SGS-CSTC Standards Technical Services Ltd.

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FCC REPORT

Application No. :	SZEM1503001078CR
Applicant:	Innovation First, Inc.
Product Name:	Color Camera
Model No.(EUT):	276-4286
FCC ID:	UKU-VEXCAM-TX3
Standards:	47 CFR Part 15, Subpart C (2014)
Date of Receipt:	2015-03-26
Date of Test:	2015-04-01 to 2015-04-20
Date of Issue:	2015-05-08
Test Result:	**PASS ***

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

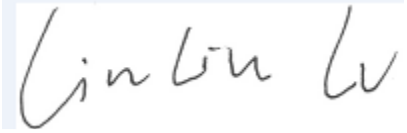
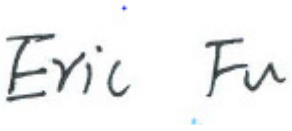
Authorized Signature:

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		*2015-05-08*		*Original*

Authorized for issue by:				
Tested By		 **(Owen Zhou) /Project Engineer**		2015-04-20 **Date**
Prepared By		 **(Linlin Lv) /Clerk**		2015-04-22 **Date**
Checked By		 **(Eric Fu) /Reviewer**		2015-04-22 **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 15.249 (a)	ANSI C63.10 (2009)	PASS
Spurious Emissions	47 CFR Part 15, Subpart C Section 15.249 (a)/15.209	ANSI C63.10 (2009)	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.249(a)/15.205	ANSI C63.10 (2009)	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215 (c)	ANSI C63.10 (2009)	PASS

4 Contents

5 General Information

5.1 Client Information

Applicant:	Innovation First, Inc.
Address of Applicant:	Innovation First, Inc. 1519 INT. 30 W Greenville, TX 75402

5.2 General Description of EUT

Product Name:	Color Camera
Model No.:	276-4286
EUT Function:	Color Camera
Frequency Range:	5725MHz, 5745MHz, 5765MHz, 5805MHz
Modulation Type:	FM
Sample Type:	Portable production
Antenna Type:	Integral
Antenna Gain:	2dBi
Power Supply:	Camera unit:DC6V-DC9V Camera Recevier: DC6V(4 x 1.5V "AA" Size Battery)

5.3 Test Environment and Mode

Operating Environment:	
Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1010 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation.

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 10m Semi-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.: G-823, R-4188, 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.

5.10 Equipment List

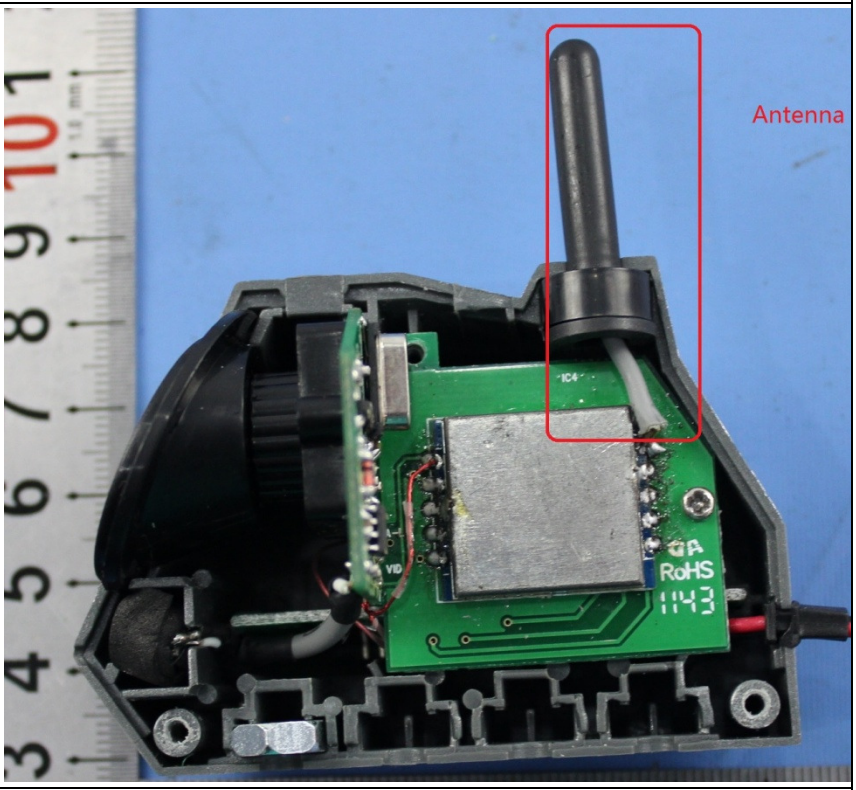
RE in Chamber					
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2015-06-10
2	EMI Test Receiver	Agilent Technologies	N9038A	SEL0312	2015-09-16
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2015-10-24
5	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2015-10-24
6	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2015-10-24
7	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2015-05-16
8	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2015-10-24
9	Coaxial cable	SGS	N/A	SEL0027	2015-05-29
10	Coaxial cable	SGS	N/A	SEL0189	2015-05-29
11	Coaxial cable	SGS	N/A	SEL0121	2015-05-29
12	Coaxial cable	SGS	N/A	SEL0178	2015-05-29
13	Band filter	Amindeon	82346	SEL0094	2015-05-16
14	Barometer	Chang Chun	DYM3	SEL0088	2015-05-16
15	DC Power Supply	Zhao Xin	RXN-305D	SEL0117	2015-10-24
16	Humidity/ Temperature Indicator	Shanhai Qixiang	ZJ1-2B	SEL0103	2015-10-24
17	Signal Generator (10M-27GHz)	Rohde & Schwarz	SMR27	SEL0067	2015-05-16
18	Signal Generator	Rohde & Schwarz	SMY01	SEL0155	2015-10-24
19	Loop Antenna	Beijing Daze	ZN30401	SEL0203	2015-06-04

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	2015-10-24
2	Humidity/ Temperature Indicator	HYGRO	ZJ1-2B	SEL0033	2015-10-24
3	Spectrum Analyzer	Rohde & Schwarz	FSP	SEL0154	2015-10-24
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	2015-10-24
10	Attenuator	Beijin feihang taida	TST-2-6dB	SEL0205	2015-05-16
11	Power Divider(splitter)	Agilent Technologies	11636B	SEL0130	2015-10-24

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:	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2dBi.	

6.2 Spurious Emissions

6.2.1 Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.249 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: (Spurious Emissions)

Frequency	Field strength (microvolt/meter)	Limit (dBuV/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

Frequency	Limit (dBuV/m @3m)	Remark
2400MHz-2483.5MHz	94.0	Average Value

fundamental signal)		114.0	Peak Value

Test Setup:

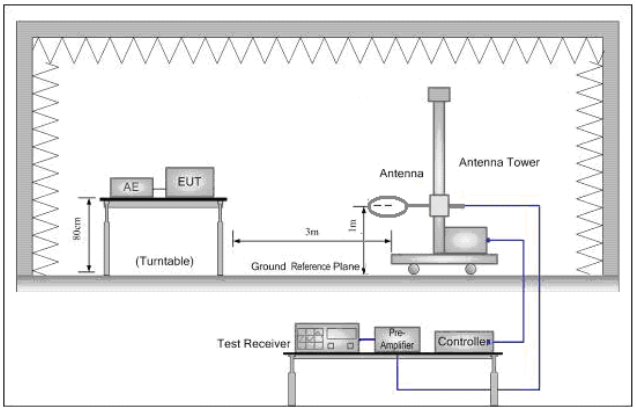


Figure 1. Below 30MHz

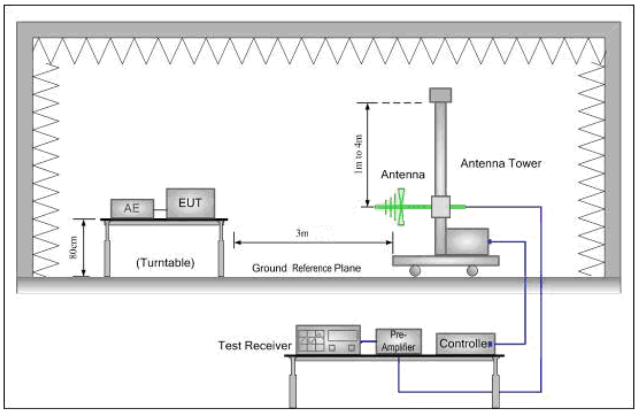


Figure 2. 30MHz to 1GHz

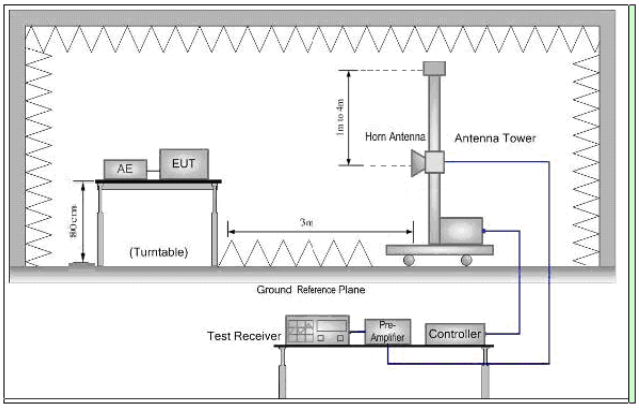


Figure 3. Above 1 GHz

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. Test the EUT in the lowest channel, the middle channel, the Highest channel h. 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. i. Repeat above procedures until all frequencies measured was complete.
Instruments Used:	Refer to section 5.10 for details
Test Mode:	Transmitting mode
Test Results:	Pass

