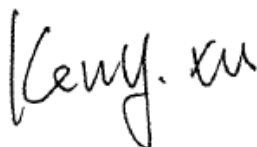


TEST REPORT

Application No.: SZCR2105021258AT
Applicant: Guangdong WiiRobot Co., Ltd
Address of Applicant: Room 401, Building 1, No.11 Yinghe 1st Street, Yaoshan, Xiegang Town, Dongguan City, Guangdong Province, China
Manufacturer: Guangdong WiiRobot Co., Ltd.
Address of Manufacturer: Room 401, Building 1, No. 11, Yaoshan Yinghe Street, Xiegang Town, Dongguan City, Guangdong Province
Equipment Under Test (EUT):
EUT Name: Speedbird
Model No.: I63E, I63E Bundle A, I63E Bundle B, I63EA ♣
 ♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: ING
FCC ID: 2AZ7PI63E
Standard(s) : 47 CFR Part 15, Subpart C 15.249
Date of Receipt: 2021-05-28
Date of Test: 2021-06-09 to 2021-06-17
Date of Issue: 2021-06-22

Test Result:	Pass*
---------------------	--------------

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



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:				
		Benson Wang		
		Benson Wang/Project Engineer		
		Eric Fu		
		Eric Fu/Reviewer		



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	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	47 CFR Part 15, Subpart C 15.249	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		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

Declaration of EUT Family Grouping:

Model No.: I63E, I63E Bundle A, I63E Bundle B, I63EA

Only the model I63E was tested. According to the declaration from the applicant, the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on models, appearance and package method.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Lithium Ion Battery: DC11.4V 3200mAh (Charged by adapter)
Cable(s):	Type-C to Type-C cable: 43cm unshielded support 5V/2A USB-A to Type-C cable: 43cm unshielded support 45W.
Operation Frequency:	2452MHz-2474MHz
Modulation Type:	GFSK
Number of Channels:	23
Channel Spacing:	1MHz
Antenna Type:	Integral Antenna
Antenna Gain:	Antenna 1/2: 2dBi Two antennas can not simultaneous transmission.

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	$\pm 3\%$
Field Strength of the Fundamental Signal (15.249(a))	$\pm 4.5\text{dB}$ (Below 1GHz); $\pm 4.8\text{dB}$ (Above 1GHz)
Restricted Band Around Fundamental Frequency	$\pm 4.5\text{dB}$ (Below 1GHz); $\pm 4.8\text{dB}$ (Above 1GHz)
Radiated Emissions Below 1GHz	$\pm 4.5\text{dB}$
Radiated Emissions Above 1GHz	$\pm 4.8\text{dB}$

Remark:

The U_{lab} (lab Uncertainty) is less than U_{CISPR} (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.

4.4 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.

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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5 Equipment List

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 (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Pre-Amplifier (0.1-26.5GHz)	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 (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Pre-Amplifier (0.1-26.5GHz)	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



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Radiated Emissions Below 1GHz					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020-07-19	2023-07-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2020-11-02	2021-11-01
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-02	2019-05-24	2022-05-23
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2021-03-24	2022-03-23
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020-07-10	2021-07-09

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 (10Hz-44GHz)	Agilent Technologies Inc	N9010A	SEM004-12	2021-02-01	2022-01-31
Horn Antenna (800MHz-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2021-04-14	2024-04-13
Pre-Amplifier (0.1-26.5GHz)	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



6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203

6.1.2 Conclusion

15.203 requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna 1/2: 2dBi.

Antenna location: Refer to Internal photos



7 Radio Spectrum Matter Test Results

7.1 20dB Bandwidth

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

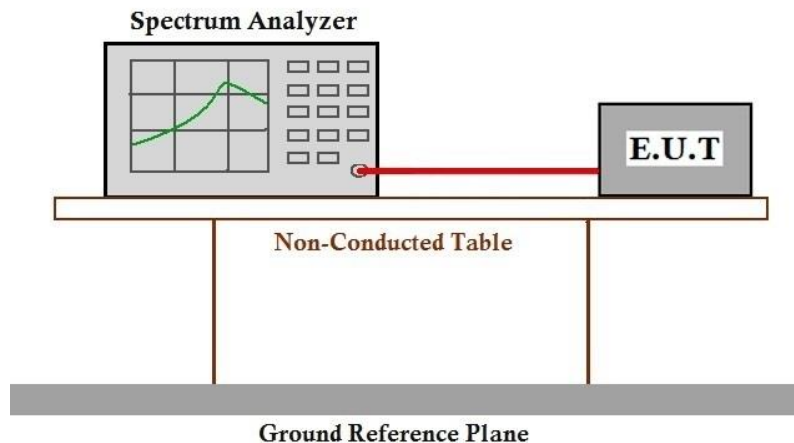
7.1.1 E.U.T. Operation

Operating Environment:
Temperature: 25.4 °C Humidity: 48.8 % RH Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_ Keep the EUT in transmitting with modulation mode.

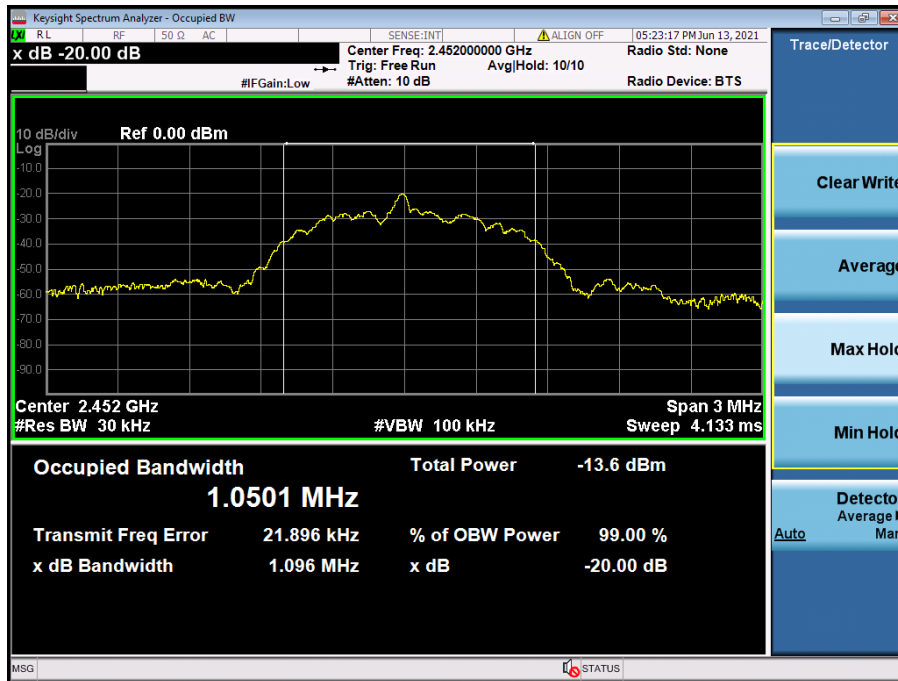
7.1.3 Test Setup Diagram



7.1.4 Measurement Procedure and Data

Pretest the EUT at antenna 1, antenna 2 and found the antenna 1 which is worst case; So, Only the worst test data is recorded in the report.

2452MHz



2463MHz



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2474MHz



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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

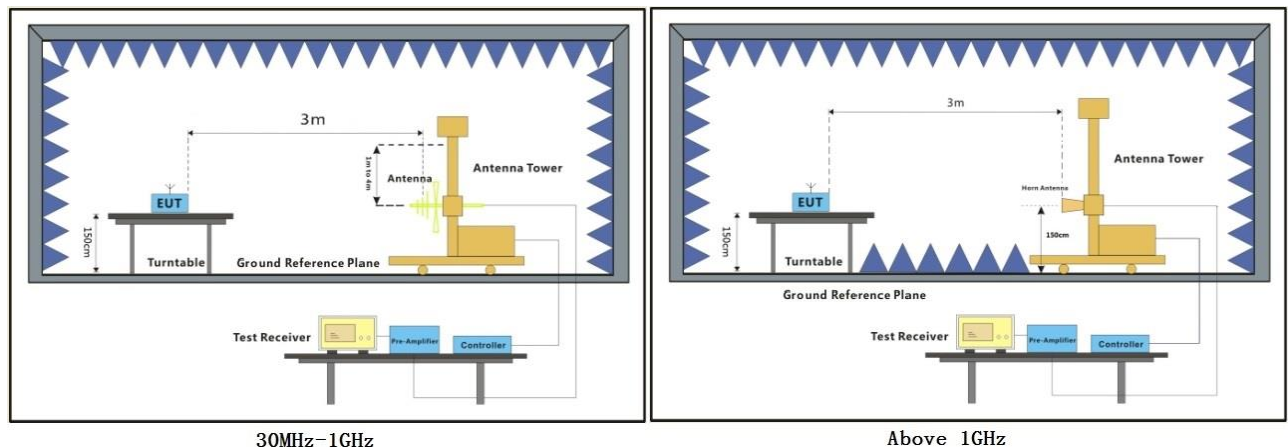
Operating Environment:

Temperature: 22.9 °C Humidity: 50.6 % RH Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT in transmitting with modulation mode.

7.2.3 Test Setup Diagram



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

Remark 2: Average value=Peak value – Duty factor

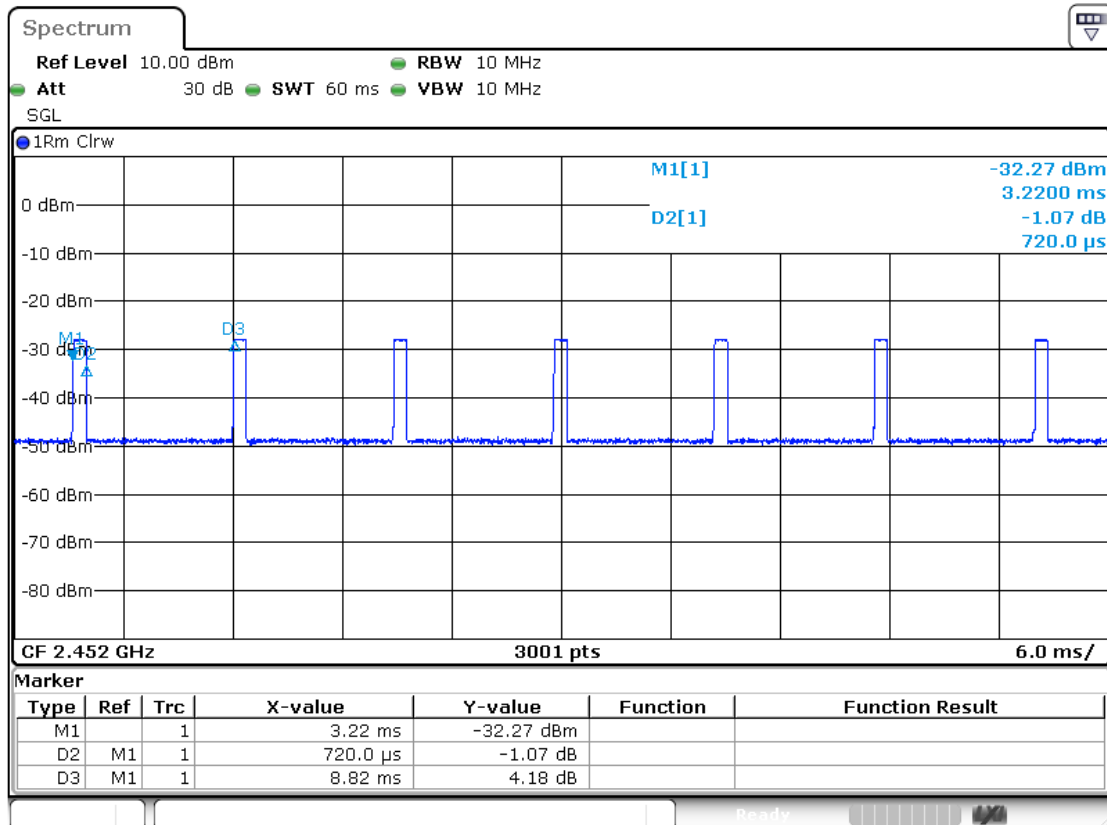
On time (ms)=0.72

One Period time (ms) = 8.82

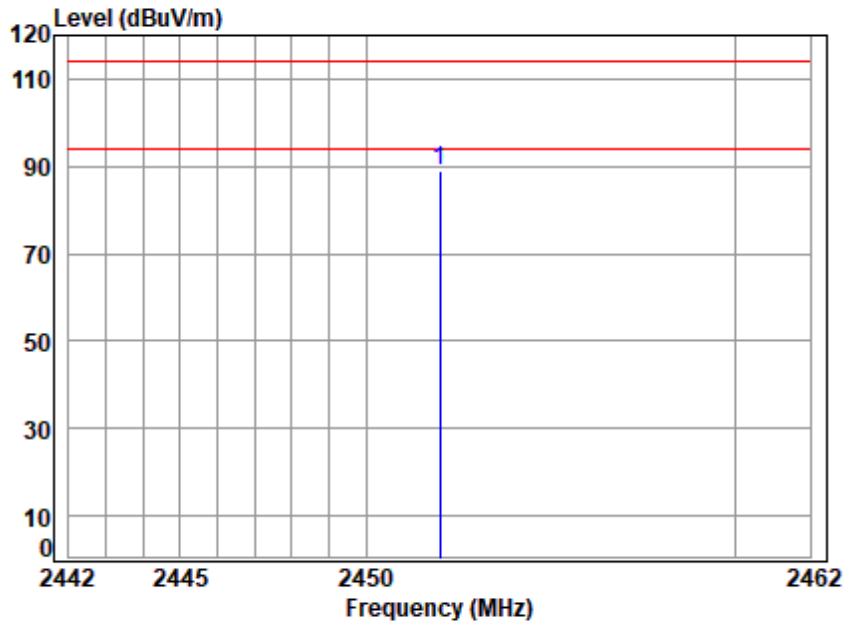
Duty cycle= on time / one period time = 0.72 / 8.82 = 0.0816%

