FCC Test Report

Product Name ： Portable Stereo Speaker

Trade Name ： soundmatters

Model No. ： Moment, DASH 4

FCC ID. ： YOSMOMENT

Applicant ： Soundmatters International Inc.

Address ： 8060 Double R. Blvd. Suite 100, Reno NV 89511.
U.S Reno Nevada United States

Date of Receipt ： Mar. 07, 2016

Issued Date ： Oct. 18, 2016

Report No. ： 1630136R-RFUSP01V00

Report Version ： V1.0

Testing Laboratory
3024

Test Report Certification

Issued Date : Oct. 18, 2016
Report No. : 1630136R-RFUSP01V00

Product Name	:	Portable Stereo Speaker
Applicant	:	Soundmatters International Inc.
Address	:	8060 Double R. Blvd. Suite 100, Reno NV 89511. U.S Reno Nevada United States
Manufacturer	:	Thin Ray Precision Industry Co., Ltd.
Model No.	:	Moment, DASH 4
FCC ID.	:	YOSMOMENT
EUT Voltage	:	DC 3.7V (Power by Battery) DC 5V (Power by PC)
Testing Voltage	:	DC 3.7V (Power by Battery) DC 5V (Power by PC)
Trade Name	:	soundmatters
Applicable Standard	:	FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2015
Test Lab	:	Hsin Chu Laboratory
Test Result	:	Complied

The test results relate only to the samples tested.

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Documented By : Lyla Yang
(Lyla Yang / Engineering Adm. Assistant)

Tested By : JuBo Shen
(JuBo Shen / Senior Engineer)

Approved By : Roy Wang
(Roy Wang / Director)

Revision History

Report No.	Version	Description	Issued Date
1630136R-RFUSP01V00	V1.0	Initial issue of report.	Oct. 18, 2016

Laboratory Information

We, **QuieTek Corporation**, are an independent RF consultancy that was established the whole facility in our laboratories. The test facility has been accredited/accepted (audited or listed) by the following related bodies in compliance with ISO 17025 specified testing scopes:

Taiwan R.O.C.	**:**	**TAF, Accreditation Number: 3024**
USA	**:**	**FCC, Registration Number: 834100**
Canada	**:**	**IC, Submission No: 181665 / IC Registration Number: 4075C-4**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site:http://www.quietek.com/english/about/certificates.aspx?bval=5
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/index_en.aspx
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

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1. General Information

1.1. EUT Description

Product Name	Portable Stereo Speaker
Trade Name	soundmatters
Model No.	Moment, DASH 4
Frequency Range	2402~2480MHz
Channel Number	79 Channels
Type of Modulation	GFSK

Antenna Information	
Model Name	Antenova / A10381
Antenna Type	Chip Antenna
Antenna Gain	1.5dBi

Accessories Information	
USB Cable	Shielded, 1.6m

Working Frequency of Each Channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 00	2402 MHz	Channel 20	2422 MHz	Channel 40	2442 MHz	Channel 60	2462 MHz
Channel 01	2403 MHz	Channel 21	2423 MHz	Channel 41	2443 MHz	Channel 61	2463 MHz
Channel 02	2404 MHz	Channel 22	2424 MHz	Channel 42	2444 MHz	Channel 62	2464 MHz
Channel 03	2405 MHz	Channel 23	2425 MHz	Channel 43	2445 MHz	Channel 63	2465 MHz
Channel 04	2406 MHz	Channel 24	2426 MHz	Channel 44	2446 MHz	Channel 64	2466 MHz
Channel 05	2407 MHz	Channel 25	2427 MHz	Channel 45	2447 MHz	Channel 65	2467 MHz
Channel 06	2408 MHz	Channel 26	2428 MHz	Channel 46	2448 MHz	Channel 66	2468 MHz
Channel 07	2409 MHz	Channel 27	2429 MHz	Channel 47	2449 MHz	Channel 67	2469 MHz
Channel 08	2410 MHz	Channel 28	2430 MHz	Channel 48	2450 MHz	Channel 68	2470 MHz
Channel 09	2411 MHz	Channel 29	2431 MHz	Channel 49	2451 MHz	Channel 69	2471 MHz
Channel 10	2412 MHz	Channel 30	2432 MHz	Channel 50	2452 MHz	Channel 70	2472 MHz
Channel 11	2413 MHz	Channel 31	2433 MHz	Channel 51	2453 MHz	Channel 71	2473 MHz
Channel 12	2414 MHz	Channel 32	2434 MHz	Channel 52	2454 MHz	Channel 72	2474 MHz
Channel 13	2415 MHz	Channel 33	2435 MHz	Channel 53	2455 MHz	Channel 73	2475 MHz
Channel 14	2416 MHz	Channel 34	2436 MHz	Channel 54	2456 MHz	Channel 74	2476 MHz
Channel 15	2417 MHz	Channel 35	2437 MHz	Channel 55	2457 MHz	Channel 75	2477 MHz
Channel 16	2418 MHz	Channel 36	2438 MHz	Channel 56	2458 MHz	Channel 76	2478 MHz
Channel 17	2419 MHz	Channel 37	2439 MHz	Channel 57	2459 MHz	Channel 77	2479 MHz
Channel 18	2420 MHz	Channel 38	2440 MHz	Channel 58	2460 MHz	Channel 78	2480 MHz
Channel 19	2421 MHz	Channel 39	2441 MHz	Channel 59	2461 MHz		

Note:

1. This device is a Portable Stereo Speaker including BT 3.0 transmitting and receiving function.
2. These test results on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. The different of the each model is shown as below:

Model Number	Description
Moment	Wireless Charger
DASH 4	General Charger

4. Regards to the frequency band operation; the lowest、middle and highest frequency of channel were selected to perform the test, and then shown on this report.
5. This device has USB and Ethernet ports, which can be connected to computer. It is a Class B personal computer and peripheral. Its test report number is 1630136R-RFUSP01V00-A under part 15B with Declaration of Conformity.

1.2. Test Mode

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in transmitting operation, which was shown in this test report and defined as follows:

Pre-Test Mode	
TX	Mode 1: Transmit Mode
Final Test Mode	
TX	Mode 1: Transmit Mode

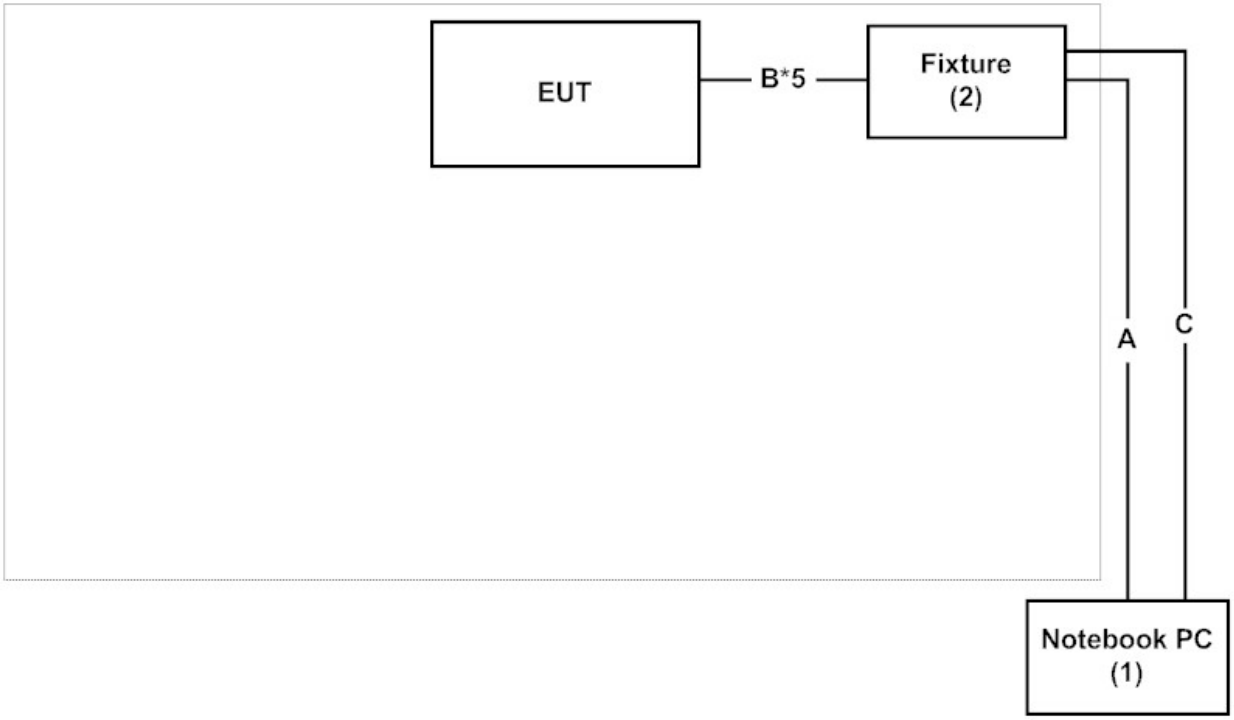
Emission	Mode 1
Conducted Emission	Yes
The maximum peak conducted output power	Yes
Radiated Emission	Yes
RF antenna conducted test	Yes
Band Edge	Yes
Number of hopping Frequency	Yes
Carrier Frequency Separation	Yes
Occupied Bandwidth	Yes
Dwell Time	Yes

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	ASUS	X522EP	E5N0CV043264197	DoC	Non-Shielded, 1.8m, one ferrite core bonded
2	Fixture	N/A	N/A	N/A	DoC	N/A

1.4. Configuration of tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	Console Cable	Non-Shielded, 0.1m
B	Signal Cable	Non-Shielded, 0.2m, 5 Pecs
C	USB Cable	Shielded, 1.5m

1.5. EUT Exercise Software

1	Setup the EUT as shown in Section 1.4.
2	Turn on the EUT and tested equipment power.
3	Execute the test program software of “CSR BuleTest 3”.
4	The RF signal’s status will continue transmit through EUT.
5	Repeat the above procedure.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Test Item	Required (IEC 68-1)	Actual
Temperature (°C)	FCC PART 15 C 15.207 Conducted Emission (FHSS)	15 - 35	23
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 The maximum peak conducted output power	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Radiated Emission (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	54
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Band Edge (FHSS)	15 - 35	25
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Number of hopping Frequency (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Carrier Frequency Separation (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Occupied Bandwidth (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 RF antenna conducted test (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Dwell Time (FHSS)	15 - 35	24
Humidity (%RH)		25 - 75	45
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

