Global United Technology Service Co., Ltd.
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FCC REPORT

Application No:	GTSE100700102RF
Applicant:	SAGA AUDIO EQUIPMENT CO., LTD.
Address of Applicant:	No.1 Saga Road, Shashui District, Songgang Town, Nanhai, Foshan City, Guangdong, P.R. China
Equipment Under Test (EUT)	
Name:	7" Wide Screen TFT LCD High-Definition Media Player Monitor
Model No.	D72TSB, D73TSB, D365IN, LTF-DV2716, LTF-DV2726, LTF-DV2736, LTF-DV2746, LTF-DV2756
Operation Frequency:	2400MHz to 2483.5MHz
FCC ID:	YMKD72TSB
Standards:	FCC CFR Title 47 Part 15 Subpart C Section 15.247:2008
Date of Receipt:	14 July, 2010
Date of Test:	15~17 July, 2010
Date of Issue:	17 July, 2010
Test Result :	**PASS ***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:

Robinson Lo
Laboratory Manager

2 Contents

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3 Test Summary

Test Item	Section in CFR 47	Result
Antenna Requirement	15.203/15.247 (c)	Passed
Conducted Peak Output Power	15.247 (b)(1)	Passed
20dB Occupied Bandwidth	15.247 (a)(1)	Passed
Carrier Frequencies Separation	15.247 (a)(1)	Passed
Hopping Channel Number	15.247 (a)(1)	Passed
Dwell Time	15.247 (a)(1)	Passed
Pseudorandom Frequency Hopping Sequence	15.247(b)(4)&TCB Exclusion List	Passed
Radiated Emission	15.205/15.209	Passed
RF Exposure Compliance Requirement	15.247(b)(4)& TCB Exclusion List (7 July 2002)	Passed

Remark:

Passed: The EUT complies with the essential requirements in the standard.

Failed: The EUT does not comply with the essential requirements in the standard.

Tx: In this whole report Tx (or tx) means Transmitter.

Rx: In this whole report Rx (or rx) means Receiver.

4 General Information

4.1 Client Information

Applicant:	SAGA AUDIO EQUIPMENT CO., LTD.
Address of Applicant:	No.1 Saga Road, Shashui District, Songgang Town, Nanhai, Foshan City, Guangdong, P.R. China
Manufacturer/Factory:	N/A
Address of Manufacturer/Factory:	N/A

4.2 General Description of E.U.T.

Product Name:	7" Wide Screen TFT LCD High-Definition Media Player Monitor
Item No.:	D72TSB, D73TSB, D365IN, LTF-DV2716, LTF-DV2726, LTF-DV2736, LTF-DV2746, LTF-DV2756
Operation Frequency:	2402MHz~2480MHz
Channel numbers:	79
Channel separation:	1MHz
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	2dBi
Power supply:	DC 12.0V

Remark:

Model no:

D72TSB, D73TSB, D365IN, LTF-DV2716, LTF-DV2726,LTF-DV2736, LTF-DV2746, LTF-DV2756

Only the model No. D72TSB *was tested, since the electrical circuit design, PCB layout, Electrical Parts and figure are identical to the basic model, except the outer decoration.*

Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1	2402MHz	21	2422MHz	41	2442MHz	61	2462MHz
2	2403MHz	22	2423MHz	42	2443MHz	62	2463MHz
3	2404MHz	23	2424MHz	43	2444MHz	63	2464MHz
4	2405MHz	24	2425MHz	44	2445MHz	64	2465MHz
5	2406MHz	25	2426MHz	45	2446MHz	65	2466MHz
6	2407MHz	26	2427MHz	46	2447MHz	66	2467MHz
7	2408MHz	27	2428MHz	47	2448MHz	67	2468MHz
8	2409MHz	28	2429MHz	48	2449MHz	68	2469MHz
9	2410MHz	29	2430MHz	49	2450MHz	69	2470MHz
10	2411MHz	30	2431MHz	50	2451MHz	70	2471MHz
11	2412MHz	31	2432MHz	51	2452MHz	71	2472MHz
12	2413MHz	32	2433MHz	52	2453MHz	72	2473MHz
13	2414MHz	33	2434MHz	53	2454MHz	73	2474MHz
14	2415MHz	34	2435MHz	54	2455MHz	74	2475MHz
15	2416MHz	35	2436MHz	55	2456MHz	75	2476MHz
16	2417MHz	36	2437MHz	56	2457MHz	76	2477MHz
17	2418MHz	37	2438MHz	57	2458MHz	77	2478MHz
18	2419MHz	38	2439MHz	58	2459MHz	78	2479MHz
19	2420MHz	39	2440MHz	59	2460MHz	79	2480MHz
20	2421MHz	40	2441MHz	60	2461MHz		

Note:
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	2402MHz
The middle channel	2441MHz
The Highest channel	2480MHz

4.3 E.U.T Operation mode

Operating Environment:	
Temperature:	25.0 °C
Humidity:	45 % RH
Atmospheric Pressure:	1008 mbar
Test mode:	
Transmitting mode:	Keep the EUT in transmitting mode with modulation.

4.4 Test Facility

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

- **FCC —Registration No.: 600491**

  Global United Technology Service Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in out files. Registration 600491, July 20, 2010.

4.5 Test Location

All tests were performed at:

Global United Technology Service Co., Ltd.
Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China
Tel: 0755-27798480
Fax: 0755-27798960

4.6 Other Information Requested by the Customer

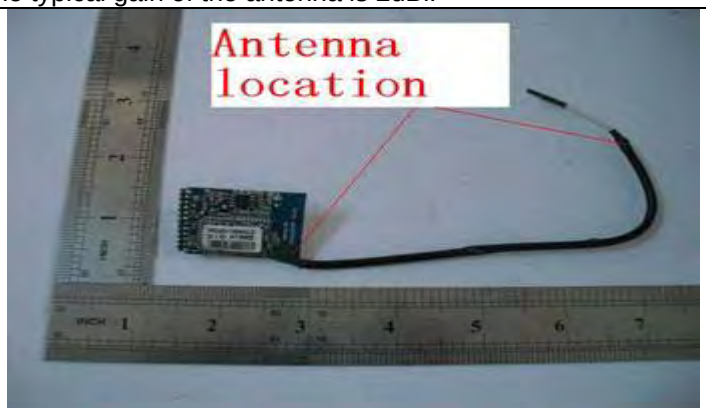
None.

4.7 Test Instruments list

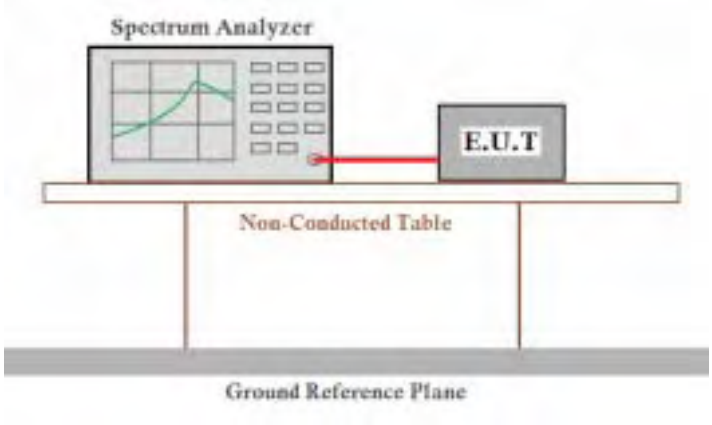
Radiated Emission						
Item	**Test Equipment**	**Manufacturer**	**Model No.**	**Inventory No.**	**Cal.Date (dd-mm-yy)**	**Cal.Due date (dd-mm-yy)**
1	3m Semi-Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS201	Mar. 30 2010	Mar. 30 2011
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS202	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Sep. 10 2009	Sep. 10 2010
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS204	Feb 26 2009	Sep. 10 2010
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS205	June 30 2010	June 30 2011
6	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
7	Coaxial Cable	GTS	N/A	GTS400	Apr. 01 2010	Apr. 01 2011
8	Coaxial Cable	GTS	N/A	GTS401	Apr. 01 2010	Apr. 01 2011
9	Coaxial cable	GTS	N/A	GTS402	Apr. 01 2010	Apr. 01 2011
10	Coaxial Cable	GTS	N/A	GTS407	Apr. 01 2010	Apr. 01 2011
11	Coaxial Cable	GTS	N/A	GTS408	Apr. 01 2010	Apr. 01 2011
12	Amplifier(10KHz-5GHz)	Sonnoma Instrument	305-1052	GTS210	Apr. 01 2010	Apr. 01 2011
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS231	Apr. 01 2010	Apr. 01 2011

5 Test results and Measurement Data

5.1 Antenna requirement:

Standard requirement:	**FCC Part15 C 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(c) (1)(i) requirement:* *(i) Systems operating in the 2400-2483.5 MHz band that is used exclusively for fixed. Point-to-point operations may employ transmitting antennas with directional gain greater than 6dBi provided the maximum conducted output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6dBi.*	
E.U.T Antenna:	
The EUT make use of an lead antenna, the antenna size: 12cm(L)* Φ 0.15cm , The typical gain of the antenna is 2dBi.	
	

