

TEST REPORT

Application No.: GZCR2509001413HS

Applicant: GUANGDONG BAOLI CULTURAL DEVELOPMENT CO., LTD

Address of Applicant: WEST ER HENG, QUJIAN RAOD, FENGXIN GANGKOU INDUSTRIAL PARK, FENGXIANG STREET, CHENGHAI, SHANTOU, GUANGDONG, CHINA

Manufacturer: GUANGDONG BAOLI CULTURAL DEVELOPMENT CO., LTD

Address of Manufacturer: WEST ER HENG, QUJIAN RAOD, FENGXIN GANGKOU INDUSTRIAL PARK, FENGXIANG STREET, CHENGHAI, SHANTOU, GUANGDONG, CHINA

Factory: GUANGDONG BAOLI CULTURAL DEVELOPMENT CO., LTD

Address of Factory: WEST ER HENG, QUJIAN RAOD, FENGXIN GANGKOU INDUSTRIAL PARK, FENGXIANG STREET, CHENGHAI, SHANTOU, GUANGDONG, CHINA

Product Name: REMOTE CONTROL CAR SERIES

Model No.: 2505C, 2505D ♣

♣ Please refer to section 2 of this report which indicates which item was actually tested and which were electrically identical.

Standard(s) : 47 CFR Part 15, Subpart C 15.249

Date of Receipt: 2025-09-10

Date of Test: 2025-09-16 to 2025-09-26

Date of Issue: 2025-11-03

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards specified above.



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, EMC Laboratory

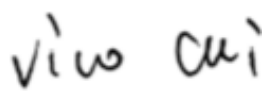
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Revision Record			
Version	Report No.	Date	Remark
01	GZCR250900141302	2025-11-03	Original

Authorized for issue by:			
			
		Michael Huang/Project Engineer	
Approved By			
		Vico Cui/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
Conducted Emissions at AC Power Line (150kHz-30MHz)	47 CFR Part 15, Subpart C 15.249	ANSI C63.10 (2020) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
Field Strength of the Fundamental Signal (15.249(a))		ANSI C63.10 (2020) Section 6.5&6.6	47 CFR Part 15, Subpart C 15.249(a)	Pass
Restricted Band Around Fundamental Frequency		ANSI C63.10 (2020) 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 (2020) 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 (2020) Section 6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass
20dB Bandwidth		ANSI C63.10 (2020) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass

Note:

E.U.T./EUT means Equipment Under Test.

Pass means the test result passed the test standard requirement, please find the detailed decision rule in the report relative section.

♣ Declaration of EUT Family Grouping:

Model No.: 2505C, 2505D

According to the declaration from the applicant, the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference being the packaging styles.

Only the model 2505C was tested.



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4 General Information

4.1 Details of E.U.T.

Power supply: AC 120V 60Hz \ DC 5V (Supply power for the AC\DC adapter)
DC 5V (Supply power for the AC\DC adapter)
Battery Operation(B/O): DC 3V = 2 X 1.5V"AA" batteries for controller (TX)
Battery Operation(B/O): DC 3.7 V Rechargeable Battery for Toy vehicles (RX)
Rated Power: below 75W
Test voltage: AC 120V 60Hz & DC 3V(TX) & DC 3.7V(RX)

Cable(s): 2 Pins, AC input
2 wires x about 1.0m unscreened DC output cable.
(The AC\DC adapter output cable to EUT).
USB lines: about 0.5m unscreened.

Operation Frequency: 2420MHz to 2460MHz
Modulation Type: GFSK
Number of Channels: 3 (2420MHz, 2440MHz & 2460MHz)
Antenna Type: PCB Antenna

Remark: The information in this section is provided by the applicant or manufacturer, SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.

4.2 Description of Support Units

Description	Manufacturer	Model No.	Serial No.
Note Book Computer	LENOVO	ThinkPad T490	PF1D1MVJ
AC/DC Adapter	HUAWEI	Model: HW-110600C02; Input: AC 100-240V,1.8A Max.50/60Hz; Output: DC 5V/2A, 10V/4A, 11V/6A Max.	JL28L4NBM03275



4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	$\pm 3.22\text{dB}$ (150kHz to 30MHz)
Field Strength of the Fundamental Signal (15.249(a))	$\pm 4.88\text{dB}$ (1GHz-6GHz); $\pm 5.06\text{dB}$ (6GHz-18GHz); $\pm 5.30\text{dB}$ (18GHz-40GHz)
Restricted Band Around Fundamental Frequency	$\pm 4.88\text{dB}$ (1GHz-6GHz); $\pm 5.06\text{dB}$ (6GHz-18GHz)
Radiated Emissions Below 1GHz	$\pm 3.08\text{dB}$ (9kHz to 150kHz); $\pm 3.19\text{dB}$ (150kHz to 30MHz); $\pm 5.14\text{dB}$ (30MHz-1GHz) (3m); $\pm 4.90\text{dB}$ (30MHz-1GHz) (10m)
Radiated Emissions Above 1GHz	$\pm 4.88\text{dB}$ (1GHz-6GHz); $\pm 5.06\text{dB}$ (6GHz-18GHz); $\pm 5.30\text{dB}$ (18GHz-40GHz)
20dB Bandwidth	$\pm 0.274\%$

Remark:
The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty) or U_{ETSI} (ETSI Uncertainty).

Emission decision rule:
 – Compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit, marked as Pass in the report.
 – Non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit, marked as Fail in the report.

4.4 Test Location

All tests were performed at:

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou Branch EMC Laboratory,
No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou,
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No tests were sub-contracted.



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4.5 Test Facility

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

● ACMA

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory can also perform testing for the Australian/New Zealand Regulatory Compliance Mark (RCM).

● SGS UK(Certificate No.: 32), SGS-TUV SAARLAND and SGS-FIMKO

Have approved SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory as a supplier of EMC TESTING SERVICES and SAFETY TESTING SERVICES.

● FCC Recognized Accredited Test Firm(Registration No.: 486818)

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: CN5016, Test Firm Registration Number: 486818.

● ISED (Registration No.: 4620B, CAB identifier: CN0052)

SGS-CSTC Standards Technical Services Co., Ltd., has been registered by Innovation Science and Economic Development Canada for Wireless Device Testing laboratories to test to Canadian radio equipment requirements. Registration No. 4620B, CAB identifier: CN0052.

● VCCI (Registration No.: R-12460, C-12584, G-20107 and T-11179)

The 10m Semi-anechoic chamber, 966 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.: R-12460, C-12584, G-20107 and T-11179 respectively.

● CBTL (Lab Code: TL129)

SGS-CSTC Standards Technical Services Co., Ltd., E&E Laboratory has been assessed and fully comply with the requirements of ISO/IEC 17025:2017, the Basic Rules, IECEE 01 and Rules of procedure IECEE 02, and the relevant IECEE CB-Scheme Operational documents.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None



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5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Coaxial Cable	HangTianXing	2m	EMC0107	2025-08-12	2026-08-11
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	2025-08-14	2028-08-13
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2025-08-13	2026-08-12
EMI Test Receiver (9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2024-12-04	2025-12-03
Test Software E3r	Audix	Ver.6.191211	GZE100-77	N/A	N/A

Field Strength of the Fundamental Signal (15.249(a))					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2025-08-11	2026-08-10
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2025-08-11	2026-08-10
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Horn Antenna (1-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2025-05-13	2027-05-12
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2025-08-12	2026-08-11
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-23	2026-12-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Restricted Band Around Fundamental Frequency					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2025-08-11	2026-08-10
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2025-08-11	2026-08-10
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Horn Antenna (1-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2025-05-13	2027-05-12
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-23	2026-12-22
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A



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Radiated Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
966 Anechoic Chamber	Shenzhen C.R.T	CRTSGSSAC966	EMC2230	2025-03-22	2028-03-21
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2229	2024-12-03	2025-12-02
Amplifier(9k-1000MHz)	SONOMA	310	EMC2237	2024-12-03	2025-12-02
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess-Elektronik	VULB 9168	EMC2238	2025-03-24	2027-03-23
Coaxial Cable	Mirco-COAX UTIFLEX ve	LA2-C125-8000	EMC2239	2024-12-04	2026-12-03
Test Software E3	Audix	Ver.6.191211	GZE100-81	N/A	N/A
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2024-04-16	2026-04-15

Radiated Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2025-08-11	2026-08-10
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2025-08-11	2026-08-10
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Horn Antenna (1-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2025-05-13	2027-05-12
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2025-08-12	2026-08-11
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2025-08-12	2026-08-11
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-23	2026-12-22
Microwave Broadband Preamplifier (18-40GHz)	SCHWARZBECK	BBV 9721	EMC2172	2025-08-12	2026-08-11
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
MXA Signal Analyzer (10Hz-8.4GHz)	Agilent Technologies	N9020A	SEM004-10	2024-12-03	2025-12-02
MI CABLE	SGS-EMC	0.8M	EMC2136	2023-11-02	2025-11-01



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General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2025-06-03	2026-06-02



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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

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.