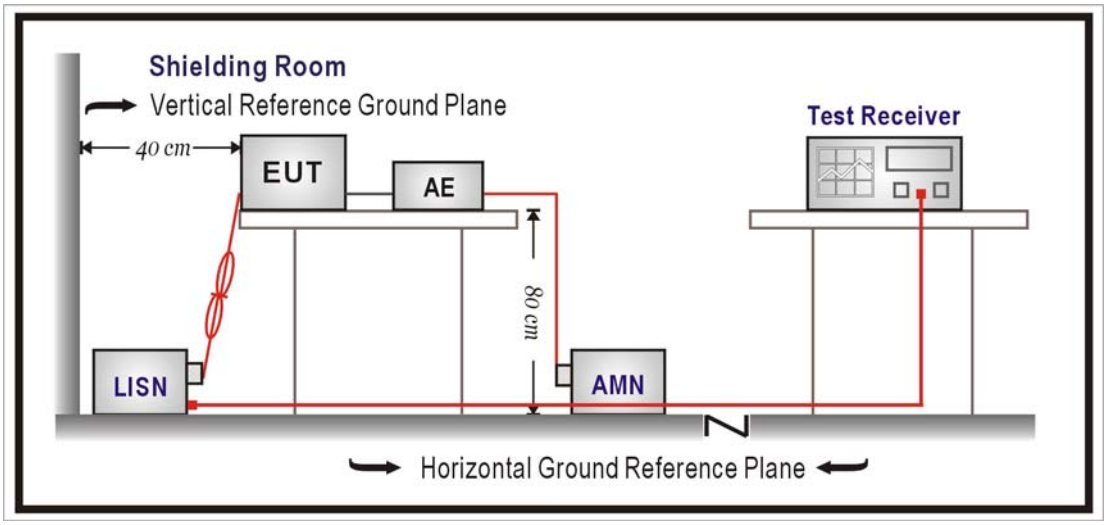
The following test equipments are used during the test:

Conducted Emission / SR3

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100092	2016/08/17
LISN	R&S	ENV4200	848411/010	2016/01/25
Test Receiver	R&S	ESCS 30	825442/014	2016/07/16

Note: All equipments that need to calibrate are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 Limits (dBuV)		
Frequency MHz	QP	AV
0.15 - 0.50	66 - 56	56 - 46
0.50 - 5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges.

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs.)
Both sides of A.C. line are checked for maximum conducted interference. 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.
Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

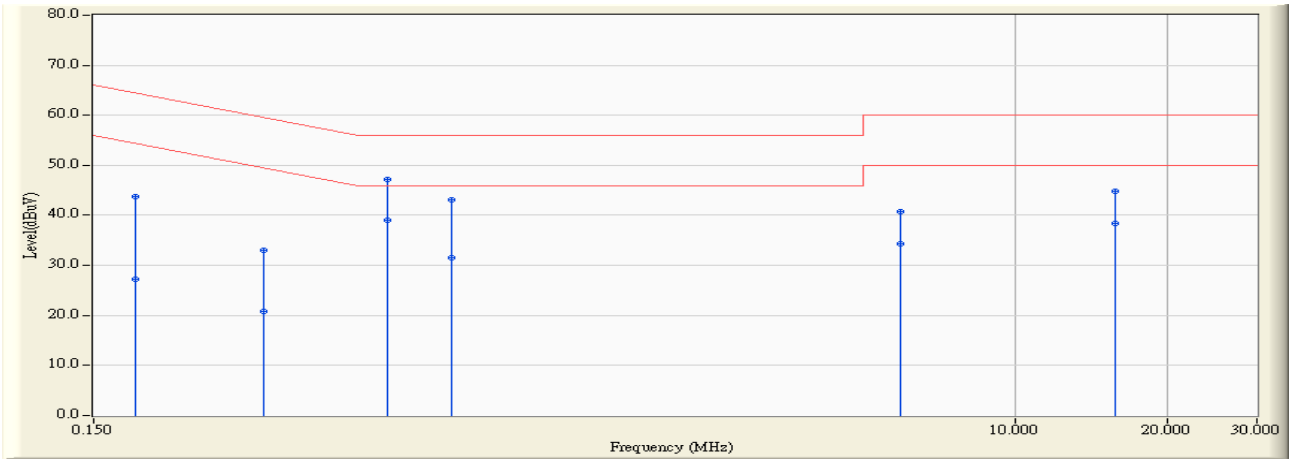
According to FCC Part 15 Subpart C Paragraph 15.247: 2015

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR3	**Time : 2015/12/22 - 21:37**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-5_0728 - Line1	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**

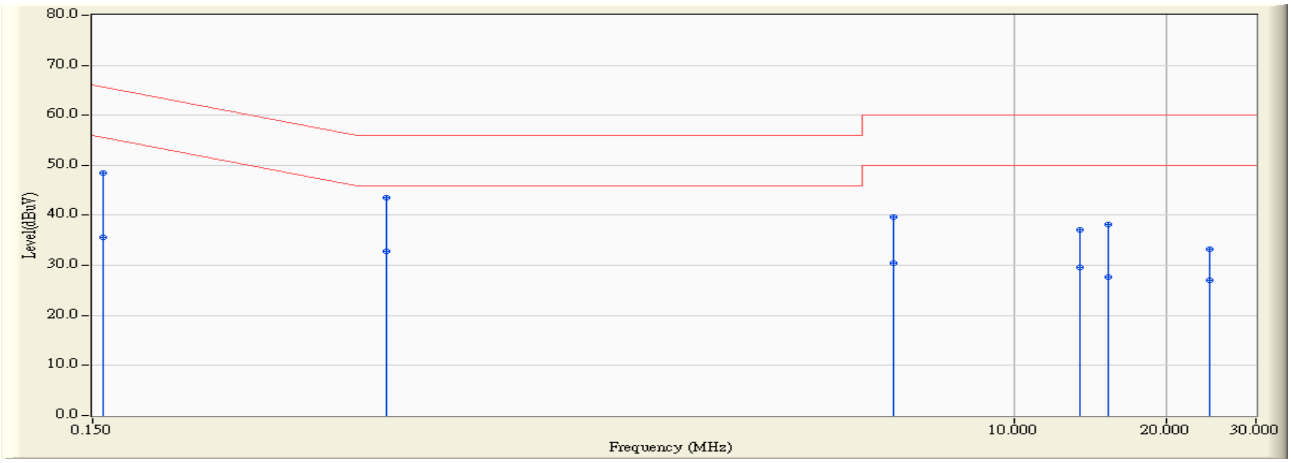


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.181	9.748	33.900	43.648	-20.780	64.428	QUASIPEAK
2		0.181	9.748	17.520	27.268	-27.160	54.428	AVERAGE
3		0.326	9.765	23.240	33.005	-26.553	59.558	QUASIPEAK
4		0.326	9.765	11.010	20.775	-28.783	49.558	AVERAGE
5		0.572	9.790	37.400	47.190	-8.810	56.000	QUASIPEAK
6	*	0.572	9.790	29.250	39.040	-6.960	46.000	AVERAGE
7		0.767	9.790	33.230	43.020	-12.980	56.000	QUASIPEAK
8		0.767	9.790	21.840	31.630	-14.370	46.000	AVERAGE
9		5.916	9.963	30.830	40.793	-19.207	60.000	QUASIPEAK
10		5.916	9.963	24.310	34.273	-15.727	50.000	AVERAGE
11		15.697	10.210	34.570	44.780	-15.220	60.000	QUASIPEAK
12		15.697	10.210	28.150	38.360	-11.640	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

Site : SR3	**Time : 2015/12/22 - 21:42**
Limit : CISPR_B_00M_QP	**Margin : 10**
Probe : SR3_LISN(16A)-5_0728 - Line2	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.158	9.745	38.790	48.536	-17.043	65.579	QUASIPEAK
2		0.158	9.745	25.770	35.516	-20.063	55.579	AVERAGE
3	*	0.572	9.783	33.820	43.603	-12.397	56.000	QUASIPEAK
4		0.572	9.783	23.110	32.893	-13.107	46.000	AVERAGE
5		5.771	9.967	29.770	39.737	-20.263	60.000	QUASIPEAK
6		5.771	9.967	20.550	30.517	-19.483	50.000	AVERAGE
7		13.447	10.239	26.770	37.010	-22.990	60.000	QUASIPEAK
8		13.447	10.239	19.390	29.630	-20.370	50.000	AVERAGE
9		15.334	10.290	27.830	38.121	-21.879	60.000	QUASIPEAK
10		15.334	10.290	17.400	27.691	-22.309	50.000	AVERAGE
11		24.326	10.552	22.610	33.162	-26.838	60.000	QUASIPEAK
12		24.326	10.552	16.520	27.072	-22.928	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.

