



SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch

SZEMC-TRF-01 Rev. A/1

Report No.: SZCR250200073401

Page: 1 of 47

TEST REPORT

Application No.: SZCR2502000734AT
Applicant: Traxxas LP
Address of Applicant: 6250 Traxxas Way McKinney, Texas 75070, United States
Manufacturer: Traxxas LP
Address of Manufacturer: 6250 Traxxas Way McKinney, Texas, 75070, USA
Equipment Under Test (EUT):
EUT Name: Long Range TQ Transmitter
Model No.: 6567, 6568 ♦
♦ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: Traxxas
FCC ID: XVE-TRX1030
Standard(s) : 47 CFR Part 15, Subpart C 15.247
Date of Receipt: 2025-02-28
Date of Test: 2025-02-28 to 2025-03-03
Date of Issue: 2025-03-04

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

Keny Xu
EMC Laboratory Manager



SGS-CSTC Standards Technical Services Co., Ltd.
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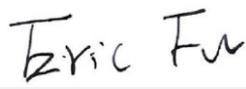
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Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2025-03-04		Original

Authorized for issue by:			
			
	Bill Chen/Project Engineer		
			
	Eric Fu/Reviewer		



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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
Minimum 6dB Bandwidth	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.8.1	47 CFR Part 15, Subpart C 15.247a(2)	Pass
Conducted Peak Output Power	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.9.1	47 CFR Part 15, Subpart C 15.247(b)(3)	Pass
Power Spectrum Density	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.10.2	47 CFR Part 15, Subpart C 15.247(e)	Pass
Conducted Band Edges Measurement	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.13.3.2	47 CFR Part 15, Subpart C 15.247(d)	Pass
Conducted Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 11.11	47 CFR Part 15, Subpart C 15.247(d)	Pass
Radiated Emissions which fall in the restricted bands	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.10.5	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass
Radiated Spurious Emissions	47 CFR Part 15, Subpart C 15.247	ANSI C63.10 (2013) Section 6.4,6.5,6.6	47 CFR Part 15, Subpart C 15.209 & 15.247(d)	Pass

Remark:

Model No: 6567, 6568

The model 6568 was only tested. Since the electrical circuit design, layout, components used, internal wiring and functions were identical for the above models, with only difference on model name and below details.

Model No.	6567	6568
Differences	Main – 2 Channels (2 control switches)	Main – 3 Channels (3 control switches)

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4 General Information

4.1 Details of E.U.T.

Power Supply:	DC6.0V(4 x 1.5V"AA" Batteries)
Operation Frequency:	2406MHz to 2453MHz
Modulation Type:	GFSK
Channel Spacing:	1MHz
Number of Channels:	48
Antenna Gain:	0dBi
Antenna Type:	PCB Antenna

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

4.2 Description of Support Units

The EUT has been tested as an independent unit.

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF conducted power	$\pm 0.75\text{dB}$
5	RF power density	$\pm 2.84\text{dB}$
6	Conducted Spurious emissions	$\pm 0.75\text{dB}$
7	RF Radiated power	$\pm 4.5\text{dB}$ (Below 1GHz) $\pm 4.8\text{dB}$ (Above 1GHz)
8	Radiated Spurious emission test	$\pm 4.5\text{dB}$ (Below 1GHz) $\pm 4.8\text{dB}$ (Above 1GHz)
9	Temperature test	$\pm 1^\circ\text{C}$
10	Humidity test	$\pm 3\%$
11	Supply voltages	$\pm 1.5\%$
12	Time	$\pm 3\%$

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4.4 Test Location

All tests were performed at:

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Tel: +86 755 2601 2053 Fax: +86 755 2671 0594

No tests were sub-contracted.

4.5 Test Facility

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

- **A2LA (Certificate No. 3816.01)**

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

- **VCCI (Member No. 1937)**

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

- **FCC –Designation Number: CN1336**

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

Designation Number: CN1336. Test Firm Registration Number: 787754.

- **Innovation, Science and Economic Development Canada**

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

CAB identifier: CN0006.

IC#: 4620C.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

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5 Equipment List

Radiated Emissions which fall in the restricted bands					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-7	2026-01-6
Low Noise Amplifier 30M-8GHz	Tonscend	TAP30M8G30	SZ-WRG-M-050	2025-01-7	2026-01-6
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

Radiated Spurious Emissions Below 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Loop Antenna	ETS-Lindgren	6502	SEM003-08	2023-11-20	2025-11-19
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2023-06-19	2026-06-18
MXE EMI Receiver	Agilent Technologies	N9038A	SEM004-15	2024-08-14	2025-08-13
BiConiLog Antenna	ETS-LINDGREN	3142C	SEM003-01	2023-09-16	2025-09-15
Pre-Amplifier	Agilent Technologies	8447D	SEM005-01	2024-03-05	2025-03-04
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2024-07-06	2025-07-05



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Radiated Spurious Emissions Above 1GHz					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Signal & Spectrum Analyzer	Rohde & Schwarz	FSV	SZ-WRG-M-048	2025-01-7	2026-01-6
Low Noise Amplifier 1G-18GHz	Tonscend	TAP01018050	SZ-WRG-M-051	2025-01-7	2026-01-6
Low Noise Amplifier 18G-40GHz	Tonscend	TAP18040048	SZ-WRG-M-052	2025-01-8	2026-01-7
Double Ridge Horn Antenna 1GHz-18GHz	SCHWARZBECK	BBHA 9120 D	SZ-WRG-M-055	2023-12-21	2025-12-20
SHF-EHF Horn 15GHz-40GHz	SCHWARZBECK	BBHA 9170	SZ-WRG-M-056	2023-12-25	2025-12-24
RSE Test Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Chamber	CRTSGSSAC966	N/A	SZ-WRG-C-063	2025-01-06	2028-01-05
Humidity and Temperature Indicator	deli	8838	SEM002-46	2024-07-24	2025-07-23

RF Conducted Test					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Power Sensor	TST PASS	TSPS2023R	SEM009-26	2024-03-05	2025-03-04
Power Sensor	KEYSIGHT	U2021XA	SEM009-16	2024-03-05	2025-03-04
DC Power Supply	Chroma	62012P-80-60	SEM011-11	2024-08-14	2025-08-13
MXA Signal Analyzer	KEYSIGHT	N9020A	SEM004-19	2024-03-05	2025-03-04
Measurement Software	TST PASS	TST PASS V2.0	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM031-01	2024-07-06	2025-07-05
Attenuator	Huber+Suhner	6620_SMA-50-1	SEM021-09	2024-03-05	2025-03-04

General used equipment					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Humidity/ Temperature Indicator	deli	8838	SEM002-32	2024-07-24	2025-07-23
Humidity/ Temperature Indicator	deli	8838	SEM002-33	2024-07-24	2025-07-23
Barometer	Changchun Meteorological Industry Factory	DYM3	SEM002-01	2024-03-18	2025-03-17

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6 Radio Spectrum Technical Requirement

6.1 Antenna Requirement

6.1.1 Test Requirement:

47 CFR Part 15, Subpart C 15.203 & 15.247(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 0dBi.

Antenna location: Refer to internal photo.



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7 Radio Spectrum Matter Test Results

7.1 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

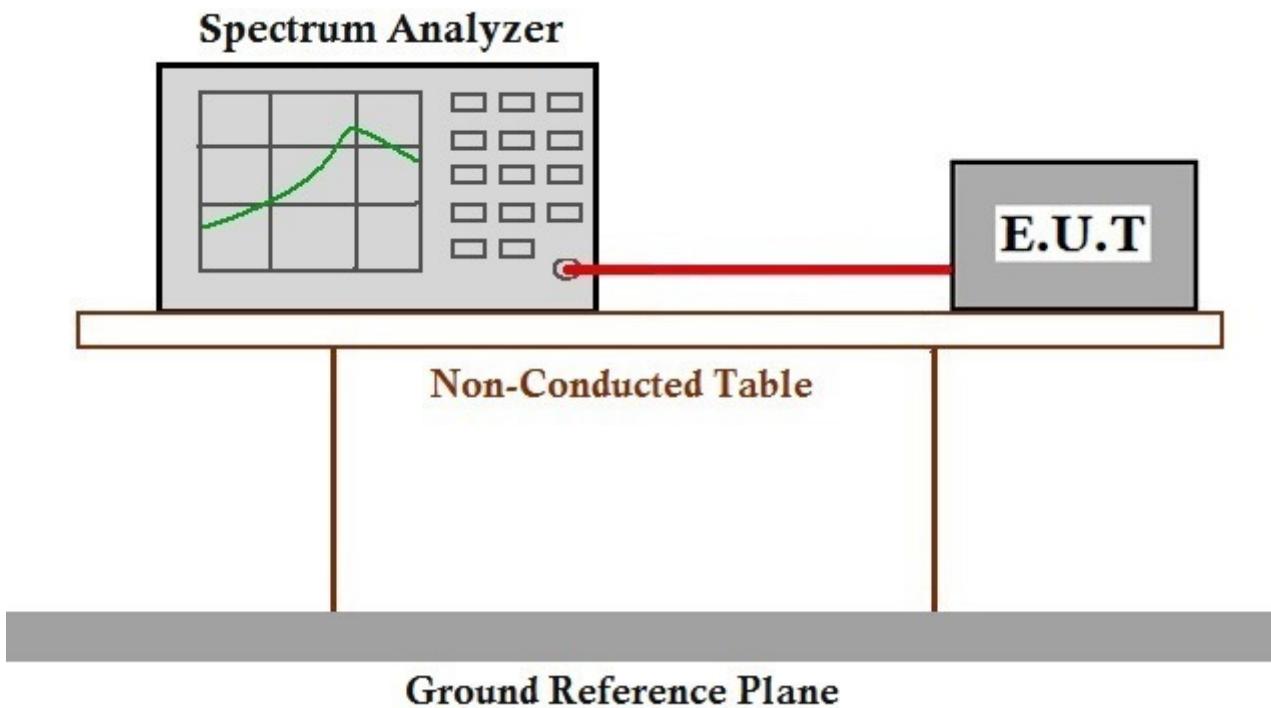
7.1.1 E.U.T. Operation

Operating Environment:

Temperature: 27.4 °C Humidity: 44 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.1.2 Test Setup Diagram



7.1.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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7.2 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



