TEST REPORT

Application No.:	GZCR2201000121AT
Applicant:	Wyze Labs, Inc.
Address of Applicant:	5808 Lake Washington Blvd NE Ste 300 Kirkland Washington 98033 United States
Manufacturer:	Wyze Labs, Inc.
Address of Manufacturer:	5808 Lake Washington Blvd NE Ste 300 Kirkland Washington 98033 United States
Equipment Under Test (EUT):	
EUT Name:	WYZE CHIME
Model No.:	WDBC1
Trade Mark:	WYZE
Standard(s) :	47 CFR Part 15, Subpart C 15.249
Date of Receipt:	2022-03-02
Date of Test:	2022-03-03 to 2022-03-10
Date of Issue:	2022-05-09
Test Result:	**Pass***

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

Kobe Jian
EMC Laboratory Manager

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		*2022-05-09*		*Original*

Authorized for issue by:				
		Curry Wu/Project Engineer		
		Ricky Liu/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 (2013) Section 6.2	47 CFR Part 15, Subpart C 15.207	Pass
20dB Bandwidth		ANSI C63.10 (2013) Section 6.9	47 CFR Part 15, Subpart C 15.215	Pass
Field Strength of the Fundamental Signal (15.249(a))		ANSI C63.10 (2013) Section 6.5&6.6	47 CFR Part 15, Subpart C 15.249(a)	Pass
Restricted Band Around Fundamental Frequency		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&6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	Pass
Radiated Emissions (above 1GHz)		ANSI C63.10 (2013) Section 6.4&6.5&6.6	47 CFR Part 15, Subpart C 15.209 & 15.249 (a),(d)	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.

3 Contents

SGS-CSTC Standards Technical Services Co., Ltd. Guangzhou Branch Testing Center, EEC Laboratory.
No.198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663 t (86–20) 82155555 f (86–20) 82075058 www.sgsgroup.com.cn
中国·广州·经济技术开发区科学城科珠路198号 邮编: 510663 t (86–20) 82155555 f (86–20) 82075058 sgs.china@sgs.com

4 General Information

4.1 Details of E.U.T.

Power Supply: AC 100-240V 50/60Hz 0.1A
Operation Frequency: 906.6-907MHz
Modulation Type: GFSK
Number of Channels: 3
Antenna Type: FPC Antenna
Antenna Gain: 1.5dBi

Remark: EUT was tested at 120VAC, 50 / 60Hz and 240VAC, 50 / 60Hz, and only the worst data 120VAC, 60Hz were retained in the report.

4.2 Description of Support Units

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

4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Conducted Emissions at AC Power Line (150kHz-30MHz)	±2.76dB
20dB Bandwidth	± 3%
Field Strength of the Fundamental Signal (15.249(a))	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m);± 4.52dB (1GHz-6GHz);
Restricted Band Around Fundamental Frequency	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m);± 4.52dB (1GHz-6GHz);
Radiated Emissions (below 1GHz)	±5.00dB (30MHz-1GHz; 3m);±4.38dB (30MHz-1GHz; 10m)
Radiated Emissions (above 1GHz)	± 4.52dB (1GHz-6GHz);± 4.54dB (above 6GHz)

4.4 Test Location

All tests were performed at:

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

198 Kezhu Road, Scientech Park, Guangzhou Economic & Technology Development District, Guangzhou, China 510663

Tel: +86 20 82155555 Fax: +86 20 82075059

No tests were sub-contracted.

4.5 Test Facility

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

- **NVLAP (Lab Code: 200611-0)**

SGS-CSTC Standards Technical Services Co., Ltd., Guangzhou EMC Laboratory is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP/NIST). NVLAP Code: 200611-0.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

- **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.

- **CNAS (Lab Code: L0167)**

SGS-CSTC Standards Technical Services Co., Ltd., EMC Laboratory has been assessed and in compliance with CNAS-CL01:2018 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2017 General Requirements) for the Competence of Testing Laboratories.

- **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

5 Equipment List

Conducted Emissions at AC Power Line (150kHz-30MHz)					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Shielding Room	ChangZhou ZhongYu	8m x 3m x 3.8m	EMC0306	N/A	N/A
Two-Line V-Network	Rohde & Schwarz	ENV216	EMC0118	2021-12-23	2022-12-22
Two-Line V-Network-GZ	Rohde & Schwarz	ENV216	EMC2135	2021-09-24	2022-09-23
Coaxial Cable	HangTianXing	2m	EMC0107	2020-09-09	2022-09-08
EMI Test Receiver(9kHz-3.6GHz)	Rohde & Schwarz	ESR3	EMC2221	2021-06-01	2022-05-31

20dB Bandwidth					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
EXA Signal Analzer(10Hz-44GHz)	Agilent Technologies	N9010A	EMC2138	2021-09-16	2022-09-15
6dB Attenuator	HP	8491A	EMC2062	2020-04-15	2022-04-14
MI CABLE	SGS-EMC	0.8M	EMC2136	2021-11-01	2023-11-01
MI CABLE	SGS-EMC	0.8M	EMC2137	2021-11-01	2023-11-01
Test Software	TST	V2.0	GZE100-78	N/A	N/A

Field Strength of the Fundamental Signal (15.249(a))					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2021-09-25	2024-09-24
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2020-04-16	2022-04-15
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25

Restricted Band Around Fundamental Frequency					
Equipment	**Manufacturer**	**Model No**	**Inventory No**	**Cal Date**	**Cal Due Date**
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2021-09-25	2024-09-24
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18

Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2020-04-16	2022-04-15
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25

Radiated Emissions (below 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable	HangTianXing	N/A	EMC0542	2020-09-09	2022-09-08
Trilog Broadband Antenna(25MHz-1GHz)-Lab	SCHWARZBECK MESS-ELEKTRONIK	VULB 9168	SEM003-18	2021-09-25	2024-09-24
Amplifier(9kHz-1.3GHz)	HP	8447F	EMC2065	2021-05-19	2022-05-18
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2020-04-16	2022-04-15
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2019-10-20	2022-10-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
EMI Test Receiver(1Hz-8GHz)	Rohde & Schwarz	ESW8	EMC2220	2021-05-26	2022-05-25

Radiated Emissions (above 1GHz)

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Chamber cable(Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2020-09-09	2022-09-08
Horn Antenna(1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2019-09-25	2022-09-24
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2021-12-17	2022-12-16
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2021-12-17	2022-12-16
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2020-12-20	2023-12-19
MXE EMI Receiver(10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2021-11-01	2022-10-31
EXA Signal Analyzer(10Hz-44GHz)	Keysight	N9010A	EMC2138	2021-09-16	2022-09-15
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

General used equipment

Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2021-07-05	2022-07-05
DMM	Fluke	73	EMC0007	2021-07-05	2022-07-05

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 is 1.5dBi.

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 (2013) 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

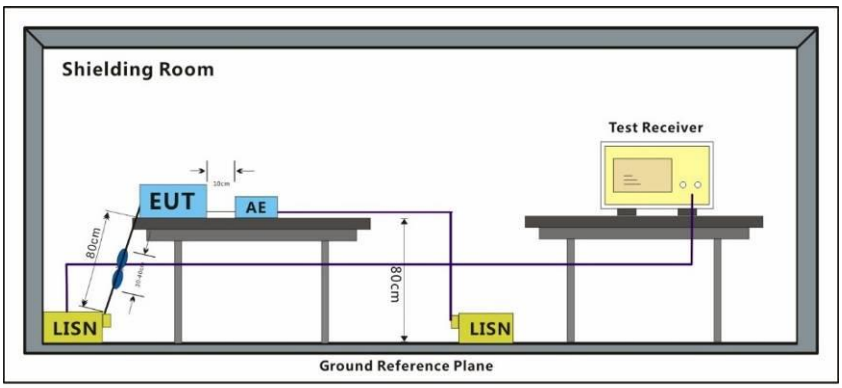
Operating Environment:

Temperature: 21.8 °C Humidity: 48.6 % RH Atmospheric Pressure: 1003 mbar

7.1.2 Test Mode Description

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

7.1.3 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.

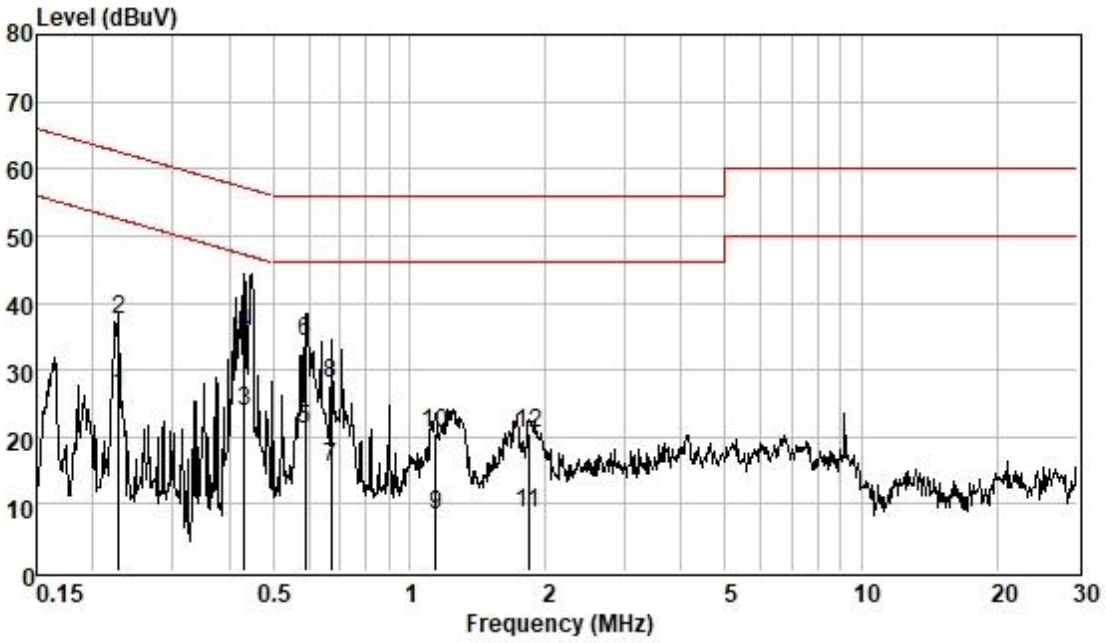
3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane.