3. The maximum peak conducted output power

3.1. Test Equipment

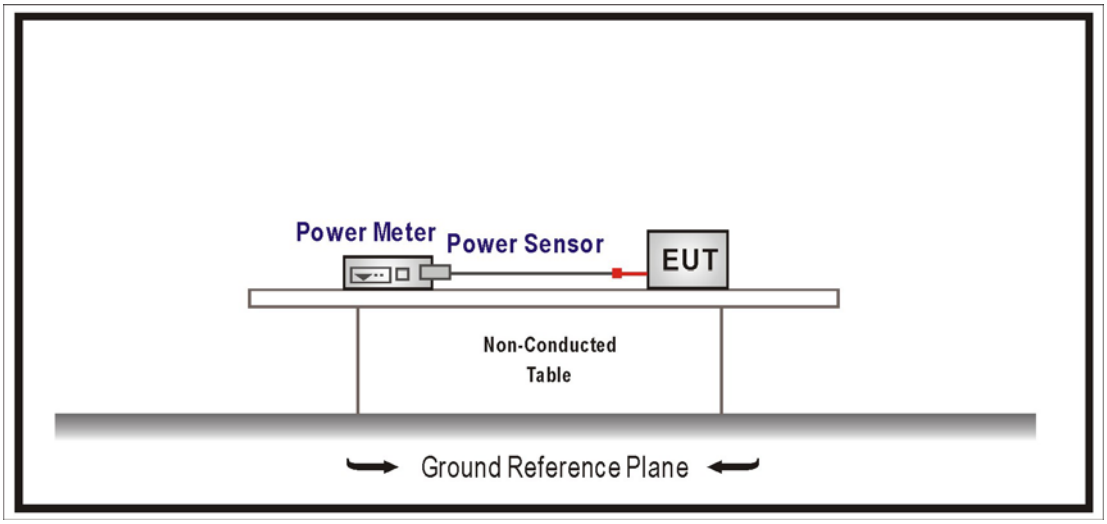
The following test equipment is used during the test:

The maximum peak conducted output power / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Power Meter	Agilent	N1911A	MY45101353	2017/09/29
Power Sensor	Agilent	N1921A	MY45241670	2017/09/28
USB Power Sensor	Keysight	U2021XA	MY54070005	NCR
Temperature & Humidity Chamber	WIT	TH-1S-B	1082101	2017/01/18

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

3.2. Test Setup



3.3. Test procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements.

3.4. Limits

(1)For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.
(2) For frequency hopping systems operating in the 902-928 MHz band: 1 watt for systems employing at least 50 hopping channels; and, 0.25 watts for systems employing less than 50 hopping channels, but at least 25 hopping channels,

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

3.6. Test Result

Product	Portable Stereo Speaker		
Test Item	The maximum peak conducted output power		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	6.335	30	Pass
39	2441	6.133	30	Pass
78	2480	5.922	30	Pass

π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	5.463	30	Pass
39	2441	5.025	30	Pass
78	2480	4.445	30	Pass

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	5.512	30	Pass
39	2441	5.036	30	Pass
78	2480	4.668	30	Pass

4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

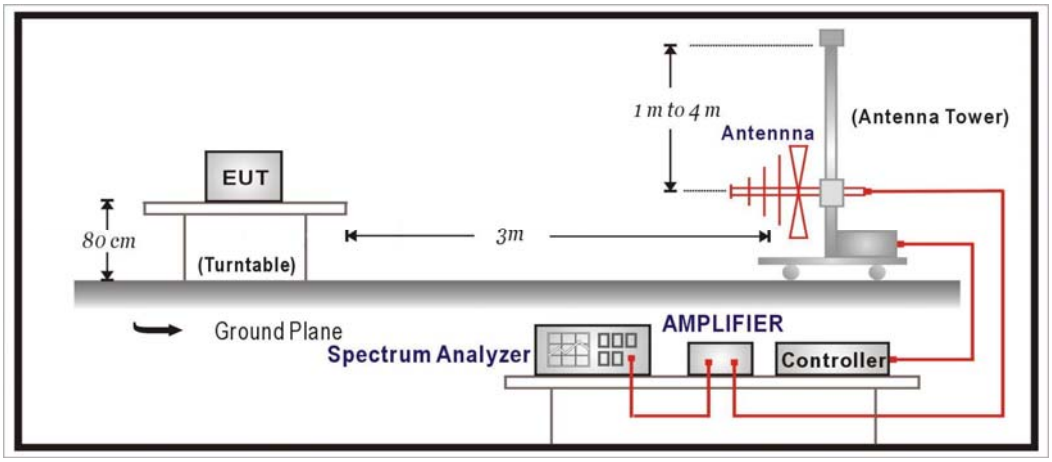
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Schaffner	CBL6112B	2895	Schaffner	2016/08/14
Schwarzbeck	BBHA 9120	D743	Schwarzbeck	2016/01/26
EMCI	EMC0031835	980233	EMCI	2016/01/18
QuieTek	AP-025C	CHM-0706049	QuieTek	2016/01/18
Agilent	E4440A	MY46187335	Agilent	2016/01/07
Huber+Suhner	SF 102	25623/2	Huber+Suhner	2016/01/26

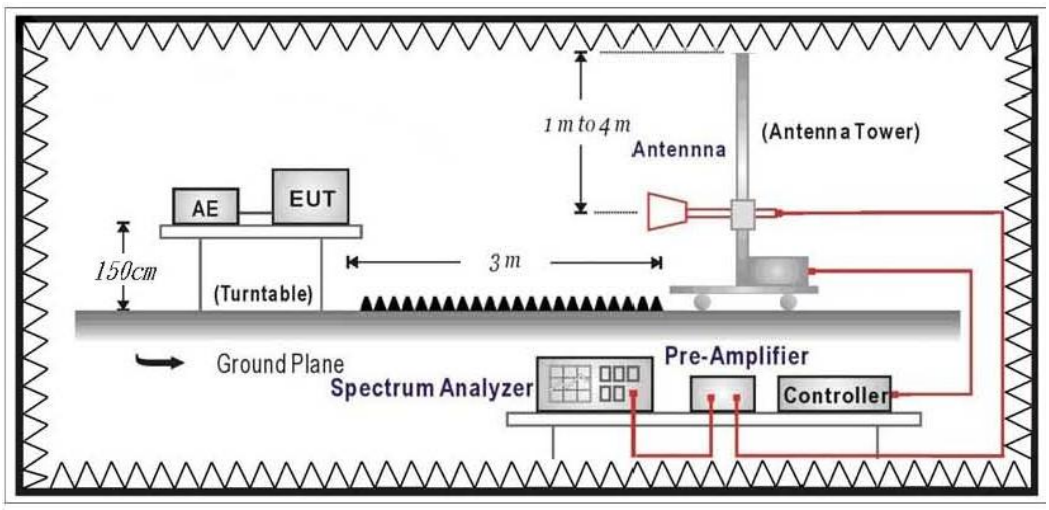
Note: All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

Under 1GHz Test Setup:



Above 1GHz Test Setup:



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m	dBuV/m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements.
The EUT and its simulators are placed on a turn table which is 0.8 meter or 1.5m above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.
On any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function. When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit. The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

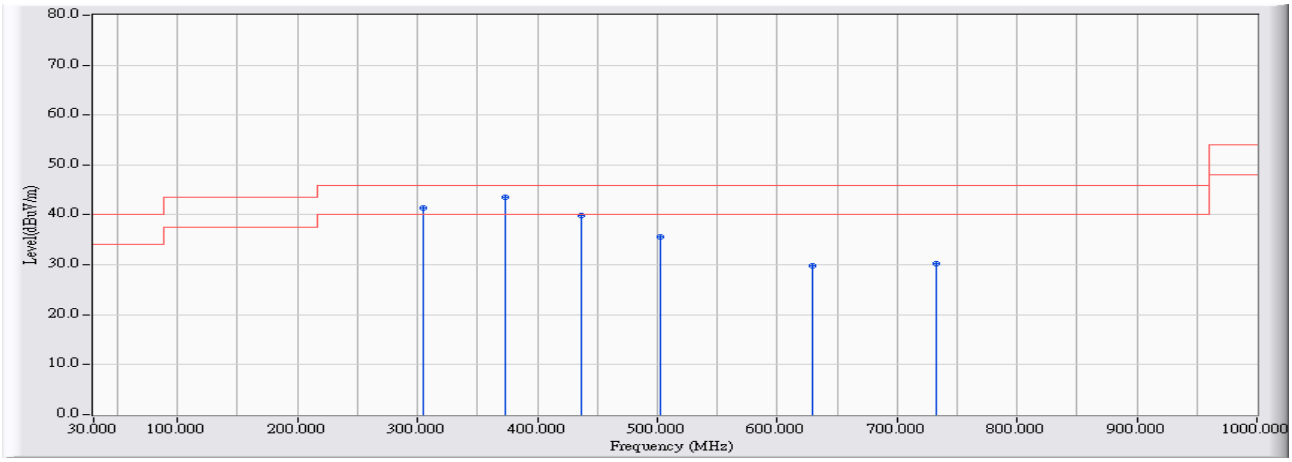
4.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

4.6. Test Result

30MHz-1GHz Spurious

Site : CB1	**Time : 2015/12/18 - 10:36**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**

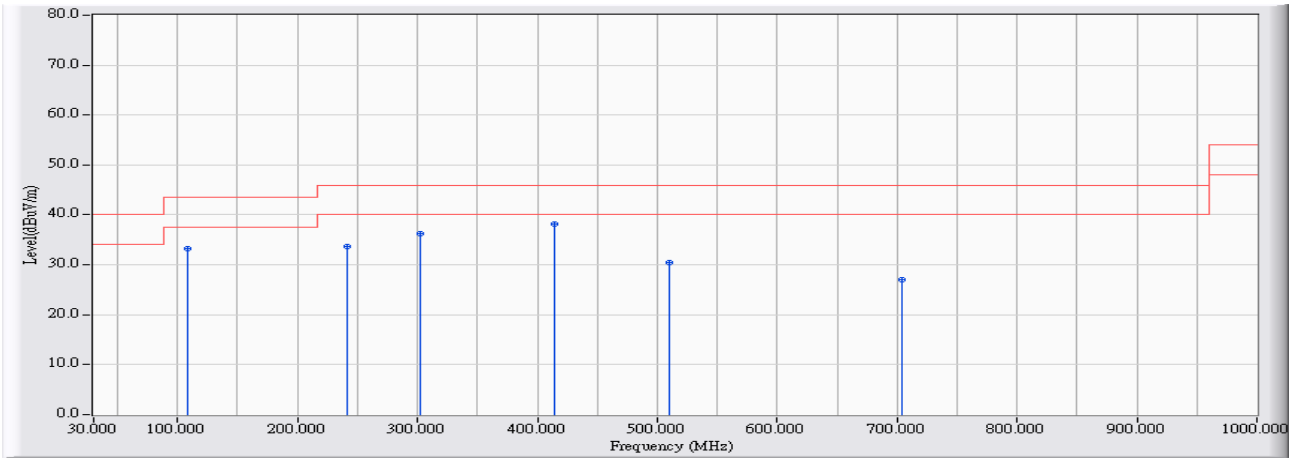


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		305.064	13.463	28.025	41.488	-4.512	46.000	QUASIPEAK
2	*	373.831	15.024	28.476	43.500	-2.500	46.000	QUASIPEAK
3		436.195	16.309	23.640	39.949	-6.051	46.000	QUASIPEAK
4		502.149	17.532	18.155	35.687	-10.313	46.000	QUASIPEAK
5		629.594	17.858	12.015	29.873	-16.127	46.000	QUASIPEAK
6		732.695	18.534	11.613	30.147	-15.853	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Site : CB1	**Time : 2015/12/18 - 10:36**
Limit : FCC_CLASS_B_03M_QP	**Margin : 6**
Probe : CB1_FCC_EFS_30-1G-2_1011 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**