Duty factor= 20log(duty cycle) = -21.76dB





Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL

Job No : 21258AT

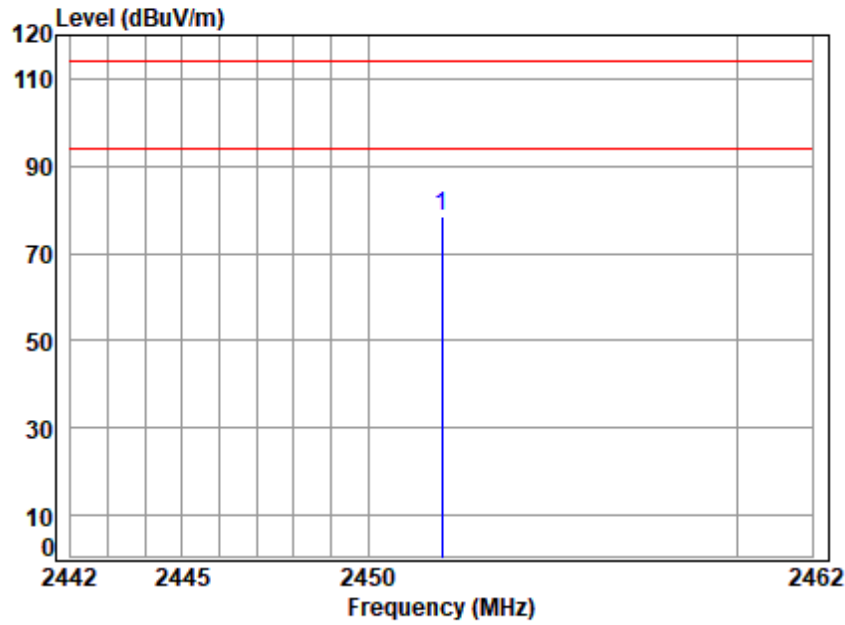
Mode : 2452 Field strength

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2452.000	4.44	29.00	40.45	96.07	89.06	114.00	-24.94 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
89.06	-21.76	67.3	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



Site : chamber

Condition: 3m VERTICAL

Job No : 21258AT

Mode : 2452 Field strength

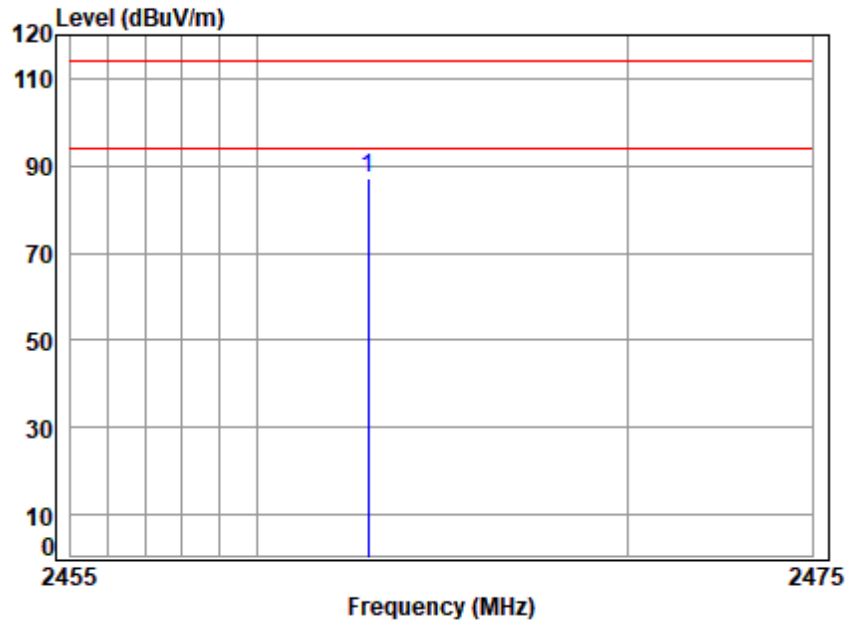
	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB

1 2452.000 4.44 29.00 40.45 85.67 78.66 114.00 -35.34 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
78.66	-21.76	56.9	94



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



Site : chamber

Condition: 3m HORIZONTAL

Job No : 21258AT

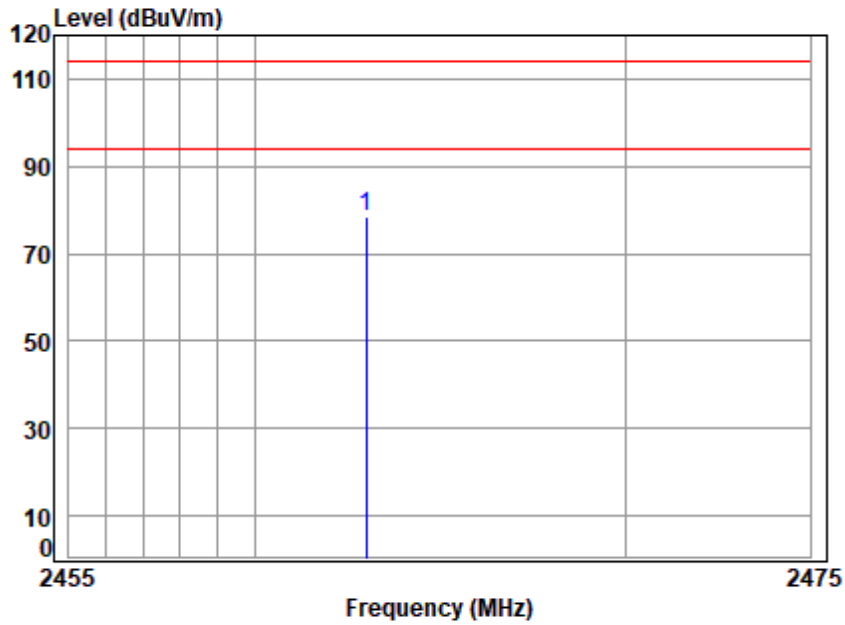
Mode : 2463 Field strength

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2463.000	4.46	29.03	40.46	94.29	87.32	114.00	-26.68 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
87.32	-21.76	65.56	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



Site : chamber

Condition: 3m VERTICAL

Job No : 21258AT

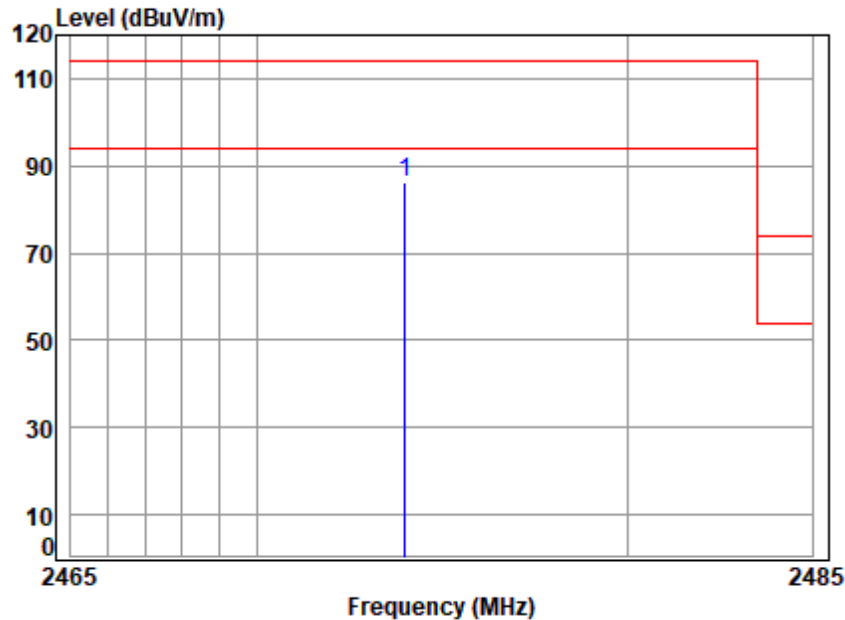
Mode : 2463 Field strength

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2463.000	4.46	29.03	40.46	85.63	78.66	114.00	-35.34 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
78.66	-21.76	56.9	94



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber

Condition: 3m HORIZONTAL

Job No : 21258AT

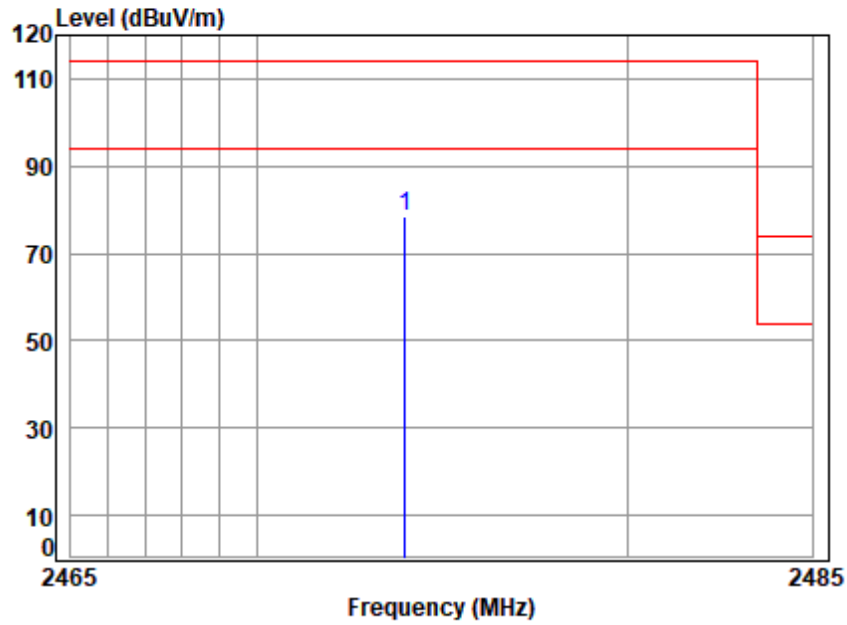
Mode : 2474 Field strength

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2474.000	4.48	29.05	40.46	93.09	86.16	114.00	-27.84 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
86.16	-21.76	64.4	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber

Condition: 3m VERTICAL

Job No : 21258AT

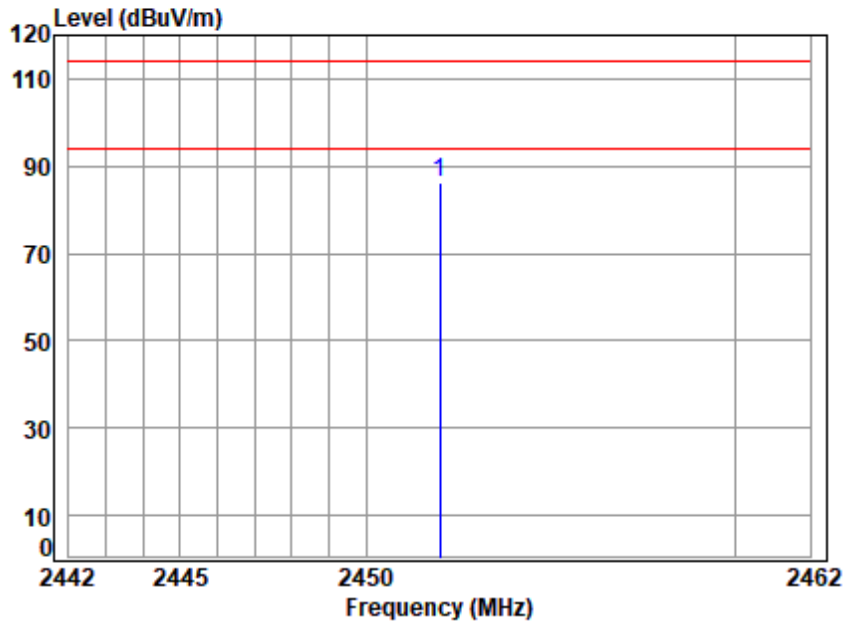
Mode : 2474 Field strength

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2474.000	4.48	29.05	40.46	85.55	78.62	114.00	-35.38 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
78.62	-21.76	56.86	94



