

RF Test Report

Applicant : Sound Land Corporation

Product Name : Sound Mixer

Trade Name : Maker hart 

Model Number : Just Combo V

Applicable Standard : FCC 47 CFR PART 15 SUBPART C
ANSI C63.10:2013

Received Date : Sep. 16, 2022

Test Period : Oct. 17 ~ Oct. 27, 2022

Issued Date : Nov. 23, 2022

Issued by

Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel : +886-3-2710188 / Fax : +886-3-2710190



Taiwan Accreditation Foundation accreditation number: 1330

Frequency Range: 9 kHz to 325 GHz (Bade test site)

Frequency Range: 9 kHz to 40 GHz (Wugu test site)

Test Firm MRA designation number: TW0010

Note:

1. The test results are valid only for samples provided by customers and under the test conditions described in this report.
2. This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3. The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Version	Issued Date	Revisions	Revised By
00	Nov. 23, 2022	Initial Issue	Snow Wang

Verification of Compliance

Applicant : Sound Land Corporation

Product Name : Sound Mixer

Trade Name : Maker hart 

Model Number : Just Combo V

FCC ID : 2AYQY-COMBO-V

Applicable Standard : FCC 47 CFR PART 15 SUBPART C
ANSI C63.10:2013

Test Result : Complied

Performing Lab. : Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel : +886-3-2710188 / Fax : +886-3-2710190
Taiwan Accreditation Foundation accreditation number: 1330



Eurofins E&E Wireless Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Eurofins E&E Wireless Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : _____

TABLE OF CONTENTS

1	General Information.....	5
1.1.	Summary of Test Result.....	5
1.2.	Testing Location.....	6
1.3.	Measurement Uncertainty.....	6
2	EUT Description.....	7
3	Test Methodology.....	8
3.1.	Mode of Operation.....	8
3.2.	EUT Test Step.....	8
3.3.	Configuration of Test System Details.....	9
3.4.	Test Instruments.....	11
3.5.	Test Site Environment.....	14
4	Measurement Procedure.....	15
4.1.	Maximum Conducted Output Power Measurement.....	15
4.2.	AC Power Line Conducted Emission Measurement.....	16
4.3.	Radiated Emission Measurement.....	18
4.4.	20 dB RF Bandwidth Measurement.....	21
4.5.	Carrier Frequency Separation Measurement.....	22
4.6.	Number of Hopping Measurement.....	23
4.7.	Time of Occupancy (Dwell Time) Measurement.....	24
4.8.	Out of Band Conducted Emissions Measurement.....	25
4.9.	Antenna Measurement.....	25
5	Test Results.....	26
5.1.	Conducted Emission.....	26
5.2.	Conducted Test Results.....	28
5.3.	Radiated Emission Measurement.....	66

Appendix A. Test Setup Photographs

1 General Information

1.1. Summary of Test Result

Standard	Item	Result	Remark
15.207	AC Power Conducted Emission	PASS	-----
15.203	Antenna Requirement	PASS	-----
15.247(b)(1)	Max. Output Power	PASS	-----
15.247(d)	Transmitter Radiated Emissions	PASS	-----
15.247(a)(1)	20 dB RF Bandwidth	PASS	-----
15.247(a)(1)	Carrier Frequency Separation	PASS	-----
15.247(a)(1)(iii)	Number of Hopping	PASS	-----
15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	PASS	-----
15.247(d)	Out of Band Conducted Spurious Emission	PASS	-----

Decision Rule

- ☒ Uncertainty is not included.
- ☐ Uncertainty is included.

Standard	Description
CFR47, Part 15, Subpart C	Intentional Radiators
ANSI C63. 10: 2013	American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices
DA 00-705	Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

1.2. Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ☒ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: ☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

1.3. Measurement Uncertainty

Test Item	Frequency Range	Uncertainty
Conducted Emission	150 kHz ~ 30 MHz	2.7 dB
Radiated Emission	9 kHz ~ 30 MHz	2.2 dB
	30 MHz ~ 1000 MHz	5.1 dB
	1000 MHz ~ 18000 MHz	5.2 dB
	18000 MHz ~ 26500 MHz	4.6 dB
	26500 MHz ~ 40000 MHz	4.6 dB
Conducted Output Power	1.1 dB	
RF Bandwidth	4.7 %	
Power Spectral Density	1.1 dB	

2 EUT Description

Applicant	Sound Land Corporation No.32, Keji 1st Rd., Guishan Dist., Taoyuan City 33383, Taiwan
Product Name	Sound Mixer
Trade Name	Maker hart 
Model Number	Just Combo V
FCC ID	2AYQY-COMBO-V
Frequency Range	2402 ~ 2480 MHz
Modulation Type	GFSK for 1 Mbps
	$\pi/4$ -DQPSK for 2 Mbps
	8DPSK for 3 Mbps
Operate Temp. Range	+5 ~ +40 °C
EUT Power Rating	5 Vdc, 1 A

Module : ASE		
Antenna information	Type	Max. Gain (dBi)
	Ceramic Antenna	2
Max. RF Output Power	GFSK for 1 Mbps	0.00179 W
	$\pi/4$ -DQPSK for 2 Mbps	0.00274 W
	8DPSK for 3 Mbps	0.00300 W

Module : Kirchhoff		
Antenna information	Type	Max. Gain (dBi)
	PCB Antenna	5.3
Max. RF Output Power	GFSK for 1 Mbps	0.00619 W
	$\pi/4$ -DQPSK for 2 Mbps	0.00458 W
	8DPSK for 3 Mbps	0.00504 W

3 Test Methodology

3.1. Mode of Operation

Decision of Test Eurofins has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Pre-Test Mode
Transmit Mode
BT_GFSK
BT_ $\pi/4$ -DQPSK
BT_8DPSK

After verification, all tests were carried out with the worst case test modes.

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that “Z axis” position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

Final-Test Mode
Transmit Mode
BT_GFSK
BT_8DPSK

Description of Test Modes

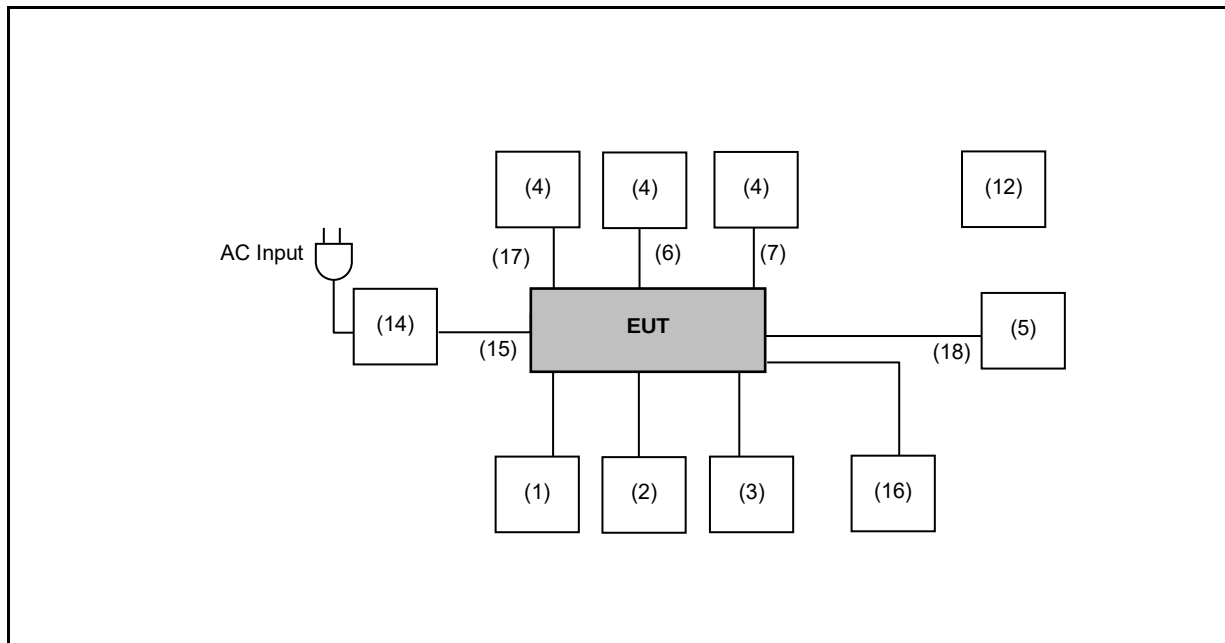
Preliminary tests were performed in different modulation to find the worst case. The modulation has shown the worst-case in section 4.5. Investigation has been done on all the possible configurations for searching the worst cases.

3.2. EUT Test Step

1	Setup the EUT shown on “Configuration of Test System Details.”
2	Turn on the power of all equipment.
3	Turn on TX function
4	EUT run test program.

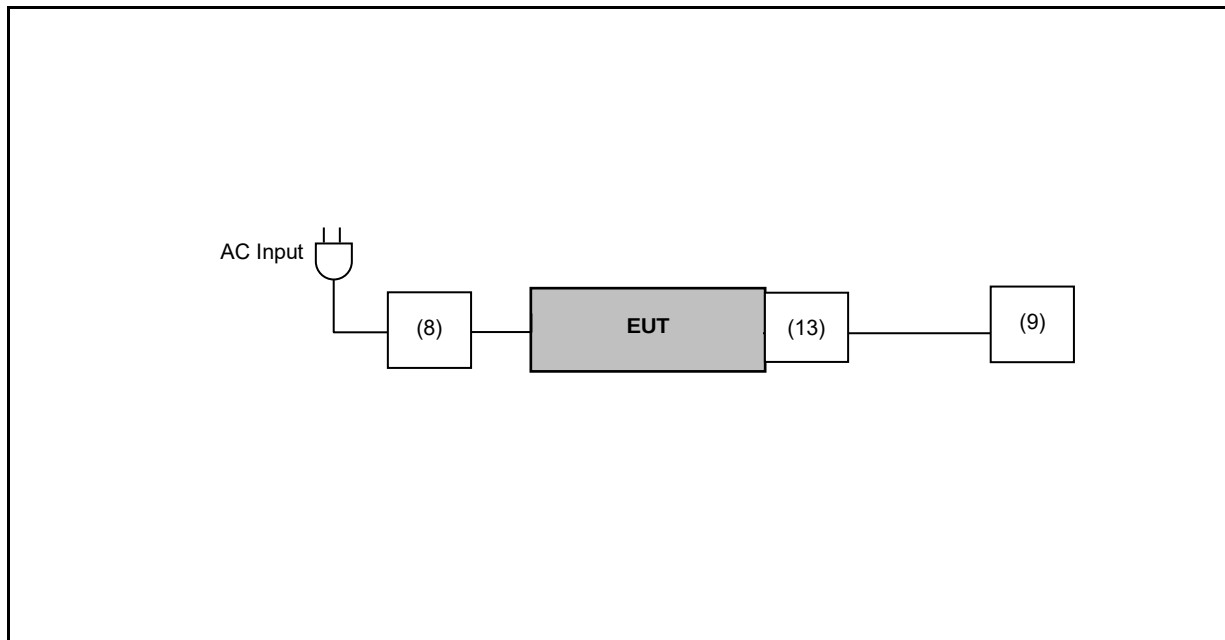
3.3. Configuration of Test System Details

Conducted Emission

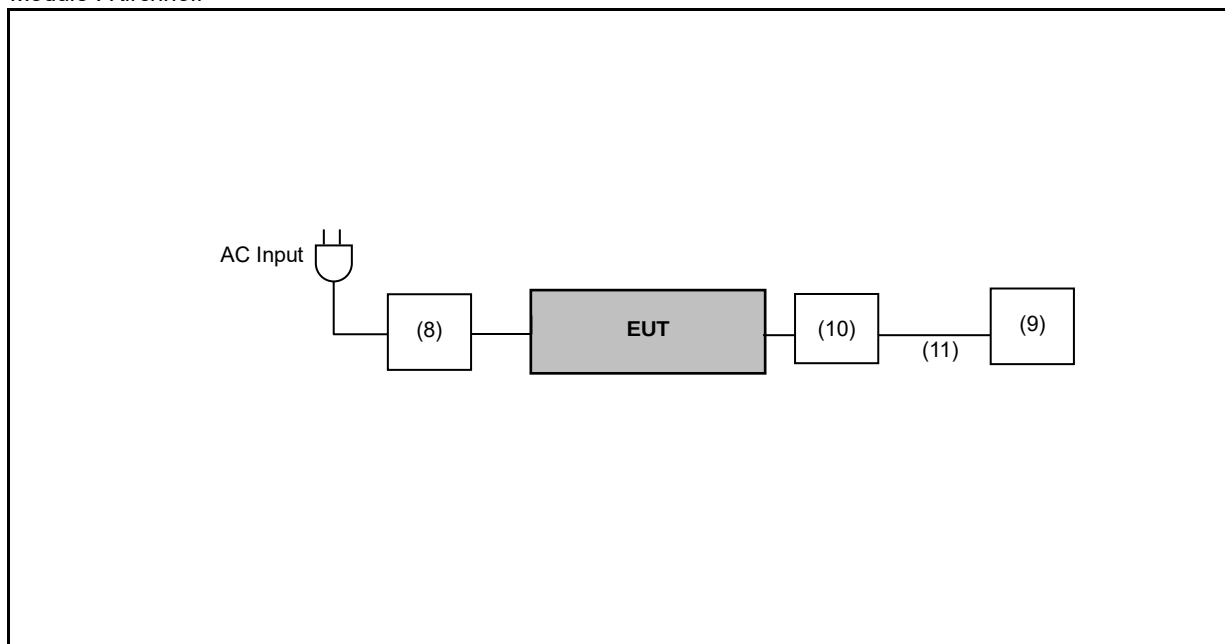


Radiated Emissions

Module : ASE



Module : Kirchhoff



Devices Description					
	Product	Manufacturer	Model Number	Serial Number	Power Cord
(1)	Speaker	KINYO	KY-490	---	---
(2)	Earphone & Microphone	INTOPIC	Jazz-218	---	---
(3)	Earphone & Microphone	HUAWEI	22040296	---	---
(4)	i-Pod	Apple	A1199	---	---
(5)	Smart phone	Samsung	SM-G9910	---	---
(6)	Audio Cable	Edifier	ATL-001	---	---
(7)	Audio Cable	ATake	AVC -3.5MM01	---	---
(8)	Adapter	HUAWEI	HW-050100U01	---	---
(9)	NB	HP	TPN-DA17	---	---
(10)	Fixture	CSR	usb-spi	---	---
(11)	USB Cable	ATL	TS-041-01	---	---
(12)	Portable Bluetooth Speaker	harman/kardon	HK NEO	---	---
(13)	Fixture	Maker hart	Just Combo V	---	---
(14)	AC ADAPTER	KPTEC	K05S050100U	---	---
(15)	L-shaped USB Power Cable	Maker hart	USB Cable	---	---
(16)	USB Mute Module	Maker hart	Mute Module	---	---
(17)	TRRS to TRRS audio cable	Maker hart	audio cable	---	---
(18)	TRS to TRS audio cable	Maker hart	audio cable	---	---

3.4. Test Instruments

For Conducted Emission

Test Period: Oct. 27, 2022

Testing Engineer: Jayson Hsieh

Test Site		Conduction01-BD				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Test Receiver	R&S	ESCI	100367	May 19, 2022	1 year
☐	Test Receiver	R&S	ESCI	100722	Nov. 02, 2021	1 year
☐	Test Receiver	R&S	ESCI	101000	Nov. 26, 2021	1 year
☒	LISN	R&S	ENV216	101040	Apr. 06, 2022	1 year
☐	LISN	R&S	ENV216	101140	Jan. 25, 2022	1 year
☒	RF Cable	Woken	00100D1380194M	TE-02-03	May 27, 2022	1 year
☒	Software	EZ EMC	1.1.4.3	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

For Conducted
 Test Period: Oct. 20, 2022
 Testing Engineer: Brian Lin

Test Site		RF01-BD				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	Power Sensor	Anritsu	MA2411B	1126022	Sep. 04, 2022	1 year
☐	Power Meter	Anritsu	ML2495A	1135009	Sep. 04, 2022	1 year
☒	Power Sensor	Agilent	N1921A	MY45241957	Dec. 06, 2021	1 year
☒	Power Meter	Agilent	N1911A	MY45101619	Dec. 06, 2021	1 year
☒	Spectrum Analyzer (10 Hz~26.5 GHz)	Keysight	N9010B	MY59071418	Mar. 16, 2022	1 year
☐	Spectrum Analyzer (9 kHz~26.5 GHz)	Agilent	N9010A	MY48030518	Jul. 21, 2022	1 year
☐	Spectrum Analyzer (20 Hz~26.5 GHz)	Agilent	N9020A	US47520902	Sep. 01, 2022	1 year
☐	Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	Jan. 05, 2022	1 year
☐	Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	Mar. 28, 2022	1 year
☐	Signal Generator	Keysight	N5182B	MY53052569	Apr. 16, 2022	1 year
☐	Signal Generator	Keysight	N5182BX07	MY59360221	Apr. 16, 2022	1 year
☒	Bluetooth Tester	R&S	CBT	100350	Mar. 17, 2021	2 years
☐	Wireless Connectivity Tester	R&S	CMW270	102208	Jun. 01, 2022	1 year
☐	Power Supply	KEITHLEY	2303	4045290	Jan. 19, 2022	1 year

Note: N.C.R. = No Calibration Request.

For Radiated Emissions
Test Period: Oct. 17, 2022
Testing Engineer: Kerry Xu, Andy Lu

Test Site		96603-BD				
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9010A	MY52221312	Jan. 13, 2022	1 year
☐	Spectrum Analyzer (3 Hz~50 GHz)	Agilent	N9030A	MY53120541	Jan. 05, 2022	1 year
☒	Spectrum Analyzer (2 Hz~50 GHz)	Keysight	N9030B	MY57143537	Apr. 14, 2022	1 year
☐	Spectrum Analyzer (10 Hz~44 GHz)	Keysight	N9020B	MY60112363	Feb. 27, 2022	1 year
☒	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A11119	Jan. 14, 2022	1 year
☐	Amplifier (100 kHz~1.3 GHz)	Agilent	8447D	2944A10961	Jul. 07, 2022	1 year
☐	Broadband Amplifier (100 kHz~1 GHz)	Titan	T0910E00014330 A1F	001	Jul. 21, 2022	1 year
☐	Amplifier (1 GHz~26.5 GHz)	Agilent	8449B	3008A02237	Oct. 21, 2021	1 year
☒	Broadband Amplifier (1 GHz~26.5 GHz)	Titan	T0912E01263025 A1F	002	Jul. 21, 2022	1 year
☐	Preamplifier (26.5 GHz~40 GHz)	EMCI	EMC2654045	980028	Sep. 02, 2022	1 year
☐	Loop Antenna (9 kHz~30 MHz)	COM-POWER CORPORATION	AL-130	121014	Mar. 28, 2022	1 year
☐	Active Loop Antenna (9 kHz~30 MHz)	Schwarzbeck Mess-Elektronik	FMZB 1513-60	1513-60-031	Feb. 17, 2022	1 year
☐	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	01146	Jul. 22, 2022	1 year
☒	Trilog Broadband Antenna (30 kHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	416	Nov. 17, 2021	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	02207	Jul. 13, 2022	1 year
☐	Broadband Horn Antenna (1 GHz~18 GHz)	Schwarzbeck Mess-Elektronik	9120D	9120D-550	Aug. 25, 2022	1 year
☒	Broadband Horn Antenna (18 GHz~40 GHz)	Schwarzbeck Mess-Elektronik	9170	9170-320	Aug. 25, 2022	1 year
☐	Horn Antenna (18 GHz~40 GHz)	ETS	3116	00086467	Dec. 03, 2021	1 year

Note: N.C.R. = No Calibration Request.

Test Site		96603-BD				
Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☐	RF Cable	EMCI	EMC104-N-N-6000	TE01-1	Feb. 18, 2022	1 year
☐	Microwave Cable	EMCI	EMC104-SM-SM-13000	170814	Feb. 18, 2022	1 year
☐	Microwave Cable	EMCI	EMC102-KM-KM-14000	151001	Feb. 18, 2022	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A100	J11005	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	T0710AT327A10A900	J11004	Aug. 04, 2022	1 year
☒	Coaxial Cable	Titan	CFD400NL-LW	001	Aug. 04, 2022	1 year
☒	Bluetooth Tester	R&S	CBT	100350	Mar. 17, 2021	2 years
☐	Wireless Connectivity Tester	R&S	CMW270	102208	Jun. 01, 2022	1 year
☐	Power Supply	KEITHLEY	2303	4045290	Jan. 19, 2022	1 year
☒	Software	EZ EMC	1.1.4.4	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request.

3.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	45-75

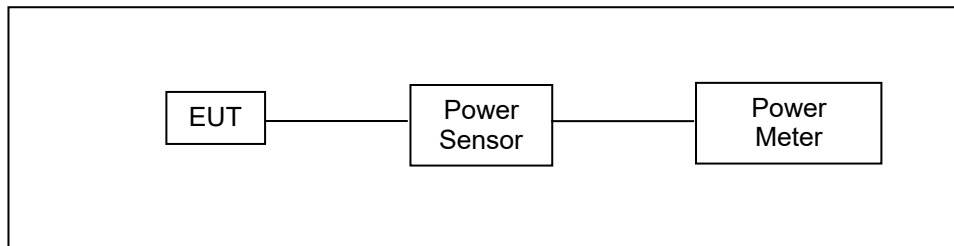
4 Measurement Procedure

4.1. Maximum Conducted Output Power Measurement

■ Limit

For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels < 0.125 watt.

■ Test Setup



■ Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor. The maximum peak output power shall not exceed 1 watt.

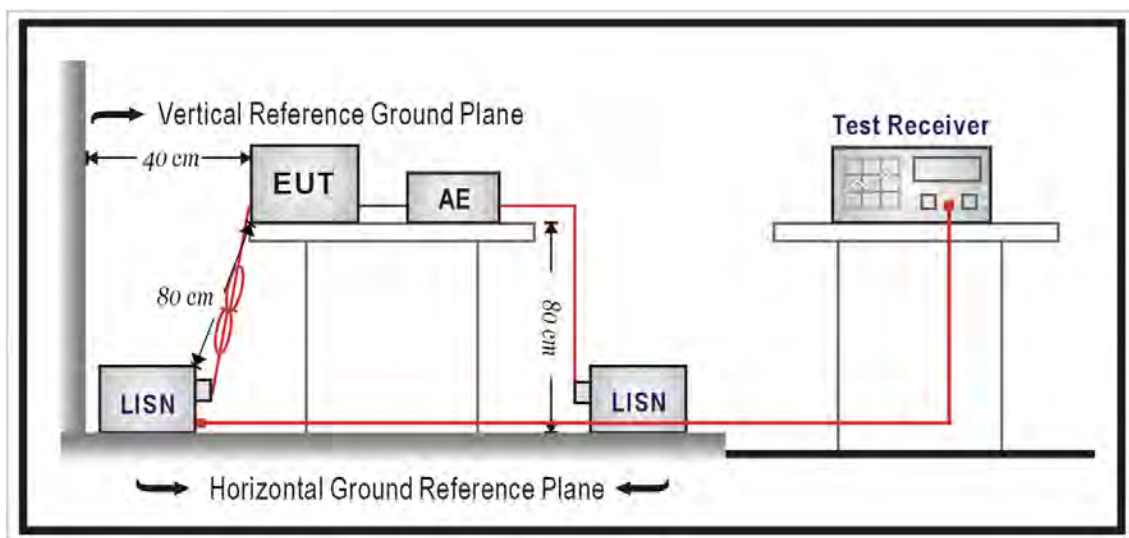
Use a direct connection between the antenna port of transmitter and the power sensor, for prevent the power sensor input attenuation 40-50 dB. Set the RBW Bandwidth of the emission or use a channel power meter mode. For antennas with gains of 6 dBi or less, maximum allowed transmitter output is 1 watt (+30 dBm). For antennas with gains greater than 6 dBi, transmitter output level must be decreased by an amount equal to (GAIN - 6)/3 dBm. The antenna port of the EUT was connected to the input of a power sensor. Power was read directly and cable loss correction was added to the reading to obtain power at the EUT antenna terminals.

4.2. AC Power Line Conducted Emission Measurement

■ Limit

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

■ Test Setup



■ Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a $50\ \Omega // 50\ \mu\text{H}$ coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a $50\ \Omega // 50\ \mu\text{H}$ coupling impedance with 50 ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40 cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80 cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12 mm insulating material.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150 kHz to 30 MHz then quasi-peak and average measurement was unnecessary.

The AMN shall be placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0.8 m from the AMN. If the mains power cable is longer than 1 m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4 m. All of interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1 m. All 50 Ω ports of the LISN shall be resistively terminated into 50 Ω loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.

4.3. Radiated Emission Measurement

■ Limit

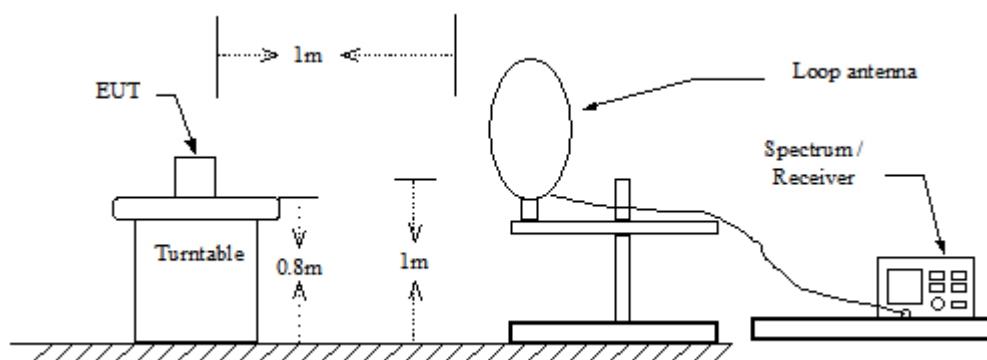
According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength ($\mu\text{V/m}$ at 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

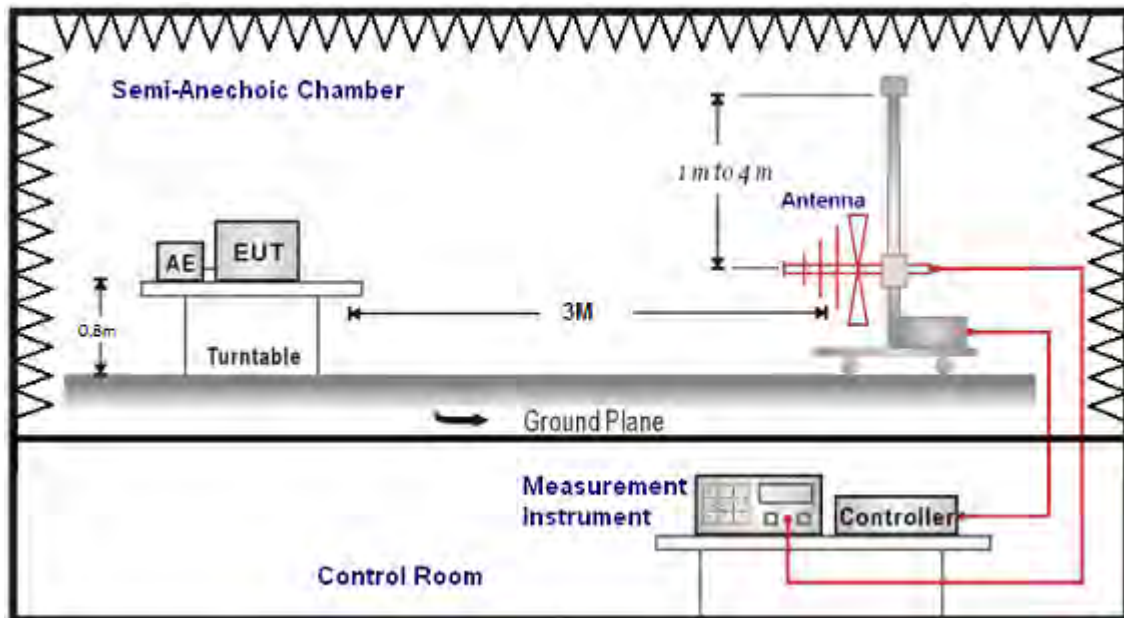
****** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

■ Setup

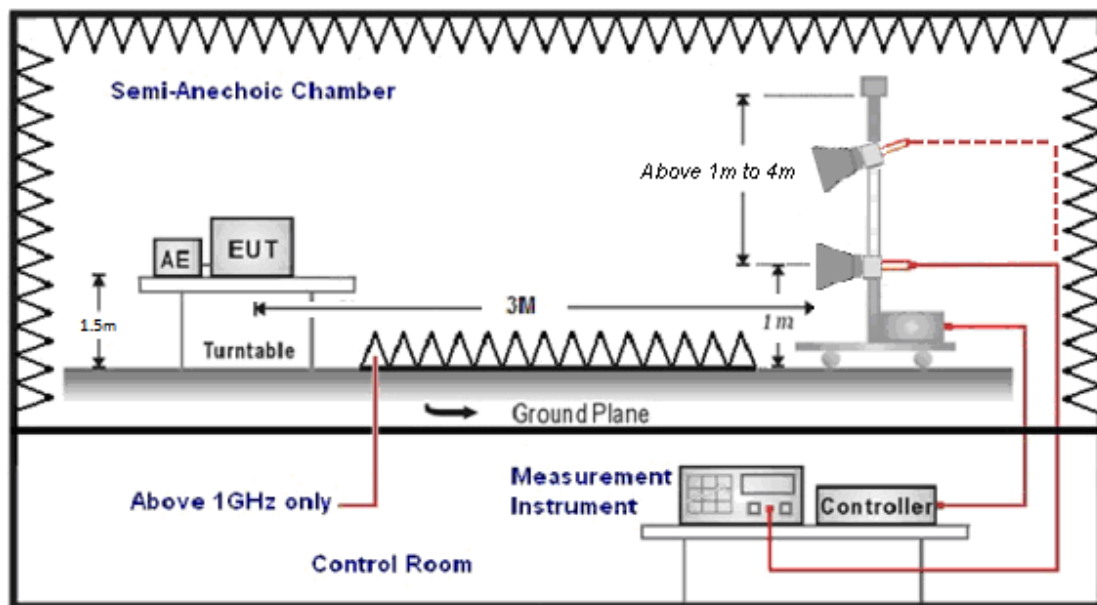
9 kHz ~ 30 MHz



Below 1 GHz



Above 1 GHz



■ Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 3 MHz for peak measurements and 10 Hz for average measurements when Duty cycle >98 % / 1/T for average measurements when Duty cycle <98 %. A nonconductive material surrounded the EUT to supporting the EUT for standing on three orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20 dB/decade).

For testing above 1 GHz, the emission level of the EUT in peak mode was 20 dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m).

The actual field intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30 dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

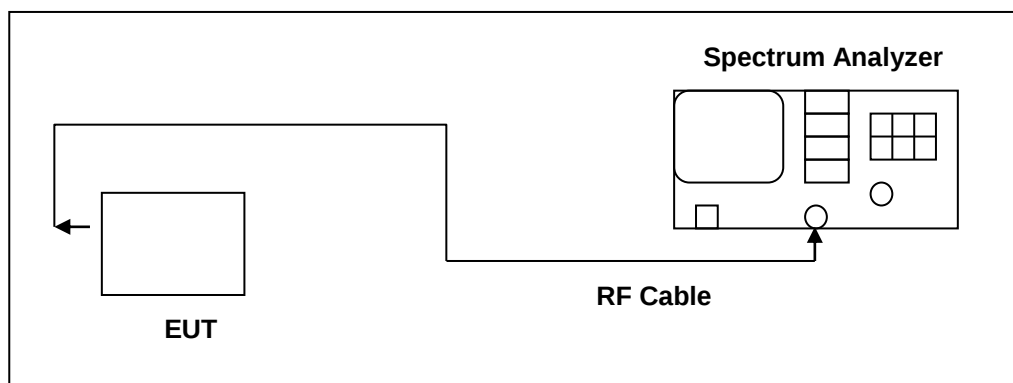
Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20 dB below the permissible limits or the field strength is too small to be measured.

4.4. 20 dB RF Bandwidth Measurement

■ **Limit**

N/A

■ **Test Setup**



■ **Test Procedure**

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10 dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = approx. 2 to 3 times the 20 dB bandwidth, centered on a hopping frequency
2. RBW $\geq$ 1 % of the 20 dB span
3. VBW $\geq$ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

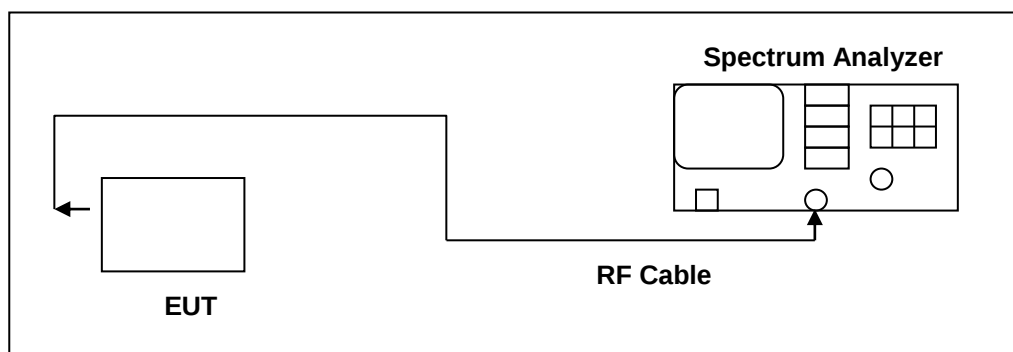
The trace was allowed to stabilize. The EUT was transmitting at its maximum data rate. The marker-to-peak function was used to set the marker to the peak of the emission. The marker-delta function was used to measure 20 dB down one side of the emission. The marker-delta function and marker was moved to the other side of the emission until it was even with the reference marker. The marker-delta reading at this point was the 20 dB bandwidth of the emission.

4.5. Carrier Frequency Separation Measurement

■ Limit

Title 47 of the CFR, Part 15 Subpart (c) 15.247(a)(1) requires the measurement of the bandwidth of the transmission between the -20 dB points on the transmitted spectrum. The results of this test determine the limits for channel spacing. The channel spacing shall be a minimum of 25 kHz or the 20 dB bandwidth, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel.

■ Test Setup



■ Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10 dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = wide enough to capture the peaks of two adjacent channels
2. Resolution (or IF) Bandwidth (RBW) = Start with the RBW set to approximately 30% of the channel spacing;
adjust as necessary to best identify the center of each individual channel.
3. Video (or Average) Bandwidth (VBW) $\geq$ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

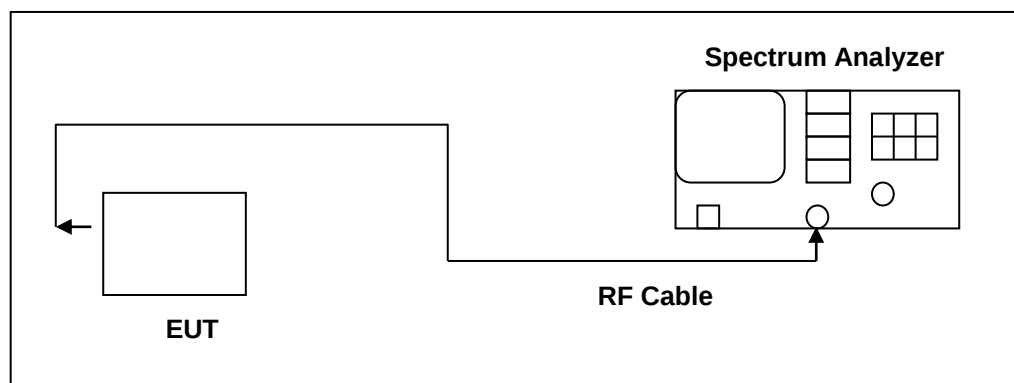
The trace was allowed to stabilize. The marker-delta function was used to determine the separation between the peaks of the adjacent channels.

4.6. Number of Hopping Measurement

■ Limit

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.

■ Test Setup



■ Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the EMC analyzer through a specialized RF connector and a 10 dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth frequency hopping function of the EUT was enabled. The spectrum analyzer used the following settings:

1. Span = the frequency band of operation
2. RBW = To identify clearly the individual channels, set the RBW to less than 30% of the channel spacing or the 20 dBbandwidth, whichever is smaller.
3. VBW $\geq$ RBW
4. Sweep = auto
5. Detector function = peak
6. Trace = max hold

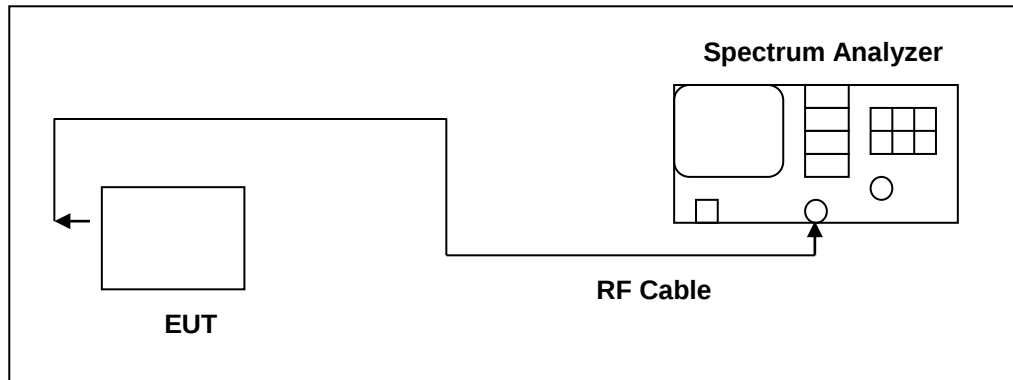
The trace was allowed to stabilize.

