

TEST REPORT

Applicant: HANGZHOU ONTIME I.T. CO., LTD.

Address of Applicant: 8Floor, Building 6, RealBlue Commercial Center, No.18 Zixuan RD, Xihu District, Hangzhou 310030, China

Manufacturer/Factory: HANGZHOU ONTIME I.T. CO., LTD.

Address of Manufacturer/Factory: 8Floor, Building 6, RealBlue Commercial Center, No.18 Zixuan RD, Xihu District, Hangzhou 310030, China

Equipment Under Test (EUT)

Product Name: Antennaless System

Model No.: OS0263

FCC ID: 2BDN4-OS0263

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.231

Date of sample receipt: November 08, 2023

Date of Test: November 09, 2023-May 21, 2024

Date of report issued: May 21, 2024

Test Result : PASS *

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

Authorized Signature:



Robinson Luo

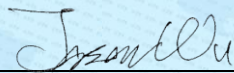
Laboratory Manager

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
01	May 21, 2024	Original

Prepared By:

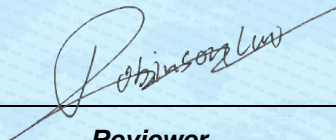


Date:

May 21, 2024

Project Engineer

Check By:



Date:

May 21, 2024

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 DESCRIPTION OF SUPPORT UNITS	6
5.4 TEST FACILITY.....	6
5.5 TEST LOCATION	6
5.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER	6
5.7 ADDITIONAL INSTRUCTIONS.....	6
6 TEST INSTRUMENTS LIST	7
7 TEST RESULTS AND MEASUREMENT DATA.....	9
7.1 ANTENNA REQUIREMENT	9
7.2 CONDUCTED EMISSIONS	10
7.3 RADIATED EMISSION METHOD	13
7.3.1 <i>Field Strength of The Fundamental Signal</i>	15
7.3.2 <i>Spurious Emissions</i>	17
7.4 20dB OCCUPY BANDWIDTH	22
7.5 DEACTIVATION TESTING.....	23
8 TEST SETUP PHOTO	25
9 EUT CONSTRUCTIONAL DETAILS	25

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203	Pass
Conduction Emission	15.207	Pass
Field strength of the Fundamental Signal	15.231 (b)	Pass
Spurious Emissions	15.231 (b)/15.209	Pass
20dB Bandwidth	15.231 (c)	Pass
Deactivation Testing	15.231 (a)(2)	Pass

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

N/A: Not applicable.

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)
Radiated Emission	18GHz-40GHz	3.30dB	(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:	Antennaless System
Model No.:	OS0263
S/N:	OS0263
Test sample(s) ID:	GTS2023110058-1
Sample(s) Status:	Engineer sample
Operation Frequency:	433.856MHz
Modulation technology:	ASK
Antenna Type:	PCB Antenna
Antenna gain:	0dBi(declare by applicant)
Power supply:	AC/DC adapter Model: F024WB-120200U Input: AC 100-240V, 50/60Hz, 0.8A Output: DC 12.0V, 2.0A, 24.0W

Remark:

1. Antenna gain information provided by the customer
2. The relevant information of the sample is provided by the entrusting company, and the laboratory is not responsible for its authenticity.

5.2 Test mode

Transmitting mode	Keep the EUT in transmitting mode
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Per-test mode.

We have 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 only the worst case was shown in this test report and defined as follows:

433.856MHz	Axis	X	Y	Z
	Field Strength(dBuV/m)	76.52	77.56	75.14

5.3 Description of Support Units

None.

5.4 Test Facility

<p>The test facility is recognized, certified, or accredited by the following organizations:</p> <ul style="list-style-type: none"> ● 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. ● ISED—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 ISED 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).
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5.5 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd. No.123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China Tel: 0755-27798480 Fax: 0755-27798960

5.6 Other Information Requested by the Customer

None.

5.7 Additional Instructions

EUT Software Settings:

Mode	Continuously transmitter by manufacturer, power set default
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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	June 23, 2021	June 22, 2024
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 11, 2024	April 10, 2025
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 19, 2023	March 18, 2025
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	April 17, 2023	April 16, 2025
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 11, 2024	April 10, 2025
8	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 13, 2023	Nov.12, 2024
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 11, 2024	April 10, 2025
10	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 11, 2024	April 10, 2025
11	Horn Antenna (18-26.5GHz)	/	UG-598A/U	GTS664	Oct. 29, 2023	Oct. 28, 2024
12	Horn Antenna (26.5-40GHz)	A.H Systems	SAS-573	GTS665	Oct. 29, 2023	Oct. 28, 2024
13	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	March 12, 2024	March 11, 2025
14	Amplifier	/	LNA-1000-30S	GTS650	April 11, 2024	April 10, 2025
15	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS692	Nov. 08, 2023	Nov.07, 2024
16	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	April 11, 2024	April 10, 2025
17	Thermo meter	JINCHUANG	GSP-8A	GTS643	April 18, 2024	April 17, 2025
18	RE cable 1	GTS	N/A	GTS675	July 31. 2023	July 30. 2024
19	RE cable 2	GTS	N/A	GTS676	July 31. 2023	July 30. 2024
20	RE cable 3	GTS	N/A	GTS677	July 31. 2023	July 30. 2024
21	RE cable 4	GTS	N/A	GTS678	July 31. 2023	July 30. 2024
22	RE cable 5	GTS	N/A	GTS679	July 31. 2023	July 30. 2024
23	RE cable 6	GTS	N/A	GTS680	July 31. 2023	July 30. 2024
24	RE cable 7	GTS	N/A	GTS681	July 31. 2023	July 30. 2024
25	RE cable 8	GTS	N/A	GTS682	July 31. 2023	July 30. 2024