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



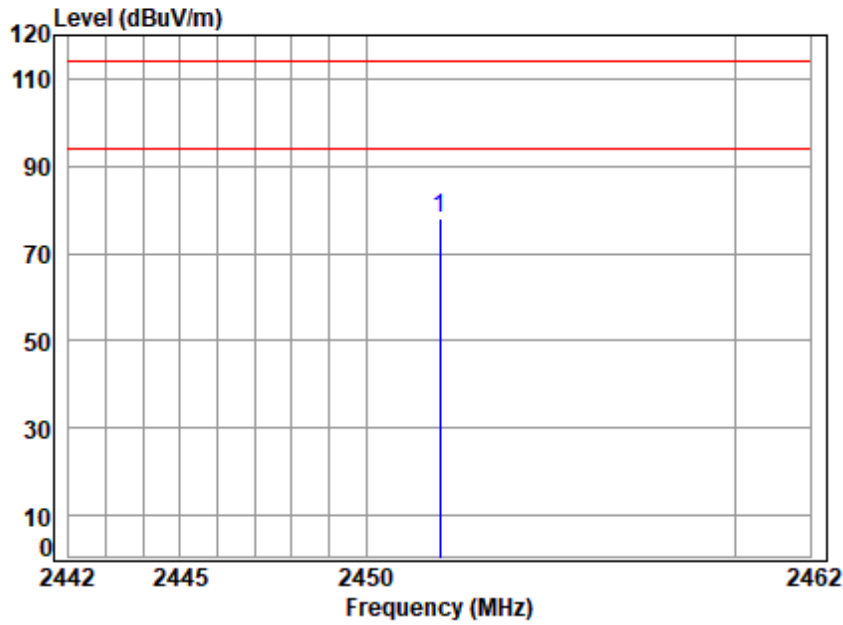
Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2452 Field strength
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2452.000	4.44	29.00	40.45	93.22	86.21	114.00	-27.79 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
86.21	-21.76	64.45	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low



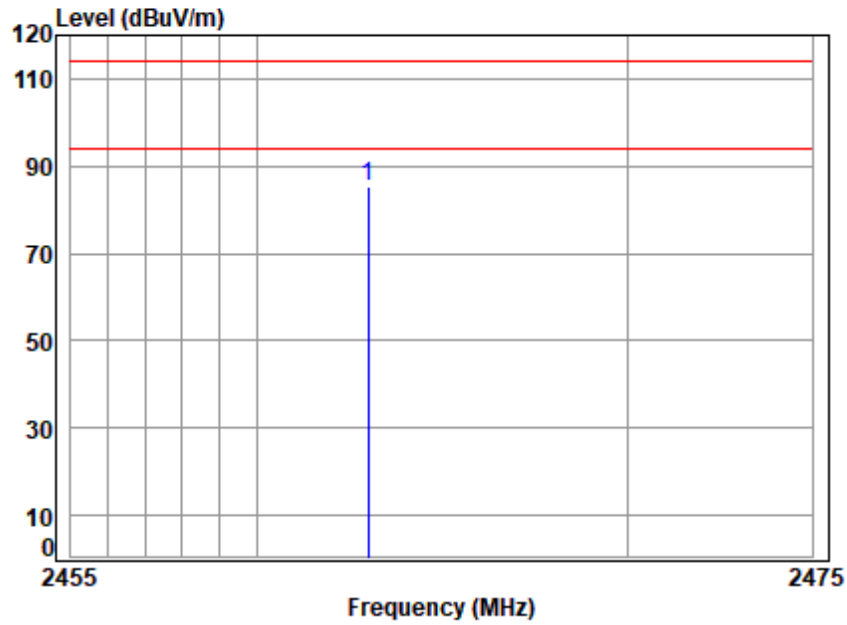
Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2452 Field strength
: ATN 2

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2452.000	4.44	29.00	40.45	85.26	78.25	114.00	-35.75	peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
78.25	-21.76	56.49	94



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle



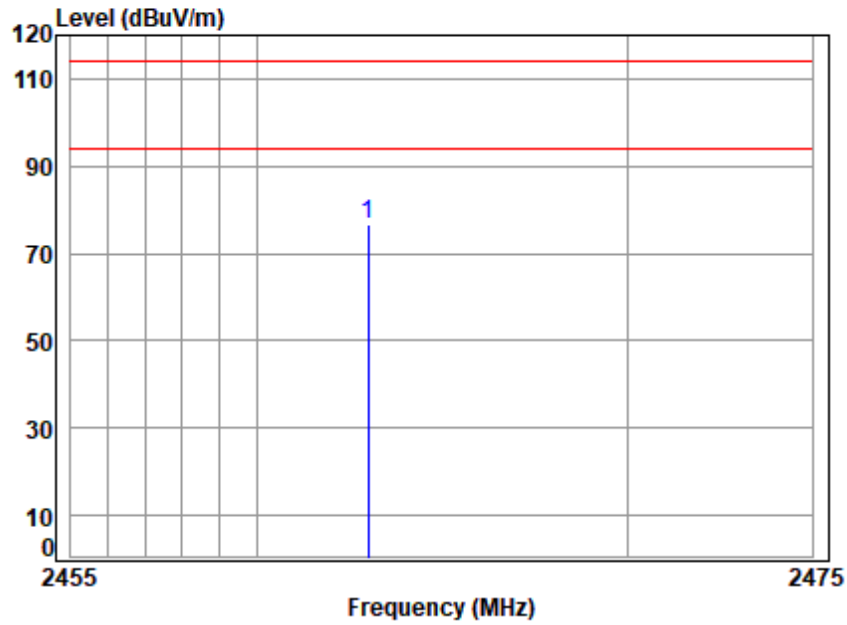
Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2463 Field strength
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2463.000	4.46	29.03	40.46	92.40	85.43	114.00	-28.57 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
85.43	-21.76	63.67	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle



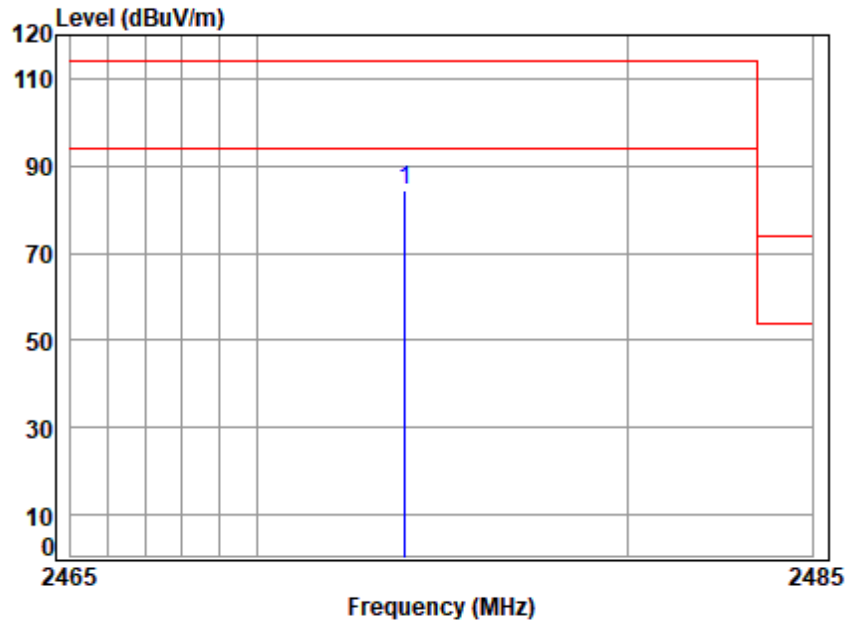
Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2463 Field strength
: ATN 2

	Cable	Ant	Preamp	Read		Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2463.000	4.46	29.03	40.46	83.61	76.64	114.00	-37.36	peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
76.64	-21.76	54.88	94



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



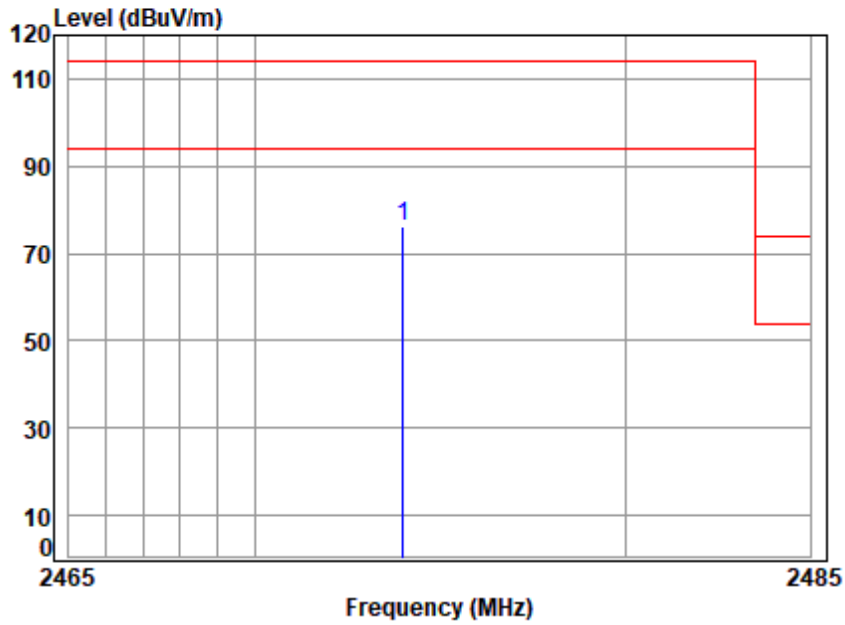
Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2474 Field strength
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2474.000	4.48	29.05	40.46	91.16	84.23	114.00	-29.77 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
84.23	-21.76	62.47	94



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2474 Field strength
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2474.000	4.48	29.05	40.46	83.16	76.23	114.00	-37.77 peak

Peak value (dBuV/m)	Duty factor (dB)	AV value (dBuV/m)	Limit (dBuV/m)
76.23	-21.76	54.47	94



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

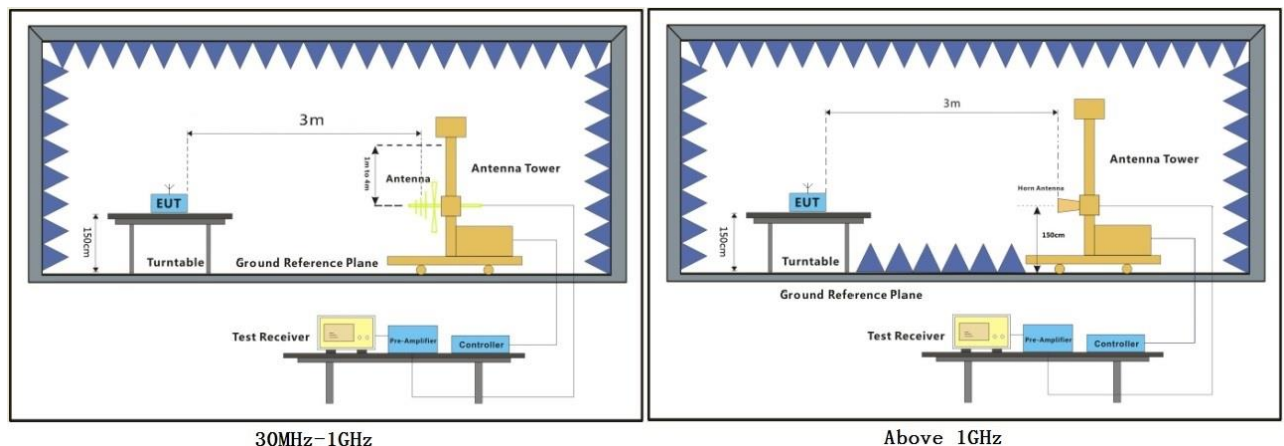
Operating Environment:

Temperature: 22.9 °C Humidity: 50.1 % RH Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT in transmitting with modulation mode.