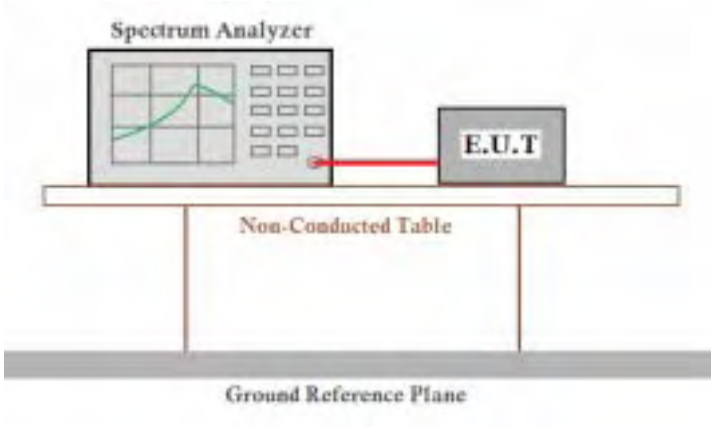
5.2 Conducted Peak Output Power

Test Requirement:	**FCC Part15 C Section 15.247 (b)(3)**
Test Method:	**ANSI C63.4:2003 and KDB DA00-705**
Receiver setup:	**RBW=1MHz, VBW=1MHz, Detector=Peak**
Limit:	**30dBm**
Test setup:	 ***Remark:*** ***Offset the High-Frequency cable loss 2.5dB in the spectrum analyzer.***
Test Instruments:	Refer to section 4.7 for details
Test mode:	**Non-hopping transmitting with modulation.**
Test results:	**Passed**

Measurement Data

Test channel	Peak Output Power (dBm)	Limit (dBm)	Result
Lowest	-3.92	30.00	Pass
Middle	-3.11	30.00	Pass
Highest	-3.54	30.00	Pass

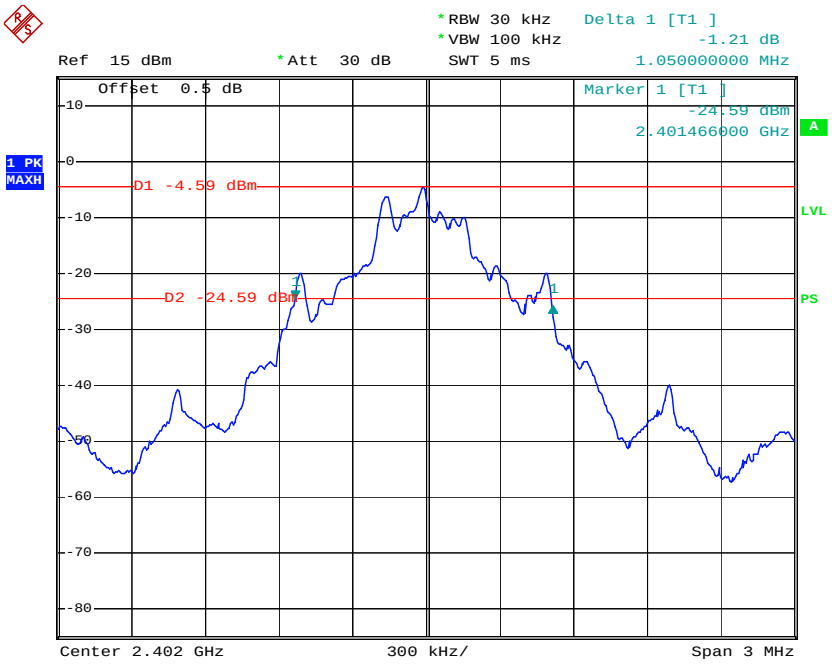
5.3 20dB Occupy Bandwidth

Test Requirement:	**FCC Part15 C Section 15.247 (a)(1)**
Test Method:	**ANSI C63.4:2003 and KDB DA00-705**
Receiver setup:	**RBW=30KHz, VBW=100KHz,detector=Peak**
Limit:	**NA**
Test setup:	 ***Remark:*** ***Offset the High-Frequency cable loss 0.5dB in the spectrum analyzer.***
Test Instruments:	**Refer to section 4.7 for details**
Test mode:	**Transmitting mode**
Test results:	**Passed**

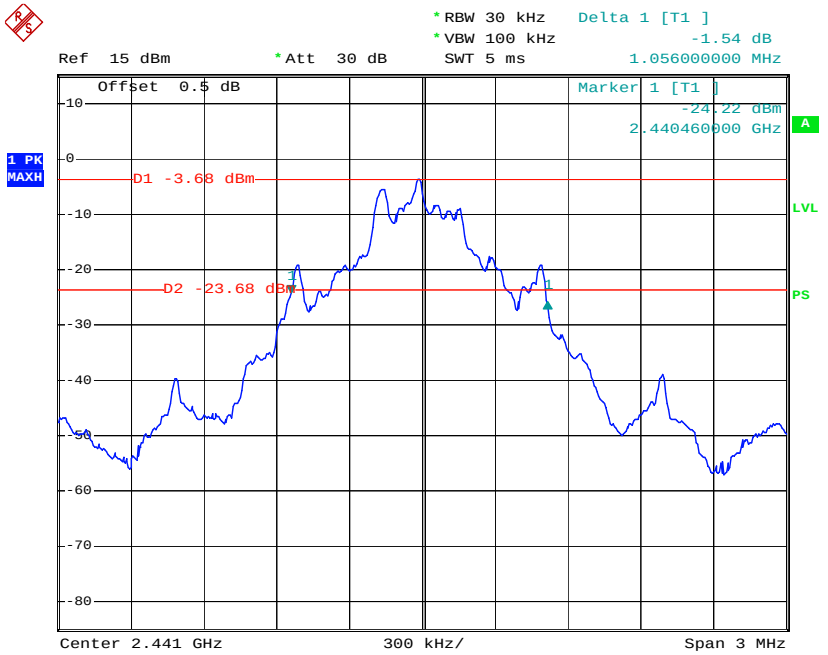
Measurement Data			
Test channel	Lowest	Middle	Highest
20dB Occupy Bandwidth (KHz)	1050	1056	1056

Test plot as follows:

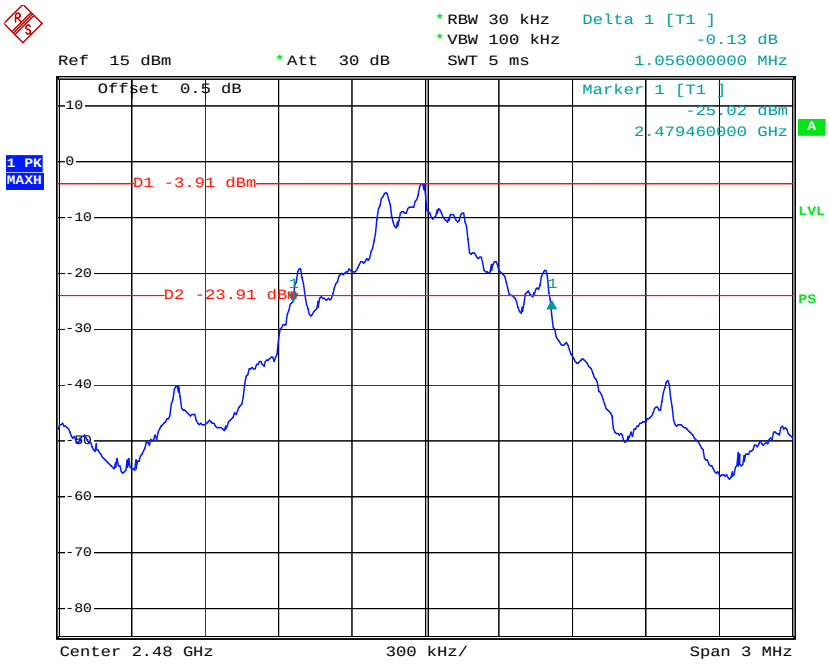
Test channel:	Lowest



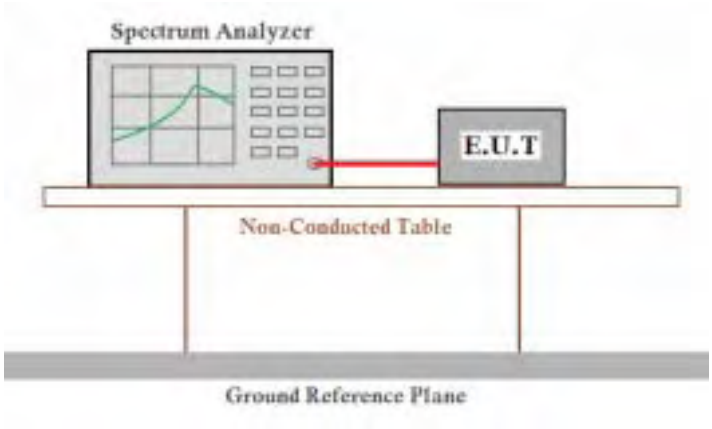
Test channel:	Middle



Test channel:	Highest



5.4 Carrier Frequencies Separation

Test Requirement:	**FCC Part15 C Section 15.247 (a)(1)**
Test Method:	**ANSI C63.4:2003 and KDB DA00-705**
Receiver setup:	**RBW=30KHz, VBW=100KHz, detector=Peak**
Limit:	**0.025MHz or 2/3 of the 20dB bandwidth (whichever is greater)**
Test setup:	 ***Remark:*** ***Offset the High-Frequency cable loss 0.5dB in the spectrum analyzer.***
Test Instruments:	Refer to section 4.7 for details
Test mode:	**Hopping transmitting with modulation.**
Test results:	**Passed**

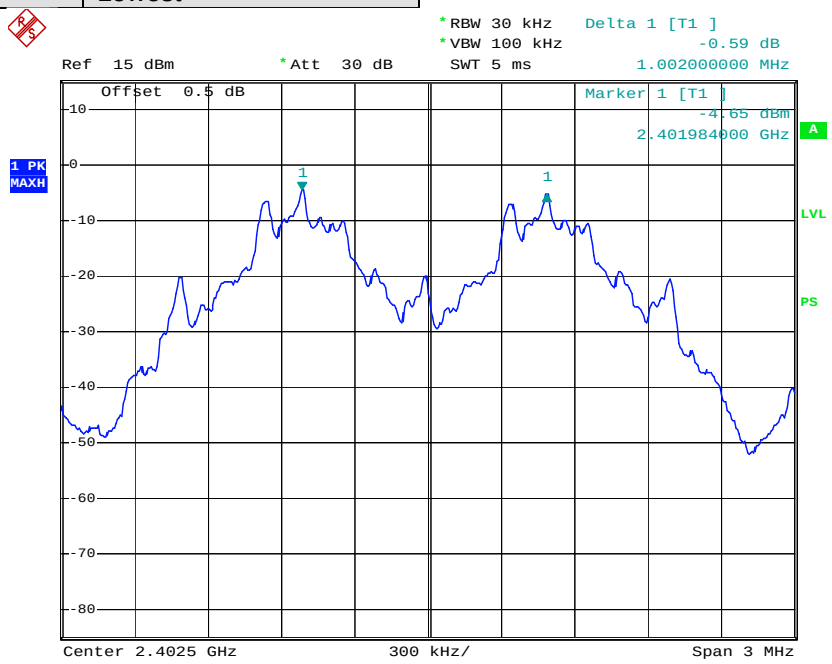
Measurement Data			
Test channel	Carrier Frequencies Separation (KHz)	Limit (KHz)	Result
Lowest	1002	704	Pass
Middle	1002	704	Pass
Highest	1002	704	Pass

Note: According to section 5.4,

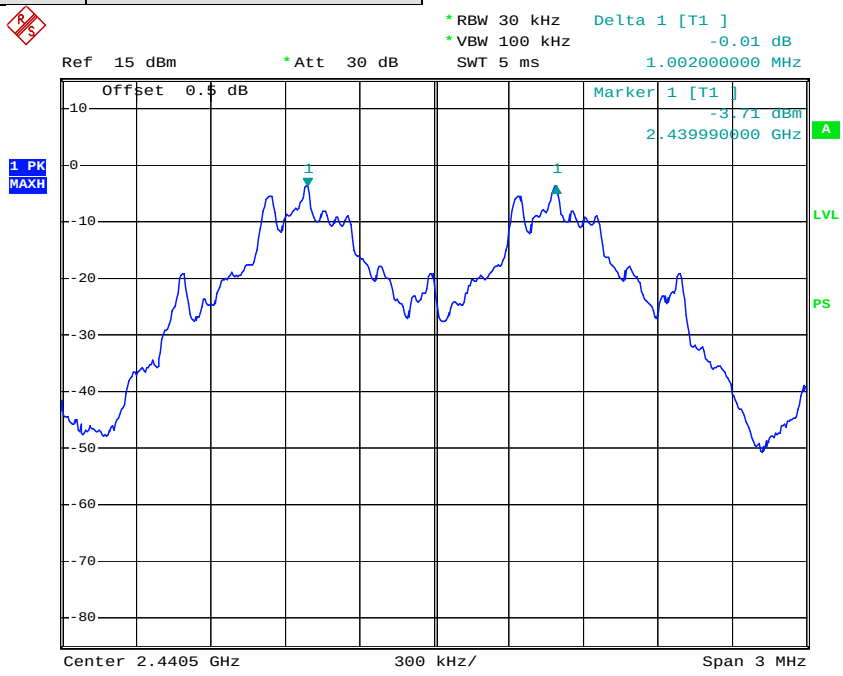
Mode	*20dB bandwidth (KHz) (worse case)*	*Limit (KHz) (Carrier Frequencies Separation)*
GFSK	*1056*	704

Test plot as follows:

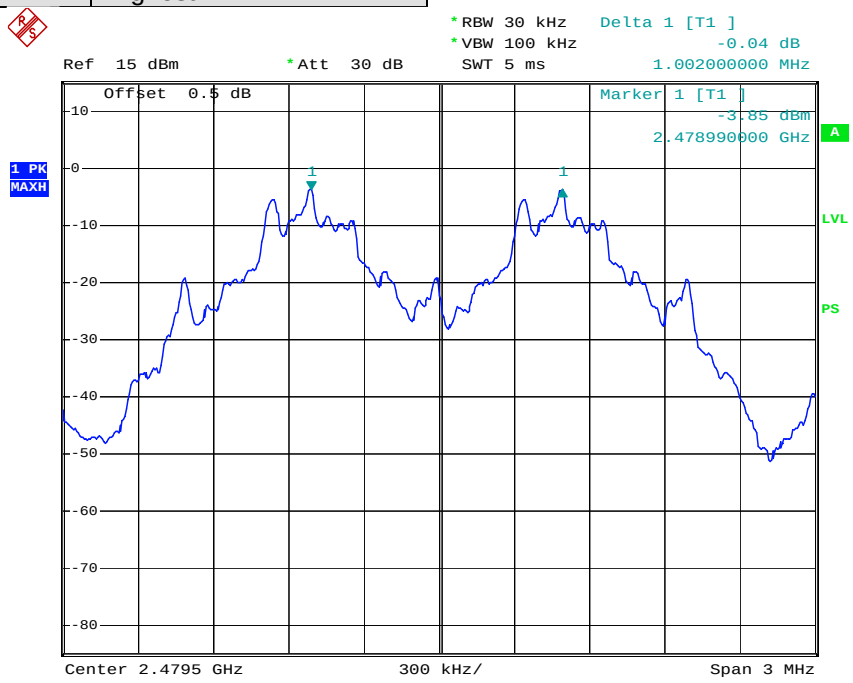
Test channel:	Lowest



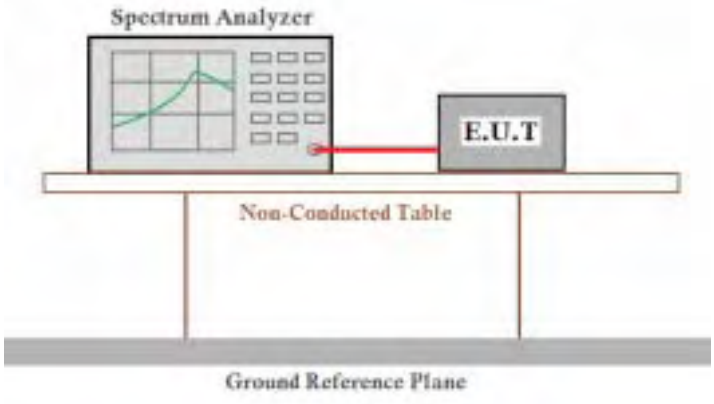
Test channel:	Middle



Test channel:	Highest

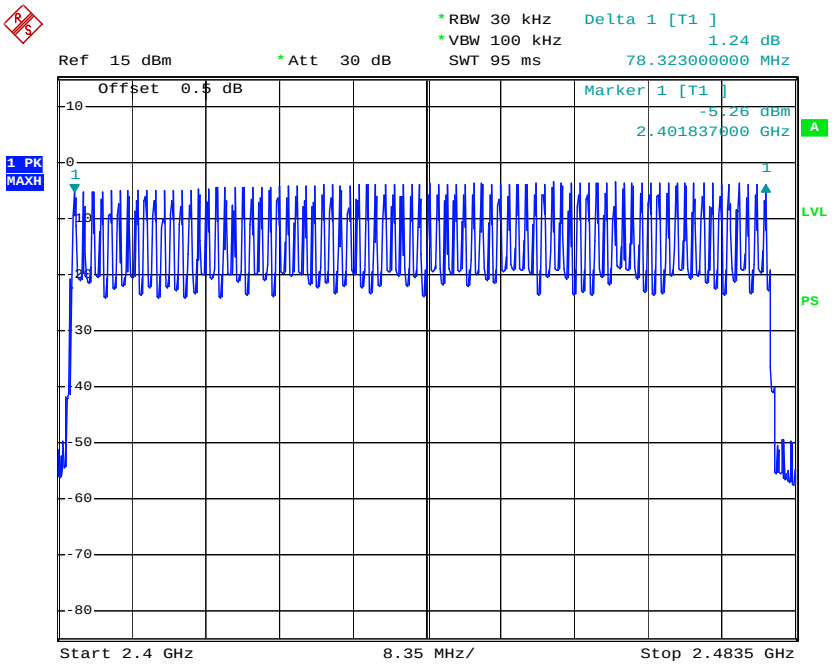


5.5 Hopping Channel Number

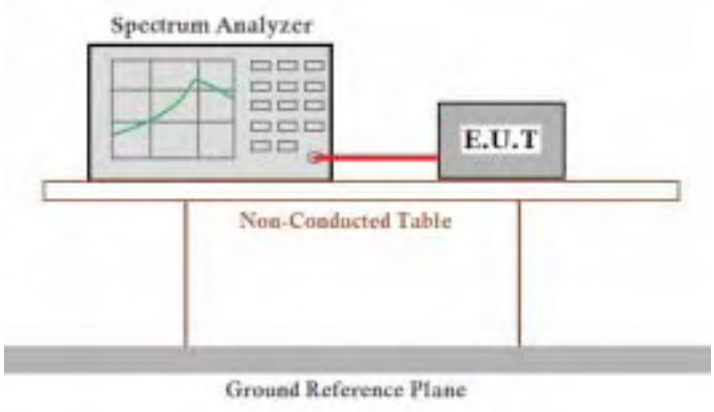
Test Requirement:	**FCC Part15 C Section 15.247 (a)(1)**
Test Method:	**ANSI C63.4:2003 and KDB DA00-705**
Receiver setup:	**RBW=30KHz, VBW=100KHz, Frequency range=2400MHz-2483.5MHz, Detector=Peak**
Limit:	**75channels**
Test setup:	 ***Remark:*** ***Offset the High-Frequency cable loss 0.5dB in the spectrum analyzer.***
Test Instruments:	Refer to section 4.7 for details
Test mode:	**Hopping transmitting with modulation.**
Test results:	**Passed**

Measurement Data	
Hopping channel numbers	**79 channel**

Test plot as follows



5.6 Dwell Time

Test Requirement:	**FCC Part15 C Section 15.247 (a)(1)**
Test Method:	**ANSI C63.4:2003 and KDB DA00-705**
Receiver setup:	**RBW=1MHz, VBW=3MHz, Span=0Hz, Detector=Peak**
Limit:	**0.4 Second**
Test mode:	**Hopping transmitting with modulation.**
Test setup:	
Test Instruments:	Refer to section 4.7 for details
Test results:	**Passed**

Measurement Data

Mode	Packet	Channel	Pulse wide (msec)	Dwell time (sec)	Limit (sec)	Result
GFSK	DH1	Low Channel	0.485	0.155	0.4	Pass
		Mid Channel	0.490	0.157	0.4	Pass
		High Channel	0.490	0.157	0.4	Pass
	DH3	Low Channel	1.760	0.282	0.4	Pass
		Mid Channel	1.760	0.282	0.4	Pass
		High Channel	1.760	0.282	0.4	Pass
	DH5	Low Channel	3.040	0.324	0.4	Pass
		Mid Channel	3.040	0.324	0.4	Pass
		High Channel	3.040	0.324	0.4	Pass

Dwell time

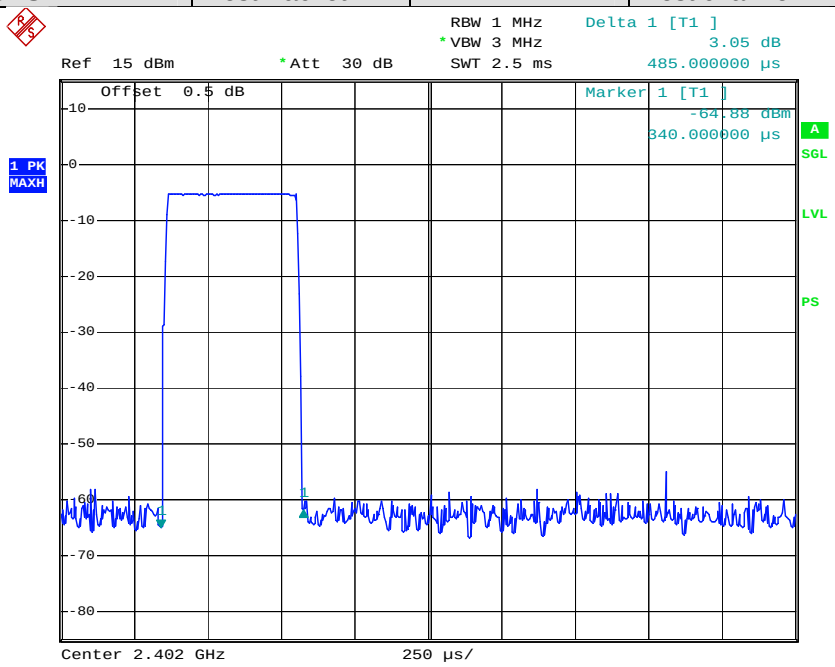
DH1: Dwell time = Pulse time*(1600/2/79)*31.6S;

DH3: Dwell time = Pulse time*(1600/4/79)*31.6S;

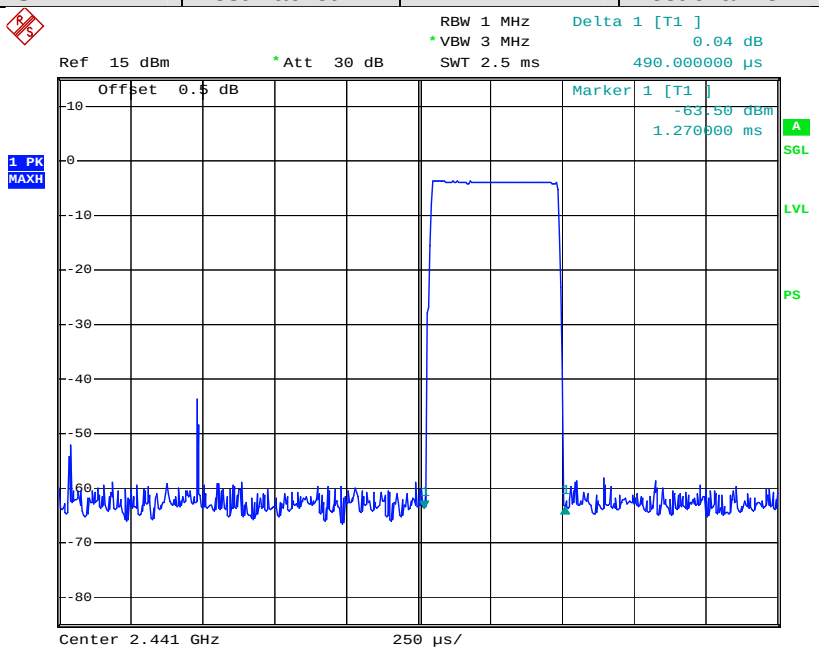
DH5: Dwell time = Pulse time*(1600/6/79)*31.6S;

