



**SGS-CSTC Standards Technical Services Ltd.**  
**Shenzhen Branch**

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Report No.: SZEM160400295101  
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## FCC REPORT

**Application No. :** SZEM1604002951CR  
**Applicant:** Shenzhen JTT Technology Co.,Ltd  
**Manufacturer:** Shenzhen JTT Technology Co.,Ltd  
**Factory:** Shenzhen JTT Technology Co.,Ltd  
**Product Name:** T50  
**Model No.(EUT):** T-50  
**Trade Mark:** JTT  
**FCC ID:** 2AIV4-T50  
**Standards:** 47 CFR Part 15, Subpart C (2015)  
**Date of Receipt:** 2016-04-29  
**Date of Test:** 2016-06-09 to 2016-06-13  
**Date of Issue:** 2016-06-29

<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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## 2 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00		2016-06-29		Original

Authorized for issue by:				
Tested By				2016-06-13
				Date
Checked By				2016-06-29
				Date
		(Bill Chen) /Project Engineer		
		(Eric Fu) /Reviewer		

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### 3 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
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

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## 5 General Information

### 5.1 Client Information

Applicant:	Shenzhen JTT Technology Co.,Ltd
Address of Applicant:	6F,A5 Building,Nanshan i Park, No.1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong P.R.C
Manufacturer:	Shenzhen JTT Technology Co.,Ltd
Address of Manufacturer:	6F,A5 Building,Nanshan i Park, No.1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong P.R.C
Factory:	Shenzhen JTT Technology Co.,Ltd
Address of Factory:	6F,A5 Building,Nanshan i Park, No.1001 Xueyuan Avenue, Nanshan District, Shenzhen, Guangdong P.R.C

### 5.2 General Description of EUT

Name:	T50
Model No.:	T-50
Trade Mark :	JTT
Modulation Type:	OQPSK
Antenna Type:	Embedded coaxial terminal
Antenna Gain:	2dBi
Power Supply:	Battery: DC 16.8V 9500mAh

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Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2405MHz	18	2423MHz	36	2441MHz	54	2459MHz
1	2406MHz	19	2424MHz	37	2442MHz	55	2460MHz
2	2407MHz	20	2425MHz	38	2443MHz	56	2461MHz
3	2408MHz	21	2426MHz	39	2444MHz	57	2462MHz
4	2409MHz	22	2427MHz	40	2445MHz	58	2463MHz
5	2410MHz	23	2428MHz	41	2446MHz	59	2464MHz
6	2411MHz	24	2429MHz	42	2447MHz	60	2465MHz
7	2412MHz	25	2430MHz	43	2448MHz	61	2466MHz
8	2413MHz	26	2431MHz	44	2449MHz	62	2467MHz
9	2414MHz	27	2432MHz	45	2450MHz	63	2468MHz
10	2415MHz	28	2433MHz	46	2451MHz	64	2469MHz
11	2416MHz	29	2434MHz	47	2452MHz	65	2470MHz
12	2417MHz	30	2435MHz	48	2453MHz	66	2471MHz
13	2418MHz	31	2436MHz	49	2454MHz	67	2472MHz
14	2419MHz	32	2437MHz	50	2455MHz	68	2473MHz
15	2420MHz	33	2438MHz	51	2456MHz	69	2474MHz
16	2421MHz	34	2439MHz	52	2457MHz	70	2475MHz
17	2422MHz	35	2440MHz	53	2458MHz		

Using test software was control EUT work in continuous transmitter and receiver mode.and select test channel as below:

Channel	Frequency
The lowest channel (CH0)	2405MHz
The middle channel (CH35)	2440MHz
The highest channel (CH70)	2475MHz

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### 5.3 Test Environment and Mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	56 % RH
Atmospheric Pressure:	1015 mbar

### 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.



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### 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.

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI**

The 10m Semi-anechoic chamber and Shielded Room 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 and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

### 5.7 Deviation from Standards

None.

### 5.8 Abnormalities from Standard Conditions

None.

### 5.9 Other Information Requested by the Customer

None.





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## 5.10 Equipment List

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2015-08-01	2016-08-01
2	EMI Test Receiver (9k-3GHz)	Rohde & Schwarz	ESCI	SEM004-01	2016-04-25	2017-04-25
3	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-17	2016-01-26	2017-01-26
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2016-04-25	2017-04-25
5	Loop Antenna	ETS-Lindgren	6502	SEM003-08	2015-08-14	2016-08-14

RE in Chamber						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2016-05-13	2017-05-13
2	EMI Test Receiver	Rohde & Schwarz	ESIB26	SEM004-04	2016-04-25	2017-04-25
3	BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-02	2014-11-15	2017-11-15
4	Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2015-10-09	2016-10-09
5	Horn Antenna (1-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2015-06-14	2018-06-14
6	Horn Antenna (18-26GHz)	ETS-Lindgren	3160	SEM003-12	2014-11-24	2017-11-24
7	Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2015-10-09	2016-10-09
8	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A

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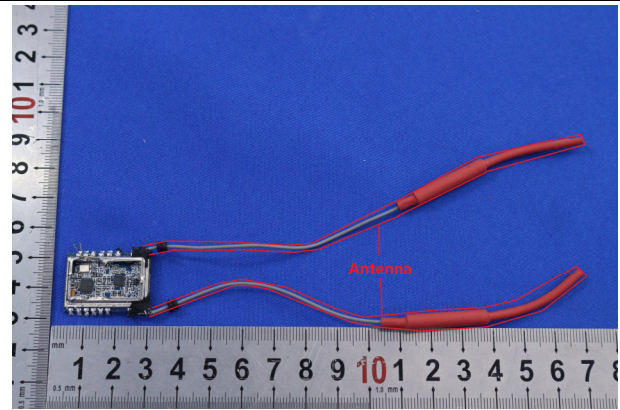
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RF connected test						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd)
1	DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2015-10-09	2016-10-09
2	Spectrum Analyzer	Rohde & Schwarz	FSP	SEM004-06	2015-10-17	2016-10-17
3	Signal Generator	Rohde & Schwarz	SML03	SEM006-02	2016-04-25	2017-04-25
4	Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2015-10-09	2016-10-09