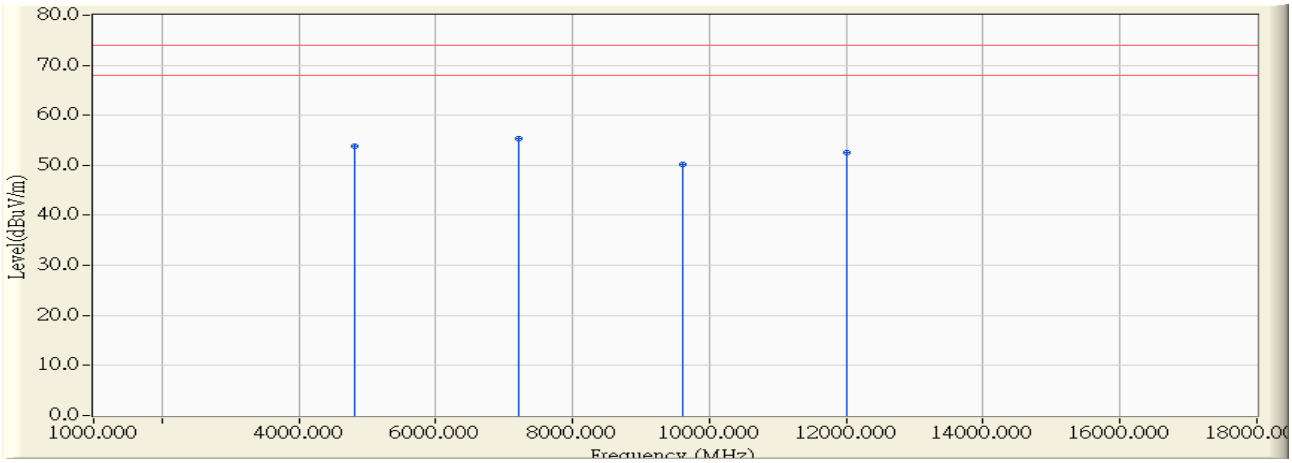
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		108.756	11.180	22.024	33.204	-10.296	43.500	QUASIPEAK
2		240.954	11.899	21.673	33.572	-12.428	46.000	QUASIPEAK
3		302.931	13.415	22.933	36.348	-9.652	46.000	QUASIPEAK
4	*	414.082	15.887	22.199	38.086	-7.914	46.000	QUASIPEAK
5		510.005	17.548	13.012	30.560	-15.440	46.000	QUASIPEAK
6		704.083	18.214	8.910	27.124	-18.876	46.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Above 1GHz Spurious:

Site : CB1	**Time : 2015/12/17 - 15:52**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

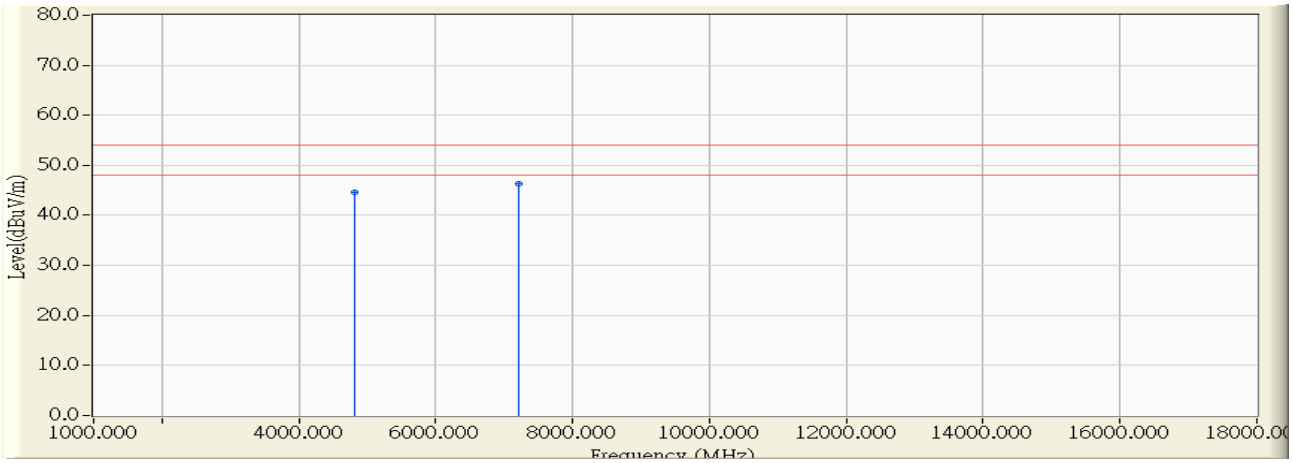


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4803.975	-2.613	56.420	53.807	-20.193	74.000	PEAK
2	*	7206.269	5.868	49.470	55.337	-18.663	74.000	PEAK
3		9608.359	7.444	42.770	50.214	-23.786	74.000	PEAK
4		12010.939	10.395	42.250	52.646	-21.354	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 15:56**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

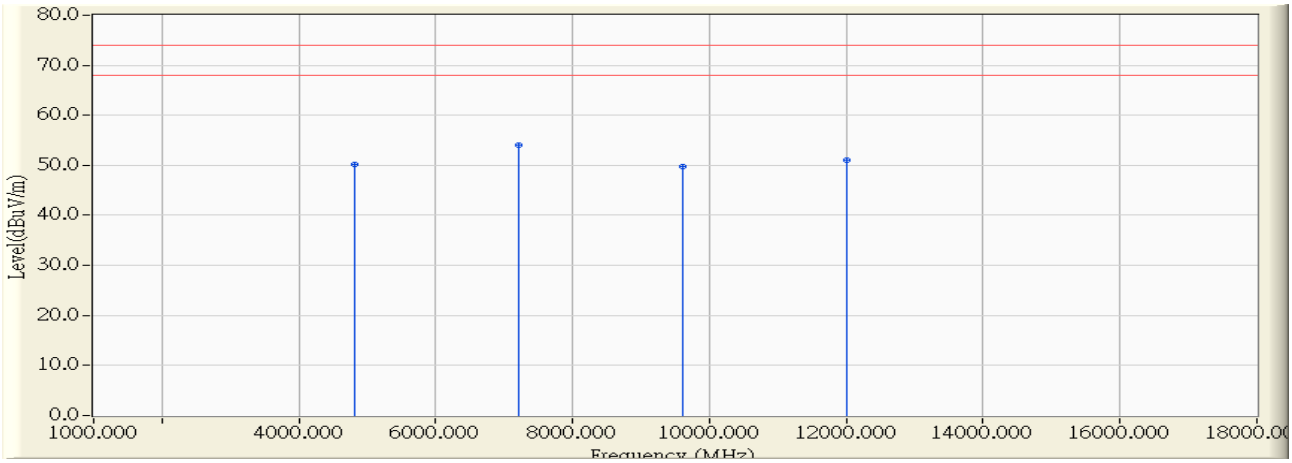


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.010	-2.613	47.210	44.597	-9.403	54.000	AVERAGE
2	*	7206.000	5.866	40.520	46.387	-7.613	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 15:22**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

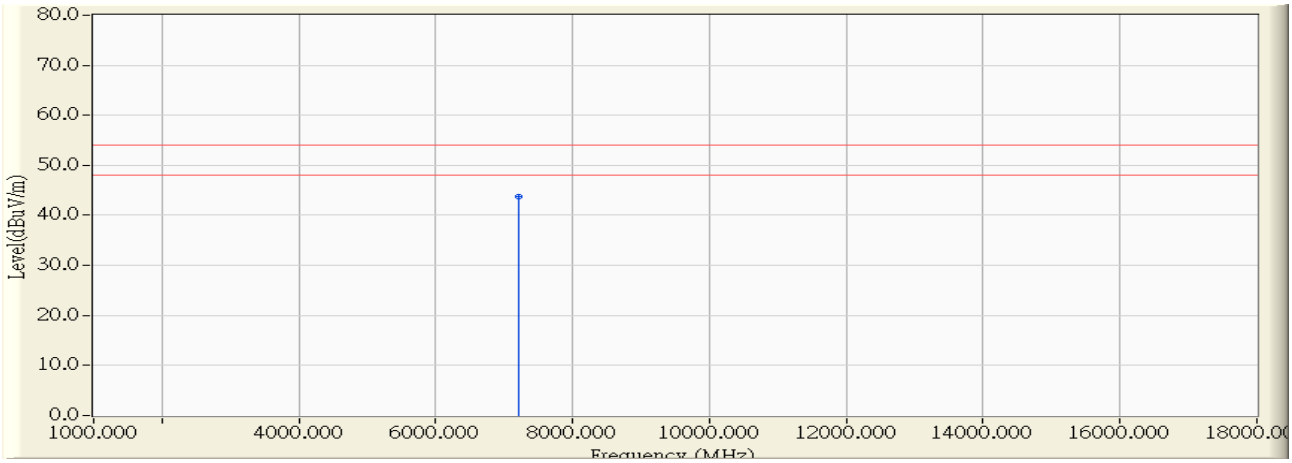


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4804.015	-1.666	51.760	50.094	-23.906	74.000	PEAK
2	*	7206.449	5.368	48.670	54.038	-19.962	74.000	PEAK
3		9607.415	7.002MHz	42.860	49.862	-24.138	74.000	PEAK
4		12010.719	9.923	41.170	51.094	-22.906	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 15:41**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

