

TEST REPORT

Application No.: GZCR2412001417HS
Applicant: FKA Distributing Co., LLC
Address of Applicant: 3000 N. Pontiac Trail, Commerce Township, Michigan, 48390, United States
Manufacturer: Shenzhen Yolanda Technology Co., Ltd
Address of Manufacturer: Room 201, jinfulai Building, No.49-1, Dabao Road, Dalang Area, Xinan Street, Baoan, Shenzhen, China
Factory: Shenzhen Yolanda Technology Co., Ltd
Address of Factory: Guangyao industrial plant area - factory building C, No.18, No.4 Industrial Zone, Zhulongtian Road, Shuitian community Shiyan street, Baoan, Shenzhen, China
Product Name: Body Composition Scales
Model No.: SCL-BBC200, SCL-BBC200-BK, SCL-BBC200-WT, SCL-BBC250, SCL-BBC250-BK, SCL-BBC250-WT, SCL-BBC350, SCL-BBC350-BK, SCL-BBC350-WT, SCL-XBC200, SCL-XBC200-BK, SCL-XBC200-WT, SCL-BBC250BK-CA ♣
♣ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2024-12-04
Date of Test: 2024-12-10 to 2024-12-20
Date of Issue: 2025-01-21

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

Ricky Liu

Ricky Liu
Manager



SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch Testing Center EEC Laboratory

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t (86-20) 82155555 www.sgsgroup.com.cn
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Revision Record			
Version	Report No.	Date	Remark
01	GZCR241200141702	2025-01-21	Original

Authorized for issue by:			
		Pank Feng	
		Pank Feng/Project Engineer	
		Vico Cui	
		Vico Cui/Reviewer	



2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
Antenna Requirement	47 CFR Part 15, Subpart C 15.247	N/A	47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)	Pass

Radio Spectrum Matter Part				
Item	Standard	Method	Requirement	Result
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.12	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Below 1GHz		ANSI C63.10 (2013) Section 6.4,6.5	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Radiated Spurious Emissions Above 1GHz		ANSI C63.10 (2013) Section 6.6	47 CFR Part 15, Subpart C 15.205 & 15.209	Pass
Conducted Peak Output Power		ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Minimum 6dB Bandwidth		ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Power Spectrum Density		ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement		ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions		ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(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.



♣ Declaration of EUT Family Grouping:

According to the declaration from the applicant, the difference is as below.

SCL-BBC200, SCL-BBC200-BK, SCL-BBC200-WT	SCL-BBC250 SCL-BBC250-BK SCL-BBC250-WT SCL-BBC350 SCL-BBC350-BK SCL-BBC350-WT SCL-BBC250BK-CA	SCL-XBC200, SCL-XBC200-BK, SCL-XBC200-WT
the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name and appearance.	the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name and appearance.	the electrical circuit design, layout, components used and internal wiring were identical for all models, with only difference on model name and appearance.
The RF module of all models is same.		

Therefore model **SCL-BBC250-BK** was performed a full test, **SCL-BBC200-BK** and **SCL-XBC200-BK** were performed Radiated Spurious Emissions Below 1GHz in this report.



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4 General Information

4.1 Details of E.U.T.

Power supply:	Battery operation:
	M1(SCL-BBC250-BK): DC 6V=1.5V x 4 size AAA Battery.
	M2(SCL-BBC200-BK): DC 6V=1.5V x 4 size AAA Battery.
	M3(SCL-XBC200-BK): DC 4.5V=1.5 x 3 size AAA Battery.
Cable:	None
Test Voltage:	The same as power supply
Operation Frequency:	2402MHz to 2480MHz
Bluetooth Version:	V5.4 LE
Modulation Type:	GFSK
Number of Channels:	40
Channel Spacing:	2MHz
Antenna Type:	PCB Antenna
Antenna Gain:	1.75 dBi according to antenna specification
Antenna Number:	1

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



4.3 Measurement Uncertainty

Test Item	Measurement Uncertainty
Radiated Emissions which fall in the restricted bands	$\pm 5.14\text{dB}$ (3m); $\pm 4.90\text{dB}$ (10m); $\pm 4.88\text{dB}$ (1GHz-6GHz); $\pm 5.06\text{dB}$ (6GHz-18GHz); $\pm 5.30\text{dB}$ (18GHz-40GHz)
Radiated Spurious 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 Spurious Emissions Above 1GHz	$\pm 4.88\text{dB}$ (1GHz-6GHz); $\pm 5.06\text{dB}$ (6GHz-18GHz); $\pm 5.30\text{dB}$ (18GHz-40GHz)
Conducted Peak Output Power	$\pm 0.75\text{dB}$
Minimum 6dB Bandwidth	$\pm 0.274\%$
Power Spectrum Density	$\pm 2.84\text{dB}$
Conducted Band Edges Measurement	$\pm 0.75\text{dB}$
Conducted Spurious Emissions	$\pm 0.75\text{dB}$
<p>Remark:</p> <p>The U_{lab} (lab Uncertainty) is less than $U_{\text{cisp}} (CISPR \text{ Uncertainty})$ or $U_{\text{ETSI}} (ETSI \text{ Uncertainty})$.</p> <p>Emission decision rule:</p> <ul style="list-style-type: none"> – 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,
Guangdong, China 510663

Tel: +86 20 82155555

No tests were sub-contracted.



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

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



5 Equipment List

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2024-10-14	2025-10-13
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2024-09-02	2025-09-01
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2024-08-19	2025-08-18
MXE EMI Receiver (10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2024-10-14	2025-10-13
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A

Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
10m Semi-Anechoic Chamber	ETS	N/A	EMC0530	2022-10-16	2025-10-15
Coaxial cable	Mirco-COAX UTIFLEX	311A	EMC0540	2024-08-19	2026-08-18
Amplifier (9kHz-1.3GHz)	HP	8447F	EMC2065	2024-12-04	2025-12-03
Active Loop Antenna-RED	ETS-Lindgren	6502	EMC2190	2024-04-08	2026-04-07
EMI Test Receiver (9kHz-7GHz)	Rohde & Schwarz	ESR7	EMC2220	2024-12-04	2025-12-03
Test Software E3	Audix	Ver.6.120110a	GZE100-61	N/A	N/A
Trilog Broadband Antenna (25MHz-2GHz)	Schwarzbeck Mess-Elektronik	VULB 9168	EMC2174	2022-06-19	2025-06-18



Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
1GHz-26.5 GHz Pre-Amplifier	Agilent	8449B	EMC0521	2024-10-14	2025-10-13
EMI Test Receiver (10Hz-26.5GHz)	Rohde & Schwarz	ESIB26	EMC0522	2024-09-02	2025-09-01
Chamber cable (Above 1GHz)	Scoflex	KMKM-8.0m	EMC0545	2024-08-19	2026-08-18
Horn Antenna (1GHz-18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120D	EMC2026	2022-09-23	2025-09-22
Horn Antenna (14-40GHz)	SCHWARZBECK	BBHA 9170	EMC2041	2023-06-18	2026-06-17
2.4GHz Filter	Micro-Tronics	BRM 50702	EMC2069	2024-10-14	2025-10-13
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2024-08-19	2025-08-18
MXE EMI Receiver (10Hz-8.4GHz)	Keysight	N9038A	EMC2139	2024-10-14	2025-10-13
966 Anechoic Chamber	C.R.T	9m x 6m x 6m	EMC2142	2023-12-20	2026-12-19
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
MI CABLE	SGS-EMC	0.8M	EMC2137	2023-11-02	2025-11-01
4X4 Power sensor Unit	TST	TSPS2023R	EMC2226	2024-08-19	2025-08-18
Test Software	TST	V2.0	GZE100-78	N/A	N/A
EXA Signal Analyzer (10Hz-44GHz)	Keysight	N9010A	EMC2138	2024-08-19	2025-08-18

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
DMM	Fluke	73	EMC0006	2024-06-13	2025-06-12



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No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
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

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

6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(b)(4)

6.1.2 Conclusion

Standard 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. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

EUT Antenna:

The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is 1.75 dBi.

Antenna location: Refer to internal photo.



7 Radio Spectrum Matter Test Results

7.1 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 11.12

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
Above 960	500	3

Remark: The emission limits shown in the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90kHz, 110-490kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector, 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.

7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22.2 °C

Humidity: 51.4 % RH

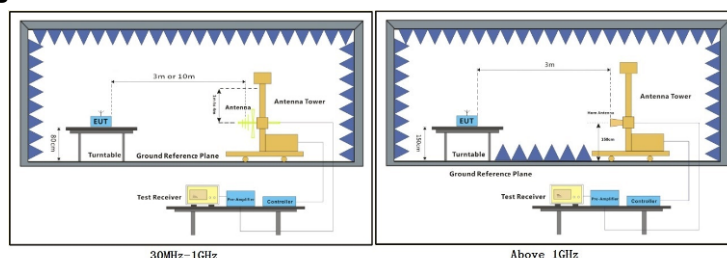
Atmospheric Pressure: 1017 mbar

7.1.2 Test Mode Description

Pre-scan / Mode
Final test Code Description

Final test 00 TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.1.3 Test Setup Diagram



7.1.4 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 1: Level= Read Level+ Cable Loss+ Antenna Factor- Preamp Factor

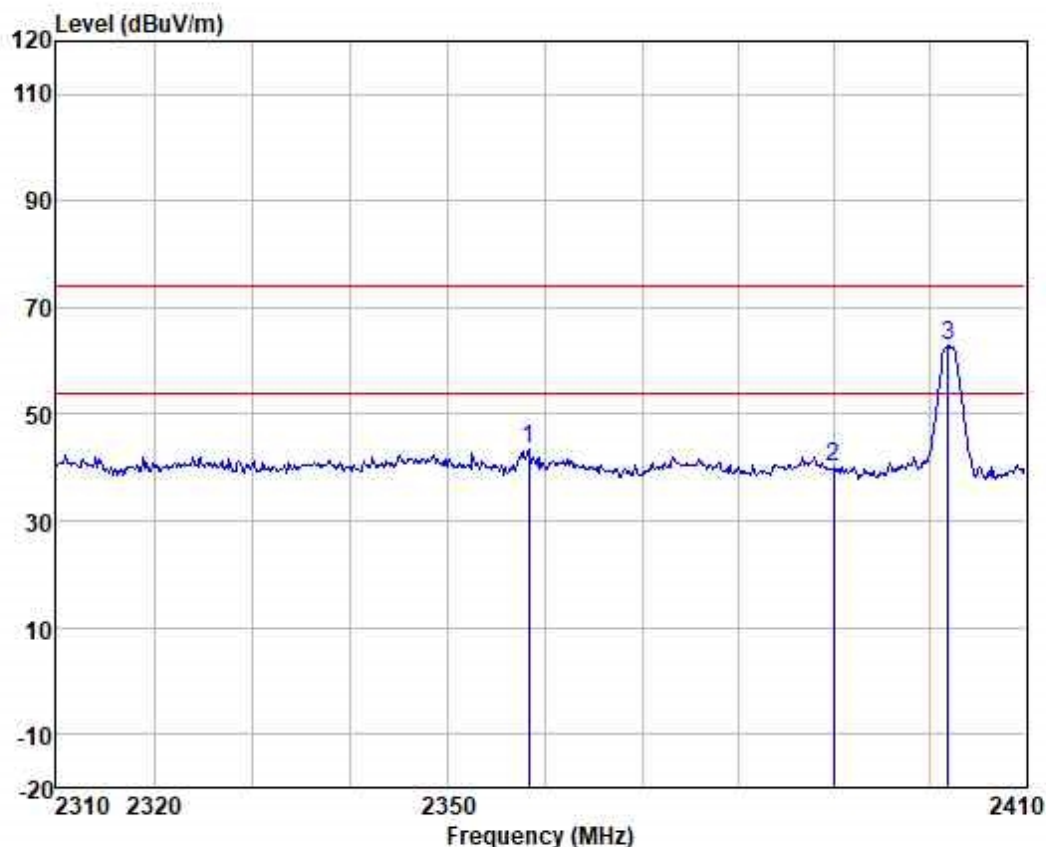
Remark 2: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.

Remark 3: The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.