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## 6 Test results and Measurement Data

### 6.1 Antenna Requirement

<b>Standard requirement:</b>	47 CFR Part 15C Section 15.203
<p>15.203 requirement:</p> <p>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.</p>	
<b>EUT Antenna:</b>	
<p>The antenna is integrated on the main Embedded coaxial terminal and no consideration of replacement. The best case gain of the antenna is 2dBi.</p>	



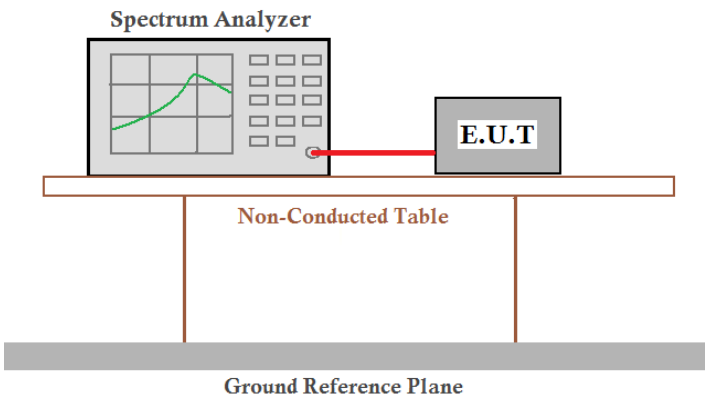
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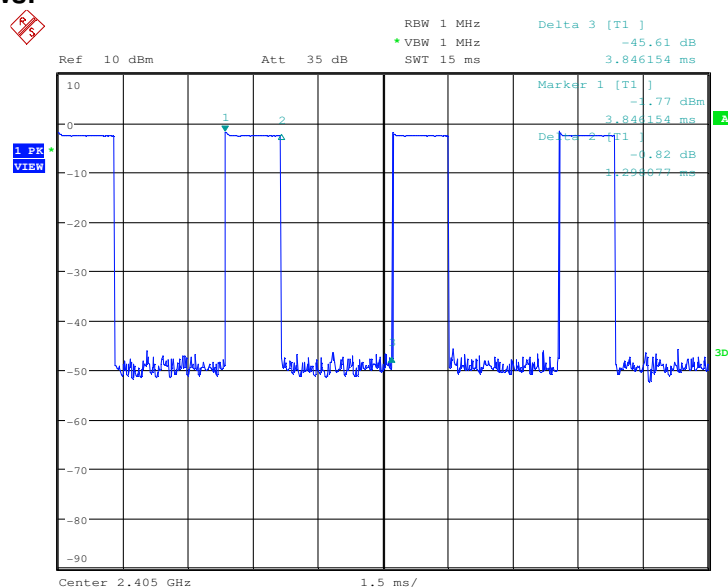
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### 6.2 Radiated Emission

#### 6.2.1 Duty Cycle

Test Requirement:	47 CFR Part 15C Section 15.35 (c)
Test Method:	ANSI C63.10:2013 11.6
Test Setup:	
Instruments Used:	Refer to section 5.10 for details
Limit:	N/A
Test Mode:	Transmitting mode
Test Results:	Pass

Test plot as follows:



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Test Requirement:	47 CFR Part 15C Section 15.249 and 15.209				
Test Method:	ANSI C63.10: 2013 11.12				
Test Site:	Measurement Distance: 10m (Semi-Anechoic Chamber) 3m(Fully-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	29.5	Quasi-peak	10
	88MHz-216MHz	150	33.1	Quasi-peak	10
	216MHz-960MHz	200	35.6	Quasi-peak	10
	960MHz-1GHz	500	43.5	Quasi-peak	10
	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	
	2400MHz-2483.5MHz	94.0		Average Value	
		114.0		Peak Value	
Test Setup:					

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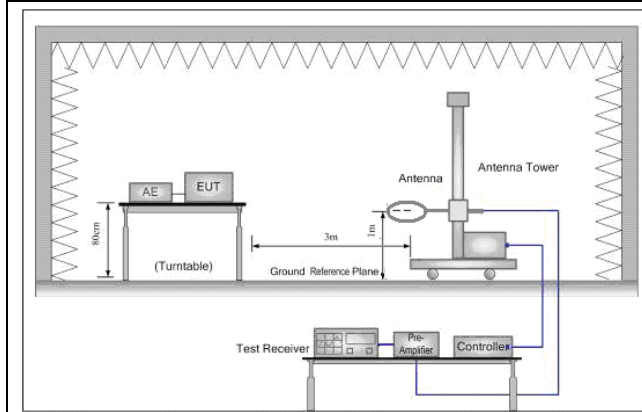