Test plot as follows

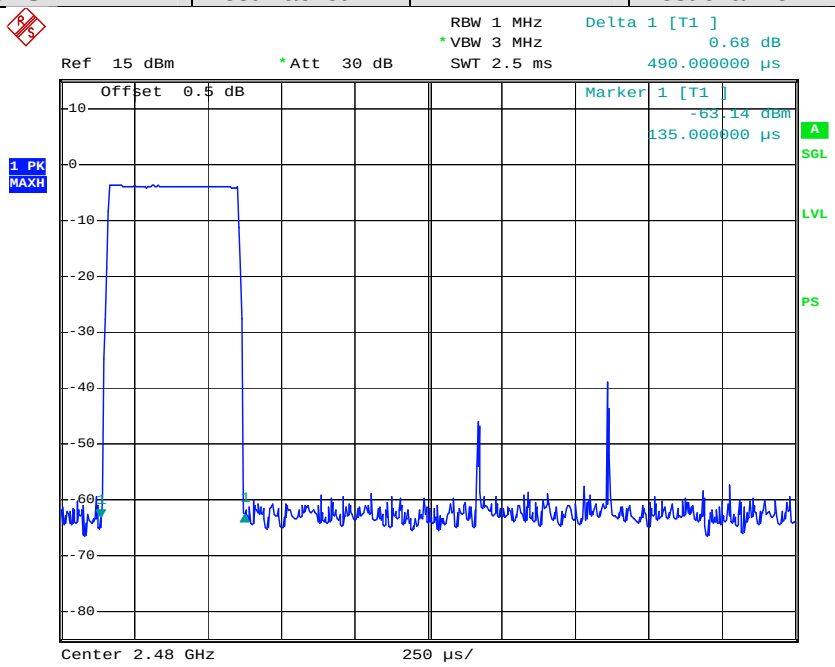
Test mode:	GFSK	Test Packet:	DH1	Test channel:	Lowest



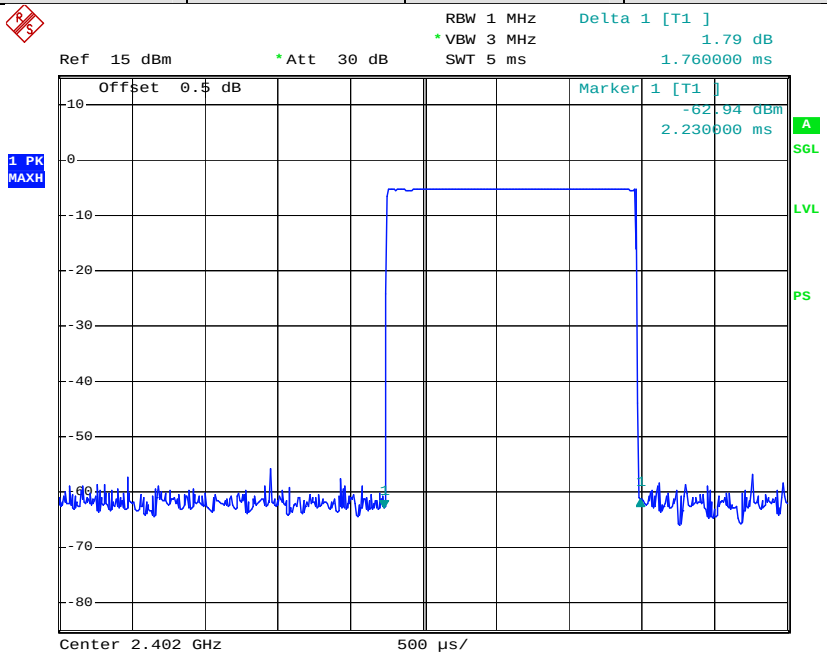
Test mode:	GFSK	Test Packet:	DH1	Test channel:	Middle



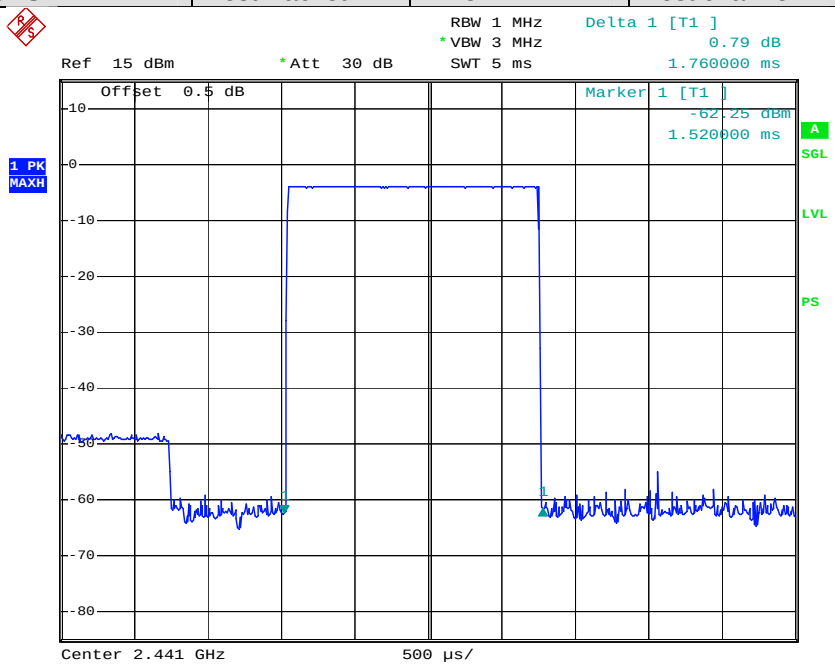
Test mode:	GFSK	Test Packet:	DH1	Test channel:	Highest



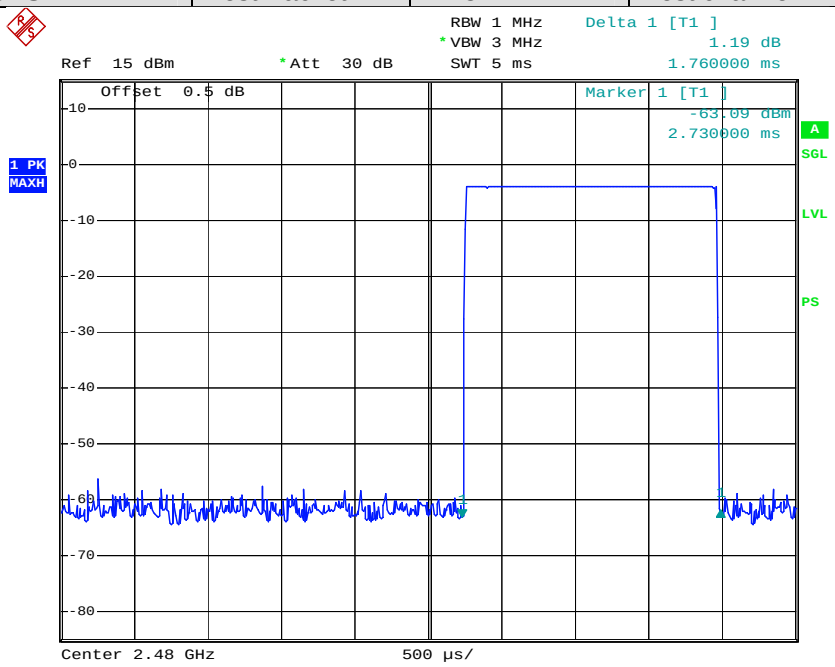
Test mode:	GFSK	Test Packet:	DH3	Test channel:	Lowest



