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## TEST REPORT

Application No.:	SZCR2105020924ET(SGS SZ No.:T52110260033EM)
Applicant:	Potpourri Group, Inc.
Address of Applicant:	101 Billerica Ave. Building 2, North Billerica, Massachusetts, 01862 United States
Manufacturer:	Infiniti Toys
Address of Manufacturer:	No. 12 Fengxiang Road, Chenghai, Shantou, Guangdong, China
Supplier:	Infiniti Toys
Buyer / Importer:	Potpourri Group, Inc.
Equipment Under Test (EUT	):
EUT Name:	R/C GLIDER
Model No.:	Y211219
P.O. / Ref. No.:	601171709
Request Age Grading:	14+
Country of Origin:	China
Country of Destination:	USA
FCC ID:	2AIY3-Y211219
Standard(s) :	47 CFR Part 15, Subpart C 15.249
Date of Receipt:	2021-05-08
Date of Test:	2021-05-19 to 2021-06-14
Date of Issue:	2021-06-22
Test Result:	Pass*

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

Keny. Ku

Keny Xu EMC Laboratory Manager



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Revision Record					
Version Chapter Date Modifier				Remark	
01		2021-06-22		Original	

Authorized for issue by:			
	former Baro		
	Powell Bao/Project Engineer	_	
	Eric Fu		
	Eric Fu/Reviewer	-	



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#### **Test Summary** 2

Radio Spectrum Technical Requirement					
Item Standard Method		Method	Requirement	Result	
Antenna Requirement	47 CFR Part 15, Subpart C 15.249	N/A	47 CFR Part 15, Subpart C 15.203	Pass	

Radio Spectrum Matter Part					
Item	Standard	Method	Requirement	Result	
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass	
Field Strength of the Fundamental Signal (15.249(a))		ANSI C63.10 (2013) Section 6.5&6.6	47 CFR Part 15, Subpart C 15.249(a)	Pass	
Restricted Band Around Fundamental Frequency	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.205 & 15.249(d) & 15.209	Pass	
Radiated Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4&6.5	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass	
Radiated Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass	



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#### **General Information** 4

### 4.1 Details of E.U.T.

EUT name	R/C GLIDER
Power supply:	6V DC(1.5V x 4 "AAA" Size Batteries) For TX
Operation Frequency:	2412MHz to 2472MHz
Modulation Type:	GFSK
Number of Channels:	61
Channel Spacing	1MHz
Sample Type:	Portable production
Antenna Type:	Integral
Antenna Gain:	3dBi

#### Channel list:

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



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### 4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.		
The EUT has been tested as an independent unit.					

### 4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
20dB Bandwidth	± 3%
Field Strength of the Fundamental Signal (15.249(a))	± 4.5dB (Below 1GHz);± 4.8dB (Above 1GHz)
Restricted Band Around Fundamental Frequency	± 4.5dB (Below 1GHz);± 4.8dB (Above 1GHz)
Radiated Emissions Below 1GHz	± 4.5dB
Radiated Emissions Above 1GHz	± 4.8dB

#### Remark:

The Ulab (lab Uncertainty) is less than Ucispr (CISPR Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



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### 4.4 Test Location

All tests were performed at: SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch Address 1: No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, Guangdong, China. 518057. Address 2: Room 105, Building A, Xinlong Technology Industrial Park, No. 50 Fengtang Road, Xintian Community, Fuyong Street, Bao'an District, Shenzhen, China Tel: +86 755 2601 2053 Fax: +86 755 2671 0594 No tests were sub-contracted.

### 4.5 Test Facility

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

#### 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 (Member No. 1937)

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 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.

#### • Innovation, Science and Economic Development Canada

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

CAB identifier: CN0006.

IC#: 4620C.

#### 4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions None



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#### **Equipment List** 5

20dB Bandwidth					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Shielding Room	SAEMC	MSR733	SEM001-09	2019-06-13	2022-06-12
DC Power Supply	Rohde & Schwarz	NGSM 32/10	SEM011-04	2021-03-23	2022-03-22
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-17	2021-04-08	2022-04-07
Measurement Software	TST	TST PASS V1.0.5	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2020-07-10	2021-07-09
Attenuator	Huber+Suhner	6620_SMA-50- 1	SEM021-09	2021-04-08	2022-04-07

Field Strength of the Fundamental Signal (15.249(a))							
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date		
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25		
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31		
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13		
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22		
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A		
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09		

Restricted Band Around Fundamental Frequency						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25	
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31	
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13	
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22	
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09	
Horn Antenna	Schwarzbeck	BBHA 9170	SEM003-15	2020-11-14	2023-11-13	
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-2640-50	SEM005-08	2021-03-24	2022-03-23	