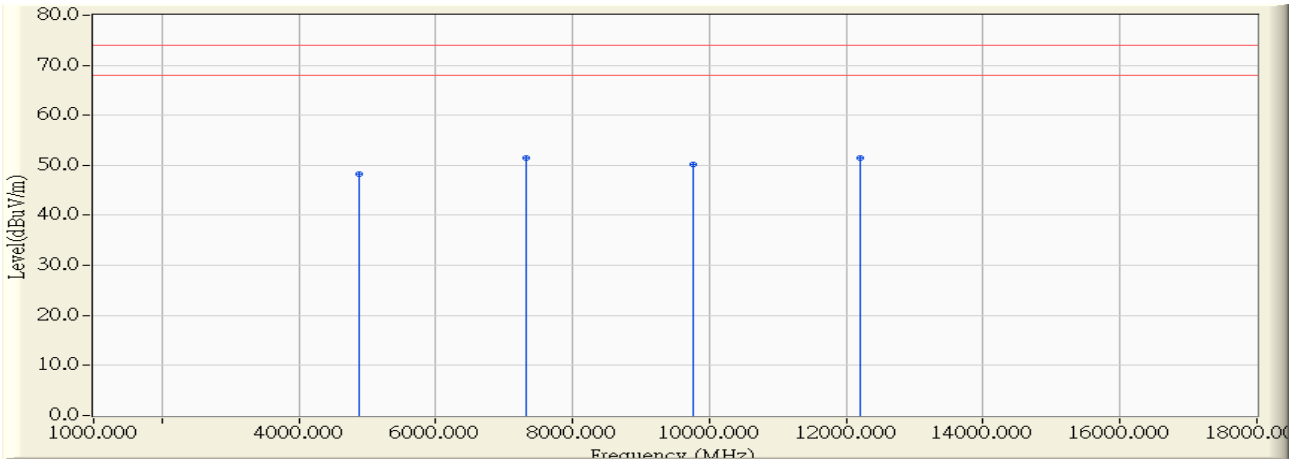


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	7206.02MHz5	5.366	38.390	43.757	-10.243	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 16:32**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**

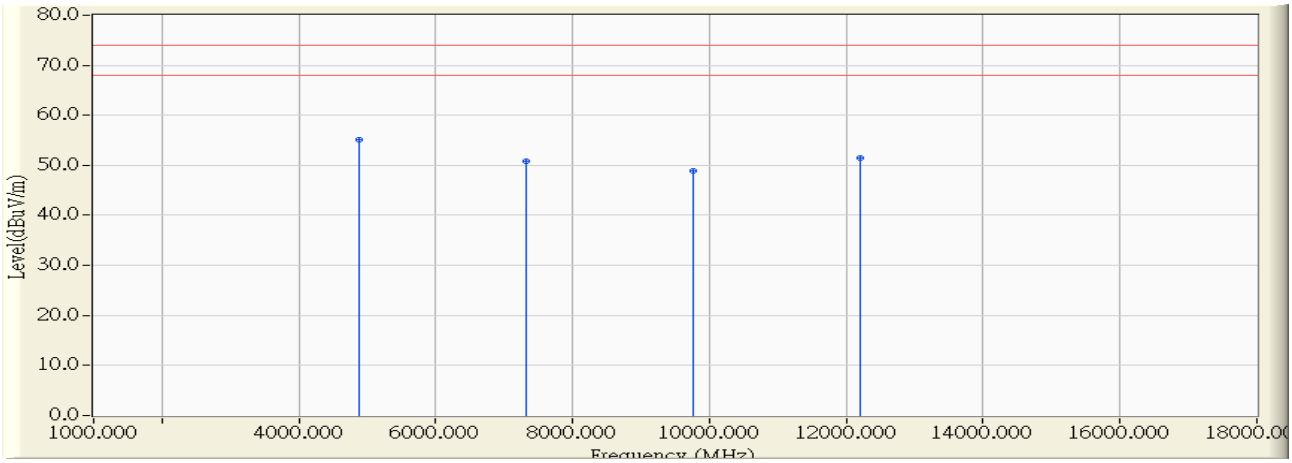


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4881.720	-2.404	50.760	48.355	-25.645	74.000	PEAK
2	*	7322.595	6.096	45.480	51.576	-22.424	74.000	PEAK
3		9763.875	8.286	41.930	50.216	-23.784	74.000	PEAK
4		12205.000	10.165	41.350	51.514	-22.486	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 16:38**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441 MHz**

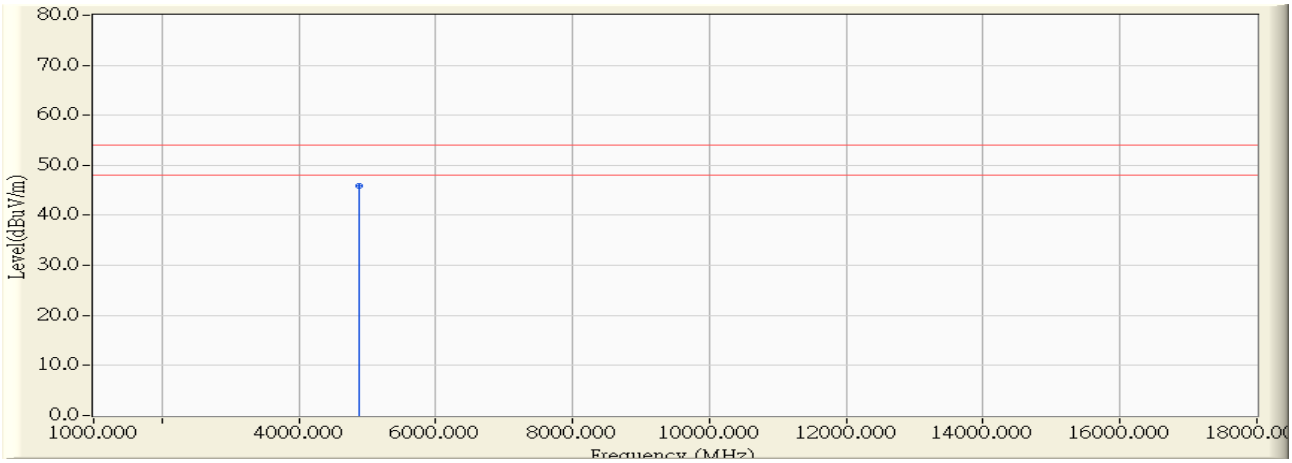


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4882.030	-1.651	56.680	55.02MHz9	-18.971	74.000	PEAK
2		7322.710	5.596	45.320	50.917	-23.083	74.000	PEAK
3		9765.369	7.621	41.380	49.001	-24.999	74.000	PEAK
4		12208.318	9.885	41.530	51.416	-22.584	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 16:43**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2441MHz**

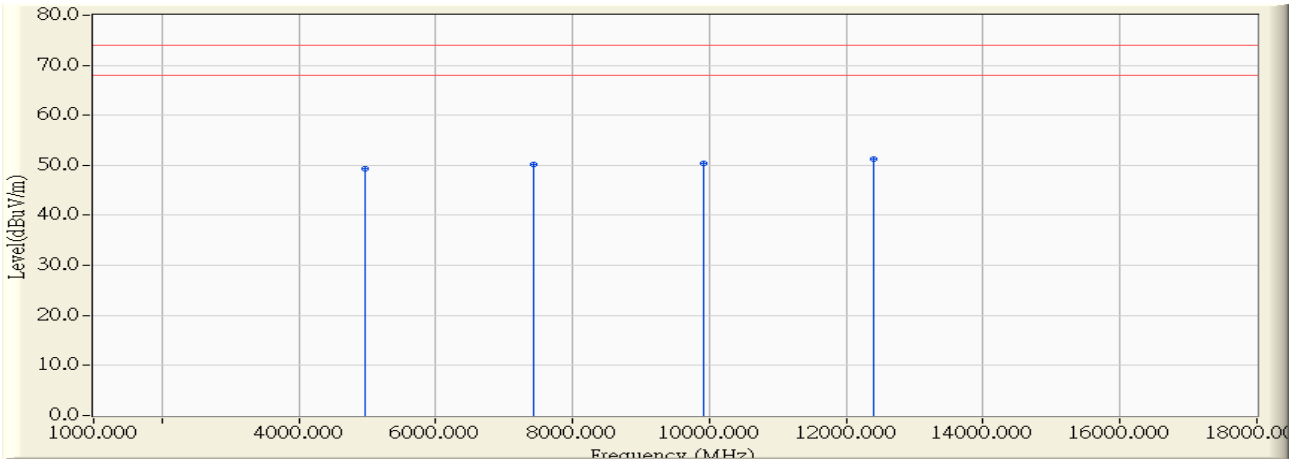


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4881.970	-1.651	47.490	45.839	-8.161	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 17:21**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**

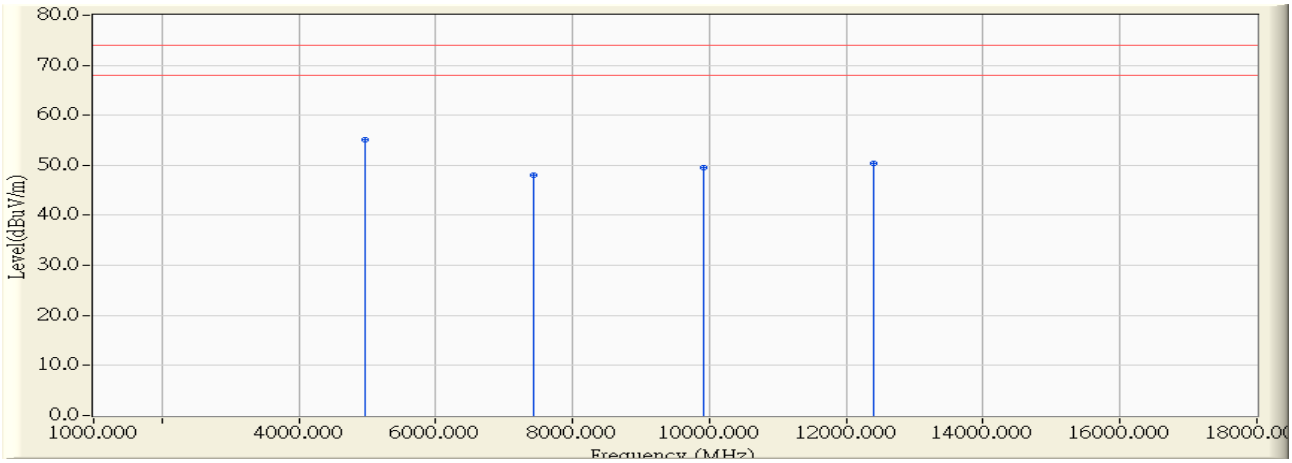


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4959.705	-2.196	51.460	49.265	-24.735	74.000	PEAK
2		7440.164	6.328	43.910	50.238	-23.762	74.000	PEAK
3		9922.193	9.144	41.210	50.354	-23.646	74.000	PEAK
4	*	12395.702MHz	9.937	41.290	51.227	-22.773	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 17:29**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**

