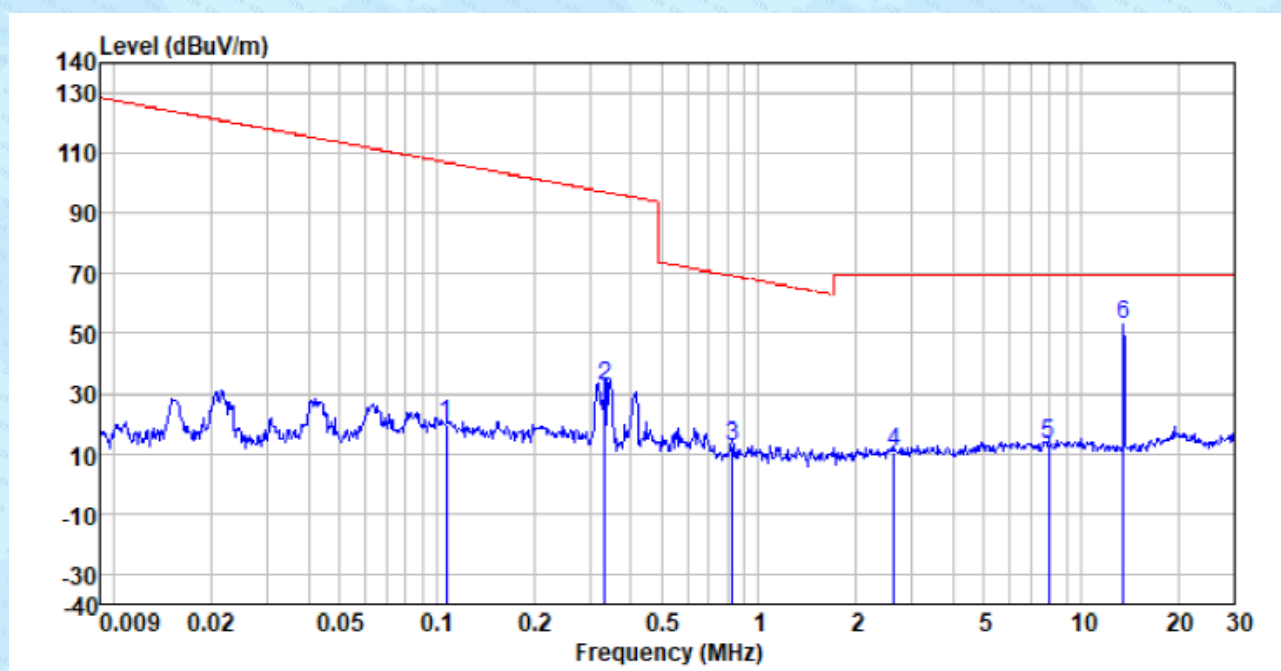
Measurement data:

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	29.89	22.86	0.51	53.26	94	-40.74	QP

Test plot as follows:

Test data combines x, y, z-axis

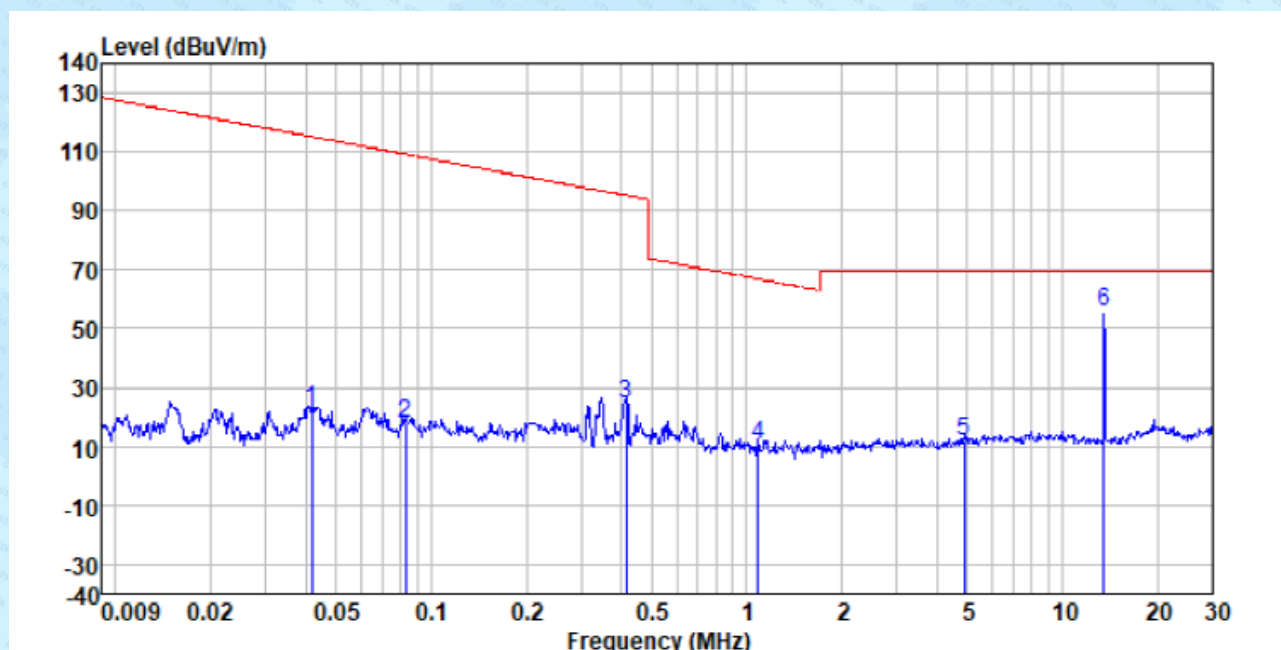


ANT 2:

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	32.29	22.86	0.51	55.66	94	-38.34	QP

Test plot as follows:

Test data combines x, y, z-axis

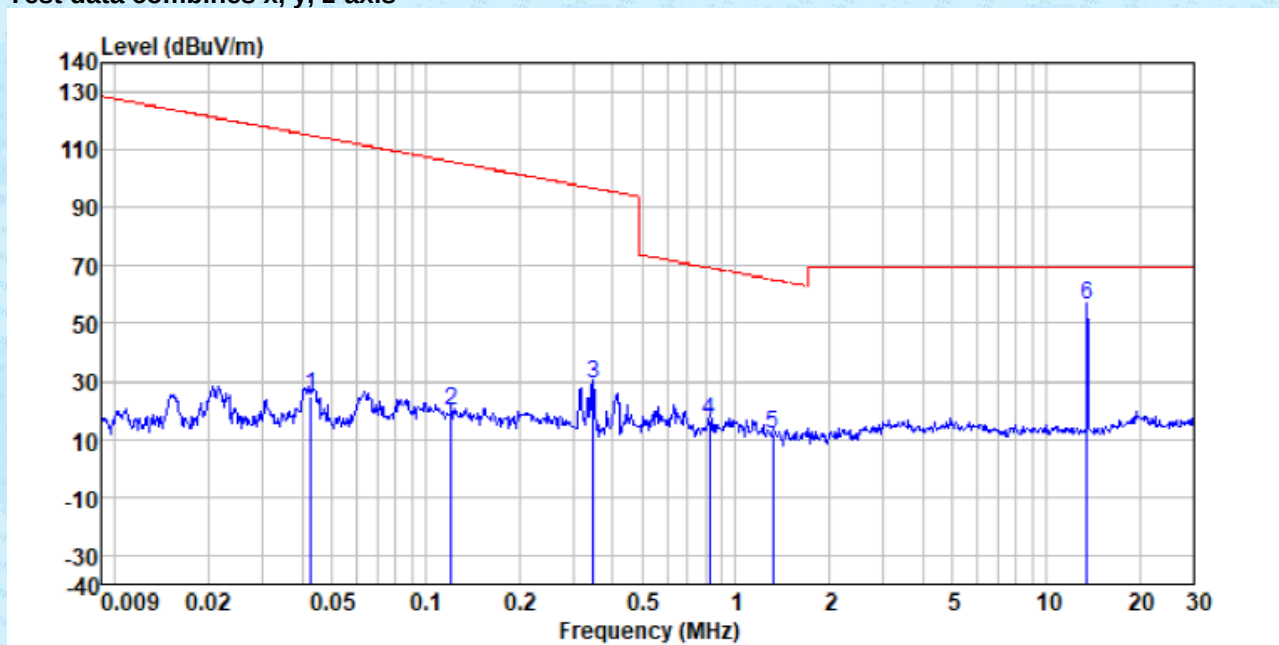


ANT 3:

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	33.25	22.86	0.51	56.62	94	-37.38	QP

Test plot as follows:

Test data combines x, y, z-axis

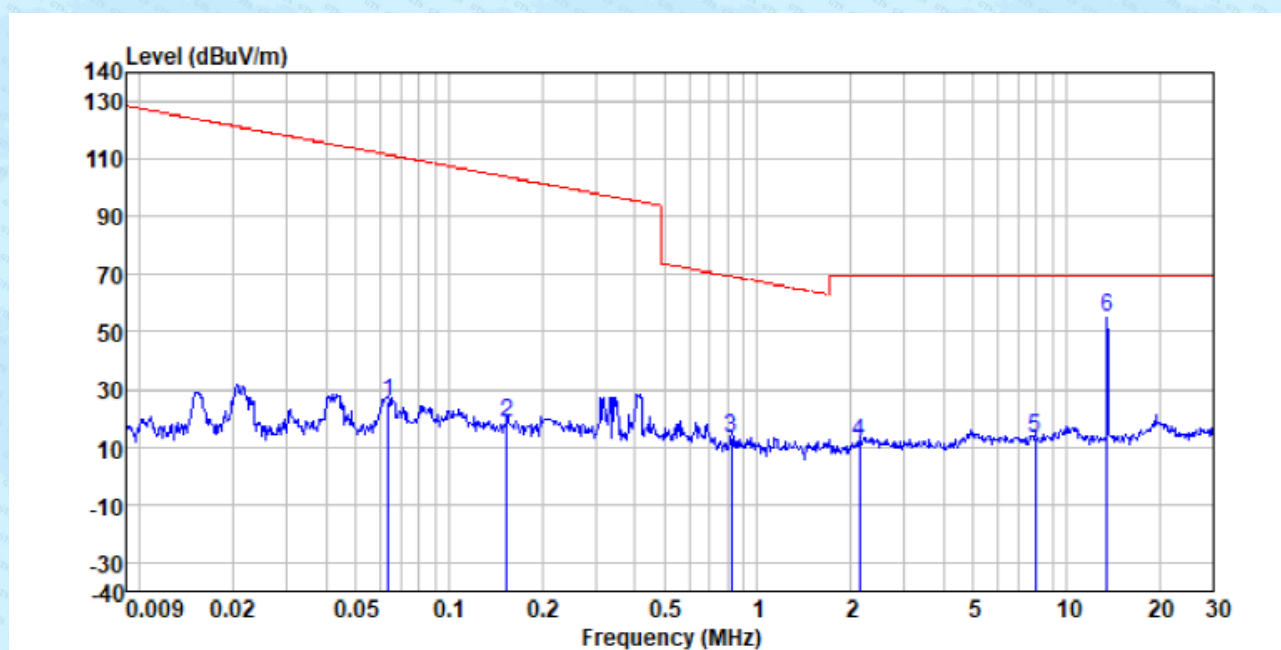


ANT 4:

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	31.72	22.86	0.51	55.09	94	-38.91	QP

Test plot as follows:

Test data combines x, y, z-axis

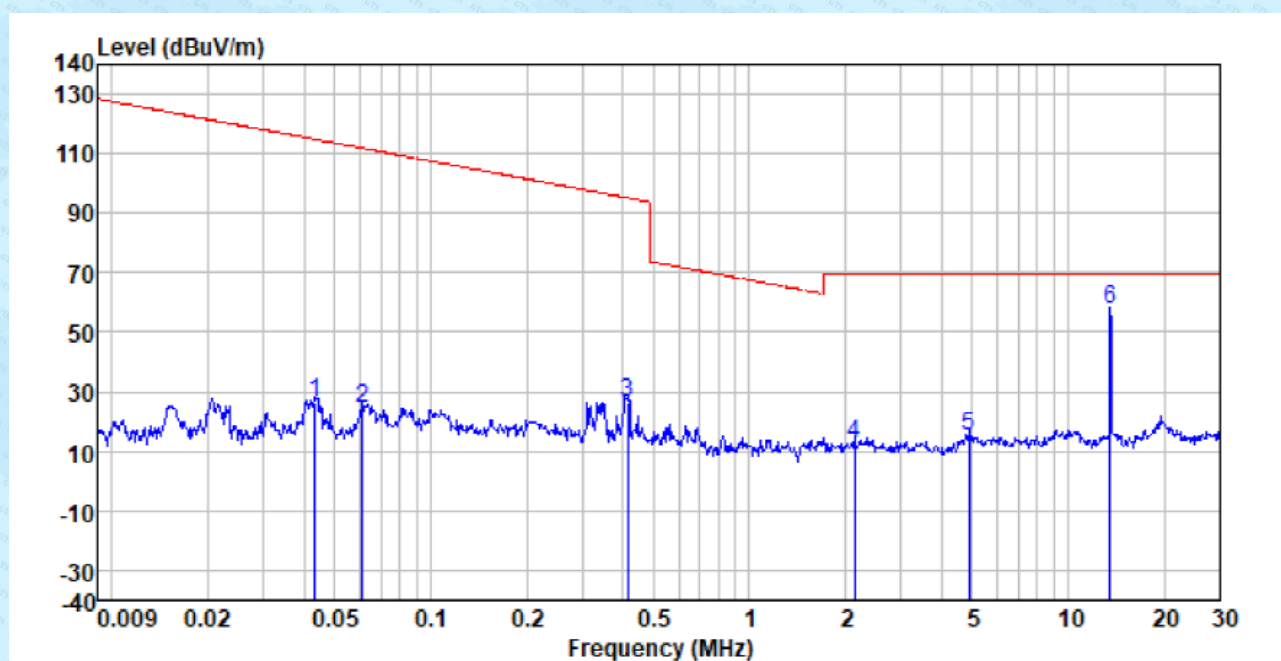


ANT 1+2+3+4:

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	34.23	22.86	0.51	57.60	94	-36.40	QP

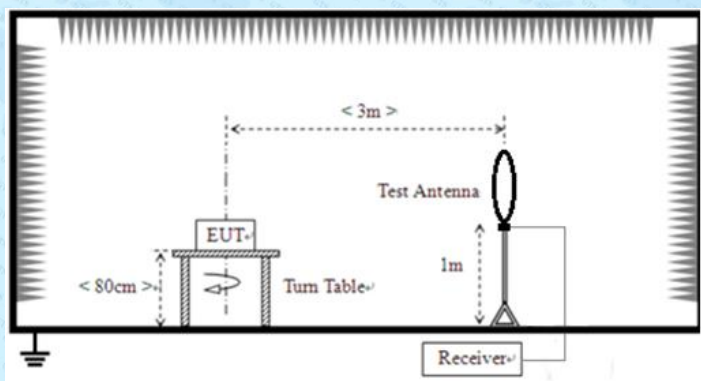
Test plot as follows:

Test data combines x, y, z-axis

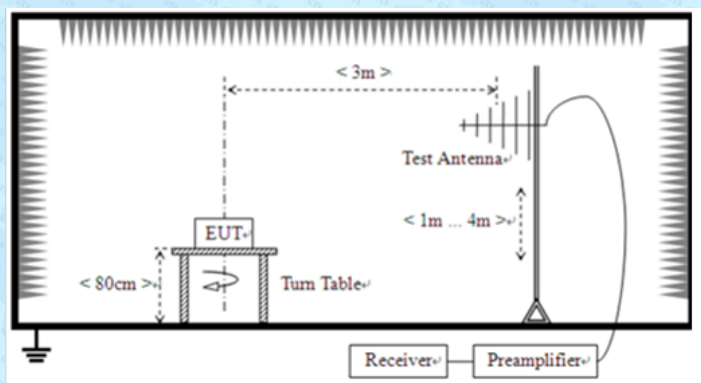


7.4 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.225(d) and 15.209 RSS-210 B.6& RSS-Gen 8.9& RSS-Gen 8.10																												
Test Method:	ANSI C63.10: 2013 & ANSI C63.4: 2014 &RSS-Gen																												
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> 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.					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																											
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> 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> Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.					Frequency (MHz)	Field strength (µV/m at 3 m)	30 – 88	100	88 – 216	150	216 – 960	200	Above 960	500	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 (MHz)	Field strength (µV/m at 3 m)																												
30 – 88	100																												
88 – 216	150																												
216 – 960	200																												
Above 960	500																												
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																											
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					

