TEST REPORT

Applicant:	CartaSense Ltd.
Address of Applicant:	6 Ravnitzki street, Petach-Tikva, Israel 49277
Manufacturer:	CartaSense Ltd.
Address of Manufacturer:	6 Ravnizki St. ,Petah Tikva, Israel 4900617
Equipment Under Test (EUT)	
Product Name:	O-Sensor stationary / O-Sensor mobile
Model No.:	100700-XX
FCC ID:	2AAEP-OSENSOR
IC:	11128A-OSENSOR
Applicable standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247 RSS-247 Issue 3 RSS-Gen Issue 5
Date of sample receipt:	March 05, 2023
Date of Test:	March 05, 2023-August 31, 2023
Date of report issued:	August 31, 2023
Test Result :	PASS *

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

Authorized Signature:

Robinson Lo
Laboratory Manager

TESTING
NVLAP LAB CODE 600179-0

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	*August 31, 2023*	*Original*

Prepared By: ***Date:*** *August 31, 2023*

Project Engineer

Check By: ***Date:*** *August 31, 2023*

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203/15.247 (c) RSS-Gen Section 6.8	Pass
AC Power Line Conducted Emission	15.207 RSS-Gen Section 8.8	N/A
Conducted Output Power	15.247 (b)(3) RSS-247 Section 5.4(d)	Pass
Channel Bandwidth	15.247 (a)(2) RSS-247 Section 5.2(a)	Pass
99% Occupy Bandwidth	RSS-Gen Section 6.7	Pass
Power Spectral Density	15.247 (e) RSS-247 Section 5.2(b)	Pass
Band Edge	15.247(d) RSS-247 Section 5.5	Pass
Spurious Emission	15.205/15.209 RSS-247 Section 5.5	Pass
Frequency stability	RSS-Gen Section 6.11& Section 8.11	Pass

Remarks:

1. *Pass: The EUT complies with the essential requirements in the standard.*
2. *Test according to ANSI C63.10:2013 and RSS-Gen.*

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:	O-Sensor stationary / O-Sensor mobile
Model No.:	100700-XX
Test sample(s) ID:	GTS202103000066-1
Sample(s) Status:	Engineer sample
S/N:	000001
Operation Frequency:	2402MHz~2480MHz
Channel Numbers:	40
Channel Separation:	2MHz
Modulation Type:	GFSK
Antenna Type:	Integral Antenna
Antenna Gain:	1.42dBi
Power Supply:	NON-RECHEARGEABLE: 1.8 Volt - 3.3 Volt Or RECHEARGEABLE: 4.5 Volt - 5.5 Volt

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.

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402 MHz	11	2422 MHz	21	2442 MHz	31	2462 MHz
2	2404 MHz	12	2424 MHz	22	2444 MHz	32	2464 MHz
3	2406 MHz	13	2426 MHz	23	2446 MHz	33	2466 MHz
4	2408 MHz	14	2428 MHz	24	2448 MHz	34	2468 MHz
5	2410 MHz	15	2430 MHz	25	2450 MHz	35	2470 MHz
6	2412 MHz	16	2432 MHz	26	2452 MHz	36	2472 MHz
7	2414 MHz	17	2434 MHz	27	2454 MHz	37	2474 MHz
8	2416 MHz	18	2436 MHz	28	2456 MHz	38	2476 MHz
9	2418 MHz	19	2438 MHz	29	2458 MHz	39	2478 MHz
10	2420 MHz	20	2440 MHz	30	2460 MHz	40	2480 MHz

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2402MHz
The middle channel	2440MHz
The Highest channel	2480MHz

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode

5.3 Description of Support Units

Manufacturer	Description	Model	Serial Number
MEILI	DC POWER SUPPLY	MCH-305A	011121168

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

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

● **FCC —Registration No.: 381383**

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. Registration 381383.

● **ISED —Registration No.: 9079A**

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 with Registration No.: 9079A

● **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 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

5.8 Additional instructions

Test Software	Test command provide by manufacturer.
Power level setup	Default

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 14, 2023	April 13, 2024
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 14, 2023	April 13, 2024
8	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 29, 2022	Nov. 28, 2023
9	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 14, 2023	April 13, 2024
10	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 14, 2023	April 13, 2024
11	Horn Antenna (18-26.5GHz)	/	UG-598A/U	GTS664	Oct. 30, 2022	Oct. 29, 2023
12	Horn Antenna (26.5-40GHz)	A.H Systems	SAS-573	GTS665	Oct. 30, 2022	Oct. 29, 2023
13	FSV·Signal Analyzer (10Hz-40GHz)	Keysight	FSV-40-N	GTS666	March 13, 2023	March 12, 2024
14	Amplifier	/	LNA-1000-30S	GTS650	April 14, 2023	April 13, 2024
15	CDNE M2+M3-16A	HCT	30MHz-300MHz	GTS668	Dec. 20, 2022	Dec.19, 2023
16	Wideband Amplifier	/	WDA-01004000-15P35	GTS602	April 14, 2023	April 13, 2024
17	Thermo meter	JINCHUANG	GSP-8A	GTS643	April 19, 2023	April 18, 2024
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

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 14, 2023	April 13, 2024
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 14, 2023	April 13, 2024
3	PSA Series Spectrum Analyzer	Agilent	E4440A	GTS536	April 14, 2023	April 13, 2024
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 14, 2023	April 13, 2024
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 14, 2023	April 13, 2024
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 14, 2023	April 13, 2024
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 14, 2023	April 13, 2024
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 14, 2023	April 13, 2024
9	Thermo meter	JINCHUANG	GSP-8A	GTS641	April 19, 2023	April 18, 2024

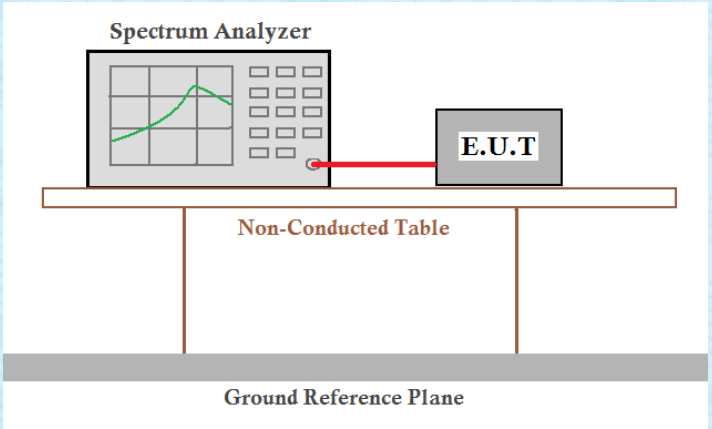
General used equipment:						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (mm-dd-yy)**	**Cal.Due date (mm-dd-yy)**
1	Barometer	KUMAO	SF132	GTS647	April 19, 2023	April 18, 2024