4.7. Time of Occupancy (Dwell Time) Measurement

■ Limit

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

■ Test Setup



■ Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. The RF output port of the Equipment-Under-Test is directly coupled to the input of the spectrum through a specialized RF connector and a 10 dB passive attenuator. A fully charged battery was used for the supply voltage. The Bluetooth hopping function of the EUT was enabled. The following spectrum analyzer settings were used:

1. Span = zero span, centered on a hopping channel
2. RBW = 1 MHz
3. VBW $\geq$ RBW
4. Sweep = as necessary to capture the entire dwell time per hopping channel
5. Detector function = peak
6. Trace = max hold

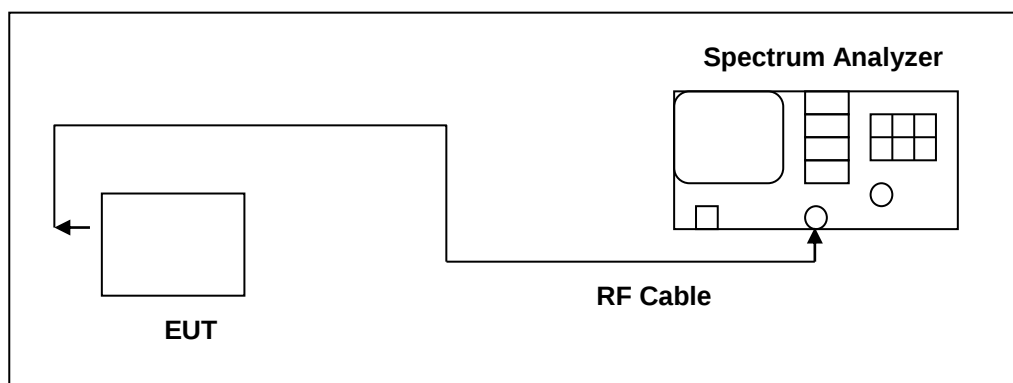
The marker-delta function was used to determine the dwell time.

4.8. Out of Band Conducted Emissions Measurement

■ 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

■ Test Setup



■ Test Procedure

Testing must be done according to this procedure, FCC Public Notice DA 00-705 - Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems. This is the only method recognized by the FCC. In any 100 kHz bandwidth outside the EUT pass band, the RF power produced by the modulation products of the spreading sequence, the information sequence, and the carrier frequency shall be at least 20 dB below that of the maximum in-band 100 kHz emission, antenna output of the EUT was coupled directly to spectrum analyzer; if an external attenuator and/or cable was used, these losses are compensated for with the analyzer OFFSET function. All other types of emissions from the EUT shall meet the general limits for radiated frequencies outside the pass band. The test was performed at 3 channels (Channel 0, 39, 78)

4.9. Antenna Measurement

■ Limit

For intentional device, according to 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.

And According to 15.247 (b)(4), if transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

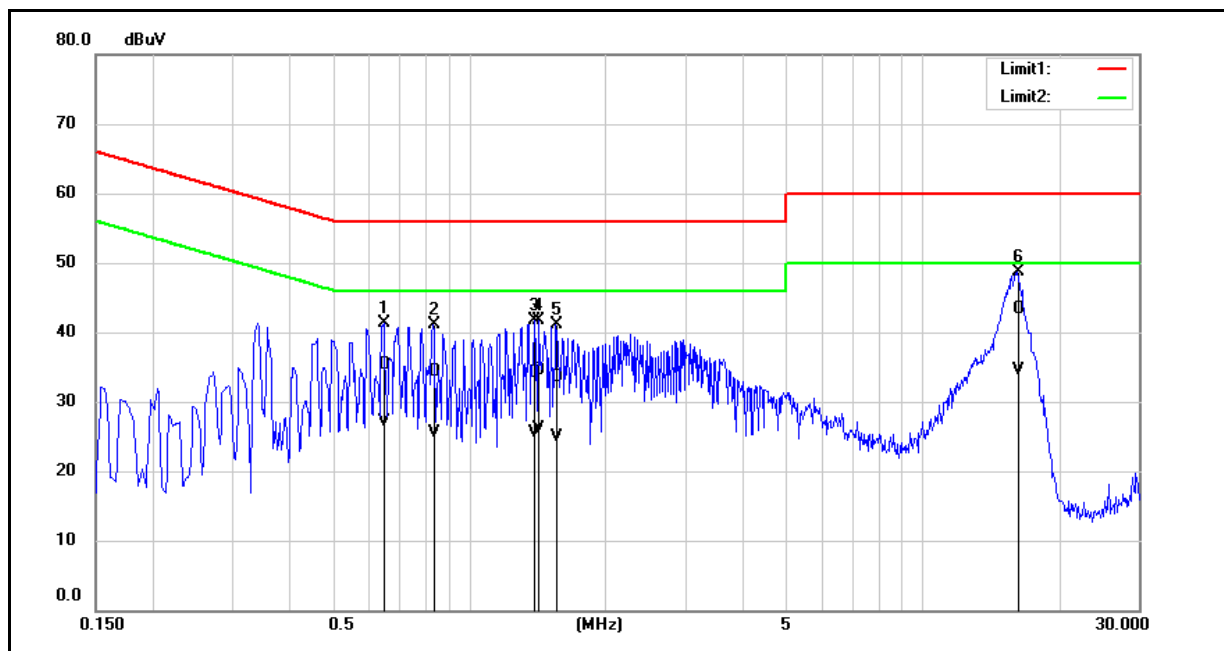
■ Antenna Connector Construction

See section 2 – antenna information.

5 Test Results

5.1. Conducted Emission

Standard:	Part 15C	Line:	L1
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit Mode		
Description:			

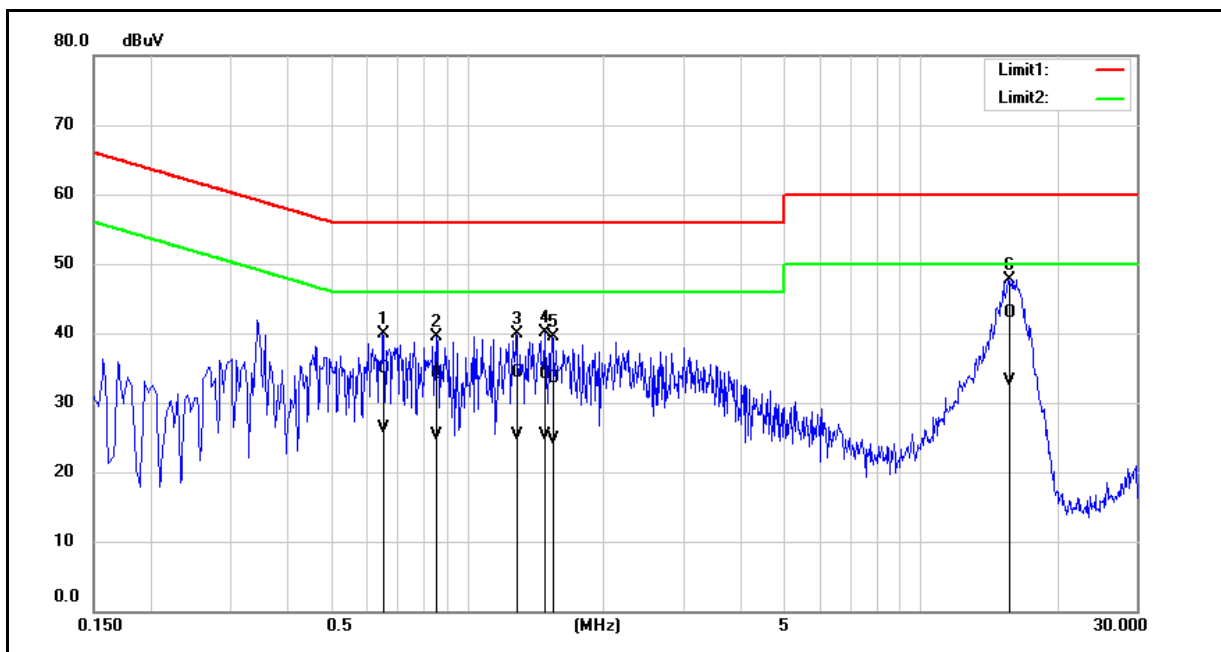


No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.6500	25.72	17.56	9.56	35.28	27.12	56.00	46.00	-20.72	-18.88	Pass
2	0.8340	24.68	15.94	9.57	34.25	25.51	56.00	46.00	-21.75	-20.49	Pass
3	1.3940	24.51	15.97	9.59	34.10	25.56	56.00	46.00	-21.90	-20.44	Pass
4	1.4220	24.83	16.52	9.59	34.42	26.11	56.00	46.00	-21.58	-19.89	Pass
5	1.5580	23.89	15.29	9.60	33.49	24.89	56.00	46.00	-22.51	-21.11	Pass
6	16.1540	33.50	24.59	9.83	43.33	34.42	60.00	50.00	-16.67	-15.58	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

Standard:	Part 15C	Line:	N
Test item:	Conducted Emission	Power:	AC 120 V/60 Hz
Mode:	Transmit Mode		
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.6540	25.24	16.73	9.62	34.86	26.35	56.00	46.00	-21.14	-19.65	Pass
2	0.8540	24.56	15.77	9.63	34.19	25.40	56.00	46.00	-21.81	-20.60	Pass
3	1.2860	24.71	15.69	9.65	34.36	25.34	56.00	46.00	-21.64	-20.66	Pass
4	1.4820	24.41	15.63	9.65	34.06	25.28	56.00	46.00	-21.94	-20.72	Pass
5	1.5380	23.85	15.11	9.67	33.52	24.78	56.00	46.00	-22.48	-21.22	Pass
6	15.6940	33.02	23.08	9.97	42.99	33.05	60.00	50.00	-17.01	-16.95	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).
 2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).

5.2. Conducted Test Results

Module : ASE

Maximum Conducted Output Power Measurement									
Test Mode	Frequency (MHz)	Packet Type	Average Power		Peak Power		Power Limit	RF Power setting in Test Software	Test Software Version
			dBm	W	dBm	W	W		
BT_GFSK	2402	DH1	1.55	0.00143	1.82	0.00152	<0.125	Default	AWBTRDLAB 1.0.9.21 / CBT
		DH3	1.56	0.00143	1.83	0.00152	<0.125	Default	
		DH5	1.58	0.00144	1.84	0.00153	<0.125	Default	
	2441	DH1	1.90	0.00155	2.15	0.00164	<0.125	Default	
		DH3	1.92	0.00156	2.16	0.00164	<0.125	Default	
		DH5	1.93	0.00156	2.19	0.00166	<0.125	Default	
	2480	DH1	2.20	0.00166	2.49	0.00177	<0.125	Default	
		DH3	2.22	0.00167	2.50	0.00178	<0.125	Default	
		DH5	2.23	0.00167	2.52	0.00179	<0.125	Default	
BT_π/4-DQPSK	2402	2DH1	1.43	0.00139	4.00	0.00251	<0.125	Default	
		2DH3	1.45	0.00140	4.05	0.00254	<0.125	Default	
		2DH5	1.46	0.00140	4.06	0.00255	<0.125	Default	
	2441	2DH1	1.76	0.00150	4.20	0.00263	<0.125	Default	
		2DH3	1.78	0.00151	4.23	0.00265	<0.125	Default	
		2DH5	1.79	0.00151	4.25	0.00266	<0.125	Default	
	2480	2DH1	2.05	0.00160	4.35	0.00272	<0.125	Default	
		2DH3	2.08	0.00161	4.36	0.00273	<0.125	Default	
		2DH5	2.10	0.00162	4.38	0.00274	<0.125	Default	
BT_8DPSK	2402	3DH1	1.55	0.00143	4.49	0.00281	<0.125	Default	
		3DH3	1.58	0.00144	4.50	0.00282	<0.125	Default	
		3DH5	1.59	0.00144	4.52	0.00283	<0.125	Default	
	2441	3DH1	1.82	0.00152	4.72	0.00296	<0.125	Default	
		3DH3	1.85	0.00153	4.75	0.00299	<0.125	Default	
		3DH5	1.86	0.00153	4.76	0.00299	<0.125	Default	
	2480	3DH1	2.13	0.00163	4.73	0.00297	<0.125	Default	
		3DH3	2.15	0.00164	4.76	0.00299	<0.125	Default	
		3DH5	2.16	0.00164	4.77	0.00300	<0.125	Default	

Note: The relevant measured result has the offset with cable loss already.

20 dB Emission Bandwidth Measurement			
Test Mode	Frequency (MHz)	20 dB RF Bandwidth (MHz)	2/3 Measurement value (MHz)
BT_GFSK	2402	0.962	0.641
	2441	0.963	0.642
	2480	0.962	0.641
BT_8DPSK	2402	1.306	0.871
	2441	1.305	0.870
	2480	1.304	0.869

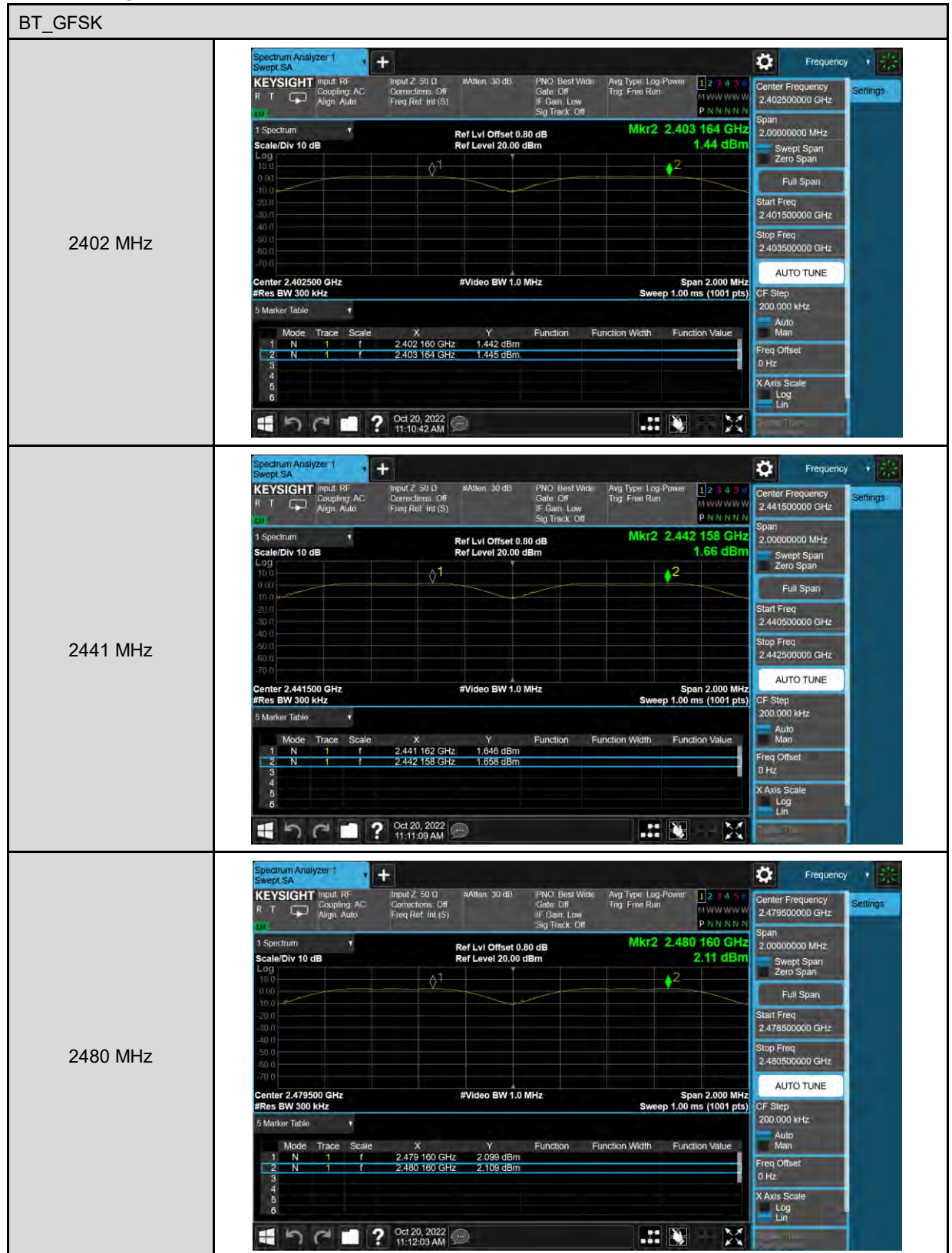
Test Graphs

BT_GFSK	 2402 MHz
2441 MHz	 2441 MHz
2480 MHz	 2480 MHz

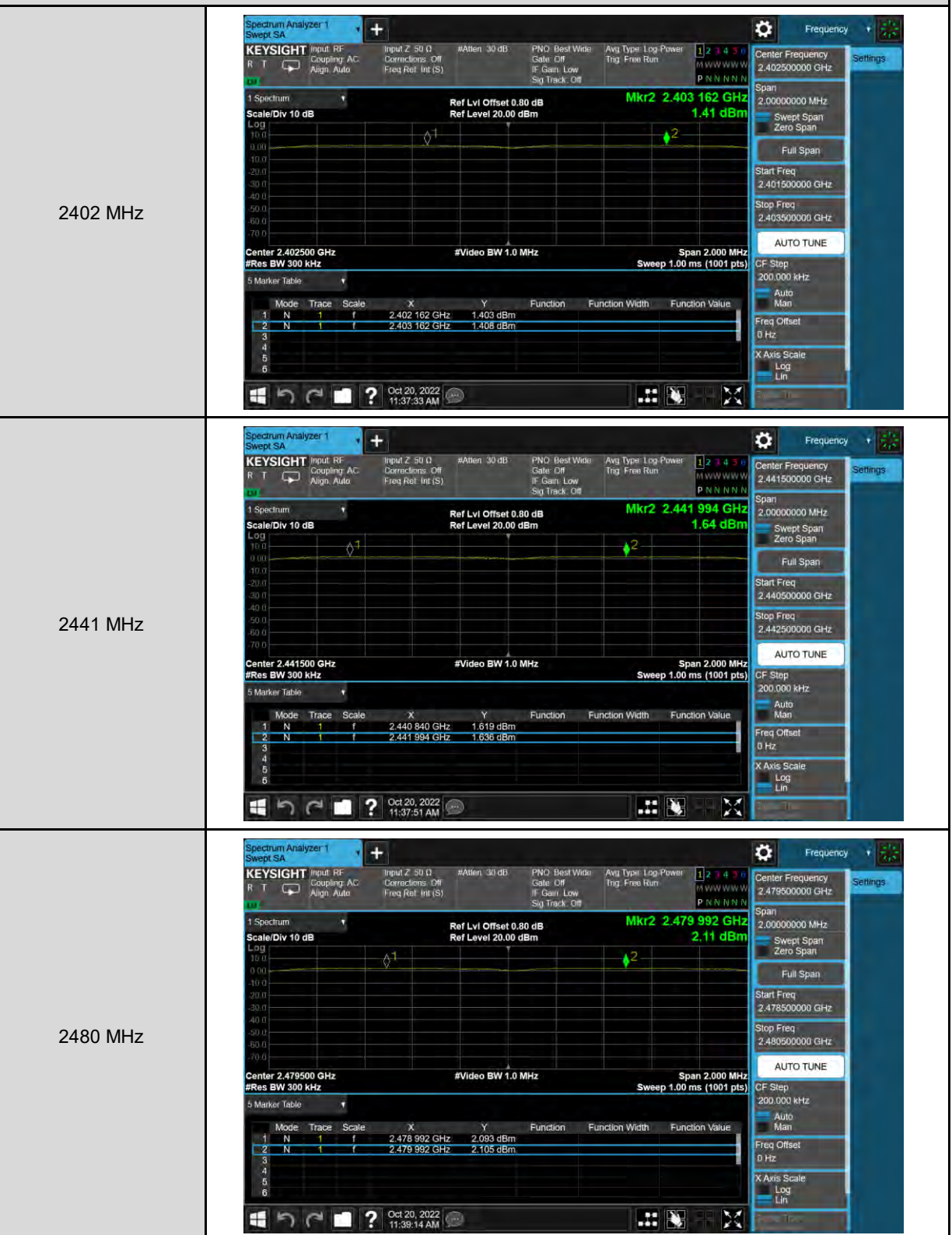
BT_8DPSK 2402 MHz	 Center Frequency: 2.40200000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.1899 MHz Total Power: 9.57 dBm Transmit Freq Error: -7.910 kHz x dB Bandwidth: 1.306 MHz
2441 MHz	 Center Frequency: 2.44100000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.1938 MHz Total Power: 9.73 dBm Transmit Freq Error: -10.396 kHz x dB Bandwidth: 1.305 MHz
2480 MHz	 Center Frequency: 2.48000000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.1966 MHz Total Power: 10.2 dBm Transmit Freq Error: -11.916 kHz x dB Bandwidth: 1.304 MHz

Carrier Frequency Separation Measurement			
Test Mode	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
BT_GFSK	2402	1.004	≥ 0.641
	2441	0.996	≥ 0.642
	2480	1.000	≥ 0.641
BT_8DPSK	2402	1.000	≥ 0.871
	2441	1.154	≥ 0.870
	2480	1.000	≥ 0.869

Test Graphs



Mode 4: 8DPSK Continuous TX mode

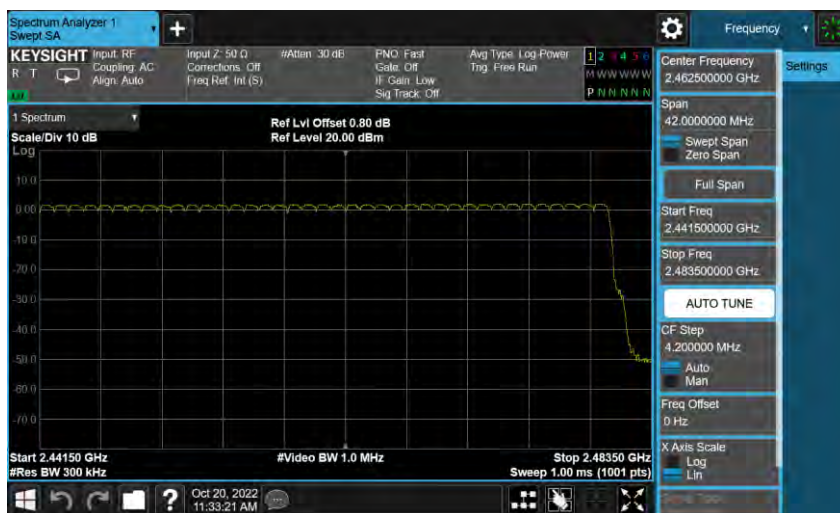


BT_8DPSK

CH0~CH39



CH40~CH78



Time of Occupancy (Dwell Time) Measurement		
Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	DH1	
BT_GFSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.420 ms
	Dwell Times on Cycle (1) * (2)	134.445 ms
	Limit (msec)	≤ 400
	DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.1 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.1 = 161.16 \text{ (times)}$
	Each Channel Dwell Times (2)	1.670 ms
	Dwell Times on Cycle (1) * (2)	267.026 ms
	Limit (msec)	≤ 400
	DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.37 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.37 = 106.492 \text{ (times)}$
	Each Channel Dwell Times (2)	2.925 ms
	Dwell Times on Cycle (1) * (2)	312.413 ms
	Limit (msec)	≤ 400

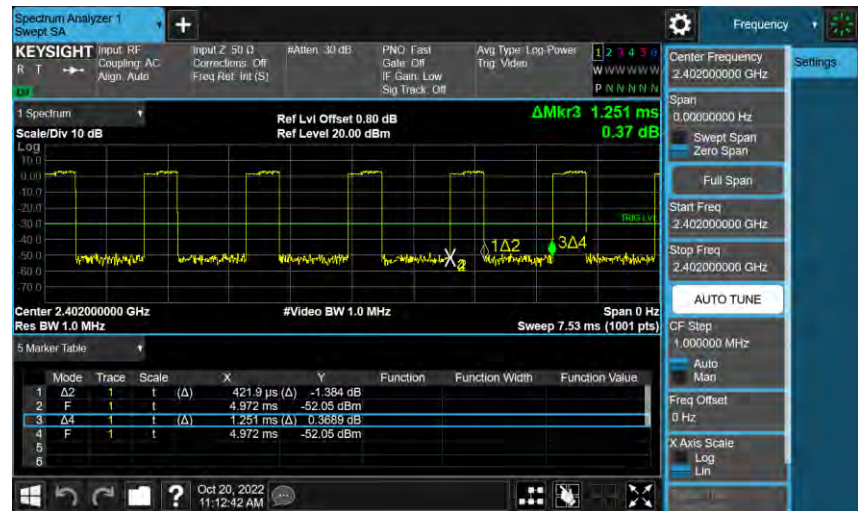
Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	3DH1	
BT_8DPSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.4219 ms
	Dwell Times on Cycle (1) * (2)	135.054 ms
	Limit (msec)	$< = 400$
	3DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.1 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.1 = 161.16 \text{ (times)}$
	Each Channel Dwell Times (2)	1.680 ms
	Dwell Times on Cycle (1) * (2)	268.625 ms
	Limit (msec)	$< = 400$
	3DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.37 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.37 = 106.492 \text{ (times)}$
	Each Channel Dwell Times (2)	2.955 ms
	Dwell Times on Cycle (1) * (2)	315.618 ms
	Limit (msec)	$< = 400$

Test Graphs

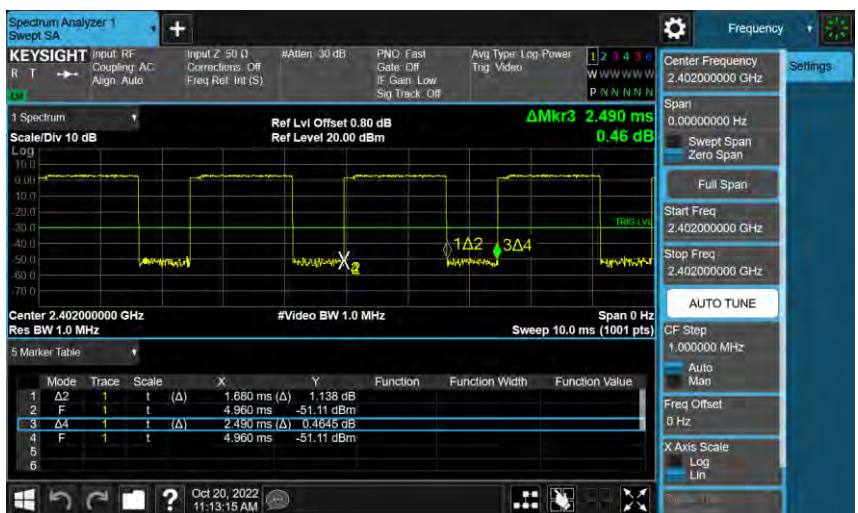
BT_GFSK	
DH3	
DH5	

BT_8DPSK

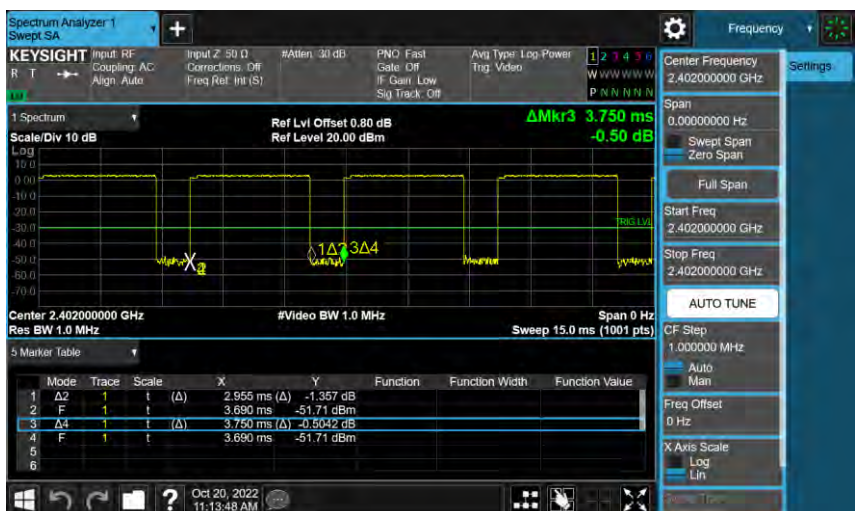
3DH1



3DH3

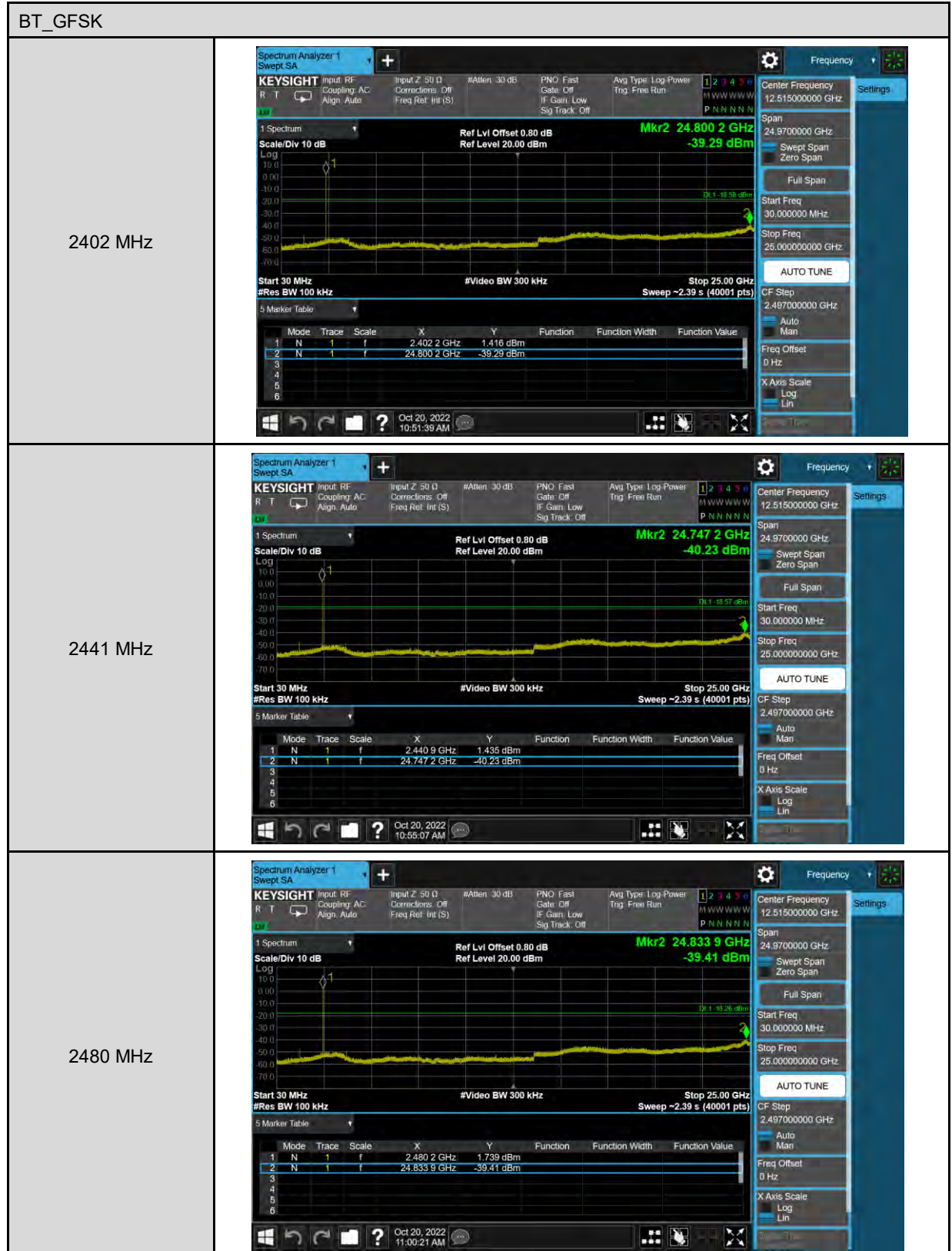


3DH5



Out of Band Conducted Emissions Measurement

Test Graphs



BT_8DPSK

2402 MHz



2441 MHz

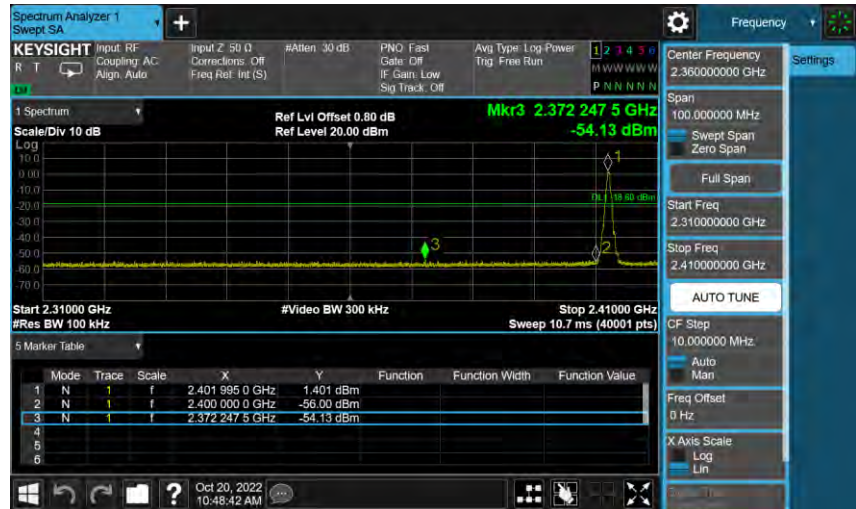


2480 MHz

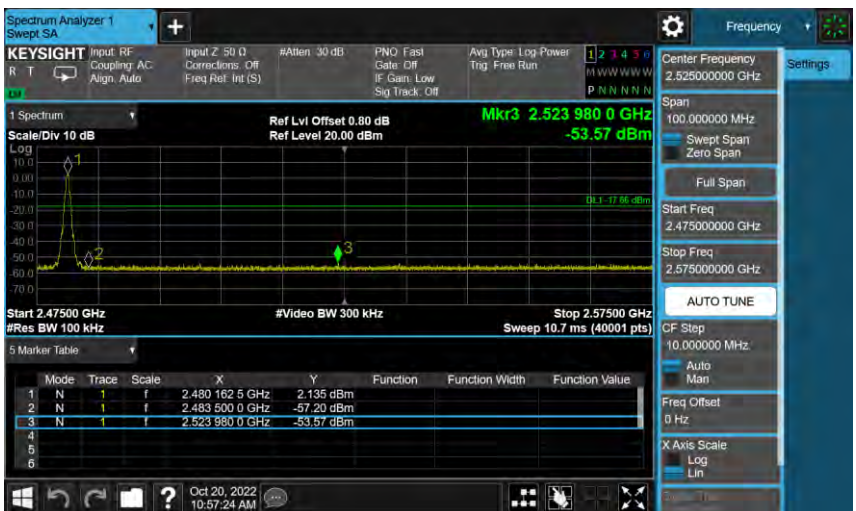


BT_GFSK _ Un-hopping

2402 MHz

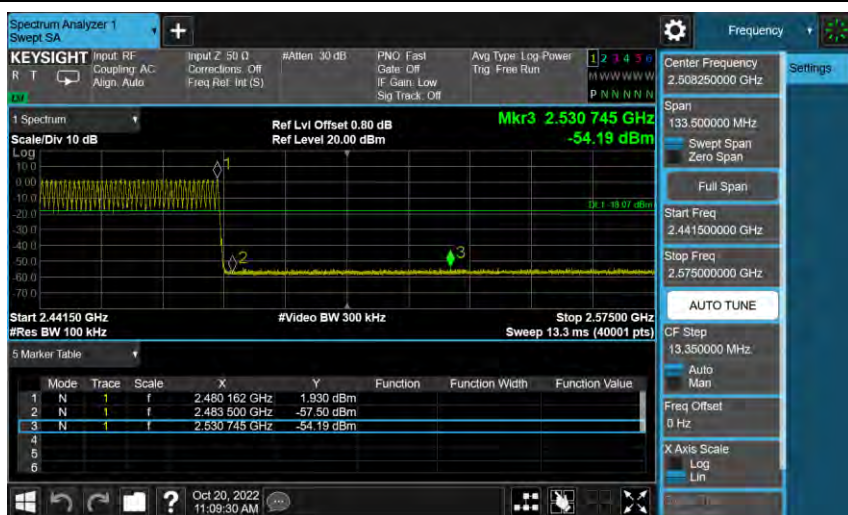
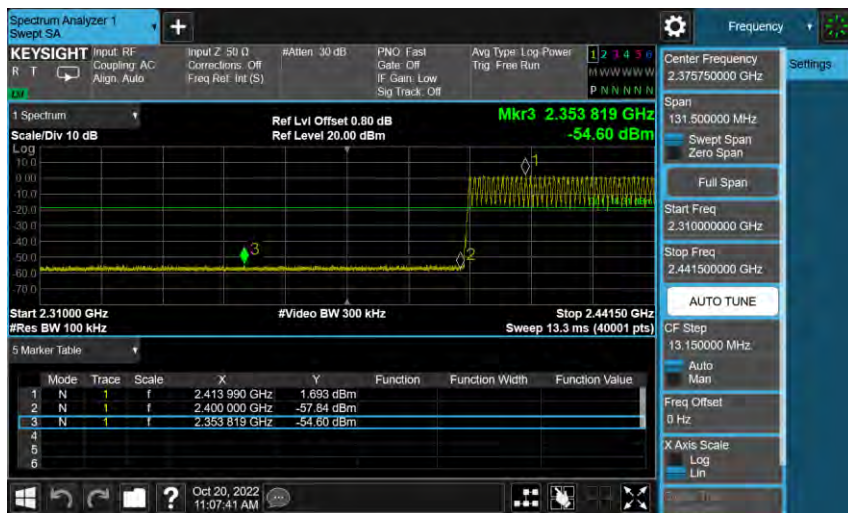


