CFR 47 FCC PART 15 SUBPART C
ISED RSS-210 Issue 11

TEST REPORT

For

TOY Transmitter

MODEL NUMBER: 60PS

REPORT NUMBER: 4791683959-1-RF-1

ISSUE DATE: March 17, 2025

FCC ID: TG360PS

IC: 20834-60PS

Prepared for

For FCC:
FKA Distributing Co., LLC
3000 N. Pontiac Trail Commerce Township, MI 48390 United States
For ISED:
HoMedics, Inc.
3000 Pontiac Trail Commerce Township MI 48390 United States Of America

Prepared by

UL Verification Services (Guangzhou) Co., Ltd, Song Shan Lake Branch

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	March 17, 2025	Initial Issue	

Summary of Test Results			
Clause	Test Items	FCC/ISED Rules	Test Results
1	20dB Bandwidth and 99% Occupied Bandwidth	CFR 47 FCC §15.215 (c) ISED RSS-Gen Clause 6.7	Pass
2	Radiated Emission	CFR 47 FCC §15.249 (a)(d)(e) ISED RSS-210 Annex B B.10 CFR 47 FCC §15.205 and §15.209 RSS-GEN Clause 8.9 RSS-GEN Clause 8.10	Pass
3	Conducted Emission Test for AC Power Port	CFR 47 FCC §15.207 RSS-GEN Clause 8.8	N/A
4	Antenna Requirement	CFR 47 FCC §15.203 ISED RSS-Gen Clause 6.8	Pass
Note 1: This test report is only published to and used by the applicant, and it is not for evidence purpose in China. Note 2: The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C, ISED RSS-210 ISSUE 11 > when <Accuracy Method> decision rule is applied. Note 3: The EUT is powered by battery. It is not applicable for Conducted Emission Test for AC Power Port.			

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1. ATTESTATION OF TEST RESULTS

Applicant Information for FCC

Company Name:	FKA Distributing Co., LLC
Address:	3000 N. Pontiac Trail Commerce Township, MI 48390 United States

Applicant Information for IC

Company Name:	HoMedics, Inc.
Address:	3000 Pontiac Trail Commerce Township MI 48390 United States Of America

Manufacturer Information

Company Name:	PLAY CRAZE, LLC
Address:	3000 N. Pontiac Trail, Commerce Township, MI 48390

EUT Information

EUT Name:	TOY Transmitter
Model:	60PS
Brand name:	Motor Dayz
Sample Received Date:	February 27, 2025
Sample Status:	Normal
Sample ID:	8179043
Date of Tested:	February 28, 2025 to March 13, 2025

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C **ISED RSS-210 Issue 11**	**Pass**

Prepared By:

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Checked By:

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Senior Project Engineer

Approved By:

Stephen Guo

Operations Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 414788 D01 Radiated Test Site v01r01, FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2013, ISED RSS-210 ISSUE 11 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Declaration of Conformity (DoC) and Certification rules **ISED (Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.

Note 1:
All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, No. 1, Li Bin Road, Song Shan Lake Hi-Tech Development Zone Dongguan, 523808, People's Republic of China.

Note 2:
The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd.
Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.

Note 3:
For below 30 MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30 MHz had been correlated to measurements performed on an OFS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations and is traceable to recognized national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Radiated Emission (Included Fundamental Emission) (9 kHz ~ 30 MHz)	2.2 dB
Radiated Emission (Included Fundamental Emission) (30 MHz ~ 1 GHz)	4.00 dB
Radiated Emission (Included Fundamental Emission) (1 GHz to 26 GHz)	5.78 dB (1 GHz ~ 18 GHz)
	5.23 dB (18 GHz ~ 26 GHz)
Duty Cycle	±0.028%
DTS and 99% Occupied Bandwidth	±0.0196%
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

EUT Name:	TOY Transmitter
Model:	60PS

Frequency Range:	2410 MHz to 2473 MHz
Type of Modulation:	GFSK
Normal Test Voltage:	Battery 3V

5.2. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2410	9	2426	17	2441	25	2458
2	2414	10	2428	18	2442	26	2462
3	2415	11	2429	19	2444	27	2464
4	2416	12	2430	20	2446	28	2465
5	2417	13	2431	21	2450	29	2466
6	2418	14	2433	22	2452	30	2467
7	2419	15	2434	23	2454	31	2469
8	2421	16	2439	24	2456	32	2473

5.3. MAXIMUM FIELD STRENGTH

Test Mode	Frequency (MHz)	Channel Number	Maximum Peak field strength (dBµV/m)	Maximum Average field strength (dBµV/m)
GFSK	2410 ~ 2473	1-32[32]	103.08	75.95

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
GFSK	CH 1(Low Channel), CH 18(MID Channel), CH 32(High Channel)	2410 MHz, 2442 MHz, 2473 MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2410 MHz ~ 2473 MHz Band				
Test Software Version		/		
Modulation Type	Transmit Antenna Number	Test Channel		
		CH 1	CH 18	CH 32
GFSK	1	Default	Default	Default

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Antenna	Frequency (MHz)	Antenna Type	Maximum Antenna Gain (dBi)
1	2410-2473	Line Antenna	1.0

Test Mode	Transmit and Receive Mode	Description
GFSK	☒1TX, 1RX	Antenna 1 can be used as transmitting/receiving antenna.
Note: The value of the antenna gain was declared by customer		

5.7. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	Specification
1	/	/	/	/

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
/	/	/	/	/	/

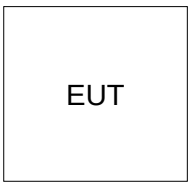
ACCESSORY

Item	Equipment	Mfr/Brand	Model/Type No.	Specification	Series No.
/	/	/	/	/	/

TEST SETUP

The EUT have the engineer mode inside.

SETUP DIAGRAM FOR TEST



6. MEASURING EQUIPMENT AND SOFTWARE USED

Radiated Emissions					
Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due Date
MXE EMI Receiver	KESIGHT	N9038A	MY56400036	Sep.28, 2024	Sep.27, 2025
Hybrid Log Periodic Antenna	TDK	HLP-3003C	130959	May.08, 2023	May.07, 2026
Preamplifier	HP	8447D	2944A09099	Sep.28, 2024	Sep.27, 2025
EMI Measurement Receiver	R&S	ESR26	101377	Sep.28, 2024	Sep.27, 2025
Horn Antenna	TDK	HRN-0118	130939	April 29, 2022	April 28, 2025
Preamplifier	TDK	PA-02-0118	TRS-305-00067	Sep.28, 2024	Sep.27, 2025
Horn Antenna	Schwarzbeck	BBHA9170	697	June 30, 2024	June 29, 2027
Preamplifier	TDK	PA-02-2	TRS-307-00003	Sep.28, 2024	Sep.27, 2025
Preamplifier	TDK	PA-02-3	TRS-308-00002	Sep.28, 2024	Sep.27, 2025
Loop antenna	Schwarzbeck	1519B	00008	April 29, 2022	April 28, 2025
Preamplifier	TDK	PA-02-001-3000	TRS-302-00050	Sep.28, 2024	Sep.27, 2025
High Pass Filter	Wi	WHKX10-2700-3000-18000-40SS	23	Sep.28, 2024	Sep.27, 2025
Band Reject Filter	Wainwright	WRCJV8-2350-2400-2483.5-2533.5-40SS	4	Sep.28, 2024	Sep.27, 2025

Software			
Description	Manufacturer	Name	Version
Test Software for Radiated Emissions	Farad	EZ-EMC	Ver. UL-3A1

7. ANTENNA PORT TEST RESULTS

7.1. 20DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

LIMITS

CFR 47 FCC Part15 (15.249) Subpart C RSS-Gen Issue 5			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.215 (c)	20dB Bandwidth	for reporting purposes only	2400-2483.5
ISED RSS-Gen Clause 6.7 Issue 5	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

TEST PROCEDURE

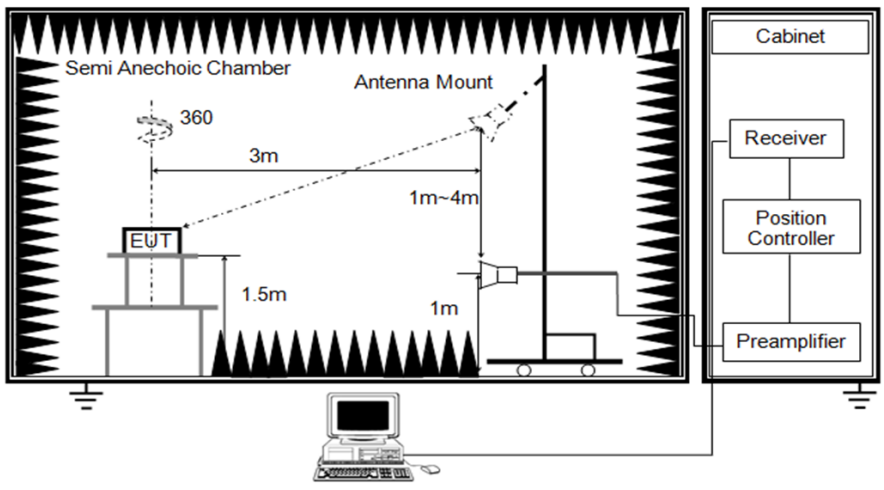
Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	1% to 5% of the occupied bandwidth
VBW	approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 20 dB/99% relative to the maximum level measured in the fundamental emission.

TEST SETUP

Above 1 GHz

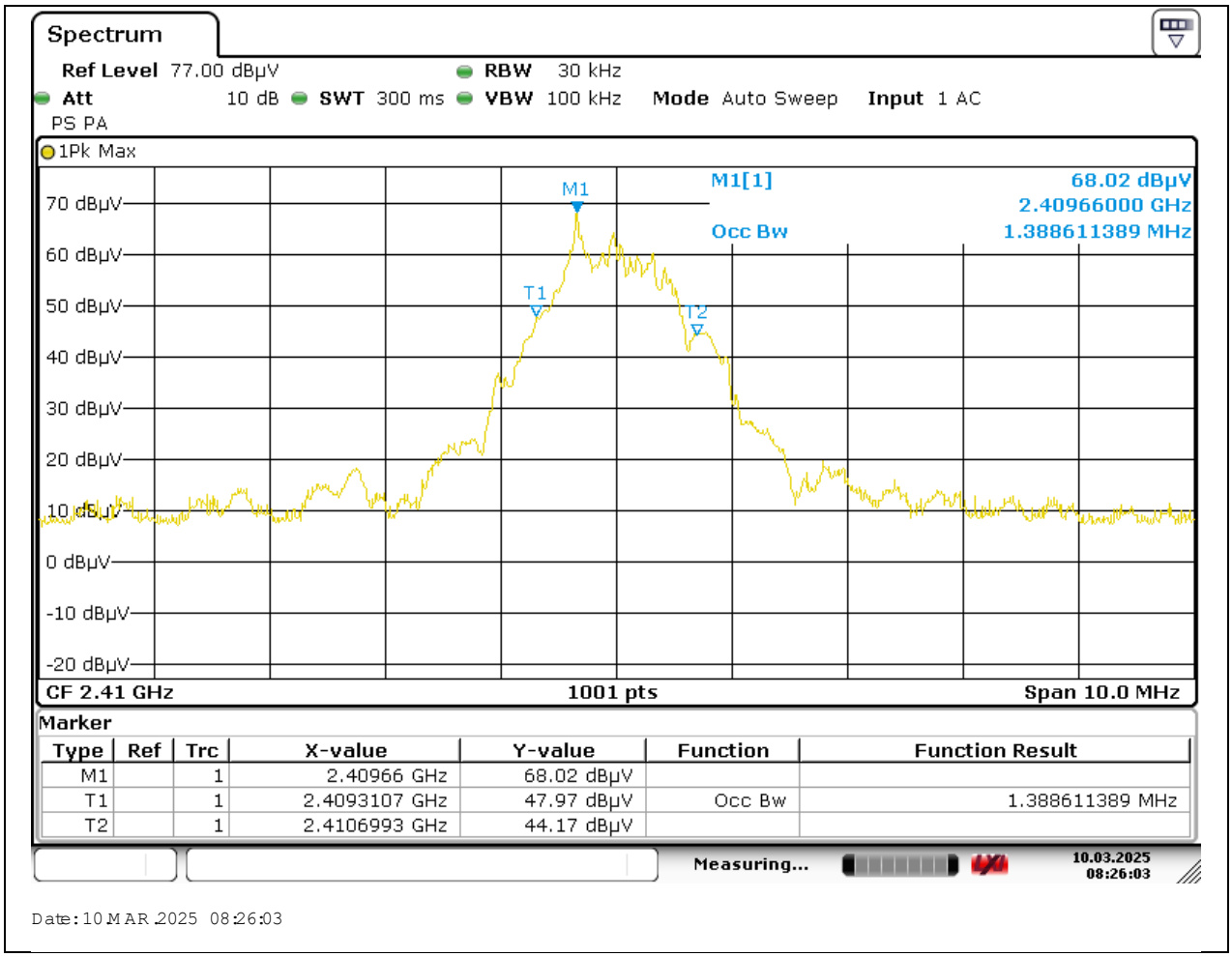


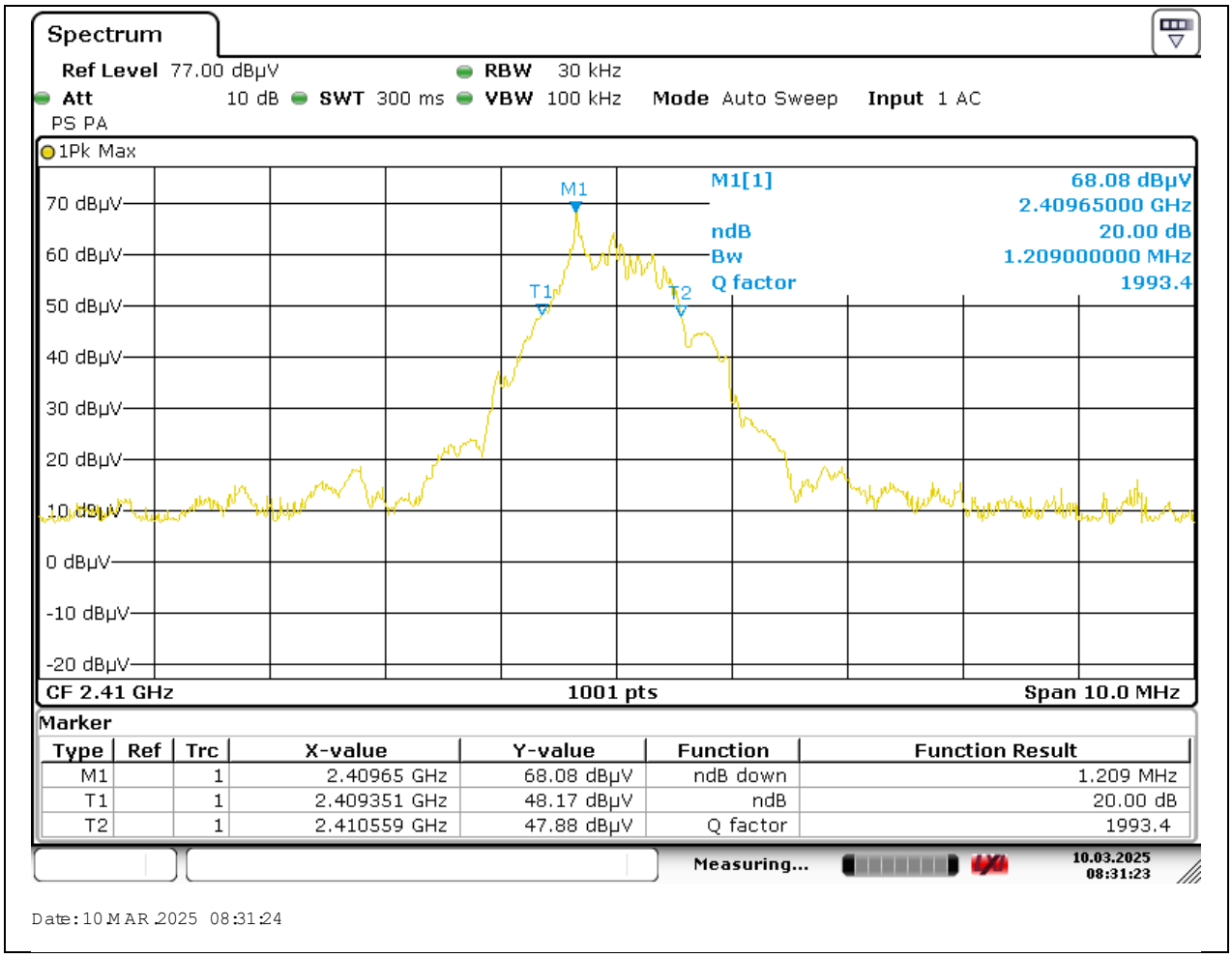
TEST ENVIRONMENT

Temperature	20.8 ℃	Relative Humidity	60.1%
Atmosphere Pressure	101 kPa	Test Voltage	DC 3 V