Remark 4: For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle < 98%) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



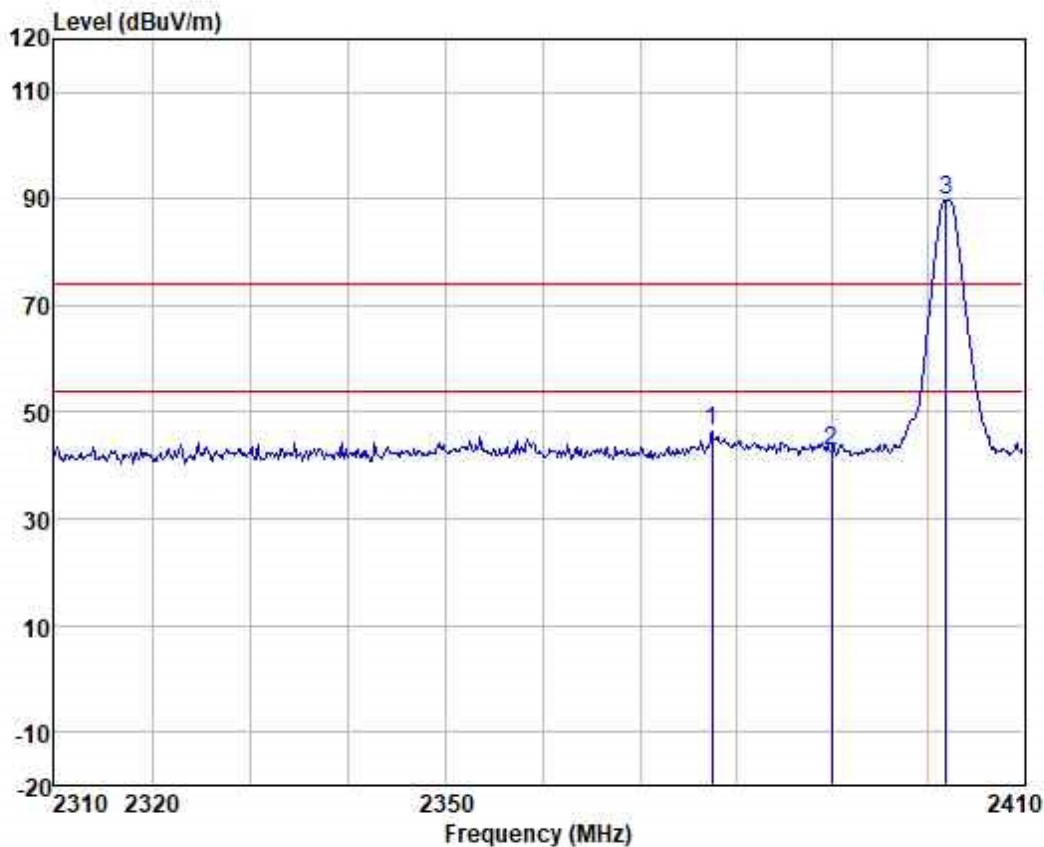
Test Mode: 00; Polarity: Vertical; Modulation: GFSK; Channel: Low



	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 2358.271	50.07	27.62	3.43	37.77	43.35	74.00	-30.65	VERTICAL	peak
2 2390.000	46.60	27.68	3.44	37.77	39.95	74.00	-34.05	VERTICAL	peak
3 2402.000	69.35	27.71	3.45	37.77	62.74	74.00	-11.26	VERTICAL	peak



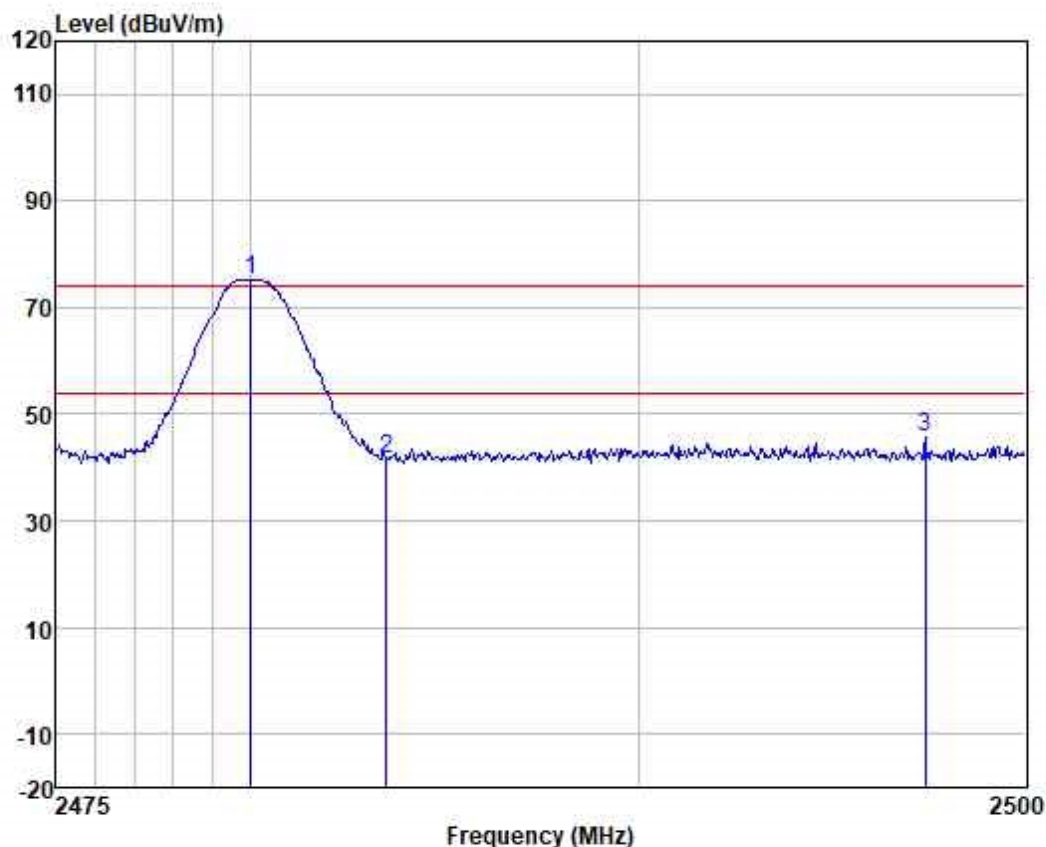
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



	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	2377.538	52.93	27.67	3.44	37.77	46.27	74.00	-27.73	HORIZONTAL peak
2	2390.000	49.52	27.68	3.44	37.77	42.87	74.00	-31.13	HORIZONTAL peak
3 *	2402.000	96.26	27.71	3.45	37.77	89.65	74.00	15.65	HORIZONTAL peak



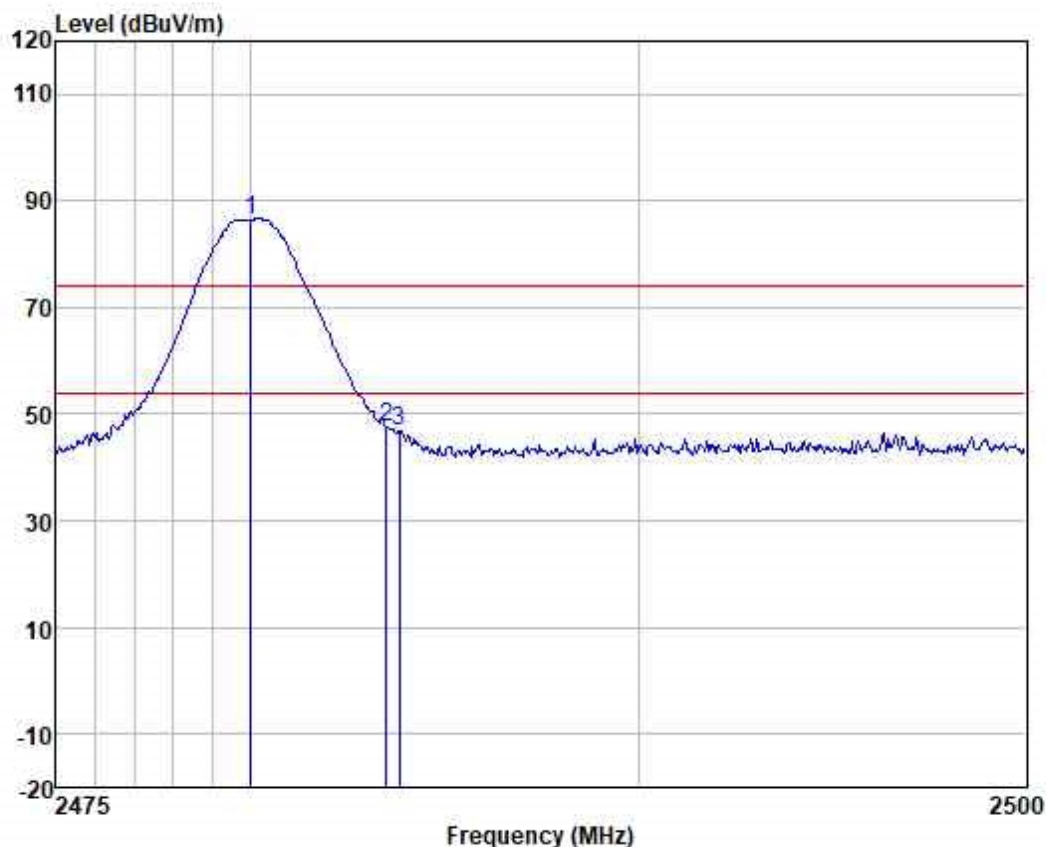
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



	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 *	2480.000	81.64	27.84	3.48	37.76	75.20	74.00	1.20	VERTICAL peak
2	2483.500	48.16	27.85	3.49	37.76	41.74	74.00	-32.26	VERTICAL peak
3	2497.438	52.18	27.87	3.49	37.76	45.78	74.00	-28.22	VERTICAL peak



Test Mode: 00; Polarity: Horizontal; 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 *	2480.000	92.83	27.84	3.48	37.76	86.39	74.00	12.39	HORIZONTAL	peak
2	2483.500	53.96	27.85	3.49	37.76	47.54	74.00	-26.46	HORIZONTAL	peak
3	2483.821	53.33	27.85	3.49	37.76	46.91	74.00	-27.09	HORIZONTAL	peak



7.2 Radiated Spurious Emissions Below 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.4,6.5

Limit:

Test Distance: 10 m above 30MHz, 3 m below 30MHz

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

7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 23.0 °C

Humidity: 55.9 % RH

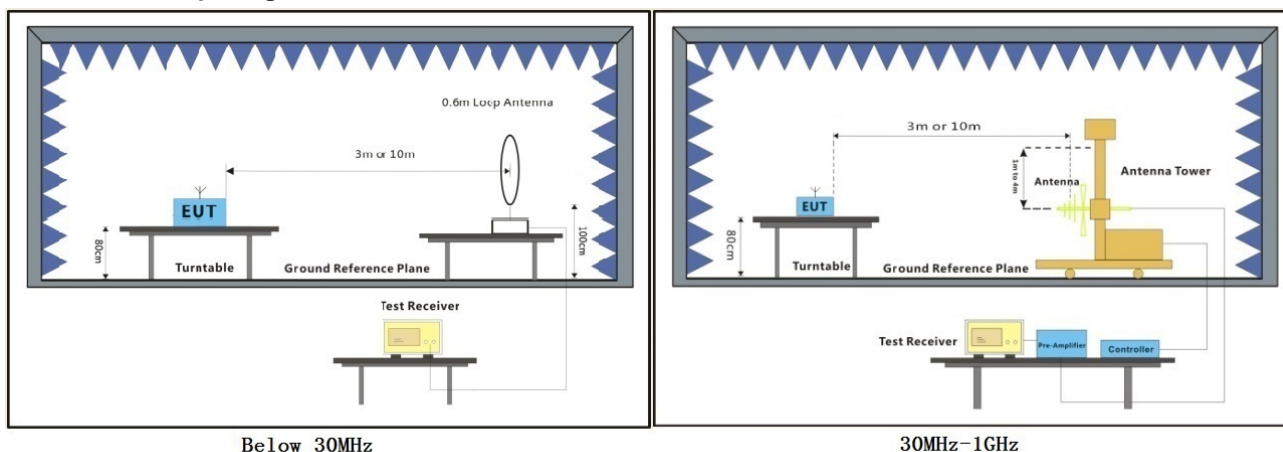
Atmospheric Pressure: 1017 mbar

7.2.2 Test Mode Description

Pre-scan / Mode Description
Final test Code

Final test 00 TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.2.3 Test Setup Diagram



Below 30MHz

30MHz-1GHz



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

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
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

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

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. 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.

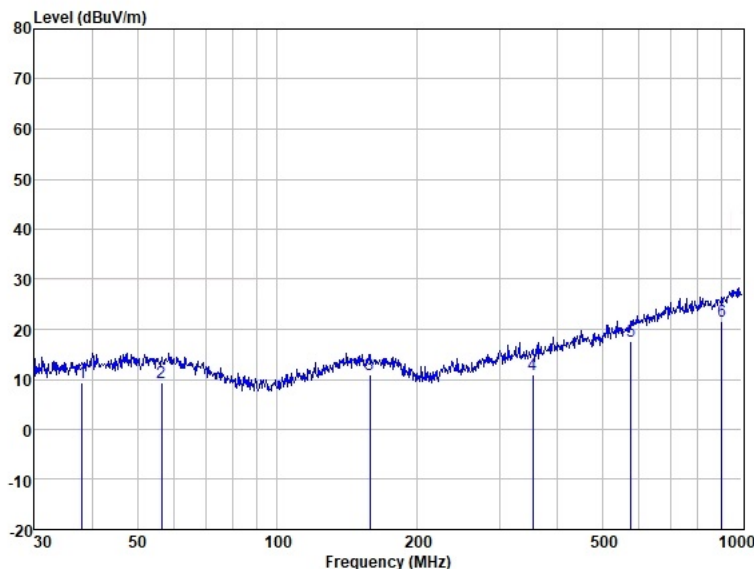
Remark:

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.



