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

No. 1 Workshop, M-10, Middle section, Science & Technology Park,

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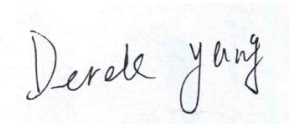
FCC REPORT

Application No:	SZEM1709010424RG
Applicant:	Pico Technology Co., Ltd.
Manufacturer:	Pico Technology Co., Ltd.
Factory:	Goertek Inc.
Product Name:	Pico 6DOF Motion Controller
Model No.(EUT):	C1310
FCC ID:	2AI3G-C1310
Standards:	47 CFR Part 15, Subpart C (2015)
Test Method	ANSI C63.10 (2013)
Date of Receipt:	2017-11-06
Date of Test:	2017-11-07 to 2017-07-13
Date of Issue:	2017-11-16
Test Result:	**PASS ***

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

Authorized Signature:



Derek Yang
Wireless 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.

2 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2017-11-16		Original

Authorized for issue by:				
Tested By		 **(Mike Hu) /Project Engineer**		2017-11-16 **Date**
Checked By		 **(Jim Huang) /Reviewer**		2017-11-16 **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 2013	PASS
AC Power Line Conducted Emission	47 CFR Part 15, Subpart C Section 15.207	ANSI C63.10 2013	PASS
Field Strength of the Fundamental Signal	47 CFR Part 15, Subpart C Section 15.249 (a)	ANSI C63.10 2013	PASS
Radiated Spurious Emissions	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS
Restricted bands around fundamental frequency (Radiated Emission)	47 CFR Part 15, Subpart C Section 15.205/15.209	ANSI C63.10 2013	PASS
20dB Occupied Bandwidth	47 CFR Part 15, Subpart C Section 15.215 (c)	ANSI C63.10 (2013)	PASS

4 Contents

5 General Information

5.1 Client Information

Applicant:	Pico Technology Co., Ltd.
Address of Applicant:	Room 2101, Shining Tower, No.35 Xueyuan Road, HaiDian District, Beijing, The People's Republic of China
Manufacturer:	Pico Technology Co., Ltd.
Address of Manufacturer:	Room 2101, Shining Tower, No.35 Xueyuan Road, HaiDian District, Beijing, The People's Republic of China
Factory:	Goertek Inc.
Address of Factory:	No.8877 Yingqian Street,High-Tech Industrial Development District,Weifang,Shandong,261031, P.R.China

5.2 General Description of EUT

Product Name:	Pico 6DOF Motion Controller
Model No.:	C1310
Trade Mark:	Pico
Operation Frequency:	2402MHz~2480MHz
Modulation Type:	GFSK
Number of Channel:	80
Sample Type:	Portable Device
Antenna Type:	Chip antenna
Antenna Gain:	2.76dBi
Power Supply	DC5V (1 x 3.7V Rechargeable battery) 450mAh Battery: Charge by DC 5V

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
0	2402MHz	20	2422MHz	40	2442MHz	60	2462MHz
1	2403MHz	21	2423MHz	41	2443MHz	61	2463MHz
2	2404MHz	22	2424MHz	42	2444MHz	62	2464MHz
3	2405MHz	23	2425MHz	43	2445MHz	63	2465MHz
4	2406MHz	24	2426MHz	44	2446MHz	64	2466MHz
5	2407MHz	25	2427MHz	45	2447MHz	65	2467MHz
6	2408MHz	26	2428MHz	46	2448MHz	66	2468MHz
7	2409MHz	27	2429MHz	47	2449MHz	67	2469MHz
8	2410MHz	28	2430MHz	48	2450MHz	68	2470MHz
9	2411MHz	29	2431MHz	49	2451MHz	69	2471MHz
10	2412MHz	30	2432MHz	50	2452MHz	70	2472MHz
11	2413MHz	31	2433MHz	51	2453MHz	71	2473MHz
12	2414MHz	32	2434MHz	52	2454MHz	72	2474MHz
13	2415MHz	33	2435MHz	53	2455MHz	73	2475MHz
14	2416MHz	34	2436MHz	54	2456MHz	74	2476MHz
15	2417MHz	35	2437MHz	55	2457MHz	75	2477MHz
16	2418MHz	36	2438MHz	56	2458MHz	76	2478MHz
17	2419MHz	37	2439MHz	57	2459MHz	77	2479MHz
18	2420MHz	38	2440MHz	58	2460MHz	78	2480MHz
19	2421MHz	39	2441MHz	59	2461MHz		

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 (CH0)	2402MHz
The middle channel (CH39)	2441MHz
The highest channel (CH78)	2480MHz

5.3 Test Environment

Operating Environment	
Temperature:	25.0 °C
Humidity:	50 % RH
Atmospheric Pressure:	1010 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
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.

• 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 –Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• 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.

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

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	0.75dB
2	RF power density, conducted	2.84dB
3	Spurious emissions, conducted	0.75dB
4	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-25GHz)
5	Conduct emission test	3.12 dB(9KHz- 30MHz)
6	Temperature test	1°C
7	Humidity test	3%
8	DC and low frequency voltages	0.5%

5.11 Equipment List

Conducted Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Duedate (yyyy-mm-dd)**
1	Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2017-05-10	2018-05-10
2	LISN	Rohde & Schwarz	ENV216	SEM007-01	2017-10-09	2018-10-09
3	LISN	ETS-LINDGREN	3816/2	SEM007-02	2017-04-14	2018-04-14
4	8 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T8-02	EMC0120	2017-09-28	2018-09-28
5	4 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T4-02	EMC0121	2017-09-28	2018-09-28
6	2 Line ISN	Fischer Custom Communications Inc.	FCC-TLISN-T2-02	EMC0122	2017-09-28	2018-09-28
7	EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2017-04-14	2018-04-14
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-10-09	2018-10-09

RF connected test						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Duedate (yyyy-mm-dd)**
1	DC Power Supply	ZhaoXin	RXN-305D	SEM011-02	2017-10-09	2018-10-09
2	Signal Analyzer	Rohde &Schwarz	FSV	W005-02	2017-03-06	2018-03-06
3	Signal Generator	Rohde &Schwarz	SML03	SEM006-02	2017-04-14	2018-04-14
4	Power Meter	Rohde &Schwarz	NRVS	SEM014-02	2017-10-09	2018-10-09
5	Power Sensor	Agilent Technologies	U2021XA	SEM009-01	2017-10-09	2018-10-09

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	ETS-LINDGREN	N/A	SEM001-01	2017-05-10	2018-05-10
2	EMI Test Receiver	Agilent Technologies	N9038A	SEM004-05	2017-10-09	2018-10-09
3	BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2017-11-01	2020-11-01
4	Double-ridged horn (1-18GHz)	ETS-LINDGREN	3117	SEM003-11	2015-10-17	2018-10-17
5	Horn Antenna (18-26GHz)	ETS-LINDGREN	3160	SEM003-12	2014-11-24	2017-11-24
6	Pre-amplifier (0.1-1300MHz)	Agilent Technologies	8447D	SEM005-01	2017-04-14	2018-04-14
7	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A
8	DC Power Supply	Zhao Xin	RXN-305D	SEM011-02	2017-10-09	2018-10-09
9	Loop Antenna	Beijing Daze	ZN30401	SEM003-09	2015-05-13	2018-05-13

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	2017-05-10	2018-05-10
2	EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2017-04-14	2018-04-14
3	Trilog-Broadband Antenna(30M-1GHz)	Schwarzbeck	VULB9168	SEM003-18	2016-06-29	2019-06-29
4	Pre-amplifier	Sonoma Instrument Co	310N	SEM005-03	2017-07-06	2018-07-06
5	.Loop Antenna	ETS-Lindgren	6502	SEM003-08	2015-08-14	2018-08-14

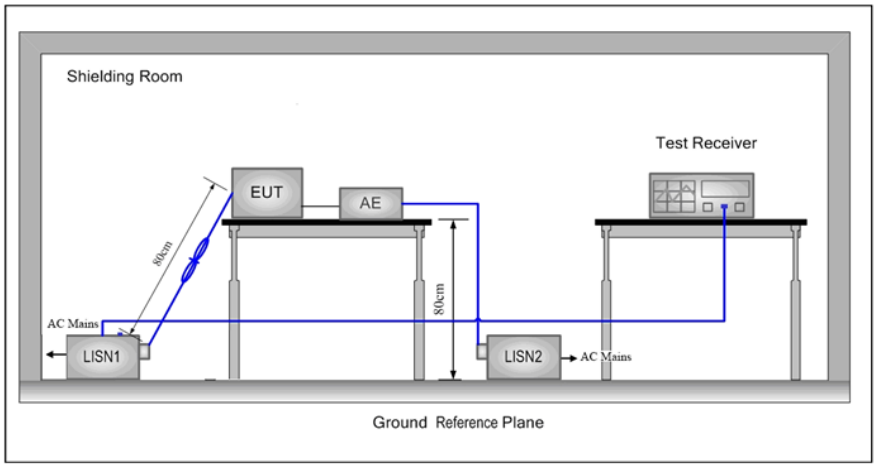
RE in Chamber						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal. date (yyyy-mm-dd)**	**Cal.Due date (yyyy-mm-dd)**
1	3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2017-05-10	2018-05-10
2	EXA Spectrum Analyzer	Agilent Technologies Inc	N9010A	SEM004-09	2017-07-19	2018-07-19
3	BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-02	2017-11-15	2020-11-15
4	Amplifier (0.1-1300MHz)	HP	8447D	SEM005-02	2017-10-09	2018-10-09
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	HornAntenna (26GHz-40GHz)	A.H.Systems, inc.	SAS-573	SEM003-13	2015-02-12	2018-02-12
8	Low Noise Amplifier	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2017-10-09	2018-10-09
9	Band filter	Amindeon	Asi 3314	SEM023-01	N/A	N/A

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.	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 2.76dBi.	