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	July 12, 2022	July 11, 2027
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 11, 2024	April 10, 2025
3	LISN	ROHDE & SCHWARZ	ENV216	GTS226	April 11, 2024	April 10, 2025
4	Coaxial Cable	GTS	N/A	GTS227	N/A	N/A
5	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
6	Thermo meter	JINCHUANG	GSP-8A	GTS642	April 18, 2024	April 17, 2025
7	Absorbing clamp	Elektronik-Feinmechanik	MDS21	GTS229	April 11, 2024	April 10, 2025
8	ISN	SCHWARZBECK	NTFM 8158	GTS565	April 11, 2024	April 10, 2025
9	High voltage probe	SCHWARZBECK	TK9420	GTS537	April 11, 2024	April 10, 2025
10	Antenna end assembly	Weinschel	1870A	GTS560	April 11, 2024	April 10, 2025

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 11, 2024	April 10, 2025
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 11, 2024	April 10, 2025
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	April 11, 2024	April 10, 2025
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 11, 2024	April 10, 2025
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 11, 2024	April 10, 2025
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 11, 2024	April 10, 2025
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 11, 2024	April 10, 2025
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 11, 2024	April 10, 2025
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	April 18, 2024	April 17, 2025

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Barometer	KUMAO	SF132	GTS647	April 18, 2024	April 17, 2025

7 Test results and Measurement Data

7.1 Antenna requirement

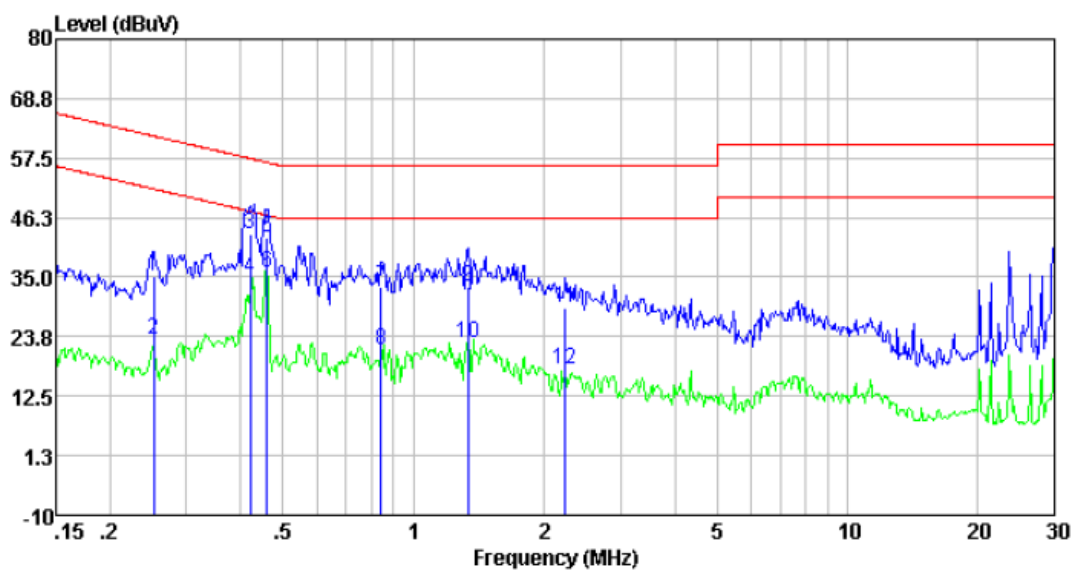
Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling 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 antenna is 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						
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:	<p><i>Remark</i> E.U.T: Equipment Under Test LISN: Line Impedance Stabilization Network Test table height=0.8m</p>						
Test procedure:	<ol style="list-style-type: none"> 1. The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment. 2. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs). 3. Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10:2013 on conducted measurement. 						
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						