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: LISN=Read Level+ Cable Loss+ LISN Factor

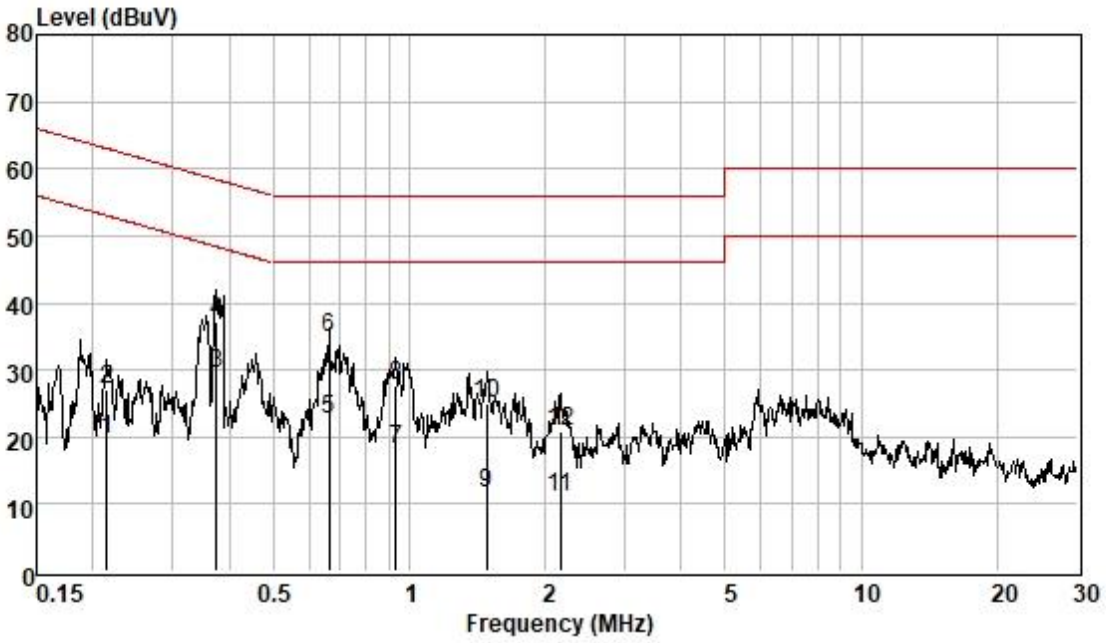
Test Mode: 00; Line: Live line



Pol :LINE
Mode :
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.228	16.51	0.06	9.57	26.14	52.52	-26.38	Average
2	0.228	27.82	0.06	9.57	37.45	62.52	-25.07	QP
3	0.433	14.08	0.06	9.58	23.72	47.20	-23.48	Average
4	0.433	25.72	0.06	9.58	35.36	57.20	-21.84	QP
5	0.589	11.40	0.07	9.59	21.06	46.00	-24.94	Average
6	0.589	24.58	0.07	9.59	34.24	56.00	-21.76	QP
7	0.672	5.82	0.07	9.59	15.48	46.00	-30.52	Average
8	0.672	18.33	0.07	9.59	27.99	56.00	-28.01	QP
9	1.147	-1.26	0.08	9.60	8.42	46.00	-37.58	Average
10	1.147	10.77	0.08	9.60	20.45	56.00	-35.55	QP
11	1.839	-1.17	0.11	9.60	8.54	46.00	-37.46	Average
12	1.839	10.93	0.11	9.60	20.64	56.00	-35.36	QP

Test Mode: 00; Line: Neutral Line



Pol :NEUTRAL
Mode :
Model :

	Frequenc MHz	Read Level dBuV	Cable Loss dB	LISN Factor dB	Measured Level dBuV	Limit Line dBuV	Over Limit dB	Remark
1	0.215	9.89	0.06	9.55	19.50	53.01	-33.51	Average
2	0.215	17.38	0.06	9.55	26.99	63.01	-36.02	QP
3	0.375	19.93	0.06	9.58	29.57	48.39	-18.82	Average
4	0.375	27.52	0.06	9.58	37.16	58.39	-21.23	QP
5	0.665	12.97	0.07	9.59	22.63	46.00	-23.37	Average
6	0.665	25.23	0.07	9.59	34.89	56.00	-21.11	QP
7	0.933	8.44	0.07	9.59	18.10	46.00	-27.90	Average
8	0.933	17.91	0.07	9.59	27.57	56.00	-28.43	QP
9	1.480	2.05	0.10	9.59	11.74	46.00	-34.26	Average
10	1.480	15.43	0.10	9.59	25.12	56.00	-30.88	QP
11	2.155	1.21	0.12	9.59	10.92	46.00	-35.08	Average
12	2.155	11.24	0.12	9.59	20.95	56.00	-35.05	QP

7.2 20dB Bandwidth

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

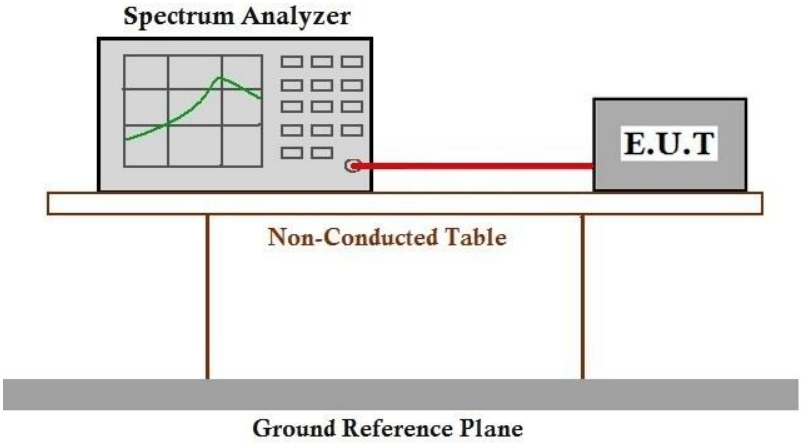
7.2.1 E.U.T. Operation

Operating Environment:
Temperature: 22.3 °C Humidity: 50.8 % RH Atmospheric Pressure: 1003 mbar

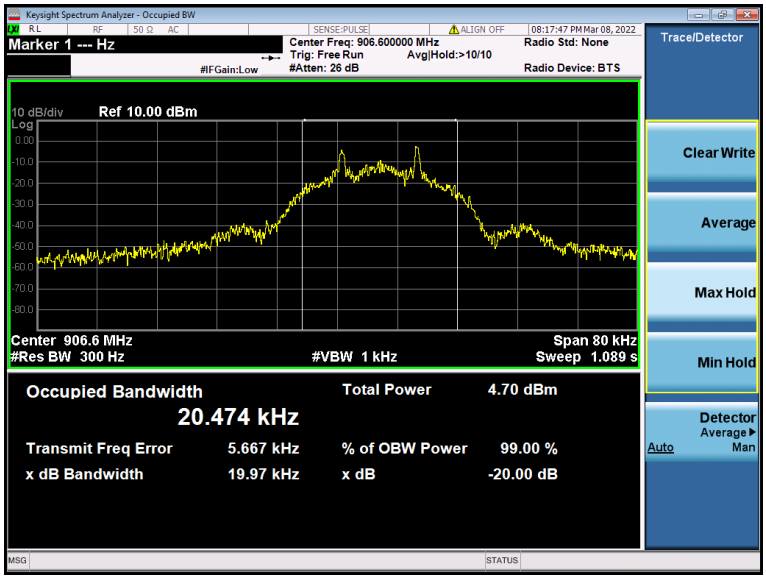
7.2.2 Test Mode Description

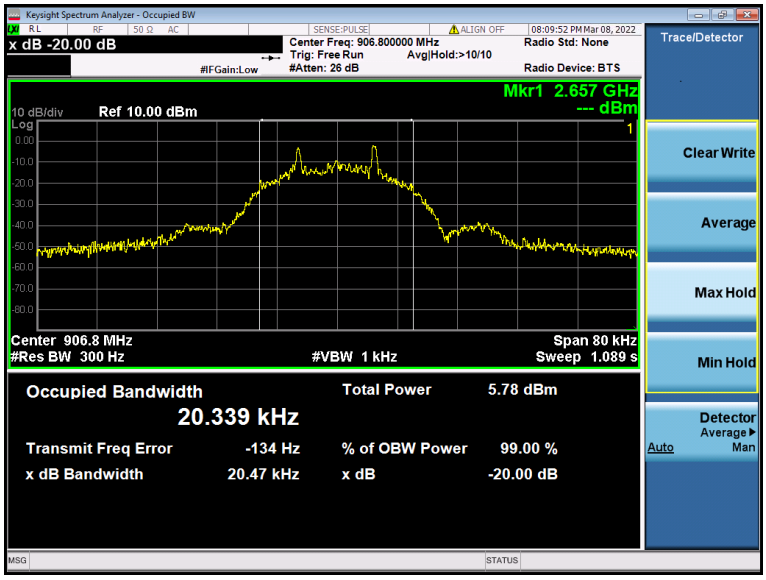
Pre-scan / Final test	Mode Code	Description
Final test	00	TX mode_Keep the EUT in transmitting with modulation mode.

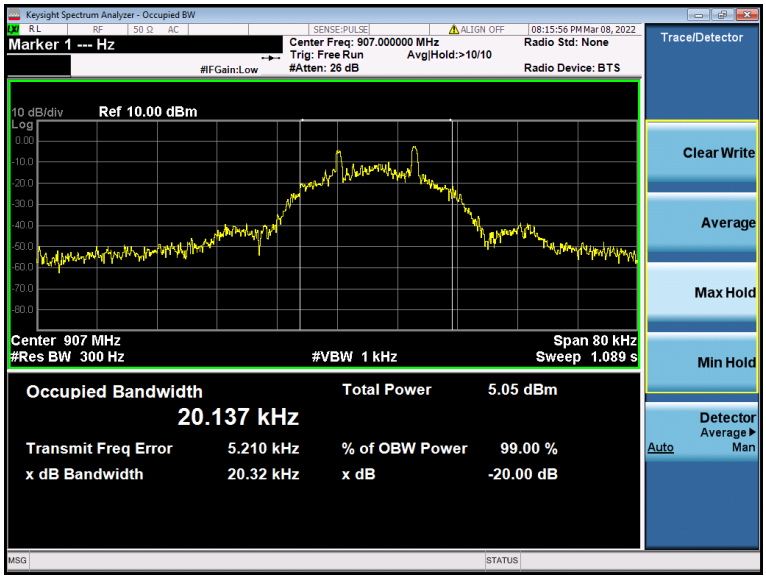
7.2.3 Test Setup Diagram



7.2.4 Measurement Procedure and Data







7.3 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

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.		

7.3.1 E.U.T. Operation

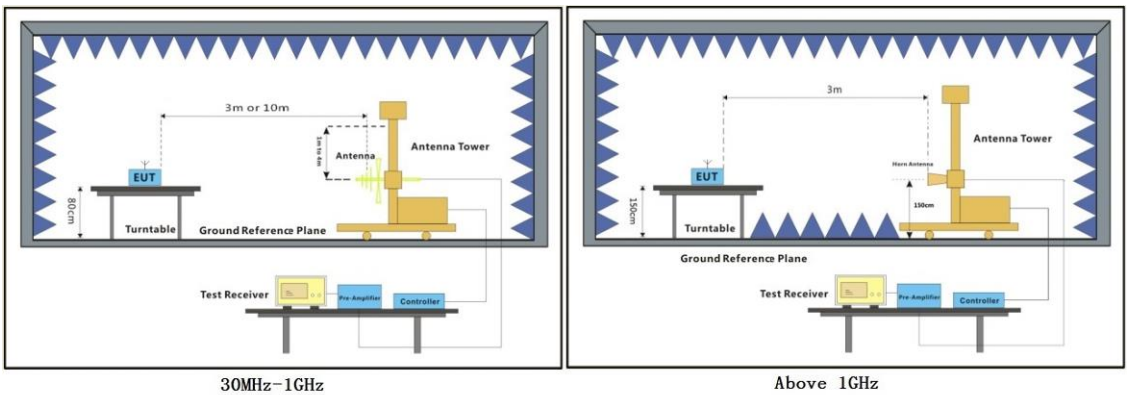
Operating Environment:

Temperature: 21.8 °C Humidity: 53.4 % RH Atmospheric Pressure: 1003 mbar

7.3.2 Test Mode Description

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

7.3.3 Test Setup Diagram



30MHz-1GHz Above 1GHz

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.