Figure 1. Below 30MHz

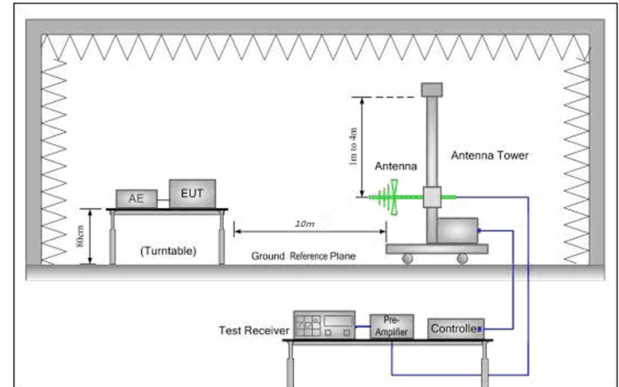


Figure 2. 30MHz to 1GHz

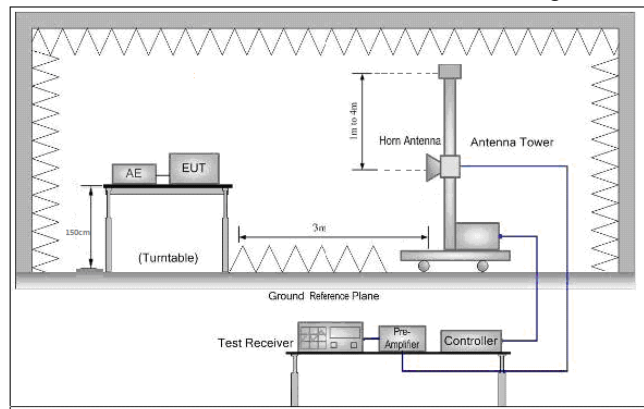


Figure 3. Above 1 GHz

<p>Test Procedure:</p>	<ol style="list-style-type: none"> <li>For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter Fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>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.</li> <li>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.</li> <li>The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>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</li> </ol>
------------------------	---

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	then reported in a data sheet. h. Test the EUT in the lowest channel,the middle channel,the Highest channel i. 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. j. Repeat above procedures until all frequencies measured was complete.
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting mode
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case Only the worst case is recorded in the report.
Test Results:	Pass

Average value:	
Calculate Formula:	Average value=Peak value + PDCF
	PDCF=20 log(Duty cycle)
	Duty cycle= T on time / T period
Test data:	Ton time =1.298
	T period =3.846
	Average value=-9.43

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**Measurement Data**

**6.2.1.1 Field Strength Of The Fundamental Signal**

Peak value:

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2405	28.62	5.35	38.11	105.73	101.59	114	-12.41	Horizontal
2405	28.63	5.35	38.11	103.73	99.6	114	-14.4	Vertical
2440	28.79	5.38	38.11	106.11	102.17	114	-11.83	Horizontal
2440	28.79	5.38	38.11	102.79	98.85	114	-15.15	Vertical
2475	28.95	5.4	38.12	104.68	100.91	114	-13.09	Horizontal
2475	28.95	5.4	38.12	102.27	98.5	114	-15.5	Vertical

Average value:

Frequency (MHz)	PDCF	Peak Level (dBuV/m)	Average Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
2405	-9.43	101.59	92.16	94.00	-1.84	Horizontal
2405		99.6	90.17	94.00	-3.83	Vertical
2440		102.17	92.74	94.00	-1.26	Horizontal
2440		98.85	89.42	94.00	-4.58	Vertical
2475		100.91	91.48	94.00	-2.52	Horizontal
2475		98.5	89.07	94.00	-4.93	Vertical

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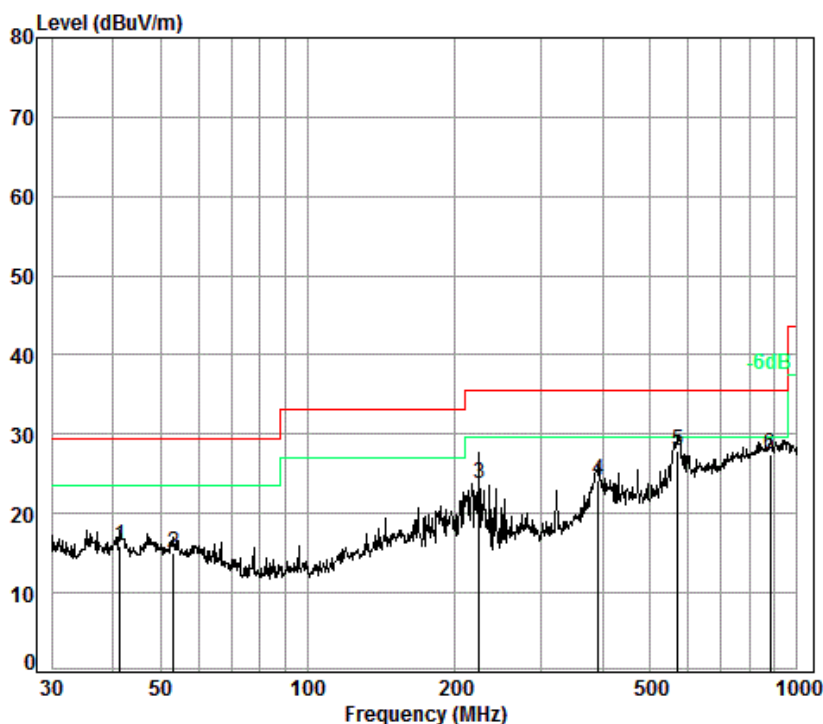
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6.2.1.2 Spurious Emissions

