Test Report

Report No.: MTi210514019-01E1

Date of issue: May 20, 2021

Applicant: Fairkeep Products Co., LTD

Product name: VORTEX HUNTING SYSTEM

Model(s): BPDI2871983, RH01796

FCC ID: QYV-BPD

Shenzhen Microtest Co., Ltd.
http://www.mtitest.com

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TEST RESULT CERTIFICATION

Applicant's name ..... :	Fairkeep Products Co., LTD
Address ..... :	Suite 1612, Kowloon Plaza 485 Castle, Peak Road, Kowloon, Hong Kong
Manufacturer's Name ..... :	Weixian Outdoor Products Co., LTD
Address ..... :	1F, Build#2, NO#7, east street, Likou village, Hongguan, Lishui Town, Nanhai district, Fosan City, Guang Dong province, China
Product description	
Product name ..... :	VORTEX HUNTING SYSTEM
Trademark ..... :	BASS PRO
Model Name ..... :	BPDI2871983
Serial Model.....	RH01796
Standards ..... :	FCC Part 15.249
Test procedure..... :	ANSI C63.10-2013
Date of Test	
Date (s) of performance of tests .....:	May 17, 2021 ~May 20, 2021
Test Result.....:	Pass

This device described above has been tested by Shenzhen Microtest Co., Ltd. and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

Testing Engineer : Cindy Qin

(Cindy Qin)

Technical Manager : Leo Su

(Leo Su)

Authorized Signatory : Tom Xue

(Tom Xue)

1 General description

1.1 Feature of equipment under test (EUT)

Equipment:	VORTEX HUNTING SYSTEM
Trade Name:	BASS PRO
Model Name:	BPDI2871983
Serial Model:	RH01796
Model Difference:	All the models are the same circuit and RF module, except the product ITEM and model No..
Operation Frequency:	2405 - 2475MHz
Modulation Type:	GFSK
Antenna Type:	Spring antenna
Antenna Gain:	2dBi
Max. Field Strength:	87.47dBuV/m
Power Source:	DC 12V from battery
Hardware version:	V1.0
Software version:	V1.0

1.2 Operation channel list

Channel No.	Frequency (MHz)
1	2405
2	2440
3	2475

1.3 Test Frequency Channel

Channel	Frequency(MHz)
Low	2405
Middle	2440
High	2475

1.4 EUT operation mode

During testing, RF test program provided by the manufacture to control the Tx operation followed the test requirement.

1.5 Ancillary equipment list

Equipment	Model	S/N	Manufacturer
/	/	/	/

2 Summary of Test Result

Test procedures according to the technical standards:

Item	FCC Part No.	Description of Test	Result
1	FCC Part15.203	Antenna Requirement	Pass
2	FCC Part15.207	AC power line conducted emission	N/A
3	FCC Part15.249(a)	Field Strength of the Fundamental signal	Pass
5	FCC Part15.249(d)	Radiated spurious emission	Pass
4	FCC Part 15.215	20dB and 99% Bandwidth	Pass

3 Test Facilities and Accreditations

3.1 Test laboratory

Test Laboratory	Shenzhen Microtest Co., Ltd
Location	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao' an District, Shenzhen, Guangdong, China.
FCC Registration No.	448573

3.2 Environmental conditions

Temperature:	15ºC~35ºC
Humidity	20%~75%
Atmospheric pressure	98kPa~101kPa

3.3 Measurement uncertainty

The reported uncertainty of measurement y ± U，where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2，providing a level of confidence of approximately 95 %

RF frequency	1 x 10-7
RF power, conducted	± 1 dB
Conducted emission(150kHz~30MHz)	± 2.5 dB
Radiated emission(30MHz~1GHz)	± 4.2 dB
Radiated emission (above 1GHz)	± 4.3 dB
Temperature	±1 degree
Humidity	± 5 %

3.4 Test software

Software Name	Manufacturer	Model	Version
Bluetooth and WiFi Test System	Shenzhen JS tonscend co,.ltd	JS1120-3	2.5.77.0418

4 List of test equipment

Equipment No.	Equipment Name	Manufacturer	Model	Serial No.	Calibration date	Due date
MTI-E043	EMI Test Receiver	Rohde&schwarz	ESCI7	101166	2020/06/04	2021/06/03
MTI-E044	TRILOG Broadband Antenna	schwarabeck	VULB 9163	9163-1338	2020/06/05	2021/06/04
MTI-E047	Amplifier	Hewlett-Packard	8447F	3113A06150	2020/06/04	2021/06/03
MTI-E089	ESG Vector Signal Generator	Agilent	N5182A	MY49060455	2020/06/03	2021/06/02
MTI-E058	ESG Series Analog Ssignal Generator	Agilent	E4421B	GB40051240	2020/07/03	2021/07/04
MTI-E062	PXA Signal Analyzer	Agilent	N9030A	MY51350296	2020/06/04	2021/06/03
MTI-E066	MXA Signal Analyzer	Agilent	N9020A	MY50143483	2020/06/04	2021/06/03
MTI-E078	Synthesized Sweeper	Agilent	83752A	3610A01957	2020/06/04	2021/06/03
MTI-E079	DC Power Supply	Agilent	E3632A	MY40027695	2020/06/04	2021/06/03
MTI-E045	Double Ridged Broadband Horn Antenna	schwarabeck	BBHA 9120 D	9120D-2278	2020/06/05	2021/06/04
MTI-E021	EMI Test Receiver	Rohde&schwarz	ESCS30	100210	2020/06/04	2021/06/03
MTI-E022	Pulse Limiter	Schwarzbeck	VSTD 9561-F	00679	2020/06/03	2021/06/02
MTI-E023	Artificial mains network	Schwarzbeck	NSLK 8127	NSLK 8127 #841	2020/06/04	2021/06/03
MTI-E046	Active Loop Antenna	Schwarzbeck	FMZB 1519 B	00044	2020/06/05	2021/06/04
MTI-E048	Amplifier	Agilent	8449B	3008A02400	2020/07/03	2021/07/04
MTI-E072	Thermometer Clock Humidity Monitor	-	HTC-1	/	2020/06/07	2021/06/06

Note: the calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

5 Test Result

5.1 Antenna requirement

5.1.1 Standard requirement

FCC PART 15.203;

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 shall be considered sufficient to comply with the provisions of this section. 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.

This requirement does not apply to carrier current devices or to devices operated under the provisions of §§15.211, 15.213, 15.217, 15.219, 15.221, or §15.236. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

5.1.2 EUT Antenna

The antenna is a Spring antenna, which was permanently affixed to the device and un-replaced, complies with 15.203. In addition, the maximum antenna gain is 2dBi.

5.2 AC power line conducted emission

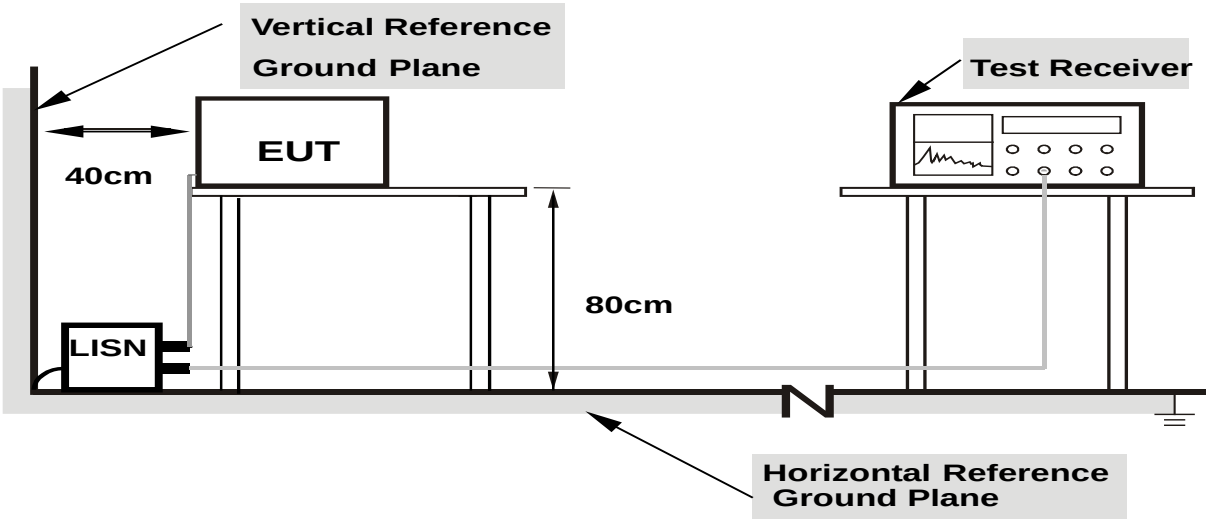
5.2.1 Limits

FCC §15.207;

For an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50μH/50Ω line impedance stabilization network (LISN).

Frequency (MHz)	Quasi-peak	Average
0.15 -0.5	66 - 56 note2	56 - 46 note2
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00
Note1: The tighter limit applies at the band edges. Note2: The limit of " * " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.		

5.2.2 Test setup



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

5.2.3 Test procedure

a. EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

b. The following table is the setting of the receiver

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

c. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment's powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.

d. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

e. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

f. LISN at least 80 cm from nearest part of EUT chassis.

For the actual test configuration, please refer to the related Item –EUT Test Photos.