Measurement Data

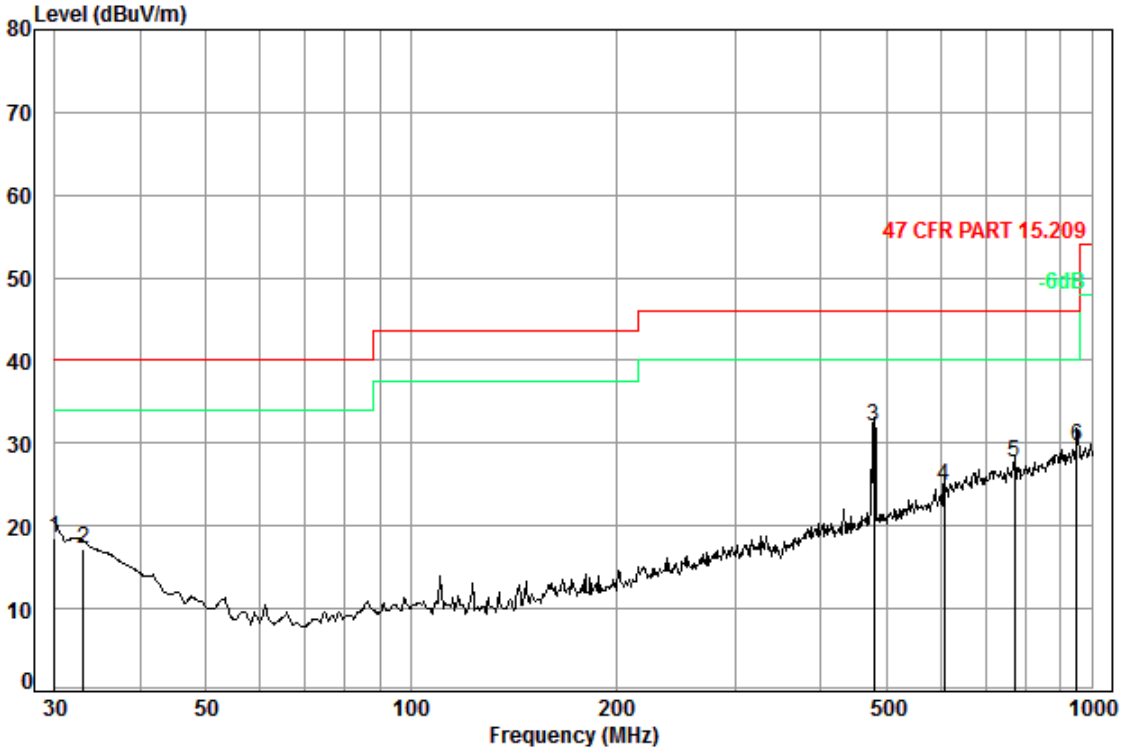
6.2.1.1 Field Strength Of The Fundamental Signal

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)	Remak
5725.00	6.90	35.74	39.21	88.10	91.53	114.00	-22.47	Peak
5725.00	6.90	35.74	39.21	88.10	80.63	94.00	-13.37	Average
5745.00	6.94	35.78	39.21	86.68	90.19	114.00	-23.81	Peak
5745.00	6.94	35.78	39.21	86.68	78.19	94.00	-15.21	Average
5765.00	6.98	35.83	39.21	85.91	89.51	114.00	-27.49	Peak
5765.00	6.98	35.83	39.21	85.91	77.68	94.00	-16.32	Average
5805.00	7.08	35.93	39.20	86.27	90.08	114.00	-23.92	Peak
5805.00	7.08	35.93	39.20	86.27	78.79	94.00	-15.21	Average

6.2.1.2 Spurious Emissions

30MHz~1GHz	
Test mode:	Transmitting

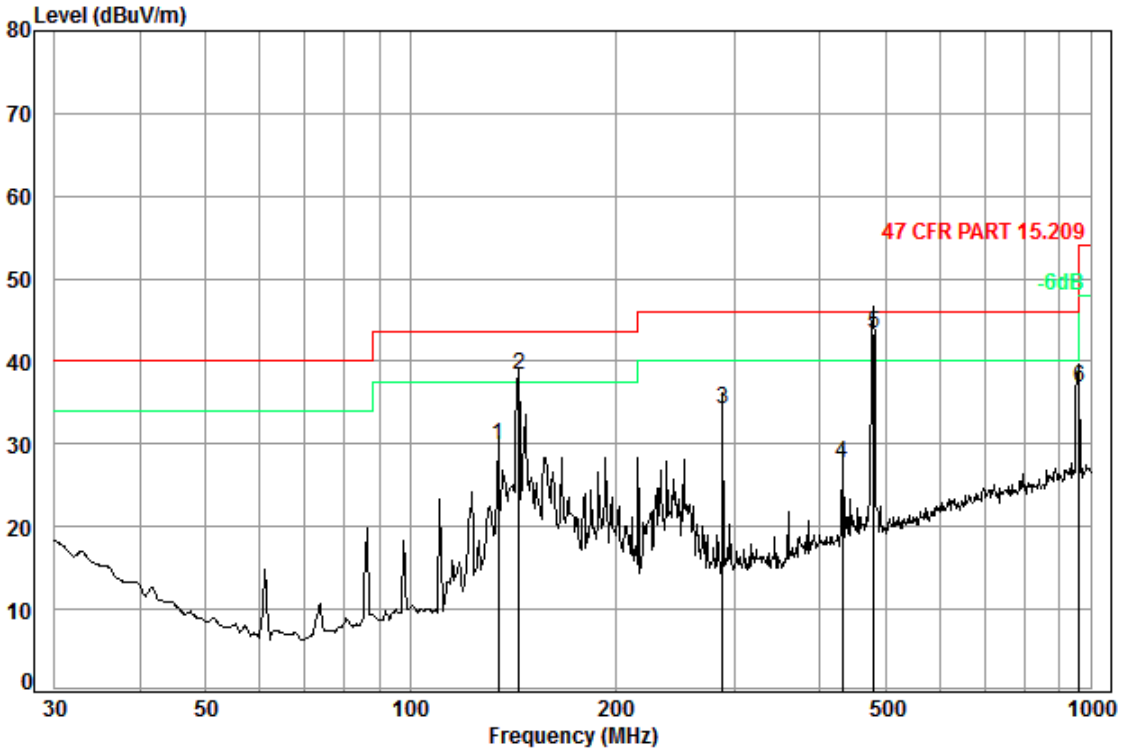
Vertical



Condition: 47 CFR PART 15.209 3m Vertical
Job No. : 1078CR
Test Mode: TX mode

	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	30.00	0.60	18.70	27.36	26.65	18.59	40.00	-21.41
2	32.98	0.60	17.03	27.34	27.01	17.30	40.00	-22.70
3	478.85	2.52	17.80	27.60	39.41	32.13	46.00	-13.87
4	607.79	2.72	20.02	27.53	29.66	24.87	46.00	-21.13
5	771.45	3.12	21.96	27.33	29.89	27.64	46.00	-18.36
6	952.09	3.65	23.30	26.54	29.33	29.74	46.00	-16.26

Horizontal



Condition: 47 CFR PART 15.209 3m Horizontal
Job No. : 1078CR
Test Mode: TX mode

	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	134.56	1.29	7.88	26.98	47.67	29.86	43.50	-13.64
2	144.33	1.31	8.49	26.94	55.43	38.29	43.50	-5.21
3	287.99	1.85	13.37	26.43	45.47	34.26	46.00	-11.74
4	431.03	2.33	16.52	27.33	36.19	27.71	46.00	-18.29
5	480.60	2.53	17.80	27.60	50.62	43.35	46.00	-2.65
6	962.16	3.66	23.30	26.47	36.26	36.75	54.00	-17.25