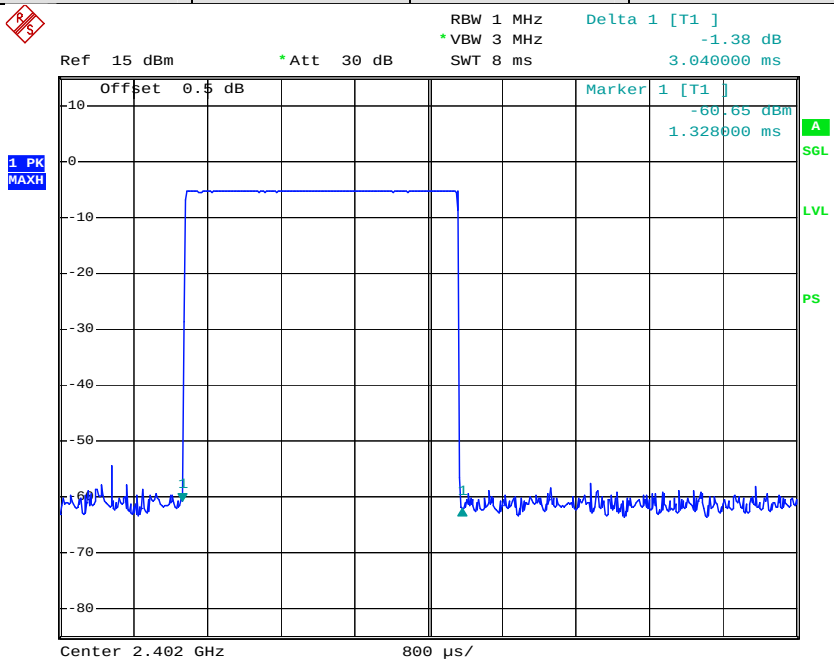
Test mode:	GFSK	Test Packet:	DH3	Test channel:	Middle



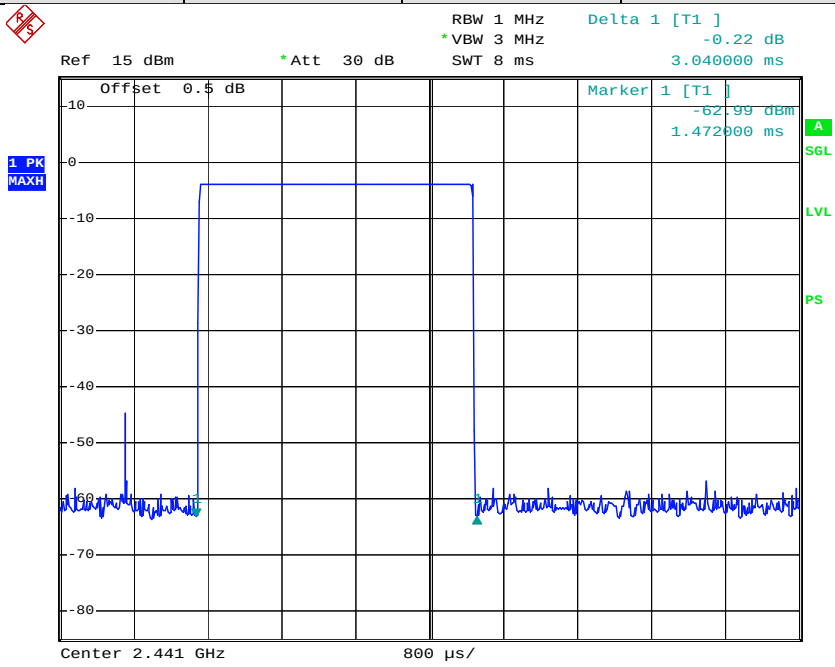
Test mode:	GFSK	Test Packet:	DH3	Test channel:	Highest



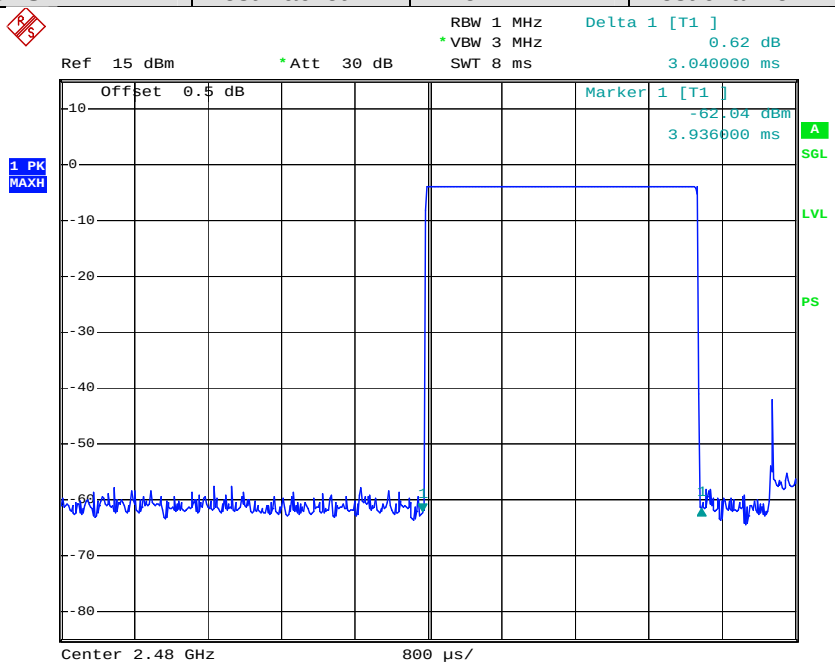
Test mode:	GFSK	Test Packet:	DH5	Test channel:	Lowest



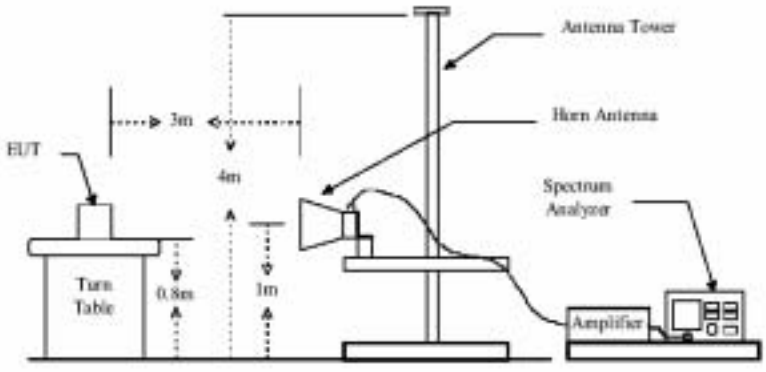
Test mode:	GFSK	Test Packet:	DH5	Test channel:	Middle



Test mode:	GFSK	Test Packet:	DH5	Test channel:	Highest



5.7 Band Edge

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>2400MHz to 2483.5MHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>a. The EUT was placed on the top of a rotating table 0.8 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.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.</td></tr>
<tr><td>Test setup:</td><td> 
</td></tr>
<tr><td>Test Instruments:</td><td>Refer to section 4.7 for details</td></tr>
<tr><td>Test mode:</td><td>Non-hopping transmitting with modulation.</td></tr>
<tr><td>Test results:</td><td>Passed</td></tr>
</table>

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2390	6.28	32.24	39.03	58.76	58.25	74	-15.75	Vertical
2400	6.34	32.25	38.87	60.22	59.94	74	-14.06	Vertical
2390	6.28	32.24	39.03	55.29	54.78	74	-19.22	Horizontal
2400	6.34	32.25	38.87	56.37	56.09	74	-17.91	Horizontal

Test mode:	Transmitting	Test channel:	Lowest	Remark:	Average

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2390	6.28	32.24	39.03	48.36	47.85	54	-6.15	Vertical
2400	6.34	32.25	38.87	49.01	48.73	54	-5.27	Vertical
2390	6.28	32.24	39.03	44.98	44.47	54	-9.53	Horizontal
2400	6.34	32.25	38.87	46.72	46.44	54	-7.56	Horizontal

Test mode:	Transmitting	Test channel:	Highest	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2483.5	6.22	32.29	39.53	57.3	56.28	74	-17.72	Vertical
2500	5.76	32.30	39.15	56.82	55.73	74	-18.27	Vertical
2483.5	6.22	32.29	39.53	55.82	54.8	74	-19.20	Horizontal
2500	5.76	32.30	39.15	55.1	54.01	74	-19.99	Horizontal

Test mode:	Transmitting	Test channel:	Highest	Remark:	Average

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2483.5	6.22	32.29	39.53	47.35	46.33	54	-7.67	Vertical
2500	5.76	32.30	39.15	48.27	47.18	54	-6.82	Vertical
2483.5	6.22	32.29	39.53	46.17	45.15	54	-8.85	Horizontal
2500	5.76	32.30	39.15	45.01	43.92	54	-10.08	Horizontal

5.8 Pseudorandom Frequency Hopping Sequence

Test Requirement:	FCC Part15 C Section 15.247 (a)(1) requirement:

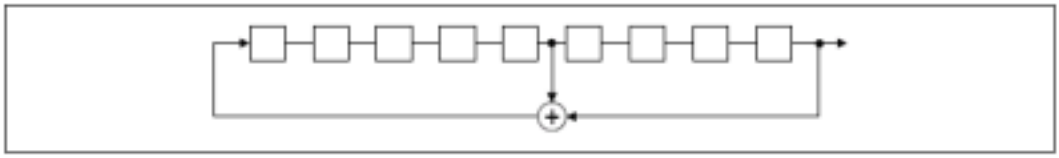
Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater.