Test Mode: 00; Polarity: Horizontal



Site : SGS
Job :
Model : M1
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	37.945	23.61	13.31	0.41	27.99	9.34	HORIZONTAL	QP
2	56.395	23.06	13.74	0.51	27.94	9.37	HORIZONTAL	QP
3	158.112	24.19	13.64	0.85	27.71	10.97	HORIZONTAL	QP
4	354.183	22.59	14.49	1.29	27.38	10.99	HORIZONTAL	QP
5	576.644	25.21	19.20	1.64	28.48	17.57	HORIZONTAL	QP
6	903.309	24.30	23.12	2.05	27.97	21.50	HORIZONTAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
37.945	9.34	10.46	19.80	40.00	-20.20	QP
56.395	9.37	10.46	19.83	40.00	-20.17	QP
158.112	10.97	10.46	21.43	43.52	-22.09	QP
354.183	10.99	10.46	21.45	46.02	-24.57	QP
576.644	17.57	10.46	28.03	46.02	-17.99	QP
903.309	21.50	10.46	31.96	46.02	-14.06	QP

*Remark:

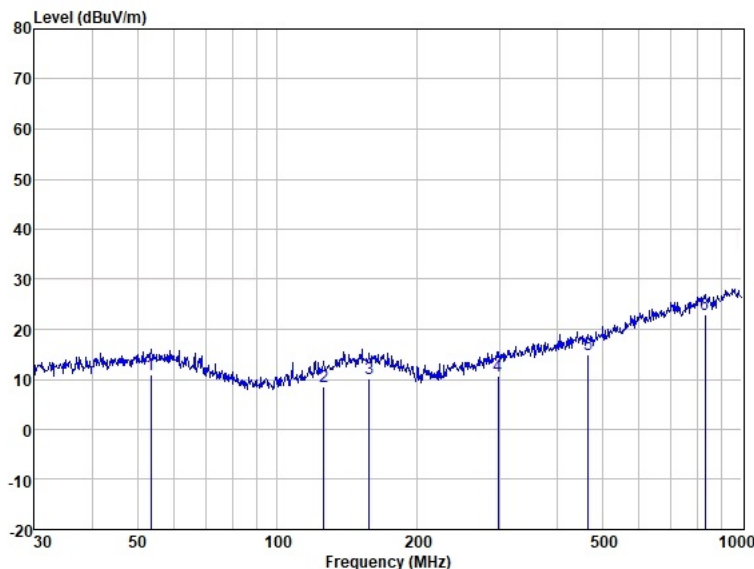
Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



Test Mode: 00; Polarity: Horizontal



Site : SGS
Job :
Model : M2
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	53.505	24.50	13.90	0.49	27.95	10.94	HORIZONTAL	QP
2	125.886	23.73	11.79	0.75	27.77	8.50	HORIZONTAL	QP
3	157.559	23.37	13.64	0.85	27.71	10.15	HORIZONTAL	QP
4	298.268	23.24	13.38	1.17	27.20	10.59	HORIZONTAL	QP
5	467.235	24.73	17.21	1.48	28.40	15.02	HORIZONTAL	QP
6	833.317	26.11	23.09	1.96	28.26	22.90	HORIZONTAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
53.505	10.94	10.46	21.40	40.00	-18.60	QP
125.886	8.50	10.46	18.96	43.52	-24.56	QP
157.559	10.15	10.46	20.61	43.52	-22.91	QP
298.268	10.59	10.46	21.05	46.02	-24.97	QP
467.235	15.02	10.46	25.48	46.02	-20.54	QP
833.317	22.90	10.46	33.36	46.02	-12.66	QP

*Remark:

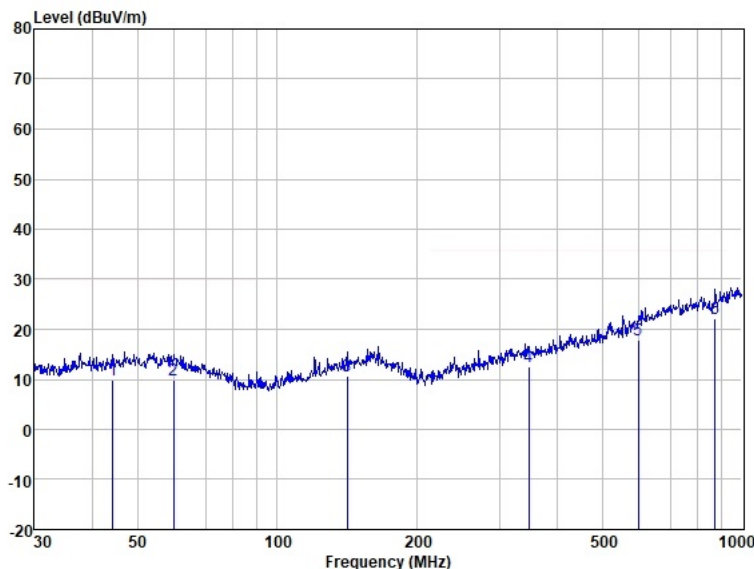
Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



Test Mode: 00; Polarity: Horizontal



Site : SGS
Job :
Model : M3
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	44.275	23.62	13.88	0.44	27.97	9.97	HORIZONTAL	QP
2	59.859	23.94	13.33	0.52	27.93	9.86	HORIZONTAL	QP
3	141.330	24.40	13.11	0.80	27.74	10.57	HORIZONTAL	QP
4	348.027	24.32	14.39	1.27	27.35	12.63	HORIZONTAL	QP
5	597.223	24.44	20.11	1.66	28.47	17.74	HORIZONTAL	QP
6	875.247	25.63	22.52	2.03	28.16	22.02	HORIZONTAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
44.275	9.97	10.46	20.43	40.00	-19.57	QP
59.859	9.86	10.46	20.32	40.00	-19.68	QP
141.330	10.57	10.46	21.03	43.52	-22.49	QP
348.027	12.63	10.46	23.09	46.02	-22.93	QP
597.223	17.74	10.46	28.20	46.02	-17.82	QP
875.247	22.02	10.46	32.48	46.02	-13.54	QP

*Remark:

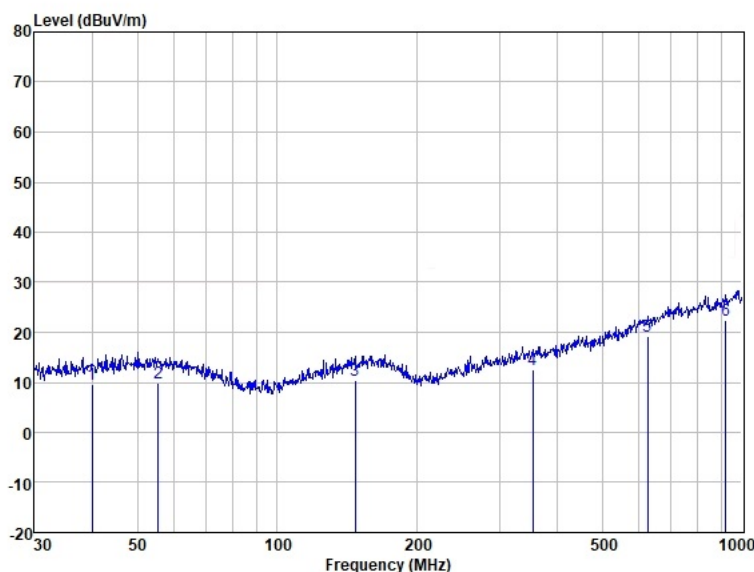
Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



Test Mode: 00; Polarity: Vertical



Site : SGS
Job :
Model : M1
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	39.994	23.77	13.50	0.42	27.98	9.71	VERTICAL	QP
2	55.415	23.43	13.81	0.50	27.95	9.79	VERTICAL	QP
3	146.888	23.81	13.40	0.81	27.73	10.29	VERTICAL	QP
4	354.183	24.22	14.49	1.29	27.38	12.62	VERTICAL	QP
5	627.274	25.83	20.01	1.70	28.44	19.10	VERTICAL	QP
6	922.516	24.73	23.42	2.07	27.85	22.37	VERTICAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
39.994	9.71	10.46	20.17	40.00	-19.83	QP
55.415	9.79	10.46	20.25	40.00	-19.75	QP
146.888	10.29	10.46	20.75	43.52	-22.77	QP
354.183	12.62	10.46	23.08	46.02	-22.94	QP
627.274	19.10	10.46	29.56	46.02	-16.46	QP
922.516	22.37	10.46	32.83	46.02	-13.19	QP

*Remark:

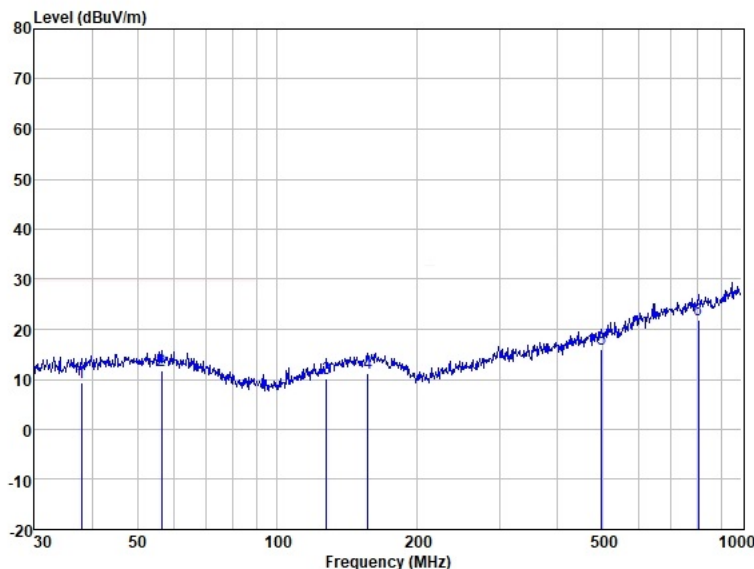
Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



Test Mode: 00; Polarity: Vertical



Site : SGS
Job :
Model : M2
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	37.812	23.50	13.31	0.41	27.99	9.23	VERTICAL	QP
2	56.395	25.31	13.74	0.51	27.94	11.62	VERTICAL	QP
3	127.665	25.05	11.99	0.75	27.76	10.03	VERTICAL	QP
4	156.458	24.54	13.61	0.84	27.71	11.28	VERTICAL	QP
5	497.677	25.38	17.62	1.52	28.49	16.03	VERTICAL	QP
6	804.603	25.17	23.01	1.93	28.29	21.82	VERTICAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
37.812	9.23	10.46	19.69	40.00	-20.31	QP
56.395	11.62	10.46	22.08	40.00	-17.92	QP
127.665	10.03	10.46	20.49	43.52	-23.03	QP
156.458	11.28	10.46	21.74	43.52	-21.78	QP
497.677	16.03	10.46	26.49	46.02	-19.53	QP
804.603	21.82	10.46	32.28	46.02	-13.74	QP

*Remark:

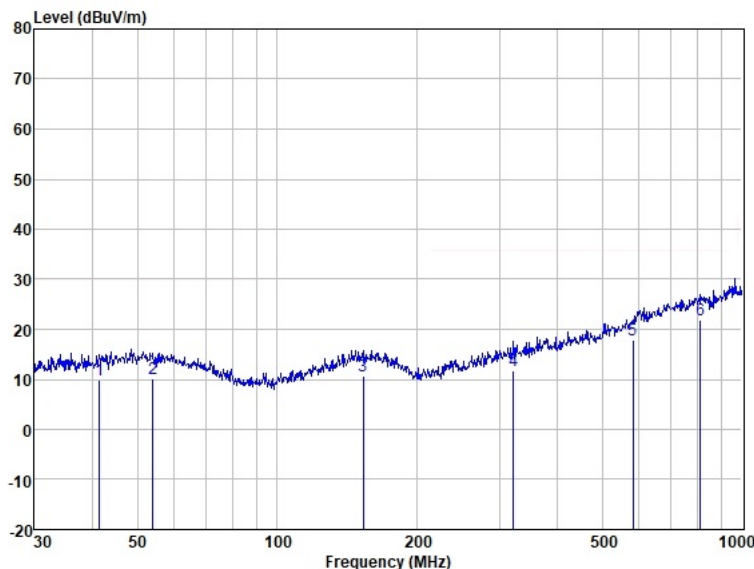
Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



Test Mode: 00; Polarity: Vertical



Site : SGS
Job :
Model : M3
Power :
Test Mode : TX

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Measured Level	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m		
1	41.422	23.77	13.66	0.43	27.98	9.88	VERTICAL	QP
2	53.882	23.85	13.86	0.49	27.95	10.25	VERTICAL	QP
3	153.200	24.00	13.59	0.84	27.72	10.71	VERTICAL	QP
4	322.189	23.58	14.07	1.21	27.26	11.60	VERTICAL	QP
5	582.743	25.22	19.39	1.65	28.47	17.79	VERTICAL	QP
6	813.112	24.98	23.27	1.94	28.28	21.91	VERTICAL	QP

Frequency (MHz)	Level @10m (dBuV/m)	Convert Factor (dB)*	Level @ 3m (dBuV/m)	Limit @3m (dBuV/m)	Over limit (dB)	Remark
41.422	9.88	10.46	20.34	40.00	-19.66	QP
53.882	10.25	10.46	20.71	40.00	-19.29	QP
153.200	10.71	10.46	21.17	43.52	-22.35	QP
322.189	11.60	10.46	22.06	46.02	-23.96	QP
582.743	17.79	10.46	28.25	46.02	-17.77	QP
813.112	21.91	10.46	32.37	46.02	-13.65	QP

*Remark:

Level (dBuV/m) @3m = Level (dBuV/m) @10m + Convert Factor (dB)

Convert Factor (dB) = 20*log(Measurement Distance/Specified Distance)

= 20*log(10/3) = 10.46 dB according to 15.31 (f) (1)



7.3 Radiated Spurious Emissions Above 1GHz

Test Requirement 47 CFR Part 15, Subpart C 15.205 & 15.209

Test Method: ANSI C63.10 (2013) Section 6.6

Limit:

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

7.3.1 E.U.T. Operation

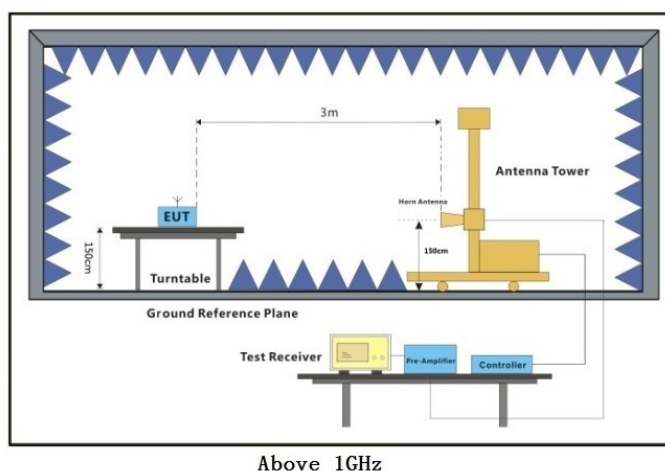
Operating Environment:

Temperature: 22.2 °C Humidity: 51.4 % RH Atmospheric Pressure: 1017 mbar

7.3.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.3.3 Test Setup Diagram



7.3.4 Measurement Procedure and Data

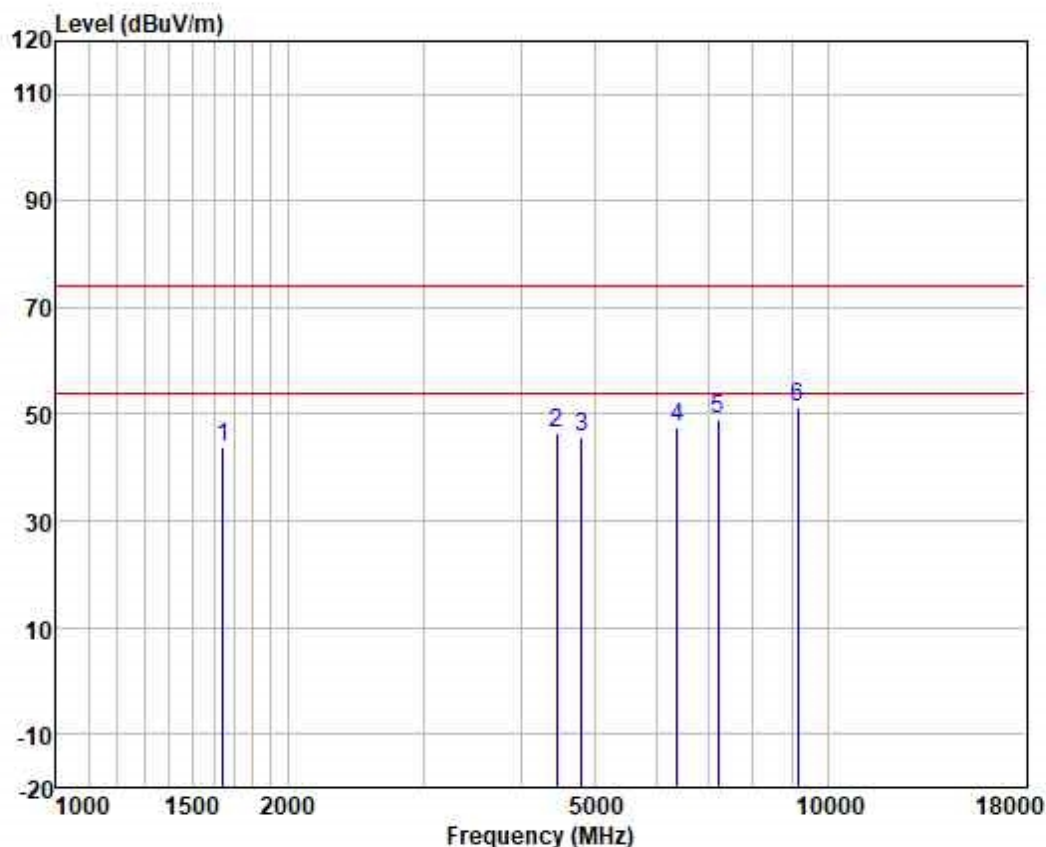
- a. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter fully-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which 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 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. 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 resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is 3MHz for Peak detection (PK) and Average detection (AV) at frequency above 1GHz.
- 5:For fundamental and harmonic signal measurement, the resolution bandwidth of test receiver/spectrum analyzer is 1MHz and the video bandwidth is $\geq 1/T$ (Duty cycle $< 98\%$) or 10Hz (Duty cycle $\geq 98\%$) for Average detection (AV) at frequency above 1GHz.



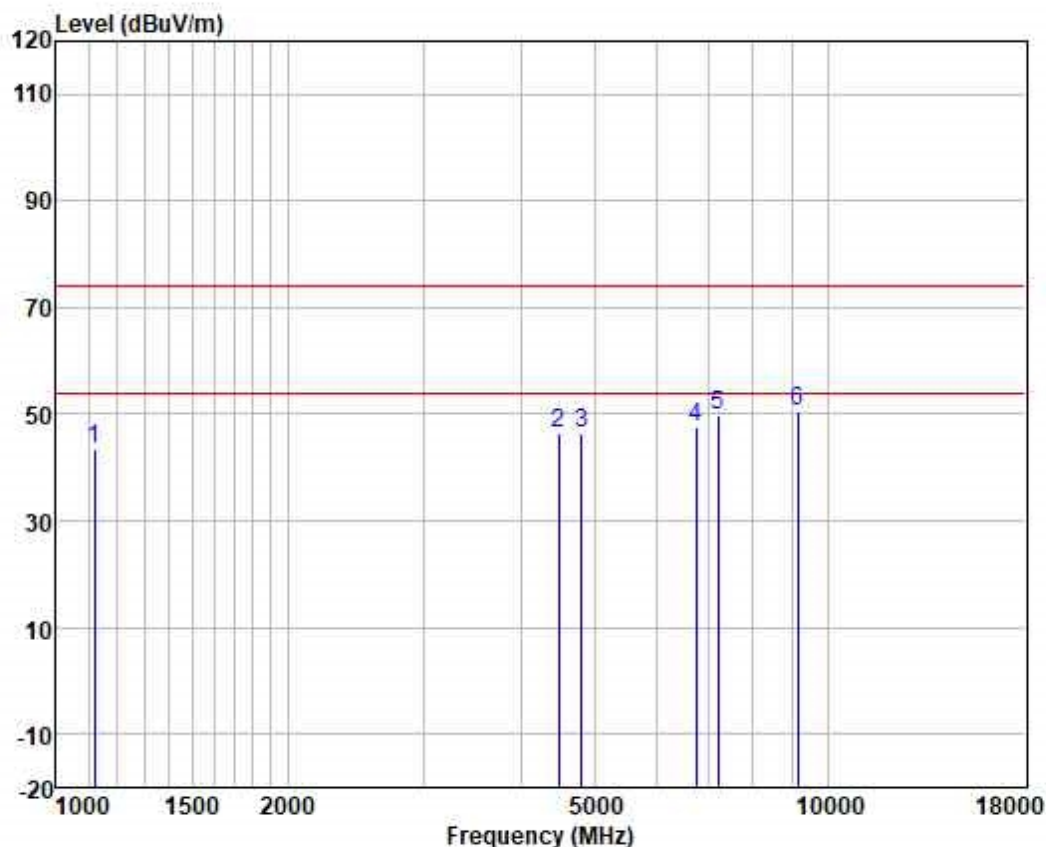
Test Mode: 00; Polarity: Vertical; Modulation: GFSK; Channel: Low



	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1644.019	54.26	24.84	2.79	38.08	43.81	74.00	-30.19	VERTICAL peak
2	4456.315	45.23	34.00	4.61	37.45	46.39	74.00	-27.61	VERTICAL peak
3	4804.000	44.01	34.16	4.81	37.38	45.60	74.00	-28.40	VERTICAL peak
4	6377.195	45.36	33.64	5.61	37.11	47.50	74.00	-26.50	VERTICAL peak
5	7206.000	44.52	35.63	5.93	37.17	48.91	74.00	-25.09	VERTICAL peak
6	9152.479	43.88	37.85	6.68	37.13	51.28	74.00	-22.72	VERTICAL peak



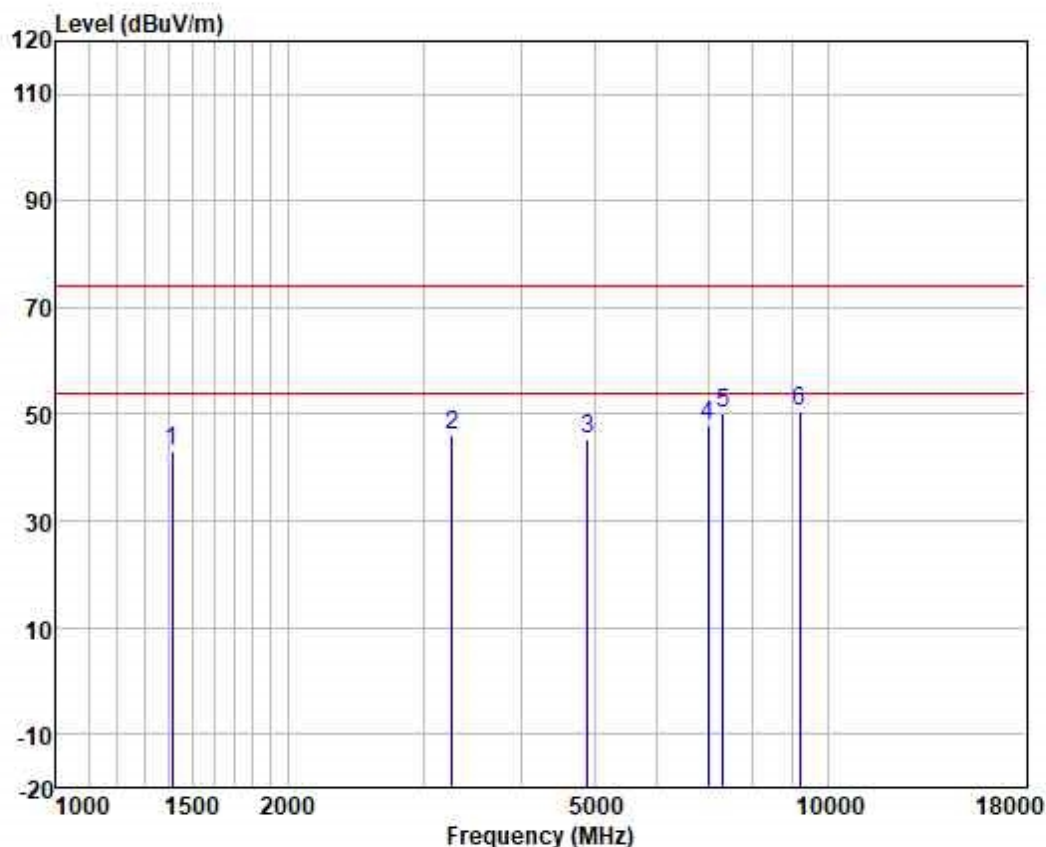
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:Low



	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1122.563	57.33	22.75	2.29	38.73	43.64	74.00	-30.36	HORIZONTAL peak
2	4482.150	45.10	34.12	4.62	37.44	46.40	74.00	-27.60	HORIZONTAL peak
3	4804.000	44.79	34.16	4.81	37.38	46.38	74.00	-27.62	HORIZONTAL peak
4	6756.708	44.29	34.56	5.77	37.13	47.49	74.00	-26.51	HORIZONTAL peak
5	7206.000	45.32	35.63	5.93	37.17	49.71	74.00	-24.29	HORIZONTAL peak
6	9152.479	43.31	37.85	6.68	37.13	50.71	74.00	-23.29	HORIZONTAL peak



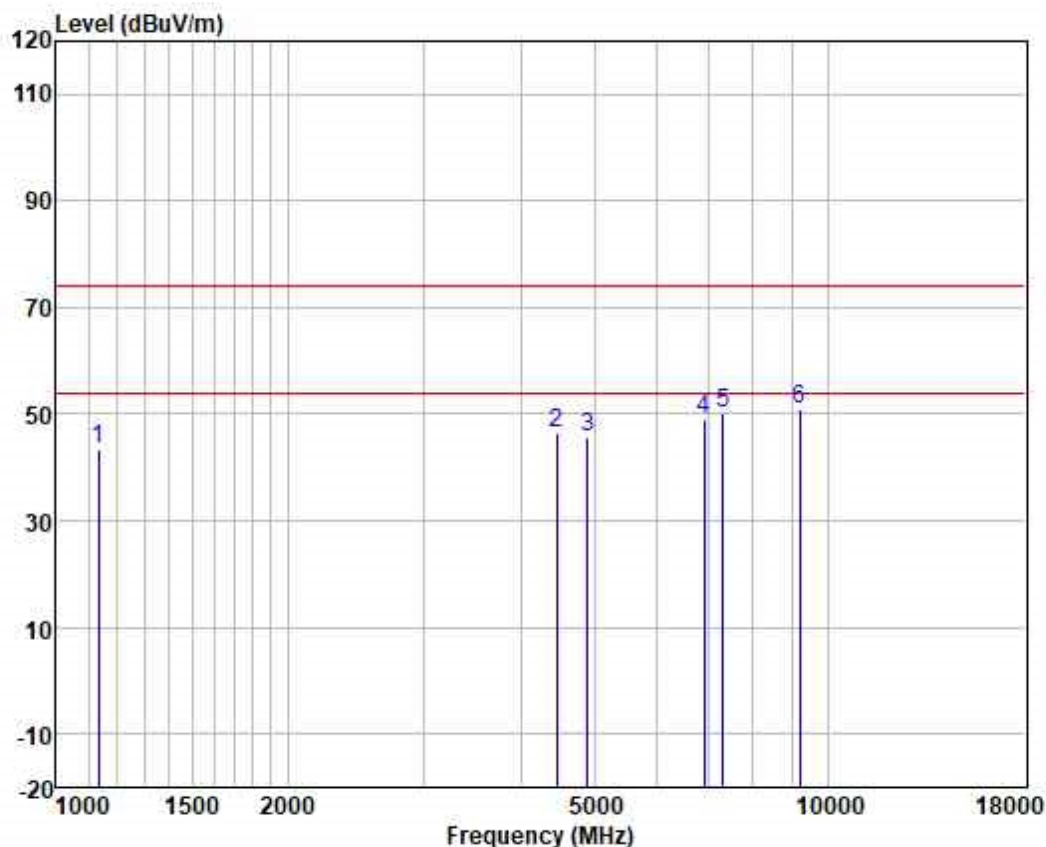
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:middle



