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Report No.: SZEM120300089601

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# FCC REPORT

**Application No. :** SZEM1203000896RF  
**Applicant:** SHANTOU ATTOP PLASTIC TOYS CO., LTD.  
**Product Name:** Remote control aircrafts  
**Operation Frequency:** 2405MHz to 2475MHz  
**FCC ID:** YGI75485515160  
**Standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249: 2010  
**Date of Receipt** 2012-03-06  
**Date of Test** 2012-03-06 to 2012-03-21  
**Date of Issue** 2012-03-29

<b>Test Result :</b>	<b>PASS *</b>
----------------------	---------------

\* 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.

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### 3 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a)/15.209	Pass
Band edge (Radiated Emission)	15.249(a)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

*Remark: Pass: The EUT complies with the essential requirements in the standard.*

*Fail: The EUT does not comply with the essential requirements in the standard.*





## 4 General Information

### 4.1 Client Information

Applicant:	SHANTOU ATTOP PLASTIC TOYS CO., LTD.
Address of Applicant:	LINGHAI INDUSTRY ZONE, LAIMEI DISTRICT, SHANTOU, GUAN SHANTOU, China

### 4.2 General Description of E.U.T.

Product Name:	Remote control aircrafts
Model No.:	YD-911, YD-912, YD-917, YD-918, YD-919, YD-811, YD-812, YD-815, YD-711, YD-712, YD-713, YD-715, YD-716, YD-717, YD-719, YD-611, YD-612, 9801, 9802, 9803, 9806, 9807, YD-921, YD-922, YD-923, YD-925, YD-926, YD-927, YD-928, YD-929 Only the model YD-711 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, the differences were the model name, colour and appearance.
Operation Frequency:	2405MHz to 2475MHz
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	0dBi
Power supply:	4.5V DC (1.5V x 3 "AAA" Size Batteries)

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	2405MHz
The middle channel	2440MHz
The highest channel	2475MHz

### 4.3 E.U.T Operation mode

**Operating Environment:**

Temperature:	24.0 °C
Humidity:	52 % RH
Atmospheric Pressure:	1015 mbar

**Test mode:**

Transmitting mode:	Keep the EUT in transmitting mode.
--------------------	------------------------------------

### 4.4 Description of Support Units

The EUT has been tested as an independent unit.



#### **4.5 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)**  
The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1.

#### **4.6 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

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No tests were sub-contracted.

#### **4.7 Other Information Requested by the Customer**

None.

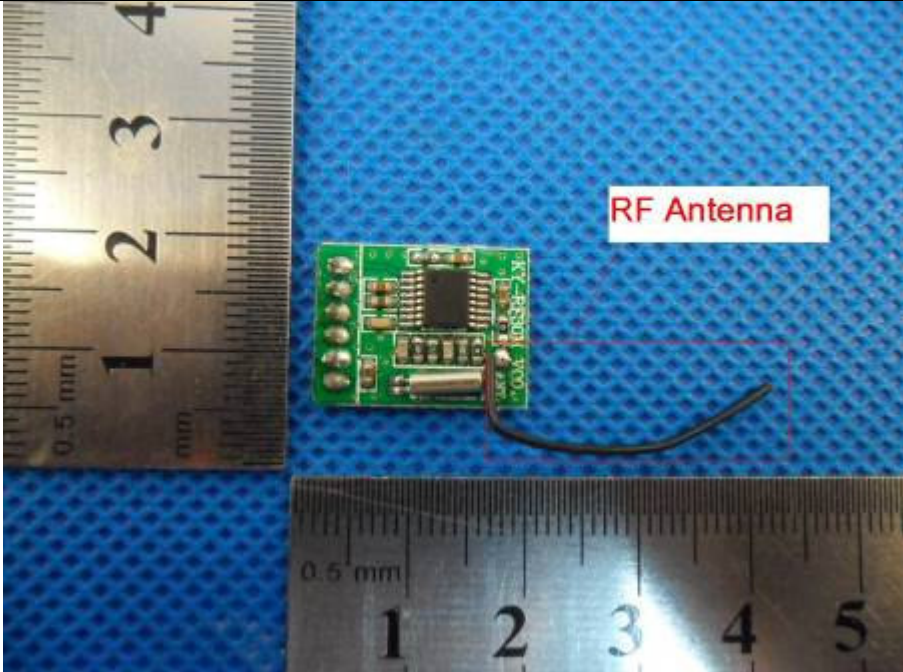
**4.8 Test Instruments list:**

<b>RE in Chamber</b>					
<b>Item</b>	<b>Test Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Inventory No.</b>	<b>Cal.Due date (yyyy-mm-dd)</b>
1	3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEL0017	2012-06-10
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEL0023	2012-05-26
3	EMI Test software	AUDIX	E3	SEL0050	N/A
4	Coaxial cable	SGS	N/A	SEL0028	2012-05-29
5	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEL0015	2012-10-29
6	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEL0006	2012-10-29
7	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEL0076	2012-10-29
8	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEL0053	2012-05-26
9	Pre-Amplifier (0.1-26.5GHz)	Compliance Directions Systems Inc.	PAP-0126	SEL0168	2012-10-26
11	Band filter	Amindeon	82346	SEL0094	2012-05-26

<b>General used equipment</b>					
<b>Item</b>	<b>Test Equipment</b>	<b>Manufacturer</b>	<b>Model No.</b>	<b>Inventory No.</b>	<b>Cal.Due date (yyyy-mm-dd)</b>
1	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0102 to SEL0103	2012-10-27
2	Humidity/ Temperature Indicator	Shanghai	ZJ1-2B	SEL0101	2012-10-27
3	Barometer	ChangChun	DYM3	SEL0088	2012-05-18

## 5 Test results and Measurement Data

### 5.1 Antenna requirement:

<b>Standard requirement:</b>	FCC Part15 C Section 15.203
<p>15.203 requirement:  <i>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.</i></p>	
<b>E.U.T Antenna:</b>	
<p>The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 0dBi.</p>	
	





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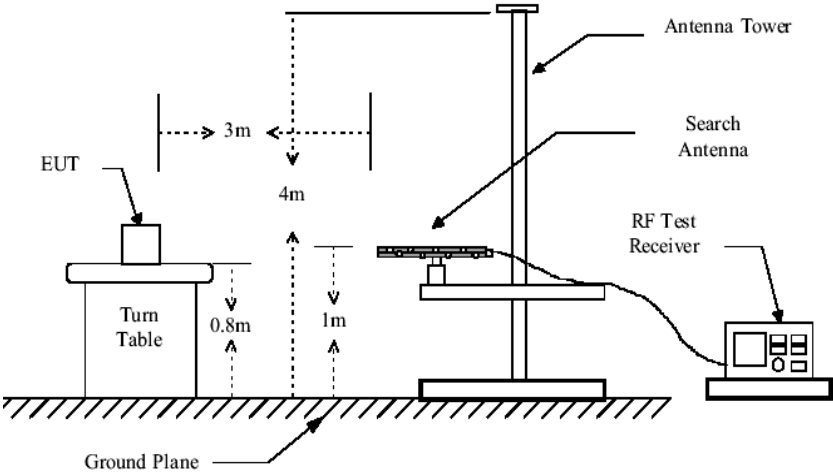
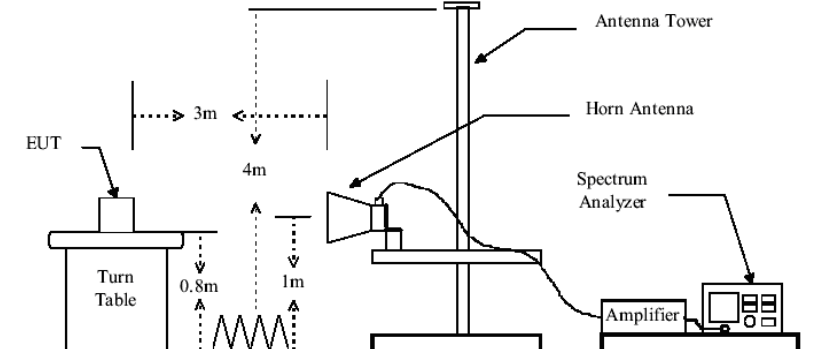
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## 5.2 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.249 and 15.209			
Test Method:	ANSI C63.10: 2009			
Test Frequency Range:	30MHz to 25000MHz			
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)			
Receiver setup:	Frequency	Detector	RBW	VBW
	30MHz-1GHz	Quasi-peak	100kHz	300kHz
	Above 1GHz	Peak	1MHz	3MHz
		Peak	1MHz	10Hz
Remark	Quasi-peak Value			
	Peak Value			
	Average Value			
Limit: (Field strength of the fundamental signal)	Frequency	Limit (dBuV/m @3m)		Remark
	2400MHz-2483.5MHz	94.0		Average Value
		114.0		Peak Value
Limit: (Spurious Emissions)	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
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.			
Test Procedure:	<p>a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</p> <p>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.</p>			