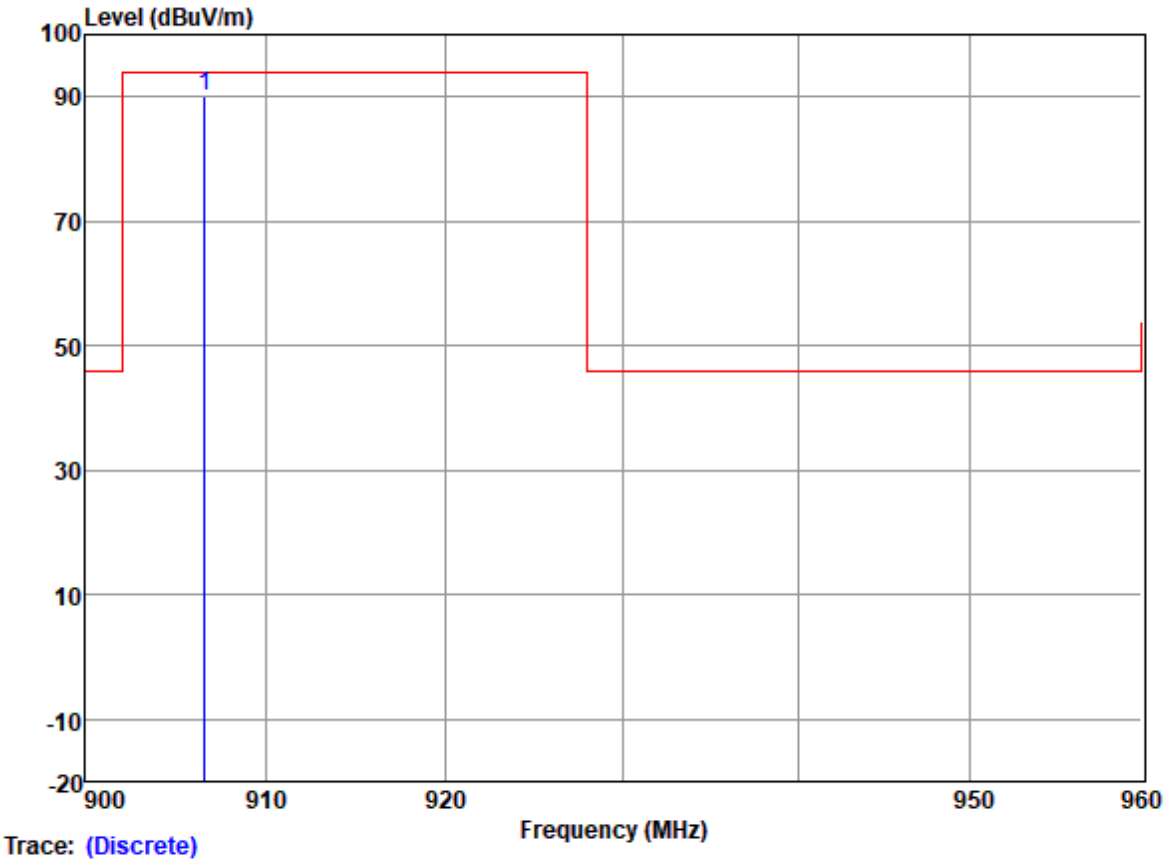
i.The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, and found the X axis positioning which it is the worst case.

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

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

Remark 2: Antenna: 3 denotes the type of antenna for above 1000MHz.

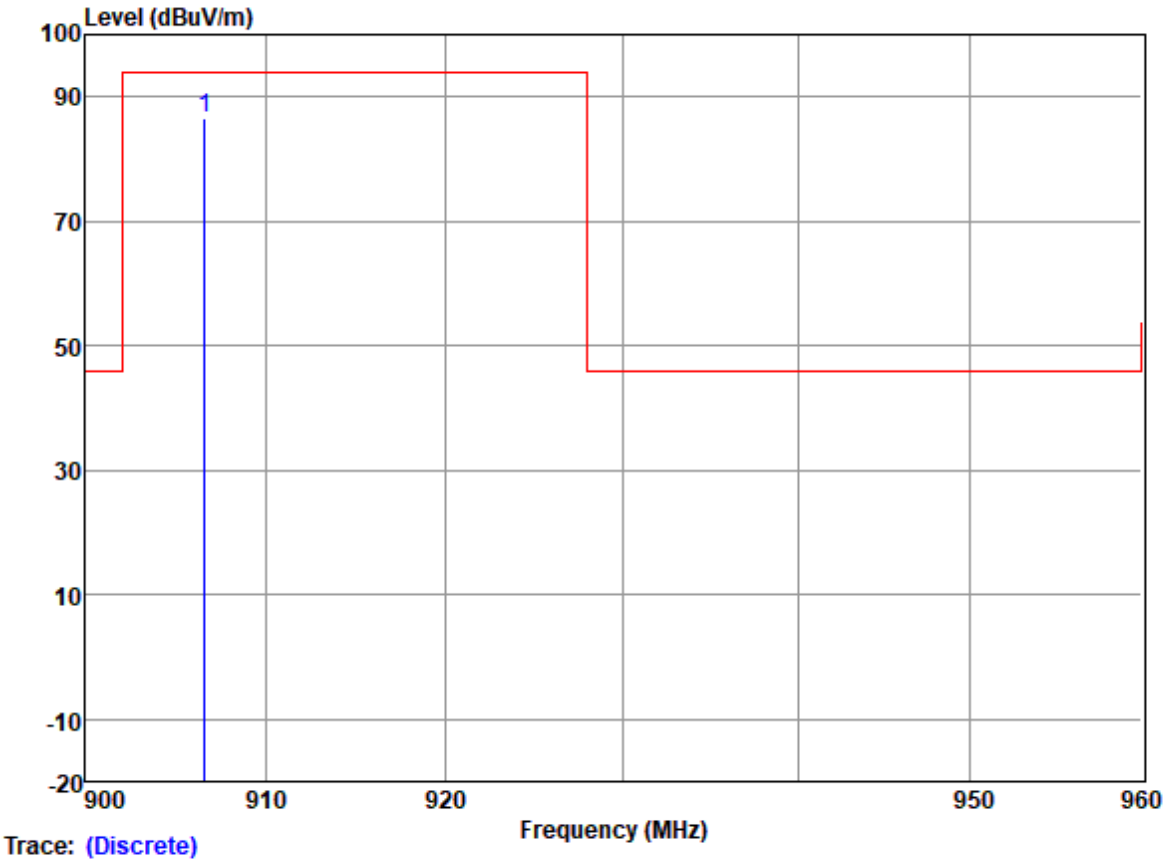
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	906.59	87.72	23.37	6.96	27.84	90.21	94.00	-3.79	HORIZONTAL	QP

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

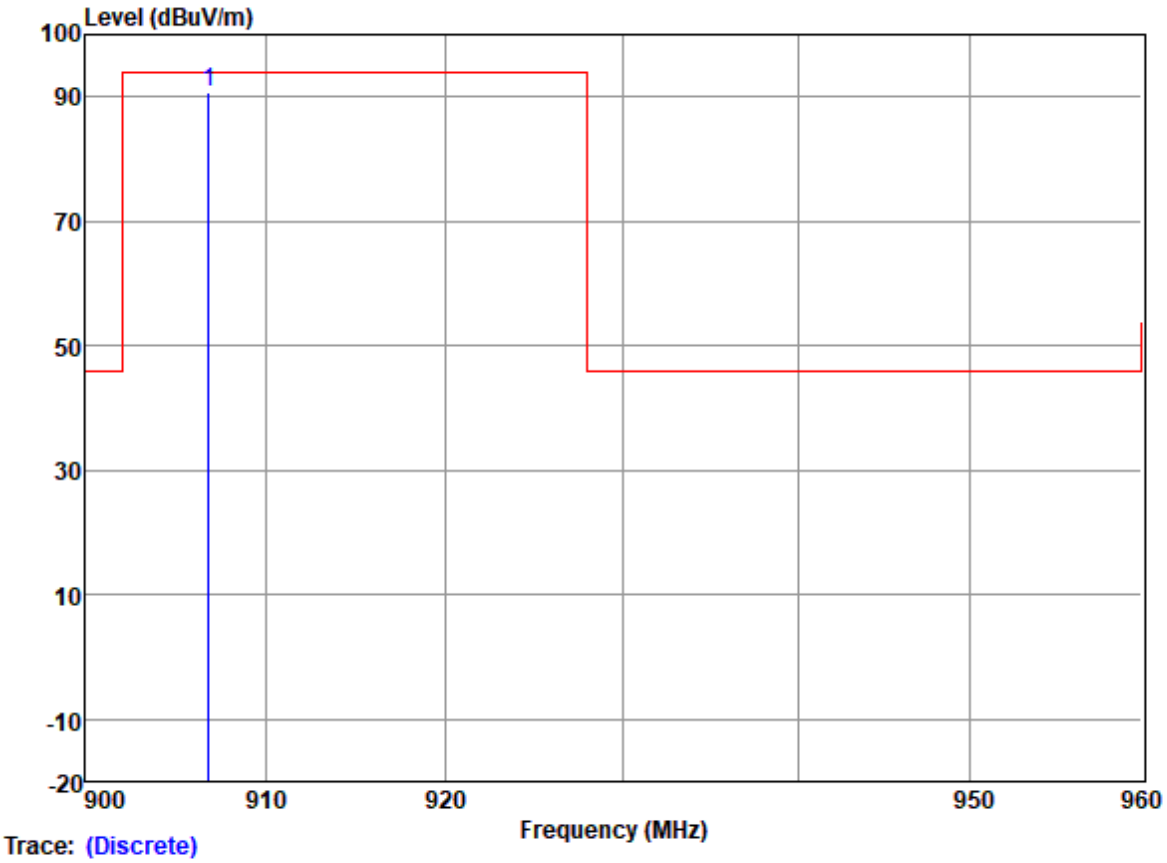


Trace: (Discrete)

Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	906.59	84.02	23.37	6.96	27.84	86.51	94.00	-7.49	VERTICAL	QP

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

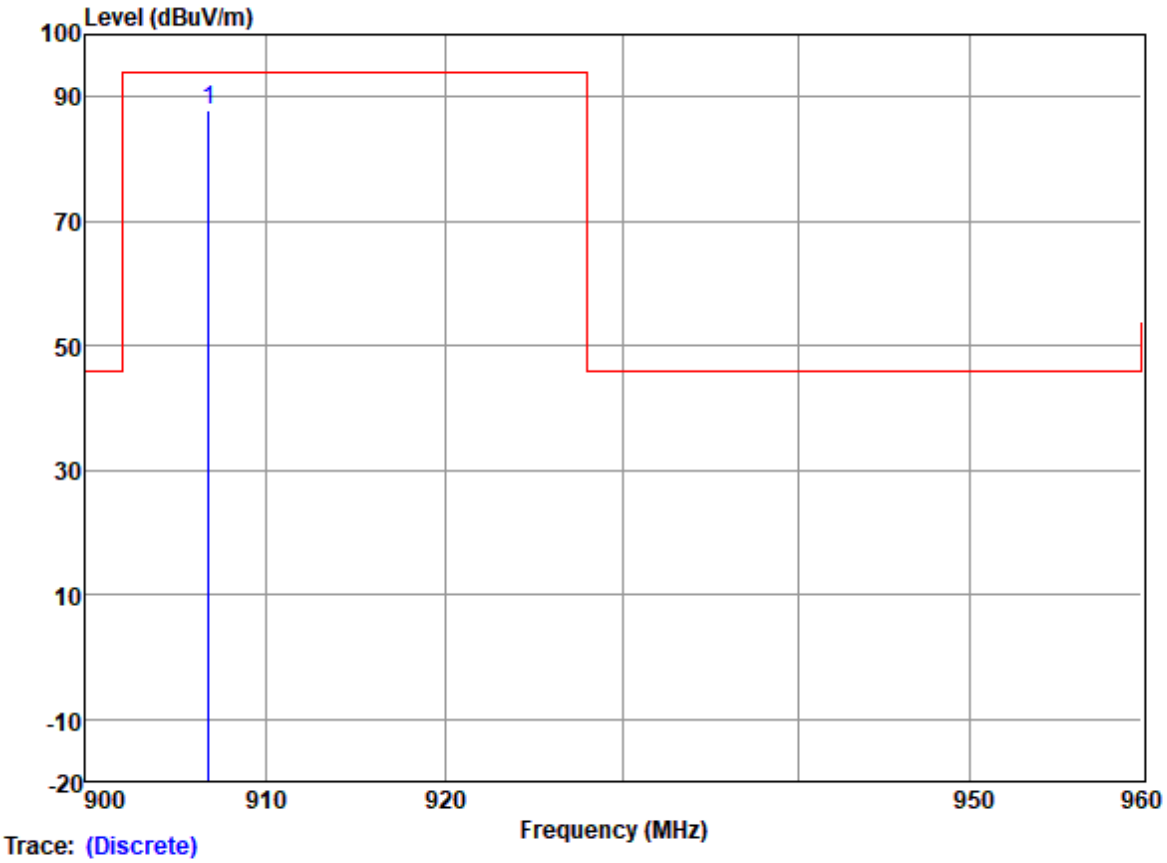


Trace: (Discrete)

Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	906.76	88.33	23.37	6.96	27.84	90.82	94.00	-3.18	HORIZONTAL	QP

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

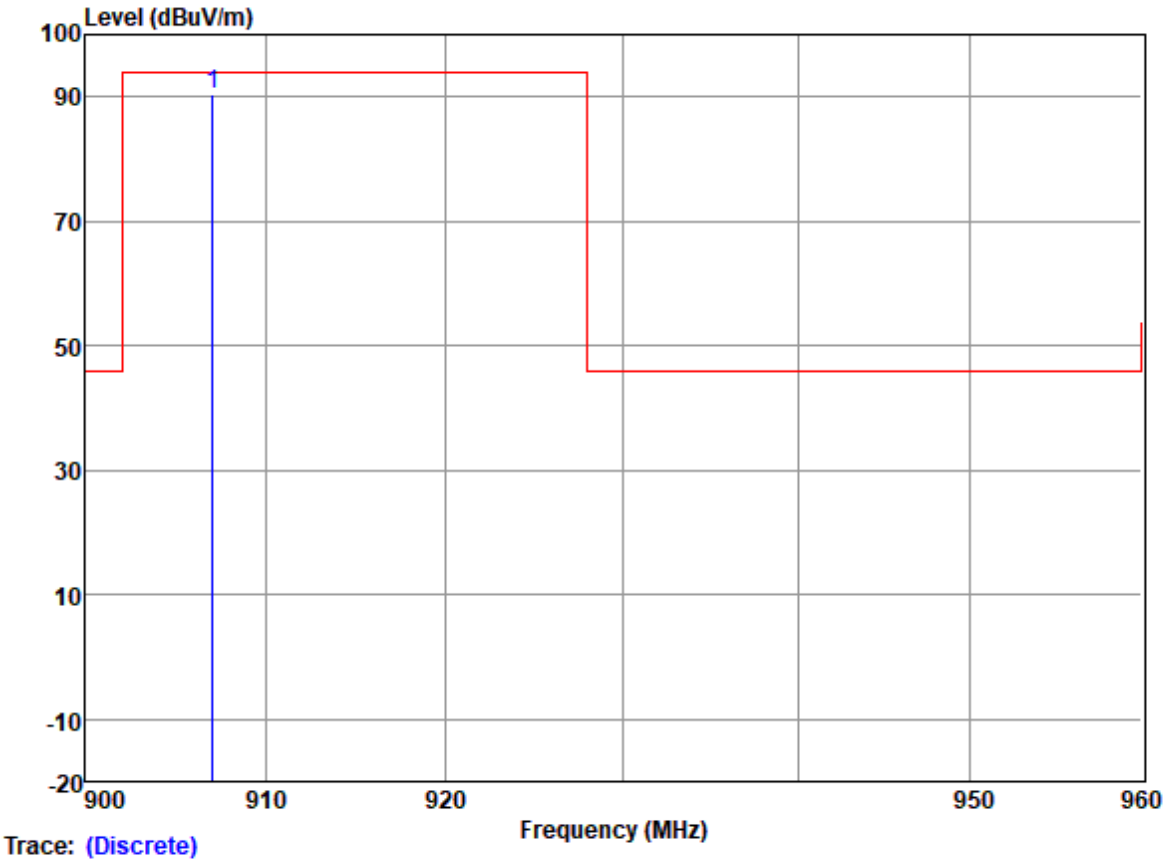


Trace: (Discrete)

Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	906.76	85.46	23.37	6.96	27.84	87.95	94.00	-6.05	VERTICAL	QP

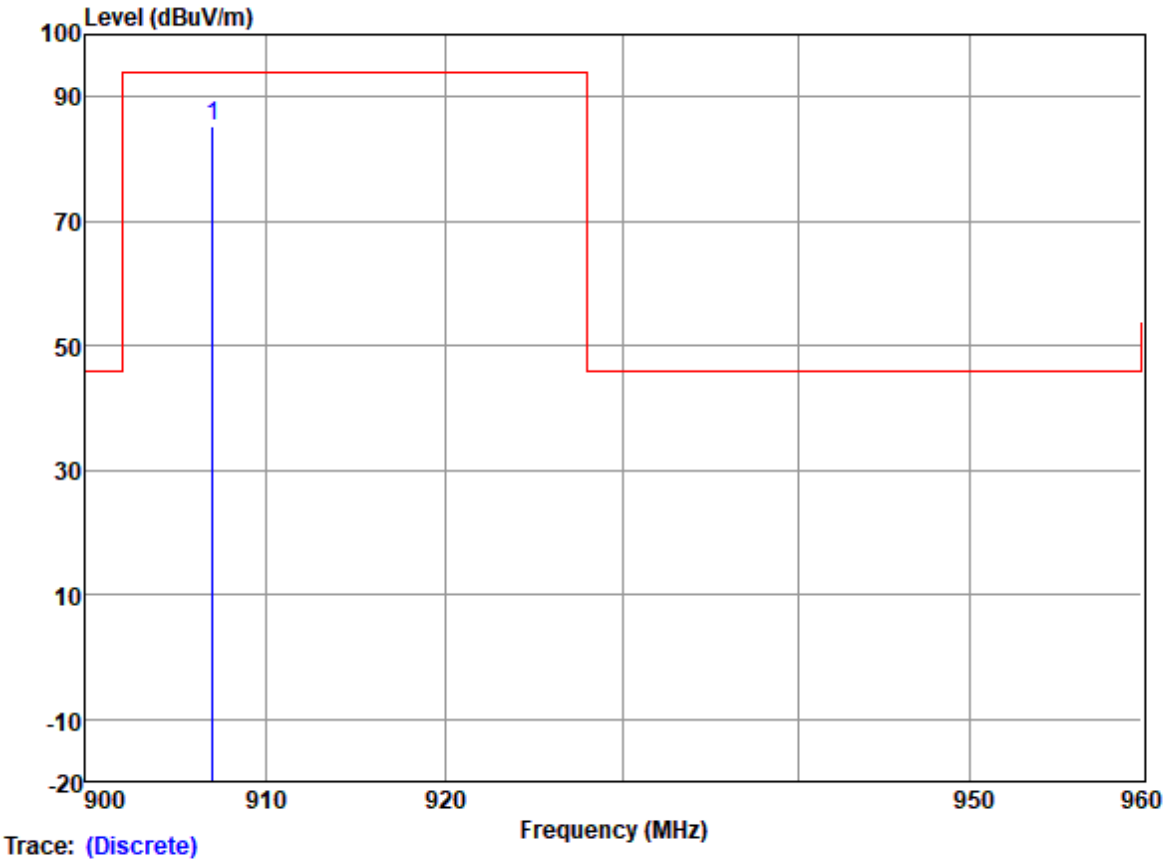
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	907.00	88.04	23.37	6.96	27.84	90.53	94.00	-3.47	HORIZONTAL	QP

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



Trace: (Discrete)

Site : SGS
Job :
Model :
Power :
Test Mode :

	Freq	Read Level	Anterna Factor	Cable Loss	Preamp Factor	Measured Level	Limit Line	Over Limit	Pol/ Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	907.00	82.94	23.37	6.96	27.84	85.43	94.00	-8.57	VERTICAL	QP

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&6.6
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30
30-88	100	40.0	QP	3
88-216	150	43.5	QP	3
216-960	200	46.0	QP	3
960-1000	500	54.0	QP	3
Above 1000	500	54.0	AV	3

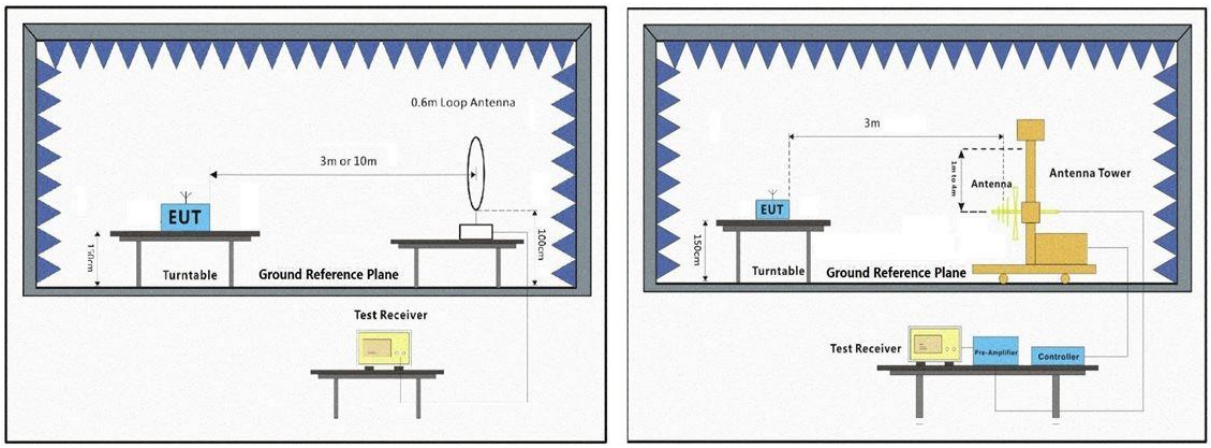
7.4.1 E.U.T. Operation

Operating Environment:
Temperature: 21.8 °C Humidity: 53.4 % RH Atmospheric Pressure: 1003 mbar

7.4.2 Test Mode Description

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

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

a. 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. 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 peak, quasi-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:

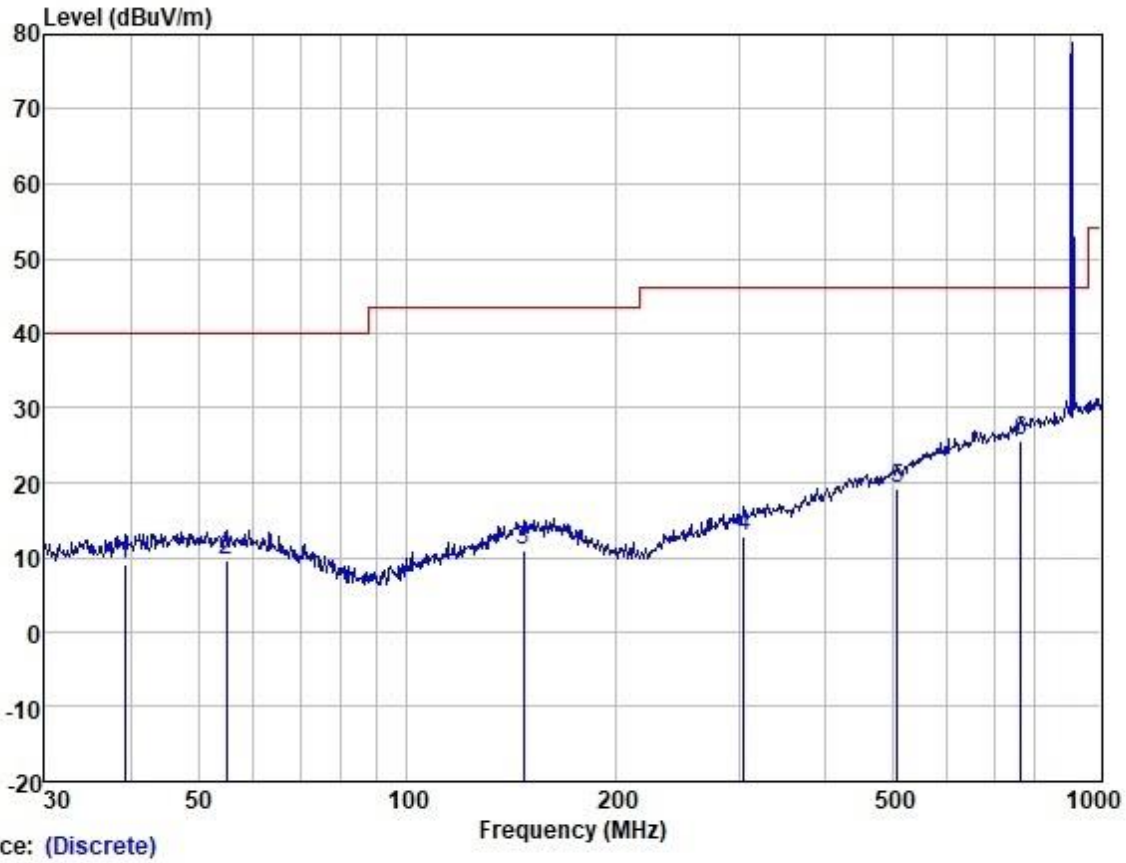
1) Through pre-scan found the worst case is the lowest channel. Only the worst case is recorded in the report.