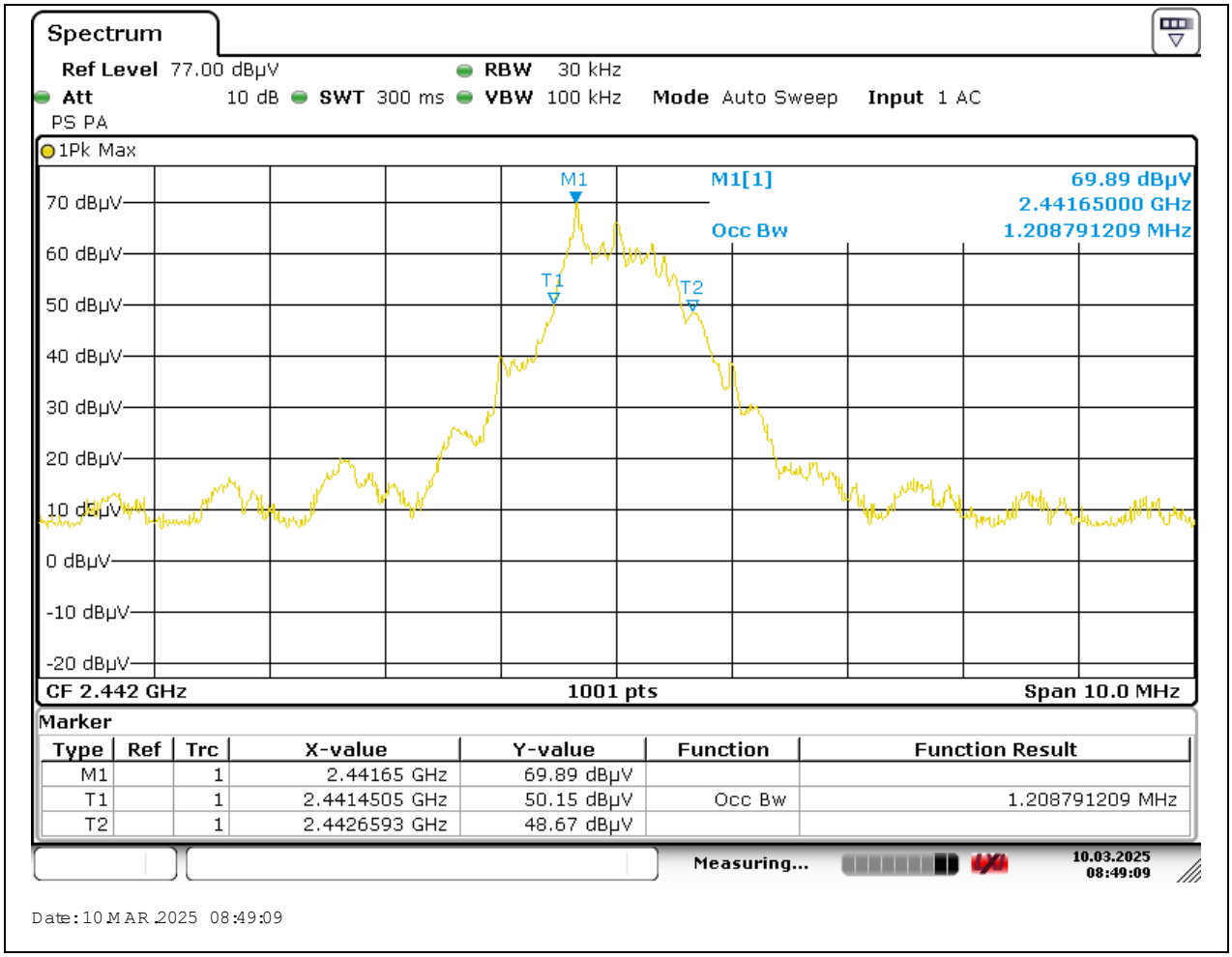
TEST RESULTS

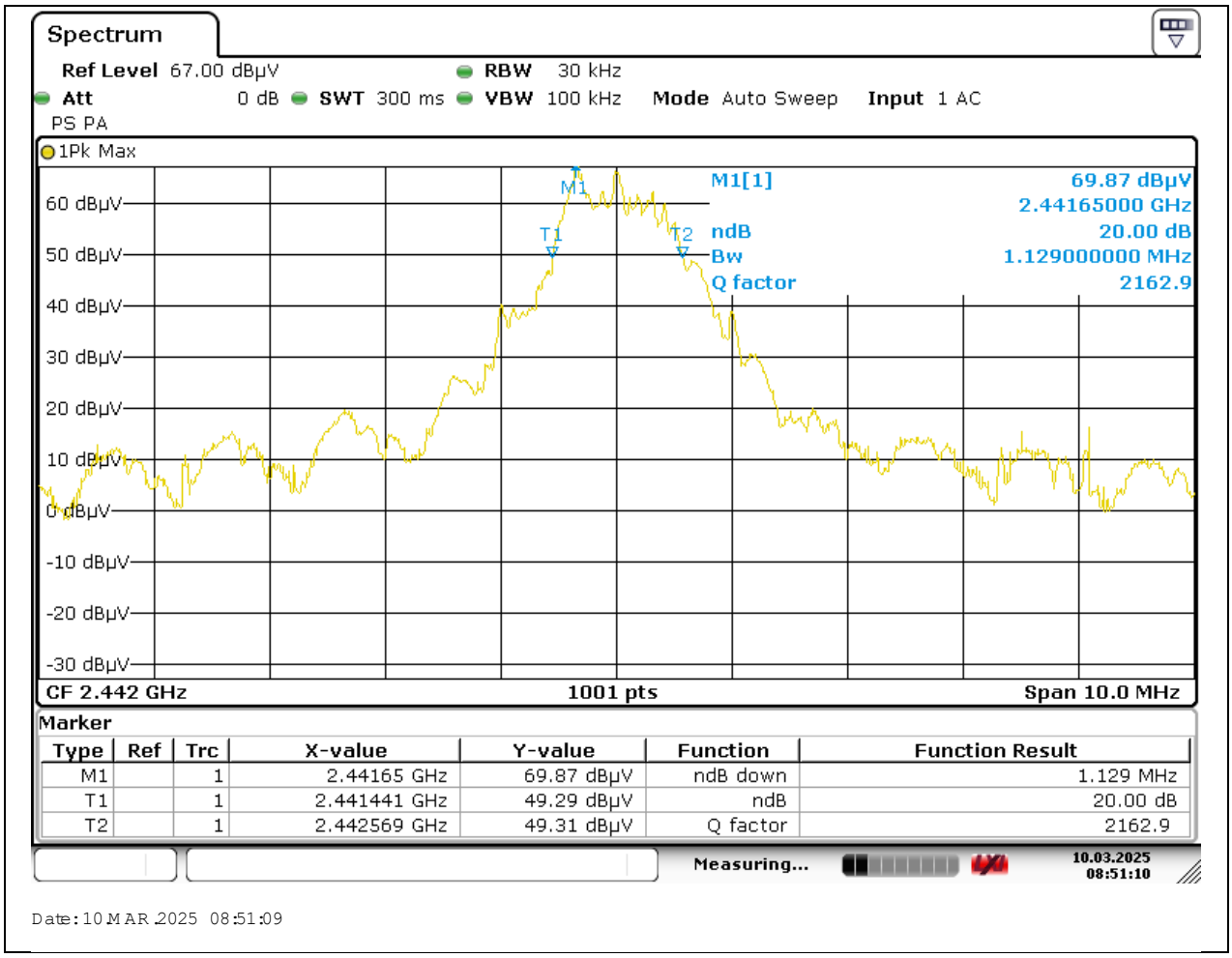
Frequency (MHz)	99% Bandwidth (MHz)	20dB Bandwidth (MHz)	Result
2410	1.39	1.21	PASS



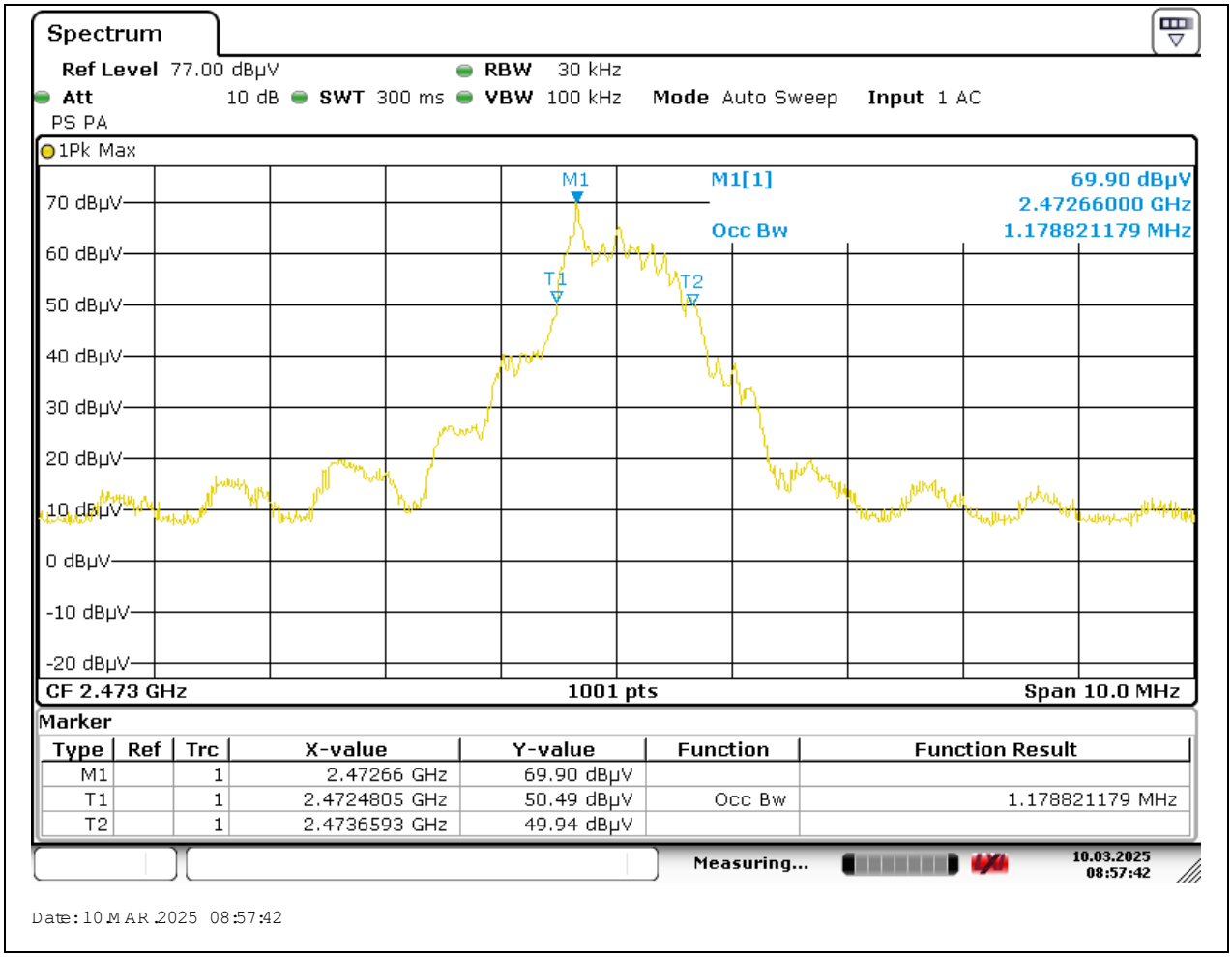


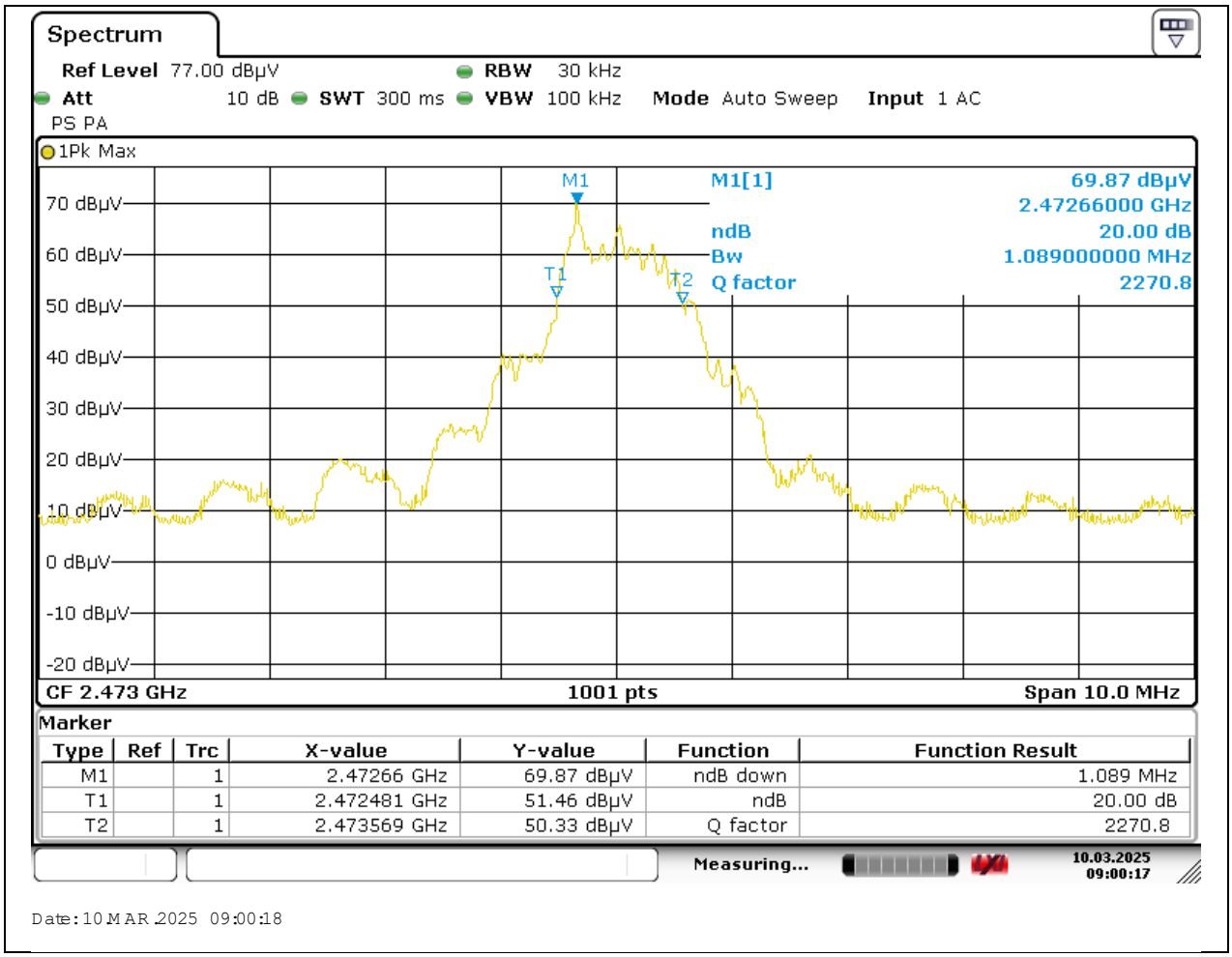
Frequency (MHz)	99% Bandwidth (MHz)	20dB Bandwidth (MHz)	Result
2442	1.21	1.13	PASS





Frequency (MHz)	99% Bandwidth (MHz)	20dB Bandwidth (MHz)	Result
2473	1.18	1.09	PASS





7.2. DUTY CYCLE

LIMITS

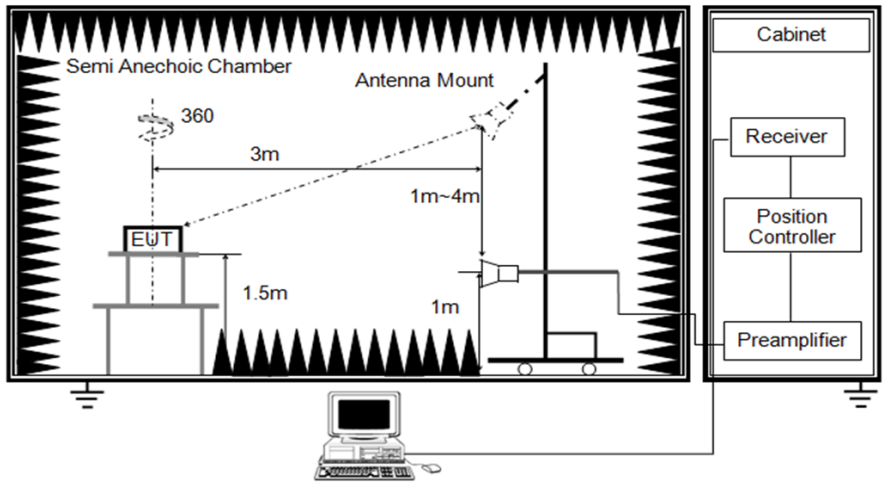
None; for reporting purposes only.

TEST PROCEDURE

Refer to ANSI C63.10-2013 clause 11.6 Zero – Span Spectrum Analyzer method.