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	g. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
Test Instruments:	Refer to section 4.8 for details
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
Test mode:	Transmitting mode
Test results:	Pass

**Note:**

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

$$\text{Final Test Level} = \text{Receiver Reading} + \text{Antenna Factor} + \text{Cable Factor} - \text{Preamplifier Factor}$$



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## Measurement Data

### 5.2.1 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
2405.100	2.99	32.54	39.86	96.94	92.61	114.00	-21.39	Horizontal
2405.100	2.99	32.54	39.86	97.79	93.46	114.00	-20.54	Vertical
2440.000	3.01	32.61	39.89	96.87	92.60	114.00	-21.40	Horizontal
2440.000	3.01	32.61	39.89	99.15	94.88	114.00	-19.12	Vertical
2475.000	3.02	32.67	39.92	96.63	92.40	114.00	-21.60	Horizontal
2475.000	3.02	32.67	39.92	95.50	91.27	114.00	-22.73	Vertical

Average 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
2405.000	2.99	32.54	39.86	86.04	81.71	94.00	-12.29	Horizontal
2405.000	2.99	32.54	39.86	88.55	84.22	94.00	-9.78	Vertical
2440.000	3.01	32.61	39.89	88.87	84.60	94.00	-9.40	Horizontal
2440.000	3.01	32.61	39.89	91.15	86.88	94.00	-7.12	Vertical
2475.000	3.02	32.67	39.92	89.27	85.04	94.00	-8.96	Horizontal
2475.000	3.02	32.67	39.92	87.31	83.08	94.00	-10.92	Vertical

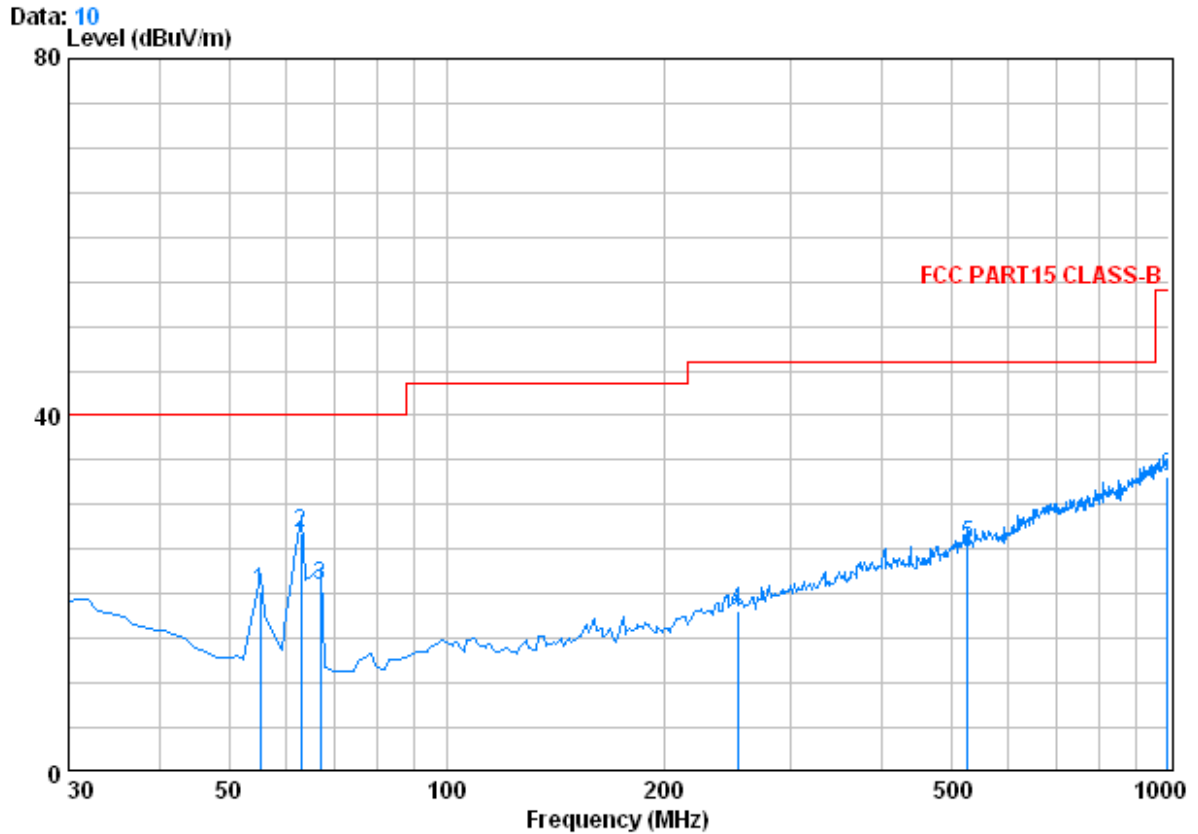
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5.2.2 Spurious Emissions

30MHz~1GHz

Vertical:



Condition : FCC PART15 CLASS-B 3m 0042673 VERTICAL  
 Job No. : 0896RF  
 test mode : tx se

	Freq	CableAntenna	Preamp	Read	Limit	Over	
	MHz	Loss	Factor	Level	Line	Limit	
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m
1	55.220	0.80	7.56	27.28	39.14	20.22	40.00 -19.78
2	62.980	0.80	7.11	27.26	46.14	26.78	40.00 -13.22
3	66.860	0.80	6.99	27.25	40.44	20.97	40.00 -19.03
4	253.100	1.69	12.38	26.53	30.48	18.02	46.00 -27.98
5	525.670	2.63	18.53	27.65	32.04	25.55	46.00 -20.45
6	995.150	3.70	24.26	26.33	31.51	33.13	54.00 -20.87