6.2 Conducted Emissions

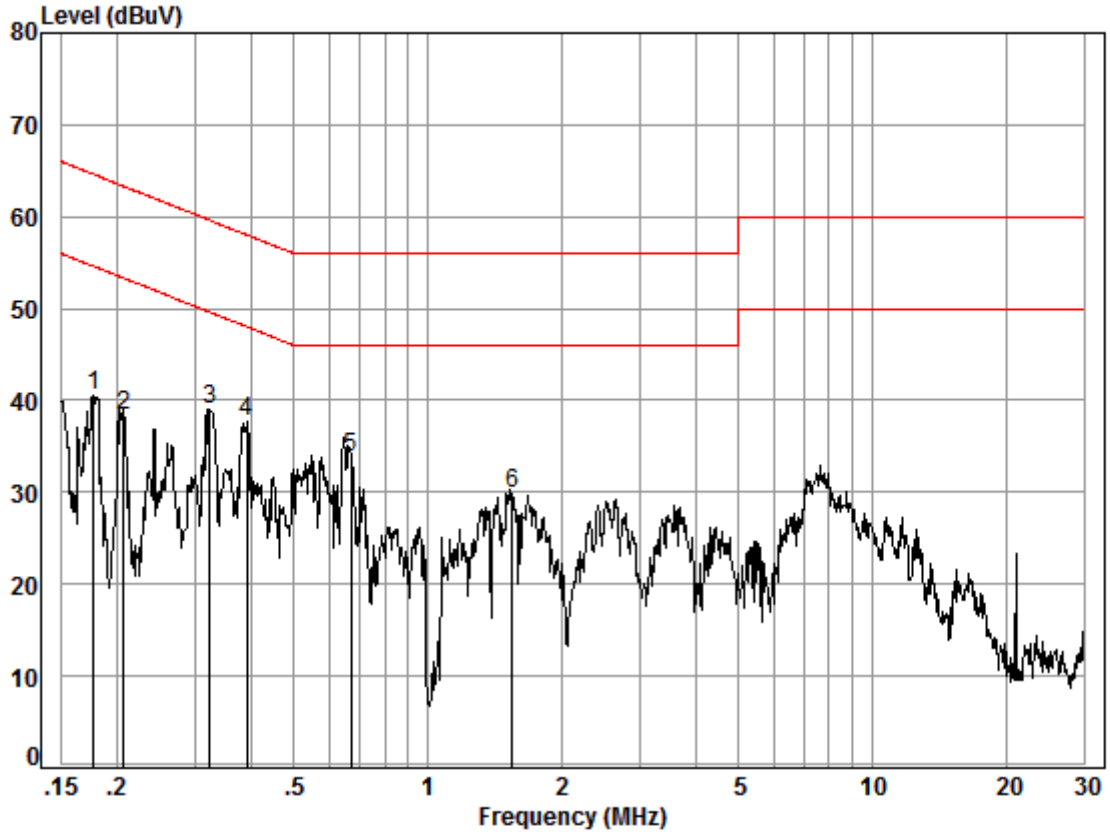
Test Requirement:	47 CFR Part 15C Section 15.207
Test Method:	ANSI C63.10: 2013
Test Frequency Range:	150kHz to 30MHz
Limit:	<table><tr><td rowspan="2">Frequency range (MHz)</td><td colspan="2">Limit (dBuV)</td></tr><tr><td>Quasi-peak</td><td>Average</td></tr><tr><td>0.15-0.5</td><td>66 to 56*</td><td>56 to 46*</td></tr><tr><td>0.5-5</td><td>56</td><td>46</td></tr><tr><td>5-30</td><td>60</td><td>50</td></tr></table> * Decreases with the logarithm of the frequency.
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane. 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.
Test Setup:	
Test Mode:	Transmitting with GFSK modulation. Charge +Transmitting mode.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

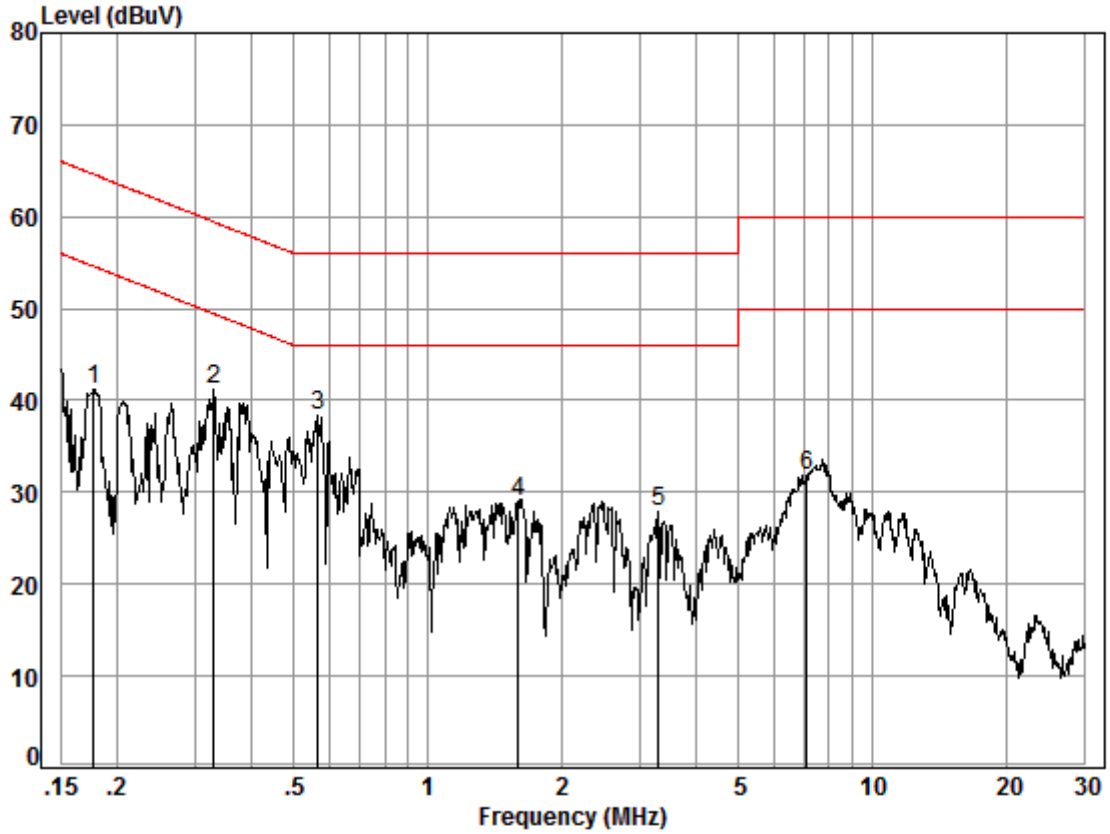
Live line:



Site : Shielding Room
Condition: Line
Job No. : 10424RG
Test mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18	0.02	9.52	30.94	40.48	54.64	-14.16	Peak
2	0.21	0.02	9.50	28.74	38.26	53.32	-15.06	Peak
3	0.32	0.01	9.51	29.58	39.10	49.62	-10.52	Peak
4	0.39	0.01	9.49	28.21	37.71	48.03	-10.32	Peak
5	0.67	0.02	9.50	24.30	33.82	46.00	-12.18	Peak
6	1.55	0.02	9.51	20.28	29.81	46.00	-16.19	Peak

Neutral line:



Site : Shielding Room
Condition: Neutral
Job No. : 10424RG
Test mode: a

	Freq	Cable Loss	LISN Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB	dBuV	dBuV	dBuV	dB	
1	0.18	0.02	9.59	31.66	41.27	54.64	-13.37	Peak
2	0.33	0.01	9.58	31.56	41.15	49.44	-8.29	Peak
3	0.57	0.01	9.61	28.85	38.47	46.00	-7.53	Peak
4	1.60	0.02	9.63	19.45	29.10	46.00	-16.90	Peak
5	3.31	0.02	9.66	18.19	27.87	46.00	-18.13	Peak
6	7.14	0.01	9.72	22.03	31.76	50.00	-18.24	Peak

Notes:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

6.3 Radiated Spurious Emission

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205
Test Method:	ANSI C63.10 :2013 Section 11.12
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)

Receiver Setup:

Frequency	Detector	RBW	VBW	Remark
0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
30MHz-1GHz	Quasi-peak	100 kHz	300kHz	Quasi-peak
Above 1GHz	Peak	1MHz	3MHz	Peak
	Peak	1MHz	10Hz	Average

Limit:

Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
0.490MHz-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:
fundamental signal)

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

Test Setup:	

