Report No.: HR/2020/C000403
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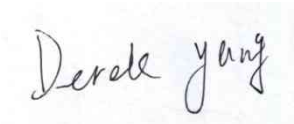
FCC TEST REPORT

Application No.:	HR/2020/C0004
Applicant:	Honor Device Co., Ltd.
Address of Applicant	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China
Manufacturer:	Honor Device Co., Ltd.
Address of Manufacturer	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China
EUT Description:	Smart Watch
Model No.:	KAN-B39
FCC ID:	2AYGCKAN-B39
Trade Mark:	HONOR
Standards:	47 CFR FCC Part 2, Subpart J 47 CFR Part 15, Subpart C
Date of Receipt:	2020/12/12
Date of Test:	2020/12/12 to 2020/12/24
Date of Issue:	2021/2/22
Test Result :	**PASS ***

* In the configuration tested, the EUT detailed in this report complied with the standards specified above.

Authorized Signature:



Derek Yang
Wireless Laboratory Manager

1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2020-12-24		Original
02		2021-2-22		Comment Revised

Authorized for issue by:				
Tested By		Mike Hu **(Mike Hu) /Project Engineer**		
Checked By		David Chen **(David Chen) /Reviewer**		

2 Test Summary

Test Item	Test Requirement	Test Method	Test Result	Result
AC Power Line Conducted Emission	15.207	ANSI C63.10 2013	Clause 4.2	PASS
Conducted Output Power	15.247 (b)(3)	ANSI C63.10 2013	Clause 4.3	PASS
DTS (6 dB) Bandwidth & 99% Occupied Bandwidth	15.247 (a)(2)	ANSI C63.10 2013	Clause 4.4	PASS
Power Spectral Density	15.247 (e)	ANSI C63.10 2013	Clause 4.5	PASS
Band-edge for RF Conducted Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.6	PASS
RF Conducted Spurious Emissions	15.247(d)	ANSI C63.10 2013	Clause 4.7	PASS
Radiated Spurious Emissions	15.205/15.209	ANSI C63.10 2013	Clause 4.8	PASS
Restricted bands around fundamental frequency (Radiated Emission)	15.205/15.209	ANSI C63.10 2013	Clause 4.9	PASS

Contents

3 General Information

3.1 Details of Client

Applicant:	Honor Device Co., Ltd.
Address of Applicant	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China
Manufacturer:	Honor Device Co., Ltd.
Address of Manufacturer	Shum Yip Sky Park, No. 8089, Hongli West Road, Shenzhen, Guangdong, China

3.2 Test Location

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China
Post code:	518057

3.3 Test Facility

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

• CNAS (No. CNAS L2929)

CNAS has accredited SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab to ISO/IEC 17025:2017 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• A2LA (Certificate No. 3816.01)

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

• VCCI

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

• FCC –Designation Number: CN1178

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

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Industry Canada (IC)

Two 3m Semi-anechoic chambers and the 10m Semi-anechoic chamber of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch EMC Lab have been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 4620C-1, 4620C-2, 4620C-3.

3.4 General Description of EUT

EUT Description:	Smart Watch
Model No.:	KAN-B39
Trade Mark:	HONOR
Hardware Version:	Ajc8ac
Software Version:	10.1.2.52SP1
Operation Frequency:	2400MHz~2483.5MHz fc = 2402 MHz + N * 2 MHz, where: -fc = “Operating Frequency” in MHz, -N = “Channel Number” with the range from 0 to 39.
Bluetooth version:	Bluetooth V5.1 LE
Modulation Type:	GFSK
Number of Channel:	40
Sample Type:	☒ Portable Device, ☐ Module
Antenna Type:	☐ External, ☒ Integrated
Antenna Gain:	-5.2dBi
Power Supply	☐ AC/DC Adapter; ☒ Battery ☐ PoE:; ☐ Other:

Operation Frequency of each channel							
Channel	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**	**Channel**	**Frequency**
0	2402MHz	10	2422MHz	20	2442MHz	30	2462MHz
1	2404MHz	11	2424MHz	21	2444MHz	31	2464MHz
2	2406MHz	12	2426MHz	22	2446MHz	32	2466MHz
3	2408MHz	13	2428MHz	23	2448MHz	33	2468MHz
4	2410MHz	14	2430MHz	24	2450MHz	34	2470MHz
5	2412MHz	15	2432MHz	25	2452MHz	35	2472MHz
6	2414MHz	16	2434MHz	26	2454MHz	36	2474MHz
7	2416MHz	17	2436MHz	27	2456MHz	37	2476MHz
8	2418MHz	18	2438MHz	28	2458MHz	38	2478MHz
9	2420MHz	19	2440MHz	29	2460MHz	39	2480MHz

Remark:
In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The Lowest channel(CH0)	2402MHz
The Middle channel(CH19)	2440MHz
The Highest channel(CH39)	2480MHz

3.5 Test Environment

Operating Environment:	
Temperature:	25.0 ˚C
Humidity:	50 % RH
Atmospheric Pressure:	101.30 KPa

3.6 Description of Support Units

The EUT has been tested independent unit.

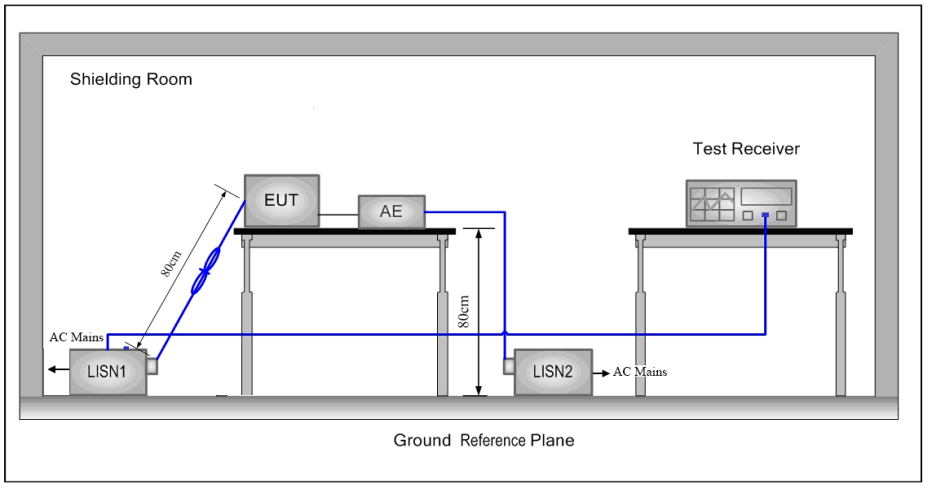
4 Test results and Measurement Data

4.1 Antenna Requirement

Standard requirement:	47 CFR Part 15C Section 15.203 /247(c)
15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. 15.247(b) (4) requirement: The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.	
The antenna is integrated on the main PCB and no consideration of replacement. The best case gain of the antenna is -5.2dBi.	

4.2 AC Power Line Conducted Emissions

Test Requirement:	47 CFR Part 15C Section 15.207		
Test Method:	ANSI C63.10: 2013		
Test Frequency Range:	150kHz to 30MHz		
Limit:	Frequency range (MHz)	Limit (dBuV)	
		Quasi-peak	Average
	0.15-0.5	66 to 56*	56 to 46*
	0.5-5	56	46
	5-30	60	50
	* Decreases with the logarithm of the frequency.		
Test Procedure:	1) The mains terminal disturbance voltage test was conducted in a shielded room. 2) The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT were connected to a second LISN 2, which was bonded to the ground reference plane in the same way as the LISN 1 for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded. 3) The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane. 4) The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN 1 was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN 1 and the EUT. All other units of the EUT and associated equipment was at least 0.8 m from the LISN 2. 5) In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2013 on conducted measurement.		

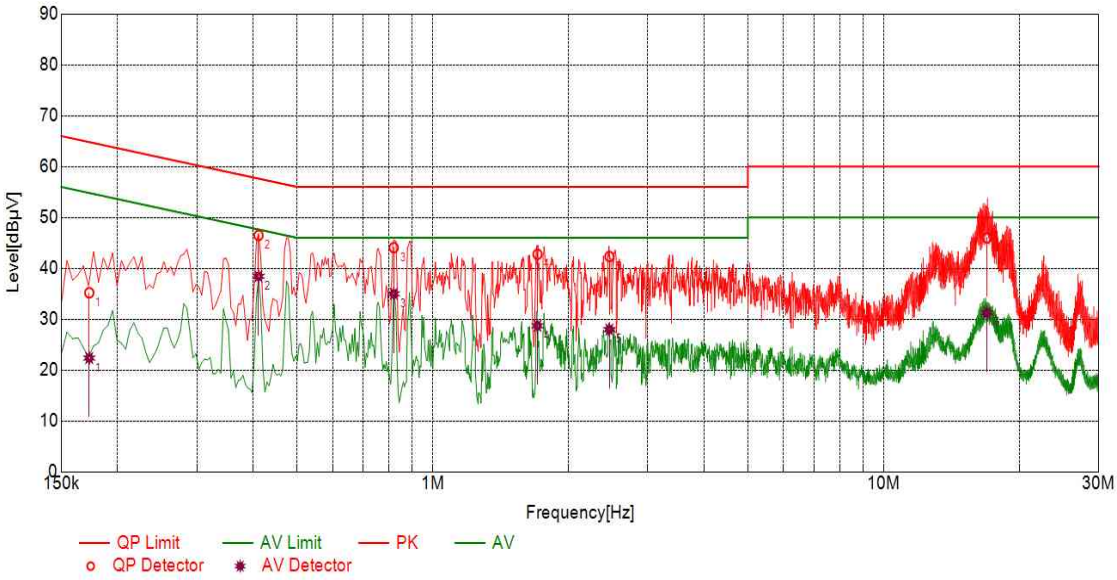
Test Setup:	
Test Mode:	Transmitting with GFSK modulation. Charge +Transmitting mode.
Instruments Used:	Refer to section 6 for details.
Test Results:	Pass

Measurement Data

An initial pre-scan was performed on the live and neutral lines with peak detector.

Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission were detected.

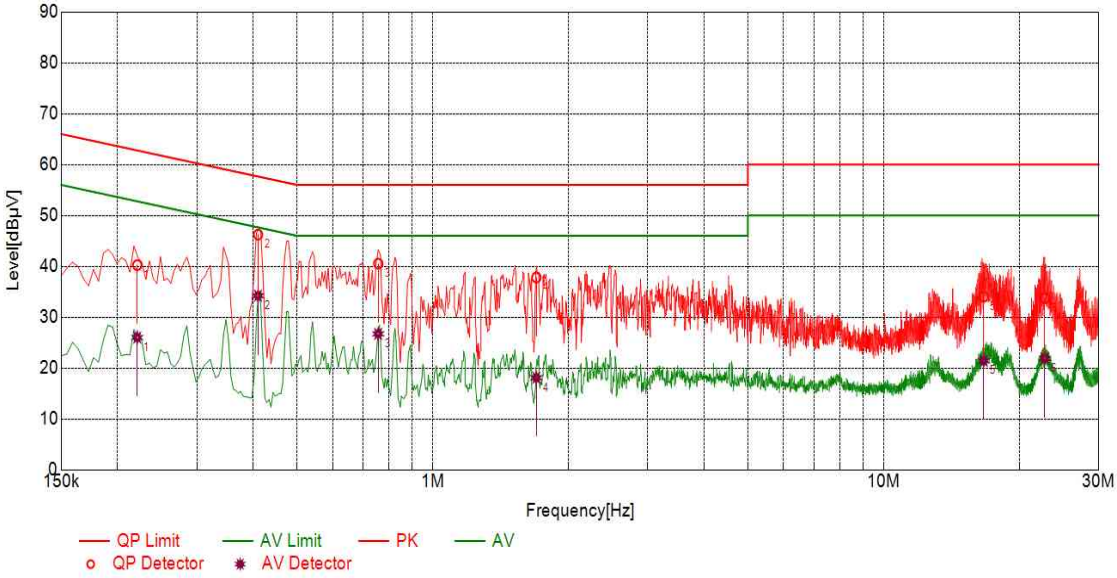
Live Line:



Test Graph

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Type
1	0.1731	10.10	35.19	64.81	29.62	22.36	54.81	32.45	L
2	0.4109	10.10	46.46	57.63	11.17	38.42	47.63	9.21	L
3	0.8197	10.10	44.06	56.00	11.94	34.99	46.00	11.01	L
4	1.7074	10.10	42.76	56.00	13.24	28.71	46.00	17.29	L
5	2.4650	10.10	42.32	56.00	13.68	27.96	46.00	18.04	L
6	16.9583	10.11	46.00	60.00	14.00	31.26	50.00	18.74	L

Neutral Line:



Test Graph

Final Data List									
NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV]	QP Limit [dBµV]	QP Margin [dB]	AV Value [dBµV]	AV Limit [dBµV]	AV Margin [dB]	Type
1	0.2212	10.10	40.24	62.77	22.53	26.01	52.77	26.76	N
2	0.4100	10.10	46.24	57.65	11.41	34.22	47.65	13.43	N
3	0.7571	10.10	40.53	56.00	15.47	26.73	46.00	19.27	N
4	1.6977	10.10	37.81	56.00	18.19	18.10	46.00	27.90	N
5	16.6788	10.11	34.02	60.00	25.98	21.42	50.00	28.58	N
6	22.7842	10.11	33.73	60.00	26.27	21.91	50.00	28.09	N

Remarks:

1. The following Quasi-Peak and Average measurements were performed on the EUT:

2. Final Test Level =Receiver Reading + LISN Factor + Cable Loss.

4.3 Duty Cycle

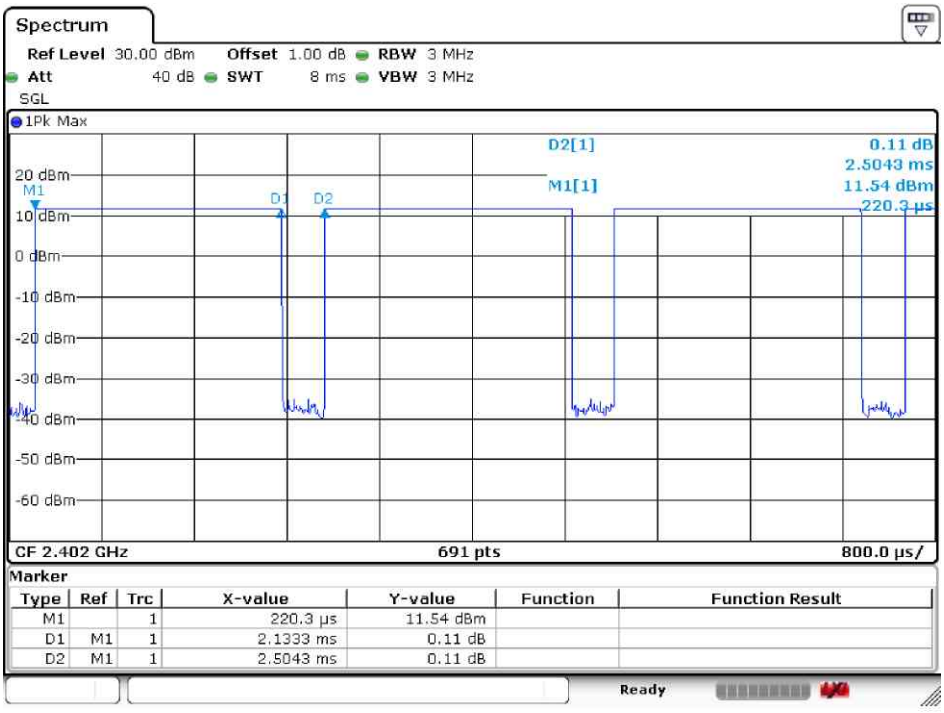
4.3.1 Test Results

Test Mode	TX Freq. [MHz]	Duty cycle [%]
BLE_1M	CH0, CH19, CH39	85.19
BLE_2M	CH0, CH19, CH39	56.88

4.3.2 Test Plots

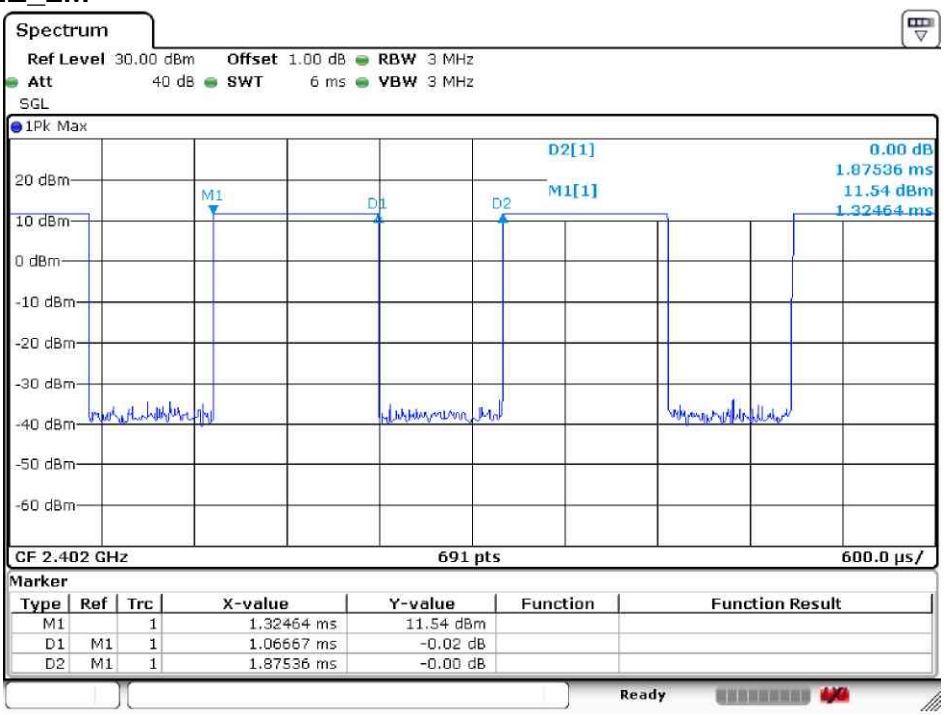
4.3.2.1 ANT1

4.3.2.1.1 BLE_1M

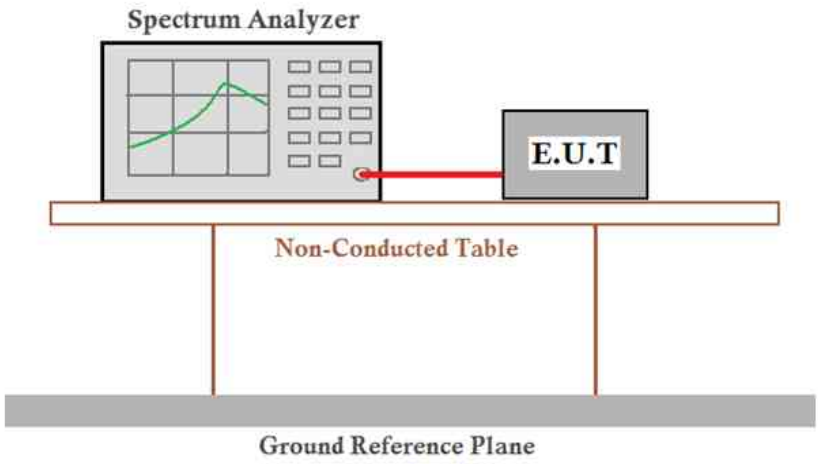


Date: 16.DEC.2020 10:31:57

4.3.2.1.2 BLE_2M



4.4 Conducted Output Power

Test Requirement:	47 CFR Part 15C Section 15.247 (b)(3)
Test Method:	ANSI C63.10 :2013 Section 11.9.1.1
Test Setup:	
Test Instruments:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	30dBm
Test Results:	Pass