5.2.4 Test results

Note: The device is a DC power supply and does not apply to conducted emissions.

5.3 Radiated spurious emission

5.3.1 Limit

FCC PART 15.249(a);

Except as provided in paragraph (a) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Frequency (MHz)	Field Strength of Fundamental (mV/m)	Field Strength of Harmonics (μV/m)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209, whichever is the lesser attenuation.

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
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

5.3.2 Test method

a) The EUT is placed on a turntable, which is 0.8m above ground plane for test frequency range blew 1GHz, and 1.5m above ground plane for test frequency range above 1GHz.

b) EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.

c) Use the following spectrum analyser settings:

   1) Span = wide enough to fully capture the emission being measured

   2) RBW = 1 MHz for f ≥ 1GHz, 100 kHz for f < 1 GHz

   3) VBW ≥ RBW, Sweep = auto

   4) Detector function = peak

   5) Trace = max hold

d) Follow the guidelines in ANSI C63.4-2014 with respect to maximizing the emission by rotating the EUT, adjusting the measurement antenna height and polarization, etc. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, submit this data. Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

e) The peak level, once corrected, must comply with the limit specified in Section 15.209. Set the RBW = 1MHz, VBW = 10Hz, Detector = PK for AV value, while maintaining all of the other instrument settings.

5.3.3 Test Result

Below 30MHz

EUT：	VORTEX HUNTING SYSTEM	Model name. ：	BPDI2871983
Pressure：	1010 hPa	Test voltage：	DC 12V from battery
Test mode：	TX	Polarization :	--

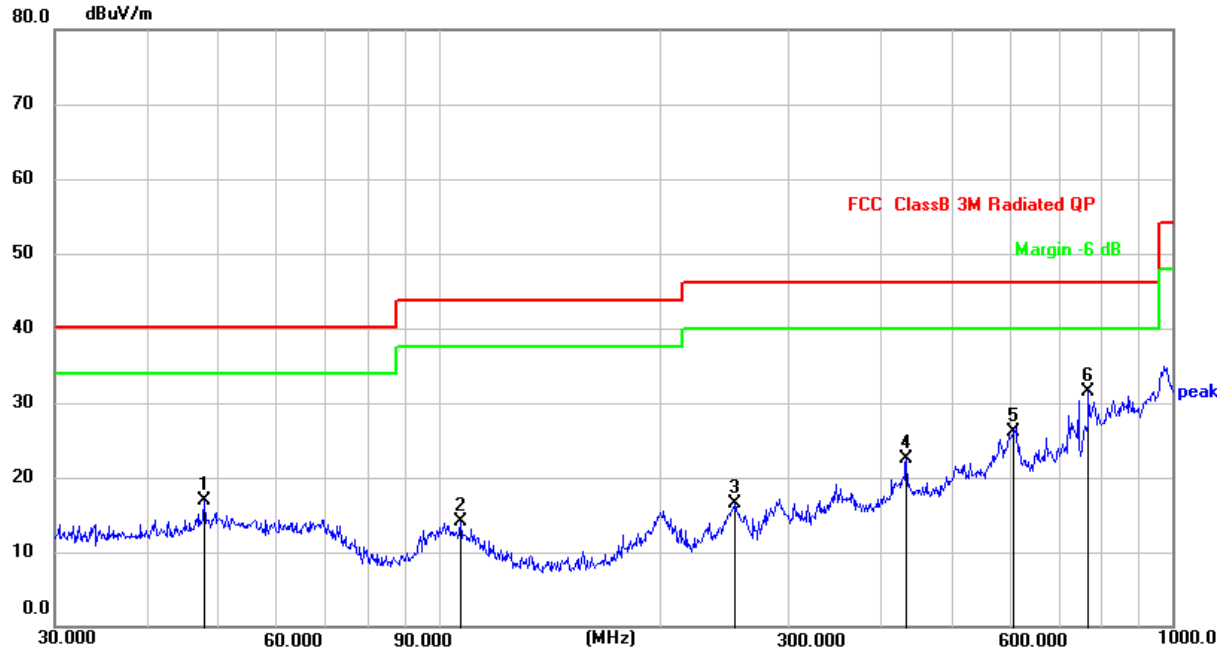
Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
--	--	--	--	Pass
--	--	--	--	Pass

Note:

1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.
2. Distance extrapolation factor =40 log (specific distance/test distance)(dB);
3. Limit line = specific limits (dBuV) + distance extrapolation factor.

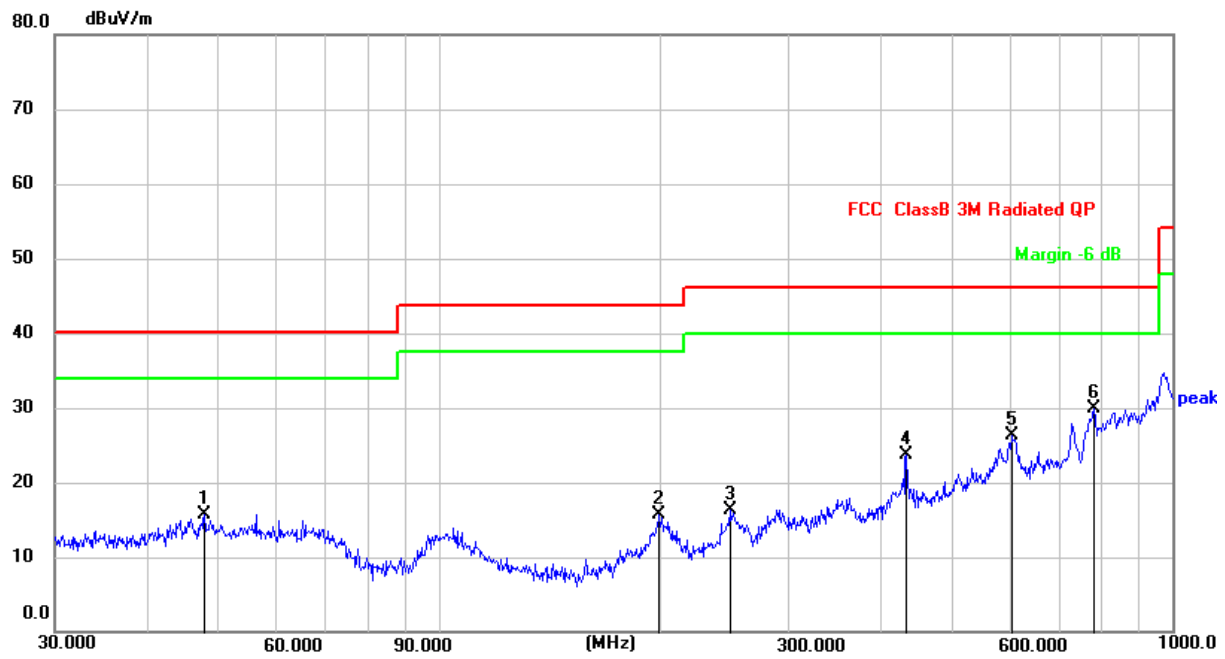
30MHz-1GHz

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2405MHz



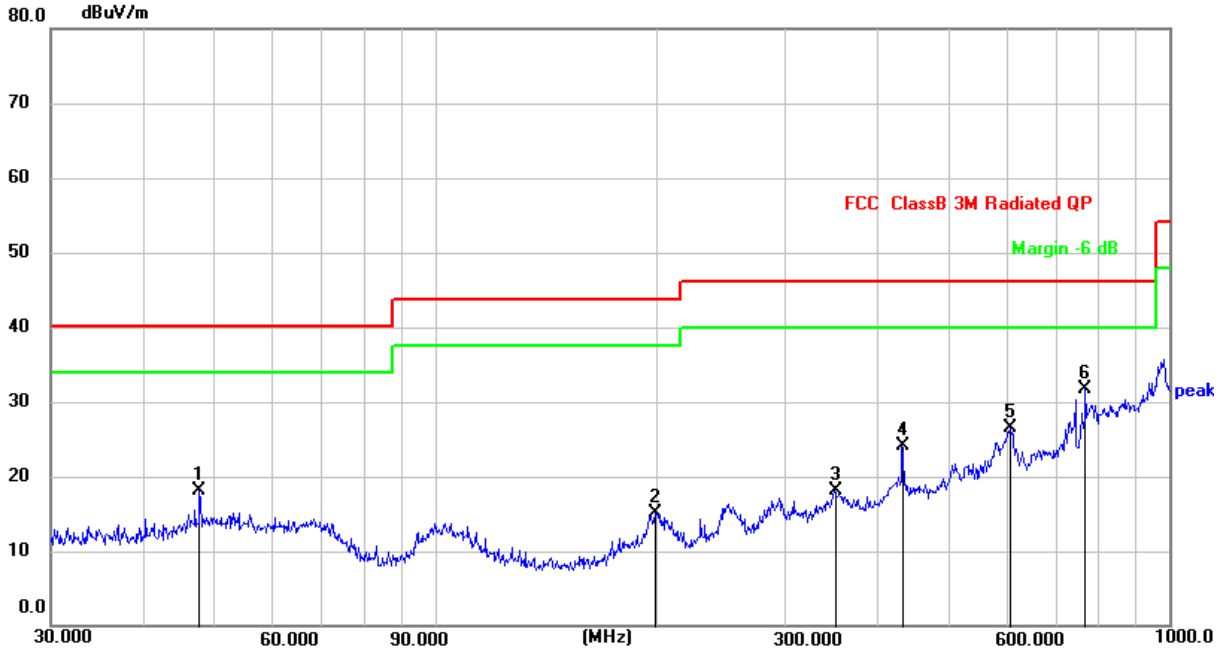
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	34.09	-17.10	16.99	40.00	-23.01	QP
2	107.1337	28.81	-14.66	14.15	43.50	-29.35	QP
3	253.8366	27.42	-10.95	16.47	46.00	-29.53	QP
4	434.0650	28.10	-5.61	22.49	46.00	-23.51	QP
5	607.7867	30.19	-4.10	26.09	46.00	-19.91	QP
6 *	768.7481	33.36	-1.88	31.48	46.00	-14.52	QP