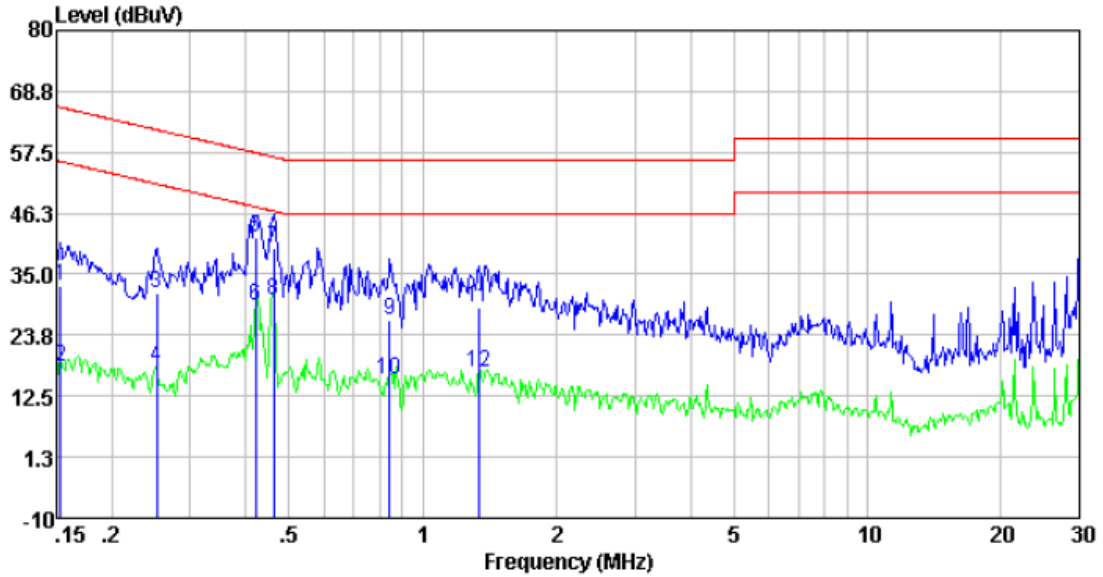
Measurement data

Line:



Freq	Reading level	LISN/ISM factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.25	25.59	9.50	0.01	35.10	61.69	-26.59	QP
0.25	13.81	9.50	0.01	23.32	51.69	-28.37	Average
0.42	33.50	9.49	0.01	43.00	57.42	-14.42	QP
0.42	25.49	9.49	0.01	34.99	47.42	-12.43	Average
0.46	32.95	9.49	0.01	42.45	56.71	-14.26	QP
0.46	26.18	9.49	0.01	35.68	46.71	-11.03	Average
0.84	23.58	9.49	0.03	33.10	56.00	-22.90	QP
0.84	11.80	9.49	0.03	21.32	46.00	-24.68	Average
1.34	23.47	9.54	0.04	33.05	56.00	-22.95	QP
1.34	12.99	9.54	0.04	22.57	46.00	-23.43	Average
2.24	19.62	9.59	0.05	29.26	56.00	-26.74	QP
2.24	8.06	9.59	0.05	17.70	46.00	-28.30	Average

Neutral:

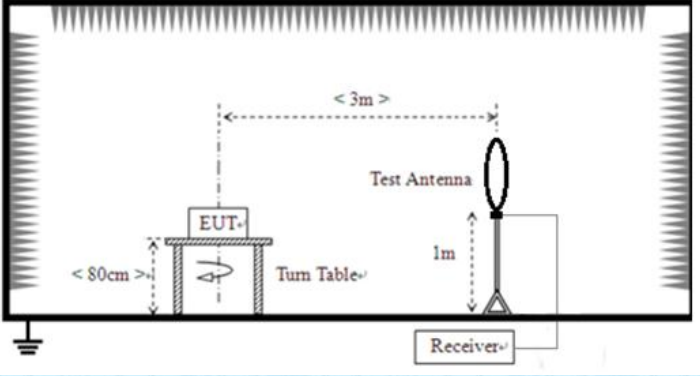


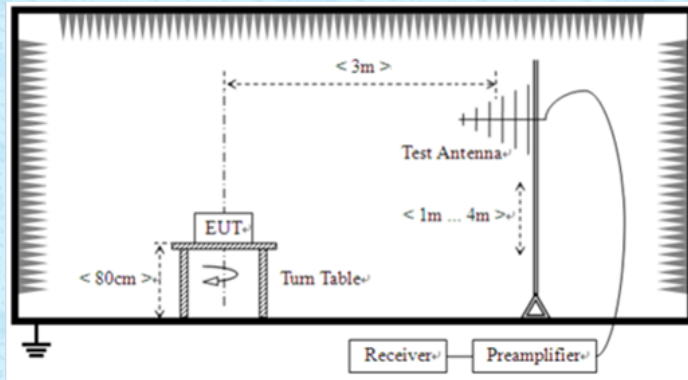
Freq	Reading level	LISN/ISN factor	Cable loss	Level	Limit level	Over limit	Remark
MHz	dBuV	dB	dB	dBuV	dBuV	dB	
0.15	23.25	9.55	0.01	32.81	65.82	-33.01	QP
0.15	8.50	9.55	0.01	18.06	55.82	-37.76	Average
0.25	21.80	9.56	0.01	31.37	61.69	-30.32	QP
0.25	8.33	9.56	0.01	17.90	51.69	-33.79	Average
0.42	32.15	9.57	0.01	41.73	57.42	-15.69	QP
0.42	19.73	9.57	0.01	29.31	47.42	-18.11	Average
0.46	30.15	9.57	0.01	39.73	56.67	-16.94	QP
0.46	20.75	9.57	0.01	30.33	46.67	-16.34	Average
0.84	16.90	9.55	0.03	26.48	56.00	-29.52	QP
0.84	5.86	9.55	0.03	15.44	46.00	-30.56	Average
1.34	19.19	9.55	0.04	28.78	56.00	-27.22	QP
1.34	7.28	9.55	0.04	16.87	46.00	-29.13	Average