Antenna location: Refer to Internal photos



7 Radio Spectrum Matter Test Results

7.1 Conducted Emissions at AC Power Line (150kHz-30MHz)

Test Requirement 47 CFR Part 15, Subpart C 15.207

Test Method: ANSI C63.10 (2020) Section 6.2

Limit:

Frequency of emission(MHz)	Conducted limit(dBμV)	
	Quasi-peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50
*Decreases with the logarithm of the frequency.		
Detector: Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz		

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 23.4 °C

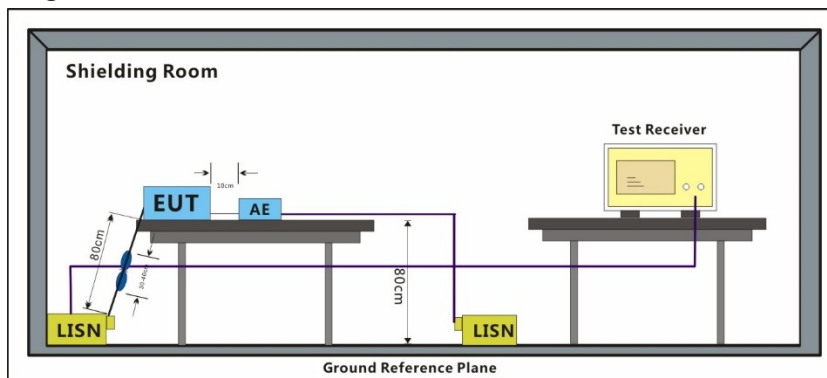
Humidity: 53.3 % RH

Atmospheric Pressure: 1010 mbar

7.1.2 Test Mode Description

Pre-scan /	Mode	Description
Final test	Code	
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.1.3 Test Setup Diagram



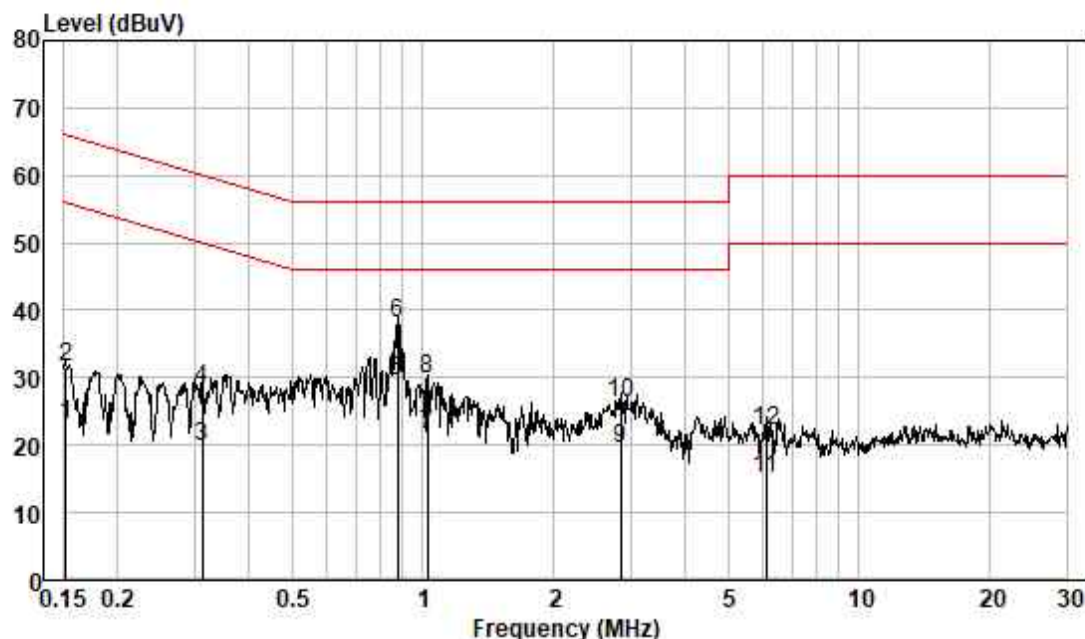
7.1.4 Measurement Procedure and Data

- 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 50ohm/50μH + 5ohm 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 on conducted measurement.

Remark : Level=Read Level+ Cable Loss+ LISN Factor



Test Mode: 00; Line: Live line

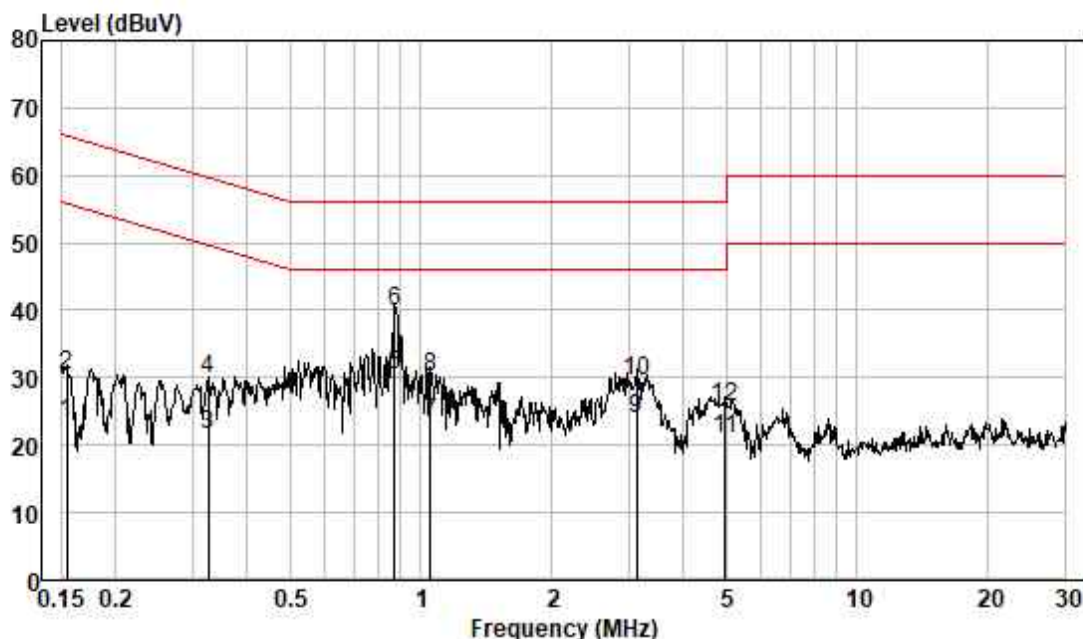


Pol : LINE
Mode :
Model :
Power :

	Frequency MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.152	13.38	0.04	9.57	22.99	55.91	-32.92	Average
2	0.152	22.02	0.04	9.57	31.63	65.91	-34.28	QP
3	0.312	10.10	0.04	9.55	19.69	49.93	-30.24	Average
4	0.312	18.64	0.04	9.55	28.23	59.93	-31.70	QP
5	0.876	19.83	0.07	9.61	29.51	46.00	-16.49	Average
6	0.876	28.43	0.07	9.61	38.11	56.00	-17.89	QP
7	1.027	11.99	0.07	9.54	21.60	46.00	-24.40	Average
8	1.027	20.30	0.07	9.54	29.91	56.00	-26.09	QP
9	2.839	9.73	0.15	9.55	19.43	46.00	-26.57	Average
10	2.839	16.68	0.15	9.55	26.38	56.00	-29.62	QP
11	6.121	5.16	0.21	9.64	15.01	50.00	-34.99	Average
12	6.121	12.18	0.21	9.64	22.03	60.00	-37.97	QP



Test Mode: 00; Line: Neutral Line



Pol : NEUTRAL
Mode :
Model :
Power :

	Frequency MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.154	13.83	0.04	9.52	23.39	55.78	-32.39	Average
2	0.154	20.71	0.04	9.52	30.27	65.78	-35.51	QP
3	0.325	11.86	0.04	9.52	21.42	49.57	-28.15	Average
4	0.325	20.24	0.04	9.52	29.80	59.57	-29.77	QP
5	0.871	20.85	0.07	9.53	30.45	46.00	-15.55	Average
6	0.871	30.12	0.07	9.53	39.72	56.00	-16.28	QP
7	1.054	13.82	0.07	9.56	23.45	46.00	-22.55	Average
8	1.054	20.39	0.07	9.56	30.02	56.00	-25.98	QP
9	3.123	14.08	0.16	9.56	23.80	46.00	-22.20	Average
10	3.123	19.74	0.16	9.56	29.46	56.00	-26.54	QP
11	4.978	11.14	0.20	9.66	21.00	46.00	-25.00	Average
12	4.978	15.94	0.20	9.66	25.80	56.00	-30.20	QP

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 (2020) Section 6.5&6.6

Limit:

Test Distance: 3m

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: 25.7 °C

Humidity: 61.2 % RH

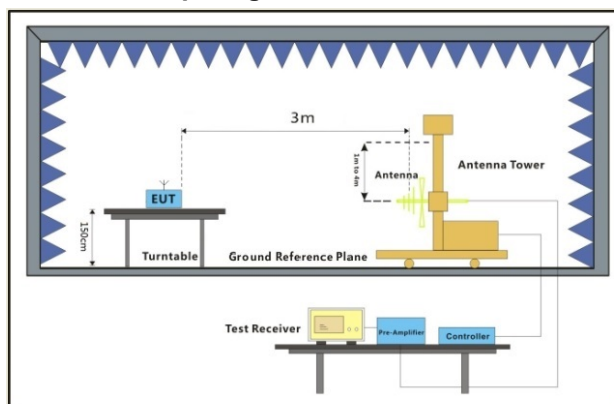
Atmospheric Pressure: 1010 mbar

7.2.2 Test Mode Description

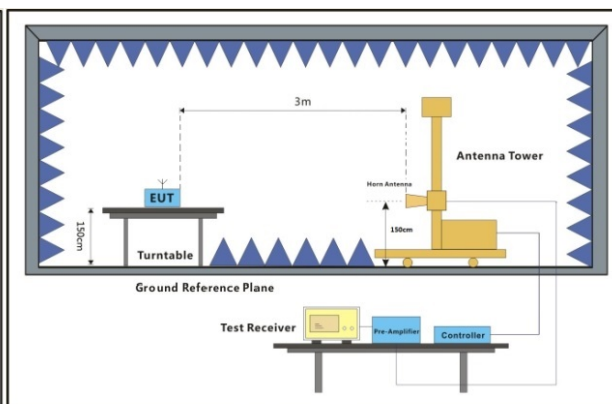
Pre-scan / Mode Description
Final test Code

Final test 00 TX mode_Keep the EUT in transmitting with modulation mode.