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Radiated Emissions Below 1GHz						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
966 Anechoic Chamber	CRT	N/A	SEM001-13	2019-10-12	2022-10-11	
Pre-Amplifier	HP	8447D	SEM005-02	2020-09-24	2021-09-23	
Trilog-Broadband Antenna	Schwarzbeck	VULB9168	SEM003-26	2019-10-14	2022-10-13	
Coaxial Cable	SGS	N/A	SEM035-01	2021-05-17	2022-05-16	
EMI Test Receiver	Agilent	N9038A	SEM004-05	2020-09-24	2021-09-23	
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A	

Radiated Emissions Above 1GHz						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2021-03-26	2024-03-25	
EXA Signal Analyzer	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31	
Horn Antenna	Rohde&Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13	
Pre-Amplifier	Compliance Directions Systems Inc.	PAP-0126	SEM004-11	2020-09-23	2021-09-22	
Measurement Software	AUDIX	e3 V8.2014-6- 27	N/A	N/A	N/A	
Coaxial Cable	SGS	N/A	SEM026-01	2020-07-10	2021-07-09	

General used equipment						
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date	
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	ZJ1-2B	SEM002-04	2020-09-15	2021-09-14	
Humidity/ Temperature Indicator	Mingle	N/A	SEM002-08	2020-09-15	2021-09-14	
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2021-03-30	2022-03-29	
Humidity/ Temperature Indicator	MINGGAO	TH607	SEM002-23	2020-09-15	2021-09-14	
Barometer	Shanghai Meteorological Industry Factory	DYM3	SEM002-24	2020-09-20	2021-09-20	



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## 6 Radio Spectrum Technical Requirement

### 6.1 Antenna Requirement

#### 6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 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.

#### 6.1.2 Conclusion

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 3dBi.

Antenna location: Refer to Internal photos



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#### **Radio Spectrum Matter Test Results** 7

#### 20dB Bandwidth 7.1

Test Requirement	47 CFR Part 15, Subpart C 15.215
Test Method:	ANSI C63.10 (2013) Section 6.9

#### 7.1.1 E.U.T. Operation

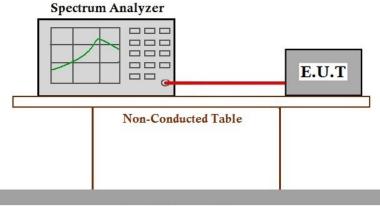
Operating Environment

oporating Entrie						
Temperature:	23.8 °C	Humidity:	47.5 % RH	Atmospheric Pressure:	1010	mbar

#### 7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.1.3 Test Setup Diagram



#### Ground Reference Plane

#### 7.1.4 Measurement Procedure and Data

Test channel	20dB bandwidth (MHz)	Results
Lowest	1.058	Pass
Middle	1.095	Pass
Highest	1.144	Pass



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Keysight Spectrum Analyzer - Occupied B	W				
ເx/ RF 50 Ω AC Span 4.0000 MHz	Cent	SENSE:INT ter Freq: 2.412000000 GHz		07:36:19 PM Jun 14, 2021 adio Std: None	Trace/Detector
opull Hoodo Mill		:FreeRun Avg Ho en:0dB	old:>10/10	adio Device: BTS	
	#IFGaIn:Low #Att				
10 dB/div Ref -25.00 dB	m		IVIKT	2.41192 GHz -34.872 dBm	
Log		1			
-45.0		Mnn.			Clear Write
-45.0					
-65.0					
-75.0	my mad		m		Average
-85.0			* 6-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4-4	m mannament	
-95.0					
-105					Max Hold
-115					IVIAX HOIG
Center 2.412 GHz #Res BW 30 kHz		#VBW 100 kHz	6	Span 4 MHz weep 5.467 ms	
			3	weep 5.407 ms	Min Hold
Occupied Bandwid	th	Total Power	-27.7 d	Bm	
1	0207 MHz				Detector
					Average►
Transmit Freq Error	-61.273 kHz	% of OBW Por	wer 99.0	0 %	<u>Auto</u> Man
x dB Bandwidth	1.058 MHz	x dB	-20.00	dB	
MSG			STATUS		



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### 7.2 Field Strength of the Fundamental Signal (15.249(a))

Test Requirement	47 CFR Part 15, Subpart C 15.249(a)
Test Method:	ANSI C63.10 (2013) Section 6.5&6.6
Measurement Distance:	3m

Limit:

Fundamental frequency(MHz)	Field strength of fundamental(millivolts/meter)	Field strength of harmonics(microvolts/meter)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

Remark: The frequencies above 1000MHz 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.

For fundamental frequency in "902-928MHz", the field strength of fundamental is based on Quasi-Peak.