Notes:

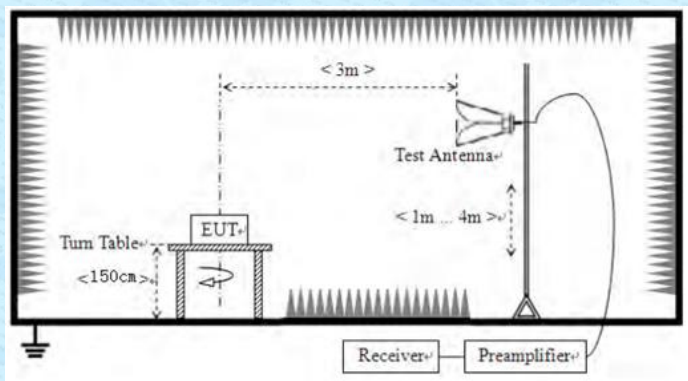
1. An initial pre-scan was performed on the line and neutral lines with peak detector.
2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
3. Final Level = Receiver Read level + LISN Factor + Cable Loss
4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.

7.3 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.231 (b)& Section 15.209					
Test Method:	ANSI C63.10:2013					
Test Frequency Range:	9kHz to 6000MHz					
Test site:	Measurement Distance: 3m					
Receiver setup:	Frequency	Detector	RBW	VBW	Value	
	9KHz-150KHz	Quasi-peak	200Hz	600Hz	Quasi-peak	
	150KHz-30MHz	Quasi-peak	9KHz	30KHz	Quasi-peak	
	30MHz-1GHz	Quasi-peak	120KHz	300KHz	Quasi-peak	
	Above 1GHz	Peak	1MHz	3MHz	Peak	
Peak		1MHz	10Hz	Average		
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark		
	433.856MHz	100.83		Peak Value		
		80.83		Average Value		
Limit: (Spurious Emissions)	Fundamental Frequency (MHz)	Field Strength of fundamental (microvolts/meter)	Field Strength of Unwanted Emissions (microvolts/meter)			
	40.66-40.70	2250	225			
	70-130	1250	125			
	130-174	1250 to 3750**	125 to 735			
	174-260	3750	375			
	260-470	3750 to 12500	375 to 1250			
	Above 470	12500	1250			
	Frequency (MHz)	Class B(dBuV/m @3m)				
		Above 1000	Peak	Average		
			74	54		
Or The maximum permitted unwanted emission level is 20 dB below the maximum permitted fundamental level whichever limit permits higher field strength.						
Test setup:	Below 30MHz					
						
Below 1GHz						



Above 1GHz



Test Instruments:	Refer to section 6.0 for details				
Test mode:	Refer to section 5.2 for details				
Test environment:	Temp.:	25 °C	Humid.:	50%	Press.: 1 010mbar
Test results:	Pass				

Measurement data:

7.3.1 Field Strength of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
433.856	89.56	16.39	3.02	32.19	76.78	100.83	-24.05	Vertical
433.856	90.34	16.39	3.02	32.19	77.56	100.83	-23.27	Horizontal

Average value:

Frequency (MHz)	Peak Value (dBuV/m)	Duty cycle factor	Average value (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
433.856	76.78	-2.91	73.87	80.83	-6.96	Vertical
433.856	77.56	-2.91	74.65	80.83	-6.18	Horizontal

Remarks:

Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor

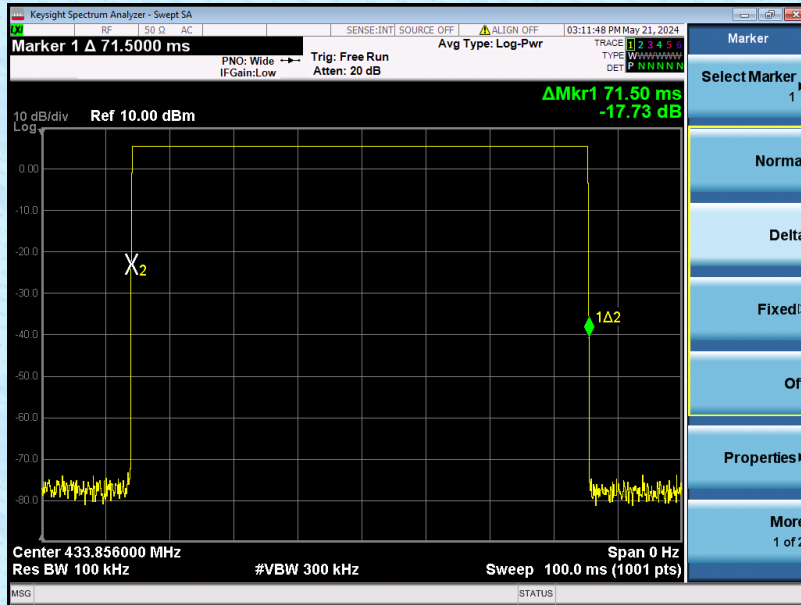
Average value:	
Calculate Formula:	Average value=Peak value + Duty Cycle Factor
	Duty cycle factor=20 log(Duty cycle)
	Duty cycle=on time/100 milliseconds or period, whichever is less
Test data:	T on time =71.5(ms)
	T period =100(ms)
	Duty cycle=0.715
	duty cycle factor=-2.91