4.4.1 Test Results

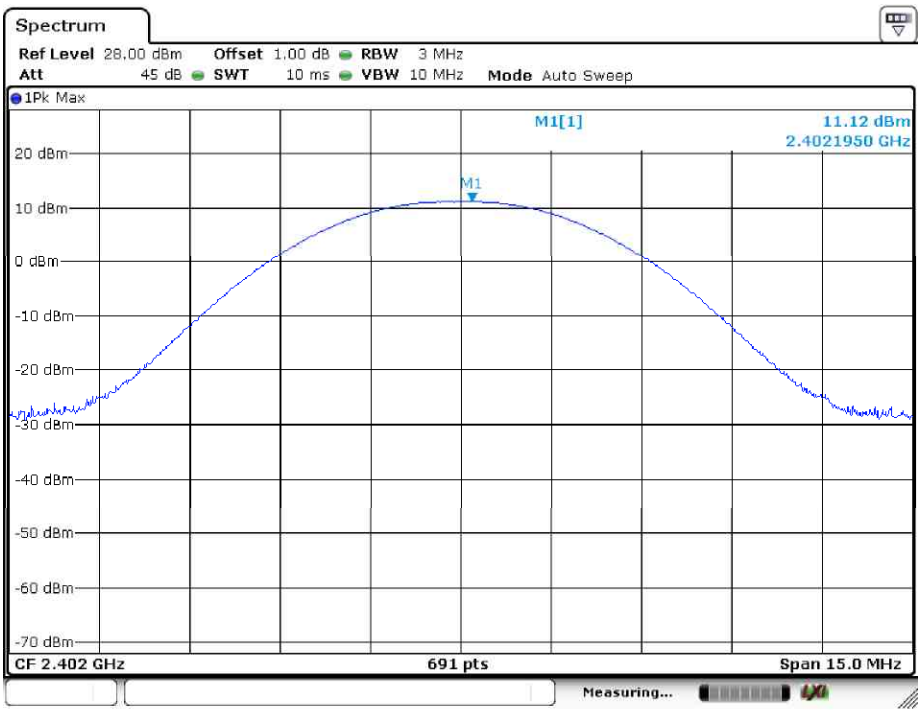
Measurement Data of Peak Power:

GFSK_1M mode			
Test Channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	11.12	30.00	Pass
Middle	11.23	30.00	Pass
Highest	11.20	30.00	Pass

GFSK_2M mode			
Test Channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	11.18	30.00	Pass
Middle	11.27	30.00	Pass
Highest	11.21	30.00	Pass

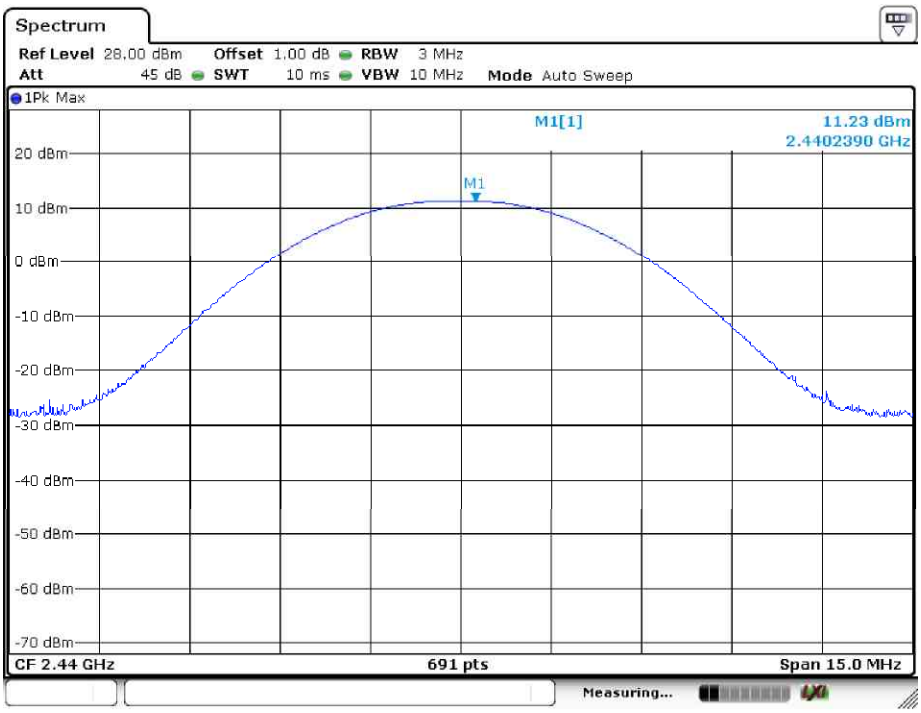
4.4.2 Test Plots

4.4.2.1 GFSK 1M_Lowest Channel



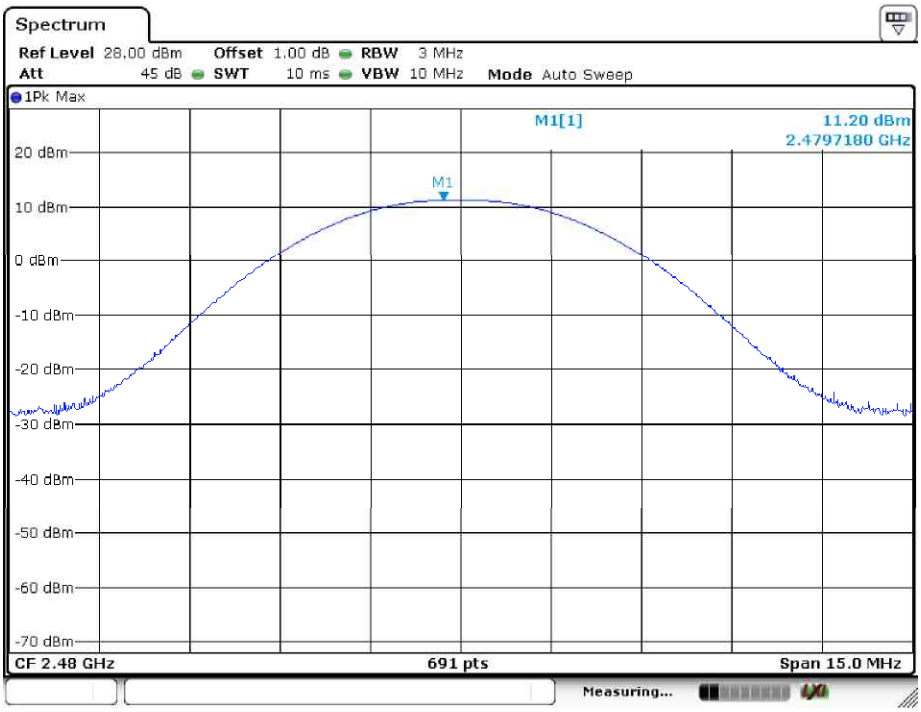
Date: 24.DEC.2020 09:21:28

4.4.2.2 GFSK 1M_Middle Channel



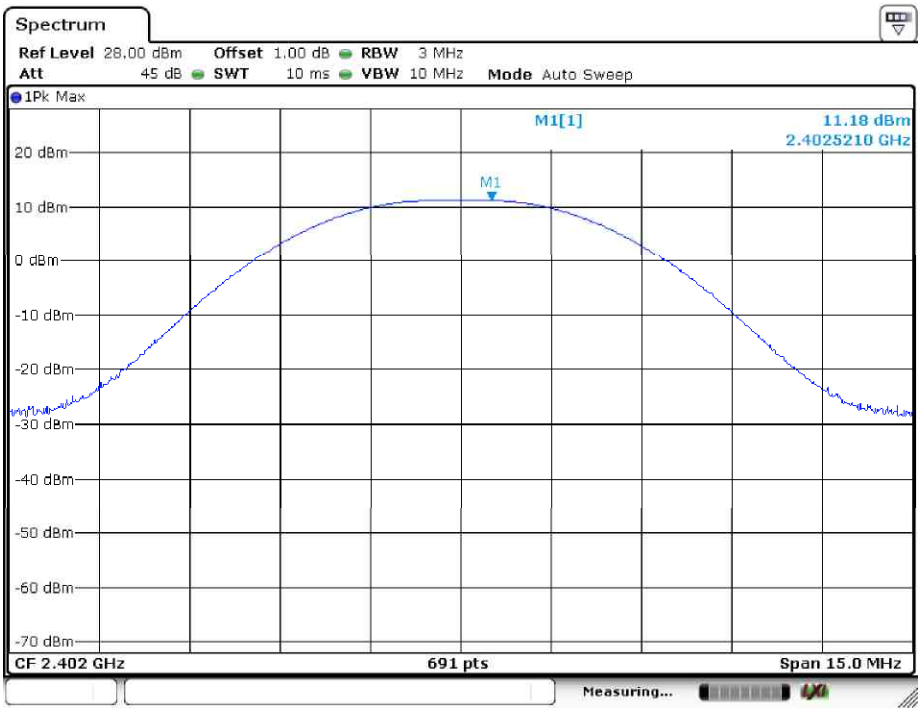
Date: 24.DEC.2020 09:21:13

4.4.2.3 GFSK 1M_Highest Channel



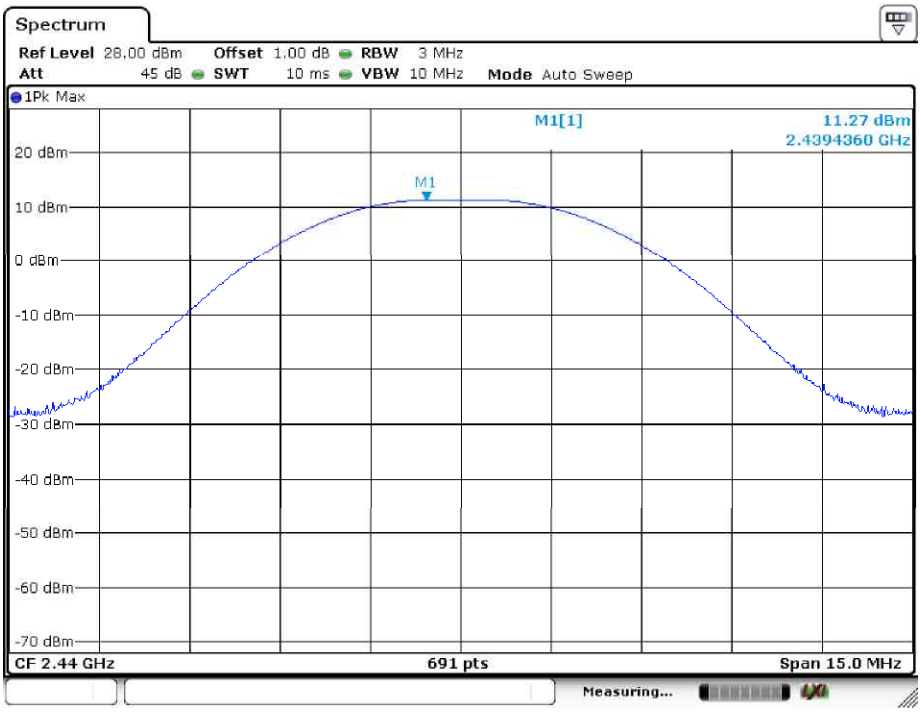
Date: 24.DEC.2020 09:20:32

4.4.2.4 GFSK 2M_Lowest Channel



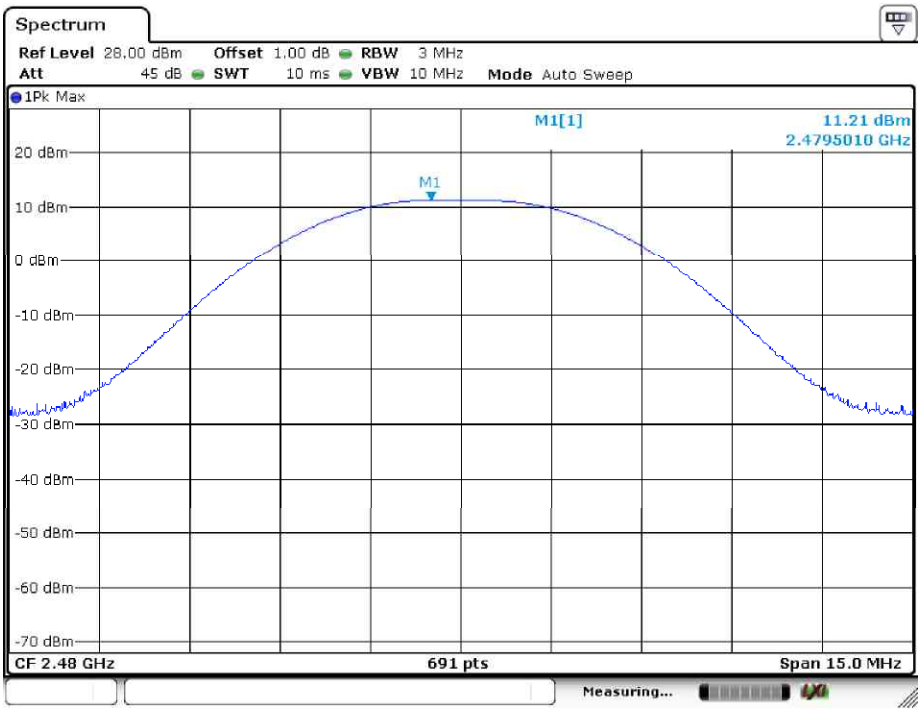
Date: 24.DEC.2020 09:24:46

4.4.2.5 GFSK 2M_Middle Channel



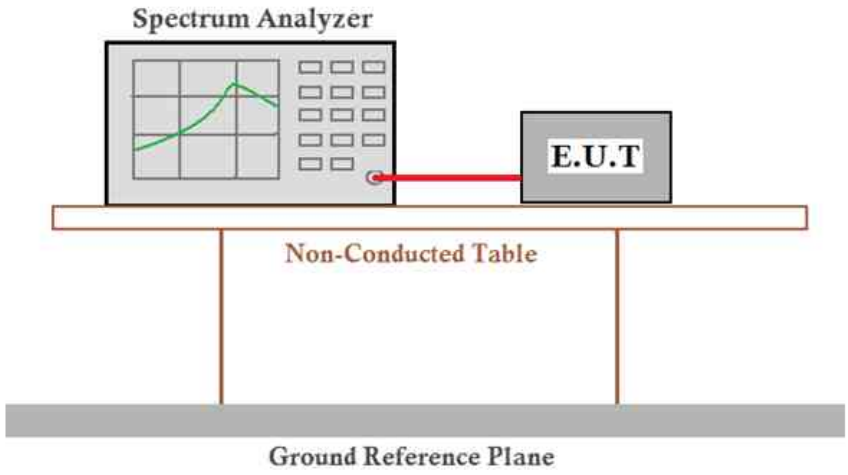
Date: 24.DEC.2020 09:25:05

4.4.2.6 GFSK 2M_Highest Channel



Date: 24.DEC.2020 09:25:53

4.5 DTS (6 dB) Bandwidth & 99% Occupied Bandwidth

Test Requirement:	47 CFR Part 15C Section 15.247 (a)(2)
Test Method:	ANSI C63.10: 2013 Section 11.8 Option 2
Test Setup:	
Instruments Used:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	≥ 500 kHz
Test Results:	Pass

4.5.1 Test Results

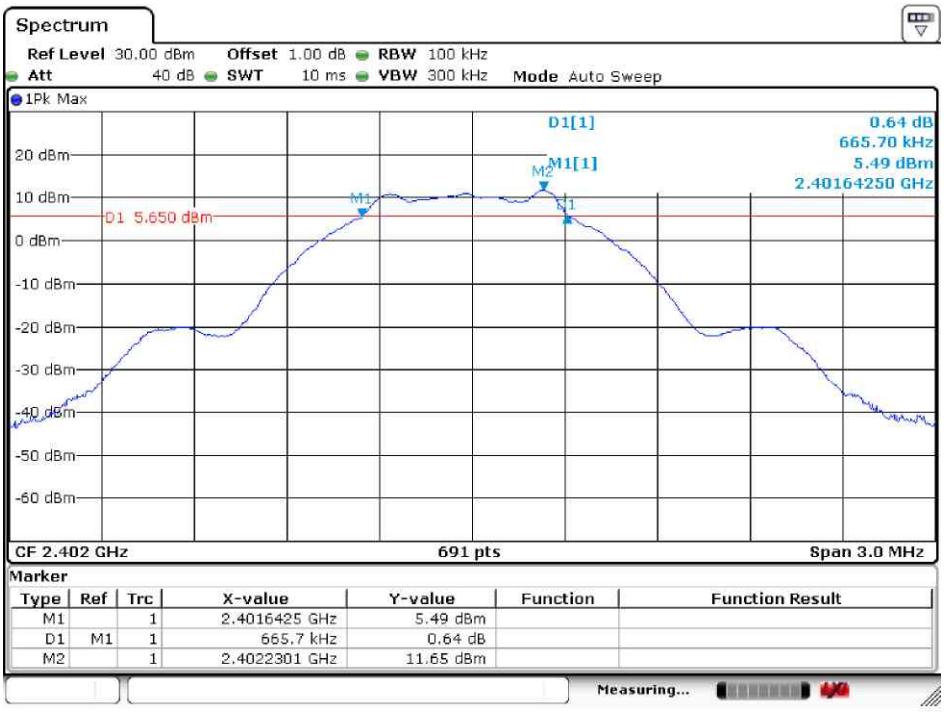
Mode	Test Channel	99% Occupied Bandwidth (MHz)	6dB Emission Bandwidth (MHz)	Limit (kHz)	Result
GFSK_1M	Lowest	1.02	0.67	≥500	Pass
	Middle	1.02	0.67	≥500	Pass
	Highest	1.03	0.67	≥500	Pass

Mode	Test Channel	99% Occupied Bandwidth (MHz)	6dB Emission Bandwidth (MHz)	Limit (kHz)	Result
GFSK_2M	Lowest	2.05	1.24	≥500	Pass
	Middle	2.05	1.25	≥500	Pass
	Highest	2.05	1.24	≥500	Pass