7 Test results and Measurement Data

7.1 Antenna requirement

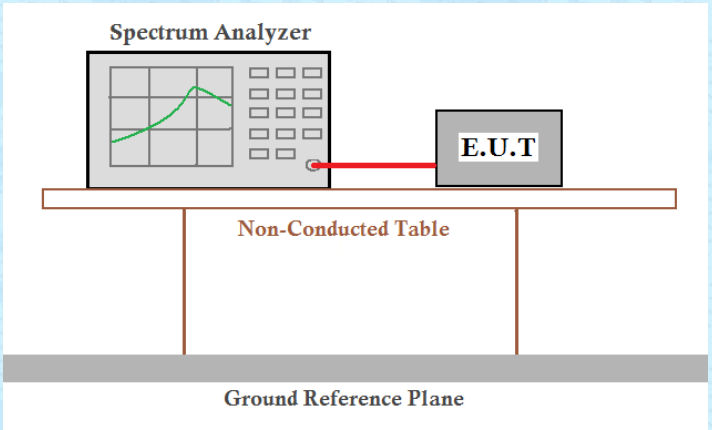
Standard requirement:	FCC Part15 C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique 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. **15.247(c) (1)(i) requirement:** (i) 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.	
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	
E.U.T Antenna:	
The antenna is Integral antenna, reference to the appendix II for details	

7.2 Conducted Output Power

Test Requirement:	FCC Part15 C Section 15.247 (b)(3) RSS-247 Section 5.4(d)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	30dBm 36dBm(4W for e.i.r.p)
Test setup:	
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

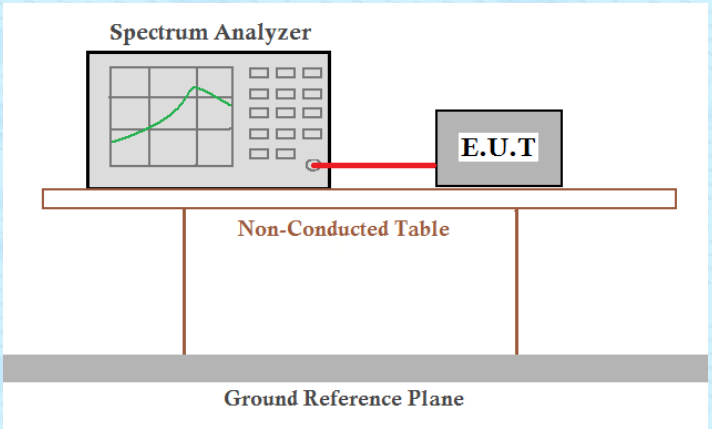
Measurement Data: The detailed test data see Appendix.

7.3 Channel Bandwidth & 99% Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.247 (a)(2) & RSS-247 Section 5.2(a)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	>500KHz
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: The detailed test data see Appendix.

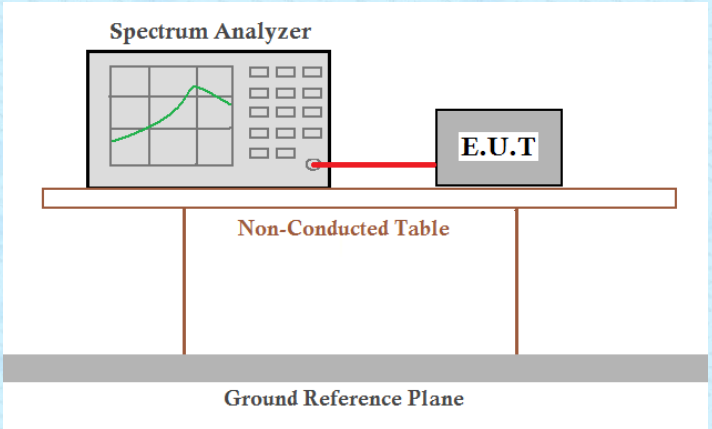
7.4 Power Spectral Density

Test Requirement:	FCC Part15 C Section 15.247 (e) RSS-247 Section 5.2(b)
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 and RSS-Gen
Limit:	8dBm/3kHz
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: The detailed test data see Appendix.

7.5 Spurious Emission in Non-restricted & restricted Bands

7.5.1 Conducted Emission Method

Test Requirement:	FCC Part15 C Section 15.247 (d) RSS-247 Section 5.5
Test Method:	ANSI C63.10:2013 and KDB558074 D01 15.247 Meas Guidance v05r02 & RSS-Gen
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 intentional radiator 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, based on either an RF conducted or a radiated measurement.
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: The detailed test data see Appendix.

7.5.2 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 RSS-247 Section 3.3 & RSS-Gen Section 8.9
Test Method:	ANSI C63.10:2013 & RSS-Gen
Test Frequency Range:	9kHz to 25GHz
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

FCC Limit:

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:

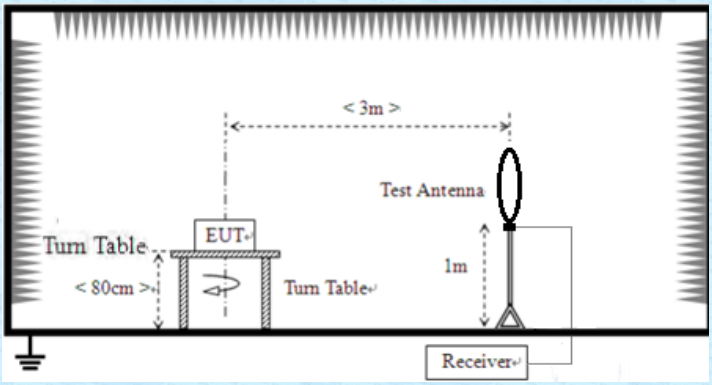
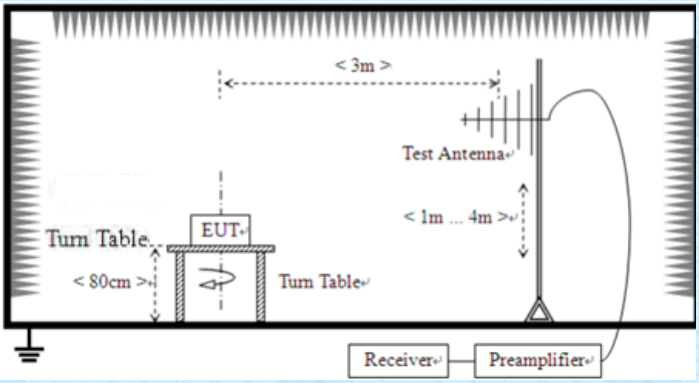
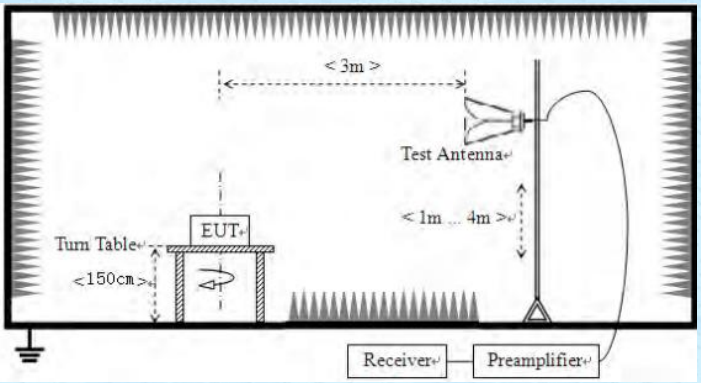
Table 5 – General field strength limits at frequencies above 30 MHz

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

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:	For radiated emissions from 9kHz to 30MHz  For radiated emissions from 30MHz to1GHz  For radiated emissions above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1G and 1.5m for above 1G) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the

	measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.					
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 results:	Pass					

Measurement data:

Remark:
Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.