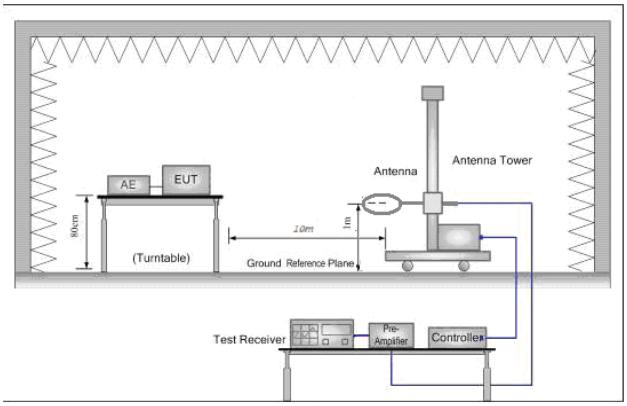


Figure 1. Below 30MHz

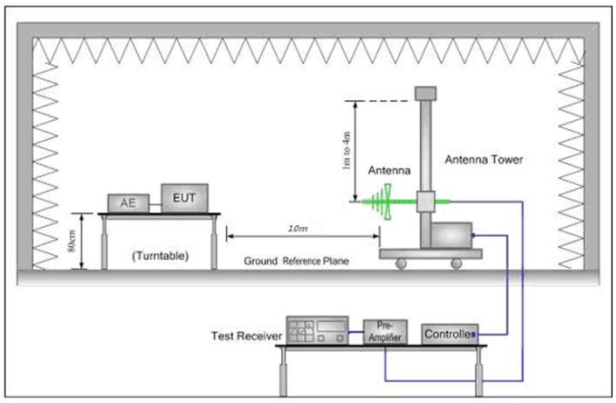


Figure 2. 30MHz to 1GHz

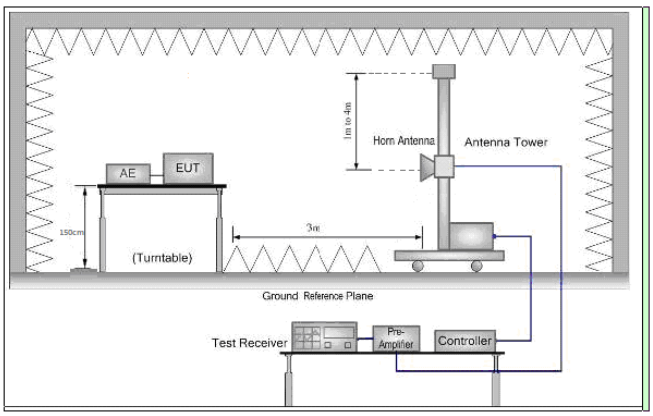


Figure 3. Above 1 GHz

Test Procedure:	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 camber. The table was rotated 360 degrees to determine the position of the highest radiation. 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 semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 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. 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 (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. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. 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. h. Test the EUT in the lowest channel (2402MHz),the middle channel (2440MHz),the Highest channel (2480MHz) i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case. j. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode, For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass

Measurement Data

6.3.1 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
2402.00	5.49	29.11	37.65	93.46	90.41	114.00	-23.59	Horizontal
2402.00	5.49	29.11	37.65	84.95	81.90	114.00	-32.10	Vertical
2441.00	5.54	29.23	37.65	93.60	90.72	114.00	-23.28	Horizontal
2441.00	5.54	29.23	37.65	87.82	84.94	114.00	-29.06	Vertical
2480.00	5.59	29.34	37.65	91.92	89.20	114.00	-24.80	Horizontal
2480.00	5.59	29.34	37.65	89.77	87.05	114.00	-26.95	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
2402.00	5.49	29.11	37.65	91.42	88.37	94.00	-5.63	Horizontal
2402.00	5.49	29.11	37.65	82.93	79.88	94.00	-14.12	Vertical
2441.00	5.54	29.23	37.65	91.55	88.67	94.00	-5.33	Horizontal
2441.00	5.54	29.23	37.65	85.76	82.88	94.00	-11.12	Vertical
2480.00	5.59	29.34	37.65	89.73	87.01	94.00	-6.99	Horizontal
2480.00	5.59	29.34	37.65	87.76	85.04	94.00	-8.96	Vertical

6.3.2 Radiated Emission below 1GHz

The test was performed at a 10m test site. According to below formulate and the test data at 10m test distance,

$L_3 / L_{10} = D_{10} / D_3$

Note:

L_3: Level @ 3m distance. Unit: uV/m;

L_{10}: Level @ 10m distance. Unit: uV/m;

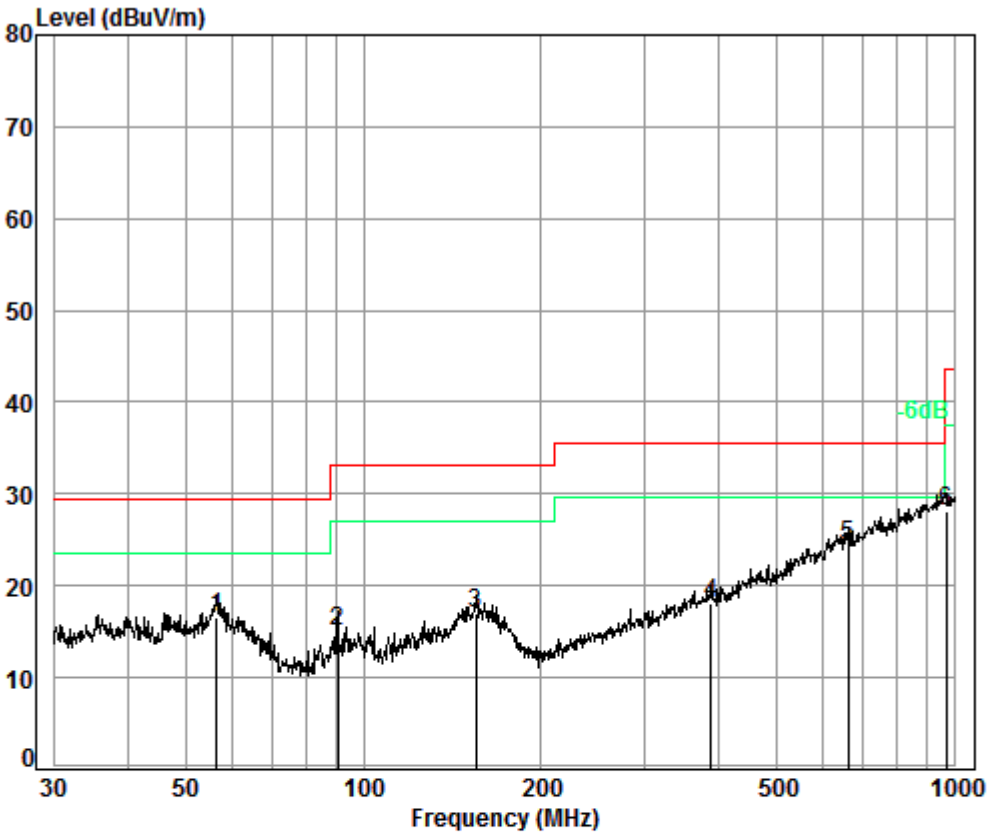
D_3: 3m distance. Unit: m

D_{10}: 10m distance. Unit: m

The level at 3m test distance is below:

Frequency (MHz)	Level @ 10m (dBuV/m)	Level @ 10m (uV/m)	Level @ 3m (uV/m)	Level @ 3m (dBuV/m)	Limit @ 3m (dBuV/m)	Over Limit (dB)	Ant. Polarization
56.59	16.65	6.80	22.67	27.11	40.00	-12.89	V
90.54	15.14	5.71	19.05	25.60	43.50	-17.90	V
154.82	16.91	7.01	23.35	27.37	43.50	-16.13	V
387.99	18.14	8.07	26.91	28.60	46.00	-17.40	V
661.15	24.42	16.63	55.45	34.88	46.00	-11.12	V
965.54	28.06	25.29	84.31	38.52	54.00	-15.48	V
47.16	14.60	5.37	17.90	25.06	40.00	-14.94	H
59.65	12.24	4.09	13.64	22.70	40.00	-17.30	H
155.36	15.76	6.14	20.46	26.22	43.50	-17.28	H
338.40	17.03	7.10	23.68	27.49	46.00	-18.51	H
642.86	24.10	16.03	53.44	34.56	46.00	-11.44	H
979.18	27.90	24.83	82.77	38.36	54.00	-15.64	H

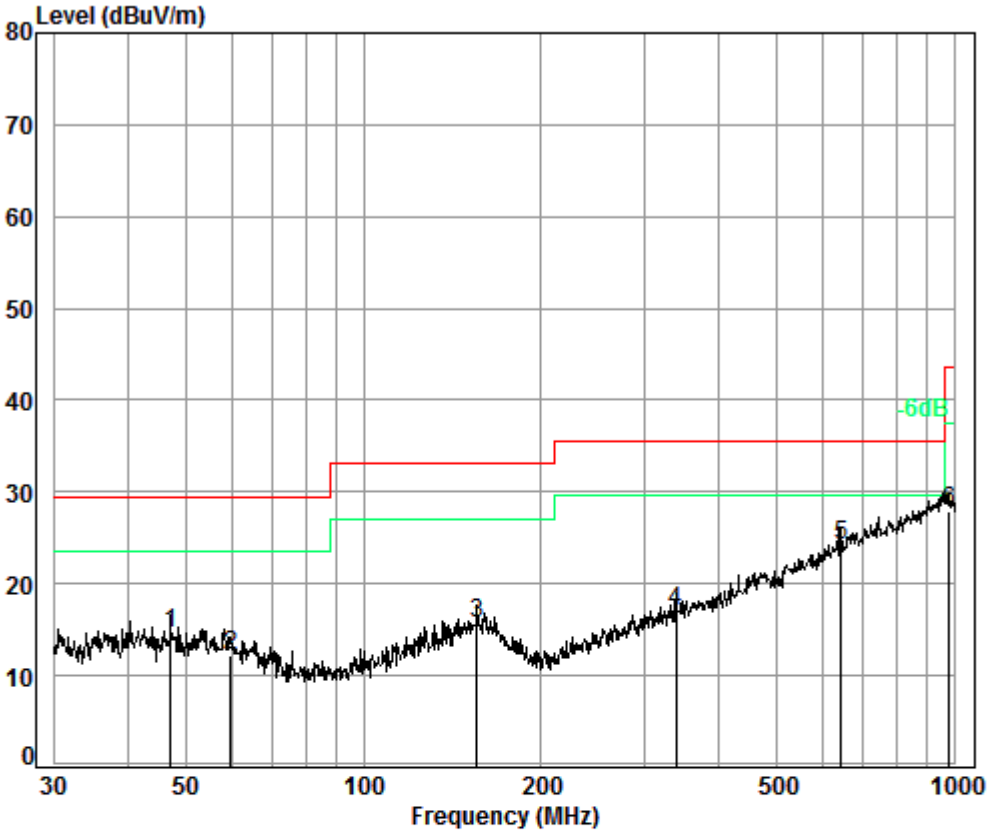
30MHz~1GHz (QP)		
Test mode:	Charge + Transmitting	Vertical