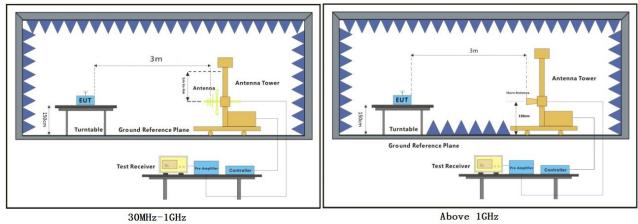
#### 7.2.1 E.U.T. Operation

Operating Enviror	nment:					
Temperature:	21.6 °C	Humidity:	54.8 % RH	Atmospheric Pressure:	1010	mbar

#### 7.2.2 Test Mode Description

	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.2.3 Test Setup Diagram



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#### 7.2.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. 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 fully-anechoic chamber. 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, 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 the worst case.

j.Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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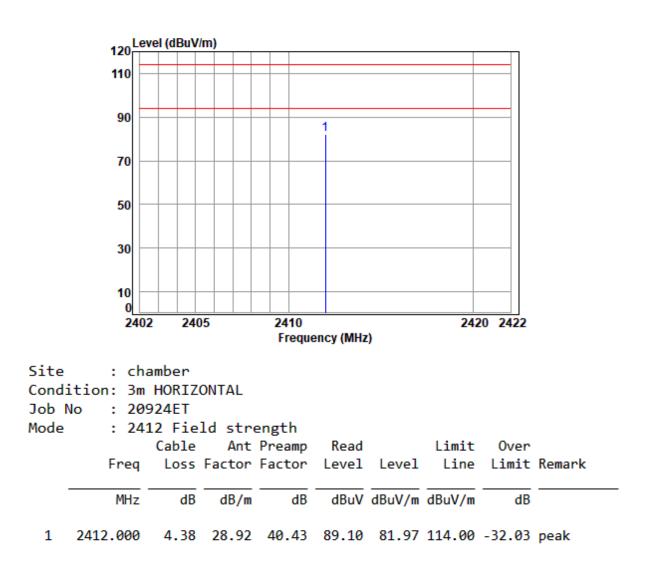
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low