The formula as below:

T on time=71.5

Duty cycle= T on time/ T period=71.5/100=0.715

Test plot as follows:



7.3.2 Spurious Emissions

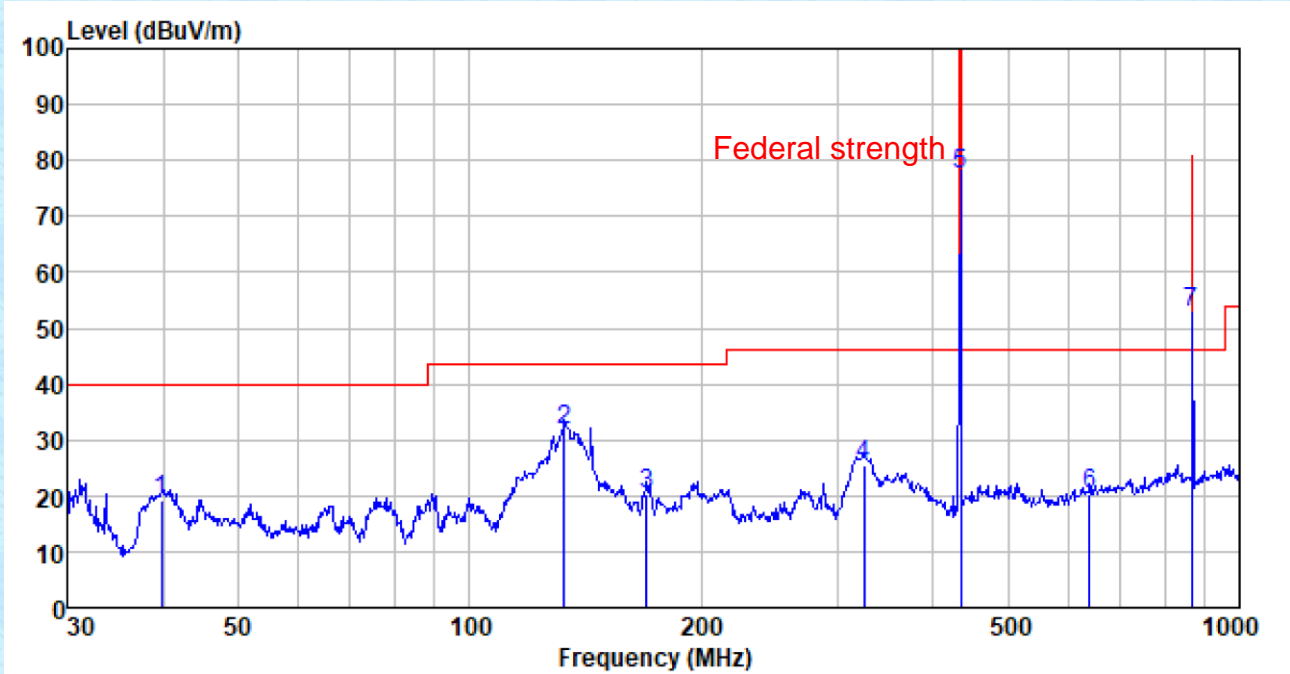
Measurement data:

9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Below 1GHz:

Mode:	Transmitting mode	Polarization:	Horizontal
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QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
39.72	38.82	13.46	0.66	33.73	19.21	40.00	-20.79	Horizontal
132.69	51.42	11.98	1.45	33.27	31.58	43.50	-11.92	Horizontal
169.60	40.28	11.46	1.69	32.99	20.44	43.50	-23.06	Horizontal
325.60	42.34	13.34	2.49	32.59	25.58	46.00	-20.42	Horizontal
638.37	28.22	19.90	3.87	31.71	20.28	46.00	-25.72	Horizontal