4.5.2 Test Plots

4.5.2.1 GFSK 1M_Lowest Channel

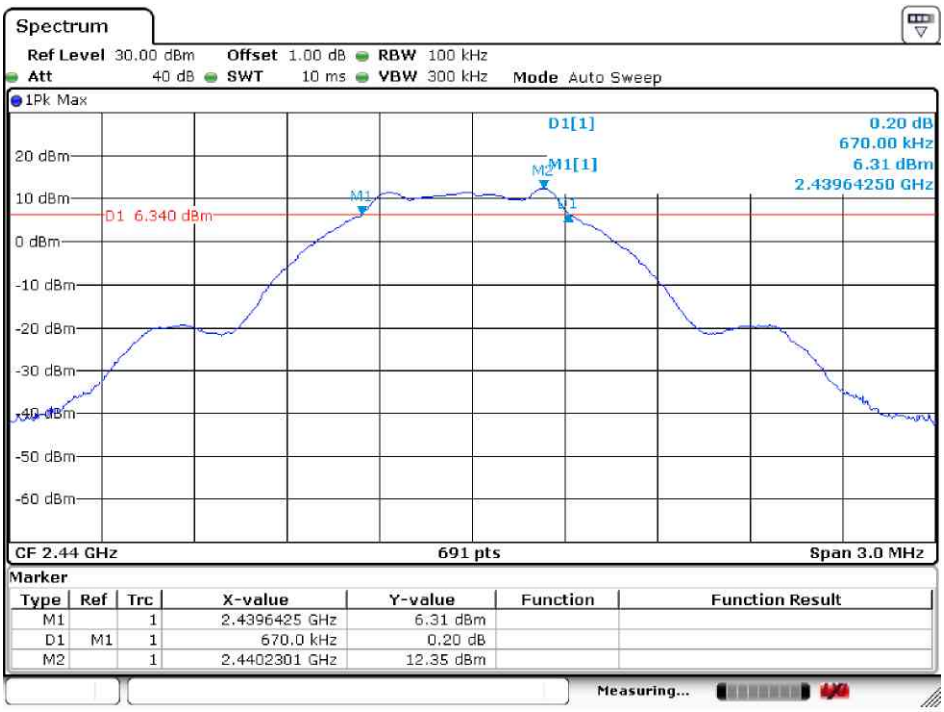
Date: 16.DEC.2020 10:30:01



Date: 16.DEC.2020 10:30:26

4.5.2.2 GFSK 1M_Middle Channel

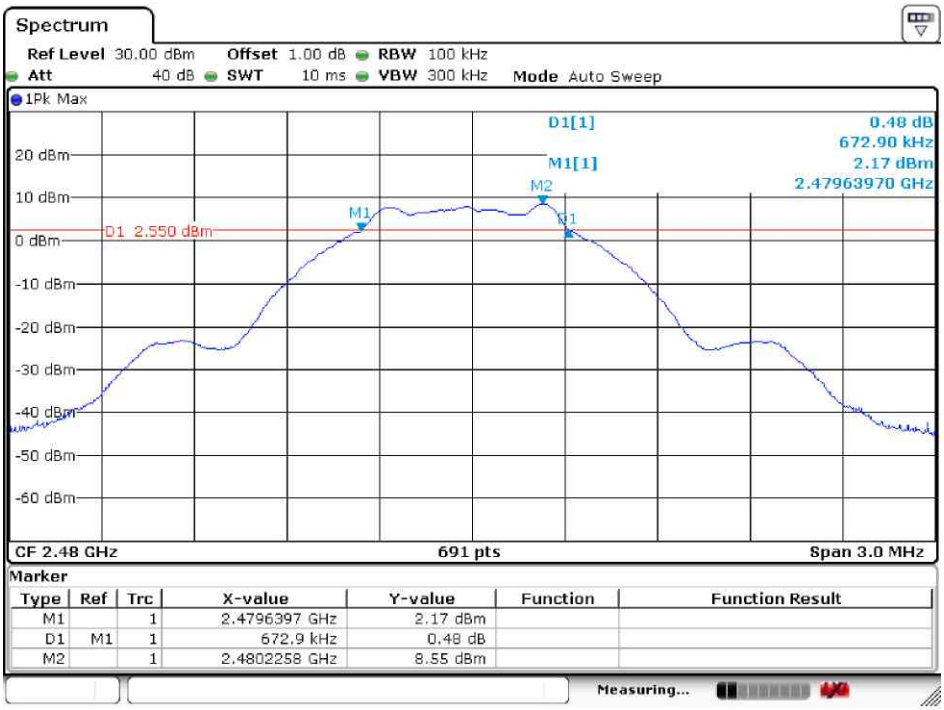
Date: 16.DEC.2020 10:33:46



Date: 16.DEC.2020 10:34:11

4.5.2.3 GFSK 1M_Highest Channel

Date: 16.DEC.2020 10:35:58

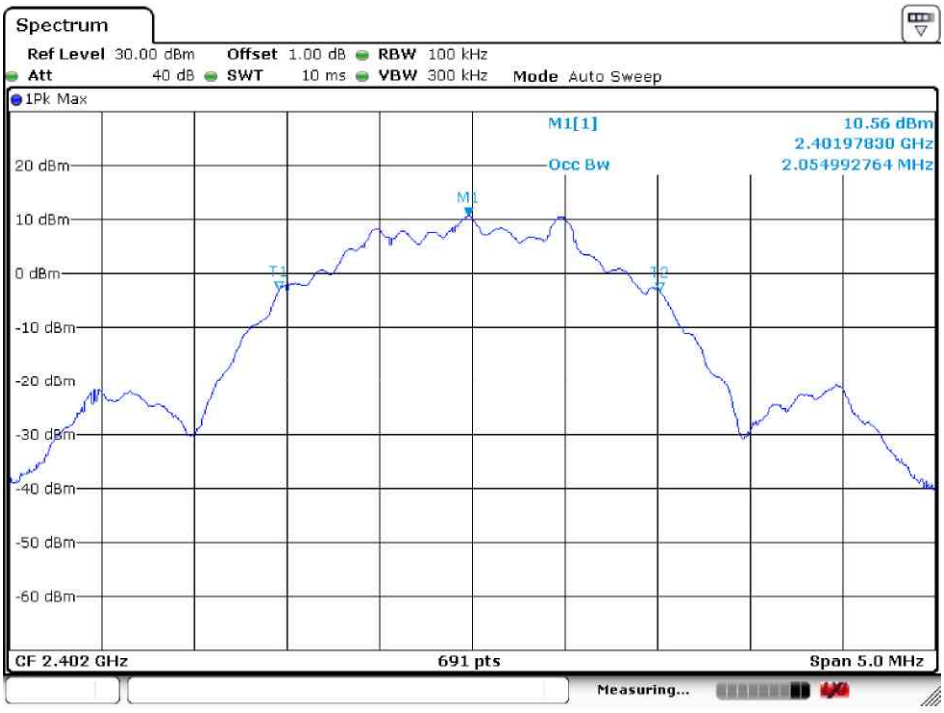


Marker

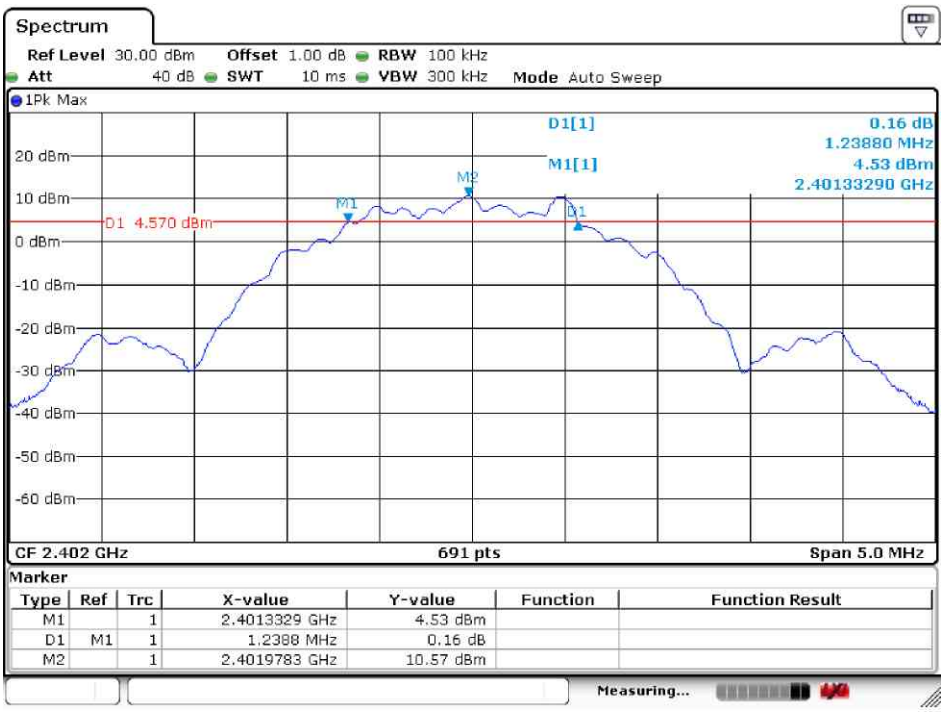
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4796397 GHz	2.17 dBm		
D1	M1	1	672.9 kHz	0.48 dB		
M2		1	2.4802258 GHz	8.55 dBm		

Date: 16.DEC.2020 10:35:50

4.5.2.4 GFSK 2M_Lowest Channel

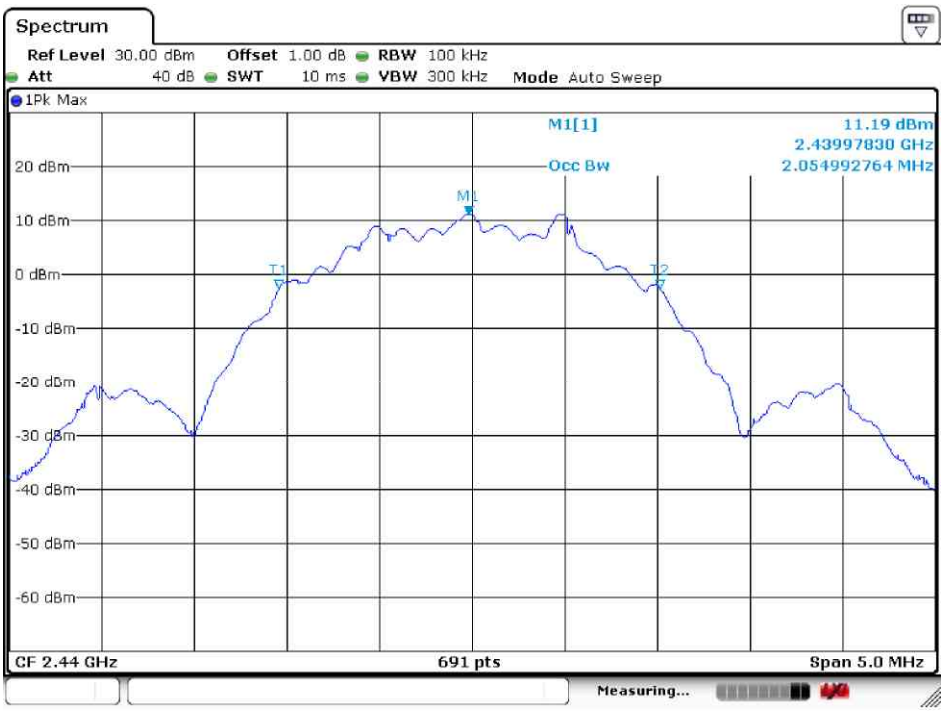


Date: 16.DEC.2020 10:55:35

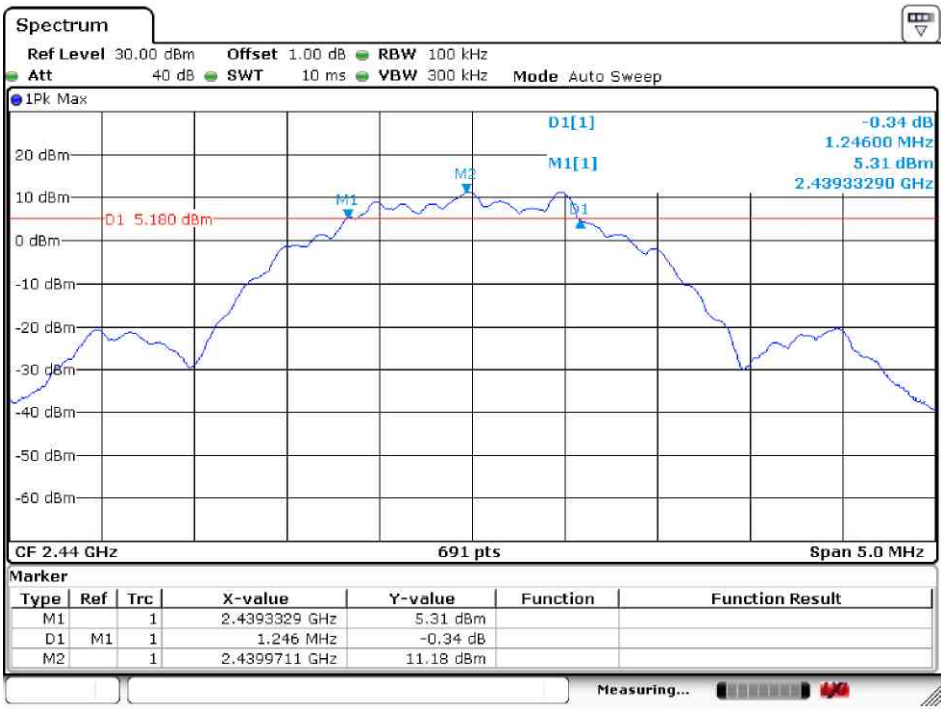


Date: 16.DEC.2020 10:55:56

4.5.2.5 GFSK 2M_Middle Channel



Date: 16.DEC.2020 10:58:01



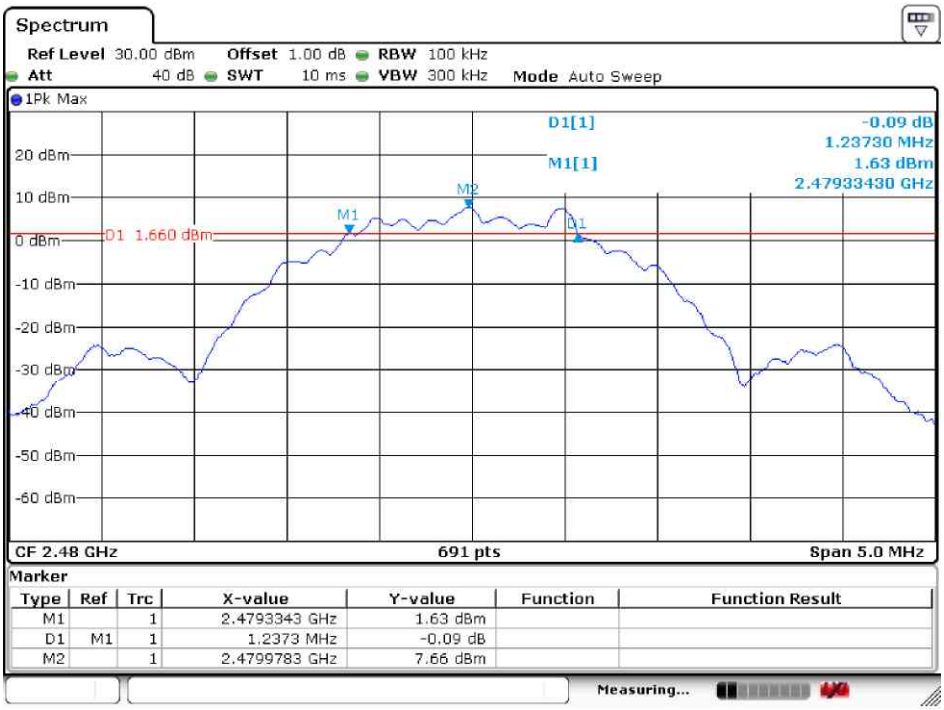
Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4393329 GHz	5.31 dBm		
D1	M1	1	1.246 MHz	-0.34 dB		
M2		1	2.4399711 GHz	11.18 dBm		

Date: 16.DEC.2020 10:58:31

4.5.2.6 GFSK 2M_Highest Channel

Date: 16.DEC.2020 10:59:14

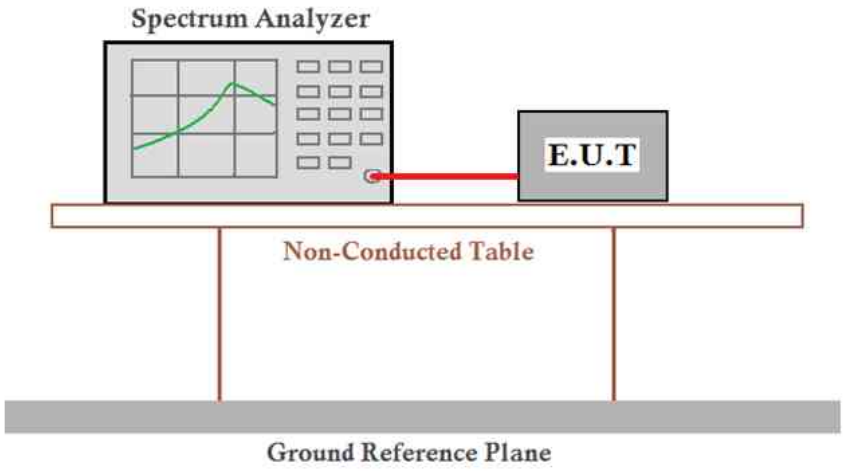


Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	2.4793343 GHz	1.63 dBm		
D1	M1	1	1.2373 MHz	-0.09 dB		
M2		1	2.4799783 GHz	7.66 dBm		

Date: 16.DEC.2020 10:59:04

4.6 Power Spectral Density

Test Requirement:	47 CFR Part 15C Section 15.247 (e)
Test Method:	ANSI C63.10 :2013 Section 11.10.2
Test Setup:	
Test Instruments:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	≤8.00dBm/3kHz
Test Results:	Pass

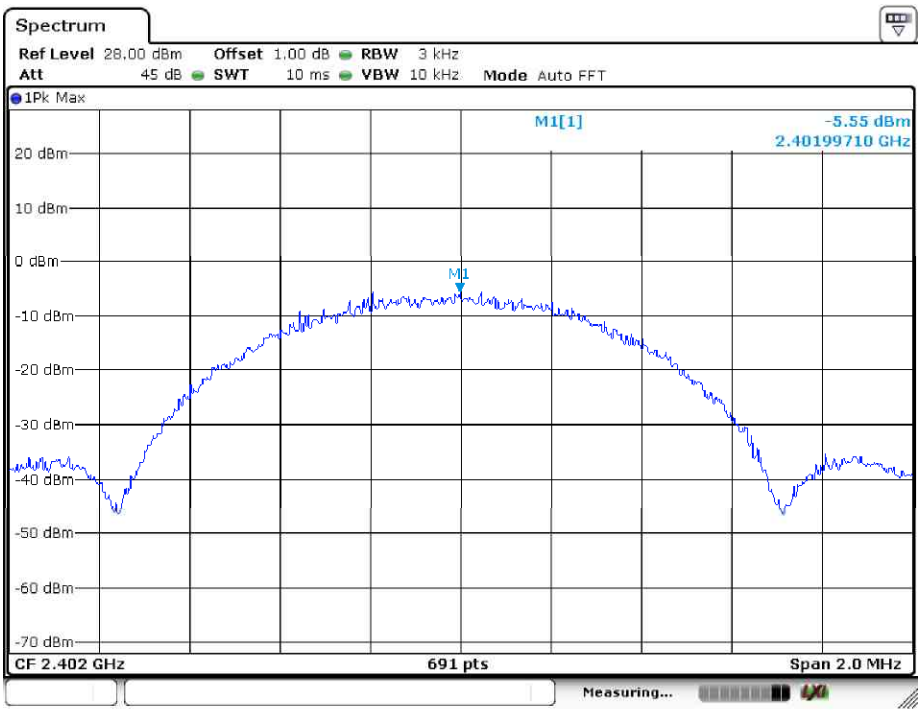
4.6.1 Test Results

Mode	Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
GFSK_1M	Lowest	-5.55	≤8.00	Pass
	Middle	-5.46	≤8.00	Pass
	Highest	-5.44	≤8.00	Pass

Mode	Test Channel	Power Spectral Density (dBm/3kHz)	Limit (dBm/3kHz)	Result
GFSK_2M	Lowest	-8.29	≤8.00	Pass
	Middle	-8.17	≤8.00	Pass
	Highest	-8.22	≤8.00	Pass