7.3.3 Test Setup Diagram



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

Remark 2: Average value=Peak value – Duty factor

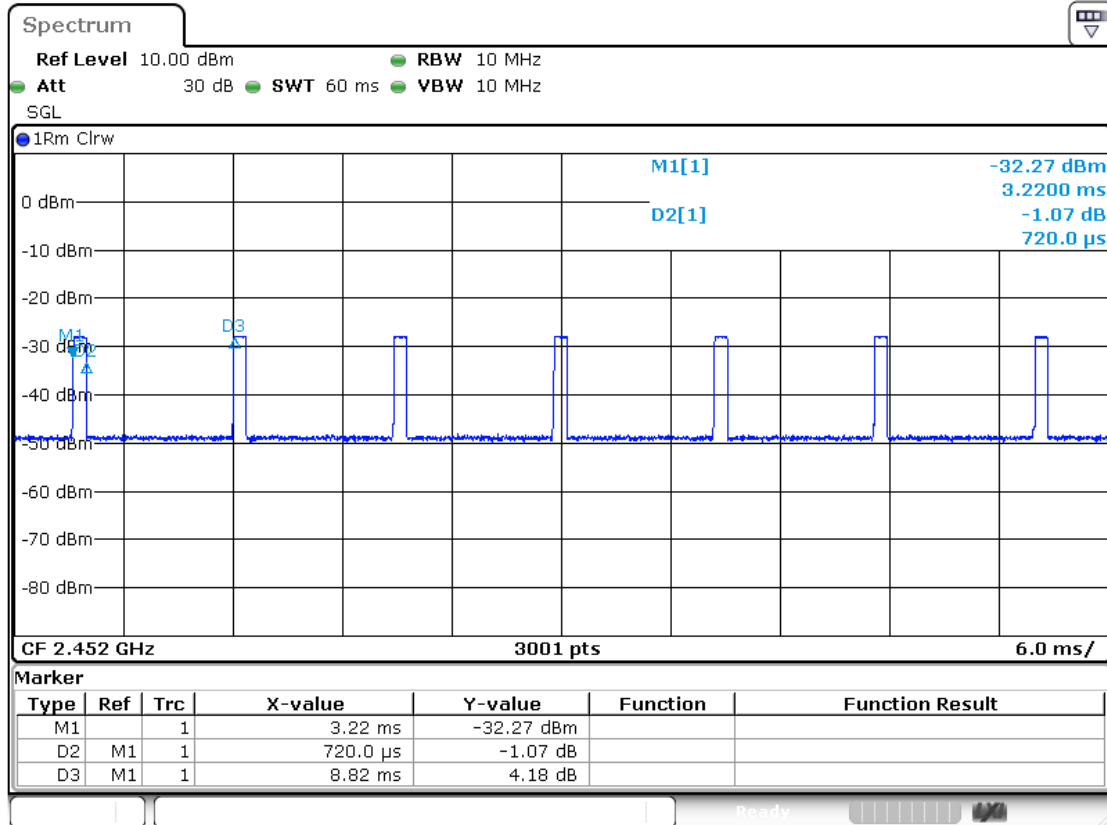
On time (ms)=0.72

One Period time (ms) = 8.82

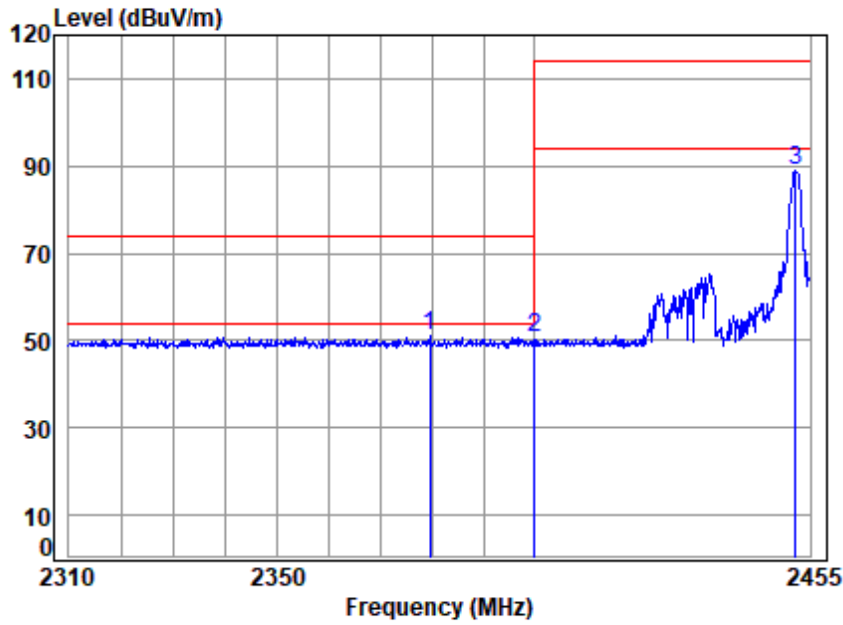
Duty cycle= on time / one period time = 0.72 / 8.82 = 0.0816%

Duty factor= 20log(duty cycle) = -21.76dB





Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low

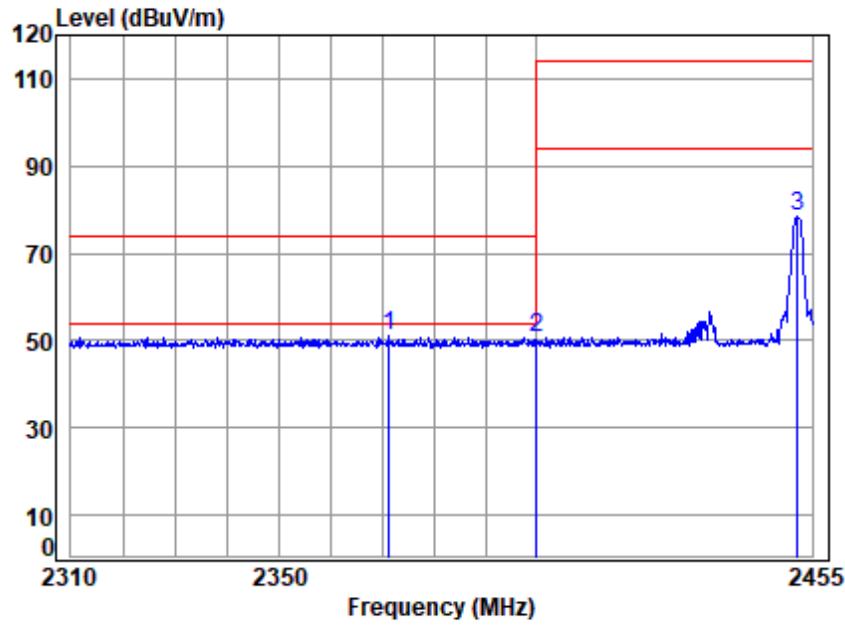


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2452 Band edge

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2379.513	4.33	28.86	40.41	58.22	51.00	74.00	-23.00 Peak
2	2400.000	4.36	28.89	40.42	57.98	50.81	74.00	-23.19 peak
3	2452.000	4.44	29.00	40.45	95.98	88.97	114.00	-25.03 Peak



Test Mode: 02; Polarity: Vertical; Modulation: GFSK; Channel: Low

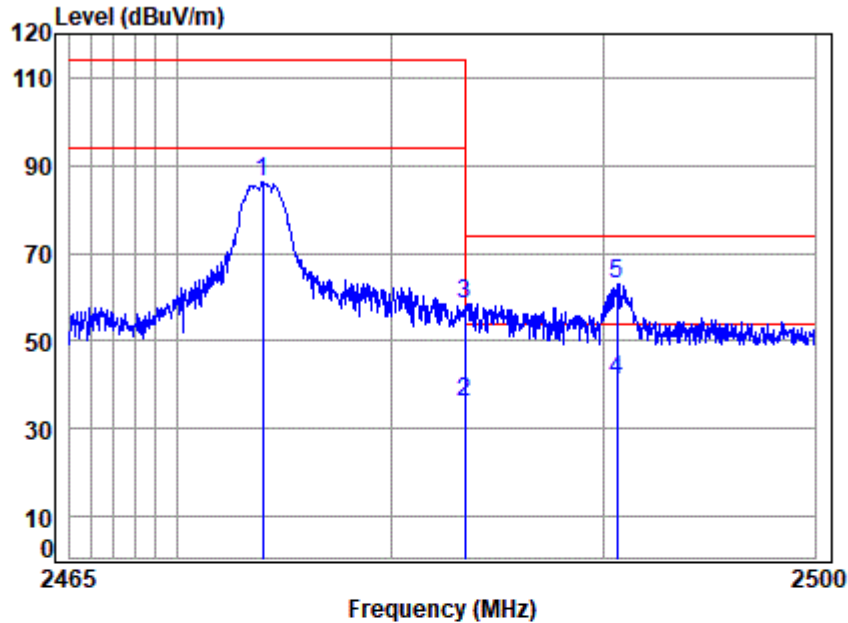


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2452 Band edge

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2371.270	4.31	28.84	40.41	58.25	50.99	74.00	-23.01 Peak
2	2400.000	4.36	28.89	40.42	57.86	50.69	74.00	-23.31 peak
3	2452.000	4.44	29.00	40.45	85.54	78.53	114.00	-35.47 Peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High

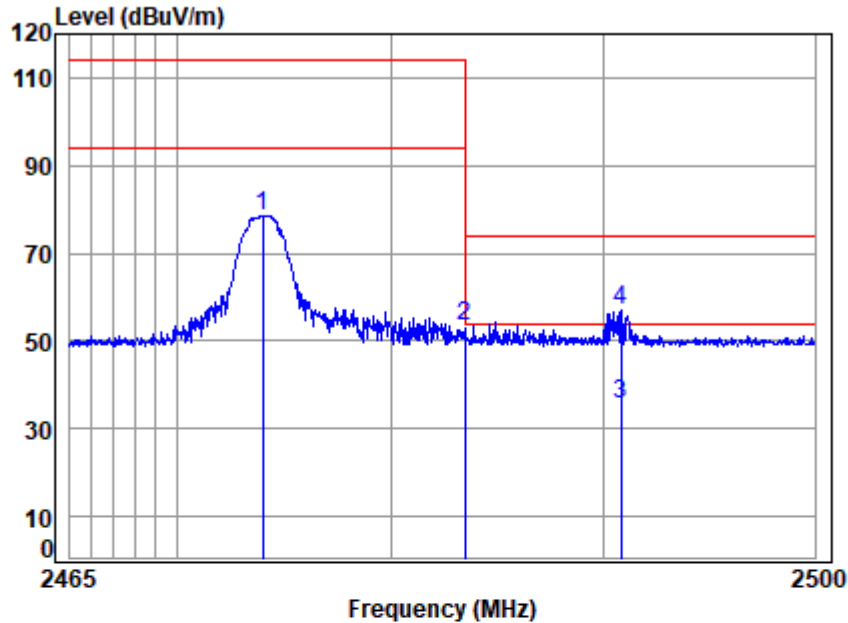


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2474 Band edge

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dB	
1	2474.000	4.48	29.05	40.46	92.95	86.02	114.00	-27.98 peak
2	2483.500	4.49	29.07	40.47	43.71	36.80	54.00	-17.20 Average
3	2483.500	4.49	29.07	40.47	65.47	58.56	74.00	-15.44 peak
4	2490.642	4.51	29.08	40.47	48.01	41.13	74.00	-32.87 Average
5	2490.642	4.51	29.08	40.47	69.77	62.89	74.00	-11.11 Peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber

Condition: 3m VERTICAL

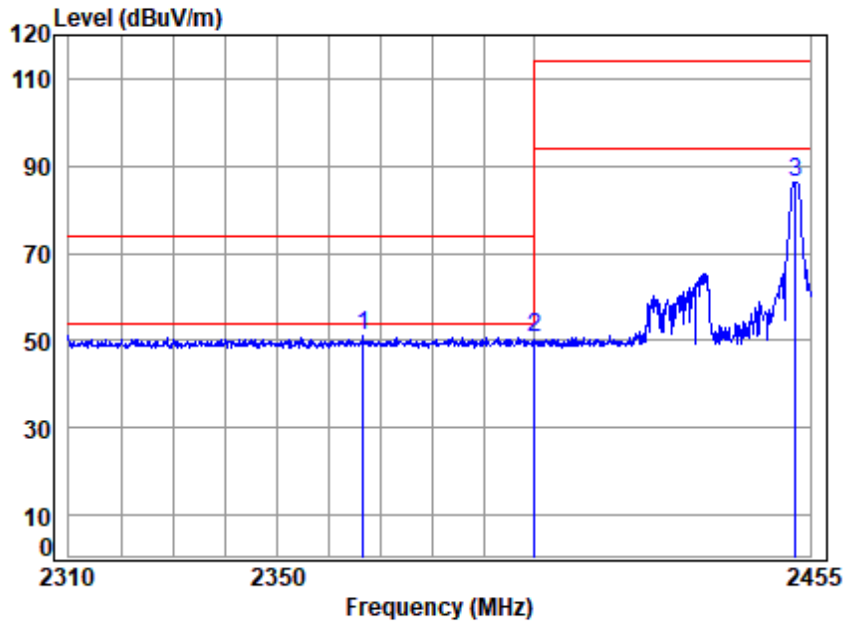
Job No : 21258AT

Mode : 2474 Band edge

		Cable	Ant	Preamp	Read	Limit	Over	
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB		dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2474.000	4.48	29.05	40.46	85.45	78.52	114.00	-35.48 peak
2	2483.500	4.49	29.07	40.47	60.07	53.16	74.00	-20.84 peak
3	2490.853	4.51	29.08	40.47	42.37	35.49	74.00	-38.51 Average
4	2490.853	4.51	29.08	40.47	64.13	57.25	74.00	-16.75 Peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low

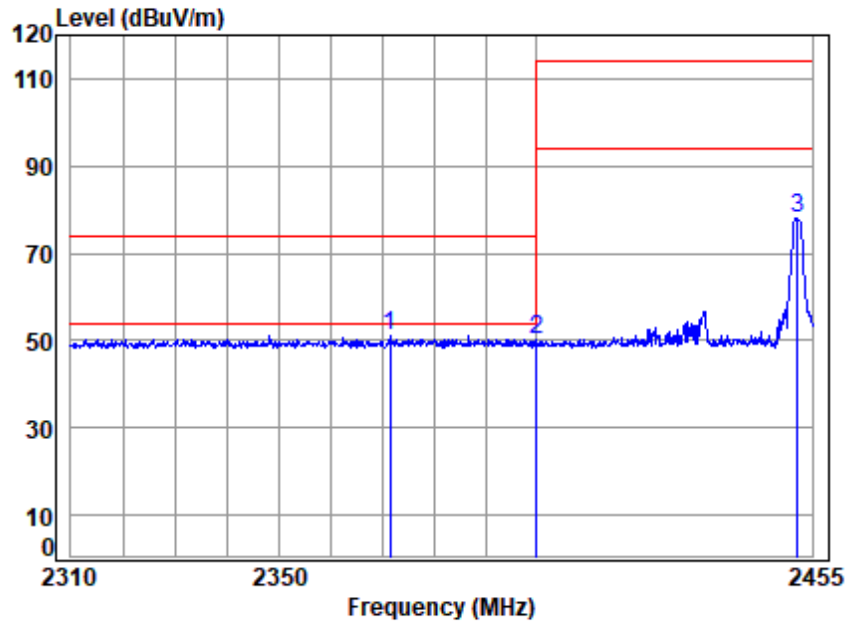


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2452 Band edge
: ATN 2

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2366.511	4.31	28.83	40.41	58.59	51.32	74.00	-22.68 Peak
2	2400.000	4.35	28.88	40.42	58.03	50.84	74.00	-23.16 peak
3	2452.000	4.44	29.00	40.45	93.41	86.40	114.00	-27.60 Peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:Low

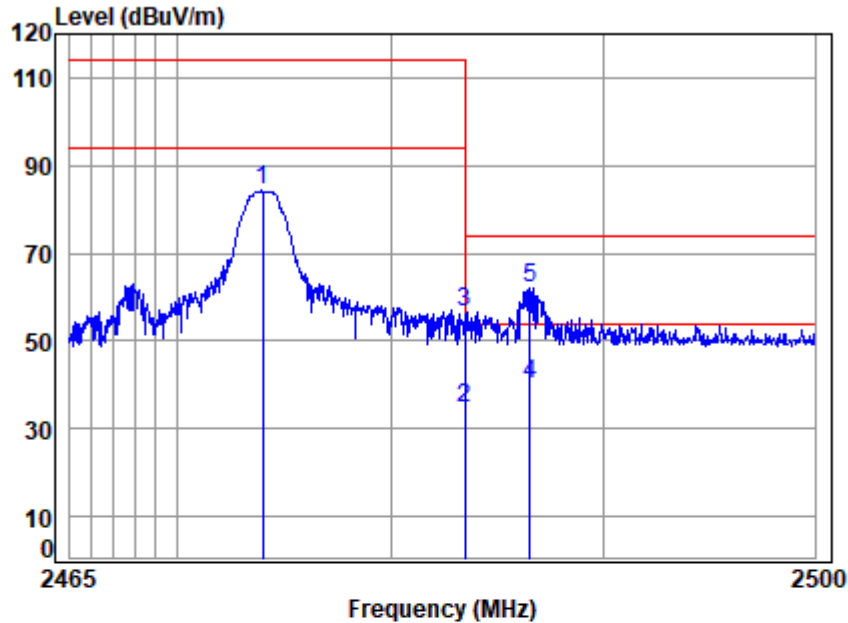


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2452 Band edge
: ATN 2

		Cable	Ant	Preamp	Read	Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2371.414	4.31	28.84	40.41	58.54	51.28	74.00	-22.72 Peak
2	2400.000	4.35	28.88	40.42	57.53	50.34	74.00	-23.66 peak
3	2452.000	4.44	29.00	40.45	85.16	78.15	114.00	-35.85 Peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High

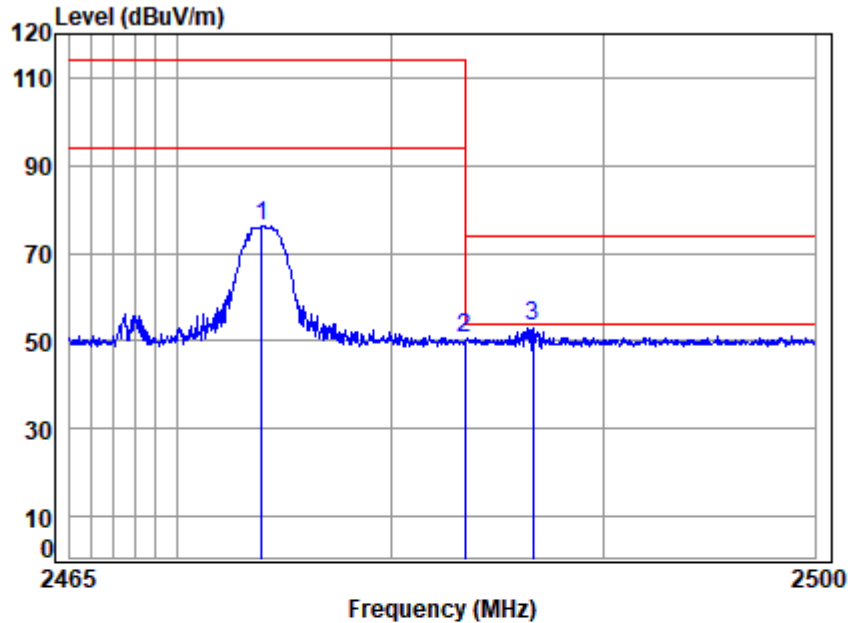


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2474 Band edge
: ATN 2

		Cable	Ant	Preamp	Read	Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1	2474.000	4.48	29.05	40.46	91.14	84.21	114.00	-29.79 peak
2	2483.500	4.49	29.07	40.47	41.70	34.79	54.00	-19.21 Average
3	2483.500	4.49	29.07	40.47	63.46	56.55	74.00	-17.45 peak
4	2486.572	4.50	29.07	40.47	47.18	40.28	54.00	-13.72 Average
5	2486.572	4.50	29.07	40.47	68.94	62.04	74.00	-11.96 Peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2474 Band edge
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1 2473.948	4.48	29.05	40.46	83.03	76.10	114.00	-37.90	peak
2 2483.500	4.49	29.07	40.47	57.56	50.65	74.00	-23.35	peak
3 2486.677	4.50	29.07	40.47	60.33	53.43	74.00	-20.57	Peak



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: 26.2 °C

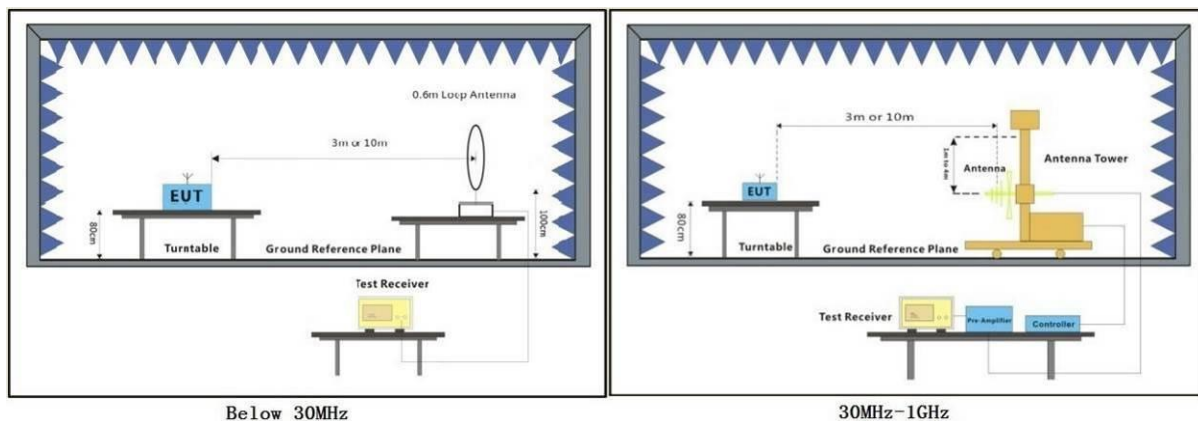
Humidity: 61.9 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_ Keep the EUT in transmitting with modulation mode.

7.4.3 Test Setup Diagram



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.

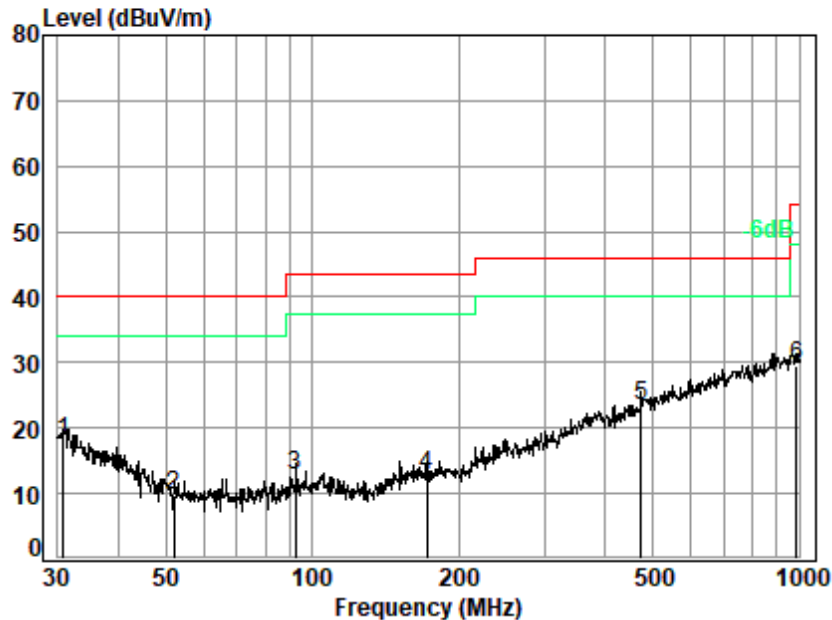
Remark:

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.



Pretest the EUT at antenna 1, antenna 2 and found the antenna 1 which is worst case; So, Only the worst test data is recorded in the report.

Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High

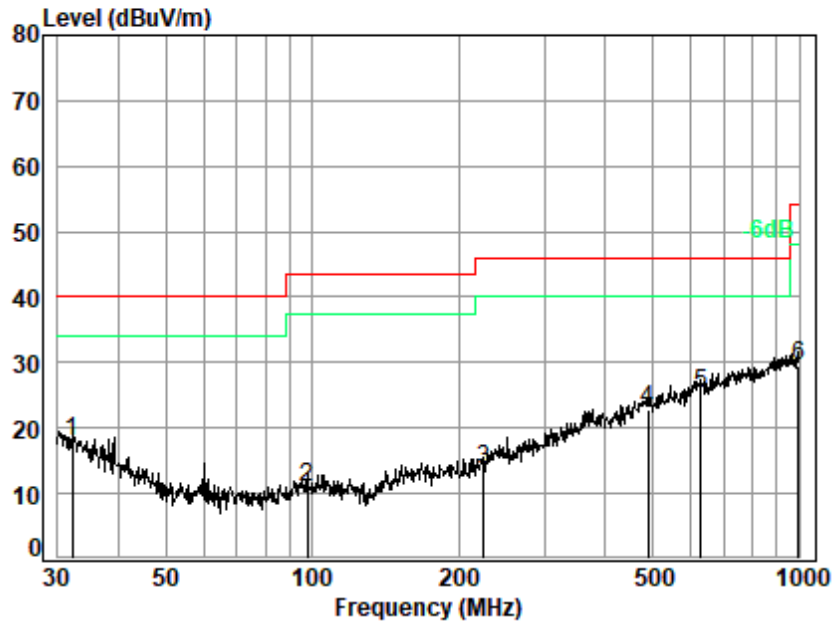


Site : chamber
Condition: 3m HORIZONTAL
Job No. : 21258AT
Test Mode: 02

		Ant	Cable	Preamp	Read		Limit	Over	
	Freq	Factor	Loss	Factor	Level	Level	Line	Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB	
1	q	30.75	22.43	0.61	27.73	22.51	17.82	40.00	-22.18 QP
2		52.03	13.50	0.72	27.68	23.31	9.85	40.00	-30.15 QP
3		92.46	13.50	1.25	27.62	25.53	12.66	43.50	-30.84 QP
4		171.99	15.56	1.18	27.24	23.42	12.92	43.50	-30.58 QP
5		473.83	23.87	2.45	27.70	24.89	23.51	46.00	-22.49 QP
6		986.07	29.59	3.59	26.73	23.03	29.48	54.00	-24.52 QP



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No. : 21258AT
Test Mode: 02

	Ant Freq	Cable Factor	Preamp Loss	Read Level	Limit Level	Limit Line	Over Limit	Remark
	MHz	dB/m	dB	dB	dBuV	dBuV/m	dBuV/m	dB
1	32.18	21.44	0.62	27.73	23.62	17.95	40.00	-22.05 QP
2	97.80	13.80	1.14	27.61	23.64	10.97	43.50	-32.53 QP
3	224.52	17.03	1.43	27.07	22.15	13.54	46.00	-32.46 QP
4	489.03	24.30	2.48	27.76	23.75	22.77	46.00	-23.23 QP
5 q	629.48	26.51	2.76	28.06	24.05	25.26	46.00	-20.74 QP
6	996.50	29.75	3.60	26.68	22.99	29.66	54.00	-24.34 QP



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 Environment:

Temperature: 22.9 °C

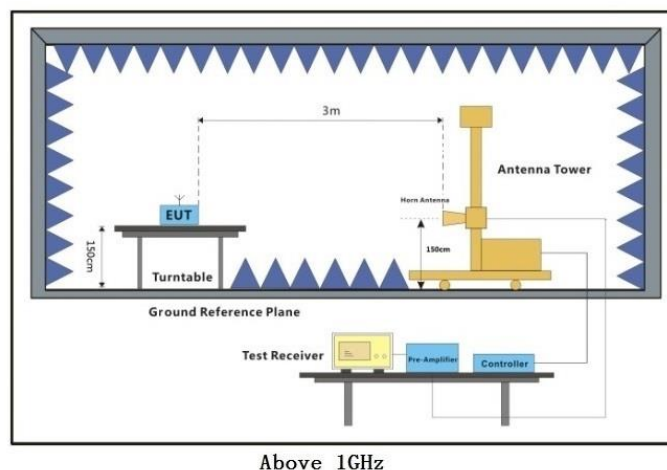
Humidity: 50.1 % RH

Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	02	TX mode_Keep the EUT in transmitting with modulation mode.

7.5.3 Test Setup Diagram



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.
5. Average value=Peak value – Duty factor

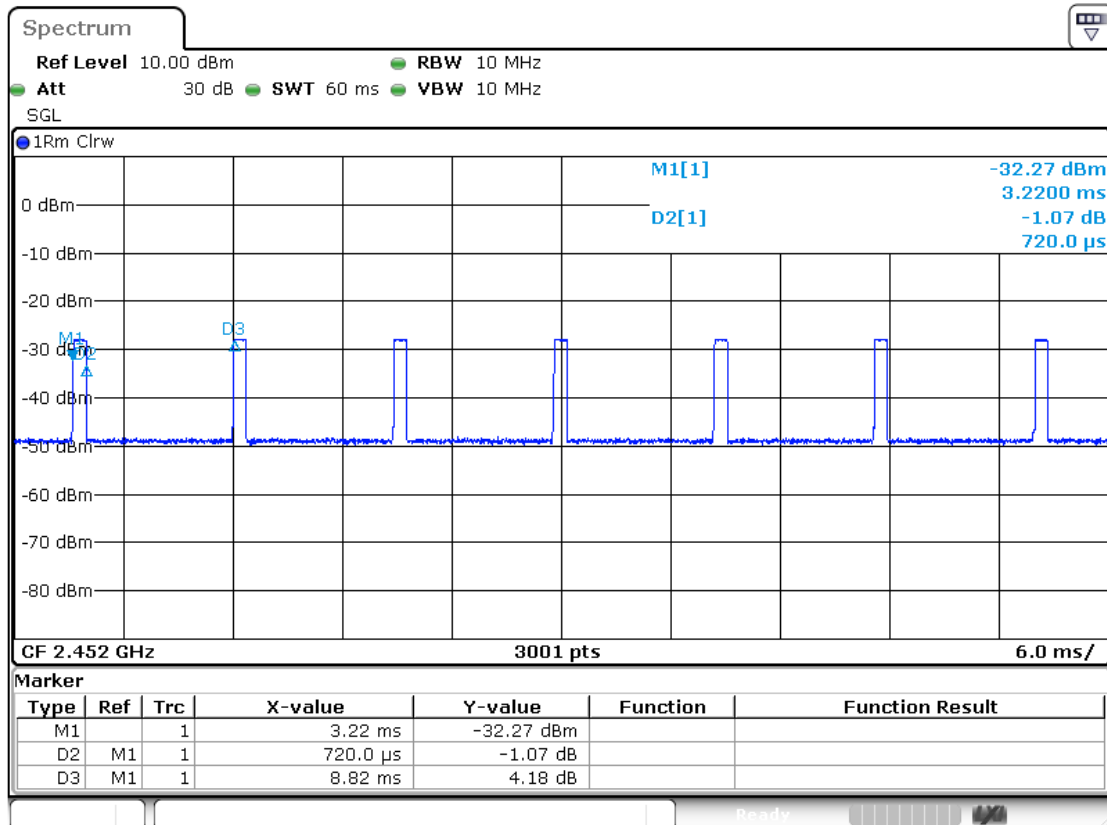
On time (ms)=0.72

One Period time (ms) = 8.82

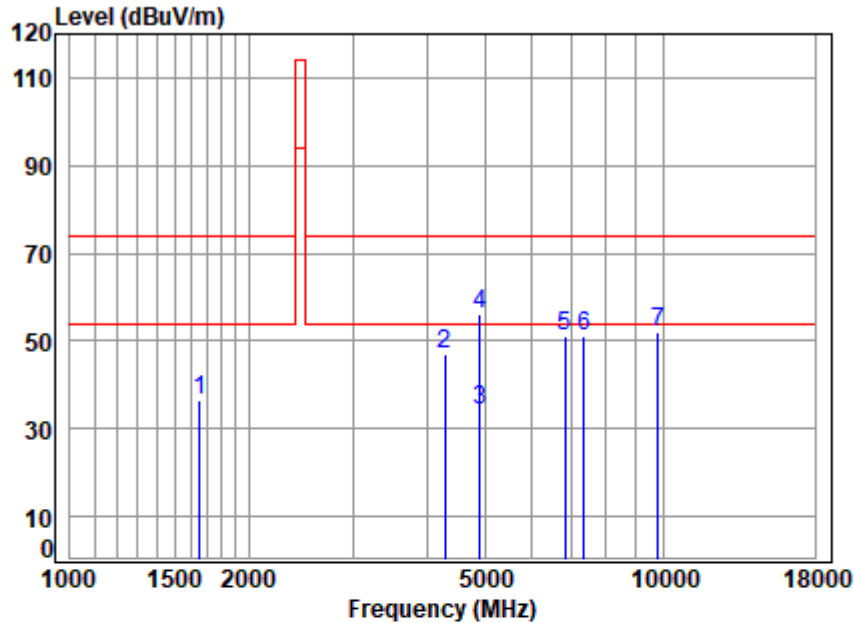
Duty cycle= on time / one period time = 0.72 / 8.82 = 0.0816%

Duty factor= 20log(duty cycle) = -21.76dB





Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : chamber

Condition: 3m HORIZONTAL

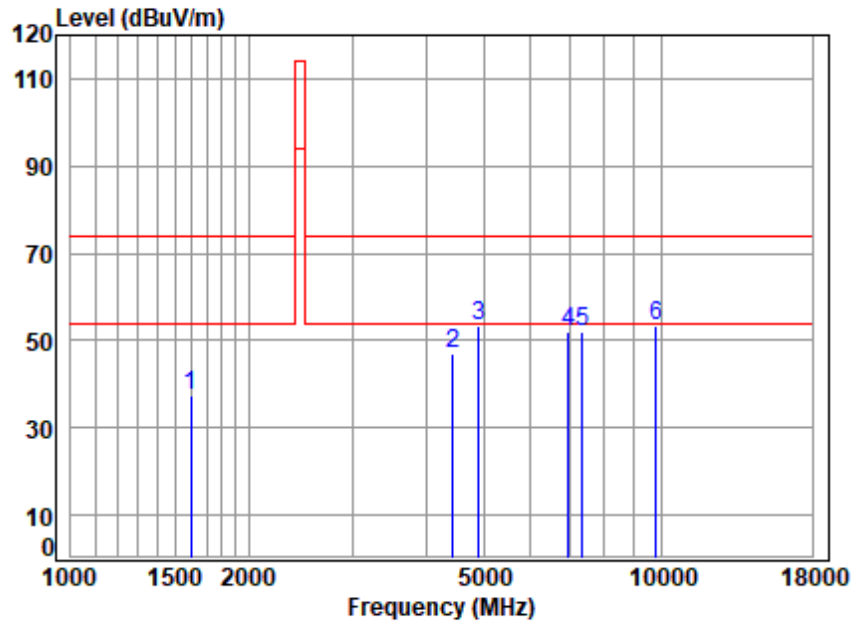
Job No : 21258AT

Mode : 2452 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1653.550	3.39	26.48	40.04	46.89	36.72	74.00	-37.28	peak
2	4279.589	6.56	32.83	41.67	49.33	47.05	74.00	-26.95	peak
3	4904.000	7.20	33.82	42.22	35.46	34.26	54.00	-19.74	Average
4	4904.000	7.20	33.82	42.22	57.22	56.02	74.00	-17.98	Peak
5	6835.278	8.46	35.21	41.81	49.18	51.04	74.00	-22.96	peak
6	7356.000	8.88	35.79	41.37	47.60	50.90	74.00	-23.10	peak
7	9808.000	10.75	37.42	37.42	41.39	52.14	74.00	-21.86	peak