7.2.3 Test Setup Diagram



30MHz-1GHz



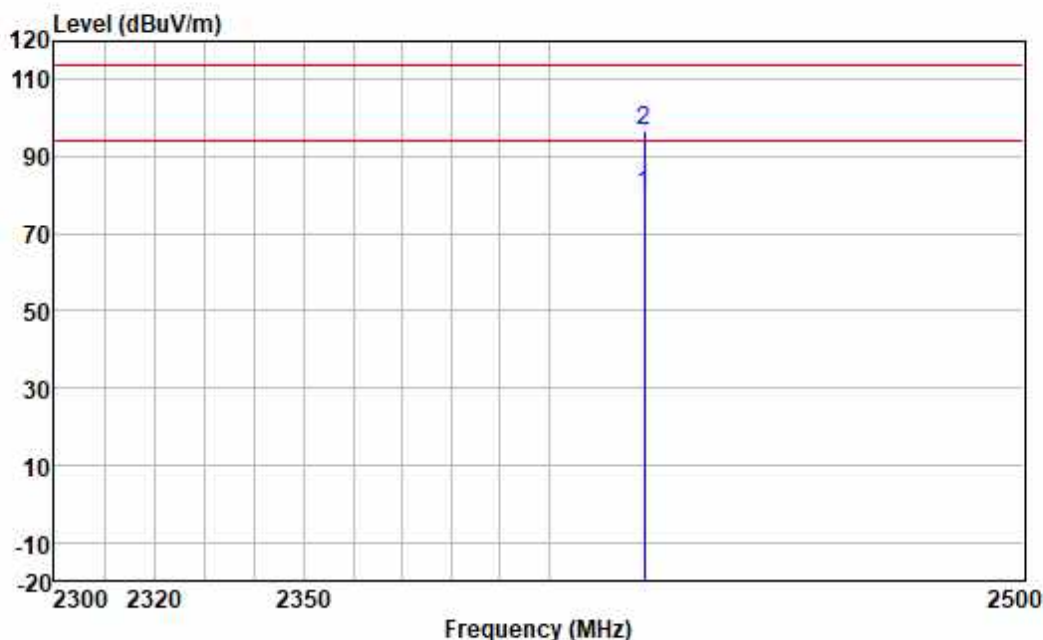
Above 1GHz

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



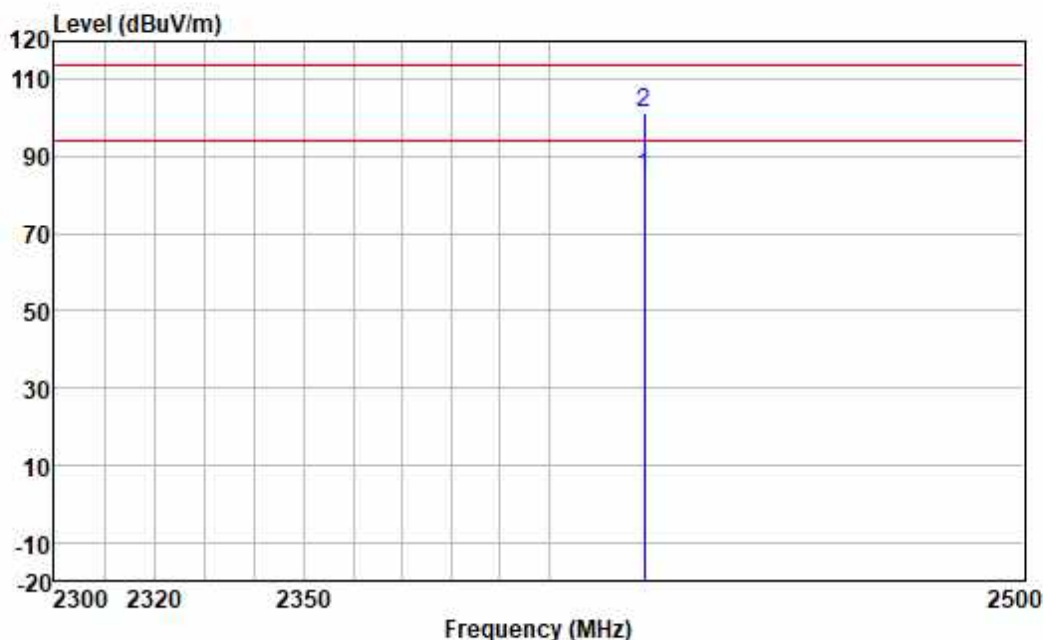
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2420.000	86.85	27.68	3.46	37.77	80.22	94.00	-13.78	VERTICAL	Average
2	2420.000	103.24	27.68	3.46	37.77	96.61	114.00	-17.39	VERTICAL	Peak



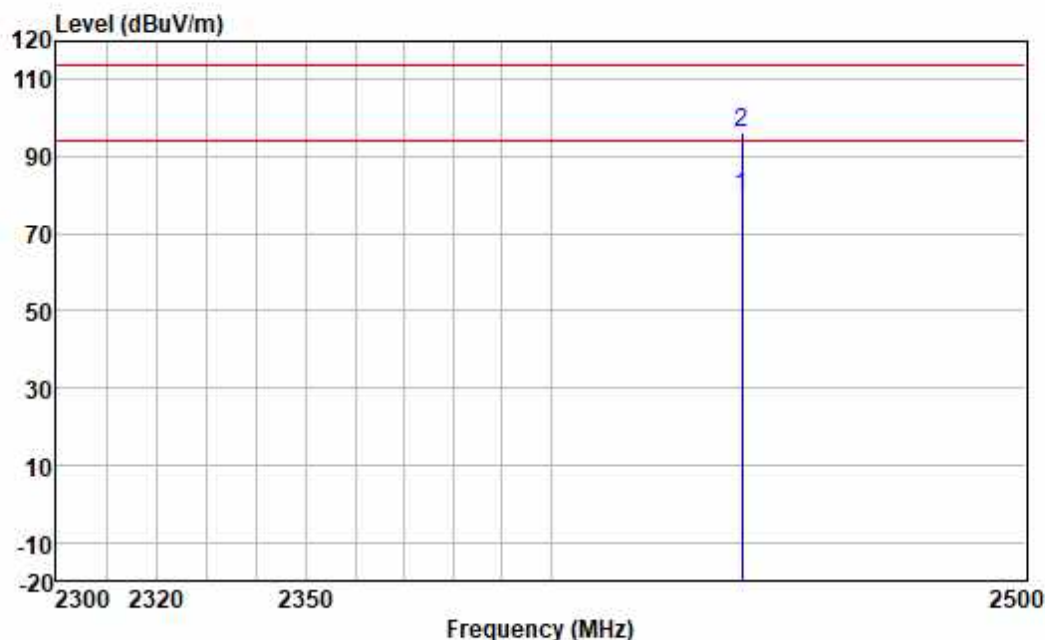
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



	Freq	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2420.000	91.69	27.68	3.46	37.77	85.06	94.00	-8.94	HORIZONTAL Average
2	2420.000	108.08	27.68	3.46	37.77	101.45	114.00	-12.55	HORIZONTAL Peak



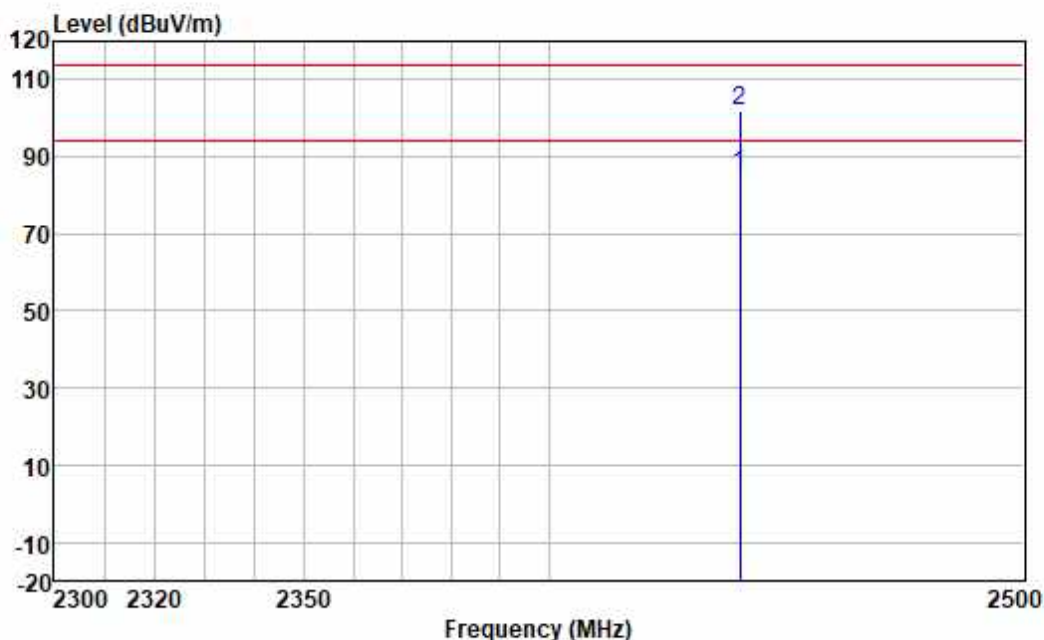
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2440.000	86.19	27.71	3.47	37.76	79.61	94.00	-14.39	VERTICAL	Average
2	2440.000	102.58	27.71	3.47	37.76	96.00	114.00	-18.00	VERTICAL	Peak



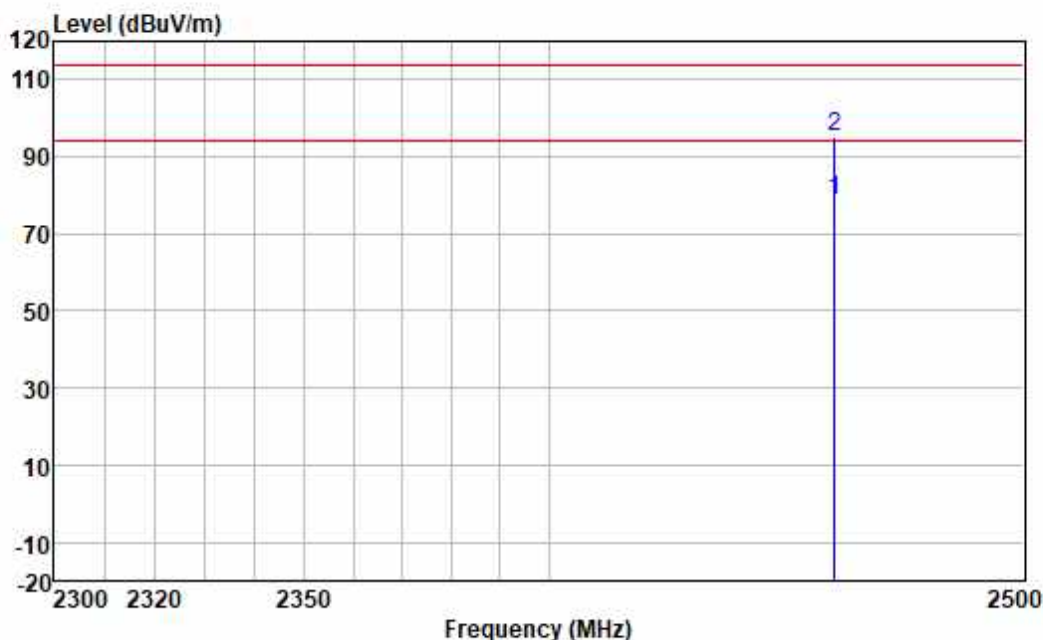
Test Mode: 00; Polarity: Horizontal; Modulation: GFSK; Channel: middle