2480 MHz



BT_GFSK_Hopping

2402 ~ 2480 MHz

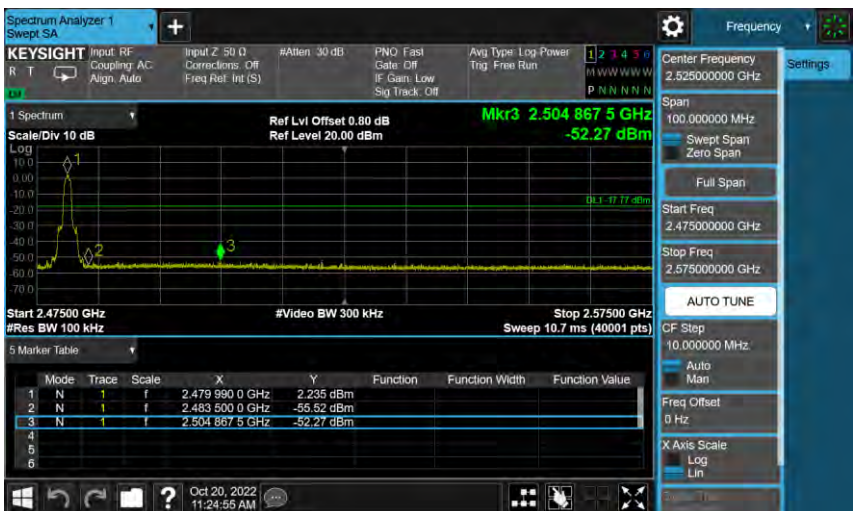


BT_8DPSK_Un-hopping

2402 MHz

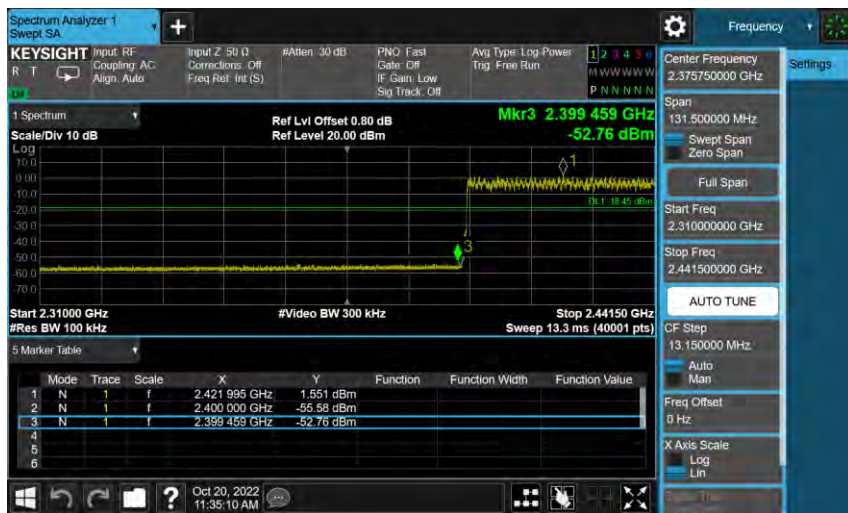


2480 MHz



BT_8DPSK_Hopping

2402 ~ 2480 MHz



Module : Kirchhoff

Test Mode	Frequency (MHz)	Packet Type	Average Power		Peak Power		Power Limit	RF Power setting in Test Software	Test Software Version
			dBm	W	dBm	W	W		
BT_GFSK	2402	DH1	6.41	0.00438	6.76	0.00474	<0.125	Default	AWBTRDLAB 1.0.9.21 / CBT
		DH3	6.42	0.00439	6.77	0.00475	<0.125	Default	
		DH5	6.44	0.00441	6.78	0.00476	<0.125	Default	
	2441	DH1	7.35	0.00543	7.68	0.00586	<0.125	Default	
		DH3	7.37	0.00546	7.69	0.00587	<0.125	Default	
		DH5	7.38	0.00547	7.71	0.00590	<0.125	Default	
	2480	DH1	7.57	0.00571	7.88	0.00614	<0.125	Default	
		DH3	7.60	0.00575	7.90	0.00617	<0.125	Default	
		DH5	7.61	0.00577	7.92	0.00619	<0.125	Default	
BT_π/4-DQPSK	2402	2DH1	3.60	0.00229	5.30	0.00339	<0.125	Default	
		2DH3	3.62	0.00230	5.33	0.00341	<0.125	Default	
		2DH5	3.66	0.00232	5.35	0.00343	<0.125	Default	
	2441	2DH1	4.46	0.00279	6.58	0.00455	<0.125	Default	
		2DH3	4.47	0.00280	6.59	0.00456	<0.125	Default	
		2DH5	4.50	0.00282	6.60	0.00457	<0.125	Default	
	2480	2DH1	4.50	0.00282	6.57	0.00454	<0.125	Default	
		2DH3	4.52	0.00283	6.60	0.00457	<0.125	Default	
		2DH5	4.55	0.00285	6.61	0.00458	<0.125	Default	
BT_8DPSK	2402	3DH1	3.68	0.00233	5.65	0.00367	<0.125	Default	
		3DH3	3.70	0.00234	5.66	0.00368	<0.125	Default	
		3DH5	3.71	0.00235	5.69	0.00371	<0.125	Default	
	2441	3DH1	5.07	0.00321	6.79	0.00478	<0.125	Default	
		3DH3	5.08	0.00322	6.80	0.00479	<0.125	Default	
		3DH5	5.11	0.00324	6.83	0.00482	<0.125	Default	
	2480	3DH1	5.13	0.00326	6.99	0.00500	<0.125	Default	
		3DH3	5.16	0.00328	7.00	0.00501	<0.125	Default	
		3DH5	5.17	0.00329	7.02	0.00504	<0.125	Default	

Note: The relevant measured result has the offset with cable loss already.

20 dB Emission Bandwidth Measurement			
Test Mode	Frequency (MHz)	20 dB RF Bandwidth (MHz)	2/3 Measurement value (MHz)
BT_GFSK	2402	0.949	0.633
	2441	0.949	0.633
	2480	0.948	0.632
BT_8DPSK	2402	1.289	0.859
	2441	1.292	0.861
	2480	1.294	0.863

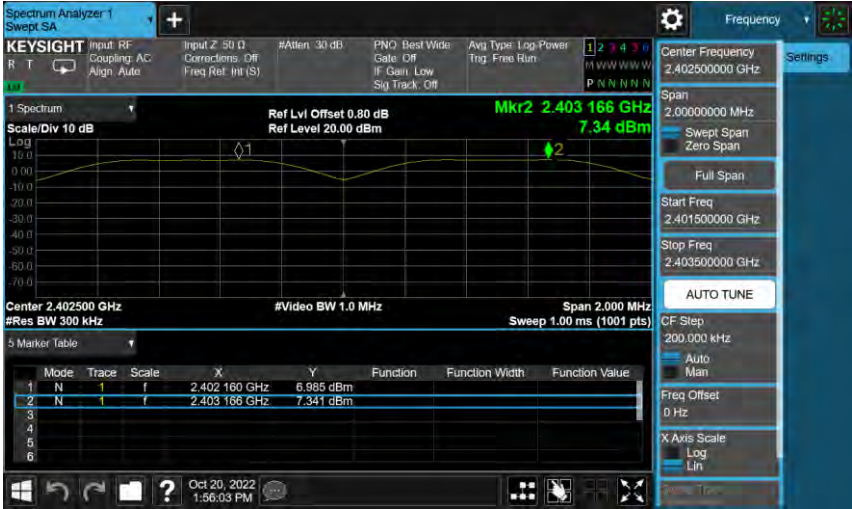
Test Graphs

BT_GFSK	 2402 MHz
2441 MHz	 2441 MHz
2480 MHz	 2480 MHz

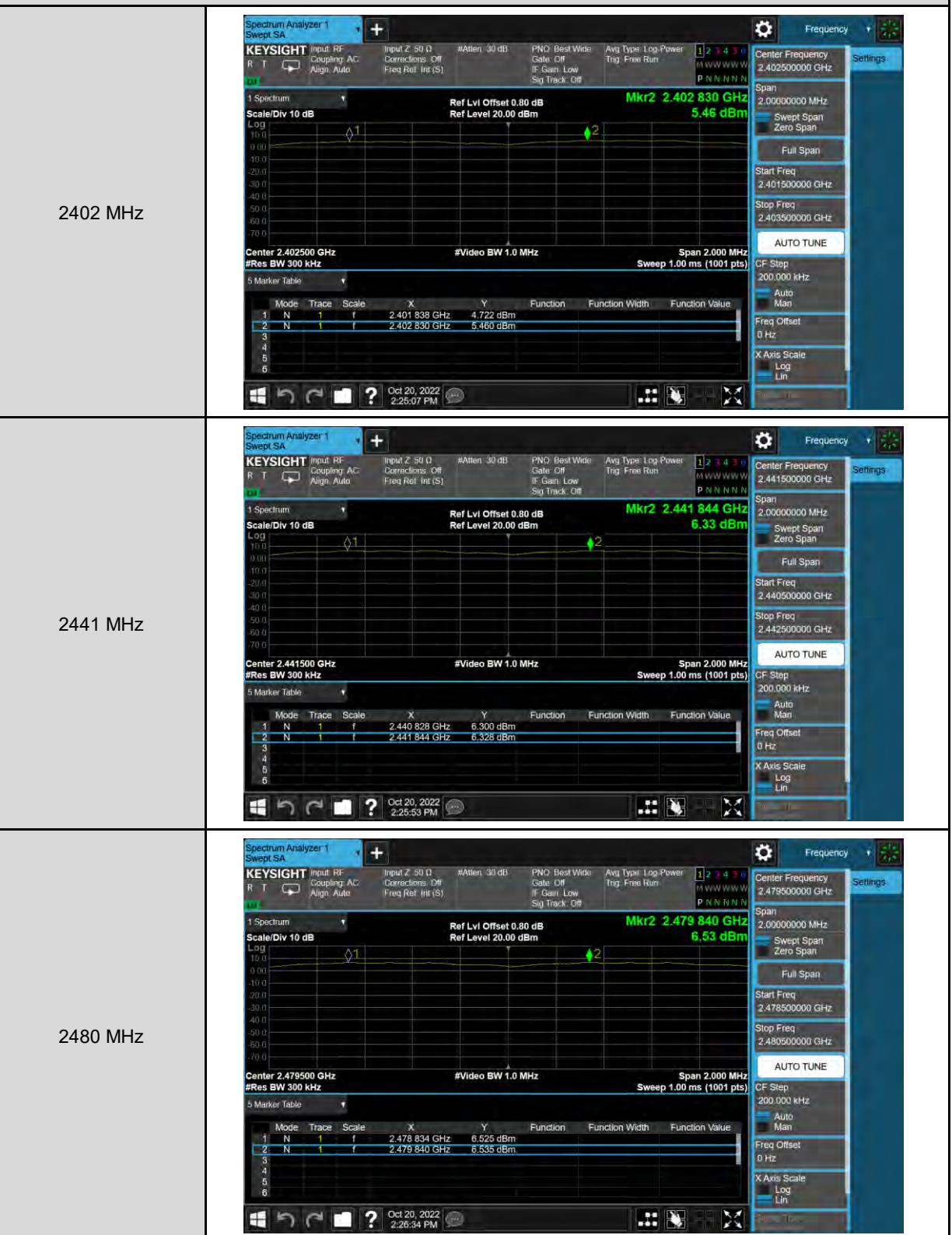
BT_8DPSK 2402 MHz	 Center Frequency: 2.40200000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.188 MHz Total Power: 12.6 dBm Transmit Freq Error: -6.711 kHz % of OBW Power: 99.00 % x dB Bandwidth: 1.289 MHz x dB: -20.00 dB
2441 MHz	 Center Frequency: 2.44100000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.1964 MHz Total Power: 14.2 dBm Transmit Freq Error: -6.355 kHz % of OBW Power: 99.00 % x dB Bandwidth: 1.292 MHz x dB: -20.00 dB
2480 MHz	 Center Frequency: 2.48000000 GHz Span: 3.0000 MHz CF Step: 300.000 kHz Freq Offset: 0 Hz Occupied Bandwidth: 1.1945 MHz Total Power: 14.4 dBm Transmit Freq Error: -5.434 kHz % of OBW Power: 99.00 % x dB Bandwidth: 1.294 MHz x dB: -20.00 dB

Carrier Frequency Separation Measurement			
Test Mode	Frequency (MHz)	Measurement (MHz)	Limit (MHz)
BT_GFSK	2402	1.006	≥ 0.633
	2441	1.006	≥ 0.633
	2480	1.010	≥ 0.632
BT_8DPSK	2402	0.992	≥ 0.859
	2441	1.016	≥ 0.861
	2480	1.006	≥ 0.863

Test Graphs

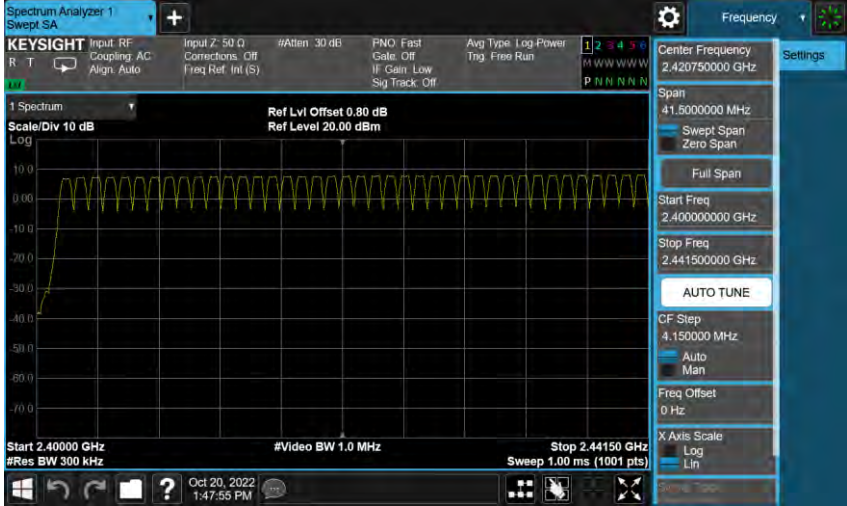
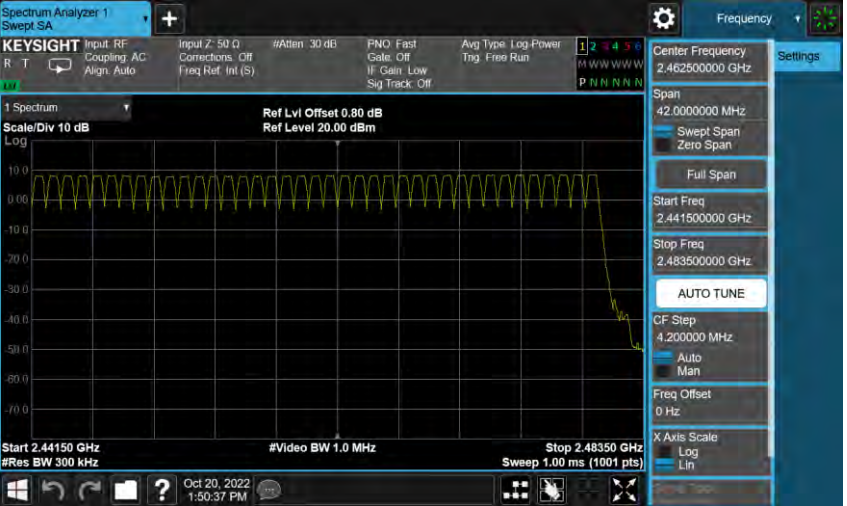
BT_GFSK	 2402 MHz
2441 MHz	 2441 MHz
2480 MHz	 2480 MHz

Mode 4: 8DPSK Continuous TX mode



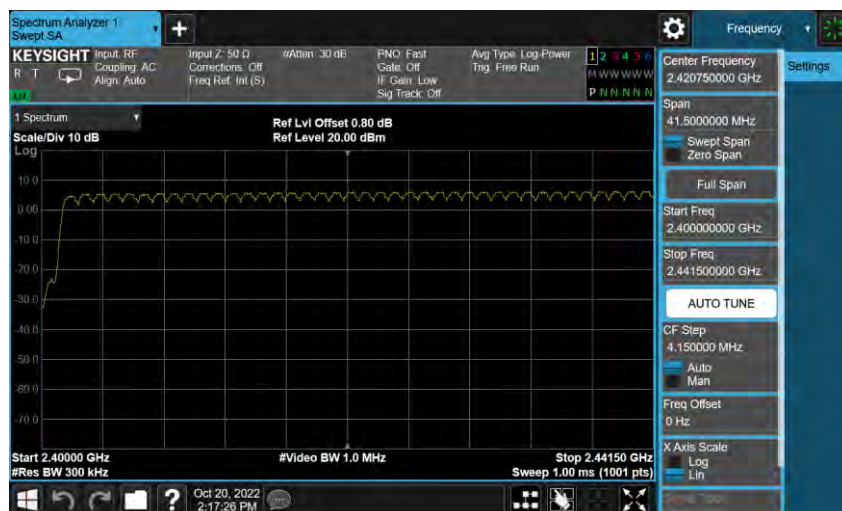
Number of Hopping Measurement

■ Test Graphs

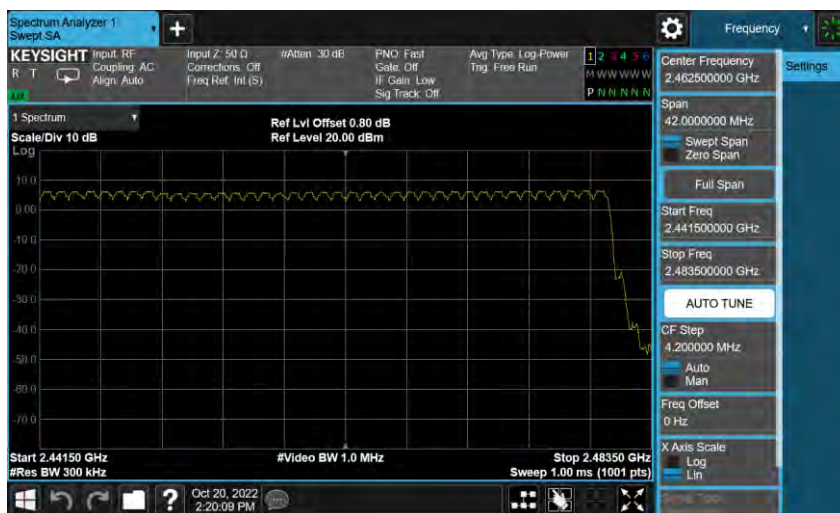
BT_GFSK CH0~CH39	
CH40~CH78	

BT_8DPSK

CH0~CH39



CH40~CH78



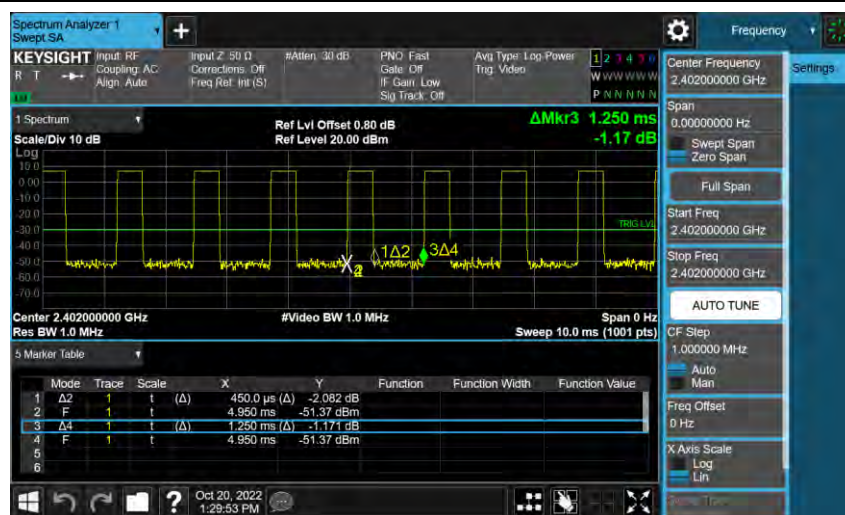
Time of Occupancy (Dwell Time) Measurement		
Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	DH1	
BT_GFSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.450 ms
	Dwell Times on Cycle (1) * (2)	144.049 ms
	Limit (msec)	≤ 400
	DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.1 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.1 = 161.16 \text{ (times)}$
	Each Channel Dwell Times (2)	1.700 ms
	Dwell Times on Cycle (1) * (2)	271.823 ms
	Limit (msec)	≤ 400
	DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.37 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.37 = 106.492 \text{ (times)}$
	Each Channel Dwell Times (2)	2.970 ms
	Dwell Times on Cycle (1) * (2)	317.220 ms
	Limit (msec)	≤ 400

Test Mode	Average Time of Occupancy (Dwell Time) Measurement	
	3DH1	
BT_8DPSK	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$800/79CH = 10.13 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 10.13 = 320.108 \text{ (times)}$
	Each Channel Dwell Times (2)	0.460 ms
	Dwell Times on Cycle (1) * (2)	147.250 ms
	Limit (msec)	$< = 400$
	3DH3	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$400/79CH = 5.1 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 5.1 = 161.16 \text{ (times)}$
	Each Channel Dwell Times (2)	1.710 ms
	Dwell Times on Cycle (1) * (2)	273.422 ms
	Limit (msec)	$< = 400$
	3DH5	
	Cycle Calculate	$79CH * 0.4 = 31.6 \text{ (sec)}$
	The EUT Hopping Number per Sec	1600 times/sec
	Each Channel Dwell Times per Sec	$266.7/79CH = 3.37 \text{ (times/sec)}$
	Each Channel Dwell Times on Cycle(1)	$31.6 * 3.37 = 106.492 \text{ (times)}$
	Each Channel Dwell Times (2)	2.970 ms
	Dwell Times on Cycle (1) * (2)	317.220 ms
	Limit (msec)	$< = 400$

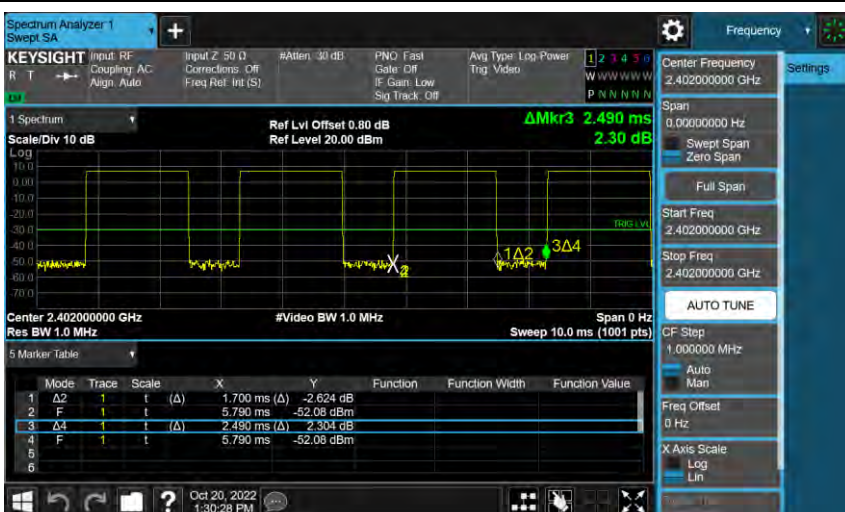
■ Test Graphs

BT GFSK

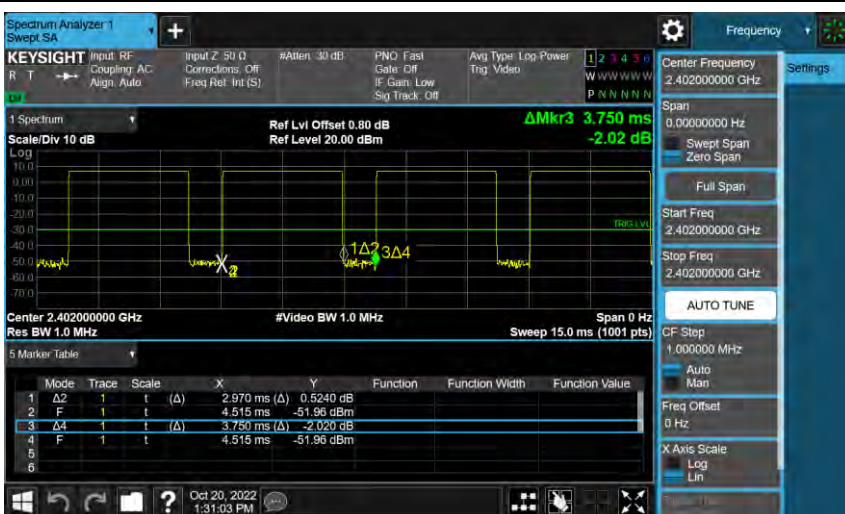
DH1



DH3



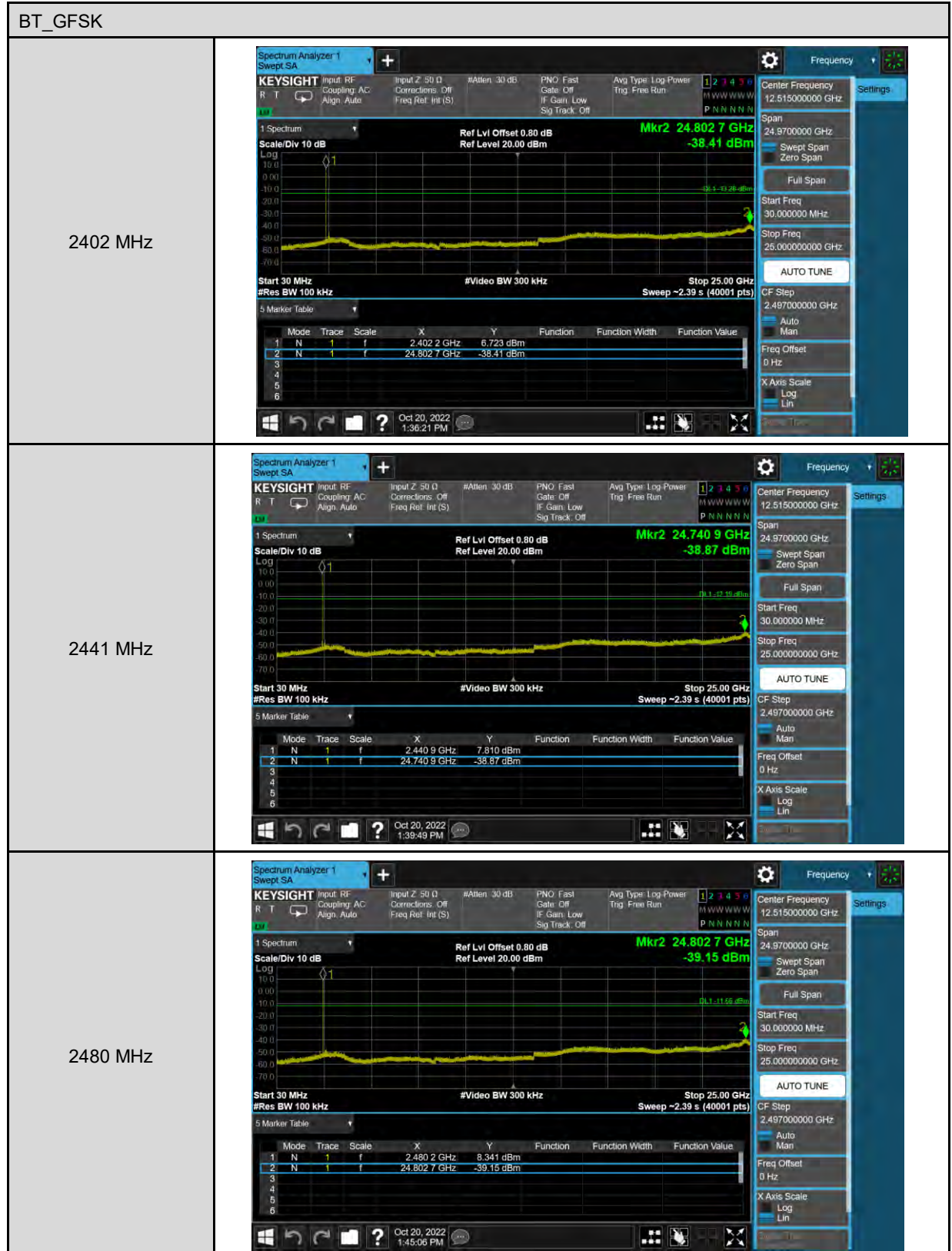
DH5





Out of Band Conducted Emissions Measurement

■ Test Graphs



BT_8DPSK

2402 MHz



2441 MHz



2480 MHz

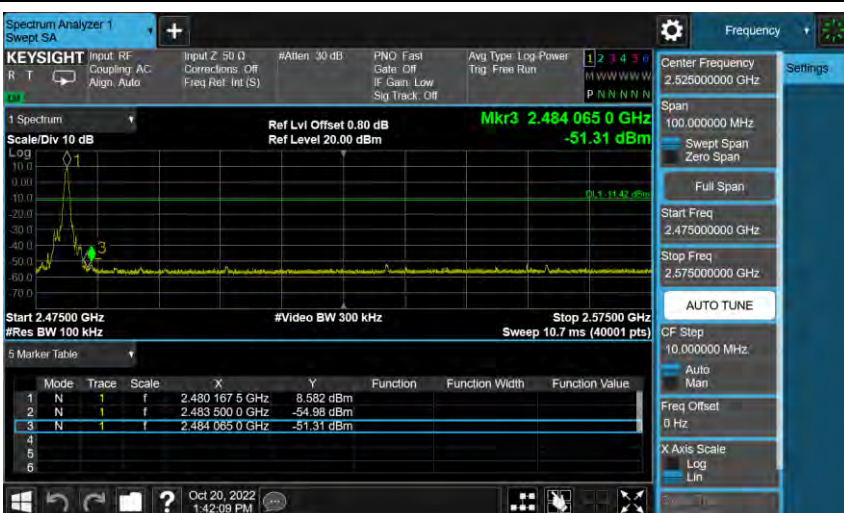


BT_GFSK _ Un-hopping

2402 MHz

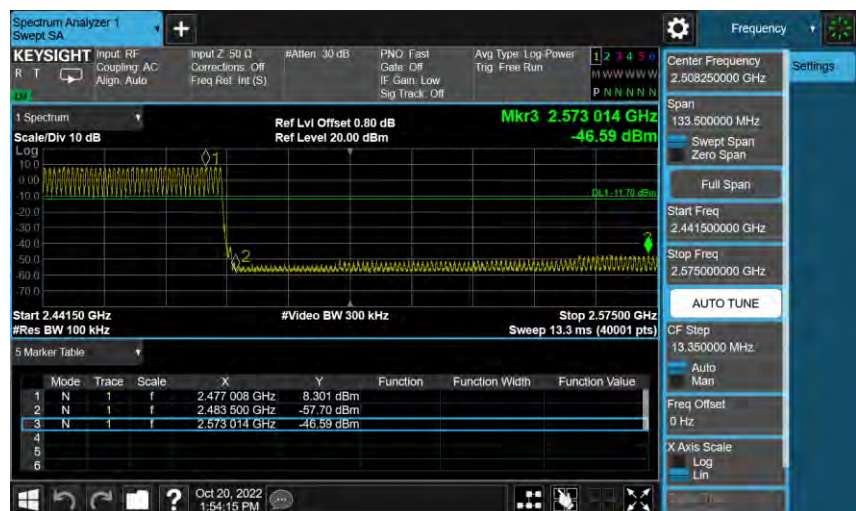
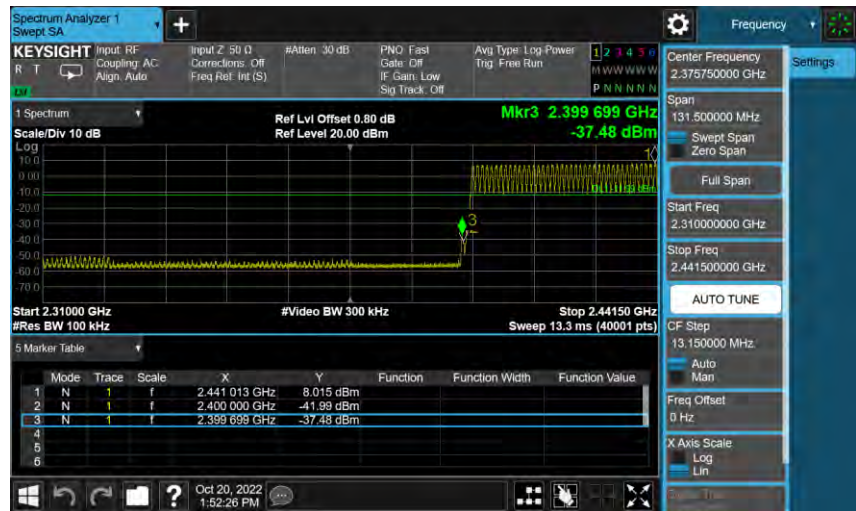


