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FCC REPORT

Application No:	SZEM1408004633RF
Applicant:	Fillony Limited
Manufacturer:	Telefield Limited
Factory:	GuangZhou Telefield Limited
Product Name:	FM Transmitter, Charger, Sound Simulator
Model No.(EUT):	Mr. Vroom
FCC ID:	2AC6F-VROOM
Trade Mark:	Wikango, ScientificLabs
Standards:	47 CFR Part 15, Subpart C (2013)
Date of Receipt:	2014-08-28
Date of Test:	2014-09-05 to 2014-09-23
Date of Issue:	2014-10-08
Test Result:	**PASS ***

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

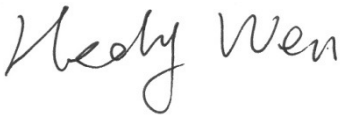
Authorized Signature:

Jack Zhang
EMC Laboratory Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.
The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
00		2014-10-08		Original

Authorized for issue by:				
Tested By		 **(Jim Huang) /Project Engineer**		2014-09-23 **Date**
Prepared By		 **(Hedy Wen) /Clerk**		2014-10-08 **Date**
Checked By		 **(Emen Li) /Reviewer**		2014-10-11 **Date**

3 Test Summary

Test Item	Test Requirement	Test method	Result
Antenna Requirement	47 CFR Part 15, Subpart C Section 15.203	ANSI C63.10 (2009)	PASS
Field Strength of the Fundamental Signal	47 CFR Part 15, Subpart C Section 15.239 (a)	ANSI C63.10 (2009)	PASS
Spurious Emissions	47 CFR Part 15, Subpart C Section 15.239 (c)/15.209	ANSI C63.10 (2009)	PASS
20dB Bandwidth	47 CFR Part 15, Subpart C Section 15.239 (a)	ANSI C63.10 (2009)	PASS

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5 General Information

5.1 Client Information

Applicant:	Fillony Limited
Address of Applicant:	Units 811-813, Level 8, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong
Manufacturer:	Telefield Limited
Address of Manufacturer:	Units 609-610, 6/F, Bio-Informatics Centre, No.2 Science Park West Avenue, Hong Kong Science Park, Shatin, New Territories, Hong Kong.
Factory:	GuangZhou Telefield Limited
Address of Factory:	No. 15, Guangcong Commercial North Street, 1 Industrial Area, Zhuliao, Guangzhou Baiyun Area, Guangdong Province, P.R.China

5.2 General Description of EUT

Product Name:	FM Transmitter, Charger, Sound Simulator
Model No.:	Mr. Vroom
Trade Mark:	Wikango, ScientificLabs
Sample Type:	Fixed production
EUT Function:	FM Transmitter, Charger, Sound Simulator
Operation Frequency:	88.2MHz~107.8MHz
Channel Numbers:	99
Channel Separation:	200kHz
Modulation Type:	FM
Antenna Type:	Integral
Power Supply:	DC 12-24V
Test Voltage:	DC 12V, DC 24V
	Pre-test the EUT in DC 12V and DC 24V, and the compliance test was performed at DC 12V as the worst case was found.
Audio Cable:	40cm (Unshielded)
USB Cable:	10cm (Shielded)
USB Charging Cable:	100cm (Shielded)

Operation Frequency each of Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	88.2MHz	26	93.2MHz	51	98.2MHz	76	103.2MHz
2	88.4MHz	27	93.4MHz	52	98.4MHz	77	103.4MHz
3	88.6MHz	28	93.6MHz	53	98.6MHz	78	103.6MHz
4	88.8MHz	29	93.8MHz	54	98.8MHz	79	103.8MHz
5	89.0MHz	30	94.0MHz	55	99.0MHz	80	104.0MHz
6	89.2MHz	31	94.2MHz	56	99.2MHz	81	104.2MHz
……	……	……	……	……	……	……	……
25	93.0MHz	50	98MHz	75	103MHz	99	107.8MHz

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	88.2MHz
The Middle channel	98MHz
The Highest channel	107.8MHz

5.3 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1005 mbar
Test mode:	
AUX in + Tx mode:	Keep the EUT in transmitting mode via Aux in.

5.4 Description of Support Units

The EUT has been tested independent unit.

5.5 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch E&E Lab,

No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057.

Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

5.6 Test Facility

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

- **CNAS (No. CNAS L2929)**

  CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

- **VCCI**

  The 3m Semi-anechoic chamber, Full-anechoic Chamber and Shielded Room (7.5m x 4.0m x 3.0m) of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-2197, G-416, T-1153 and C-2383 respectively.

- **FCC – Registration No.: 556682**

  SGS-CSTC Standards Technical 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 our files. Registration No.: 556682.

- **Industry Canada (IC)**

  Two 3m Semi-anechoic chambers of SGS-CSTC Standards Technical Services Co., Ltd. have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1 & 4620C-2.

5.7 Deviation from Standards

None.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

5.10Equipment List

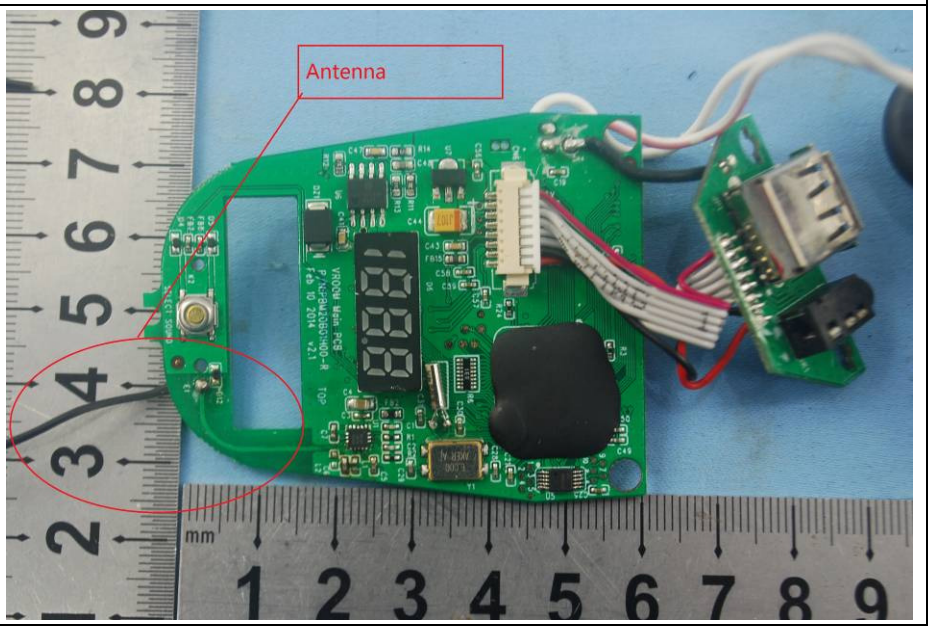
RE in Chamber					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2015-06-10
2	EMI Test Receiver	Agilent Technologies	N9038A	SEL0312	2015-09-16
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0027	2015-05-29
5	Coaxial cable	SGS	N/A	SEL0189	2015-05-29
6	Coaxial cable	SGS	N/A	SEL0121	2015-05-29
7	Coaxial cable	SGS	N/A	SEL0178	2015-05-29
8	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2014-10-24
9	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2014-10-24
10	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2015-05-16
11	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2014-10-24
12	Barometer	ChangChun	DYM3	SEL0088	2015-05-16
13	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24
14	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2014-10-24
15	Signal Generator	Rohde & Schwarz	SMY01	SEL0155	2014-10-24
16	Signal Generator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2015-05-16
17	Loop Antenna	Beijing Daze	ZN30401	SEL0203	2015-06-04
18	Audio analyzer	Rohde & Schwarz	UPL	SEL0093	2014-10-24