Above 1GHz								
Test mode:	Transmitting	Frequency :	5725MHz	Remark:	Peak			
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
1894.154	4.19	30.87	38.42	45.65	42.29	74	-31.71	Vertical
4417.841	4.82	34.29	39.11	46.87	46.87	74	-27.13	Vertical
7562.942	8.65	35.47	39.04	45.69	50.77	74	-23.23	Vertical
8969.161	8.94	35.99	38.33	43.23	49.83	74	-24.17	Vertical
11450.000	10.03	38.19	38.44	52.43	62.21	74	-11.79	Vertical
17175.000	12.63	41.03	41.67	45.50	57.49	74	-16.51	Vertical
1894.154	4.19	30.87	38.42	45.26	41.90	74	-32.10	Horizontal
3746.792	5.75	33.11	38.85	43.41	43.42	74	-30.58	Horizontal
7242.052	8.32	35.59	39.06	43.73	48.58	74	-25.42	Horizontal
9021.160	8.96	36.05	38.30	42.50	49.21	74	-24.79	Horizontal
11450.000	10.03	38.19	38.44	52.13	61.91	74	-12.09	Horizontal
17175.000	12.63	41.03	41.67	45.90	57.89	74	-16.11	Horizontal

Test mode:	Transmitting	Frequency :	5725MHz	Remark:	Average			
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
1894.154	4.19	30.87	38.42	36.35	32.99	54	-21.01	Vertical
4417.841	4.82	34.29	39.11	37.57	37.57	54	-16.43	Vertical
7562.942	8.65	35.47	39.04	36.52	41.60	54	-12.40	Vertical
8969.161	8.94	35.99	38.33	34.89	41.49	54	-12.51	Vertical
11450.000	10.03	38.19	38.44	43.62	53.40	54	-0.60	Vertical
17175.000	12.63	41.03	41.67	37.12	49.11	54	-4.89	Vertical
1894.154	4.19	30.87	38.42	36.26	32.90	54	-21.10	Horizontal
3746.792	5.75	33.11	38.85	34.25	34.26	54	-19.74	Horizontal
7242.052	8.32	35.59	39.06	34.26	39.11	54	-14.89	Horizontal
9021.160	8.96	36.05	38.30	33.26	39.97	54	-14.03	Horizontal
11450.000	10.03	38.19	38.44	41.89	51.67	54	-2.33	Horizontal
17175.000	12.63	41.03	41.67	35.28	47.27	54	-6.73	Horizontal

Test mode:	Transmitting	Frequency :	5745MHz	Remark:	Peak

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
3587.818	5.85	32.99	38.78	45.44	45.50	74	-28.50	Vertical
4973.662	5.92	34.87	39.29	45.94	47.44	74	-26.56	Vertical
7497.646	8.61	35.45	39.04	44.87	49.89	74	-24.11	Vertical
9475.497	9.30	37.08	38.01	43.12	51.49	74	-22.51	Vertical
11490.000	10.11	38.31	38.52	53.00	62.90	74	-11.10	Vertical
17235.000	12.74	41.01	41.69	45.40	57.46	74	-16.54	Vertical
3703.723	5.78	33.08	38.83	45.22	45.25	74	-28.75	Horizontal
5090.007	6.06	34.88	39.29	45.04	46.69	74	-27.31	Horizontal
7390.070	8.49	35.43	39.05	45.76	50.63	74	-23.37	Horizontal
9725.221	9.20	37.69	37.86	41.95	50.98	74	-23.02	Horizontal
11490.000	10.06	38.22	38.46	47.54	57.36	74	-16.64	Horizontal
17235.000	11.66	40.14	41.40	52.14	62.54	74	-11.46	Horizontal

Test mode:	Transmitting	Frequency :	5745MHz	Remark:	Average

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
3587.818	5.85	32.99	38.78	36.26	36.32	54	-17.68	Vertical
4973.662	5.92	34.87	39.29	36.22	37.72	54	-16.28	Vertical
7497.646	8.61	35.45	39.04	35.23	40.25	54	-13.75	Vertical
9475.497	9.30	37.08	38.01	34.25	42.62	54	-11.38	Vertical
11490.000	10.11	38.31	38.52	43.84	53.74	54	-0.26	Vertical
17235.000	12.74	41.01	41.69	35.95	48.01	54	-5.99	Vertical
3703.723	5.78	33.08	38.83	36.23	36.26	54	-17.74	Horizontal
5090.007	6.06	34.88	39.29	35.86	37.51	54	-16.49	Horizontal
7390.070	8.49	35.43	39.05	36.58	41.45	54	-12.55	Horizontal
9725.221	9.20	37.69	37.86	32.11	41.14	54	-12.86	Horizontal
11490.000	10.06	38.22	38.46	34.56	44.38	54	-9.62	Horizontal
17235.000	11.66	40.14	41.40	39.26	49.66	54	-4.34	Horizontal

Test mode:	Transmitting	Frequency :	5765MHz	Remark:	Peak

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
3725.195	5.77	33.09	38.84	45.61	45.63	74	-28.37	Vertical
5002.497	5.99	34.90	39.30	45.51	47.10	74	-26.90	Vertical
6894.806	7.85	35.78	39.09	45.83	50.37	74	-23.63	Vertical
8789.516	8.95	35.96	38.45	42.97	49.43	74	-24.57	Vertical
11530.000	10.08	38.25	38.48	51.53	61.38	74	-12.62	Vertical
17295.000	12.84	40.98	41.70	48.46	60.58	74	-13.42	Vertical
3693.033	5.79	33.07	38.83	44.57	44.60	74	-29.40	Horizontal
4560.559	4.85	34.52	39.16	45.26	45.47	74	-28.53	Horizontal
6717.762	7.54	35.75	39.11	45.13	49.31	74	-24.69	Horizontal
8106.200	8.93	35.83	38.92	44.34	50.18	74	-23.82	Horizontal
11530.000	10.08	38.25	38.48	47.88	57.73	74	-16.27	Horizontal
17295.000	12.84	40.98	41.70	47.85	59.97	74	-14.03	Horizontal

Test mode:	Transmitting	Frequency :	5765MHz	Remark:	Average

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
3725.195	5.77	33.09	38.84	36.89	36.91	54	-17.09	Vertical
5002.497	5.99	34.90	39.30	36.21	37.80	54	-16.20	Vertical
6894.806	7.85	35.78	39.09	36.21	40.75	54	-13.25	Vertical
8789.516	8.95	35.96	38.45	33.25	39.71	54	-14.29	Vertical
11530.000	10.08	38.25	38.48	42.17	52.02	54	-1.98	Vertical
17295.000	12.84	40.98	41.70	36.26	48.38	54	-5.62	Vertical
3693.033	5.79	33.07	38.83	35.21	35.24	54	-18.76	Horizontal
4560.559	4.85	34.52	39.16	36.21	36.42	54	-17.58	Horizontal
6717.762	7.54	35.75	39.11	35.89	40.07	54	-13.93	Horizontal
8106.200	8.93	35.83	38.92	35.25	41.09	54	-12.91	Horizontal
11530.000	10.08	38.25	38.48	38.26	48.11	54	-5.89	Horizontal
17295.000	12.84	40.98	41.70	36.39	48.51	54	-5.49	Horizontal

Test mode:	Transmitting	Frequency :	5805MHz	Remark:	Peak

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
3640.045	5.82	33.03	38.80	50.08	50.13	74	-23.87	Vertical
4959.307	5.89	34.86	39.29	46.23	47.69	74	-26.31	Vertical
7138.144	8.19	35.69	39.07	44.95	49.76	74	-24.24	Vertical
9312.588	9.18	36.75	38.11	43.95	51.77	74	-22.23	Vertical
11610.000	10.06	38.22	38.46	51.14	60.96	74	-13.04	Vertical
15988.450	11.73	40.28	41.32	47.75	58.44	74	-15.56	Vertical
3546.577	5.88	32.94	38.76	44.68	44.74	74	-29.26	Horizontal
4888.151	5.71	34.79	39.26	44.89	46.13	74	-27.87	Horizontal
6954.852	7.95	35.79	39.09	45.21	49.86	74	-24.14	Horizontal
9366.577	9.22	36.87	38.08	43.49	51.50	74	-22.50	Horizontal
11610.000	10.11	38.31	38.52	47.36	57.26	74	-16.74	Horizontal
17415.000	13.06	40.93	41.74	46.81	59.06	74	-14.94	Horizontal