TEST SETUP

Above 1 GHz



TEST ENVIRONMENT

Temperature	20.8 ℃	Relative Humidity	60.1%
Atmosphere Pressure	101kPa	Test Voltage	DC 3.0 V

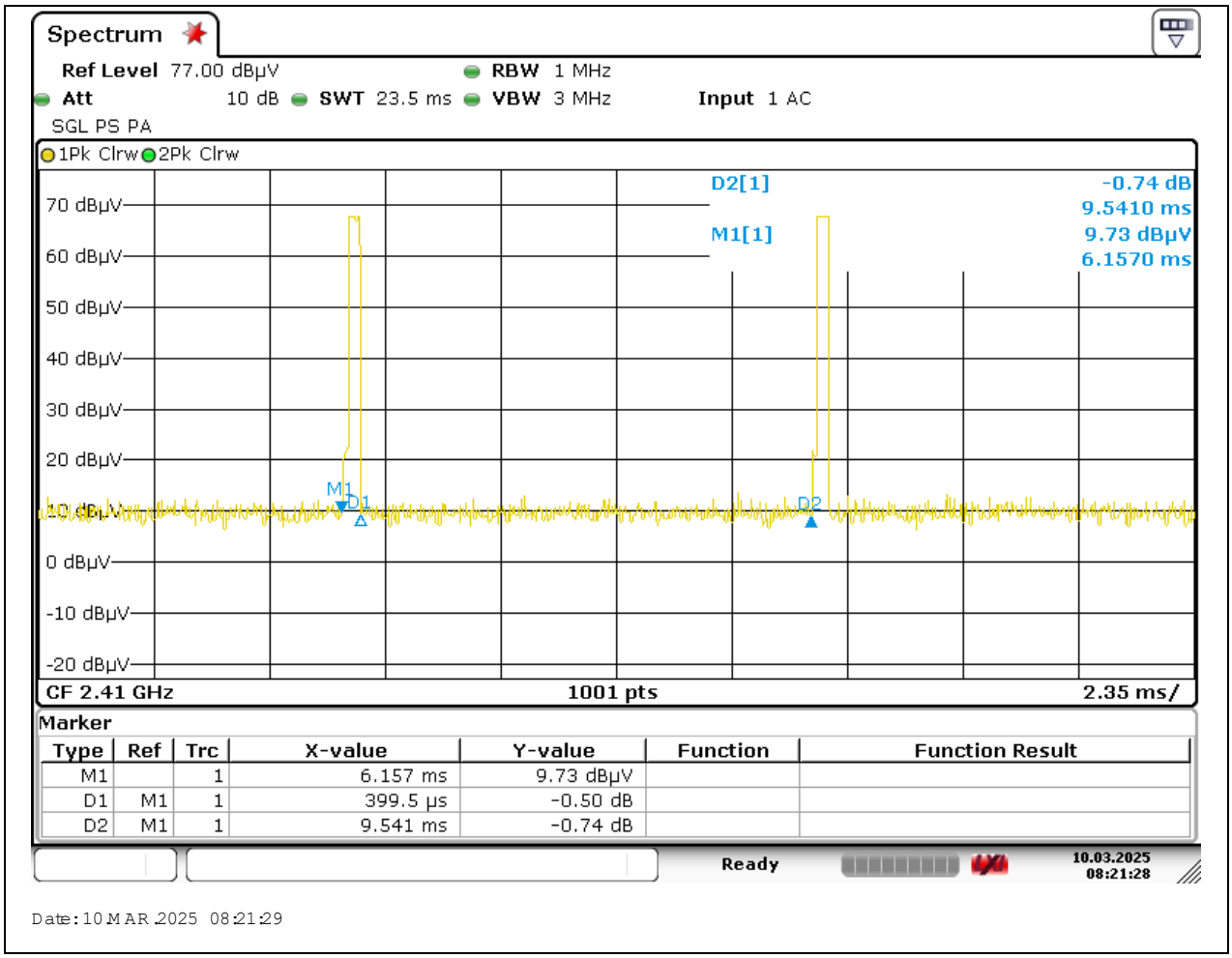
TEST RESULTS

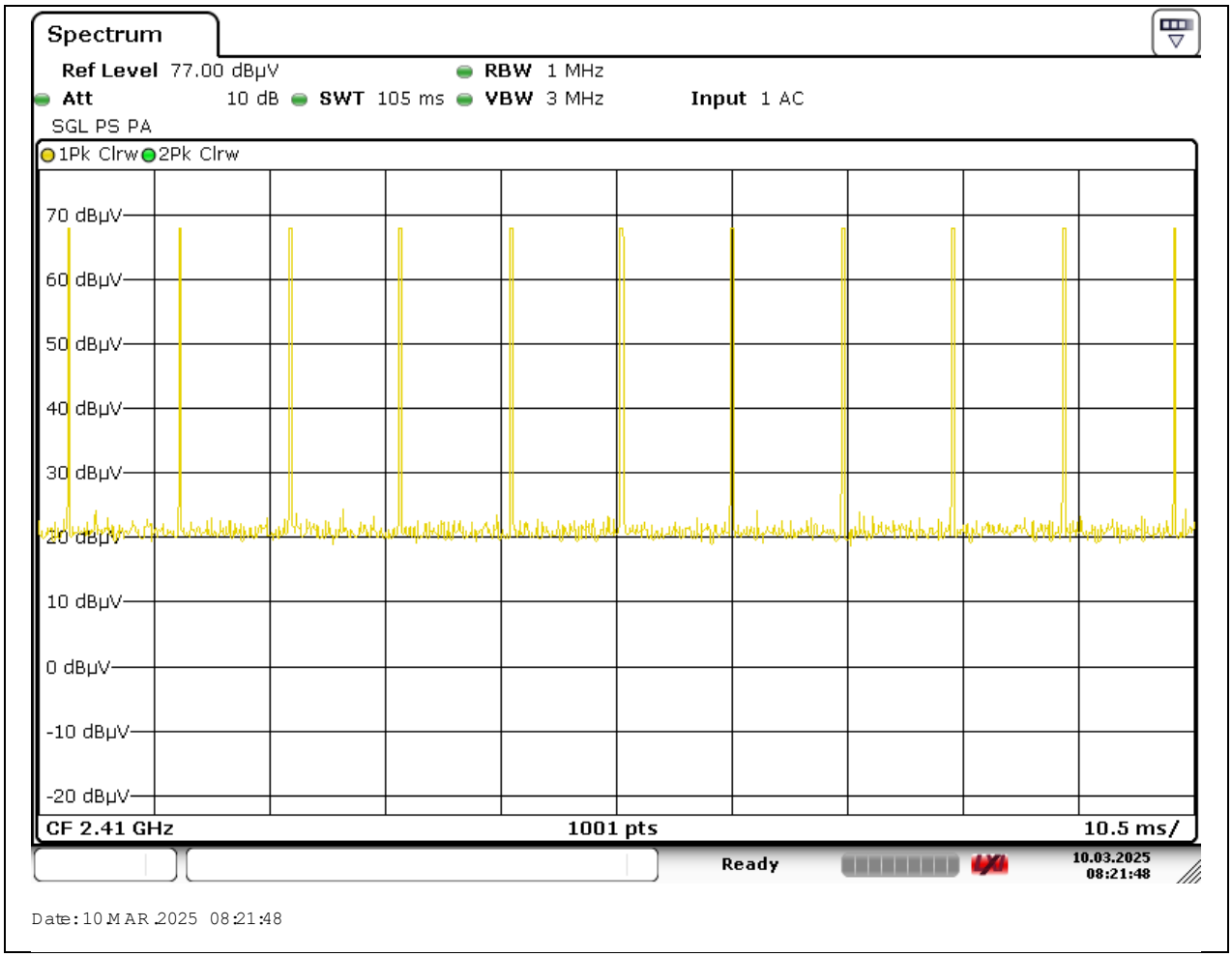
Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)
GFSK	4.40	100	0.0440	4.40	-27.13

Note: Duty Cycle Correction Factor=20log(x).
Where: x is Duty Cycle

Note: All modes and buttons had been tested, but only the worst data was recorded in the report.

Note: On Time=Pulse width×Pulses per Period
Pulse is the single transmitting time between M1 and D1 showed in the first graph below.
Pulses per Period is showed in the second graph below.
As a result, On Time=0.400ms×11=4.40ms





8. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205, §15.209 and §15.249 (a).

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10 and RSS-210 B.10 (a).

Radiation Disturbance Test Limit for FCC

Emissions radiated outside of the specified frequency bands above 30 MHz			
Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m	
		Quasi-Peak	
30 - 88	100	40	
88 - 216	150	43.5	
216 - 960	200	46	
Above 960	500	54	
Above 1000	500	Peak	Average
		74	54

FCC field strength of emissions from intentional radiators operated within these frequency bands			
Frequency (MHz)	Field strength of Fundamental	Field strength of Harmonics	Distance (m)
902 - 928	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3
2400 – 2483.5	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3
5725 – 5875	50 mV/m (94 dBuV/m)	500 uV/m (54 dBuV/m)	3

The field strength of fundamental and harmonic emissions measured at 3 m shall not exceed the limits in table B2 for ISED.

Note: The EUT has the same power when push the control direction of different strength.

Table B2 — Field strength limits at various frequencies		
	Field strength (mV/m)	
Frequency bands (MHz)	Fundamental emissions	Harmonic emissions
902-928	50	0.5
2400-2483.5	50	0.5
5725-5875	50	0.5
24000-24250	250	2.5

FCC Emissions radiated outside of the specified frequency bands below 30 MHz		
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

ISED General field strength limits at frequencies below 30 MHz

Table 6 – General field strength limits at frequencies below 30 MHz

Frequency	Magnetic field strength (H-Field) (µA/m)	Measurement distance (m)
9 - 490 kHz[Note 1]	6.37/F (F in kHz)	300
490 - 1705 kHz	63.7/F (F in kHz)	30
1.705 - 30 MHz	0.08	30

Note 1: The emission limits for the ranges 9-90 kHz and 110-490 kHz are based on measurements employing a linear average detector.

ISED Restricted bands please refer to ISED RSS-GEN Clause 8.10

Table 7 – Restricted frequency bands[Note 1]

MHz	MHz	GHz
0.090 - 0.110	149.9 - 150.05	9.0 - 9.2
0.495 - 0.505	156.52475 - 156.52525	9.3 - 9.5
2.1735 - 2.1905	156.7 - 156.9	10.6 - 12.7
3.020 - 3.026	162.0125 - 167.17	13.25 - 13.4
4.125 - 4.128	167.72 - 173.2	14.47 - 14.5
4.17725 - 4.17775	240 – 285	15.35 - 16.2
4.20725 - 4.20775	322 - 335.4	17.7 - 21.4
5.677 - 5.683	399.9 - 410	22.01 - 23.12
6.215 - 6.218	608 - 614	23.6 - 24.0
6.26775 - 6.26825	960 - 1427	31.2 - 31.8
6.31175 - 6.31225	1435 - 1626.5	36.43 - 36.5
8.291 - 8.294	1645.5 - 1646.5	Above 38.6
8.362 - 8.366	1660 - 1710	
8.37625 - 8.38675	1718.8 - 1722.2	
8.41425 - 8.41475	2200 - 2300	
12.29 - 12.293	2310 - 2390	
12.51975 - 12.52025	2483.5 - 2500	
12.57675 - 12.57725	2655 - 2900	
13.36 - 13.41	3260 – 3267	
16.42 - 16.423	3332 - 3339	
16.69475 - 16.69525	3345.8 - 3358	
16.80425 - 16.80475	3500 - 4400	
25.5 - 25.67	4500 - 5150	
37.5 - 38.25	5350 - 5460	
73 - 74.6	7250 - 7750	
74.8 - 75.2	8025 – 8500	
108 – 138		

Note 1: Certain frequency bands listed in table 7 and in bands above 38.6 GHz are designated for licence-exempt applications. These frequency bands and the requirements that apply to related devices are set out in the 200 and 300 series of RSSs.

FCC Restricted bands of operation refer to FCC §15.205 (a):

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
[1]0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2690-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	([2])
13.36-13.41			

Note: [1]Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2]Above 38.6c

TEST PROCEDURE

Below 30 MHz

The setting of the spectrum analyzer

RBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
VBW	200 Hz (From 9 kHz to 0.15 MHz)/ 9 kHz (From 0.15 MHz to 30 MHz)
Sweep	Auto

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.4.

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both Horizontal, Face-on and Face-off polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a 1 m height antenna tower.

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

6. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open field site, adequate comparison measurements were confirmed against 30m open field site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field site based on KDB 414788.

8. The limits in CFR 47, Part 15, Subpart C, paragraph 15.209 (a), are identical to those in RSS-GEN Section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377Ω. For example, the measurement frequency X kHz resulted in a level of Y dBuV/m, which is equivalent to Y-51.5 = Z dBuA/m, which has the same margin, W dB, to the corresponding RSS-GEN Table 6 limit as it has to be 15.209(a) limit.

Below 1 GHz and above 30 MHz

The setting of the spectrum analyzer

RBW	120 kHz
VBW	300 kHz
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.5.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80 cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1 GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1 GHz

The setting of the spectrum analyzer

For Restricted Bandedge and Spurious Emissions

RBW	1 MHz
VBW	3 MHz
Sweep	Auto
Detector	Peak
Trace	Max hold

For field strength of fundamental emission

RBW	⩾ 20dB Bandwidth or 99% Occupied Bandwidth, which one is greater
VBW	3 × RBW
Sweep	Auto
Detector	Peak
Trace	Max hold

Note: According to test result of Clause 7.1, RBW is set as 3MHz.

1. The testing follows the guidelines in ANSI C63.10-2013 clause 6.6.

2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

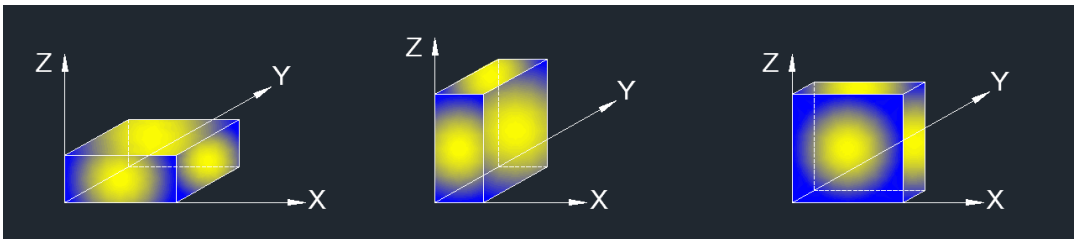
3. The EUT was placed on a turntable with 1.5 m above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1 GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements. AVG Result=Peak Result + Duty Cycle Correction Factor. For the + Duty Cycle Correction Factor please refer to clause 7.2. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

For Restricted Bandedge and field strength of fundamental emission:
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. For the transmitting duration, please refer to clause 7.2.
6. Only the worst data was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.
7. Both horizontal and vertical have been tested, only the worst data was recorded in the report.
8. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious emission (9 kHz ~ 30 MHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All 3 polarizations (Horizontal, Face-on and Face-off) of the loop antenna had been tested, but only the worst data recorded in the report.
4. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious Emission (30 MHz ~ 1 GHz):
Note:
1. Result Level = Read Level + Correct Factor.
2. If the peak values are less than the QP limit, the QP result is deemed to comply with QP limit.
3. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

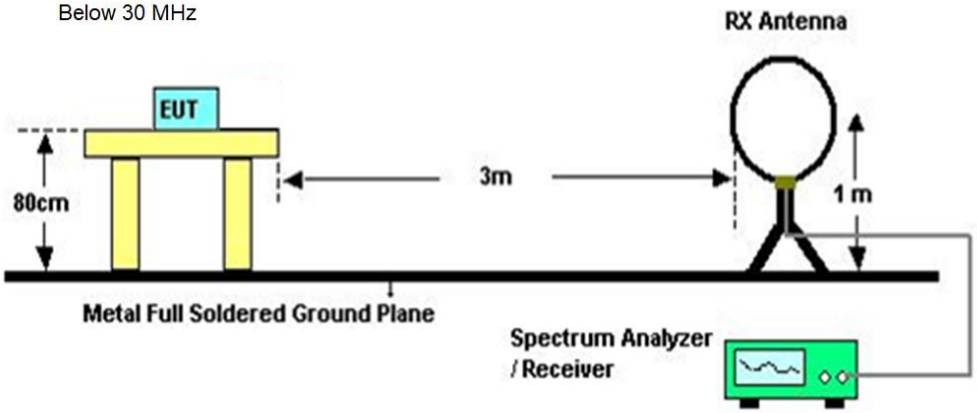
For Radiate Spurious Emission (1 GHz ~ 3 GHz):
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. For the transmitting duration, please refer to clause 7.2.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for Band reject filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

For Radiate Spurious Emission (3 GHz ~ 18 GHz):
Note:
1. Peak Result = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. AVG Result=Peak Result + Duty Cycle Correction Factor.
5. For the transmitting duration, please refer to clause 7.2.
6. Filter losses were only considered in the spurious frequency bands and the authorized band was not corrected for High Pass Filter losses.
7. Proper operation of the transmitter prior to adding the filter to the measurement chain.
8. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

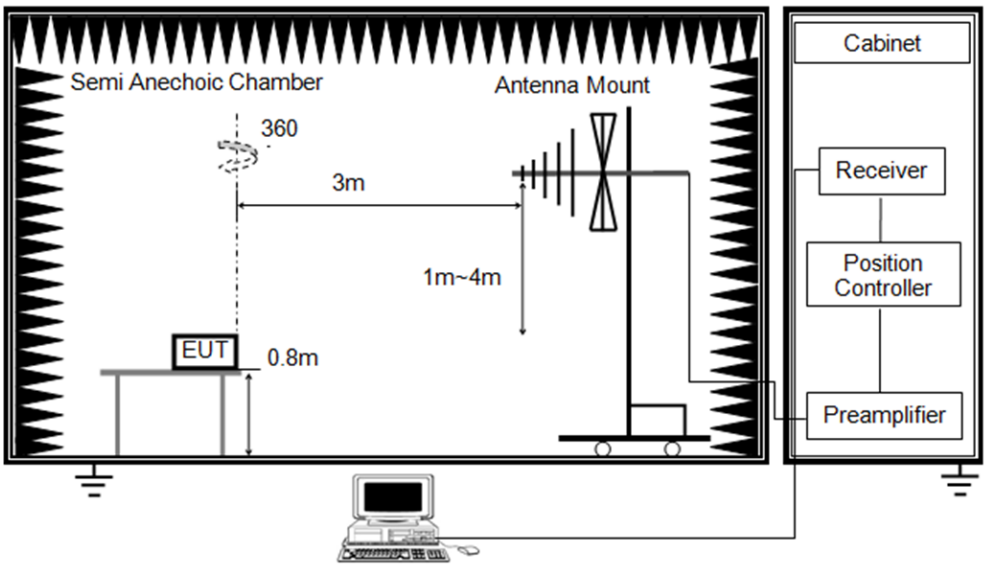
For Radiate Spurious emission (18 GHz ~ 26 GHz):
Note:
1. Measurement = Reading Level + Correct Factor.
2. If the peak values are less than the average limit of 54 dBuV/m, the average result is deemed to comply with average limit.
3. Peak: Peak detector.
4. All modes, channels and antennas have been tested, only the worst data was recorded in the report.