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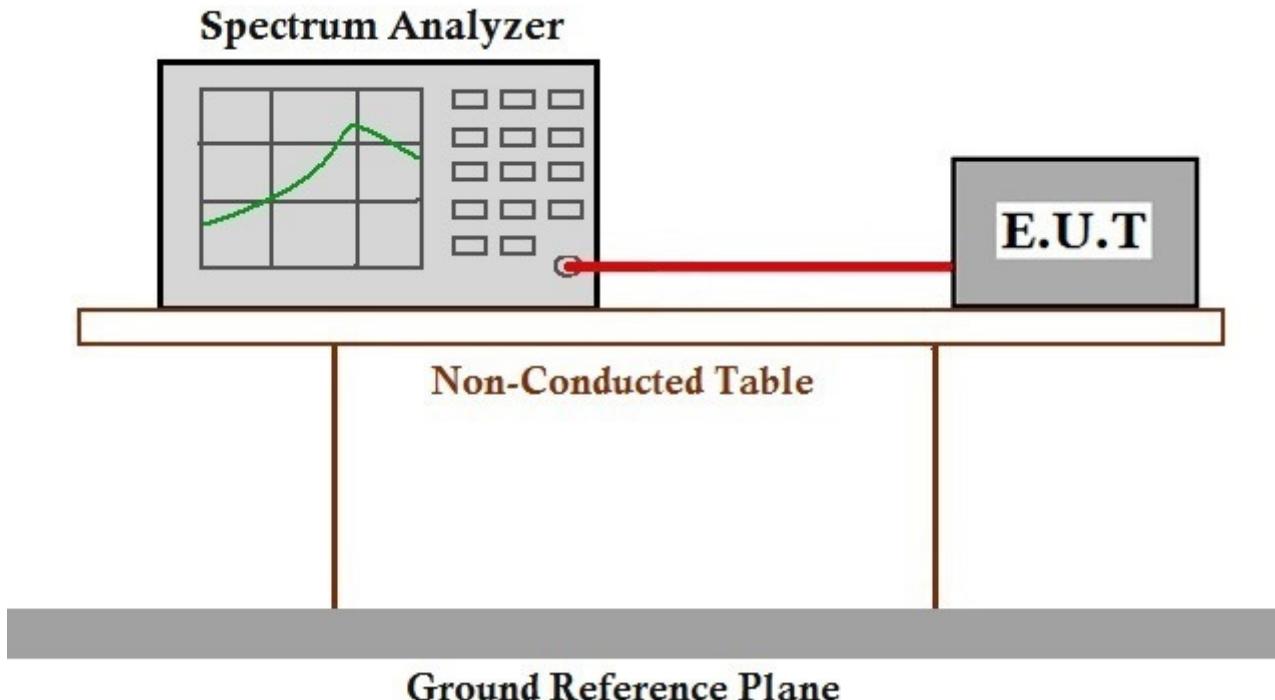
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7.2.1 E.U.T. Operation

Operating Environment:

Temperature: 27.4 °C Humidity: 44 % RH Atmospheric Pressure: 1020 mbar
Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.2.2 Test Setup Diagram



7.2.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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7.3 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

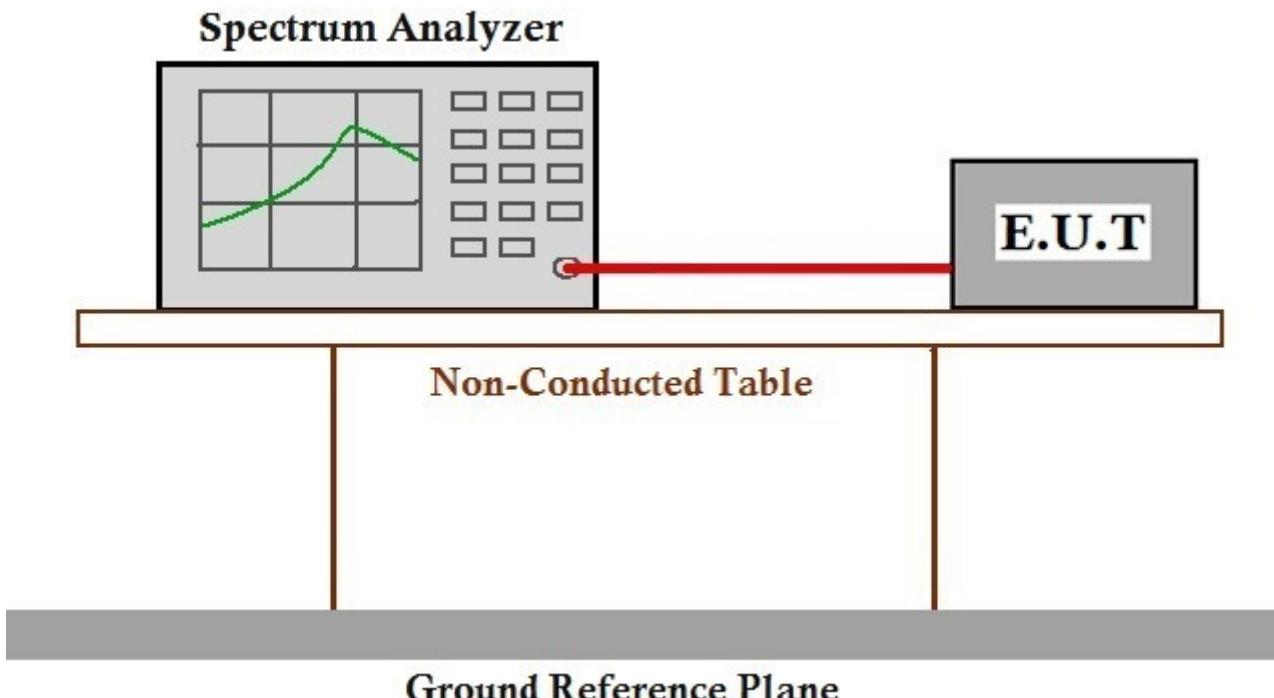
7.3.1 E.U.T. Operation

Operating Environment:

Temperature: 27.4 °C Humidity: 44 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.3.2 Test Setup Diagram



7.3.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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7.4 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 §15.205(a) (see §15.205(c))

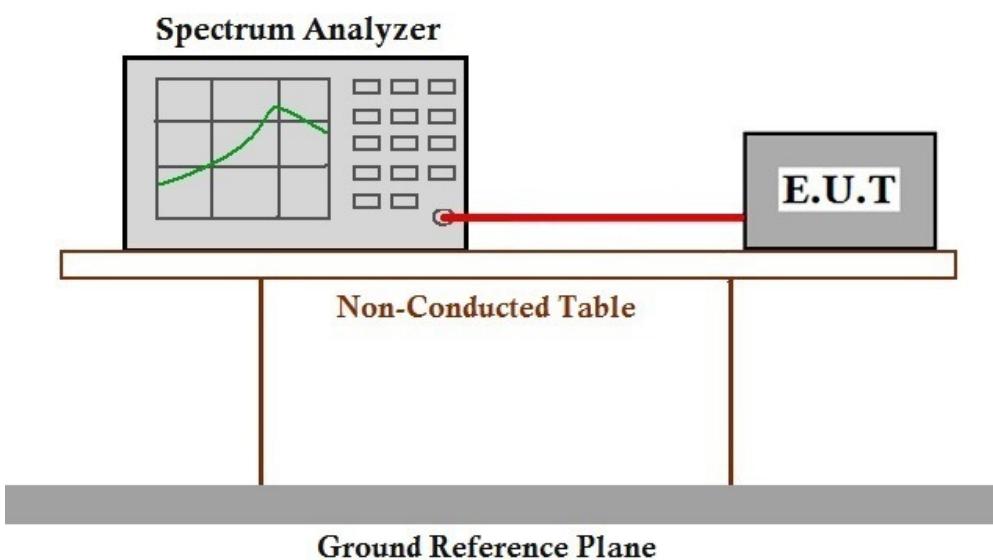
7.4.1 E.U.T. Operation

Operating Environment:

Temperature: 27.4 °C Humidity: 44 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.4.2 Test Setup Diagram



7.4.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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7.5 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 §15.205(a) (see §15.205(c))

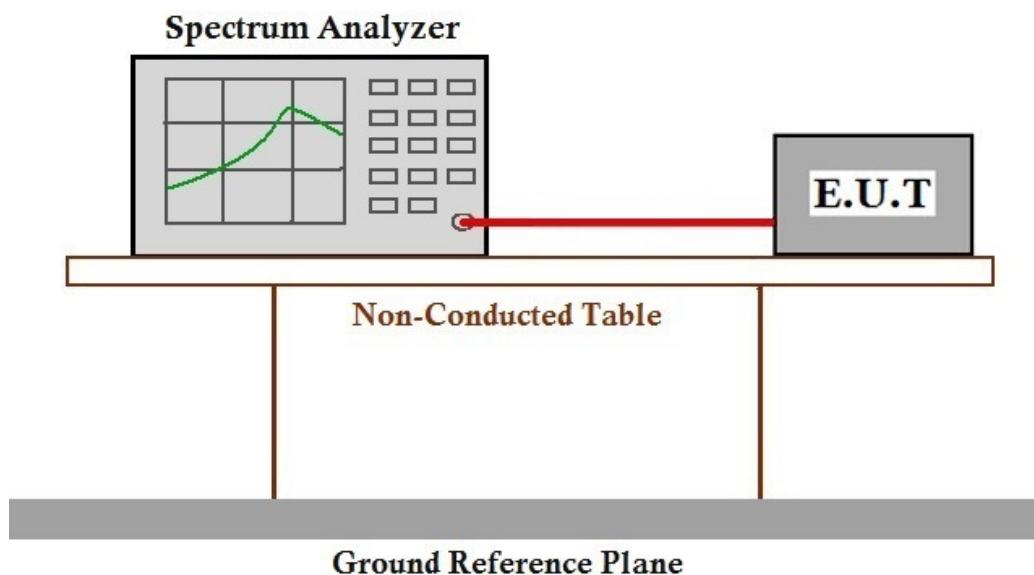
7.5.1 E.U.T. Operation

Operating Environment:

Temperature: 27.4 °C Humidity: 44 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.5.2 Test Setup Diagram



7.5.3 Measurement Procedure and Data

The detailed test data see: Appendix 15.247



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7.6 Radiated Emissions which fall in the restricted bands

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)

Test Method: ANSI C63.10 (2013) Section 6.10.5

Measurement Distance: 3m

Limit:

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

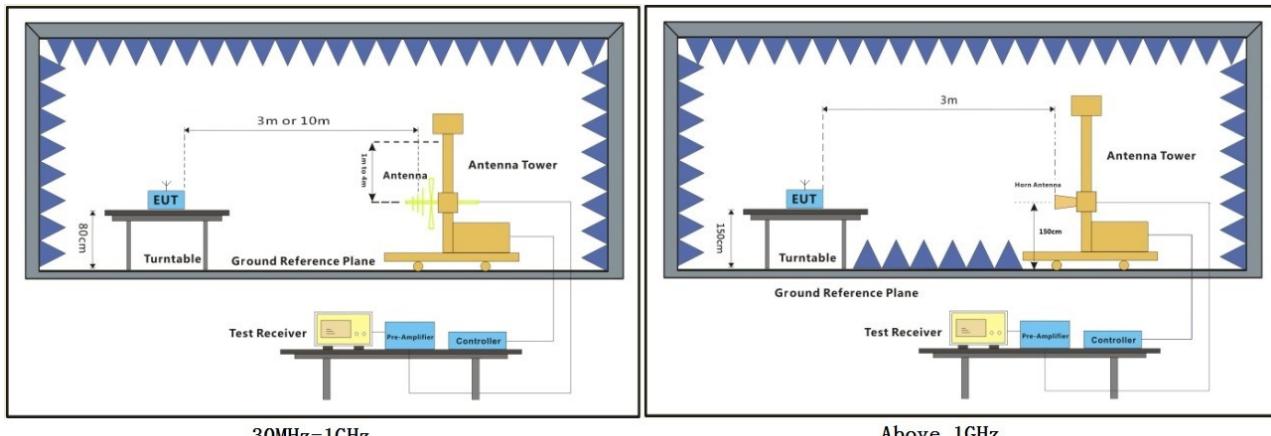
7.6.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C Humidity: 56.3 % RH Atmospheric Pressure: 1020 mbar

Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.6.2 Test Setup Diagram



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7.6.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. 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 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: For frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. For the emissions whose peak level is lower than the average limit, only the peak measurement is shown in the report.