2480 MHz

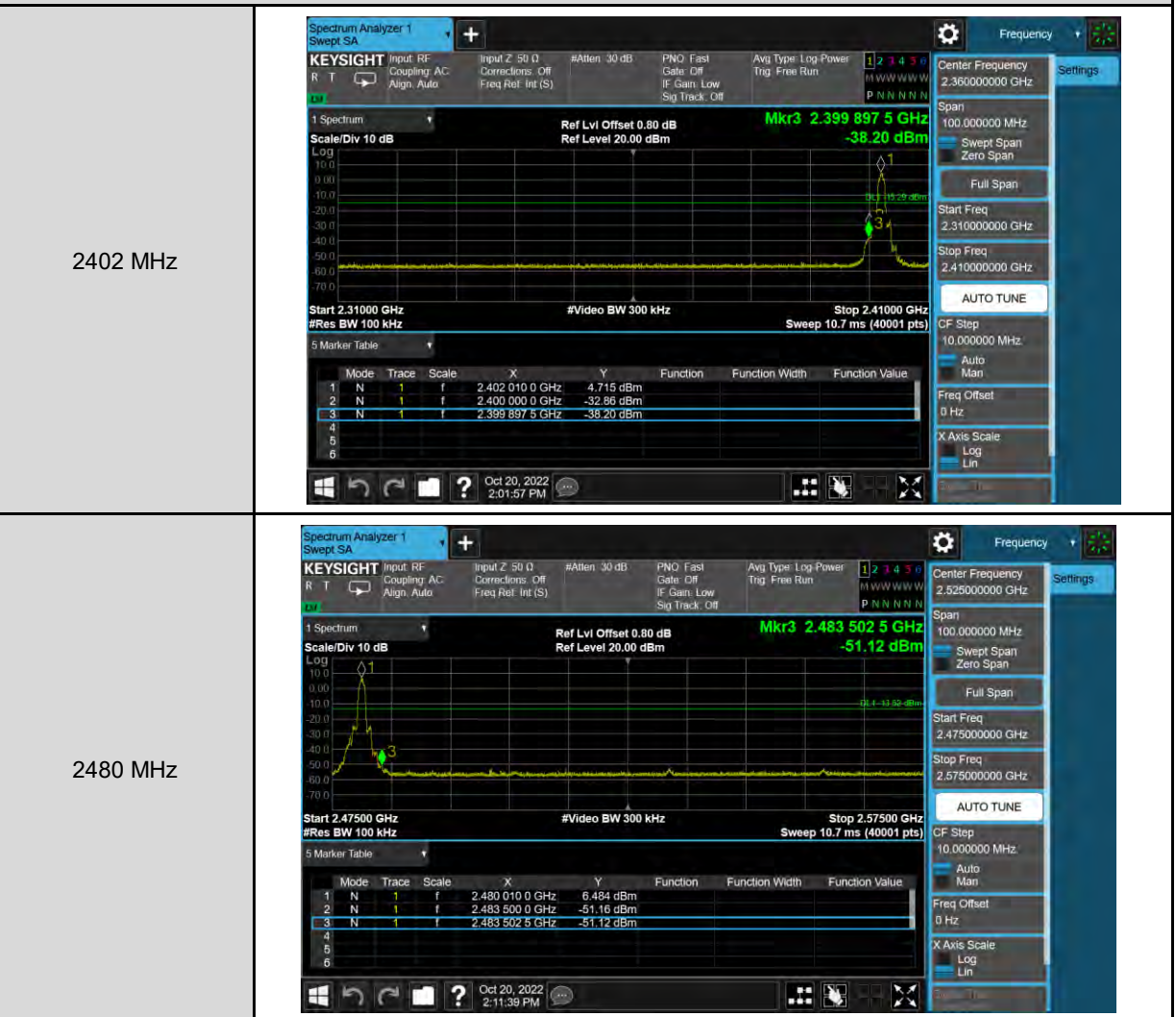


BT_GFSK_Hopping

2402 ~ 2480 MHz

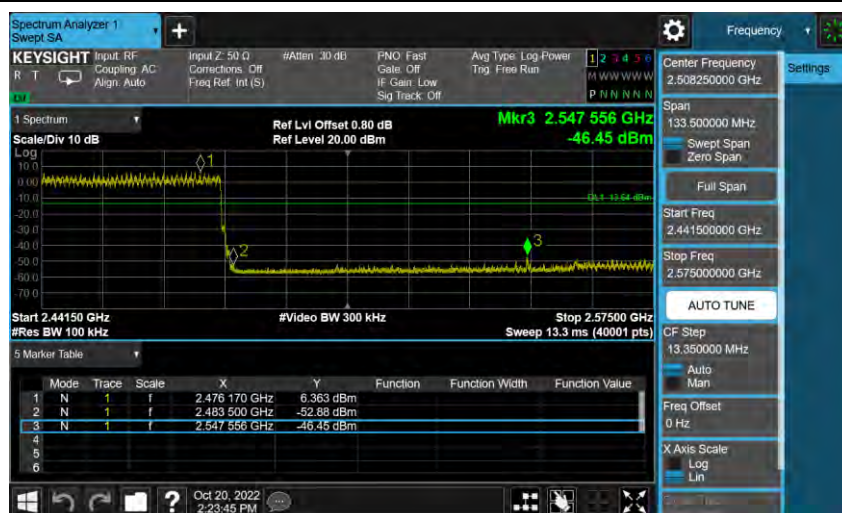
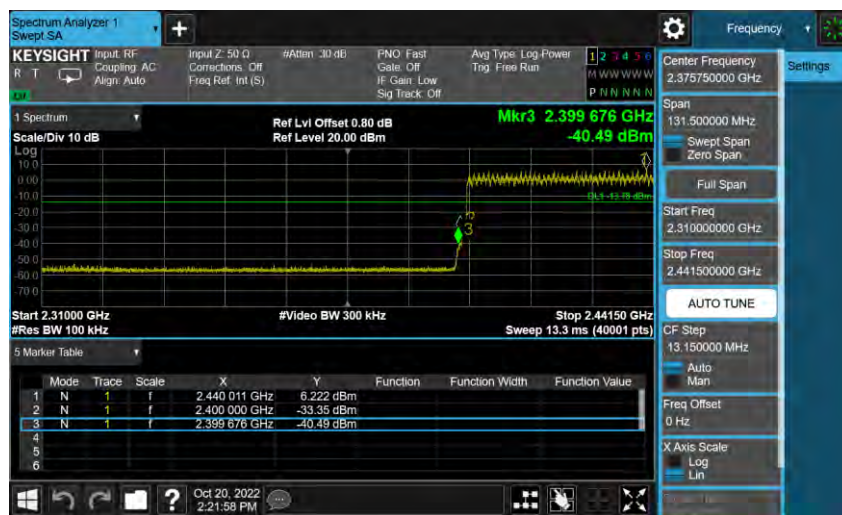


BT_8DPSK_Un-hopping



BT_8DPSK_Hopping

2402 ~ 2480 MHz

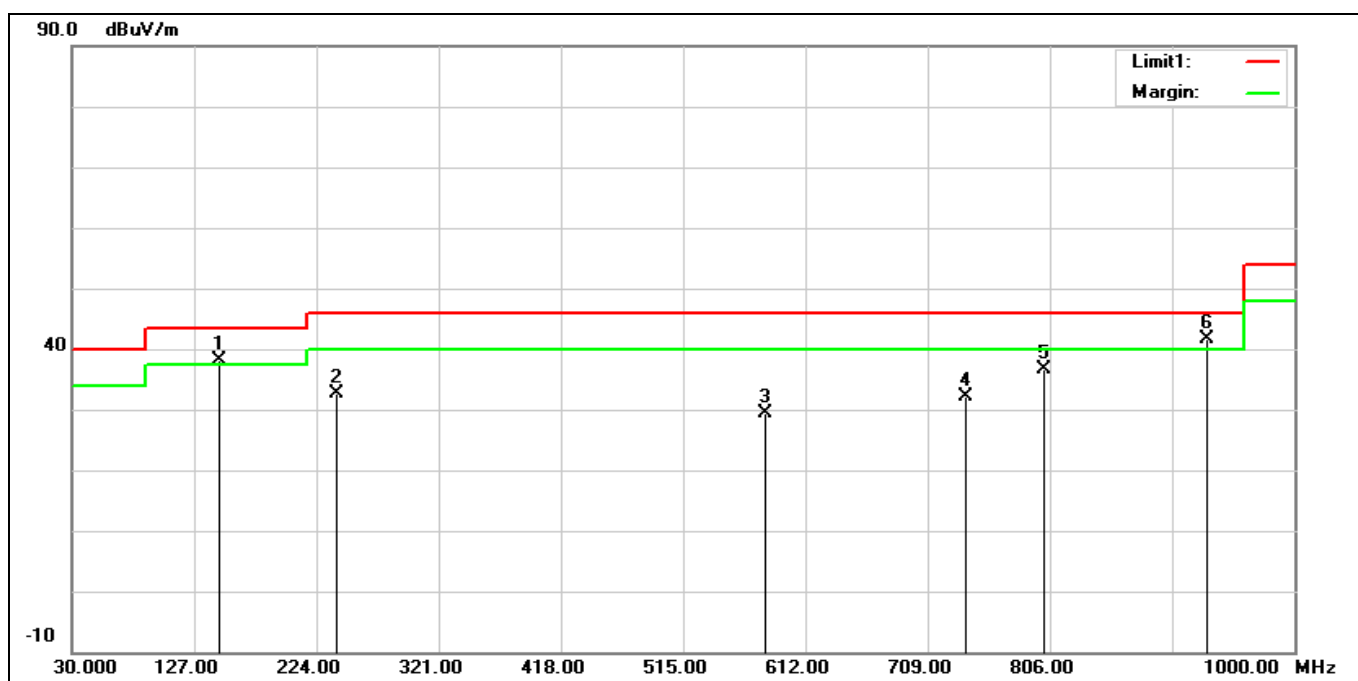


5.3. Radiated Emission Measurement

Module : ASE

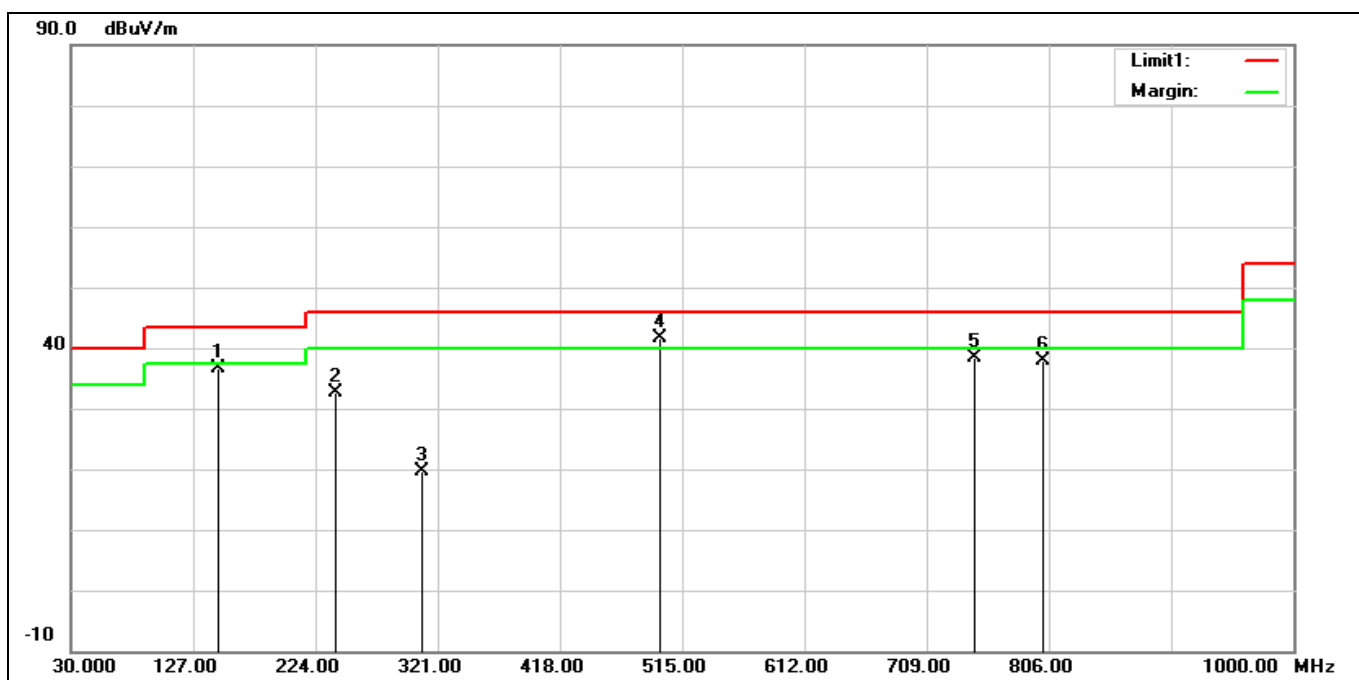
Below 1 GHz

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1!	147.3700	45.59	-7.40	38.19	43.50	-5.31	QP
2	240.4900	41.36	-8.64	32.72	46.00	-13.28	QP
3	579.9900	29.95	-0.50	29.45	46.00	-16.55	QP
4	739.0700	29.54	2.66	32.20	46.00	-13.80	QP
5	801.1500	32.75	3.87	36.62	46.00	-9.38	QP
6*	931.1300	35.72	5.94	41.66	46.00	-4.34	QP

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			

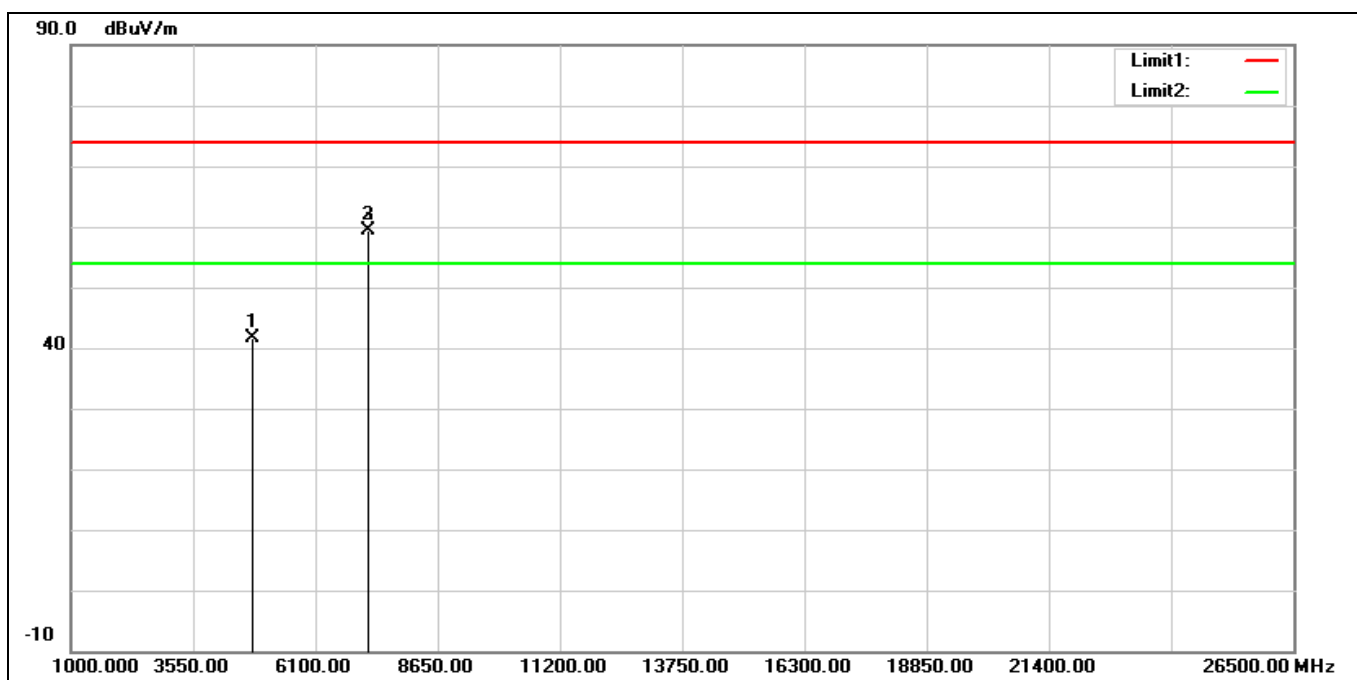


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	147.3700	44.07	-7.40	36.67	43.50	-6.83	QP
2	240.4900	41.29	-8.64	32.65	46.00	-13.35	QP
3	308.3900	26.19	-6.58	19.61	46.00	-26.39	QP
4*	497.5400	43.78	-2.16	41.62	46.00	-4.38	QP
5	746.8300	35.58	2.86	38.44	46.00	-7.56	QP
6	801.1500	34.05	3.87	37.92	46.00	-8.08	QP

Harmonic

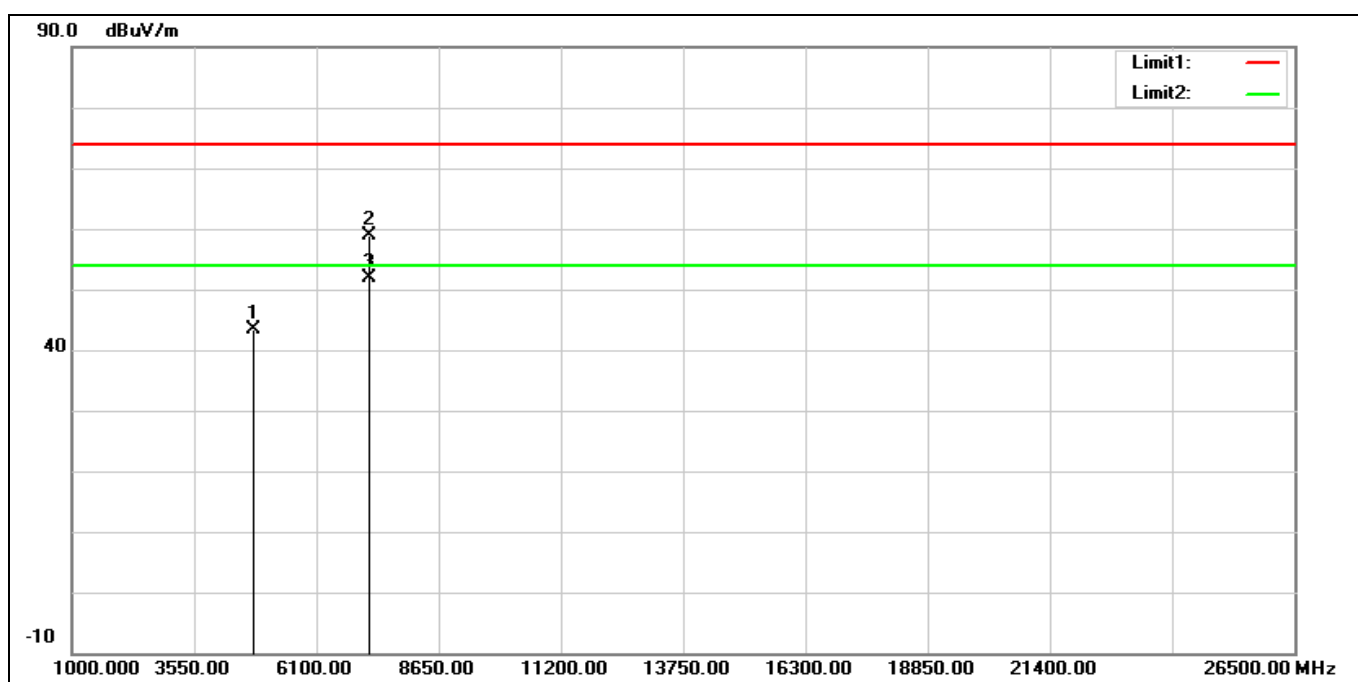
Above 1 GHz

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



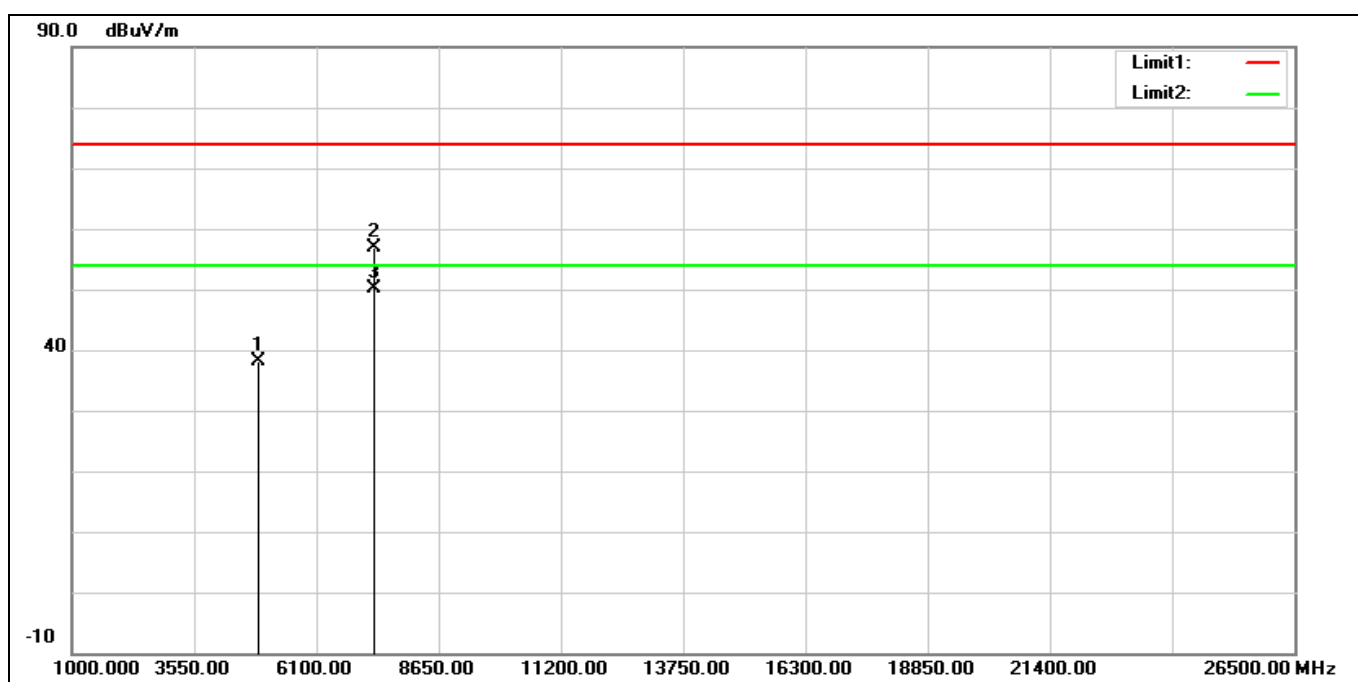
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	41.36	0.29	41.65	74.00	-32.35	peak
2*	7206.000	51.68	7.82	59.50	74.00	-14.50	peak
3*	7206.000	51.68	7.82	59.50	74.00	-14.50	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



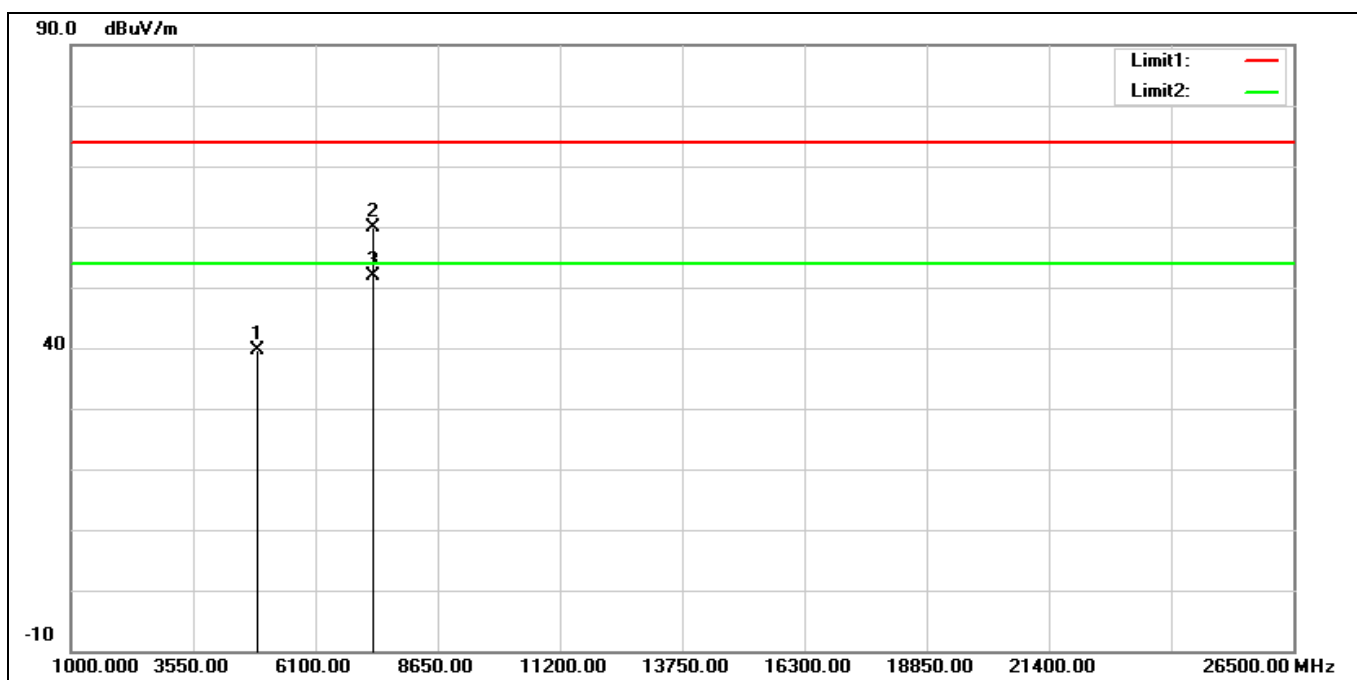
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	43.01	0.29	43.30	74.00	-30.70	peak
2	7206.000	50.99	7.82	58.81	74.00	-15.19	peak
3*	7206.000	43.97	7.82	51.79	54.00	-2.21	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2441 MHz		
Remark:			



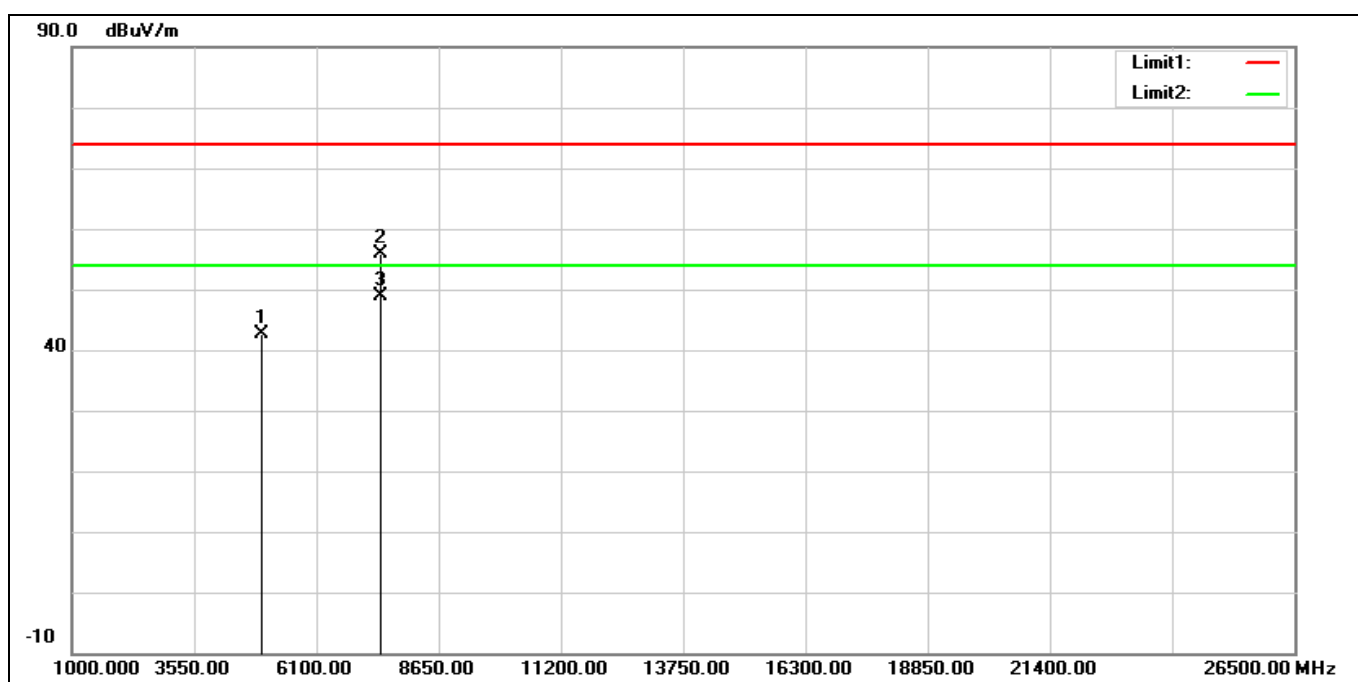
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	37.76	0.38	38.14	74.00	-35.86	peak
2	7323.000	48.85	7.99	56.84	74.00	-17.16	peak
3*	7323.000	42.16	7.99	50.15	54.00	-3.85	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2441 MHz		
Remark:			



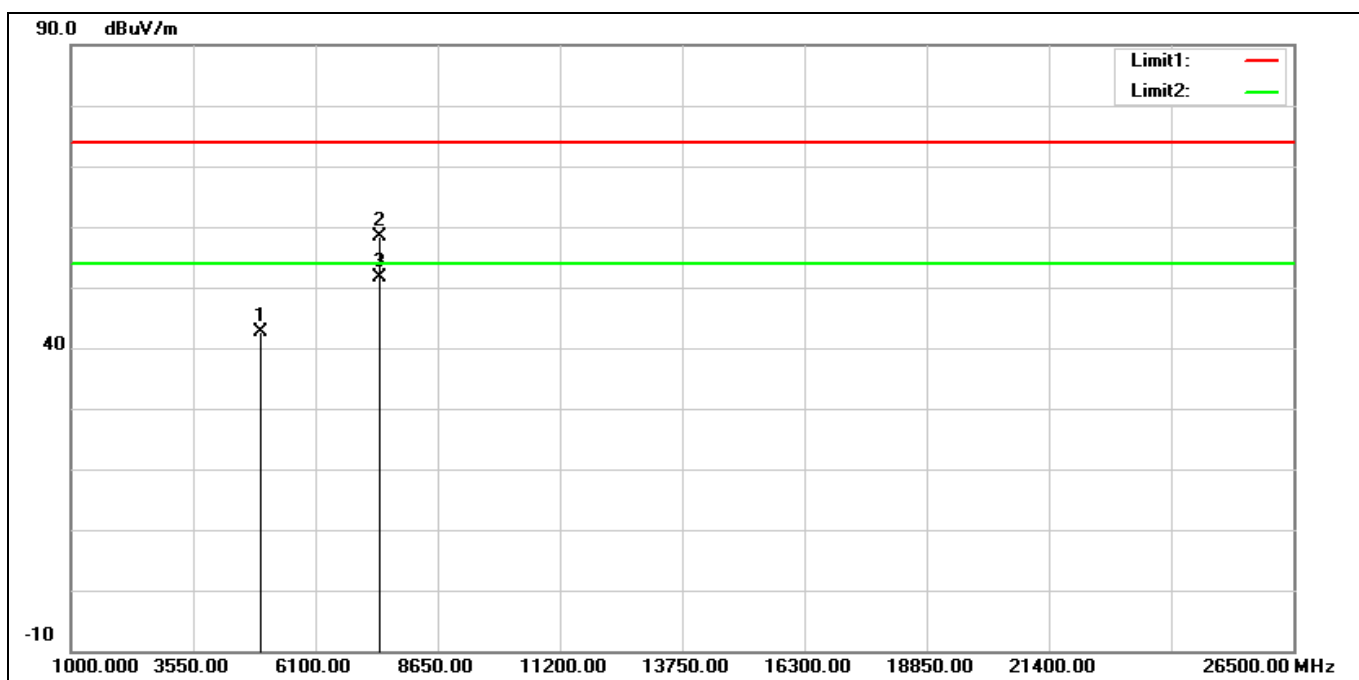
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	39.36	0.38	39.74	74.00	-34.26	peak
2	7323.000	51.90	7.99	59.89	74.00	-14.11	peak
3*	7323.000	43.94	7.99	51.93	54.00	-2.07	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



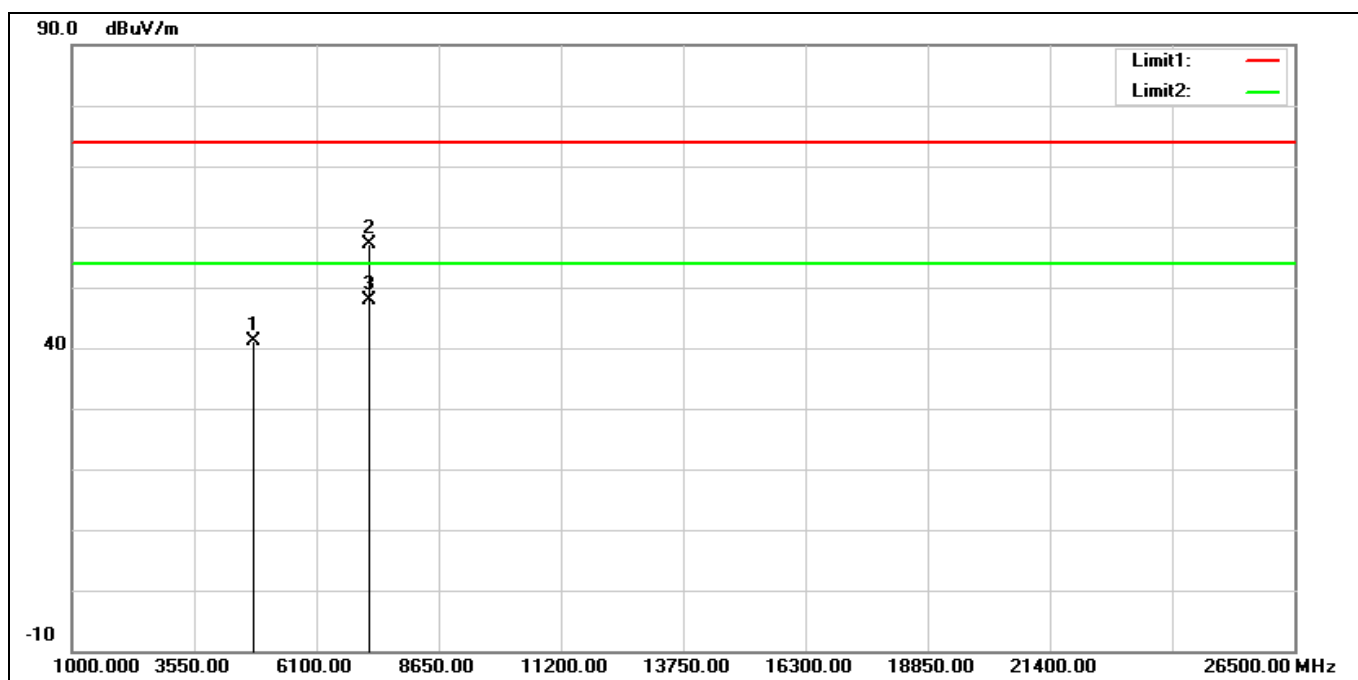
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	42.10	0.57	42.67	74.00	-31.33	peak
2	7440.000	47.45	8.34	55.79	74.00	-18.21	peak
3*	7440.000	40.54	8.34	48.88	54.00	-5.12	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



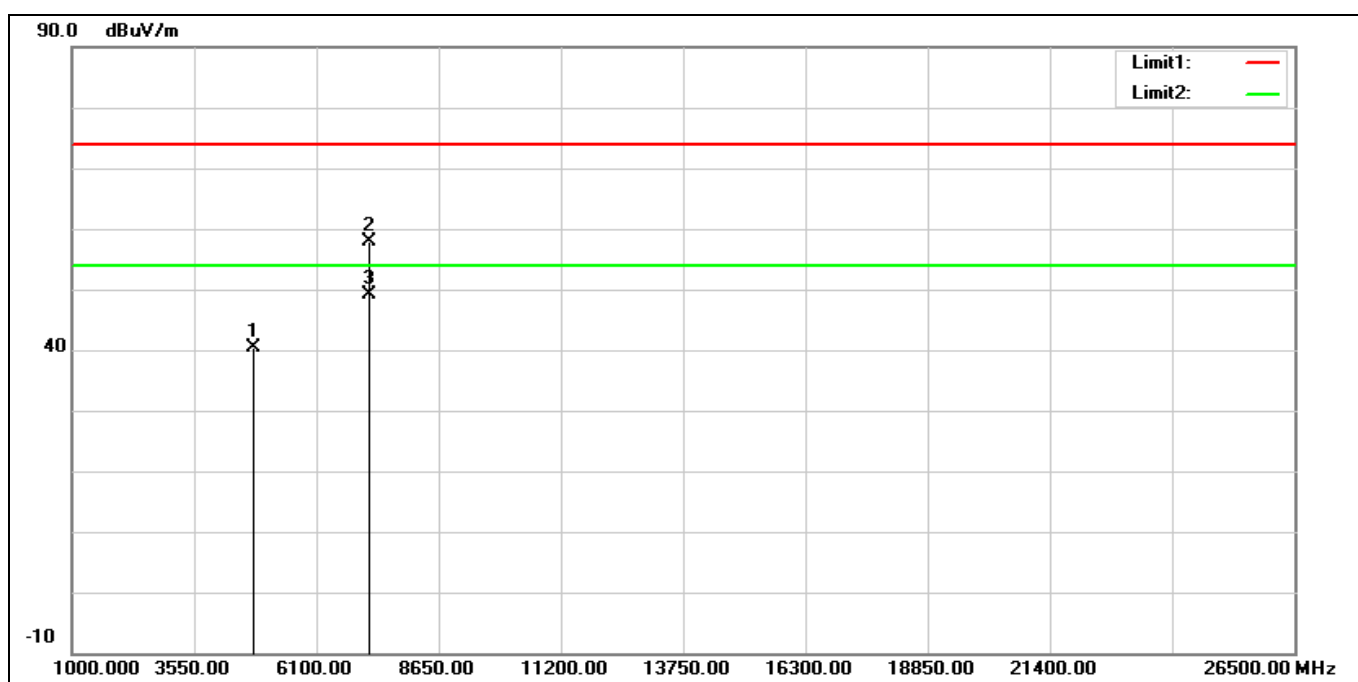
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	42.06	0.57	42.63	74.00	-31.37	peak
2	7440.000	50.05	8.34	58.39	74.00	-15.61	peak
3*	7440.000	43.32	8.34	51.66	54.00	-2.34	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