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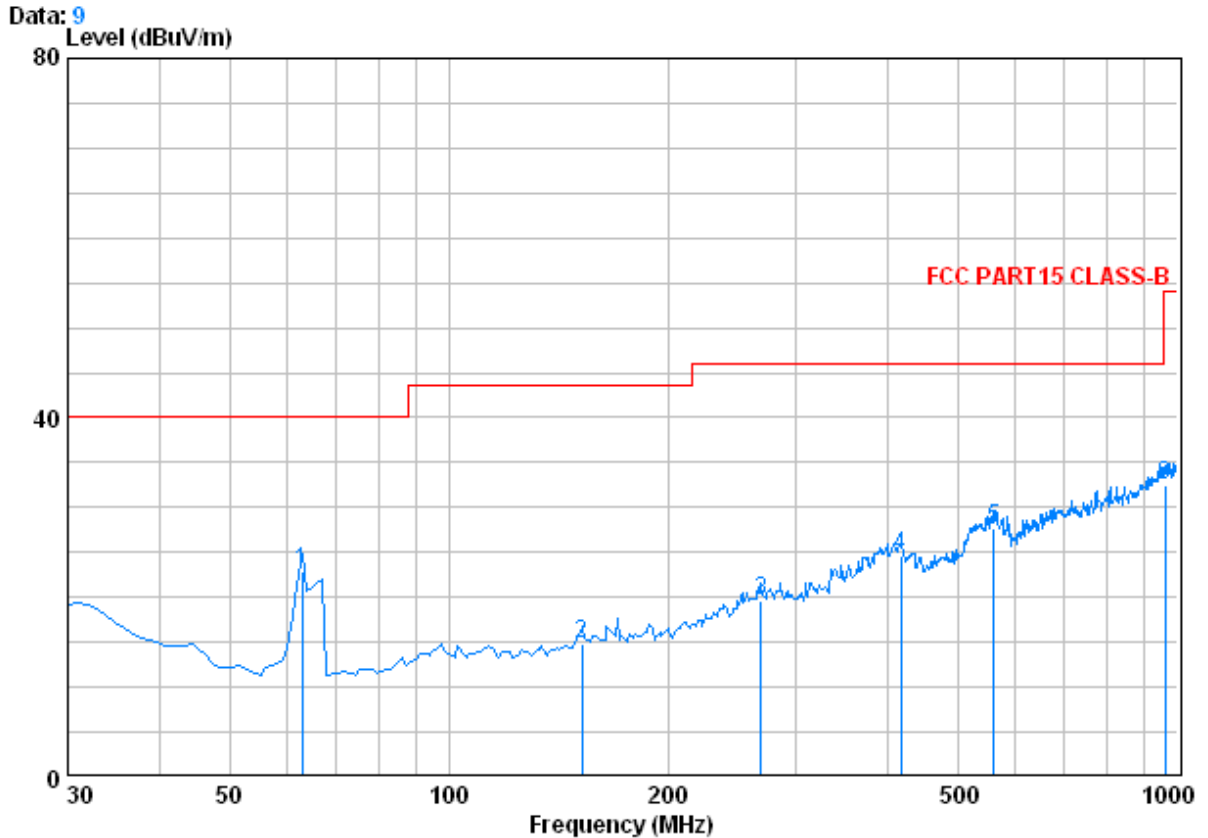


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Horizontal:



Condition : FCC PART15 CLASS-B 3m 0042673 HORIZONTAL  
 Job No. : 0896RF  
 test mode : tx se

	Freq MHz	CableAntenna Preamp			Read		Limit Line	Over Limit
		Loss	Factor	Factor	Level	Level		
		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	62.980	0.80	7.11	27.26	42.14	22.79	40.00	-17.21
2	152.220	1.32	9.14	26.90	31.23	14.80	43.50	-28.70
3	268.620	1.76	12.68	26.49	31.55	19.51	46.00	-26.49
4	418.000	2.28	16.38	27.25	33.21	24.60	46.00	-21.40
5	560.590	2.66	18.98	27.60	33.55	27.60	46.00	-18.40
6	963.140	3.66	23.70	26.47	31.67	32.56	54.00	-21.44



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<b>Above 1GHz</b>									
Test mode:		Transmitting		Test channel:		Lowest		Remark:	
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	
1529.749	2.54	28.35	39.37	46.35	37.87	74.00	-36.13	Vertical	
2898.032	3.26	33.26	40.23	48.22	44.51	74.00	-29.49	Vertical	
4821.757	4.70	34.68	41.64	57.99	55.73	74.00	-18.27	Vertical	
6094.137	5.15	35.82	40.84	49.40	49.53	74.00	-24.47	Vertical	
8042.903	6.20	36.01	39.15	49.14	52.20	74.00	-21.80	Vertical	
10165.290	6.01	37.90	37.51	45.62	52.02	74.00	-21.98	Vertical	
1711.050	2.65	29.70	39.44	46.75	39.66	74.00	-34.34	Horizontal	
3376.244	3.64	33.25	40.58	47.83	44.14	74.00	-29.86	Horizontal	
4821.757	4.70	34.68	41.64	57.92	55.66	74.00	-18.34	Horizontal	
6219.512	5.19	35.96	40.73	49.19	49.61	74.00	-24.39	Horizontal	
7489.599	6.10	36.00	39.62	48.37	50.85	74.00	-23.15	Horizontal	
9465.979	6.02	37.16	37.91	45.93	51.20	74.00	-22.80	Horizontal	

Test mode:		Transmitting		Test channel:		Lowest		Remark:	
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	
1529.749	2.54	28.35	39.37	40.23	31.75	54.00	-22.25	Vertical	
2898.032	3.26	33.26	40.23	41.22	37.51	54.00	-16.49	Vertical	
4821.757	4.70	34.68	41.64	52.99	50.73	54.00	-3.27	Vertical	
6094.137	5.15	35.82	40.84	44.12	44.25	54.00	-9.75	Vertical	
8042.903	6.20	36.01	39.15	42.14	45.20	54.00	-8.80	Vertical	
10165.290	6.01	37.90	37.51	40.35	46.75	54.00	-7.25	Vertical	
1711.050	2.65	29.70	39.44	39.75	32.66	54.00	-21.34	Horizontal	
3376.244	3.64	33.25	40.58	41.02	37.33	54.00	-16.67	Horizontal	
4821.757	4.70	34.68	41.64	53.02	50.76	54.00	-3.24	Horizontal	
6219.512	5.19	35.96	40.73	43.25	43.67	54.00	-10.33	Horizontal	
7489.599	6.10	36.00	39.62	41.37	43.85	54.00	-10.15	Horizontal	
9465.979	6.02	37.16	37.91	40.11	45.38	54.00	-8.62	Horizontal	

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Test mode:		Transmitting		Test channel:		Middle		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		
1795.839	2.71	30.32	39.48	47.14	40.69	74.00	-33.31	Vertical		
3709.691	3.91	33.45	40.83	48.86	45.39	74.00	-28.61	Vertical		
4883.519	4.72	34.59	41.68	54.73	52.36	74.00	-21.64	Vertical		
6219.512	5.19	35.96	40.73	49.39	49.81	74.00	-24.19	Vertical		
7941.185	6.21	36.00	39.24	48.83	51.80	74.00	-22.20	Vertical		
10696.210	6.14	38.38	37.73	46.69	53.48	74.00	-20.52	Vertical		
1589.289	2.57	28.84	39.39	45.74	37.76	74.00	-36.24	Horizontal		
3241.498	3.52	33.30	40.48	48.07	44.41	74.00	-29.59	Horizontal		
4883.519	4.72	34.59	41.68	56.25	53.88	74.00	-20.12	Horizontal		
6956.627	5.48	35.85	40.08	49.00	50.25	74.00	-23.75	Horizontal		
8904.986	6.16	36.52	38.40	46.83	51.11	74.00	-22.89	Horizontal		
10999.950	6.22	38.50	37.86	46.16	53.02	74.00	-20.98	Horizontal		

Test mode:		Transmitting		Test channel:		Middle		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		
1589.289	2.57	28.84	39.39	39.84	31.86	54.00	-22.14	Vertical		
3241.498	3.52	33.30	40.48	42.07	38.41	54.00	-15.59	Vertical		
4883.519	4.72	34.59	41.68	52.74	50.37	54.00	-3.63	Vertical		
6956.627	5.48	35.85	40.08	43.00	44.25	54.00	-9.75	Vertical		
8904.986	6.16	36.52	38.40	41.30	45.58	54.00	-8.42	Vertical		
10999.950	6.22	38.50	37.86	40.16	47.02	54.00	-6.98	Vertical		
1795.839	2.71	30.32	39.48	41.35	34.90	54.00	-19.10	Horizontal		
3709.691	3.91	33.45	40.83	42.86	39.39	54.00	-14.61	Horizontal		
4883.519	4.72	34.59	41.68	51.81	49.44	54.00	-4.56	Horizontal		
6219.512	5.19	35.96	40.73	43.39	43.81	54.00	-10.19	Horizontal		
7941.185	6.21	36.00	39.24	41.52	44.49	54.00	-9.51	Horizontal		
10696.210	6.14	38.38	37.73	38.71	45.50	54.00	-8.50	Horizontal		