RF connected test					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2014-10-24
2	Humidity/ Temperature Indicator	HYGRO	ZJ1-2B	SEL0033	2014-10-24
3	Spectrum Analyzer	Rohde & Schwarz	FSP	SEL0154	2014-10-24
4	Coaxial cable	SGS	N/A	SEL0178	2015-05-29
5	Coaxial cable	SGS	N/A	SEL0179	2015-05-29
6	Barometer	ChangChun	DYM3	SEL0088	2015-05-16
7	Signal Generator	Rohde & Schwarz	SML03	SEL0068	2015-05-16
8	Band filter	amideon	82346	SEL0094	2015-05-16
9	POWER METER	R & S	NRVS	SEL0144	2014-10-24
10	Attenuator	Beijin feihang taida	TST-2-6dB	SEL0205	2015-05-16
11	Power Divider(splitter)	Agilent Technologies	11636B	SEL0130	2014-10-24

Note: The calibration interval is one year, all the instruments are valid.

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:	

6.2 Radiated Emission

Test Requirement:	47 CFR Part 15C Section 15.239 and 15.209
Test Method:	ANSI C63.10: 2009
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	100 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-.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 (dBuV/m @3m)	Remark
88MHz-108MHz	47.96	Average Value
	67.96	Peak Value

Test Procedure:	a. 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. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. 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. d. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. 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. g. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Setup:	

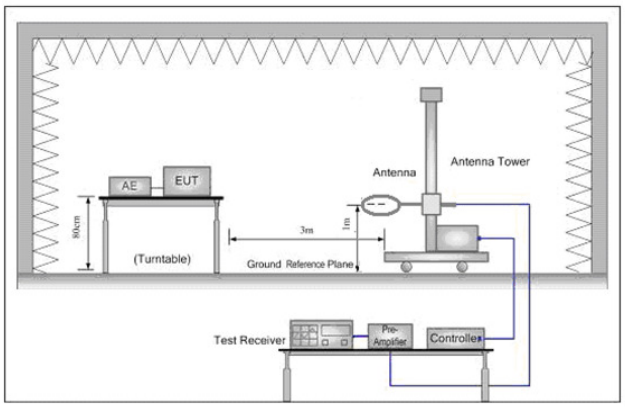


Figure 1. Below 30MHz

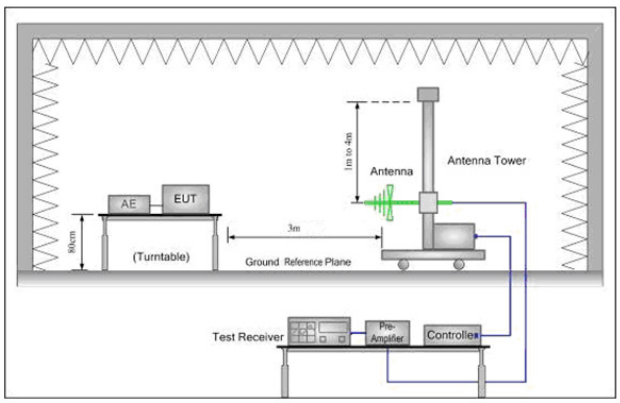


Figure 2. 30MHz to 1GHz

Test Mode:	AUX in + Tx mode
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

6.2.1 Field Strength Of The Fundamental Signal

Peak value:

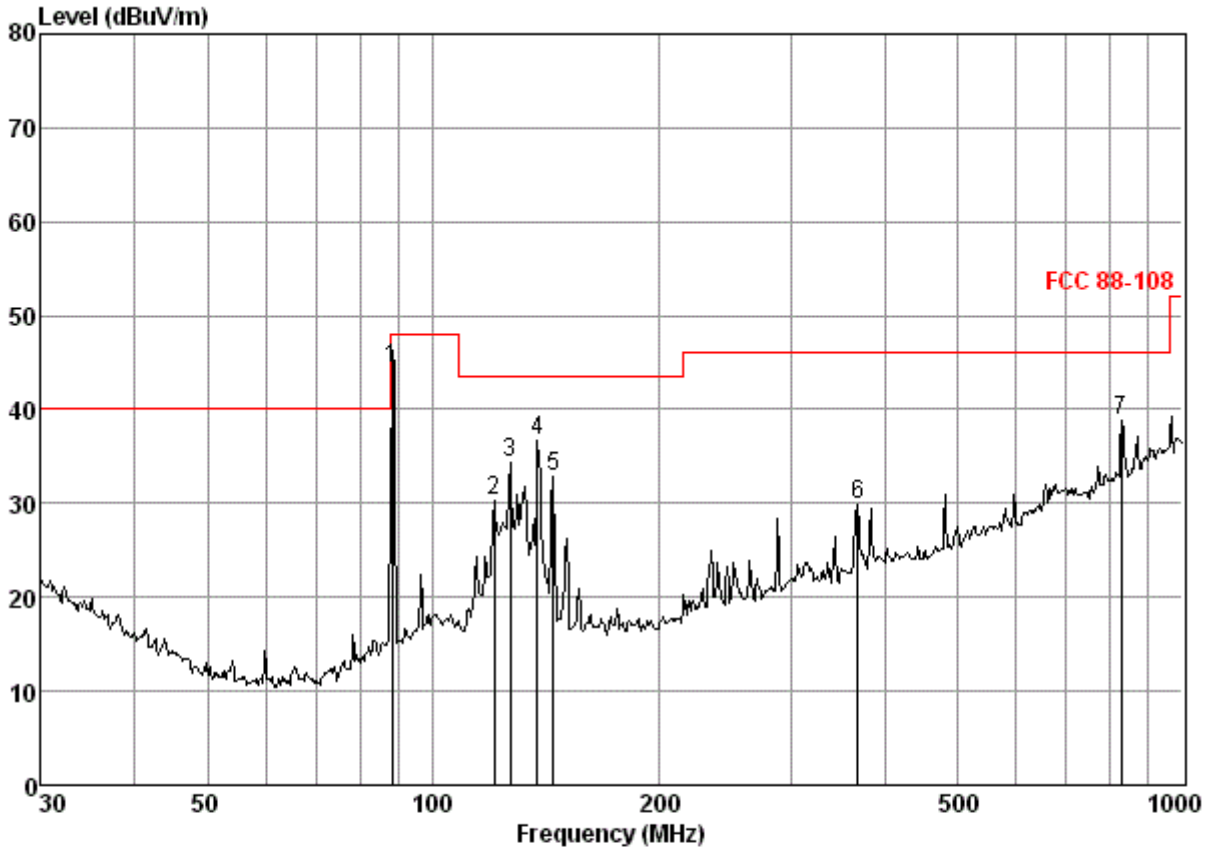
Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
88.200	1.10	8.52	27.22	61.94	44.34	67.96	-23.66	Horizontal
88.200	1.10	8.52	27.22	61.70	44.10	67.96	-23.90	Vertical
98.490	1.18	9.04	27.20	60.64	43.66	67.96	-24.30	Horizontal
98.490	1.18	9.04	27.20	61.41	44.43	67.96	-23.53	Vertical
107.890	1.22	8.72	27.15	61.26	44.05	67.96	-23.91	Horizontal
107.890	1.22	8.72	27.15	60.86	43.65	67.96	-24.31	Vertical

Remark:

As shown in this section, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.