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, whichever is greater, provided the systems operate with an output power no greater than 125 mW. The system shall hop to channel frequencies that are selected at the system hopping rate from a Pseudorandom ordered list of hopping frequencies. Each frequency must be used equally on the average by each transmitter. The system receivers shall have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shall shift frequencies in synchronization with the transmitted signals.

EUT Pseudorandom Frequency Hopping Sequence

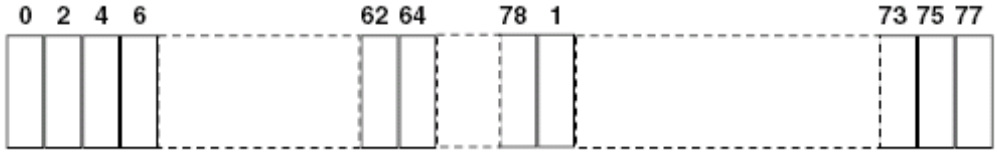
The pseudorandom sequence may be generated in a nine-stage shift register whose 5th and 9th stage outputs are added in a modulo-two addition stage. And the result is fed back to the input of the first stage. The sequence begins with the first ONE of 9 consecutive ONEs; i.e. the shift register is initialized with nine ones.

- *Number of shift register stages: 9*
- *Length of pseudo-random sequence: 2^9 -1 = 511 bits*
- *Longest sequence of zeros: 8 (non-inverted signal)*



Linear Feedback Shift Register for Generation of the PRBS sequence

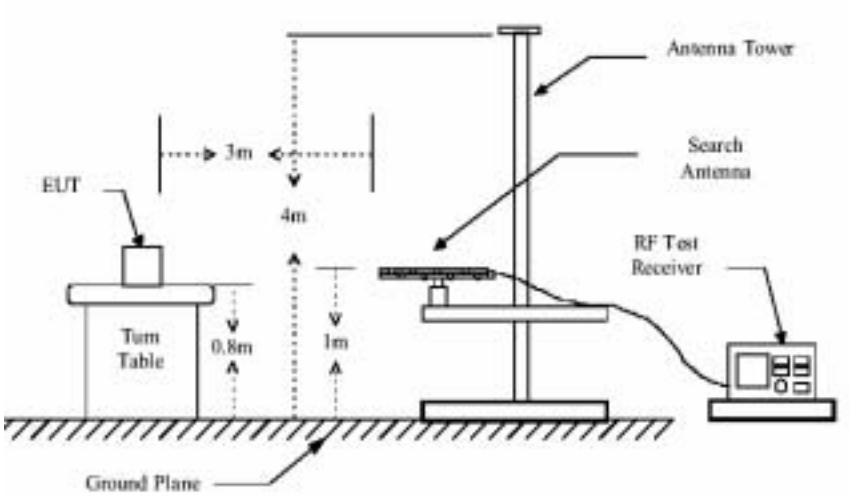
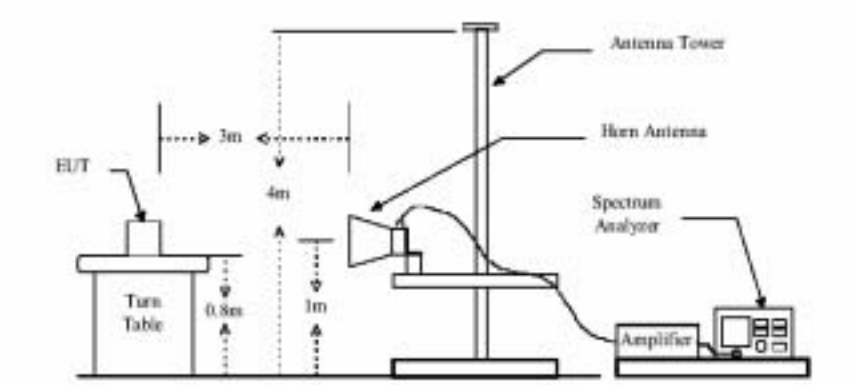
An example of Pseudorandom Frequency Hopping Sequence as follow:



Each frequency used equally on the average by each transmitter.
The system receivers have input bandwidths that match the hopping channel bandwidths of their ***corresponding transmitters and shift frequencies in synchronization with the transmitted signals.***

5.9 Radiated Emission

<table>
<tr><td>Test Requirement:</td><td>FCC Part15 C Section 15.209 and 15.205</td></tr>
<tr><td>Test Method:</td><td>ANSI C63.4: 2003</td></tr>
<tr><td>Test Frequency Range:</td><td>30MHz to 25GHz</td></tr>
<tr><td>Test site:</td><td>Measurement Distance: 3m (Semi-Anechoic Chamber)</td></tr>
<tr><td>Receiver setup:</td><td>
<table>
<tr><th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr>
<tr><td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr>
<tr><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr>
</table>
</td></tr>
<tr><td>Limit:</td><td>
<table>
<tr><th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr>
<tr><td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr>
<tr><td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr>
<tr><td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr>
<tr><td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr>
<tr><td rowspan="2">Above 1GHz</td><td>54.0</td><td>Average Value</td></tr>
<tr><td>74.0</td><td>Peak Value</td></tr>
</table>
</td></tr>
<tr><td>Test Procedure:</td><td>a. The EUT was placed on the top of a rotating table 0.8 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.
b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
c. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotable table was turned from 0 degrees to 360 degrees to find the maximum reading.
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
g. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.</td></tr>
</table>

Test setup:	Below 1GHz  Above 1GHz 
Test Instruments:	Refer to section 4.7 for details
Test mode:	**Non-hopping transmitting with modulation.**
Test results:	Passed

Note:
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

5.9.1 Radiated emission below 1GHz

Test channel:	Lowest

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
56.792	0.69	12.61	25.71	51.18	38.77	40.0	-1.23	Vertical
79.8	0.96	12.14	25.68	48.57	35.99	40.0	-4.01	Vertical
147.921	1.5	10.06	25.64	55.54	41.46	43.5	-2.04	Vertical
170.793	1.64	13.36	25.63	51.85	41.22	43.5	-2.28	Vertical
307.831	2.09	16.66	25.59	49.32	42.48	46.0	-3.52	Vertical
330.195	16.45	16.86	25.58	48.68	42.09	46.0	-3.91	Vertical
56.991	0.69	10.55	25.71	50.77	36.3	40.0	-3.7	Horizontal
125.446	1.35	11.41	25.65	51.46	38.57	43.5	-4.93	Horizontal
147.921	1.5	10.2	25.64	56.07	42.13	43.5	-1.37	Horizontal
170.793	1.64	10.58	25.63	56.54	43.13	43.5	-0.37	Horizontal
193.773	1.74	11.28	25.62	52.64	40.04	43.5	-3.46	Horizontal
558.73	2.58	21.34	25.54	41.52	39.9	46.0	-6.1	Horizontal

Test channel:	Middle

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
56.991	0.69	12.61	25.71	51.9	39.49	40.0	-0.51	Vertical
79.8	0.96	12.14	25.68	48.51	35.93	40.0	-4.07	Vertical
122.404	1.34	10.8	25.65	50.49	36.98	43.5	-6.52	Vertical
147.921	1.5	10.06	25.64	54.98	40.9	43.5	-2.6	Vertical
170.793	1.64	13.36	25.63	52.37	41.74	43.5	-1.76	Vertical
307.831	2.09	16.66	25.59	50.44	43.6	46.0	-2.4	Vertical
56.792	0.69	10.55	25.71	44.39	29.92	40.0	-10.08	Horizontal
79.8	0.96	7.43	25.68	49.44	32.15	40.0	-7.85	Horizontal
147.921	1.5	10.2	25.64	53.44	39.5	43.5	-4.0	Horizontal
170.793	1.64	10.58	25.63	55.32	41.91	43.5	-1.59	Horizontal
193.773	1.74	11.28	25.62	53.77	41.17	43.5	-2.33	Horizontal
475.499	2.37	20.83	25.55	42.66	40.31	46.0	-5.69	Horizontal