	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	MHz	Level	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2440.000	92.04	27.71	3.47	37.76	85.46	94.00	-8.54	HORIZONTAL Average
2	2440.000	108.43	27.71	3.47	37.76	101.85	114.00	-12.15	HORIZONTAL Peak



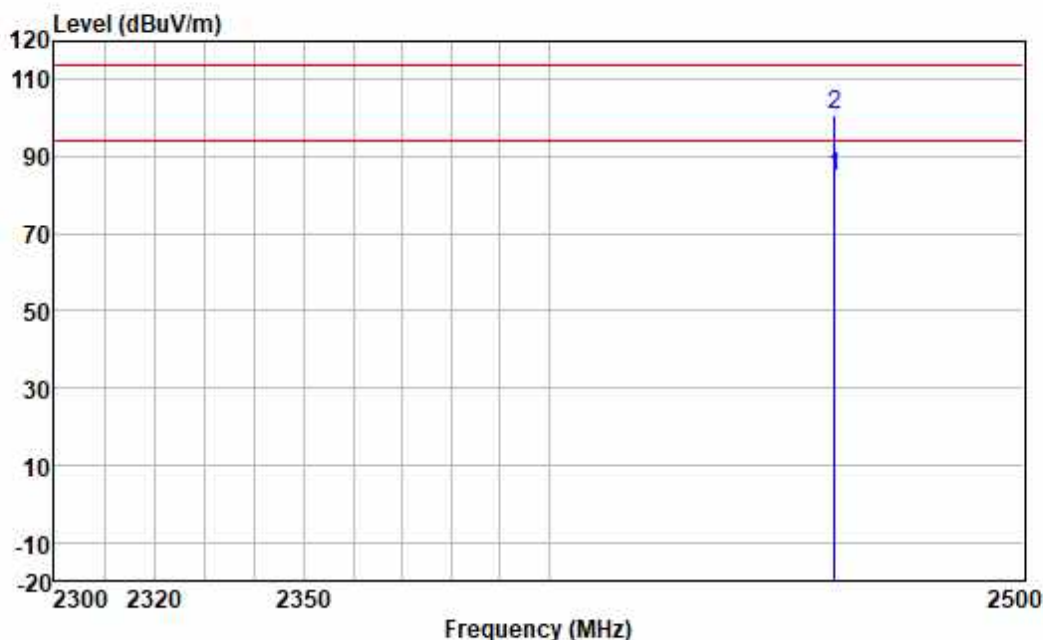
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



		ReadAntenna	Cable	Preamp		Limit	Over		
	Freq	Level	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2460.000	85.23	27.72	3.47	37.76	78.66	94.00	-15.34	VERTICAL Average
2	2460.000	101.62	27.72	3.47	37.76	95.05	114.00	-18.95	VERTICAL Peak



Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



	Freq	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	2460.000	91.20	27.72	3.47	37.76	84.63	94.00	-9.37	HORIZONTAL Average
2	2460.000	107.59	27.72	3.47	37.76	101.02	114.00	-12.98	HORIZONTAL Peak



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 (2020) Section 6.10.5

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: 25.7 °C

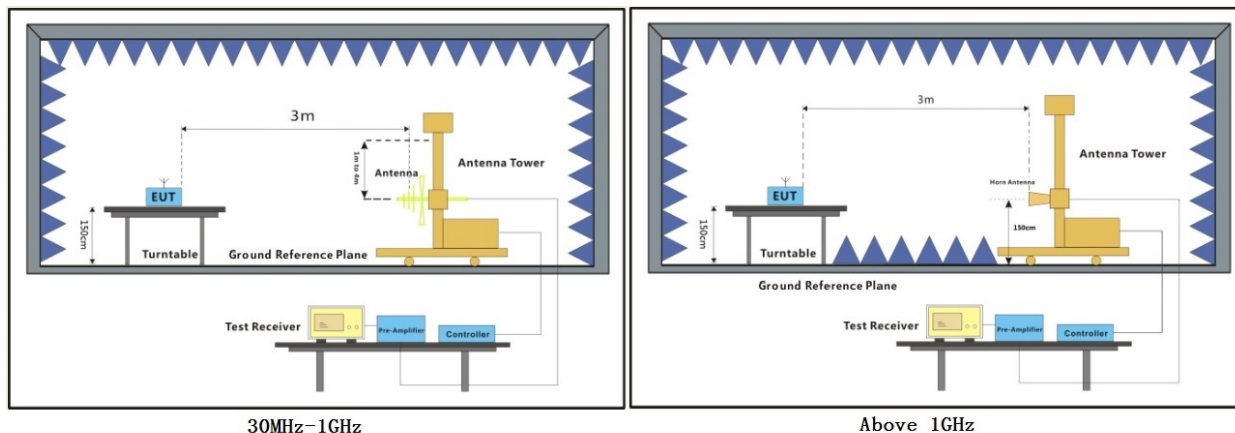
Humidity: 61.2 % RH

Atmospheric Pressure: 1010 mbar

7.3.2 Test Mode Description

Pre-scan /	Mode	Description
Final test	Code	
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.3.3 Test Setup Diagram

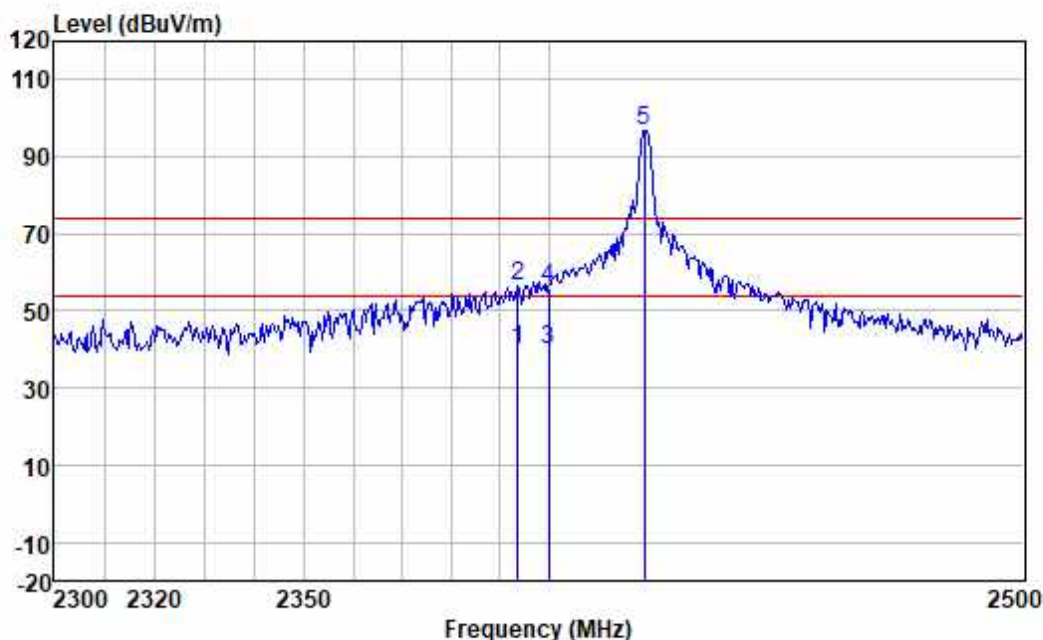


7.3.4 Measurement Procedure and Data

- 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 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



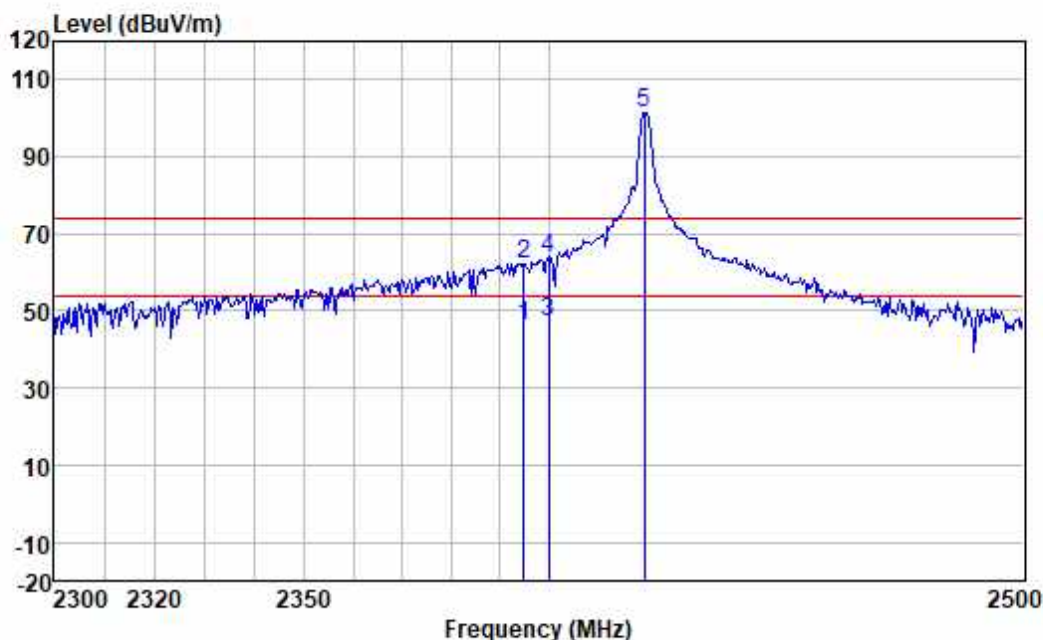
Test Mode: 00; Polarity: Vertical; Modulation: GFSK; Channel: Low



	Freq	ReadAntenna Level	Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2393.721	46.81	27.64	3.45	37.77	40.13	54.00	-13.87	VERTICAL	Average
2	2393.721	63.20	27.64	3.45	37.77	56.52	74.00	-17.48	VERTICAL	peak
3	2400.000	46.35	27.65	3.45	37.77	39.68	54.00	-14.32	VERTICAL	Average
4	2400.000	62.74	27.65	3.45	37.77	56.07	74.00	-17.93	VERTICAL	peak
5 *	2420.000	103.24	27.68	3.46	37.77	96.61	74.00	22.61	VERTICAL	Peak