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2405MHz



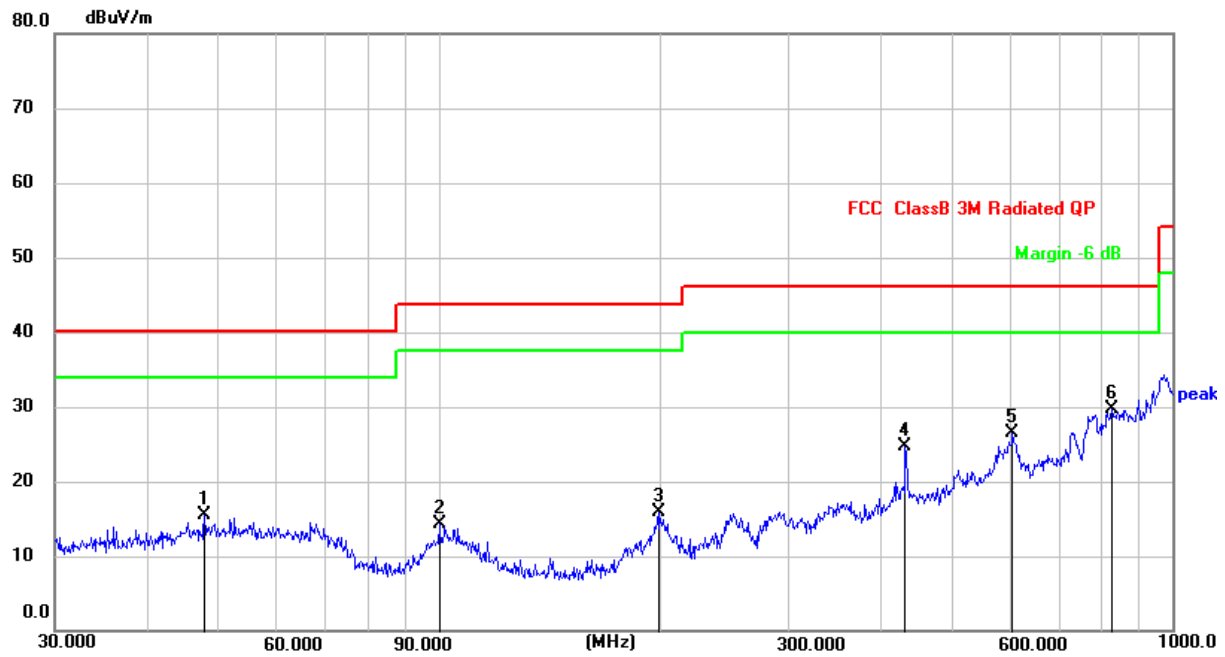
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	27.73	-12.00	15.73	40.00	-24.27	QP
2	199.9855	25.72	-10.07	15.65	43.50	-27.85	QP
3	249.4250	25.56	-9.33	16.23	46.00	-29.77	QP
4	434.0650	30.13	-6.45	23.68	46.00	-22.32	QP
5	603.5391	26.36	-0.12	26.24	46.00	-19.76	QP
6 *	782.3453	26.08	3.80	29.88	46.00	-16.12	QP

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



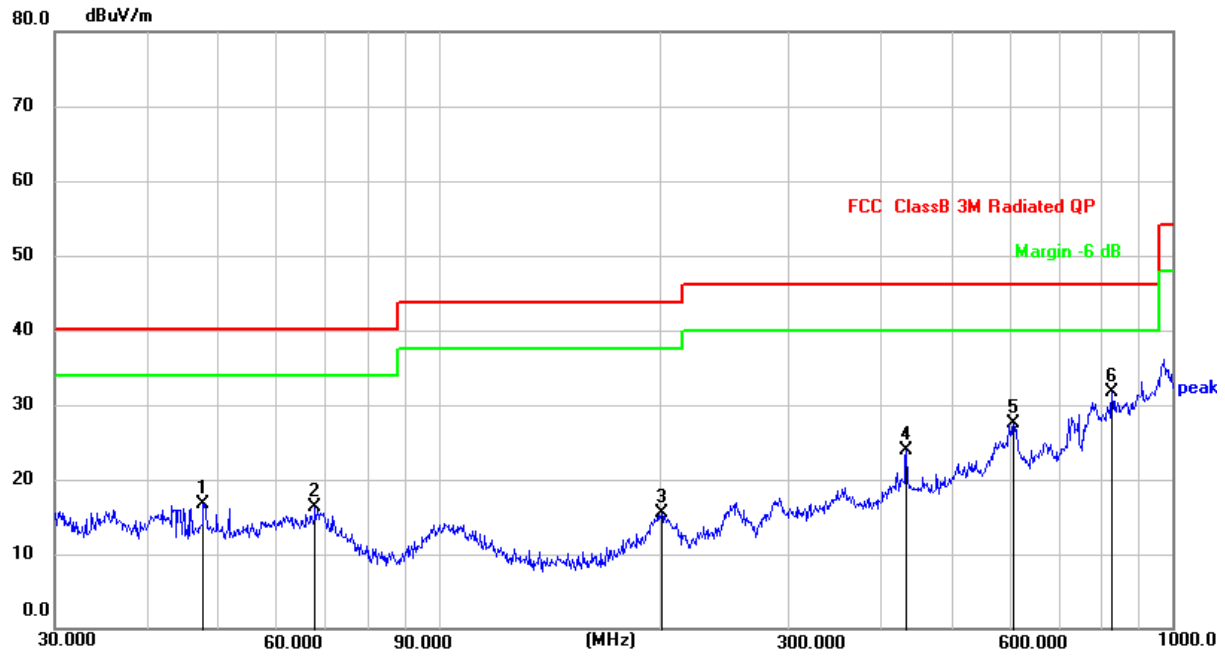
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.8260	35.08	-17.05	18.03	40.00	-21.97	QP
2	199.2855	28.01	-12.96	15.05	43.50	-28.45	QP
3	350.4768	26.41	-8.29	18.12	46.00	-27.88	QP
4	432.5457	29.47	-5.29	24.18	46.00	-21.82	QP
5	607.7867	30.69	-4.10	26.59	46.00	-19.41	QP
6 *	768.7481	33.67	-1.88	31.79	46.00	-14.21	QP

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



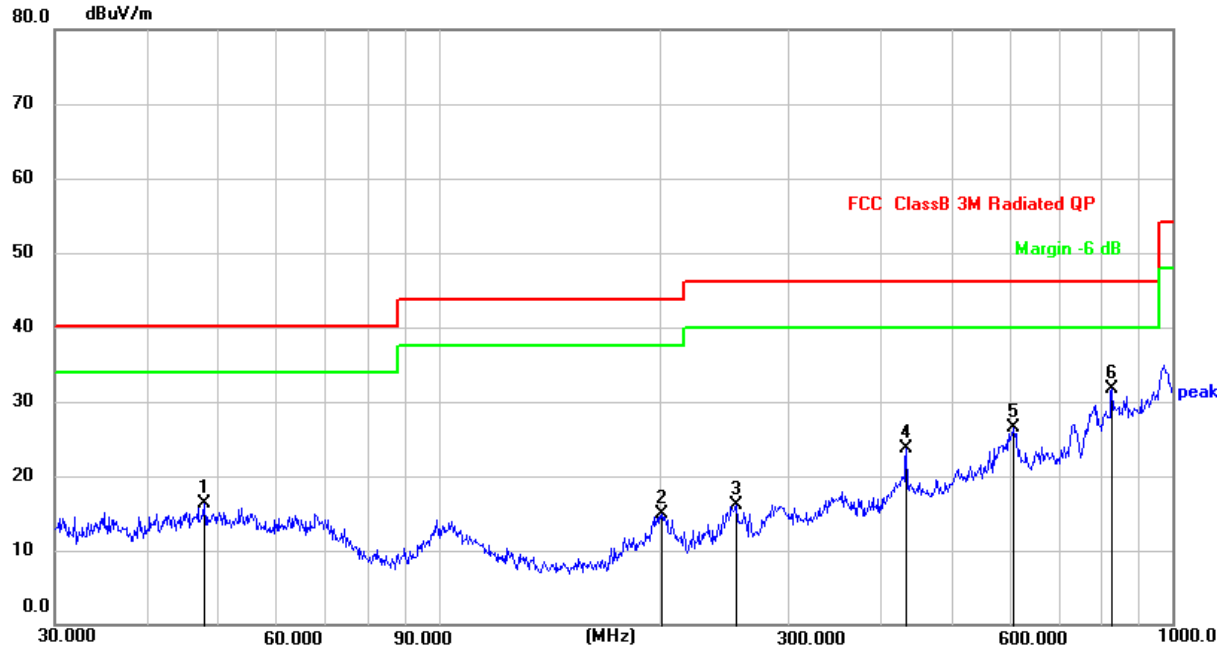
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	27.56	-12.00	15.56	40.00	-24.44	QP
2	100.2285	26.86	-12.59	14.27	43.50	-29.23	QP
3	199.2855	26.12	-10.31	15.81	43.50	-27.69	QP
4	432.5456	30.97	-6.27	24.70	46.00	-21.30	QP
5	605.6592	26.47	-0.01	26.46	46.00	-19.54	QP
6 *	827.4934	25.74	3.97	29.71	46.00	-16.29	QP