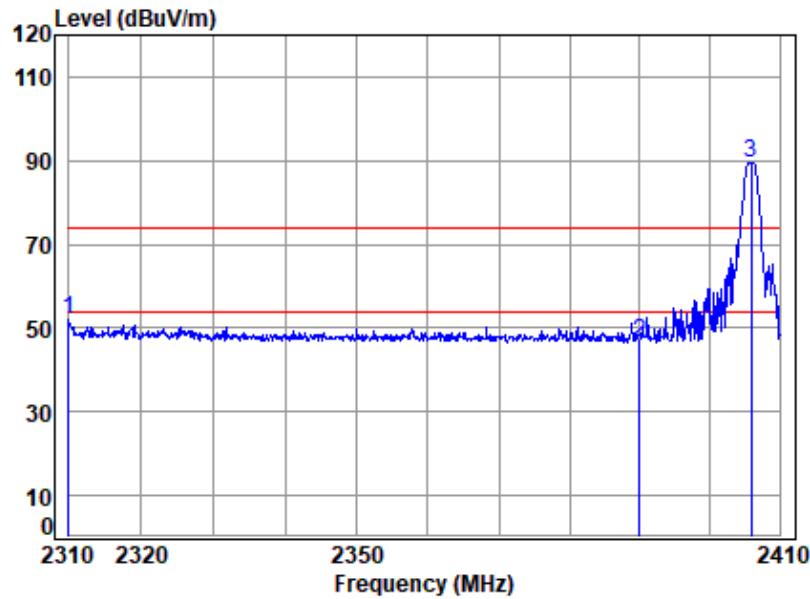
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Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low

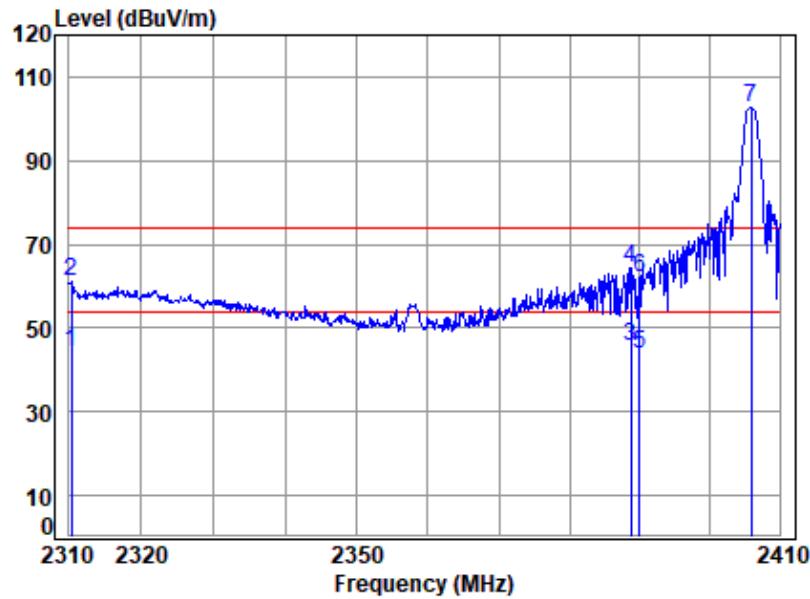


Site : chamber
Condition: 3m HORIZONTAL
Job No : 00734AT \00735AT
Mode : 2406 Band edge
Note :

Freq	Cable Loss	Ant Factor	Preamp Factor	Read Level	Limit Level	Limit Line	Over	Remark
							dB	
1 2310.000	4.22	28.38	40.94	60.30	51.96	74.00	-22.04	peak
2 2390.000	3.69	28.52	40.97	55.52	46.76	74.00	-27.24	peak
3 * 2406.000	3.65	28.55	40.98	98.27	89.49	74.00	15.49	peak



Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



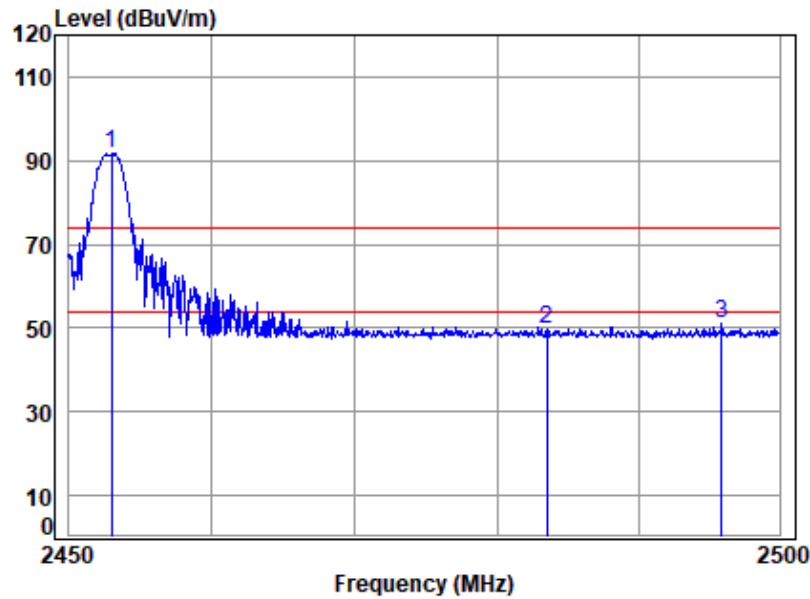
Site : chamber
 Condition: 3m VERTICAL
 Job No : 00734AT \00735AT
 Mode : 2406 Band edge
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Loss	Factor	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 2310.294	4.22	28.38	40.94	52.58	44.24	54.00	-9.76 Average
2 2310.294	4.22	28.38	40.94	69.47	61.13	74.00	-12.87 Peak
3 2388.748	3.69	28.52	40.97	54.38	45.62	54.00	-8.38 Average
4 2388.748	3.69	28.52	40.97	73.10	64.34	74.00	-9.66 peak
5 2390.000	3.69	28.52	40.97	52.43	43.67	54.00	-10.33 Average
6 2390.000	3.69	28.52	40.97	70.73	61.97	74.00	-12.03 peak
7 * 2406.000	3.65	28.55	40.98	111.37	102.59	74.00	28.59 peak

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Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:High



Site : chamber
Condition: 3m HORIZONTAL
Job No : 00734AT \00735AT
Mode : 2453 Band edge
Note :

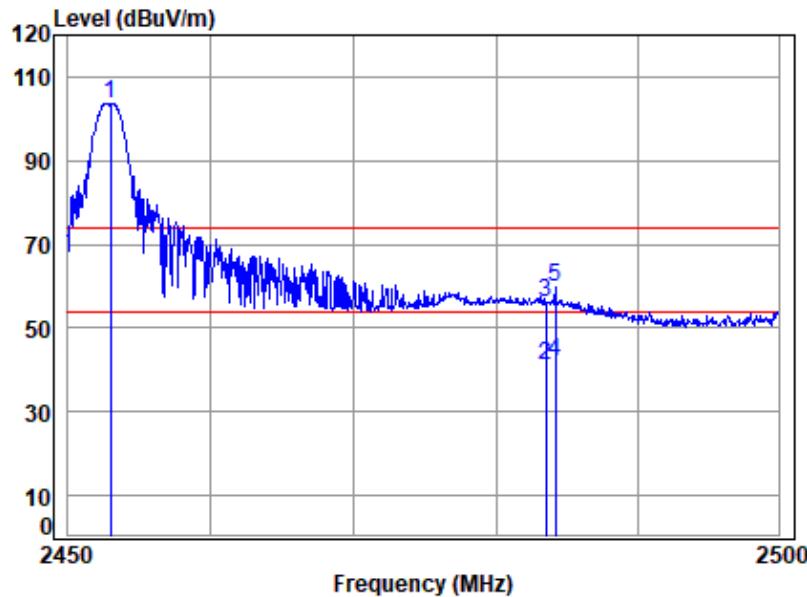
Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Loss	Factor	Factor	Level			
MHz	dB	dB/m		dB	dBuV	dBuV/m	dB
1 * 2453.000	3.87	28.62	41.00	100.08	91.57	74.00	17.57 Peak
2 2483.500	4.01	28.67	41.01	57.90	49.57	74.00	-24.43 Peak
3 2495.912	4.06	28.69	41.02	59.17	50.90	74.00	-23.10 Peak



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Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 00734AT \00735AT
Mode : 2453 Band edge
Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Loss	Factor	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 * 2453.000	3.87	28.62	41.00	112.06	103.55	74.00	29.55 Peak
2 2483.500	4.01	28.67	41.01	49.53	41.20	54.00	-12.80 Average
3 2483.500	4.01	28.67	41.01	64.62	56.29	74.00	-17.71 Peak
4 2484.191	4.01	28.67	41.01	50.27	41.94	54.00	-12.06 Average
5 2484.191	4.01	28.67	41.01	68.07	59.74	74.00	-14.26 Peak

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7.7 Radiated Spurious Emissions

Test Requirement 47 CFR Part 15, Subpart C 15.209 & 15.247(d)

Test Method: ANSI C63.10 (2013) Section 6.4,6.5,6.6

Measurement Distance: 3m

Limit:

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



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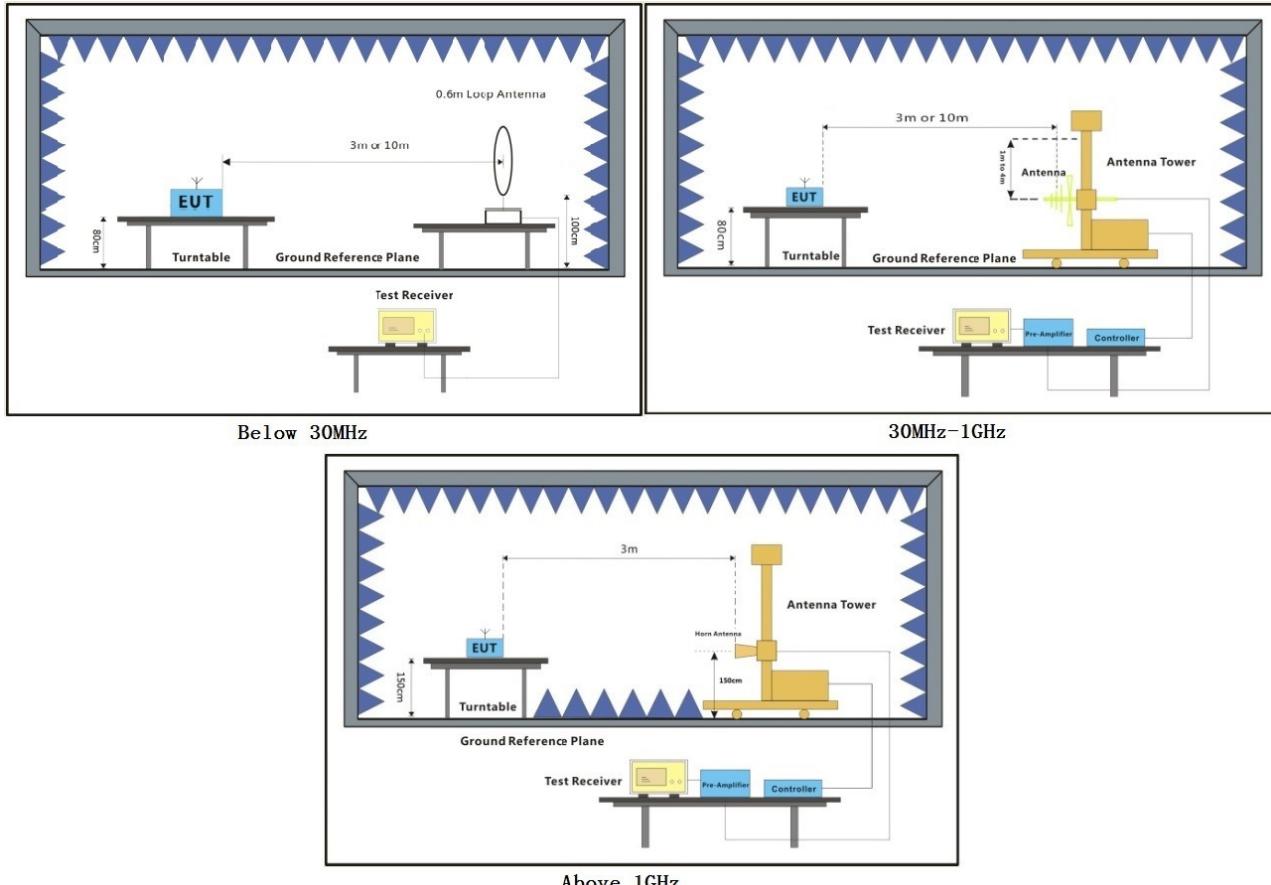
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7.7.1 E.U.T. Operation

Operating Environment:

Temperature: 23.5 °C Humidity: 56.3 % RH Atmospheric Pressure: 1020 mbar
Test mode a:TX mode_Keep the EUT in continuously transmitting with GFSK modulation mode.