Condition: 10m VERTICAL
EUT : 10424RG
Test Mode: b

	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	56.59	7.00	12.25	32.44	29.84	16.65	29.50	-12.85
2	90.54	7.20	8.73	32.52	31.73	15.14	33.10	-17.96
3	154.82	7.48	13.40	32.43	28.46	16.91	33.10	-16.19
4	387.99	8.30	14.64	32.33	27.53	18.14	35.60	-17.46
5 pp	661.15	9.05	19.67	32.27	27.97	24.42	35.60	-11.18
6	965.54	9.60	22.78	30.88	26.56	28.06	43.50	-15.44

Test mode:	Charge + Transmitting	Horizontal

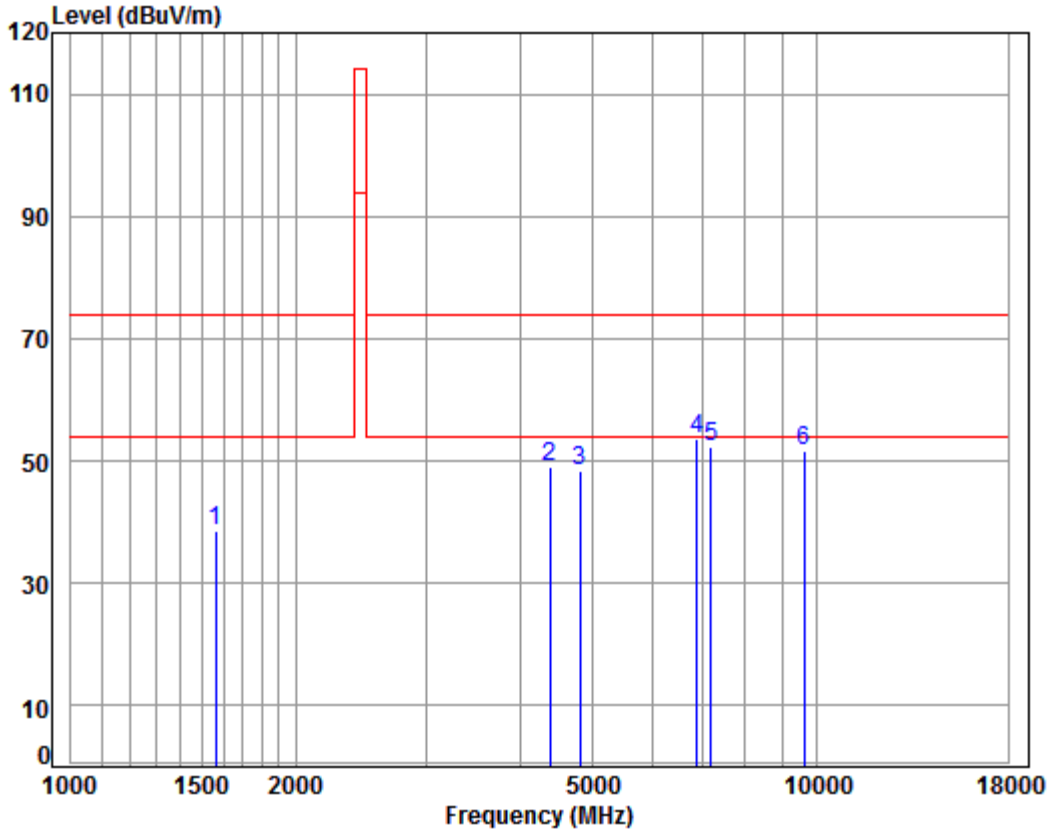


Condition: 10m HORIZONTAL
EUT : 10424RG
Test Mode: b

	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	47.16	6.84	12.85	32.43	27.34	14.60	29.50	-14.90
2	59.65	7.00	12.03	32.45	25.66	12.24	29.50	-17.26
3	155.36	7.48	13.40	32.43	27.31	15.76	33.10	-17.34
4	338.40	8.19	13.63	32.36	27.57	17.03	35.60	-18.57
5 pp	642.86	9.01	19.45	32.27	27.91	24.10	35.60	-11.50
6	979.18	9.60	22.82	30.77	26.25	27.90	43.50	-15.60

6.3.3 Transmitter Emission above 1GHz

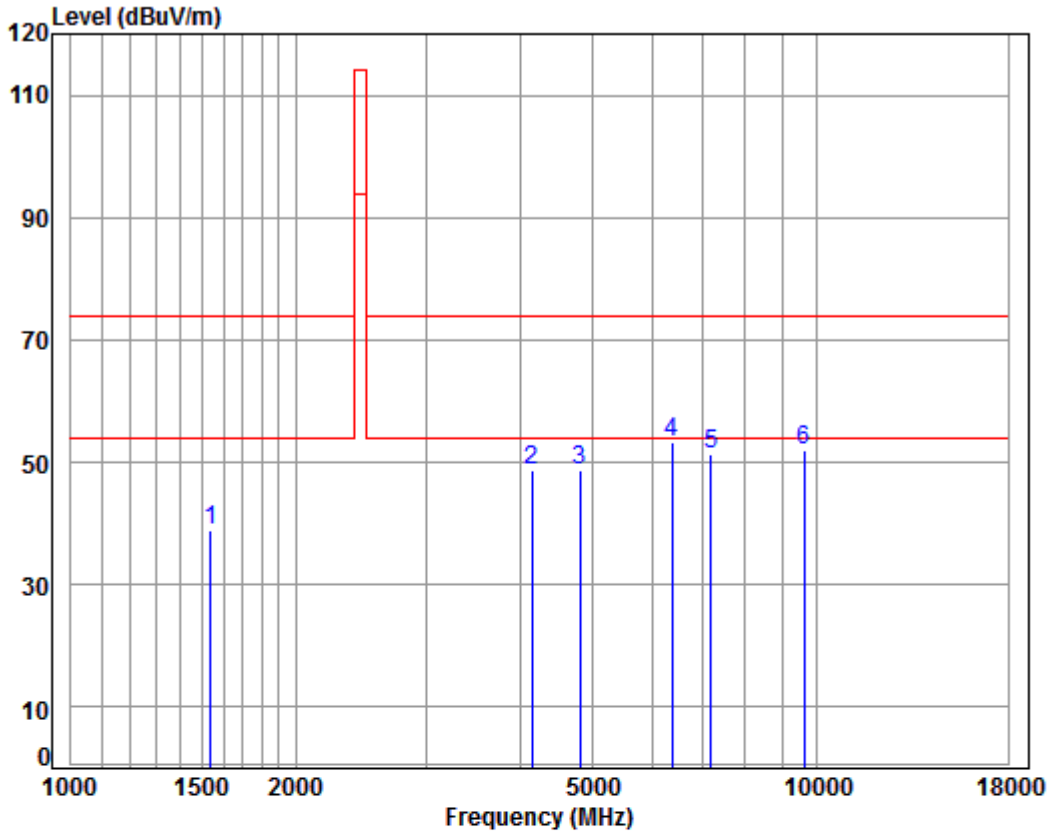
Test mode:	GFSK	Test channel:	Lowest	Remark:	Peak	Vertical



Condition: 3m VERTICAL
Job No : 10424RG
Mode : 2402 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1565.191	5.39	26.10	37.74	44.76	38.51	74.00	-35.49	peak
2	4379.699	7.43	33.60	37.18	45.29	49.14	74.00	-24.86	peak
3	4804.000	7.89	34.16	37.26	43.48	48.27	74.00	-25.73	peak
4 pp	6894.806	10.42	36.21	37.63	44.68	53.68	74.00	-20.32	peak
5	7206.000	10.08	36.42	37.56	43.43	52.37	74.00	-21.63	peak
6	9608.000	10.75	37.52	35.80	39.33	51.80	74.00	-22.20	peak