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

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

3) Scan from 9kHz to 1 GHz, 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.

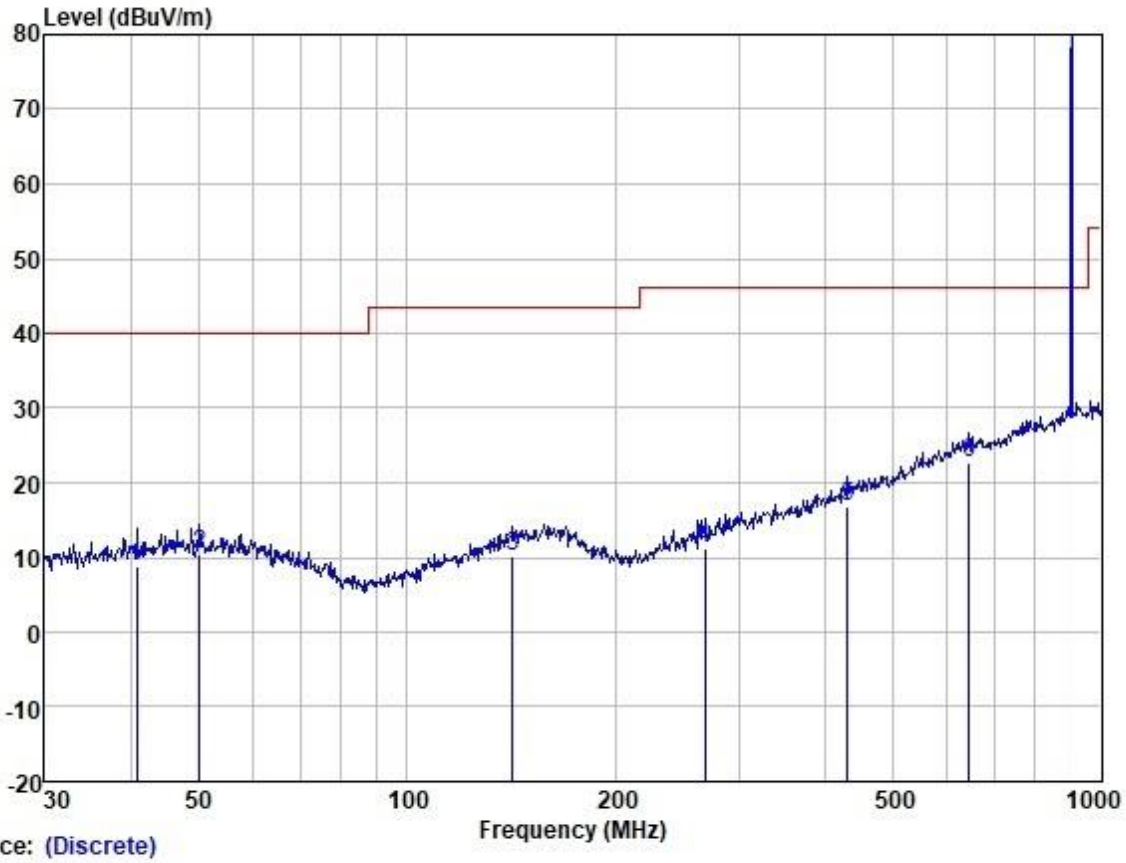
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	ReadLevel	Antenna 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	39.162	22.16	12.97	1.09	27.18	9.04	40.00	-30.96	HORIZONTAL	QP
2	54.835	22.17	13.37	1.19	27.16	9.57	40.00	-30.43	HORIZONTAL	QP
3	146.888	22.41	13.26	2.20	26.85	11.02	43.50	-32.48	HORIZONTAL	QP
4	305.680	22.91	13.38	3.21	26.58	12.92	46.00	-33.08	HORIZONTAL	QP
5	508.258	24.81	17.98	4.47	27.99	19.27	46.00	-26.73	HORIZONTAL	QP
6	766.057	25.66	22.04	6.05	28.06	25.69	46.00	-20.31	HORIZONTAL	QP

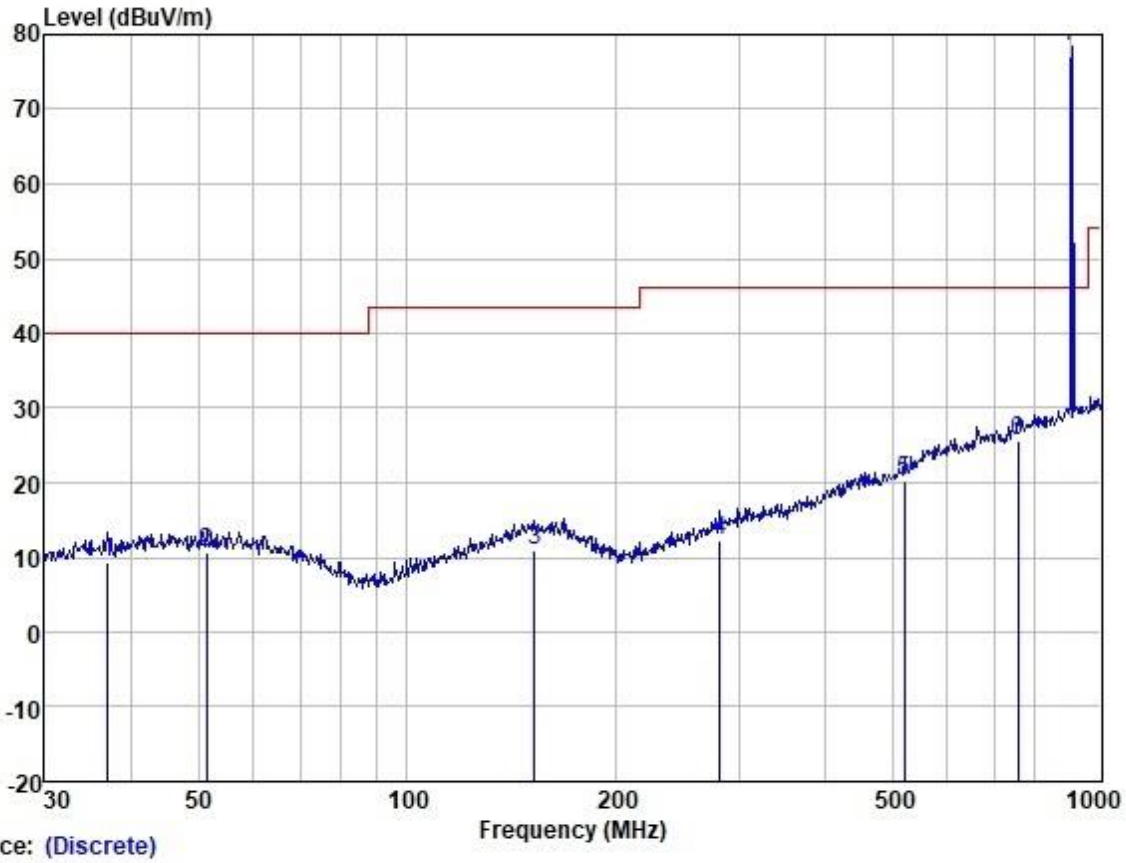
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	Read Level	Antenna 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	40.702	21.76	13.07	1.10	27.18	8.75	40.00	-31.25	VERTICAL	QP
2	50.232	22.83	13.62	1.15	27.17	10.43	40.00	-29.57	VERTICAL	QP
3	141.826	22.08	12.94	2.12	26.90	10.24	43.50	-33.26	VERTICAL	QP
4	268.485	22.45	12.22	3.04	26.58	11.13	46.00	-34.87	VERTICAL	QP
5	431.032	23.76	16.36	4.09	27.50	16.71	46.00	-29.29	VERTICAL	QP
6	645.120	25.26	20.09	5.45	28.19	22.61	46.00	-23.39	VERTICAL	QP

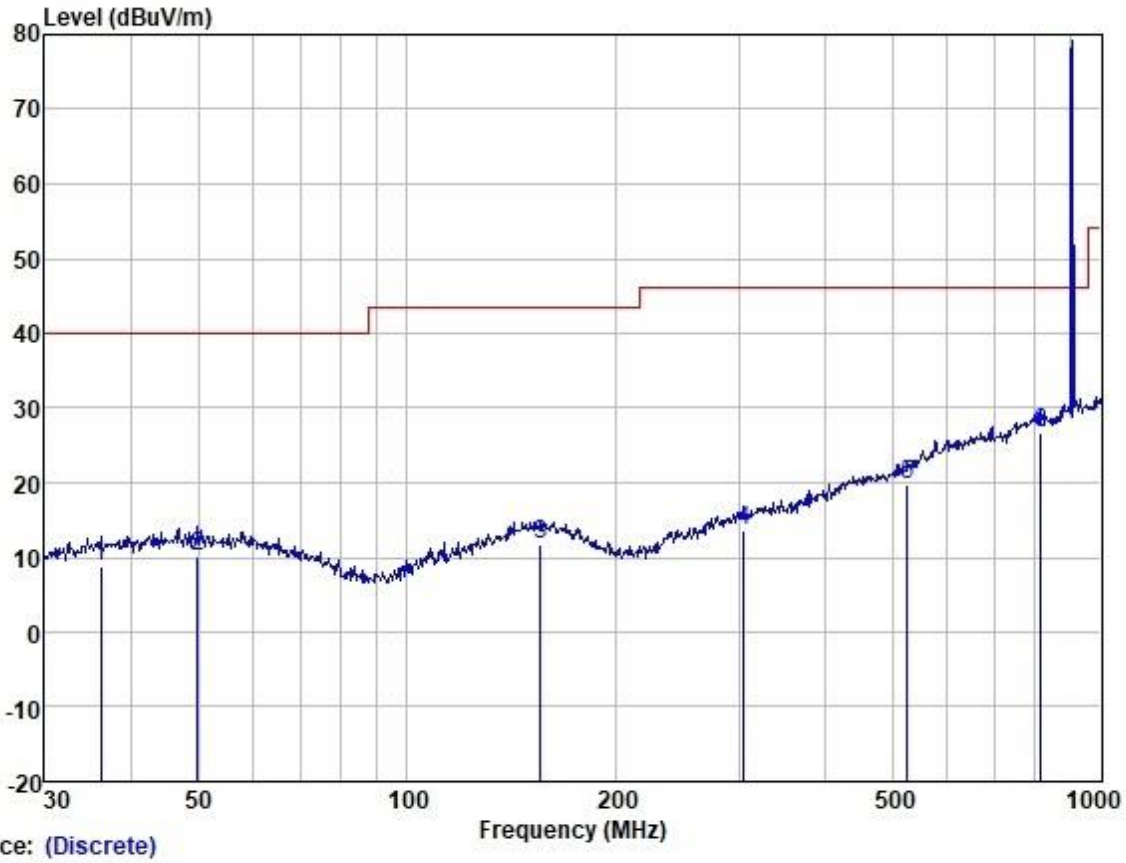
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Middle