7.7.2 Test Setup Diagram



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7.7.3 Measurement Procedure and Data

- a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. 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 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) For emission below 1GHz, 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 25GHz, the disturbance above 18GHz and 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.

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

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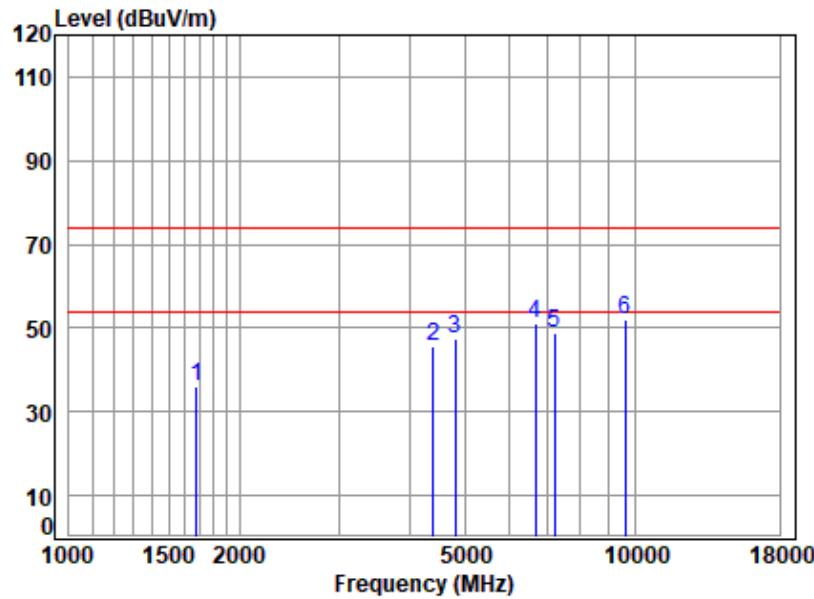


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Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:Low



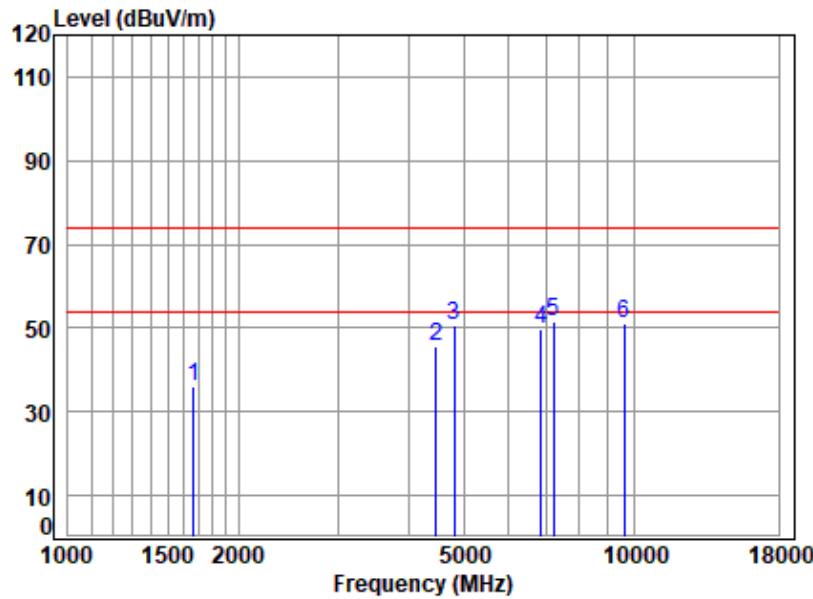
Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 00734AT \00735AT
 Mode : 2406 TX RSE
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Freq	Loss	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 1677.621	3.23	26.58	40.62	46.63	35.82	74.00	-38.18 peak
2 4405.090	6.67	33.44	42.48	48.00	45.63	74.00	-28.37 peak
3 4812.000	6.83	33.98	42.77	49.52	47.56	74.00	-26.44 peak
4 6659.763	8.21	35.70	41.86	49.22	51.27	74.00	-22.73 peak
5 7218.000	8.43	36.08	41.57	46.03	48.97	74.00	-25.03 peak
6 9624.000	9.27	37.68	38.55	43.46	51.86	74.00	-22.14 peak

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Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:Low



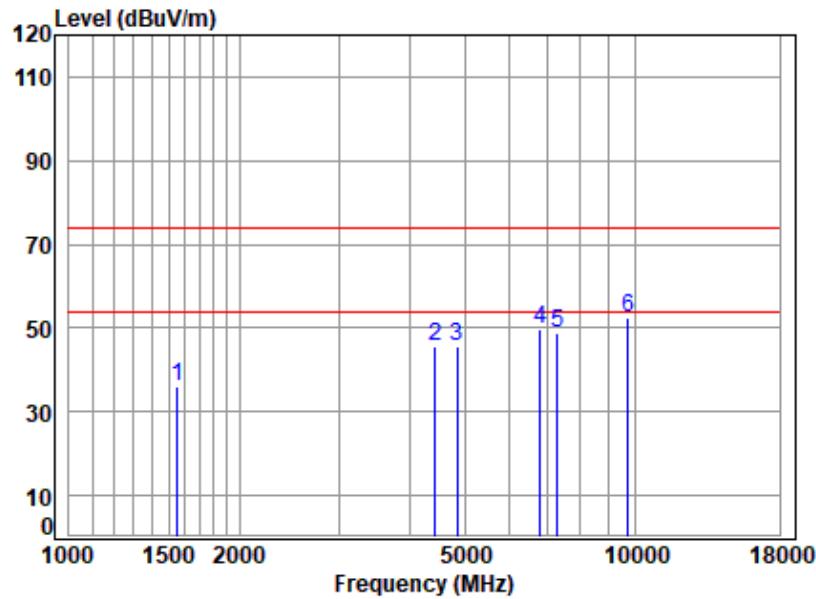
Site : chamber
 Condition: 3m VERTICAL
 Job No : 00734AT \00735AT
 Mode : 2406 TX RSE
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Loss	Factor	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 1667.951	3.20	26.54	40.61	46.77	35.90	74.00	-38.10 peak
2 4469.214	6.47	33.55	42.53	48.02	45.51	74.00	-28.49 peak
3 4812.000	6.83	33.98	42.77	52.72	50.76	74.00	-23.24 peak
4 6855.063	7.90	35.82	41.76	47.56	49.52	74.00	-24.48 peak
5 7218.000	8.43	36.08	41.57	48.74	51.68	74.00	-22.32 peak
6 9624.000	9.27	37.68	38.55	42.58	50.98	74.00	-23.02 peak

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Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:middle



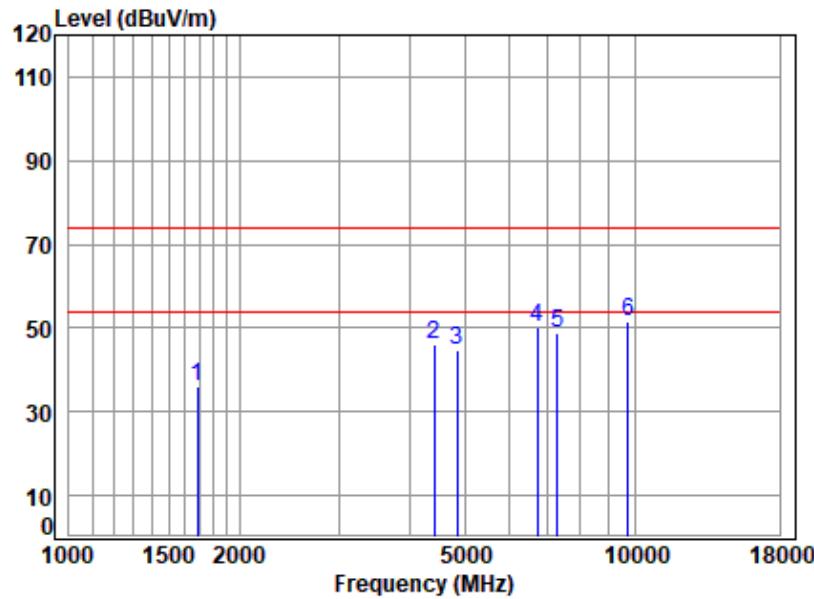
Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 00734AT \00735AT
 Mode : 2429 TX RSE
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Freq	Loss	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 1551.677	2.97	26.04	40.54	47.42	35.89	74.00	-38.11 peak
2 4430.628	6.59	33.48	42.50	47.99	45.56	74.00	-28.44 peak
3 4858.000	6.96	34.04	42.80	47.45	45.65	74.00	-28.35 peak
4 6795.879	8.00	35.78	41.79	47.70	49.69	74.00	-24.31 peak
5 7287.000	8.41	36.13	41.54	45.83	48.83	74.00	-25.17 peak
6 9716.000	9.62	37.73	38.41	43.37	52.31	74.00	-21.69 peak

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Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:middle



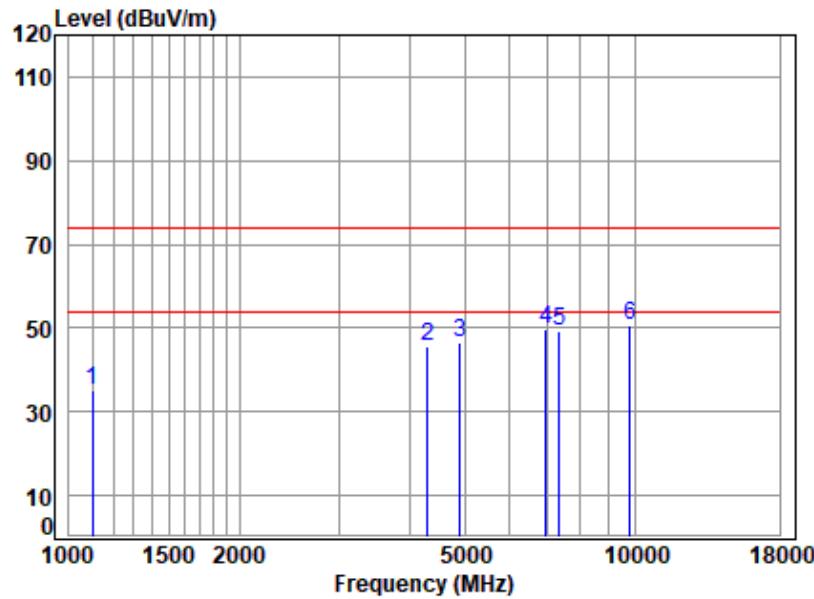
Site : chamber
 Condition: 3m VERTICAL
 Job No : 00734AT \00735AT
 Mode : 2429 TX RSE
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Freq	Loss	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 1687.347	3.27	26.62	40.62	46.63	35.90	74.00	-38.10 peak
2 4417.841	6.63	33.46	42.49	48.67	46.27	74.00	-27.73 peak
3 4858.000	6.96	34.04	42.80	46.38	44.58	74.00	-29.42 peak
4 6717.762	8.28	35.73	41.83	47.85	50.03	74.00	-23.97 peak
5 7287.000	8.41	36.13	41.54	45.96	48.96	74.00	-25.04 peak
6 9716.000	9.62	37.73	38.41	42.54	51.48	74.00	-22.52 peak