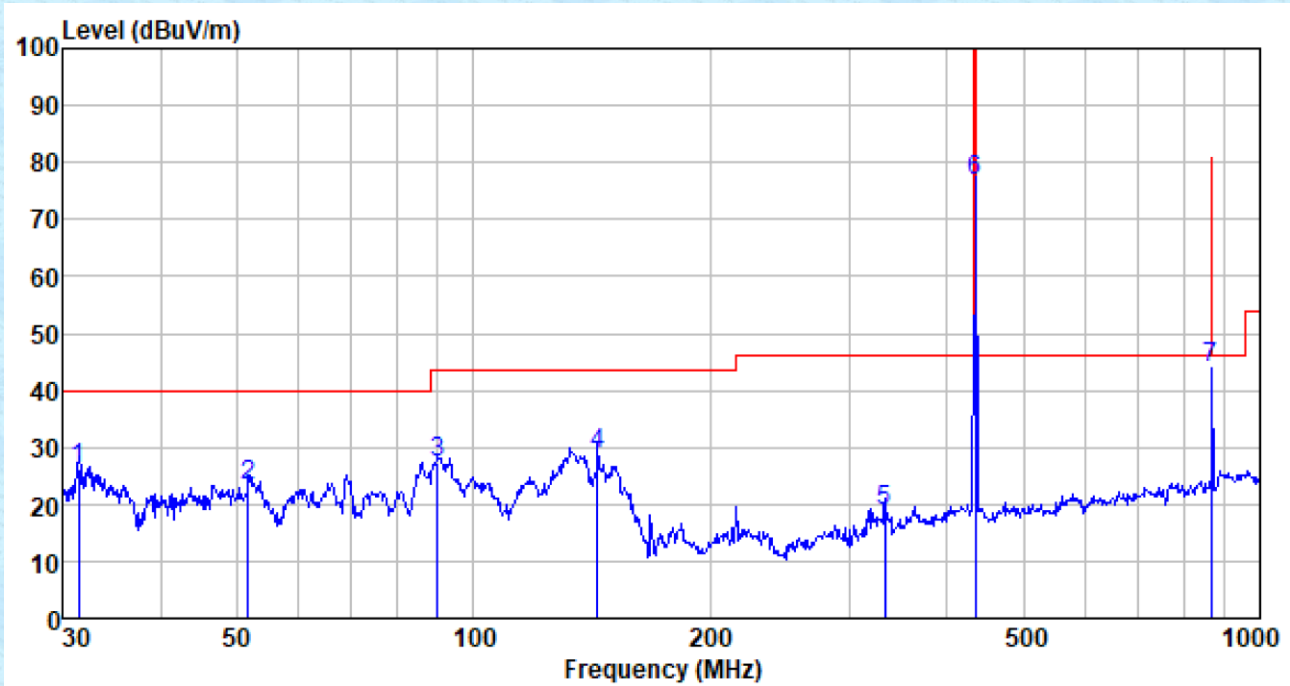
Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
867.712	54.42	23.53	4.73	31.06	51.62	80.83	-29.21	Horizontal

Average value:

Frequency (MHz)	Level (dBuV/m)	Duty cycle factor	Average Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
867.712	51.62	-2.91	48.71	60.83	-12.12	Horizontal

Mode:	Transmitting mode	Polarization:	Vertical
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QP value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
31.51	47.29	12.29	0.57	33.79	26.36	40.00	-13.64	Vertical
51.66	43.02	13.09	0.79	33.67	23.23	40.00	-16.77	Vertical
89.91	51.35	8.60	1.11	33.60	27.46	43.50	-16.04	Vertical
143.83	47.99	12.44	1.53	33.18	28.78	43.50	-14.72	Vertical
333.69	35.25	13.62	2.54	32.55	18.86	46.00	-27.14	Vertical

Peak value:

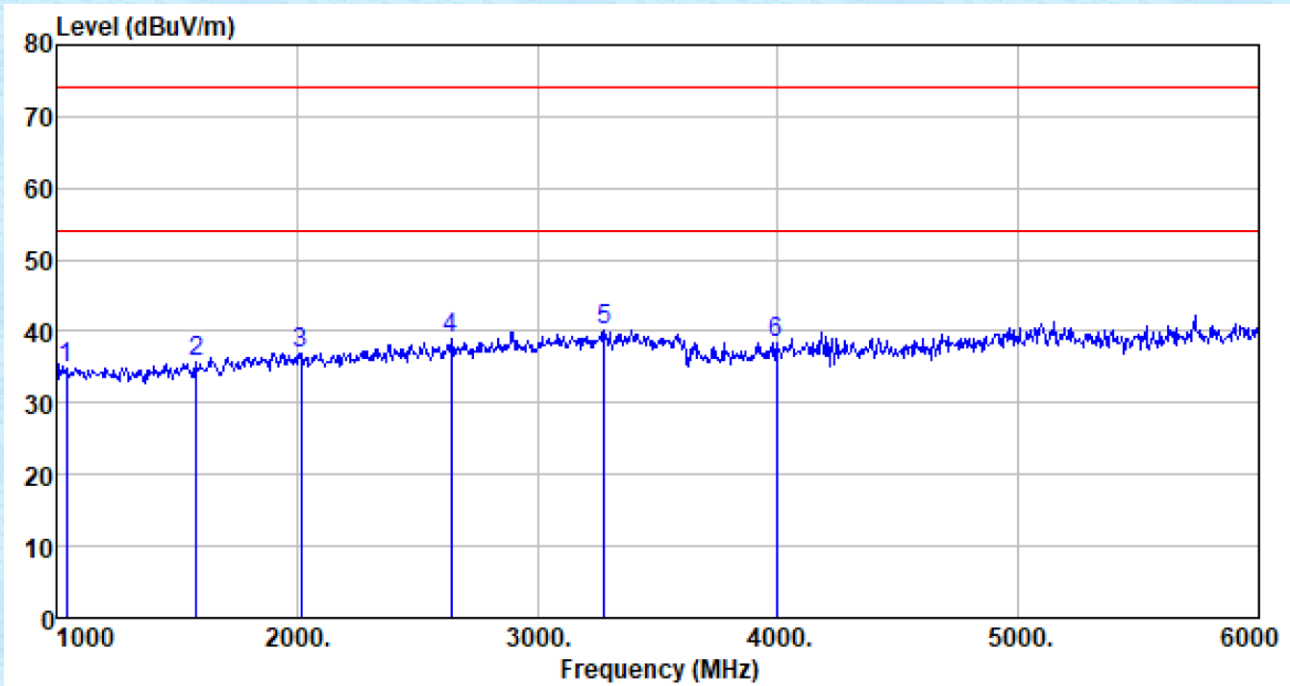
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
867.712	46.57	23.53	4.73	31.06	43.77	80.83	-37.06	Vertical