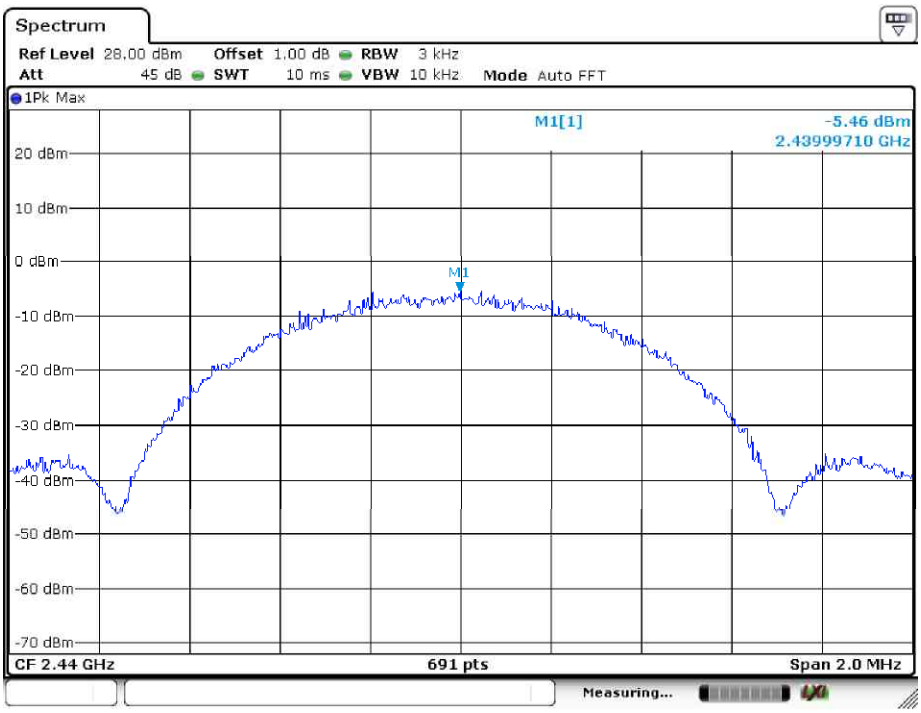
4.6.2 Test Plots

4.6.2.1 GFSK 1M_Lowest Channel

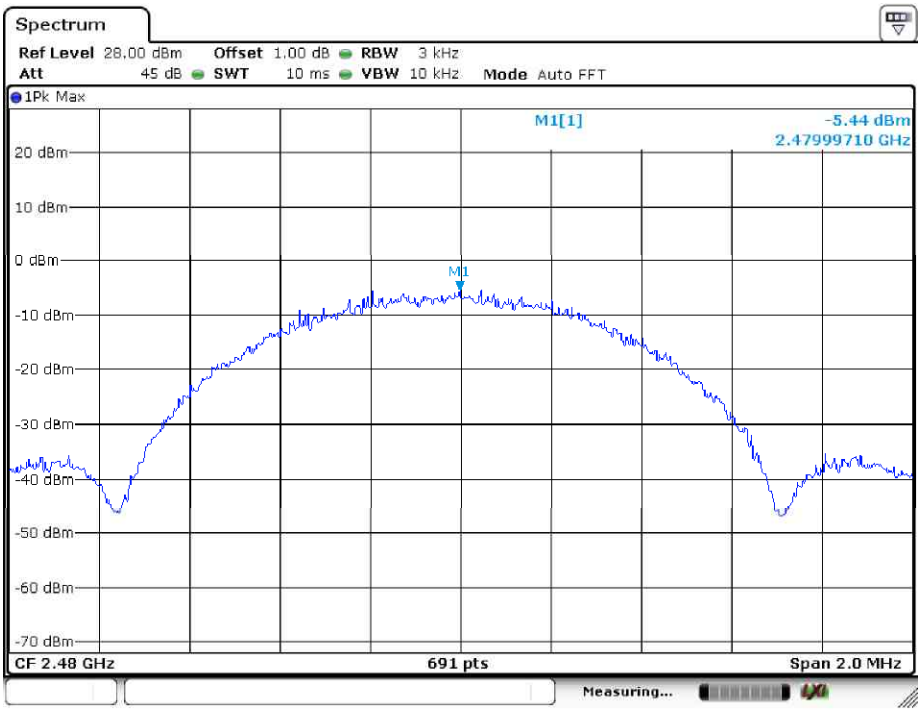


Date: 24.DEC.2020 09:21:39

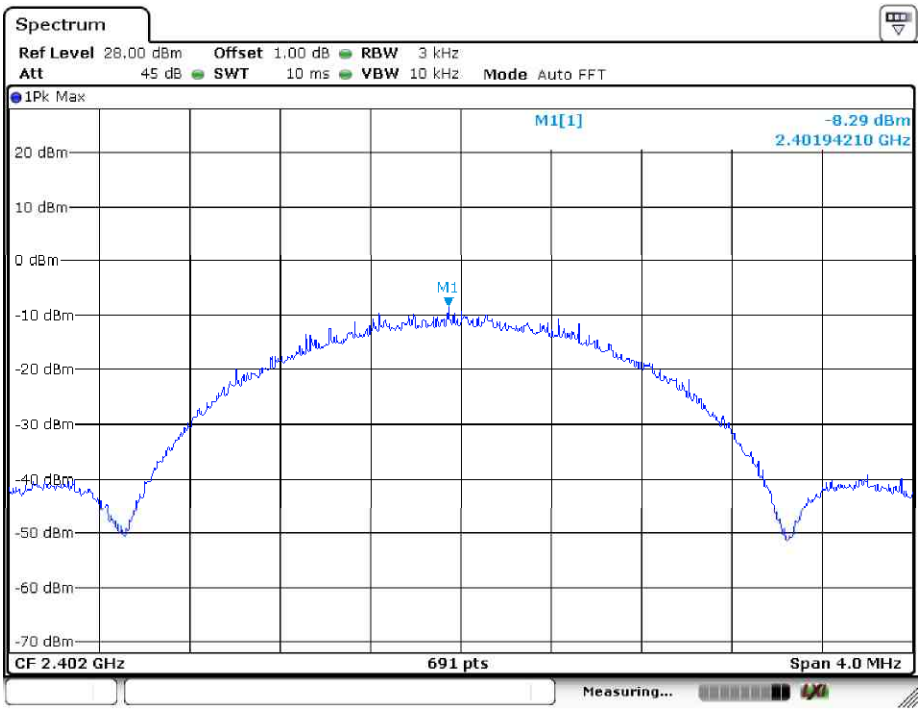
4.6.2.2 GFSK 1M_Middle Channel



4.6.2.3 GFSK 1M_Highest Channel

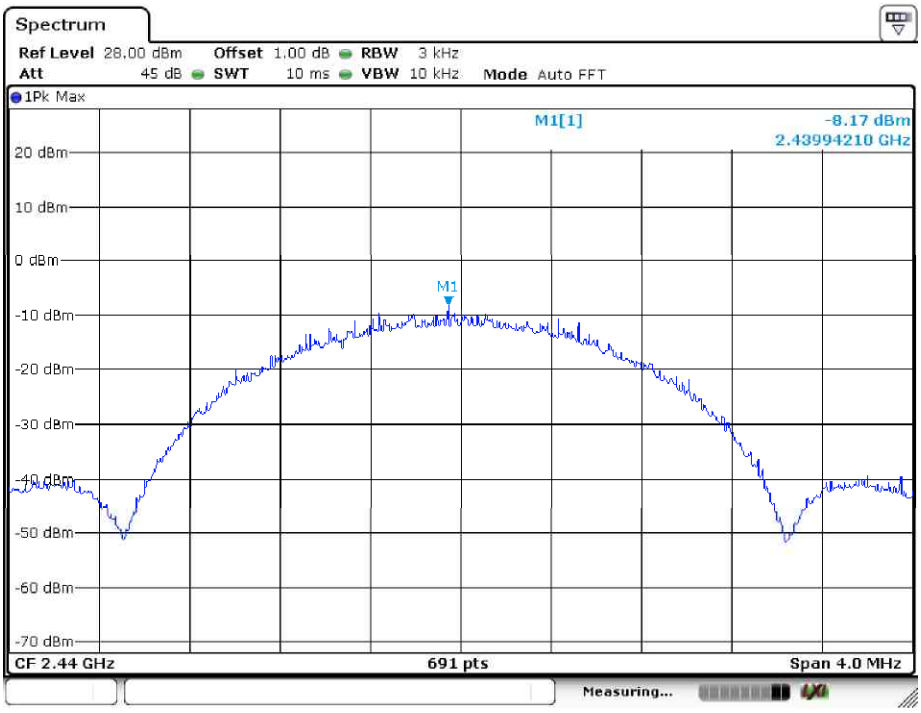


4.6.2.4 GFSK 2M_Lowest Channel



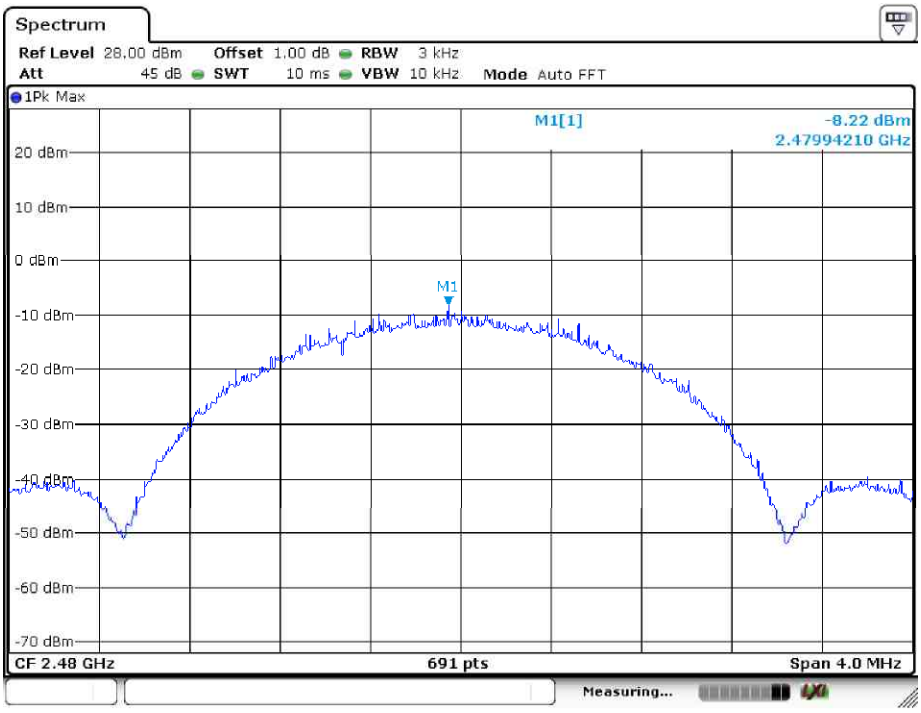
Date: 24.DEC.2020 09:24:33

4.6.2.5 GFSK 2M_Middle Channel

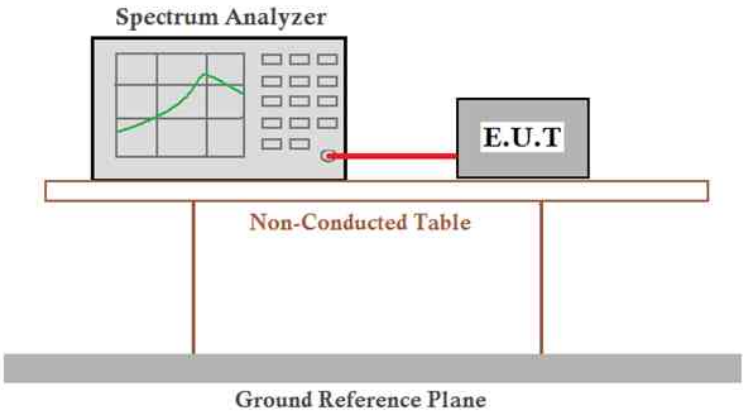


Date: 24.DEC.2020 09:25:18

4.6.2.6 GFSK 2M_Highest Channel

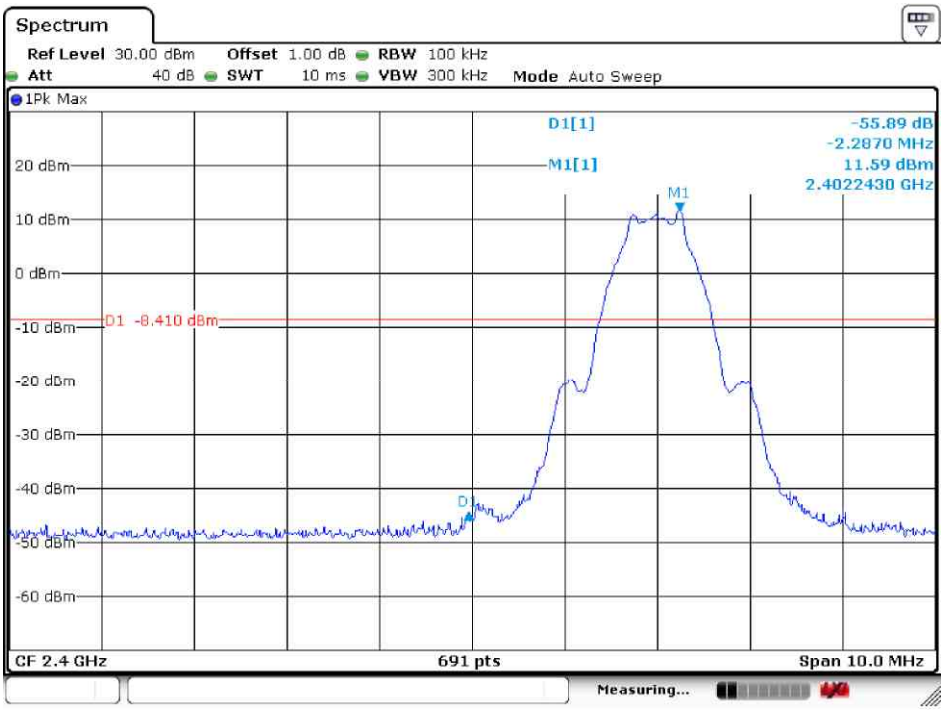


4.7 Band-edge for RF Conducted Emissions

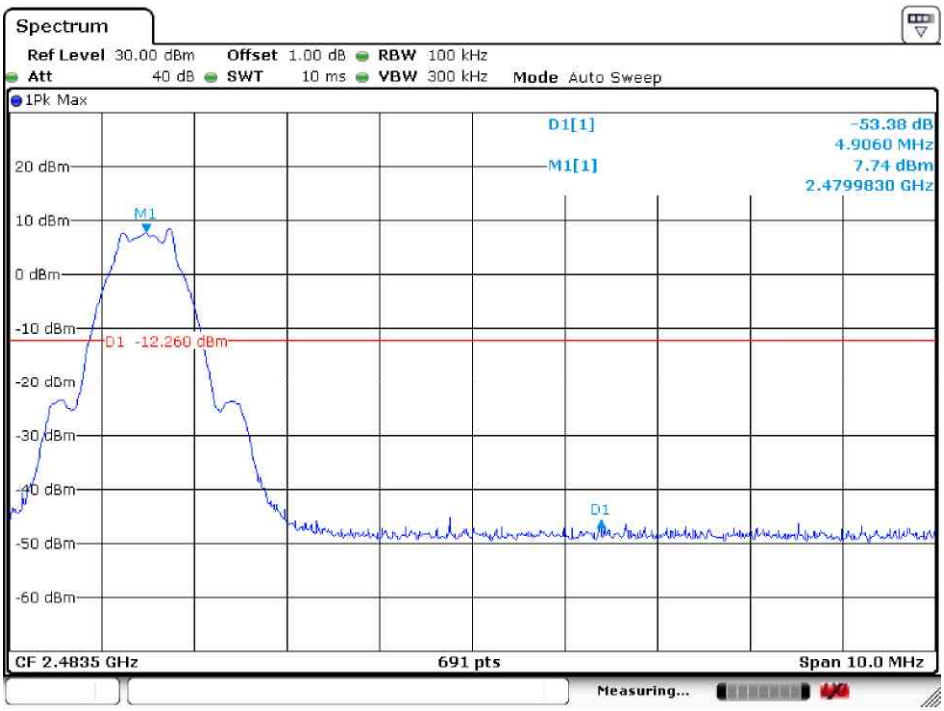
Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.13
Test Setup:	
Instruments Used:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

4.7.1 Test Plots

4.7.1.1 GFSK 1M_Lowest Channel

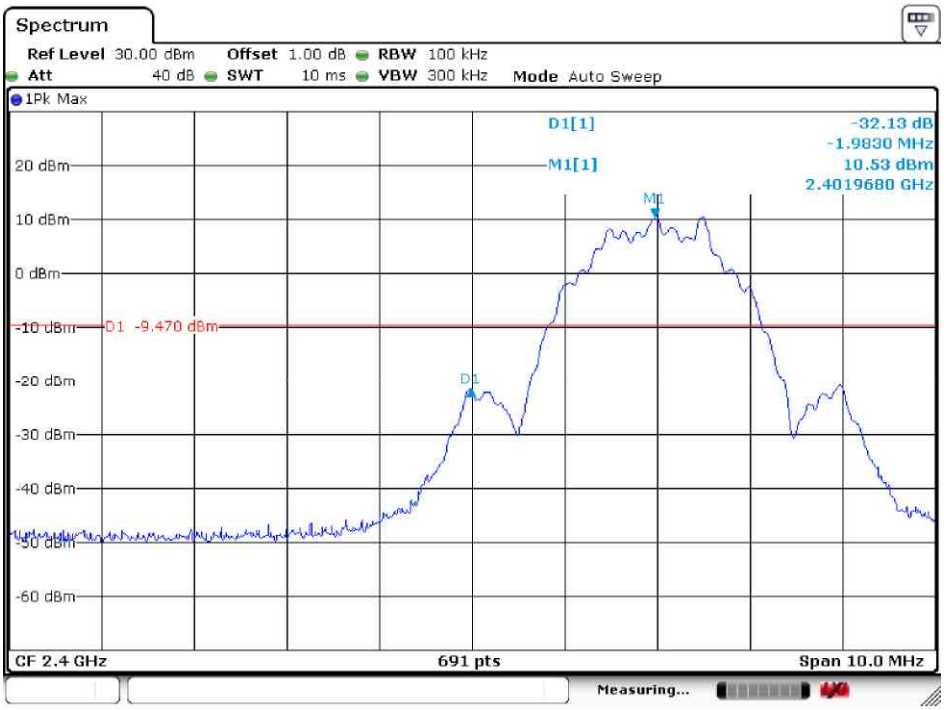


4.7.1.2 GFSK 1M_Highest Channel



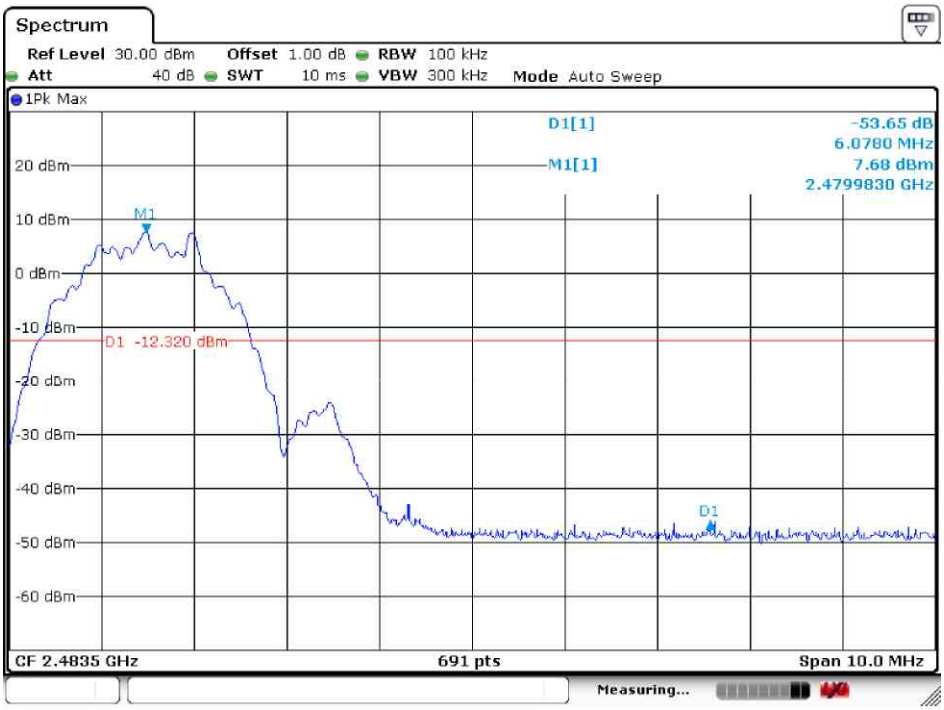
Date: 16.DEC.2020 10:44:32

4.7.1.3 GFSK 2M_Lowest Channel

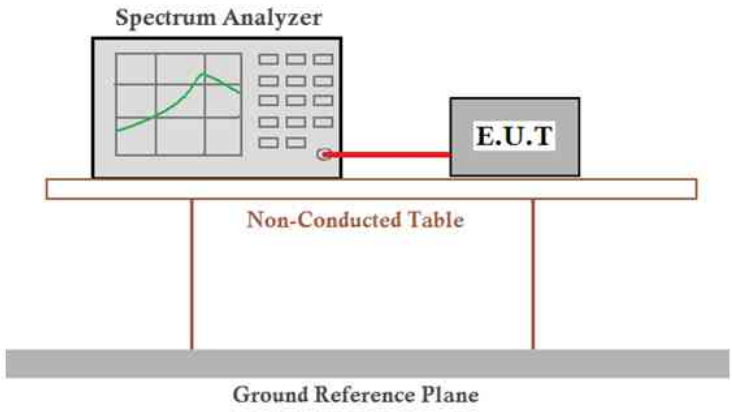


Date: 16.DEC.2020 10:56:20

4.7.1.4 GFSK 2M_Highest Channel

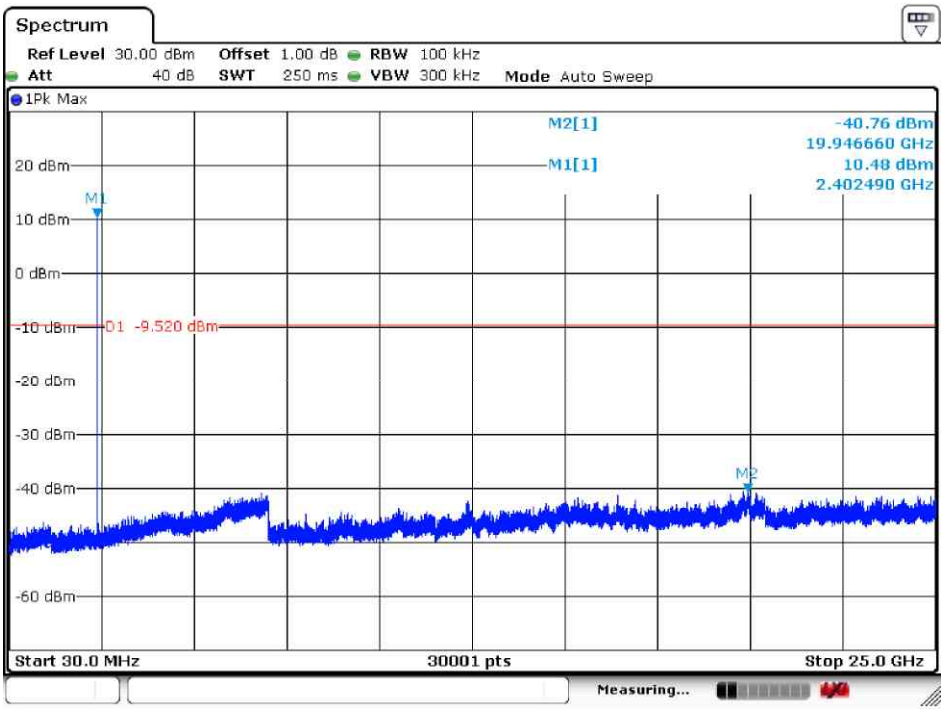


4.8 RF Conducted Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.247 (d)
Test Method:	ANSI C63.10: 2013 Section 11.11
Test Setup:	
Instruments Used:	Refer to section 6 for details
Test Mode:	Transmitting with GFSK modulation.
Limit:	In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.
Test Results:	Pass