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Mode:a; Polarization:Horizontal; Modulation:GFSK; ; Channel:High



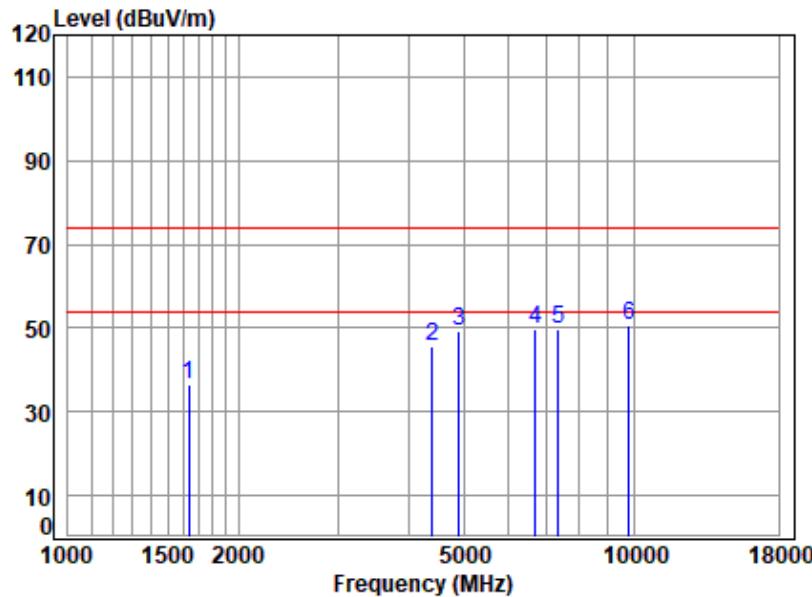
Site : chamber
 Condition: 3m HORIZONTAL
 Job No : 00734AT \00735AT
 Mode : 2453 TX RSE
 Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	Freq	Loss	Factor	Level			
MHz	dB	dB/m	dB	dBuV	dBuV/m	dBuV/m	dB
1 1100.079	2.19	24.12	40.20	49.09	35.20	74.00	-38.80 peak
2 4304.400	6.32	33.26	42.40	48.25	45.43	74.00	-28.57 peak
3 4906.000	7.07	34.09	42.84	48.39	46.71	74.00	-27.29 peak
4 6954.852	7.82	35.87	41.71	47.93	49.91	74.00	-24.09 peak
5 7359.000	8.27	36.19	41.50	46.29	49.25	74.00	-24.75 peak
6 9812.000	9.05	37.79	38.27	42.08	50.65	74.00	-23.35 peak

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Mode:a; Polarization:Vertical; Modulation:GFSK; ; Channel:High



Site : chamber
Condition: 3m VERTICAL
Job No : 00734AT \00735AT
Mode : 2453 TX RSE
Note :

Freq	Cable	Ant	Preamp	Read	Limit	Over	Remark
	MHz	Loss	Factor	Level	Level	Line	
1	1634.543	3.08	26.40	40.59	47.63	36.52	74.00 -37.48 peak
2	4405.090	6.67	33.44	42.48	48.20	45.83	74.00 -28.17 peak
3	4906.000	7.07	34.09	42.84	50.95	49.27	74.00 -24.73 peak
4	6698.373	8.34	35.72	41.84	47.52	49.74	74.00 -24.26 peak
5	7359.000	8.27	36.19	41.50	46.56	49.52	74.00 -24.48 peak
6	9812.000	9.05	37.79	38.27	41.96	50.53	74.00 -23.47 peak

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8 Test Setup Photo

Refer to Appendix - Test Setup Photo for SZCR2502000734AT

9 EUT Constructional Details (EUT Photos)

Refer to Appendix - External and Internal Photos for SZCR2502000734AT



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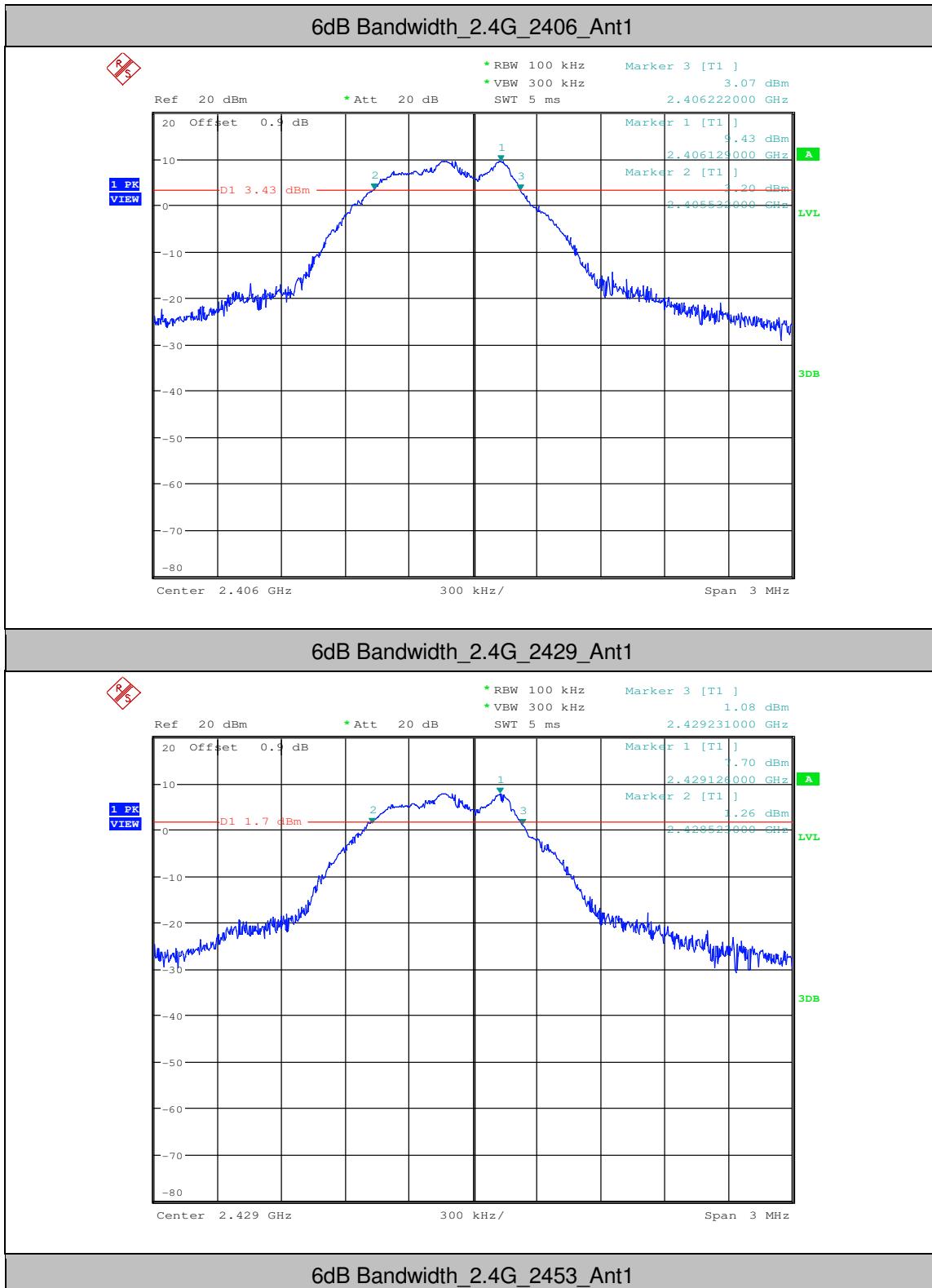
10 Appendix

Appendix 15.247

1.6dB Bandwidth

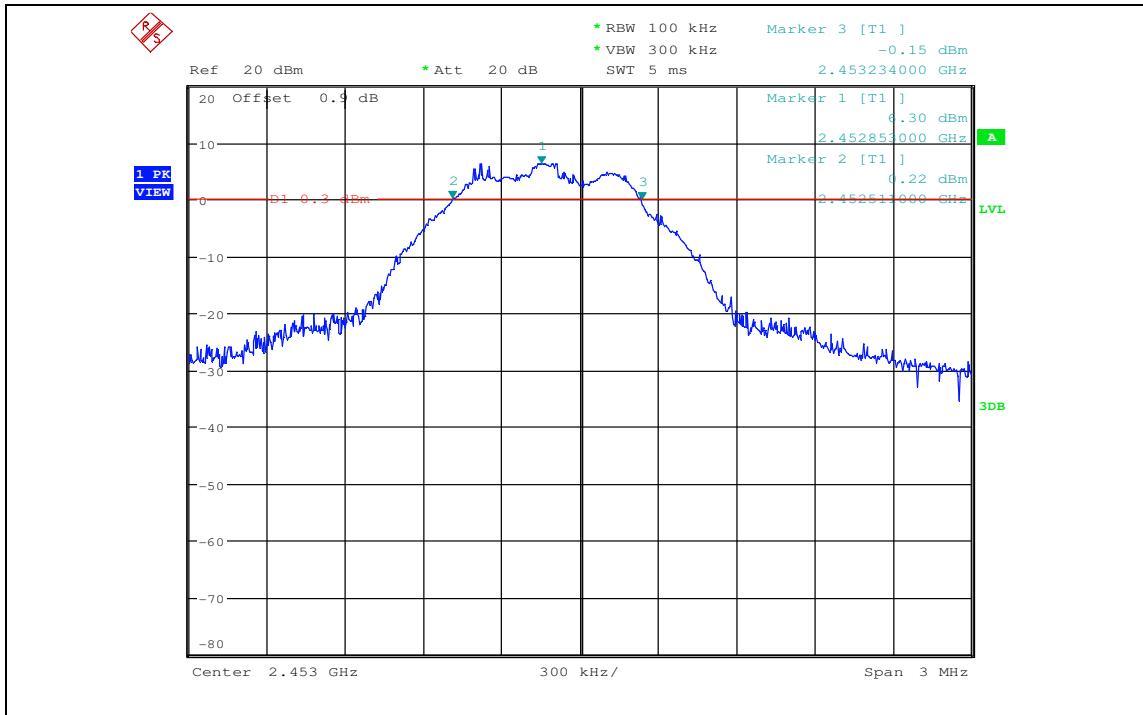
Test Mode	Test	Ant	EBW[MHz]	Limit[MHz]	Verdict
2.4G	2406	Ant1	0.690	>=0.5	PASS
2.4G	2429	Ant1	0.708	>=0.5	PASS
2.4G	2453	Ant1	0.723	>=0.5	PASS