30MHz~1GHz (QP)	
Test mode:	Transmitting



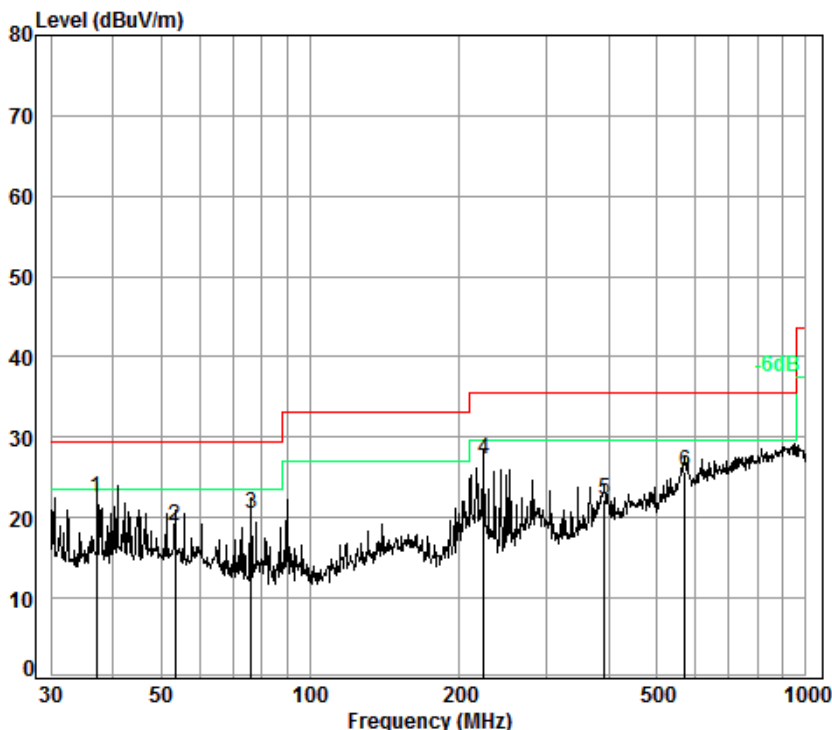
Condition: 10m HORIZONTAL

Job No. : 2951CR

Test Mode: TX mode

	Freq	Cable	Ant	Preamp	Read	Limit	Over
	MHz	Loss	Factor	Factor	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1	41.42	6.80	13.20	32.30	28.28	15.98	29.50 -13.52
2	53.32	6.97	12.51	32.30	27.90	15.08	29.50 -14.42
3	223.73	7.72	10.39	32.30	37.92	23.73	35.60 -11.87
4	392.10	8.30	14.71	32.11	33.31	24.21	35.60 -11.39
5 pp	570.61	8.83	18.10	32.10	33.10	27.93	35.60 -7.67
6	881.41	9.50	21.98	32.12	28.04	27.40	35.60 -8.20

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Condition: 10m VERTICAL

Job No. : 2951CR

Test Mode: TX mode

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	37.15	6.74	12.94	32.30	35.07	22.45	29.50	-7.05
2	53.51	6.97	12.49	32.30	31.81	18.97	29.50	-10.53
3	76.24	7.03	9.09	32.30	36.69	20.51	29.50	-8.99
4	223.73	7.72	10.39	32.30	41.48	27.29	35.60	-8.31
5	392.10	8.30	14.71	32.11	31.35	22.25	35.60	-13.35
6	570.61	8.83	18.10	32.10	30.90	25.73	35.60	-9.87



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Above 1GHz					
Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3870.060	32.97	7.77	38.51	45.89	48.12	74	-25.88	Vertical
4810.000	34.11	8.88	38.75	49.64	53.88	74	-20.12	Vertical
6087.002	34.74	10.45	38.85	46.58	52.92	74	-21.08	Vertical
7215.000	35.59	10.68	37.63	43.03	51.67	74	-22.33	Vertical
9620.000	37.10	12.51	36.33	37.08	50.36	74	-23.64	Vertical
12566.850	37.87	14.34	37.72	39.05	53.54	74	-20.46	Vertical
3836.607	32.94	7.75	38.50	44.95	47.14	74	-26.86	Horizontal
4810.000	34.11	8.88	38.75	45.83	50.07	74	-23.93	Horizontal
6087.002	34.74	10.45	38.85	45.31	51.65	74	-22.35	Horizontal
7215.000	35.59	10.68	37.63	44.18	52.82	74	-21.18	Horizontal
9620.000	37.10	12.51	36.33	37.78	51.06	74	-22.94	Horizontal
12566.850	37.87	14.34	37.72	37.96	52.45	74	-21.55	Horizontal

Test mode:	Transmitting	Test channel:	Middle	Remark:	Peak
------------	--------------	---------------	--------	---------	------

Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3881.276	32.98	7.77	38.52	44.67	46.90	74	-27.10	Vertical
4880.000	34.18	8.97	38.76	48.65	53.04	74	-20.96	Vertical
6051.874	34.73	10.49	38.89	45.47	51.80	74	-22.20	Vertical
7320.000	35.54	10.72	37.59	41.82	50.49	74	-23.51	Vertical
9760.000	37.10	12.58	36.14	39.09	52.63	74	-21.37	Vertical
12603.270	37.90	14.44	37.75	38.53	53.12	74	-20.88	Vertical
3870.060	32.97	7.77	38.51	45.26	47.49	74	-26.51	Horizontal
4880.000	34.18	8.97	38.76	45.46	49.85	74	-24.15	Horizontal
6034.386	34.72	10.52	38.91	45.15	51.48	74	-22.52	Horizontal
7320.000	35.54	10.72	37.59	42.62	51.29	74	-22.71	Horizontal
9760.000	37.10	12.58	36.14	39.25	52.79	74	-21.21	Horizontal
12603.270	37.90	14.44	37.75	38.53	53.12	74	-20.88	Horizontal

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Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak
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Frequency (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
3977.930	33.08	7.80	38.55	44.43	46.76	74	-27.24	Vertical
4950.000	34.25	9.07	38.78	49.21	53.75	74	-20.25	Vertical
5811.590	34.23	10.03	38.93	46.57	51.90	74	-22.10	Vertical
7425.000	35.56	10.76	37.54	38.78	47.56	74	-26.44	Vertical
9900.000	37.20	12.66	35.96	39.40	53.30	74	-20.70	Vertical
12676.420	37.94	14.65	37.82	38.32	53.09	74	-20.91	Vertical
3825.521	32.93	7.75	38.49	45.07	47.26	74	-26.74	Horizontal
4950.000	34.25	9.07	38.78	45.77	50.31	74	-23.69	Horizontal
5964.939	34.61	10.46	38.95	45.80	51.92	74	-22.08	Horizontal
7425.000	35.56	10.76	37.54	41.95	50.73	74	-23.27	Horizontal
9900.000	37.20	12.66	35.96	38.09	51.99	74	-22.01	Horizontal
12639.790	37.92	14.55	37.79	37.75	52.43	74	-21.57	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 .
- 3) As shown in this section, for frequencies above 1GHz, 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.