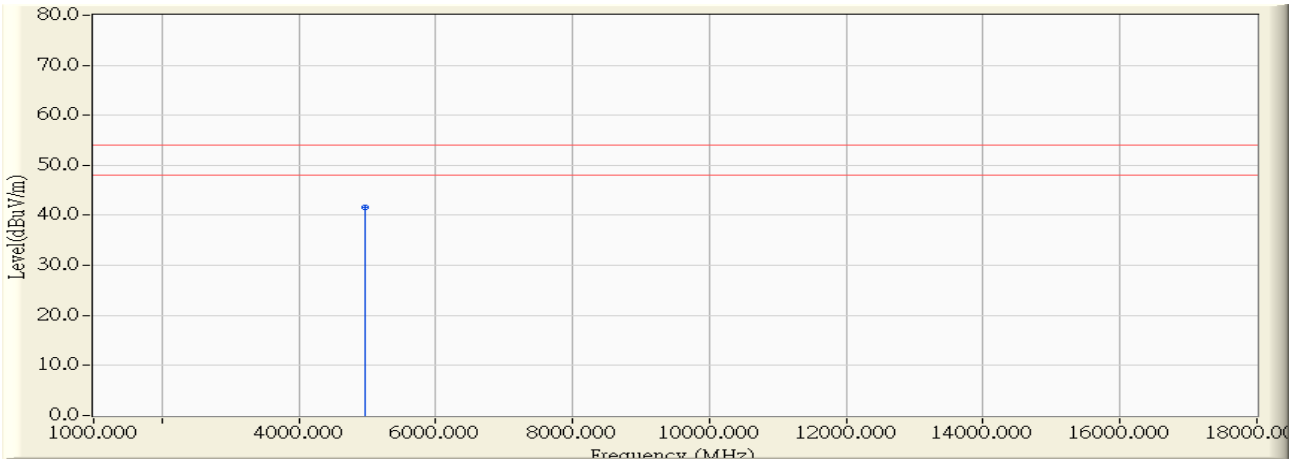


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4959.710	-1.638	56.840	55.203	-18.797	74.000	PEAK
2		7439.580	5.827	42.190	48.017	-25.983	74.000	PEAK
3		9923.953	8.241	41.280	49.522	-24.478	74.000	PEAK
4		12404.802MHz	9.847	40.580	50.428	-23.572	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

Site : CB1	**Time : 2015/12/17 - 17:34**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4959.980	-1.638	43.320	41.683	-12.317	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ * ”, means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The Emission above 13GHz were not included is because their levels are too low.

5. RF antenna conducted test

5.1. Test Equipment

The following test equipment is used during the test:

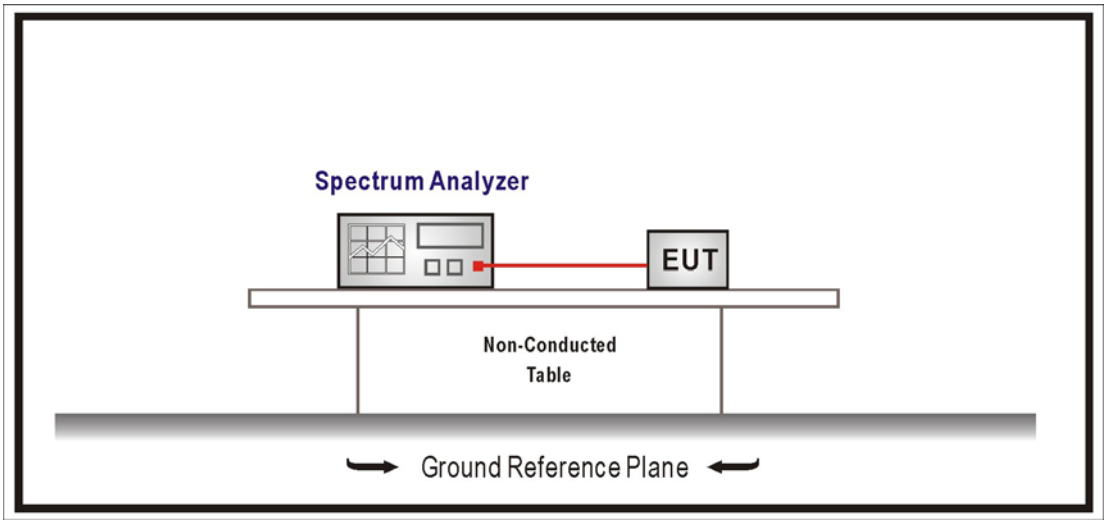
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23
Signal & Spectrum Analyzer	R&S	FSV40	101049	2017/01/05
Signal Analyzer	R&S	FSV7	101650	2016/11/30

Note: All equipments that need to calibrate are with calibration period of 1 year.

5.2. Test Setup

RF Conducted Measurement:



5.3. Limits

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 an RF conducted or radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

5.6. Test Result

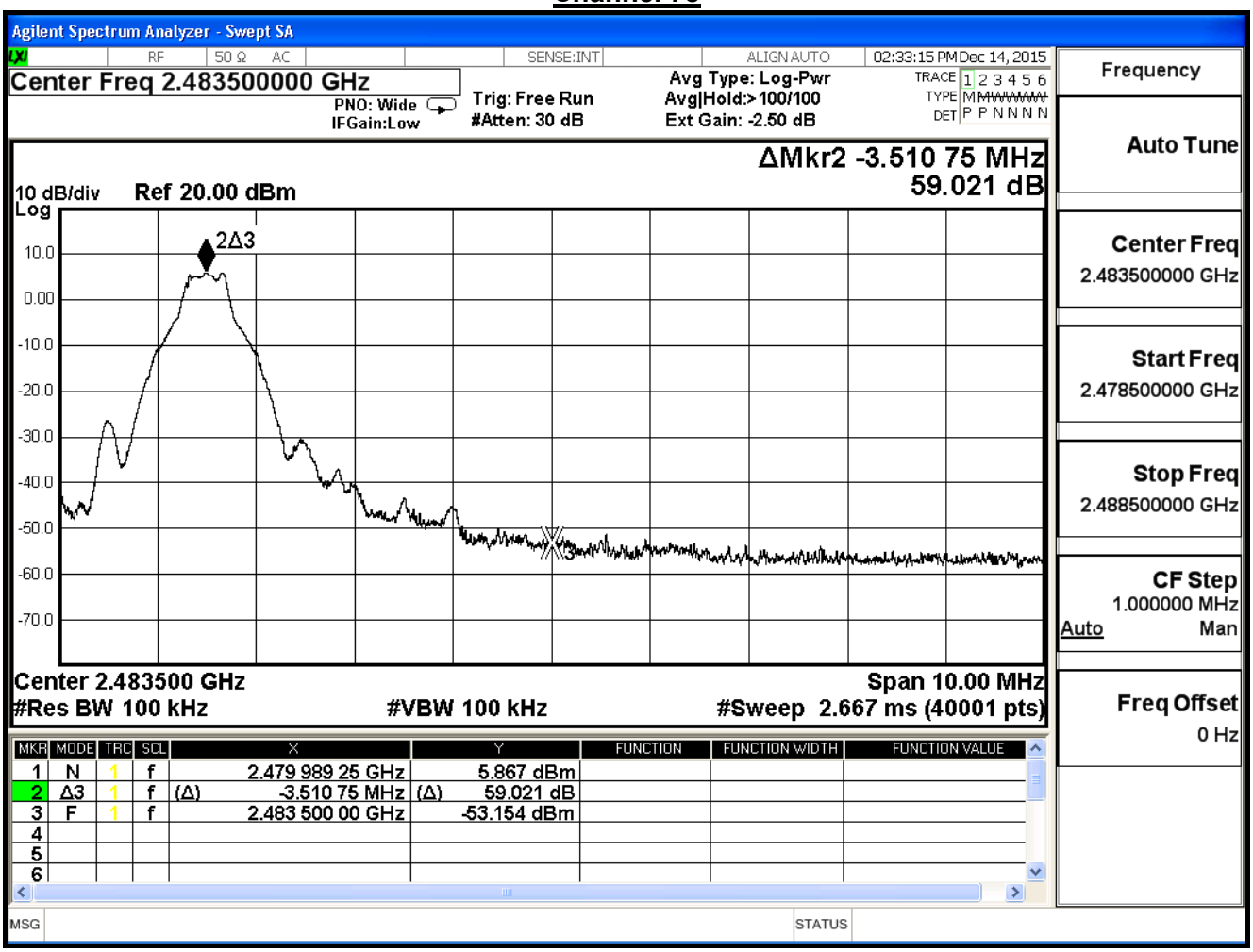
Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

GFSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	58.498	≧20	Pass
78	2480	59.021	≧20	Pass