Test mode:	Transmitting	Frequency :	5805MHz	Remark:	Average

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
3640.045	5.82	33.03	38.80	40.23	40.28	54	-13.72	Vertical
4959.307	5.89	34.86	39.29	37.21	38.67	54	-15.33	Vertical
7138.144	8.19	35.69	39.07	35.21	40.02	54	-13.98	Vertical
9312.588	9.18	36.75	38.11	34.56	42.38	54	-11.62	Vertical
11610.000	10.06	38.22	38.46	41.50	51.32	54	-2.68	Vertical
15988.450	11.73	40.28	41.32	38.23	48.92	54	-5.08	Vertical
3546.577	5.88	32.94	38.76	35.23	35.29	54	-18.71	Horizontal
4888.151	5.71	34.79	39.26	35.61	36.85	54	-17.15	Horizontal
6954.852	7.95	35.79	39.09	35.99	40.64	54	-13.36	Horizontal
9366.577	9.22	36.87	38.08	34.26	42.27	54	-11.73	Horizontal
11610.000	10.11	38.31	38.52	38.12	48.02	54	-5.98	Horizontal
17415.000	13.06	40.93	41.74	31.24	43.49	54	-10.51	Horizontal

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) Scan from 9kHz to 25GHz,The disturbance above 13GHz and 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 .

6.3 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2009
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)
Limit(band edge):	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 Section 15.209, whichever is the lesser attenuation.

Frequency	Limit (dBuV/m @3m)	Remark
30MHz-88MHz	40.0	Quasi-peak Value
88MHz-216MHz	43.5	Quasi-peak Value
216MHz-960MHz	46.0	Quasi-peak Value
960MHz-1GHz	54.0	Quasi-peak Value
Above 1GHz	54.0	Average Value
	74.0	Peak Value

Test Setup:

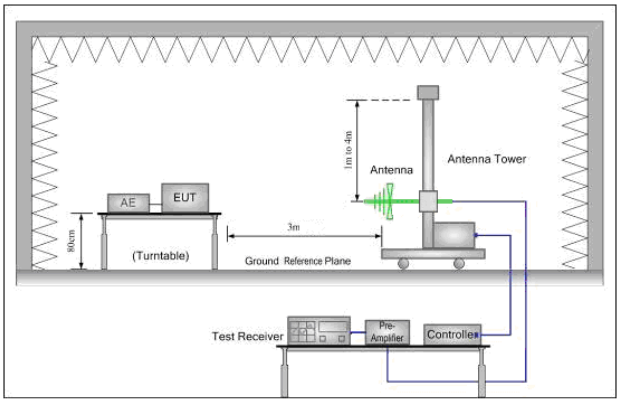


Figure 1. 30MHz to 1GHz

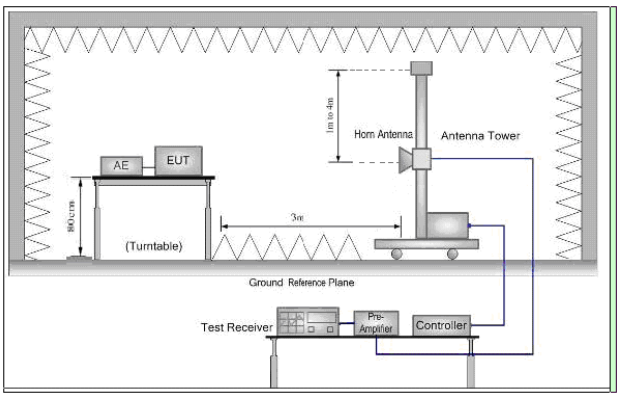
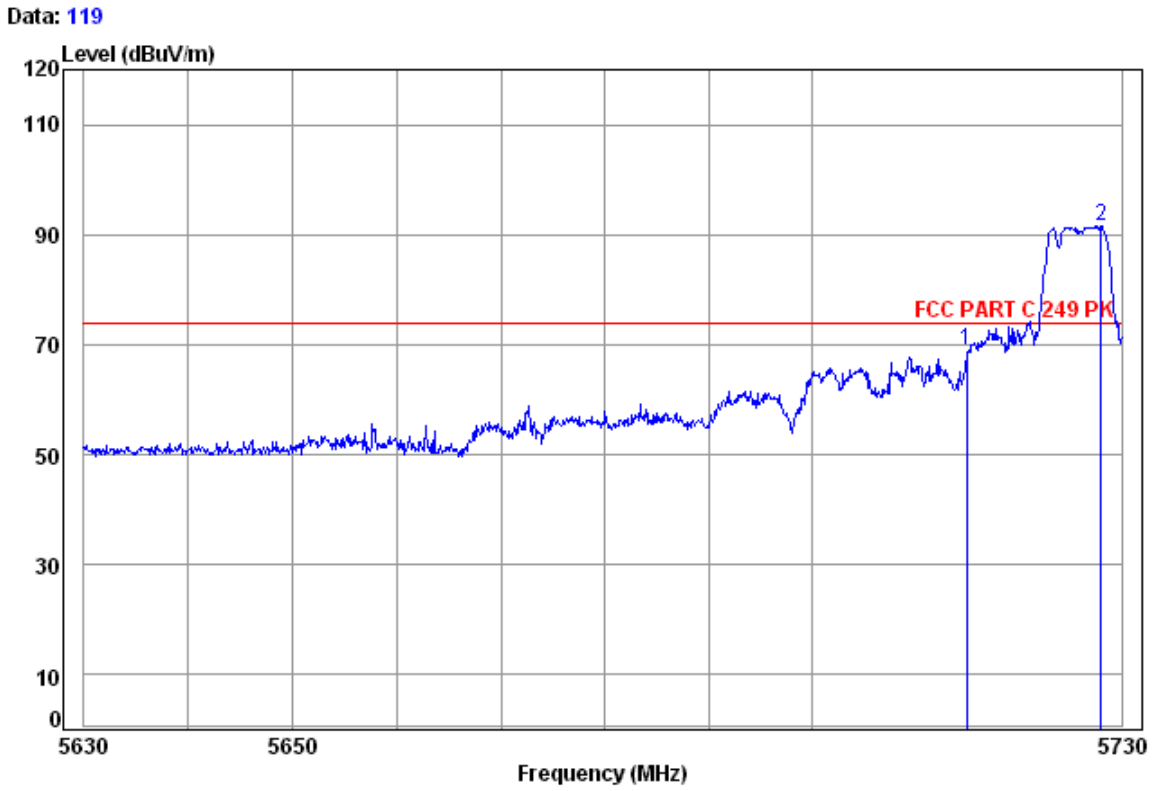


Figure 2. Above 1 GHz

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 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. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel g. Test the EUT in the lowest channel , the Highest channel h. 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.. i. Repeat above procedures until all frequencies measured was complete.
Instruments Used:	Refer to section 5.10 for details
Test Mode:	Transmitting mode
Test Results:	Pass

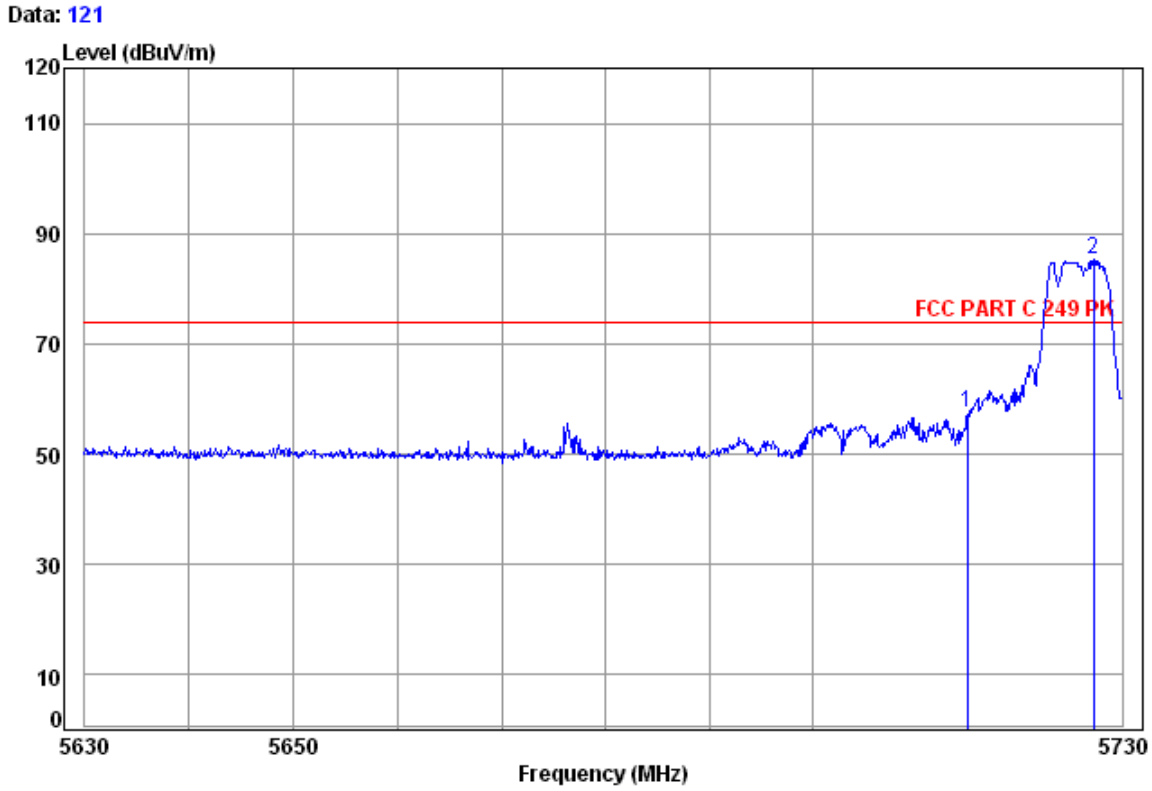
Band edge (Radiated Emission)						
Worse case mode:	5725MHz	Test channel:	Lowest	Remark:	Peak	Vertical