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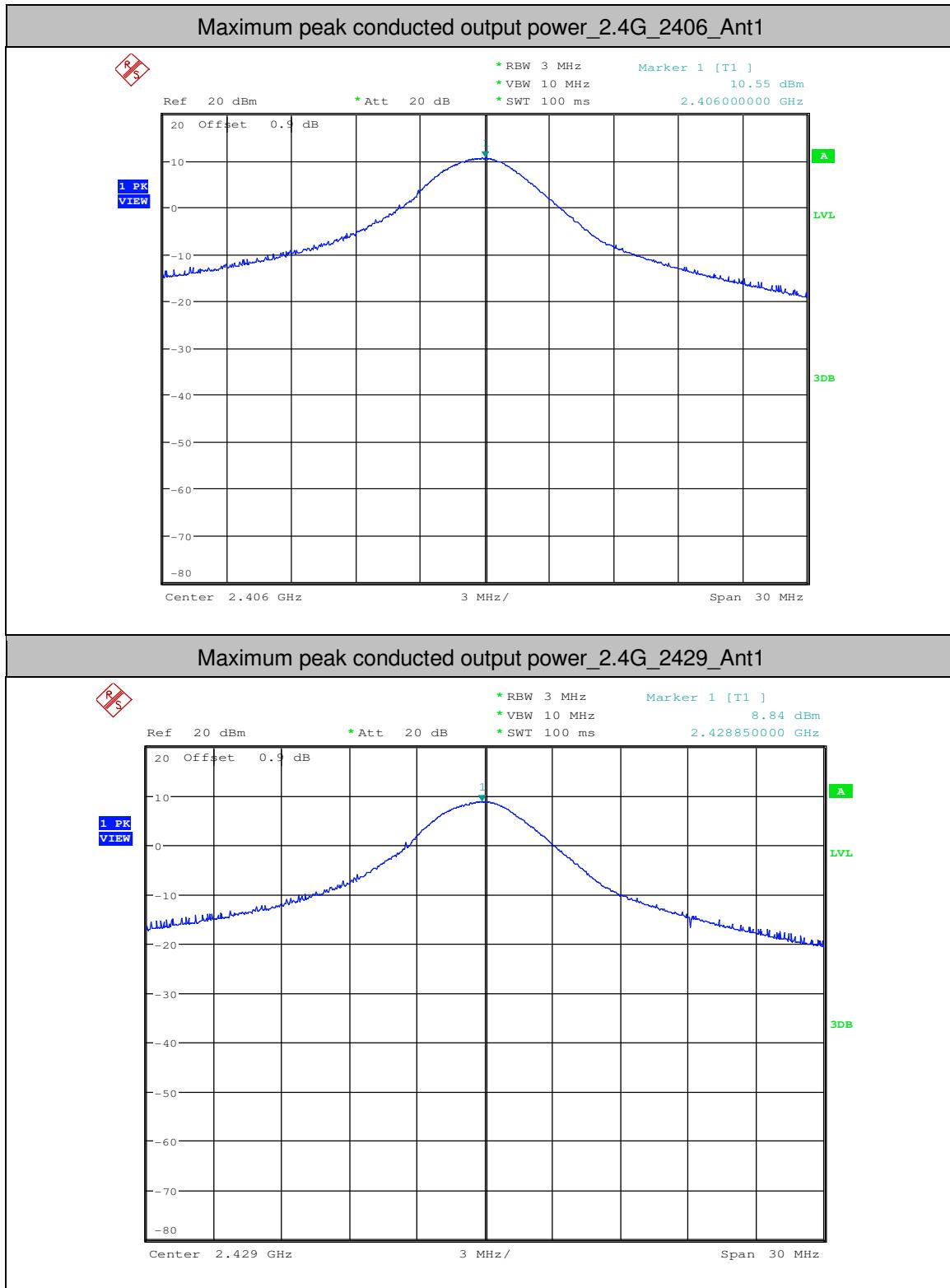
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2. Maximum peak conducted output power

Test Mode	Test Channel	Ant	Power[dBm]	Limit[dBm]	Verdict
2.4G	2406	Ant1	10.55	<30	PASS
2.4G	2429	Ant1	8.84	<30	PASS
2.4G	2453	Ant1	7.36	<30	PASS





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3. Maximum Peak power spectral density

Test Mode	Test Channel	Ant	PSD[dBm/3kHz]	Limit[dBm/3kHz]	Verdict
2.4G	2406	Ant1	-3.18	<8.00	PASS
2.4G	2429	Ant1	-4.4	<8.00	PASS
2.4G	2453	Ant1	-6.09	<8.00	PASS

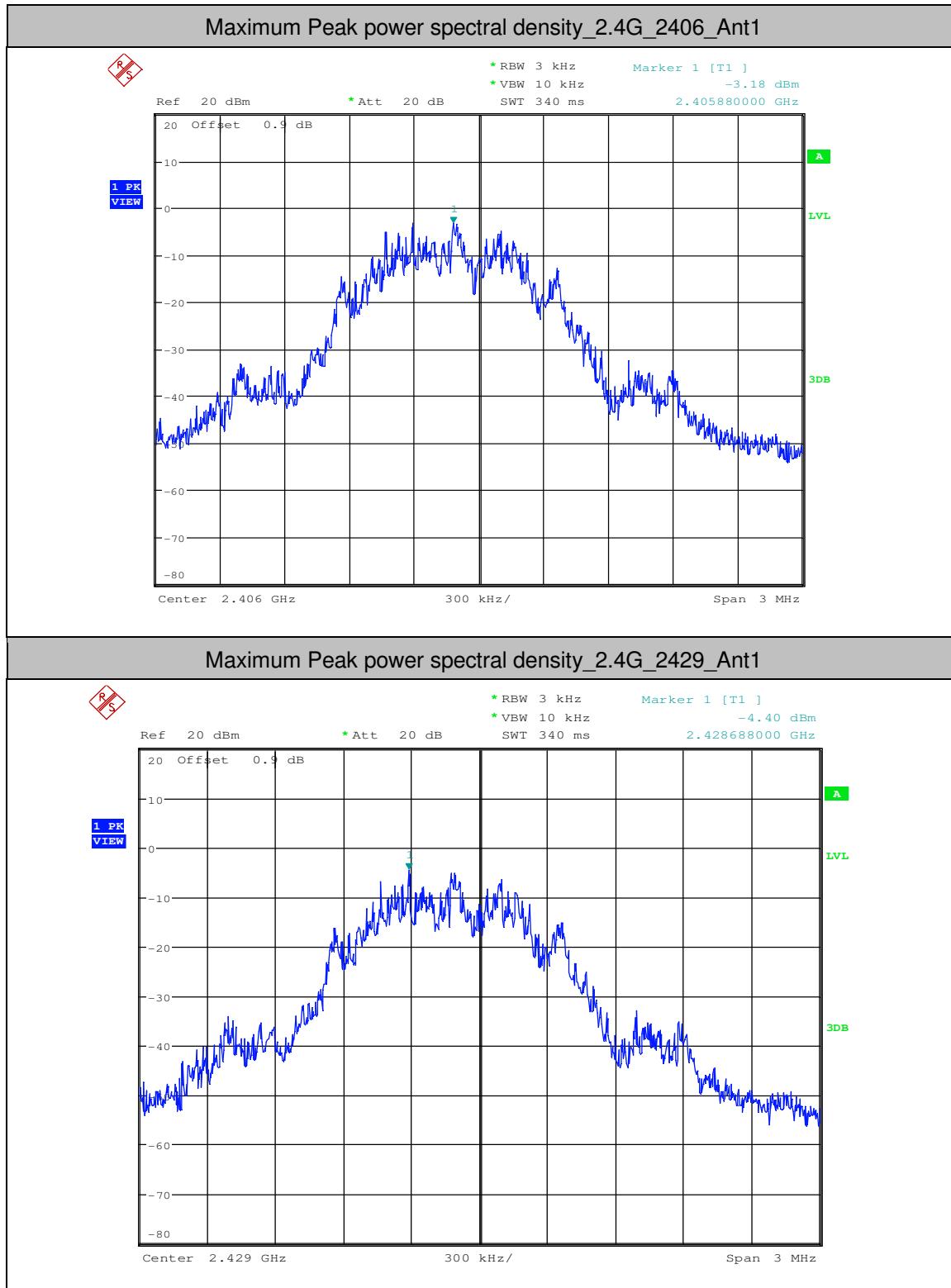
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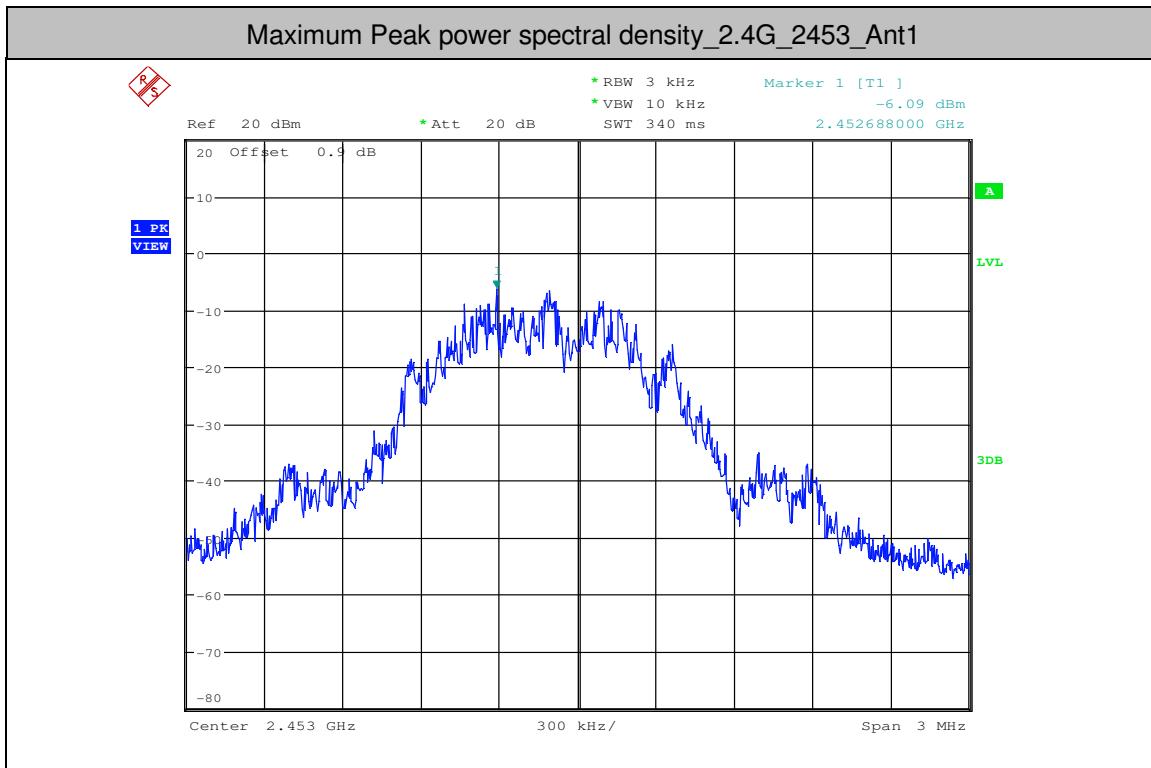
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4. Band-edge for RF Conducted Emissions

Test Mode	Test Channel	Ant	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
2.4G	2406	Ant1	9.450	-31.326	<-10.55	PASS
2.4G	2453	Ant1	6.240	-50.869	<-13.76	PASS