Test channel:	Highest

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
56.792	0.69	12.61	25.71	51.54	39.13	40.0	-0.87	Vertical
79.8	0.96	12.14	25.68	51.93	39.35	40.0	-0.65	Vertical
122.404	1.34	10.8	25.65	54.55	41.04	43.5	-2.46	Vertical
153.2	1.53	10.56	25.64	56.46	42.91	43.5	-0.59	Vertical
170.793	1.64	13.36	25.63	53.1	42.47	43.5	-1.03	Vertical
357.929	2.18	16.98	25.57	50.09	43.68	46.0	-2.32	Vertical
122.404	1.34	11.71	25.65	52.48	39.88	43.5	-3.62	Horizontal
147.921	1.5	10.2	25.64	54.11	40.17	43.5	-3.33	Horizontal
170.793	1.64	10.58	25.63	55.25	41.84	43.5	-1.66	Horizontal
193.773	1.74	11.28	25.62	55.27	42.67	43.5	-0.83	Horizontal
214.514	1.84	11.69	25.61	54.06	41.98	43.5	-1.52	Horizontal
490.745	2.39	20.85	25.55	46.86	44.55	46.0	-1.45	Horizontal

5.9.2 Transmitter emission above 1GHz

Test channel:	Lowest	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2395	4.97	32.24	37.65	60.08	59.64	74.00	-14.36	Vertical
4804	9.36	34.25	41.53	41.12	43.20	74.00	-30.80	Vertical
7206	13.38	37.23	40.98	37.40	47.03	74.00	-26.97	Vertical
9608	13.39	37.99	37.56	35.10	48.92	74.00	-25.08	Vertical
12010	16.45	39.10	39.09	36.20	52.66	74.00	-21.34	Vertical
2394	4.97	32.24	37.65	60.16	59.72	74.00	-14.28	Horizontal
4804	9.36	34.25	41.53	39.58	41.66	74.00	-32.34	Horizontal
7206	13.38	37.23	40.98	38.65	48.28	74.00	-25.72	Horizontal
9608	13.39	37.99	37.56	34.62	48.44	74.00	-25.56	Horizontal
12010	16.45	39.10	39.09	34.97	51.43	74.00	-22.57	Horizontal

Test channel:	Lowest	Remark:	Average

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2394	4.97	32.24	37.65	40.40	39.96	54.00	-14.04	Vertical
4804	9.36	34.25	41.53	29.96	32.04	54.00	-21.96	Vertical
7206	13.38	37.23	40.98	26.34	35.97	54.00	-18.03	Vertical
9608	13.39	37.99	37.56	23.39	37.21	54.00	-16.79	Vertical
12010	16.45	39.10	39.09	23.98	40.44	54.00	-13.56	Vertical
2394	4.97	32.24	37.65	39.30	38.86	54.00	-15.14	Horizontal
4804	9.36	34.25	41.53	28.14	30.22	54.00	-23.78	Horizontal
7206	13.38	37.23	40.98	26.41	36.04	54.00	-17.96	Horizontal
9608	13.39	37.99	37.56	23.41	37.23	54.00	-16.77	Horizontal
12010	16.45	39.10	39.09	23.97	40.43	54.00	-13.57	Horizontal

Test channel:	Middle	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882	10.57	34.35	40.33	42.84	47.43	74.00	-26.57	Vertical
7323	12.91	37.31	40.40	36.75	46.57	74.00	-27.43	Vertical
9764	13.89	38.03	37.94	31.46	45.44	74.00	-28.56	Vertical
12205	17.95	39.23	39.30	33.57	51.45	74.00	-22.55	Vertical
14646	17.18	41.27	45.96	31.81	44.30	74.00	-29.70	Vertical
4882	10.57	34.35	40.33	41.52	46.11	74.00	-27.89	Horizontal
7323	12.91	37.31	40.40	39.26	49.08	74.00	-24.92	Horizontal
9764	13.89	38.03	37.94	33.60	47.58	74.00	-26.42	Horizontal
12205	17.95	39.23	39.30	35.45	53.33	74.00	-20.67	Horizontal
14646	17.18	41.27	45.96	34.01	46.50	74.00	-27.50	Horizontal

Test channel:	Middle	Remark:	Average

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
4882	10.57	34.35	40.33	31.02	35.61	54.00	-18.39	Vertical
7323	12.91	37.31	40.40	26.36	36.18	54.00	-17.82	Vertical
9764	13.89	38.03	37.94	20.38	34.36	54.00	-19.64	Vertical
12205	17.95	39.23	39.30	22.27	40.15	54.00	-13.85	Vertical
14646	17.18	41.27	45.96	20.70	33.19	54.00	-20.81	Vertical
4882	10.57	34.35	40.33	29.34	33.93	54.00	-20.07	Horizontal
7323	12.91	37.31	40.40	27.33	37.15	54.00	-16.85	Horizontal
9764	13.89	38.03	37.94	22.26	36.24	54.00	-17.76	Horizontal
12205	17.95	39.23	39.30	24.21	42.09	54.00	-11.91	Horizontal
14646	17.18	41.27	45.96	22.68	35.17	54.00	-18.83	Horizontal

Test channel:	Highest	Remark:	Peak

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2480.3	5.08	32.29	37.64	59.55	59.28	74.00	-14.72	Vertical
4960	10.43	34.45	41.03	42.42	46.27	74.00	-27.73	Vertical
7440	12.72	37.37	40.01	37.66	47.74	74.00	-26.26	Vertical
9920	14.24	38.08	37.78	30.66	45.20	74.00	-28.80	Vertical
12400	17.55	39.34	39.48	33.21	50.62	74.00	-23.38	Vertical
14880	16.69	41.16	46.61	32.98	44.22	74.00	-29.78	Vertical
2480.3	5.08	32.29	37.64	62.47	62.20	74.00	-11.80	Horizontal
4960	10.43	34.45	41.03	39.10	42.95	74.00	-31.05	Horizontal
7440	12.72	37.37	40.01	37.14	47.22	74.00	-26.78	Horizontal
9920	14.24	38.08	37.78	30.45	44.99	74.00	-29.01	Horizontal
12400	17.55	39.34	39.48	34.21	51.62	74.00	-22.38	Horizontal
14880	16.69	41.16	46.61	32.43	43.67	74.00	-30.33	Horizontal

Test channel:	Highest	Remark:	Average

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Preamp Factor (dB)	Read Level (dBuV)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
2480.3	5.08	32.29	37.64	44.66	44.39	54.00	-9.61	Vertical
4960	10.43	34.45	41.03	30.98	34.83	54.00	-19.17	Vertical
7440	12.72	37.37	40.01	26.21	36.29	54.00	-17.71	Vertical
9920	14.24	38.08	37.78	18.57	33.11	54.00	-20.89	Vertical
12400	17.55	39.34	39.48	22.21	39.62	54.00	-14.38	Vertical
14880	16.69	41.16	46.61	20.96	32.20	54.00	-21.80	Vertical
2480.3	5.08	32.29	37.64	46.73	46.46	54.00	-7.54	Horizontal
4960	10.43	34.45	41.03	27.88	31.73	54.00	-22.27	Horizontal
7440	12.72	37.37	40.01	26.20	36.28	54.00	-17.72	Horizontal
9920	14.24	38.08	37.78	18.63	33.17	54.00	-20.83	Horizontal
12400	17.55	39.34	39.48	22.20	39.61	54.00	-14.39	Horizontal
14880	16.69	41.16	46.61	20.82	32.06	54.00	-21.94	Horizontal

5.10 RF Exposure Compliance Requirement

5.10.1 Standard requirement

15.247(b)(4) requirement:
(4) 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.

5.10.2 EUT RF Exposure

Predication of MPE limit at a given distance
$S = PG/4\pi R^2$
S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW) .
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

Maximum peak output power at antenna input terminal: -3.11dBm（0.489mw）
Prediction distance: >20 (cm)
Predication frequency: 2402 (MHz)
Antenna Gain (typical): 2.0(dBi)
Antenna Gain (typical): 1.58 (numeric)
The worst case is power density at predication frequency at 20 cm :
Power density $S = PG/4\pi R^2 = 0.489mW \times 1.58 / (4 \times 3.14 \times 20^2)$
$= 0.000154\ mW/cm^2$ ①

MPE limit for general population exposure at prediction frequency:1 (mW/cm2) ②

① < ②.

So the SAR report is not required.

Note: For mobile or fixed location transmitters, the minimum separation distance is 20cm, even if calculations indicate that the MPE distance would be less.