TEST SETUP

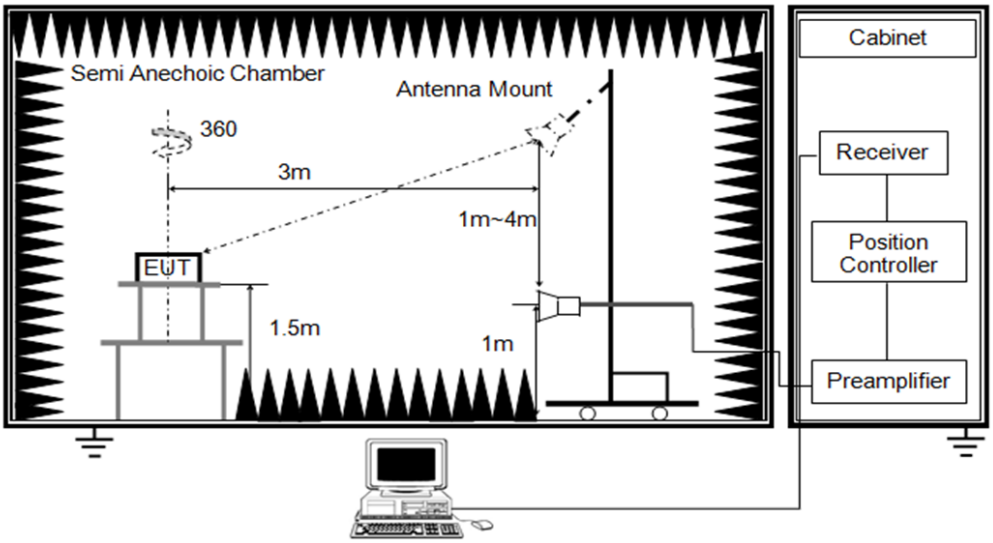
Below 30 MHz



Below 1 GHz and above 30 MHz



Above 1 GHz



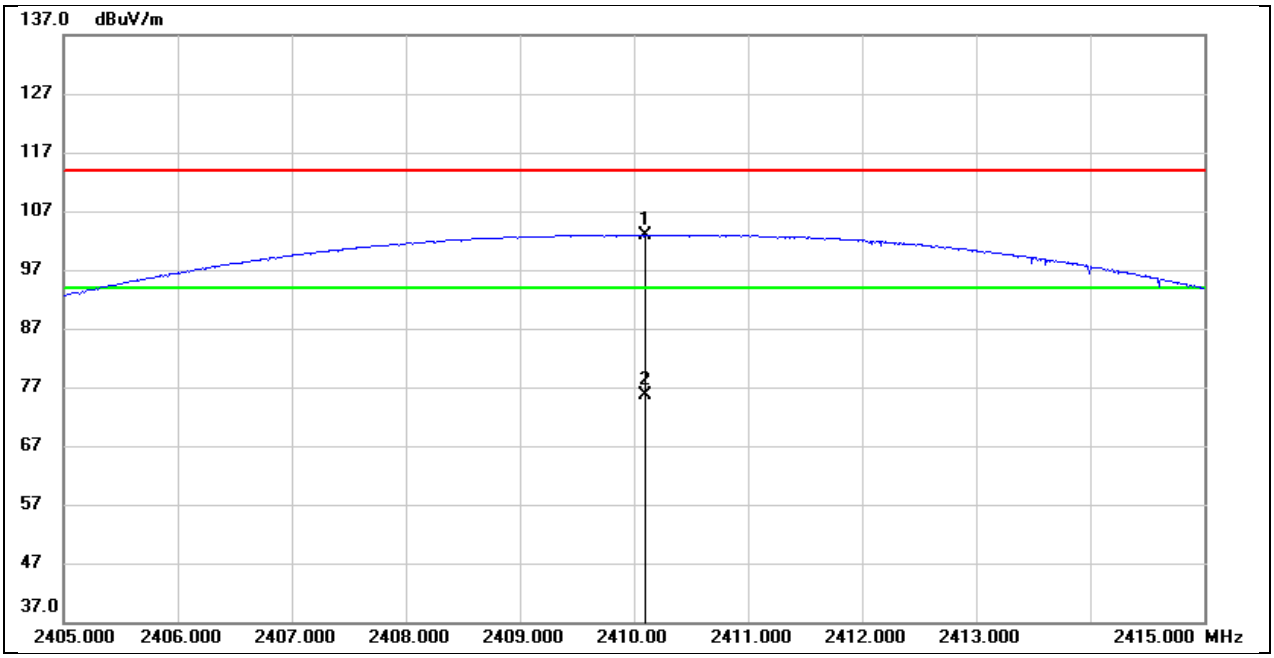
TEST ENVIRONMENT

Temperature	20.8 ℃	Relative Humidity	60.1%
Atmosphere Pressure	101 kPa	Test Voltage	DC 3 V

TEST RESULTS

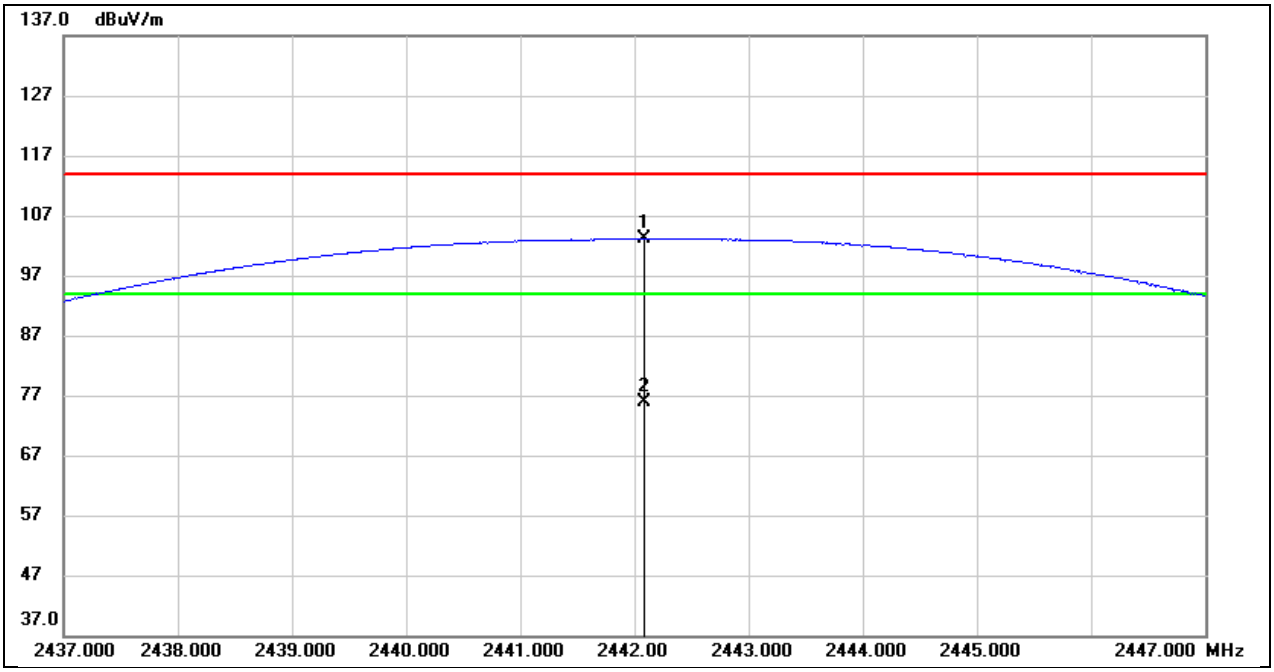
8.1. FUNDAMENTAL EMISSION

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



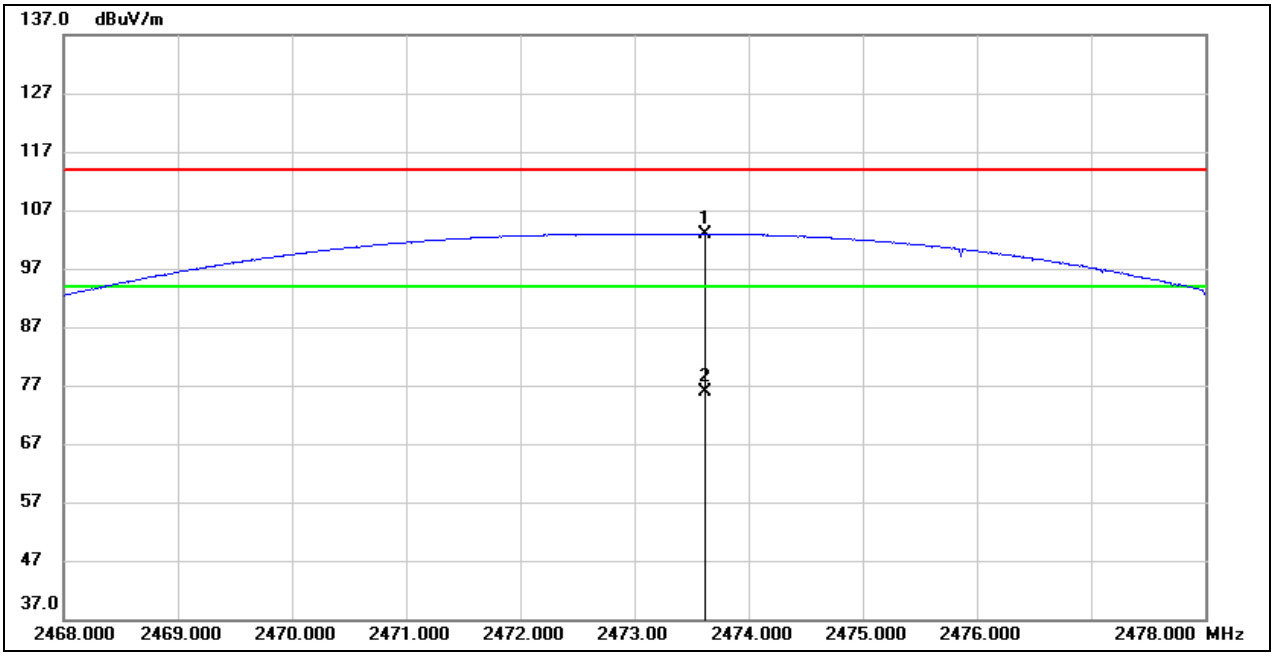
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2410.100	70.22	32.62	102.84	114.00	-11.16	Fundamental
2	2410.100	/	/	75.71	94.00	-18.29	

Test Mode:	2.4GHz	Frequency(MHz):	2442
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2442.090	70.38	32.70	103.08	114.00	-10.92	Fundamental
2	2442.090	/	/	75.95	94.00	-18.05	

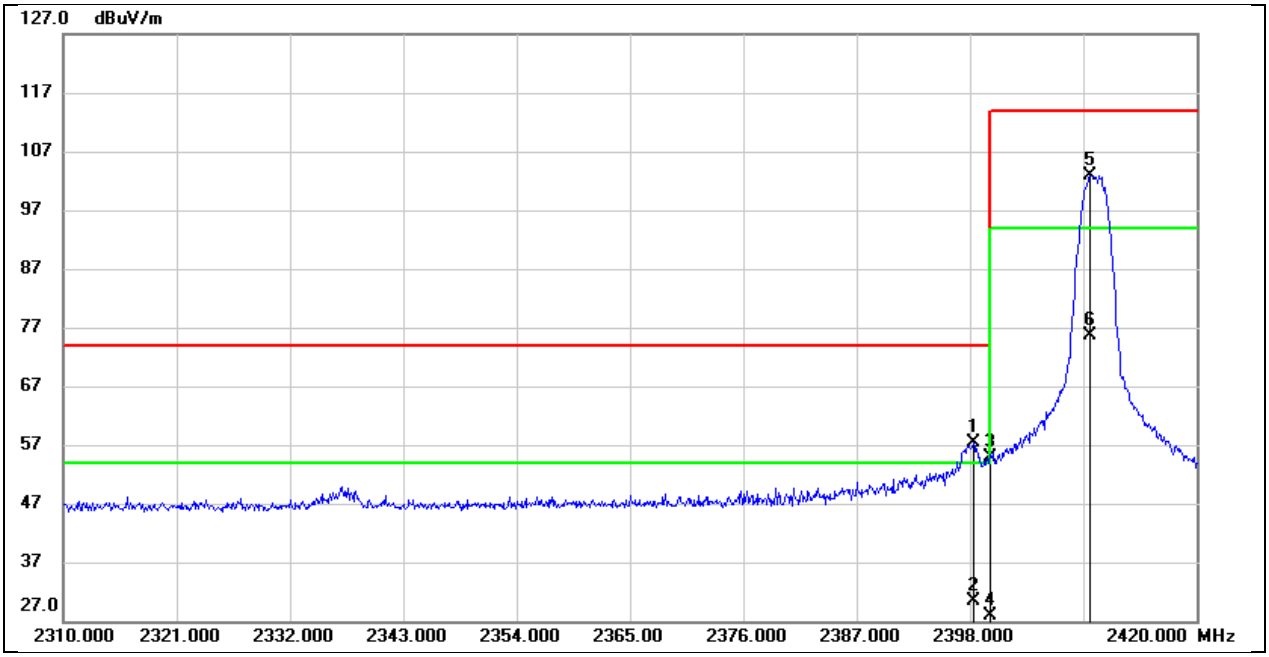
Test Mode:	2.4GHz	Frequency(MHz):	2473
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2473.620	70.18	32.77	102.95	114.00	-11.05	Fundamental
2	2473.620	/	/	75.82	94.00	-18.18	