	Freq	ReadAntenna	Cable	Preamp	Limit	Over			
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1414.597	54.78	24.29	2.67	38.47	43.27	74.00	-30.73	VERTICAL peak
2	3261.418	50.83	28.89	3.98	37.58	46.12	74.00	-27.88	VERTICAL peak
3	4880.000	43.87	34.15	4.85	37.35	45.52	74.00	-28.48	VERTICAL peak
4	6995.172	44.18	35.11	5.87	37.15	48.01	74.00	-25.99	VERTICAL peak
5	7320.000	45.13	36.07	5.98	37.18	50.00	74.00	-24.00	VERTICAL peak
6	9205.540	43.01	37.97	6.73	37.13	50.58	74.00	-23.42	VERTICAL peak



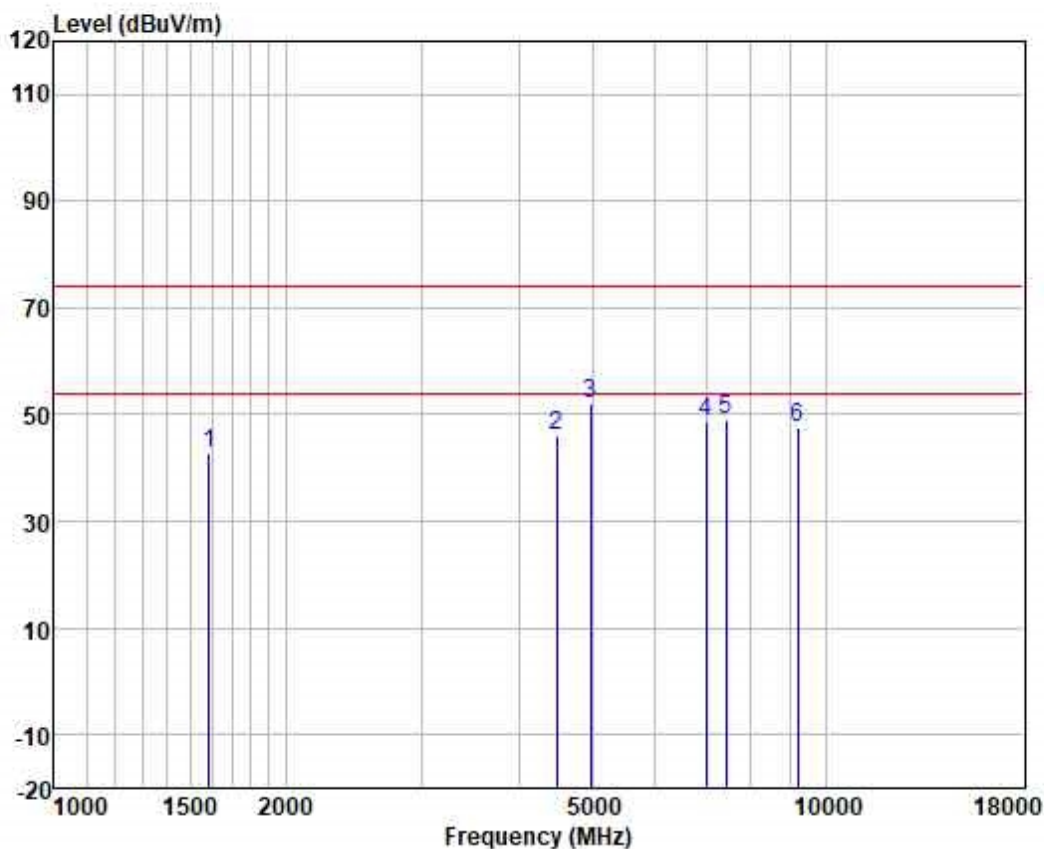
Test Mode: 00; Polarity: Horizontal; Modulation:GFSK; Channel:middle



		ReadAntenna		Cable	Preamp		Limit	Over	Pol/Phase	Remark
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit		
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB		
1	1135.617	57.25	22.81	2.30	38.72	43.64	74.00	-30.36	HORIZONTAL	peak
2	4456.315	45.17	34.00	4.61	37.45	46.33	74.00	-27.67	HORIZONTAL	peak
3	4880.000	44.23	34.15	4.85	37.35	45.88	74.00	-28.12	HORIZONTAL	peak
4	6914.763	45.22	34.97	5.84	37.14	48.89	74.00	-25.11	HORIZONTAL	peak
5	7320.000	45.14	36.07	5.98	37.18	50.01	74.00	-23.99	HORIZONTAL	peak
6	9205.540	43.42	37.97	6.73	37.13	50.99	74.00	-23.01	HORIZONTAL	peak



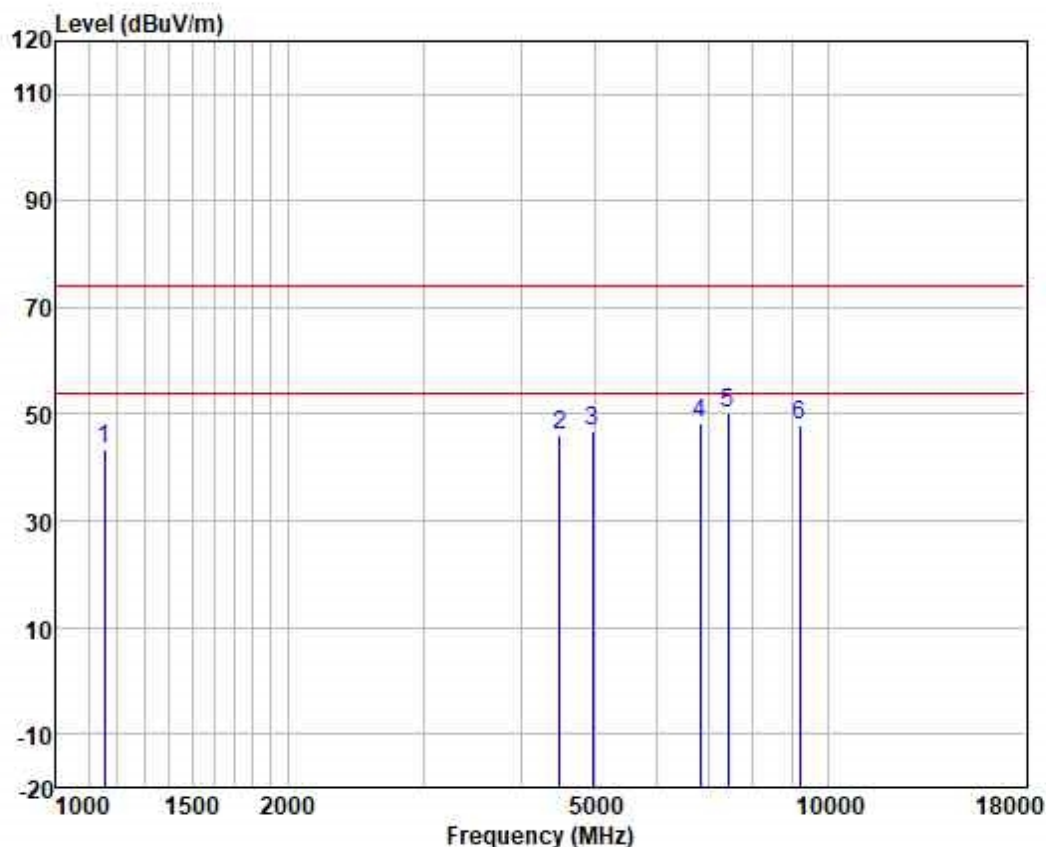
Test Mode: 00; Polarity: Vertical; Modulation:GFSK; Channel:High



	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over	Pol/Phase	Remark
	MHz	Level	Factor	Loss	Factor	Line	Limit		
		dBuV	dB/m	dB	dB	dBuV/m	dB		
1	1587.975	53.49	24.65	2.75	38.15	42.74	74.00	-31.26	VERTICAL peak
2	4482.150	44.97	34.12	4.62	37.44	46.27	74.00	-27.73	VERTICAL peak
3	4960.000	50.20	34.15	4.89	37.32	51.92	74.00	-22.08	VERTICAL peak
4	6995.172	44.98	35.11	5.87	37.15	48.81	74.00	-25.19	VERTICAL peak
5	7440.000	43.94	36.33	6.02	37.18	49.11	74.00	-24.89	VERTICAL peak
6	9205.540	40.07	37.97	6.73	37.13	47.64	74.00	-26.36	VERTICAL peak



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



	Freq	ReadAntenna	Cable	Preamp	Level	Limit	Over		
	MHz	Level	Factor	Loss	Factor	Line	Limit	Pol/Phase	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	1155.483	56.99	22.89	2.33	38.71	43.50	74.00	-30.50	HORIZONTAL peak
2	4495.125	44.70	34.17	4.62	37.44	46.05	74.00	-27.95	HORIZONTAL peak
3	4960.000	45.04	34.15	4.89	37.32	46.76	74.00	-27.24	HORIZONTAL peak
4	6835.278	44.85	34.79	5.81	37.13	48.32	74.00	-25.68	HORIZONTAL peak
5	7440.000	45.17	36.33	6.02	37.18	50.34	74.00	-23.66	HORIZONTAL peak
6	9205.540	40.45	37.97	6.73	37.13	48.02	74.00	-25.98	HORIZONTAL peak



7.4 Conducted Peak Output Power

Test Requirement 47 CFR Part 15, Subpart C 15.247(b)(3)

Test Method: ANSI C63.10 (2013) Section 11.9.1

Limit:

Frequency range(MHz)	Output power of the intentional radiator(watt)
902-928	1 for ≥ 50 hopping channels
	0.25 for $25 \leq$ hopping channels < 50
	1 for digital modulation
2400-2483.5	1 for ≥ 75 non-overlapping hopping channels
	0.125 for all other frequency hopping systems
	1 for digital modulation
5725-5850	1 for frequency hopping systems and digital modulation

7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 20.1 °C

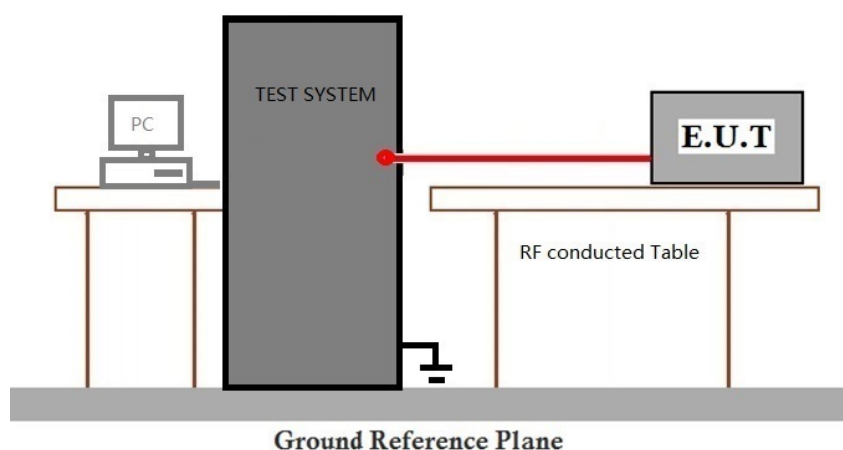
Humidity: 39.7 % RH

Atmospheric Pressure: 1017 mbar

7.4.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.4.3 Test Setup Diagram



7.4.4 Measurement Procedure and Data

Note: Since the verify power the same operating range bandwidth and smaller power can be covered by the higher power.