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Test mode:		Transmitting		Test channel:		Highest		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		
1711.050	2.65	29.70	39.44	46.75	39.66	74.00	-34.34	Vertical		
3943.392	4.11	33.74	41.00	49.24	46.09	74.00	-27.91	Vertical		
4933.497	4.75	34.51	41.72	51.77	49.31	74.00	-24.69	Vertical		
6172.197	5.17	35.90	40.78	49.31	49.60	74.00	-24.40	Vertical		
7413.726	6.02	35.97	39.69	52.38	54.68	74.00	-19.32	Vertical		
10269.320	6.04	38.02	37.56	45.87	52.37	74.00	-21.63	Vertical		
1832.785	2.73	30.57	39.50	47.53	41.33	74.00	-32.67	Horizontal		
4138.802	4.25	34.22	41.14	48.91	46.24	74.00	-27.76	Horizontal		
4933.497	4.75	34.51	41.72	50.88	48.42	74.00	-25.58	Horizontal		
6478.053	5.25	36.26	40.51	48.58	49.58	74.00	-24.42	Horizontal		
7413.726	6.02	35.97	39.69	50.85	53.15	74.00	-20.85	Horizontal		
10165.290	6.01	37.90	37.51	46.22	52.62	74.00	-21.38	Horizontal		

Test mode:		Transmitting		Test channel:		Highest		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		
1711.050	2.65	29.70	39.44	38.75	31.66	54.00	-22.34	Vertical		
3943.392	4.11	33.74	41.00	41.24	38.09	54.00	-15.91	Vertical		
4933.497	4.75	34.51	41.72	44.01	41.55	54.00	-12.45	Vertical		
6172.197	5.17	35.90	40.78	40.31	40.60	54.00	-13.40	Vertical		
7413.726	6.02	35.97	39.69	48.52	50.82	54.00	-3.18	Vertical		
10269.320	6.04	38.02	37.56	39.92	46.42	54.00	-7.58	Vertical		
1832.785	2.73	30.57	39.50	38.04	31.84	54.00	-22.16	Horizontal		
4138.802	4.25	34.22	41.14	38.91	36.24	54.00	-17.76	Horizontal		
4933.497	4.75	34.51	41.72	41.88	39.42	54.00	-14.58	Horizontal		
6478.053	5.25	36.26	40.51	40.58	41.58	54.00	-12.42	Horizontal		
7413.726	6.02	35.97	39.69	46.91	49.21	54.00	-4.79	Horizontal		
10165.290	6.01	37.90	37.51	40.12	46.52	54.00	-7.48	Horizontal		

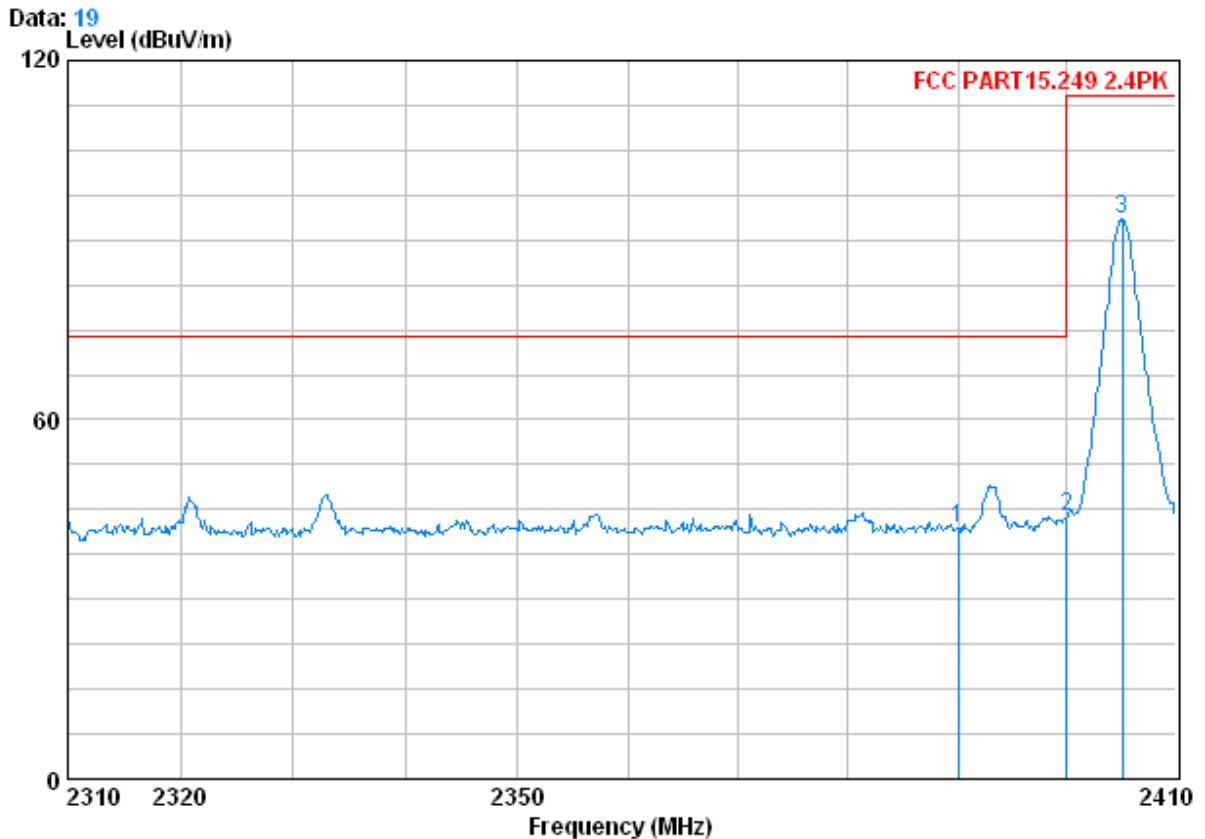
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5.2.3 Band edge (Radiated Emission)					
Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak

Vertical:



Condition : FCC PART15.249 2.4PK 3m VERTICAL  
 Job No. : 0896RF  
 test mode : low

	Freq	CableAntenna Loss	Antenna Factor	Preamp Factor	Read Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	46.20	74.00	-32.15
2	2400.000	2.98	32.51	39.86	48.25	74.00	-30.12
3 @	2405.100	2.99	32.54	39.86	97.79	114.00	-20.54