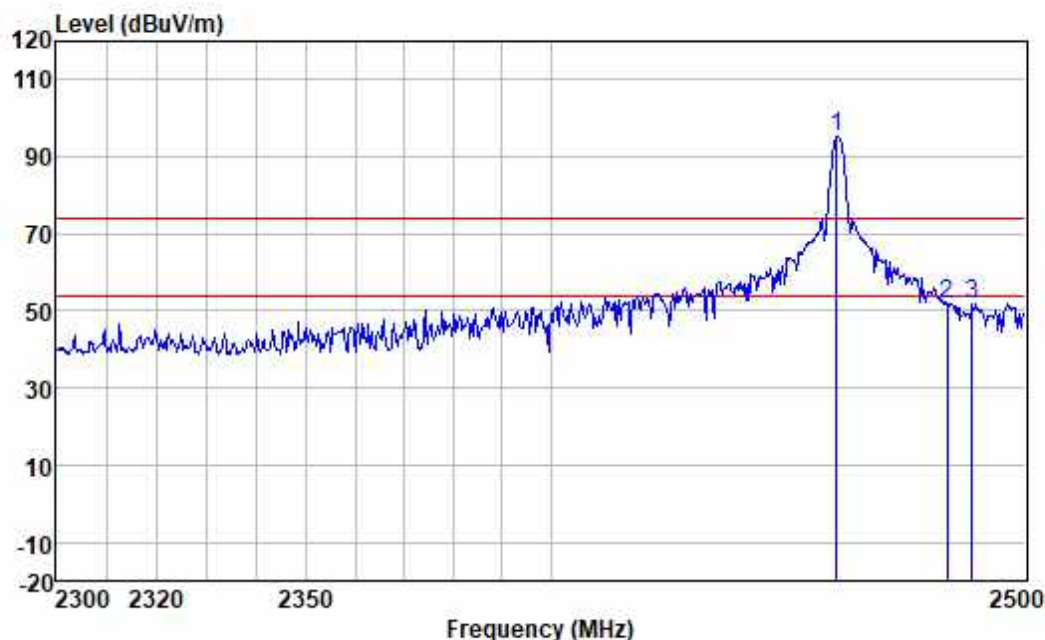
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	2394.918	52.56	27.64	3.45	37.77	45.88	54.00	-8.12	HORIZONTAL	Average
2	2394.918	68.95	27.64	3.45	37.77	62.27	74.00	-11.73	HORIZONTAL	peak
3	2400.000	54.02	27.65	3.45	37.77	47.35	54.00	-6.65	HORIZONTAL	Average
4	2400.000	70.41	27.65	3.45	37.77	63.74	74.00	-10.26	HORIZONTAL	peak
5 *	2420.000	108.08	27.68	3.46	37.77	101.45	74.00	27.45	HORIZONTAL	Peak



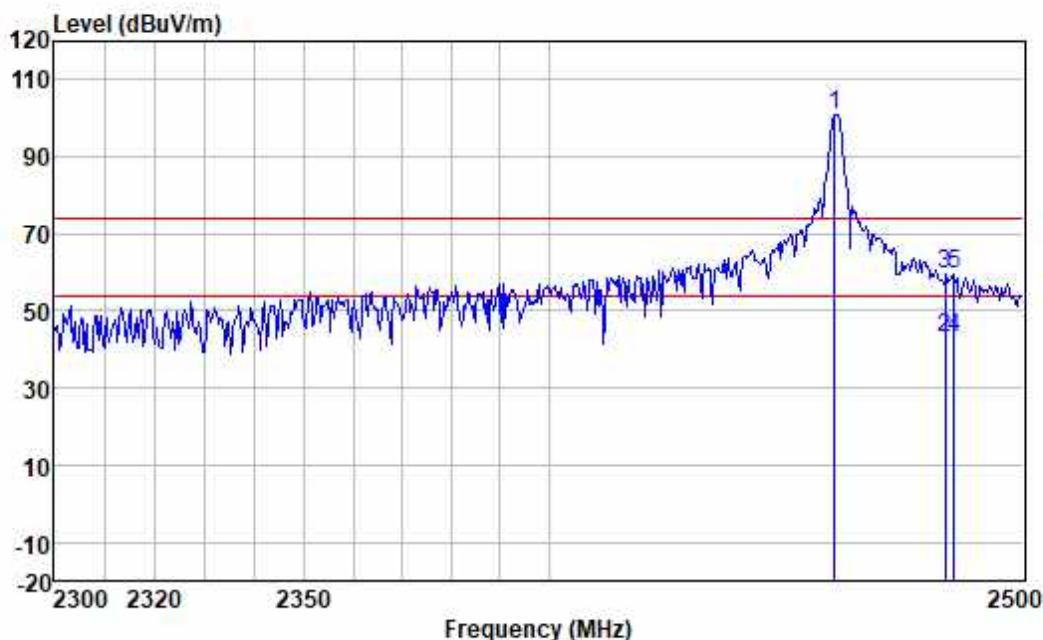
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	MHz	Level	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2460.000	101.62	27.72	3.47	37.76	95.05	74.00	21.05	VERTICAL Peak
2	2483.500	58.07	27.76	3.49	37.76	51.56	74.00	-22.44	VERTICAL peak
3	2488.769	58.48	27.76	3.49	37.76	51.97	74.00	-22.03	VERTICAL Peak



Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



	Freq	ReadAntenna	Cable	Preamp		Limit	Over		
	MHz	Level	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 *	2460.000	107.59	27.72	3.47	37.76	101.02	74.00	27.02	HORIZONTAL Peak
2	2483.500	49.72	27.76	3.49	37.76	43.21	54.00	-10.79	HORIZONTAL Average
3	2483.500	66.11	27.76	3.49	37.76	59.60	74.00	-14.40	HORIZONTAL peak
4	2485.243	49.75	27.76	3.49	37.76	43.24	54.00	-10.76	HORIZONTAL Average
5	2485.243	66.14	27.76	3.49	37.76	59.63	74.00	-14.37	HORIZONTAL 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 (2020) Section 6.4&6.5

Limit:

Test Distance: 3 m

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: 24.4 °C

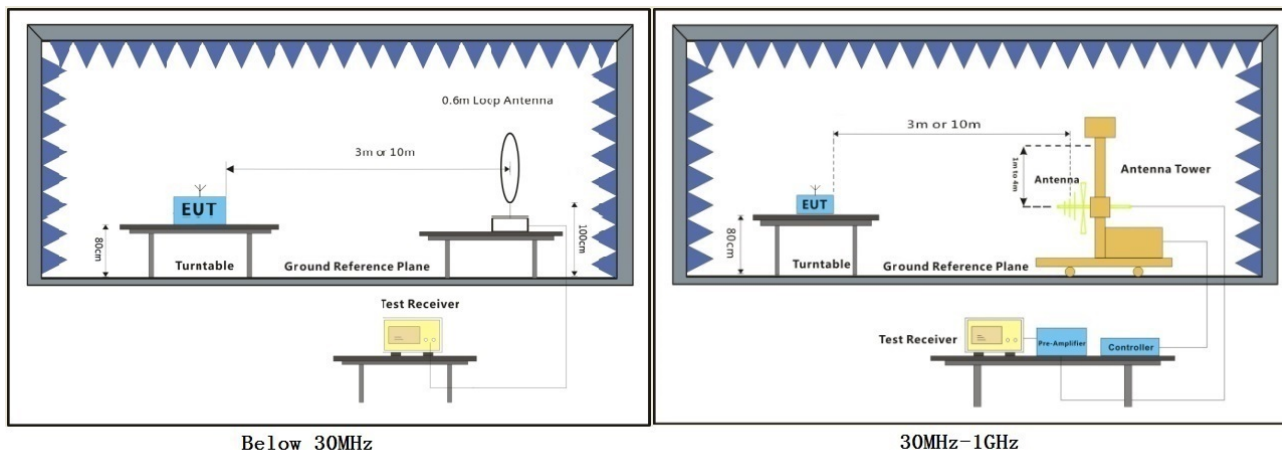
Humidity: 51.4 % RH

Atmospheric Pressure: 1010 mbar

7.4.2 Test Mode Description

Pre-scan /	Mode	Description
Final test	Code	
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.4.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz

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.



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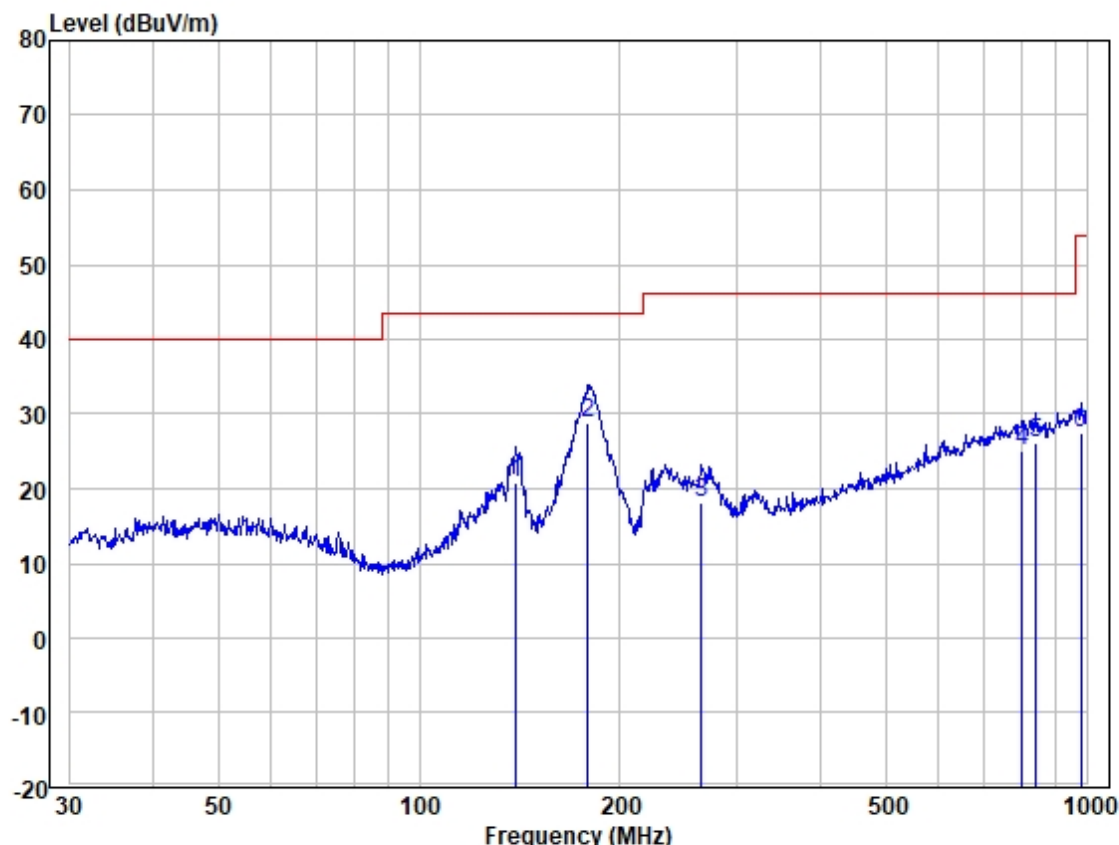
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中国·广东·广州高新技术产业开发区科学城科珠路198号 邮编: 510663