6.2.2 Spurious Emissions

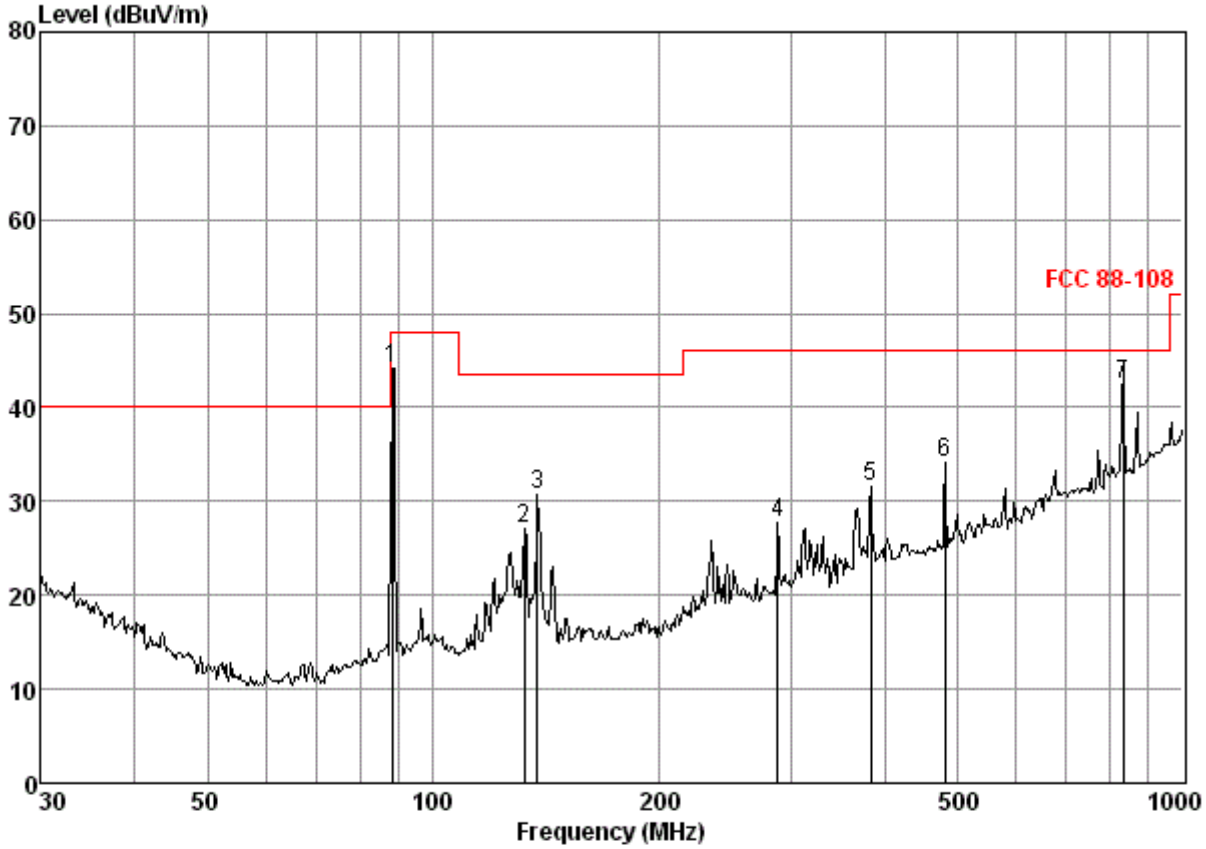
Test mode:	AUX in + Tx mode	Test channel:	Lowest	Polarization:	Horizontal



Condition: FCC 88-108 3m 3142C HORIZONTAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	88.20	1.10	8.52	27.22	61.94	44.34	47.96	-3.62
2	120.70	1.26	7.89	27.06	48.15	30.24	43.50	-13.26
3	126.77	1.27	7.76	27.03	52.32	34.32	43.50	-9.18
4	137.90	1.30	8.02	26.97	54.31	36.66	43.50	-6.84
5	144.84	1.31	8.54	26.93	50.01	32.93	43.50	-10.57
6	368.11	2.11	15.42	26.93	39.25	29.85	46.00	-16.15
7	827.49	3.32	22.40	27.13	40.24	38.83	46.00	-7.17

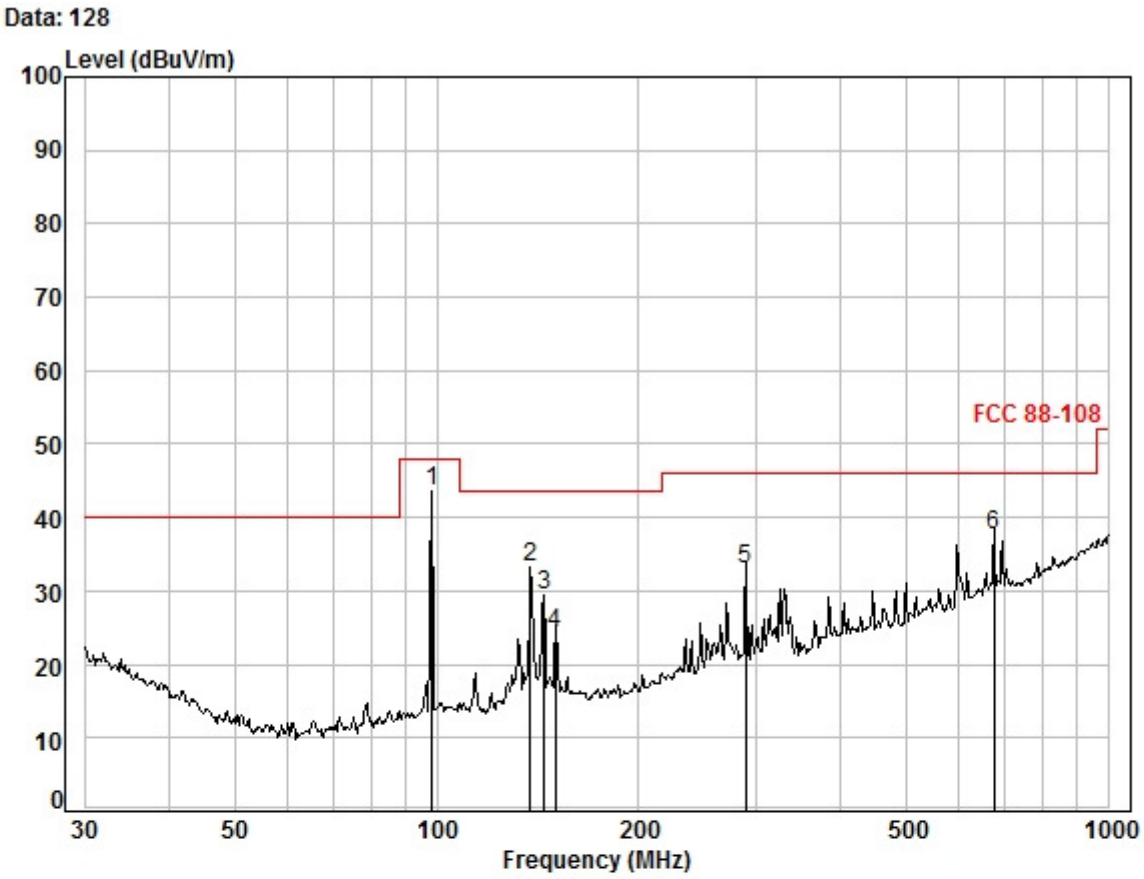
Test mode:	AUX in + Tx mode	Test channel:	Lowest	Polarization:	Vertical