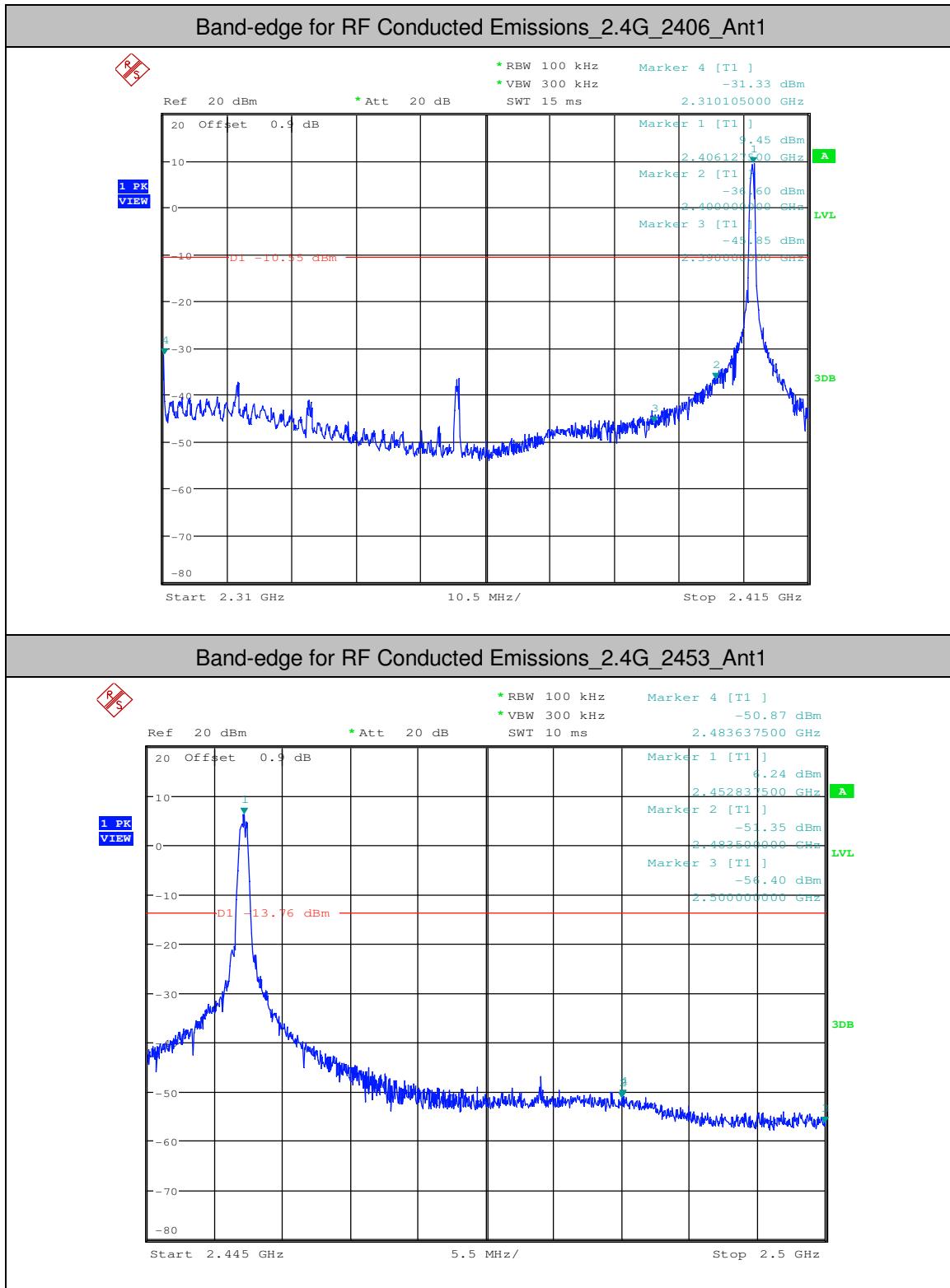


SGS-CSTC Standards Technical Services Co., Ltd.
Shenzhen Branch No.1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China 518057

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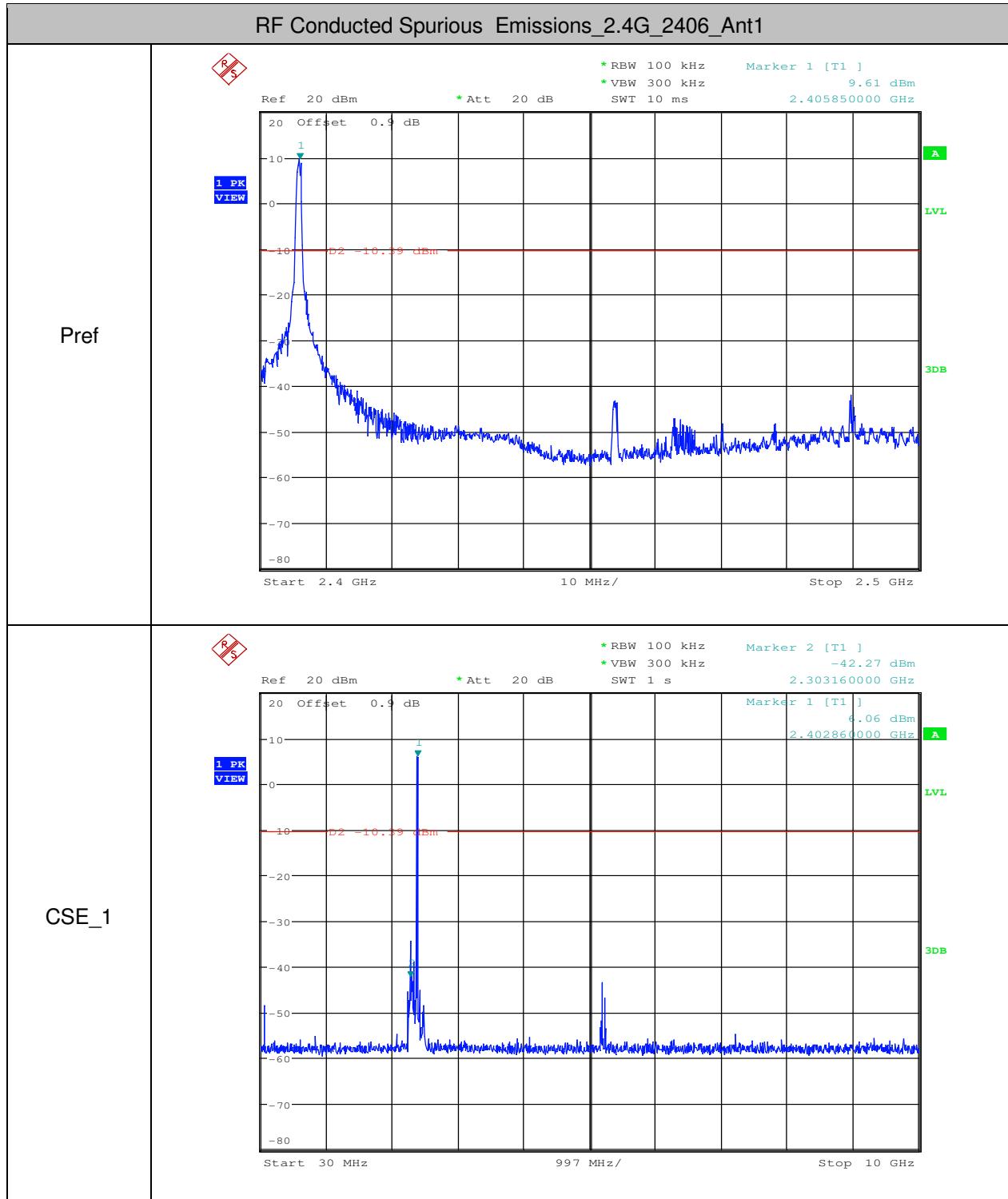
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5. RF Conducted Spurious Emissions

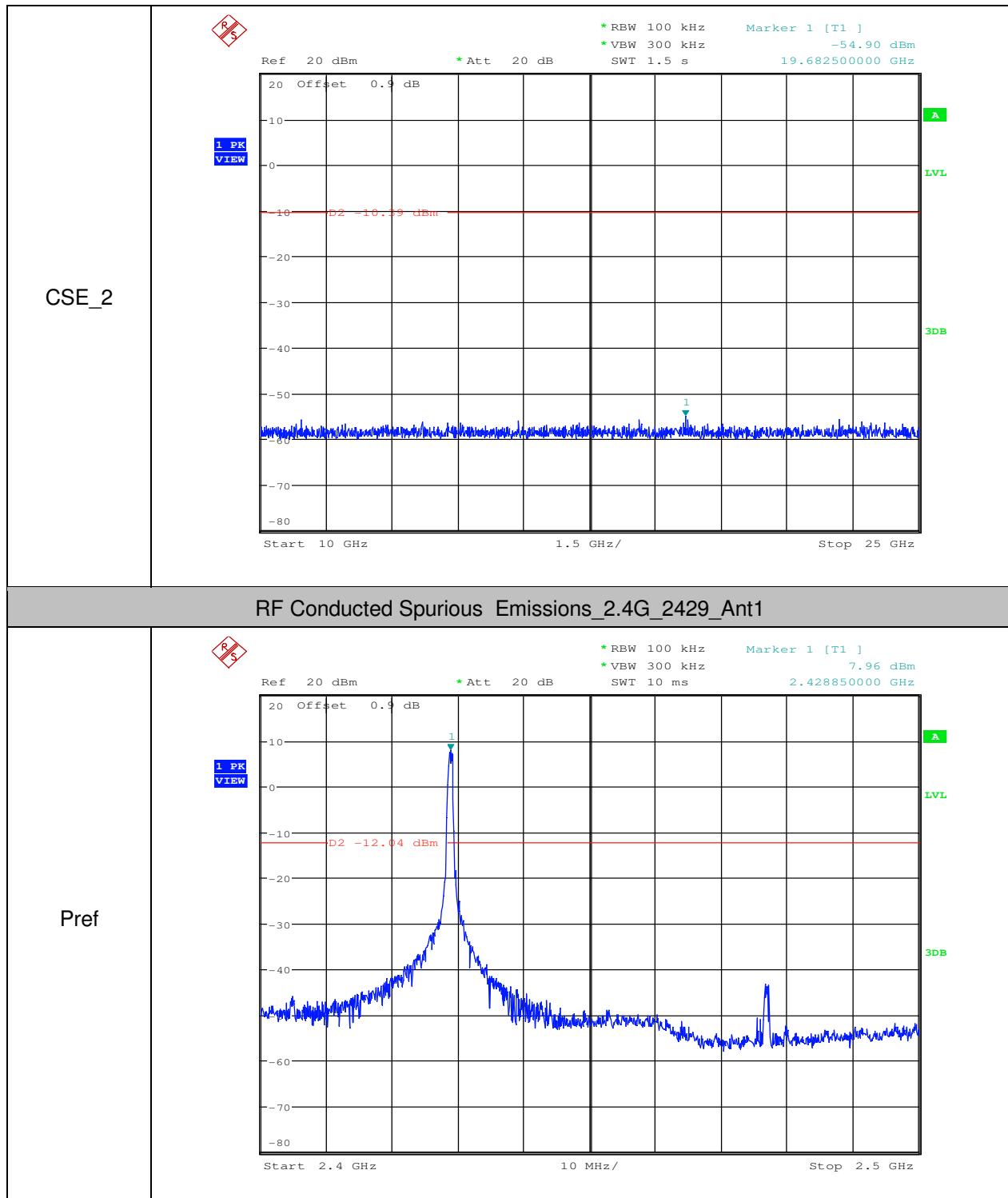
Test Mode	Test Channel	StartFre [MHz]	StopFre [MHz]	RBW [kHz]	VBW [kHz]	Pref[dBm]	Max. Level [dBm]	Limit [dBm]	Verdict
2.4G	2406	30	10000	100	300	9.61	-42.270	< 10.39	PASS
2.4G	2406	10000	25000	100	300	9.61	-54.900	< 10.39	PASS
2.4G	2429	30	10000	100	300	7.96	-39.150	< 12.04	PASS
2.4G	2429	10000	25000	100	300	7.96	-55.100	< 12.04	PASS
2.4G	2453	30	10000	100	300	6.5	-44.780	<-13.5	PASS
2.4G	2453	10000	25000	100	300	6.5	-55.680	<-13.5	PASS