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	Read Level	Antenna 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	37.025	22.67	12.74	1.08	27.18	9.31	40.00	-30.69	HORIZONTAL	QP
2	51.301	23.11	13.59	1.15	27.17	10.68	40.00	-29.32	HORIZONTAL	QP
3	152.664	22.25	13.35	2.26	26.82	11.04	43.50	-32.46	HORIZONTAL	QP
4	281.995	22.87	12.77	3.10	26.56	12.18	46.00	-33.82	HORIZONTAL	QP
5	520.888	25.63	18.11	4.55	28.01	20.28	46.00	-25.72	HORIZONTAL	QP
6	758.041	25.71	21.93	6.01	28.08	25.57	46.00	-20.43	HORIZONTAL	QP

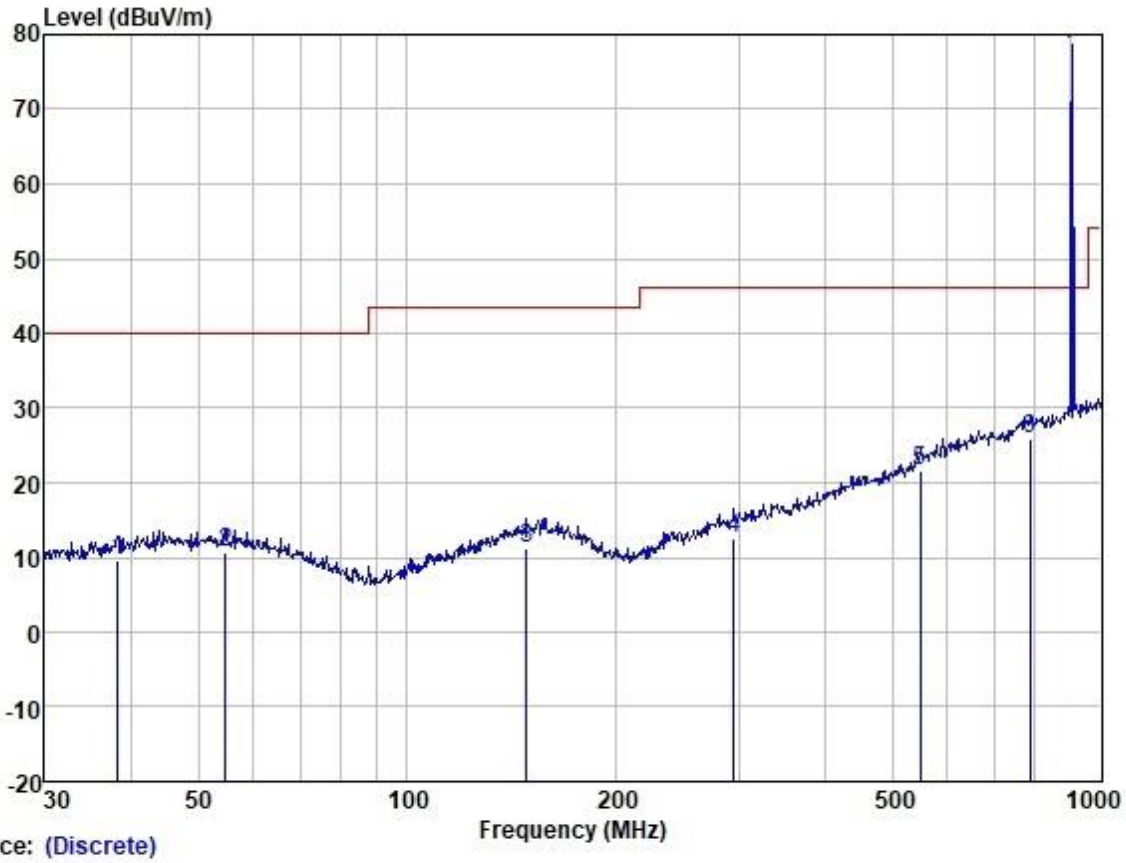
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Middle



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	ReadLevel	Antenna 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	36.127	22.37	12.64	1.07	27.18	8.90	40.00	-31.10	VERTICAL	QP
2	49.881	22.59	13.63	1.14	27.17	10.19	40.00	-29.81	VERTICAL	QP
3	155.364	23.04	13.34	2.30	26.81	11.87	43.50	-31.63	VERTICAL	QP
4	305.680	23.71	13.38	3.21	26.58	13.72	46.00	-32.28	VERTICAL	QP
5	526.397	25.07	18.07	4.60	28.03	19.71	46.00	-26.29	VERTICAL	QP
6	818.834	25.71	22.65	6.30	28.00	26.66	46.00	-19.34	VERTICAL	QP

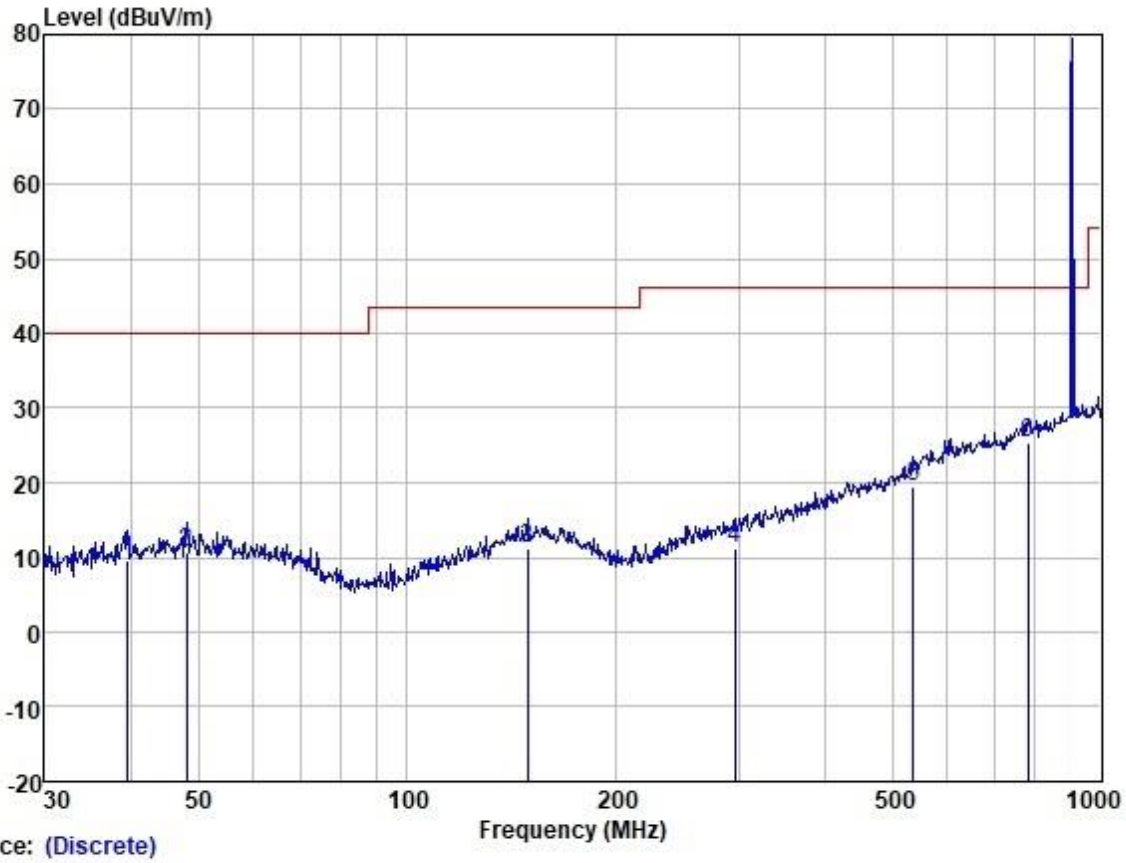
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	Freq	ReadLevel	Antenna 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	38.212	22.98	12.84	1.09	27.18	9.73	40.00	-30.27	HORIZONTAL	QP
2	54.643	23.27	13.39	1.19	27.16	10.69	40.00	-29.31	HORIZONTAL	QP
3	148.441	22.64	13.31	2.22	26.84	11.33	43.50	-32.17	HORIZONTAL	QP
4	295.147	22.74	13.10	3.15	26.55	12.44	46.00	-33.56	HORIZONTAL	QP
5	549.020	26.75	18.24	4.76	28.10	21.65	46.00	-24.35	HORIZONTAL	QP
6	790.619	25.20	22.58	6.14	28.04	25.88	46.00	-20.12	HORIZONTAL	QP

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



Trace: (Discrete)
Site : SGS
Condition:
Job :
Model :
Power :
Test Mode:

	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	39.576	22.73	12.99	1.10	27.18	9.64	40.00	-30.36	VERTICAL	QP
2	47.994	23.25	13.55	1.13	27.17	10.76	40.00	-29.24	VERTICAL	QP
3	148.963	22.37	13.32	2.22	26.84	11.07	43.50	-32.43	VERTICAL	QP
4	296.184	21.57	13.13	3.15	26.55	11.30	46.00	-34.70	VERTICAL	QP
5	535.707	24.76	18.19	4.65	28.05	19.55	46.00	-26.45	VERTICAL	QP
6	785.093	25.01	22.21	6.11	28.04	25.29	46.00	-20.71	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 (2013) Section 6.4&6.5&6.6
Measurement Distance: 3m
Limit:

Frequency(MHz)	Field strength (microvolts/meter)	Limit (dBuV/m)	Detector	Measurement Distance (meters)
0.009-0.490	2400/F(kHz)	-	-	300
0.490-1.705	24000/F(kHz)	-	-	30
1.705-30	30	-	-	30
30-88	100	40.0	QP	3
88-216	150	43.5	QP	3
216-960	200	46.0	QP	3
960-1000	500	54.0	QP	3
Above 1000	500	54.0	AV	3

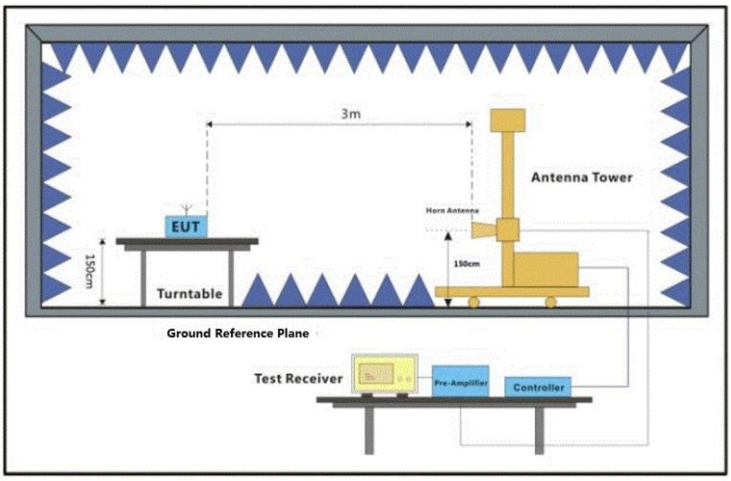
7.5.1 E.U.T. Operation

Operating Environment:
Temperature: 23.7 °C Humidity: 52.3 % RH Atmospheric Pressure: 1003 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. 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 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 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, quasi-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:

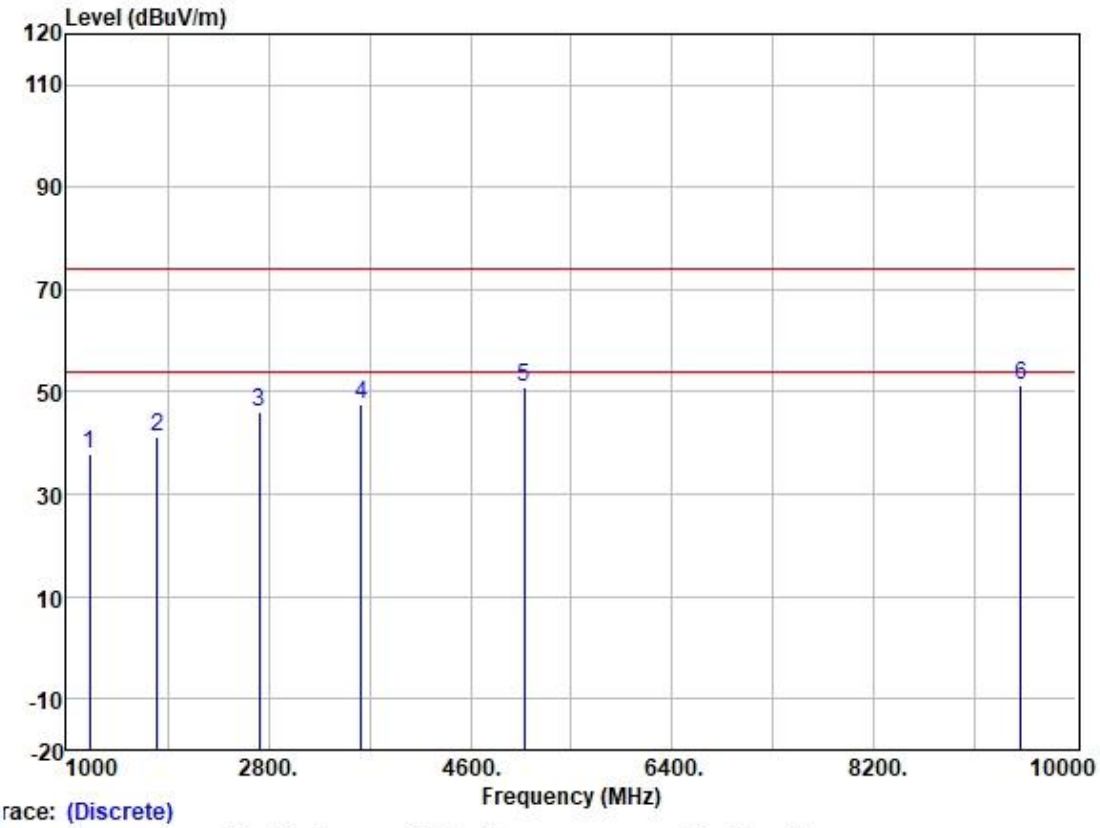
1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

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

2) Scan from 1GHz to 25GHz, 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) 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.

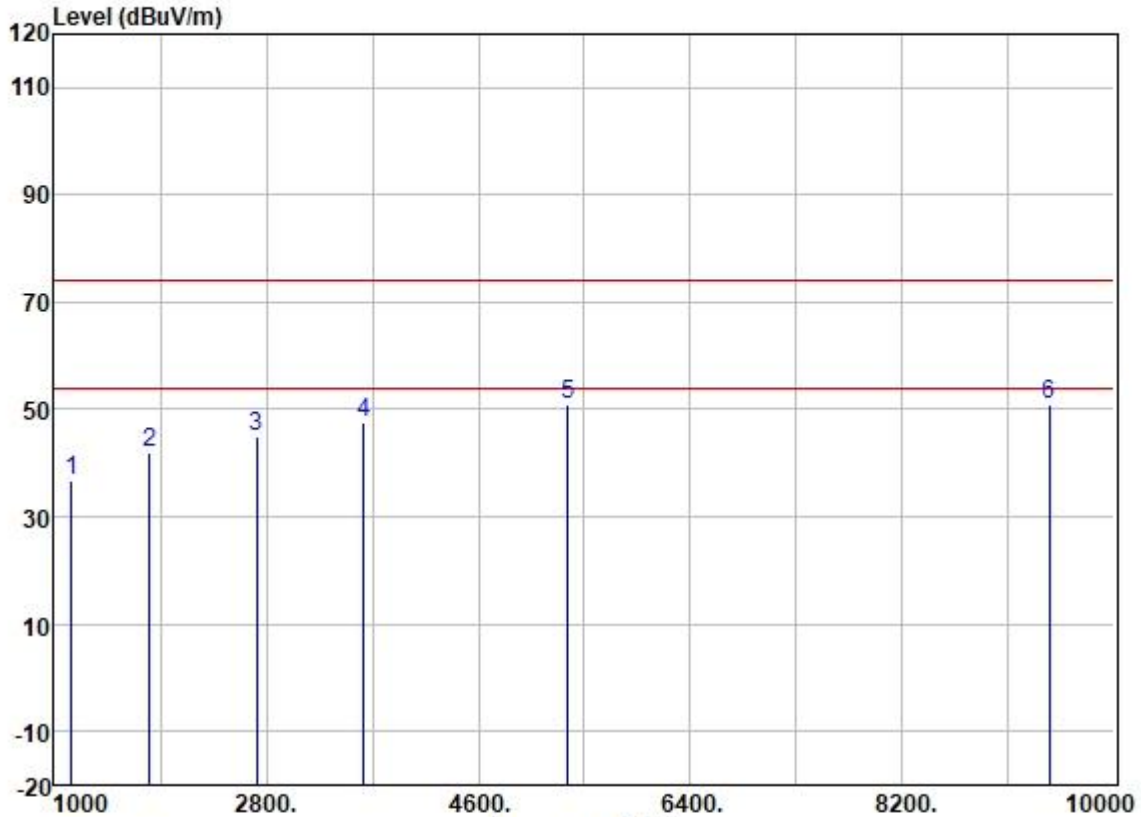
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



race: (Discrete)

	Freq	ReadLevel	Antenna 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	1205.036	49.17	24.72	2.33	38.39	37.83	74.00	-36.17	HORIZONTAL	Peak
2	1813.200	50.11	25.96	2.99	37.80	41.26	74.00	-32.74	HORIZONTAL	Peak
3	2719.800	52.10	27.89	3.61	37.46	46.14	74.00	-27.86	HORIZONTAL	Peak
4	3626.400	50.97	29.09	4.51	36.90	47.67	74.00	-26.33	HORIZONTAL	Peak
5	5081.594	50.25	31.71	5.67	36.86	50.77	74.00	-23.23	HORIZONTAL	Peak
6	9506.048	43.51	38.30	7.10	37.43	51.48	74.00	-22.52	HORIZONTAL	Peak

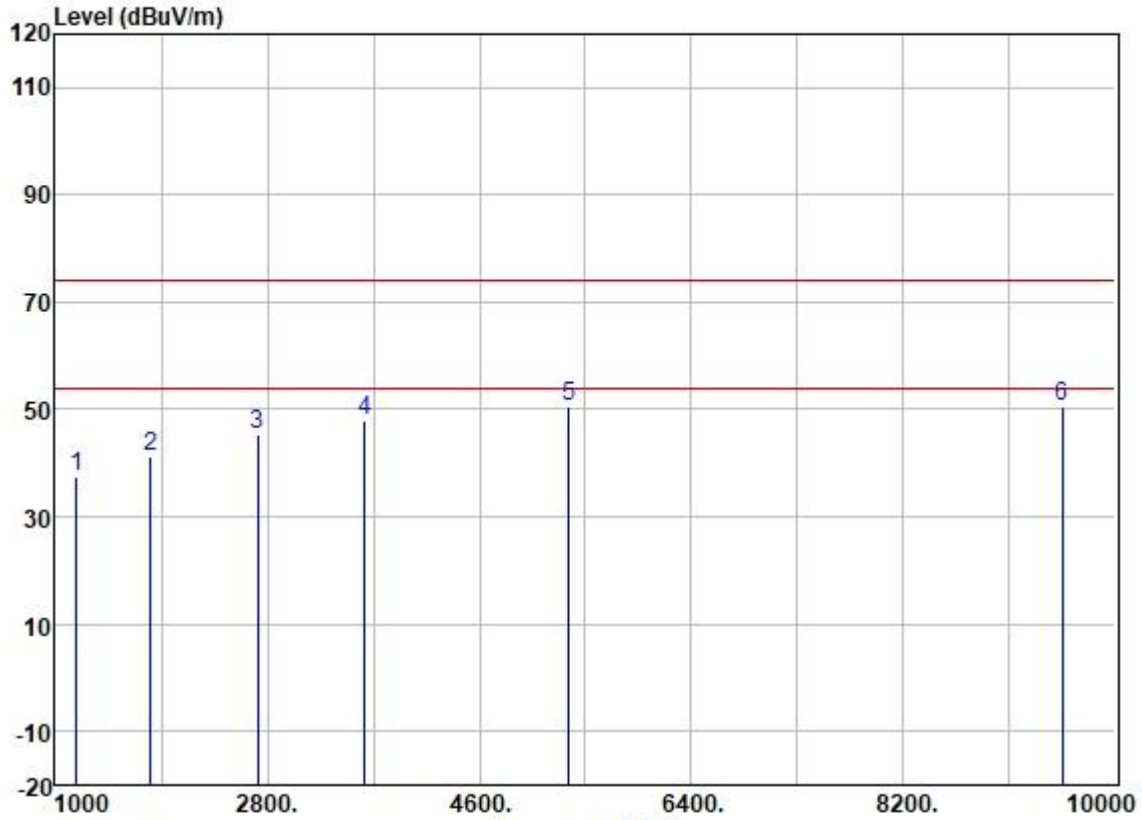
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Low



race: (Discrete)

	Freq	Read Level	Antenna 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	1148.154	48.41	24.49	2.34	38.42	36.82	74.00	-37.18	VERTICAL	Peak
2	1813.200	50.70	25.96	2.99	37.80	41.85	74.00	-32.15	VERTICAL	Peak
3	2719.800	50.86	27.89	3.61	37.46	44.90	74.00	-29.10	VERTICAL	Peak
4	3626.400	50.80	29.09	4.51	36.90	47.50	74.00	-26.50	VERTICAL	Peak
5	5357.967	49.92	31.78	6.03	36.88	50.85	74.00	-23.15	VERTICAL	Peak
6	9440.608	43.00	38.22	7.14	37.44	50.92	74.00	-23.08	VERTICAL	Peak