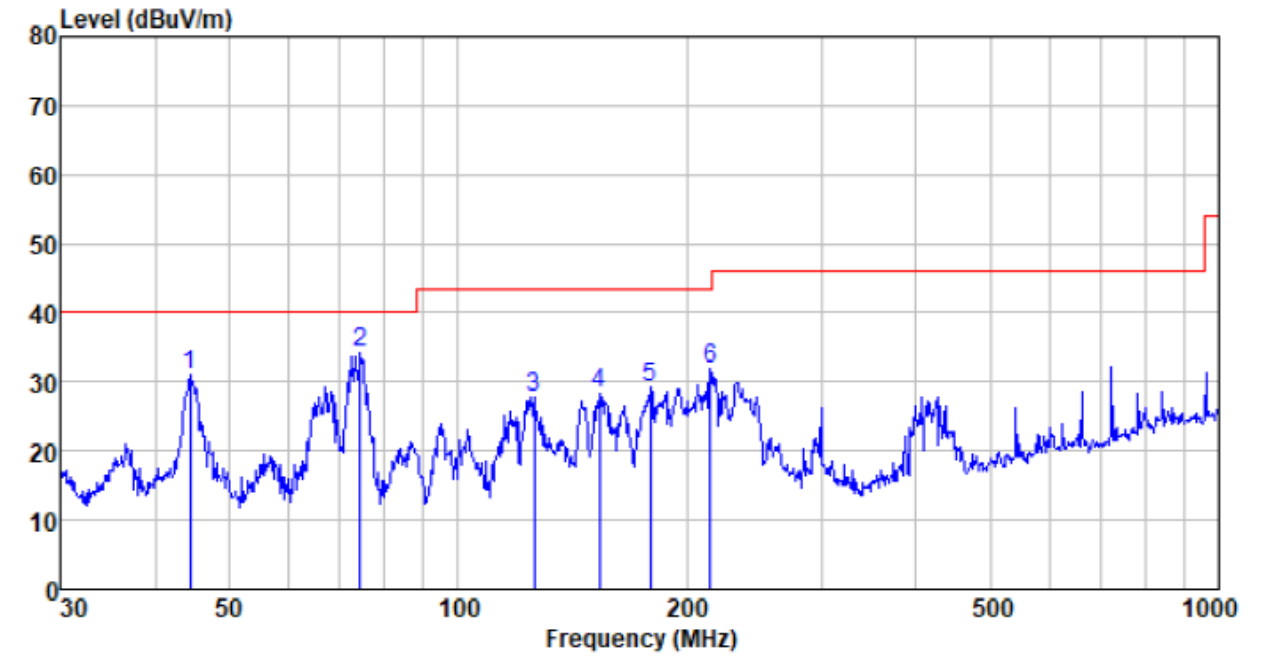
■ **9kHz~30MHz**

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**

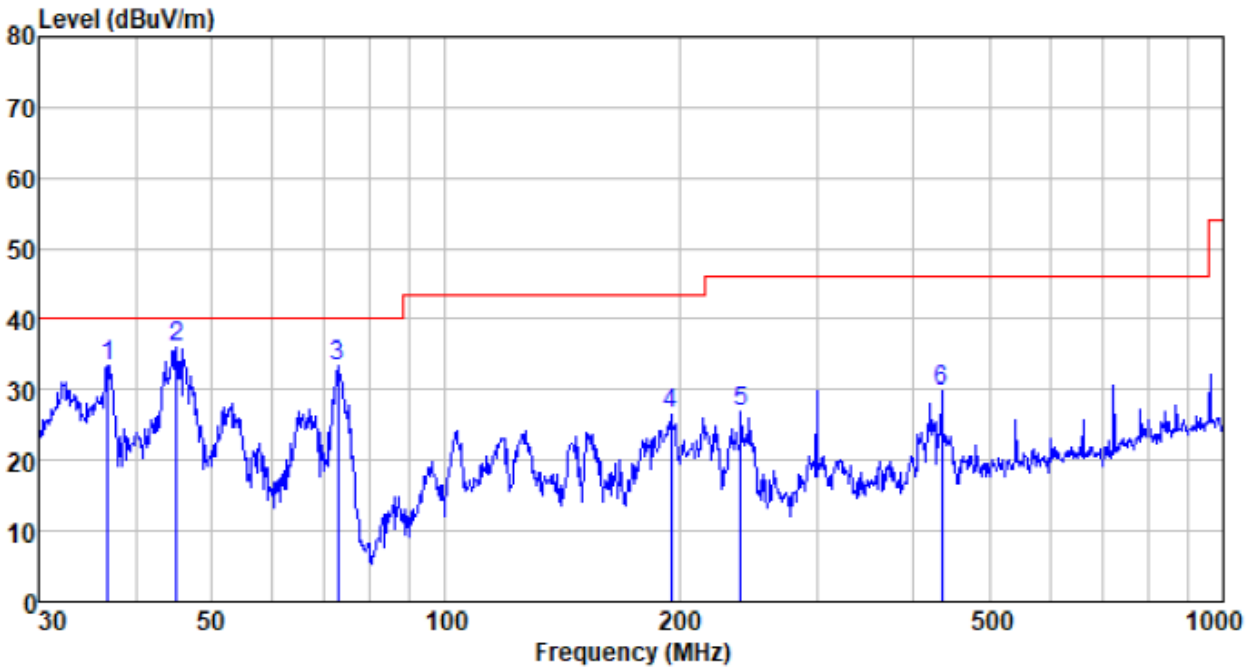
Pre-scan all test modes, found worst case at 2480MHz, and so only show the test result of 2480MHz

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
44.431	54.00	12.25	0.71	35.91	31.05	40.00	-8.95	Peak
74.396	62.31	7.46	0.98	36.49	34.26	40.00	-5.74	Peak
125.886	54.59	8.74	1.41	36.92	27.82	43.50	-15.68	Peak
153.200	55.99	7.85	1.59	37.10	28.33	43.50	-15.17	Peak
178.758	55.88	8.87	1.73	37.23	29.25	43.50	-14.25	Peak
214.514	56.29	10.95	1.93	37.35	31.82	43.50	-11.68	Peak

Vertical:

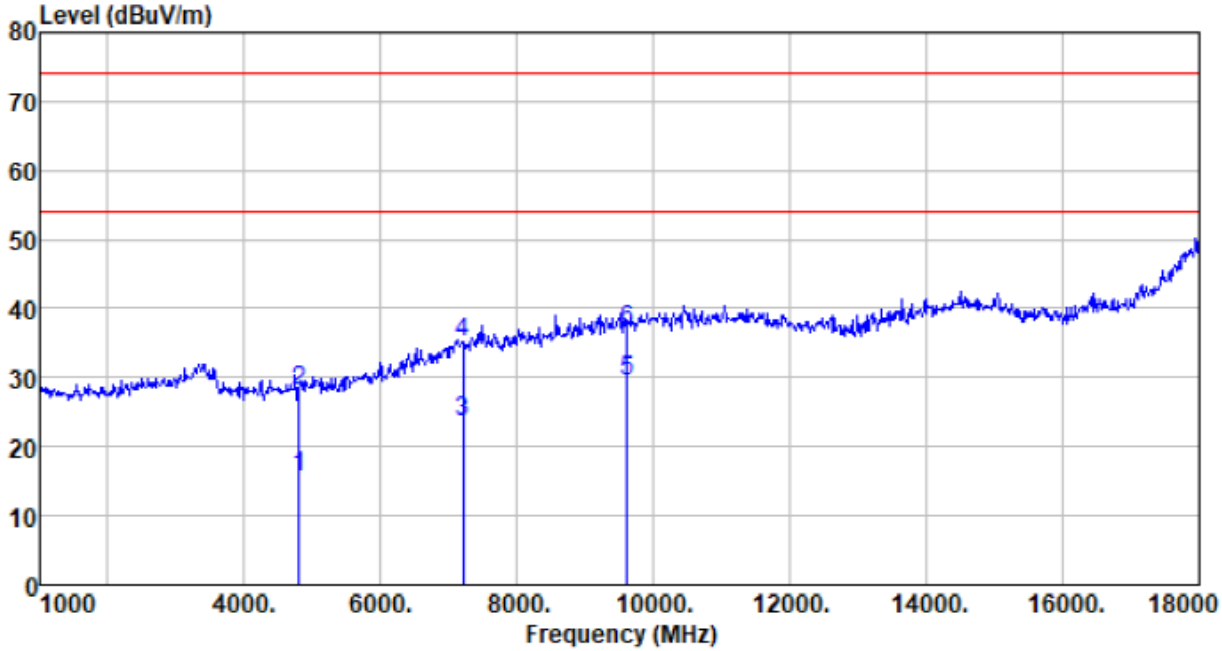


Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV/m	Limit level dBuV/m	Over limit dB	Remark
36.766	56.52	11.64	0.63	35.47	33.32	40.00	-6.68	QP
45.058	58.86	12.25	0.72	35.94	35.89	40.00	-4.11	QP
72.847	61.40	7.47	0.96	36.47	33.36	40.00	-6.64	QP
195.137	51.79	10.17	1.81	37.31	26.46	43.50	-17.04	QP
239.987	50.24	11.85	2.07	37.37	26.79	46.00	-19.21	QP
434.065	48.22	16.03	3.02	37.52	29.75	46.00	-16.25	QP

- **Above 1GHz**
- **Unwanted Emissions in Restricted Frequency Bands**

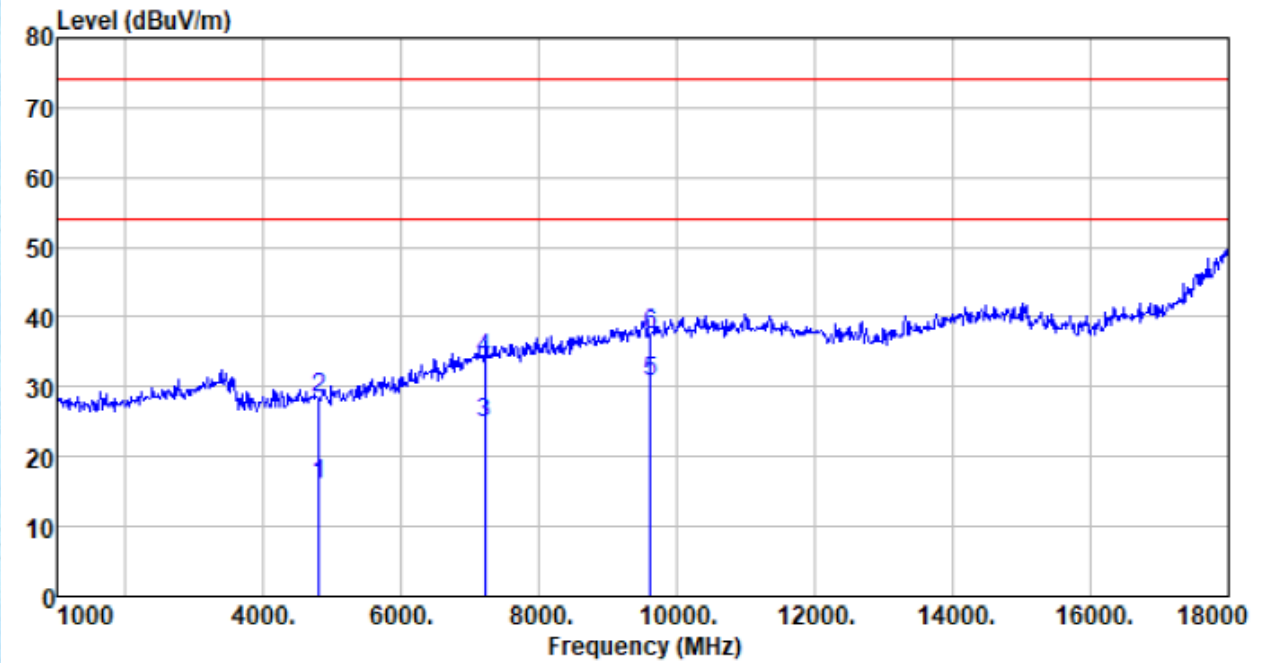
Test channel:	Lowest

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
4804.000	17.62	31.20	4.61	37.73	15.70	54.00	-38.30	Average
4804.000	29.96	31.20	4.61	37.73	28.04	74.00	-45.96	Peak
7206.000	16.68	36.16	6.48	35.63	23.69	54.00	-30.31	Average
7206.000	28.16	36.16	6.48	35.63	35.17	74.00	-38.83	Peak
9608.000	18.52	37.93	7.97	34.94	29.48	54.00	-24.52	Average
9608.000	26.06	37.93	7.97	34.94	37.02	74.00	-36.98	Peak

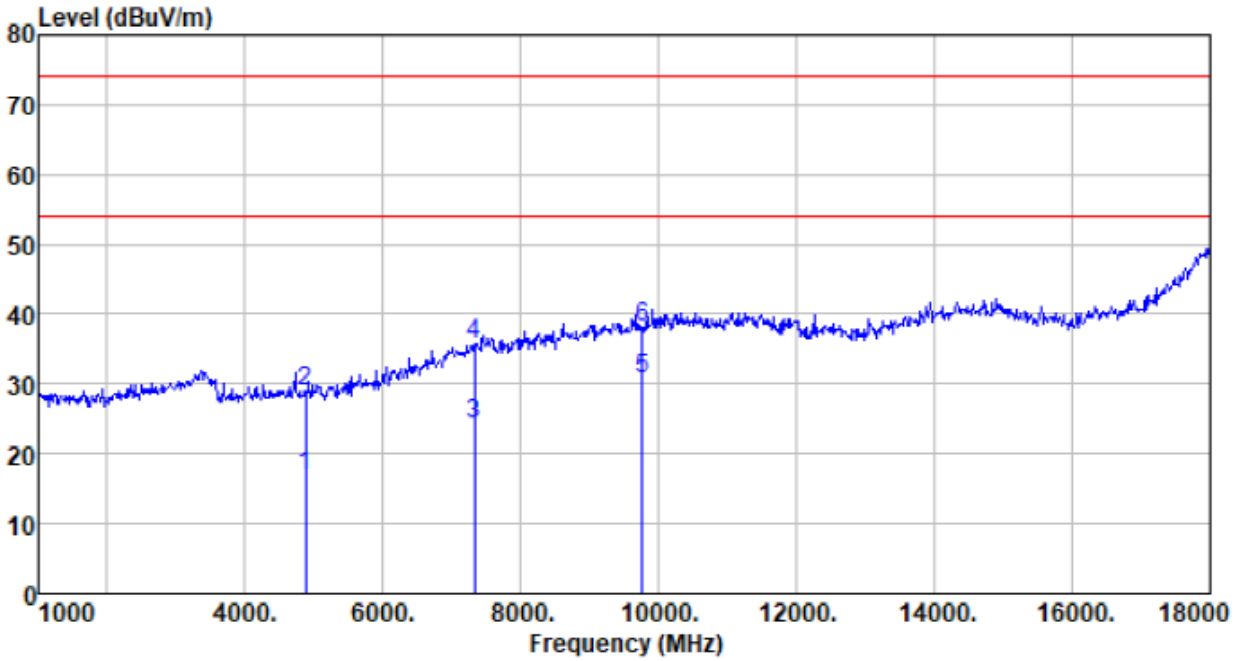
Vertical:



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
4804.000	17.99	31.20	4.61	37.73	16.07	54.00	-37.93	Average
4804.000	30.38	31.20	4.61	37.73	28.46	74.00	-45.54	Peak
7206.000	17.92	36.16	6.48	35.63	24.93	54.00	-29.07	Average
7206.000	27.03	36.16	6.48	35.63	34.04	74.00	-39.96	Peak
9608.000	19.80	37.93	7.97	34.94	30.76	54.00	-23.24	Average
9608.000	26.49	37.93	7.97	34.94	37.45	74.00	-36.55	Peak

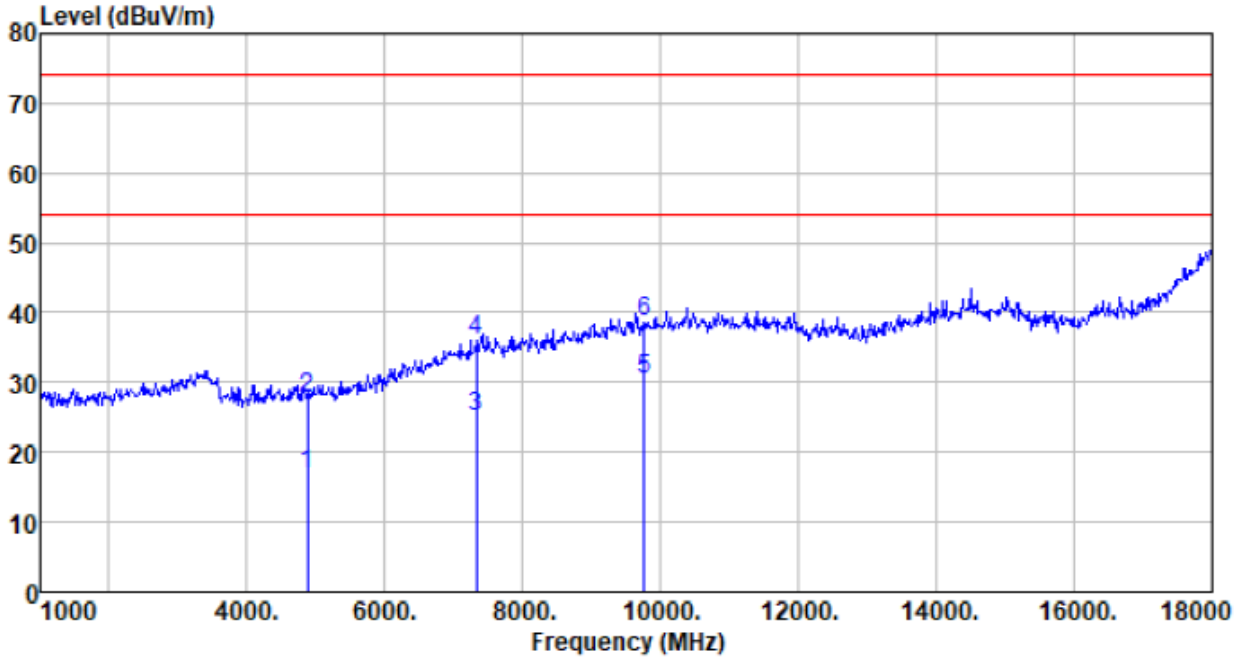
Test channel:	Middle

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
4880.000	18.46	31.31	4.69	37.75	16.71	54.00	-37.29	Average
4880.000	30.54	31.31	4.69	37.75	28.79	74.00	-45.21	Peak
7320.000	16.67	36.43	6.63	35.60	24.13	54.00	-29.87	Average
7320.000	28.27	36.43	6.63	35.60	35.73	74.00	-38.27	Peak
9760.000	19.68	38.10	8.03	35.03	30.78	54.00	-23.22	Average
9760.000	27.07	38.10	8.03	35.03	38.17	74.00	-35.83	Peak

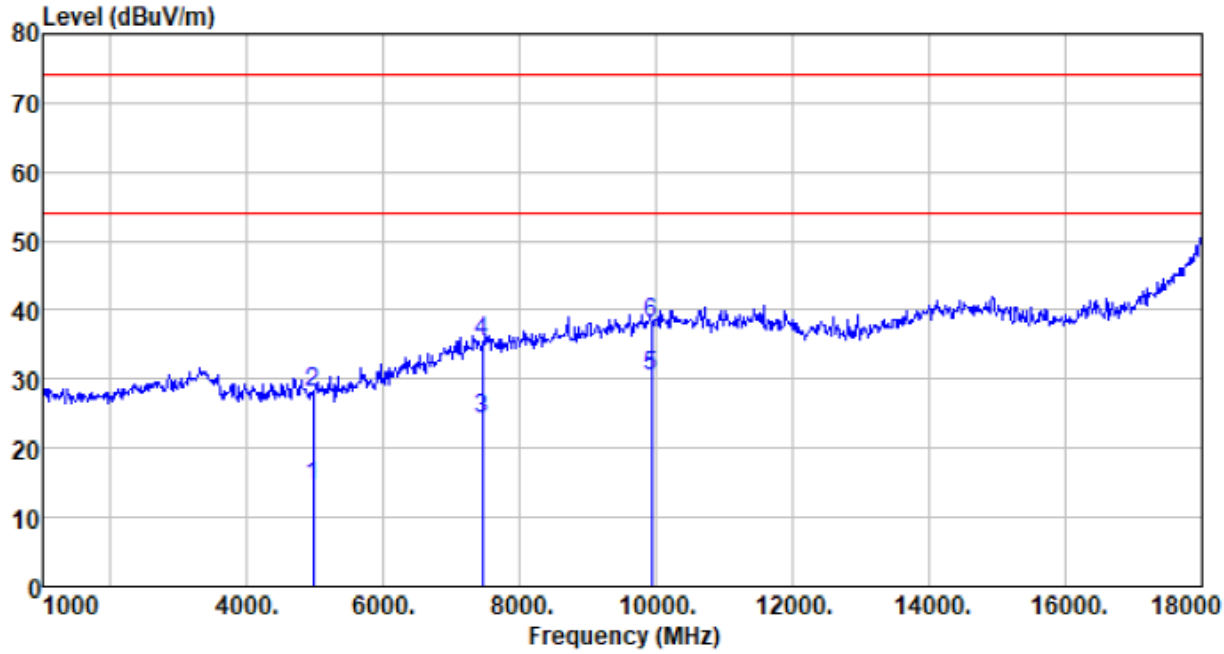
Vertical:



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
4880.000	18.54	31.31	4.69	37.75	16.79	54.00	-37.21	Average
4880.000	29.65	31.31	4.69	37.75	27.90	74.00	-46.10	Peak
7320.000	17.59	36.43	6.63	35.60	25.05	54.00	-28.95	Average
7320.000	28.64	36.43	6.63	35.60	36.10	74.00	-37.90	Peak
9760.000	19.29	38.10	8.03	35.03	30.39	54.00	-23.61	Average
9760.000	27.53	38.10	8.03	35.03	38.63	74.00	-35.37	Peak

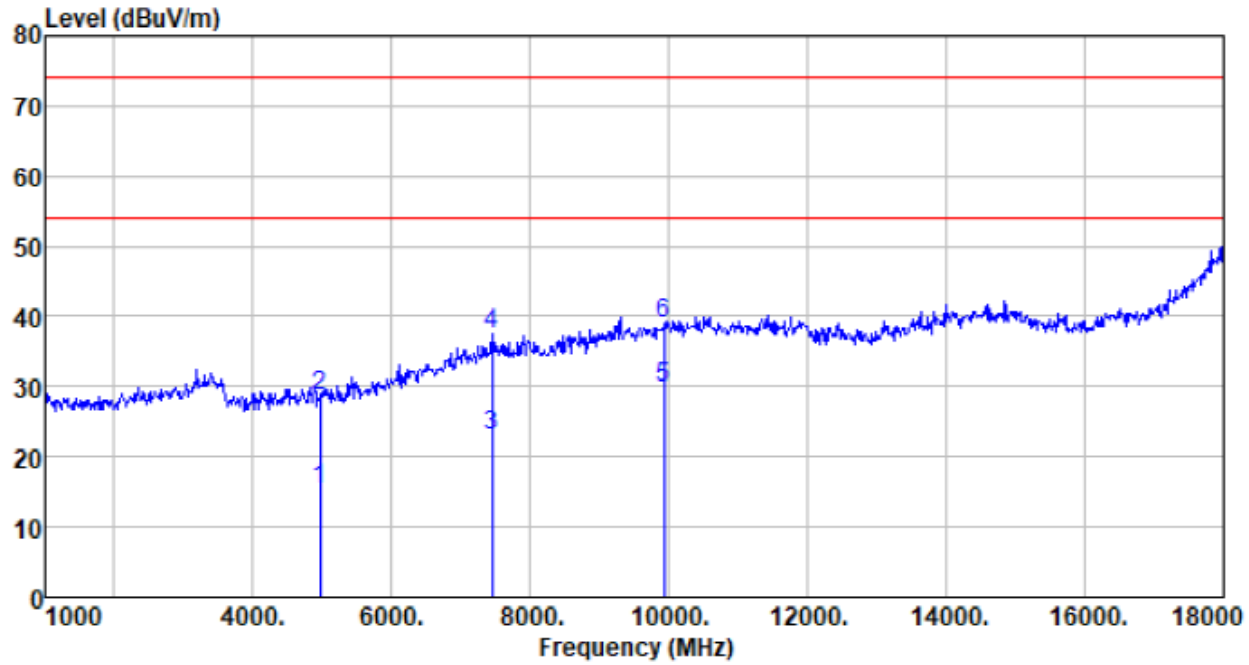
Test channel:	Highest

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
4960.000	15.93	31.44	4.79	37.78	14.38	54.00	-39.62	Average
4960.000	29.46	31.44	4.79	37.78	27.91	74.00	-46.09	Peak
7440.000	16.28	36.66	6.77	35.56	24.15	54.00	-29.85	Average
7440.000	27.58	36.66	6.77	35.56	35.45	74.00	-38.55	Peak
9920.000	19.09	38.30	8.09	35.14	30.34	54.00	-23.66	Average
9920.000	26.81	38.30	8.09	35.14	38.06	74.00	-35.94	Peak

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
4960.000	16.96	31.44	4.79	37.78	15.41	54.00	-38.59	Average
4960.000	30.19	31.44	4.79	37.78	28.64	74.00	-45.36	Peak
7440.000	15.24	36.66	6.77	35.56	23.11	54.00	-30.89	Average
7440.000	29.49	36.66	6.77	35.56	37.36	74.00	-36.64	Peak
9920.000	18.48	38.30	8.09	35.14	29.73	54.00	-24.27	Average
9920.000	27.86	38.30	8.09	35.14	39.11	74.00	-34.89	Peak

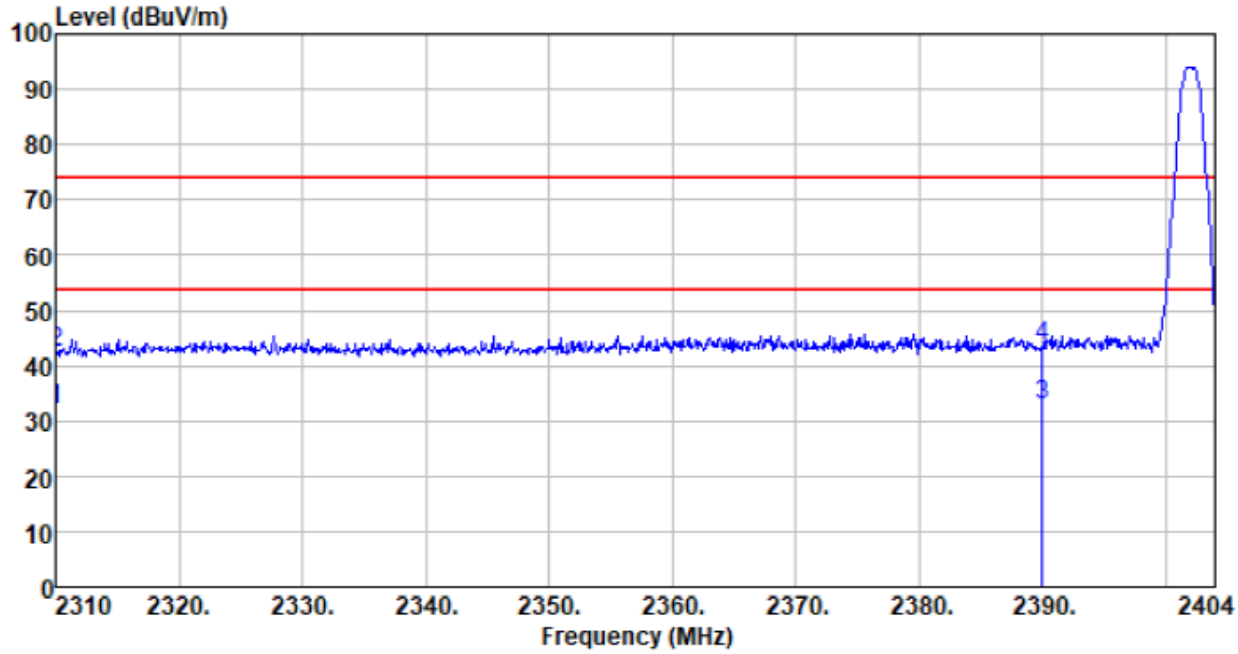
Remarks:

1. *Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
2. *The emission levels of other frequencies are very lower than the limit and not show in test report.*