Please Refer to Appendix for Details



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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

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

7.5 Minimum 6dB Bandwidth

Test Requirement	47 CFR Part 15, Subpart C 15.247a(2)
Test Method:	ANSI C63.10 (2013) Section 11.8.1
Limit:	≥500 kHz

7.5.1 E.U.T. Operation

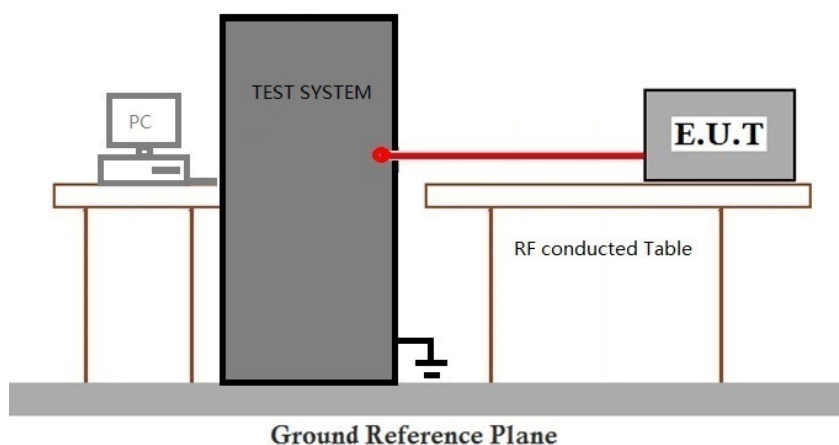
Operating Environment:

Temperature: 20.1 °C Humidity: 39.7 % RH Atmospheric Pressure: 1017 mbar

7.5.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.5.3 Test Setup Diagram



7.5.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.6 Power Spectrum Density

Test Requirement 47 CFR Part 15, Subpart C 15.247(e)
 Test Method: ANSI C63.10 (2013) Section 11.10.2
 Limit:
 ≤8dBm in any 3 kHz band during any time interval of continuous transmission

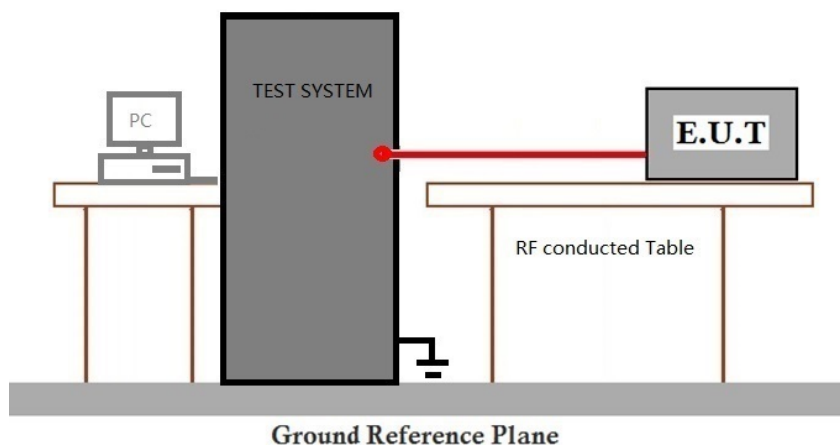
7.6.1 E.U.T. Operation

Operating Environment:
 Temperature: 20.1 °C Humidity: 39.7 % RH Atmospheric Pressure: 1017 mbar

7.6.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.6.3 Test Setup Diagram



7.6.4 Measurement Procedure and Data

Please Refer to Appendix for Details



7.7 Conducted Band Edges Measurement

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.13.3.2

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.7.1 E.U.T. Operation

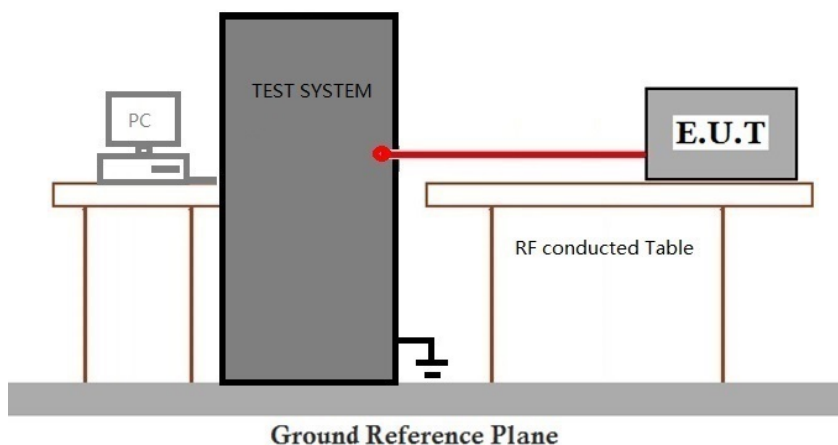
Operating Environment:

Temperature: 20.1 °C Humidity: 39.7 % RH Atmospheric Pressure: 1017 mbar

7.7.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.7.3 Test Setup Diagram



7.7.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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Guangzhou Branch, Testing Center EEC Laboratory.

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
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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7.8 Conducted Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.247(d)

Test Method: ANSI C63.10 (2013) Section 11.11

Limit:

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

7.8.1 E.U.T. Operation

Operating Environment:

Temperature: 20.1 °C

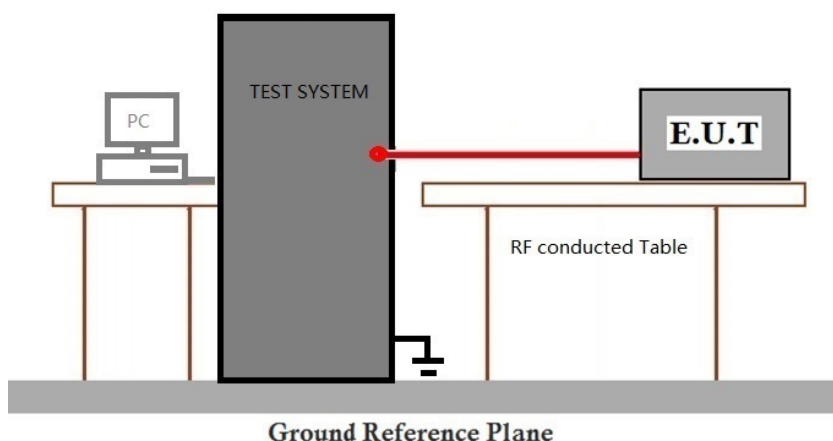
Humidity: 39.7 % RH

Atmospheric Pressure: 1017 mbar

7.8.2 Test Mode Description

Pre-scan / Mode	Description
Final test Code	
Final test 00	TX mode(1Mbps)_Keep the EUT in continuously transmitting mode with GFSK modulation.

7.8.3 Test Setup Diagram



7.8.4 Measurement Procedure and Data

Please Refer to Appendix for Details



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SGS-CSTC Standards Technical Services Co., Ltd.
Guangzhou Branch, Testing Center EEC Laboratory.

No.198, Kezhu Road, Science City, Economic & Technological Development Area, Guangzhou, Guangdong, China 510663
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

t (86-20) 82155555 www.sgsgroup.com.cn
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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for GZCR241200141702



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9 EUT Constructional Details (EUT Photos)

Refer to External and Internal Photos for GZCR2412001417HS



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10 Appendix

1. Duty Cycle

1.1 Test Result

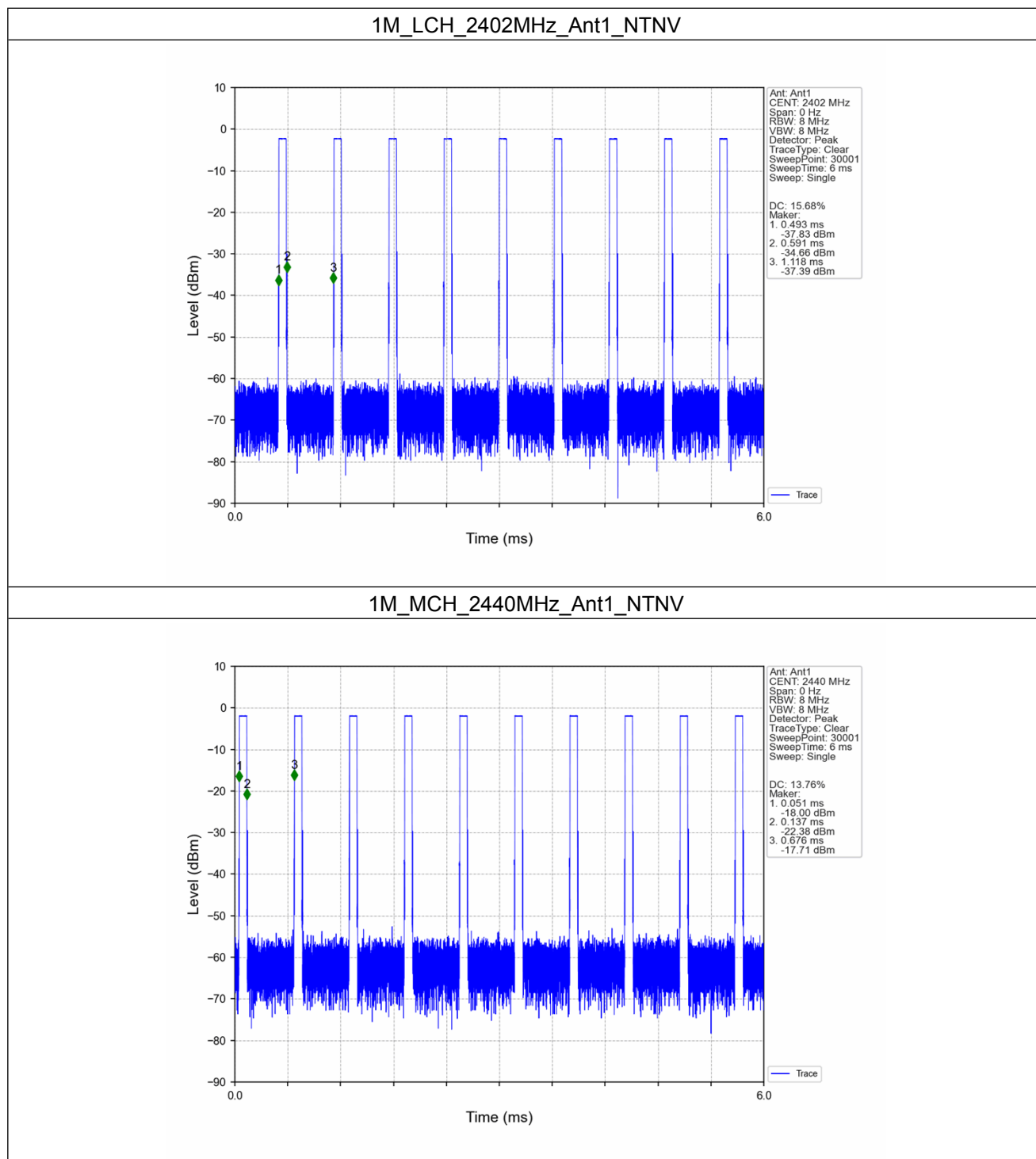
1.1.1 Ant1

Ant1							
Mode	TX Type	Frequency (MHz)	T _{on} (ms)	Period (ms)	Duty Cycle (%)	Duty Cycle Correction Factor (dB)	Max. DC Variation (%)
1M	SISO	2402	0.098	0.625	15.68	8.05	0.00
		2440	0.086	0.625	13.76	8.61	0.03
		2480	0.086	0.625	13.76	8.61	0.00