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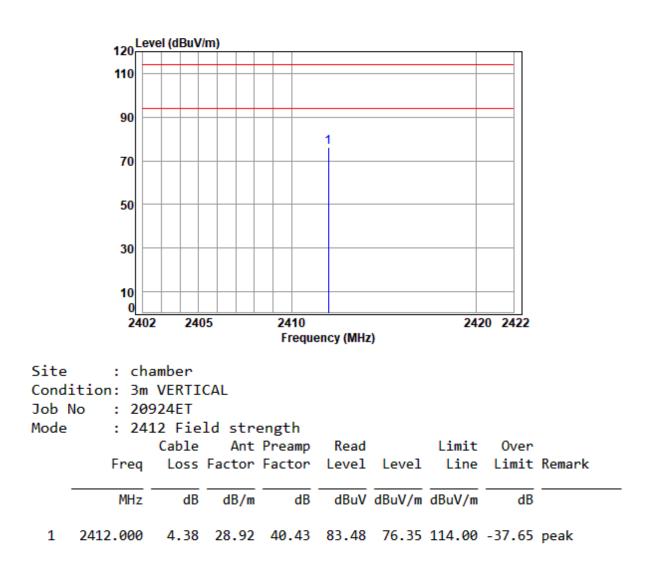
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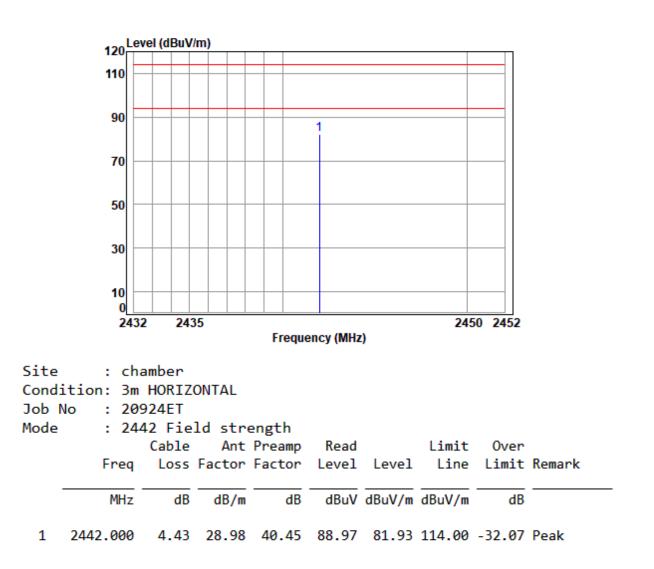
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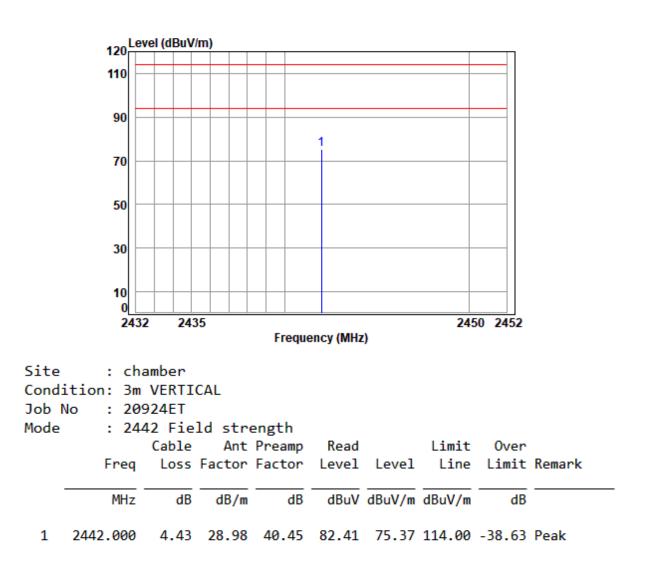
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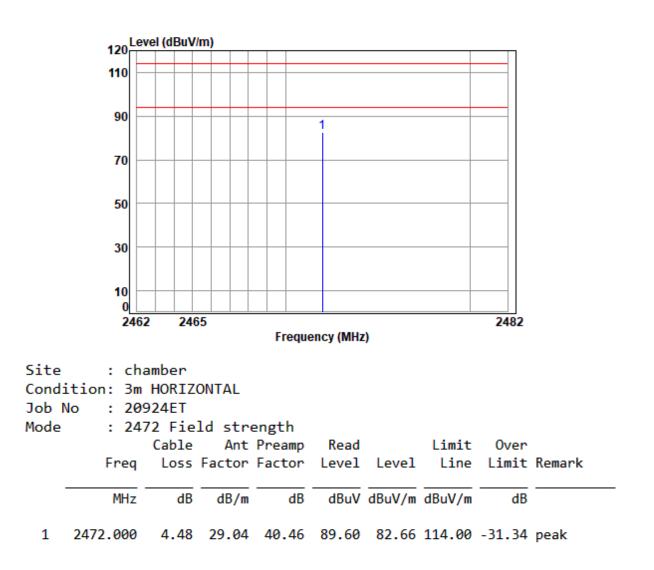
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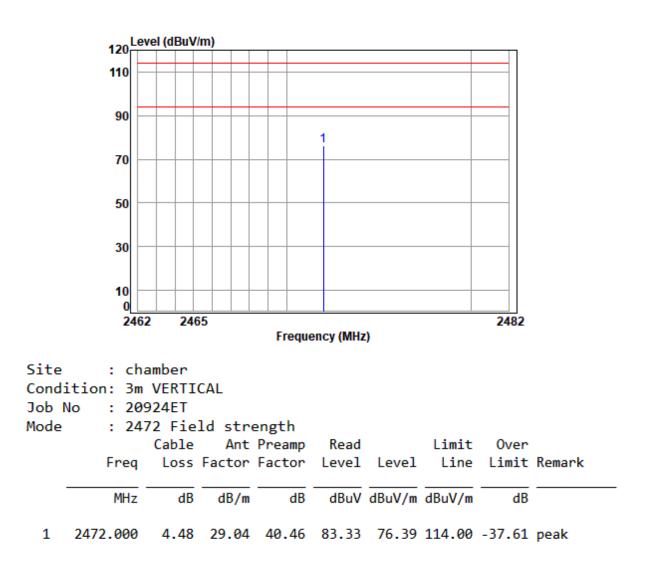
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#### Remark:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) The 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 above measurement data were shown in the report





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### 7.3 Restricted Band Around Fundamental Frequency

Test Requirement	47 CFR Part 15, Subpart C 15.205 & 15.249(d) & 15.209
Test Method:	ANSI C63.10 (2013) Section 6.10.5
Measurement Distance:	3m

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
Above 1GHz	74.0	Peak Value

Emission 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.

#### 7.3.1 E.U.T. Operation

Operating Enviro	onment:				
Temperature:	21.5 °C	Humidity:	54.3 % RH	Atmospheric Pressure: 1010	) mbar

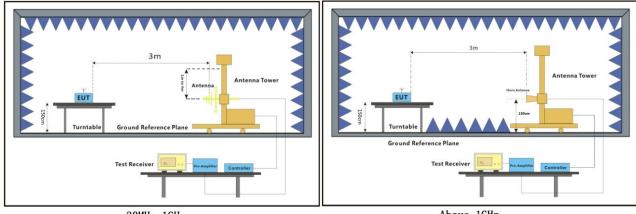
#### 7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.3.3 Test Setup Diagram

检验检测专用章 ion & Testing Services

Shenzhen R



30MHz-1GHz

Above 1GHz





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#### 7.3.4 Measurement Procedure and Data

a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. 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 fully-anechoic chamber. 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, 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 the worst case.

j. Repeat above procedures until all frequencies measured was complete.