Average value:

Frequency (MHz)	Level (dBuV/m)	Duty cycle factor	Average Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
867.712	43.77	-2.91	40.86	60.83	-19.97	Vertical

Above 1G:

Mode:	Transmitting mode	Polarization:	Horizontal
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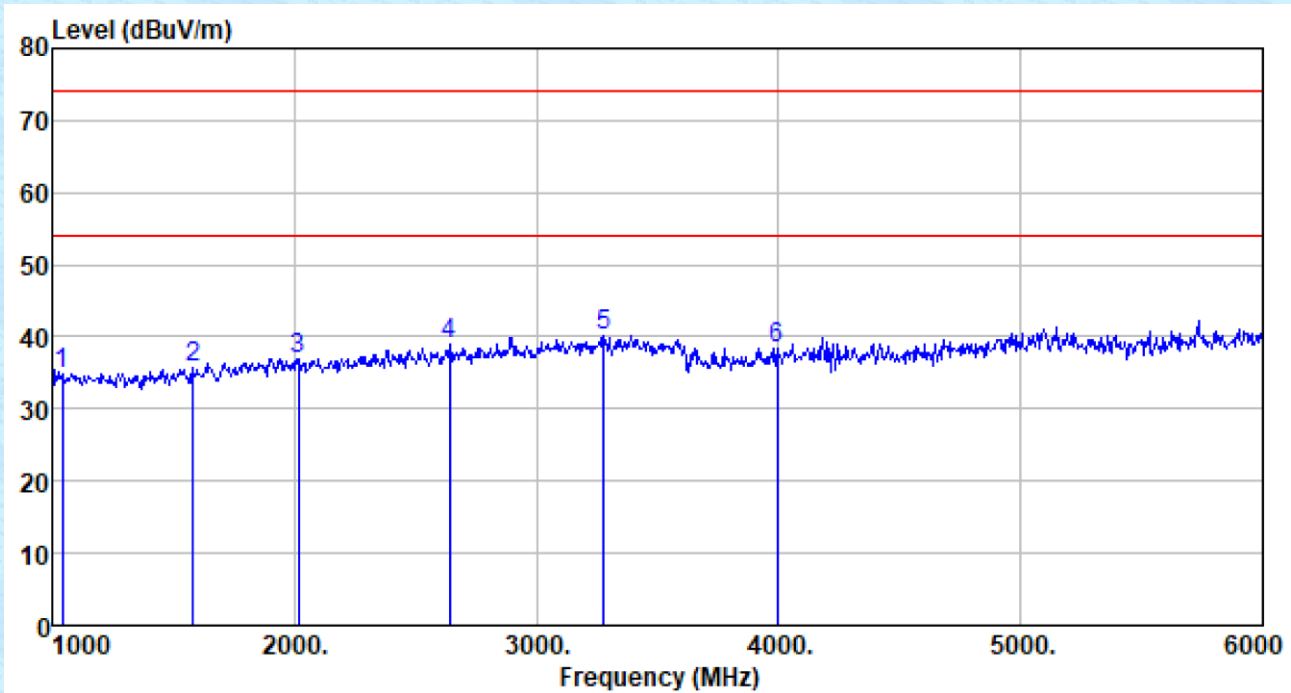
Peak value:

Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Polarization
1175.00	48.61	24.34	2.12	39.51	35.56	74.00	-38.44	Horizontal
1835.00	47.26	25.97	2.49	38.53	37.19	74.00	-36.81	Horizontal
2215.00	47.24	27.06	2.69	38.49	38.50	74.00	-35.50	Horizontal
2525.00	47.13	27.46	3.04	38.60	39.03	74.00	-34.97	Horizontal
3400.00	46.27	28.60	3.64	38.52	39.99	74.00	-34.01	Horizontal
4060.00	44.03	29.41	3.94	38.21	39.17	74.00	-34.83	Horizontal

Average value:

Frequency (MHz)	Level (dBUV/m)	Duty cycle factor	Average Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Polarization
1175.00	35.56	-2.91	32.65	54.00	-21.35	Horizontal
1835.00	37.19	-2.91	34.28	54.00	-19.72	Horizontal
2215.00	38.50	-2.91	35.59	54.00	-18.41	Horizontal
2525.00	39.03	-2.91	36.12	54.00	-17.88	Horizontal
3400.00	39.99	-2.91	37.08	54.00	-16.92	Horizontal
4060.00	39.17	-2.91	36.26	54.00	-17.74	Horizontal

Mode:	Transmitting mode	Polarization:	Vertical
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Peak value:

Frequency (MHz)	Read Level (dBUV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Polarization
1040.00	48.23	24.54	2.01	39.81	34.97	74.00	-39.03	Vertical
1580.00	47.00	25.12	2.32	38.74	35.70	74.00	-38.30	Vertical
2015.00	45.98	26.82	2.55	38.41	36.94	74.00	-37.06	Vertical
2640.00	46.75	27.74	3.13	38.60	39.02	74.00	-34.98	Vertical
3280.00	46.45	28.60	3.62	38.54	40.13	74.00	-33.87	Vertical
3995.00	43.31	29.29	3.91	38.20	38.31	74.00	-35.69	Vertical

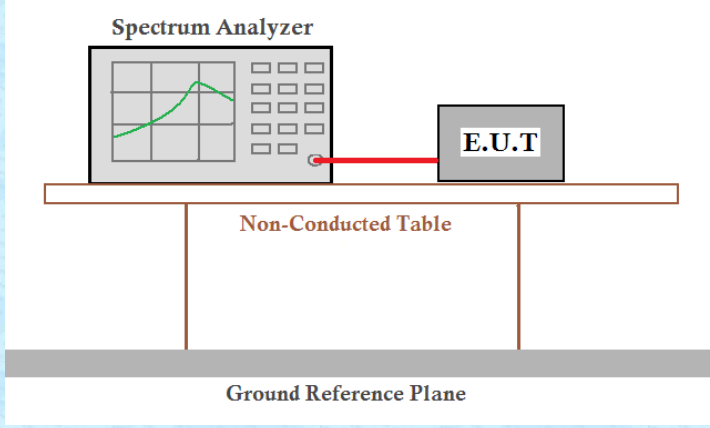
Average value:

Frequency (MHz)	Level (dBUV/m)	Duty cycle factor	Average Level (dBUV/m)	Limit Line (dBUV/m)	Over Limit (dB)	Polarization
1040.00	34.97	-2.91	32.06	54.00	-21.94	Vertical
1580.00	35.70	-2.91	32.79	54.00	-21.21	Vertical
2015.00	36.94	-2.91	34.03	54.00	-19.97	Vertical
2640.00	39.02	-2.91	36.11	54.00	-17.89	Vertical
3280.00	40.13	-2.91	37.22	54.00	-16.78	Vertical
3995.00	38.31	-2.91	35.40	54.00	-18.60	Vertical

Remarks:

Final Level = Receiver Read level + Antenna Factor + Cable Loss – Pre-amplifier Factor

7.4 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.231 (c)
Test Method:	ANSI C63.10:2013
Limit:	The bandwidth of the emission shall be no wider than 0.25% of the center frequency for devices operating above 70 MHz and below 900MHz. For devices operating above 900 MHz, the emission shall be no wider than 0.5% of the center frequency. Bandwidth is determined at the points 20 dB down from the modulated carrier.
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

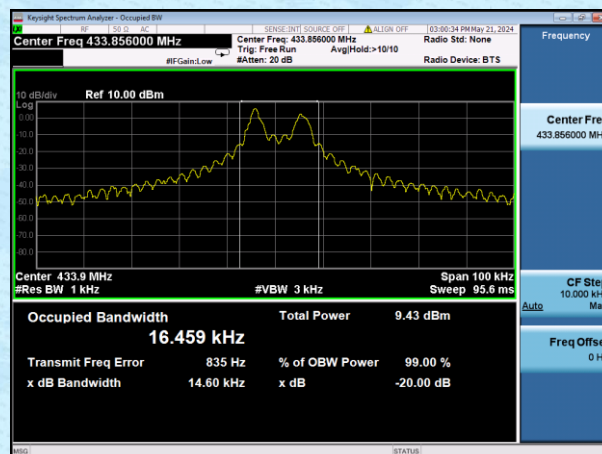
Measurement Data

Test Frequency (MHz)	20dB bandwidth (kHz)	Limit (MHz)	Result
433.856	14.6	1.0846	Pass

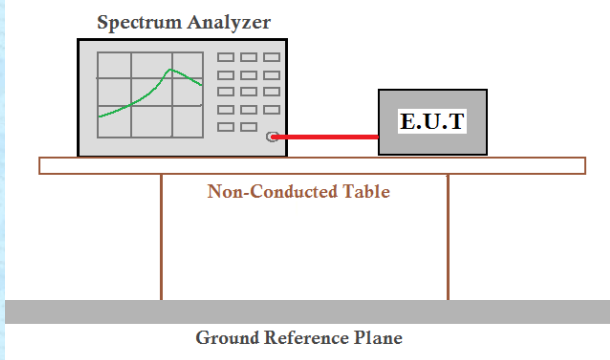
Note: Limit= Fundamental frequency×0.25%

$433.856 \times 0.25\% = 1.0846\text{MHz}$

Test plot as follows:



7.5 Deactivation Testing

Test Requirement:	FCC Part15 C Section 15.231 (a)(2)
Test Method:	ANSI C63.10:2013
Receiver setup:	RBW=1MHz, VBW=1MHz, span=0Hz, detector: Peak
Limit:	Not more than 5 seconds
Test setup:	 <p>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 sits on a Ground Reference Plane.</p>
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:

Frequency (MHz)	Duration of each TX (ms)	Limit (second)	Result
433.856	71.4	<5.0	Pass

Test plot as follows:



8 Test Setup Photo

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

9 EUT Constructional Details

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

----- End -----