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### 6.3 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205																					
Test Method:	ANSI C63.10: 2013 11.12																					
Test Site:	Measurement Distance: 10m (Semi-Anechoic Chamber) 3m(Fully-Anechoic Chamber)																					
Limit(band edge):	<p>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.</p> <table border="1"> <thead> <tr> <th>Frequency</th><th>Limit (dBuV/m @10m &amp;3m)</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>30MHz-88MHz</td><td>29.5</td><td>Quasi-peak Value</td></tr> <tr> <td>88MHz-216MHz</td><td>33.1</td><td>Quasi-peak Value</td></tr> <tr> <td>216MHz-960MHz</td><td>35.6</td><td>Quasi-peak Value</td></tr> <tr> <td>960MHz-1GHz</td><td>43.5</td><td>Quasi-peak Value</td></tr> <tr> <td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr> <tr> <td>74.0</td><td>Peak Value</td></tr> </tbody> </table>		Frequency	Limit (dBuV/m @10m &3m)	Remark	30MHz-88MHz	29.5	Quasi-peak Value	88MHz-216MHz	33.1	Quasi-peak Value	216MHz-960MHz	35.6	Quasi-peak Value	960MHz-1GHz	43.5	Quasi-peak Value	Above 1GHz	54.0	Average Value	74.0	Peak Value
Frequency	Limit (dBuV/m @10m &3m)	Remark																				
30MHz-88MHz	29.5	Quasi-peak Value																				
88MHz-216MHz	33.1	Quasi-peak Value																				
216MHz-960MHz	35.6	Quasi-peak Value																				
960MHz-1GHz	43.5	Quasi-peak Value																				
Above 1GHz	54.0	Average Value																				
	74.0	Peak Value																				
Test Setup:																						

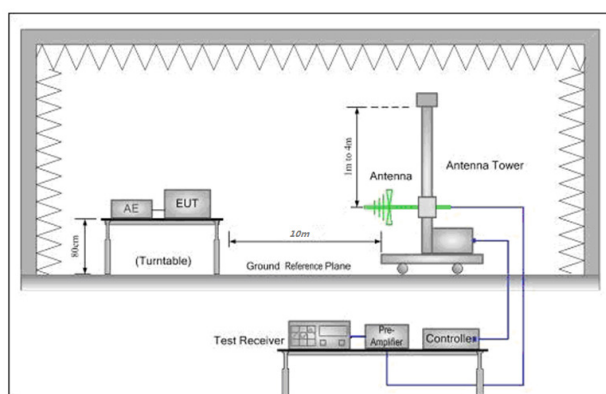


Figure 1. 30MHz to 1GHz

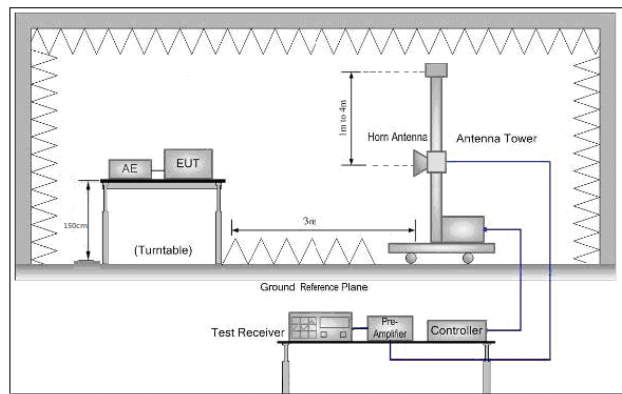


Figure 2. Above 1 GHz



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Test Procedure:	<ul style="list-style-type: none"><li>a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.</li><li>b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter Fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation</li><li>c. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li><li>d. 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.</li><li>e. 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.</li><li>f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li><li>g. 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</li><li>h. Test the EUT in the lowest channel , the Highest channel</li><li>i. 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.</li><li>j. Repeat above procedures until all frequencies measured was complete.</li></ul>
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Transmitting mode.
Final Test Mode:	Pretest the EUT at Transmitting mode, found the Transmitting mode which it is worse case Only the worst case is recorded in the report.
Test Results:	Pass

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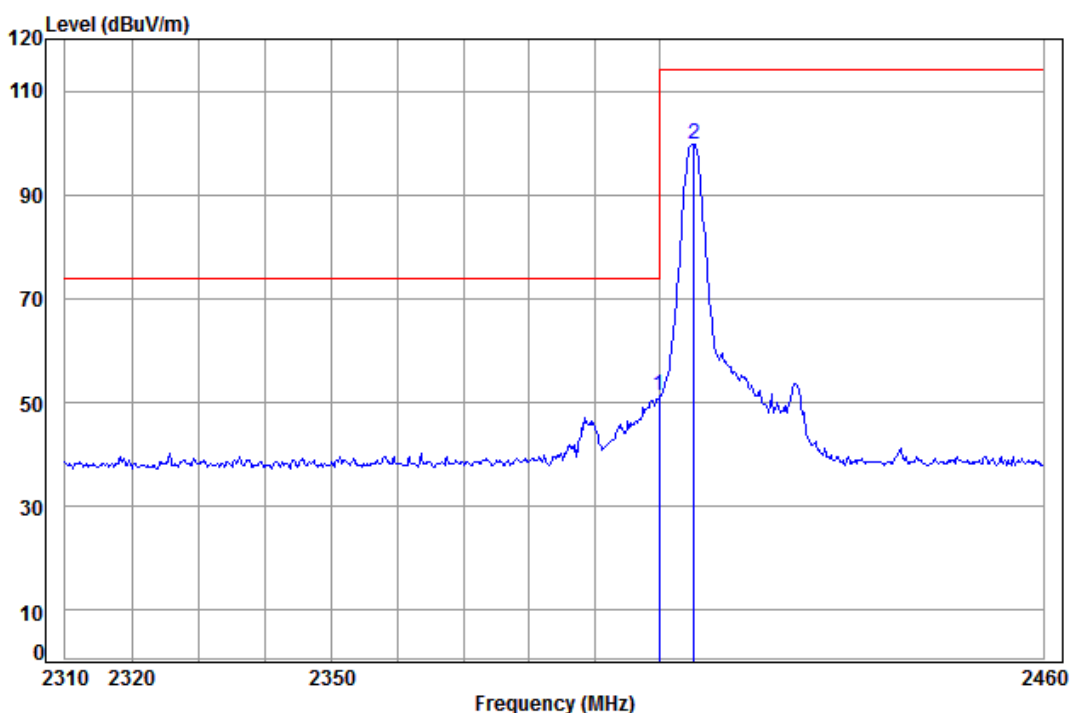
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## Band edge test data (Radiated Emission)