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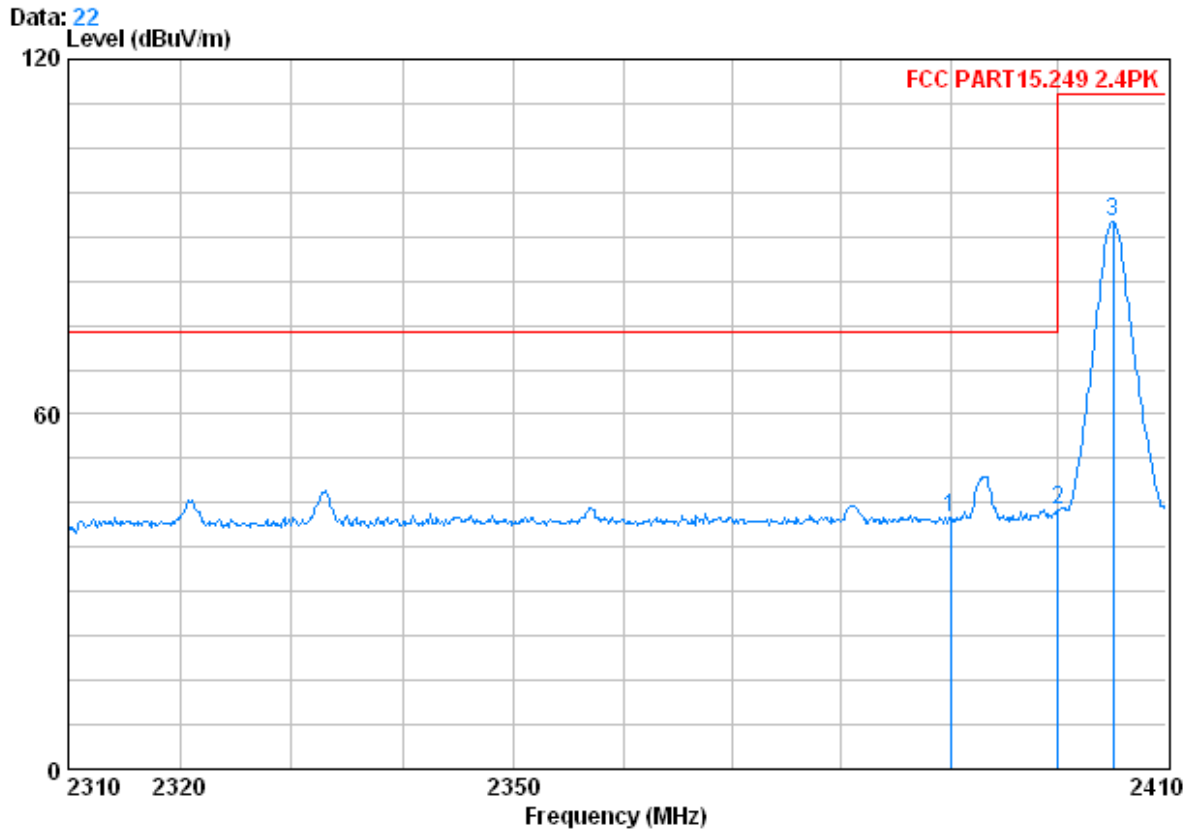


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Horizontal:



Condition : FCC PART15.249 2.4PK 3m HORIZONTAL  
 Job No. : 0896RF  
 test mode : low

	Freq	CableAntenna Loss	Preamp Factor	Read Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m
1	2390.000	2.98	32.51	39.85	46.73	42.37
2	2400.000	2.98	32.51	39.86	48.18	43.81
3	2405.100	2.99	32.54	39.86	96.93	92.61

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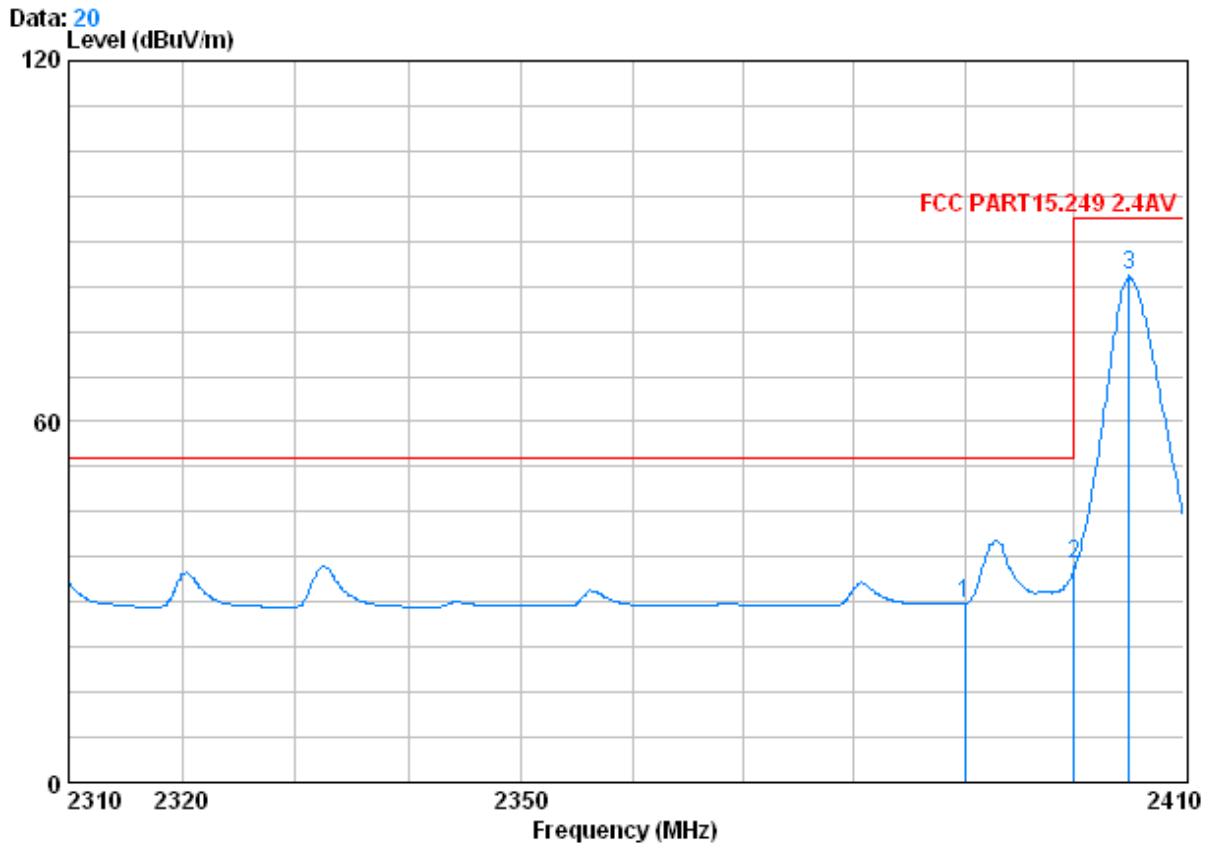
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Test mode:	Transmitting	Test channel:	Lowest	Remark:	Average
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Vertical:



Condition : FCC PART15.249 2.4AV 3m VERTICAL

Job No. : 0896RF

test mode : low

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	34.16	29.81	54.00 -24.19
2 @	2400.000	2.98	32.51	39.86	40.53	36.16	54.00 -17.84
3 @	2405.000	2.99	32.54	39.86	88.54	84.22	94.00 -9.78