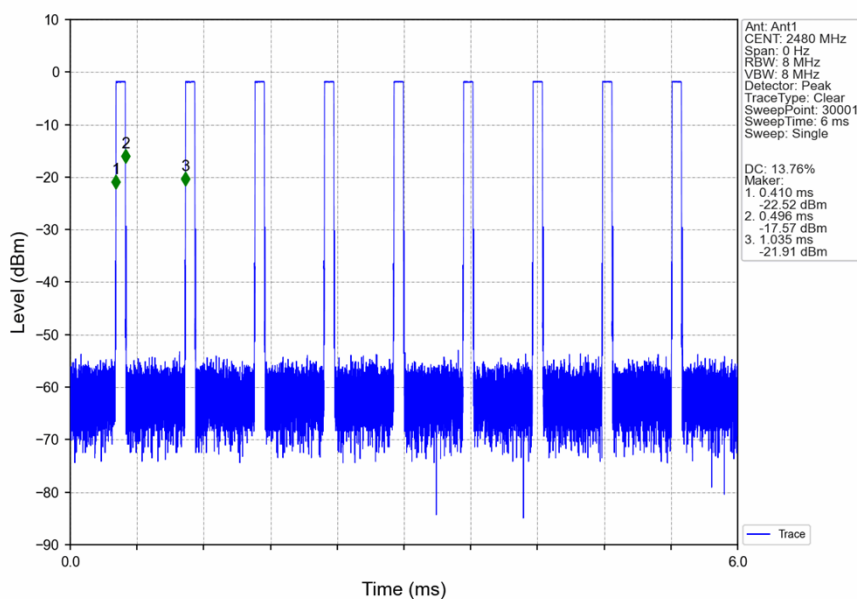


1.2 Test Graph

1.2.1 Ant1



1M_HCH_2480MHz_Ant1_NTNV



2. Bandwidth

2.1 Test Result

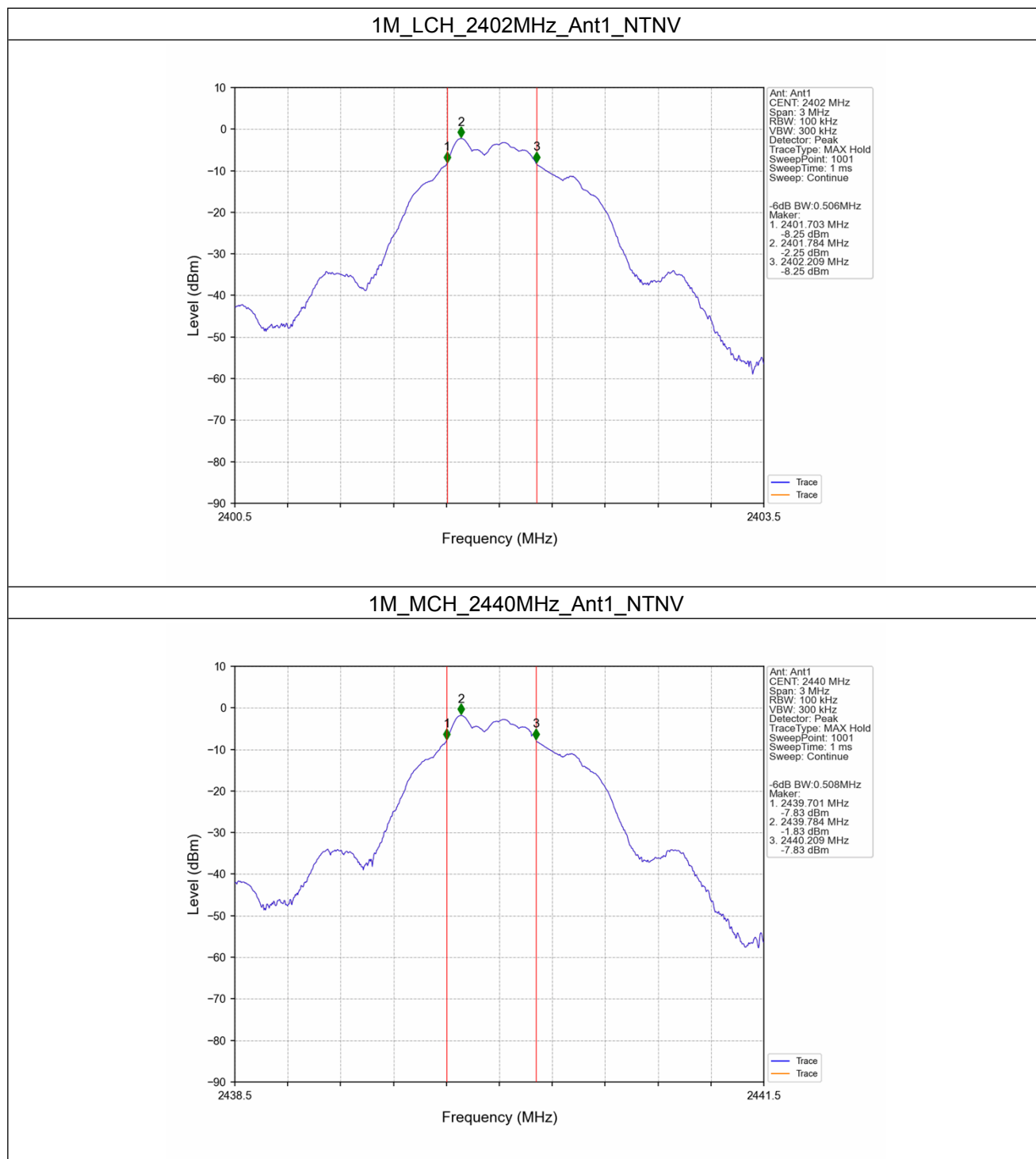
2.1.1 6dB BW

Mode	TX Type	Frequency (MHz)	ANT	6dB Bandwidth (MHz)		Verdict
				Result	Limit	
1M	SISO	2402	1	0.506	≥ 0.5	Pass
		2440	1	0.508	≥ 0.5	Pass
		2480	1	0.505	≥ 0.5	Pass

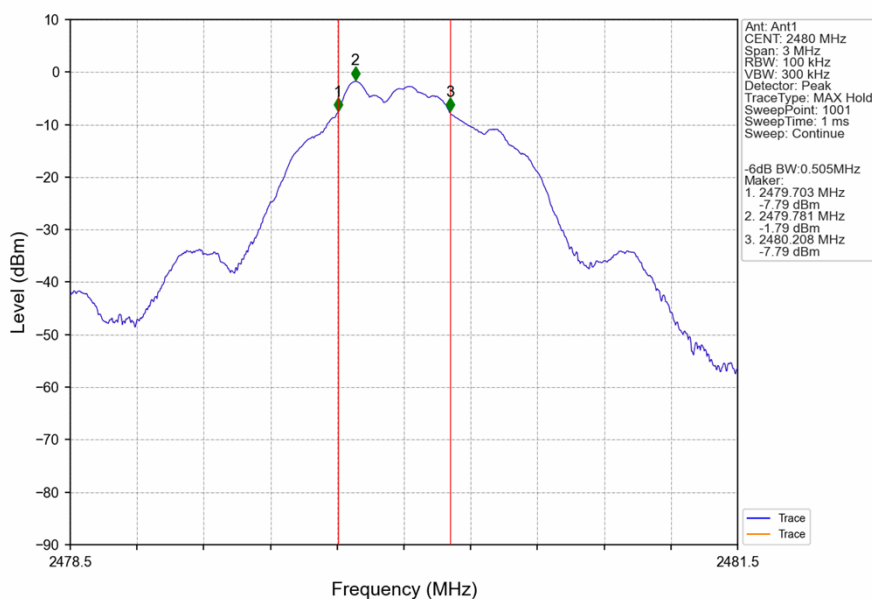


2.2 Test Graph

2.2.1 6dB BW



1M_HCH_2480MHz_Ant1_NTNV



3. Maximum Conducted Output Power

3.1 Test Result

3.1.1 Power

Mode	TX Type	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)		Verdict
			ANT1	Limit	
1M	SISO	2402	-2.32	<=30	Pass
		2440	-1.90	<=30	Pass
		2480	-1.85	<=30	Pass

Note1: Antenna Gain: Ant1: 1.75dBi;



4. Maximum Power Spectral Density

4.1 Test Result

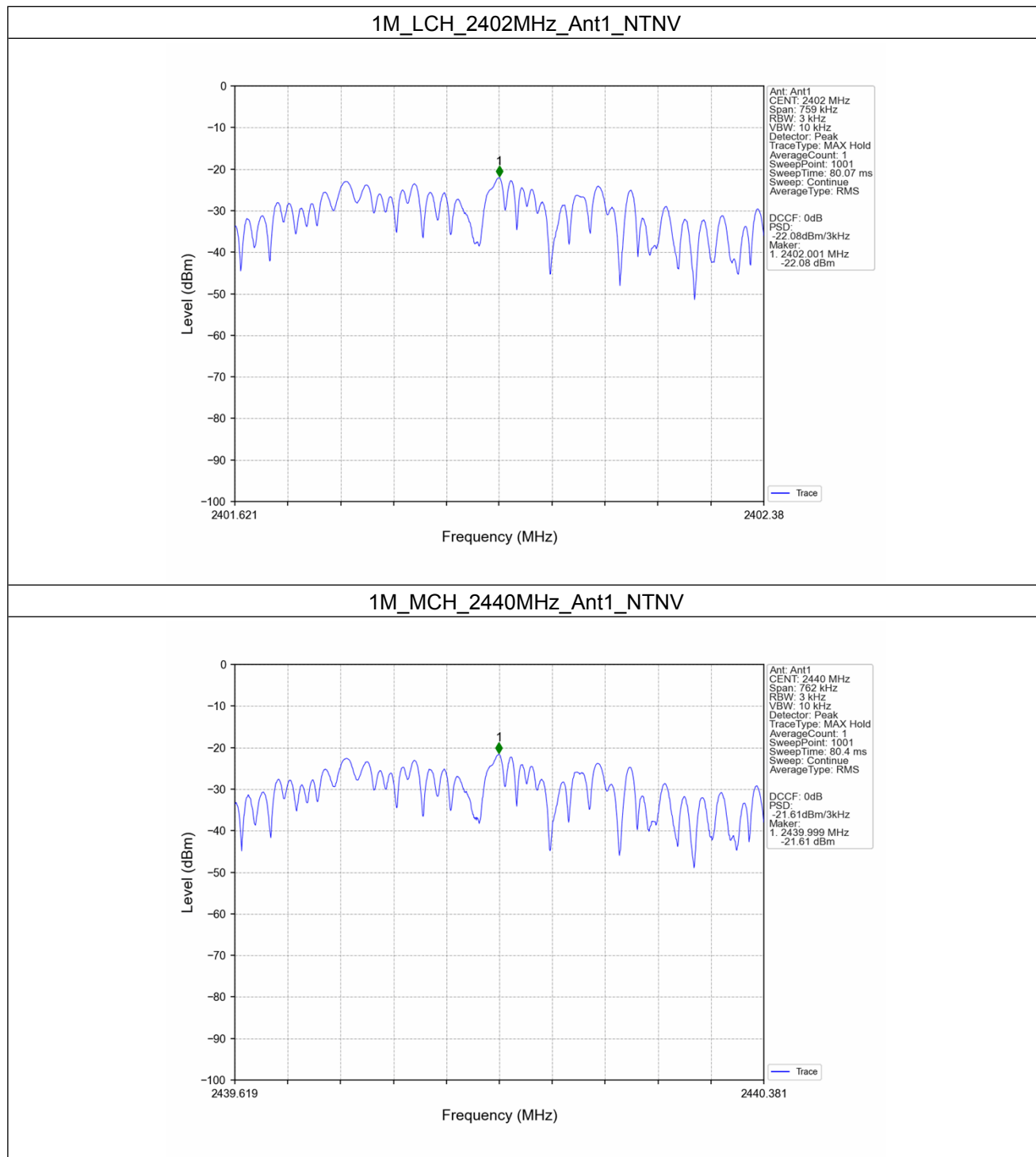
4.1.1 PSD

Mode	TX Type	Frequency (MHz)	Maximum PSD (dBm/3kHz)		Verdict
			ANT1	Limit	
1M	SISO	2402	-22.08	<=8	Pass
		2440	-21.61	<=8	Pass
		2480	-21.54	<=8	Pass
Note1: Antenna Gain: Ant1: 1.75dBi;					

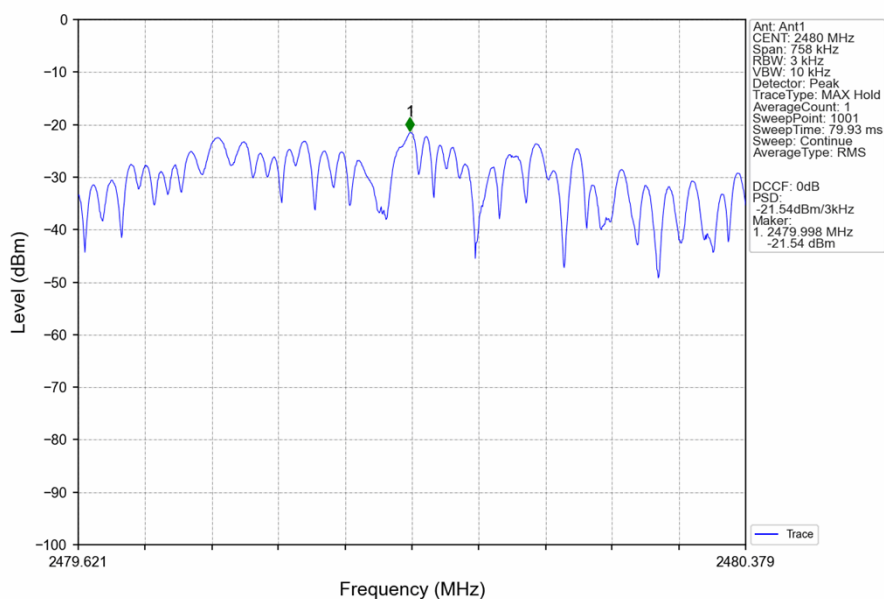


4.2 Test Graph

4.2.1 PSD



1M_HCH_2480MHz_Ant1_NTNV



5. Unwanted Emissions In Non-restricted Frequency Bands

5.1 Test Result

5.1.1 Ref

Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)
1M	SISO	2402	1	-2.27
		2440	1	-1.85
		2480	1	-1.80