Site : chamber
Condition: FCC PART C 249 PK 3m Vertical
Job No: : 1078CR
Mode: : 5725 Band edge

	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	5715.00	6.87	35.70	39.21	65.50	68.86	74.00	-5.14
2 pp	5727.98	6.90	35.74	39.21	88.10	91.53	74.00	17.53

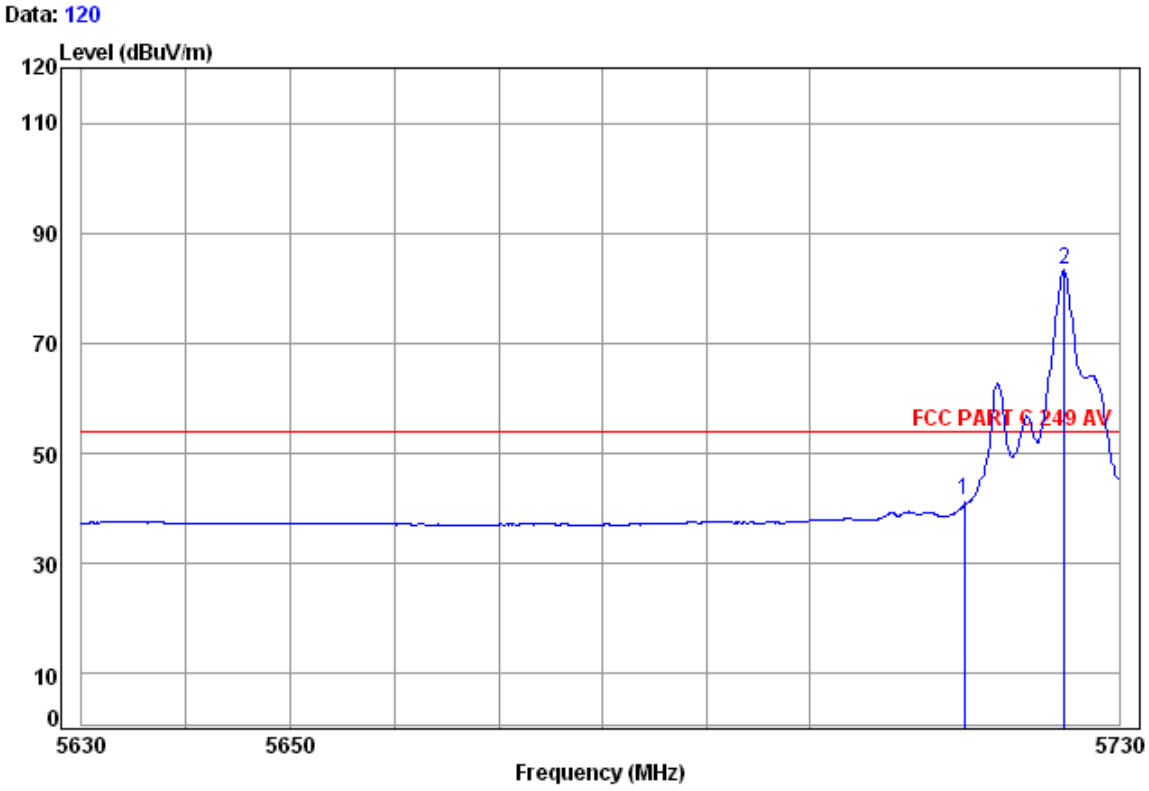
Worse case mode:	5725MHz	Test channel:	Lowest	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 249 PK 3m Horizontal
Job No: : 1078CR
Mode: : 5725 Band edge

	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	5715.00	6.87	35.70	39.21	54.24	57.60	74.00	-16.40
2 pp	5727.28	6.90	35.73	39.21	81.77	85.19	74.00	11.19

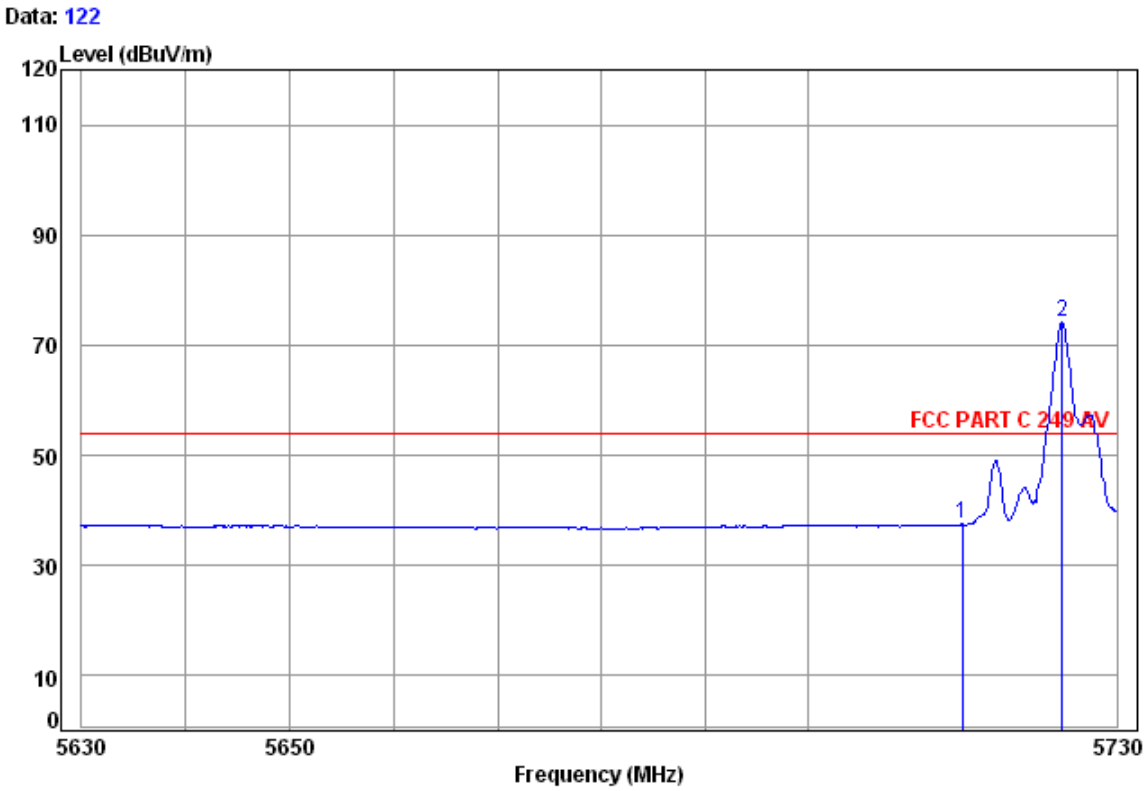
Worse case mode:	5725MHz	Test channel:	Lowest	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 249 AV 3m Vertical
Job No: : 1078CR
Mode: : 5725 Band edge

	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	5715.00	6.87	35.70	39.21	38.01	41.37	54.00	-12.63
2 pp	5724.66	6.89	35.73	39.21	79.87	83.28	54.00	29.28