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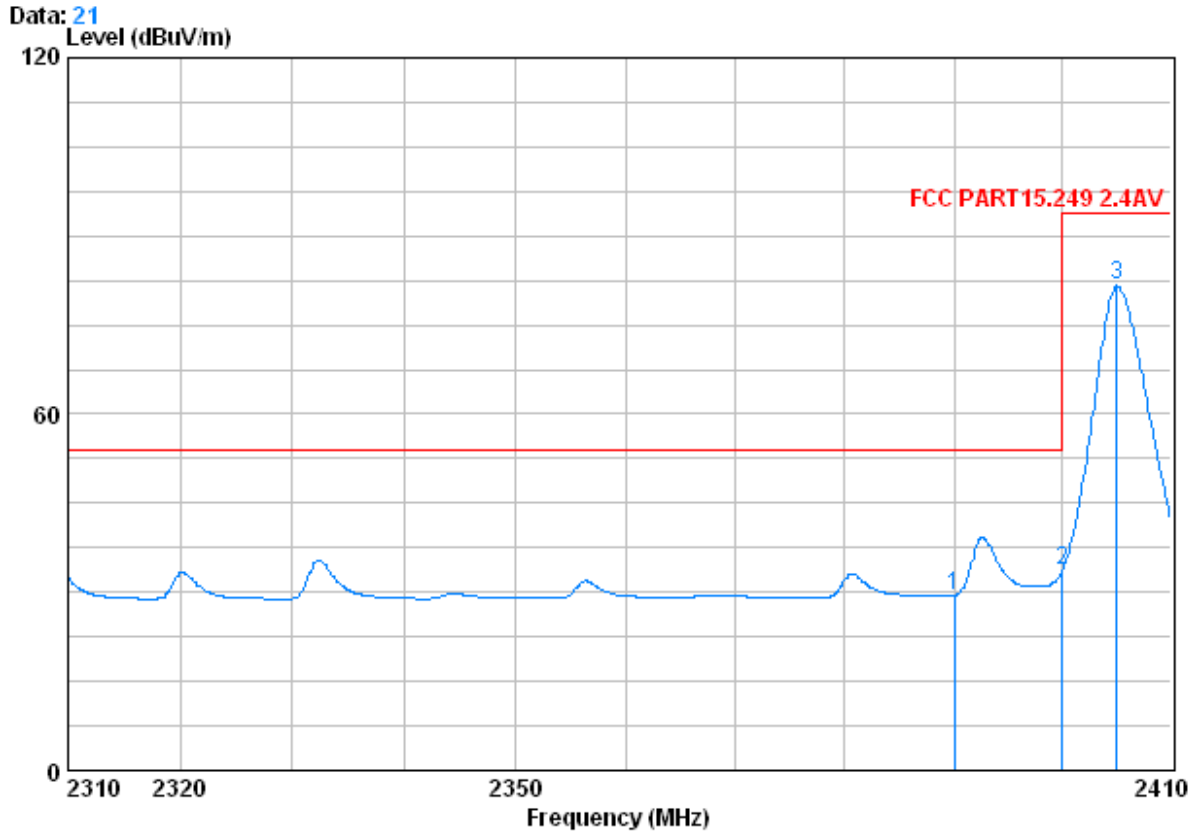


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Horizontal:



Condition : FCC PART15.249 2.4AV 3m HORIZONTAL  
Job No. : 0896RF  
test mode : low

	Freq MHz	CableAntenna Preamp			Read		Limit	Over
		Loss	Factor	Factor	Level	Level	Line	Limit
		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2390.000	2.98	32.51	39.85	33.86	29.51	54.00	-24.49
2 @	2400.000	2.98	32.51	39.86	38.20	33.84	54.00	-20.16
3 @	2405.000	2.99	32.54	39.86	86.04	81.71	94.00	-12.29

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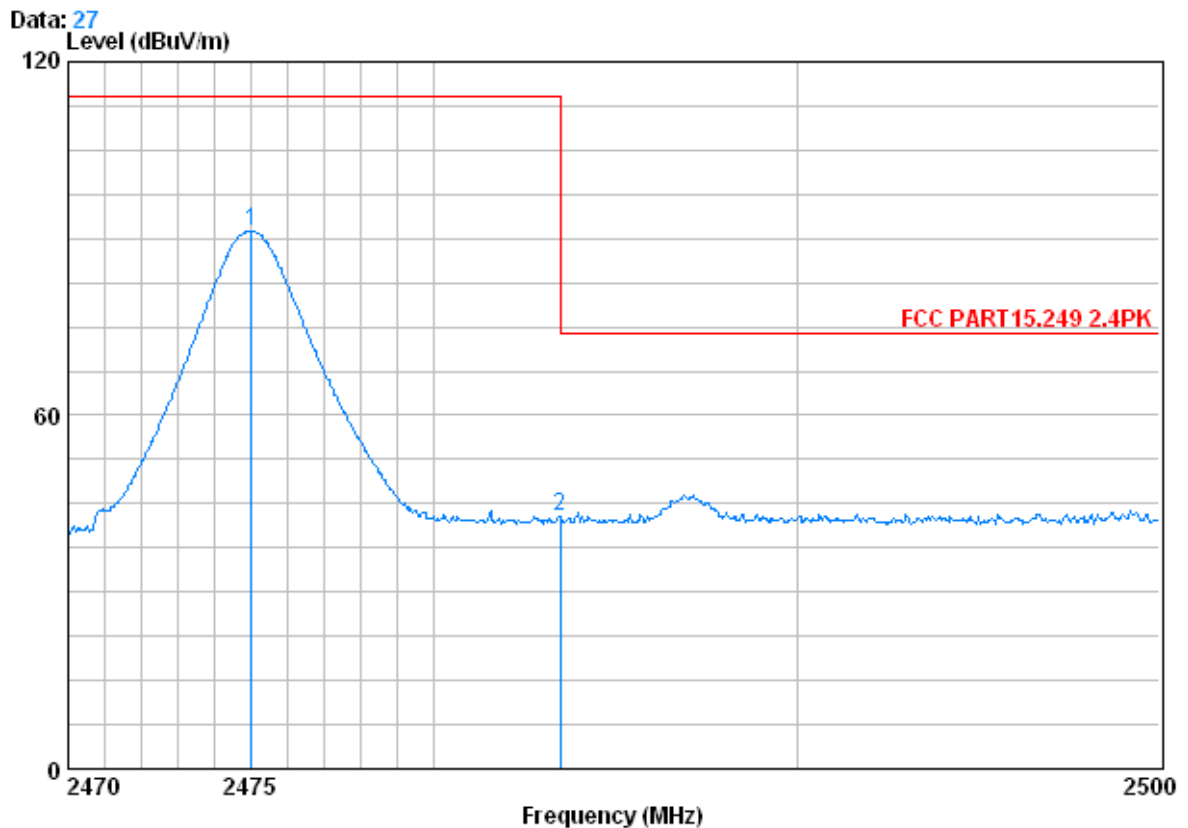
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Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak
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Vertical:



Condition : FCC PART15.249 2.4PK 3m VERTICAL  
 Job No. : 0896RF  
 test mode : high

	Freq	Cable Loss	Antenna Factor	Preamp Factor	Read Level	Limit Level	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	2475.010	3.03	32.67	39.92	95.50	114.00	-22.72
2	2483.500	3.03	32.67	39.92	47.12	74.00	-31.09

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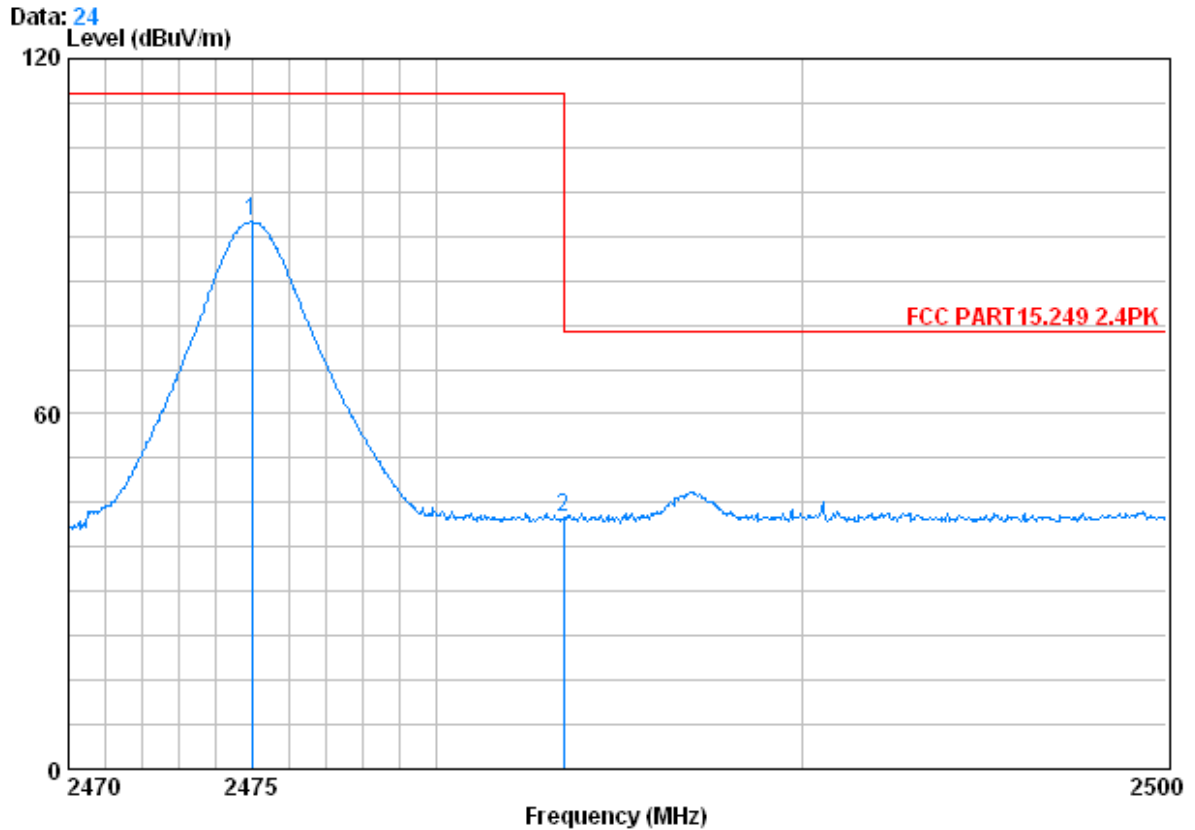