Condition: FCC 88-108 3m 3142C VERTICAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	88.20	1.10	8.52	27.22	61.70	44.10	47.96	-3.86
2	132.22	1.28	7.79	27.00	45.04	27.11	43.50	-16.39
3	137.90	1.30	8.02	26.97	48.28	30.63	43.50	-12.87
4	287.99	1.85	13.37	26.43	39.05	27.84	46.00	-18.16
5	383.93	2.16	16.11	27.03	40.33	31.57	46.00	-14.43
6	482.22	2.53	17.80	27.62	41.38	34.09	46.00	-11.91
7	833.32	3.34	22.40	27.13	43.80	42.41	46.00	-3.59

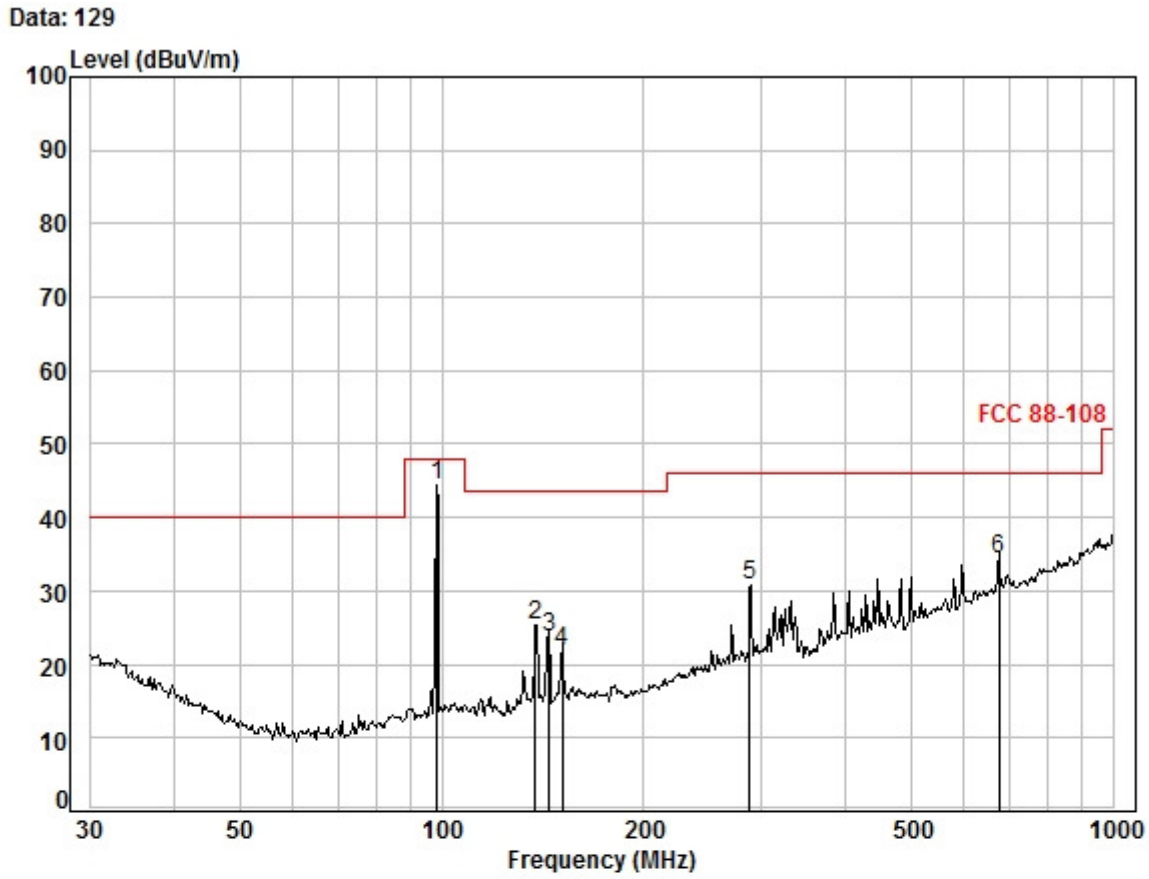
Test mode:	AUX in + Tx mode	Test channel:	Middle	Polarization:	Horizontal



Condition: FCC 88-108 3m 3142C HORIZONTAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	98.49	1.18	9.04	27.20	60.64	43.66	47.96	-4.30
2	137.90	1.30	8.02	26.97	50.96	33.31	43.50	-10.19
3	144.84	1.31	8.53	26.93	46.48	29.39	43.50	-14.11
4	150.01	1.32	9.00	26.91	40.93	24.34	43.50	-19.16
5	287.99	1.85	13.40	26.43	44.04	32.86	46.00	-13.14
6	675.21	2.85	21.42	27.44	40.70	37.53	46.00	-8.47

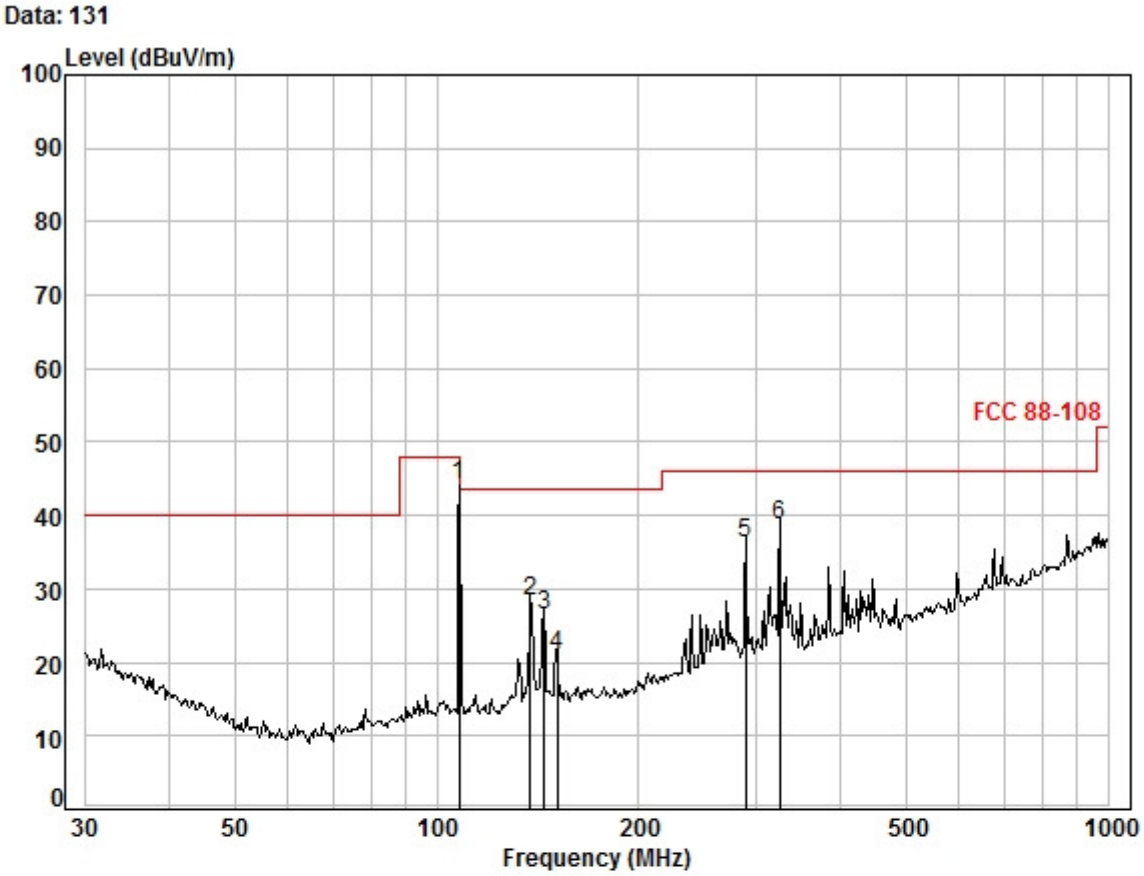
Test mode:	AUX in + Tx mode	Test channel:	Middle	Polarization:	Vertical