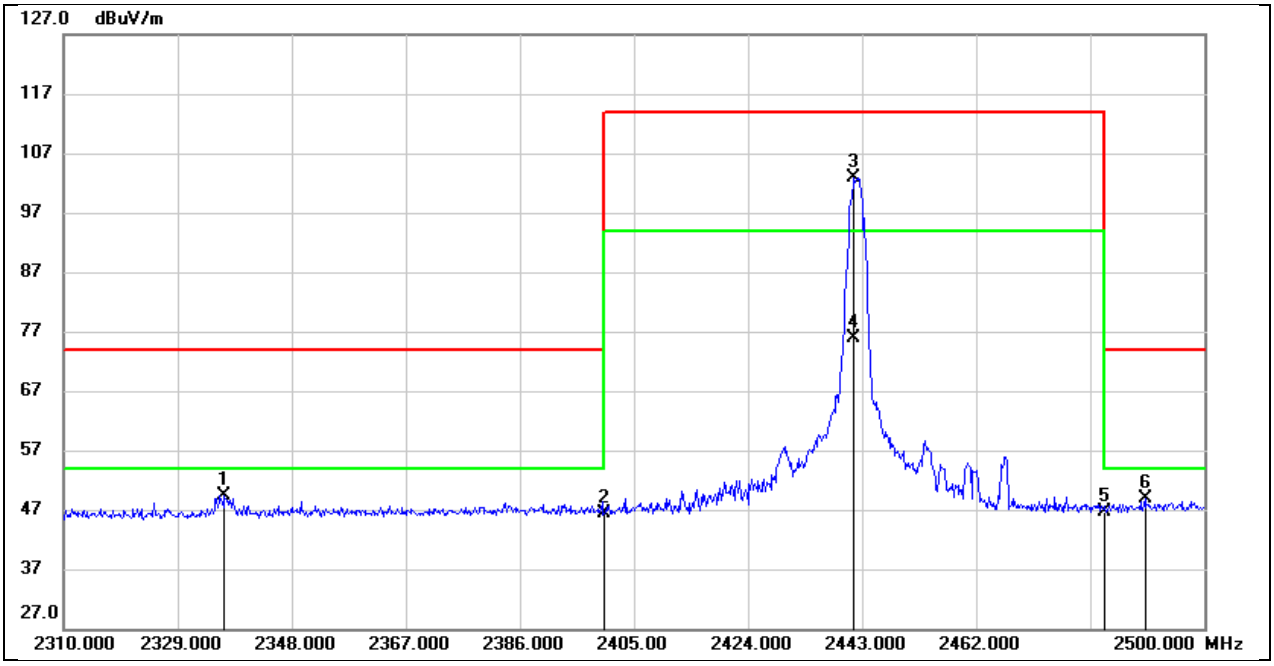
8.2. RESTRICTED BANDEDGE

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



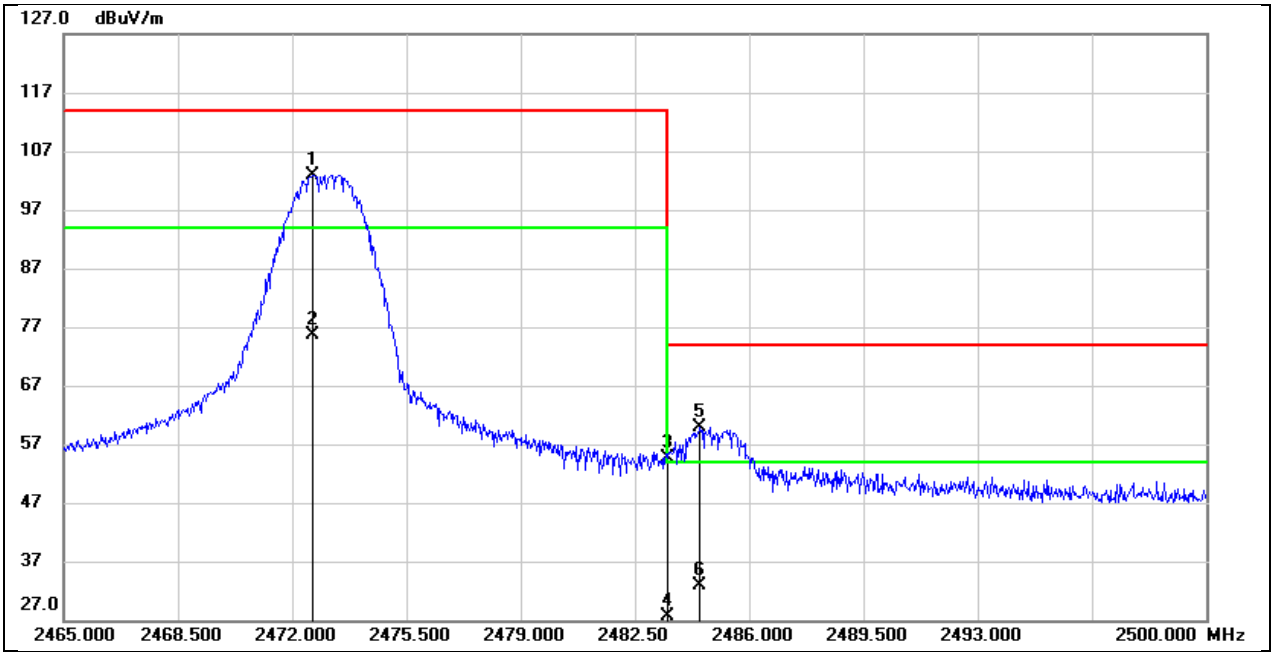
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2398.330	24.84	32.59	57.43	74.00	-16.57	peak
2	2398.330	/	/	30.30	54.00	-23.70	AVG
3	2400.000	22.37	32.59	54.96	74.00	-19.04	peak
4	2400.000	/	/	27.83	54.00	-26.17	AVG
5	2409.660	70.15	32.62	102.77	114.00	-11.23	Max Emission Position
6	2409.660	/	/	75.64	94.00	-18.36	

Test Mode:	2.4GHz	Frequency(MHz):	2442
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2336.790	17.12	32.36	49.48	74.00	-24.52	peak
2	2400.000	13.80	32.59	46.39	74.00	-27.61	peak
3	2441.670	70.29	32.69	102.98	114.00	-11.02	Max Emission
4	2441.670	/	/	75.85	94.00	-18.15	Position
5	2483.500	13.90	32.80	46.70	74.00	-27.30	peak
6	2490.120	16.07	32.81	48.88	74.00	-25.12	peak

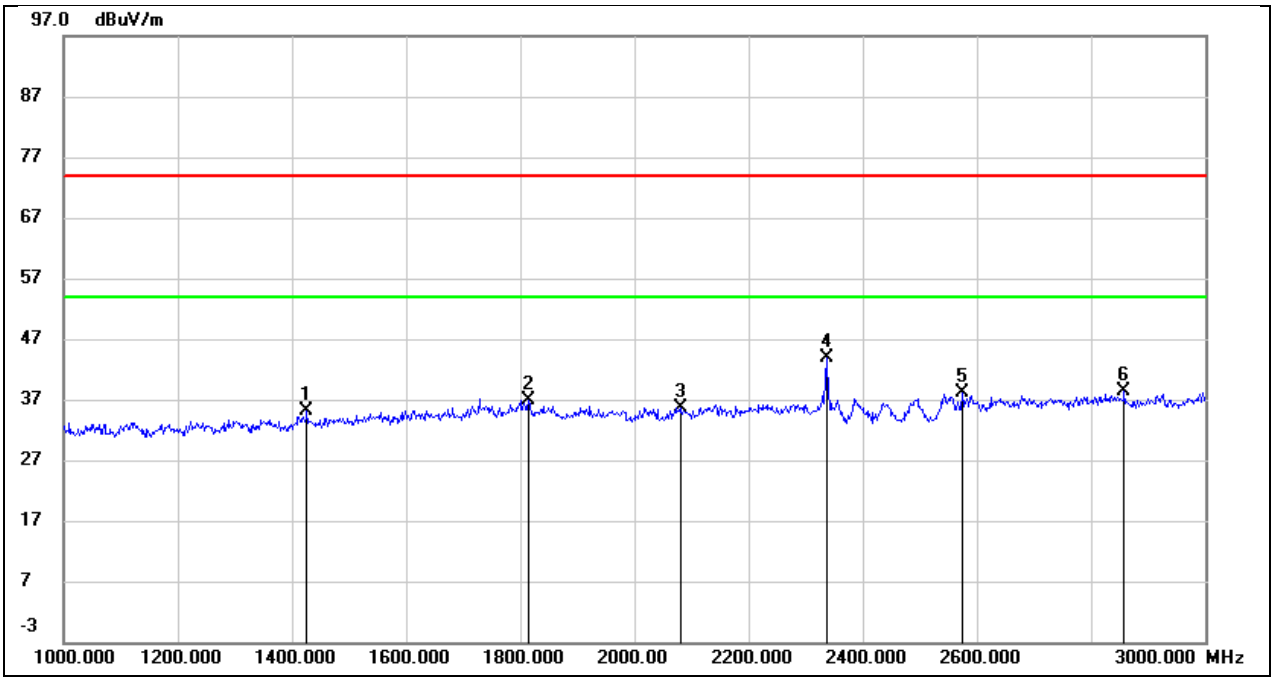
Test Mode:	2.4GHz	Frequency(MHz):	2473
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2472.630	70.13	32.77	102.90	114.00	-11.10	Max Emission
2	2472.630	/	/	75.77	94.00	-18.23	Position
3	2483.500	21.92	32.80	54.72	74.00	-19.28	peak
4	2483.500	/	/	27.59	54.00	-26.41	AVG
5	2484.495	27.15	32.80	59.95	74.00	-14.05	peak
6	2484.495	/	/	32.82	54.00	-21.18	AVG

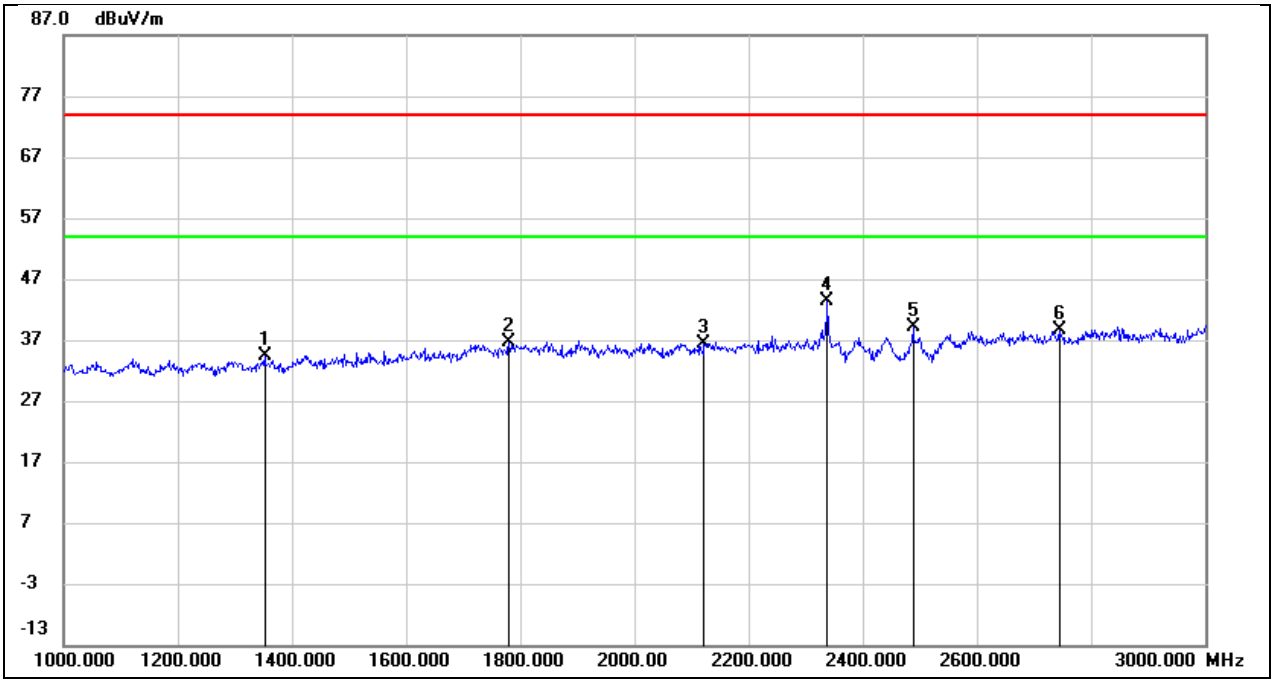
8.3. SPURIOUS EMISSIONS (1 GHZ ~ 3 GHZ)

Test Mode:	2.4GHZ	Frequency(MHz):	2410
Polarity:	Horizontal	Test Voltage:	DC 3 V



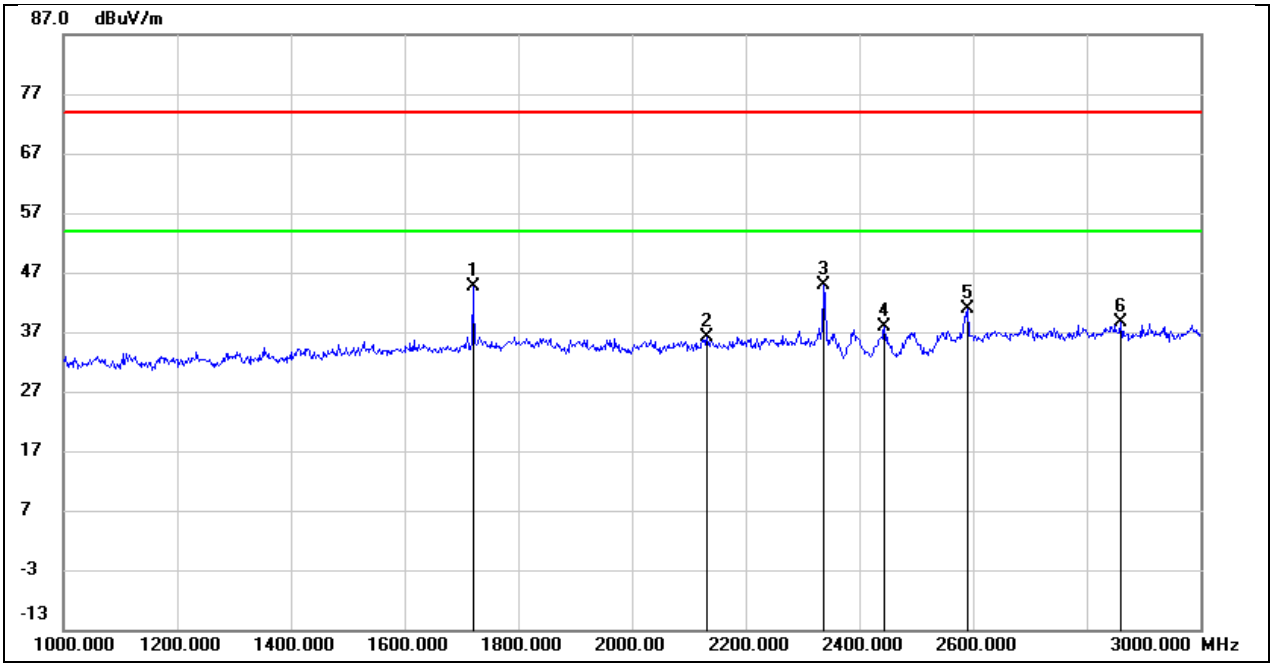
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1426.000	47.53	-12.30	35.23	74.00	-38.77	peak
2	1814.000	46.95	-9.97	36.98	74.00	-37.02	peak
3	2080.000	45.39	-9.79	35.60	74.00	-38.40	peak
4	2336.000	52.61	-8.83	43.78	74.00	-30.22	peak
5	2574.000	45.98	-7.88	38.10	74.00	-35.90	peak
6	2858.000	45.10	-6.66	38.44	74.00	-35.56	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



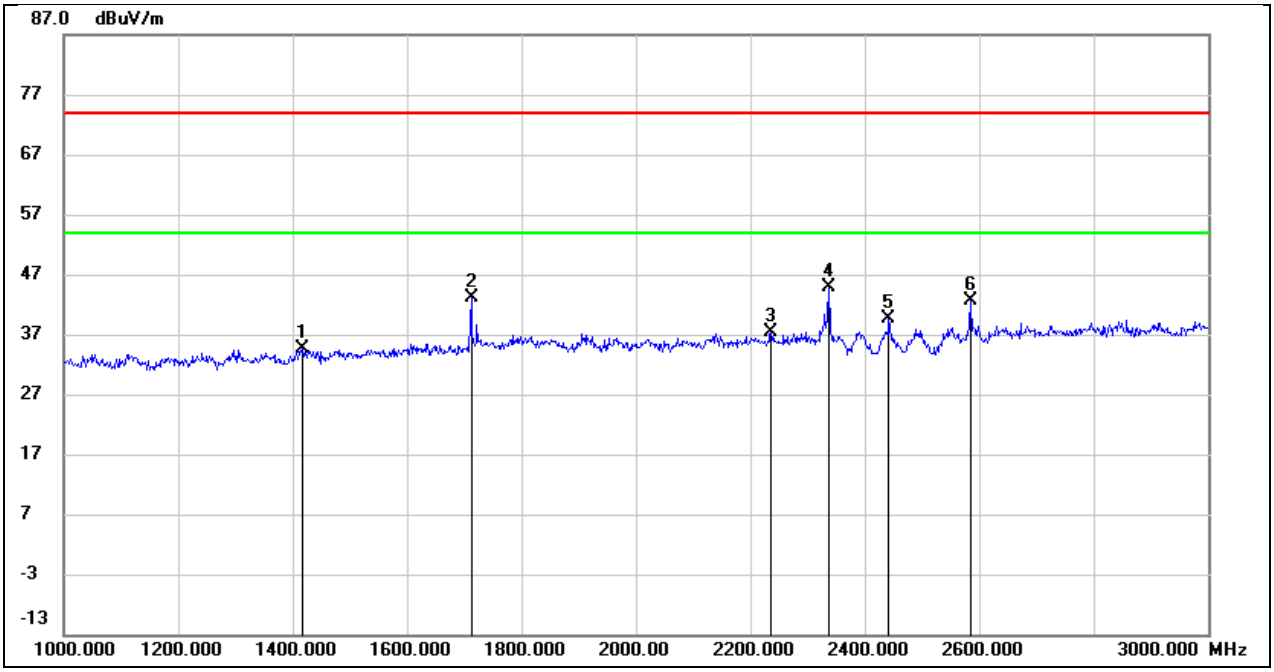
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1352.000	46.77	-12.43	34.34	74.00	-39.66	peak
2	1780.000	46.14	-9.55	36.59	74.00	-37.41	peak
3	2122.000	45.22	-8.76	36.46	74.00	-37.54	peak
4	2338.000	51.37	-7.99	43.38	74.00	-30.62	peak
5	2488.000	46.51	-7.45	39.06	74.00	-34.94	peak
6	2744.000	44.76	-6.11	38.65	74.00	-35.35	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2442
Polarity:	Horizontal	Test Voltage:	DC 3 V