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Horizontal:



Condition : FCC PART15.249 2.4PK 3m HORIZONTAL  
Job No. : 0896RF  
test mode : high

	Freq	CableAntenna Loss Factor	Preamp Factor	Read Level	Limit Level	Over Limit		
	MHz	dB	dB/m	dBuV	dBuV/m	dB		
1 @	2474.980	3.02	32.67	39.92	96.63	92.40	114.00	-21.60
2	2483.500	3.03	32.67	39.92	46.65	42.43	74.00	-31.57

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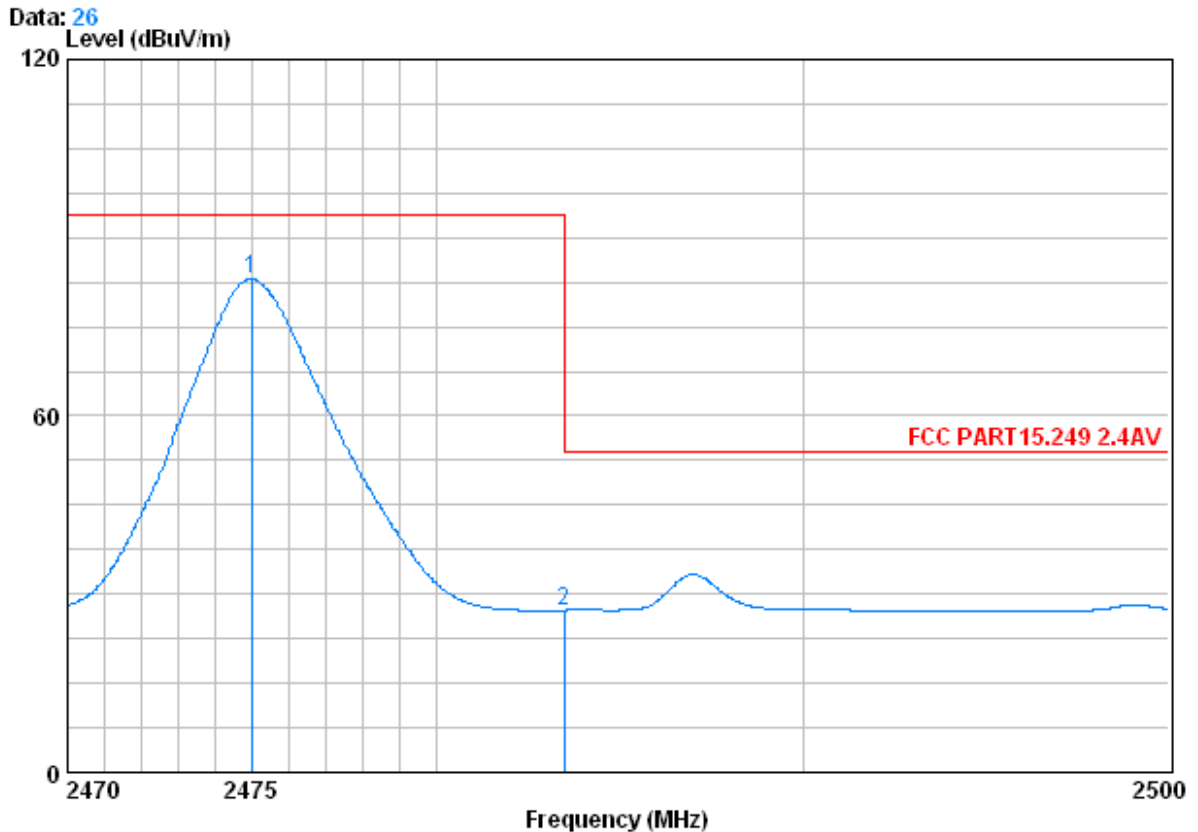
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Test mode:	Transmitting	Test channel:	Highest	Remark:	Average
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Vertical:



Condition : FCC PART15.249 2.4AV 3m VERTICAL  
Job No. : 0896RF  
test mode : high

	Freq	CableAntenna Loss	Antenna Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 @	2474.980	3.02	32.67	39.92	87.31	83.08	94.00	-10.92
2	2483.500	3.03	32.67	39.92	31.50	27.28	54.00	-26.72



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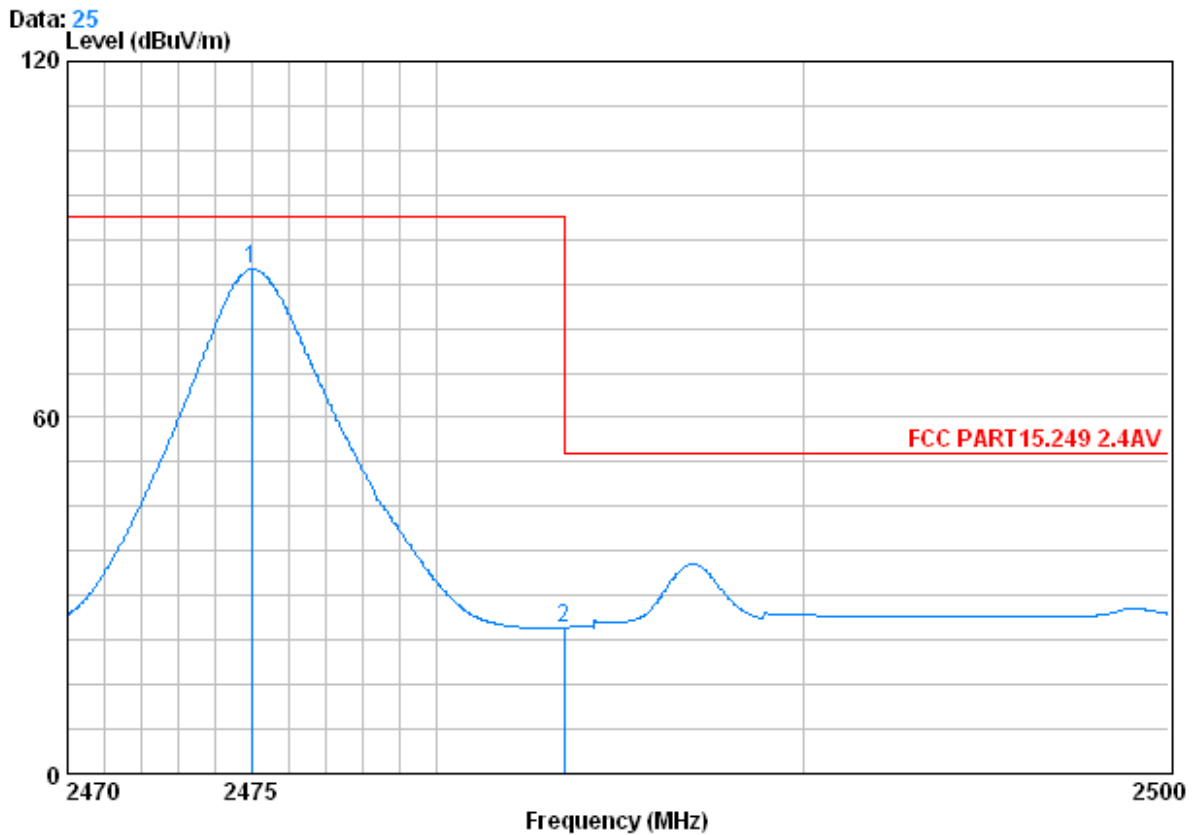