Test Mode: 02; Polarity: Vertical; Modulation: GFSK; Channel: Low

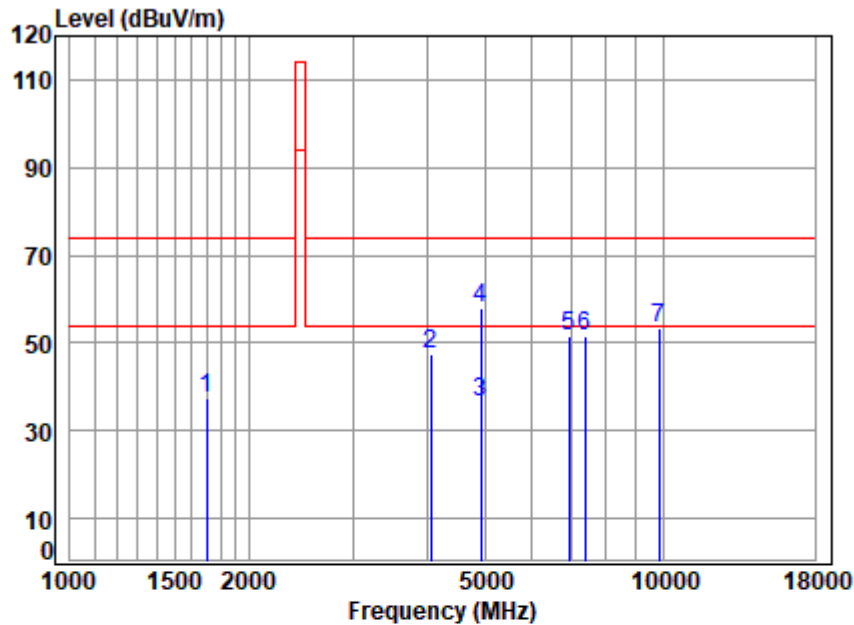


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2452 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1597.181	3.35	26.20	40.01	47.67	37.21	74.00	-36.79	peak
2	4443.453	6.71	32.96	41.82	49.03	46.88	74.00	-27.12	peak
3	4904.000	7.20	33.82	42.22	54.63	53.43	74.00	-20.57	peak
4	6954.852	8.52	35.42	41.73	49.72	51.93	74.00	-22.07	peak
5	7356.000	8.88	35.79	41.37	48.69	51.99	74.00	-22.01	peak
6	9808.000	10.75	37.42	37.42	42.60	53.35	74.00	-20.65	peak



Test Mode: 02; Polarity: Horizontal; Modulation: GFSK; Channel: middle



Site : chamber

Condition: 3m HORIZONTAL

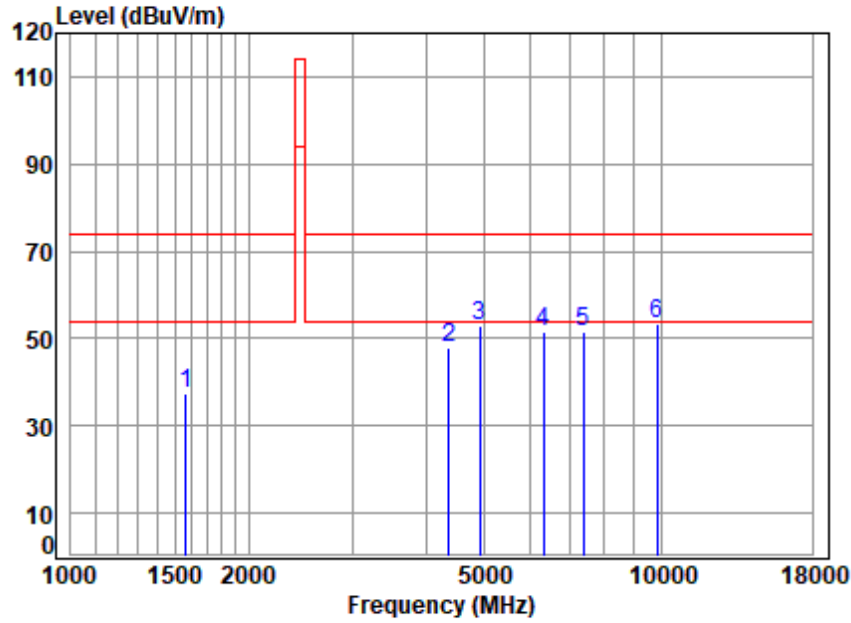
Job No : 21258AT

Mode : 2463 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1702.042	3.43	26.71	40.06	47.43	37.51	74.00	-36.49	peak
2	4062.629	6.34	32.65	41.46	49.90	47.43	74.00	-26.57	peak
3	4926.000	7.22	33.86	42.24	37.49	36.33	54.00	-17.67	Average
4	4926.000	7.22	33.86	42.24	59.25	58.09	74.00	-15.91	peak
5	6934.778	8.51	35.39	41.74	49.44	51.60	74.00	-22.40	peak
6	7389.000	8.91	35.81	41.34	48.32	51.70	74.00	-22.30	peak
7	9852.000	10.73	37.44	37.35	42.66	53.48	74.00	-20.52	peak



Test Mode: 02; Polarity: Vertical; Modulation: GFSK; Channel: middle

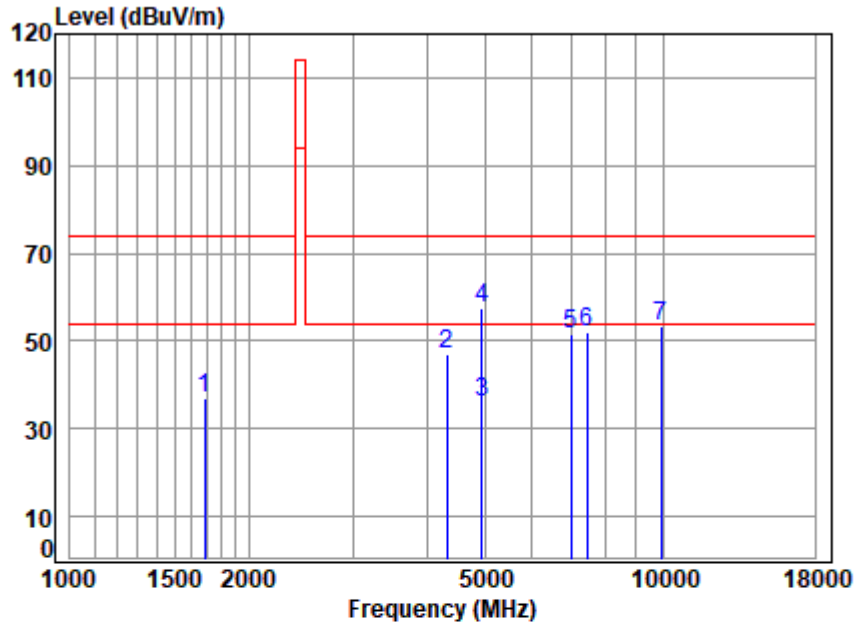


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2463 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1569.721	3.32	26.06	39.99	48.15	37.54	74.00	-36.46	peak
2	4367.058	6.64	32.90	41.75	50.00	47.79	74.00	-26.21	peak
3	4924.000	7.22	33.85	42.24	53.88	52.71	74.00	-21.29	peak
4	6322.136	8.27	34.60	42.16	50.95	51.66	74.00	-22.34	peak
5	7386.000	8.91	35.81	41.34	48.28	51.66	74.00	-22.34	peak
6	9848.000	10.73	37.44	37.35	42.66	53.48	74.00	-20.52	peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : chamber

Condition: 3m HORIZONTAL

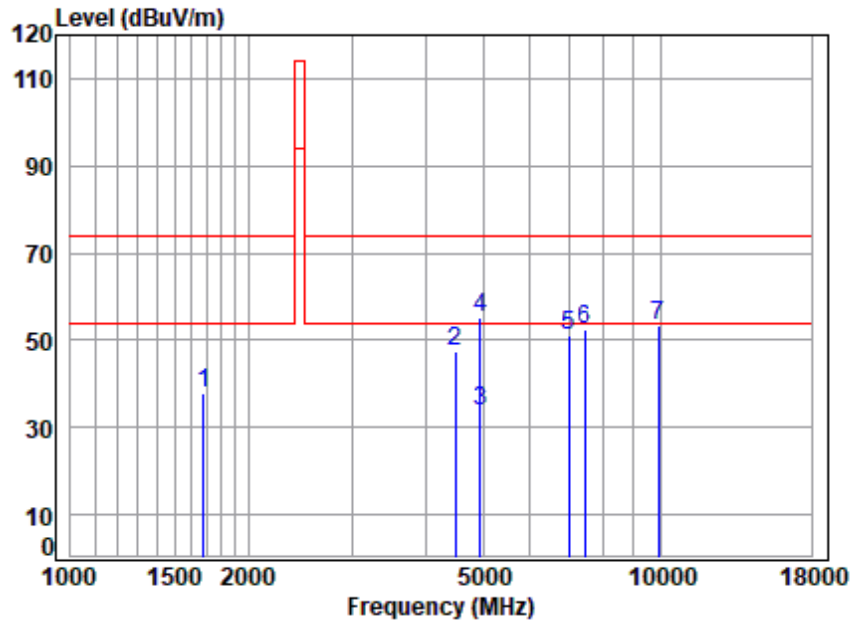
Job No : 21258AT

Mode : 2474 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
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	46.79	36.80	74.00	-37.20	peak
2	4316.859	6.59	32.86	41.71	49.37	47.11	74.00	-26.89	peak
3	4948.000	7.25	33.90	42.26	37.07	35.96	54.00	-18.04	Average
4	4948.000	7.25	33.90	42.26	58.83	57.72	74.00	-16.28	Peak
5	6974.982	8.53	35.46	41.72	49.16	51.43	74.00	-22.57	peak
6	7422.000	8.94	35.84	41.31	48.53	52.00	74.00	-22.00	peak
7	9896.000	10.72	37.46	37.27	42.64	53.55	74.00	-20.45	peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High

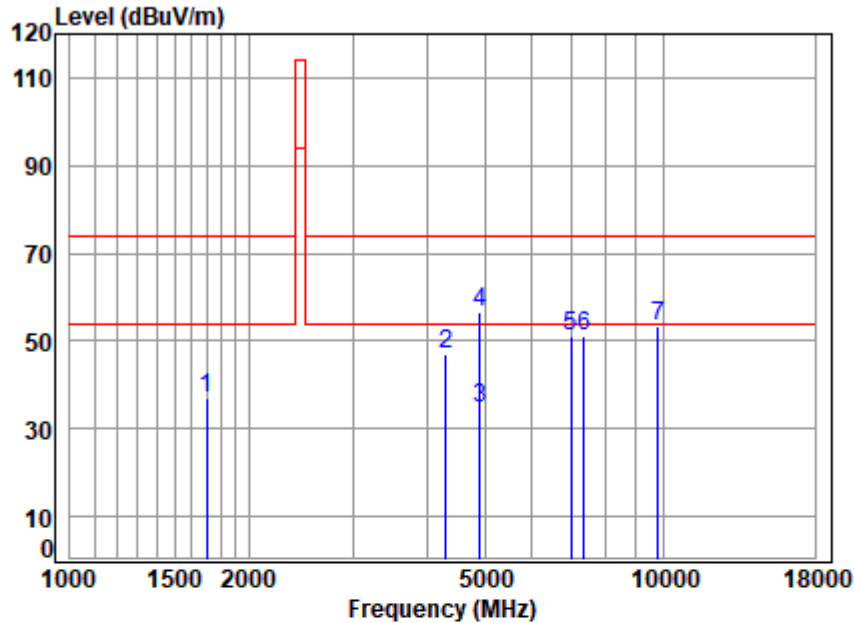


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2474 TX RSE

		Cable	Ant	Preamp	Read		Limit	Over	
Freq		Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz		dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1682.477	3.42	26.62	40.05	47.82	37.81	74.00	-36.19	peak
2	4495.125	6.76	33.00	41.87	49.38	47.27	74.00	-26.73	peak
3	4948.000	7.25	33.90	42.26	34.70	33.60	54.00	-20.40	Average
4	4948.000	7.25	33.90	42.26	56.47	55.36	74.00	-18.64	Peak
5	6995.172	8.54	35.49	41.70	48.83	51.16	74.00	-22.84	peak
6	7422.000	8.94	35.84	41.31	49.12	52.59	74.00	-21.41	peak
7	9896.000	10.72	37.46	37.27	42.50	53.41	74.00	-20.59	peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:Low