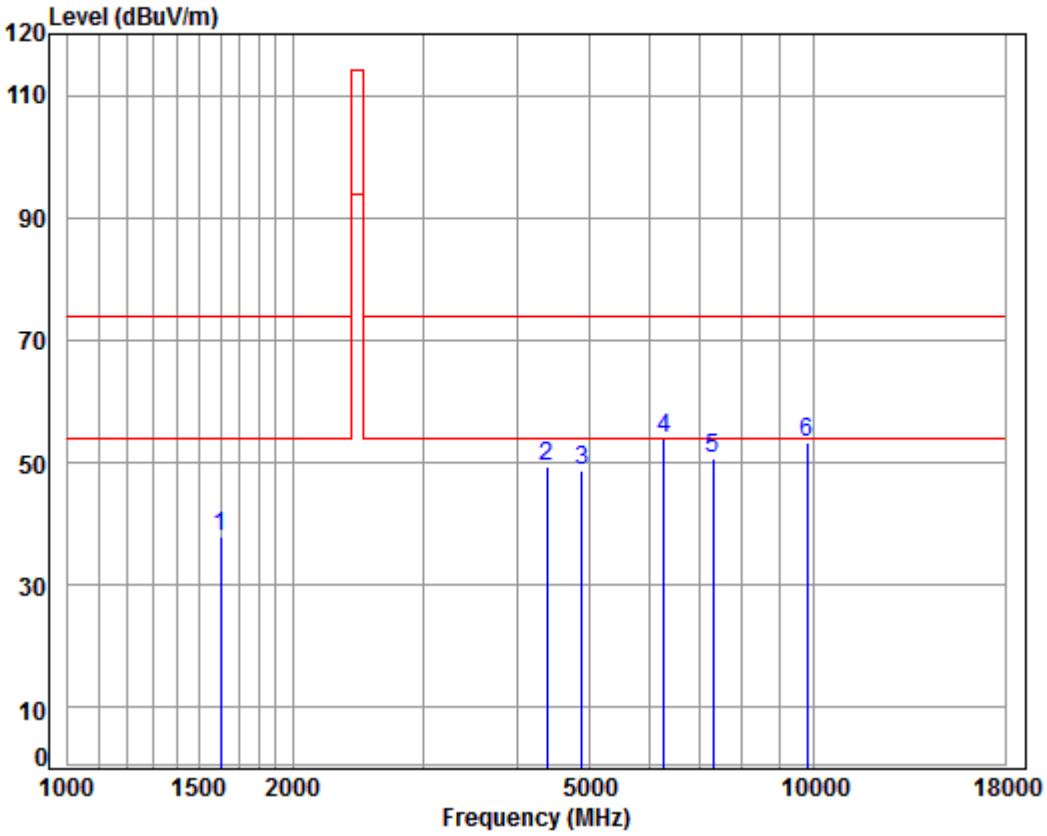
Test mode:	GFSK	Test channel:	Lowest	Remark:	Peak	Horizontal



Condition: 3m HORIZONTAL
Job No : 10424RG
Mode : 2402 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1538.281	5.43	25.98	37.74	45.30	38.97	74.00	-35.03	peak
2	4145.664	7.16	33.60	37.13	44.95	48.58	74.00	-25.42	peak
3	4804.000	7.89	34.16	37.26	43.89	48.68	74.00	-25.32	peak
4 pp	6377.195	11.31	35.00	37.78	44.77	53.30	74.00	-20.70	peak
5	7206.000	10.08	36.42	37.56	42.50	51.44	74.00	-22.56	peak
6	9608.000	10.75	37.52	35.80	39.65	52.12	74.00	-21.88	peak

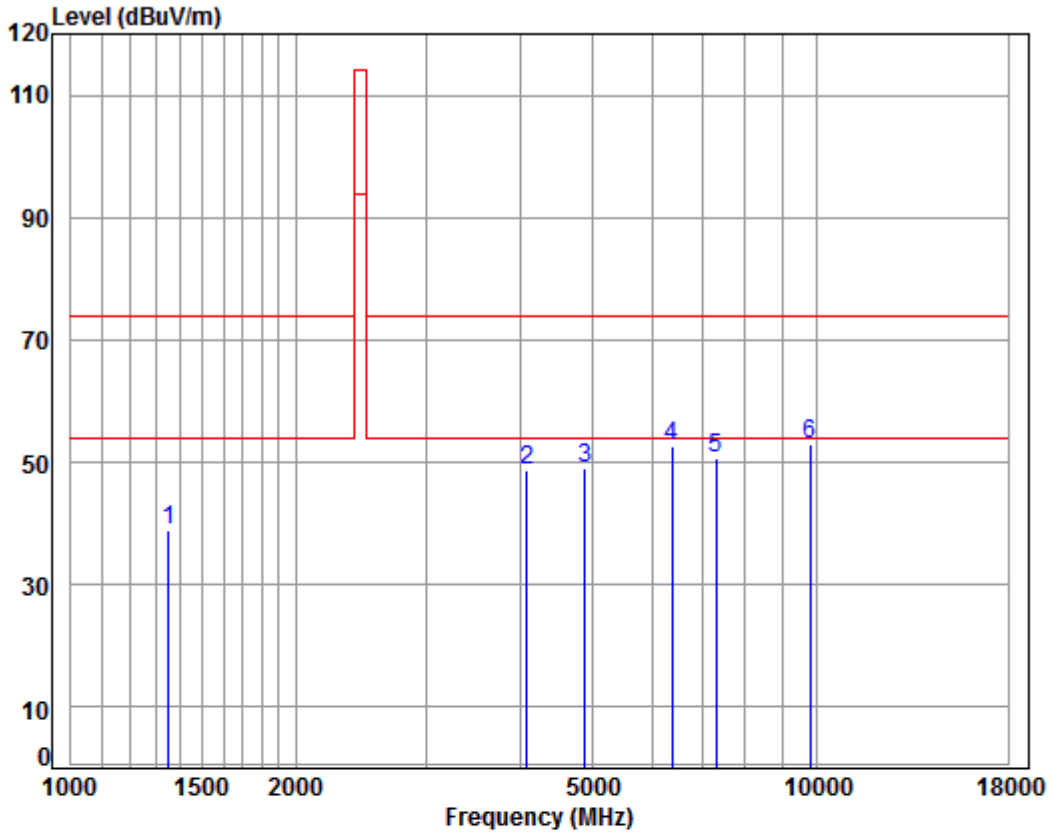
Test mode:	GFSK	Test channel:	Middle	Remark:	Peak	Vertical



Condition: 3m VERTICAL
Job No : 10424RG
Mode : 2441 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1601.804	5.35	26.26	37.73	44.02	37.90	74.00	-36.10	peak
2	4379.699	7.43	33.60	37.18	45.41	49.26	74.00	-24.74	peak
3	4882.000	7.97	34.30	37.28	43.76	48.75	74.00	-25.25	peak
4 pp	6285.695	11.13	34.93	37.81	45.62	53.87	74.00	-20.13	peak
5	7323.000	10.05	36.37	37.53	41.66	50.55	74.00	-23.45	peak
6	9764.000	10.82	37.55	35.68	40.71	53.40	74.00	-20.60	peak

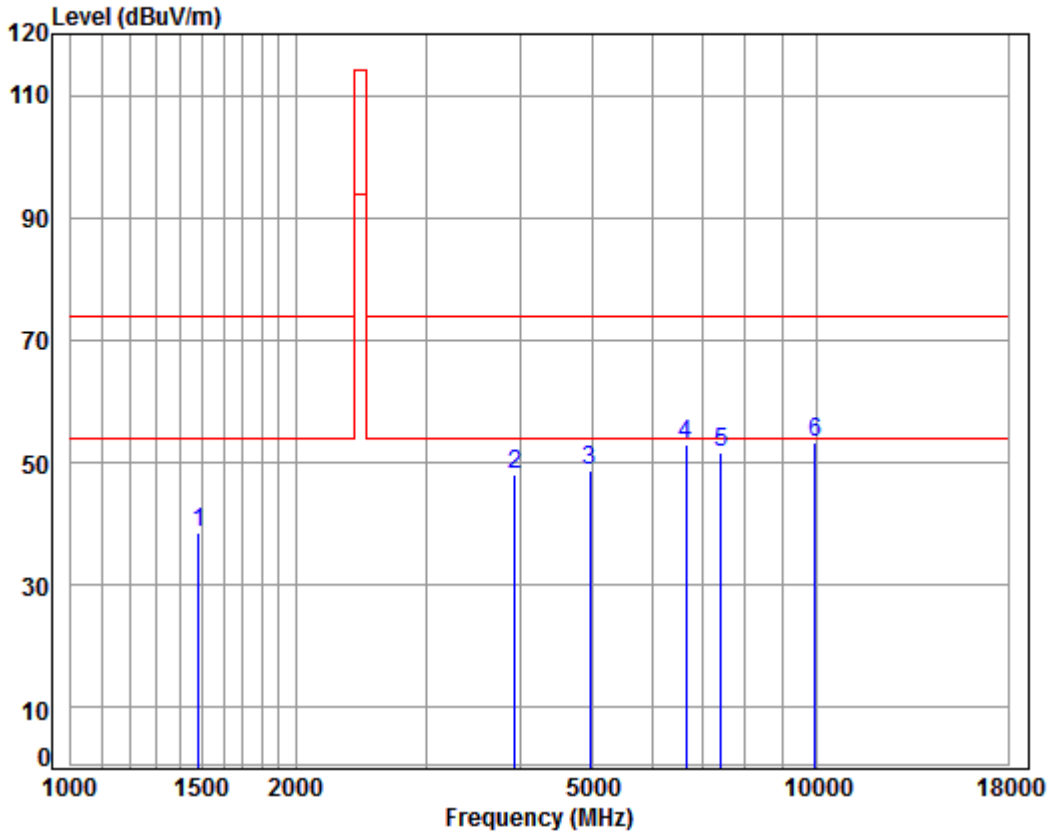
Test mode:	GFSK	Test channel:	Middle	Remark:	Peak	Horizontal



Condition: 3m HORIZONTAL
Job No : 10424RG
Mode : 2441 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1350.667	4.98	25.18	37.76	46.51	38.91	74.00	-35.09	peak
2	4086.182	7.08	33.60	37.12	45.07	48.63	74.00	-25.37	peak
3	4882.000	7.97	34.30	37.28	43.95	48.94	74.00	-25.06	peak
4	6377.195	11.31	35.00	37.78	43.99	52.52	74.00	-21.48	peak
5	7323.000	10.05	36.37	37.53	41.90	50.79	74.00	-23.21	peak
6 pp	9764.000	10.82	37.55	35.68	40.41	53.10	74.00	-20.90	peak