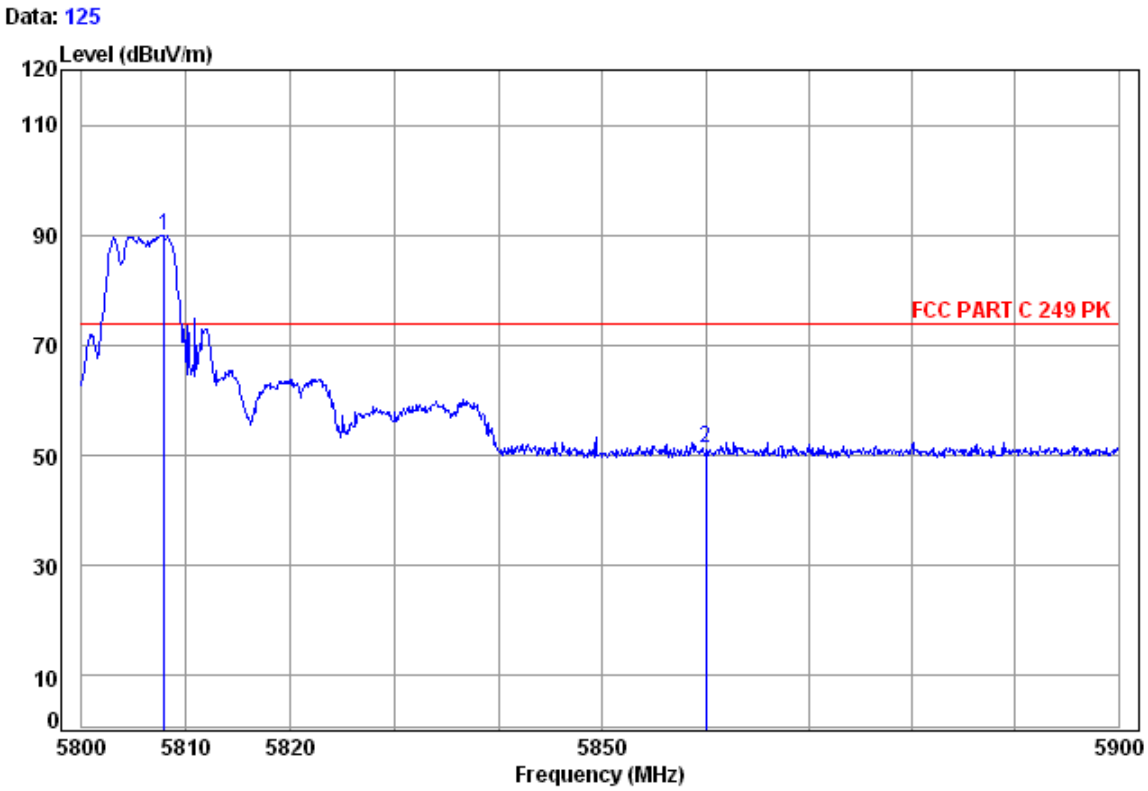
Worse case mode:	5725MHz	Test channel:	Lowest	Remark:	Average	Horizontal



Site : chamber
Condition: FCC PART C 249 AV 3m Horizontal
Job No: : 1078CR
Mode: : 5725 Band edge

	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	5715.00	6.87	35.70	39.21	34.09	37.45	54.00	-16.55
2 pp	5724.66	6.89	35.73	39.21	70.71	74.12	54.00	20.12

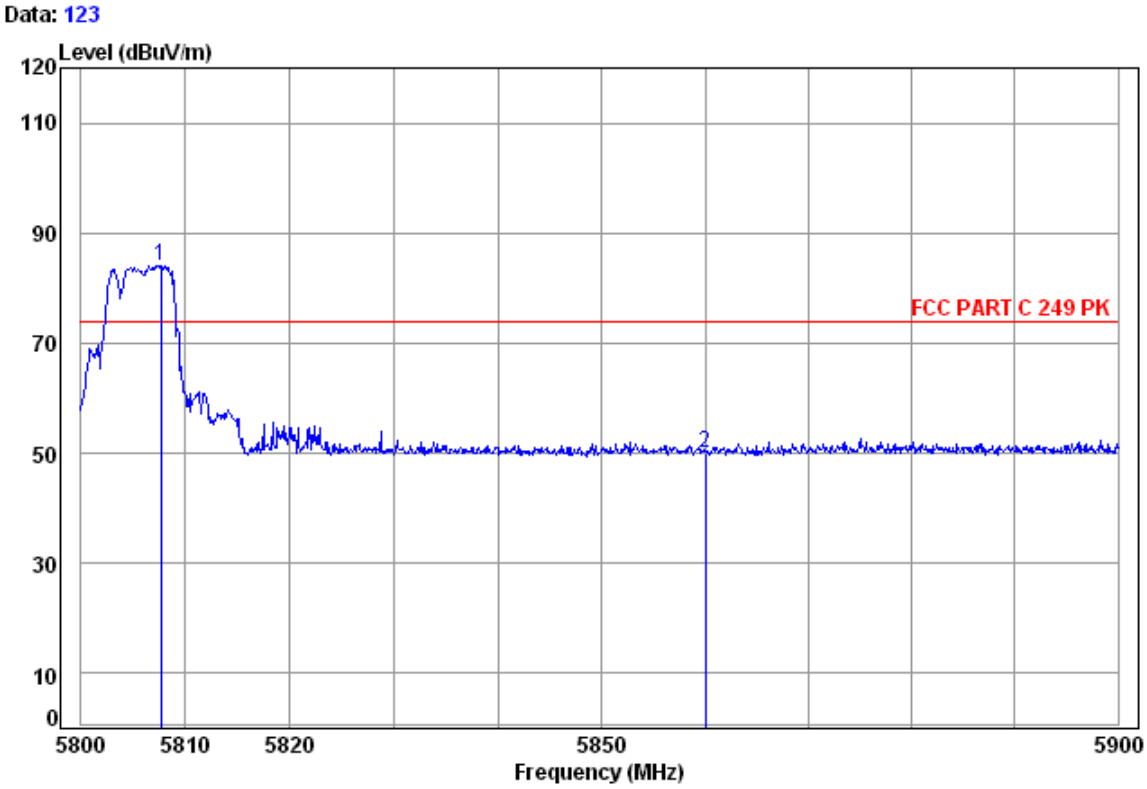
Worse case mode:	5725MHz	Test channel:	Highest	Remark:	Peak	Vertical



Site : chamber
Condition: FCC PART C 249 PK 3m Vertical
Job No: : 1078CR
Mode: : 5805 Band edge

	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 pp	5807.94	7.08	35.93	39.20	86.27	90.08	74.00	16.08
2	5860.00	7.20	36.03	39.20	47.43	51.46	74.00	-22.54

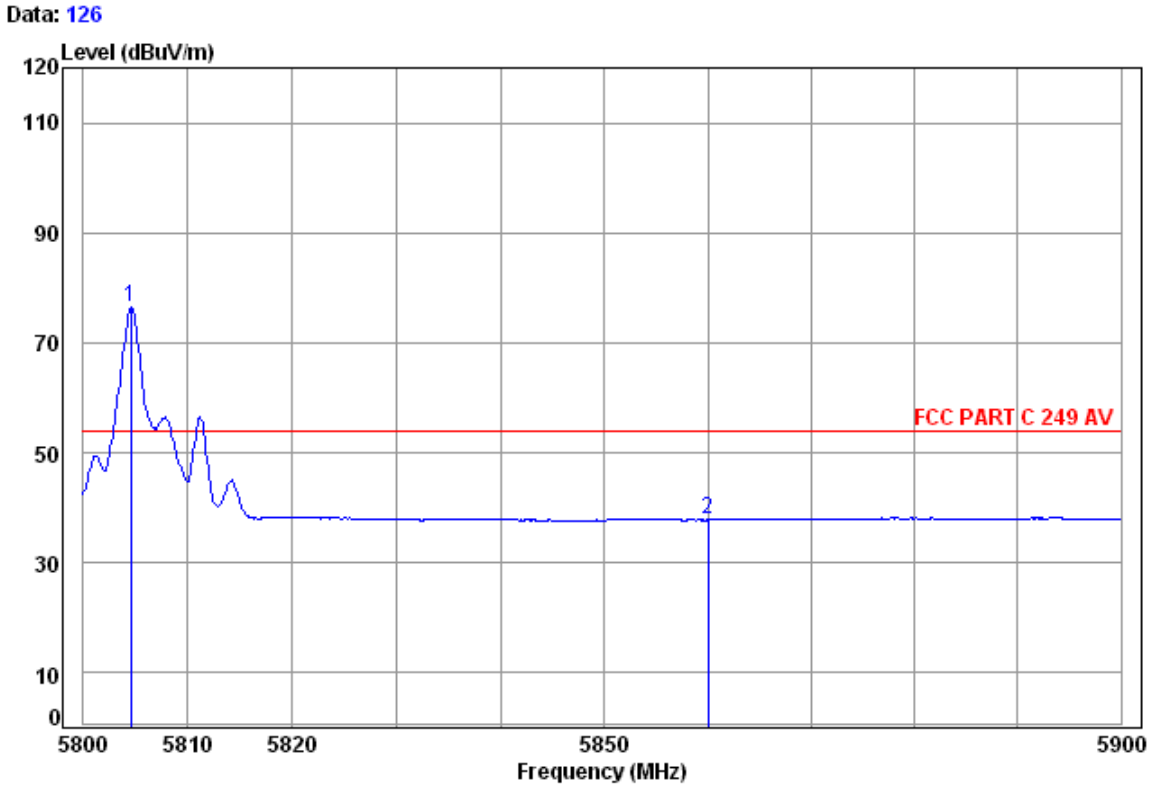
Worse case mode:	5725MHz	Test channel:	Highest	Remark:	Peak	Horizontal