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak	Vertical
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Condition: 3m VERTICAL

Job No: : 2951CR

Mode: : 2405 Band edge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit	Over
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2400.000	5.34	28.60	38.11	55.42	51.25	74.00	-22.75
2 pp	2405.364	5.35	28.63	38.11	103.73	99.60	114.00	-14.40

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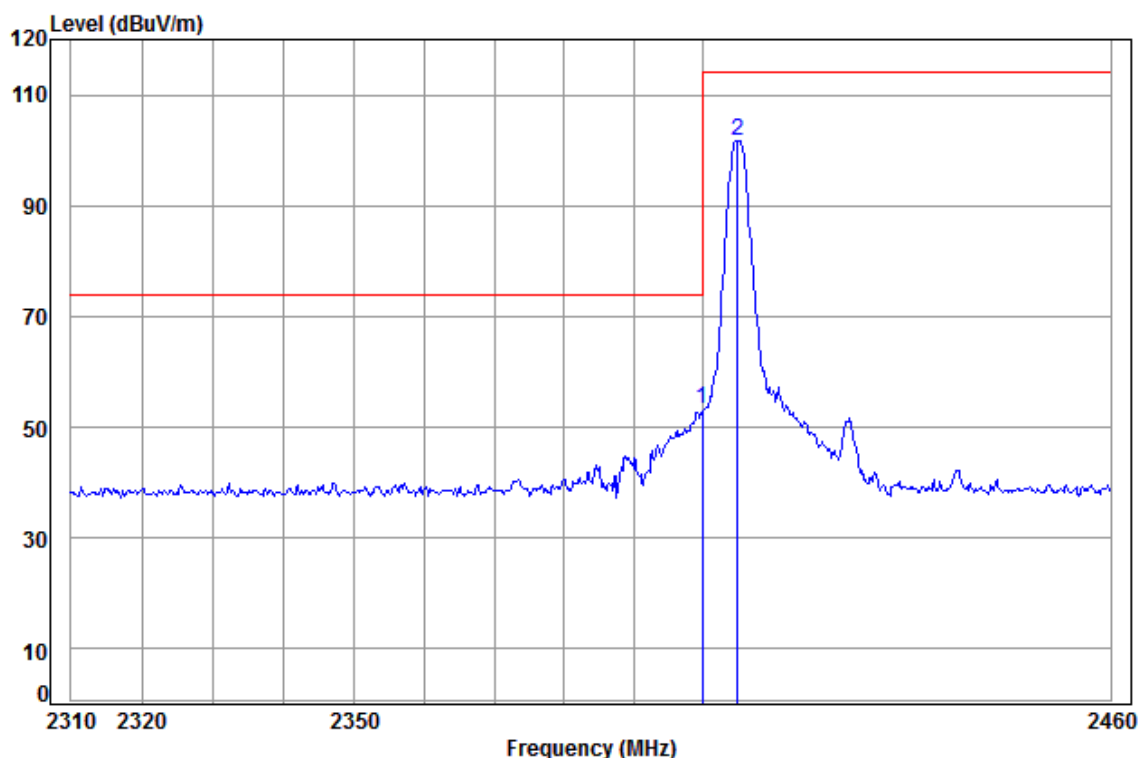


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**Shenzhen Branch**

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Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak	Horizontal
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Condition: 3m HORIZONTAL

Job No: : 2951CR

Mode: : 2405 Band edge

		Cable	Ant	Preamp	Read		Limit	Over
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2400.000	5.34	28.60	38.11	57.39	53.22	74.00	-20.78
2	pp 2405.061	5.35	28.62	38.11	105.73	101.59	114.00	-12.41

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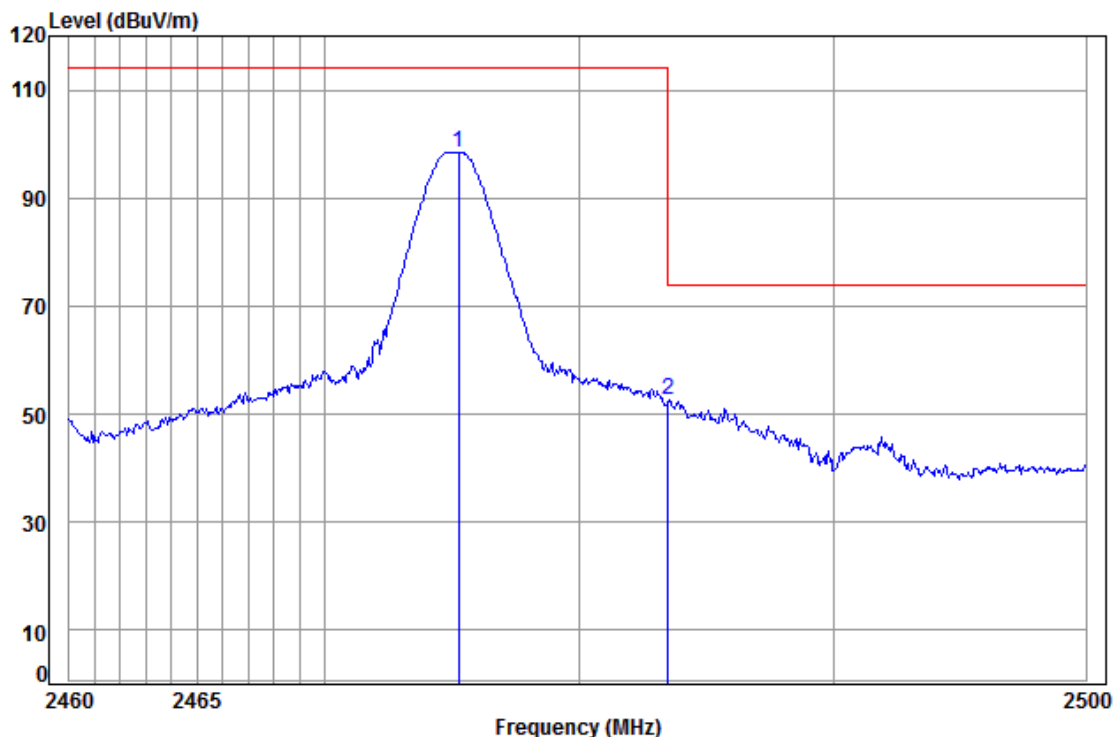