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.8260	33.74	-17.05	16.69	40.00	-23.31	QP
2	67.9128	31.56	-15.23	16.33	40.00	-23.67	QP
3	201.3930	28.38	-12.81	15.57	43.50	-27.93	QP
4	434.0649	29.44	-5.61	23.83	46.00	-22.17	QP
5	607.7866	31.53	-4.10	27.43	46.00	-18.57	QP
6 *	827.4932	31.86	-0.18	31.68	46.00	-14.32	QP

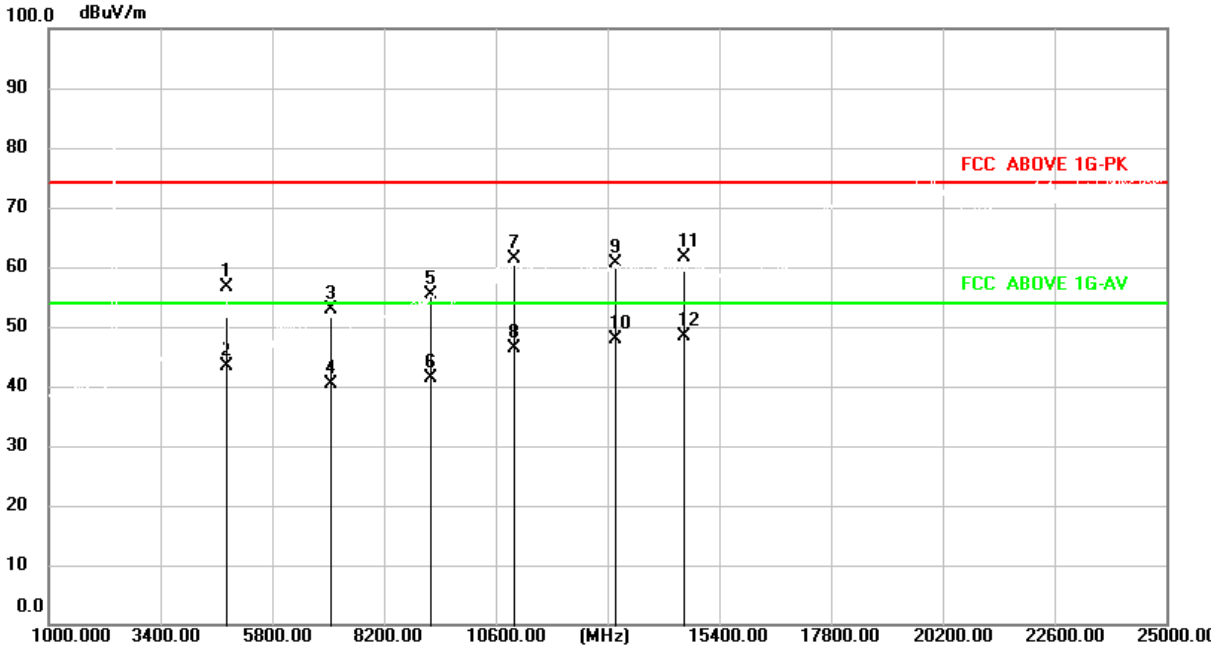
EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	47.9940	28.35	-12.00	16.35	40.00	-23.65	QP
2	201.3930	25.33	-10.37	14.96	43.50	-28.54	QP
3	254.7283	25.84	-9.73	16.11	46.00	-29.89	QP
4	434.0650	30.21	-6.45	23.76	46.00	-22.24	QP
5	607.7867	26.33	0.11	26.44	46.00	-19.56	QP
6 *	827.4934	27.75	3.97	31.72	46.00	-14.28	QP

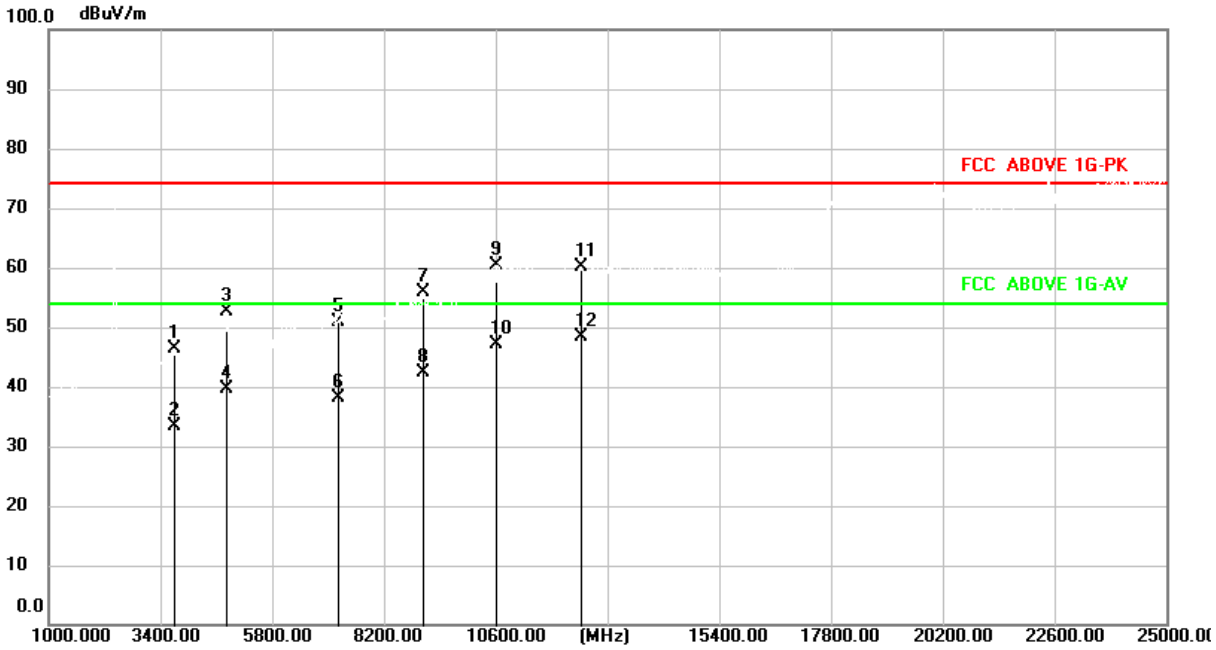
1GHz-26.5GHz:

EUT：	VORTEX HUNTING SYSTEM	Model Name. ：	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode ：	TX-2405MHz



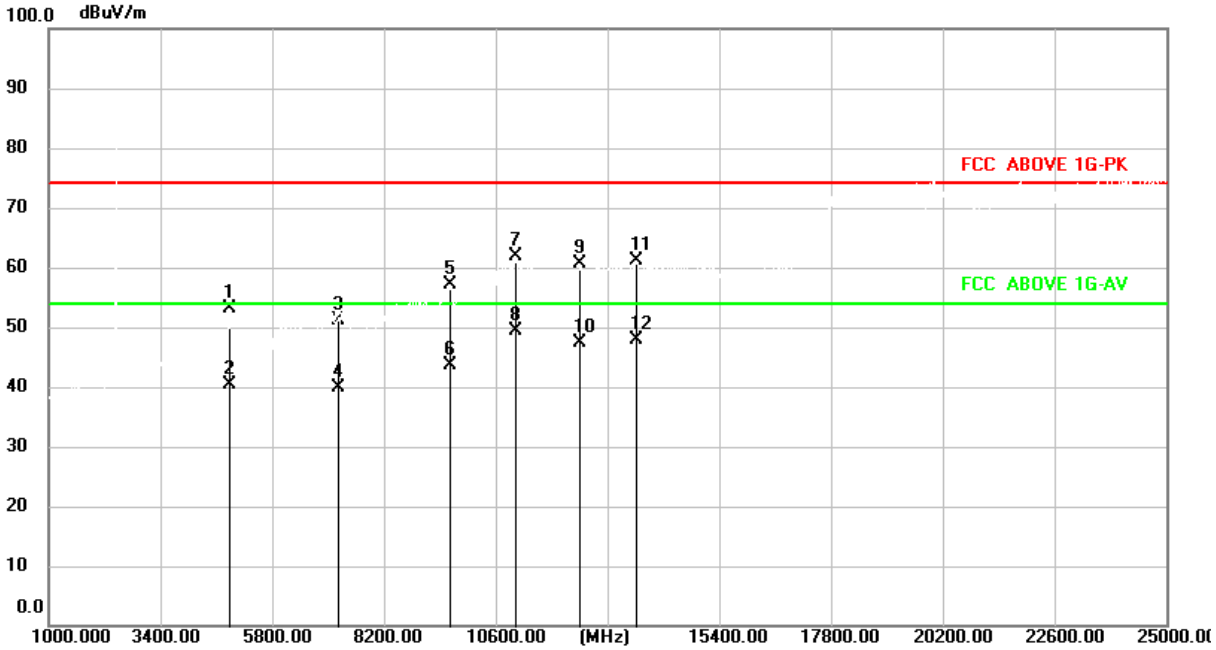
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4810.000	52.74	3.97	56.71	74.00	-17.29	peak
2	4810.000	39.53	3.97	43.50	54.00	-10.50	AVG
3	7048.000	43.21	9.58	52.79	74.00	-21.21	peak
4	7048.000	30.84	9.58	40.42	54.00	-13.58	AVG
5	9208.000	42.06	13.32	55.38	74.00	-18.62	peak
6	9208.000	28.03	13.32	41.35	54.00	-12.65	AVG
7	11008.000	41.67	19.82	61.49	74.00	-12.51	peak
8	11008.000	26.46	19.82	46.28	54.00	-7.72	AVG
9	13168.000	42.60	17.98	60.58	74.00	-13.42	peak
10	13168.000	29.92	17.98	47.90	54.00	-6.10	AVG
11	14656.000	43.09	18.54	61.63	74.00	-12.37	peak
12 *	14656.000	29.82	18.54	48.36	54.00	-5.64	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2405MHz