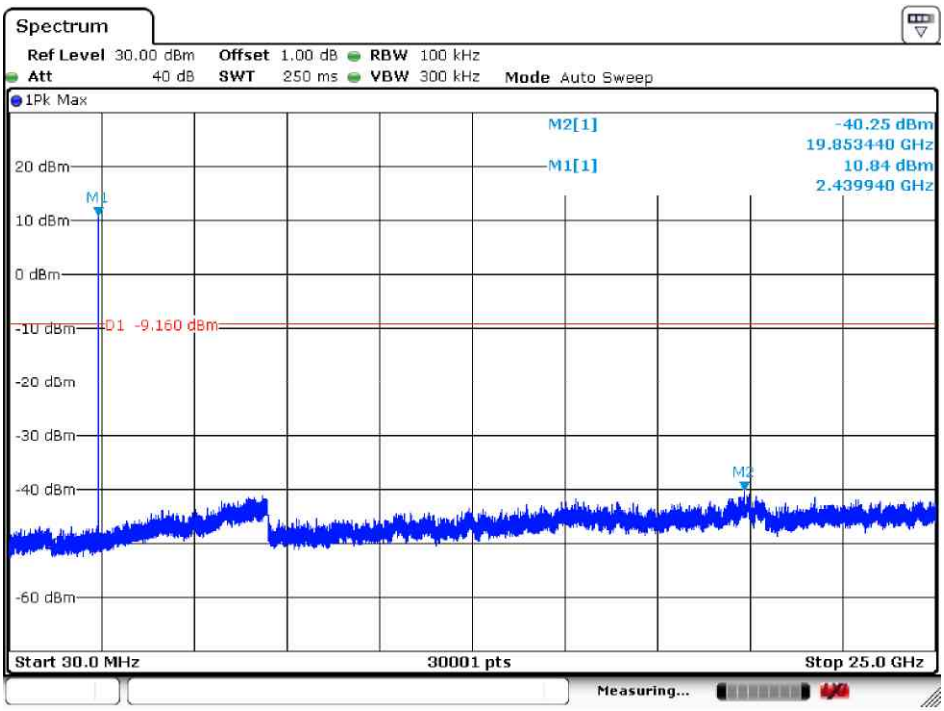
4.8.1 Test Plots

4.8.1.1 GFSK 1M_Lowest Channel



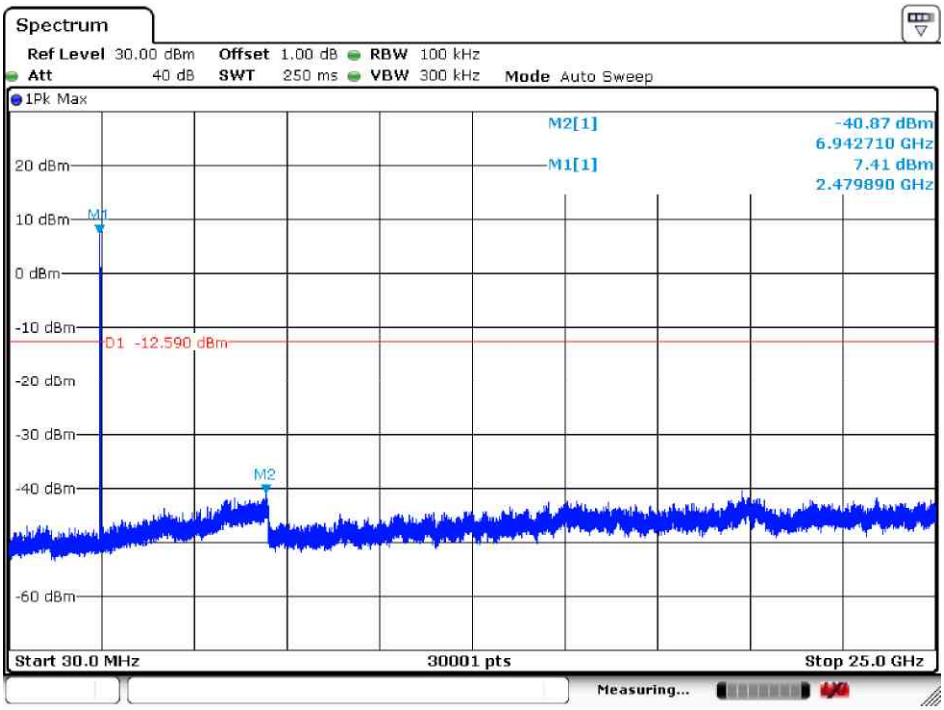
Date: 17.DEC.2020 11:48:54

4.8.1.2 GFSK 1M_Middle Channel



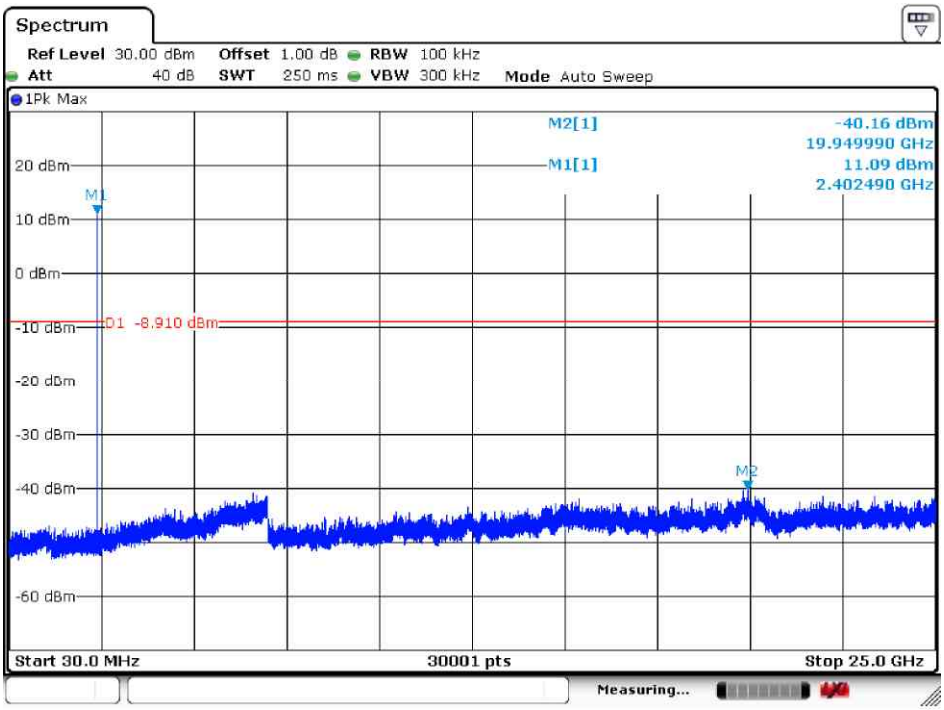
Date: 17.DEC.2020 11:50:31

4.8.1.3 GFSK 1M_Highest Channel



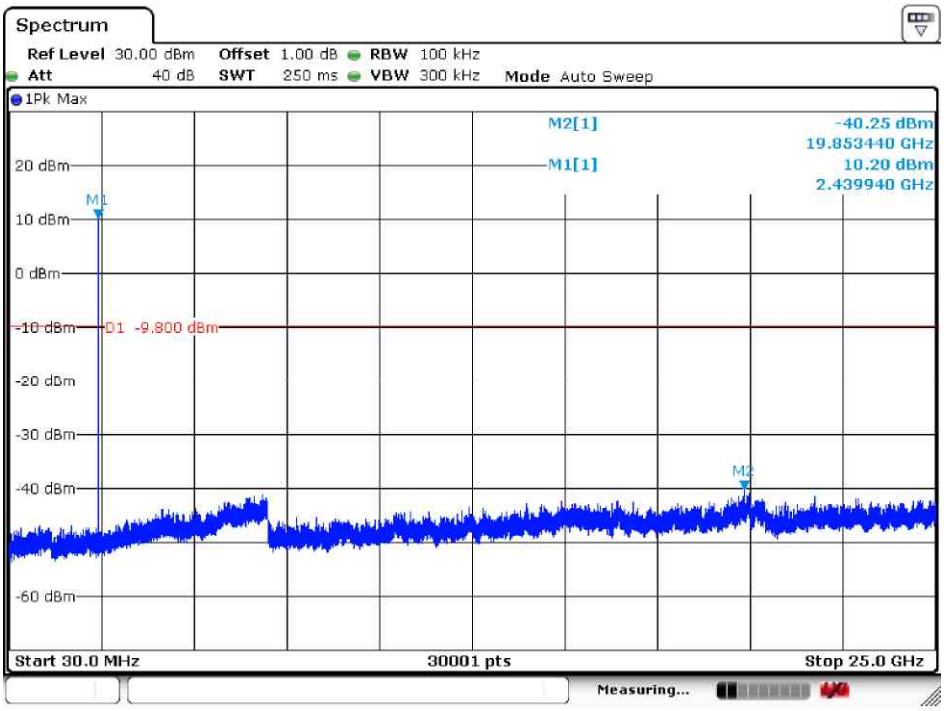
Date: 17.DEC.2020 11:51:11

4.8.1.4 GFSK 2M_Lowest Channel



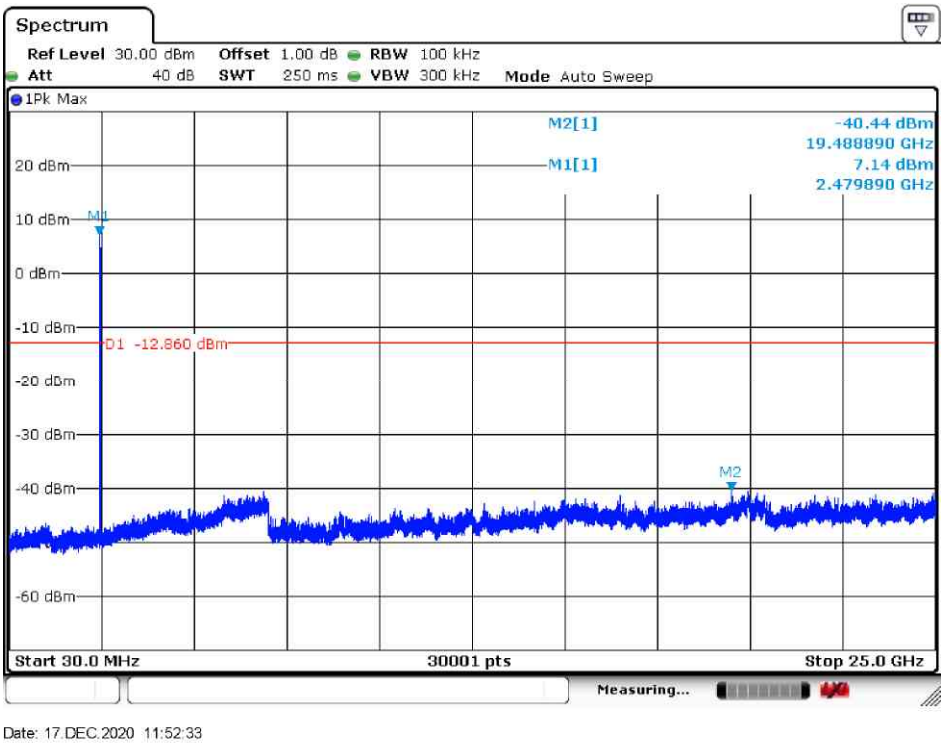
Date: 17.DEC.2020 11:49:32

4.8.1.5 GFSK 2M_Middle Channel



Date: 17.DEC.2020 11:50:13

4.8.1.6 GFSK 2M_Highest Channel



Remark:

Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

4.9 Radiated Spurious Emissions

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205				
Test Method:	ANSI C63.10 :2013 Section 11.12				
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)				
Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-0.090MHz	Peak	10kHz	30kHz	Peak
	0.009MHz-0.090MHz	Average	10kHz	30kHz	Average
	0.090MHz-0.110MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	0.110MHz-0.490MHz	Peak	10kHz	30kHz	Peak
	0.110MHz-0.490MHz	Average	10kHz	30kHz	Average
	0.490MHz -30MHz	Quasi-peak	10kHz	30kHz	Quasi-peak
	30MHz-1GHz	Quasi-peak	120kHz	300kHz	Quasi-peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
		Peak	1MHz	10Hz	Average
Limit:	Frequency	Field strength (microvolt/meter)	Limit (dBuV/m)	Remark	Measurement distance (m)
	0.009MHz-0.490MHz	2400/F(kHz)	-	-	300
	0.490MHz-1.705MHz	24000/F(kHz)	-	-	30
	1.705MHz-30MHz	30	-	-	30
	30MHz-88MHz	100	40.0	Quasi-peak	3
	88MHz-216MHz	150	43.5	Quasi-peak	3
	216MHz-960MHz	200	46.0	Quasi-peak	3
	960MHz-1GHz	500	54.0	Quasi-peak	3
	Above 1GHz	500	54.0	Average	3
	Remark: 15.35(b),Unless otherwise specified, the limit on peak radio frequency emissions is 20dB above the maximum permitted average emission limit applicable to the equipment under test. This peak limit applies to the total peak emission level radiated by the device.				

Test Setup:	

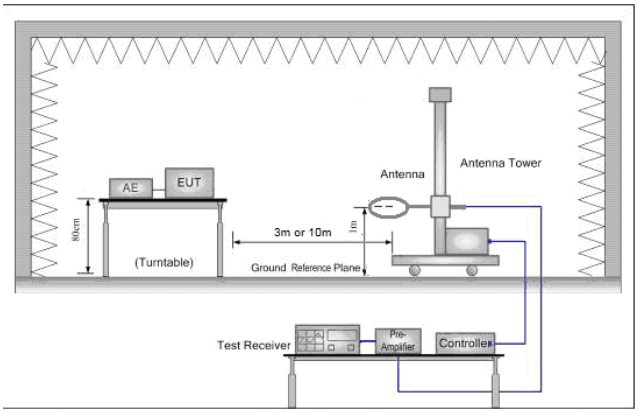


Figure 1. Below 30MHz

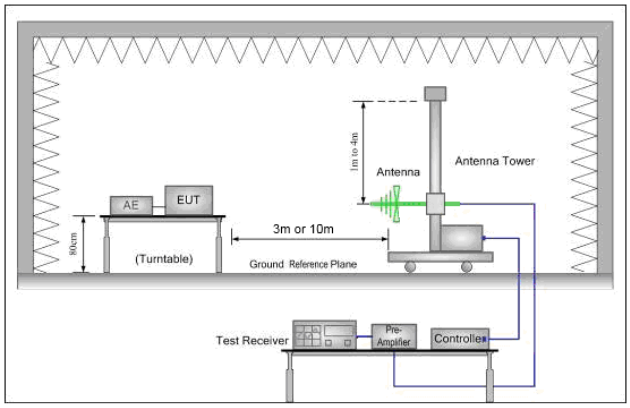


Figure 2. 30MHz to 1GHz

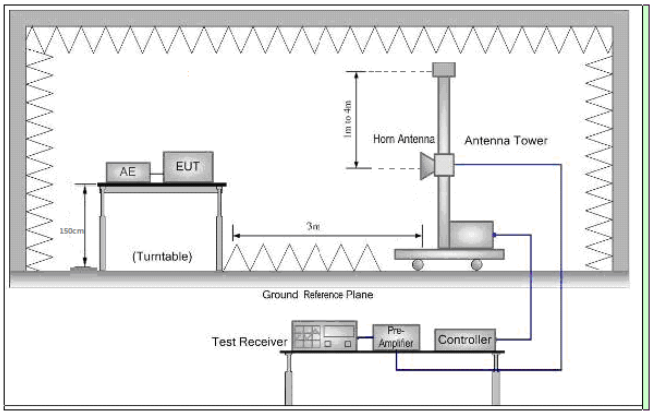
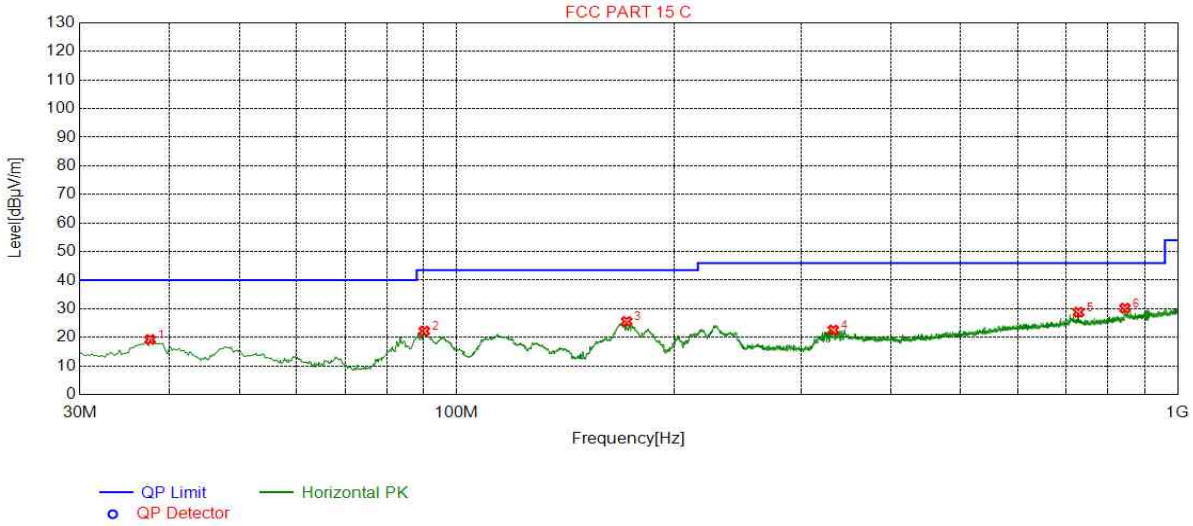


Figure 3. Above 1 GHz

Test Procedure:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. Use the following spectrum analyzer settings: (1) Span shall wide enough to fully capture the emission being measured; (2) Set RBW=100 kHz for f < 1 GHz, RBW=1MHz for f>1GHz ; VBW ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold for peak (3) For average measurement: use duty cycle correction factor method per 15.35(c).