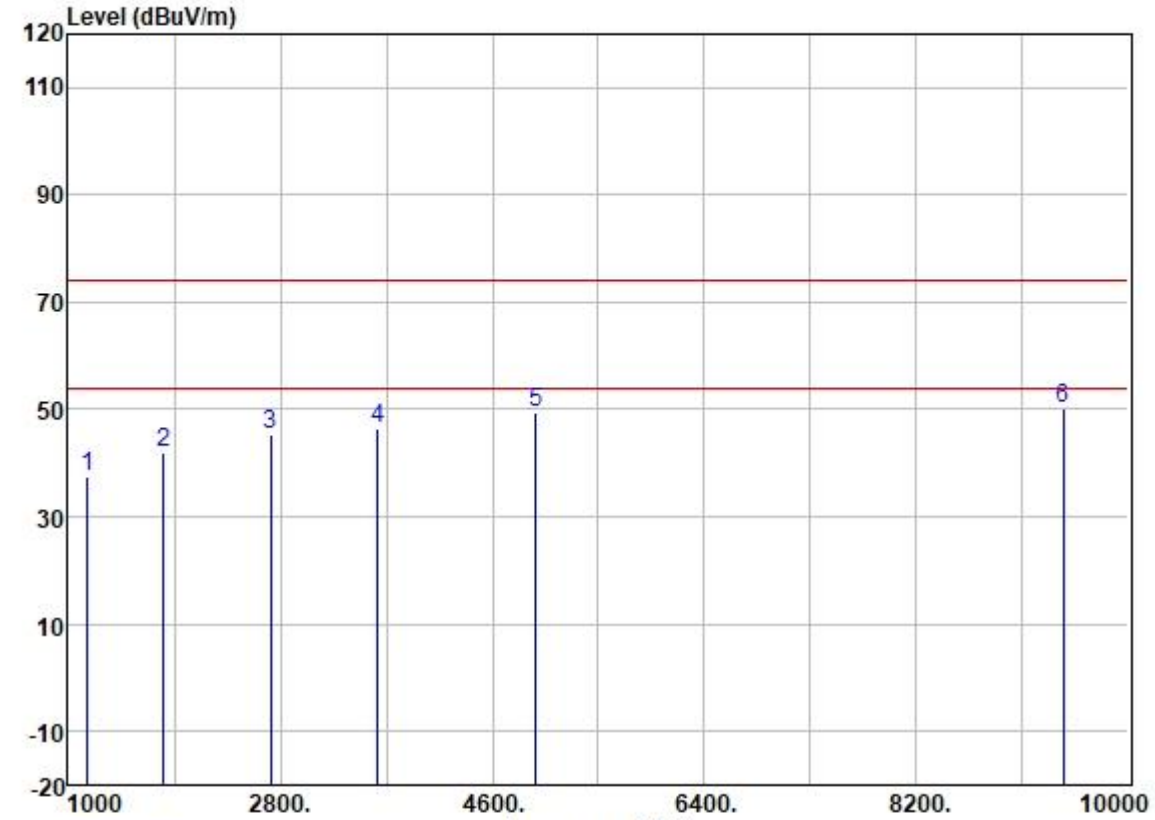
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Middle



race: (Discrete)

	Freq	Read Level	Antenna 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	1180.321	48.93	24.59	2.38	38.40	37.50	74.00	-36.50	HORIZONTAL	Peak
2	1813.600	49.99	25.96	2.99	37.80	41.14	74.00	-32.86	HORIZONTAL	Peak
3	2720.400	51.37	27.89	3.61	37.46	45.41	74.00	-28.59	HORIZONTAL	Peak
4	3627.200	51.21	29.09	4.51	36.90	47.91	74.00	-26.09	HORIZONTAL	Peak
5	5357.967	49.66	31.78	6.03	36.88	50.59	74.00	-23.41	HORIZONTAL	Peak
6	9549.926	42.65	38.33	7.09	37.43	50.64	74.00	-23.36	HORIZONTAL	Peak

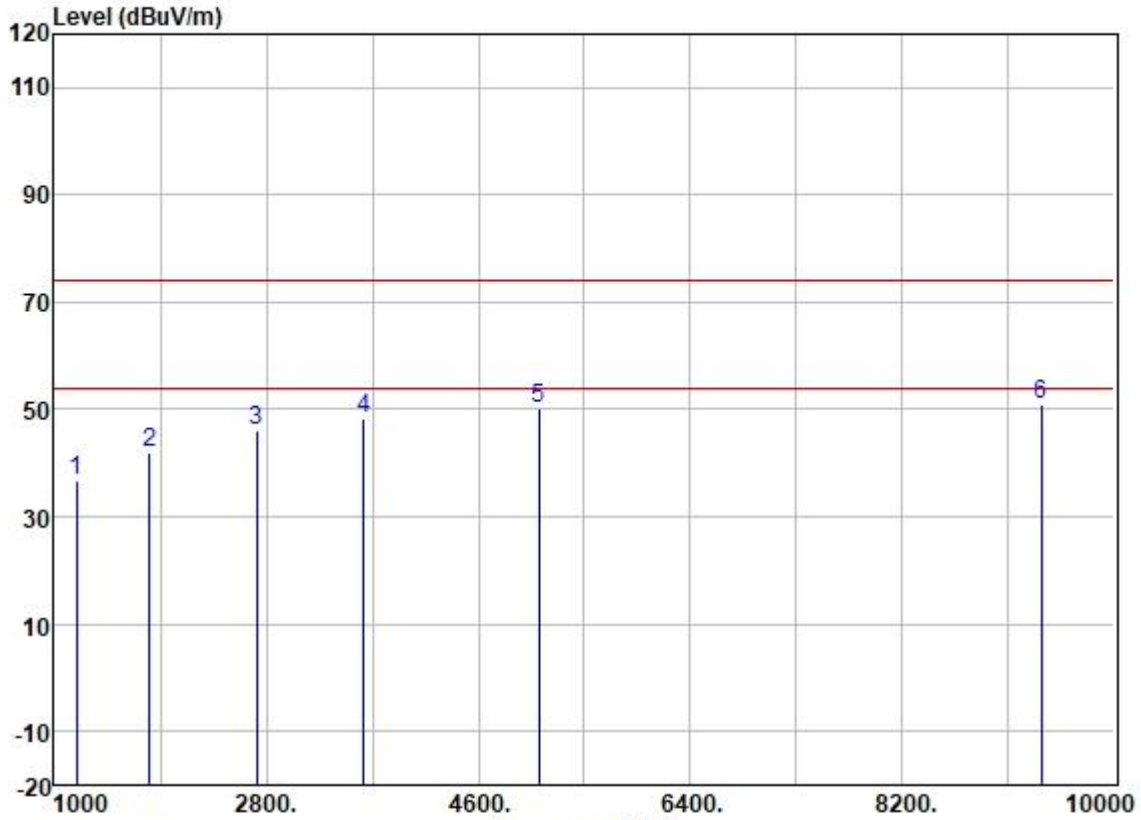
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:Middle



race: (Discrete)

	Freq	ReadLevel	Antenna 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	1161.449	48.91	24.53	2.40	38.42	37.42	74.00	-36.58	VERTICAL	Peak
2	1813.600	50.86	25.96	2.99	37.80	42.01	74.00	-31.99	VERTICAL	Peak
3	2720.400	51.23	27.89	3.61	37.46	45.27	74.00	-28.73	VERTICAL	Peak
4	3627.200	49.80	29.09	4.51	36.90	46.50	74.00	-27.50	VERTICAL	Peak
5	4965.923	48.91	31.65	5.65	36.85	49.36	74.00	-24.64	VERTICAL	Peak
6	9440.608	42.35	38.22	7.14	37.44	50.27	74.00	-23.73	VERTICAL	Peak

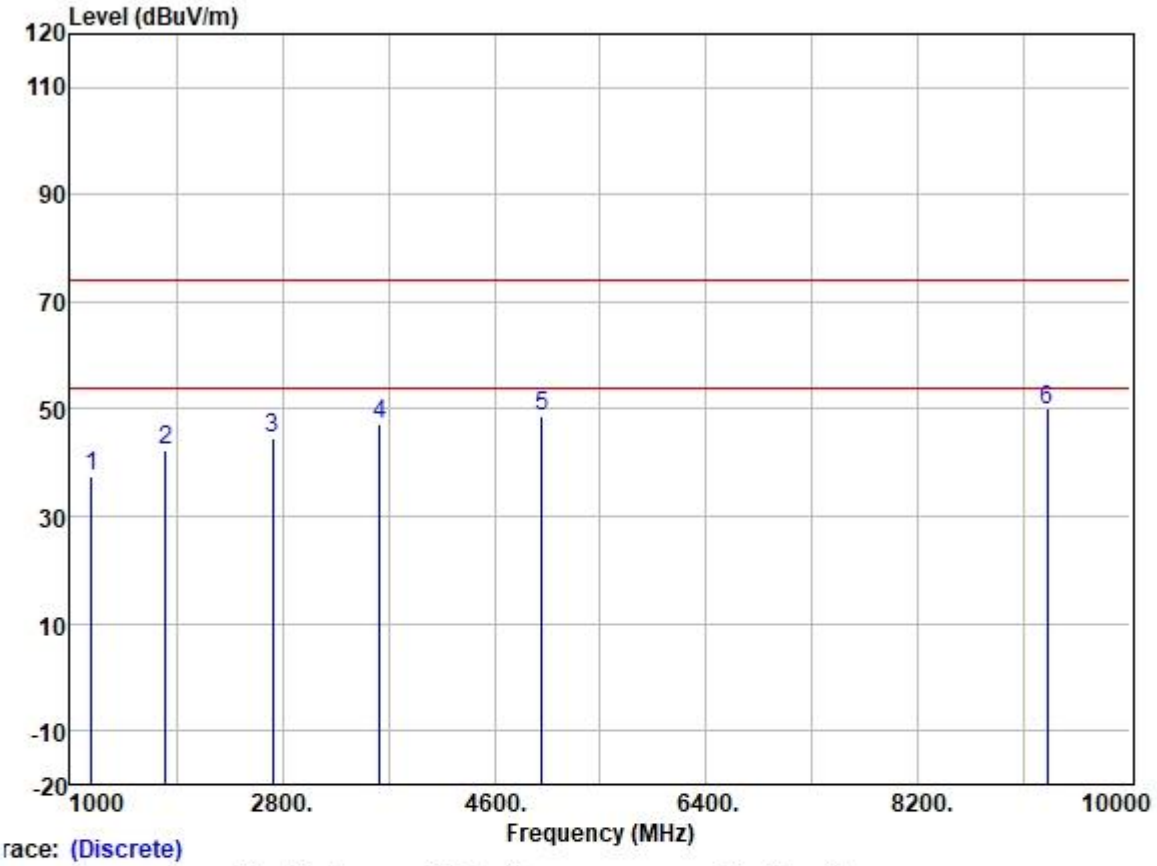
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:High



race: (Discrete)

	Freq	Read Level	Antenna 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	1188.502	48.12	24.63	2.36	38.39	36.72	74.00	-37.28	HORIZONTAL	Peak
2	1814.000	50.73	25.96	2.99	37.80	41.88	74.00	-32.12	HORIZONTAL	Peak
3	2721.000	51.90	27.89	3.61	37.46	45.94	74.00	-28.06	HORIZONTAL	Peak
4	3628.000	51.49	29.09	4.51	36.90	48.19	74.00	-25.81	HORIZONTAL	Peak
5	5116.818	49.87	31.72	5.64	36.86	50.37	74.00	-23.63	HORIZONTAL	Peak
6	9375.620	43.18	38.09	7.21	37.44	51.04	74.00	-22.96	HORIZONTAL	Peak

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



race: (Discrete)

	Freq	Read Level	Antenna 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	1185.769	48.76	24.62	2.37	38.40	37.35	74.00	-36.65	VERTICAL	Peak
2	1814.000	51.14	25.96	2.99	37.80	42.29	74.00	-31.71	VERTICAL	Peak
3	2721.000	50.38	27.89	3.61	37.46	44.42	74.00	-29.58	VERTICAL	Peak
4	3628.000	50.35	29.09	4.51	36.90	47.05	74.00	-26.95	VERTICAL	Peak
5	5000.345	48.16	31.70	5.70	36.85	48.71	74.00	-25.29	VERTICAL	Peak
6	9289.664	42.23	37.92	7.30	37.45	50.00	74.00	-24.00	VERTICAL	Peak

8 Test Setup Photo

Refer to Appendix - Test Setup Photo for GZCR2201000121AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - Photographs of EUT Constructional Details for GZCR2201000121AT

- End of the Report -

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