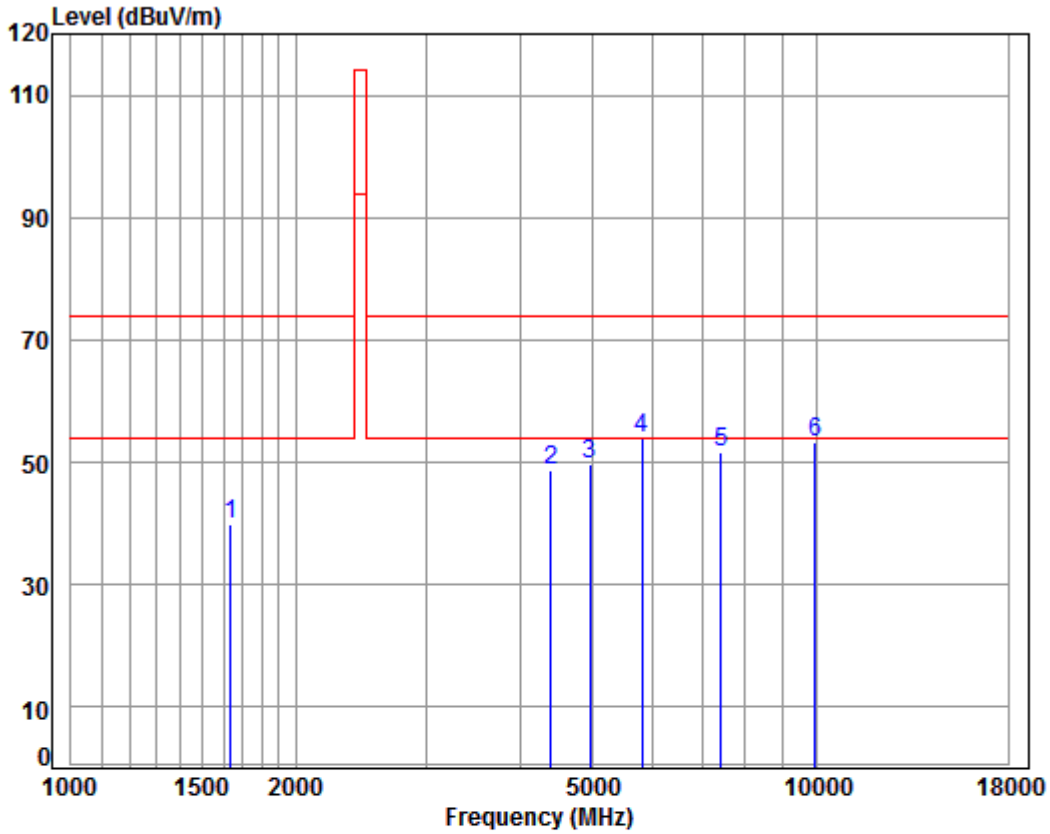
Test mode:	GFSK	Test channel:	Highest	Remark:	Peak	Vertical



Condition: 3m VERTICAL
Job No : 10424RG
Mode : 2480 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1481.553	5.42	25.73	37.74	45.11	38.52	74.00	-35.48	peak
2	3935.493	6.92	33.43	37.13	44.94	48.16	74.00	-25.84	peak
3	4960.000	8.05	34.43	37.29	43.54	48.73	74.00	-25.27	peak
4	6659.763	11.08	35.56	37.70	44.14	53.08	74.00	-20.92	peak
5	7440.000	10.02	36.32	37.51	42.88	51.71	74.00	-22.29	peak
6 pp	9920.000	10.90	37.58	35.56	40.44	53.36	74.00	-20.64	peak

Test mode:	GFSK	Test channel:	Highest	Remark:	Peak	Horizontal



Condition: 3m HORIZONTAL
Job No : 10424RG
Mode : 2480 TX RSE

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1639.274	5.30	26.42	37.73	45.83	39.82	74.00	-34.18	peak
2	4392.376	7.44	33.60	37.18	44.90	48.76	74.00	-25.24	peak
3	4960.000	8.05	34.43	37.29	44.35	49.54	74.00	-24.46	peak
4 pp	5813.812	9.95	34.59	37.80	47.15	53.89	74.00	-20.11	peak
5	7440.000	10.02	36.32	37.51	42.71	51.54	74.00	-22.46	peak
6	9920.000	10.90	37.58	35.56	40.36	53.28	74.00	-20.72	peak

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.

6.4 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205
Test Method:	ANSI C63.10: 2013 Section 11.12
Test Site:	Measurement Distance: 3m or 10m (Semi-Anechoic Chamber)

Limit:

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:

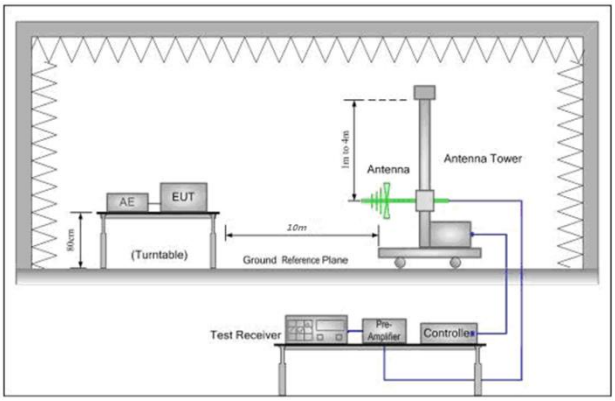


Figure 1. 30MHz to 1GHz

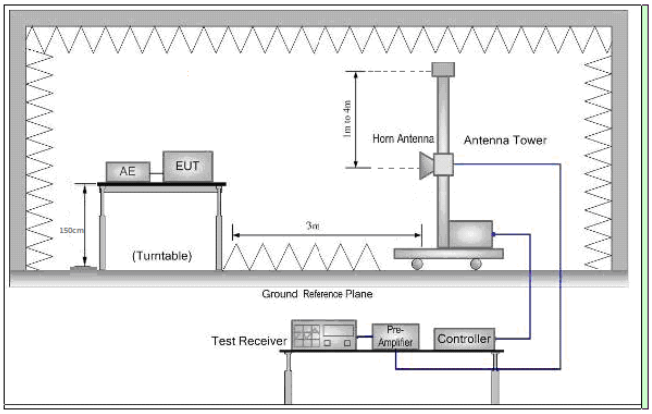


Figure 2. Above 1 GHz

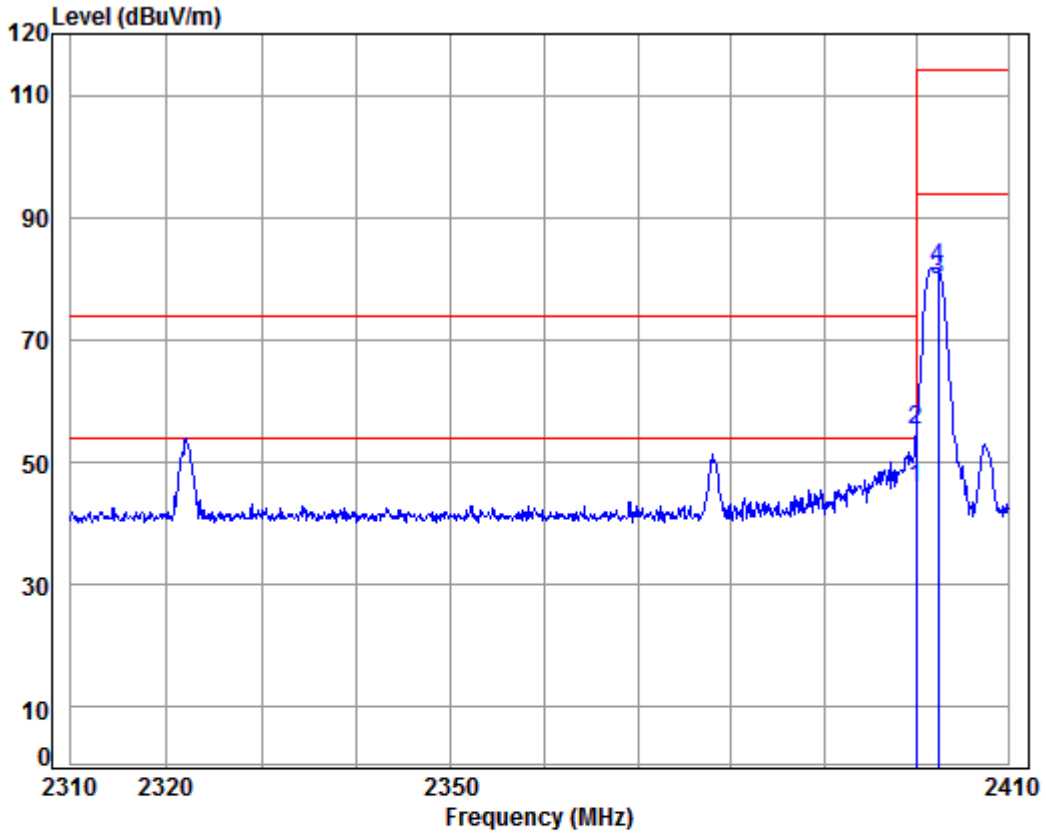
Test Procedure:

a. 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 camber. The table was rotated 360 degrees to determine the position of the highest radiation.
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 semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.
c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
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.
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.
f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
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
h. Test the EUT in the lowest 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 the worst case.
j. Repeat above procedures until all frequencies measured was complete.

Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass

Test plot as follows:

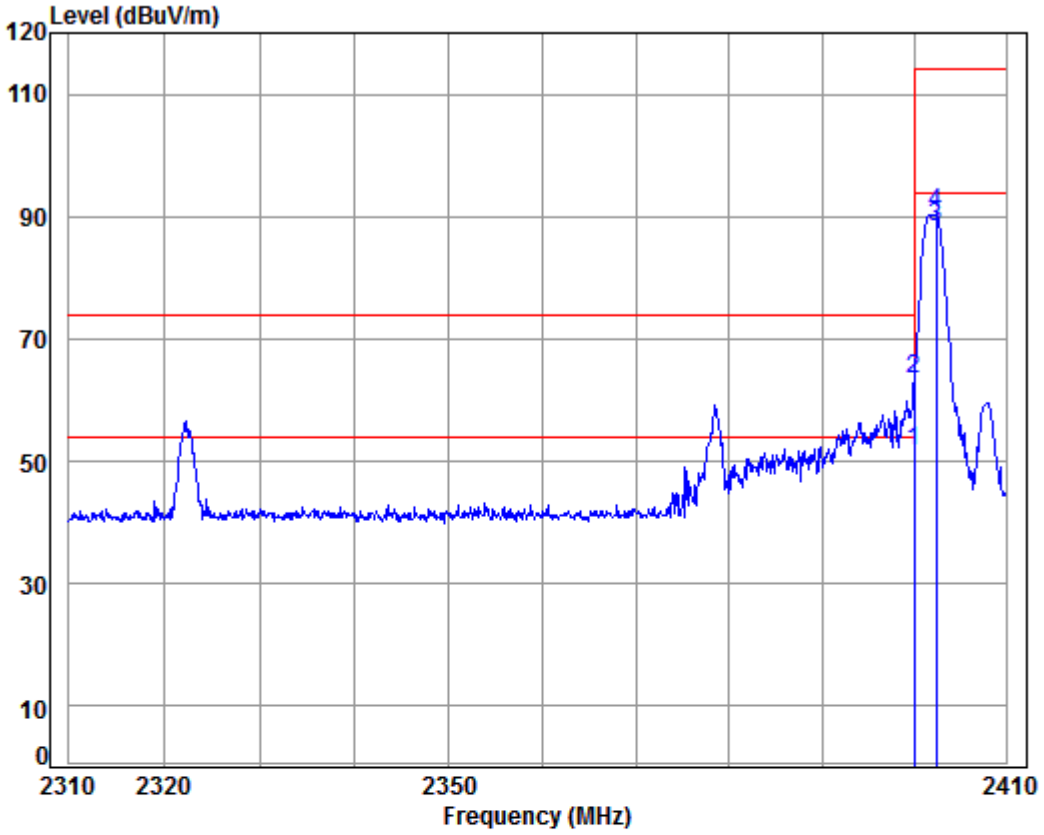
Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak	Vertical



Condition: 3m VERTICAL
Job No : 10424RG
Mode : 2402 Band edge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	pp 2400.000	5.49	29.11	37.66	48.95	45.89	54.00	-8.11	Average
2	pk 2400.000	5.49	29.11	37.66	58.46	55.40	74.00	-18.60	Peak
3	2402.352	5.49	29.11	37.65	82.93	79.88	94.00	-14.12	Average
4	2402.352	5.49	29.11	37.65	84.95	81.90	114.00	-32.10	Peak

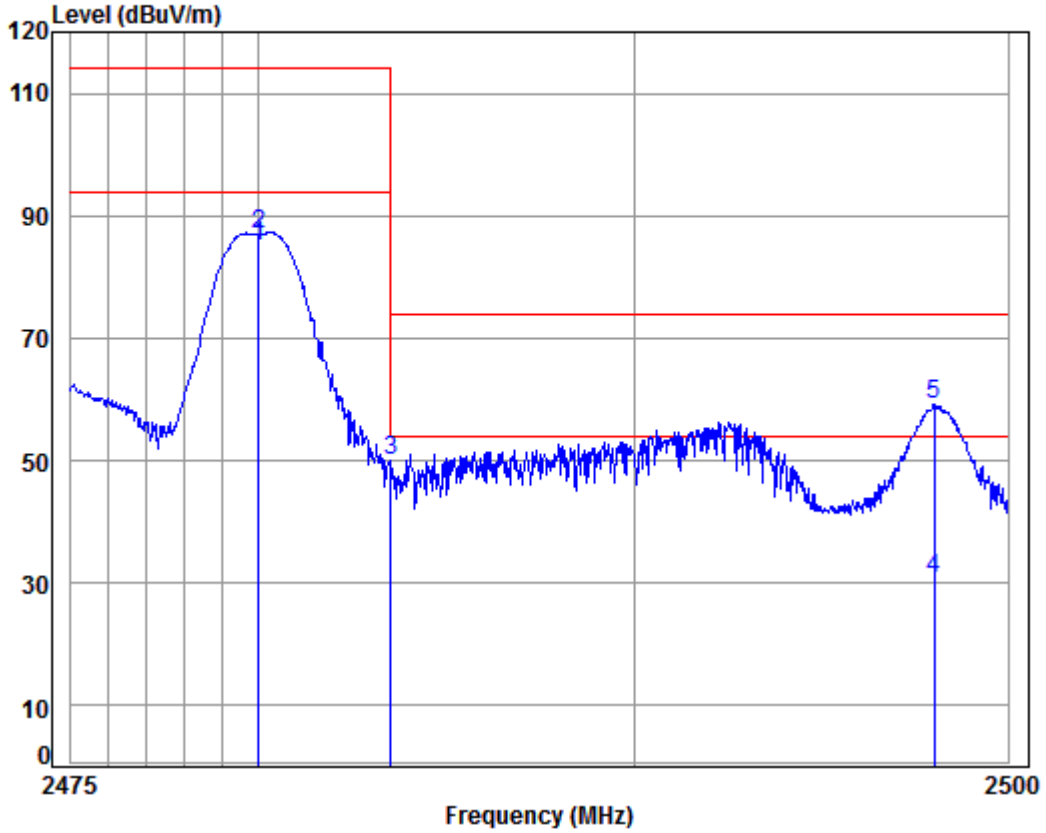
Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak	Horizontal



Condition: 3m HORIZONTAL
Job No : 10424RG
Mode : 2402 Band edge

		Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
		MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	pp	2400.000	5.49	29.11	37.66	54.71	51.65	54.00	-2.35	Average
2	pk	2400.000	5.49	29.11	37.66	66.59	63.53	74.00	-10.47	Peak
3		2402.352	5.49	29.11	37.65	91.42	88.37	94.00	-5.63	Average
4		2402.352	5.49	29.11	37.65	93.46	90.41	114.00	-23.59	Peak

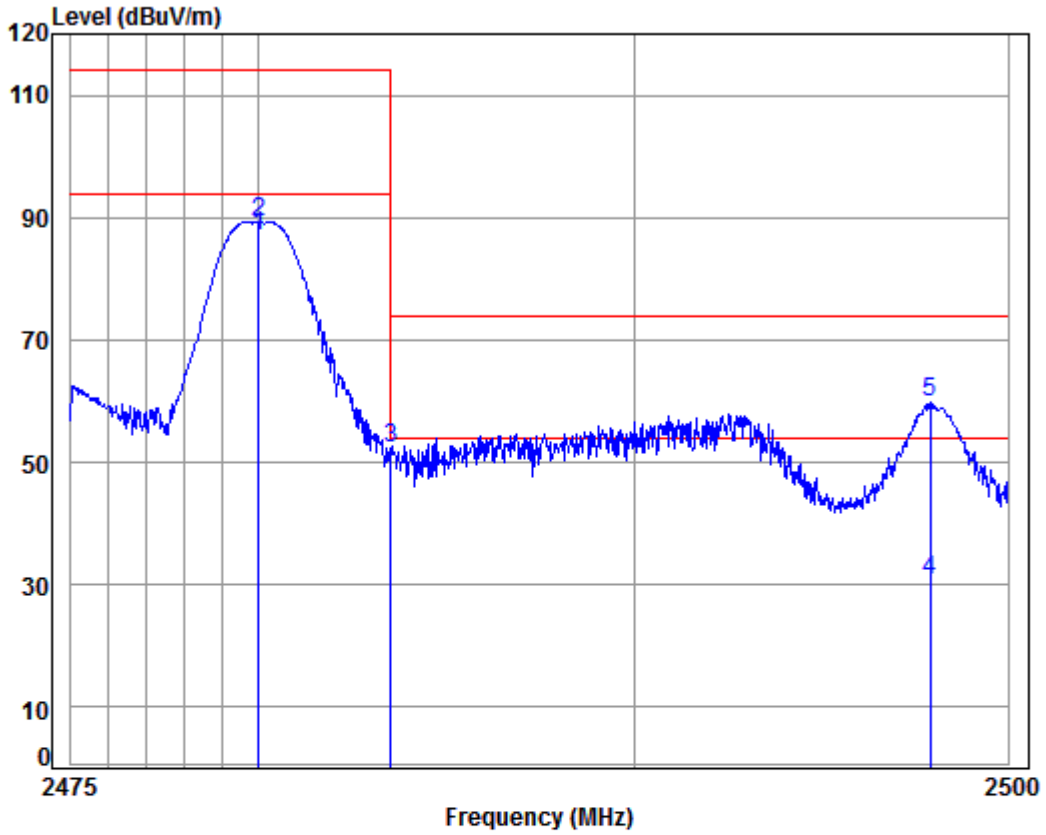
Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak	Vertical