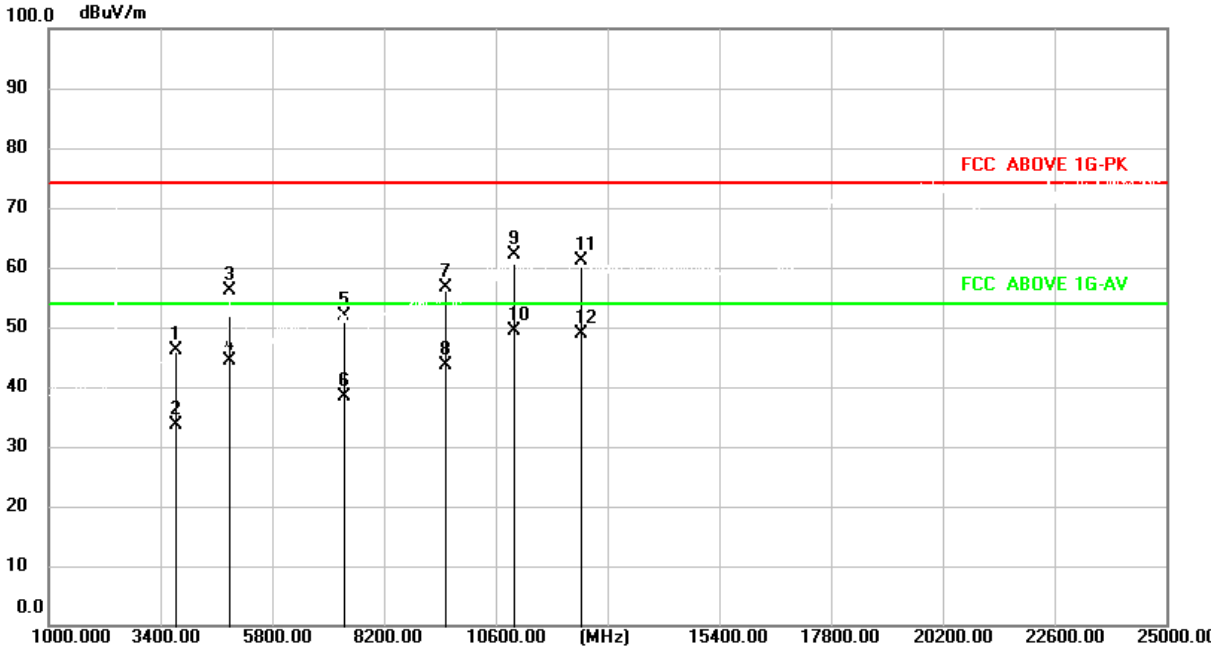
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3688.000	44.24	2.19	46.43	74.00	-27.57	peak
2	3688.000	31.31	2.19	33.50	54.00	-20.50	AVG
3	4810.000	48.63	3.97	52.60	74.00	-21.40	peak
4	4810.000	35.73	3.97	39.70	54.00	-14.30	AVG
5	7215.000	41.42	9.35	50.77	74.00	-23.23	peak
6	7215.000	28.90	9.35	38.25	54.00	-15.75	AVG
7	9040.000	43.09	12.69	55.78	74.00	-18.22	peak
8	9040.000	29.81	12.69	42.50	54.00	-11.50	AVG
9	10624.000	42.69	17.79	60.48	74.00	-13.52	peak
10	10624.000	29.41	17.79	47.20	54.00	-6.80	AVG
11	12424.000	42.94	17.20	60.14	74.00	-13.86	peak
12 *	12424.000	31.19	17.20	48.39	54.00	-5.61	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



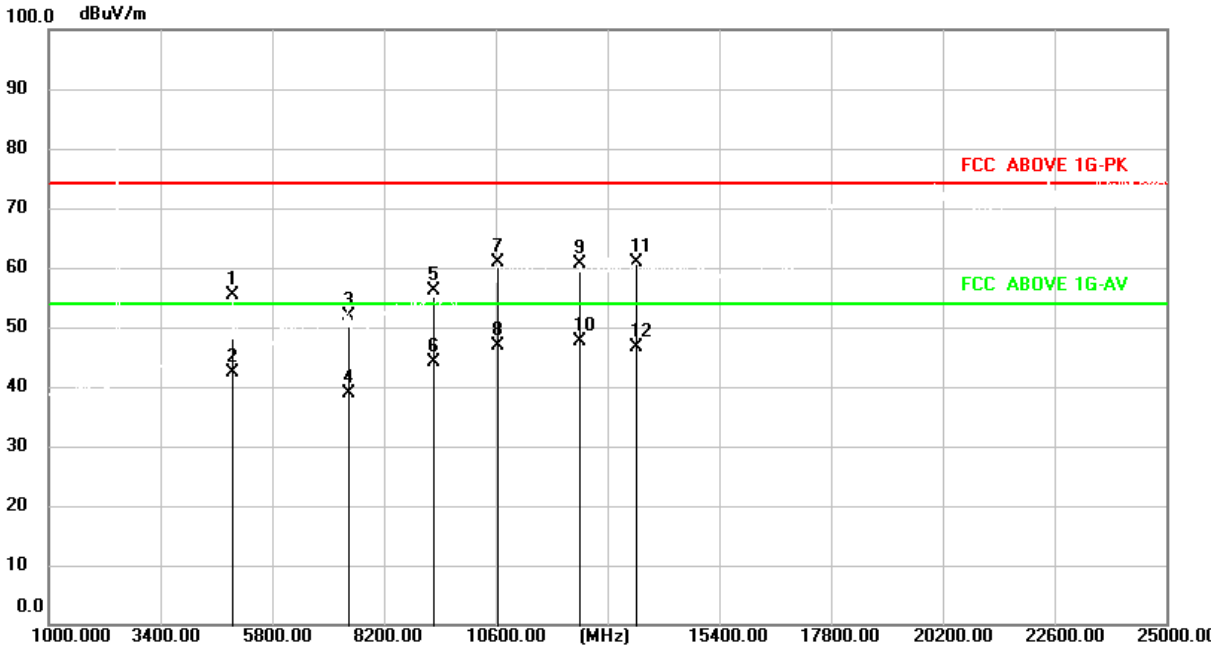
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4880.000	48.39	4.69	53.08	74.00	-20.92	peak
2	4880.000	35.71	4.69	40.40	54.00	-13.60	AVG
3	7212.000	41.67	9.35	51.02	74.00	-22.98	peak
4	7212.000	30.45	9.35	39.80	54.00	-14.20	AVG
5	9616.000	42.39	14.66	57.05	74.00	-16.95	peak
6	9616.000	29.02	14.66	43.68	54.00	-10.32	AVG
7	11032.000	42.01	19.80	61.81	74.00	-12.19	peak
8 *	11032.000	29.54	19.80	49.34	54.00	-4.66	AVG
9	12400.000	43.32	17.22	60.54	74.00	-13.46	peak
10	12400.000	30.13	17.22	47.35	54.00	-6.65	AVG
11	13624.000	42.71	18.40	61.11	74.00	-12.89	peak
12	13624.000	29.40	18.40	47.80	54.00	-6.20	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