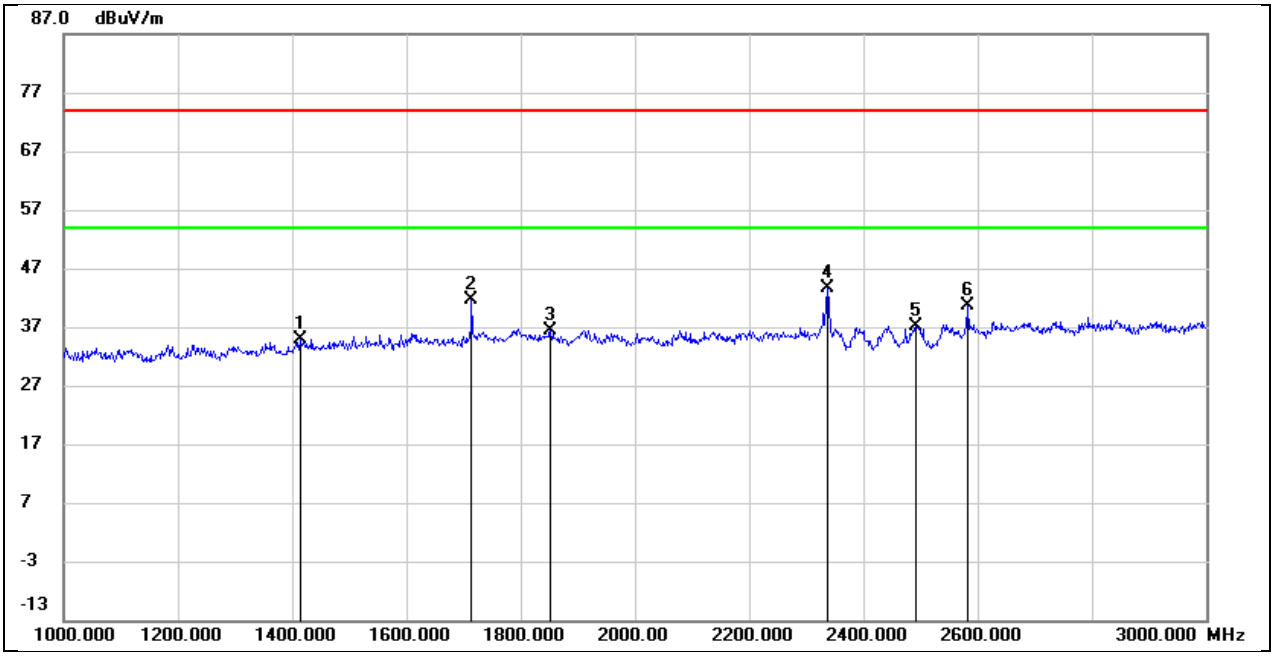
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1720.000	55.10	-10.54	44.56	74.00	-29.44	peak
2	2132.000	45.64	-9.60	36.04	74.00	-37.96	peak
3	2338.000	53.73	-8.82	44.91	74.00	-29.09	peak
4	2442.000	46.21	-8.42	37.79	/	/	Fundamental
5	2590.000	48.58	-7.81	40.77	74.00	-33.23	peak
6	2860.000	45.18	-6.64	38.54	74.00	-35.46	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2442
Polarity:	Vertical	Test Voltage:	DC 3 V



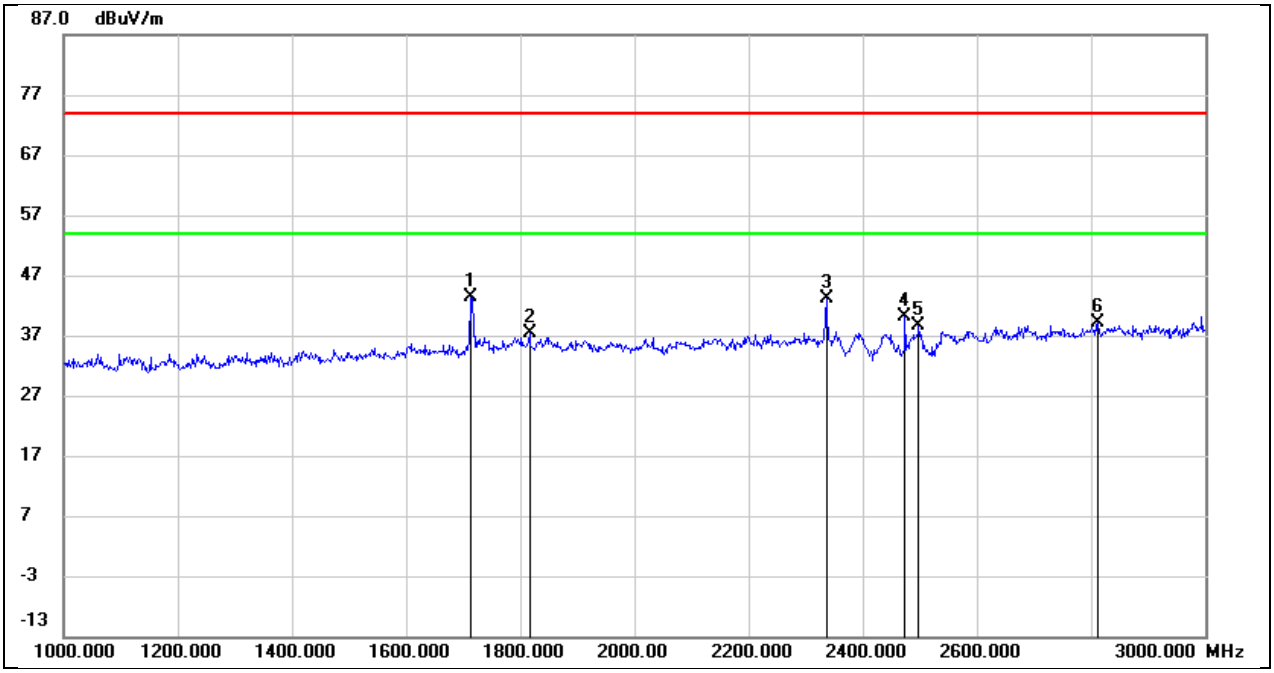
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1418.000	46.82	-12.16	34.66	74.00	-39.34	peak
2	1712.000	53.37	-10.14	43.23	74.00	-30.77	peak
3	2236.000	45.71	-8.36	37.35	74.00	-36.65	peak
4	2338.000	52.87	-7.99	44.88	74.00	-29.12	peak
5	2442.000	47.33	-7.61	39.72	/	/	Fundamental
6	2584.000	49.50	-6.95	42.55	74.00	-31.45	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2473
Polarity:	Horizontal	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1414.000	47.22	-12.38	34.84	74.00	-39.16	peak
2	1714.000	52.12	-10.57	41.55	74.00	-32.45	peak
3	1852.000	46.50	-10.00	36.50	74.00	-37.50	peak
4	2338.000	52.57	-8.82	43.75	74.00	-30.25	peak
5	2492.000	45.36	-8.24	37.12	74.00	-36.88	peak
6	2582.000	48.43	-7.84	40.59	74.00	-33.41	peak

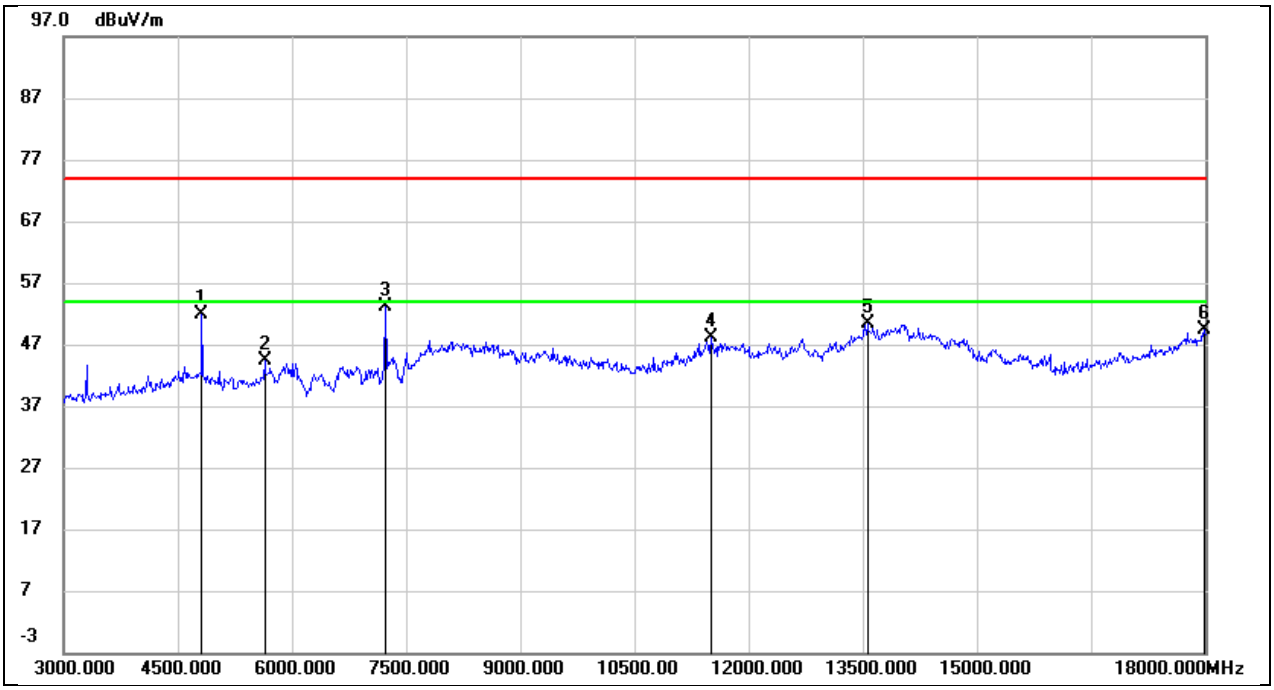
Test Mode:	2.4GHZ	Frequency(MHz):	2473
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	1714.000	53.47	-10.13	43.34	74.00	-30.66	peak
2	1816.000	46.83	-9.37	37.46	74.00	-36.54	peak
3	2336.000	51.23	-8.00	43.23	74.00	-30.77	peak
4	2473.000	47.63	-7.51	40.12	/	/	Fundamental
5	2498.000	45.99	-7.41	38.58	74.00	-35.42	peak
6	2812.000	44.77	-5.75	39.02	74.00	-34.98	peak

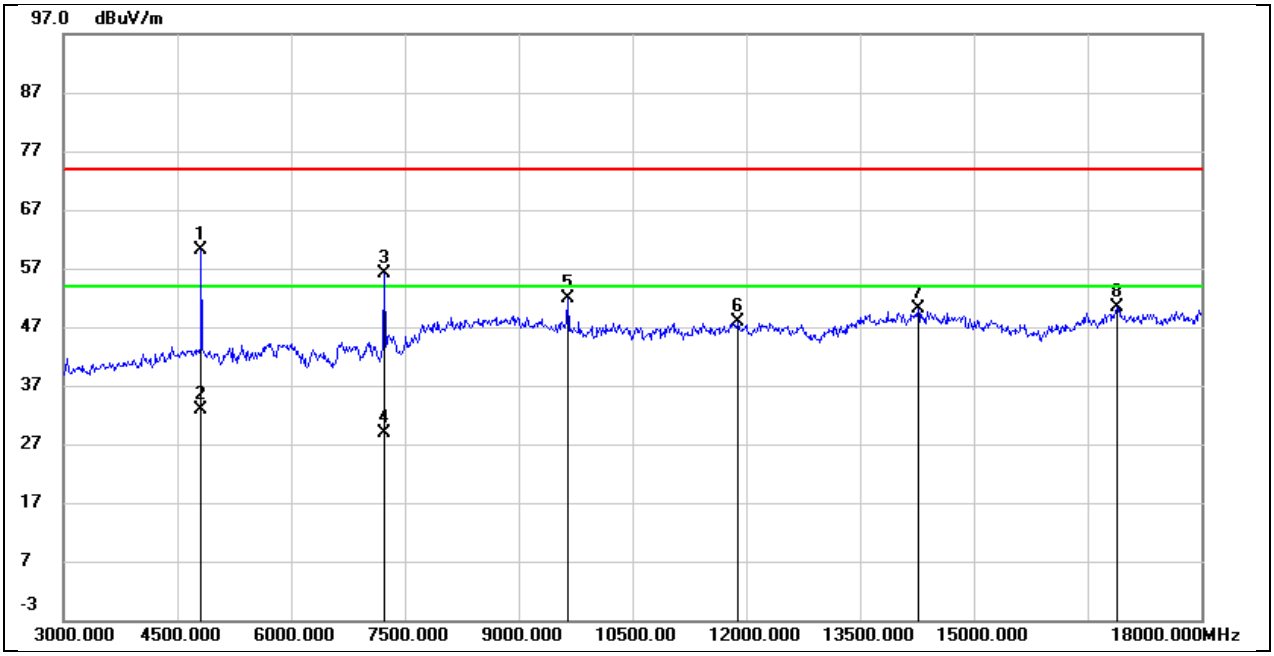
8.4. SPURIOUS EMISSIONS (3 GHZ ~ 18 GHZ)

Test Mode:	2.4GHZ	Frequency(MHz):	2410
Polarity:	Horizontal	Test Voltage:	DC 3 V



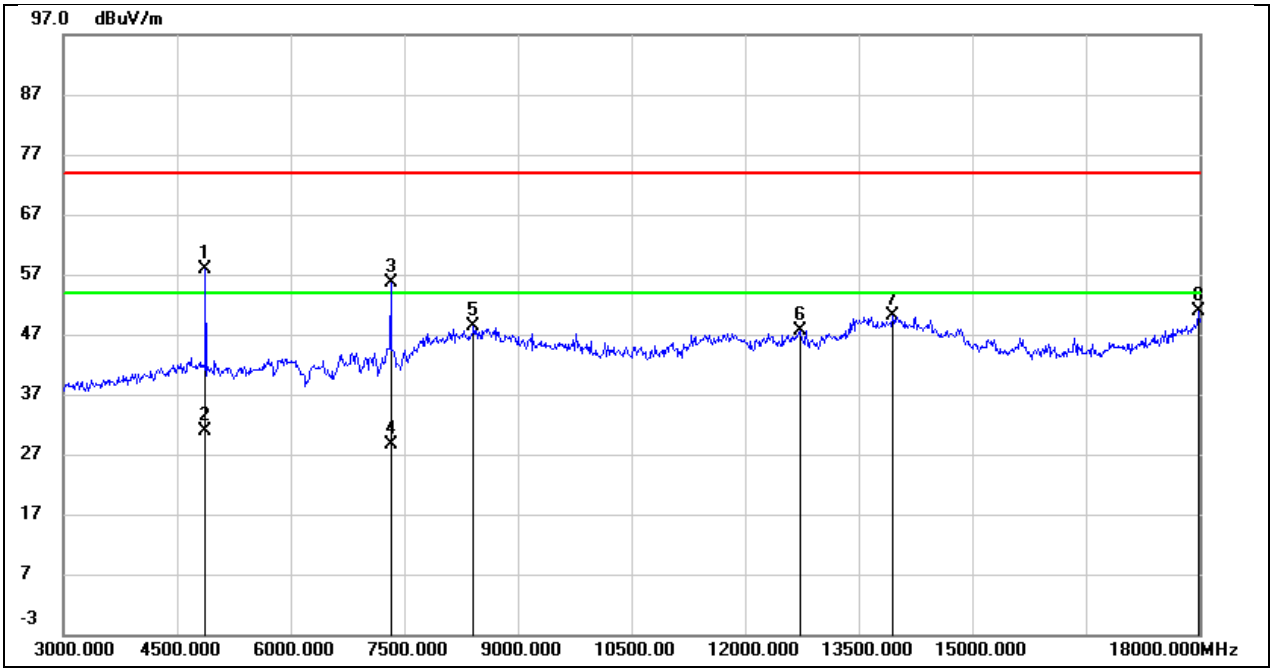
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	51.26	0.50	51.76	74.00	-22.24	peak
2	5640.000	42.09	2.40	44.49	74.00	-29.51	peak
3	7230.000	46.30	6.93	53.23	74.00	-20.77	peak
4	11505.000	30.16	17.99	48.15	74.00	-25.85	peak
5	13560.000	27.76	22.55	50.31	74.00	-23.69	peak
6	17985.000	19.78	29.49	49.27	74.00	-24.73	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