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t (86-20) 82155555 sgs.china@sgs.com

Test Mode: 00; Polarity: Horizontal

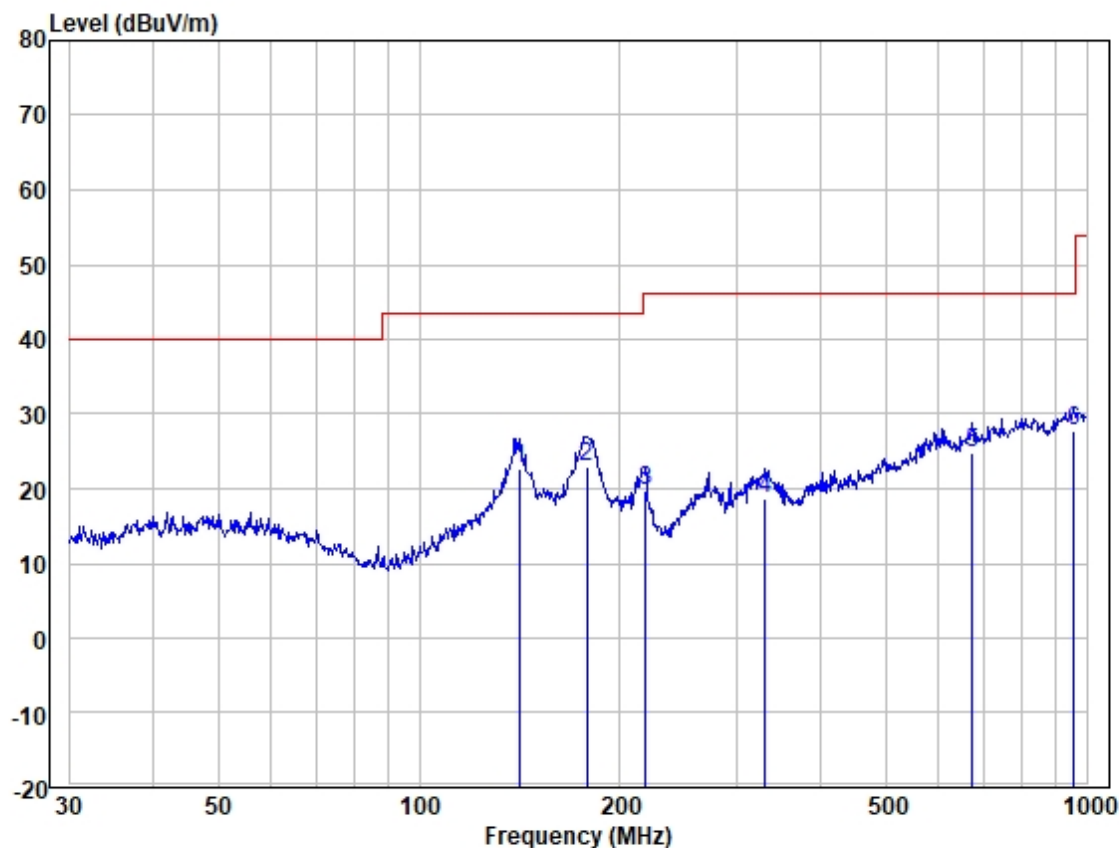


Site : 966 Chamber
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	139.851	34.09	18.69	0.64	32.73	20.69	43.52	-22.83	HORIZONTAL	QP
2	178.758	43.27	17.68	0.75	32.80	28.90	43.52	-14.62	HORIZONTAL	QP
3	264.746	31.98	18.10	0.93	32.86	18.15	46.02	-27.87	HORIZONTAL	QP
4	798.980	26.08	28.83	1.66	31.61	24.96	46.02	-21.06	HORIZONTAL	QP
5	839.182	26.82	29.04	1.69	31.52	26.03	46.02	-19.99	HORIZONTAL	QP
6	979.180	26.28	30.16	1.83	30.68	27.59	53.98	-26.39	HORIZONTAL	QP



Test Mode: 00; Polarity: Vertical



Site : 966 Chamber
 Job :
 Model :
 Power :
 Test Mode :

	Freq	Read Level	Antenna Factor	Cable Loss	Preamplifier Factor	Measured Level	Limit Line	Over Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	141.826	36.11	18.78	0.64	32.74	22.79	43.52	-20.73	VERTICAL	QP
2	178.133	37.42	17.68	0.75	32.80	23.05	43.52	-20.47	VERTICAL	QP
3	218.309	36.32	15.51	0.81	32.82	19.82	46.02	-26.20	VERTICAL	QP
4	330.195	30.34	20.10	1.01	32.87	18.58	46.02	-27.44	VERTICAL	QP
5	672.845	28.37	26.77	1.52	31.99	24.67	46.02	-21.35	VERTICAL	QP
6	955.438	26.58	30.03	1.81	30.75	27.67	46.02	-18.35	VERTICAL	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 (2020) Section 6.6

Limit:

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

7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 25.7 °C

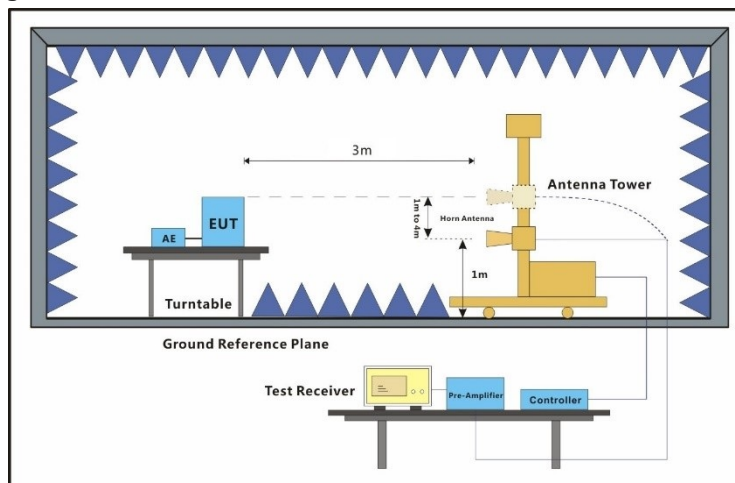
Humidity: 61.2 % RH

Atmospheric Pressure: 1010 mbar

7.5.2 Test Mode Description

Pre-scan / Final test	Mode Code	Description
Final test	00	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.



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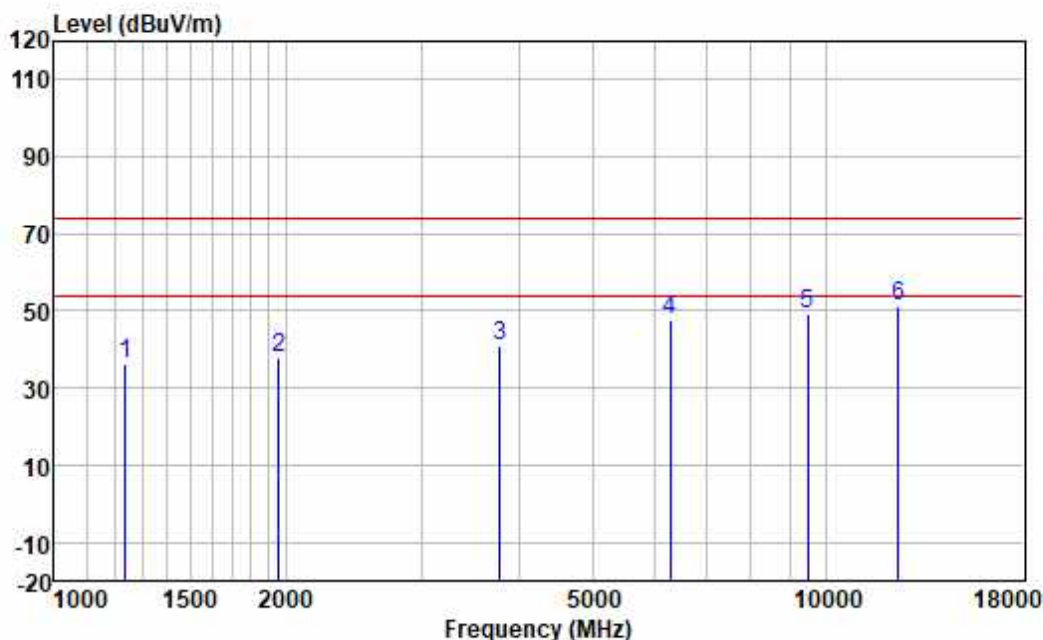
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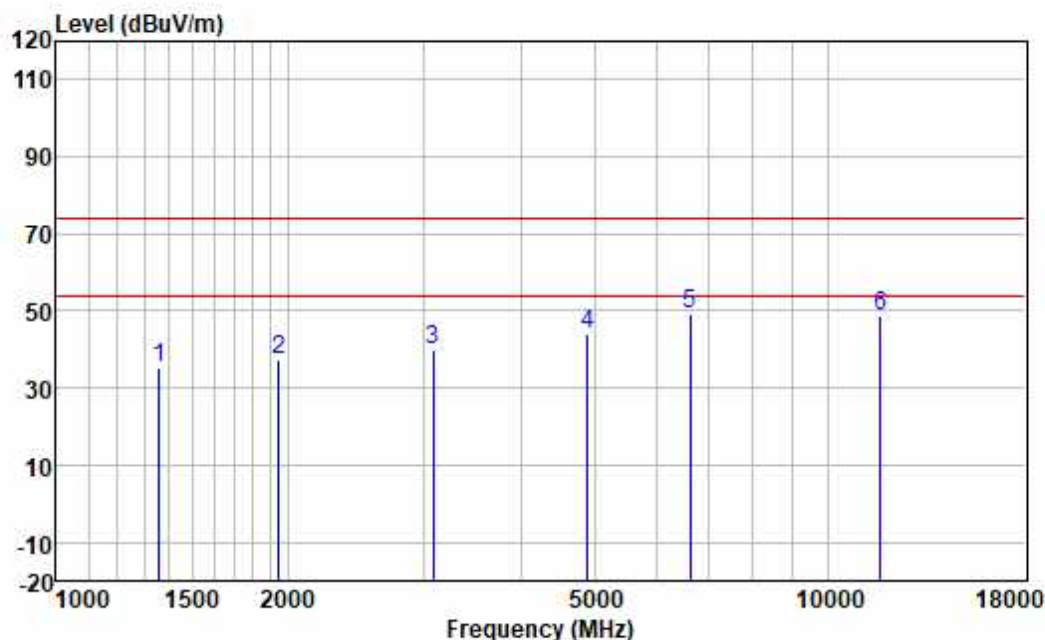
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1238.483	47.00	25.34	2.49	38.64	36.19	74.00	-37.81	VERTICAL	Peak
2	1955.344	45.94	26.62	3.10	37.83	37.83	74.00	-36.17	VERTICAL	Peak
3	3779.422	44.72	29.63	4.35	37.52	41.18	74.00	-32.82	VERTICAL	Peak
4	6285.695	45.62	33.64	5.57	37.11	47.72	74.00	-26.28	VERTICAL	Peak
5	9475.497	40.62	38.56	6.98	37.11	49.05	74.00	-24.95	VERTICAL	Peak
6	12433.620	40.92	39.15	7.92	36.87	51.12	74.00	-22.88	VERTICAL	Peak