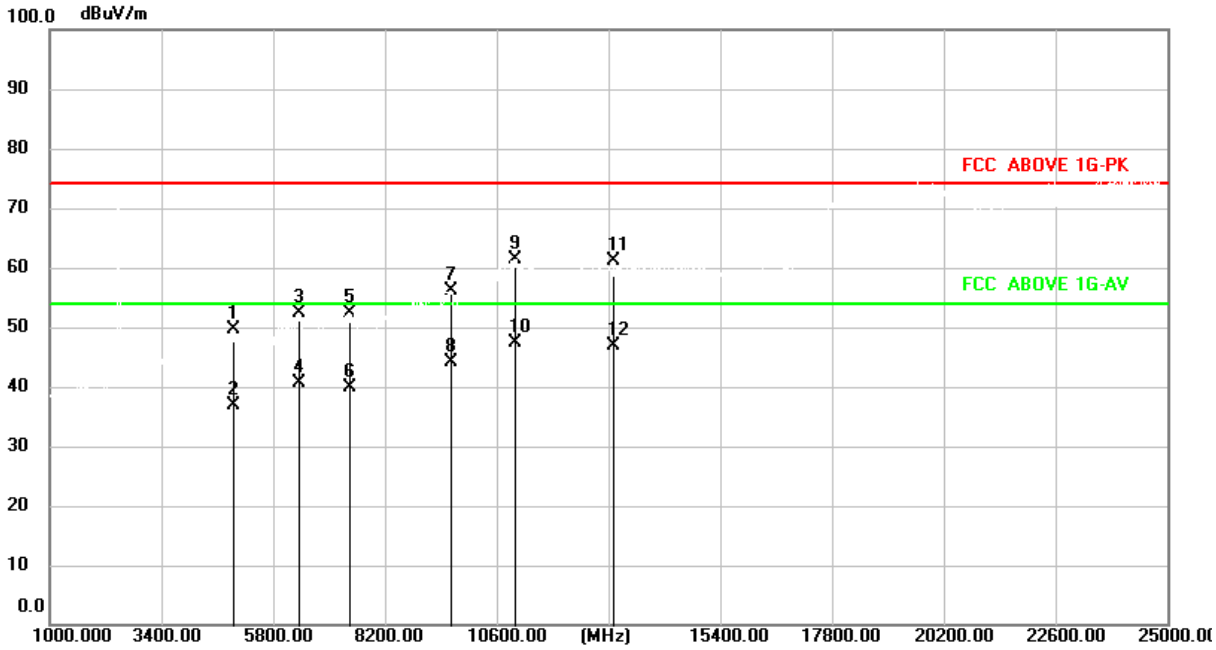
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	3736.000	43.96	2.22	46.18	74.00	-27.82	peak
2	3736.000	31.38	2.22	33.60	54.00	-20.40	AVG
3	4880.000	51.35	4.69	56.04	74.00	-17.96	peak
4	4880.000	39.71	4.69	44.40	54.00	-9.60	AVG
5	7320.000	42.67	9.20	51.87	74.00	-22.13	peak
6	7320.000	29.30	9.20	38.50	54.00	-15.50	AVG
7	9520.000	42.24	14.46	56.70	74.00	-17.30	peak
8	9520.000	29.14	14.46	43.60	54.00	-10.40	AVG
9	11008.000	42.24	19.82	62.06	74.00	-11.94	peak
10 *	11008.000	29.57	19.82	49.39	54.00	-4.61	AVG
11	12448.000	43.88	17.19	61.07	74.00	-12.93	peak
12	12448.000	31.61	17.19	48.80	54.00	-5.20	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Nam:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4950.000	49.89	5.49	55.38	74.00	-18.62	peak
2	4950.000	37.01	5.49	42.50	54.00	-11.50	AVG
3	7425.000	42.72	9.06	51.78	74.00	-22.22	peak
4	7425.000	29.74	9.06	38.80	54.00	-15.20	AVG
5	9280.000	42.42	13.59	56.01	74.00	-17.99	peak
6	9280.000	30.66	13.59	44.25	54.00	-9.75	AVG
7	10648.000	43.00	17.92	60.92	74.00	-13.08	peak
8	10648.000	28.88	17.92	46.80	54.00	-7.20	AVG
9	12400.000	43.35	17.22	60.57	74.00	-13.43	peak
10 *	12400.000	30.43	17.22	47.65	54.00	-6.35	AVG
11	13624.000	42.51	18.40	60.91	74.00	-13.09	peak
12	13624.000	28.30	18.40	46.70	54.00	-7.30	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz

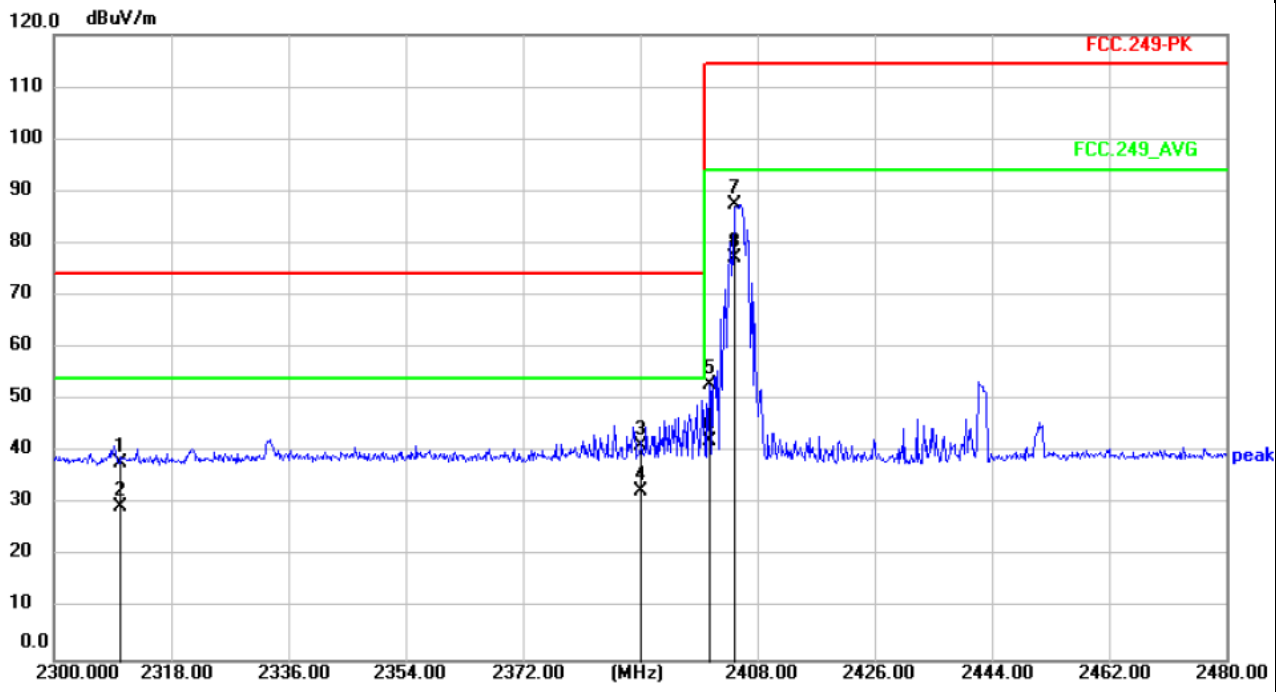


No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	4950.000	44.19	5.49	49.68	74.00	-24.32	peak
2	4950.000	31.31	5.49	36.80	54.00	-17.20	AVG
3	6352.000	44.53	7.86	52.39	74.00	-21.61	peak
4	6352.000	32.74	7.86	40.60	54.00	-13.40	AVG
5	7425.000	43.21	9.06	52.27	74.00	-21.73	peak
6	7425.000	30.74	9.06	39.80	54.00	-14.20	AVG
7	9616.000	41.37	14.66	56.03	74.00	-17.97	peak
8	9616.000	29.59	14.66	44.25	54.00	-9.75	AVG
9	11008.000	41.51	19.82	61.33	74.00	-12.67	peak
10 *	11008.000	27.58	19.82	47.40	54.00	-6.60	AVG
11	13120.000	43.08	17.94	61.02	74.00	-12.98	peak
12	13120.000	28.96	17.94	46.90	54.00	-7.10	AVG

5.3.4 Band edge-radiated

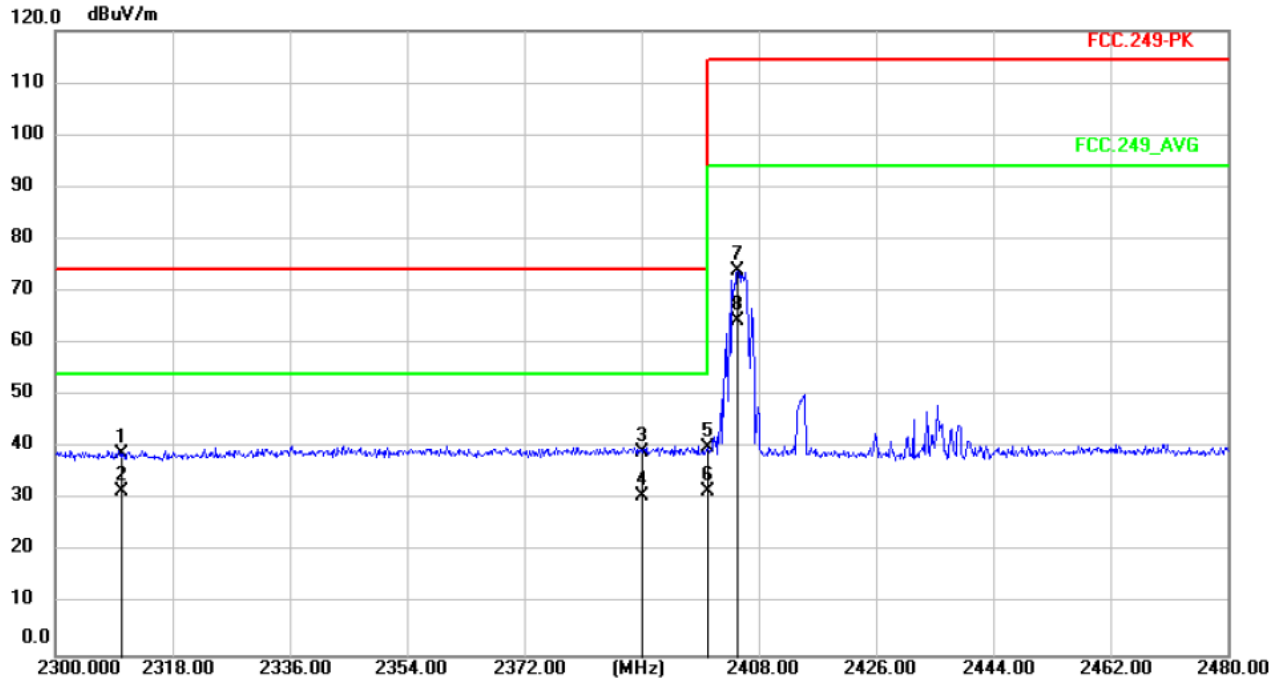
All the modulation modes have been tested, and the worst result was report as below:

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2405MHz



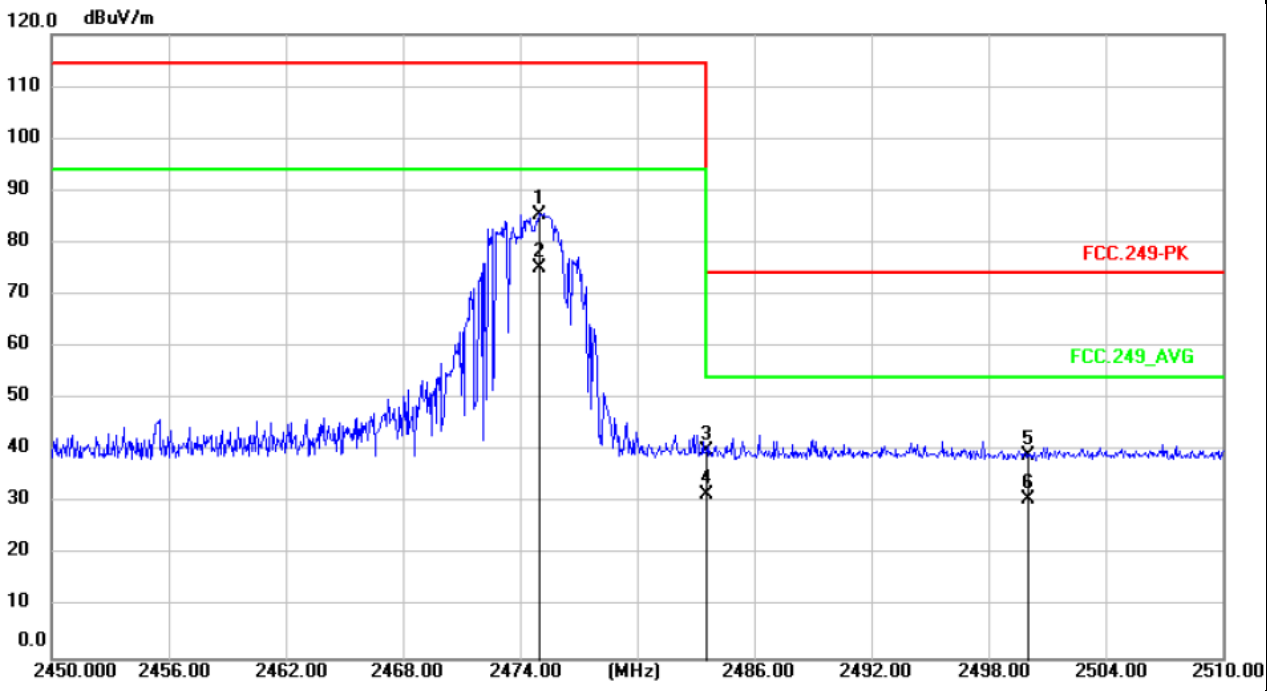
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.000	41.59	-3.61	37.98	74.00	-36.02	peak
2	2310.000	33.21	-3.61	29.60	54.00	-24.40	AVG
3	2390.000	44.22	-2.93	41.29	74.00	-32.71	peak
4	2390.000	35.43	-2.93	32.50	54.00	-21.50	AVG
5	2400.000	55.83	-2.84	52.99	114.00	-61.01	peak
6	2400.000	44.97	-2.84	42.13	94.00	-51.87	AVG
7	2404.480	90.32	-2.85	87.47	114.00	-26.53	peak
8 *	2404.480	80.09	-2.85	77.24	94.00	-16.76	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2405MHz



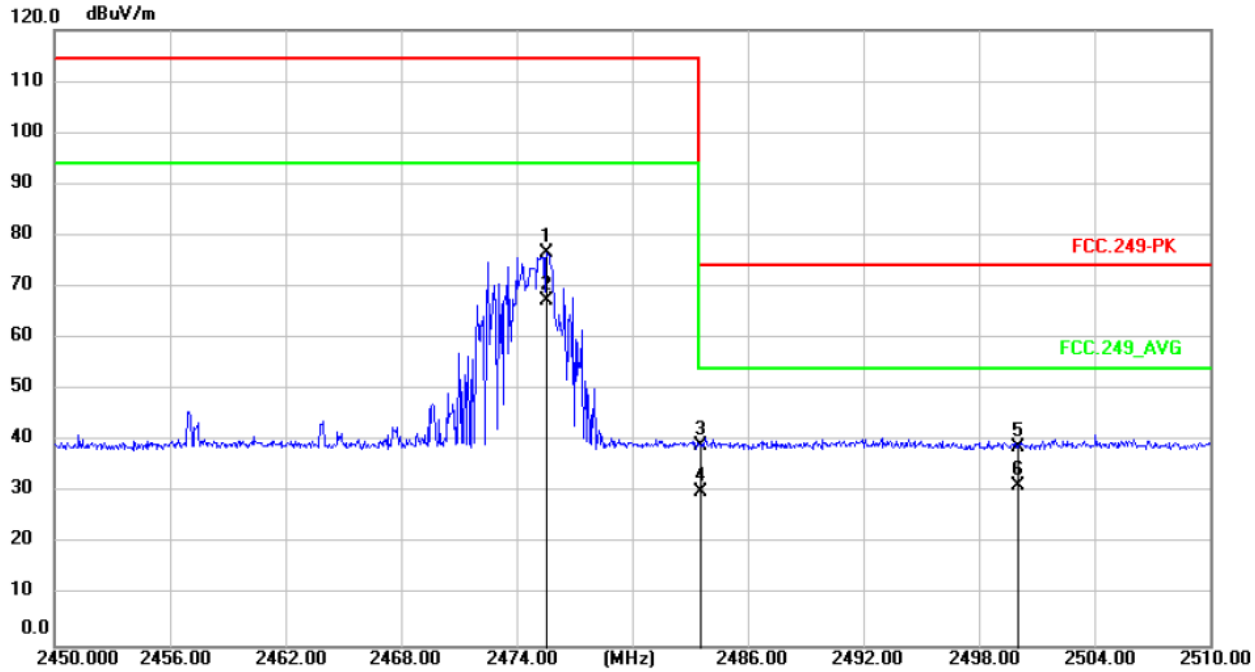
No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2310.000	42.51	-3.61	38.90	74.00	-35.10	peak
2	2310.000	35.15	-3.61	31.54	54.00	-22.46	AVG
3	2390.000	42.20	-2.93	39.27	74.00	-34.73	peak
4	2390.000	33.53	-2.93	30.60	54.00	-23.40	AVG
5	2400.000	42.84	-2.84	40.00	74.00	-34.00	peak
6 *	2400.000	34.64	-2.84	31.80	54.00	-22.20	AVG
7	2404.760	76.67	-2.85	73.82	114.00	-40.18	peak
8	2404.760	67.06	-2.85	64.21	94.00	-29.79	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2475.000	88.19	-2.91	85.28	114.00	-28.72	peak
2 *	2475.000	78.12	-2.91	75.21	94.00	-18.79	AVG
3	2483.500	43.10	-2.93	40.17	74.00	-33.83	peak
4	2483.500	34.73	-2.93	31.80	54.00	-22.20	AVG
5	2500.000	42.18	-2.94	39.24	74.00	-34.76	peak
6	2500.000	33.54	-2.94	30.60	54.00	-23.40	AVG