Remark: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor



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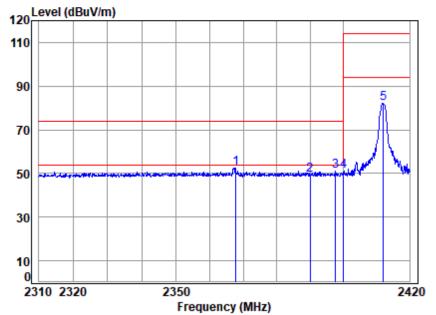
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



				-		-			
			<u> </u>	Preamp	Read		Limit	0ver	
	Freq			Factor			Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2367.772	4.31	28.83	40.41	59.87	52.60	74.00	-21.40	Peak
2	2390.000	4.34	28.88	40.42	56.56	49.36	74.00	-24.64	Peak
3	2397.589	4.36	28.89	40.42	58.05	50.88	74.00	-23.12	Peak
4	2400.000	4.36	28.89	40.42	58.05	50.88	74.00	-23.12	peak



5

2412.000

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4.38 28.92 40.43 89.10 81.97 114.00 -32.03 peak

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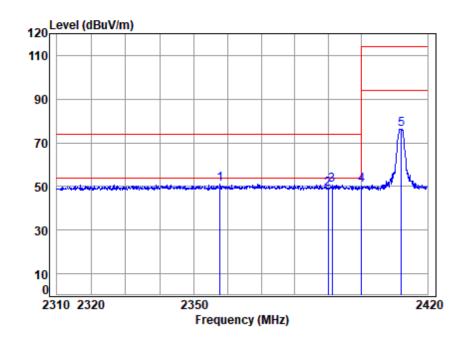
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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site :	chamber
Condition:	3m VERTICAL
Job No ·	2092/FT

JOD NO 2092461 : 2412 Band edge Mode

louc	. 27.	12 000	u cusc						
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	2357.770	4.29	28.81	40.40	58.43	51.13	74.00	-22.87	Peak
2	2390.000	4.34	28.88	40.42	56.22	49.02	74.00	-24.98	Peak
3	2391.240	4.35	28.88	40.42	57.93	50.74	74.00	-23.26	Peak
4	2400.000	4.35	28.88	40.42	57.93	50.74	74.00	-23.26	peak
5	2412.000	4.38	28.92	40.43	83.48	76.35	114.00	-37.65	peak



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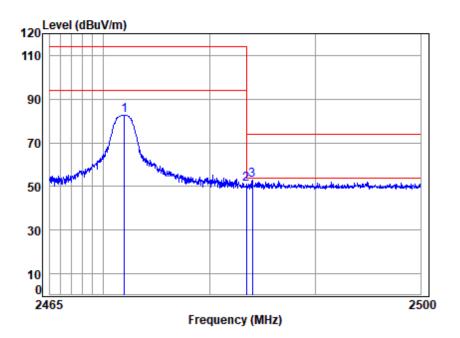
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber Condition: 3m HORIZONTAL Job No : 20924ET Mode : 2472 Band edge									
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
			~~ ~ ~						
1	2472.000			40.46					•
2	2483.500	4.49	29.07	40.47	58.06	51.15	74.00	-22.85	peak
3	2484.084	4.50	29.07	40.47	59.62	52.72	74.00	-21.28	Peak



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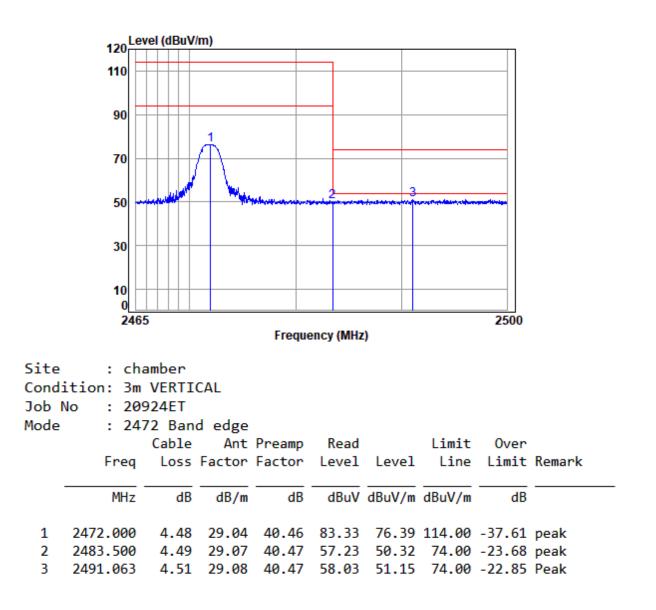
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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



