TEST REPORT

Product	:	Side Mount Garage Door Opener
Trade mark	:	SKYLINK
Model/Type reference	:	SM-001
Serial Number	:	S/N
Report Number	:	EED32P80550902
FCC ID	:	KUTSM001
Date of Issue	:	Jun. 19, 2023
Test Standards	:	47 CFR Part 15 Subpart C
Test result	:	PASS

Prepared for:

Capital Prospect Ltd.
Rm 03, 13/F, Block B, Veristrong Ind Bdg,
34-36 Au Pui Wan Street, Fo Tan, N.T., Hong Kong

Prepared by:

Centre Testing International Group Co., Ltd.
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Approved by: Aaron Ma — Aaron Ma

Date: Jun. 19, 2023

Check No.::2658200423

1 Version

Version No.	Date	Description
00	Jun. 19, 2023	Original

2 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15 Subpart C Section 15.203	ANSI C63.10-2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15 Subpart C Section 15.207	ANSI C63.10-2013	PASS
Field Strength of the Fundamental Signal	47 CFR Part 15 Subpart C Section 15.249 (a)	ANSI C63.10-2013	PASS
Spurious Emissions	47 CFR Part 15 Subpart C Section 15.249 (a)/15.209	ANSI C63.10-2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15 Subpart C Section 15.249(a)/15.205	ANSI C63.10-2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15 Subpart C Section 15.215 (c)	ANSI C63.10-2013	PASS

Remark:
Company Name and Address shown on Report, the sample(s) and sample Information were provided by the applicant who should be responsible for the authenticity which CTI hasn't verified.

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4 General Information

4.1 Client Information

Applicant:	Capital Prospect Ltd.
Address of Applicant:	Rm 03, 13/F, Block B, Veristrong Ind Bdg, 34-36 Au Pui Wan Street, Fo Tan, N.T., Hong Kong
Manufacturer:	Capital Prospect Ltd.
Address of Manufacturer:	Rm 03, 13/F, Block B, Veristrong Ind Bdg, 34-36 Au Pui Wan Street, Fo Tan, N.T., Hong Kong

4.2 General Description of EUT

Product Name:	Side Mount Garage Door Opener
Model No.:	SM-001
Trade mark:	SKYLINK
Product Type:	☐ Mobile ☐ Portable ☒ Fix Location
Operation Frequency:	911MHz~919MHz
Number of Channel:	5 (declared by the client)
Antenna Type:	Internal antenna
Test Software of EUT:	RF test
Power Supply:	AC 120V
Test Voltage:	AC 120V
Sample Received Date:	Apr.21,2023
Sample tested Date:	May.17,2023 to Jun.01,2023

Operation Frequency each of channel：	
Channel	Frequency(MHz)
CH1	911
CH2	913
CH3	915
CH4	917
CH5	919

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(MHz)
The Lowest channel(CH1)	911
The Middle channel(CH3)	915
The Highest channel(CH5)	919

4.3 Test Environment and Mode

Operating Environment:	
Temperature:	22~25.0 °C
Humidity:	50~55 % RH
Atmospheric Pressure:	1010mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation.

4.4 Description of Support Units

The EUT has been tested independently.

4.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd
Building C, Hongwei Industrial Park Block 70, Bao'an District, Shenzhen, China
Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385
No tests were sub-contracted.
FCC Designation No.: CN1164

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Other Information Requested by the Customer

None.

4.9 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.46dB (30MHz-1GHz)
		0.55dB (1GHz-18GHz)
3	Radiated Spurious emission test	3.3dB (9kHz-30MHz)
		4.3dB (30MHz-1GHz)
		4.5dB (1GHz-18GHz)
		3.4dB (18GHz-40GHz)
4	Conduction emission	3.5dB (9kHz to 150kHz)
		3.1dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	3.8%
7	DC power voltages	0.026%

5 Equipment List

Conducted disturbance Test					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Receiver	R&S	ESCI	100435	04-25-2023	04-24-2024
LISN	R&S	ENV216	100098	09-27-2022	09-26-2023
Capacitive voltage probe	Schwarzbeck	CVP 9222C	00124	07-13-2022	07-12-2023
ISN	TESEQ	ISN T800	30297	12-29-2022	12-28-2023
Barometer	changchun	DYM3	1188	---	---
Temperature/ Humidity Indicator	Defu	TH128	/	---	---
Test software	Fara	EZ-EMC	EMC-CON 3A1.1	---	---

3M Semi/full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
3M Chamber & Accessory Equipment	TDK	SAC-3	---	05-22-2022	05-21-2025
Receiver	R&S	ESCI7	100938-003	09-28-2022	09-27-2023
Spectrum Analyzer	R&S	FSV40	101200	07-29-2022	07-28-2023
Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-076	04-15-2021	04-14-2024
TRILOG Broadband Antenna	Schwarzbeck	VULB9163	9163-618	05-22-2022 05-21-2023	05-21-2023 05-20-2024
Horn Antenna	Schwarzbeck	BBHA 9120D	9120D-1869	04-17-2021	04-16-2024
Horn Antenna	A.H.SYSTEMS	SAS-574	374	05-29-2021	05-28-2024
Preamplifier	Agilent	11909A	12-1	03-28-2023	03-27-2024
Preamplifier	EMCI	EMC051845 SE	980380	12-23-2022	12-22-2023
Preamplifier	CD	PAP-1840-60	6041.6042	07-05-2022	07-04-2023
Cable line	Fulai(7M)	SF106	5219/6A	---	---
Cable line	Fulai(6M)	SF106	5220/6A	---	---
Cable line	Fulai(3M)	SF106	5216/6A	---	---
Cable line	Fulai(3M)	SF106	5217/6A	---	---
Test software	Fara	EZ-EMC	EMEC-3A1-Pre	---	---

3M full-anechoic Chamber					
Equipment	**Manufacturer**	**Model No.**	**Serial Number**	**Cal. date (mm-dd-yyyy)**	**Cal. Due date (mm-dd-yyyy)**
Fully Anechoic Chamber	TDK	FAC-3	---	01-09-2021	01-08-2024
Receiver	Keysight	N9038A	MY57290136	02-27-2023	02-26-2024
Spectrum Analyzer	Keysight	N9020B	MY57111112	02-21-2023	02-20-2024
Spectrum Analyzer	Keysight	N9030B	MY57140871	02-21-2023	02-20-2024
TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	9163-1148	04-30-2021	04-29-2024
Horn Antenna	Schwarzbeck	BBHA 9170	9170-832	04-17-2021	04-16-2024
Horn Antenna	ETS-LINDGREN	3117	57407	07-04-2021	07-03-2024
Preamplifier	EMCI	EMC001330	980563	03-28-2023	03-27-2024
Preamplifier	Tonscend	TAP-011858	AP21B806112	07-29-2022	07-28-2023
Preamplifier	EMCI	EMC184055SE	980597	04-13-2023	04-12-2024
Communication test set	R&S	CMW500	102898	12-23-2022	12-22-2023
Temperature/ Humidity Indicator	biaozhi	GM1360	EE1186631	04-11-2023	04-10-2024
RSE Automatic test software	JS Tonscend	JS36-RSE	10166	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0001		---
Cable line	Times	SFT205-NMSM-2.50M	394812-0002	---	---
Cable line	Times	SFT205-NMSM-2.50M	394812-0003	---	---
Cable line	Times	SFT205-NMSM-2.50M	393495-0001	---	---
Cable line	Times	EMC104-NMNM-1000	SN160710	---	---
Cable line	Times	SFT205-NMSM-3.00M	394813-0001	---	---
Cable line	Times	SFT205-NMNM-1.50M	381964-0001	---	---
Cable line	Times	SFT205-NMSM-7.00M	394815-0001	---	---
Cable line	Times	HF160-KMKM-3.00M	393493-0001	---	---

6 Test results and Measurement Data

6.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C 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:	Please see Internal photos
The antenna is integrated on the main PCB and no consideration of replacement.	

6.2 Conducted Emissions

Test Requirement: 47 CFR Part 15C Section 15.207

Test Method: ANSI C63.10 : 2013

Test Frequency Range: 150kHz to 30MHz

Limit:

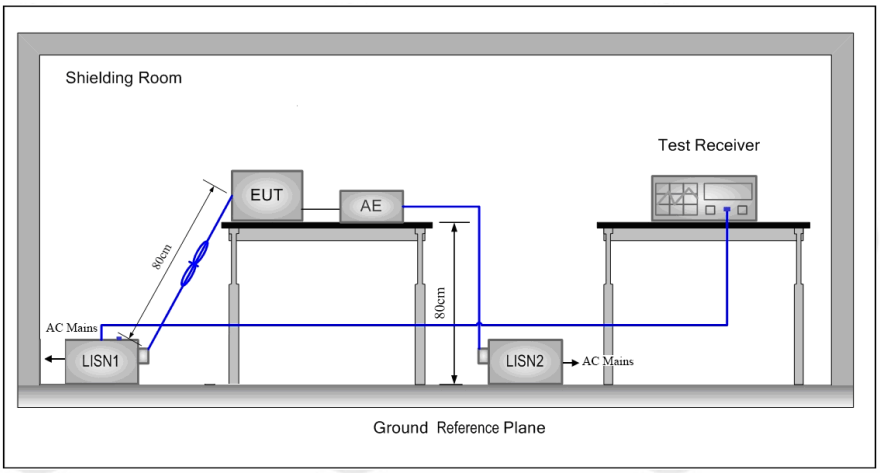
Frequency range (MHz)	Limit (dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

Test Procedure:

1) The mains terminal disturbance voltage test was conducted in a shielded room.
2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane,
4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2.
5) 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 Setup:

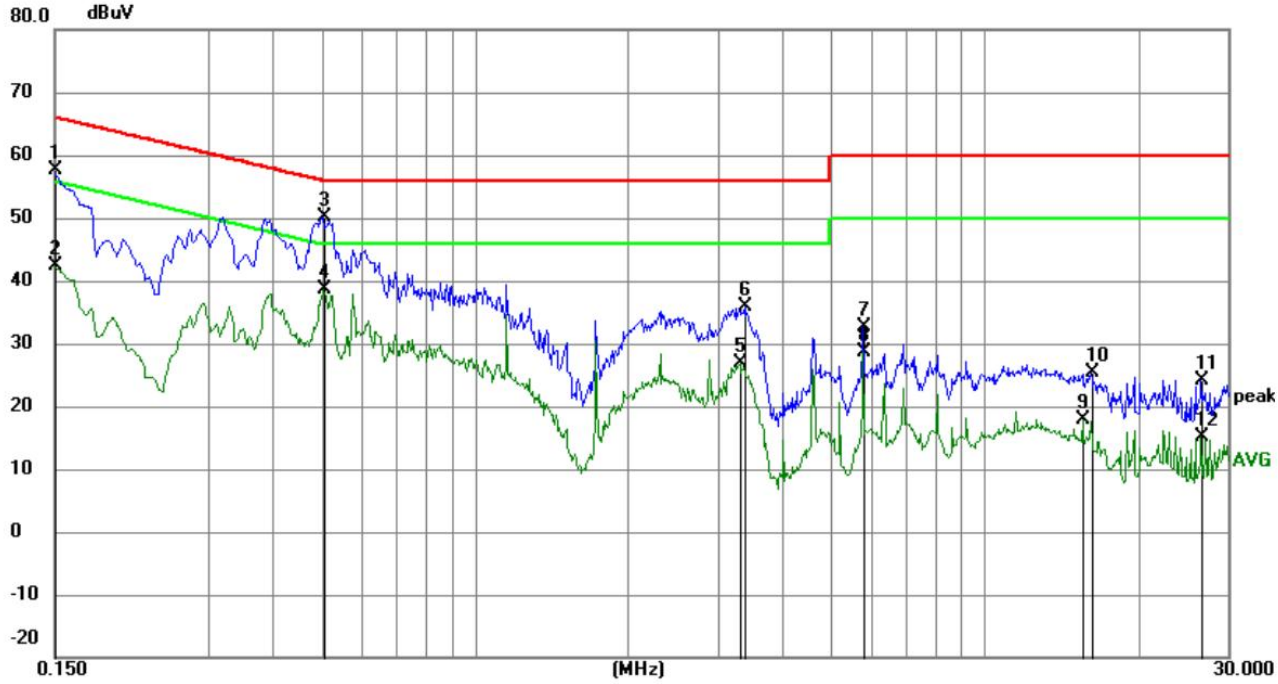


Test Mode: Transmitter mode

Test Results: Pass

Measurement Data (CH1)

Live line:

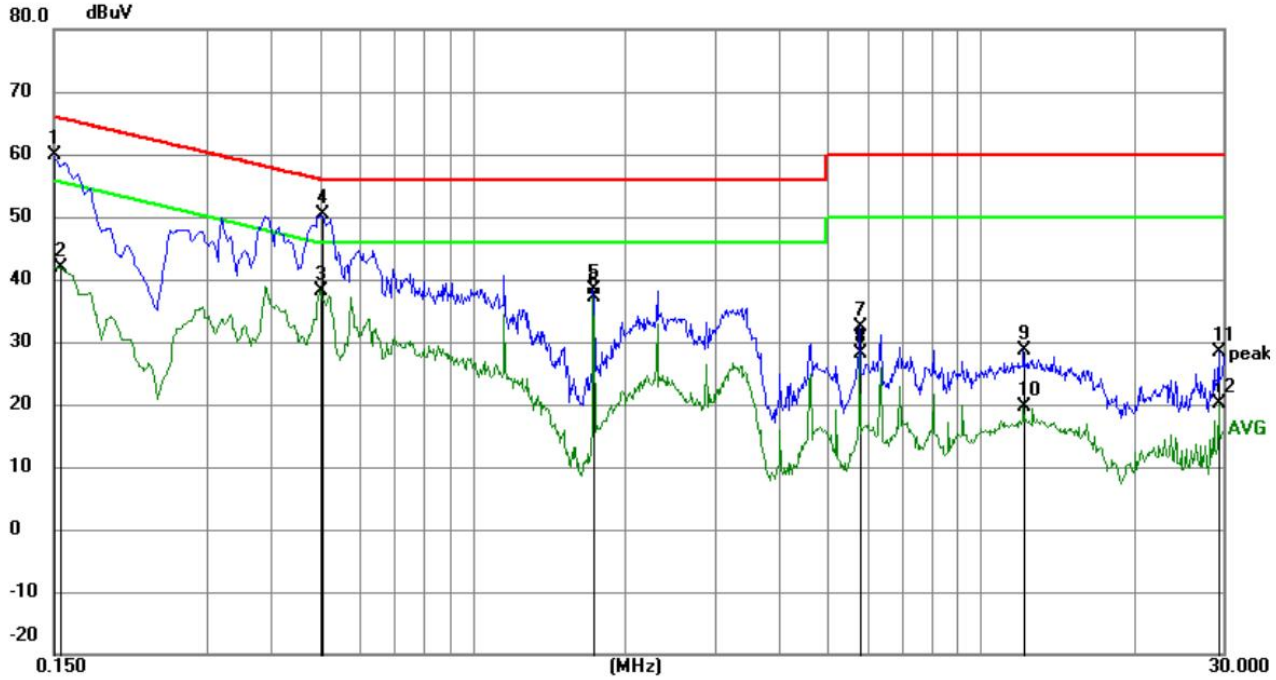


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	47.70	9.87	57.57	66.00	-8.43	QP	
2		0.1500	32.41	9.87	42.28	56.00	-13.72	AVG	
3	*	0.5055	40.26	9.96	50.22	56.00	-5.78	QP	
4		0.5055	28.71	9.96	38.67	46.00	-7.33	AVG	
5		3.3135	17.17	9.79	26.96	46.00	-19.04	AVG	
6		3.3900	26.18	9.79	35.97	56.00	-20.03	QP	
7		5.7795	22.87	9.78	32.65	60.00	-27.35	QP	
8		5.7795	18.95	9.78	28.73	50.00	-21.27	AVG	
9		15.6030	8.02	9.93	17.95	50.00	-32.05	AVG	
10		16.1745	15.55	9.94	25.49	60.00	-34.51	QP	
11		26.5650	14.23	10.01	24.24	60.00	-35.76	QP	
12		26.5650	5.17	10.01	15.18	50.00	-34.82	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



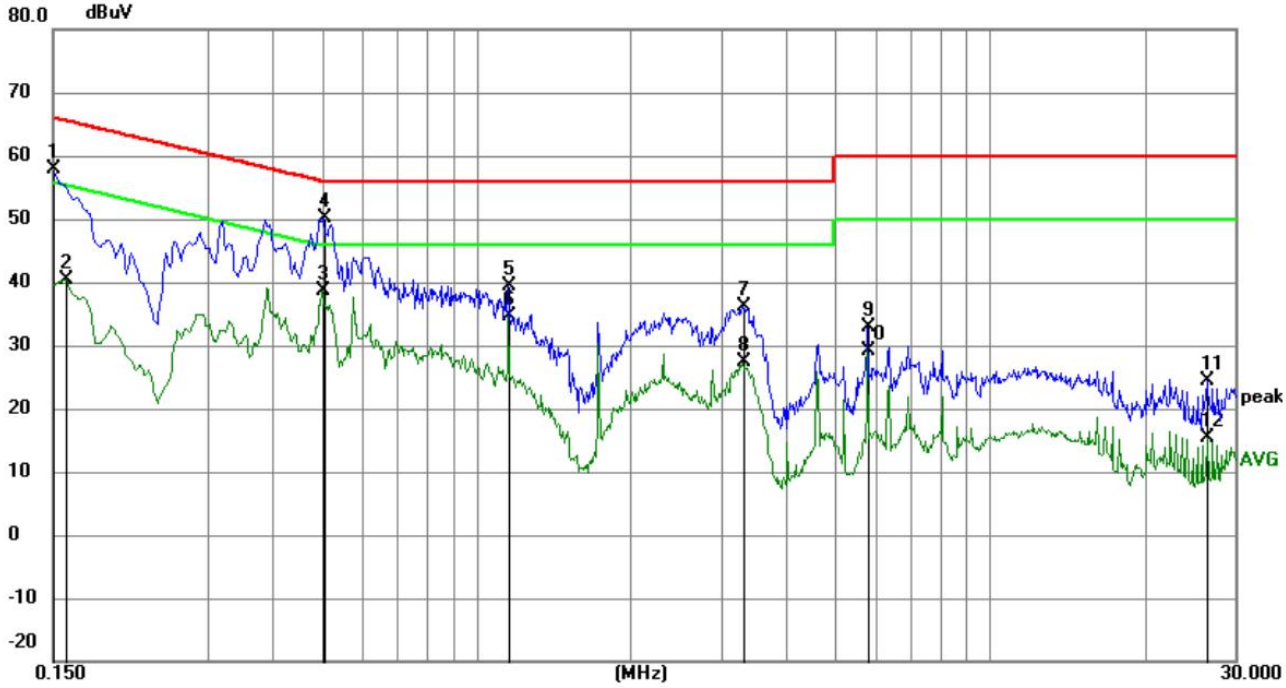
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	50.13	9.87	60.00	66.00	-6.00	QP	
2		0.1545	32.01	9.87	41.88	55.75	-13.87	AVG	
3		0.5010	28.24	9.95	38.19	46.00	-7.81	AVG	
4	*	0.5055	40.31	9.96	50.27	56.00	-5.73	QP	
5		1.7340	28.66	9.80	38.46	56.00	-17.54	QP	
6		1.7340	27.37	9.80	37.17	46.00	-8.83	AVG	
7		5.7750	22.57	9.78	32.35	60.00	-27.65	QP	
8		5.7750	18.44	9.78	28.22	50.00	-21.78	AVG	
9		12.1380	18.67	9.84	28.51	60.00	-31.49	QP	
10		12.1380	9.89	9.84	19.73	50.00	-30.27	AVG	
11		29.4585	18.32	10.03	28.35	60.00	-31.65	QP	
12		29.4585	9.99	10.03	20.02	50.00	-29.98	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Measurement Data (CH3)