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Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak	Vertical
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Condition: 3m VERTICAL

Job No: : 2951CR

Mode: : 2475 Band edge

	Freq	Cable Loss	Ant Factor	Preamplifier	Read Level	Level	Limit Line	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 pp	2475.244	5.40	28.95	38.12	102.27	98.50	114.00	-15.50
2	2483.500	5.41	28.98	38.12	56.33	52.60	74.00	-21.40

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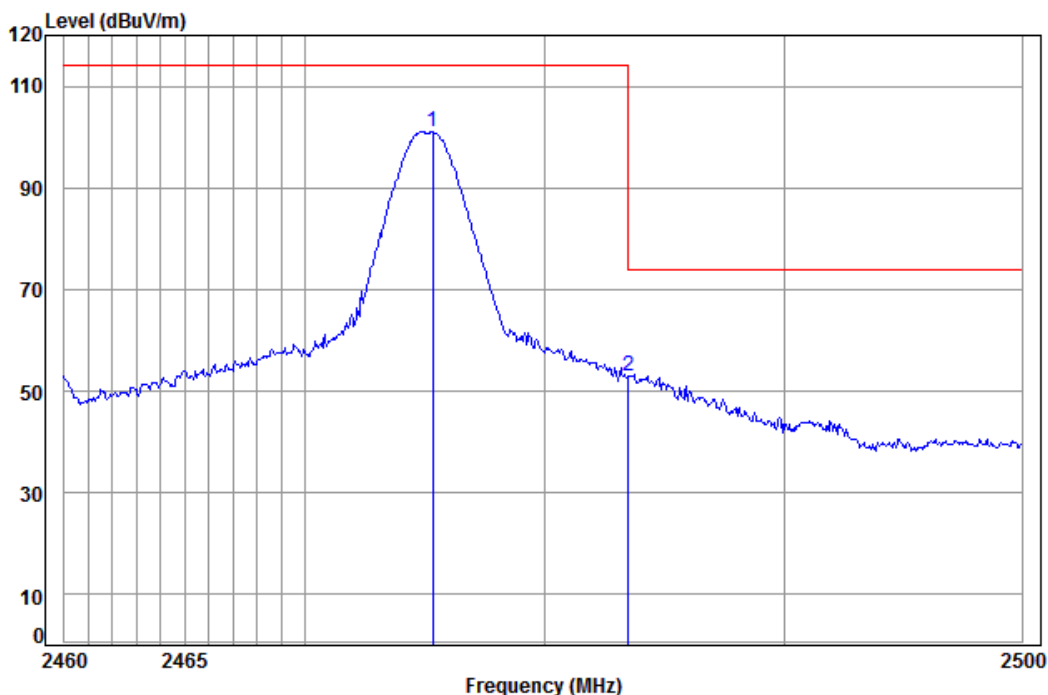


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Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak	Horizontal
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Condition: 3m HORIZONTAL

Job No: : 2951CR

Mode: : 2475 Band edge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Over Limit
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dB
1 pp	2475.324	5.40	28.95	38.12	104.68	114.00	-13.09
2	2483.500	5.41	28.98	38.12	56.70	74.00	-21.03

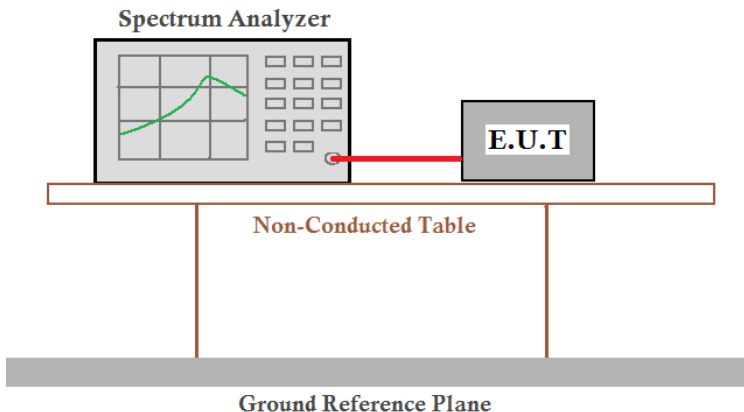
## Note:

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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## 6.4 20dB Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.215
Test Method:	ANSI C63.10:2013 11.8
Test Setup:	
Instruments Used:	Refer to section 5.10 for details
Exploratory Test Mode:	Non-hopping transmitting mode with all kind of modulation and all kind of data type
Final Test Mode:	Through Pre-scan, find the DH3 of date type is the worse case of 8DPSK modulation type
Limit:	N/A
Test Results:	Pass