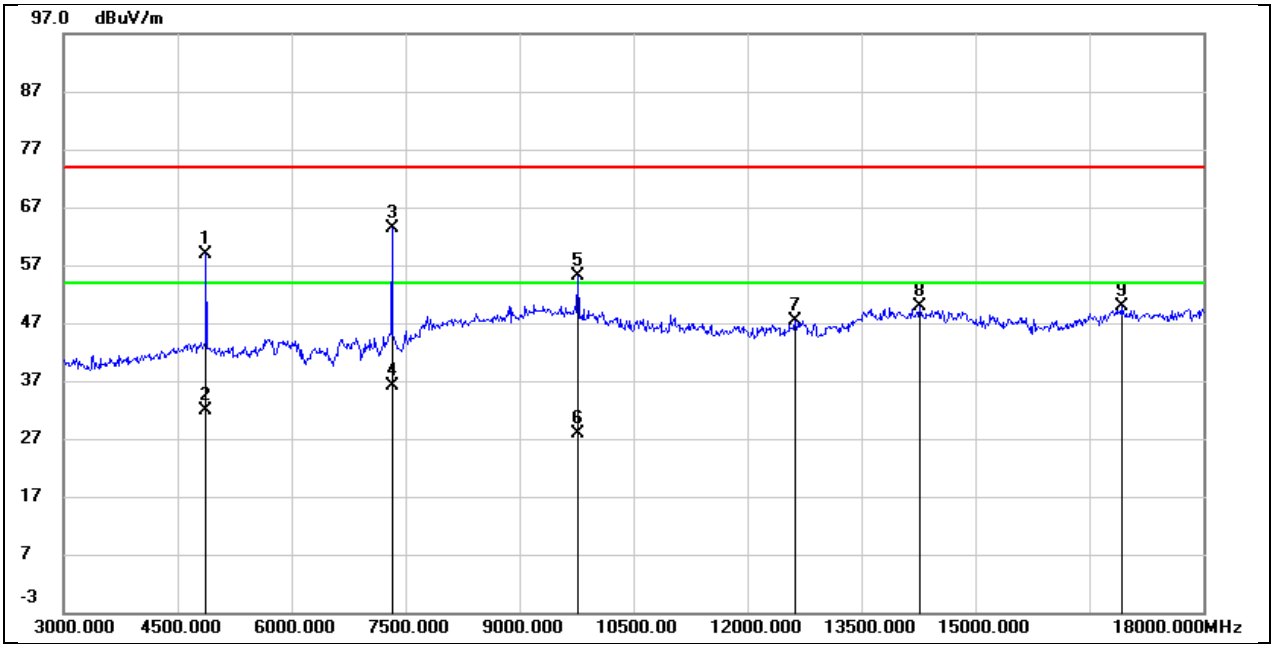
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4815.000	58.42	1.59	60.01	74.00	-13.99	peak
2	4815.000	/	/	32.88	54.00	-21.12	AVG
3	7230.000	48.50	7.65	56.15	74.00	-17.85	peak
4	7230.000	/	/	29.02	54.00	-24.98	AVG
5	9645.000	39.25	12.73	51.98	74.00	-22.02	peak
6	11895.000	30.42	17.43	47.85	74.00	-26.15	peak
7	14265.000	27.94	22.10	50.04	74.00	-23.96	peak
8	16890.000	25.41	25.05	50.46	74.00	-23.54	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2442
Polarity:	Horizontal	Test Voltage:	DC 3 V



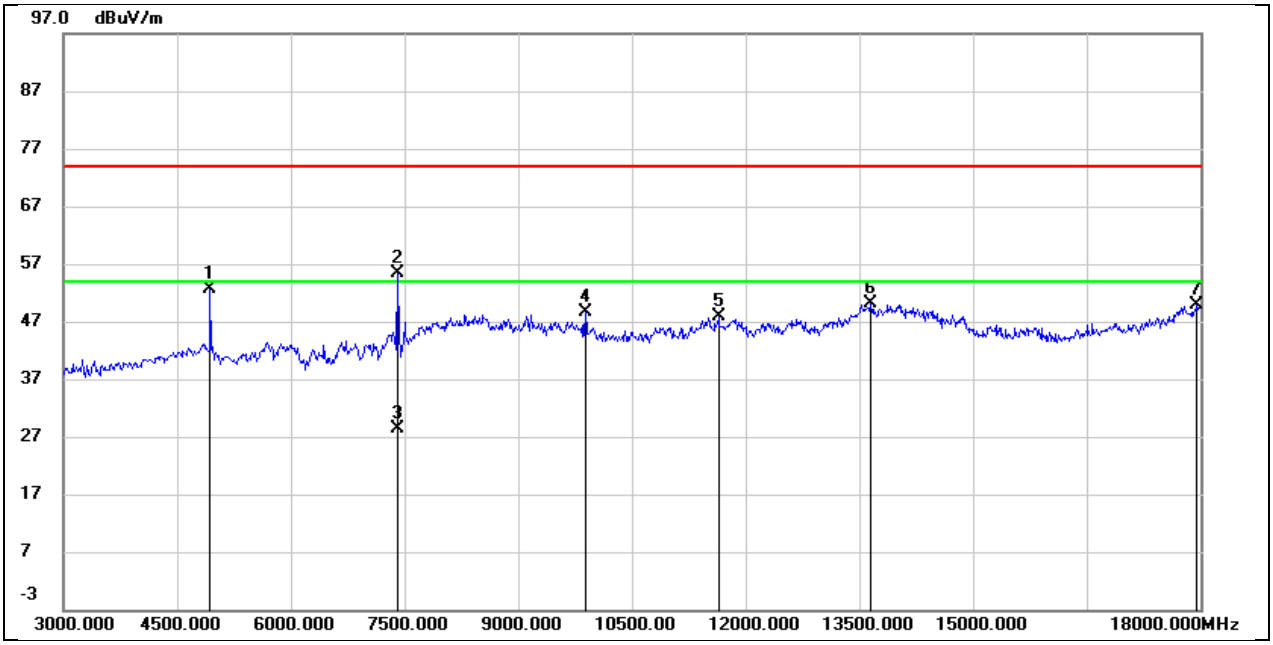
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	57.28	0.65	57.93	74.00	-16.07	peak
2	4875.000	/	/	30.80	54.00	-23.20	AVG
3	7320.000	48.62	7.05	55.67	74.00	-18.33	peak
4	7320.000	/	/	28.54	54.00	-25.46	AVG
5	8415.000	39.38	8.91	48.29	74.00	-25.71	peak
6	12720.000	28.42	19.29	47.71	74.00	-26.29	peak
7	13950.000	26.63	23.58	50.21	74.00	-23.79	peak
8	17985.000	21.41	29.49	50.90	74.00	-23.10	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2442
Polarity:	Vertical	Test Voltage:	DC 3 V



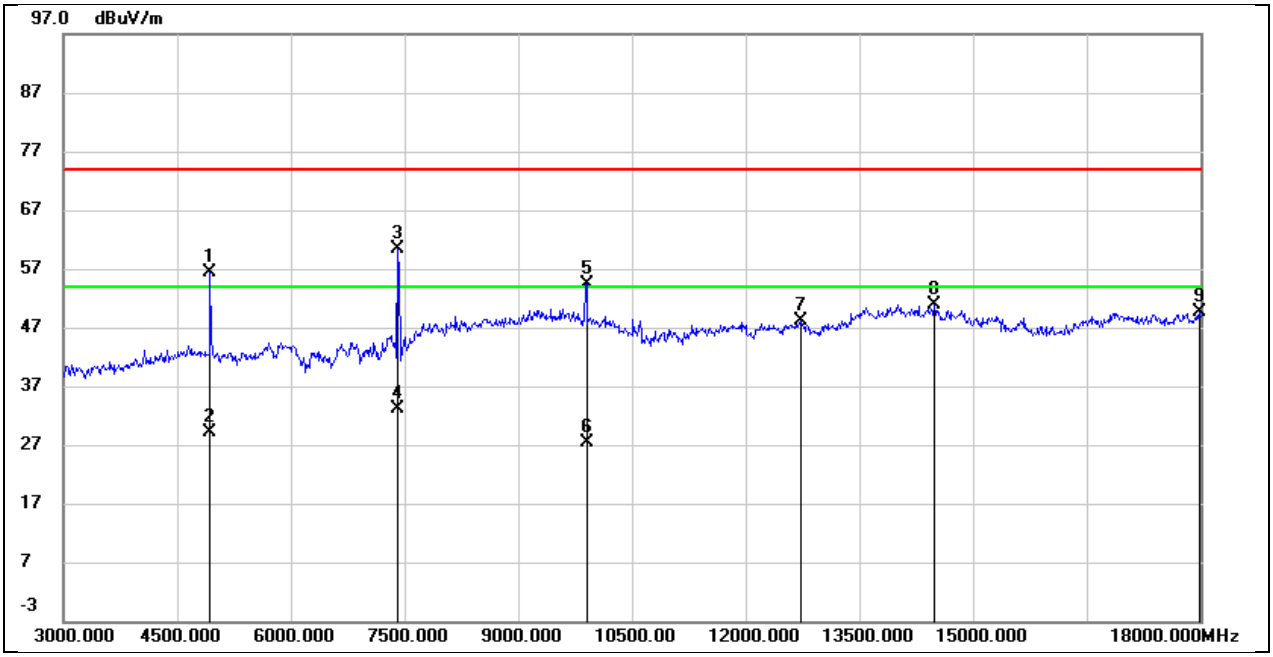
No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4875.000	57.16	1.78	58.94	74.00	-15.06	peak
2	4875.000	/	/	31.81	54.00	-22.19	AVG
3	7320.000	55.70	7.69	63.39	74.00	-10.61	peak
4	7320.000	/	/	36.26	54.00	-17.74	AVG
5	9765.000	42.30	12.83	55.13	74.00	-18.87	peak
6	9765.000	/	/	28.00	54.00	-26.00	AVG
7	12630.000	29.38	18.07	47.45	74.00	-26.55	peak
8	14265.000	27.78	22.10	49.88	74.00	-24.12	peak
9	16920.000	24.71	25.08	49.79	74.00	-24.21	peak

Test Mode:	2.4GHZ	Frequency(MHz):	2473
Polarity:	Horizontal	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4935.000	51.88	0.80	52.68	74.00	-21.32	peak
2	7410.000	48.23	7.18	55.41	74.00	-18.59	peak
3	7410.000	/	/	28.28	54.00	-25.72	AVG
4	9885.000	35.22	13.32	48.54	74.00	-25.46	peak
5	11640.000	29.54	18.23	47.77	74.00	-26.23	peak
6	13650.000	27.52	22.69	50.21	74.00	-23.79	peak
7	17955.000	20.74	29.18	49.92	74.00	-24.08	peak

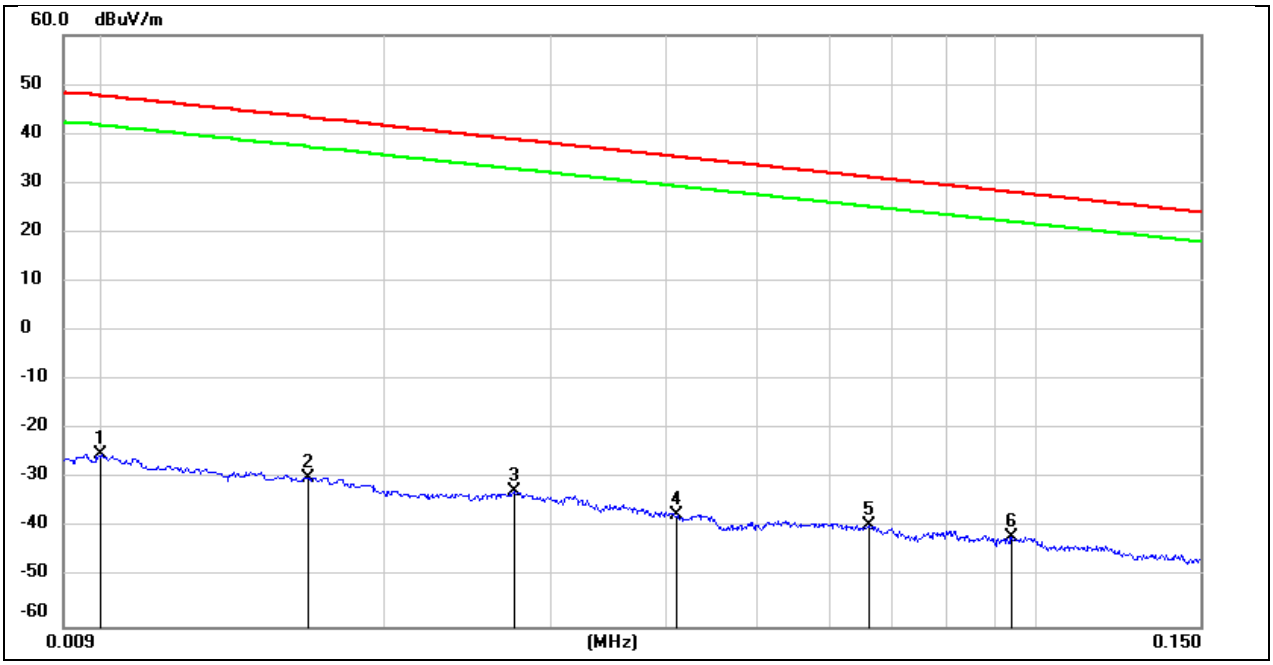
Test Mode:	2.4GHZ	Frequency(MHz):	2473
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4935.000	54.31	1.96	56.27	74.00	-17.73	peak
2	4935.000	/	/	29.14	54.00	-24.86	AVG
3	7410.000	52.58	7.76	60.34	74.00	-13.66	peak
4	7410.000	/	/	33.21	54.00	-20.79	AVG
5	9900.000	41.73	12.75	54.48	74.00	-19.52	peak
6	9900.000	/	/	27.35	54.00	-26.65	AVG
7	12735.000	29.72	18.29	48.01	74.00	-25.99	peak
8	14490.000	29.34	21.60	50.94	74.00	-23.06	peak
9	17985.000	22.27	27.35	49.62	74.00	-24.38	peak

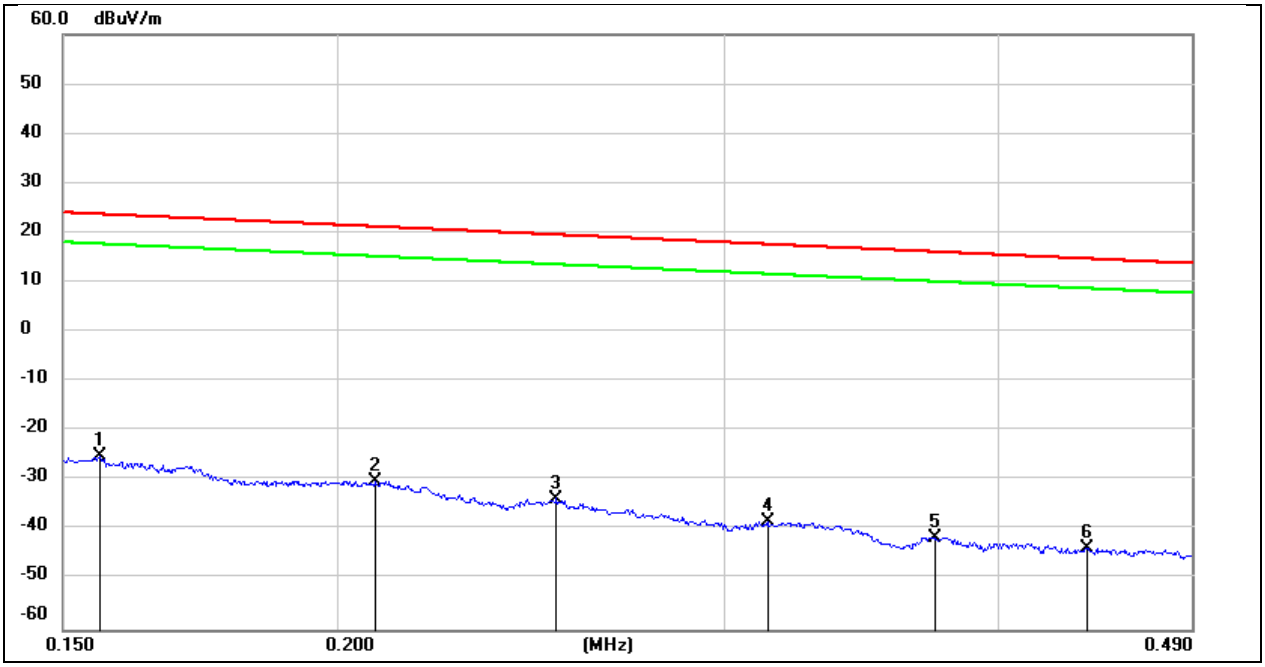
8.5. SPURIOUS EMISSIONS (9 KHZ ~ 30 MHZ)

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Loop Antenna Face On To The EUT	Test Voltage:	DC 3 V