Condition: FCC 88-108 3m 3142C VERTICAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	98.55	1.18	9.04	27.20	61.41	44.43	47.96	-3.53
2	137.88	1.30	8.02	26.97	42.94	25.29	43.50	-18.21
3	144.43	1.31	8.48	26.93	40.72	23.58	43.50	-19.92
4	151.12	1.32	9.07	26.90	38.30	21.79	43.50	-21.71
5	287.46	1.84	13.35	26.43	42.03	30.79	46.00	-15.21
6	675.82	2.85	21.42	27.44	37.60	34.43	46.00	-11.57

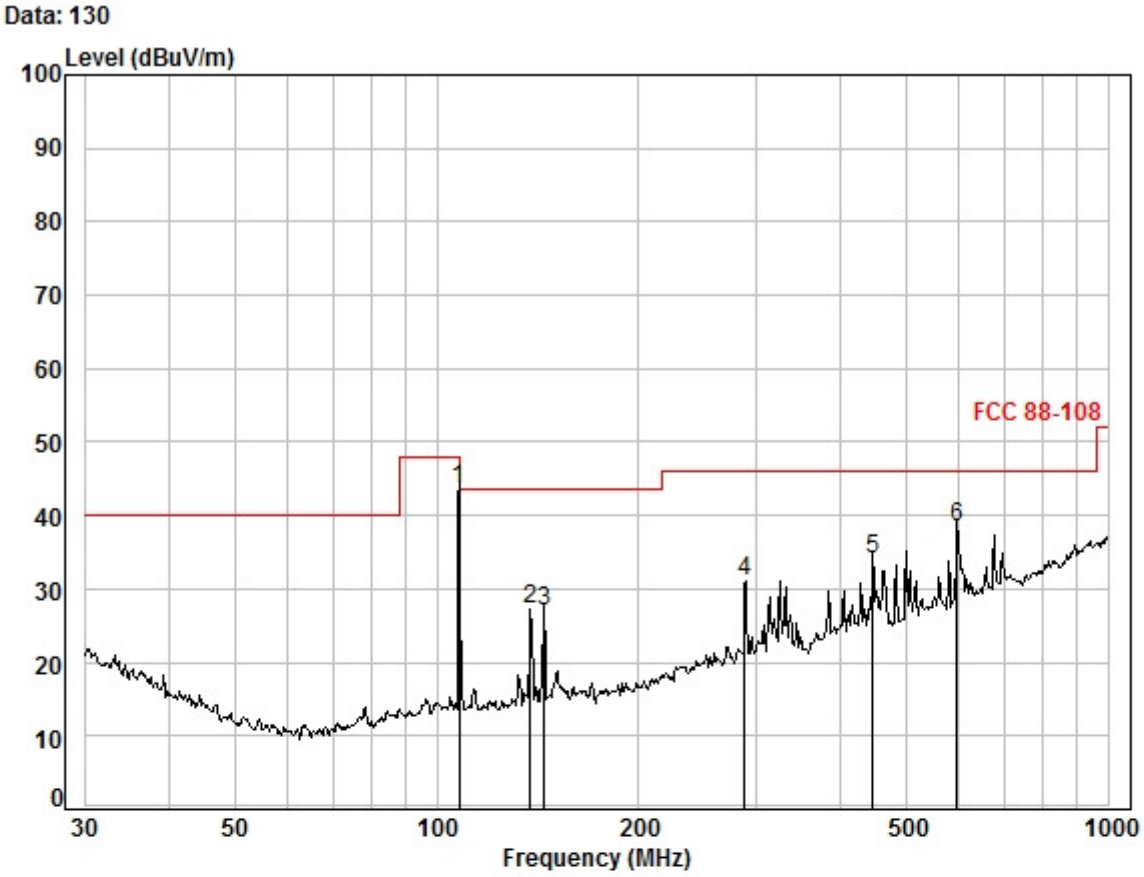
Test mode:	AUX in + Tx mode	Test channel:	Highest	Polarization:	Horizontal



Condition: FCC 88-108 3m 3142C HORIZONTAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	107.89	1.22	8.72	27.15	61.26	44.05	47.96	-3.91
2	137.90	1.30	8.02	26.97	45.92	28.27	43.50	-15.23
3	144.84	1.31	8.53	26.93	43.43	26.34	43.50	-17.16
4	151.07	1.32	9.07	26.90	37.44	20.93	43.50	-22.57
5	287.99	1.85	13.40	26.43	47.44	36.26	46.00	-9.74
6	324.46	1.98	14.80	26.58	48.39	38.59	46.00	-7.41

Test mode:	AUX in + Tx mode	Test channel:	Highest	Polarization:	Vertical



Condition: FCC 88-108 3m 3142C VERTICAL
Job No. : 4633RF
Mode : TX

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	107.89	1.22	8.72	27.15	60.86	43.65	47.96	-4.31
2	137.88	1.30	8.02	26.97	44.76	27.11	43.50	-16.39
3	144.43	1.31	8.48	26.93	44.09	26.95	43.50	-16.55
4	287.49	1.85	13.35	26.43	42.36	31.13	46.00	-14.87
5	445.99	2.40	16.81	27.42	42.26	34.05	46.00	-11.95
6	595.24	2.70	19.62	27.55	43.58	38.35	46.00	-7.65

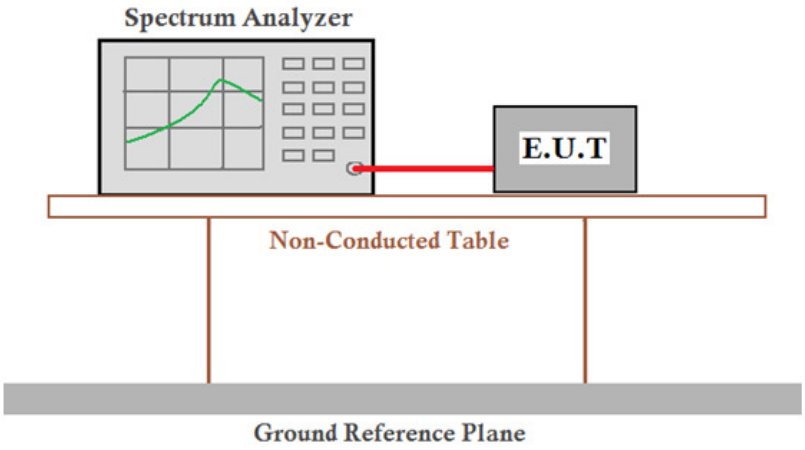
Remark:

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 + Antenna Factor + Cable Factor – Preamplifier Factor

2) The disturbance 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.