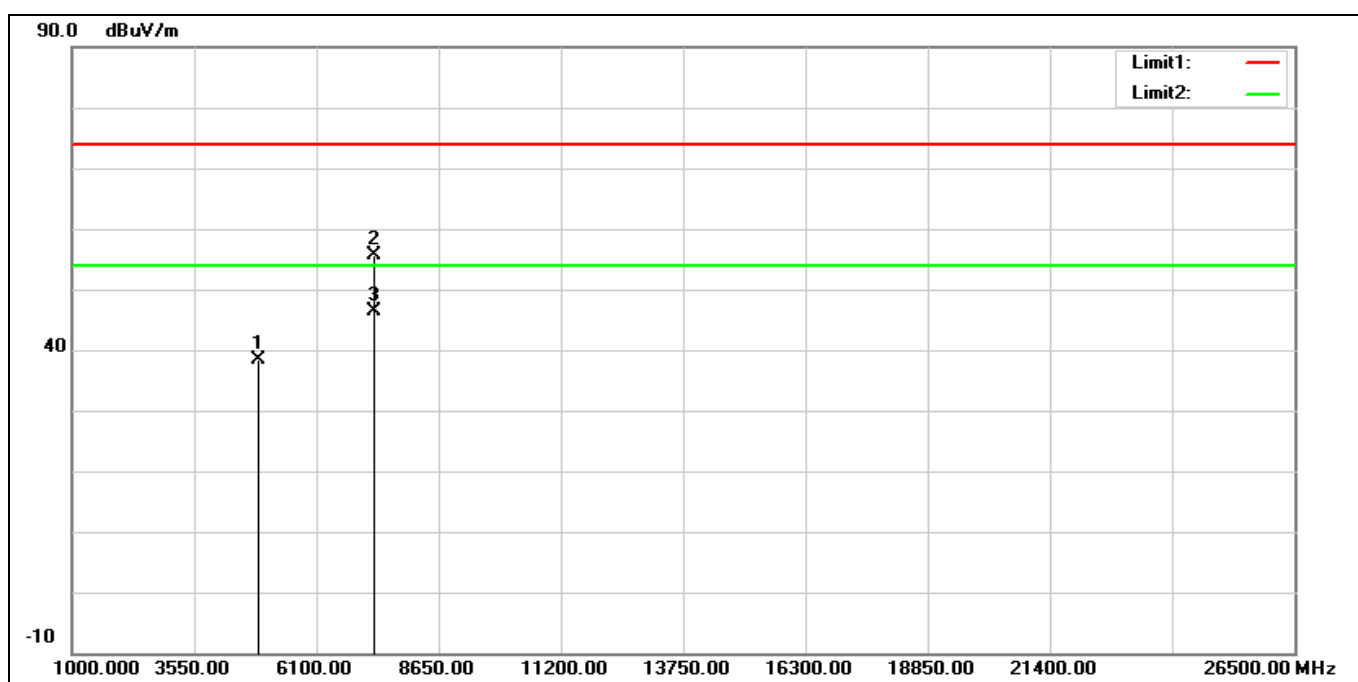
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	40.74	0.29	41.03	74.00	-32.97	peak
2	7206.000	49.32	7.82	57.14	74.00	-16.86	peak
3*	7206.000	39.97	7.82	47.79	54.00	-6.21	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



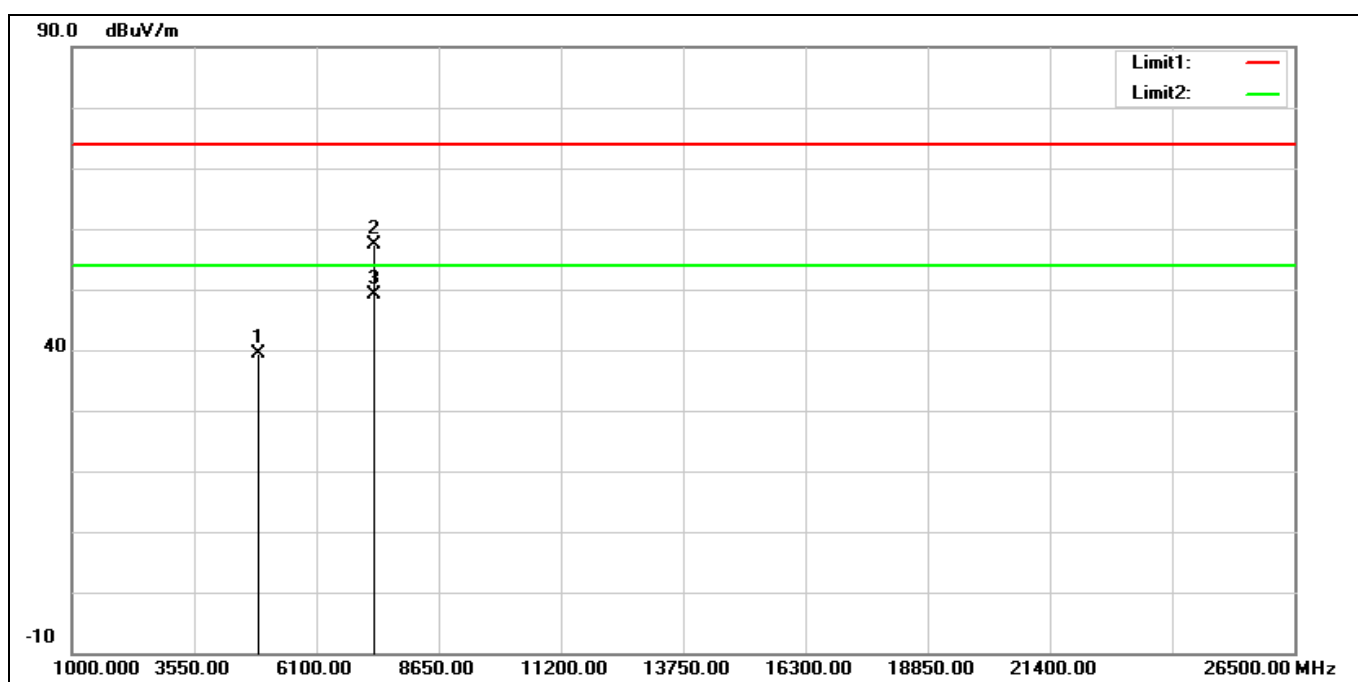
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	40.13	0.29	40.42	74.00	-33.58	peak
2	7206.000	50.06	7.82	57.88	74.00	-16.12	peak
3*	7206.000	41.27	7.82	49.09	54.00	-4.91	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2441 MHz		
Remark:			



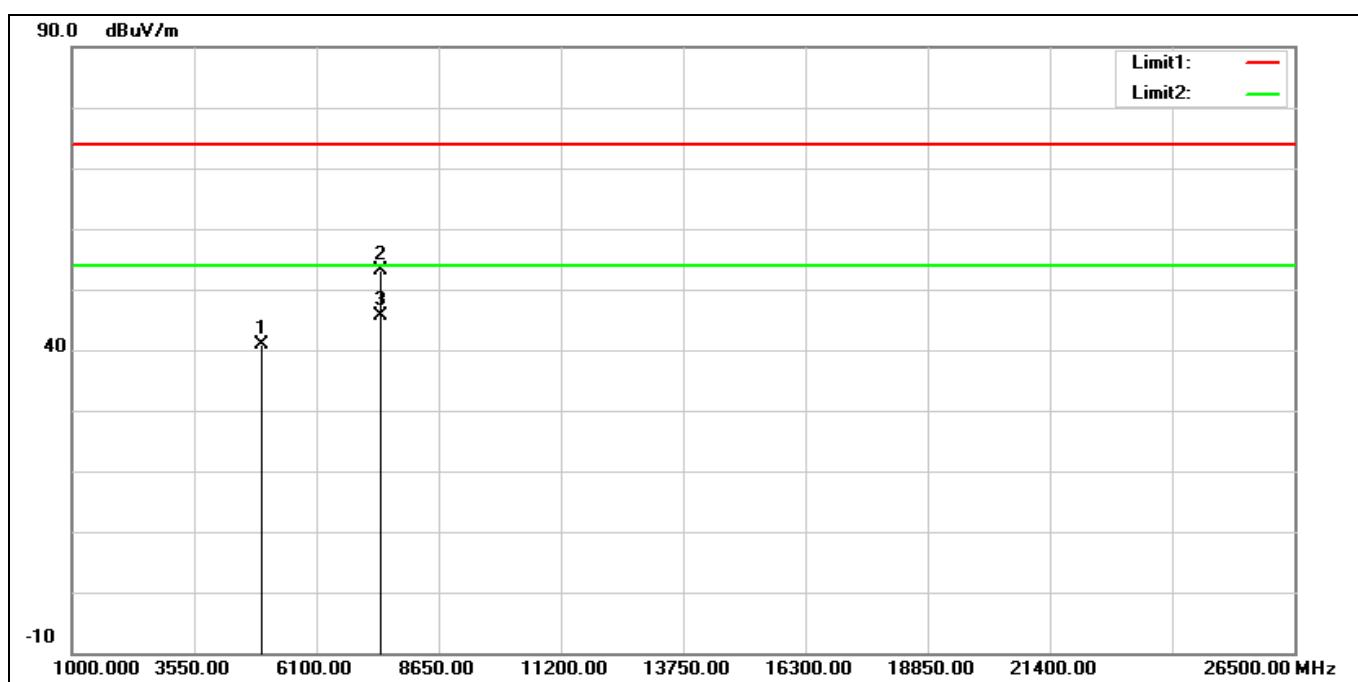
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	38.01	0.38	38.39	74.00	-35.61	peak
2	7323.000	47.53	7.99	55.52	74.00	-18.48	peak
3*	7323.000	38.48	7.99	46.47	54.00	-7.53	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2441 MHz		
Remark:			



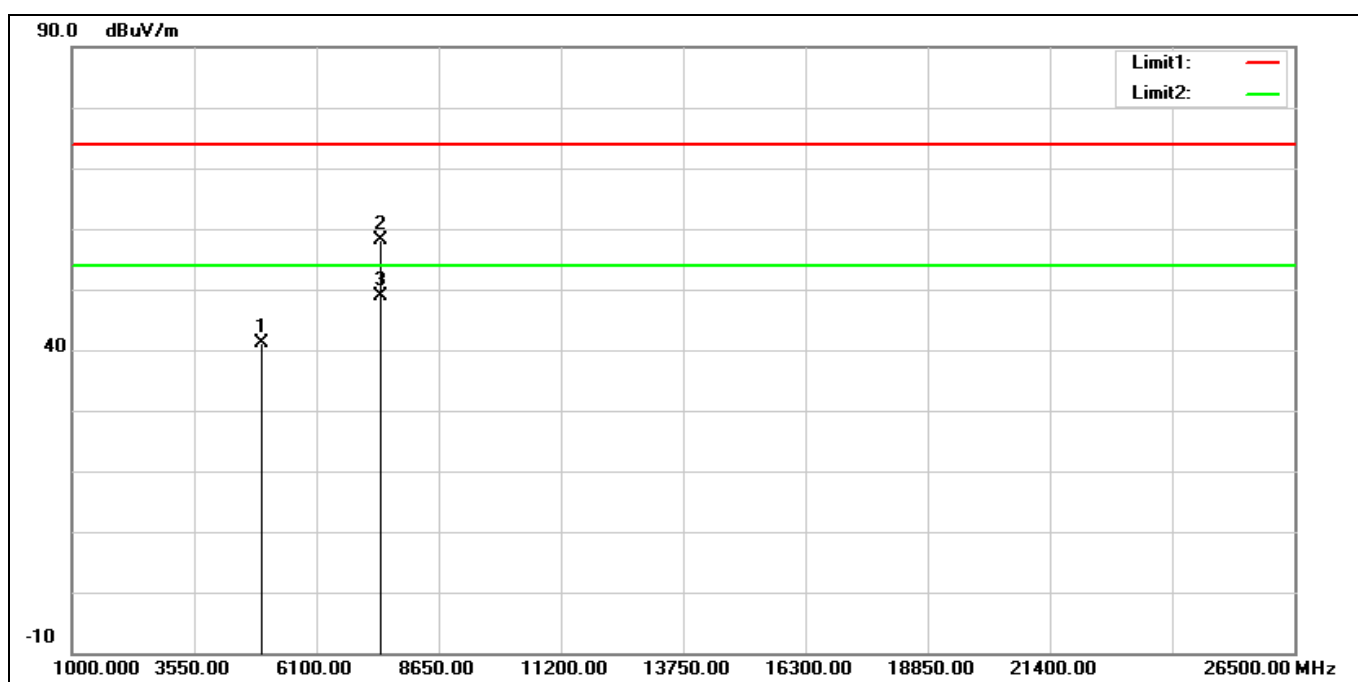
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	39.01	0.38	39.39	74.00	-34.61	peak
2	7323.000	49.37	7.99	57.36	74.00	-16.64	peak
3*	7323.000	41.08	7.99	49.07	54.00	-4.93	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



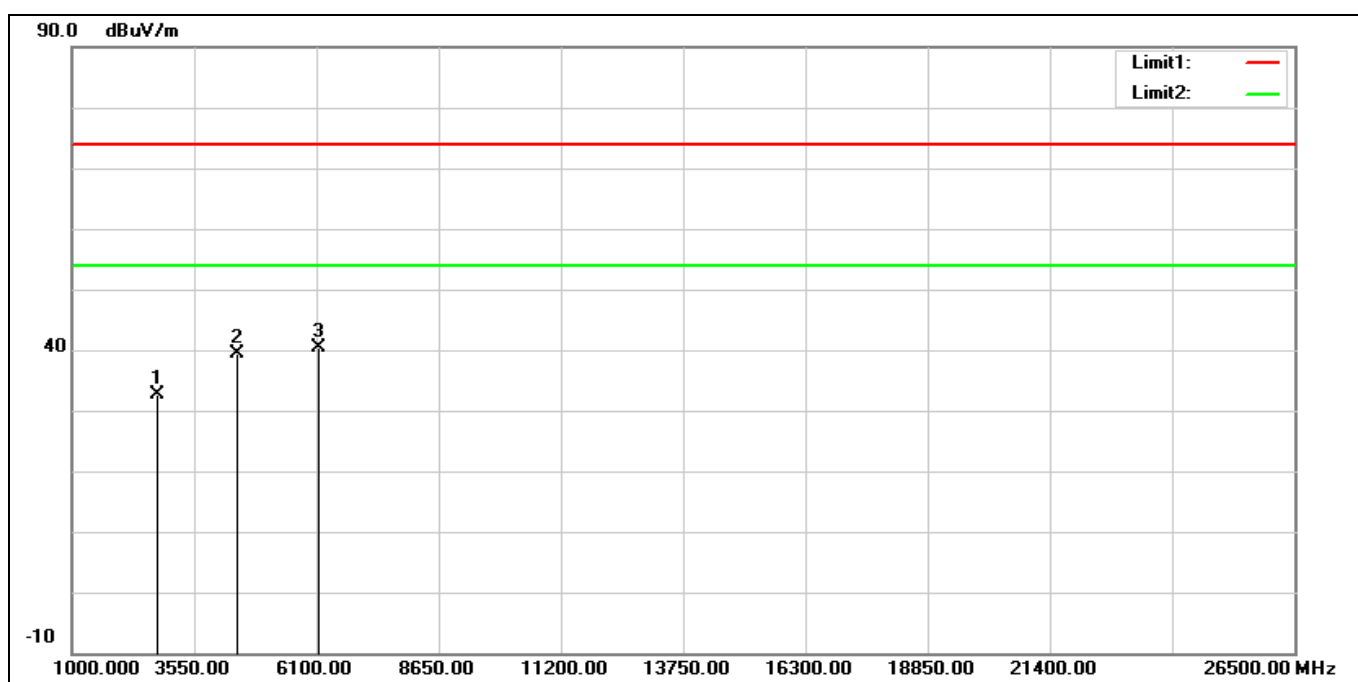
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	40.19	0.57	40.76	74.00	-33.24	peak
2	7440.000	44.78	8.34	53.12	74.00	-20.88	peak
3*	7440.000	37.25	8.34	45.59	54.00	-8.41	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



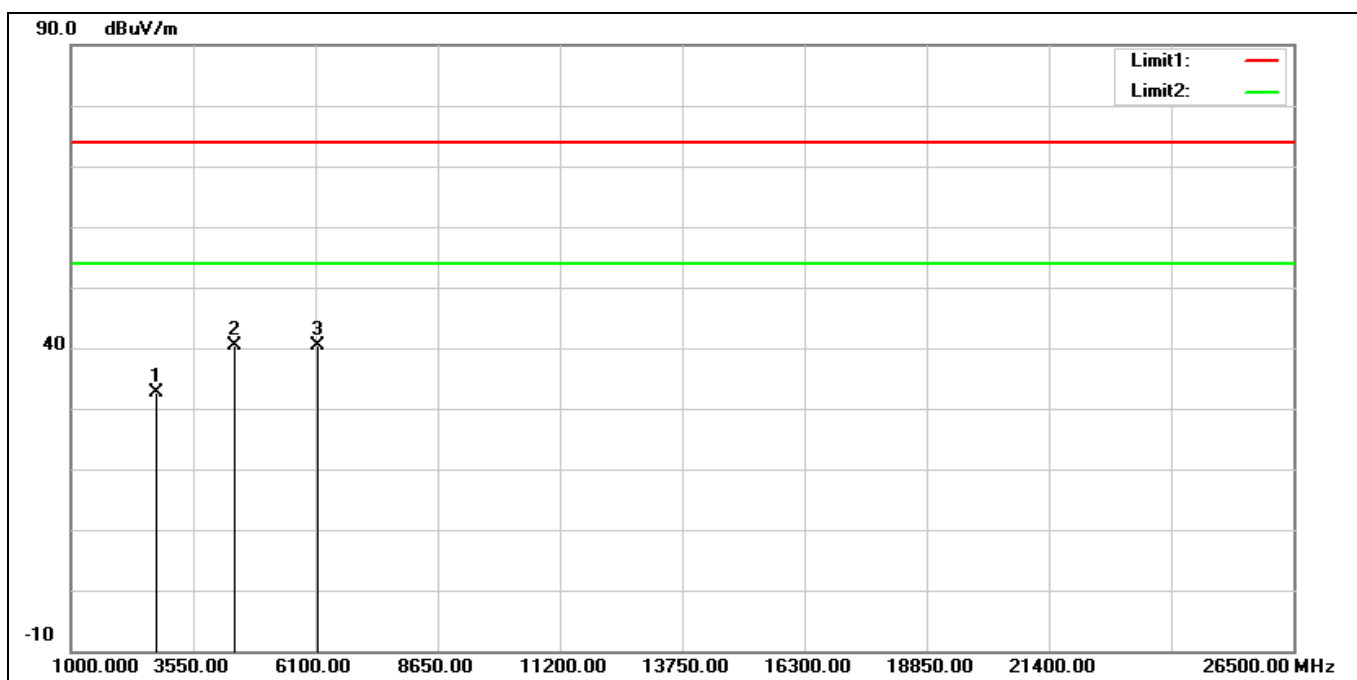
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	40.49	0.57	41.06	74.00	-32.94	peak
2	7440.000	49.76	8.34	58.10	74.00	-15.90	peak
3*	7440.000	40.46	8.34	48.80	54.00	-5.20	AVG

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT(ASE) + BT(Kirchhoff)		
Remark:	Simultaneous Transmitting		



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	37.94	-5.38	32.56	74.00	-41.44	peak
2	4451.000	40.49	-1.16	39.33	74.00	-34.67	peak
3*	6151.000	36.50	3.81	40.31	74.00	-33.69	peak

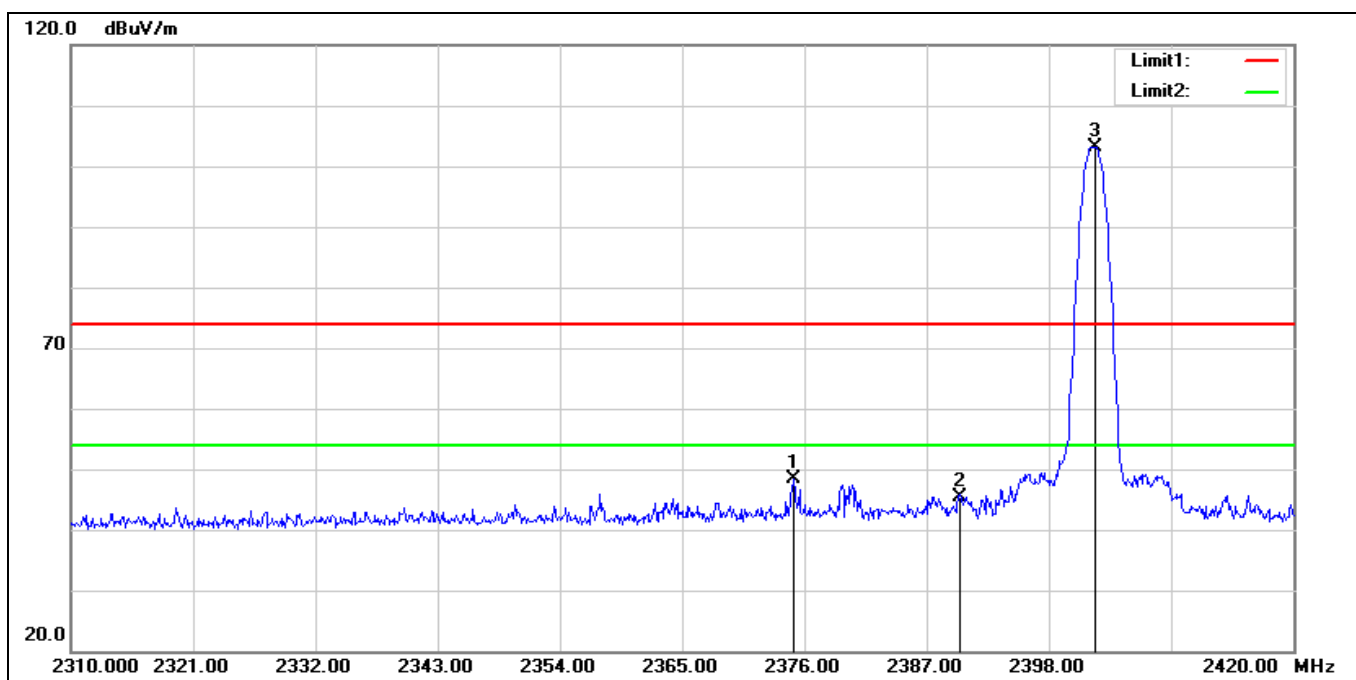
Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT(ASE) + BT(Kirchhoff)		
Remark:	Simultaneous Transmitting		



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	37.94	-5.38	32.56	74.00	-41.44	peak
2*	4417.000	41.57	-1.19	40.38	74.00	-33.62	peak
3	6151.000	36.50	3.81	40.31	74.00	-33.69	peak

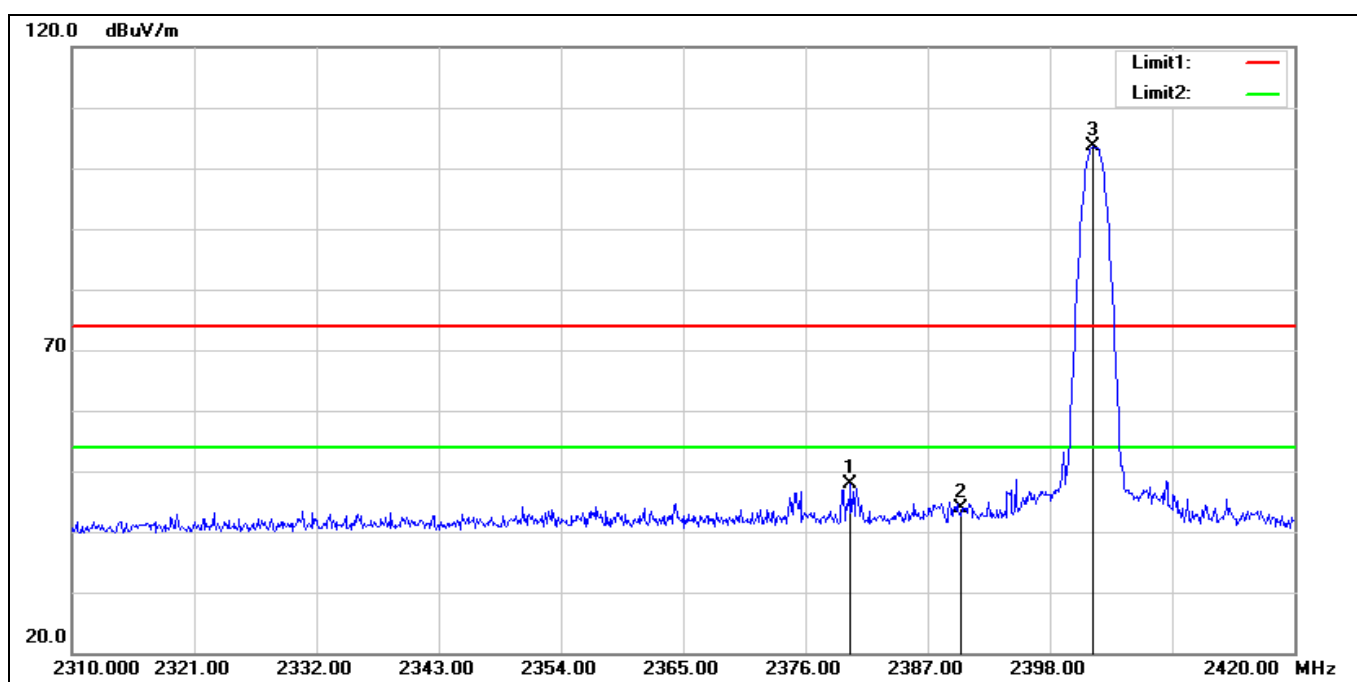
Band Edge

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



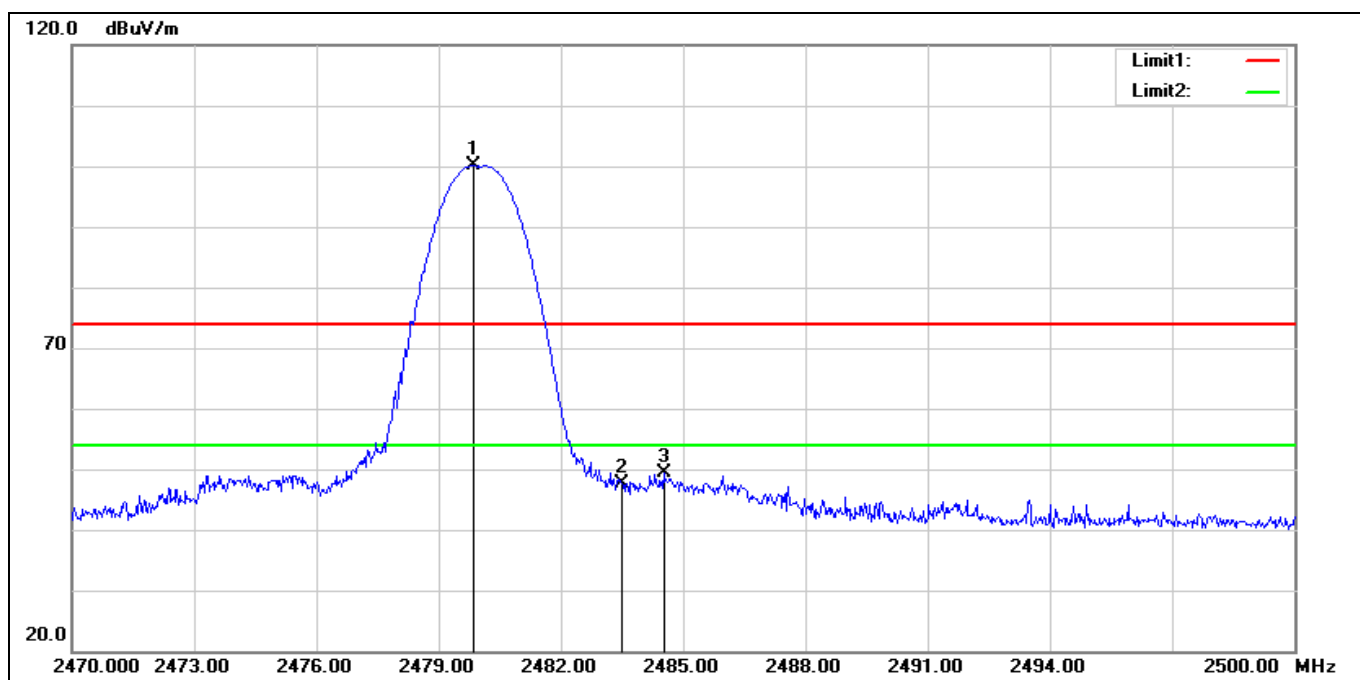
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.010	54.42	-6.11	48.31	74.00	-25.69	peak
2	2390.000	51.69	-6.19	45.50	74.00	-28.50	peak
3*	2402.180	109.37	-6.25	103.12	74.00	29.12	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



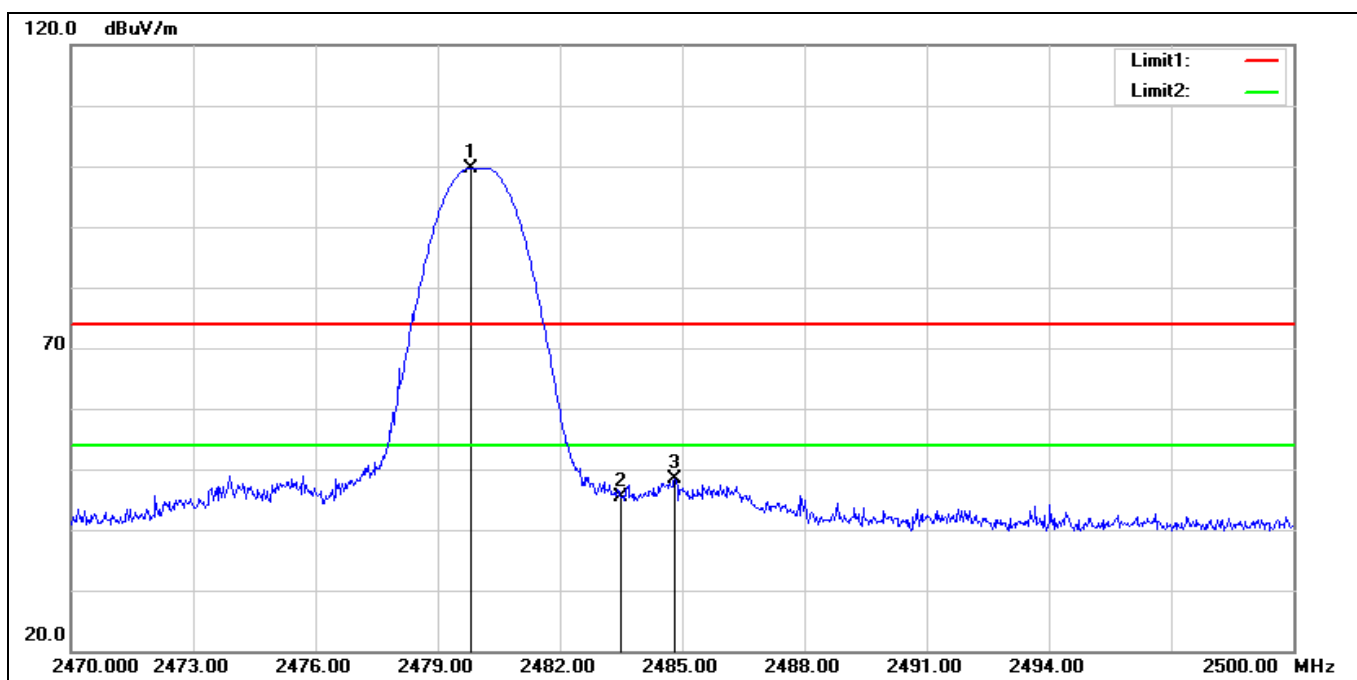
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.070	53.99	-6.14	47.85	74.00	-26.15	peak
2	2390.000	50.16	-6.19	43.97	74.00	-30.03	peak
3*	2401.850	109.77	-6.25	103.52	74.00	29.52	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



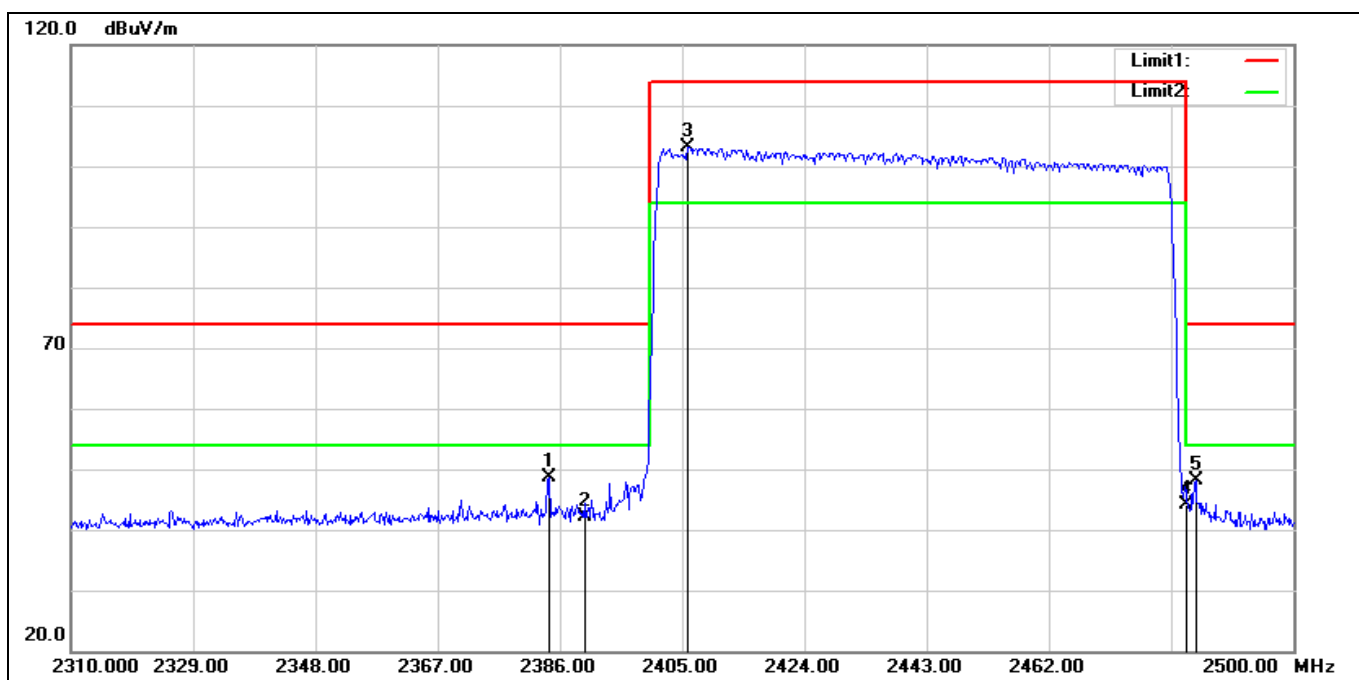
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.870	106.49	-6.46	100.03	74.00	26.03	peak
2	2483.500	54.00	-6.46	47.54	74.00	-26.46	peak
3	2484.520	55.75	-6.47	49.28	74.00	-24.72	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



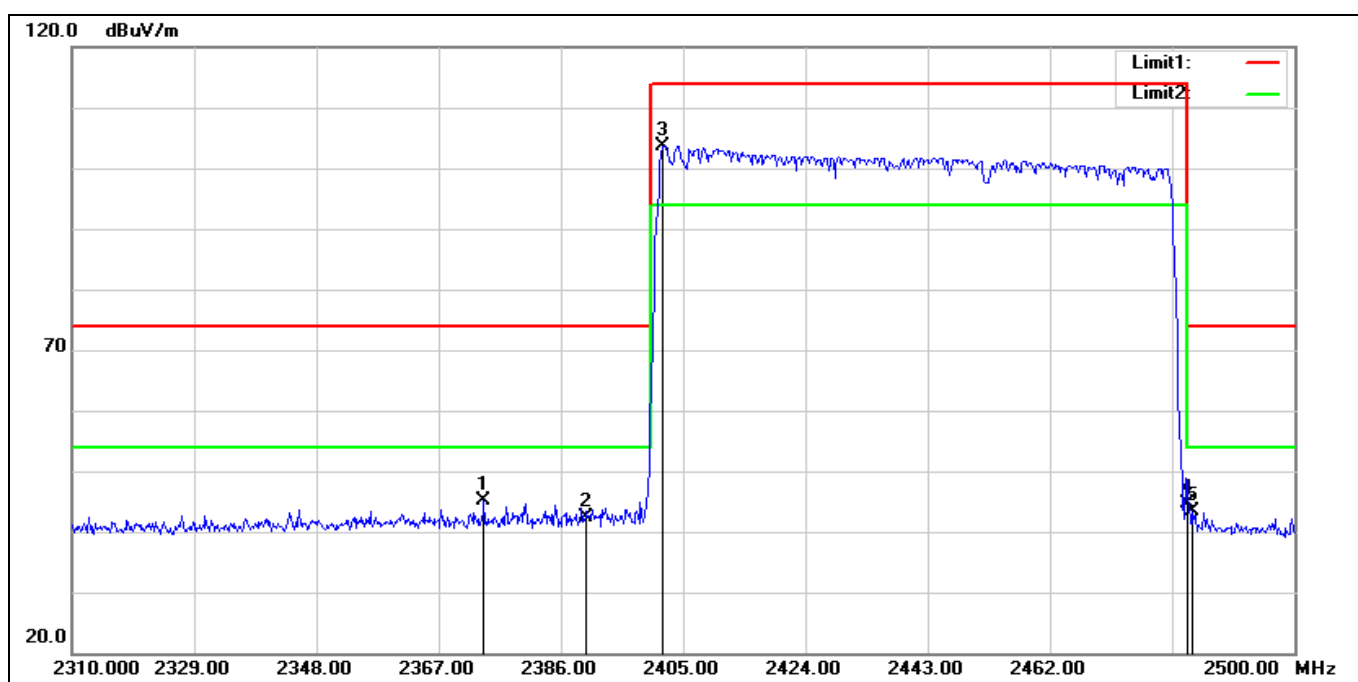
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.810	106.21	-6.46	99.75	74.00	25.75	peak
2	2483.500	51.86	-6.46	45.40	74.00	-28.60	peak
3	2484.820	54.87	-6.47	48.40	74.00	-25.60	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK_Hopping		
Remark:			