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Horizontal:



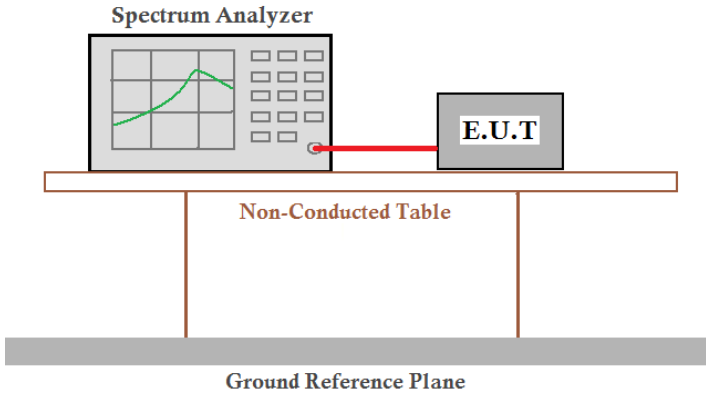
Condition : FCC PART15.249 2.4AV 3m HORIZONTAL  
 Job No. : 0896RF  
 test mode : high

	Freq	CableAntenna Loss	Preamp Factor	Read Level	Limit Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 @	2474.980	3.02	32.67	39.92	89.26	85.04	94.00 -8.96
2	2483.500	3.03	32.67	39.92	28.85	24.63	54.00 -29.37

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**5.3 20dB Bandwidth**

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.10:2009
Receiver setup:	RBW=10kHz, VBW=30kHz, detector: Peak
Limit:	Operation Frequency range 2400MHz-2483.5MHz
Test Procedure:	<ol style="list-style-type: none"> <li>1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT.</li> <li>2. Set the EUT to proper test channel.</li> <li>3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points.</li> <li>4. Read 20dB bandwidth.</li> </ol>
Test setup:	 <p>The diagram illustrates the test setup. A Spectrum Analyzer is connected via a red cable to an E.U.T. (Equipment Under Test). Both are placed on a Non-Conducted Table. Below the table is a Ground Reference Plane.</p>
Test Instruments:	Refer to section 4.8 for details
Test mode:	Transmitting mode
Test results:	Pass

**Measurement Data**

Test channel	20dB bandwidth (kHz)	Results
Lowest	131	Pass
Middle	137	Pass
Highest	144	Pass



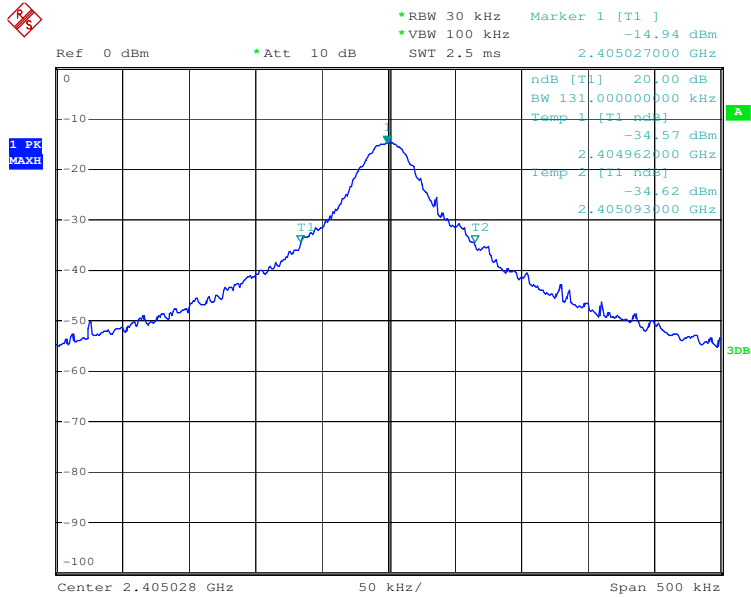
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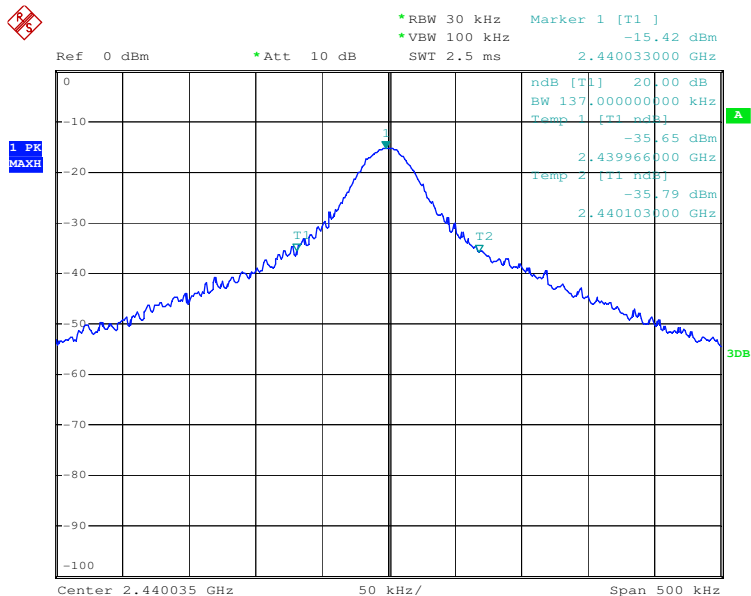
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### Test plot as follows:

Test channel:	Lowest	
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Test channel:	Middle	
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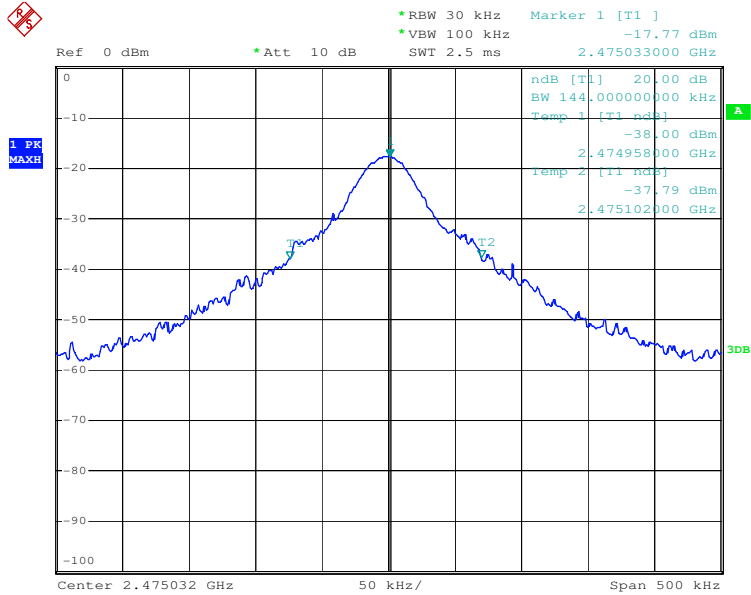


# SGS-CSTC Standards Technical Services Ltd.

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Test channel:	Highest	
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