Channel 00

Channel 78

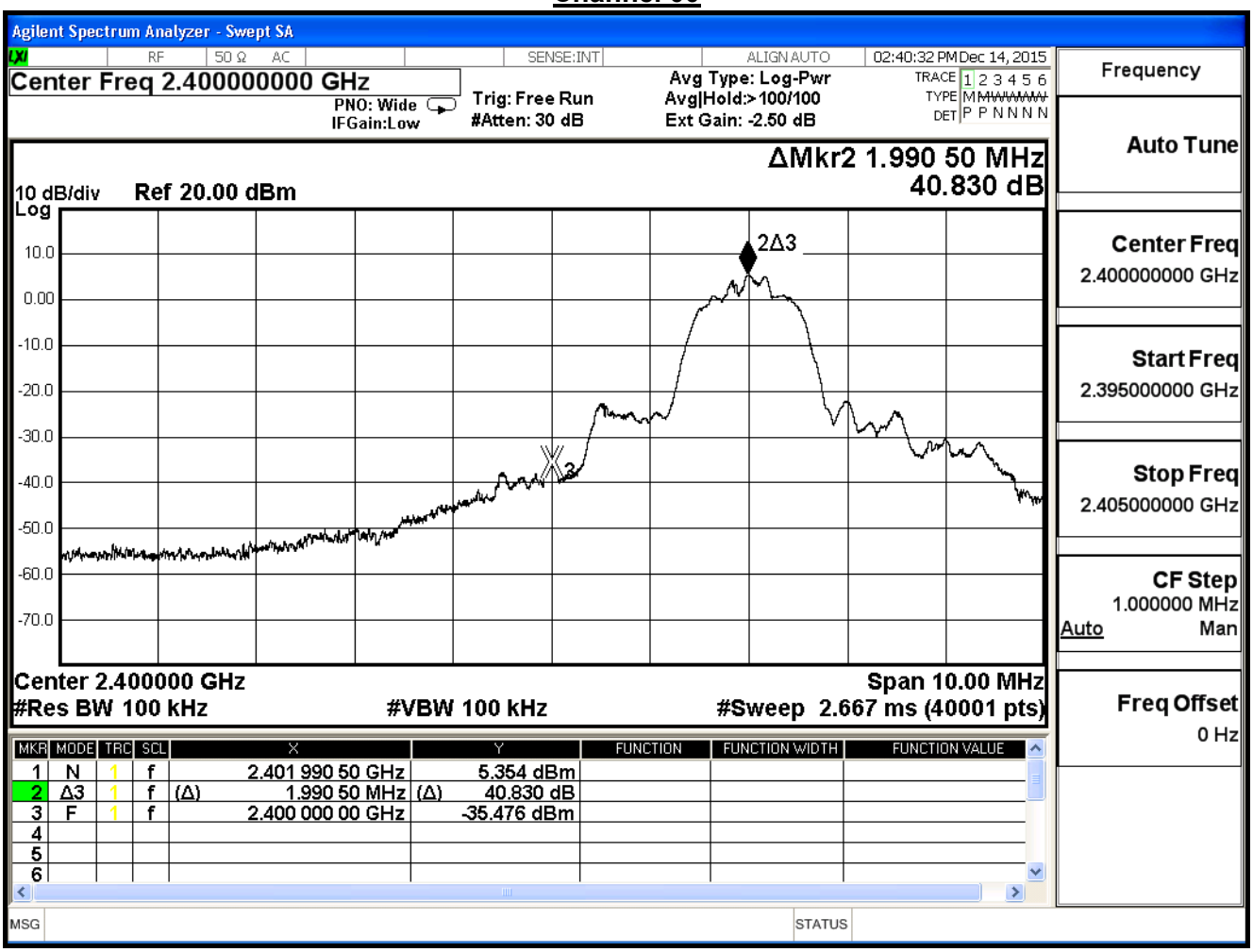

Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:33:15 PM Dec 14, 2015
Center Freq 2.483500000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
ΔMkr2 -3.510 75 MHz
59.021 dB
10 dB/div
Log
Ref 20.00 dBm
2Δ3
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.483500 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 10.00 MHz
#Sweep 2.667 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.479 989 25 GHz 5.867 dBm
2 Δ3 1 f (Δ) -3.510 75 MHz (Δ) 59.021 dB
3 F 1 f 2.483 500 00 GHz -53.154 dBm
4
5
6
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.488500000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

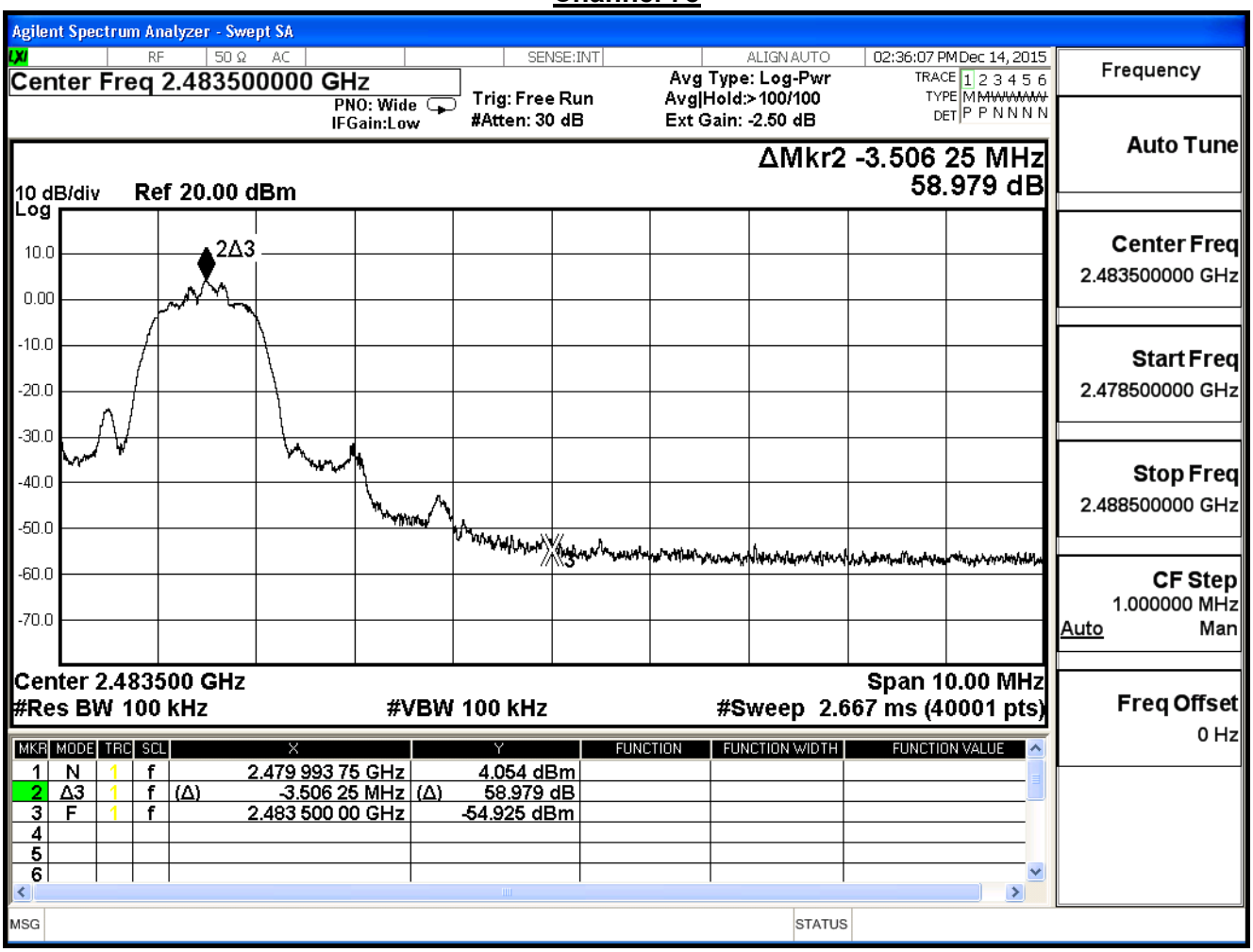
π/4-DQPSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	40.830	≧20	Pass
78	2480	58.979	≧20	Pass

Channel 00



Channel 78


Agilent Spectrum Analyzer - Swept SA
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
02:36:07 PM Dec 14, 2015
Center Freq 2.483500000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
ΔMkr2 -3.506 25 MHz
58.979 dB
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
2Δ3
Center 2.483500 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 10.00 MHz
#Sweep 2.667 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.479 993 75 GHz 4.054 dBm
2 Δ3 1 f (Δ) -3.506 25 MHz (Δ) 58.979 dB
3 F 1 f 2.483 500 00 GHz -54.925 dBm
4
5
6
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.488500000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

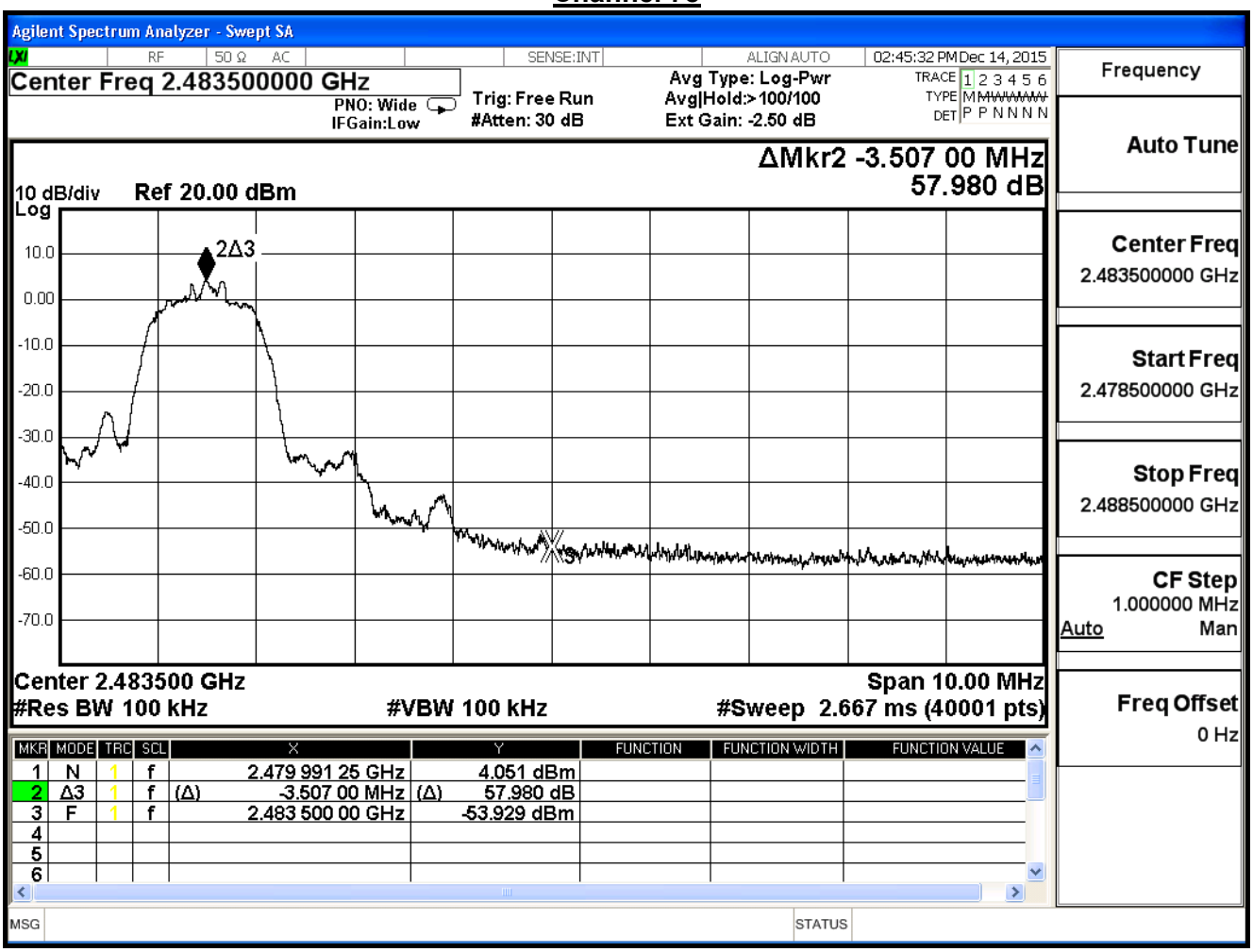
Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