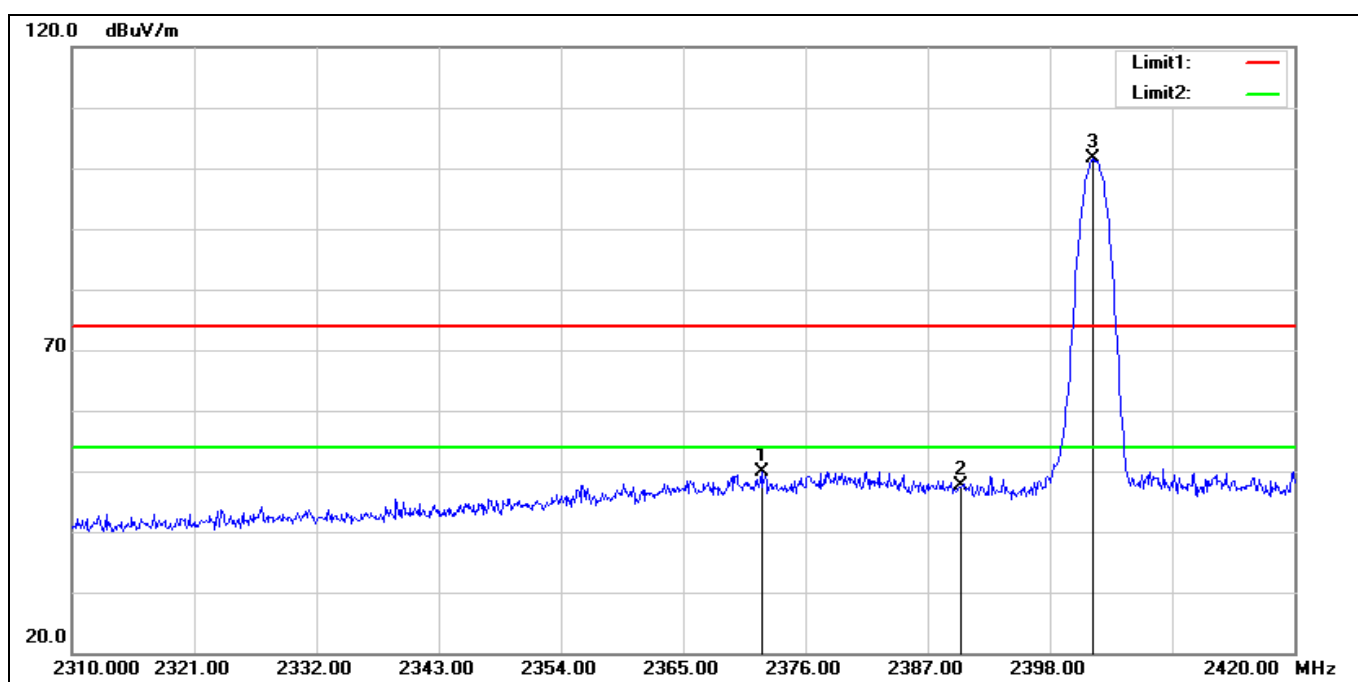
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2384.290	54.83	-6.17	48.66	74.00	-25.34	peak
2	2390.000	48.33	-6.19	42.14	74.00	-31.86	peak
3*	2405.950	109.26	-6.24	103.02	114.00	-10.98	peak
4	2483.500	50.49	-6.46	44.03	74.00	-29.97	peak
5	2484.800	54.64	-6.47	48.17	74.00	-25.83	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK_Hopping		
Remark:			



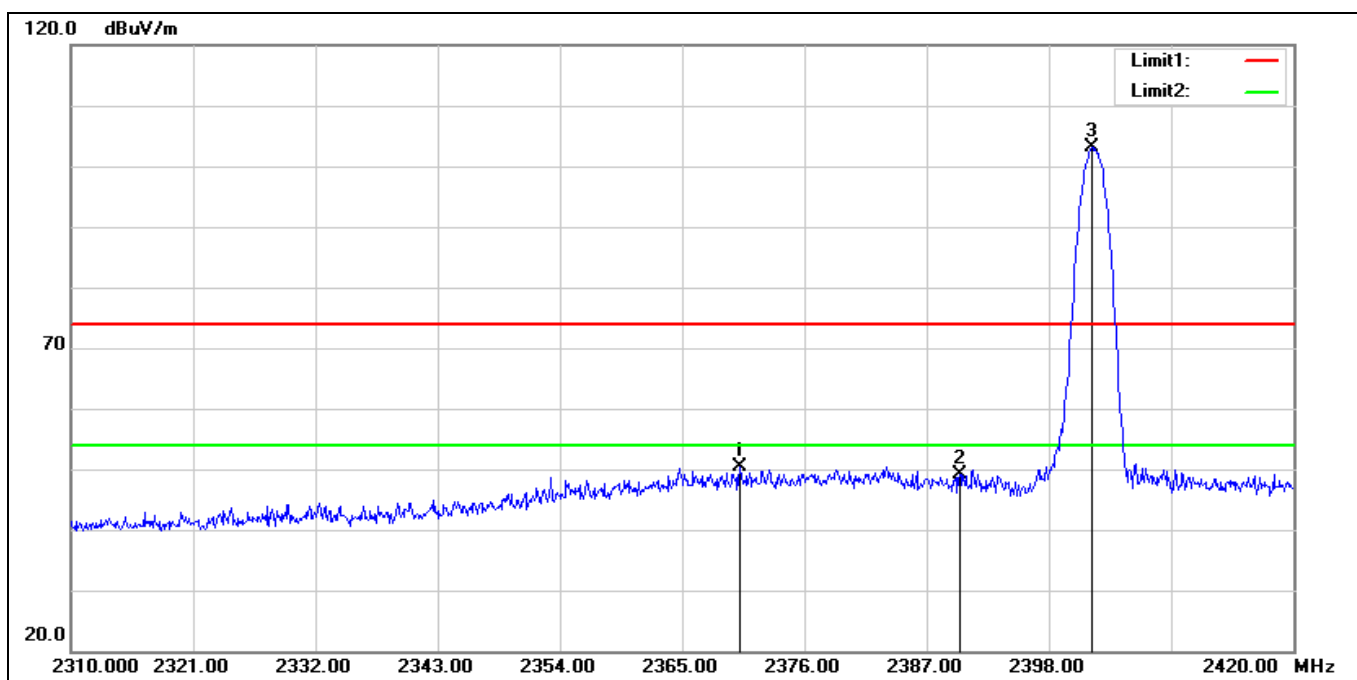
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2374.030	51.29	-6.11	45.18	74.00	-28.82	peak
2	2390.000	48.50	-6.19	42.31	74.00	-31.69	peak
3*	2401.770	109.96	-6.25	103.71	114.00	-10.29	peak
4	2483.500	51.13	-6.46	44.67	74.00	-29.33	peak
5	2484.040	49.90	-6.47	43.43	74.00	-30.57	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



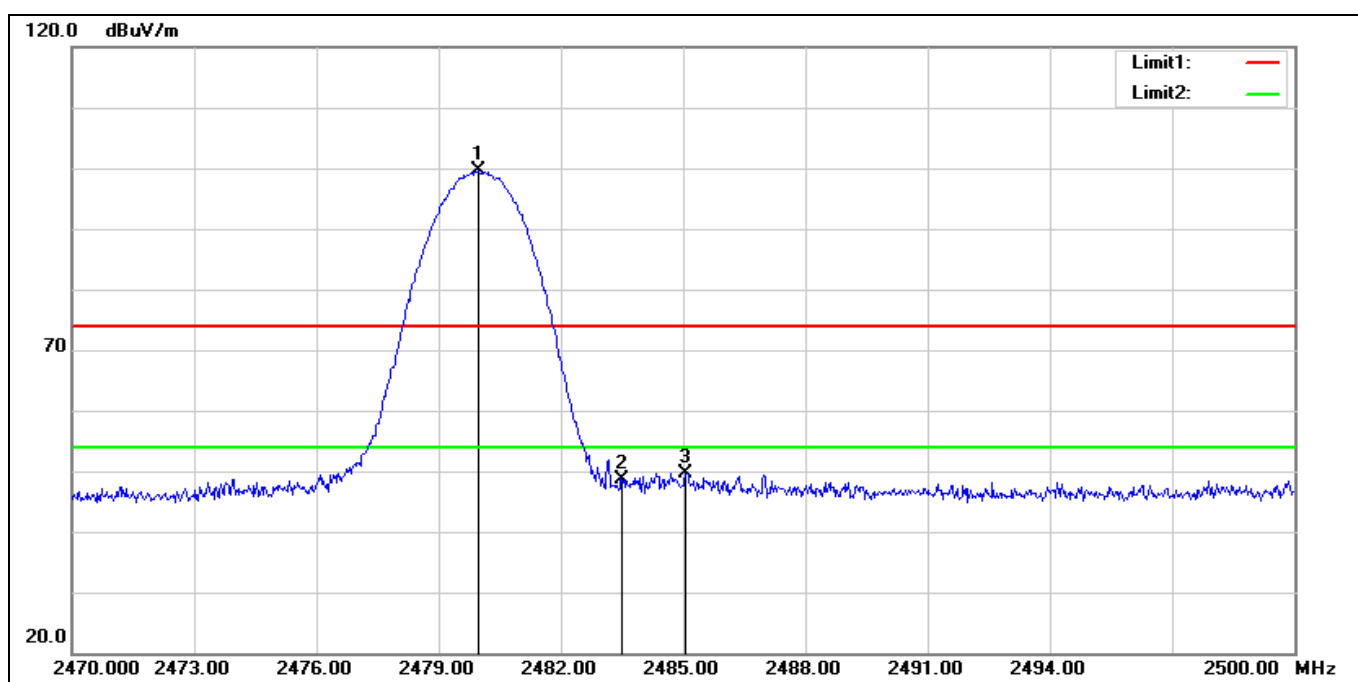
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2372.040	56.09	-6.10	49.99	74.00	-24.01	peak
2	2390.000	53.91	-6.19	47.72	74.00	-26.28	peak
3*	2401.850	107.89	-6.25	101.64	74.00	27.64	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



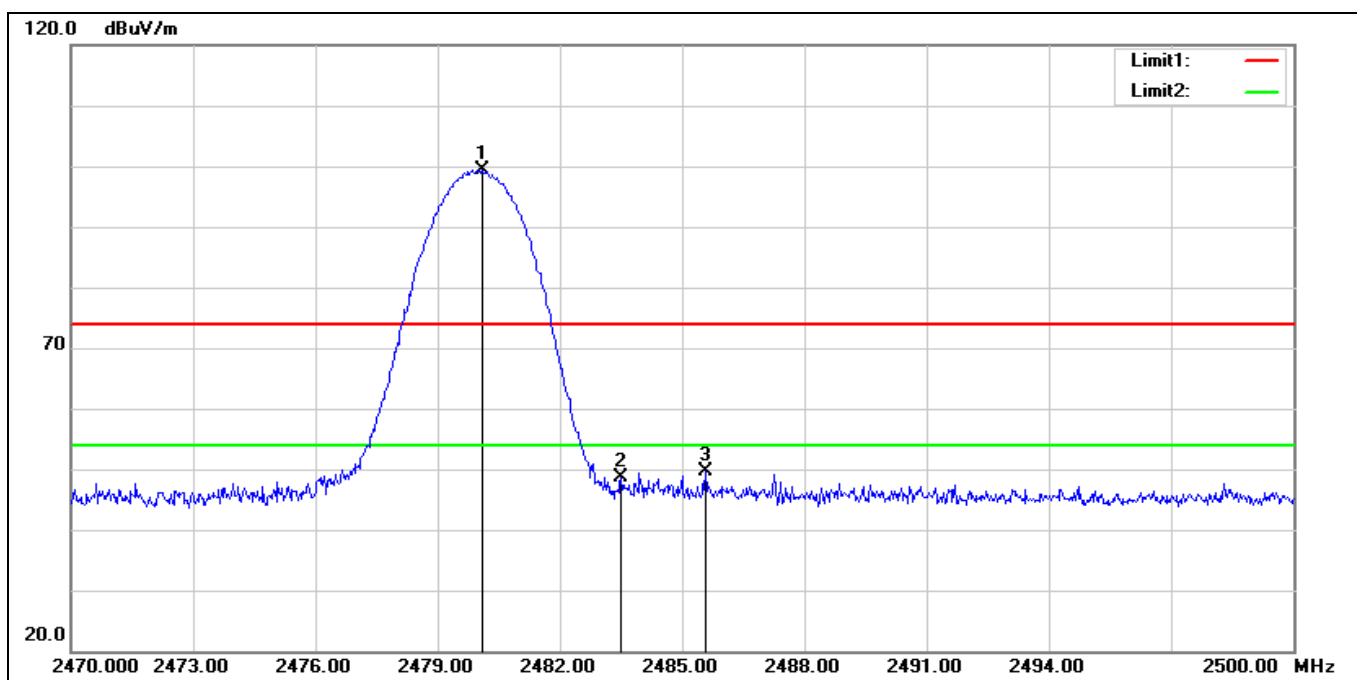
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2370.170	56.50	-6.09	50.41	74.00	-23.59	peak
2	2390.000	55.43	-6.19	49.24	74.00	-24.76	peak
3*	2401.850	109.36	-6.25	103.11	74.00	29.11	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



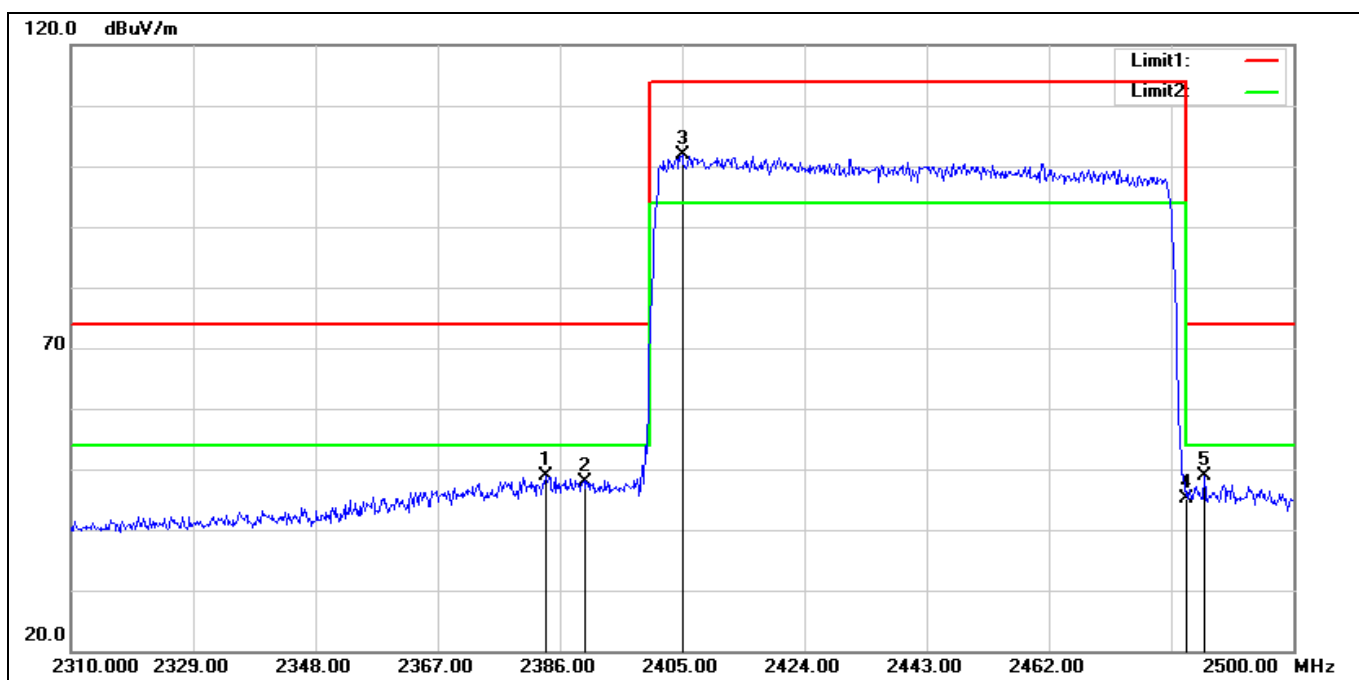
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.960	106.07	-6.46	99.61	74.00	25.61	peak
2	2483.500	55.17	-6.46	48.71	74.00	-25.29	peak
3	2485.060	56.19	-6.46	49.73	74.00	-24.27	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



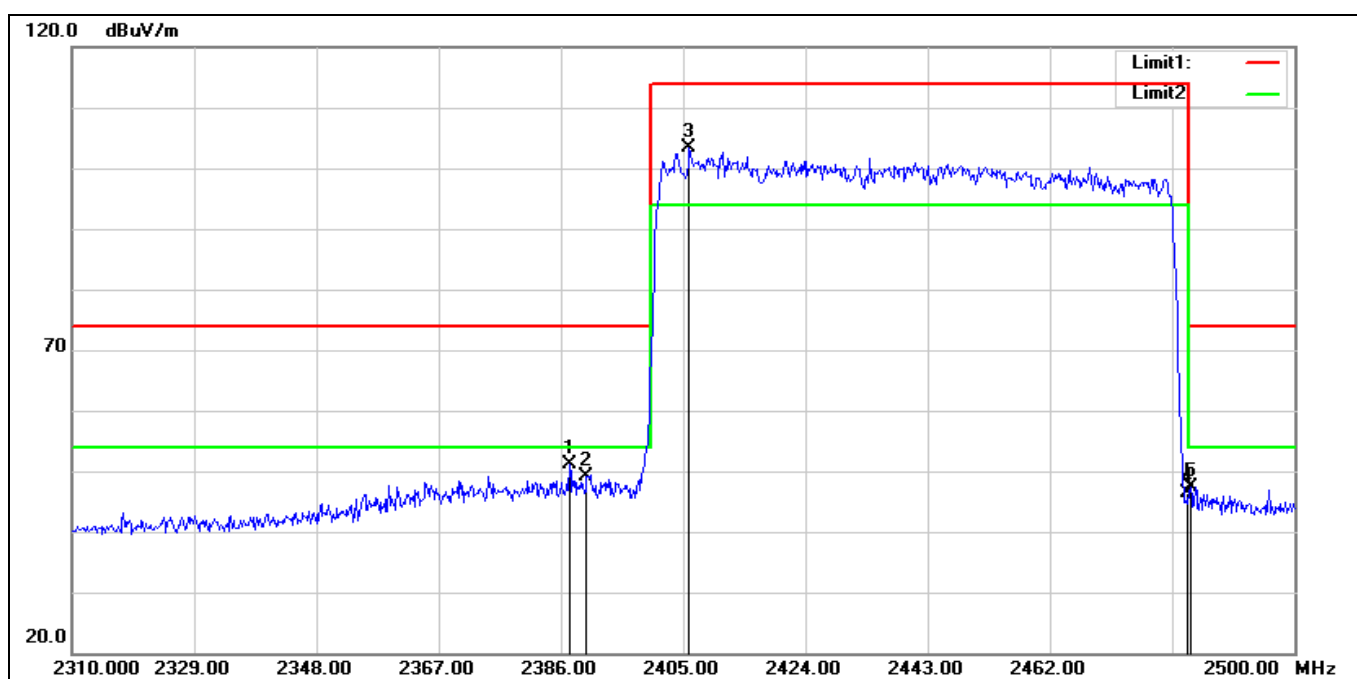
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2480.080	105.86	-6.46	99.40	74.00	25.40	peak
2	2483.500	55.19	-6.46	48.73	74.00	-25.27	peak
3	2485.570	56.04	-6.46	49.58	74.00	-24.42	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK_Hopping		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2383.910	55.14	-6.16	48.98	74.00	-25.02	peak
2	2390.000	54.13	-6.19	47.94	74.00	-26.06	peak
3*	2405.000	108.16	-6.25	101.91	114.00	-12.09	peak
4	2483.500	51.60	-6.46	45.14	74.00	-28.86	peak
5	2486.130	55.43	-6.46	48.97	74.00	-25.03	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK_Hopping		
Remark:			

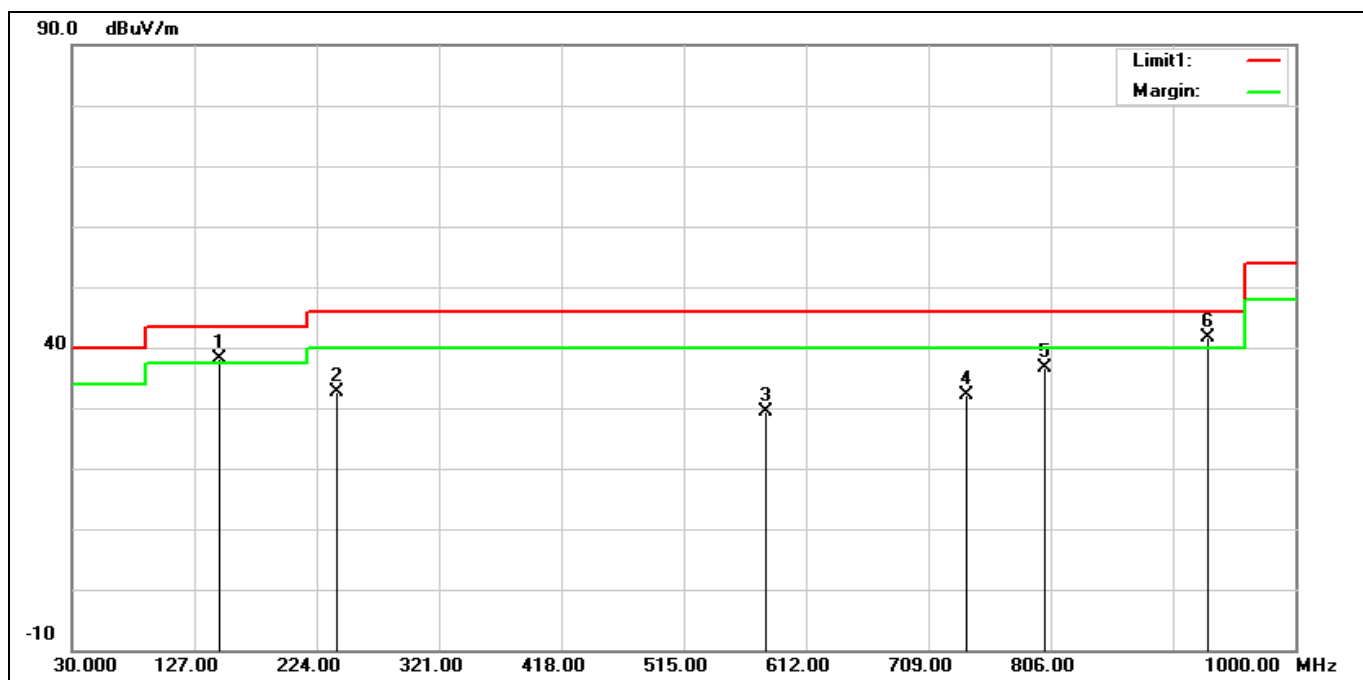


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2387.330	57.32	-6.17	51.15	74.00	-22.85	peak
2	2390.000	55.21	-6.19	49.02	74.00	-24.98	peak
3*	2405.950	109.53	-6.24	103.29	114.00	-10.71	peak
4	2483.500	52.89	-6.46	46.43	74.00	-27.57	peak
5	2483.850	53.94	-6.47	47.47	74.00	-26.53	peak

Module : Kirchhoff

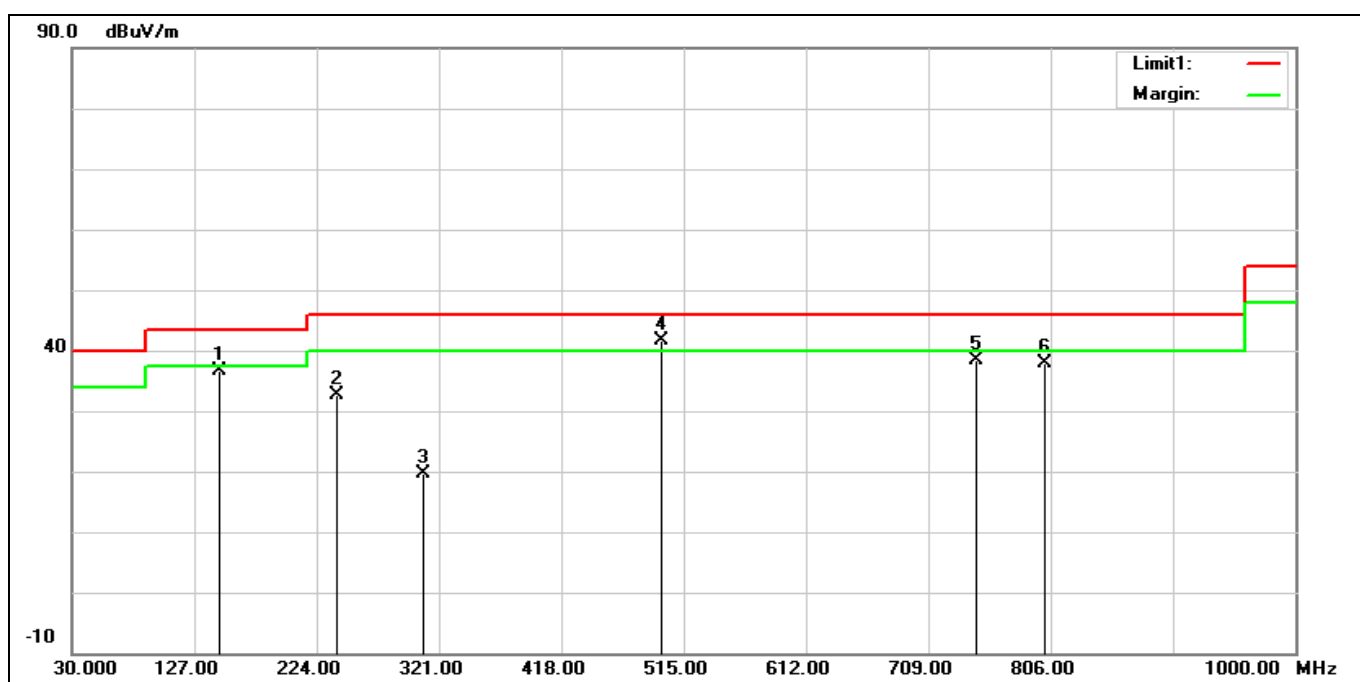
Below 1 GHz

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1!	147.3700	45.59	-7.40	38.19	43.50	-5.31	QP
2	240.4900	41.36	-8.64	32.72	46.00	-13.28	QP
3	579.9900	29.95	-0.50	29.45	46.00	-16.55	QP
4	739.0700	29.54	2.66	32.20	46.00	-13.80	QP
5	801.1500	32.75	3.87	36.62	46.00	-9.38	QP
6*	931.1300	35.72	5.94	41.66	46.00	-4.34	QP

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			

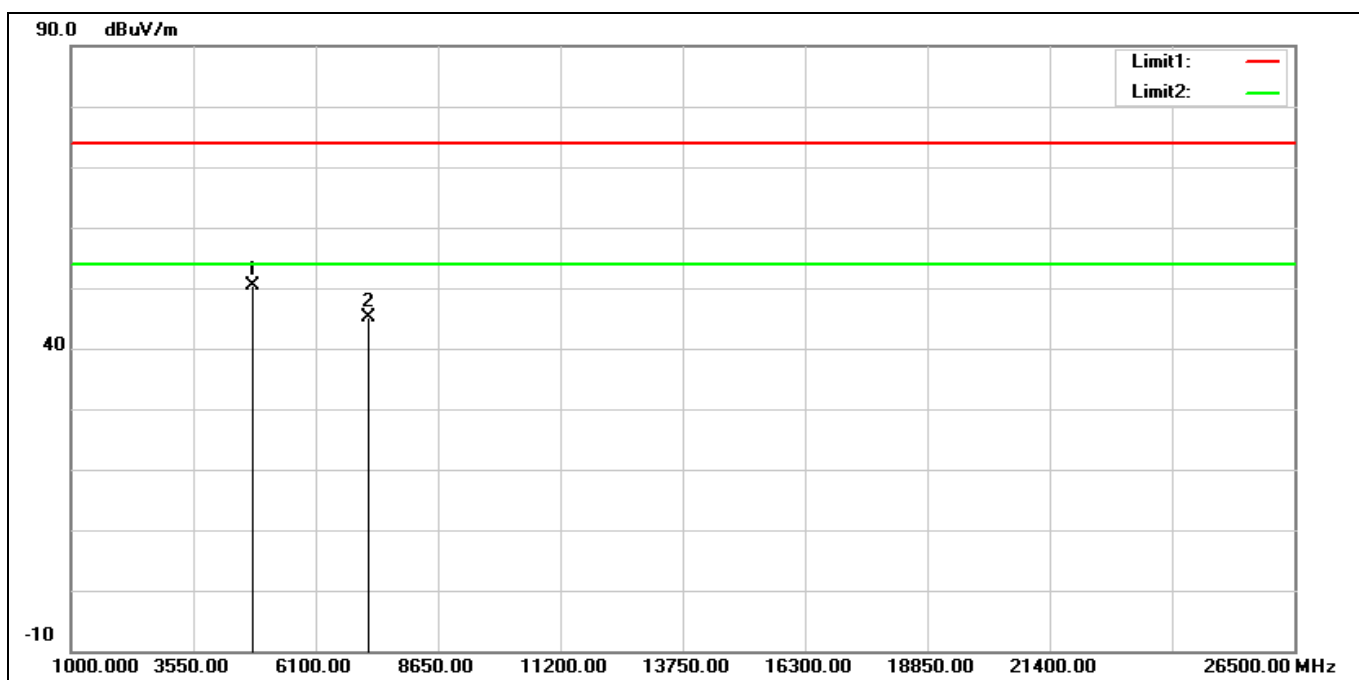


No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	147.3700	44.07	-7.40	36.67	43.50	-6.83	QP
2	240.4900	41.29	-8.64	32.65	46.00	-13.35	QP
3	308.3900	26.19	-6.58	19.61	46.00	-26.39	QP
4*	497.5400	43.78	-2.16	41.62	46.00	-4.38	QP
5	746.8300	35.58	2.86	38.44	46.00	-7.56	QP
6	801.1500	34.05	3.87	37.92	46.00	-8.08	QP

Harmonic

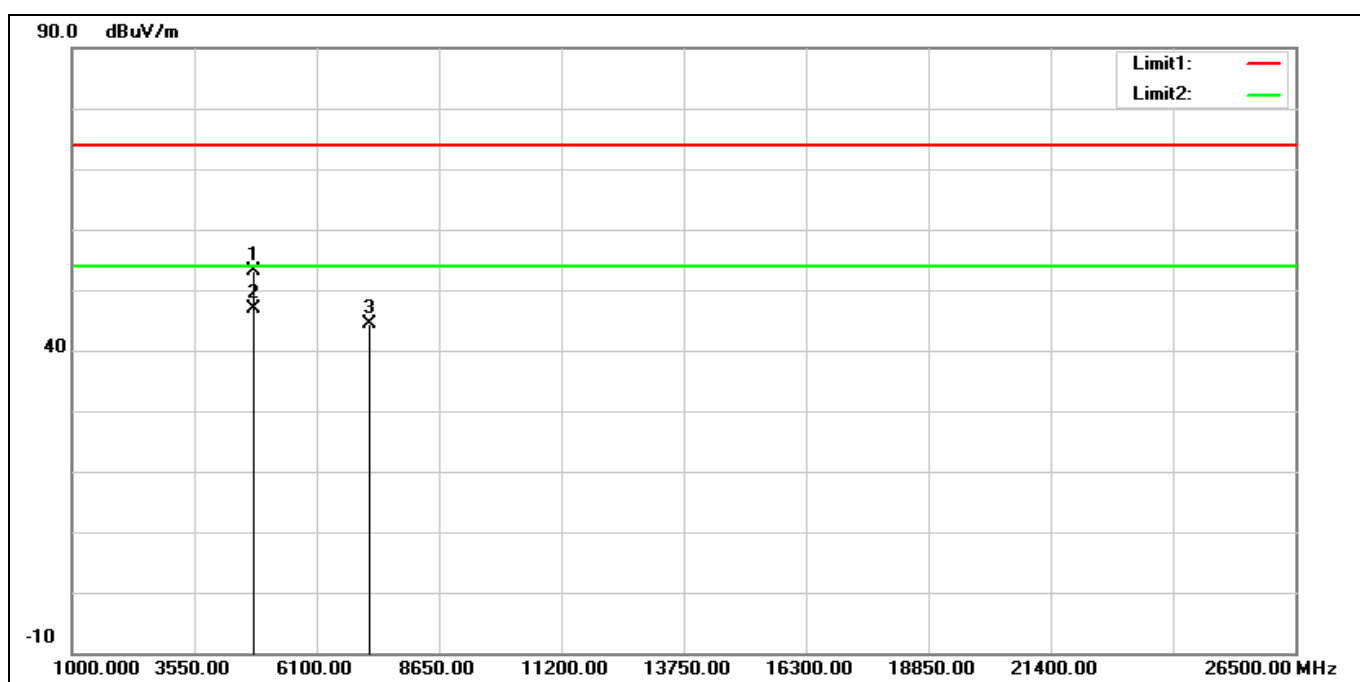
Above 1 GHz

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



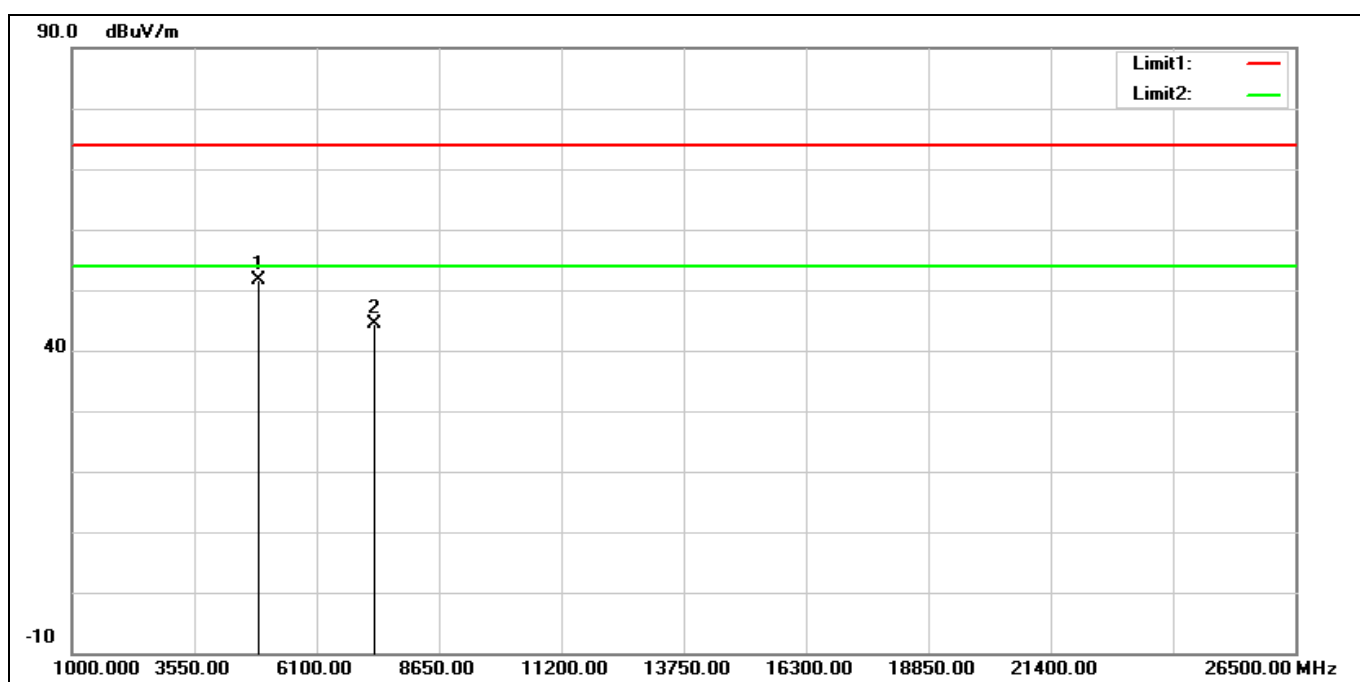
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4804.000	49.97	0.29	50.26	74.00	-23.74	peak
2	7206.000	37.35	7.82	45.17	74.00	-28.83	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