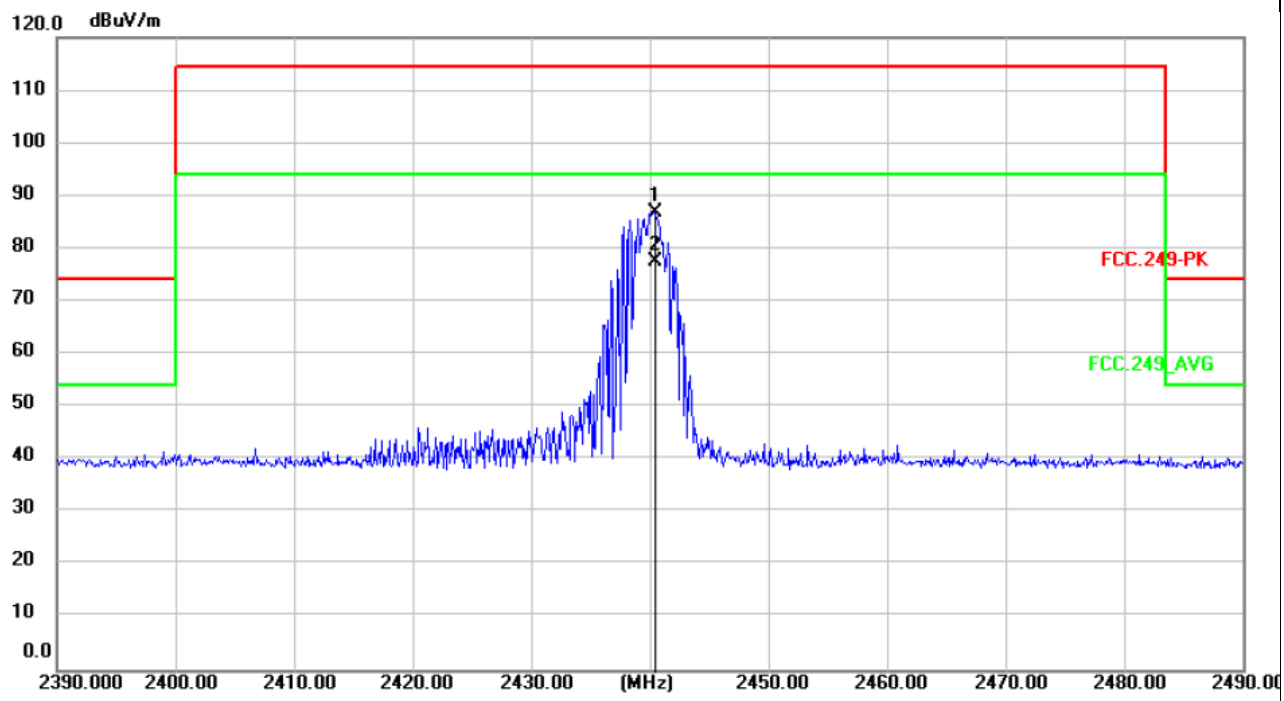
EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2475MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2475.560	79.52	-2.91	76.61	114.00	-37.39	peak
2	2475.560	70.16	-2.91	67.25	94.00	-26.75	AVG
3	2483.500	42.22	-2.93	39.29	74.00	-34.71	peak
4	2483.500	33.17	-2.93	30.24	54.00	-23.76	AVG
5	2500.000	41.73	-2.94	38.79	74.00	-35.21	peak
6 *	2500.000	34.34	-2.94	31.40	54.00	-22.60	AVG

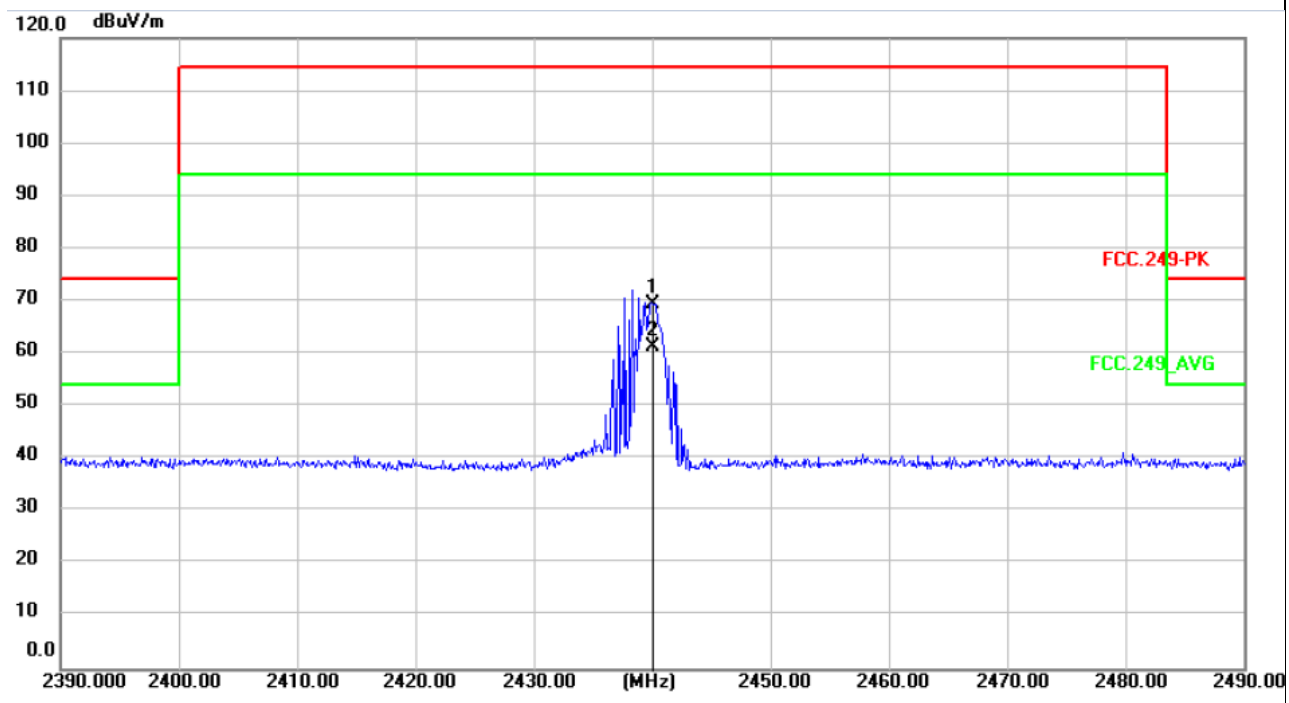
5.3.5 Field strength of fundamental

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Horizontal
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2440.400	89.68	-2.88	86.80	114.00	-27.20	peak
2 *	2440.400	80.42	-2.88	77.54	94.00	-16.46	AVG

EUT:	VORTEX HUNTING SYSTEM	Model Name:	BPDI2871983
Pressure:	101kPa	Polarization:	Vertical
Test voltage:	DC 12V from battery	Test Mode:	TX-2440MHz



No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector
1	2440.000	72.35	-2.88	69.47	114.00	-44.53	peak
2 *	2440.000	64.12	-2.88	61.24	94.00	-32.76	AVG

Note:

1. All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
2. Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor.
3. All other emissions more than 20dB below the limit.

5.4 20dB and 99% bandwidth

5.4.1 Limits

FCC §15.215(c)

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

5.4.2 Test method

Use the following spectrum analyzer settings:

For 20 dB bandwidth

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel

RBW ≥1% of the 20 dB bandwidth

VBW ≥RBW

Sweep = auto

Detector function = peak

Trace = max hold

The EUT should be transmitting at its maximum data rate. Allow the trace to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level. The marker-delta reading at this point is the 20 dB bandwidth and 99% occupied bandwidth of the emission

5.4.3 Test result

Frequency (MHz)	20dB bandwidth (MHz)
2405	1.2600
2440	1.2960
2475	1.2790

Test plots

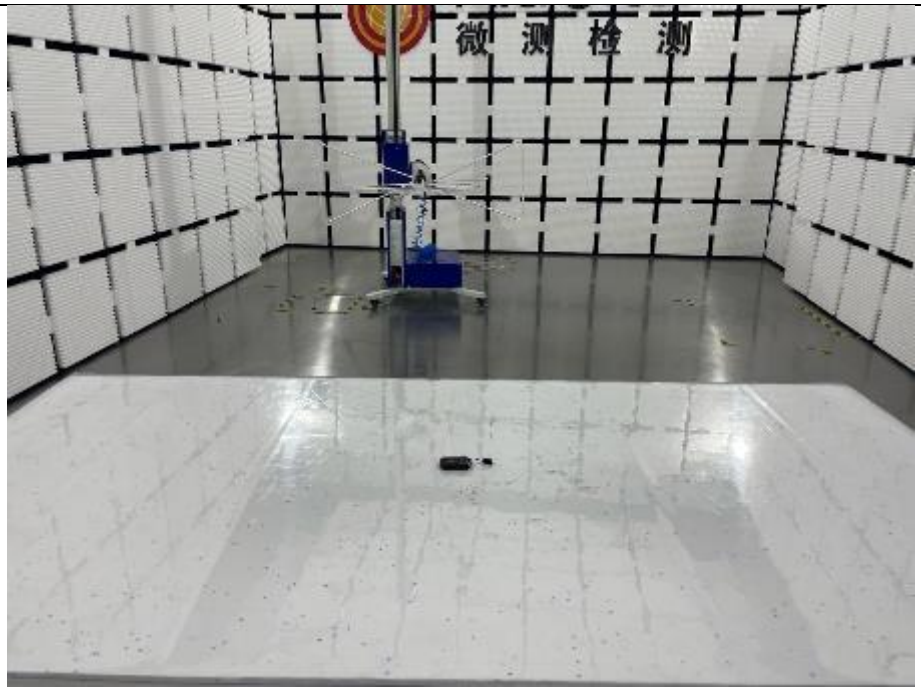
2405MHz

2440MHz

2475MHz

Photographs of the Test Setup

Radiated emission – below 1GHz



Radiated emission – above 1GHz

Photographs of the EUT

See the APPENDIX 1- EUT PHOTO.

----END OF REPORT----