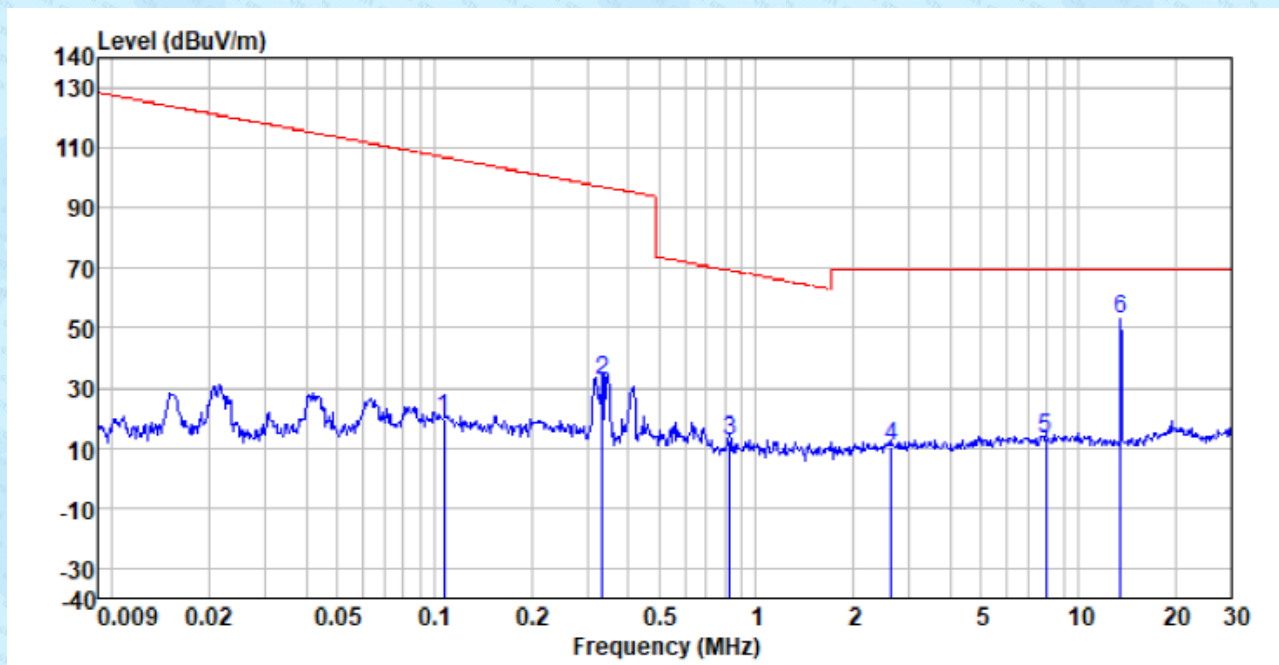
Remark: Both high and low voltages have been tested to show only the worst low voltage test data.

Measurement data:

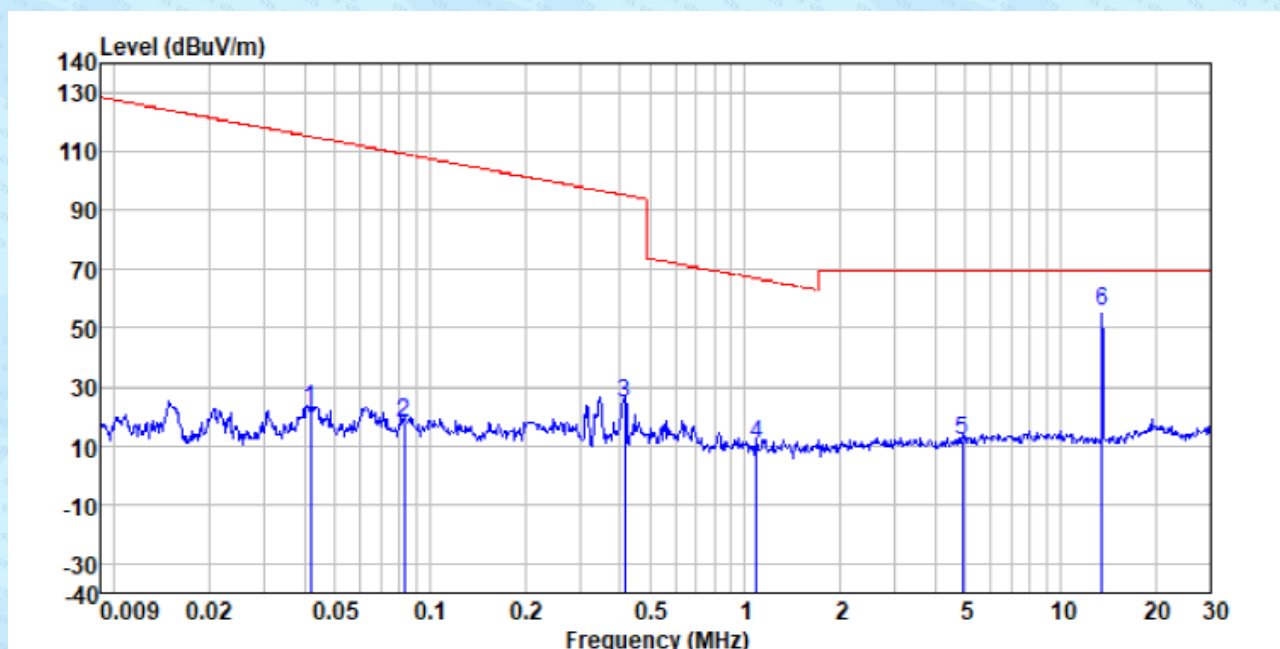
■ 9kHz~30MHz

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

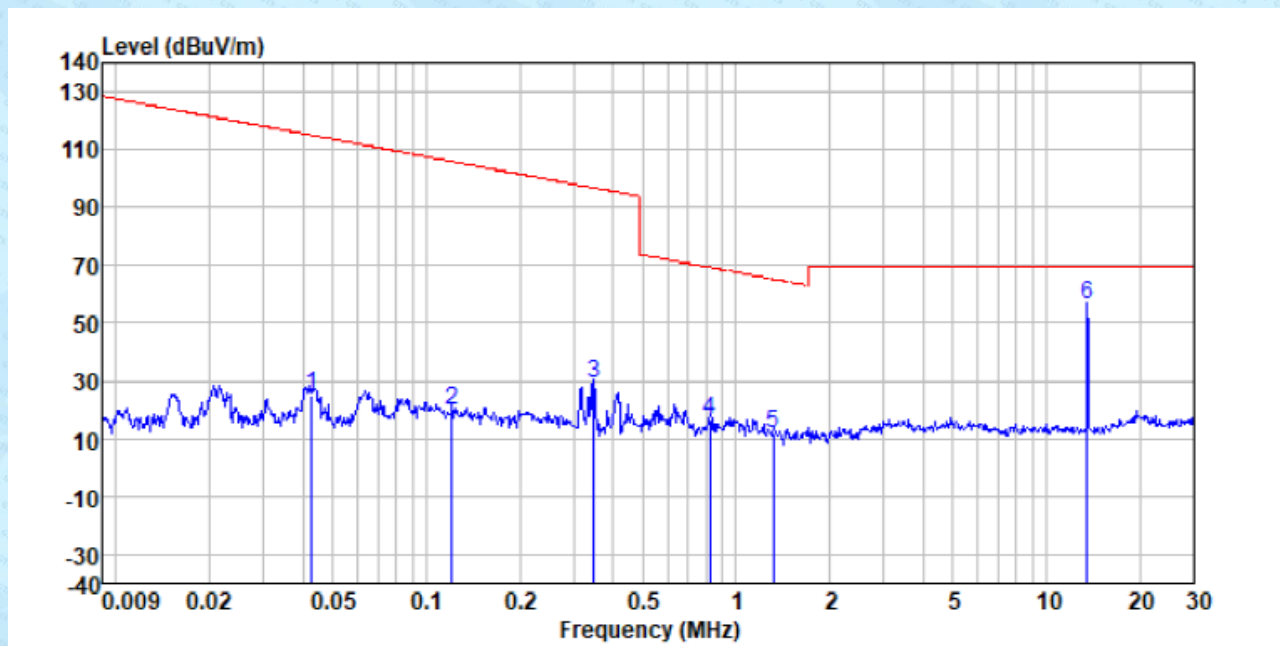
ANT 1:



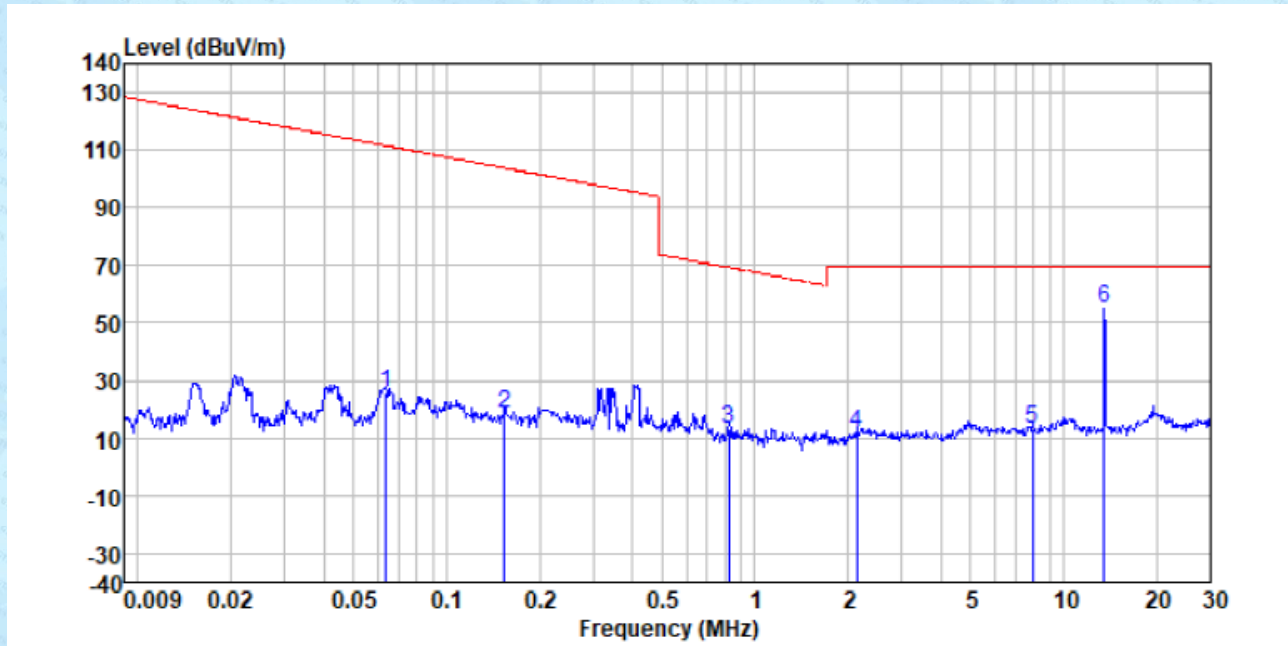
ANT 2:



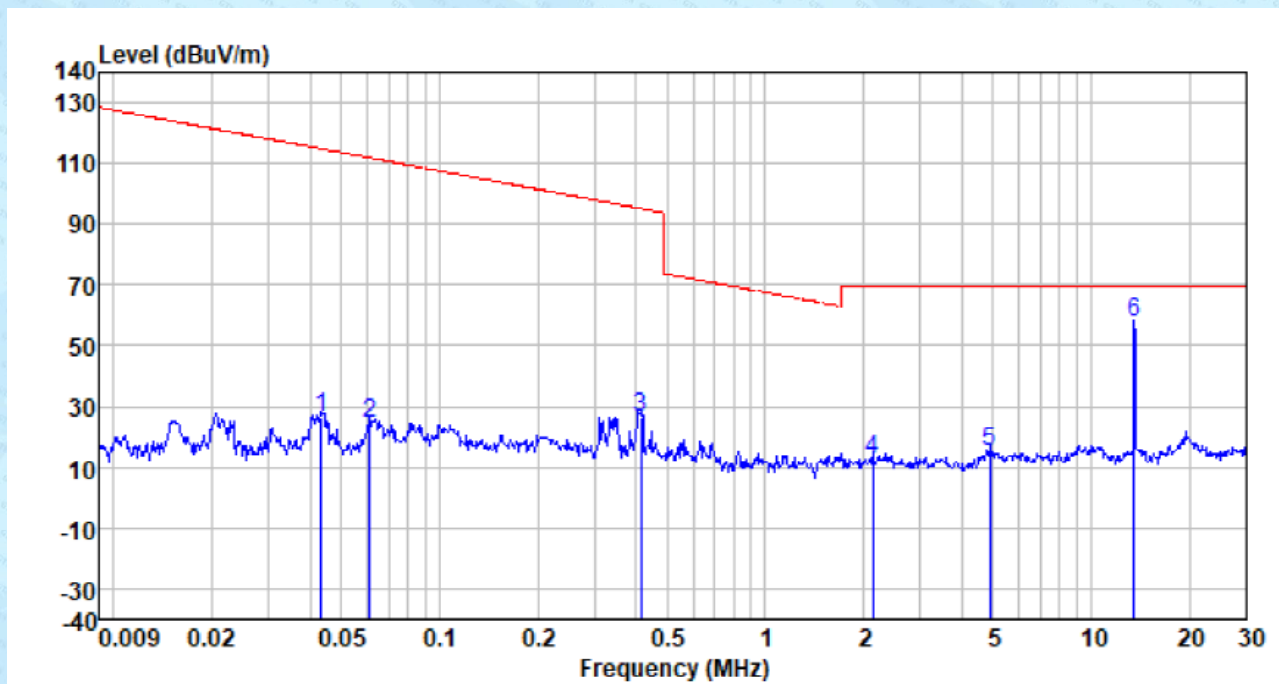
ANT 3:



ANT 4:



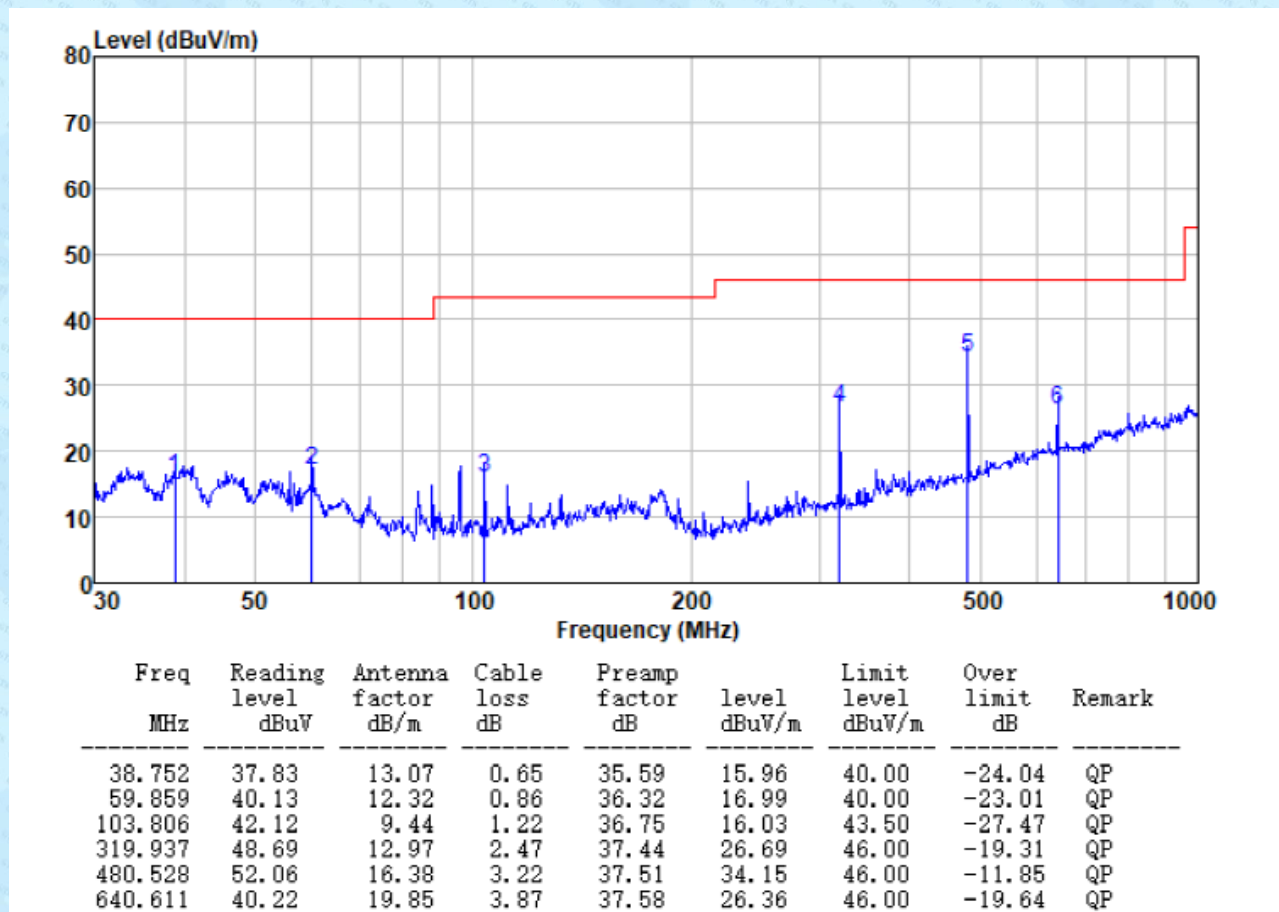
ANT 1+2+3+4:



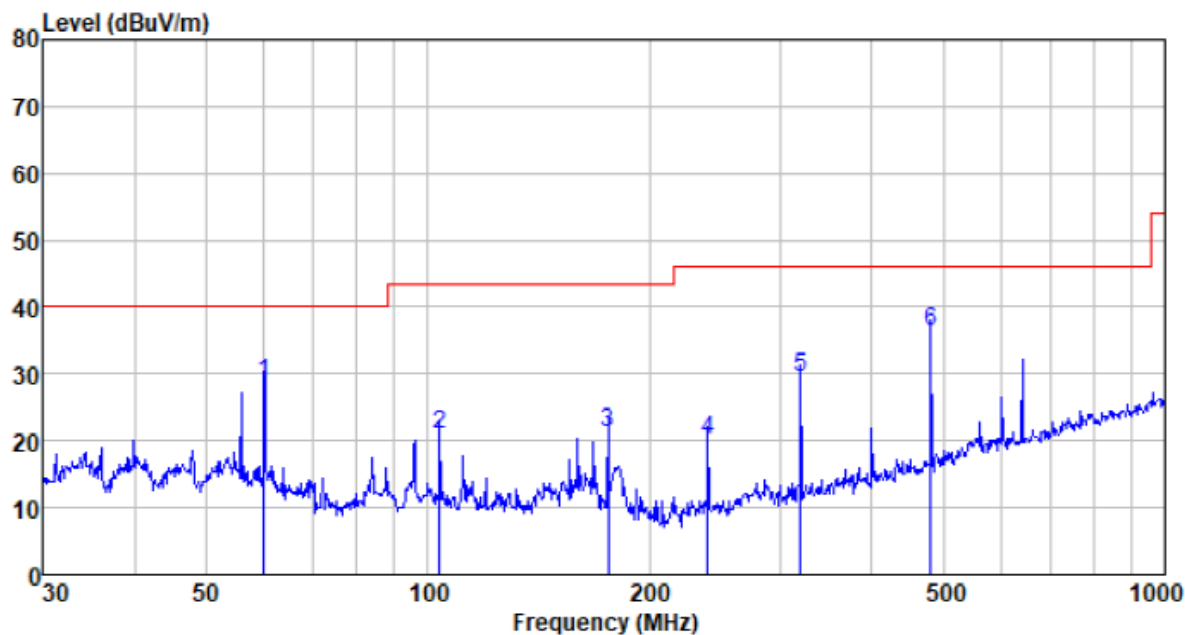
■ 30MHz~1GHz

ANT 1:

Horizontal:

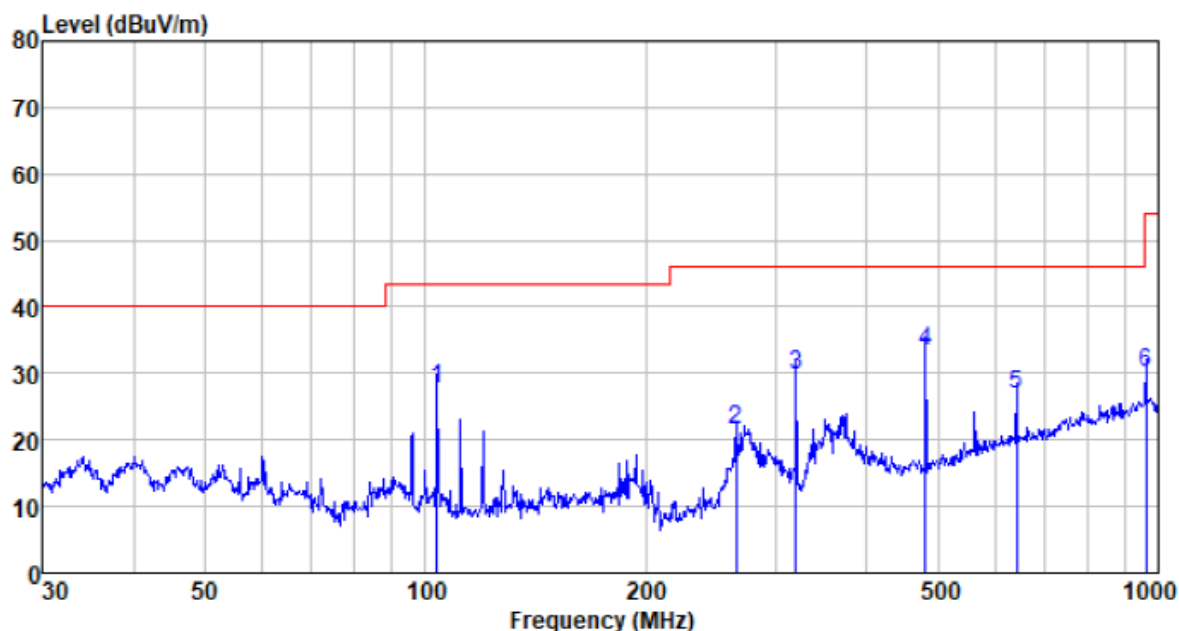


Vertical:



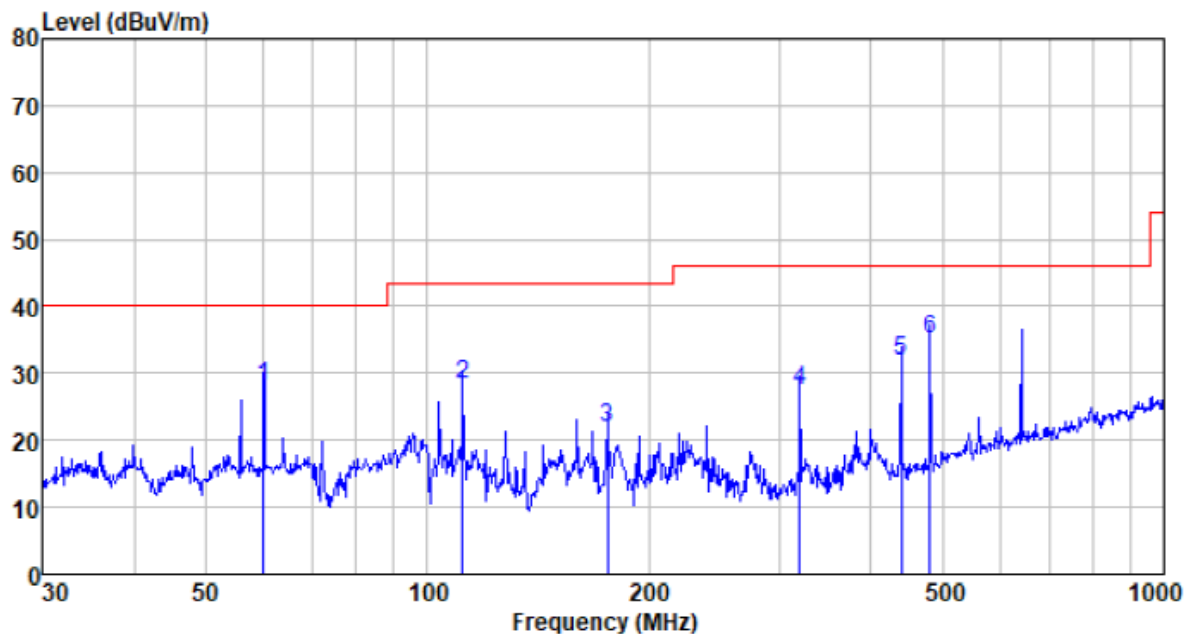
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
59.859	51.65	12.32	0.86	36.32	28.51	40.00	-11.49	QP
103.806	47.20	9.44	1.22	36.75	21.11	43.50	-22.39	QP
175.652	45.28	11.61	1.72	37.22	21.39	43.50	-22.11	QP
239.987	44.89	10.45	2.07	37.37	20.04	46.00	-25.96	QP
319.937	51.41	12.97	2.47	37.44	29.41	46.00	-16.59	QP
480.528	54.09	16.38	3.22	37.51	36.18	46.00	-9.82	QP

ANT 2: Horizontal:



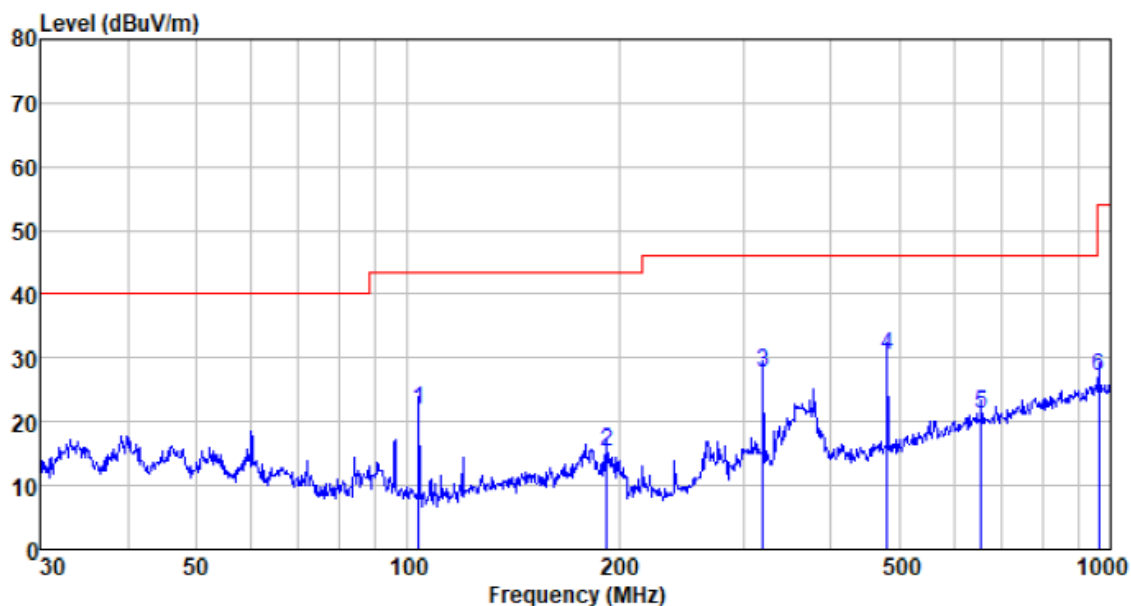
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
103.806	53.90	9.44	1.22	36.75	27.81	43.50	-15.69	QP
265.676	45.29	11.33	2.20	37.39	21.43	46.00	-24.57	QP
319.937	51.88	12.97	2.47	37.44	29.88	46.00	-16.12	QP
480.528	51.39	16.38	3.22	37.51	33.48	46.00	-12.52	QP
640.611	40.63	19.85	3.87	37.58	26.77	46.00	-19.23	QP
962.162	38.57	23.98	5.09	37.54	30.10	54.00	-23.90	QP

Vertical:



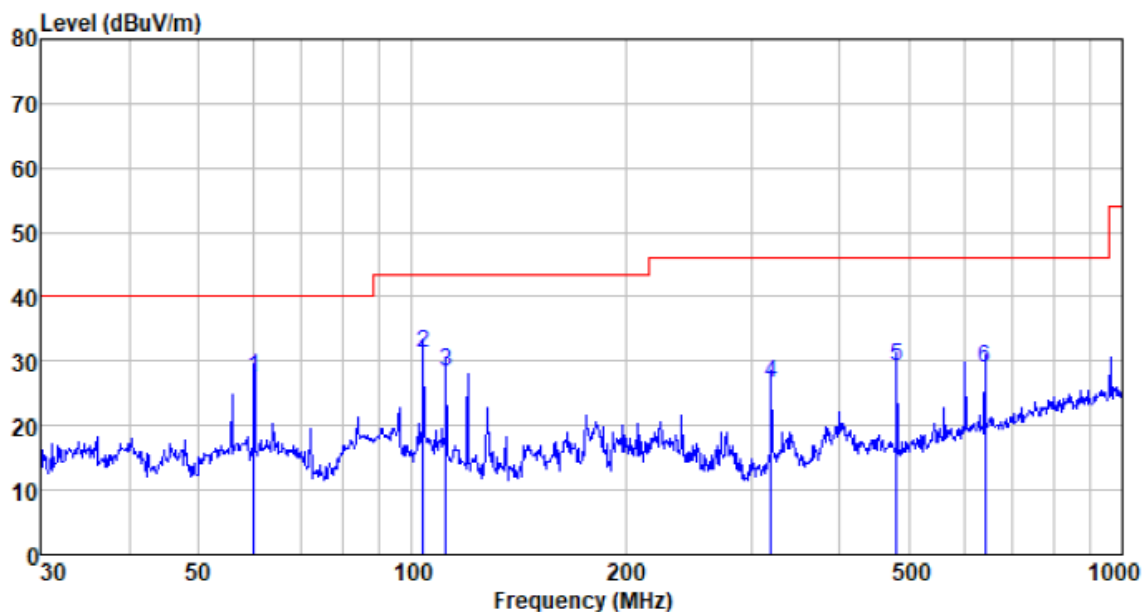
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
59.859	51.16	12.32	0.86	36.32	28.02	40.00	-11.98	QP
111.738	53.66	10.16	1.29	36.82	28.29	43.50	-15.21	QP
175.652	45.82	11.61	1.72	37.22	21.93	43.50	-21.57	QP
319.937	49.51	12.97	2.47	37.44	27.51	46.00	-18.49	QP
440.196	50.71	15.75	3.05	37.52	31.99	46.00	-14.01	QP
480.528	53.13	16.38	3.22	37.51	35.22	46.00	-10.78	QP

ANT 3:
Horizontal:



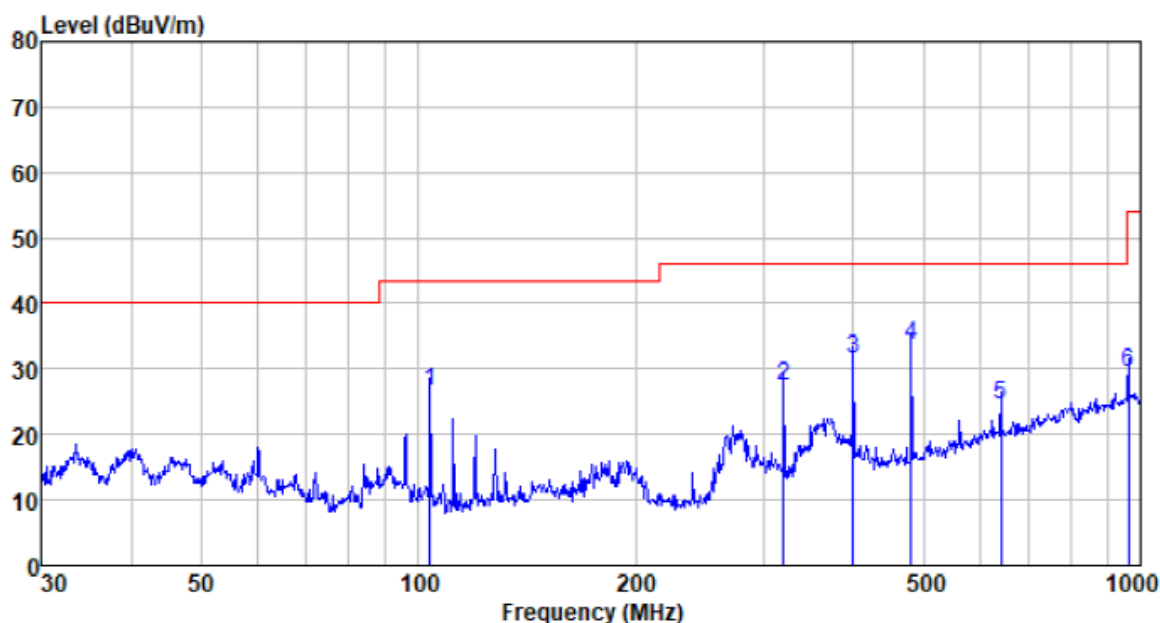
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
103.806	47.97	9.44	1.22	36.75	21.88	43.50	-21.62	QP
191.745	40.98	9.73	1.80	37.29	15.22	43.50	-28.28	QP
319.937	49.63	12.97	2.47	37.44	27.63	46.00	-18.37	QP
480.528	48.35	16.38	3.22	37.51	30.44	46.00	-15.56	QP
654.232	35.01	19.96	3.93	37.59	21.31	46.00	-24.69	QP
962.162	35.59	23.98	5.09	37.54	27.12	54.00	-26.88	QP

Vertical:



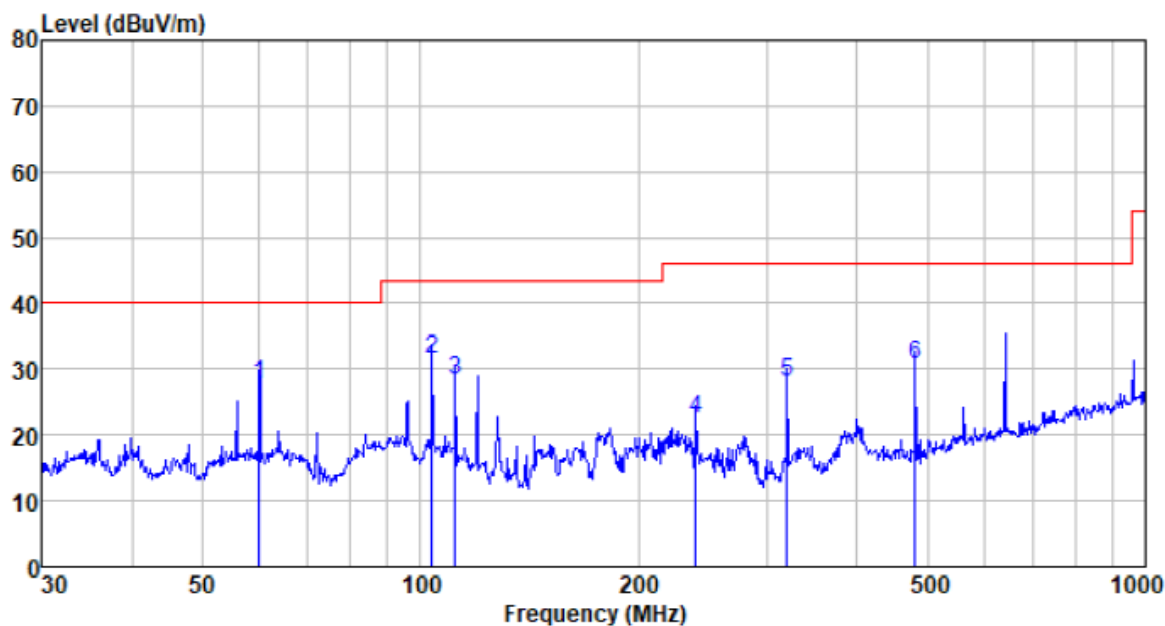
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
59.859	50.61	12.32	0.86	36.32	27.47	40.00	-12.53	QP
103.806	57.43	9.44	1.22	36.75	31.34	43.50	-12.16	QP
111.738	53.80	10.16	1.29	36.82	28.43	43.50	-15.07	QP
319.937	48.63	12.97	2.47	37.44	26.63	46.00	-19.37	QP
480.528	47.06	16.38	3.22	37.51	29.15	46.00	-16.85	QP
640.611	42.91	19.85	3.87	37.58	29.05	46.00	-16.95	QP

ANT 4:
Horizontal:



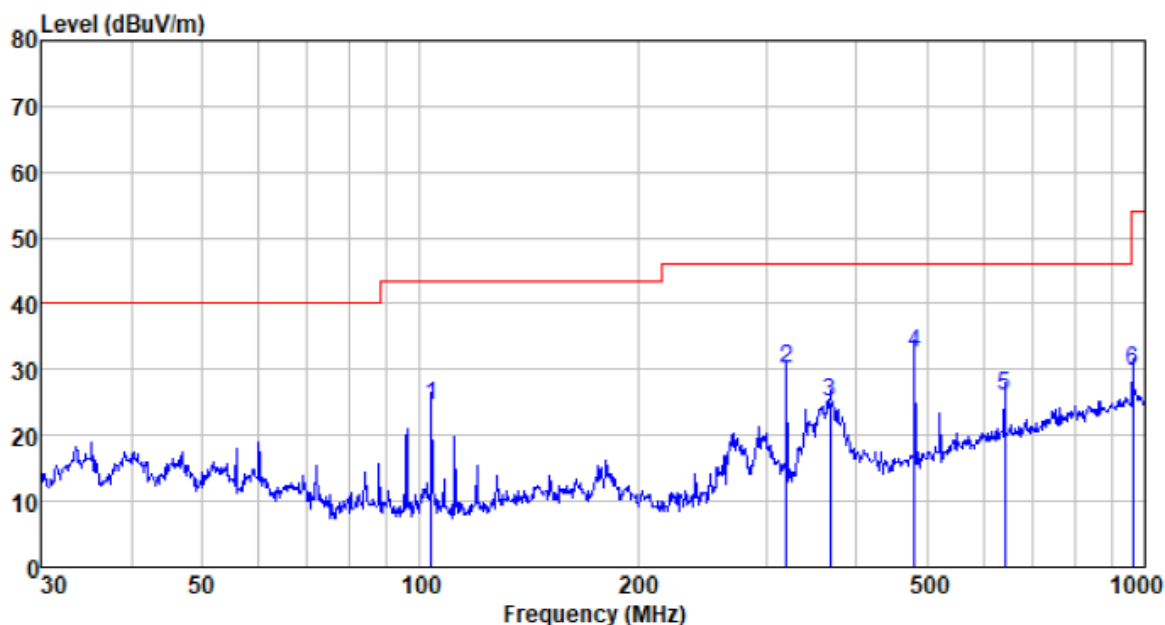
Freq MHz	Reading level dBUV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBUV/m	Limit level dBUV/m	Over limit dB	Remark
103.806	52.68	9.44	1.22	36.75	26.59	43.50	-16.91	QP
319.937	49.56	12.97	2.47	37.44	27.56	46.00	-18.44	QP
400.432	51.43	14.71	2.85	37.52	31.47	46.00	-14.53	QP
480.528	51.42	16.38	3.22	37.51	33.51	46.00	-12.49	QP
640.611	38.29	19.85	3.87	37.58	24.43	46.00	-21.57	QP
962.162	38.05	23.98	5.09	37.54	29.58	54.00	-24.42	QP

Vertical:



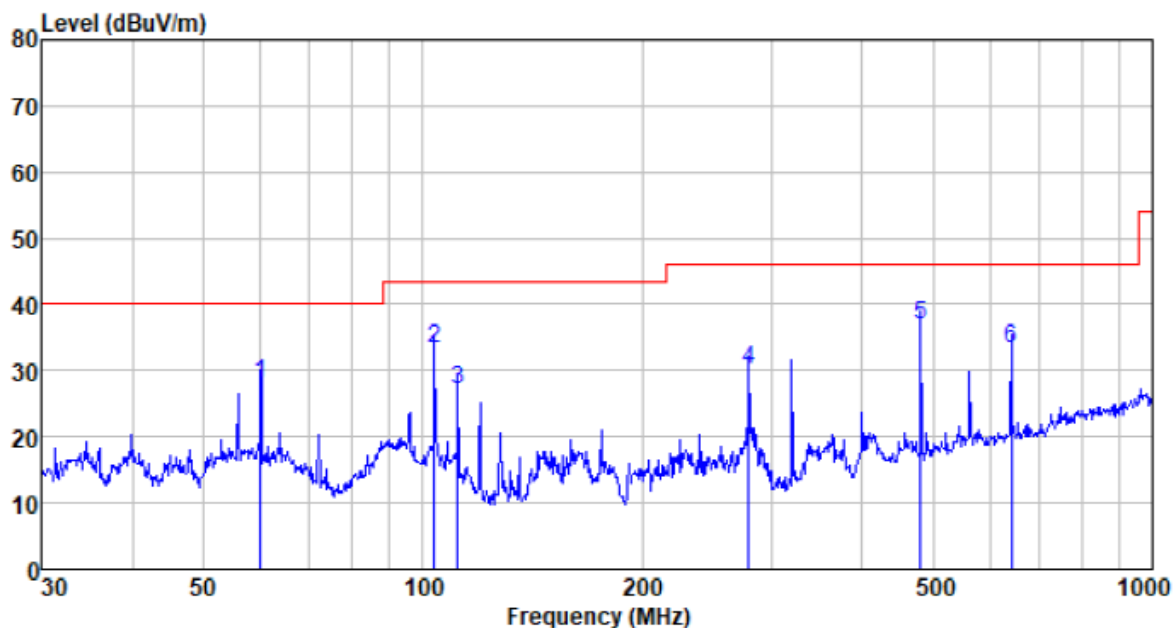
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
59.859	50.84	12.32	0.86	36.32	27.70	40.00	-12.30	QP
103.806	57.71	9.44	1.22	36.75	31.62	43.50	-11.88	QP
111.738	53.64	10.16	1.29	36.82	28.27	43.50	-15.23	QP
239.987	47.40	10.45	2.07	37.37	22.55	46.00	-23.45	QP
319.937	50.11	12.97	2.47	37.44	28.11	46.00	-17.89	QP
480.528	48.61	16.38	3.22	37.51	30.70	46.00	-15.30	QP

ANT 1+2+3+4:
Horizontal:



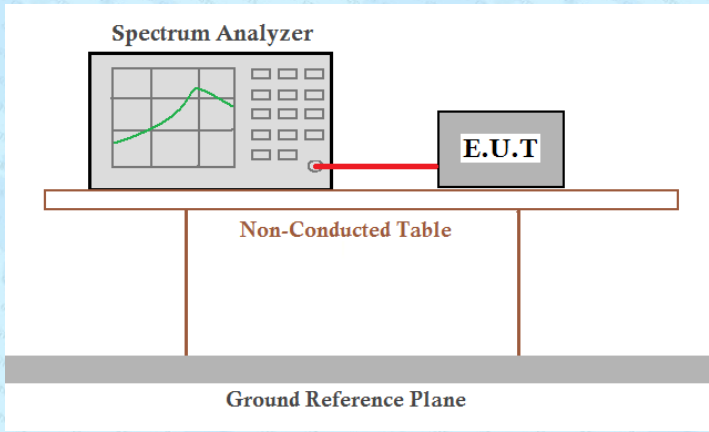
Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
103.806	50.68	9.44	1.22	36.75	24.59	43.50	-18.91	QP
319.937	52.07	12.97	2.47	37.44	30.07	46.00	-15.93	QP
368.112	45.77	14.01	2.71	37.49	25.00	46.00	-21.00	QP
480.528	50.53	16.38	3.22	37.51	32.62	46.00	-13.38	QP
640.611	39.92	19.85	3.87	37.58	26.06	46.00	-19.94	QP
962.162	38.17	23.98	5.09	37.54	29.70	54.00	-24.30	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
59.859	51.26	12.32	0.86	36.32	28.12	40.00	-11.88	QP
103.806	59.35	9.44	1.22	36.75	33.26	43.50	-10.24	QP
111.738	52.57	10.16	1.29	36.82	27.20	43.50	-16.30	QP
280.024	53.52	11.83	2.27	37.40	30.22	46.00	-15.78	QP
480.528	54.80	16.38	3.22	37.51	36.89	46.00	-9.11	QP
640.611	47.22	19.85	3.87	37.58	33.36	46.00	-12.64	QP

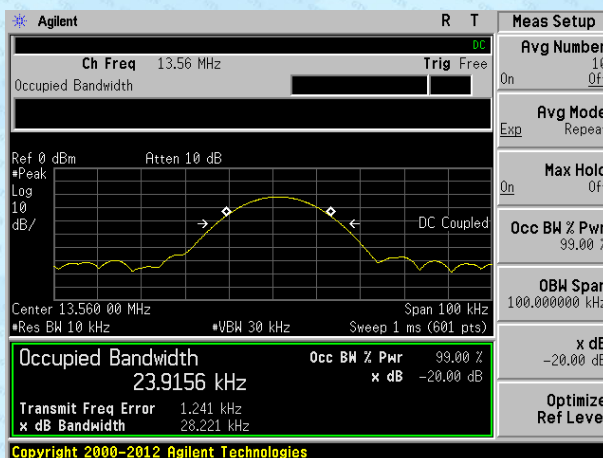
7.5 Channel Bandwidth and 99% Occupied Bandwidth

Test Requirement:	FCC Part15 C Section 15.225 and 15.215 RSS-Gen 6.7
Test Method:	ANSI C63.10:2013 & RSS-Gen
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 are placed on a Non-Conducted Table, which 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

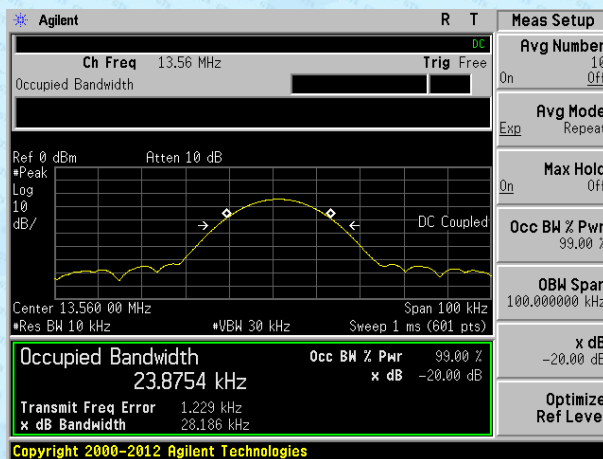
Measurement Data

Test ANT	Test frequency (MHz)	20dB bandwidth(KHz)	99% bandwidth(KHz)	Result
1	13.56	28.221	23.9256	Pass
2		28.186	23.8754	
3		28.193	23.8871	
4		28.222	23.9066	
1+2+3+4		28.242	26.9066	

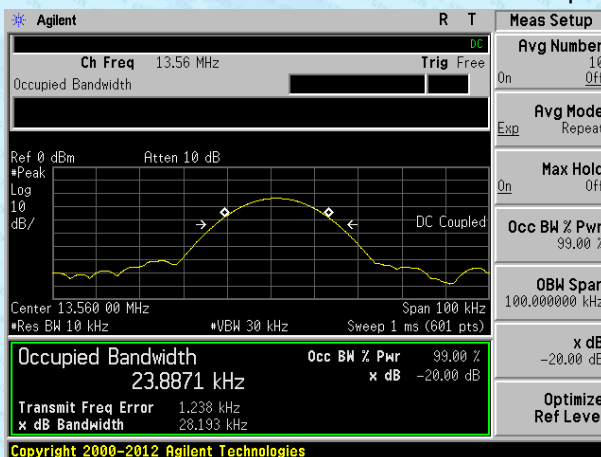
Test plot as follows:



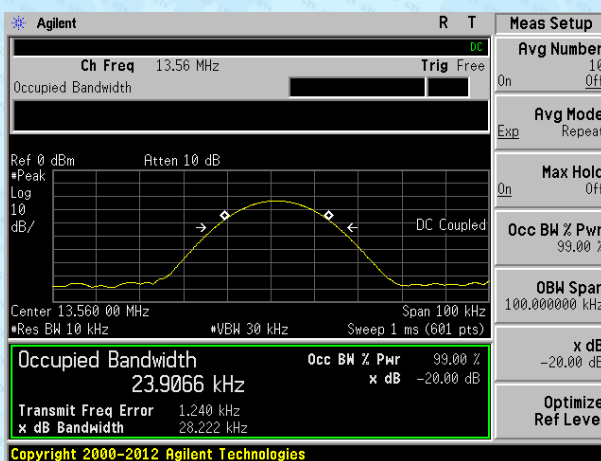
ANT 1



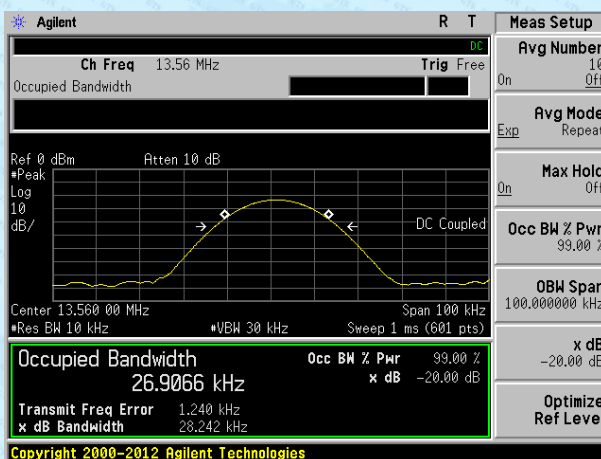
ANT 2



ANT 3

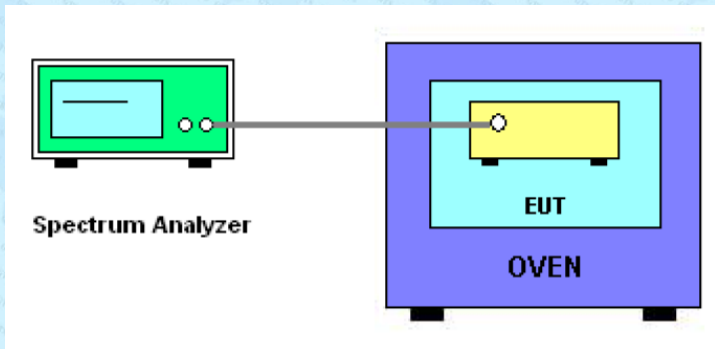


ANT 4



ANT 1+2+3+4

7.6 Frequency Stability Measurement

Test Requirement:	FCC Part15 C Section 15.225 (e) RSS-210, B.6
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, a green Spectrum Analyzer is shown. A cable connects its output to a yellow rectangular box labeled 'EUT' (Equipment Under Test). This box is placed inside a larger blue box labeled 'OVEN'. The entire setup is on a white background.
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	91	0.0007	+/- 0.01%	Pass
	-10	82	0.0006		
	0	68	0.0005		
	10	59	0.0004		
	20	49	0.0004		
	30	58	0.0004		
	40	74	0.0005		
	50	79	0.0006		

Reference Frequency: 13.56MHz					
Temperature (°C)	Power supplied (Vac)	Frequency error		Limit	Result
		Hz	ppm		
20	90	172	0.0013	+/- 0.01%	Pass
	110	128	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 -----