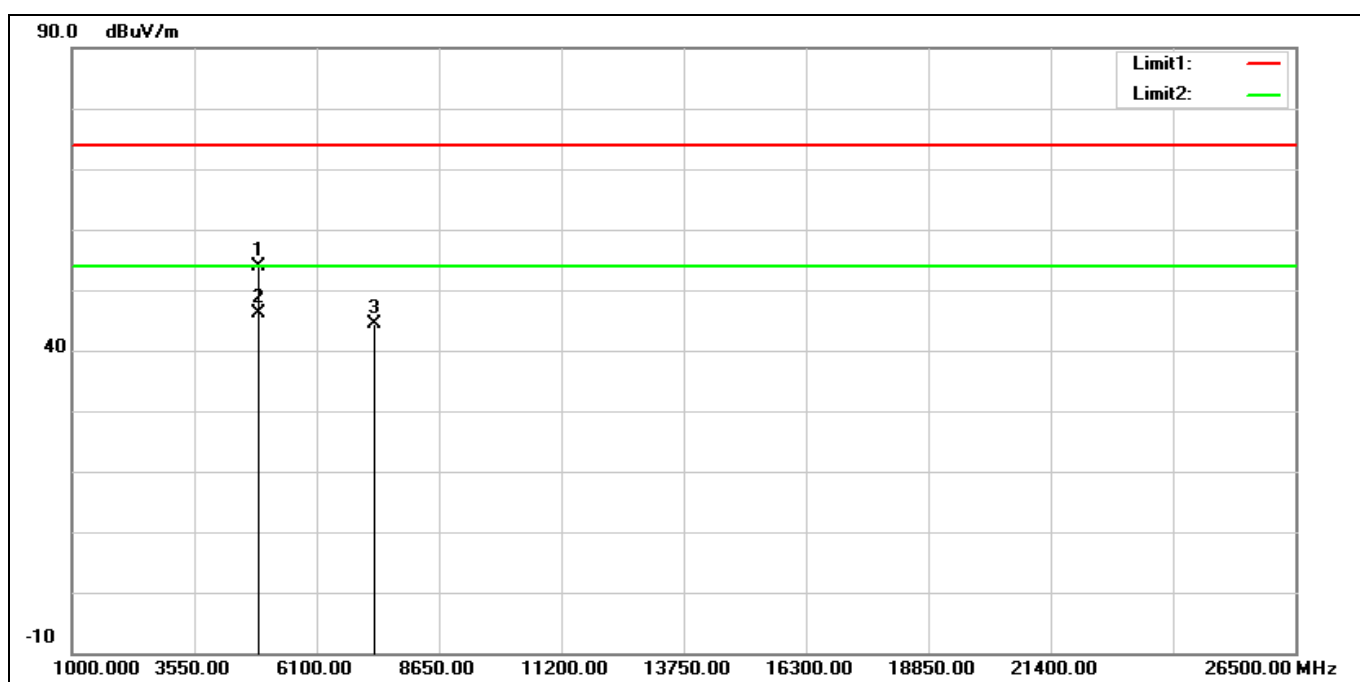
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4804.000	52.72	0.29	53.01	74.00	-20.99	peak
2*	4804.000	46.67	0.29	46.96	54.00	-7.04	AVG
3	7206.000	36.46	7.82	44.28	74.00	-29.72	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2441 MHz		
Remark:			



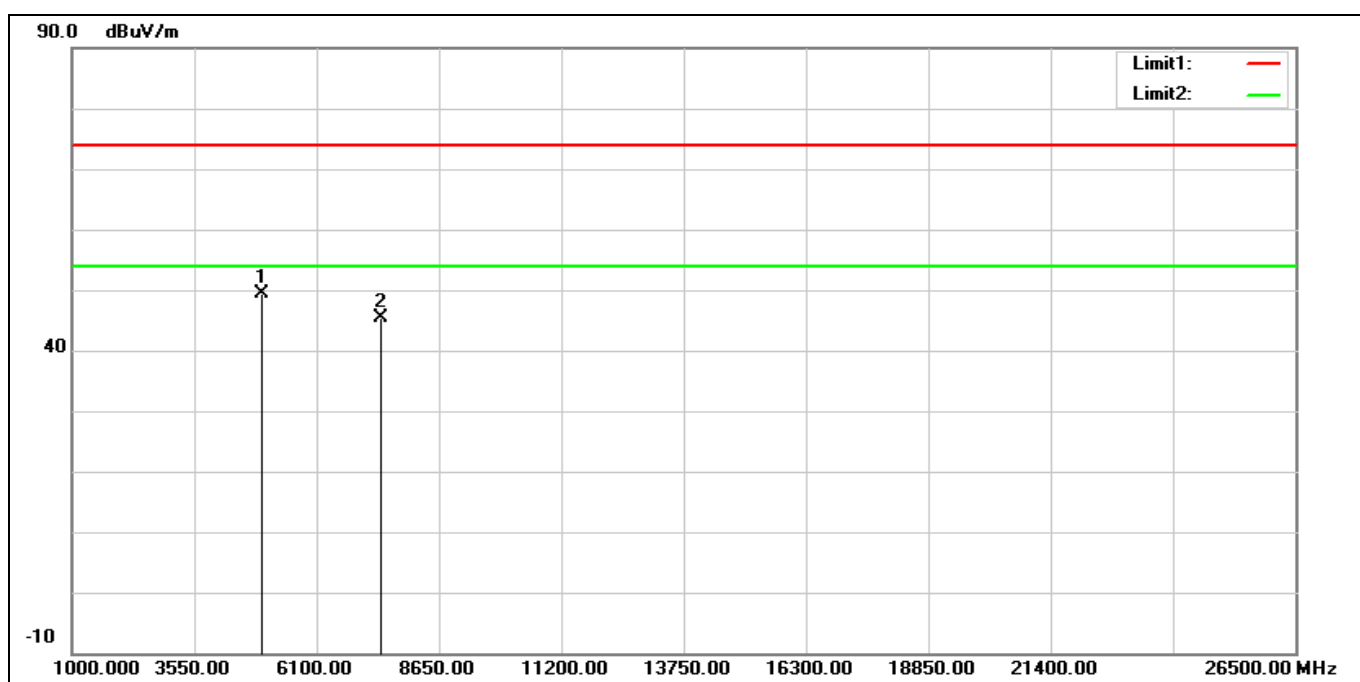
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4882.000	51.32	0.38	51.70	74.00	-22.30	peak
2	7323.000	36.46	7.99	44.45	74.00	-29.55	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2441 MHz		
Remark:			



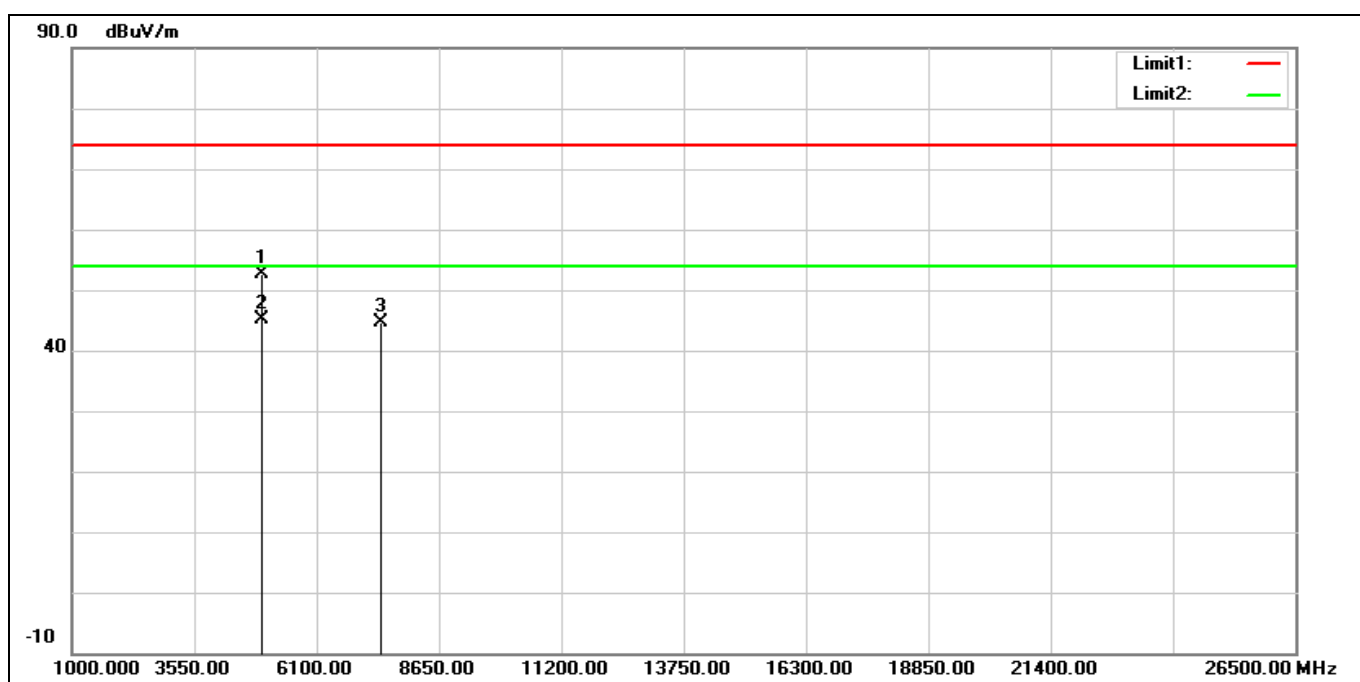
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4882.000	53.50	0.38	53.88	74.00	-20.12	peak
2*	4882.000	45.76	0.38	46.14	54.00	-7.86	AVG
3	7323.000	36.49	7.99	44.48	74.00	-29.52	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



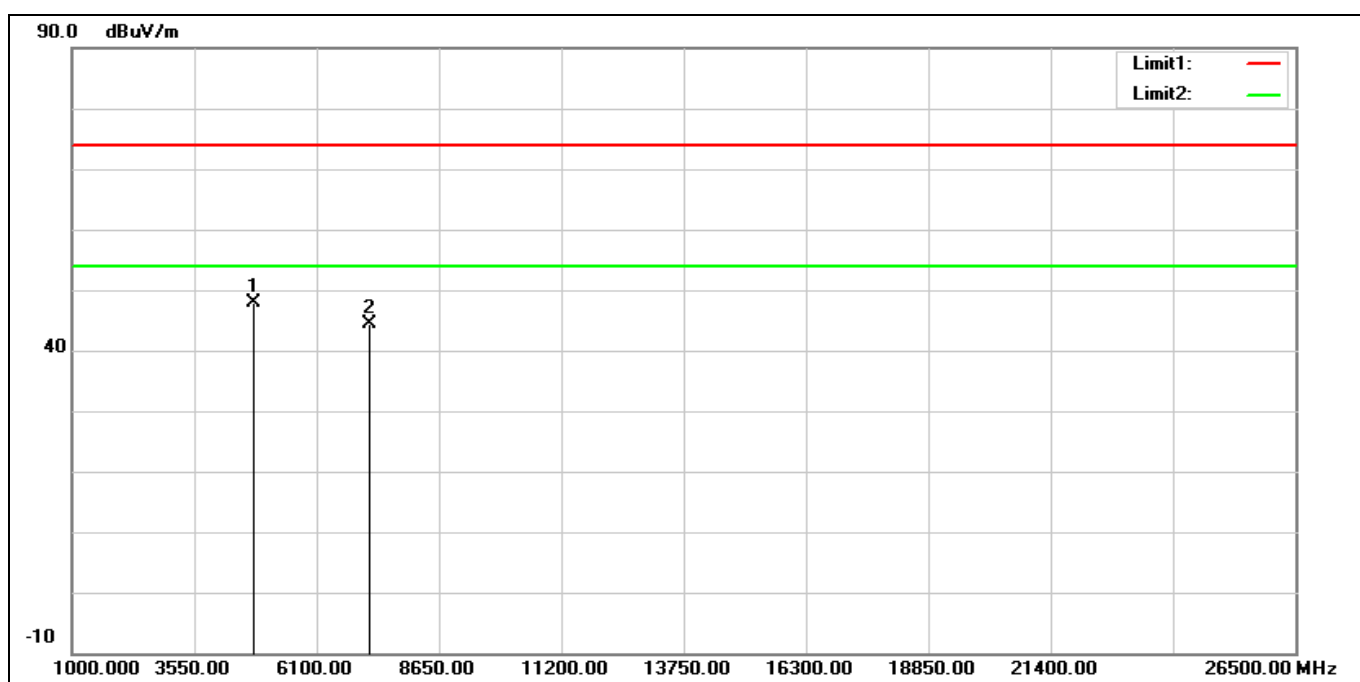
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4960.000	48.83	0.57	49.40	74.00	-24.60	peak
2	7440.000	37.13	8.34	45.47	74.00	-28.53	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



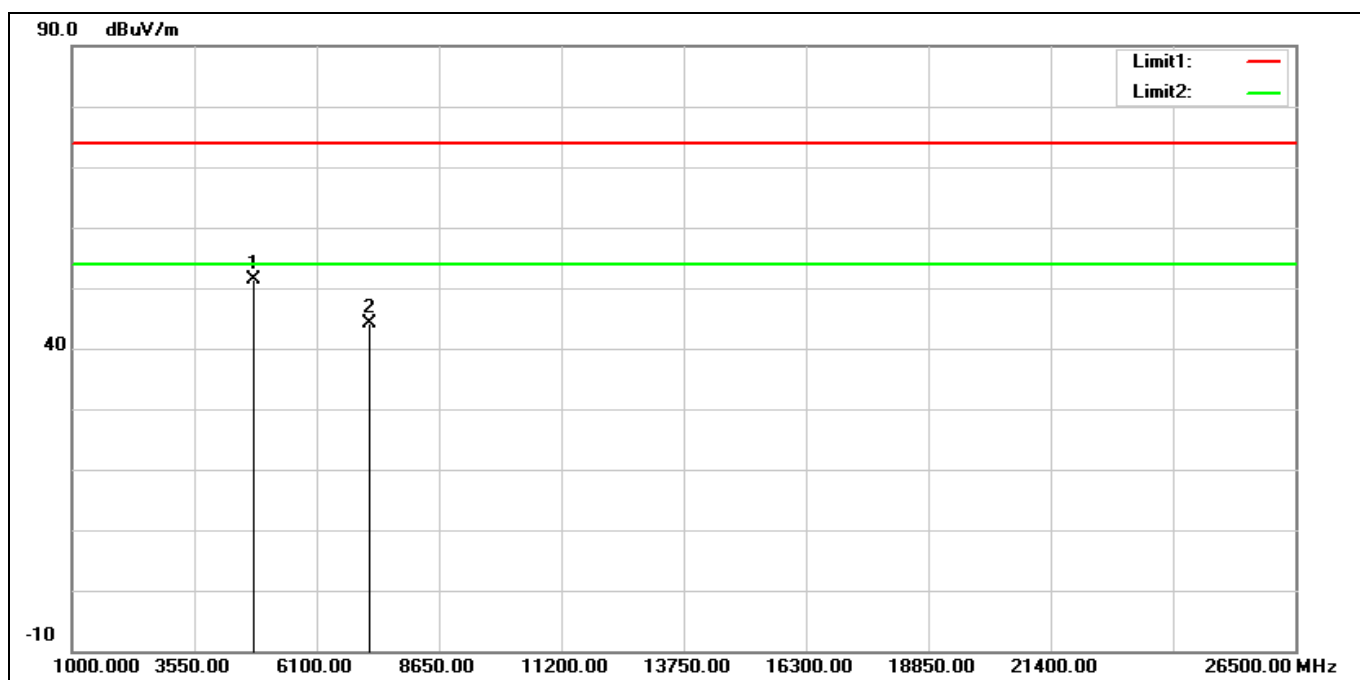
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	4960.000	52.04	0.57	52.61	74.00	-21.39	peak
2*	4960.000	44.62	0.57	45.19	54.00	-8.81	AVG
3	7440.000	36.38	8.34	44.72	74.00	-29.28	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



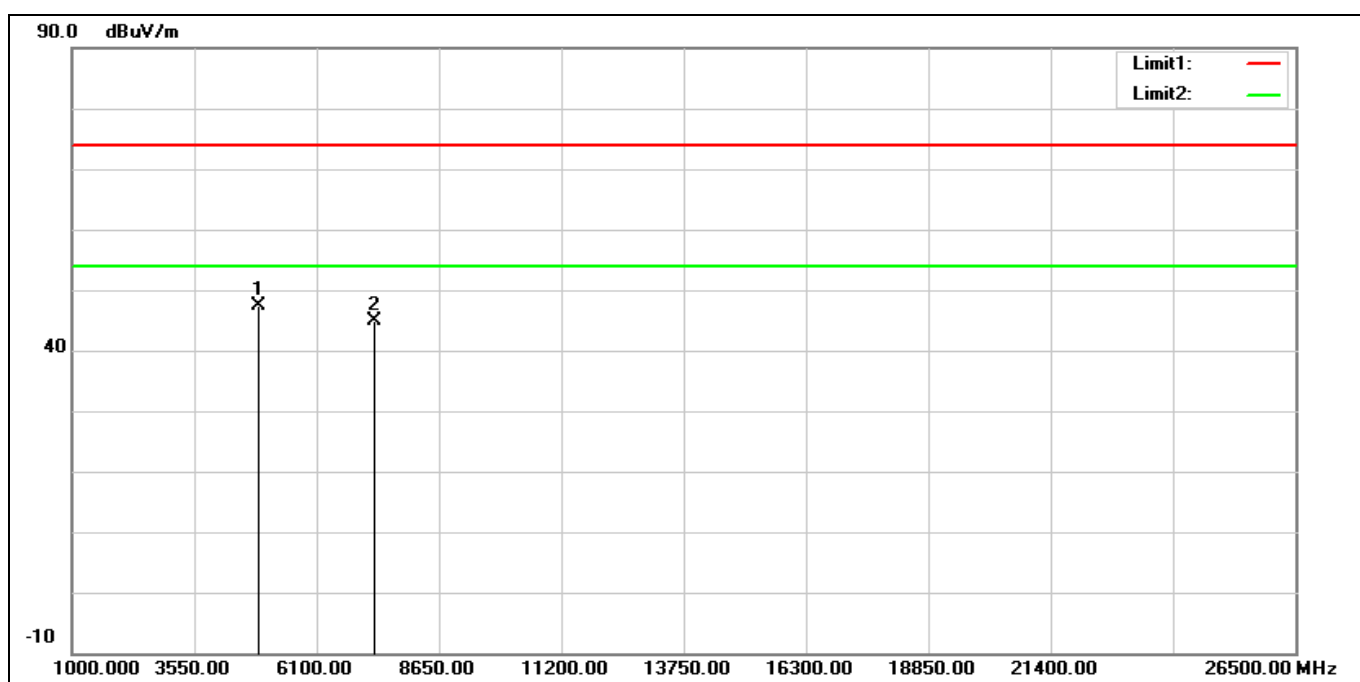
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4804.000	47.52	0.29	47.81	74.00	-26.19	peak
2	7206.000	36.58	7.82	44.40	74.00	-29.60	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



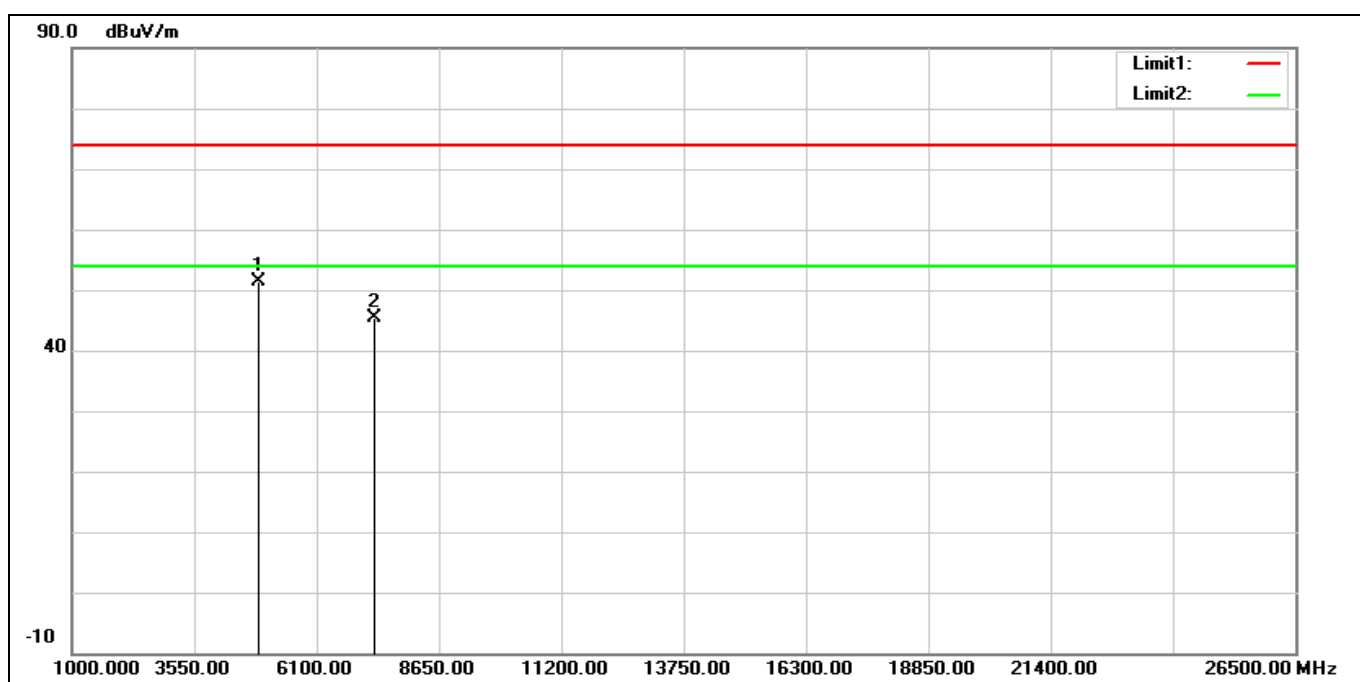
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4804.000	51.08	0.29	51.37	74.00	-22.63	peak
2	7206.000	36.40	7.82	44.22	74.00	-29.78	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2441 MHz		
Remark:			



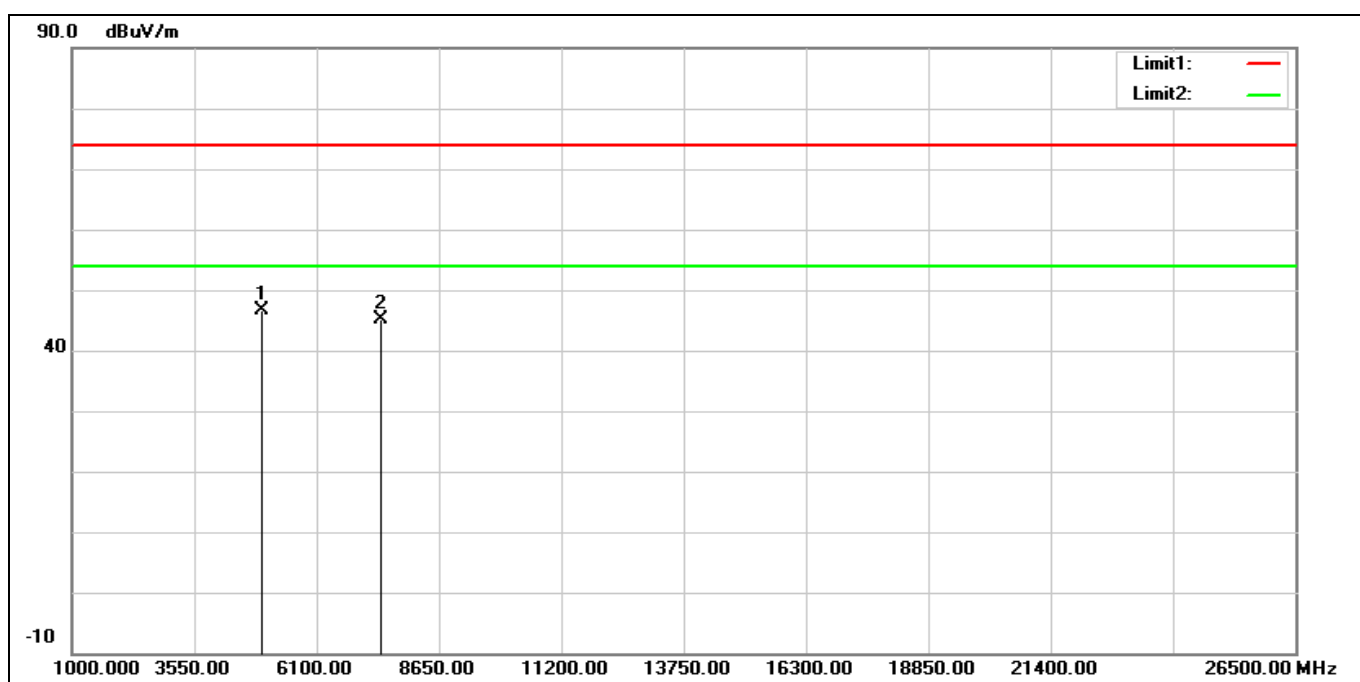
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4882.000	47.10	0.38	47.48	74.00	-26.52	peak
2	7323.000	36.81	7.99	44.80	74.00	-29.20	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2441 MHz		
Remark:			



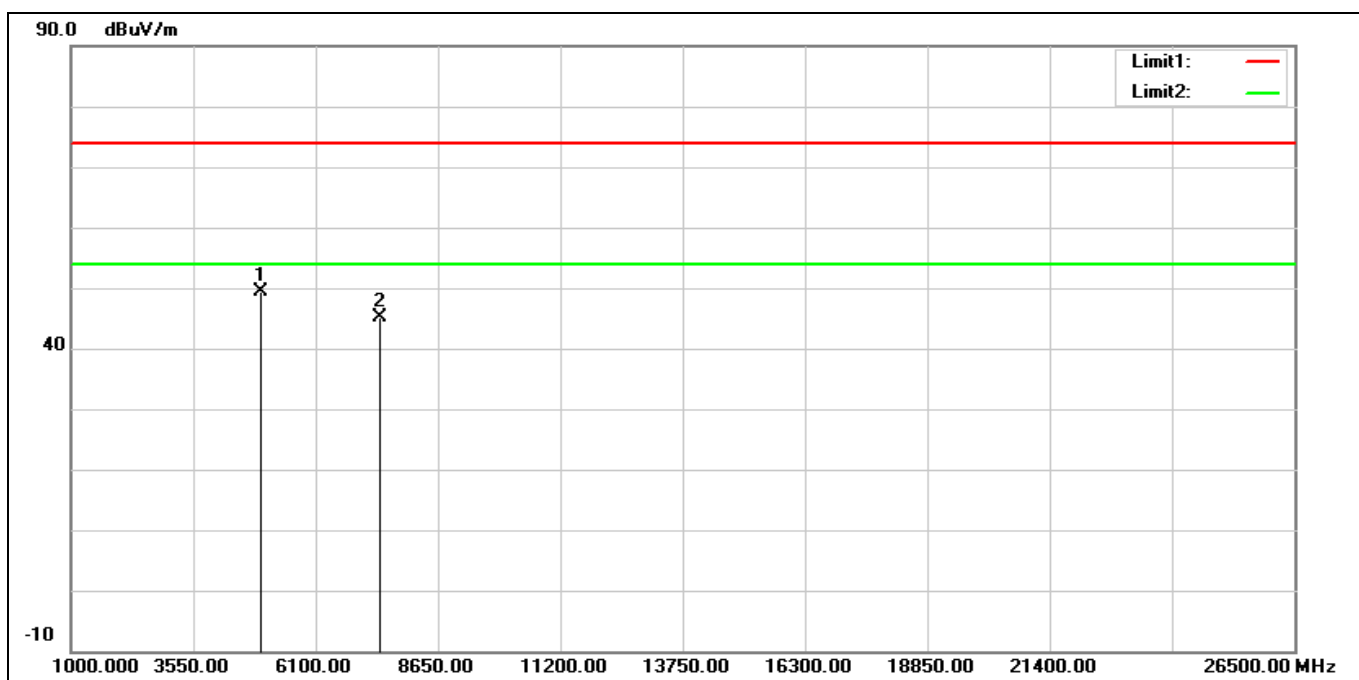
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4882.000	51.09	0.38	51.47	74.00	-22.53	peak
2	7323.000	37.30	7.99	45.29	74.00	-28.71	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



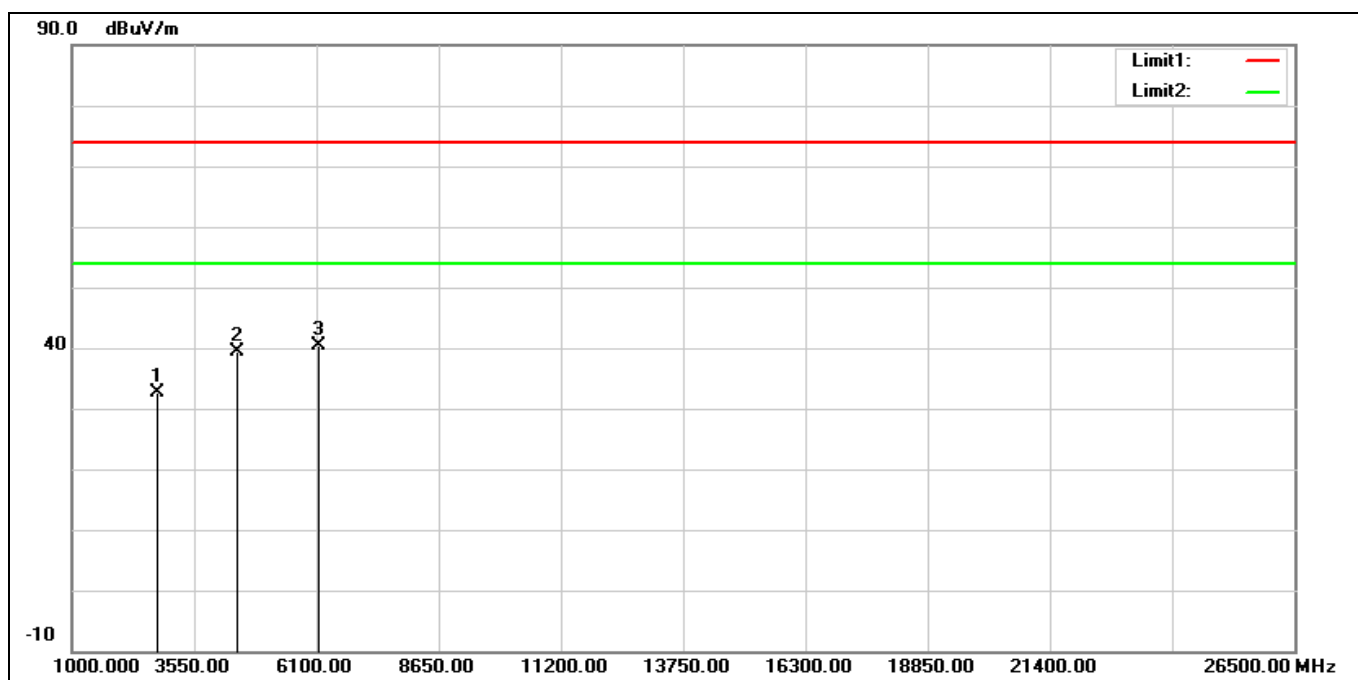
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4960.000	46.04	0.57	46.61	74.00	-27.39	peak
2	7440.000	36.88	8.34	45.22	74.00	-28.78	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



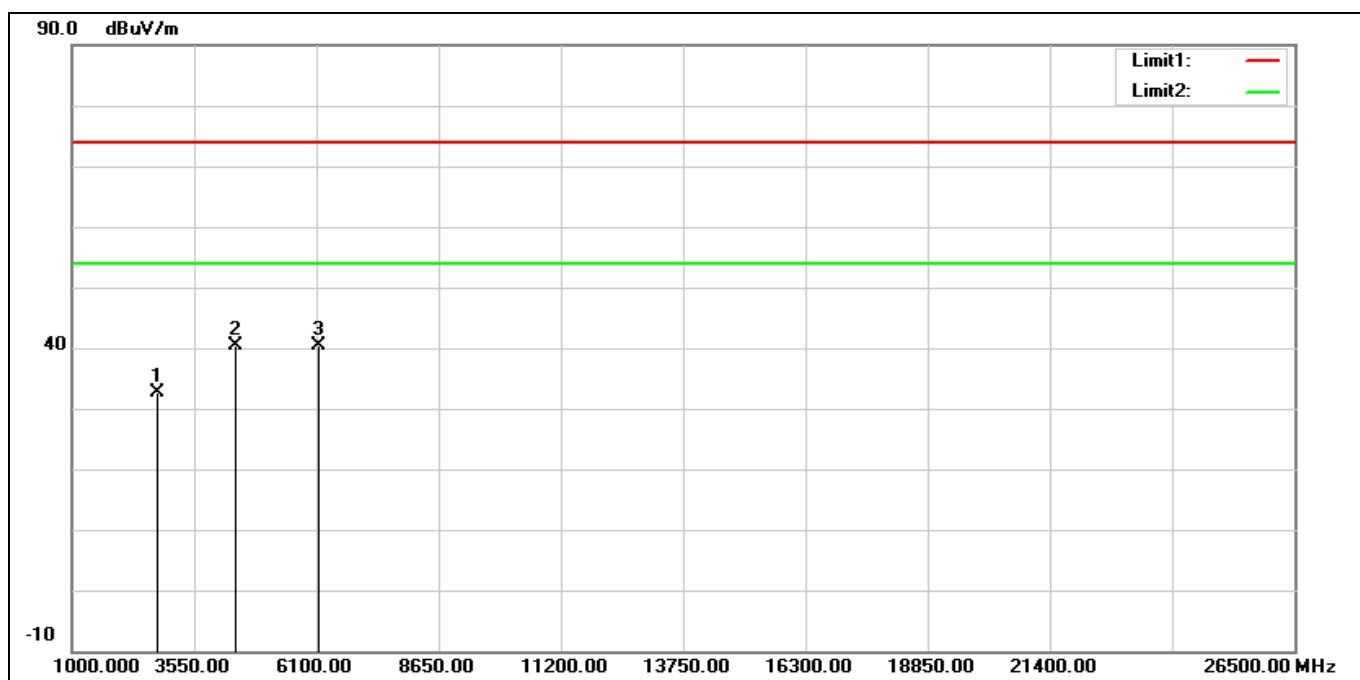
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	4960.000	48.75	0.57	49.32	74.00	-24.68	peak
2	7440.000	36.71	8.34	45.05	74.00	-28.95	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT(ASE) + BT(Kirchhoff)		
Remark:	Simultaneous Transmitting		



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	37.94	-5.38	32.56	74.00	-41.44	peak
2	4451.000	40.49	-1.16	39.33	74.00	-34.67	peak
3*	6151.000	36.50	3.81	40.31	74.00	-33.69	peak

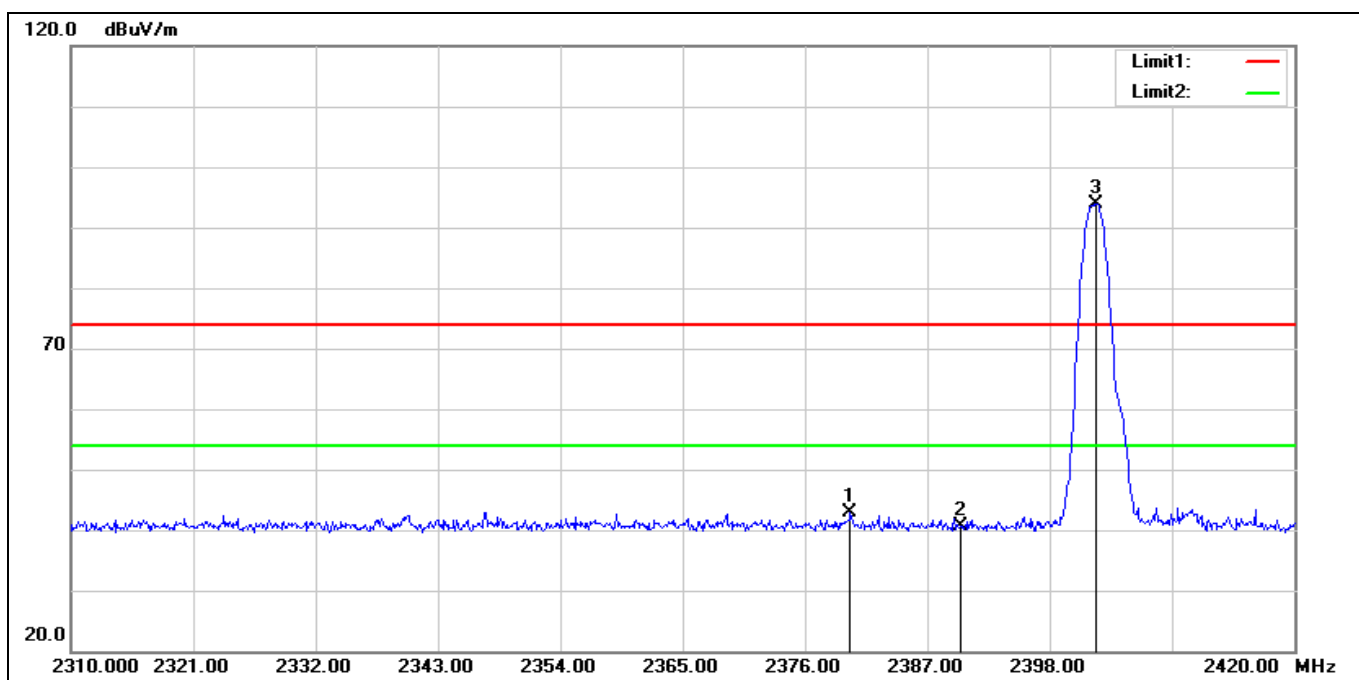
Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT(ASE) + BT(Kirchhoff)		
Remark:	Simultaneous Transmitting		