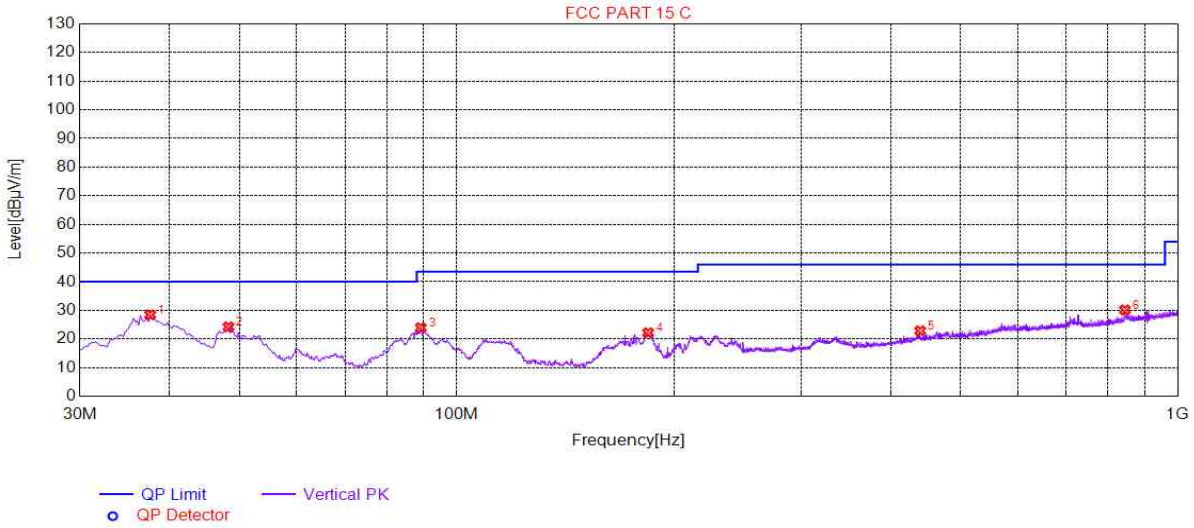
	Duty cycle = On time/100 milliseconds On time = N 1 *L 1 +N 2 *L 2 +...+N n-1 *LN n-1 +N n *L n Where N 1 is number of type 1 pulses, L 1 is length of type 1 pulses, etc. Average Emission Level = Peak Emission Level + 20*log(Duty cycle) f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters(for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. g. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. h. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. i. Test the EUT in the lowest channel, the middle channel ,the Highest channel. j. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode, And found the X axis positioning which it is worse case. k. Repeat above procedures until all frequencies measured was complete.
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode, For below 1GHz part, through pre-scan, the worst case is the lowest channel. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details
Test Results:	Pass

4.9.1 Transmitter Emission below 1GHz



Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.5675	19.27	-29.13	40.00	20.73	200	234	Horizontal
2	90.1520	22.23	-33.69	43.50	21.27	200	262	Horizontal
3	172.036	25.60	-33.89	43.50	17.90	200	219	Horizontal
4	332.894	22.61	-27.33	46.00	23.39	100	84	Horizontal
5	728.539	28.81	-18.84	46.00	17.19	100	196	Horizontal
6	844.963	30.24	-16.97	46.00	15.76	200	132	Horizontal

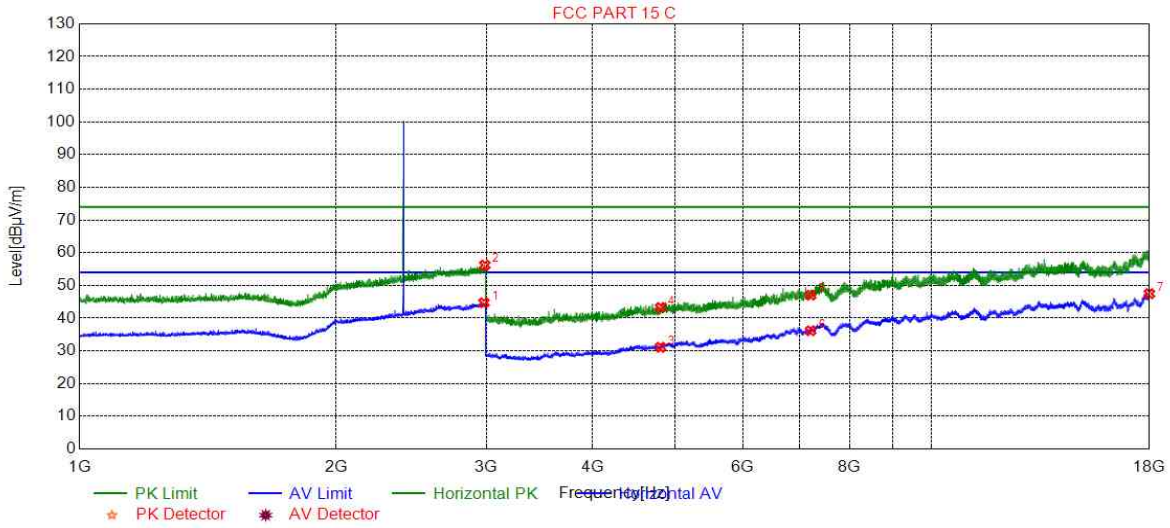


Suspected List

Suspected List								
NO.	Freq. [MHz]	Level [dBµV/m]	Factor [dB]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	37.5675	28.48	-29.13	40.00	11.52	100	14	Vertical
2	48.2396	24.26	-30.38	40.00	15.74	100	350	Vertical
3	89.1818	23.98	-33.91	43.50	19.52	100	100	Vertical
4	184.260	22.18	-32.85	43.50	21.32	100	25	Vertical
5	439.421	22.87	-24.56	46.00	23.13	100	298	Vertical
6	844.963	30.18	-16.97	46.00	15.82	200	110	Vertical

4.9.2 Transmitter Emission above 1GHz
4.9.3 BLE_1M_Channel 0

Test Graph



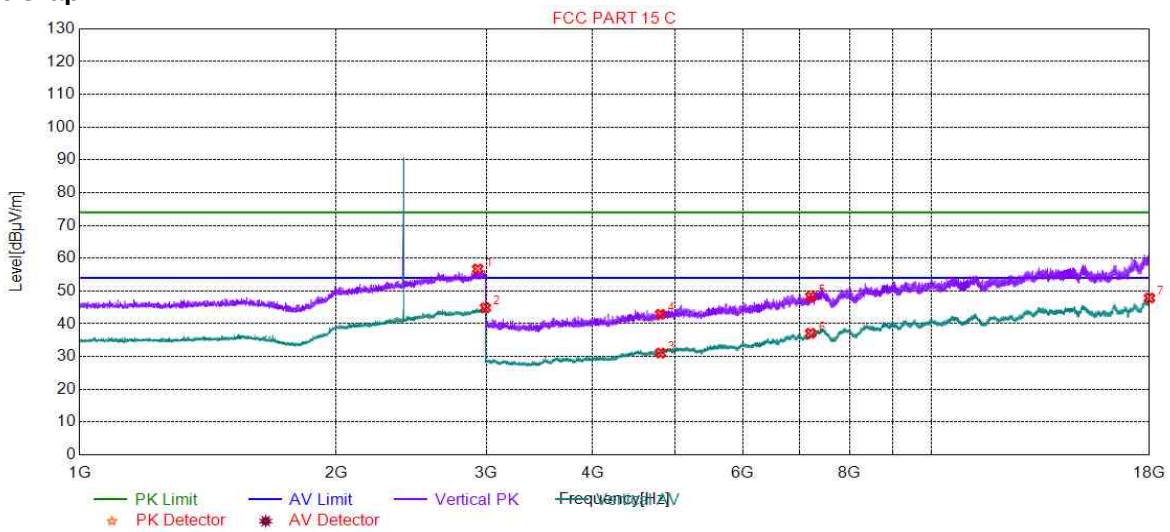
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2981.495	44.74	54.00	9.26	150	123	Horizontal
2	2988.497	56.22	74.00	17.78	150	311	Horizontal
3	4804.000	31.11	54.00	22.89	150	14	Horizontal
4	4804.000	43.26	74.00	30.74	150	304	Horizontal
5	7206.000	47.05	74.00	26.95	150	185	Horizontal
6	7206.000	36.17	54.00	17.83	150	30	Horizontal
7	17991.74	47.49	54.00	6.51	150	322	Horizontal

Final Data List

4.9.4 BLE_1M_Channel 0

Test Graph



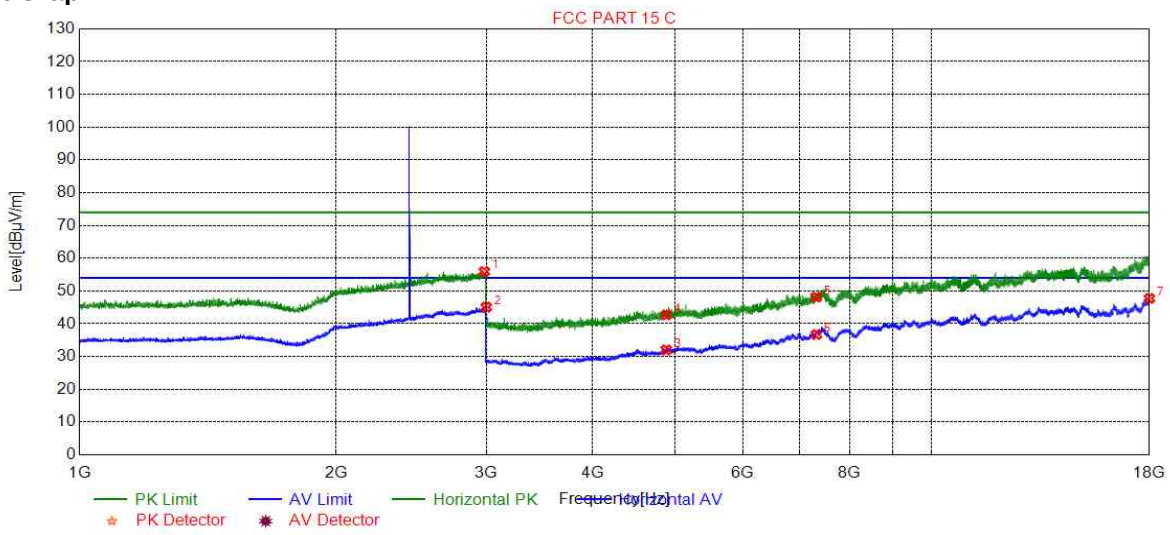
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2931.983	56.73	74.00	17.27	150	253	Vertical
2	2993.498	44.89	54.00	9.11	150	154	Vertical
3	4804.000	31.07	54.00	22.93	150	193	Vertical
4	4804.000	42.90	74.00	31.10	150	227	Vertical
5	7206.000	48.25	74.00	25.75	150	6	Vertical
6	7206.000	37.11	54.00	16.89	150	346	Vertical
7	17998.49	47.88	54.00	6.12	150	176	Vertical

Final Data List

4.9.5 BLE_1M_Channel 19

Test Graph



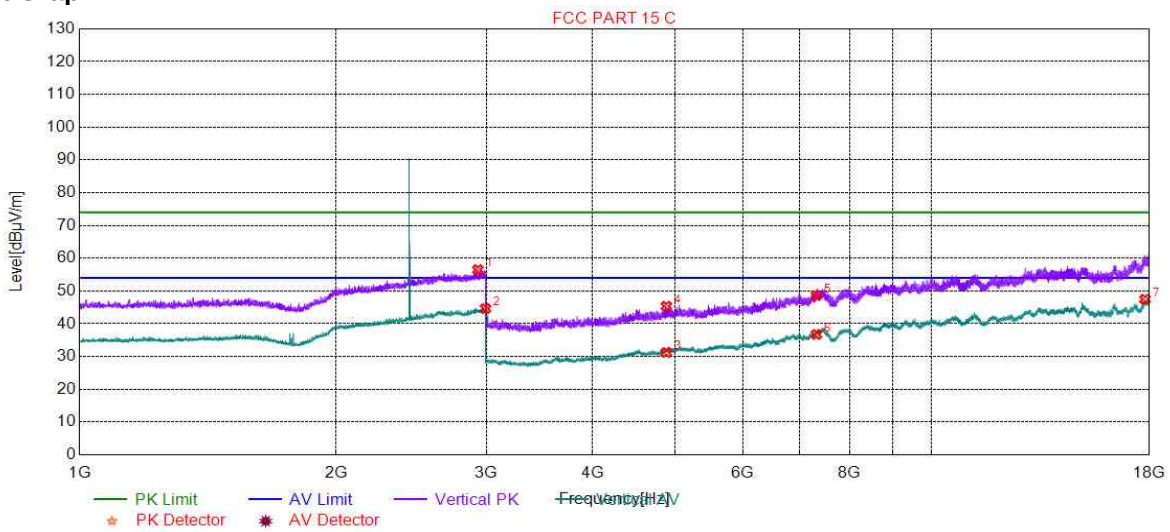
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2984.996	55.93	74.00	18.07	150	201	Horizontal
2	3000.000	45.08	54.00	8.92	150	222	Horizontal
3	4880.000	32.02	54.00	21.98	150	30	Horizontal
4	4880.000	42.72	74.00	31.28	150	30	Horizontal
5	7320.000	48.11	74.00	25.89	150	287	Horizontal
6	7320.000	36.71	54.00	17.29	150	150	Horizontal
7	17998.49	47.74	54.00	6.26	150	304	Horizontal

Final Data List

4.9.6 BLE_1M_Channel 19

Test Graph



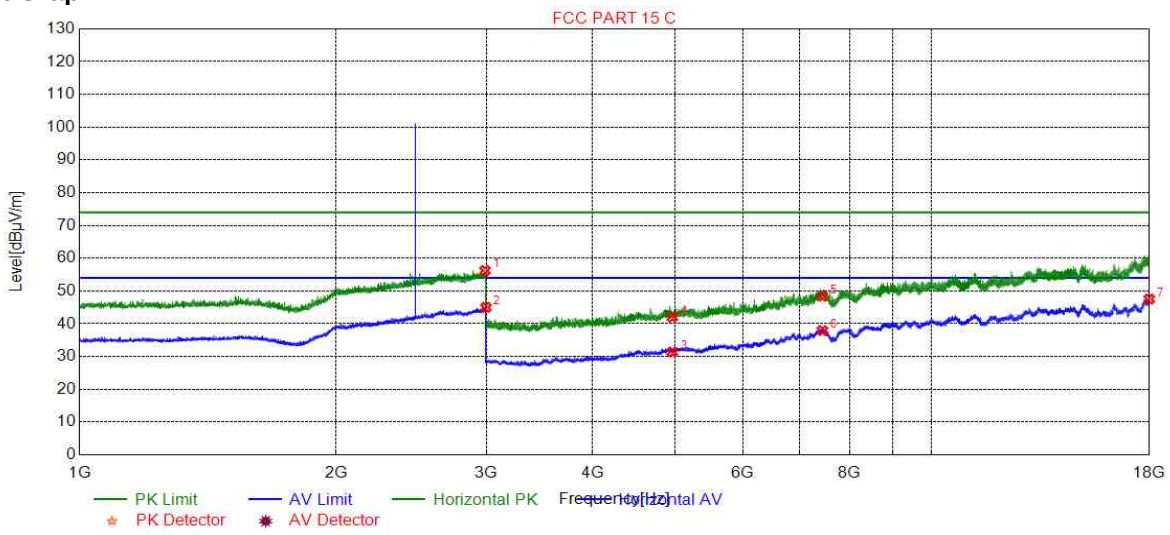
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2932.983	56.51	74.00	17.49	150	9	Vertical
2	2993.998	44.65	54.00	9.35	150	206	Vertical
3	4880.000	31.26	54.00	22.74	150	346	Vertical
4	4880.000	45.38	74.00	28.62	150	227	Vertical
5	7320.000	48.62	74.00	25.38	150	5	Vertical
6	7320.000	36.74	54.00	17.26	150	244	Vertical
7	17785.48	47.50	54.00	6.50	150	312	Vertical

Final Data List

4.9.7 BLE_1M_Channel 39

Test Graph



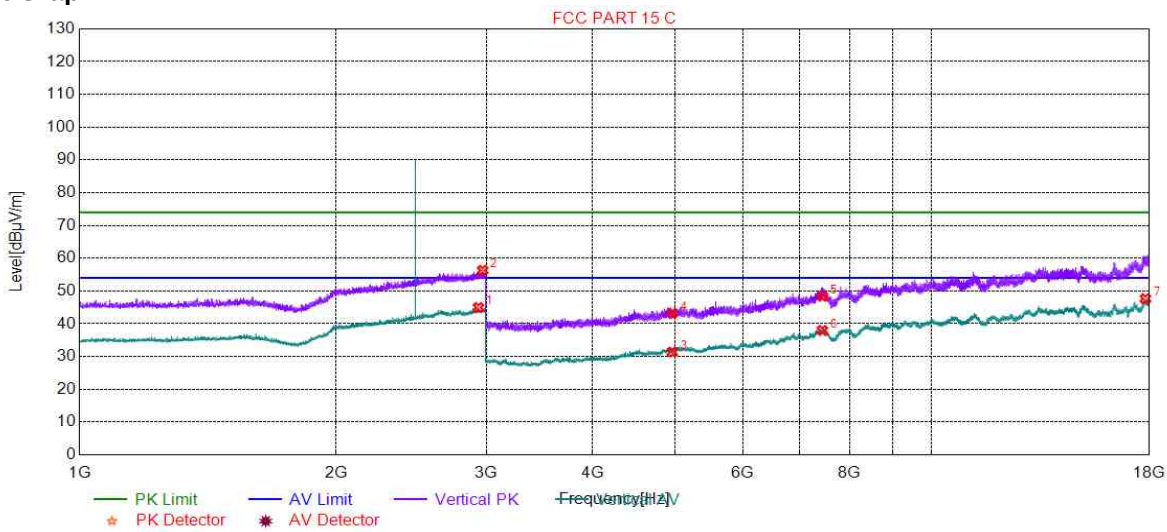
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2990.497	56.24	74.00	17.76	150	159	Horizontal
2	2997.499	44.99	54.00	9.01	150	284	Horizontal
3	4960.000	31.38	54.00	22.62	150	83	Horizontal
4	4960.000	42.01	74.00	31.99	150	237	Horizontal
5	7440.000	48.39	74.00	25.61	150	152	Horizontal
6	7440.000	37.94	54.00	16.06	150	220	Horizontal
7	17991.74	47.54	54.00	6.46	150	237	Horizontal

Final Data List

4.9.8 BLE_1M_Channel 39

Test Graph



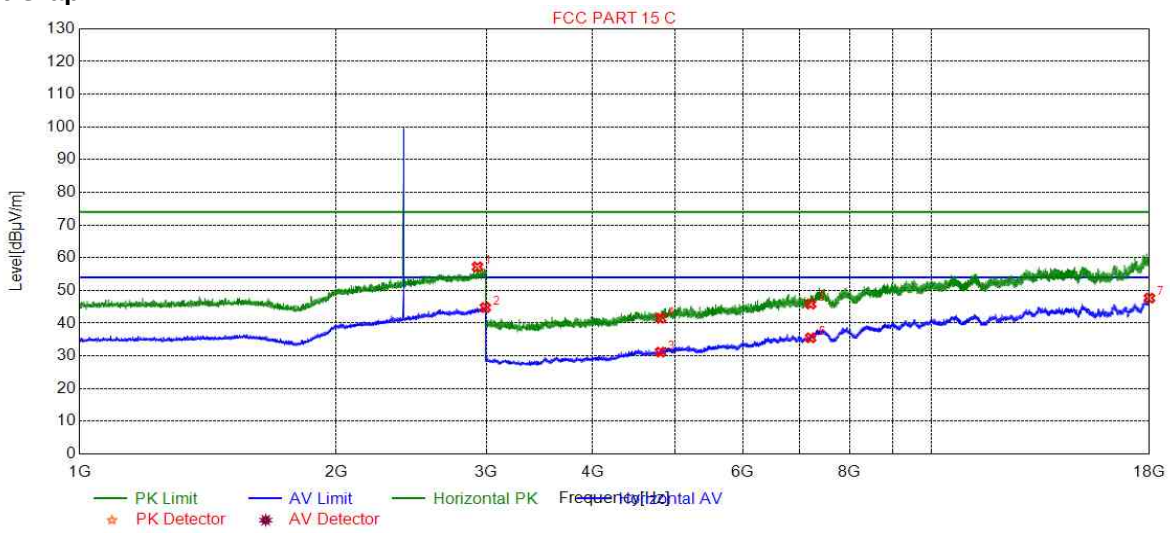
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2936.984	44.98	54.00	9.02	150	294	Vertical
2	2970.992	56.31	74.00	17.69	150	336	Vertical
3	4960.000	31.38	54.00	22.62	150	106	Vertical
4	4960.000	43.17	74.00	30.83	150	312	Vertical
5	7440.000	48.39	74.00	25.61	150	20	Vertical
6	7440.000	37.98	54.00	16.02	150	20	Vertical
7	17804.24	47.65	54.00	6.35	150	106	Vertical

Final Data List

4.9.9 BLE-2.0_Channel 0

Test Graph



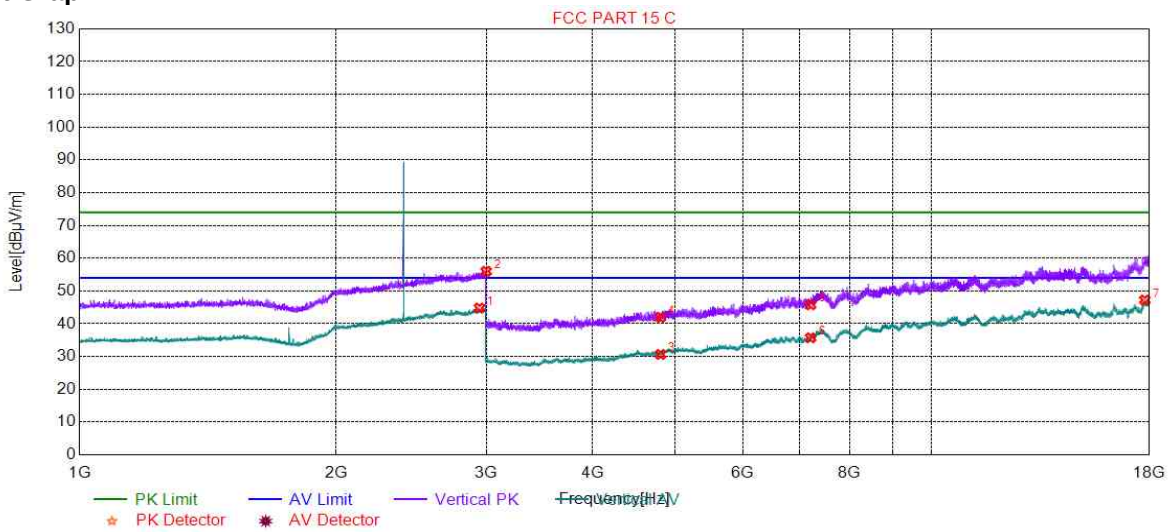
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2929.982	57.22	74.00	16.78	150	175	Horizontal
2	2992.998	44.79	54.00	9.21	150	29	Horizontal
3	4804.000	31.16	54.00	22.84	150	286	Horizontal
4	4804.000	41.52	74.00	32.48	150	337	Horizontal
5	7206.000	45.85	74.00	28.15	150	183	Horizontal
6	7206.000	35.54	54.00	18.46	150	218	Horizontal
7	17997.74	47.66	54.00	6.34	150	183	Horizontal