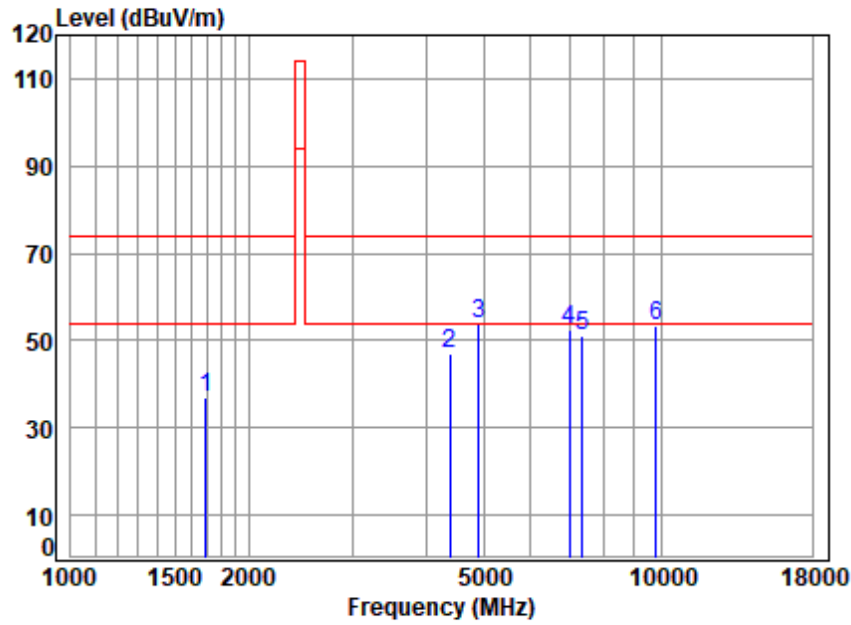


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2452 TX RSE
: ATN 2

	Cable	Ant	Preamp	Read	Limit	Over		
Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	3.43	26.69	40.06	47.02	37.08	74.00	-36.92	peak
2	6.58	32.85	41.70	49.47	47.20	74.00	-26.80	peak
3	7.20	33.82	42.22	35.80	34.60	54.00	-19.40	Average
4	7.20	33.82	42.22	57.56	56.36	74.00	-17.64	peak
5	8.53	35.46	41.72	48.87	51.14	74.00	-22.86	peak
6	8.88	35.79	41.37	47.77	51.07	74.00	-22.93	peak
7	10.75	37.42	37.42	42.74	53.49	74.00	-20.51	peak



Test Mode: 02; Polarity: Vertical; Modulation: GFSK; Channel: Low

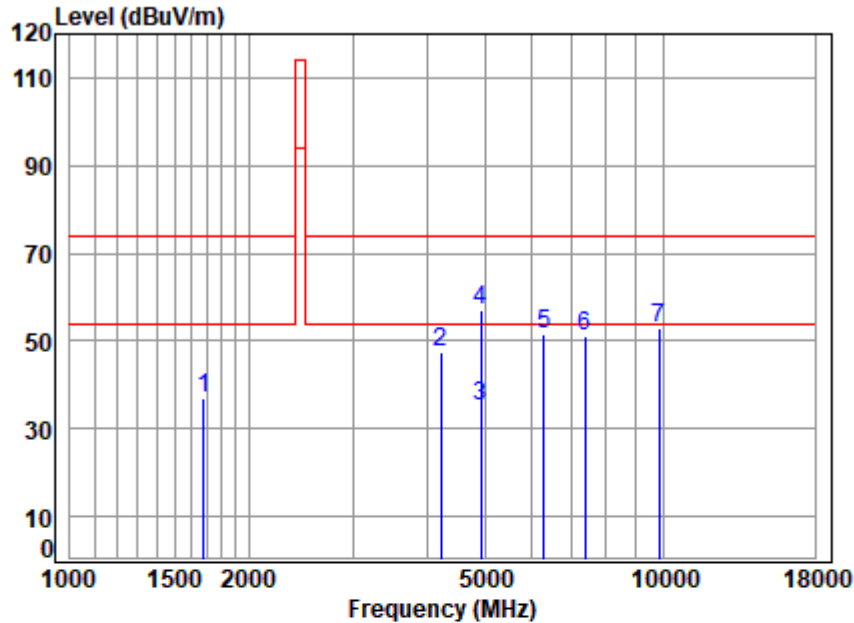


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2452 TX RSE
: ATN 2

	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	1692.231	3.42	26.66	40.06	47.09	37.11	74.00	-36.89	peak
2	4379.699	6.65	32.91	41.77	49.10	46.89	74.00	-27.11	peak
3	4904.000	7.20	33.82	42.22	54.84	53.64	74.00	-20.36	peak
4	6995.172	8.54	35.49	41.70	50.16	52.49	74.00	-21.51	peak
5	7356.000	8.88	35.79	41.37	47.94	51.24	74.00	-22.76	peak
6	9808.000	10.75	37.42	37.42	42.55	53.30	74.00	-20.70	peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:middle

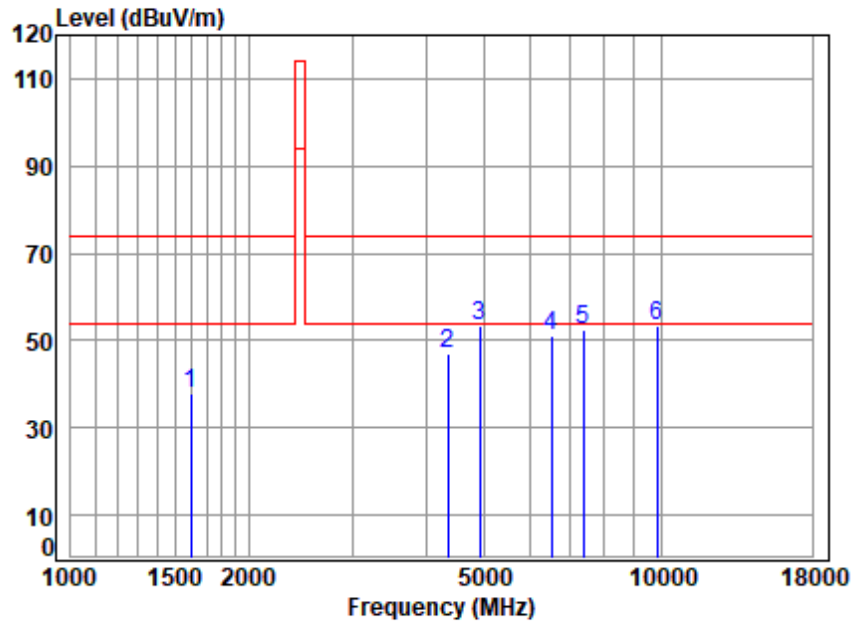


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2463 TX RSE
: ATN 2

	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	1682.477	3.42	26.62	40.05	47.01	37.00	74.00	-37.00	peak
2	4218.186	6.50	32.78	41.61	49.96	47.63	74.00	-26.37	peak
3	4926.000	7.22	33.86	42.24	36.33	35.17	54.00	-18.83	Average
4	4926.000	7.22	33.86	42.24	58.09	56.93	74.00	-17.07	peak
5	6285.695	8.27	34.60	42.19	50.85	51.53	74.00	-22.47	peak
6	7389.000	8.91	35.81	41.34	47.83	51.21	74.00	-22.79	peak
7	9852.000	10.73	37.44	37.35	42.18	53.00	74.00	-21.00	peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:middle

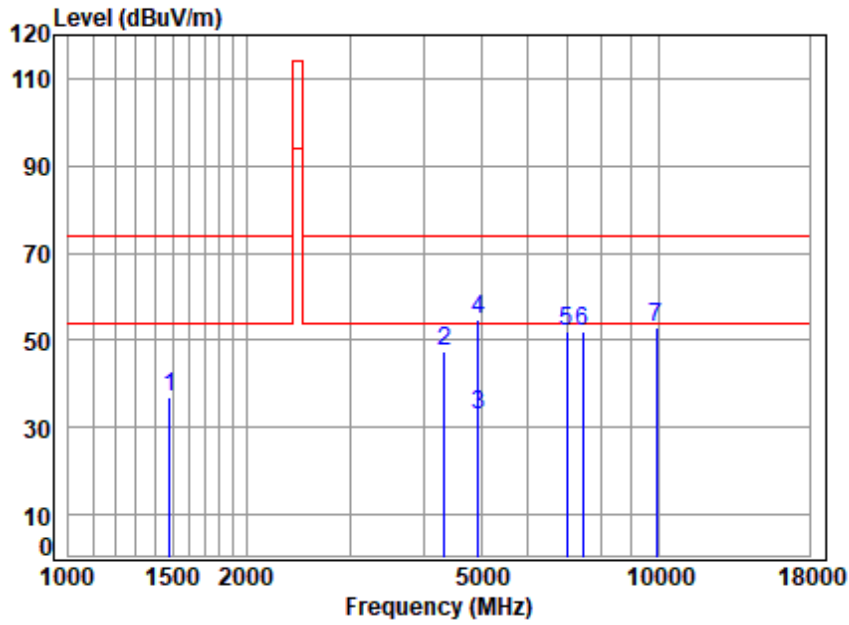


Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2463 TX RSE
: ATN 2

		Cable	Ant	Preamp	Read		Limit	Over	
	Freq	Loss	Factor	Factor	Level	Level	Line	Limit	Remark
	MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB	
1	1597.181	3.35	26.20	40.01	48.25	37.79	74.00	-36.21	peak
2	4354.454	6.63	32.89	41.74	49.16	46.94	74.00	-27.06	peak
3	4924.000	7.22	33.85	42.24	54.60	53.43	74.00	-20.57	peak
4	6507.536	8.28	34.61	42.03	50.16	51.02	74.00	-22.98	peak
5	7386.000	8.91	35.81	41.34	48.88	52.26	74.00	-21.74	peak
6	9848.000	10.73	37.44	37.35	42.48	53.30	74.00	-20.70	peak



Test Mode: 02; Polarity: Horizontal; Modulation:GFSK; Channel:High

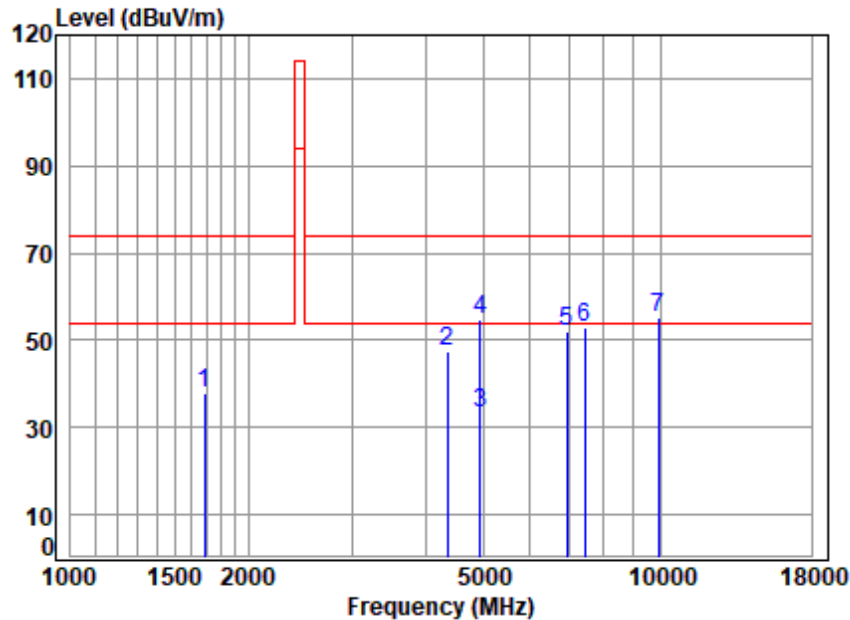


Site : chamber
Condition: 3m HORIZONTAL
Job No : 21258AT
Mode : 2474 TX RSE
: ATN 2

	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	3.23	25.67	39.94	47.93	36.89	74.00	-37.11	peak
2	4329.354	6.60	32.87	41.72	49.85	47.60	74.00	-26.40	peak
3	4948.000	7.25	33.90	42.26	34.17	33.06	54.00	-20.94	Average
4	4948.000	7.25	33.90	42.26	55.93	54.82	74.00	-19.18	peak
5	6995.172	8.54	35.49	41.70	49.67	52.00	74.00	-22.00	peak
6	7422.000	8.94	35.84	41.31	48.69	52.16	74.00	-21.84	peak
7	9896.000	10.72	37.46	37.27	42.14	53.05	74.00	-20.95	peak



Test Mode: 02; Polarity: Vertical; Modulation:GFSK; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 21258AT
Mode : 2474 TX RSE
: ATN 2

	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	1687.347	3.42	26.64	40.05	47.95	37.96	74.00	-36.04	peak
2	4354.454	6.63	32.89	41.74	49.70	47.48	74.00	-26.52	peak
3	4948.000	7.25	33.90	42.26	34.26	33.15	54.00	-20.85	Average
4	4948.000	7.25	33.90	42.26	56.02	54.91	74.00	-19.09	peak
5	6934.778	8.51	35.39	41.74	49.70	51.86	74.00	-22.14	peak
6	7422.000	8.94	35.84	41.31	49.61	53.08	74.00	-20.92	peak
7	9896.000	10.72	37.46	37.27	44.52	55.43	74.00	-18.57	peak



8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2105021258AT

9 EUT Constructional Details (EUT Photos)

Refer to EUT external and internal photos

- End of the Report -