Condition: 3m VERTICAL
Job No : 10424RG
Mode : 2480 Band edge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	pp 2480.005	5.59	29.34	37.65	87.76	85.04	94.00	-8.96	Average
2	2480.005	5.59	29.34	37.65	89.77	87.05	114.00	-26.95	Peak
3	2483.500	5.60	29.35	37.65	52.83	50.13	74.00	-23.87	Peak
4	2498.016	5.62	29.39	37.65	33.41	30.77	54.00	-23.23	Average
5	pk 2498.016	5.62	29.39	37.65	61.78	59.14	74.00	-14.86	Peak

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



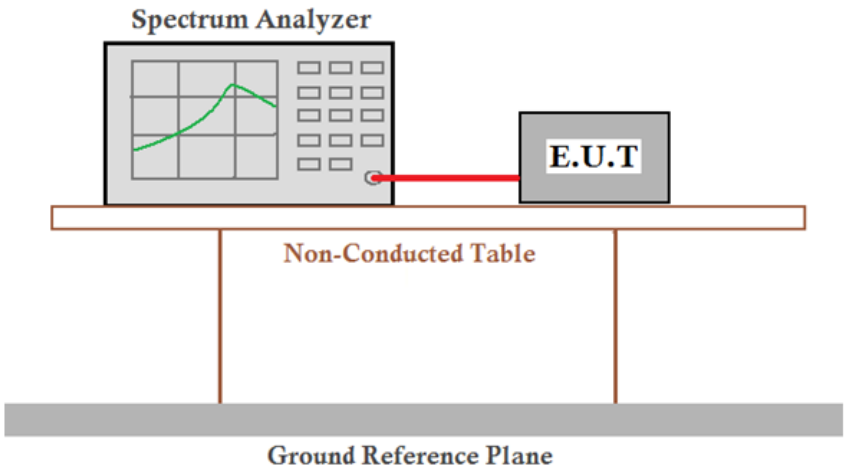
Condition: 3m HORIZONTAL
Job No : 10424RG
Mode : 2480 Band edge

	Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Level	Limit Line	Over Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	pp 2480.005	5.59	29.34	37.65	89.73	87.01	94.00	-6.99	Average
2	2480.005	5.59	29.34	37.65	91.92	89.20	114.00	-24.80	Peak
3	2483.500	5.60	29.35	37.65	54.91	52.21	74.00	-21.79	Peak
4	2497.916	5.62	29.39	37.65	33.42	30.78	54.00	-23.22	Average
5	pk 2497.916	5.62	29.39	37.65	62.38	59.74	74.00	-14.26	Peak

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

6.5 20dB Occupy Bandwidth

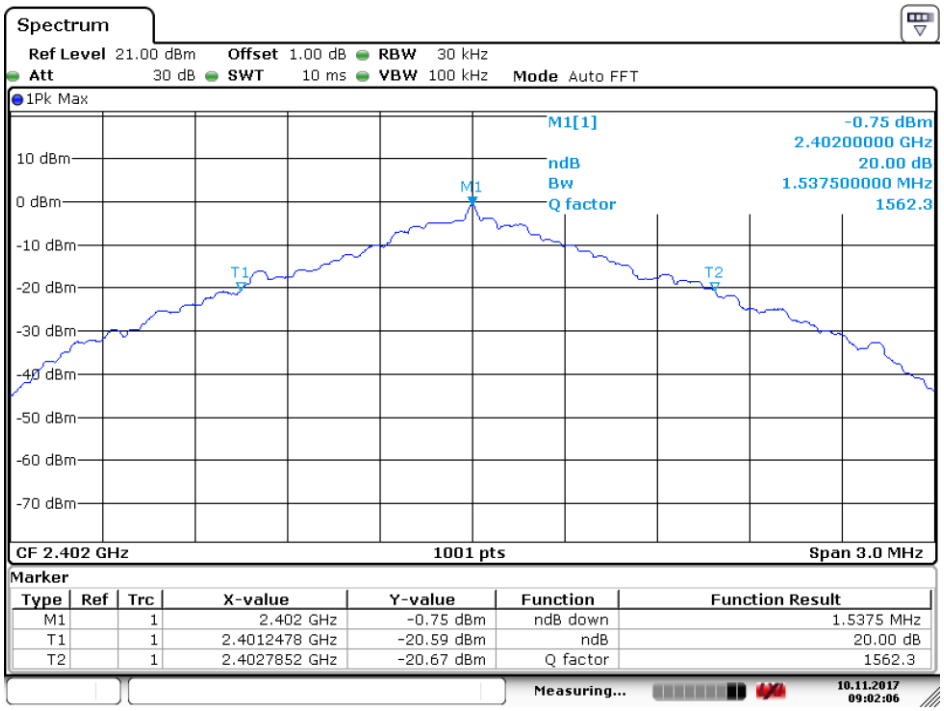
Test Requirement:	47 CFR Part 15C Section 15.215
Test Method:	ANSI C63.10:2013
Test Setup:	
Limit:	N/A
Test Mode:	Transmitter mode.
Instruments Used:	Refer to section 5.10 for details.
Test Results:	Pass

Measurement Data

Test channel	20dB Occupy Bandwidth (kHz)
Lowest	1537.5
Middle	1555.4
Highest	1585.4

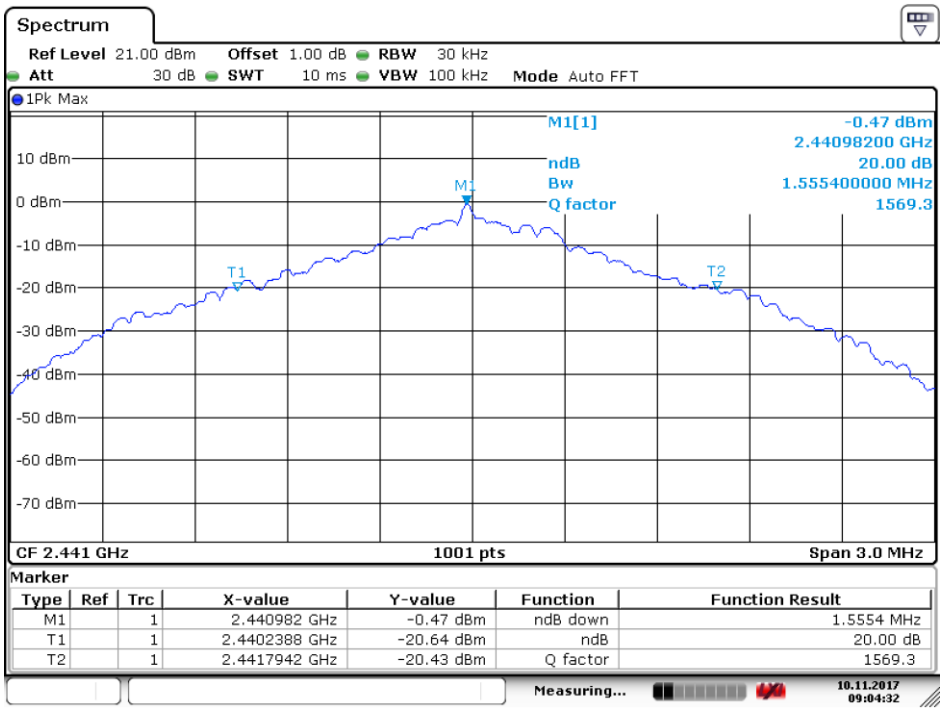
Test plot as follows:

Test channel:	Lowest



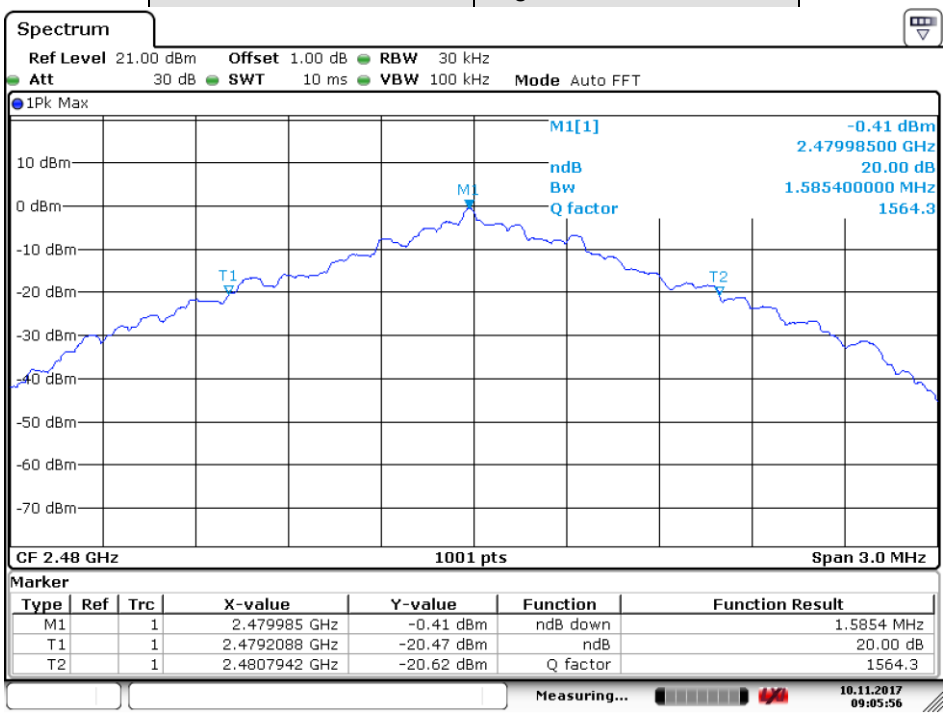
Date: 10.NOV.2017 09:02:06

Test channel:	Middle



Date: 10.NOV.2017 09:04:32

Test channel:	Highest



Date: 10.NOV.2017 09:05:57

7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of EUT Constructional Details for SZEM1709010424RG.