Live line:

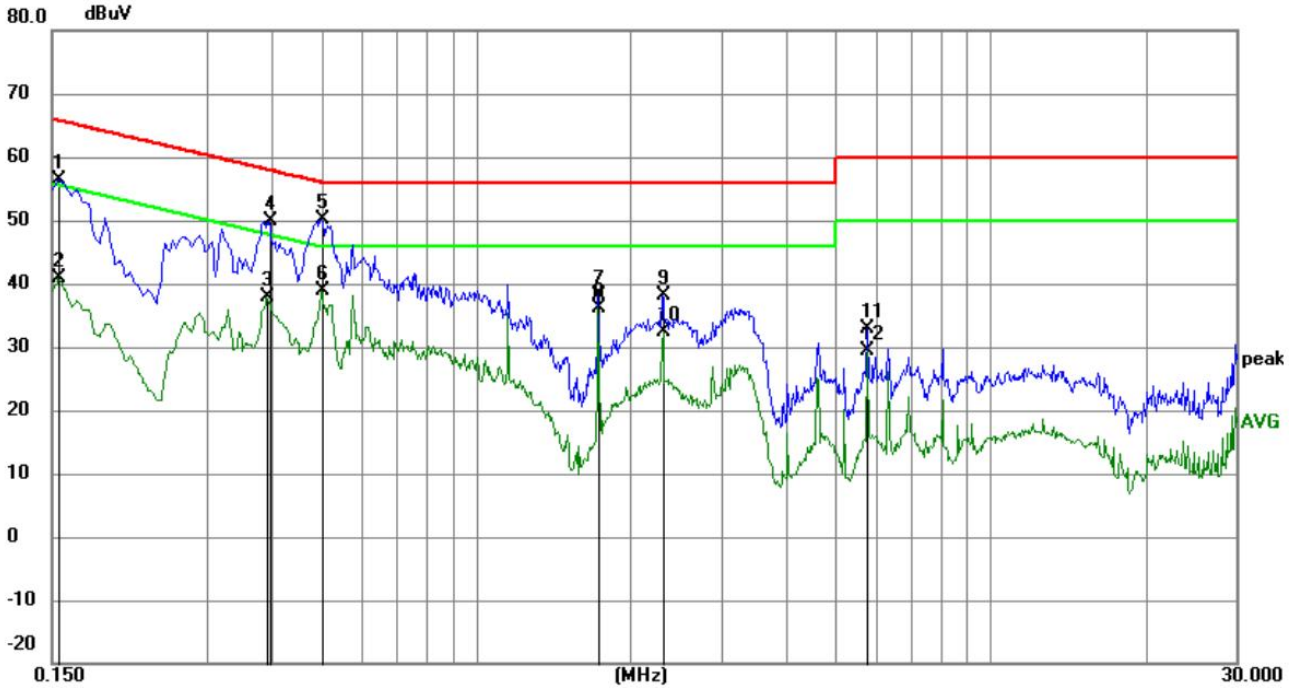


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	48.05	9.87	57.92	66.00	-8.08	QP	
2		0.1590	30.60	9.87	40.47	55.52	-15.05	AVG	
3		0.5010	28.56	9.95	38.51	46.00	-7.49	AVG	
4	*	0.5055	40.18	9.96	50.14	56.00	-5.86	QP	
5		1.1535	29.67	9.82	39.49	56.00	-16.51	QP	
6		1.1535	24.78	9.82	34.60	46.00	-11.40	AVG	
7		3.3000	26.27	9.79	36.06	56.00	-19.94	QP	
8		3.3000	17.50	9.79	27.29	46.00	-18.71	AVG	
9		5.7795	23.12	9.78	32.90	60.00	-27.10	QP	
10		5.7795	19.27	9.78	29.05	50.00	-20.95	AVG	
11		26.5560	14.27	10.01	24.28	60.00	-35.72	QP	
12		26.5560	5.40	10.01	15.41	50.00	-34.59	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



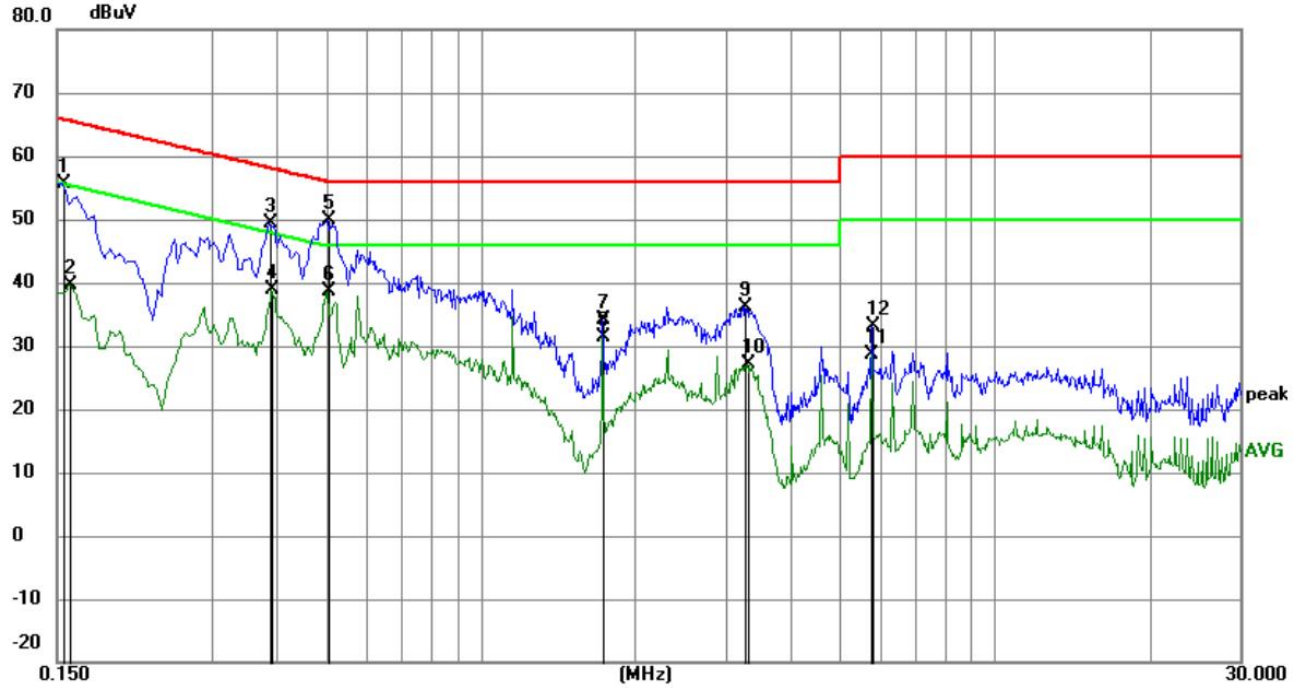
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1545	46.54	9.87	56.41	65.75	-9.34	QP	
2		0.1545	30.97	9.87	40.84	55.75	-14.91	AVG	
3		0.3930	27.82	9.98	37.80	48.00	-10.20	AVG	
4		0.3975	39.96	9.97	49.93	57.91	-7.98	QP	
5	*	0.5010	40.09	9.95	50.04	56.00	-5.96	QP	
6		0.5010	28.81	9.95	38.76	46.00	-7.24	AVG	
7		1.7295	28.36	9.80	38.16	56.00	-17.84	QP	
8		1.7295	26.42	9.80	36.22	46.00	-9.78	AVG	
9		2.3055	28.29	9.79	38.08	56.00	-17.92	QP	
10		2.3100	22.52	9.79	32.31	46.00	-13.69	AVG	
11		5.7705	23.18	9.78	32.96	60.00	-27.04	QP	
12		5.7705	19.70	9.78	29.48	50.00	-20.52	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Measurement Data (CH5)

Live line:

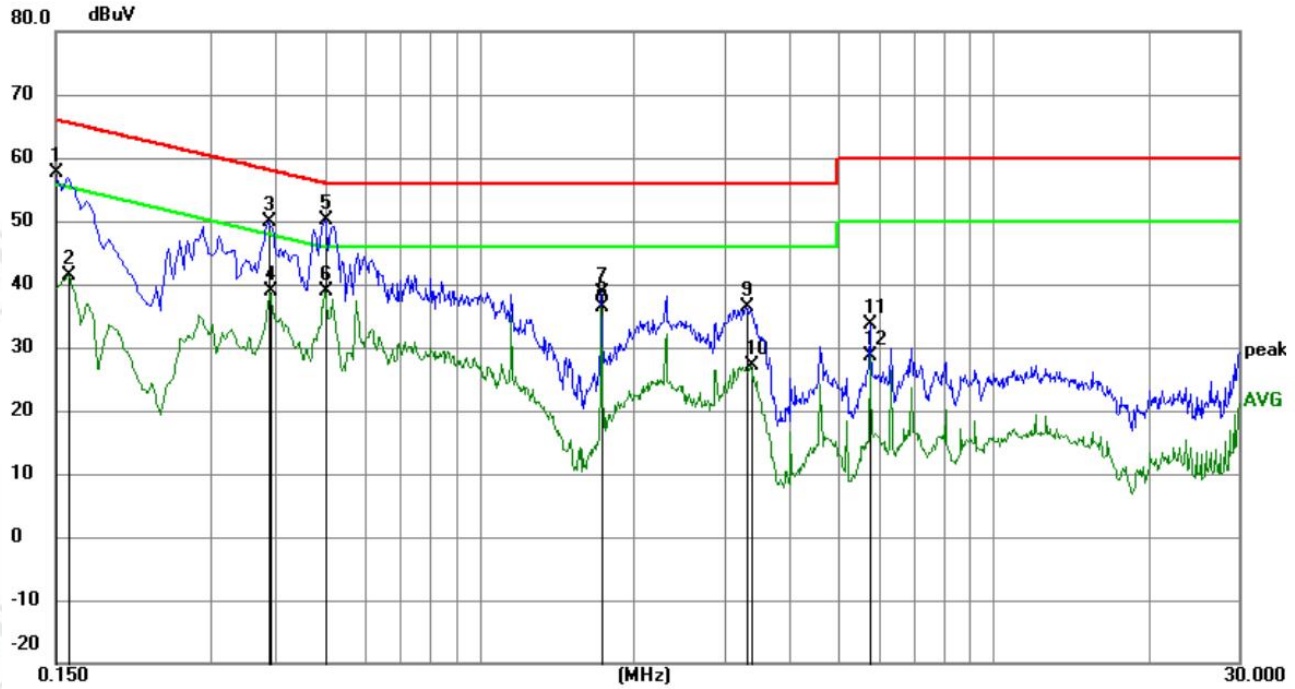


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1545	45.84	9.87	55.71	65.75	-10.04	QP	
2		0.1590	29.87	9.87	39.74	55.52	-15.78	AVG	
3		0.3885	39.37	9.98	49.35	58.10	-8.75	QP	
4		0.3930	28.86	9.98	38.84	48.00	-9.16	AVG	
5	*	0.5055	39.89	9.96	49.85	56.00	-6.15	QP	
6		0.5055	28.74	9.96	38.70	46.00	-7.30	AVG	
7		1.7295	24.23	9.80	34.03	56.00	-21.97	QP	
8		1.7295	21.50	9.80	31.30	46.00	-14.70	AVG	
9		3.2730	26.40	9.79	36.19	56.00	-19.81	QP	
10		3.2955	17.25	9.79	27.04	46.00	-18.96	AVG	
11		5.7705	18.86	9.78	28.64	50.00	-21.36	AVG	
12		5.7750	23.25	9.78	33.03	60.00	-26.97	QP	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

Neutral line:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	47.64	9.87	57.51	66.00	-8.49	QP	
2		0.1590	31.54	9.87	41.41	55.52	-14.11	AVG	
3		0.3885	39.89	9.98	49.87	58.10	-8.23	QP	
4		0.3930	28.83	9.98	38.81	48.00	-9.19	AVG	
5	*	0.5010	40.13	9.95	50.08	56.00	-5.92	QP	
6		0.5010	28.91	9.95	38.86	46.00	-7.14	AVG	
7		1.7295	28.90	9.80	38.70	56.00	-17.30	QP	
8		1.7295	26.54	9.80	36.34	46.00	-9.66	AVG	
9		3.3090	26.70	9.79	36.49	56.00	-19.51	QP	
10		3.3675	17.38	9.79	27.17	46.00	-18.83	AVG	
11		5.7705	23.88	9.78	33.66	60.00	-26.34	QP	
12		5.7705	18.90	9.78	28.68	50.00	-21.32	AVG	

Remark:

1. The following Quasi-Peak and Average measurements were performed on the EUT:
2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.
3. If the Peak value under Average limit, the Average value is not recorded in the report.

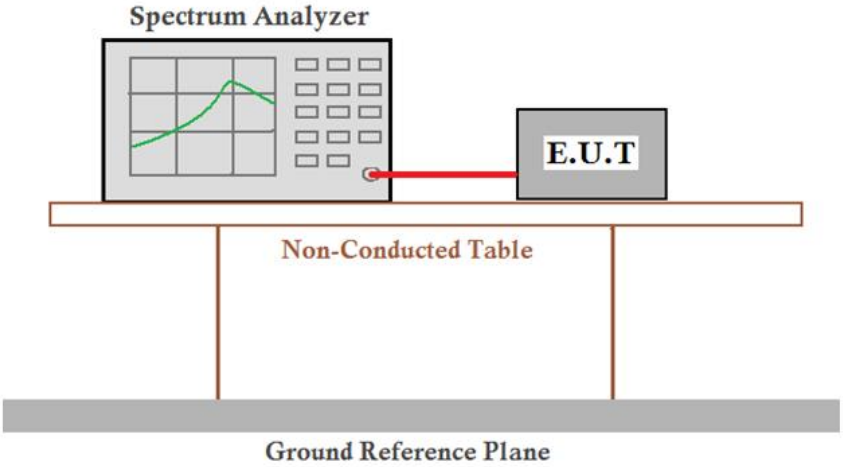
6.3 Radiated Spurious Emissions

6.3.1 Duty Cycle

Test Requirement: 47 CFR Part 15C Section 15.35 (c)

Test Method: ANSI C63.10:2013

Test Setup:



Limit: N/A

Test Mode: Transmitting mode

Test Results: Pass

The number of pulses of duration /100ms	T on time (ms)/100ms	T period (ms)	Duty cycle
36	54.0	100	0.54

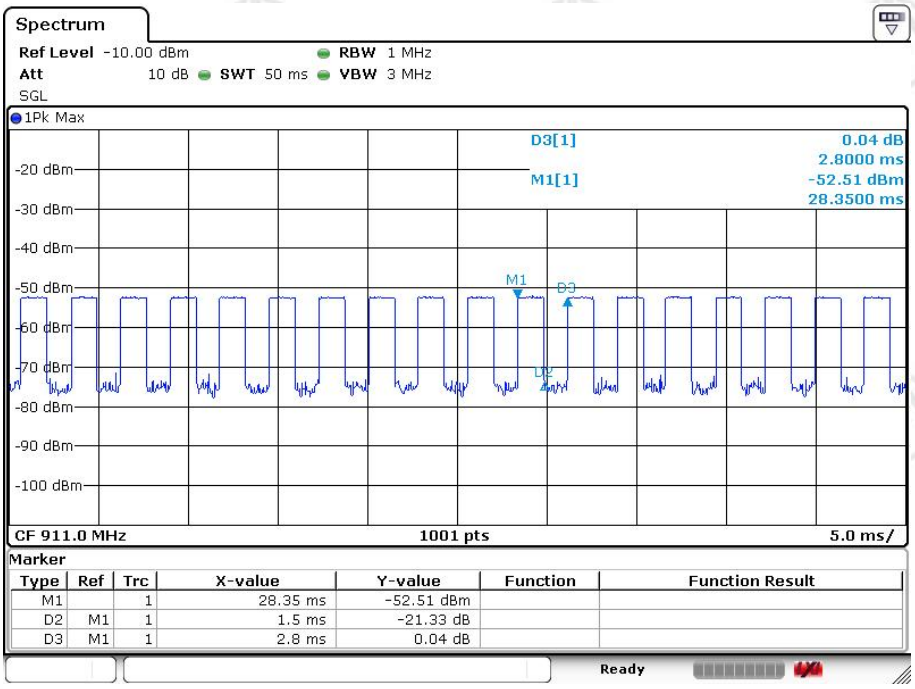
Note:

The number of pulses of duration/100ms=18*2=36

T on time(ms)/100ms=1.5ms*36=54.0ms
Duty cycle=T on time / T period

Test plot as follows:

The number of pulses of duration/50ms: number is 18



6.3.2 Radiated Spurious Emissions

Test Requirement: 47 CFR Part 15C Section 15.249 and 15.209 and 15.205

Test Method: ANSI C63.10

Test Site: Measurement Distance: 3m (Semi-Anechoic Chamber)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10kHz	Average

Limit: (Spurious Emissions)

Frequency	Field strength (microvolt/meter)	Limit (dBμV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	500	54.0	Quasi-peak	3
Above 1GHz	500	54.0	Average	3

Note: 15.35(b), Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.