### Measurement Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	1.063	Pass
Middle	1.053	Pass
Highest	1.058	Pass



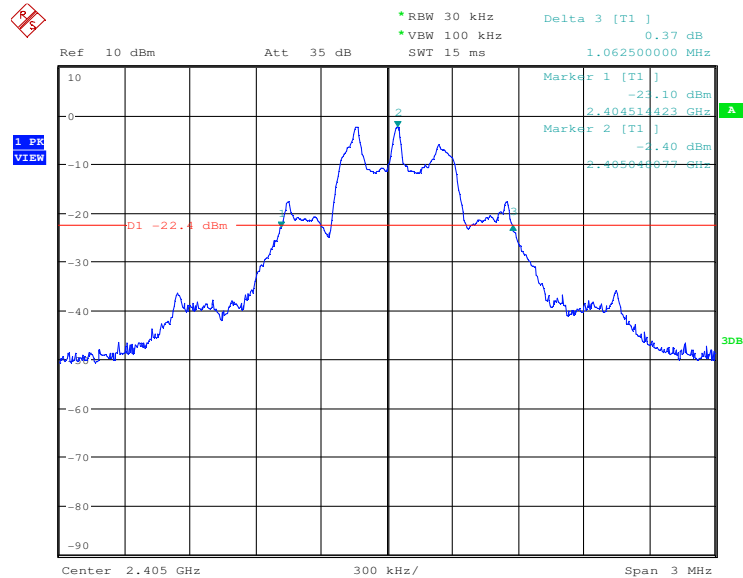
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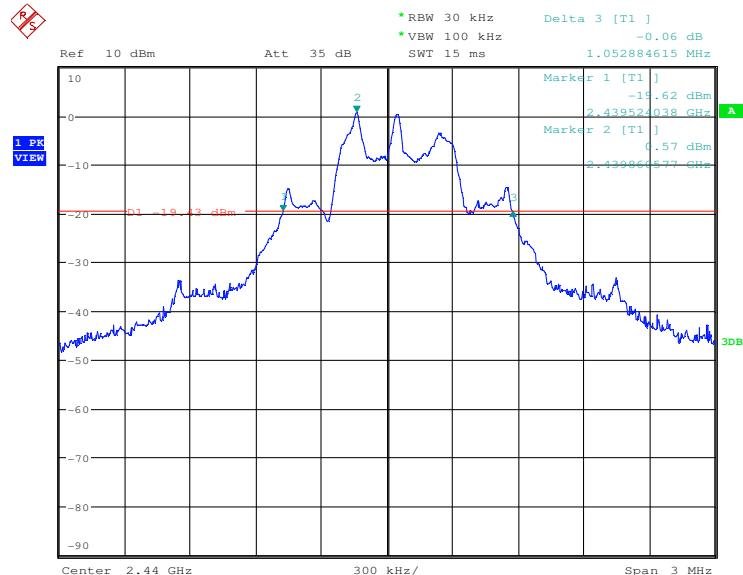
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Test plot as follows:

Test channel:	Lowest
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Test channel:	Middle
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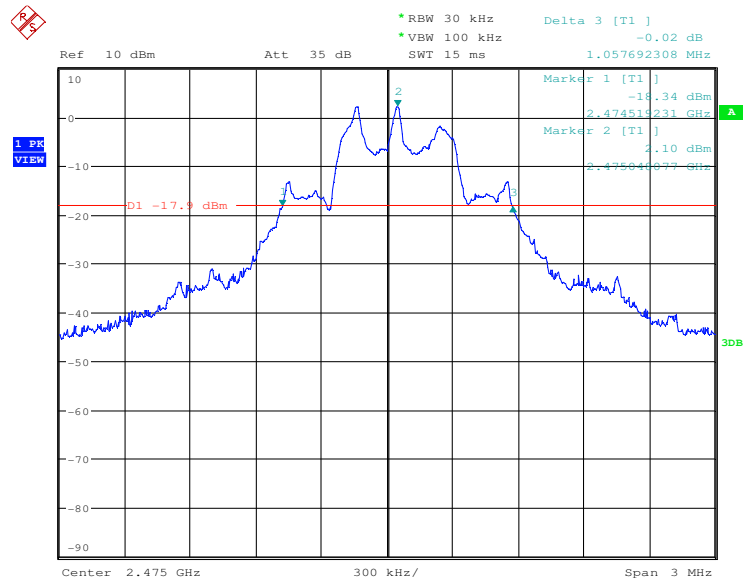


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Test channel:	Highest
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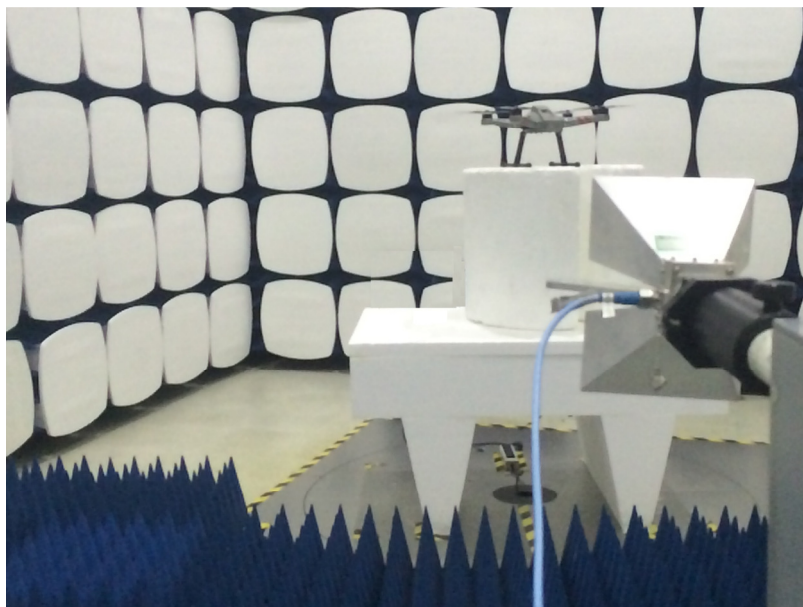
## 7 Photographs - EUT Test Setup

Test model No.:T-50

### 7.1 Radiated Emission



### 7.2 Radiated Spurious Emission



## 8 EUT Constructional Details



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