Remark:

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

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

2) The 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 above measurement data were shown in the report





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### 7.4 Radiated Emissions Below 1GHz

Test Requirement	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)
Test Method:	ANSI C63.10 (2013) Section 6.4&6.5
Measurement Distance:	3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
960-1000	500	3

#### 7.4.1 E.U.T. Operation

**Operating Environment:** Temperature: 21.2 °C

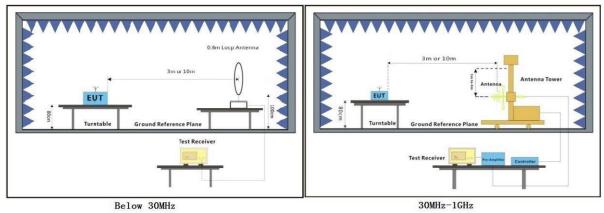
Humidity: 40.7 % RH

Atmospheric Pressure: 1010 mbar

#### 7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.4.3 Test Setup Diagram





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#### 7.4.4 Measurement Procedure and Data

a. For below 1GHz, 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.

b. 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.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using quasi-peak method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 9kHz to 30MHz, the disturbance below 30MHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points 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. The disturbance below 1GHz was very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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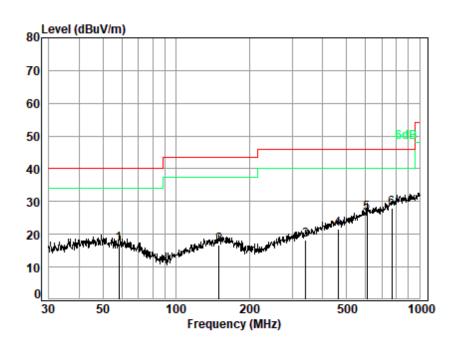
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Test Mode: 01; Polarity: Horizontal

Site : cha Condition: 3m	HORIZO	ONTAL						
Job No : 209	24ET							
Mode : 01								
	Cable	Ant	Preamp	Read		Limit	0ver	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 58.2030	0.24	19.37	25.85	23.35	17.11	40.00	-22.89	QP
2 150.0108	0.85	19.30	25.54	22.17	16.78	43.50	-26.72	QP
3 340.7817	1.42	20.41	25.41	21.93	18.35	46.00	-27.65	QP
4 462.3456	1.43	23.32	26.16	23.01	21.60	46.00	-24.40	QP
5 607.7867	2.12	26.02	26.79	25.19	26.54	46.00	-19.46	QP
6 p 768.7482	2.19	28.30	26.63	24.20	28.06	46.00	-17.94	QP



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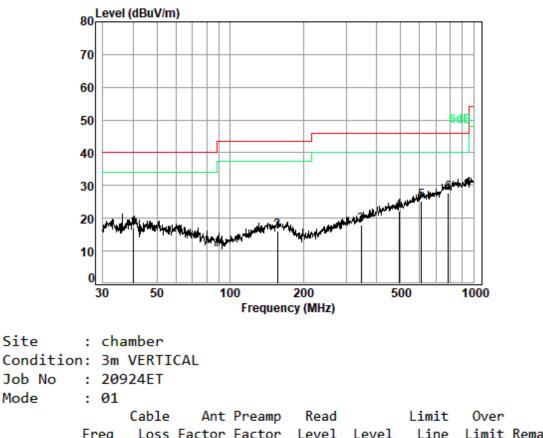
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Test Mode: 01; Polarity: Vertical

			CUDIC	000	i i comp	neuu		C101C	0101	
		Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	-	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1		40.1347	0.20	19.41	25.88	23.41	17.14	40.00	-22.86	QP
2		156.4578	0.81	19.37	25.51	21.45	16.12	43.50	-27.38	QP
3		345.5952	1.46	20.49	25.45	21.36	17.86	46.00	-28.14	QP
4		494.1985	1.41	23.71	26.32	23.53	22.33	46.00	-23.67	QP
5		609.9217	2.11	26.05	26.79	23.76	25.13	46.00	-20.87	QP
6	р	787.8513	2.49	28.34	26.61	23.46	27.68	46.00	-18.32	QP



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### 7.5 Radiated Emissions Above 1GHz

Test Requirement	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)
Test Method:	ANSI C63.10 (2013) Section 6.6
Measurement Distance:	3m

Limit:

Frequency(MHz)	Field strength(microvolts/meter)	Measurement distance(meters)
Above 1000	500	3

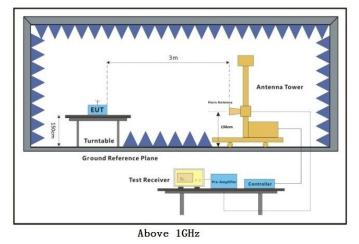
#### 7.5.1 E.U.T. Operation

Operating Enviro	onment:					
Temperature:	21.5 °C	Humidity:	54.8 % RH	Atmospheric Pressure:	1010	mbar

#### 7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	01	TX mode_Keep the EUT in transmitting with modulation mode.