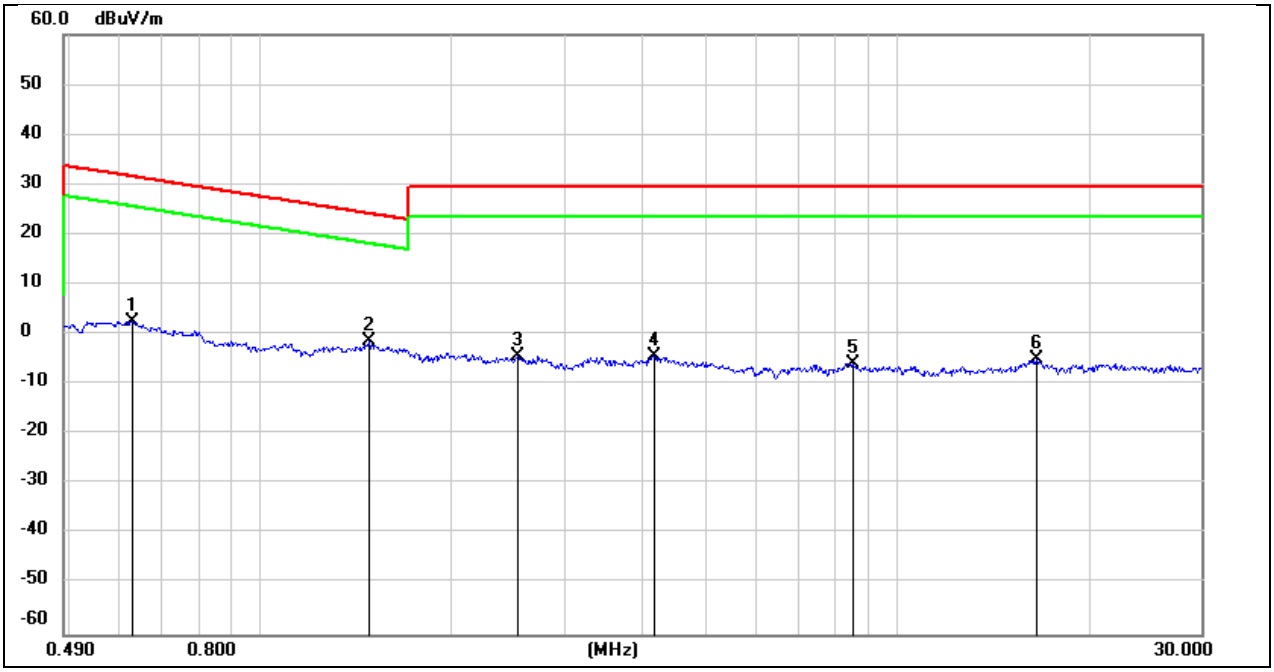
No.	Frequency	Reading	Correct	Result	Result	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuA/m)	(dBuV/m)	(dBuA/m)	(dB)	
1	0.0100	76.22	-101.40	-25.18	-76.68	47.60	-3.9	-72.78	peak
2	0.0165	71.64	-101.37	-29.73	-81.23	43.25	-8.25	-72.98	peak
3	0.0274	68.81	-101.38	-32.57	-84.07	38.85	-12.65	-71.42	peak
4	0.0410	64.24	-101.44	-37.20	-88.7	35.35	-16.15	-72.55	peak
5	0.0661	62.14	-101.55	-39.41	-90.91	31.20	-20.3	-70.61	peak
6	0.0942	59.83	-101.75	-41.92	-93.42	28.12	-23.38	-70.04	peak

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Loop Antenna Face On To The EUT	Test Voltage:	DC 3 V



No.	Frequency	Reading	Correct	Result	Result	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuA/m)	(dBuV/m)	(dBuA/m)	(dB)	
1	0.1559	76.65	-101.65	-25.00	-76.5	23.74	-27.76	-48.74	peak
2	0.2081	71.62	-101.73	-30.11	-81.61	21.23	-30.27	-51.34	peak
3	0.2515	68.20	-101.80	-33.60	-85.1	19.59	-31.91	-53.19	peak
4	0.3140	63.64	-101.87	-38.23	-89.73	17.66	-33.84	-55.89	peak
5	0.3744	60.47	-101.93	-41.46	-92.96	16.13	-35.37	-57.59	peak
6	0.4393	58.36	-102.01	-43.65	-95.15	14.75	-36.75	-58.40	peak

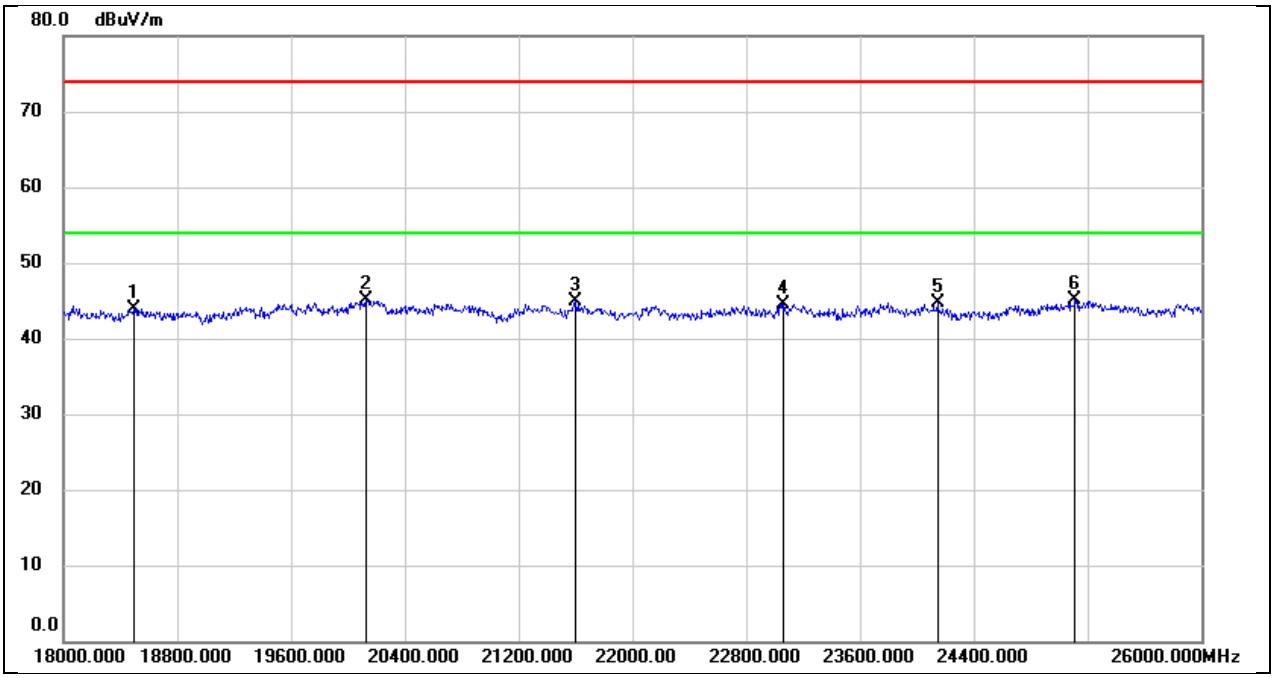
Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Loop Antenna Face On To The EUT	Test Voltage:	DC 3 V



No.	Frequency	Reading	Correct	Result	Result	Limit	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuA/m)	(dBuV/m)	(dBuA/m)	(dB)	
1	0.6298	64.67	-62.09	2.58	-48.92	31.62	-19.88	-29.04	peak
2	1.4818	60.61	-62.05	-1.44	-52.94	24.19	-27.31	-25.63	peak
3	2.5301	57.32	-61.69	-4.37	-55.87	29.54	-21.96	-33.91	peak
4	4.1492	57.00	-61.36	-4.36	-55.86	29.54	-21.96	-33.90	peak
5	8.5462	55.19	-61.00	-5.81	-57.31	29.54	-21.96	-35.35	peak
6	16.5730	55.92	-60.96	-5.04	-56.54	29.54	-21.96	-34.58	peak

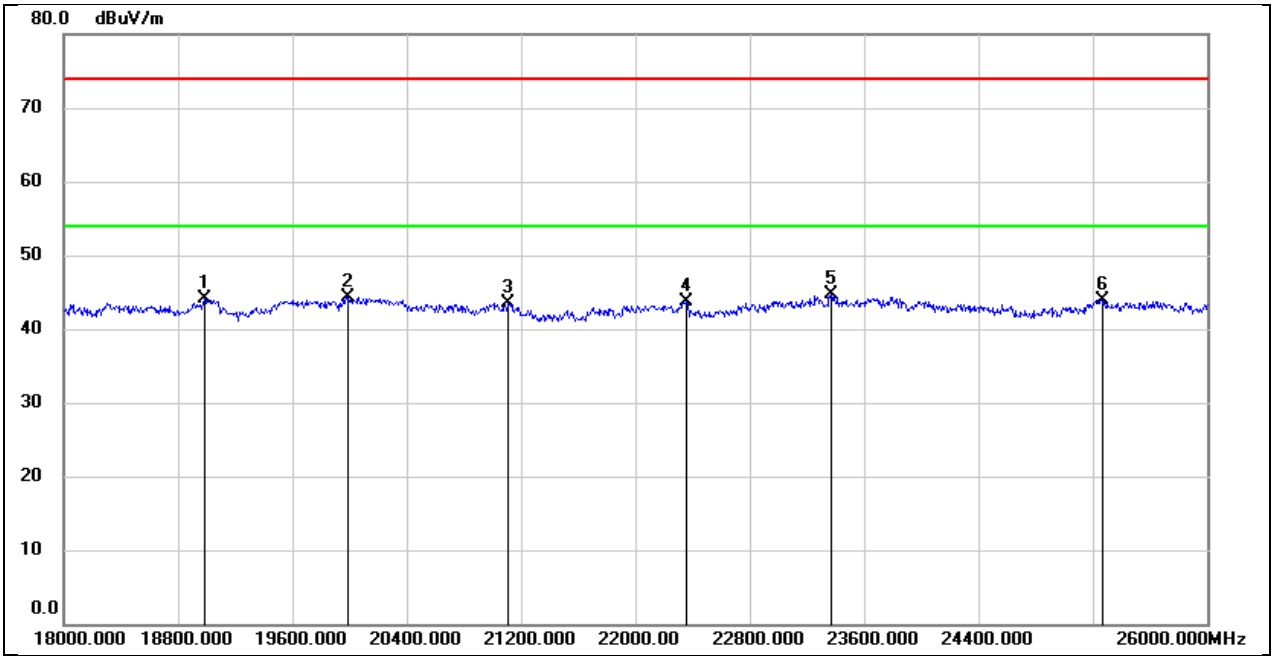
8.6. SPURIOUS EMISSIONS (18 GHZ ~ 26 GHZ)

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Horizontal	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18496.000	49.19	-5.25	43.94	74.00	-30.06	peak
2	20128.000	50.62	-5.53	45.09	74.00	-28.91	peak
3	21600.000	49.52	-4.54	44.98	74.00	-29.02	peak
4	23064.000	47.99	-3.42	44.57	74.00	-29.43	peak
5	24144.000	47.41	-2.79	44.62	74.00	-29.38	peak
6	25112.000	46.97	-1.91	45.06	74.00	-28.94	peak

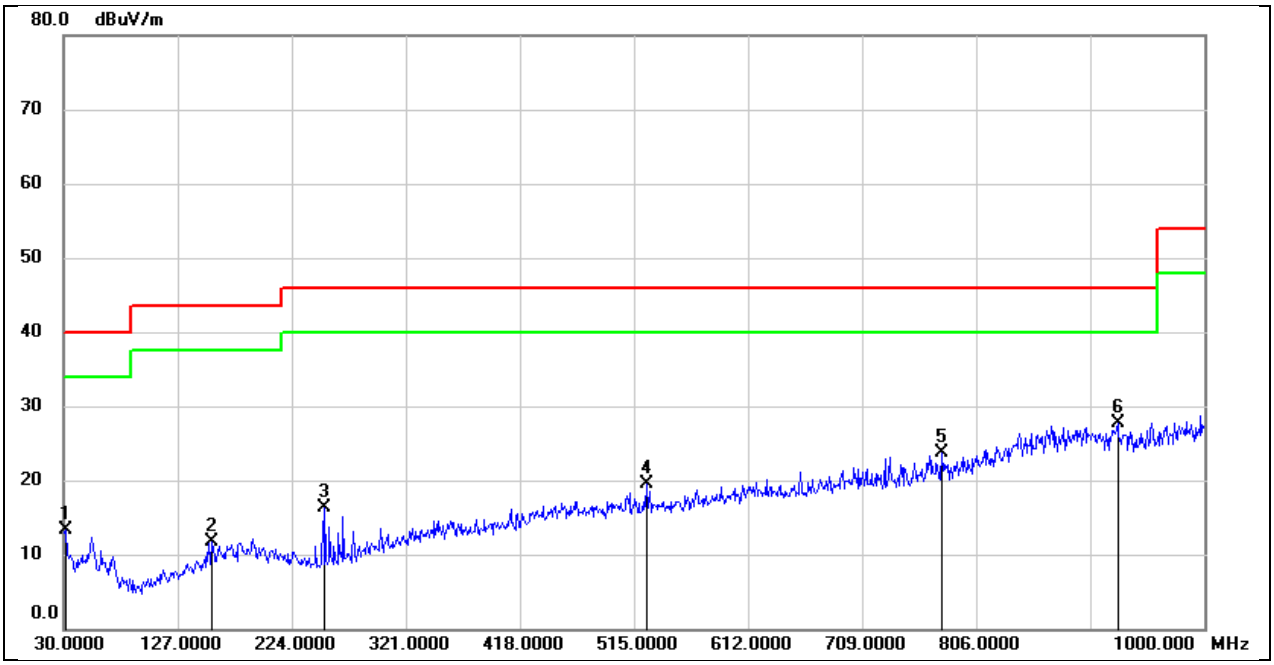
Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	18984.000	49.29	-5.23	44.06	74.00	-29.94	peak
2	19984.000	49.71	-5.44	44.27	74.00	-29.73	peak
3	21112.000	48.29	-4.83	43.46	74.00	-30.54	peak
4	22360.000	47.76	-4.07	43.69	74.00	-30.31	peak
5	23368.000	48.00	-3.26	44.74	74.00	-29.26	peak
6	25264.000	45.56	-1.67	43.89	74.00	-30.11	peak

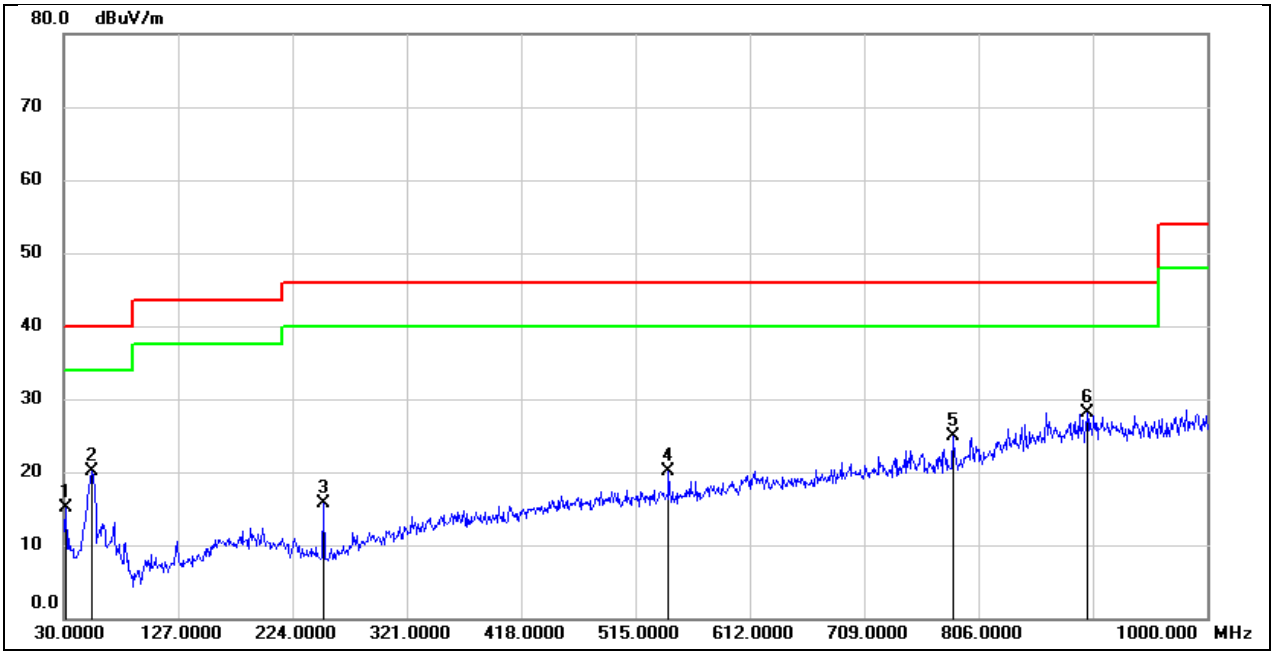
8.7. SPURIOUS EMISSIONS (30 MHZ ~ 1 GHZ)

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Horizontal	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	27.60	-14.31	13.29	40.00	-26.71	QP
2	156.1000	24.64	-13.03	11.61	43.50	-31.89	QP
3	252.1300	30.76	-14.45	16.31	46.00	-29.69	QP
4	525.6700	26.94	-7.35	19.59	46.00	-26.41	QP
5	776.9000	26.77	-3.02	23.75	46.00	-22.25	QP
6	926.2800	28.31	-0.62	27.69	46.00	-18.31	QP

Test Mode:	2.4GHz	Frequency(MHz):	2410
Polarity:	Vertical	Test Voltage:	DC 3 V



No.	Frequency (MHz)	Reading (dBuV)	Correct (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	31.9400	29.44	-14.31	15.13	40.00	-24.87	QP
2	54.2500	35.16	-15.03	20.13	40.00	-19.87	QP
3	250.1900	30.31	-14.56	15.75	46.00	-30.25	QP
4	543.1300	27.24	-7.15	20.09	46.00	-25.91	QP
5	784.6599	27.69	-2.87	24.82	46.00	-21.18	QP
6	898.1500	28.67	-0.47	28.20	46.00	-17.80	QP

9. ANTENNA REQUIREMENT

REQUIREMENT

Please refer to FCC part 15.203
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 shall be considered sufficient to comply with the provisions of this section. 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.

DESCRIPTION

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END OF REPORT