Limit: (Field strength of the fundamental signal)

Frequency	Limit (dBμV/m @3m)	Remark
911MHz-919MHz	94.0	Average Value
	114.0	Peak Value

Test Setup:

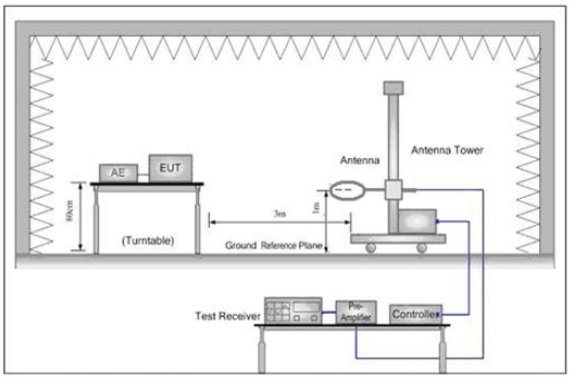


Figure 1. Below 30MHz

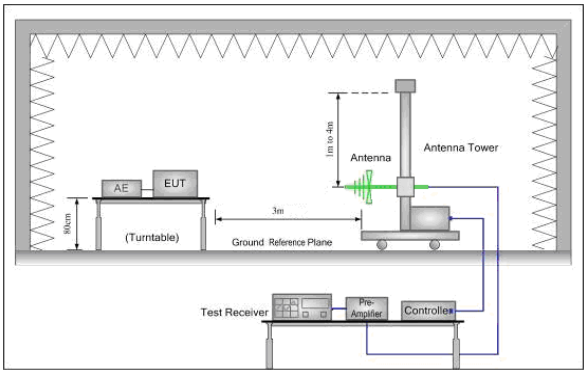


Figure 2. 30MHz to 1GHz

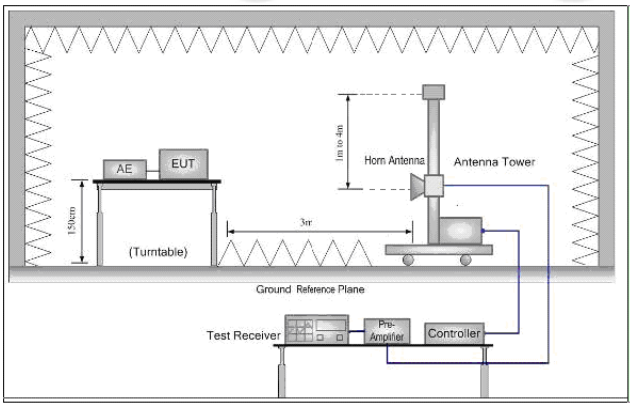


Figure 3. Above 1GHz

Test Procedure:

Below 1GHz test procedure as below:

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

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.

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 (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rota table table was turned from 0 degrees to 360 degrees to find the maximum reading.

The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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.

Above 1GHz test procedure as below:

Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber and change form table 0.8 metre to 1.5 metre(Above 18GHz the distance is 1 meter and table is 1.5 metre).

Test the EUT in the lowest channel ,middle channel, the Highest channel .

The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is worse case.

Repeat above procedures until all frequencies measured was complete.

Test Mode: Transmitting mode

Test Results: Pass

Test data:

Field Strength of the Fundamental Signal:

Average value:	
Calculate Formula:	Average value=Peak value + PDCF
	PDCF=20 log(Duty cycle)
	Duty cycle= T on time / T period
Test data:	T on time =54.0ms
	T period =100ms
	PDCF= -5.35

Test channel:	CH1

Antenna polarization: Horizontal						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
911.0	23.60	28.47	52.07	114.00	-61.93	Peak
911.0	-	-	46.72	94.00	-47.28	Average

Antenna polarization: Vertical						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
911.0	25.08	28.47	53.55	114.00	-60.45	Peak
911.0	-	-	48.20	94.00	-45.80	Average

Test channel:	CH3

Antenna polarization: Horizontal						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
915.0	11.93	28.49	40.42	114.00	-73.58	Peak
915.0	-	-	35.07	94.00	-58.93	Average

Antenna polarization: Vertical						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
915.0	12.32	28.49	40.81	114.00	-73.19	Peak
915.0	-	-	35.46	94.00	-58.54	Average

Test channel:	CH5

Antenna polarization: Horizontal						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
919.0	12.25	28.51	40.76	114.00	-73.24	Peak
919.0	-	-	35.41	94.00	-58.59	Average

Antenna polarization: Vertical						
Frequency (MHz)	Read Level (dBuV)	Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
919.0	11.81	28.51	40.32	114.00	-73.68	Peak
919.0	-	-	34.97	94.00	-59.03	Average

Remark:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Spurious Emissions

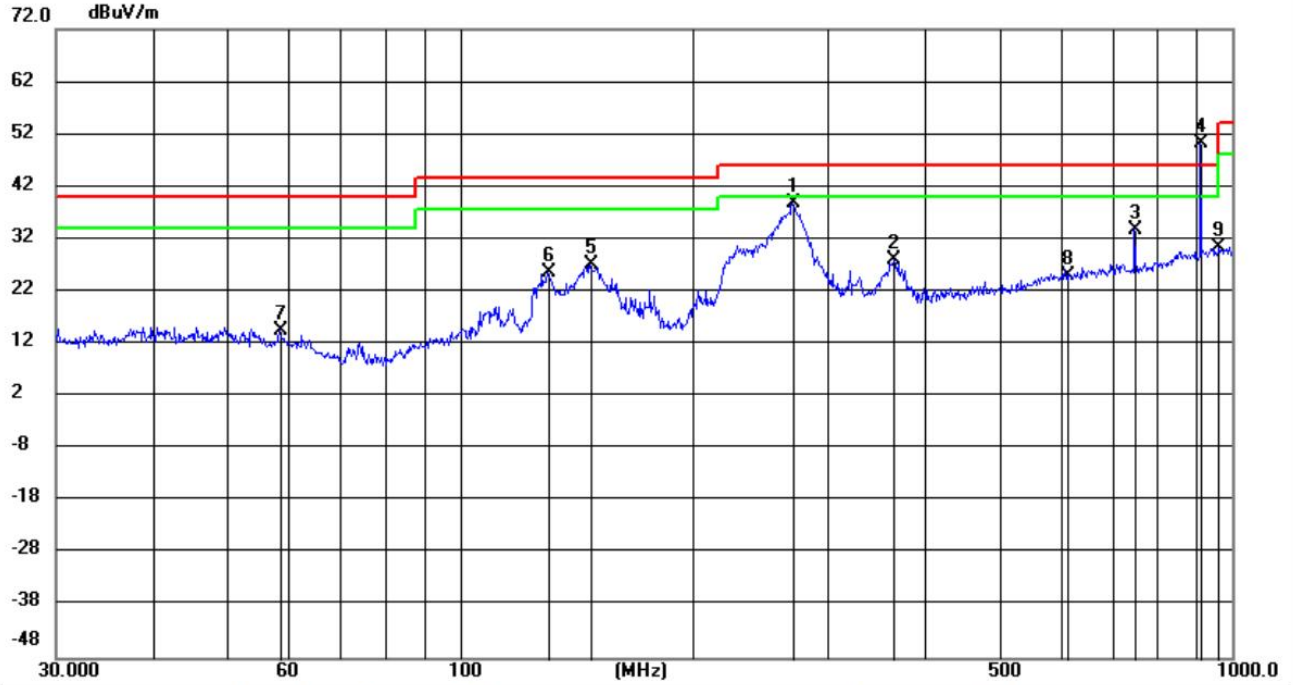
9KHz-30MHz:

9 kHz~30 MHz Field Strength of Unwanted Emissions. Quasi-Peak Measurement
The measurements with active loop antenna were greater than 20dB below the limit, so the test data were not recorded in the test report.

30MHz-1GHz & Restricted bands:

Test channel:	CH1

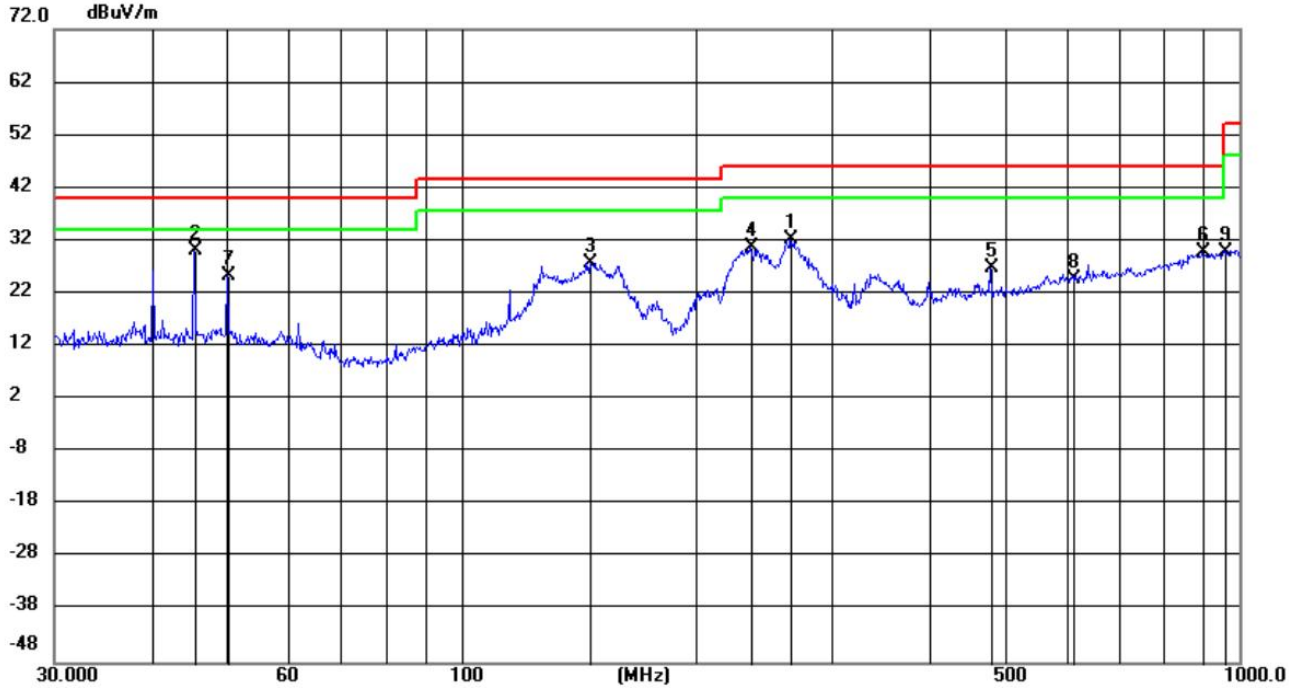
Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		269.9958	22.56	16.21	38.77	46.00	-7.23	QP	100	271	
2		364.3233	9.43	18.63	28.06	46.00	-17.94	QP	100	251	
3		749.1882	8.35	25.55	33.90	46.00	-12.10	QP	100	16	
4	*	910.9434	21.68	28.47	50.15	94.00	-43.85	QP	100	128	
5		147.5846	17.25	9.85	27.10	43.50	-16.40	QP	100	97	
6		130.2646	15.95	9.59	25.54	43.50	-17.96	QP	100	87	
7		58.5715	0.94	13.67	14.61	40.00	-25.39	QP	100	108	
8		614.0000	0.96	24.13	25.09	46.00	-20.91	QP	100	132	
9		960.0000	1.68	28.71	30.39	46.00	-15.61	QP	100	140	

Note: No.4 is the main frequency point of product operation.