#### 7.5.3 Test Setup Diagram







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#### 7.5.4 Measurement Procedure and Data

a. 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.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak or average method as specified and then reported in a data sheet.

g. Test the EUT in the lowest channel, the middle channel, the Highest channel.

h. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

i. Repeat above procedures until all frequencies measured was complete.

Remark:

1. Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

2. Scan from 18GHz to 40GHz, the disturbance above 18GHz was very low. The points marked on above plots are the highest emissions could be found when testing, so only above points 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. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

4. The disturbance above 18GHz were very low and the harmonics were the highest point could be found when testing, so only the above harmonics had been displayed.



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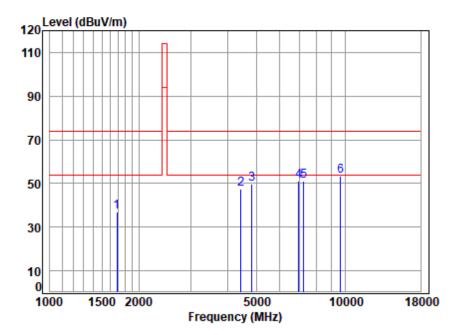
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site :	chamber
Condition:	3m HORIZONTAL
Job No :	20924ET
Mode :	2412 TX RSE

		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
						-			
1	1687.347	3.42	26.64	40.05	47.04	37.05	74.00	-36.95	peak
2	4443.453	6.71	32.96	41.82	49.68	47.53	74.00	-26.47	peak
3	4824.000	7.12	33.66	42.16	51.15	49.77	74.00	-24.23	peak
4	6954.852	8.52	35.42	41.73	49.09	51.30	74.00	-22.70	peak
5	7236.000	8.77	35.69	41.48	48.33	51.31	74.00	-22.69	peak
6	9648.000	10.79	37.36	37.69	42.71	53.17	74.00	-20.83	peak



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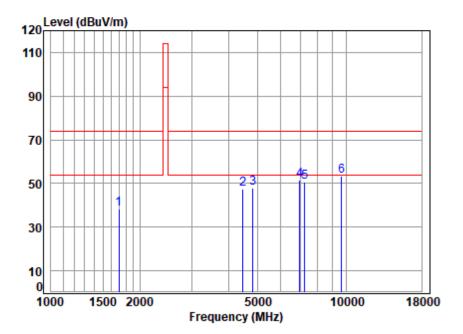
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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site :	chamber			
Condition:	3m VERTICAL			
Job No :	20924ET			

: 2412 TX RSE Mode

louc	. 27.	12 17							
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB				dB	
	1112	ab	00/11	ub	abav	0000/11	0000/11	ub	
1	1702.042	3.43	26.71	40.06	48.16	38.24	74.00	-35.76	peak
2	4469.214	6.73	32.98	41.85	49.75	47.61	74.00	-26.39	peak
3	4824.000	7.12	33.66	42.16	49.44	48.06	74.00	-25.94	peak
4	6954.852	8.52	35.42	41.73	49.33	51.54	74.00	-22.46	peak
5	7236.000	8.77	35.69	41.48	47.64	50.62	74.00	-23.38	peak
6	9648.000	10.79	37.36	37.69	42.97	53.43	74.00	-20.57	peak



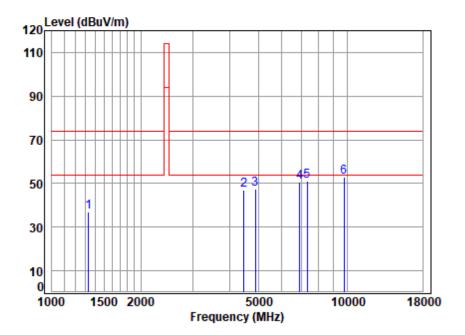
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Site :	chamber
Condition:	3m HORIZONTAL
Job No :	20924ET
Mode :	2442 TX RSE

1000									
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB			dBuV/m	dB	
	1112	40	4071	40	4541	454471	454471	ub	
1	1331.288	3.00	25.38	39.85	48.24	36.77	74.00	-37.23	peak
2	4469.214	6.73	32.98	41.85	48.92	46.78	74.00	-27.22	peak
3	4884.000	7.18	33.78	42.21	48.68	47.43	74.00	-26.57	peak
4	6914.763	8.50	35.35	41.76	48.65	50.74	74.00	-23.26	peak
5	7326.000	8.85	35.76	41.39	47.87	51.09	74.00	-22.91	peak
6	9768.000	10.76	37.41	37.49	42.18	52.86	74.00	-21.14	peak