Site : chamber
Condition: FCC PART C 249 PK 3m Horizontal
Job No: : 1078CR
Mode: : 5805 Band edge

	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 pp	5807.64	7.08	35.93	39.20	80.29	84.10	74.00	10.10
2	5860.00	7.20	36.03	39.20	45.92	49.95	74.00	-24.05

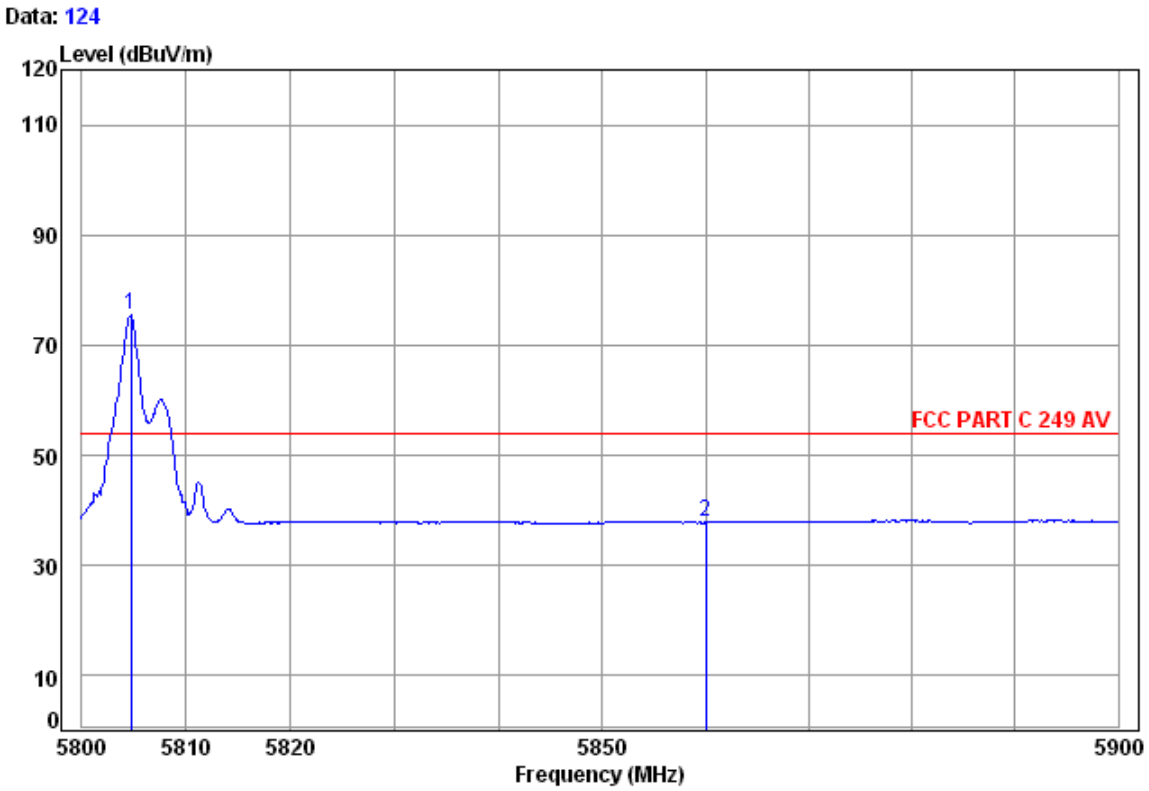
Worse case mode:	5725MHz	Test channel:	Highest	Remark:	Average	Vertical



Site : chamber
Condition: FCC PART C 249 AV 3m Vertical
Job No: : 1078CR
Mode: : 5805 Band edge

	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 pp	5804.56	7.07	35.92	39.20	72.71	76.50	54.00	22.50
2	5860.00	7.20	36.03	39.20	33.85	37.88	54.00	-16.12

Worse case mode:	5725MHz	Test channel:	Highest	Remark:	Average	Horizontal



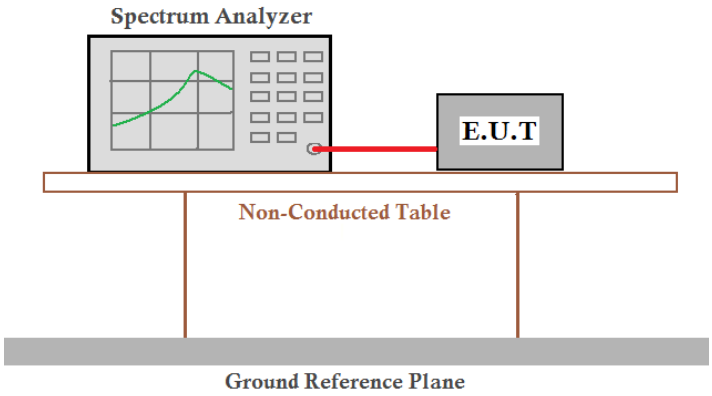
Site : chamber
Condition: FCC PART C 249 AV 3m Horizontal
Job No: : 1078CR
Mode: : 5805 Band edge

	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 pp	5804.66	7.07	35.92	39.20	71.76	75.55	54.00	21.55
2	5860.00	7.20	36.03	39.20	33.91	37.94	54.00	-16.06

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

6.4 20dB Bandwidth

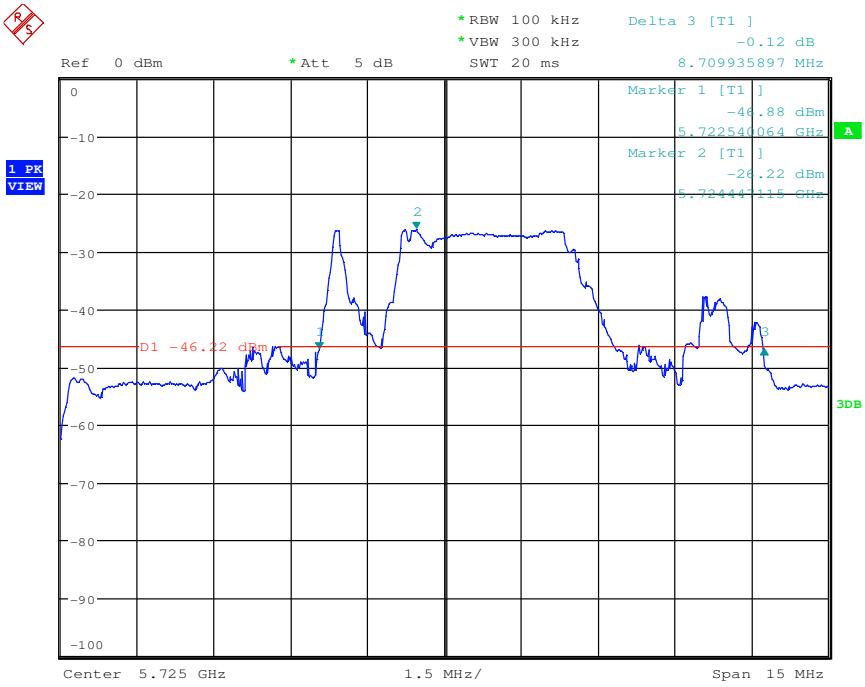
Test Requirement:	47 CFR Part 15C Section 15.215
Test Method:	ANSI C63.10:2009
Test Setup:	
Instruments Used:	Refer to section 5.10 for details
Test mode:	Transmitting mode
Limit:	N/A
Test Results:	Pass