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

5.1.2 CSE and Band Edges

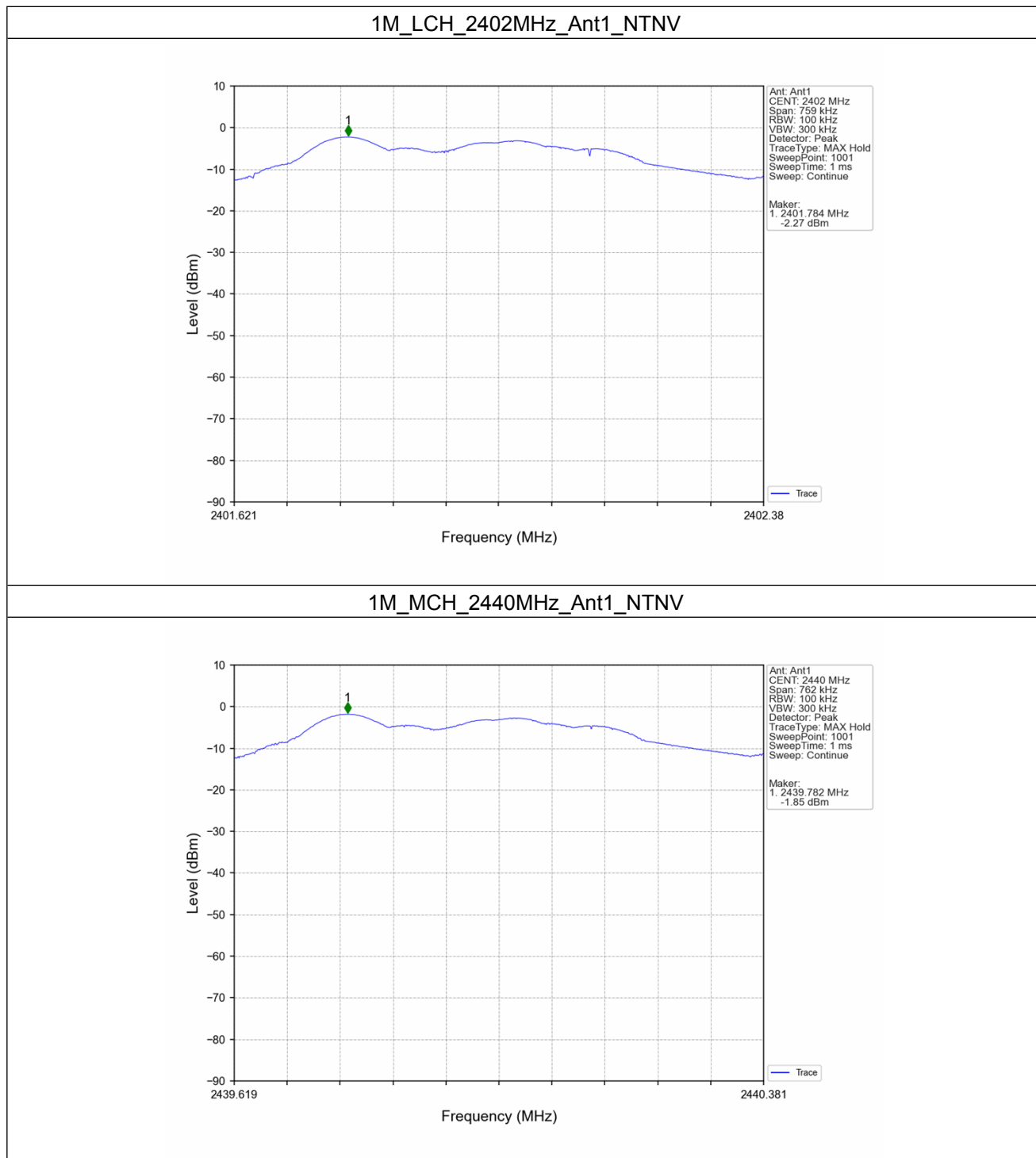
Mode	TX Type	Frequency (MHz)	ANT	Level of Reference (dBm)	Limit (dBm)	Verdict
1M	SISO	2402	1	-1.80	-21.80	Pass
		2440	1	-1.80	-21.80	Pass
		2480	1	-1.80	-21.80	Pass

Note1: Refer to FCC Part 15.247 (d) and ANSI C63.10-2013, the channel contains the maximum PSD level was used to establish the reference level.

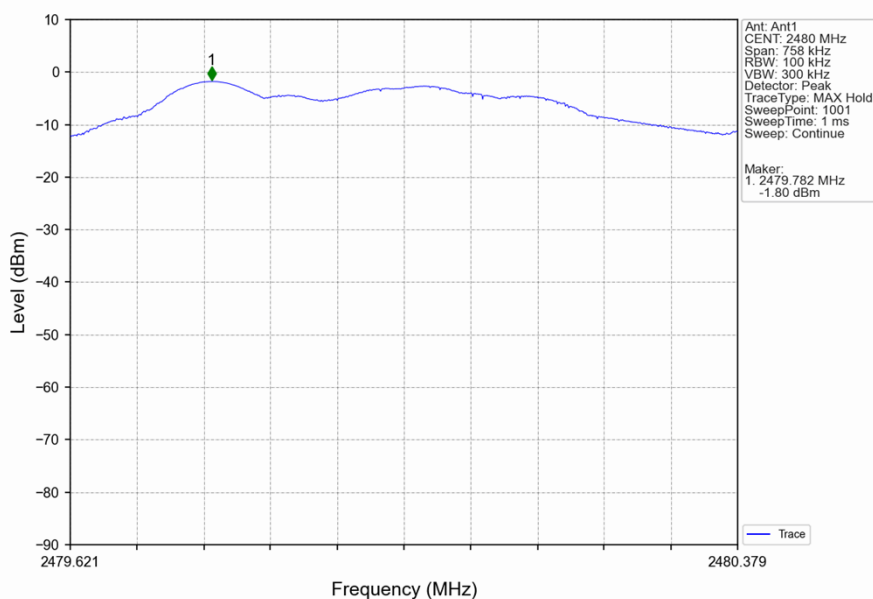


5.2 Test Graph

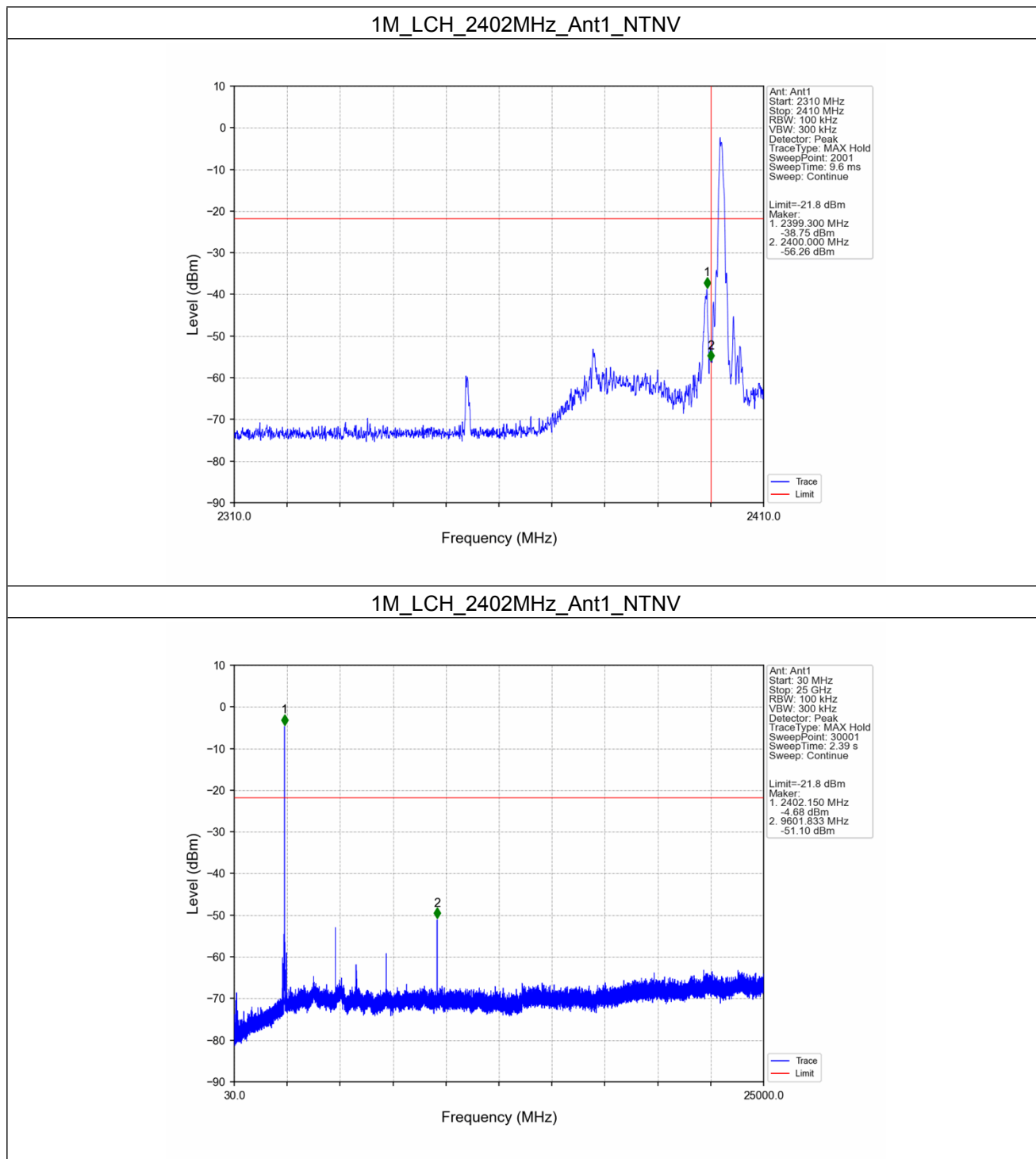
5.2.1 Ref



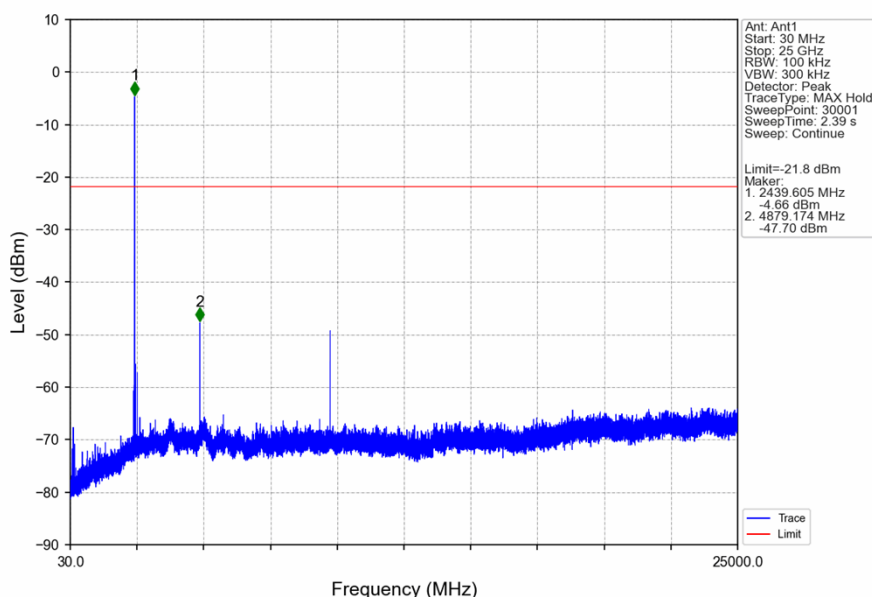
1M_HCH_2480MHz_Ant1_NTNV



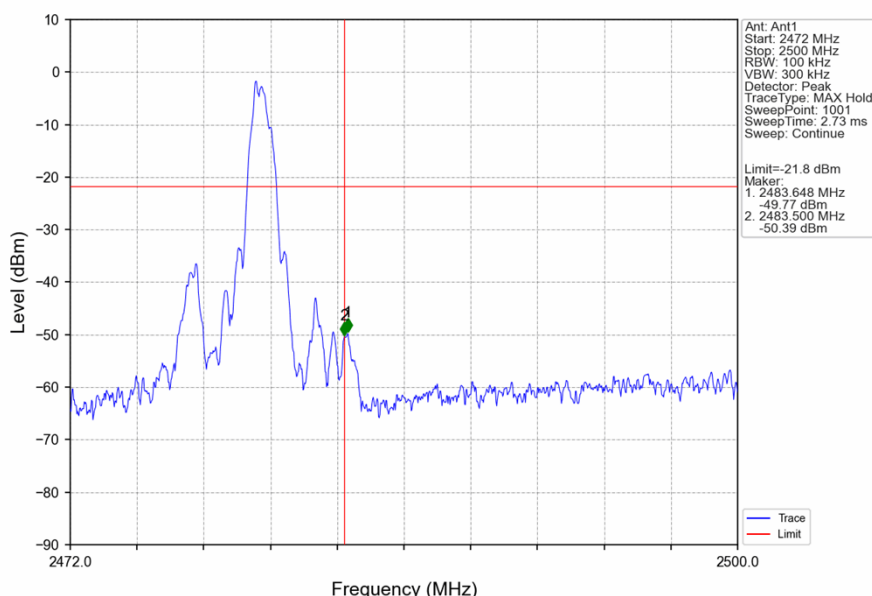
5.2.2 CSE



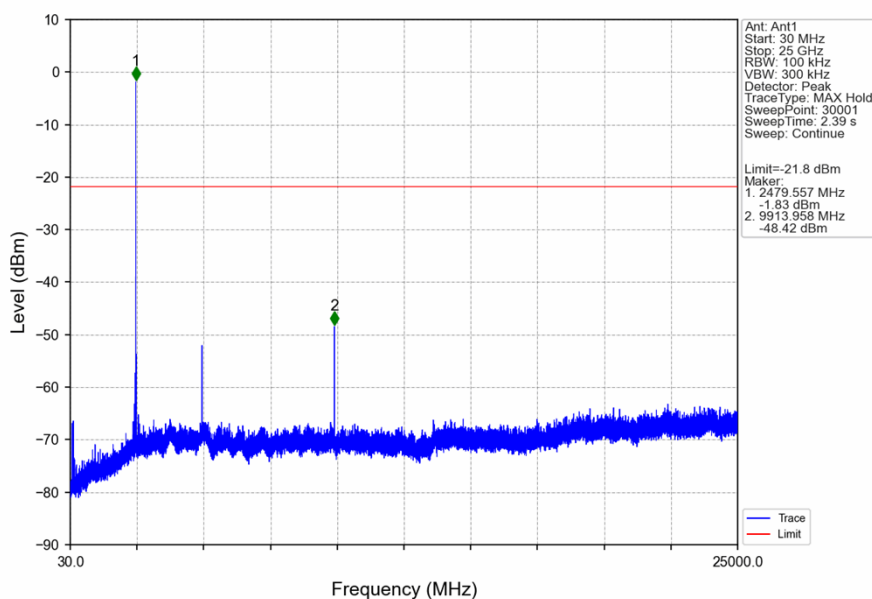
1M_MCH_2440MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



1M_HCH_2480MHz_Ant1_NTNV



- End of the Report -