6.3 20dB Bandwidth

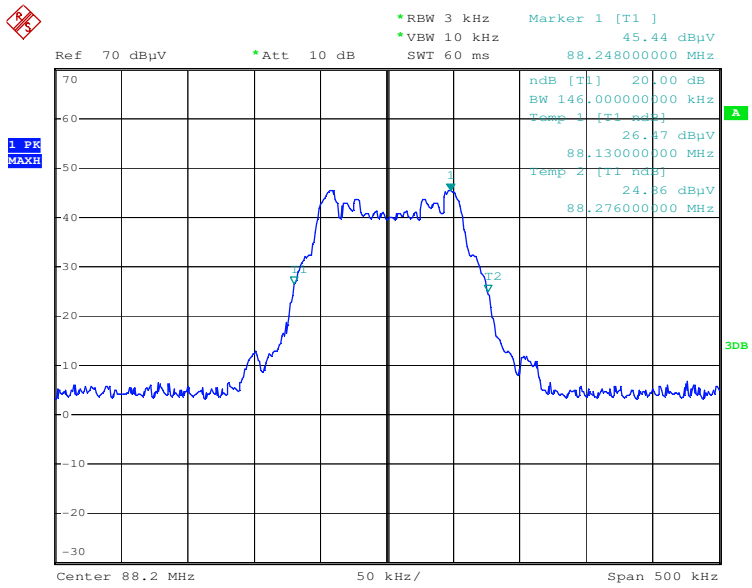
Test Requirement:	47 CFR Part 15C Section 15.239 (a)
Test Method:	ANSI C63.10:2009
Limit:	Emissions from the intentional radiator shall be confined within a band 200 kHz wide centered on the operating frequency. The 200 kHz band shall lie wholly within the frequency range of 88-108 MHz.
Test Setup:	
Test Mode:	AUX in + Tx mode
Input Modulation Signal:	The input signal shall be a 2.5 kHz tone. The level of the tone shall be 16 dB higher than that required to produce a frequency deviation of 75 kHz.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Measurement Data

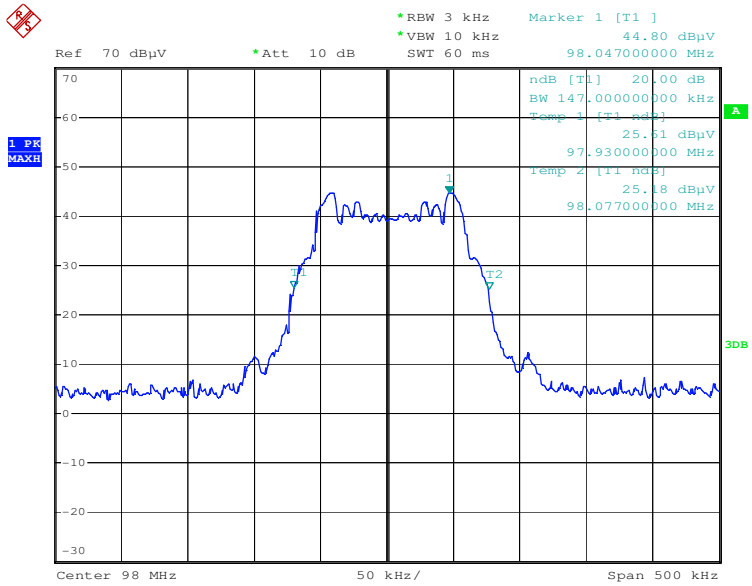
Test channel	Lower Frequency point (MHz)	Upper Frequency point (MHz)	20dB bandwidth(kHz)	Limit(kHz)
Lowest	88.130	88.276	146	200
Middle	97.930	98.077	147	200
Highest	107.735	107.872	137	200

Test plot as follows:

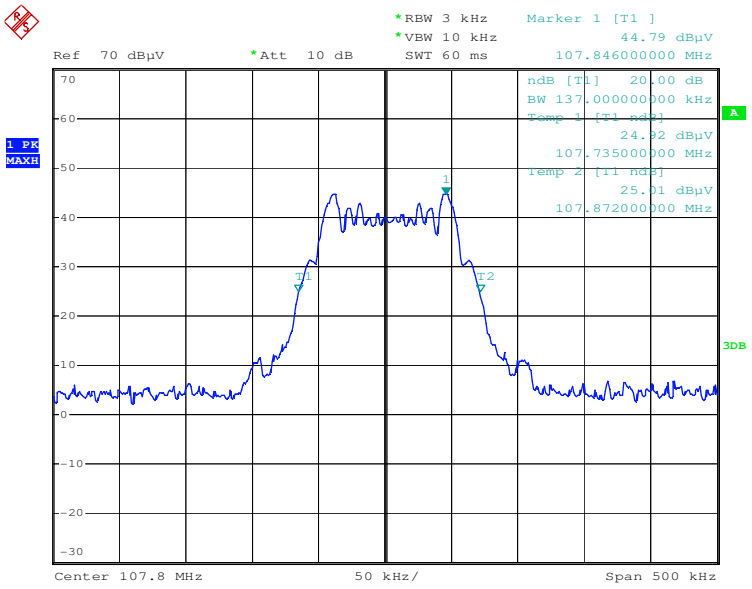
Test channel:	Lowest



Test channel:	Middle



Test channel:	Highest



6.4 Bandedge

Test Requirement:	47 CFR Part 15C Section 15.239 and 15.209
Test Method:	ANSI C63.10: 2009
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)

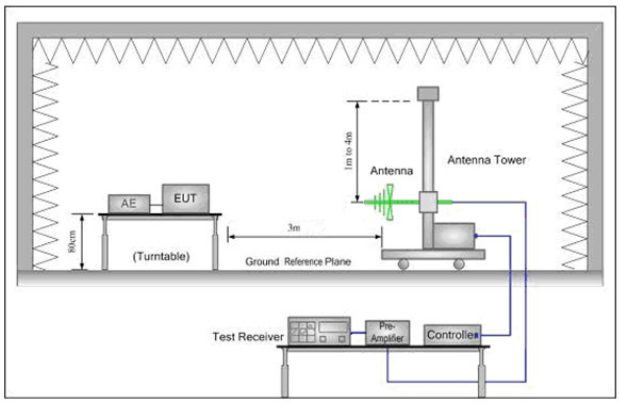
Receiver Setup:

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	100 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