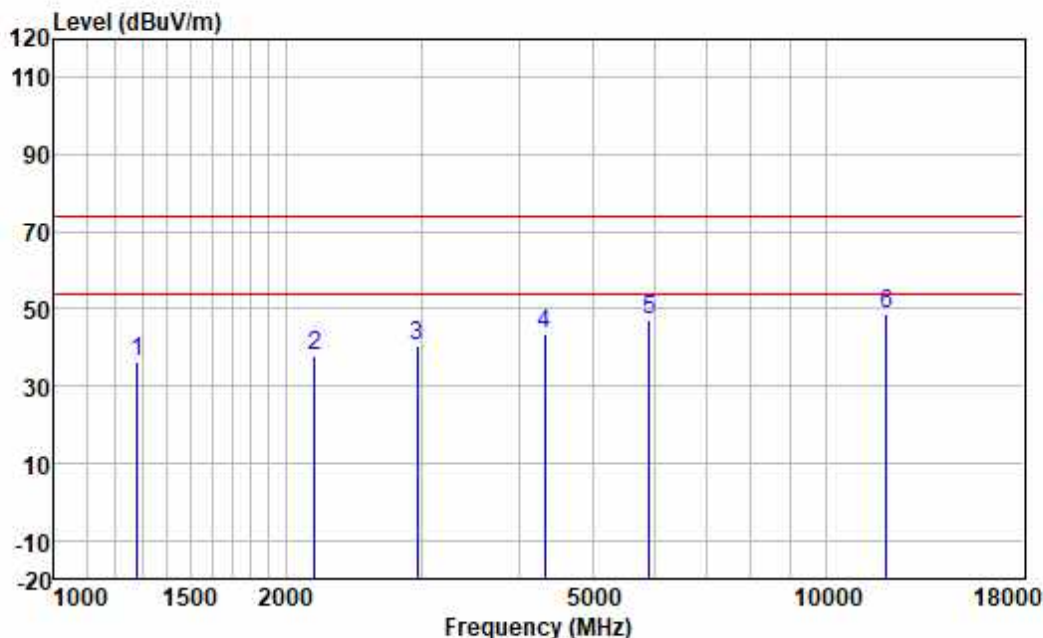
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1362.430	45.49	25.73	2.64	38.53	35.33	74.00	-38.67	HORIZONTAL	Peak
2	1944.073	45.71	26.61	3.10	37.83	37.59	74.00	-36.41	HORIZONTAL	Peak
3	3078.229	45.09	28.72	3.84	37.62	40.03	74.00	-33.97	HORIZONTAL	Peak
4	4888.151	44.83	31.65	4.86	37.35	43.99	74.00	-30.01	HORIZONTAL	Peak
5	6640.542	46.20	34.44	5.70	37.12	49.22	74.00	-24.78	HORIZONTAL	Peak
6	11701.380	37.32	40.51	7.67	36.92	48.58	74.00	-25.42	HORIZONTAL	Peak



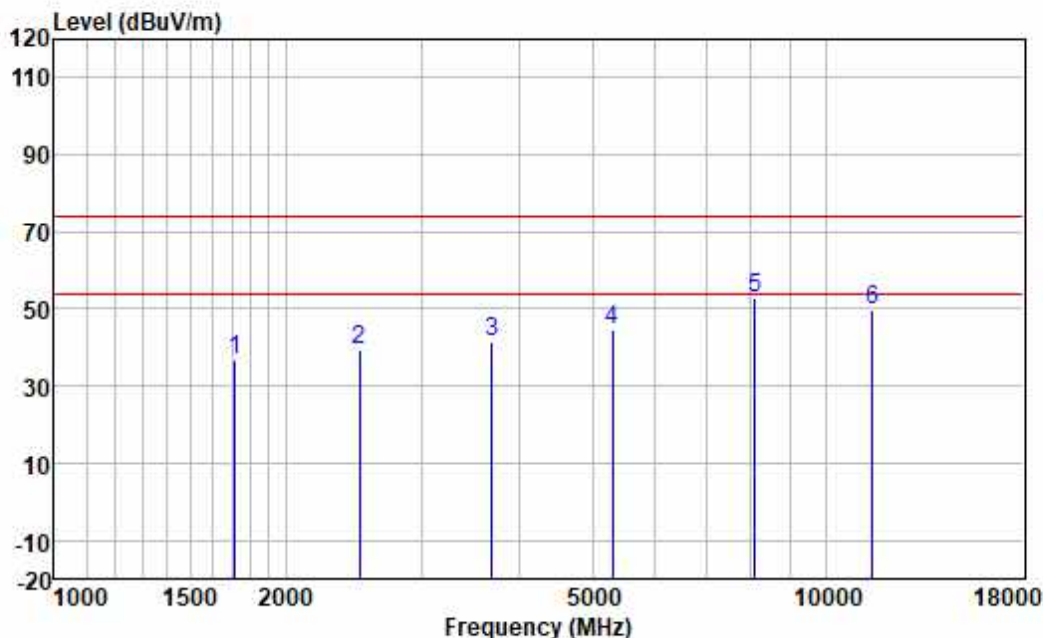
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1282.193	46.77	25.54	2.57	38.60	36.28	74.00	-37.72	VERTICAL	Peak
2	2176.047	45.58	26.98	3.23	37.79	38.00	74.00	-36.00	VERTICAL	Peak
3	2956.155	45.49	28.65	3.80	37.67	40.27	74.00	-33.73	VERTICAL	Peak
4	4329.354	45.86	30.67	4.59	37.46	43.66	74.00	-30.34	VERTICAL	Peak
5	5915.516	46.22	32.73	5.41	37.11	47.25	74.00	-26.75	VERTICAL	Peak
6	12009.760	38.10	39.86	7.73	36.90	48.79	74.00	-25.21	VERTICAL	Peak



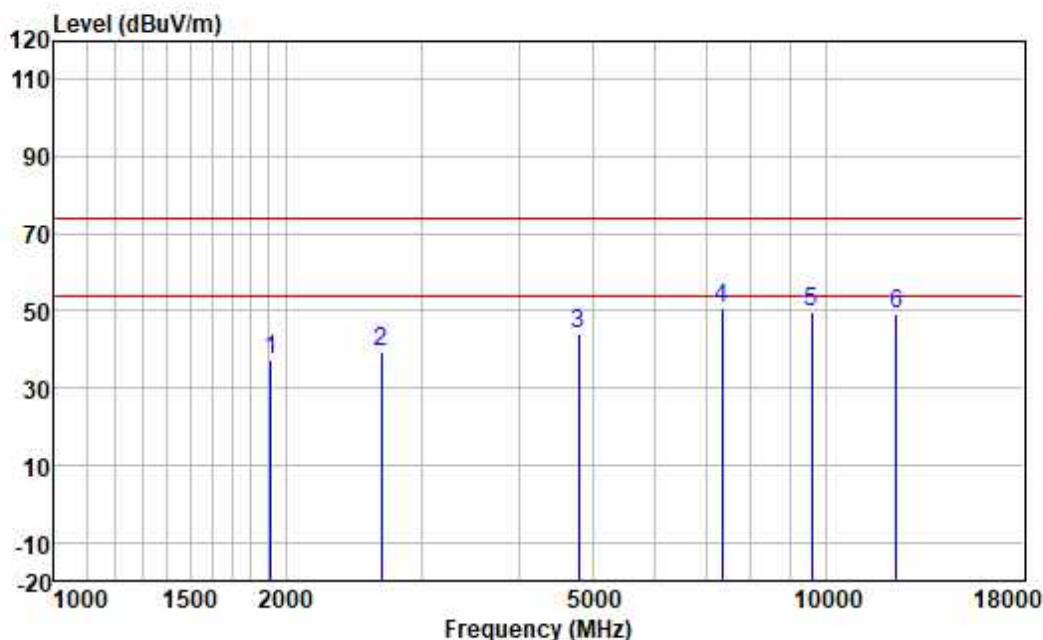
Test Mode: 00; Polarity: Horizontal; Modulation: GFSK; Channel: middle