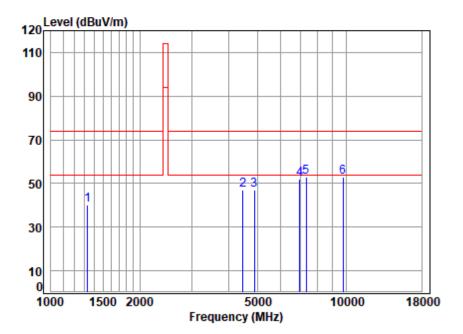
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Report No.: SZCR210502092402

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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:middle



Site :	chamber				
Condition:	3m VERTICAL				
Job No :	20924ET				

: 2442 TX RSE Mode

louc	. 24	72 17							
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV			dB	
	1112	ab	00/11	ub	abav	0000/11	0000/11	ub	
1	1331.288	3.00	25.38	39.85	51.69	40.22	74.00	-33.78	peak
2	4469.214	6.73	32.98	41.85	48.94	46.80	74.00	-27.20	peak
3	4884.000	7.18	33.78	42.21	48.13	46.88	74.00	-27.12	peak
4	6954.852	8.52	35.42	41.73	49.78	51.99	74.00	-22.01	peak
5	7326.000	8.85	35.76	41.39	49.63	52.85	74.00	-21.15	peak
6	9768.000	10.76	37.41	37.49	42.23	52.91	74.00	-21.09	peak



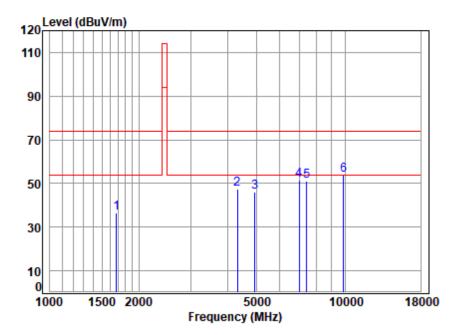
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Test Mode: 01; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site :	chamber
Condition:	3m HORIZONTAL
Job No :	20924ET
Mode :	2472 TX RSE

: 2472 TX RSE Ant Preamp Limit 0ver Cable Read Freq Loss Factor Factor Limit Remark Level Level Line MHz dB dB/m dB dBuV dBuV/m dBuV/m dB 1 1677.621 3.41 26.59 40.05 46.73 36.68 74.00 -37.32 peak 6.59 32.86 41.71 49.52 47.26 74.00 -26.74 peak 2 4316.859 3 4944.000 7.24 33.89 42.25 47.32 46.20 74.00 -27.80 peak 4 6974.982 8.53 35.46 41.72 49.48 51.75 74.00 -22.25 peak 5 8.93 35.83 41.31 47.44 50.89 74.00 -23.11 peak 7416.000 9888.000 6 10.72 37.46 37.29 42.75 53.64 74.00 -20.36 peak



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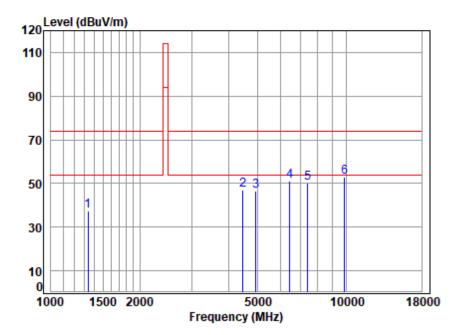
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Report No.: SZCR210502092402

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Test Mode: 01; Polarity: Vertical; Modulation:GFSK; Channel:High



Site :	chamber				
Condition:	3m VERTICAL				
Job No :	20924ET				

: 2472 TX RSE Mode

loue		~ · · · · ·							
		Cable	Ant	Preamp	Read		Limit	0ver	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1335.141	3.00	25.38	39.85	49.06	37.59	74.00	-36.41	peak
2	4469.214	6.73	32.98	41.85	49.25	47.11	74.00	-26.89	peak
3	4944.000	7.24	33.89	42.25	47.57	46.45	74.00	-27.55	peak
4	6432.732	8.28	34.60	42.08	50.40	51.20	74.00	-22.80	peak
5	7416.000	8.93	35.83	41.31	46.60	50.05	74.00	-23.95	peak
6	9888.000	10.72	37.46	37.29	42.09	52.98	74.00	-21.02	peak



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#### **Test Setup Photo** 8

Refer to Setup Photos

#### **EUT Constructional Details (EUT Photos)** 9

Refer to EUT external and internal photos

- End of the Report -



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