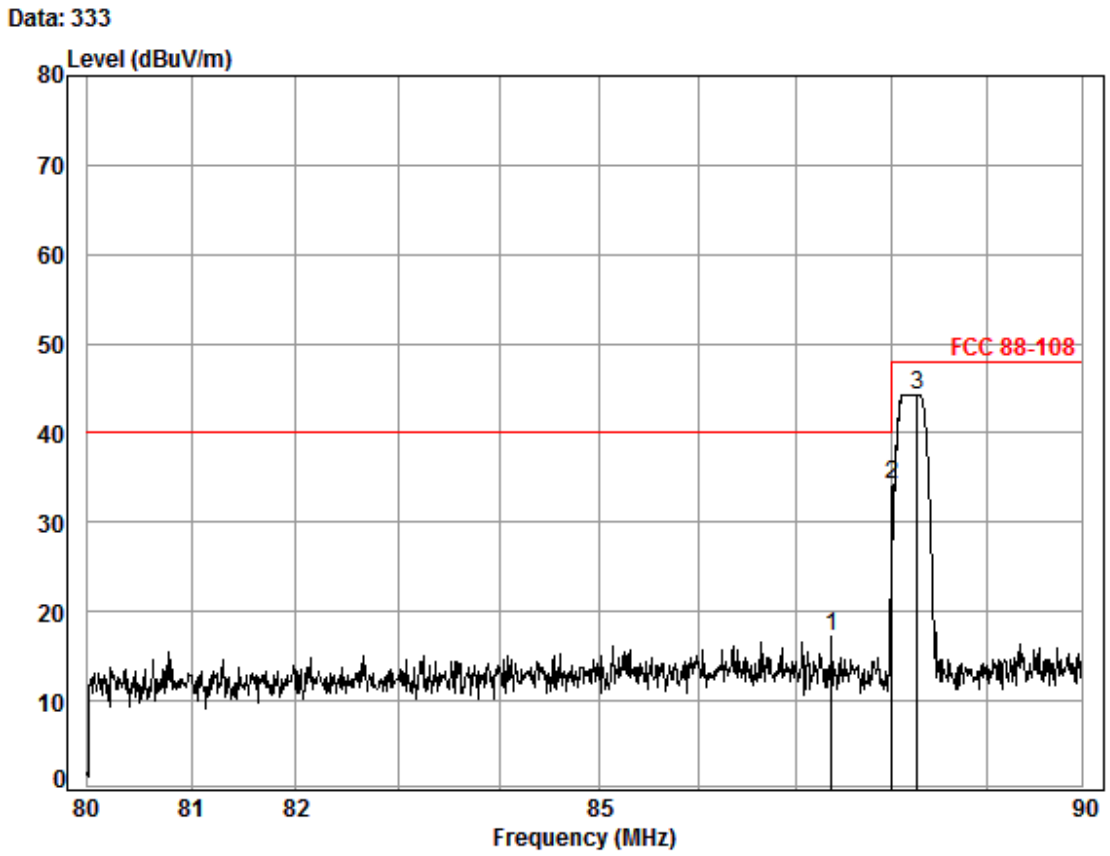
Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-.705MHz	24000/F(kHz)	-	-	30
1.705MHz-30MHz	30	-	-	30
30MHz-88MHz	100	40.0	Quasi-peak	3
88MHz-216MHz	150	43.5	Quasi-peak	3
216MHz-960MHz	200	46.0	Quasi-peak	3
960MHz-1GHz	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.

Test Procedure:	h. 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. i. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. j. 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. k. 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 rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. l. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. m. 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. n. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.
Test Setup:	 30MHz to 1GHz
Test Mode:	AUX in + Tx mode
Input Modulation Signal:	The input signal shall be a 2.5 kHz tone. The level of the tone shall be 16 dB higher than that required to pro duce a frequency deviation of 75 kHz.
Instruments Used:	Refer to section 5.10 for details
Test Results:	Pass

Test plot as follows:

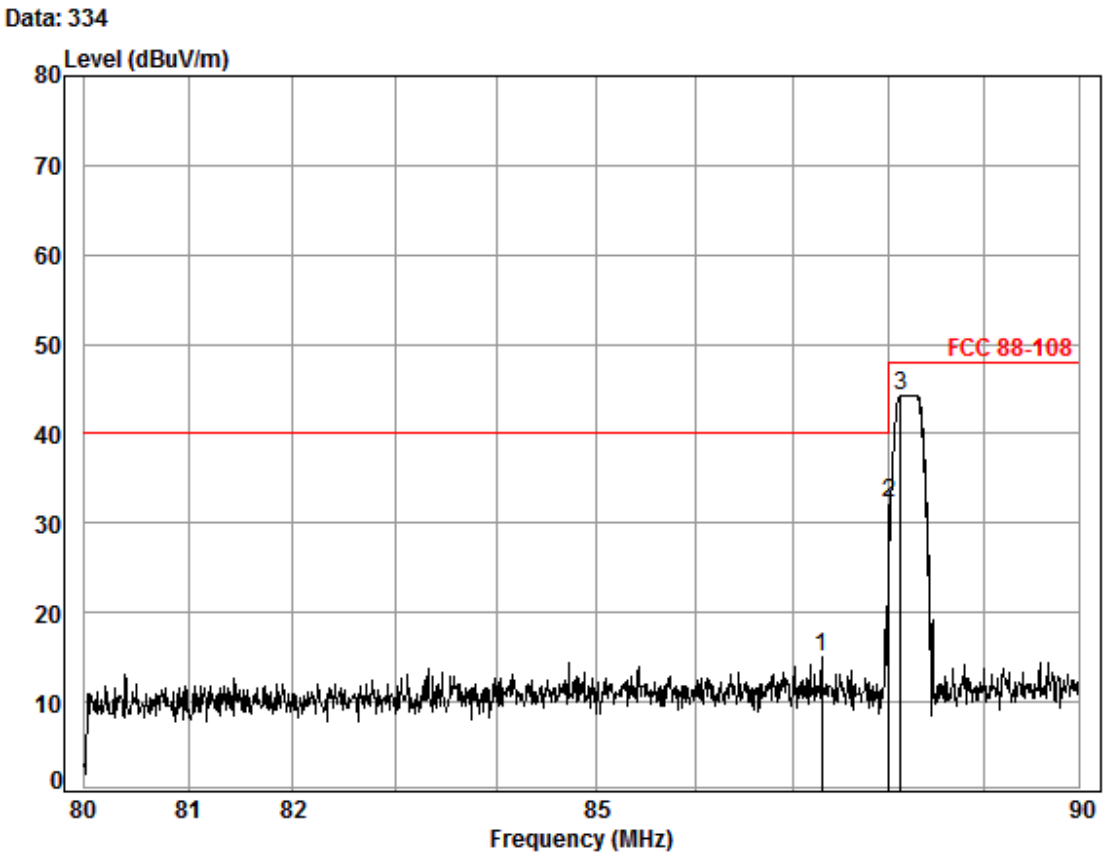
Test mode:	AUX in + Tx	Test channel:	Lowest	Remark:	Peak	Vertical



Condition: FCC 88-108 3m 3142C HORIZONTAL
Job No. : 4633RF
Mode : TX
: Peak

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	87.37	1.10	8.45	27.22	34.84	17.17	40.00	-22.83
2	88.00	1.10	8.51	27.22	51.81	34.20	40.00	-5.80
3	88.26	1.10	8.54	27.22	61.94	44.36	47.96	-3.60