Final Data List

4.9.10 BLE-2.0_Channel 0

Test Graph



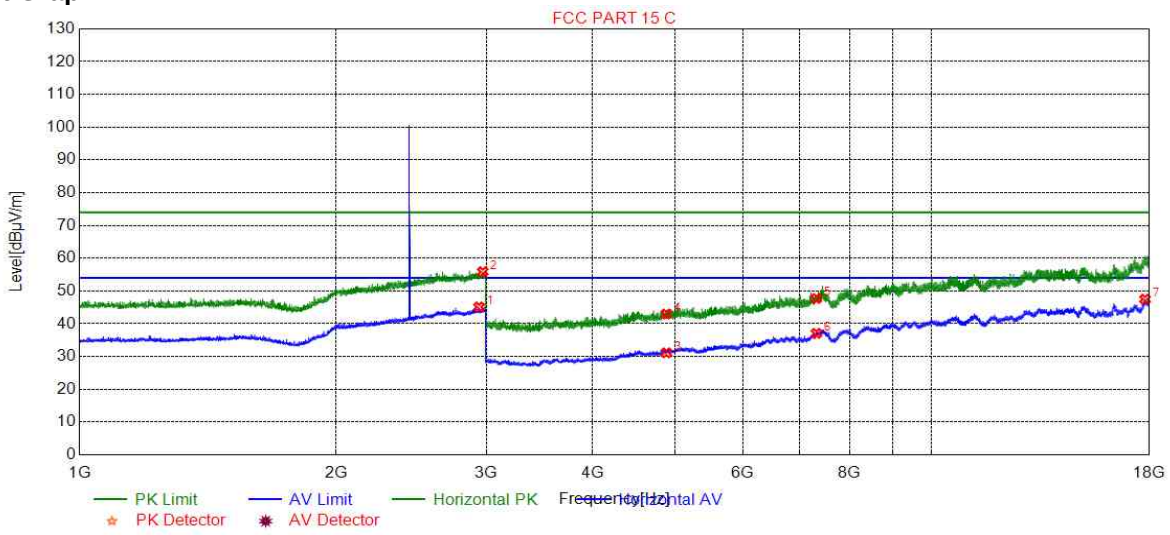
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2945.486	44.81	54.00	9.19	150	253	Vertical
2	2999.499	56.01	74.00	17.99	150	13	Vertical
3	4804.000	30.64	54.00	23.36	150	261	Vertical
4	4804.000	41.99	74.00	32.01	150	109	Vertical
5	7206.000	45.80	74.00	28.20	150	211	Vertical
6	7206.000	35.74	54.00	18.26	150	329	Vertical
7	17772.73	47.25	54.00	6.75	150	92	Vertical

Final Data List

4.9.11 BLE-2.0_Channel 19

Test Graph



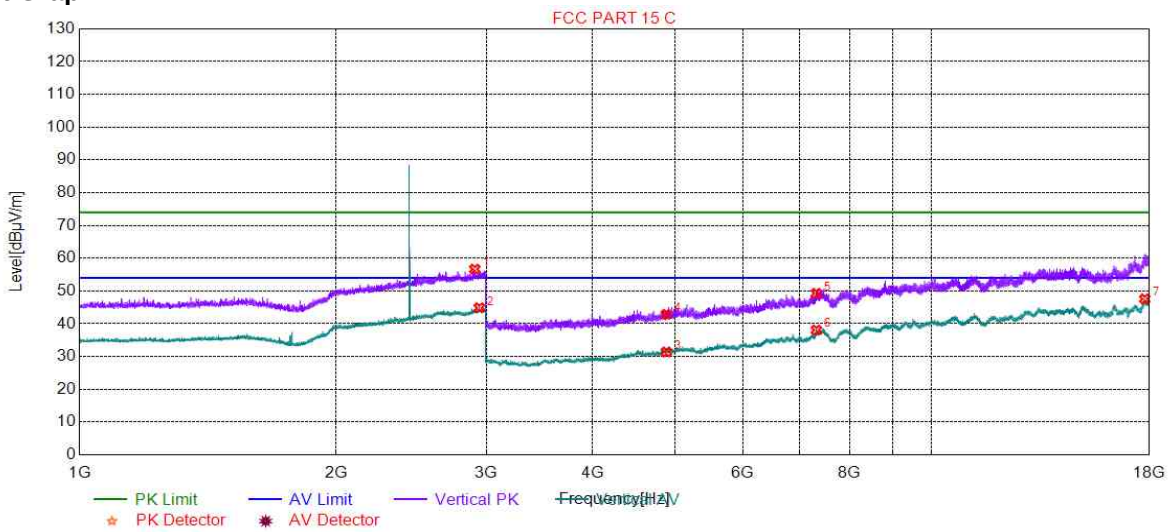
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2942.485	45.12	54.00	8.88	150	239	Horizontal
2	2971.492	55.87	74.00	18.13	150	239	Horizontal
3	4880.000	31.14	54.00	22.86	150	99	Horizontal
4	4880.000	43.00	74.00	31.00	150	273	Horizontal
5	7320.000	47.72	74.00	26.28	150	273	Horizontal
6	7320.000	37.09	54.00	16.91	150	30	Horizontal
7	17784.73	47.51	54.00	6.49	150	82	Horizontal

Final Data List

4.9.12 BLE-2.0_Channel 19

Test Graph



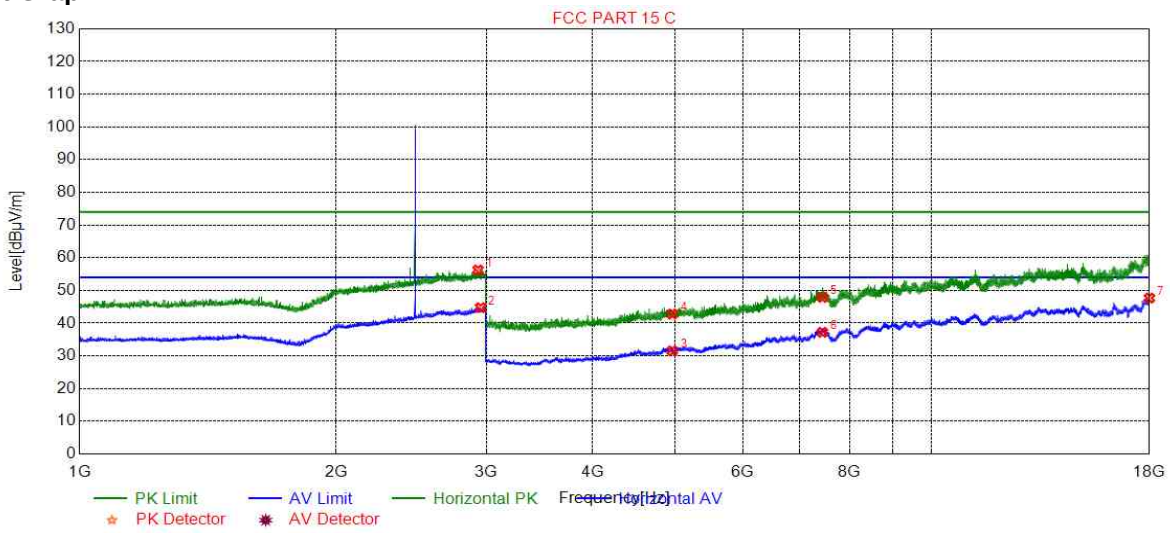
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2908.977	56.68	74.00	17.32	150	294	Vertical
2	2944.486	44.87	54.00	9.13	150	127	Vertical
3	4880.000	31.41	54.00	22.59	150	262	Vertical
4	4880.000	42.91	74.00	31.09	150	228	Vertical
5	7320.000	49.32	74.00	24.68	150	211	Vertical
6	7320.000	38.09	54.00	15.91	150	8	Vertical
7	17771.98	47.59	54.00	6.41	150	211	Vertical

Final Data List

4.9.13 BLE-2.0_Channel 39

Test Graph



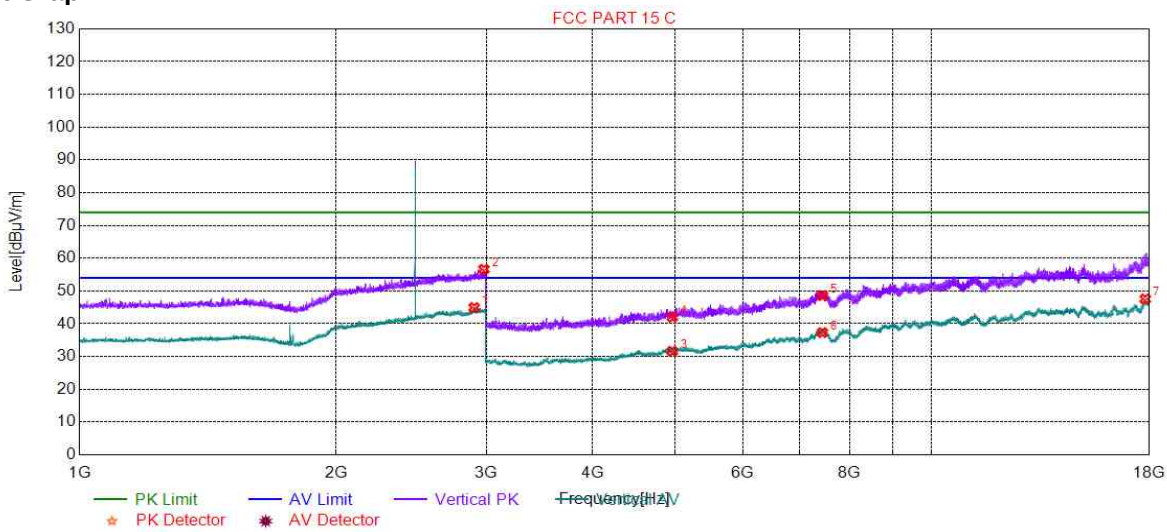
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2934.483	56.28	74.00	17.72	150	50	Horizontal
2	2954.488	44.75	54.00	9.25	150	29	Horizontal
3	4960.000	31.57	54.00	22.43	150	149	Horizontal
4	4960.000	42.81	74.00	31.19	150	14	Horizontal
5	7440.000	47.89	74.00	26.11	150	302	Horizontal
6	7440.000	37.21	54.00	16.79	150	268	Horizontal
7	17996.24	47.68	54.00	6.32	150	234	Horizontal

Final Data List

4.9.14 BLE-2.0_Channel 39

Test Graph



Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2903.976	44.94	54.00	9.06	150	104	Vertical
2	2981.495	56.63	74.00	17.37	150	51	Vertical
3	4960.000	31.63	54.00	22.37	150	296	Vertical
4	4960.000	42.03	74.00	31.97	150	313	Vertical
5	7440.000	48.62	74.00	25.38	150	296	Vertical
6	7440.000	37.30	54.00	16.70	150	262	Vertical
7	17796.73	47.58	54.00	6.42	150	211	Vertical

Final Data List

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
   Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
2) Scan from 9kHz to 25GHz, the disturbance between 9KHz to 30MHz and 18GHz to 25GHz was very low, and the above harmonics were the highest point could be found when testing, The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.
3) As shown in this section, for frequencies above 1GHz, the field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation. So, only the peak measurements were shown in the report.
4) All Modes have been tested, but only the worst case data displayed in this report.

4.10 Restricted bands around fundamental frequency

Test Requirement:	47 CFR Part 15C Section 15.209 and 15.205		
Test Method:	ANSI C63.10: 2013 Section 11.12		
Test Site:	Measurement Distance: 3m (Semi-Anechoic Chamber)		
Limit:	Frequency	Limit (dBuV/m)	Remark
	30MHz-88MHz	40.0	Quasi-peak
	88MHz-216MHz	43.5	Quasi-peak
	216MHz-960MHz	46.0	Quasi-peak
	960MHz-1GHz	54.0	Quasi-peak
	Above 1GHz	54.0	Average Value
		74.0	Peak Value
Test Setup:			

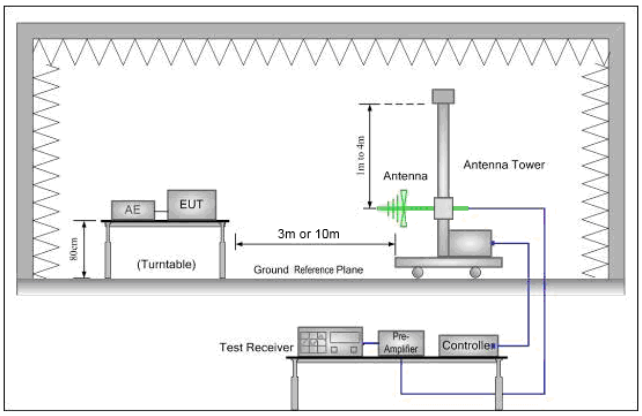


Figure 1. 30MHz to 1GHz

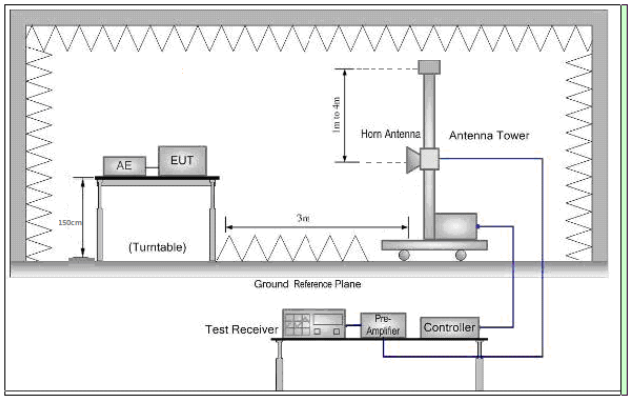


Figure 2. Above 1 GHz

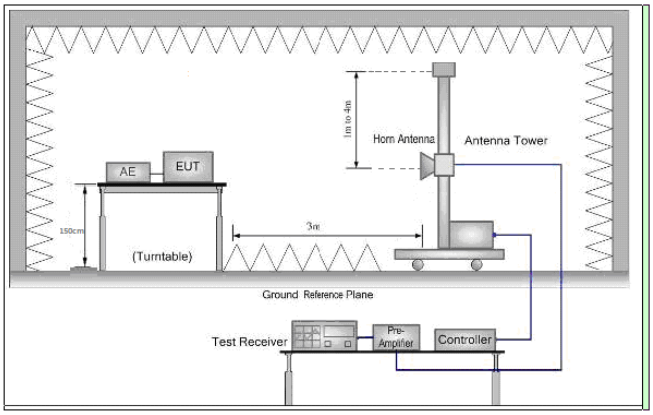
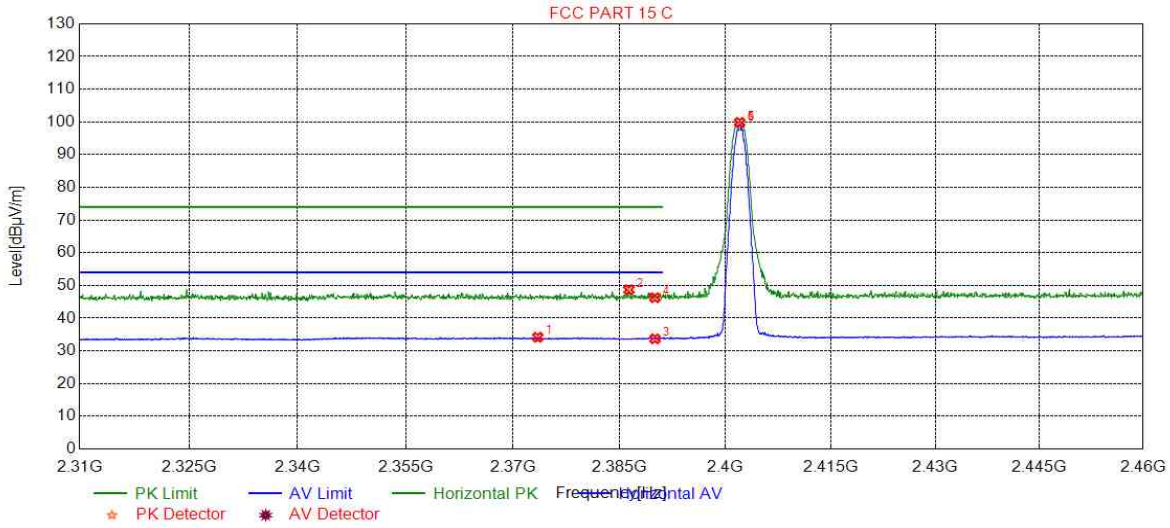


Figure 3. Above 1 GHz

Test Procedure:	a. For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. c. The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. d. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. e. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. f. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. g. Place a marker at the end of the restricted band closest to the transmit frequency to show compliance. Also measure any emissions in the restricted bands. Save the spectrum analyzer plot. Repeat for each power and modulation for lowest and highest channel h. Test the EUT in the lowest channel , the Highest channel i. The radiation measurements are performed in X, Y, Z axis positioning for Transmitting mode,And found the X axis positioning which it is worse case. j. Repeat above procedures until all frequencies measured was complete.
Test Configuration:	Peak Measurements Above 1000 MHz • RBW = 1 MHz • VBW ⩾ 3 MHz • Detector = Peak • Sweep time = auto • Trace mode = max hold Average Measurements Above 1000MHz • RBW = 1 MHz • VBW = 10 Hz, when duty cycle is no less than 98 percent. • VBW ⩾ 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
Exploratory Test Mode:	Transmitting with GFSK modulation. Charge + Transmitting mode.
Final Test Mode:	Transmitting with GFSK modulation. Pretest the EUT at Charge + Transmitting mode. Only the worst case is recorded in the report.
Instruments Used:	Refer to section 6 for details
Test Results:	Pass

4.10.1 Test plots
4.10.2 BLE_1M_Channel 0

Test Graph



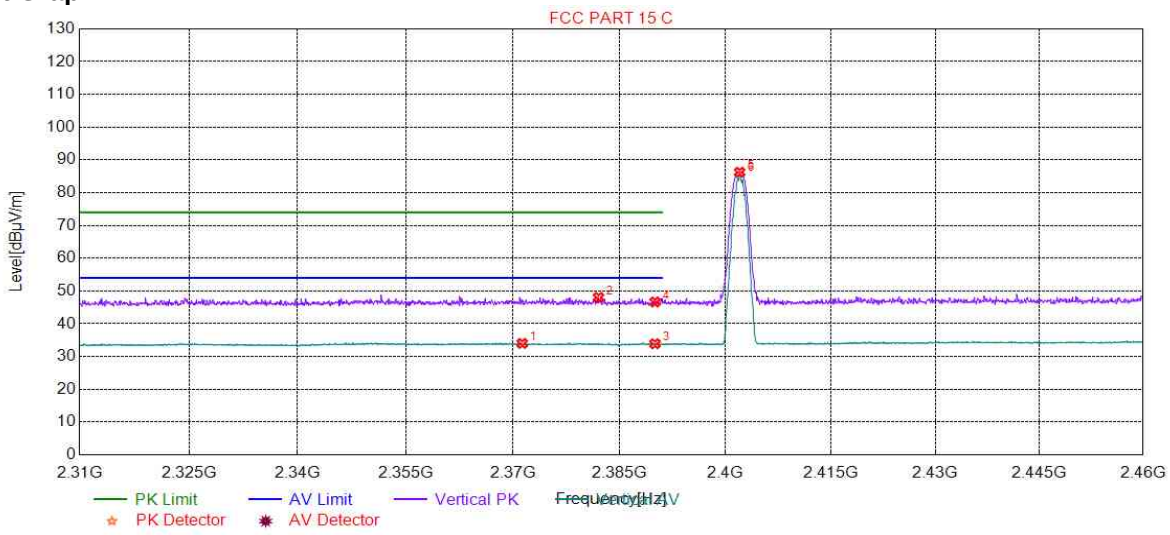
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2373.481	34.18	54.00	19.82	150	197	Horizontal
2	2386.313	48.71	74.00	25.29	150	170	Horizontal
3	2390.000	33.68	54.00	20.32	150	63	Horizontal
4	2390.000	46.27	74.00	27.73	150	312	Horizontal
5	2402.000	99.87	0.00	-99.87	150	315	Horizontal
6	2402.000	99.33	0.00	-99.33	150	315	Horizontal