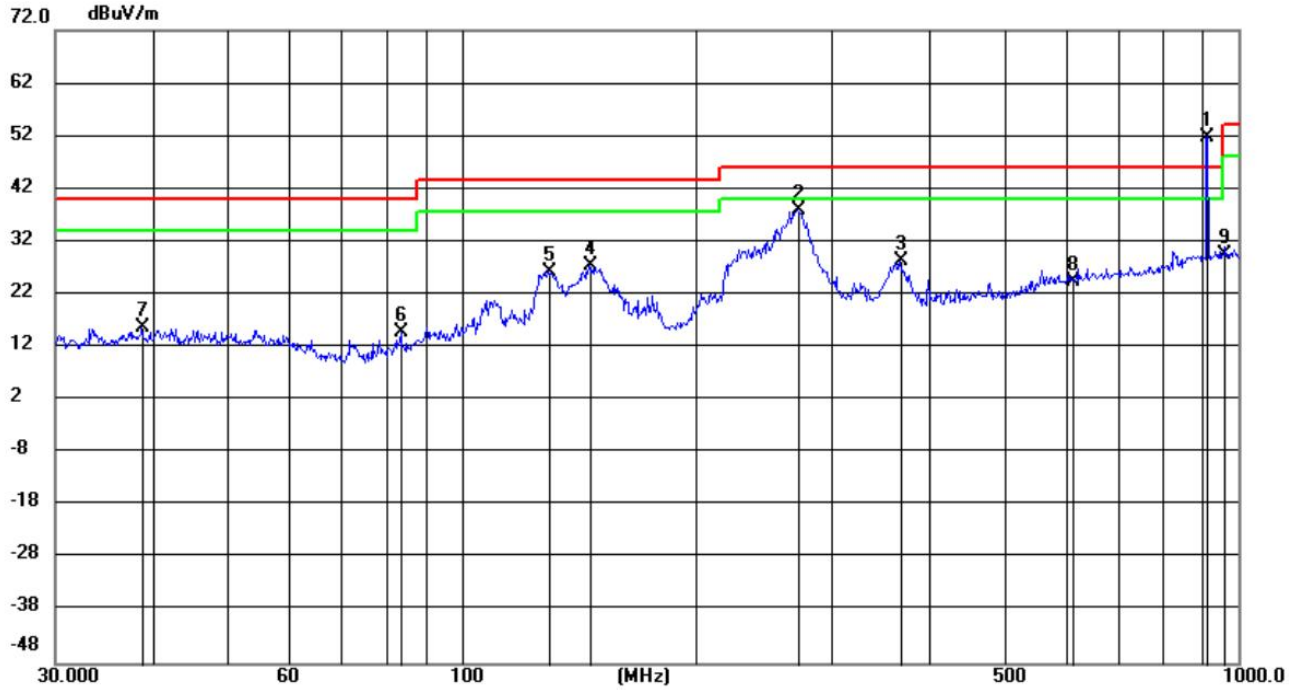
Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		264.7921	16.09	16.02	32.11	46.00	-13.89	QP	200	170	
2	*	45.4471	15.71	14.39	30.10	40.00	-9.90	QP	100	244	
3		146.6817	17.86	9.77	27.63	43.50	-15.87	QP	100	48	
4		235.6510	15.72	15.02	30.74	46.00	-15.26	QP	200	191	
5		480.0223	5.76	21.11	26.87	46.00	-19.13	QP	100	234	
6		897.3111	1.38	28.36	29.74	46.00	-16.26	QP	100	58	
7		50.1355	11.03	14.26	25.29	40.00	-14.71	QP	100	244	
8		614.0000	0.52	24.13	24.65	46.00	-21.35	QP	100	250	
9		960.0000	1.12	28.71	29.83	46.00	-16.17	QP	100	255	

Test channel:	CH3

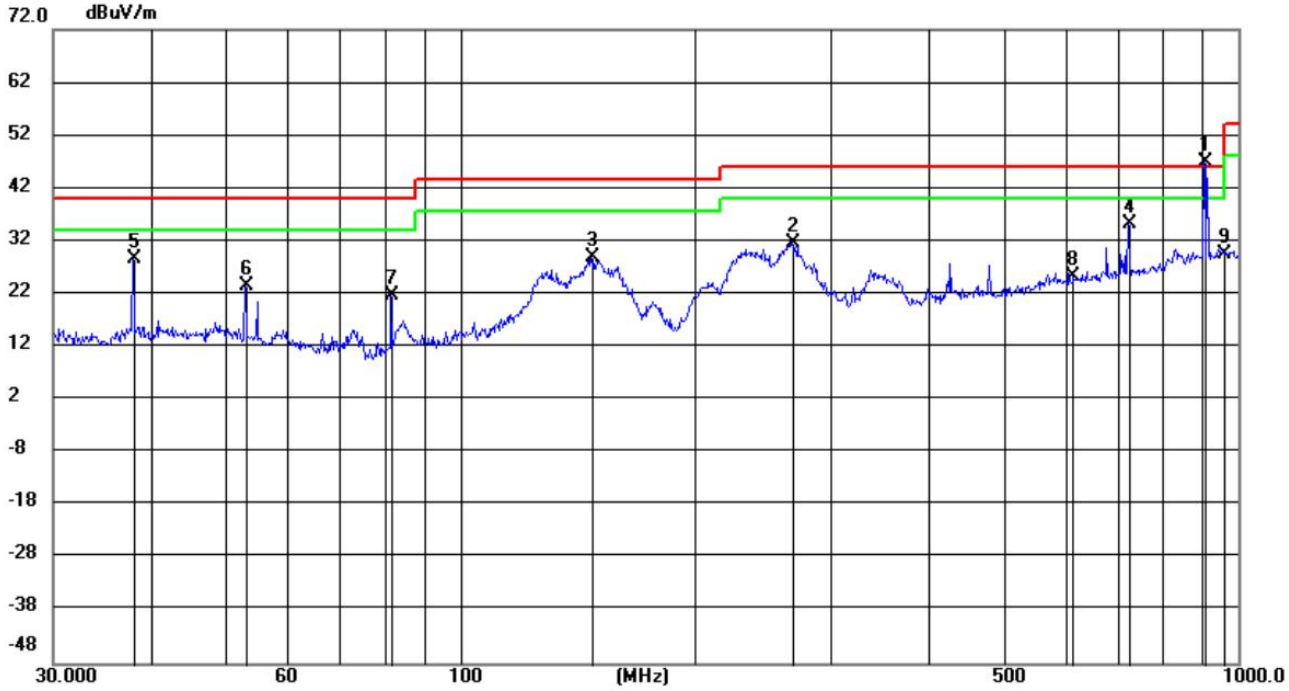
Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	914.8620	23.22	28.48	51.70	94.00	-42.30	QP	200	203	
2		270.8967	21.62	16.25	37.87	46.00	-8.13	QP	100	107	
3		367.0804	9.61	18.69	28.30	46.00	-17.70	QP	100	250	
4		146.2965	17.73	9.73	27.46	43.50	-16.04	QP	200	306	
5		129.6494	16.74	9.66	26.40	43.50	-17.10	QP	200	90	
6		83.5661	3.98	10.82	14.80	40.00	-25.20	QP	200	337	
7		38.7789	1.43	14.31	15.74	40.00	-24.26	QP	200	48	
8		614.0000	0.30	24.13	24.43	46.00	-21.57	QP	200	50	
9		960.0000	0.75	28.71	29.46	46.00	-16.54	QP	200	65	

Note: No.1 is the main frequency point of product operation.

Vertical:

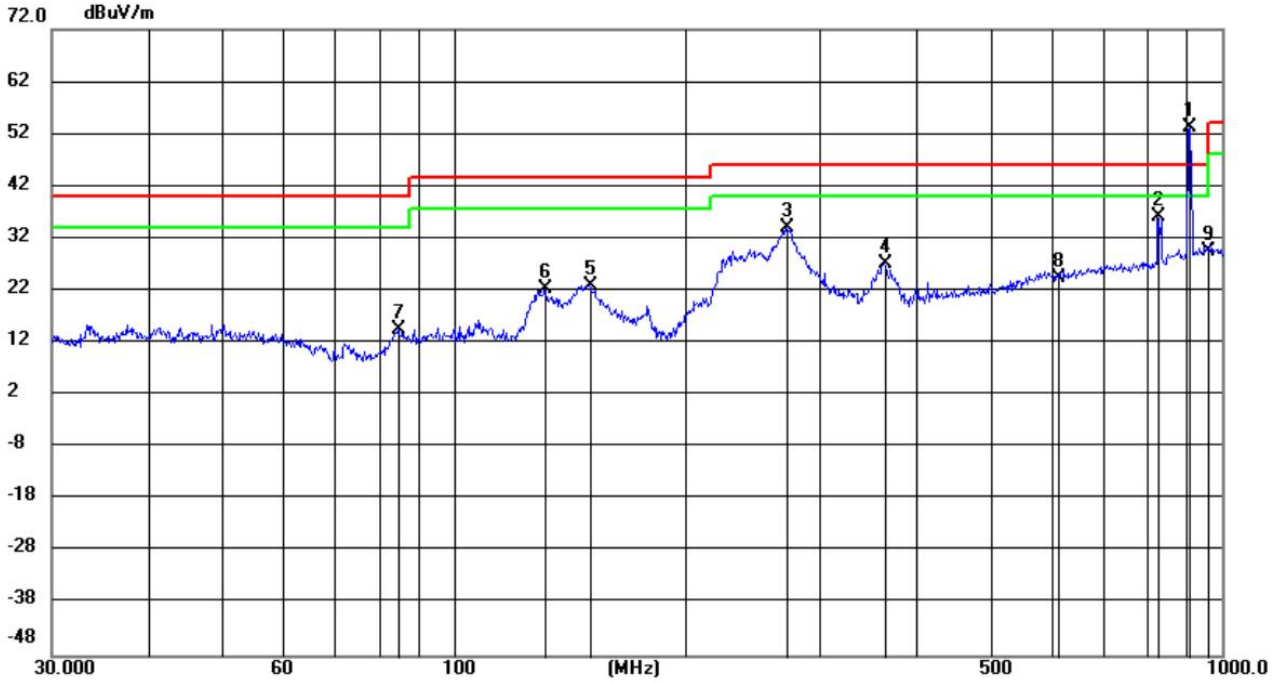


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	914.7359	18.61	28.44	47.05	94.00	-46.95	QP	100	7	
2		266.9364	15.56	16.10	31.66	46.00	-14.34	QP	200	220	
3		147.8696	19.06	9.88	28.94	43.50	-14.56	QP	100	213	
4		722.2322	10.04	25.11	35.15	46.00	-10.85	QP	200	311	
5		38.0449	14.50	14.19	28.69	40.00	-11.31	QP	100	244	
6		52.9825	9.52	14.06	23.58	40.00	-16.42	QP	100	244	
7		81.7403	11.37	10.30	21.67	40.00	-18.33	QP	100	244	
8		614.0000	1.26	24.13	25.39	46.00	-20.61	QP	100	245	
9		960.0000	0.75	28.71	29.46	46.00	-16.54	QP	100	250	

Note: No.1 is the main frequency point of product operation.

Test channel:	CH5

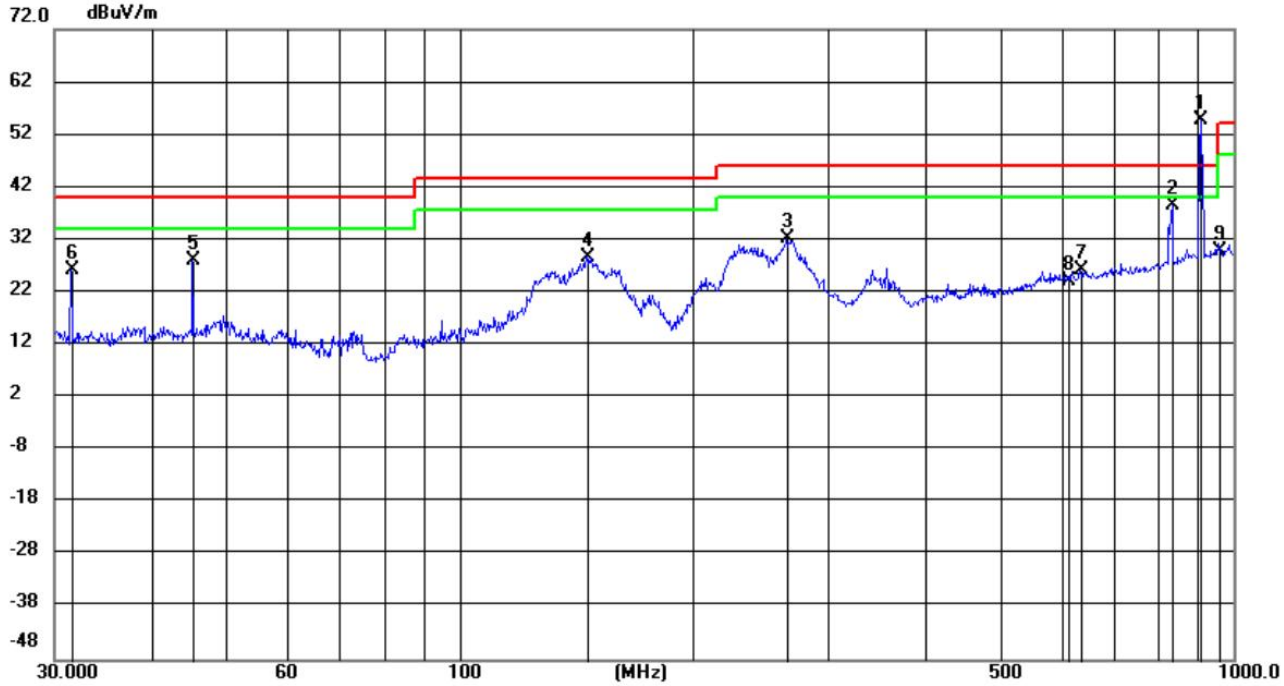
Horizontal:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	918.3916	24.78	28.46	53.24	94.00	-40.76	QP	200	255	
2		825.0306	9.30	26.90	36.20	46.00	-9.80	QP	100	210	
3		271.2769	17.78	16.26	34.04	46.00	-11.96	QP	100	281	
4		363.4939	8.63	18.61	27.24	46.00	-18.76	QP	100	251	
5		150.2739	13.00	10.08	23.08	43.50	-20.42	QP	200	100	
6		131.4347	12.68	9.54	22.22	43.50	-21.28	QP	200	141	
7		84.8952	3.25	11.20	14.45	40.00	-25.55	QP	200	7	
8		614.0000	0.36	24.13	24.49	46.00	-21.51	QP	200	15	
9		960.0000	0.85	28.71	29.56	46.00	-16.44	QP	200	25	

Note: No.1 is the main frequency point of product operation.

Vertical:



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	918.3916	26.18	28.46	54.64	94.00	-39.36	QP	100	7	
2		833.6094	11.39	27.06	38.45	46.00	-7.55	QP	200	158	
3		264.8386	16.24	16.03	32.27	46.00	-13.73	QP	200	189	
4		145.9890	19.10	9.70	28.80	43.50	-14.70	QP	100	59	
5		45.3436	13.72	14.39	28.11	40.00	-11.89	QP	200	291	
6		31.5316	13.16	13.03	26.19	40.00	-13.81	QP	200	291	
7		635.4652	1.86	24.28	26.14	46.00	-19.86	QP	200	352	
8		614.0000	0.10	24.13	24.23	46.00	-21.77	QP	200	355	
9		960.0000	1.13	28.71	29.84	46.00	-16.16	QP	200	357	

Note: No.1 is the main frequency point of product operation.

Above 1GHz:

Test mode:					Transmitting (CH1)				
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1276.22	1.00	39.07	40.07	74.00	33.93	PASS	Horizontal	PK
2	1916.69	4.12	37.57	41.69	74.00	32.31	PASS	Horizontal	PK
3	3803.05	-19.24	54.02	34.78	74.00	39.22	PASS	Horizontal	PK
4	5842.18	-13.58	50.88	37.30	74.00	36.70	PASS	Horizontal	PK
5	8580.37	-10.39	48.88	38.49	74.00	35.51	PASS	Horizontal	PK
6	12537.6	-4.56	47.81	43.25	74.00	30.75	PASS	Horizontal	PK
7	1322.83	1.13	38.99	40.12	74.00	33.88	PASS	Vertical	PK
8	1742.27	3.08	38.49	41.57	74.00	32.43	PASS	Vertical	PK
9	4097.07	-18.21	52.87	34.66	74.00	39.34	PASS	Vertical	PK
10	6839.25	-12.18	49.48	37.30	74.00	36.70	PASS	Vertical	PK
11	10859.5	-6.32	47.51	41.19	74.00	32.81	PASS	Vertical	PK
12	13206.6	-3.13	46.44	43.31	74.00	30.69	PASS	Vertical	PK

Test mode:					Transmitting (CH3)				
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1388.43	1.35	38.58	39.93	74.00	34.07	PASS	Horizontal	PK
2	1770.07	3.18	38.18	41.36	74.00	32.64	PASS	Horizontal	PK
3	3878.05	-19.13	53.23	34.10	74.00	39.90	PASS	Horizontal	PK
4	5847.18	-13.58	50.01	36.43	74.00	37.57	PASS	Horizontal	PK
5	9211.41	-7.89	47.95	40.06	74.00	33.94	PASS	Horizontal	PK
6	13307.6	-3.41	47.00	43.59	74.00	30.41	PASS	Horizontal	PK
7	1366.23	1.28	38.86	40.14	74.00	33.86	PASS	Vertical	PK
8	1913.49	4.10	38.02	42.12	74.00	31.88	PASS	Vertical	PK
9	4205.08	-17.98	52.76	34.78	74.00	39.22	PASS	Vertical	PK
10	5711.18	-13.88	50.20	36.32	74.00	37.68	PASS	Vertical	PK
11	9087.40	-8.66	47.52	38.86	74.00	35.14	PASS	Vertical	PK
12	13736.7	-1.72	46.44	44.72	74.00	29.28	PASS	Vertical	PK