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2785.000	37.94	-5.38	32.56	74.00	-41.44	peak
2*	4417.000	41.57	-1.19	40.38	74.00	-33.62	peak
3	6151.000	36.50	3.81	40.31	74.00	-33.69	peak

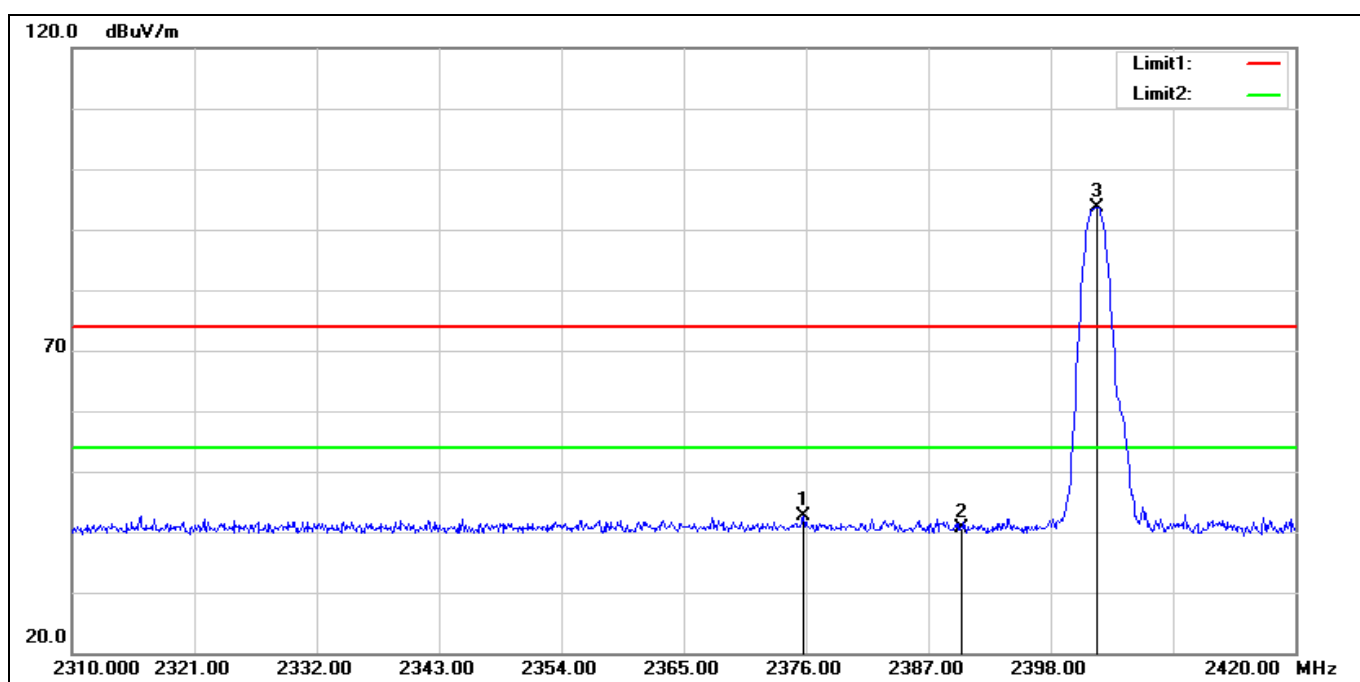
Band Edge

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



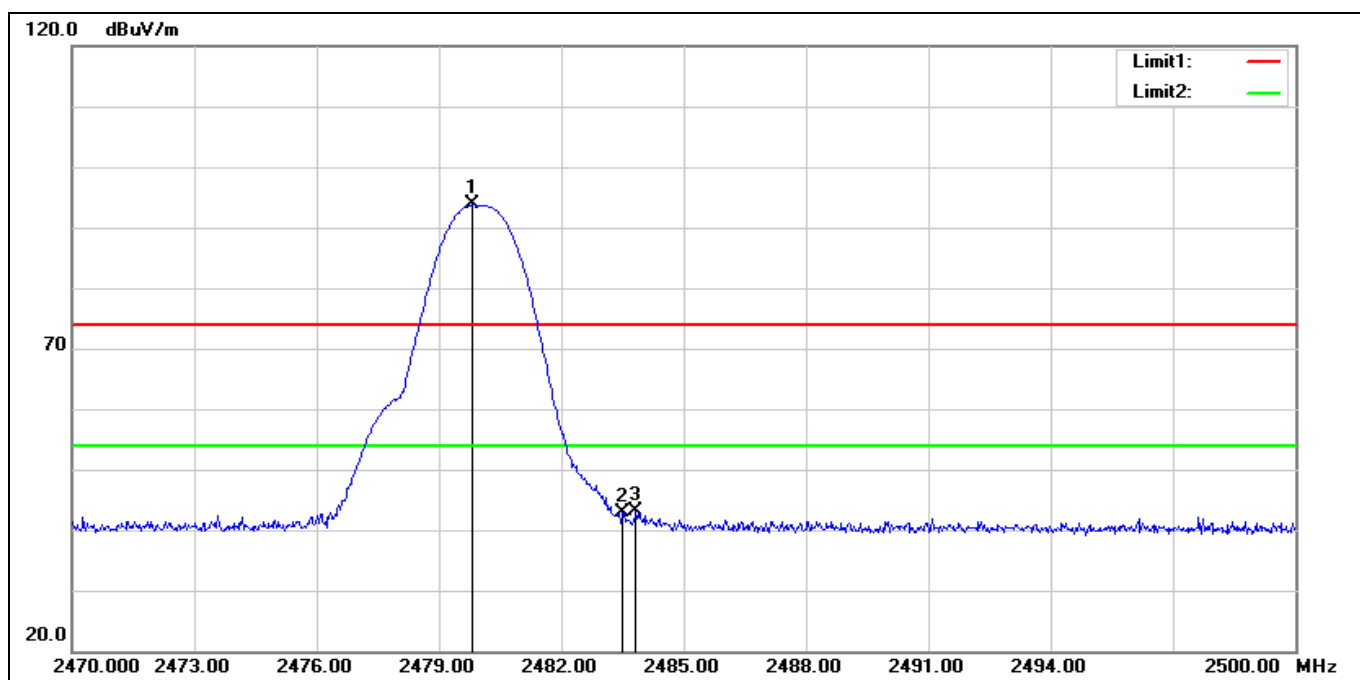
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2380.070	49.06	-6.14	42.92	74.00	-31.08	peak
2	2390.000	46.77	-6.19	40.58	74.00	-33.42	peak
3*	2402.180	100.16	-6.25	93.91	74.00	19.91	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2402 MHz		
Remark:			



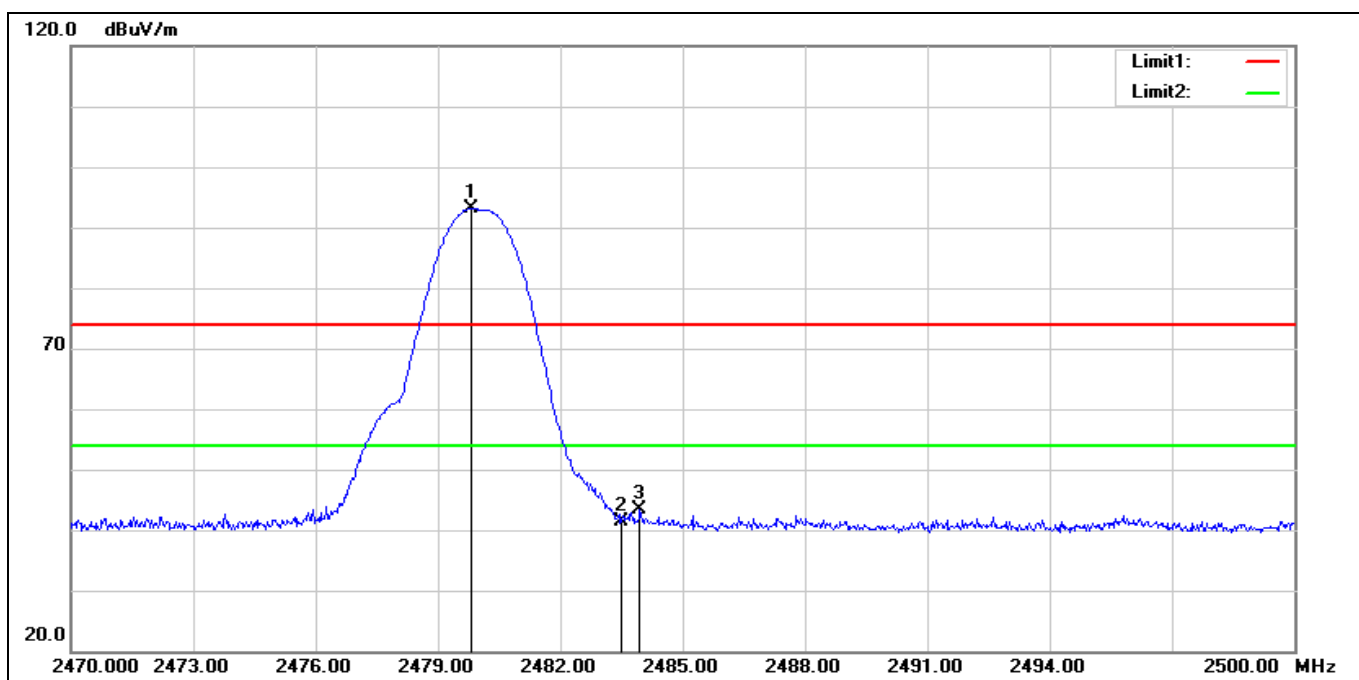
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2375.780	48.66	-6.11	42.55	74.00	-31.45	peak
2	2390.000	46.78	-6.19	40.59	74.00	-33.41	peak
3*	2402.180	99.94	-6.25	93.69	74.00	19.69	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



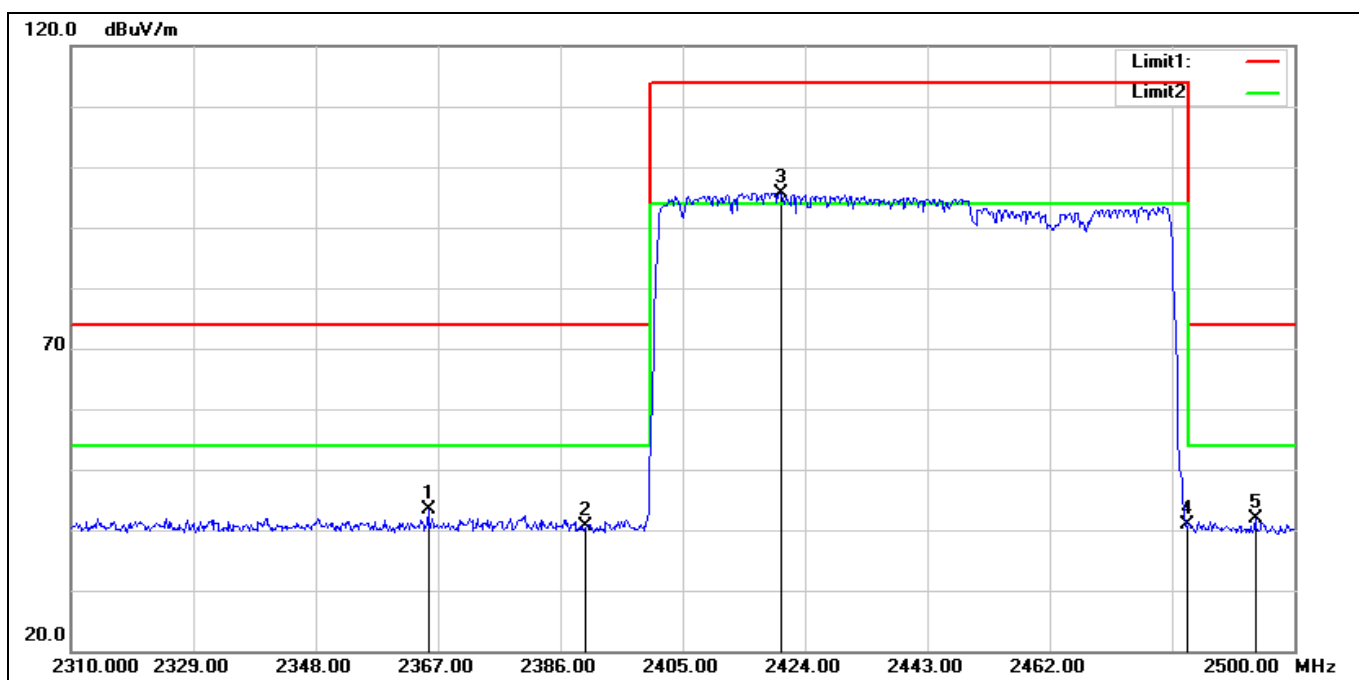
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.810	100.24	-6.46	93.78	74.00	19.78	peak
2	2483.500	49.33	-6.46	42.87	74.00	-31.13	peak
3	2483.830	49.68	-6.47	43.21	74.00	-30.79	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK 2480 MHz		
Remark:			



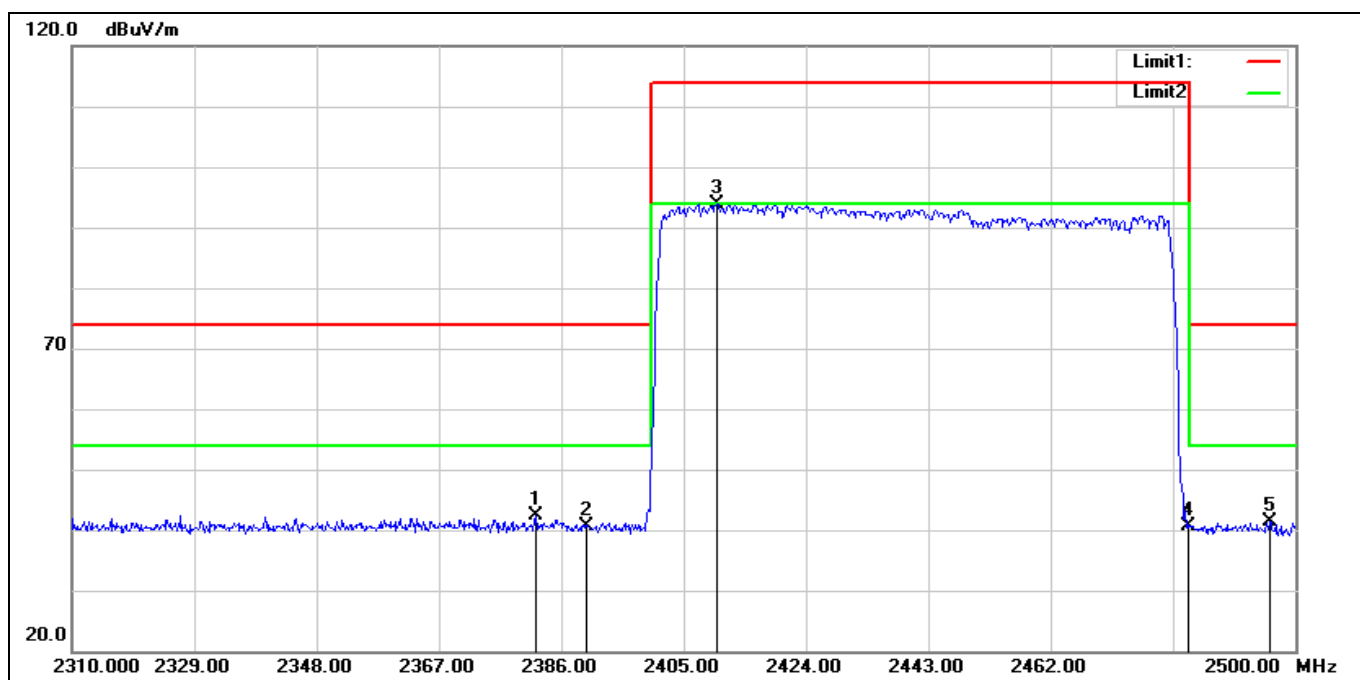
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.810	99.65	-6.46	93.19	74.00	19.19	peak
2	2483.500	47.96	-6.46	41.50	74.00	-32.50	peak
3	2483.950	49.82	-6.47	43.35	74.00	-30.65	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_GFSK_Hopping		
Remark:			



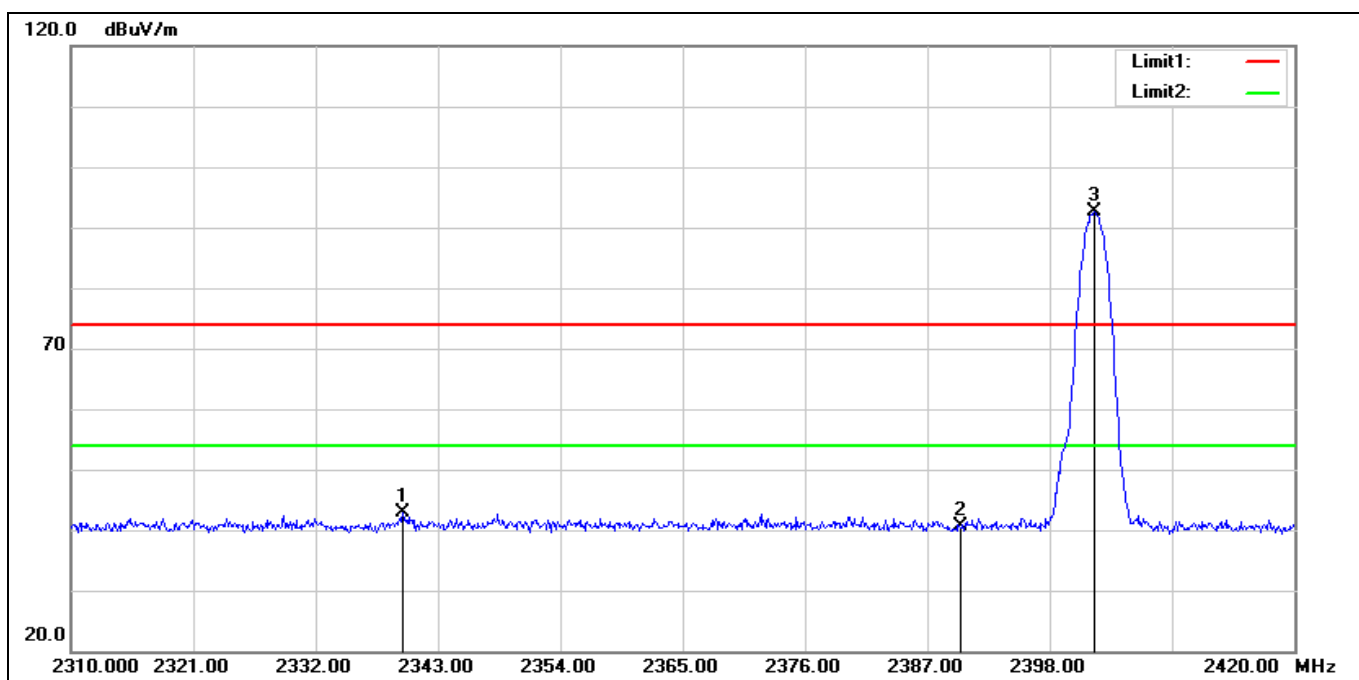
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2365.480	49.55	-6.06	43.49	74.00	-30.51	peak
2	2390.000	46.83	-6.19	40.64	74.00	-33.36	peak
3*	2420.200	101.98	-6.29	95.69	114.00	-18.31	peak
4	2483.500	47.44	-6.46	40.98	74.00	-33.02	peak
5	2493.920	48.28	-6.50	41.78	74.00	-32.22	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_GFSK_Hopping		
Remark:			



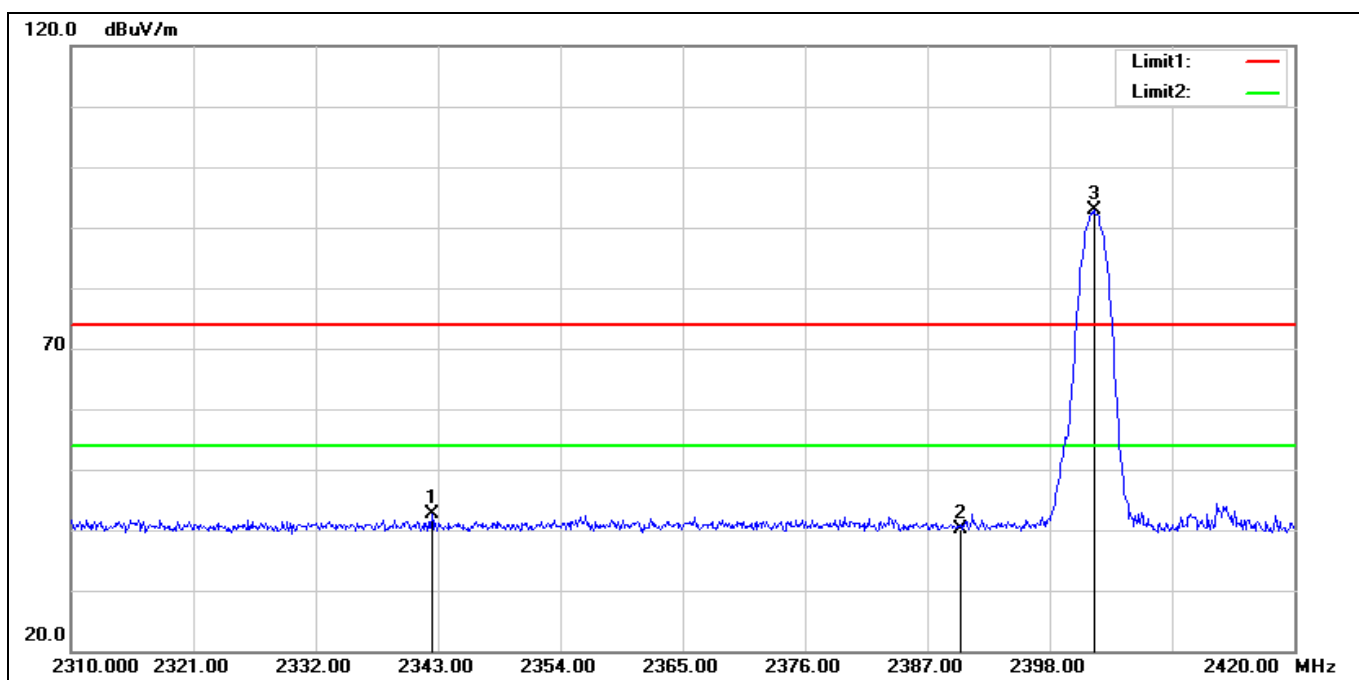
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2382.010	48.47	-6.15	42.32	74.00	-31.68	peak
2	2390.000	46.72	-6.19	40.53	74.00	-33.47	peak
3*	2410.130	100.17	-6.26	93.91	114.00	-20.09	peak
4	2483.500	47.04	-6.46	40.58	74.00	-33.42	peak
5	2496.010	47.78	-6.49	41.29	74.00	-32.71	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



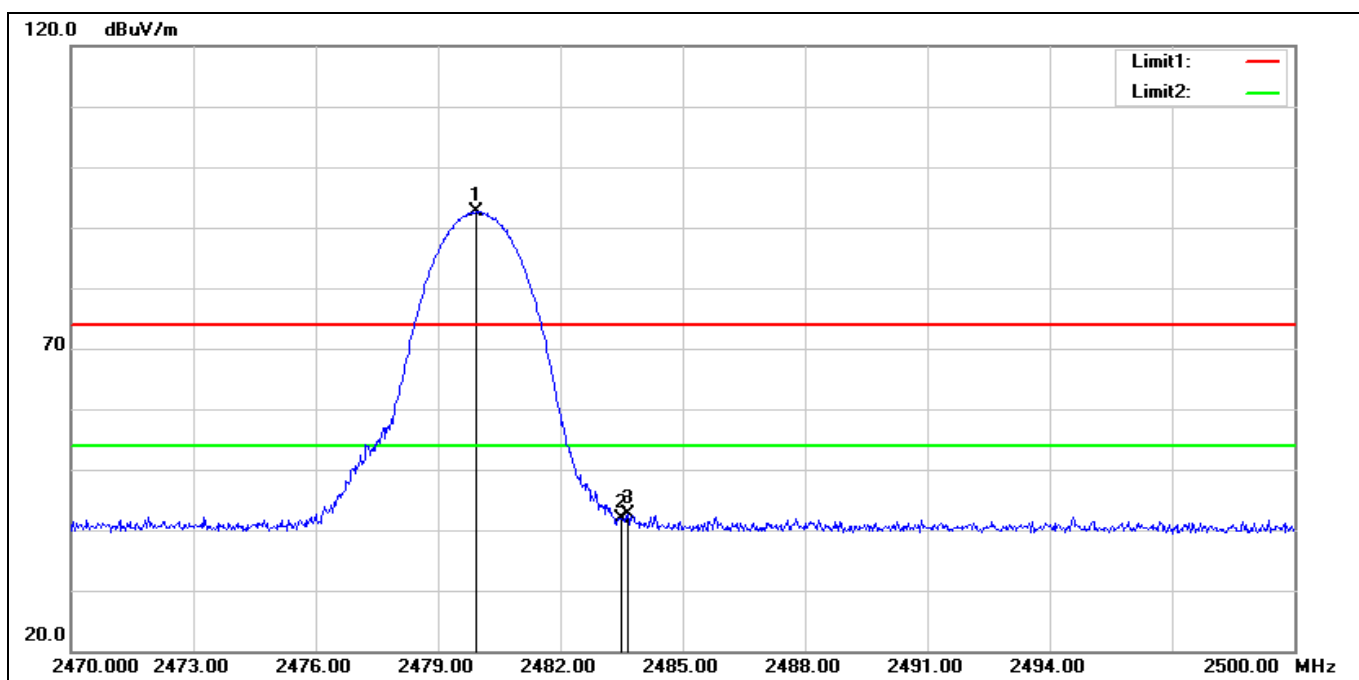
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2339.810	49.01	-6.03	42.98	74.00	-31.02	peak
2	2390.000	46.94	-6.19	40.75	74.00	-33.25	peak
3*	2401.960	98.92	-6.25	92.67	74.00	18.67	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2402 MHz		
Remark:			



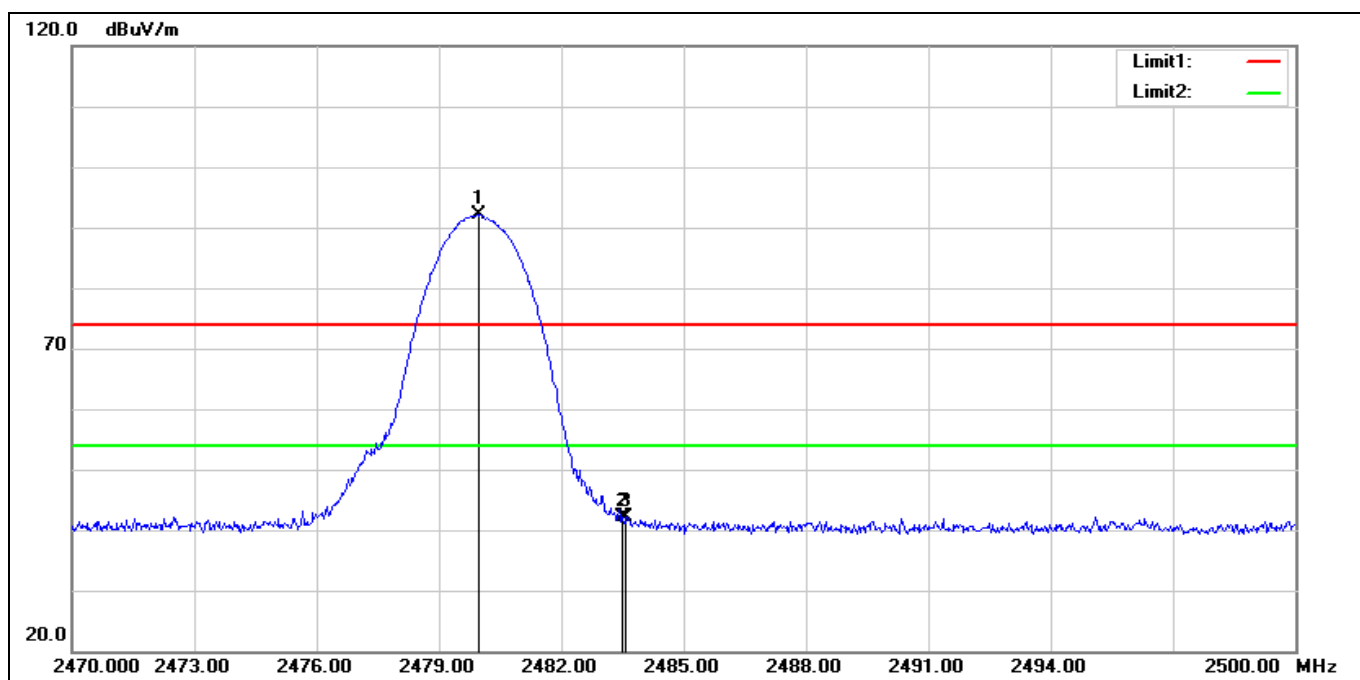
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2342.450	48.58	-6.03	42.55	74.00	-31.45	peak
2	2390.000	46.41	-6.19	40.22	74.00	-33.78	peak
3*	2401.960	99.04	-6.25	92.79	74.00	18.79	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



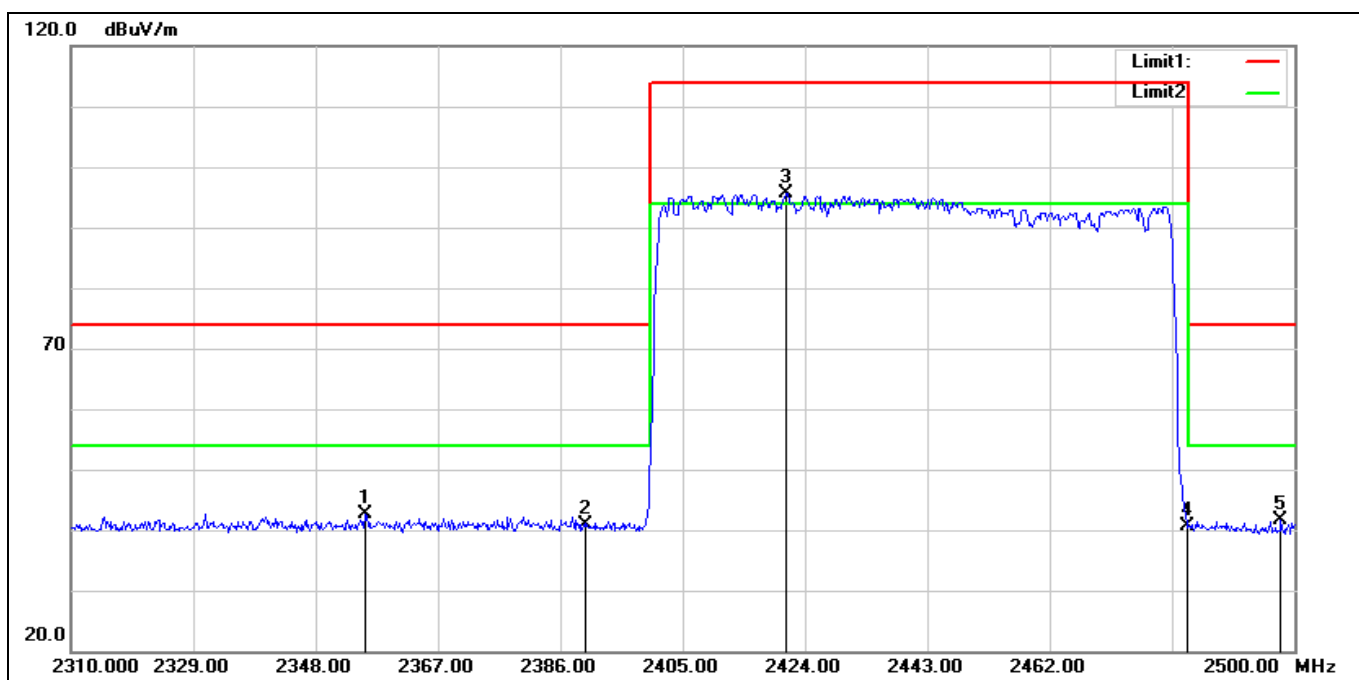
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.930	99.21	-6.46	92.75	74.00	18.75	peak
2	2483.500	48.29	-6.46	41.83	74.00	-32.17	peak
3	2483.650	49.10	-6.46	42.64	74.00	-31.36	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK 2480 MHz		
Remark:			



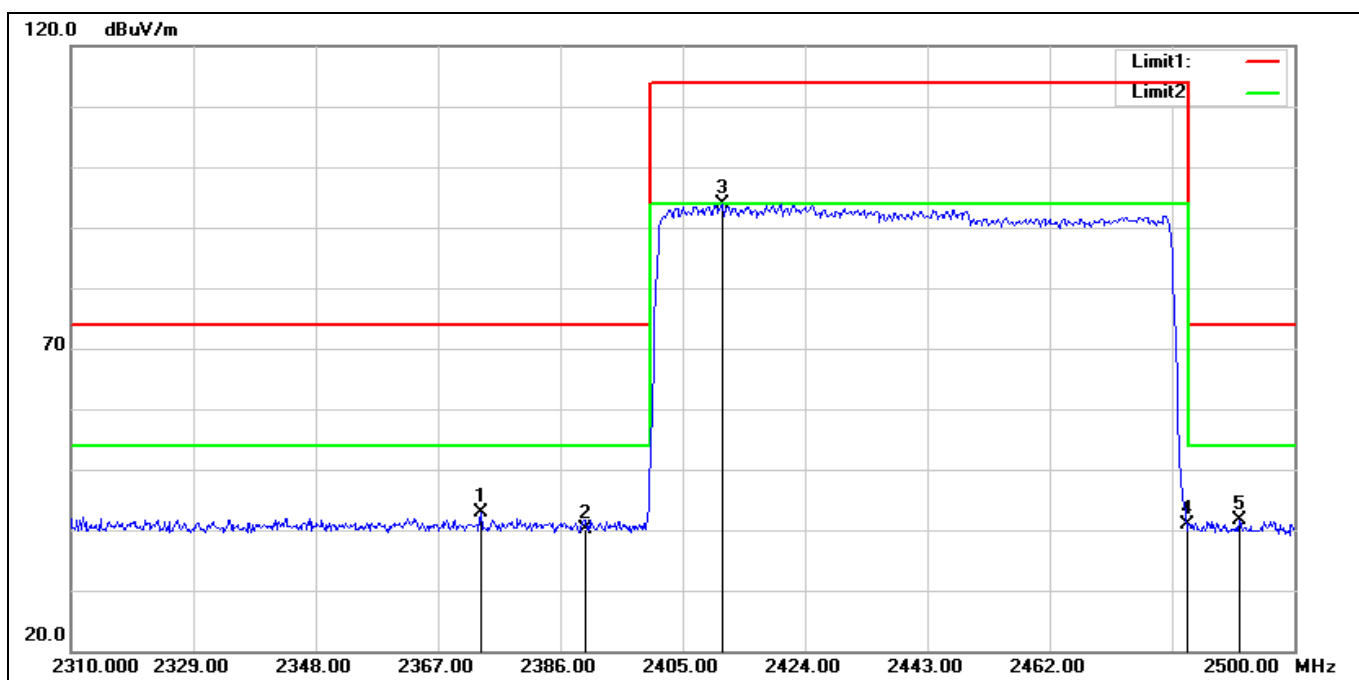
No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1*	2479.960	98.65	-6.46	92.19	74.00	18.19	peak
2	2483.500	48.47	-6.46	42.01	74.00	-31.99	peak
3	2483.590	48.58	-6.46	42.12	74.00	-31.88	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Horizontal		
Test Mode:	BT_8DPSK_Hopping		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2355.600	48.69	-6.02	42.67	74.00	-31.33	peak
2	2390.000	47.03	-6.19	40.84	74.00	-33.16	peak
3*	2421.150	101.83	-6.29	95.54	114.00	-18.46	peak
4	2483.500	47.20	-6.46	40.74	74.00	-33.26	peak
5	2497.910	48.21	-6.50	41.71	74.00	-32.29	peak

Standard:	Part 15C	Test Site:	966 Chamber
Polarization:	Vertical		
Test Mode:	BT_8DPSK_Hopping		
Remark:			



No.	Frequency (MHz)	Reading (dBuV)	Correction (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2373.650	48.96	-6.11	42.85	74.00	-31.15	peak
2	2390.000	46.24	-6.19	40.05	74.00	-33.95	peak
3*	2411.080	100.04	-6.26	93.78	114.00	-20.22	peak
4	2483.500	47.25	-6.46	40.79	74.00	-33.21	peak
5	2491.450	48.11	-6.49	41.62	74.00	-32.38	peak

---END---