■ **Unwanted Emissions in Non-restricted Frequency Bands**

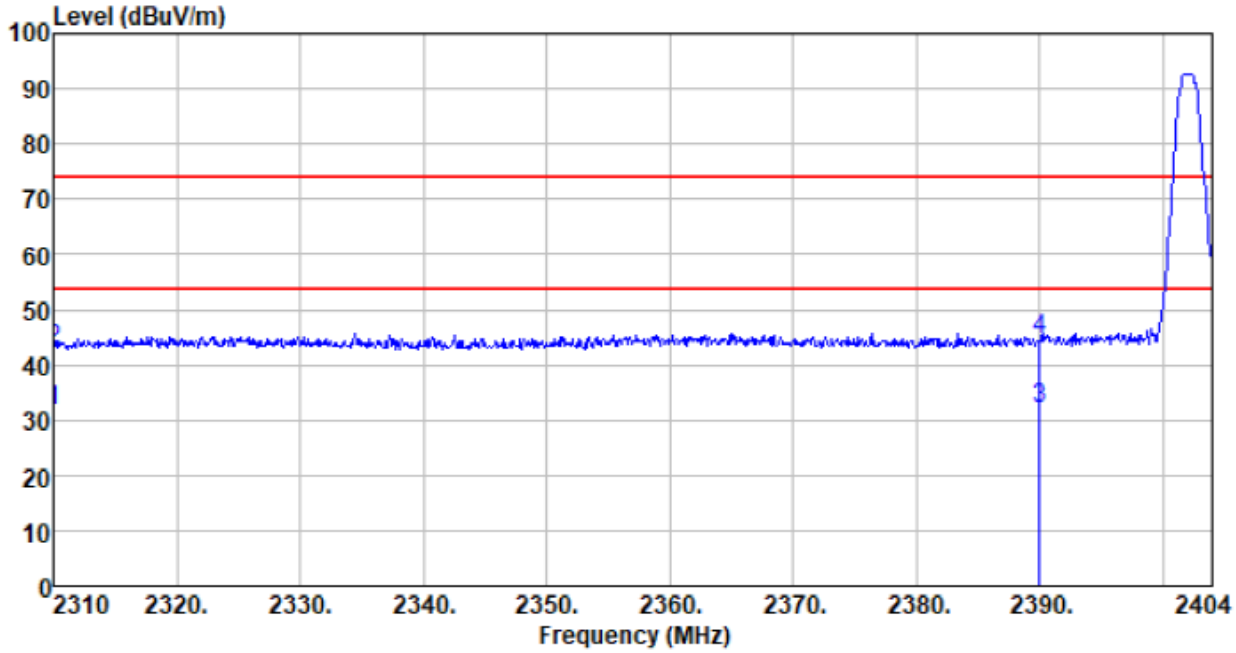
Test channel:	Lowest

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
2310.000	32.56	27.14	2.81	30.43	32.08	54.00	-21.92	Average
2310.000	42.74	27.14	2.81	30.43	42.26	74.00	-31.74	Peak
2390.000	32.81	27.37	2.91	30.24	32.85	54.00	-21.15	Average
2390.000	43.48	27.37	2.91	30.24	43.52	74.00	-30.48	Peak

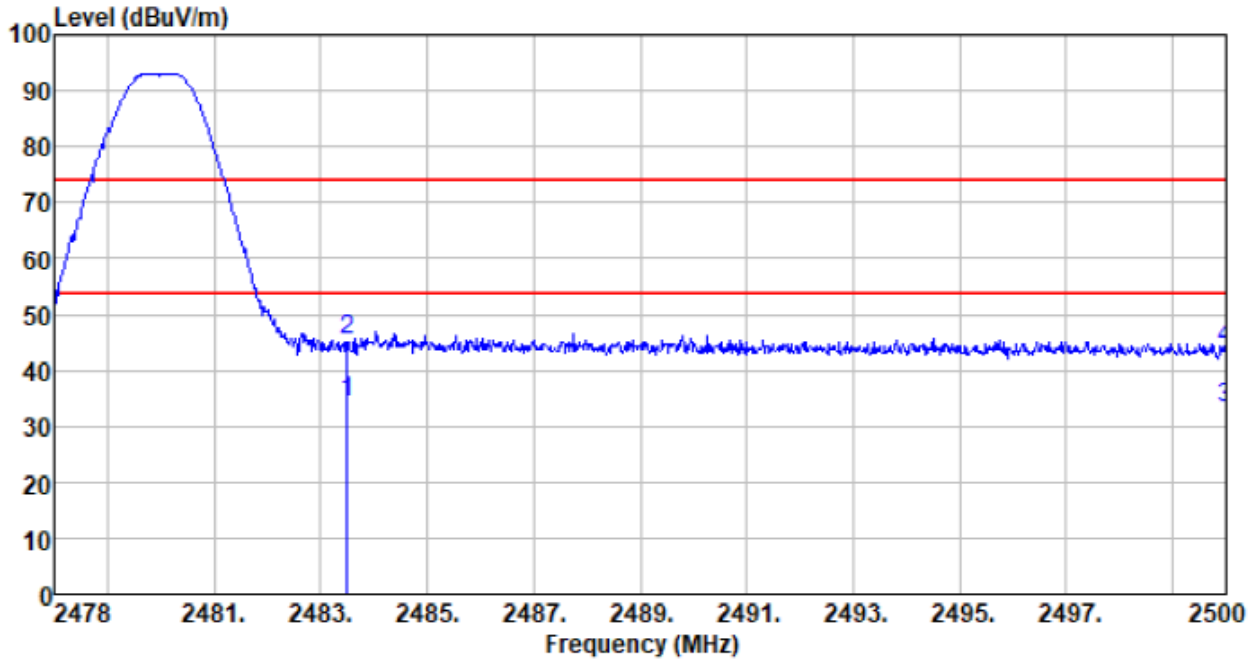
Vertical:



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
2310.000	32.06	27.14	2.81	30.43	31.58	54.00	-22.42	Average
2310.000	43.40	27.14	2.81	30.43	42.92	74.00	-31.08	Peak
2390.000	32.24	27.37	2.91	30.24	32.28	54.00	-21.72	Average
2390.000	44.77	27.37	2.91	30.24	44.81	74.00	-29.19	Peak