Test mode:					Transmitting (CH5)				
NO	Freq. [MHz]	Factor [dB]	Reading [dBμV]	Level [dBμV/m]	Limit [dBμV/m]	Margin [dB]	Result	Polarity	Remark
1	1322.03	1.13	38.22	39.35	74.00	34.65	PASS	Horizontal	PK
2	1948.29	4.28	37.93	42.21	74.00	31.79	PASS	Horizontal	PK
3	4134.07	-18.13	51.93	33.80	74.00	40.20	PASS	Horizontal	PK
4	6190.21	-13.20	50.12	36.92	74.00	37.08	PASS	Horizontal	PK
5	8988.39	-8.56	47.97	39.41	74.00	34.59	PASS	Horizontal	PK
6	13836.7	-1.76	46.34	44.58	74.00	29.42	PASS	Horizontal	PK
7	1292.22	1.04	38.66	39.70	74.00	34.30	PASS	Vertical	PK
8	1846.48	3.63	38.11	41.74	74.00	32.26	PASS	Vertical	PK
9	3801.05	-19.24	53.66	34.42	74.00	39.58	PASS	Vertical	PK
10	5679.17	-13.99	49.96	35.97	74.00	38.03	PASS	Vertical	PK
11	8651.37	-10.25	49.10	38.85	74.00	35.15	PASS	Vertical	PK
12	12519.6	-4.69	48.49	43.80	74.00	30.20	PASS	Vertical	PK

Remark:

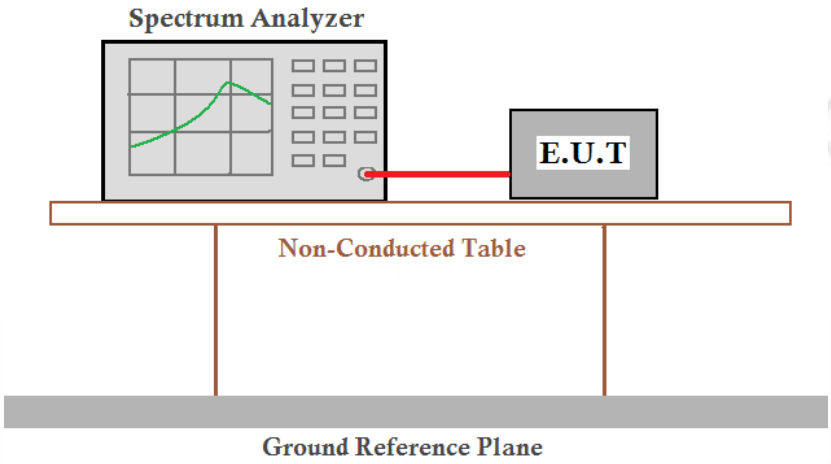
1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
   Final Test Level =Receiver Reading + Correct Factor
   Correct Factor =Antenna Factor + Cable Factor - Preamplifier Factor
2) Scan from 9kHz to 18GHz, below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported .

6.4 20dB Bandwidth

Test Requirement: 47 CFR Part 15C Section 15.215

Test Method: ANSI C63.10: 2013

Test Setup:



Test Procedure:

Remark: Offset=Cable loss+ attenuation factor.

1) The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.

2) Set to the maximum power setting and enable the EUT transmit continuously.

3) Use the following spectrum analyzer settings for 20dB Bandwidth measurement.

Span = approximately 2 to 5 times the 20 dB bandwidth, centered on a test channel; 1%≤RBW ≤5% of the 20 dB bandwidth; VBW≥3RBW;

Sweep = auto; Detector function = peak; Trace = max hold.

4) Measure and record the results in the test report.

Limit: N/A

Test Mode: Transmitter mode

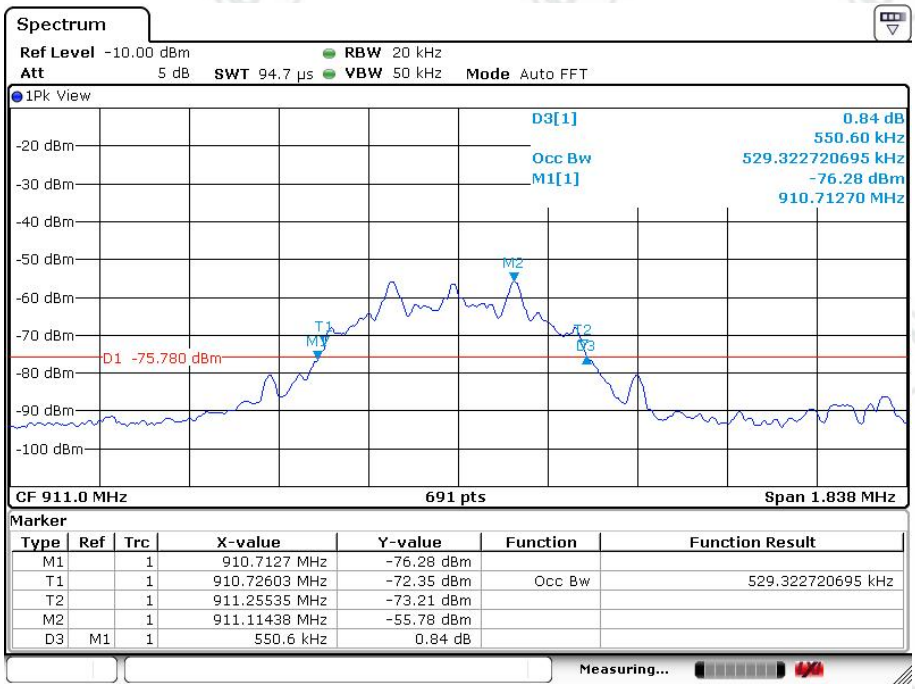
Test Results: Pass

Measurement Data

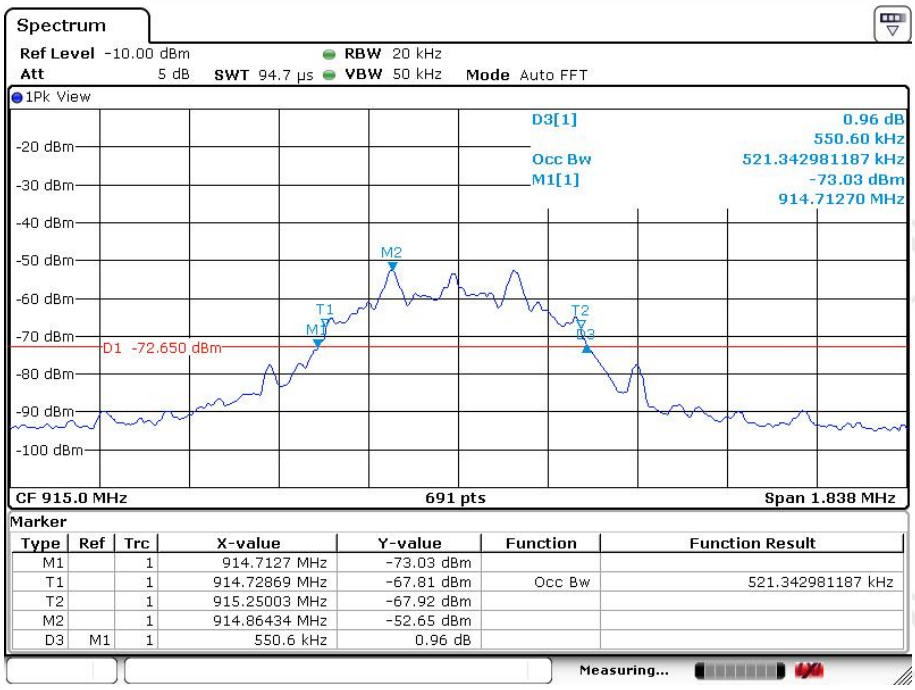
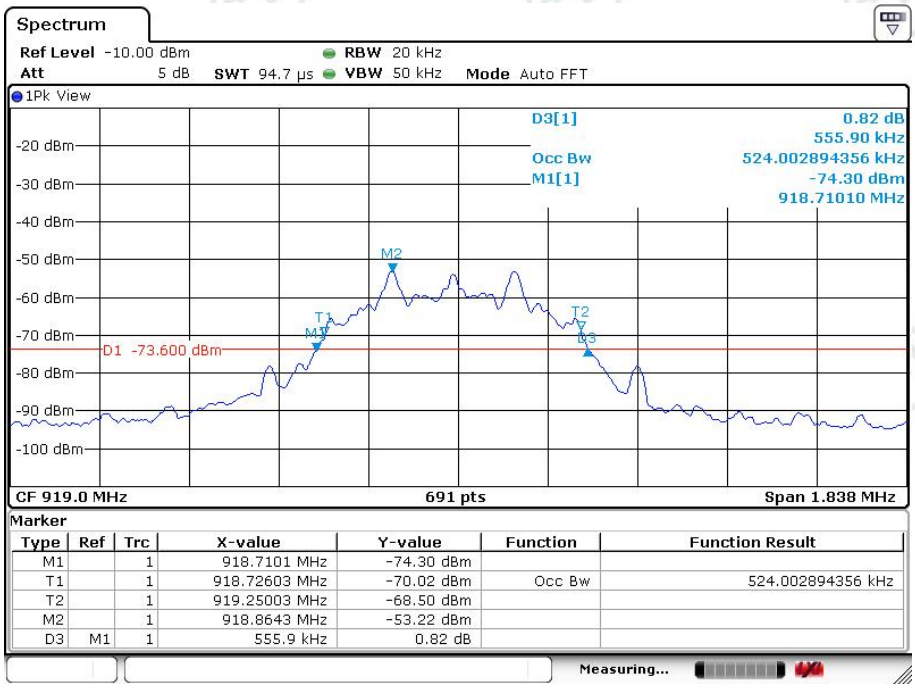
Test Channel	20dB bandwidth (kHz)	Limit (kHz)	Results
CH1	550.60	N/A	Pass
CH3	550.60	N/A	Pass
CH5	555.90	N/A	Pass

Test plot as follows:

Test channel:	CH1



Test channel:	CH3



Test channel:	CH5