	Freq	ReadAntenna	Cable	Preamp	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	1716.864	45.49	26.23	2.88	38.01	36.59	74.00	-37.41
2	2485.483	45.89	27.76	3.49	37.76	39.38	74.00	-34.62
3	3693.033	45.30	29.34	4.24	37.52	41.36	74.00	-32.64
4	5300.200	44.84	31.98	5.07	37.19	44.70	74.00	-29.30
5	8106.200	46.42	37.15	6.25	37.20	52.62	74.00	-21.38
6	11500.200	37.95	40.97	7.63	36.93	49.62	74.00	-24.38



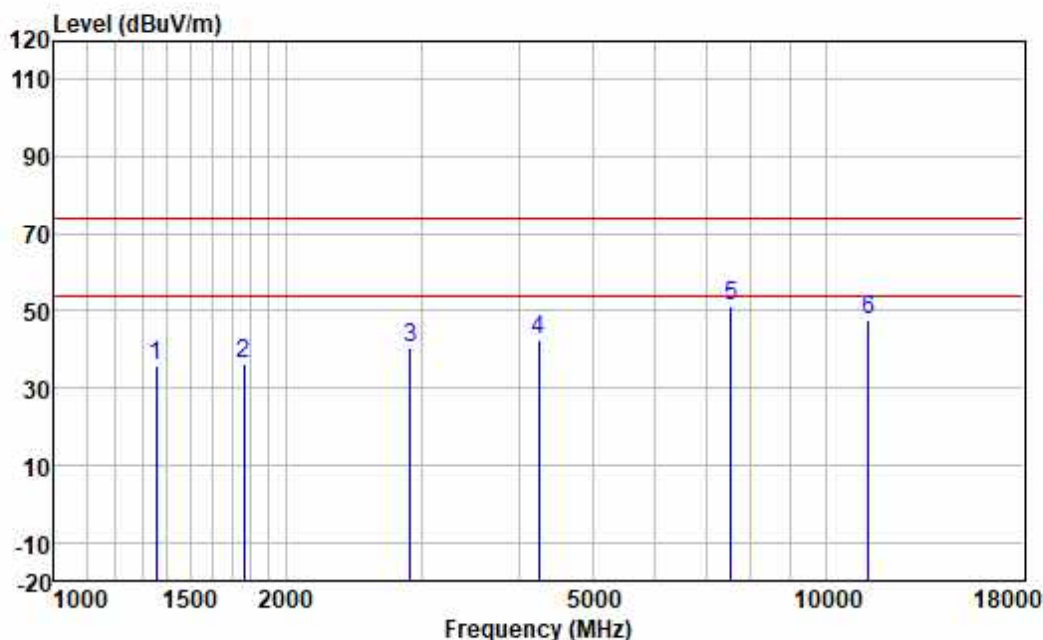
Test Mode: 00; Polarity: Vertical; Modulation: GFSK; Channel: High



	Freq	ReadAntenna	Cable	Preamp		Limit	Over			
		Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1910.650	45.56	26.59	3.08	37.85	37.38	74.00	-36.62	VERTICAL	Peak
2	2656.331	45.53	28.00	3.57	37.74	39.36	74.00	-34.64	VERTICAL	Peak
3	4790.245	44.94	31.48	4.80	37.38	43.84	74.00	-30.16	VERTICAL	Peak
4	7347.474	45.64	36.35	5.99	37.18	50.80	74.00	-23.20	VERTICAL	Peak
5	9585.684	41.37	38.67	7.03	37.11	49.96	74.00	-24.04	VERTICAL	Peak
6	12361.950	38.80	39.26	7.89	36.88	49.07	74.00	-24.93	VERTICAL	Peak



Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



		ReadAntenna		Cable	Preamp		Limit	Over		
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1354.577	46.22	25.72	2.63	38.53	36.04	74.00	-37.96	HORIZONTAL	Peak
2	1762.112	45.13	26.38	2.97	37.96	36.52	74.00	-37.48	HORIZONTAL	Peak
3	2896.945	45.62	28.58	3.77	37.69	40.28	74.00	-33.72	HORIZONTAL	Peak
4	4254.921	44.81	30.49	4.57	37.47	42.40	74.00	-31.60	HORIZONTAL	Peak
5	7541.114	45.89	36.75	6.04	37.19	51.49	74.00	-22.51	HORIZONTAL	Peak
6	11368.000	36.36	40.90	7.60	36.94	47.92	74.00	-26.08	HORIZONTAL	Peak



7.6 20dB Bandwidth

Test Requirement 47 CFR Part 15, Subpart C 15.215
Test Method: ANSI C63.10 (2020) Section 6.9

7.6.1 E.U.T. Operation

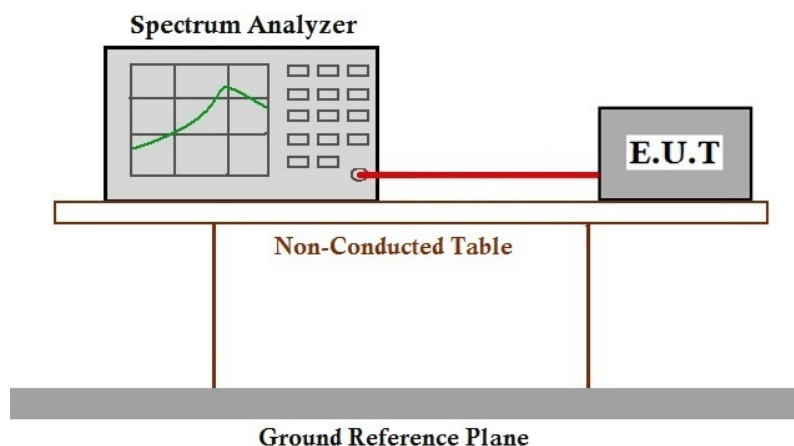
Operating Environment:

Temperature: 21.3 °C Humidity: 69.2 % RH Atmospheric Pressure: 1010 mbar

7.6.2 Test Mode Description

Pre-scan /	Mode	Description
Final test	Code	
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

7.6.3 Test Setup Diagram

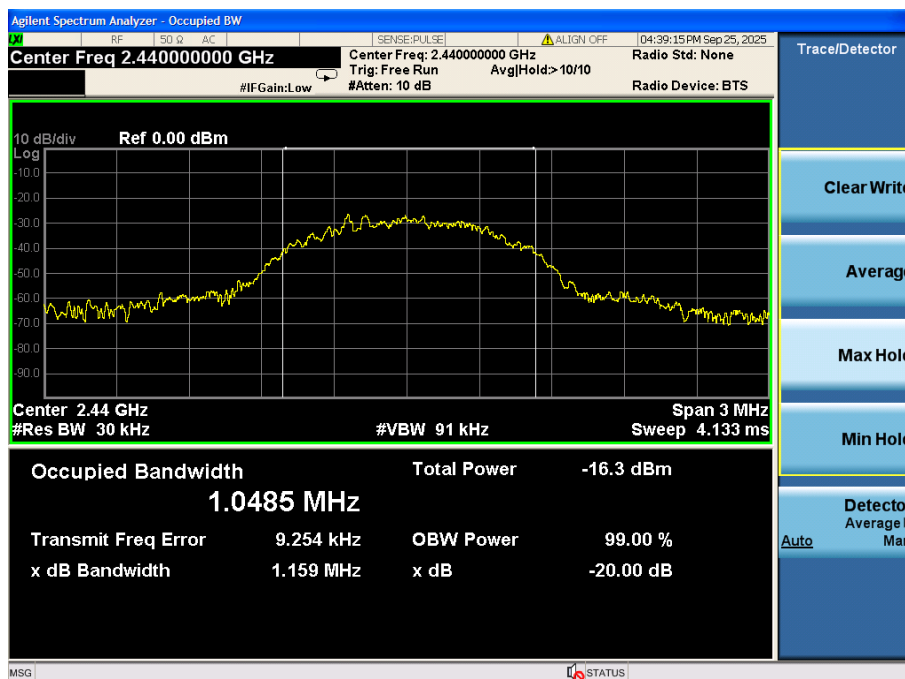


7.6.4 Measurement Procedure and Data

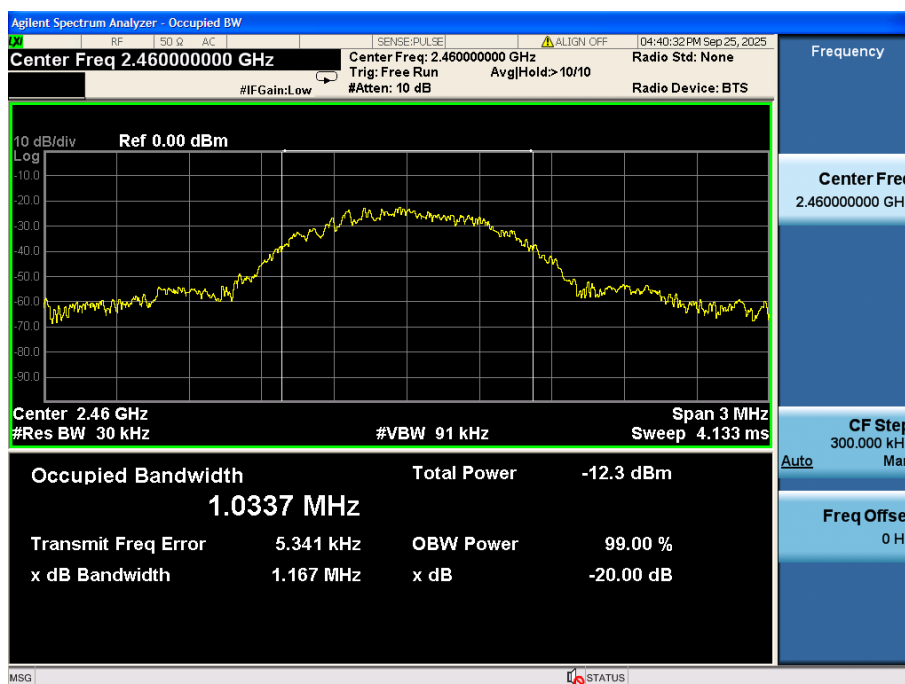
2420MHz



2440MHz



2460MHz



8 Test Setup Photo

Refer to Setup Photos for GZCR250900141302



9 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2509001413HS

- End of the Report -



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