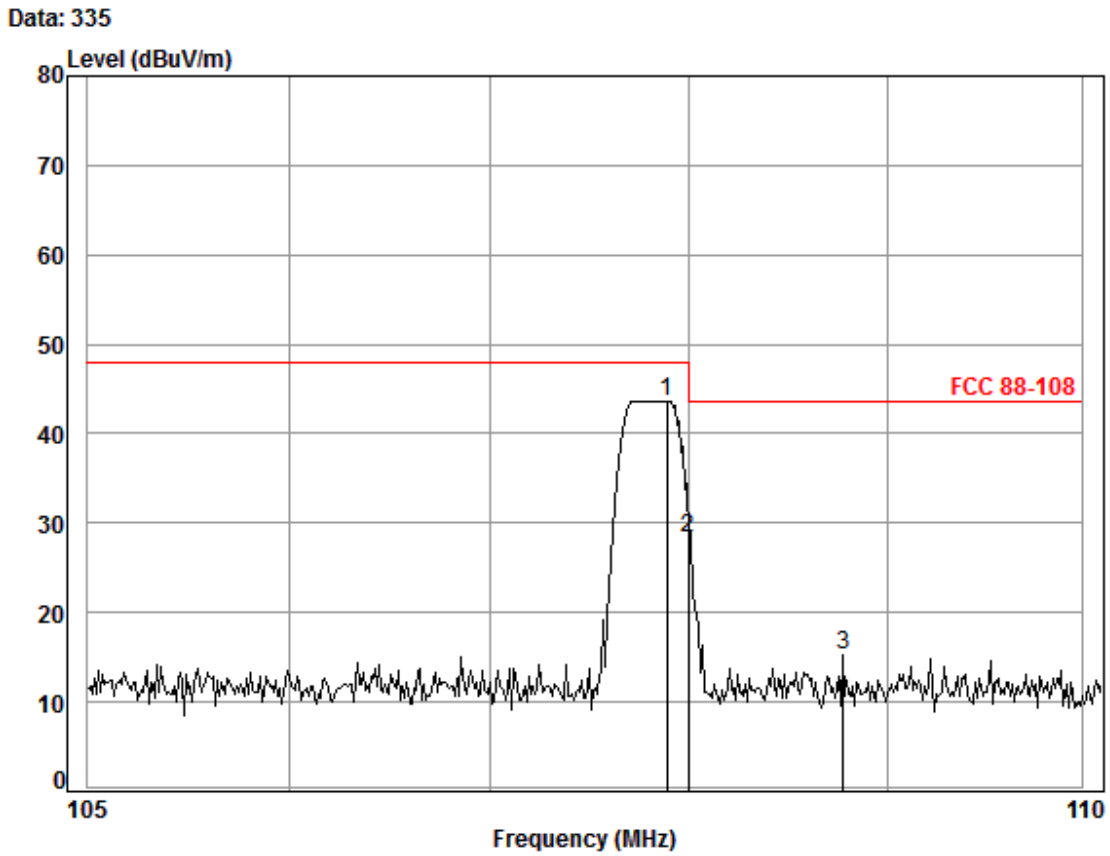
Test mode:	AUX in + Tx	Test channel:	Lowest	Remark:	Peak	Horizontal



Condition: FCC 88-108 3m 3142C Vertical
Job No. : 4633RF
Mode : TX
: Peak

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	87.30	1.10	8.45	27.22	32.81	15.14	40.00	-24.86
2	88.00	1.10	8.51	27.22	49.88	32.27	40.00	-7.73
3	88.12	1.10	8.54	27.22	61.87	44.29	47.96	-3.67

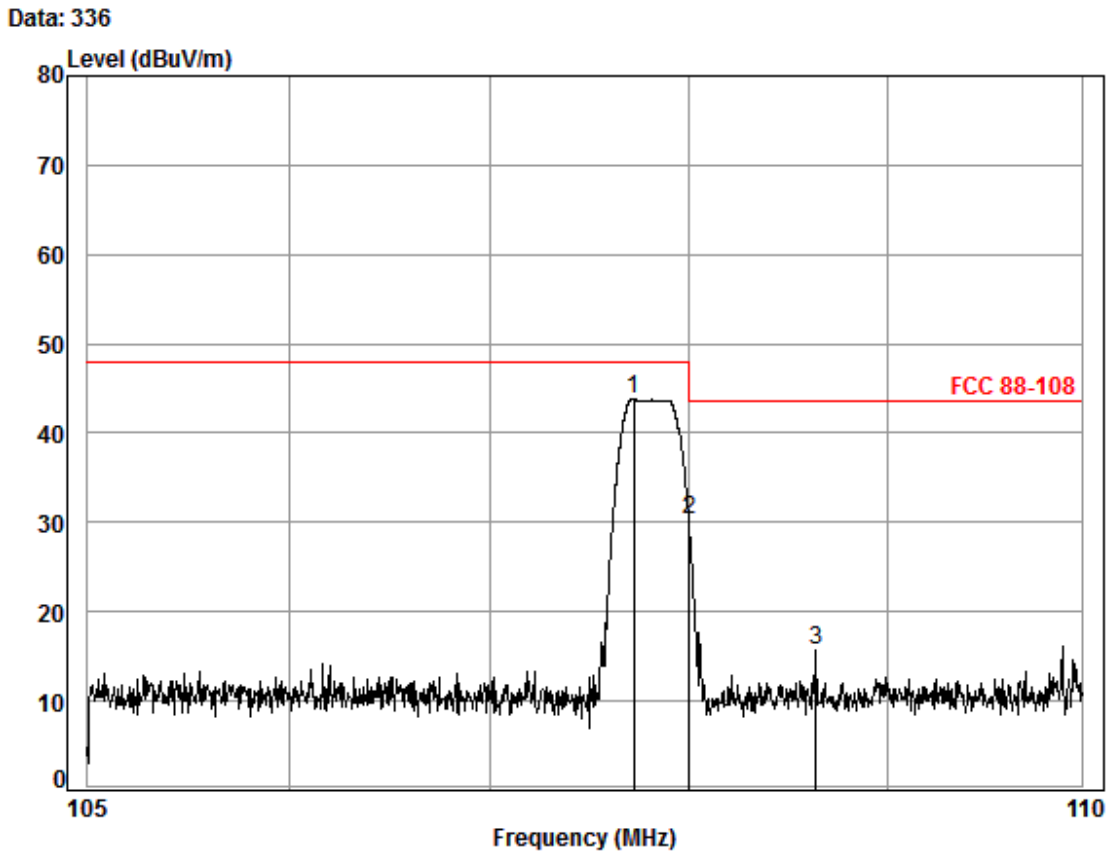
Test mode:	AUX in + Tx	Test channel:	Highest	Remark:	Peak	Vertical



Condition: FCC 88-108 3m 3142C Horizontal
Job No. : 4633RF
Mode : TX
: Peak

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	107.88	1.22	8.72	27.15	60.90	43.69	47.96	-4.27
2	107.99	1.22	8.70	27.14	45.64	28.42	47.96	-19.54
3	108.78	1.22	8.66	27.14	32.56	15.30	43.50	-28.20

Test mode:	AUX in + Tx	Test channel:	Highest	Remark:	Peak	Horizontal



Condition: FCC 88-108 3m 3142C Vertical
Job No. : 4633RF
Mode : TX
: Peak

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	107.72	1.22	8.72	27.15	60.93	43.72	47.96	-4.24
2	108.00	1.22	8.70	27.14	47.43	30.21	43.50	-13.29
3	108.64	1.22	8.68	27.14	32.98	15.74	43.50	-27.76

Note:
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

As shown in this section, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.