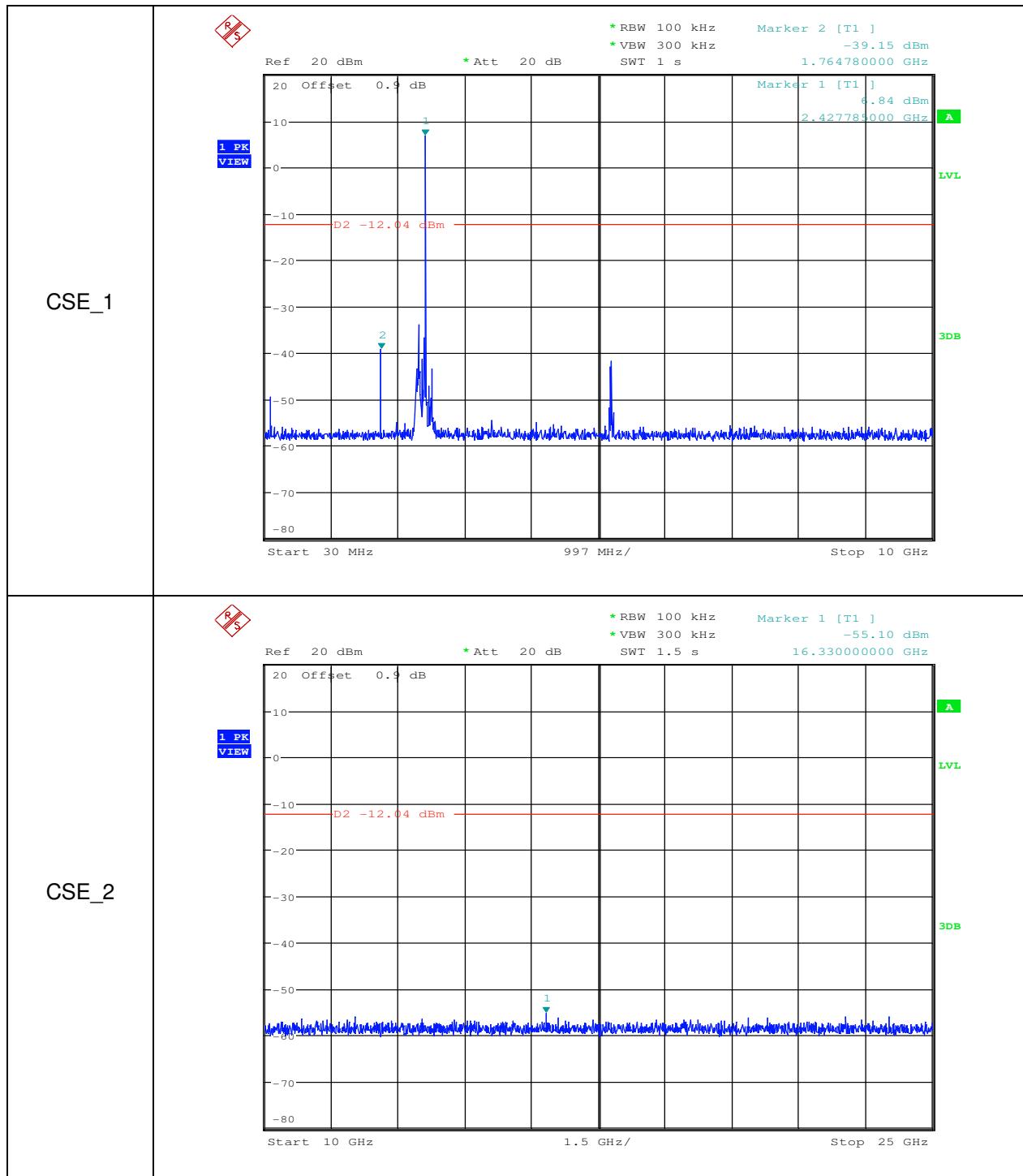
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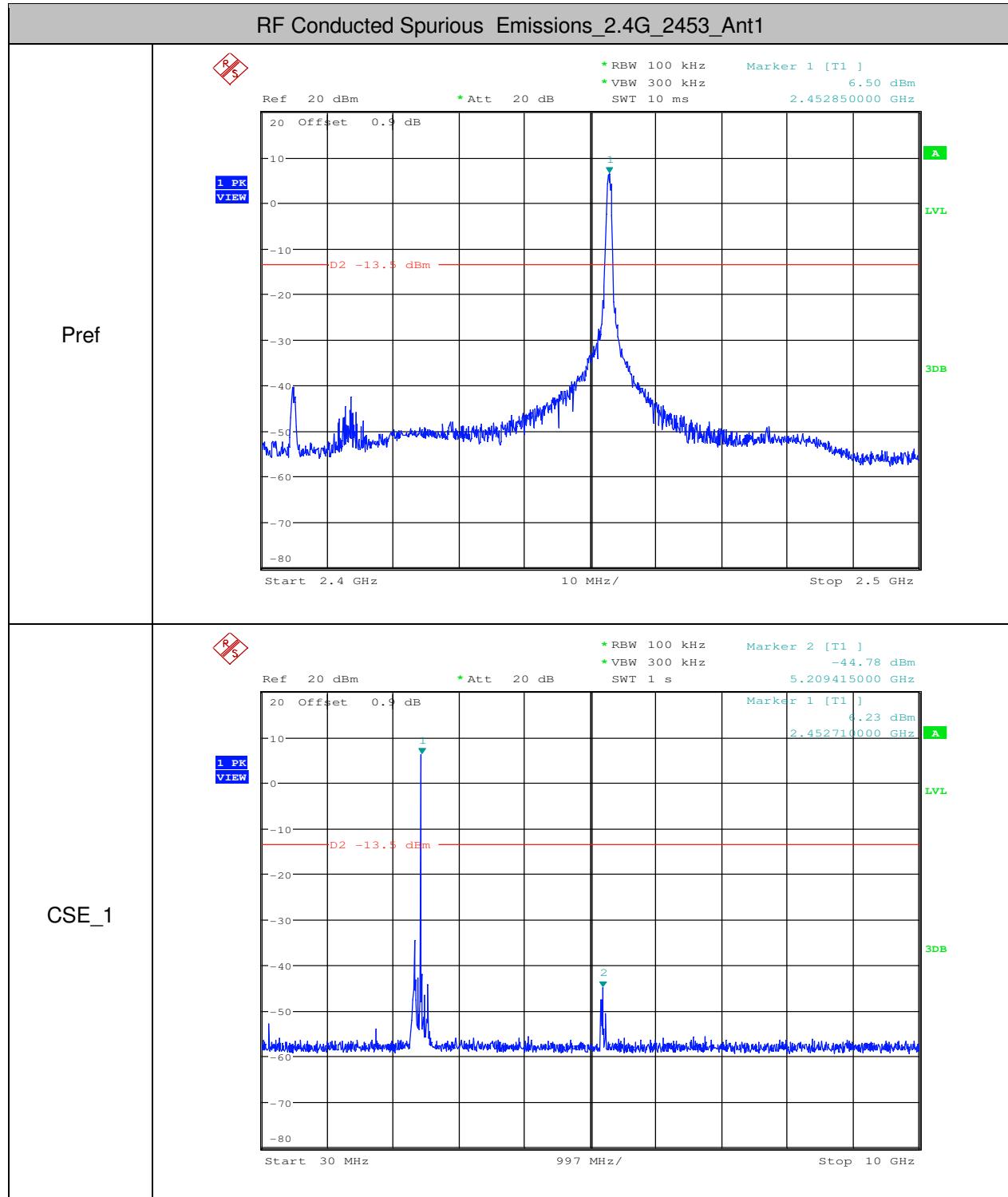
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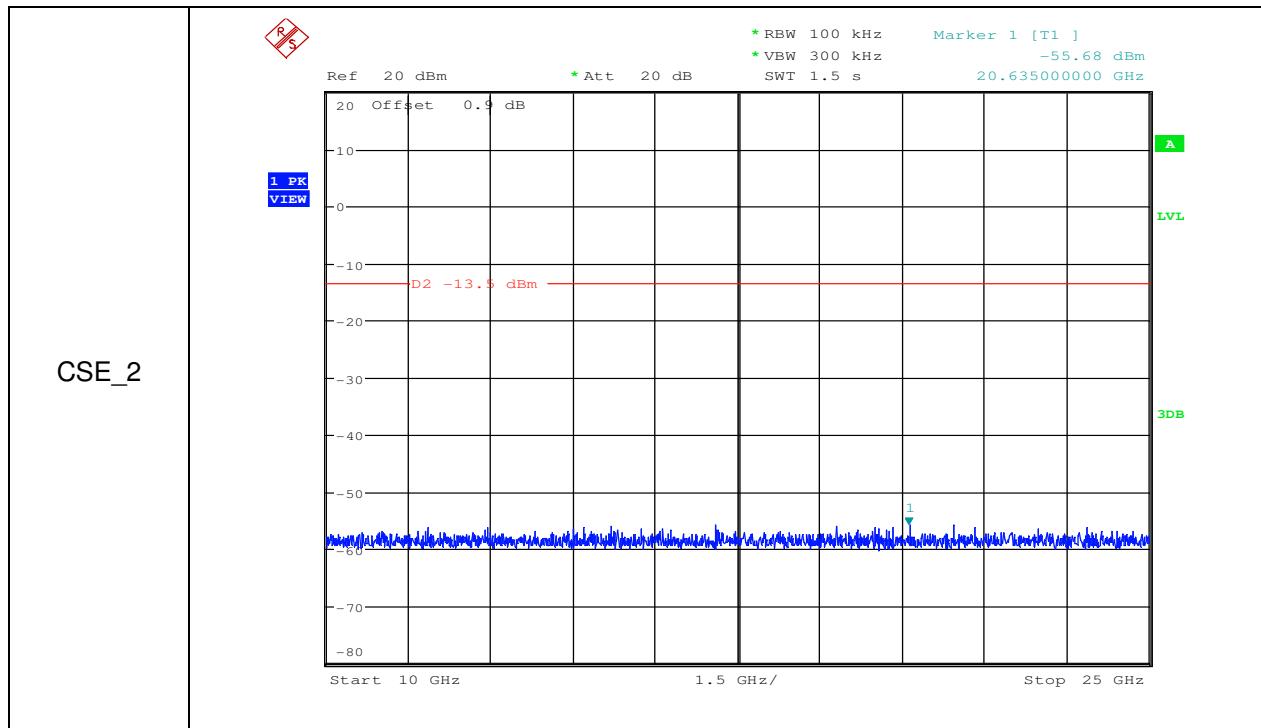
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- End of the Report -

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