Final Data List

4.10.3 BLE_1M_Channel 0

Test Graph



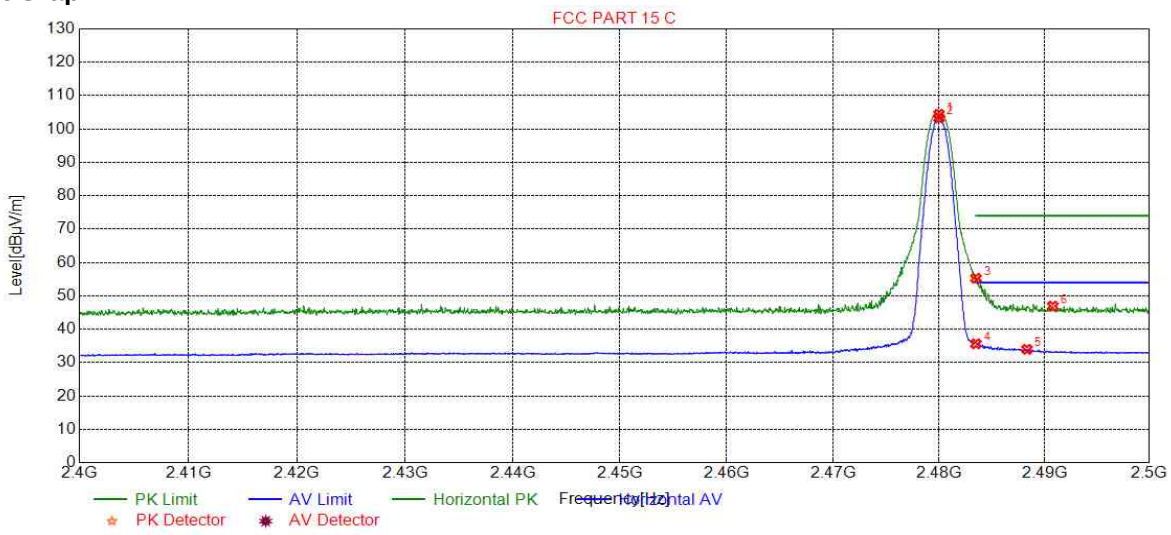
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2371.305	34.02	54.00	19.98	150	346	Vertical
2	2382.036	48.06	74.00	25.94	150	278	Vertical
3	2390.000	33.92	54.00	20.08	150	1	Vertical
4	2390.000	46.66	74.00	27.34	150	225	Vertical
5	2402.000	86.26	0.00	-86.26	150	266	Vertical
6	2402.000	85.65	0.00	-85.65	150	266	Vertical

Final Data List

4.10.4 BLE_1M_Channel 39

Test Graph



Suspected List

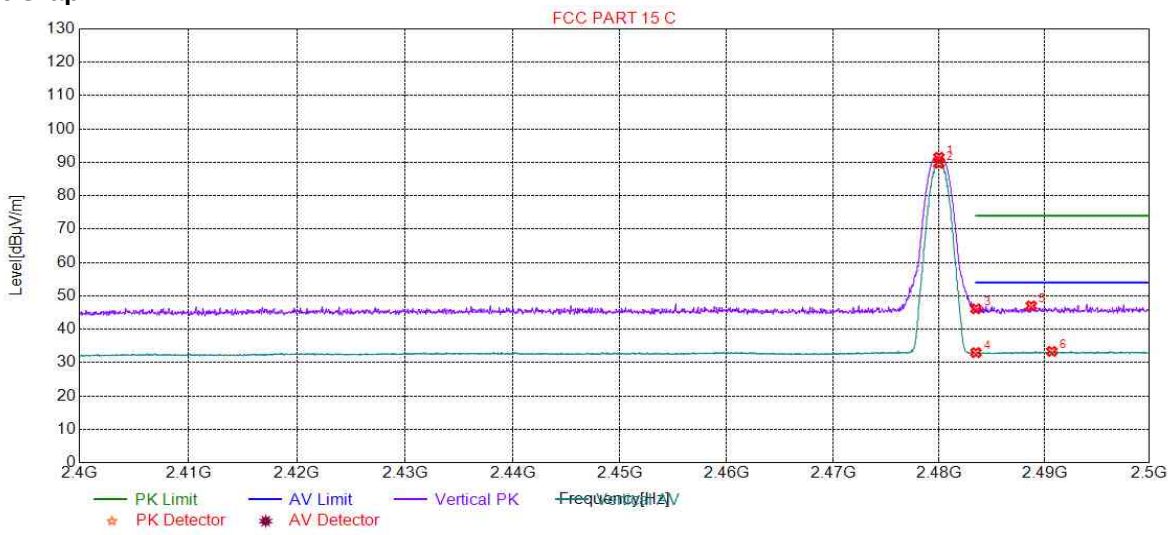
Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.000	104.42	0.00	-104.42	150	212	Horizontal
2	2480.000	103.30	0.00	-103.30	150	216	Horizontal
3	2483.500	55.28	74.00	18.72	150	208	Horizontal
4	2483.500	35.64	54.00	18.36	150	212	Horizontal
5	2488.344	34.00	54.00	20.00	150	243	Horizontal
6	2490.795	46.93	74.00	27.07	150	289	Horizontal

Final Data List

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.10.5 BLE_1M_Channel 39

Test Graph



Suspected List

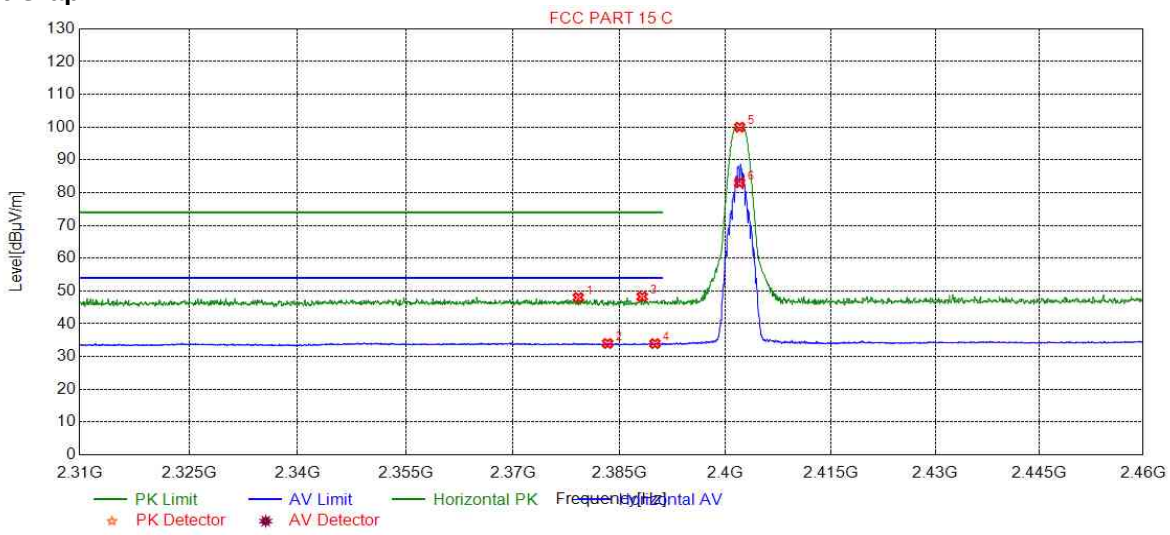
Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.000	91.52	0.00	-91.52	150	43	Vertical
2	2480.000	89.75	0.00	-89.75	150	43	Vertical
3	2483.500	46.13	74.00	27.87	150	270	Vertical
4	2483.500	33.01	54.00	20.99	150	43	Vertical
5	2488.744	47.01	74.00	26.99	150	343	Vertical
6	2490.695	33.39	54.00	20.61	150	24	Vertical

Final Data List

No.1 Workshop, M-10, Middle Section, Science & Technology Park, Shenzhen, China 518057 t (86-755) 26012053 f (86-755) 26710594 www.sgsgroup.com.cn
中国·深圳·科技园中区M-10栋一号厂房 邮编: 518057 t (86-755) 26012053 f (86-755) 26710594 sgs.china@sgs.com

4.10.6 BLE_2M_Channel 0

Test Graph



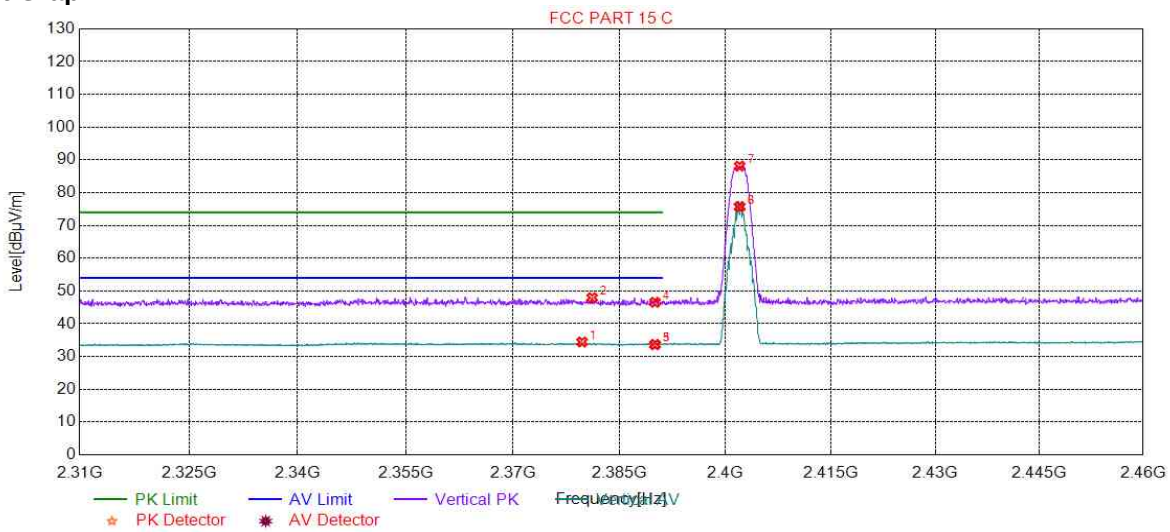
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2379.184	48.03	74.00	25.97	150	250	Horizontal
2	2383.311	33.99	54.00	20.01	150	333	Horizontal
3	2388.189	48.27	74.00	25.73	150	71	Horizontal
4	2390.000	33.94	54.00	20.06	150	71	Horizontal
5	2402.000	100.01	0.00	-100.01	150	216	Horizontal
6	2402.000	83.02	0.00	-83.02	150	59	Horizontal

Final Data List

4.10.7 BLE_2M_Channel 0

Test Graph



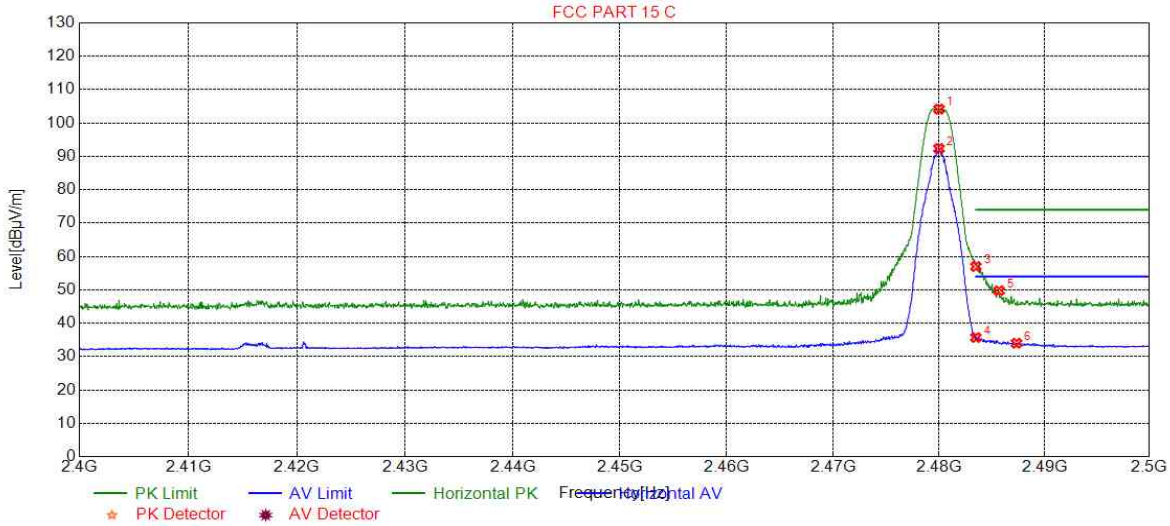
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2379.709	34.44	54.00	19.56	150	174	Vertical
2	2381.135	47.95	74.00	26.05	150	139	Vertical
3	2390.000	33.66	54.00	20.34	150	182	Vertical
4	2390.000	46.56	74.00	27.44	150	162	Vertical
5	2390.000	33.66	54.00	20.34	150	182	Vertical
6	2402.000	75.72	0.00	-75.72	150	154	Vertical
7	2402.000	88.12	0.00	-88.12	150	48	Vertical
8	2402.000	75.72	0.00	-75.72	150	154	Vertical

Final Data List

4.10.8 BLE_2M_Channel 39

Test Graph



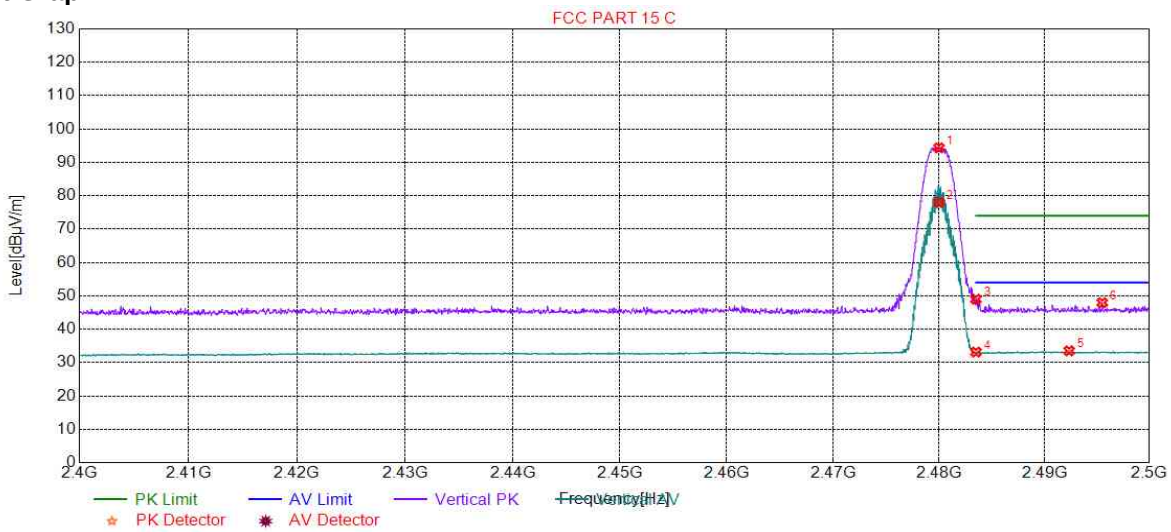
Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.000	104.16	0.00	-104.16	150	218	Horizontal
2	2480.000	92.36	0.00	-92.36	150	210	Horizontal
3	2483.500	57.00	74.00	17.00	150	299	Horizontal
4	2483.500	35.76	54.00	18.24	150	210	Horizontal
5	2485.692	49.77	74.00	24.23	150	264	Horizontal
6	2487.343	34.03	54.00	19.97	150	206	Horizontal

Final Data List

4.10.9 BLE_2M_Channel 39

Test Graph



Suspected List

Suspected List							
NO.	Freq. [MHz]	Level [dBµV/m]	Limit [dBµV/m]	Margin [dB]	Height [cm]	Angle [°]	Polarity
1	2480.000	94.34	0.00	-94.34	150	247	Vertical
2	2480.000	78.01	0.00	-78.01	150	202	Vertical
3	2483.500	49.02	74.00	24.98	150	247	Vertical
4	2483.500	33.18	54.00	20.82	150	228	Vertical
5	2492.346	33.54	54.00	20.46	150	312	Vertical
6	2495.497	47.97	74.00	26.03	150	73	Vertical

Final Data List

Remark:
The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:
Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
All Modes have been tested, but only the worst case data displayed in this report.

5 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.75dB
2	RF power density, conducted	±2.84dB
3	Spurious emissions, conducted	±0.75dB
4	Radiated Spurious emission test	±4.5dB (30MHz-1GHz)
		±4.8dB (1GHz-25GHz)
5	Conduct emission test	±3.12 dB(9KHz- 30MHz)
6	Temperature test	±1°C
7	Humidity test	±3%
8	DC and low frequency voltages	±0.5%

6 Equipment List

Conducted Emission					
Test Equipment	Manufacturer	Model No.	Inventory No	Cal. date (yyyy-mm-dd)	Cal.Duedate (yyyy-mm-dd)
Shielding Room	ZhongYu Electron	GB-88	SEM001-06	2020/5/10	2023/5/9
LISN	Rohde & Schwarz	ENV216	SEM007-01	2020/7/14	2021/7/14
LISN	ETS-LINDGREN	Feb-16	SEM007-02	2020/4/1	2021/3/31
Measurement Software	AUDIX	e3 V5.4.1221d	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM024-01	2020/6/12	2021/6/11
2 Line ISN	Fischer Custom Communications Inc	FCC-TLISN-T202	EMC0122	2020/2/11	2021/2/10
EMI Test Receiver	Rohde & Schwarz	ESCI	SEM004-02	2020/3/2	2021/3/1

RF conducted test					
Test Equipment	Manufacturer	Model No.	Inventory No	Cal. date (yyyy-mm-dd)	Cal.Duedate (yyyy-mm-dd)
DC Power Supply	Agilent Technologie Inc	66311B	W009-09	2020/7/15	2021/7/15
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2020/1/3	2021/1/2
Coaxial Cable	SGS	N/A	SEM031-01	2020/6/12	2021/6/11
Attenuator	Weinschel Associates	WA41	SEM021-09	N/A	N/A
Signal Generator	KEYSIGHT	N5173B	SEM006-05	2020/7/14	2021/7/14
Temperature Chamber	GIANT FORCE	ICT-150-40-CPAR	W027-03	2020/10/27	2021/10/27
Power Meter	Rohde & Schwarz	NRVS	SEM014-02	2020/7/14	2021/7/14

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd
3m Semi-Anechoic Chamber	AUDIX	N/A	SEM001-02	2018/3/13	2021/3/12
Measurement Software	AUDIX	e3V8.2014-6-2	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM026-01	2020/6/12	2021/6/11
EXA Signal Analyzer (10Hz-26.5GHz)	Agilent Technologie Inc	N9010A	SEM004-09	2020/3/12	2021/3/11
BiConiLog Antenna (26-3000MHz)	ETS-Lindgren	3142C	SEM003-01	2020/6/27	2023/6/26
Horn Antenna (0.8-18GHz)	Rohde & Schwarz	HF907	SEM003-07	2018/4/13	2021/4/12
Pre-amplifier(0.1-1.3GHz	HP	8447D	SEM005-02	2020/7/14	2021/7/14
Low Noise Amplifier(100MHz-18GHz)	Black Diamond Series	BDLNA-0118-352810	SEM005-05	2020/9/3	2021/9/2
Horn Antenna (15-40GHz)	Schwarzbeck	BBHA 9170	SEM003-15	2020/10/17	2023/10/16
Pre-amplifier(18-26GHz)	Rohde & Schwarz	CH14-H052	SEM005-17	2020/3/2	2021/3/1
Band filter	N/A	N/A	SEM023-01	N/A	N/A

RE in Chamber					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy-mm-dd)	Cal.Due date (yyyy-mm-dd
3m Semi-Anechoic Chamber	ETS-LINDGREN	N/A	SEM001-01	2020/8/5	2023/8/4
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM025-01	2020/6/12	2021/6/11
MXE EMI Receiver (20Hz-8.4GHz)	Agilent Technologie	N9038A	SEM004-05	2020/7/14	2021/7/14
BiConiLog Antenna (26-3000MHz)	ETS-LINDGREN	3142C	SEM003-01	2020/6/27	2023/6/26
Pre-amplifier (0.1-1.3GHz)	Agilent Technologie	8447D	SEM005-01	2020/3/2	2021/3/1

RE in Chamber					
Test Equipment	**Manufacturer**	**Model No.**	**Inventory No**	**Cal. Date (yyyy mm-dd)**	**Cal. Due date (yyyy-mm-dd)**
10m Semi-Anechoic Chamber	SAEMC	FSAC1018	SEM001-03	2018/3/31	2021/3/30
EMI Test Receiver (9k-7GHz)	Rohde & Schwarz	ESR	SEM004-03	2020/3/2	2021/3/1
Trilog-Broadband Antenna(25M-2GHz)	Schwarzbeck	VULB9168	SEM003-18	2020/3/15	2022/3/14
Pre-amplifier (9k-1GHz)	Sonoma	310N	SEM005-03	2020/3/12	2021/3/11
Loop Antenna (9kHz-30MHz)	ETS-Lindgren	6502	SEM003-08	2020/8/22	2023/8/21
Measurement Software	AUDIX	e3 V8.2014-6-27	N/A	N/A	N/A
Coaxial Cable	SGS	N/A	SEM029-01	2020/6/12	2021/6/11

7 Photographs - EUT Constructional Details

Refer to Appendix A - Photographs of Set-Up for HR/2020/C0004.

The End

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