Measurement Data

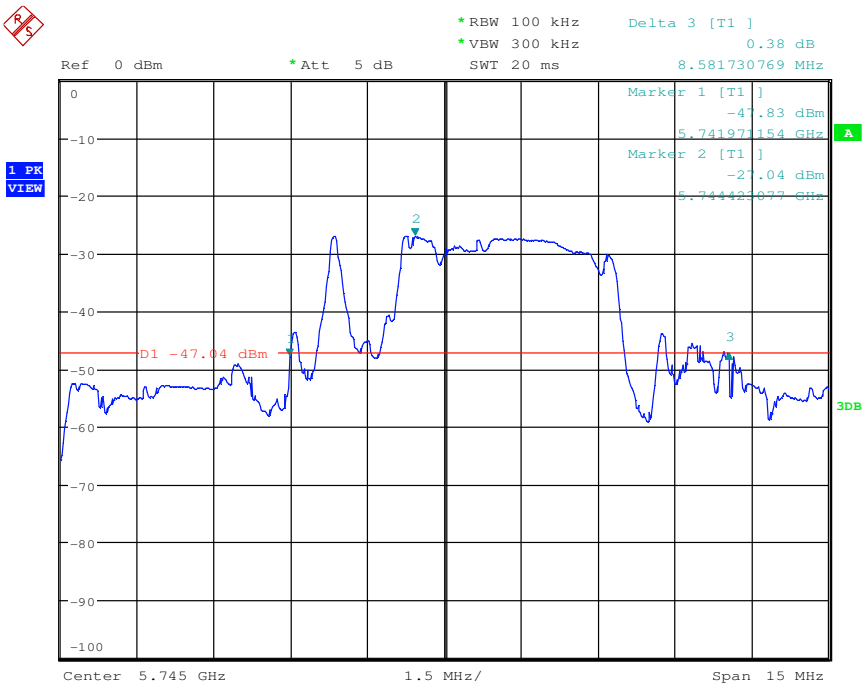
Test channel	20dB bandwidth (MHz)	Results
5725MHz	8.710	Pass
5745MHz	8.582	Pass
5765MHz	8.606	Pass
5805MHz	9.976	Pass

Test plot as follows:

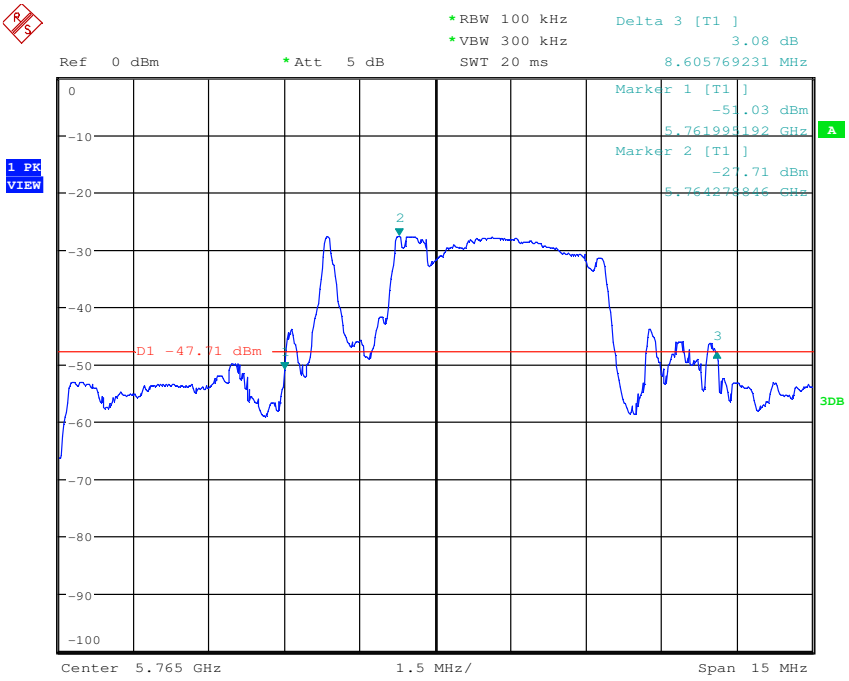
Test channel:	5725MHz



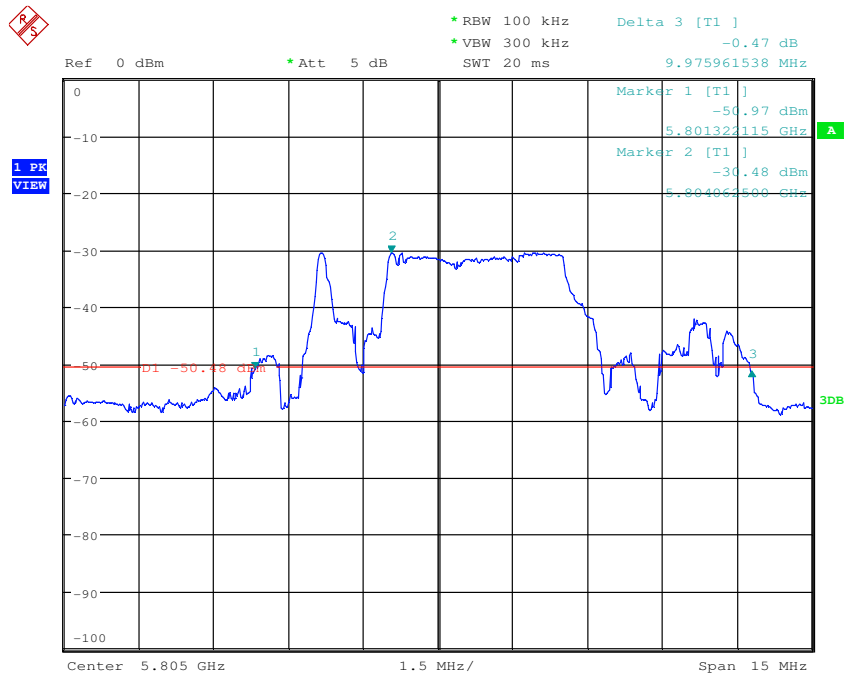
Test channel:	5745MHz



Test channel:	5765MHz

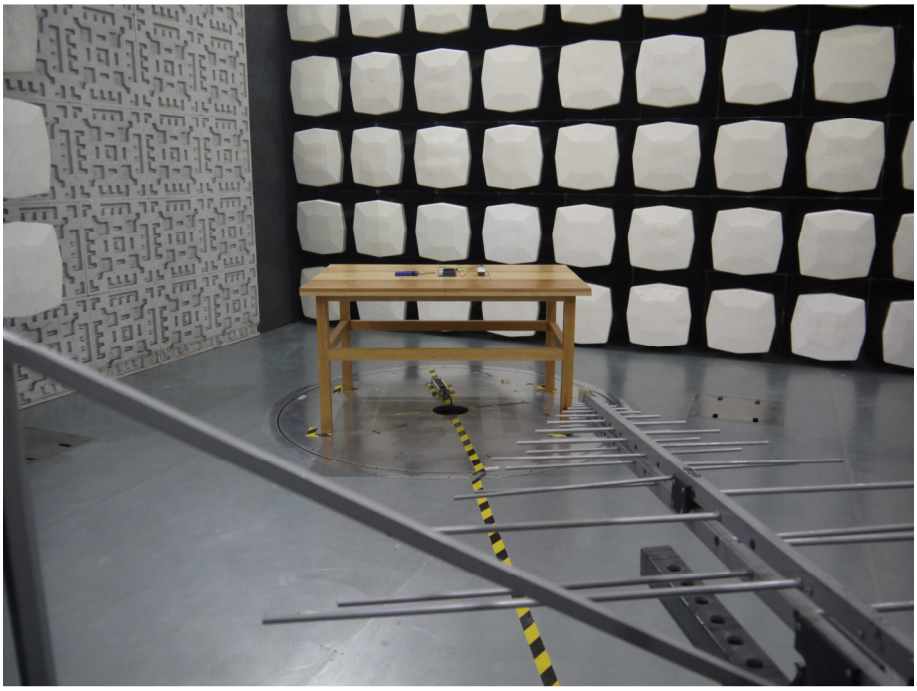


Test channel:	5805MHz



7 Photographs

7.1 Radiated Emission Test Setup



7.2 EUT Constructional Details

The detailed internal and external Photo see:

Appendix A - Photographs of EUT Constructional Details for SZEM1503001078CR