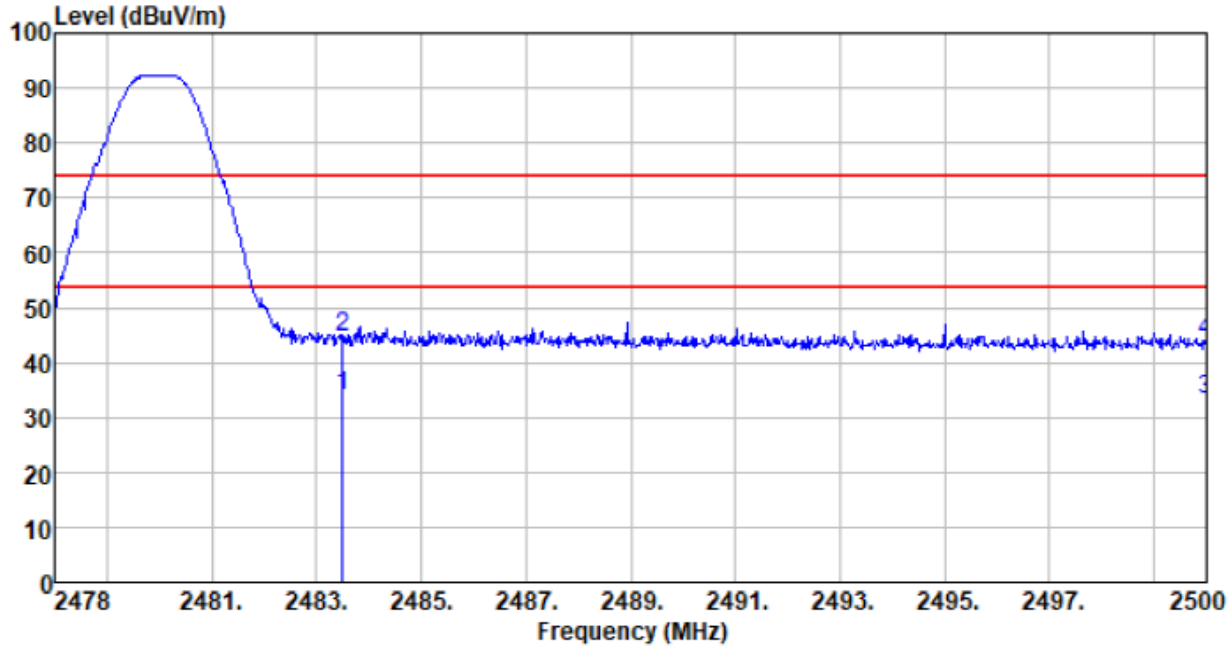
Test channel:	Highest

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
2483.500	33.66	27.66	2.99	30.12	34.19	54.00	-19.81	Average
2483.500	44.84	27.66	2.99	30.12	45.37	74.00	-28.63	Peak
2500.000	32.55	27.70	3.01	30.13	33.13	54.00	-20.87	Average
2500.000	43.31	27.70	3.01	30.13	43.89	74.00	-30.11	Peak

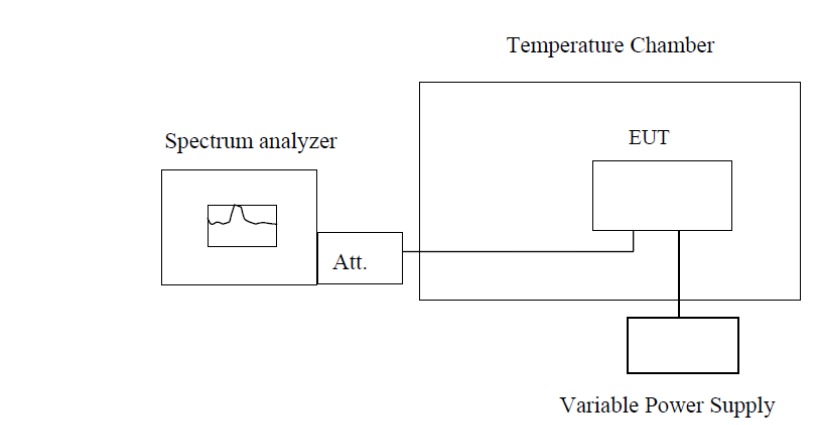
Vertical::



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
2483.500	33.47	27.66	2.99	30.12	34.00	54.00	-20.00	Average
2483.500	44.22	27.66	2.99	30.12	44.75	74.00	-29.25	Peak
2500.000	32.77	27.70	3.01	30.13	33.35	54.00	-20.65	Average
2500.000	43.49	27.70	3.01	30.13	44.07	74.00	-29.93	Peak

Remarks:
1.Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor
2.The emission levels of other frequencies are very lower than the limit and not show in test report.
3.The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.

7.6 Frequency Stability

Test Requirement:	RSS-Gen Section 6.11& Section 8.11
Test Method:	ANSI C63.10: 2013 & RSS-Gen
Limit:	Manufactures of devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.10, 2013; tested to 2.1055 for compliance to RSS-Gen requirements.
Test setup:	 **Note :** Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remark: Set the EUT transmits at un-modulation mode to test frequency stability.

Measurement data:

Frequency stability versus Temp.						
Power Supply: DC5V						
Temp. (°C)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)	Pass /Fail
-30	2402	2,402.0080	2,402.0152	2,402.0128	2,402.0104	Pass
	2440	2,440.0083	2,440.0156	2,440.0181	2,440.0107	Pass
	2480	2,480.0088	2,480.0162	2,480.0187	2,480.0112	Pass
-20	2402	2,402.0082	2,402.0154	2,402.0178	2,402.0106	Pass
	2440	2,440.0091	2,440.0164	2,440.0188	2,440.0115	Pass
	2480	2,480.0088	2,480.0163	2,480.0188	2,480.0113	Pass
-10	2402	2,402.0090	2,402.0162	2,402.0186	2,402.0114	Pass
	2440	2,440.0088	2,440.0161	2,440.0186	2,440.0113	Pass
	2480	2,480.0088	2,480.0163	2,480.0187	2,480.0113	Pass
0	2402	2,402.0082	2,402.0154	2,402.0178	2,402.0106	Pass
	2440	2,440.0083	2,440.0156	2,440.0181	2,440.0107	Pass
	2480	2,480.0081	2,480.0156	2,480.0180	2,480.0106	Pass
10	2402	2,402.0083	2,402.0155	2,402.0179	2,402.0107	Pass
	2440	2,440.0087	2,440.0160	2,440.0185	2,440.0111	Pass
	2480	2,480.0088	2,480.0163	2,480.0187	2,480.0113	Pass
20	2402	2,402.0082	2,402.0154	2,402.0178	2,402.0106	Pass
	2440	2,440.0089	2,440.0162	2,440.0187	2,440.0114	Pass
	2480	2,480.0083	2,480.0158	2,480.0183	2,480.0108	Pass
30	2402	2,402.0078	2,402.0150	2,402.0174	2,402.0102	Pass
	2440	2,440.0082	2,440.0155	2,440.0180	2,440.0107	Pass
	2480	2,480.0089	2,480.0164	2,480.0188	2,480.0114	Pass
40	2402	2,402.0087	2,402.0159	2,402.0183	2,402.0111	Pass
	2440	2,440.0074	2,440.0148	2,440.0172	2,440.0099	Pass
	2480	2,480.0076	2,480.0151	2,480.0176	2,480.0101	Pass
50	2402	2,402.0073	2,402.0145	2,402.0169	2,402.0097	Pass
	2440	2,440.0074	2,440.0148	2,440.0172	2,440.0099	Pass
	2480	2,480.0076	2,480.0151	2,480.0175	2,480.0101	Pass
Frequency stability versus Voltage						
Temperature: 25°C						
Power Supply (VDC)	Operating Frequency (MHz)	0 minute Measured Frequency (MHz)	2 minute Measured Frequency (MHz)	5 minute Measured Frequency (MHz)	10 minute Measured Frequency (MHz)	Pass /Fail
1.8	2402	2,402.0085	2,402.0157	2,402.0133	2,402.0109	Pass
	2440	2,440.0084	2,440.0157	2,440.0133	2,440.0108	Pass
	2480	2,480.0084	2,480.0158	2,480.0133	2,480.0108	Pass
5.0	2402	2,402.0088	2,402.0160	2,402.0136	2,402.0112	Pass
	2440	2,440.0087	2,440.0160	2,440.0135	2,440.0111	Pass
	2480	2,480.0089	2,480.0164	2,480.0139	2,480.0114	Pass
5.5	2402	2,402.0078	2,402.0150	2,402.0126	2,402.0102	Pass
	2440	2,440.0080	2,440.0153	2,440.0128	2,440.0104	Pass
	2480	2,480.0084	2,480.0158	2,480.0133	2,480.0108	Pass

8 Test Setup Photo

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

9 EUT Constructional Details

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

------End------