8-DPSK

Channel	Frequency (MHz)	Measure Level (dBc)	Limit (dBc)	Result
00	2402	41.859	≧20	Pass
78	2480	57.980	≧20	Pass

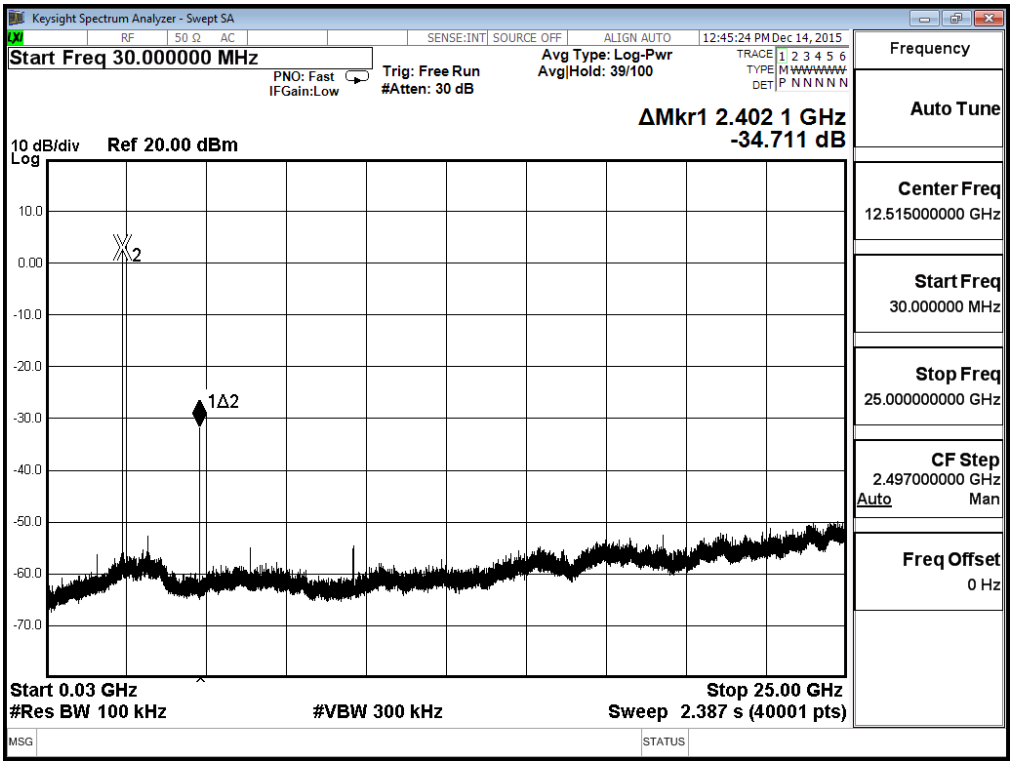
Channel 00

Channel 78

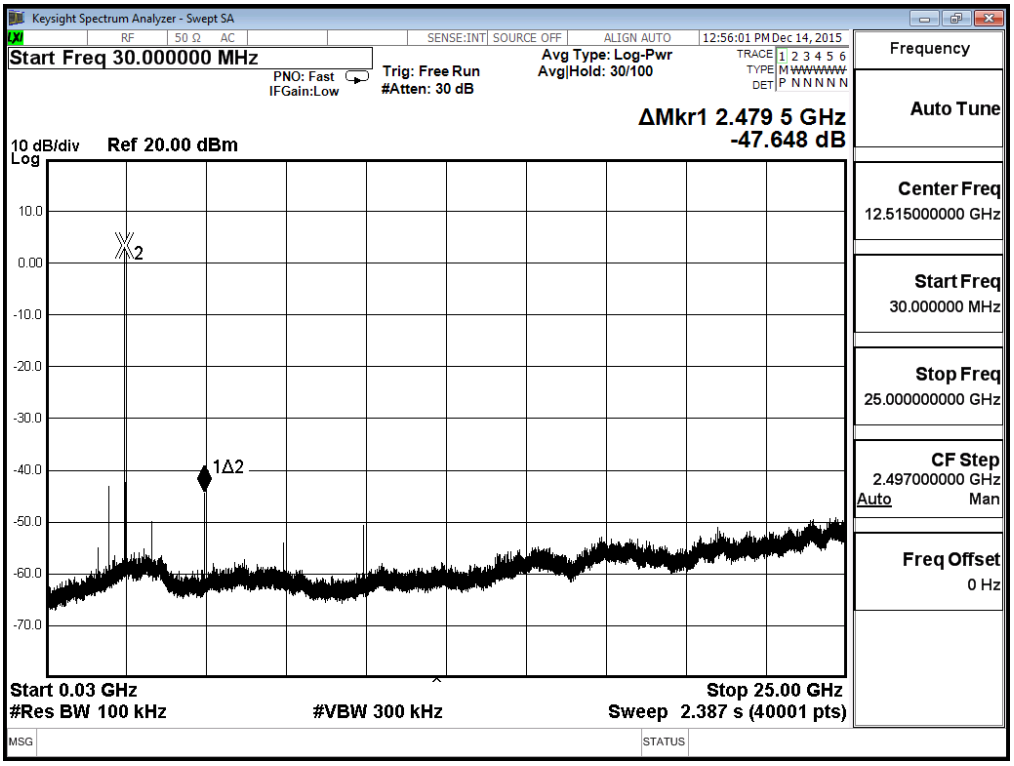

Agilent Spectrum Analyzer - Swept SA
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
02:45:32 PM Dec 14, 2015
Center Freq 2.483500000 GHz
PNO: Wide
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
TRACE 1 2 3 4 5 6
TYPE M
DET P P N N N N
ΔMkr2 -3.507 00 MHz
57.980 dB
10 dB/div
Log
Ref 20.00 dBm
2Δ3
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.483500 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 10.00 MHz
#Sweep 2.667 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.479 991 25 GHz 4.051 dBm
2 Δ3 1 f (Δ) -3.507 00 MHz (Δ) 57.980 dB
3 F 1 f 2.483 500 00 GHz -53.929 dBm
4
5
6
MSG
STATUS
Frequency
Auto Tune
Center Freq
2.483500000 GHz
Start Freq
2.478500000 GHz
Stop Freq
2.488500000 GHz
CF Step
1.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

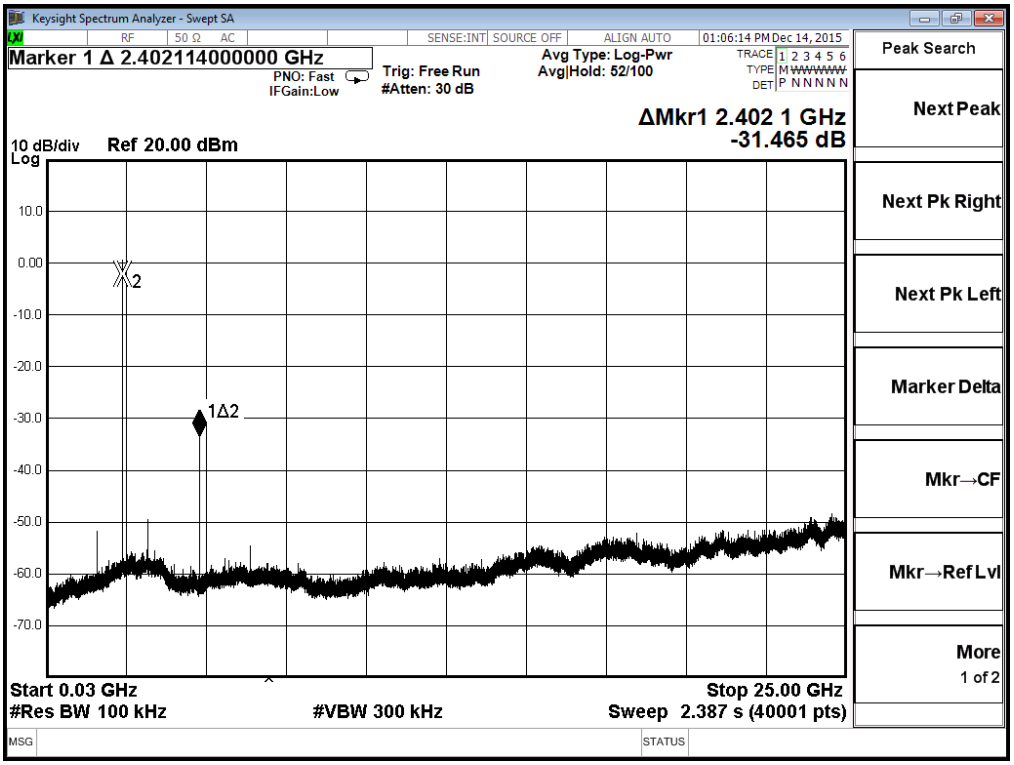
Channel 00 (30MHz-25GHz)- GFSK



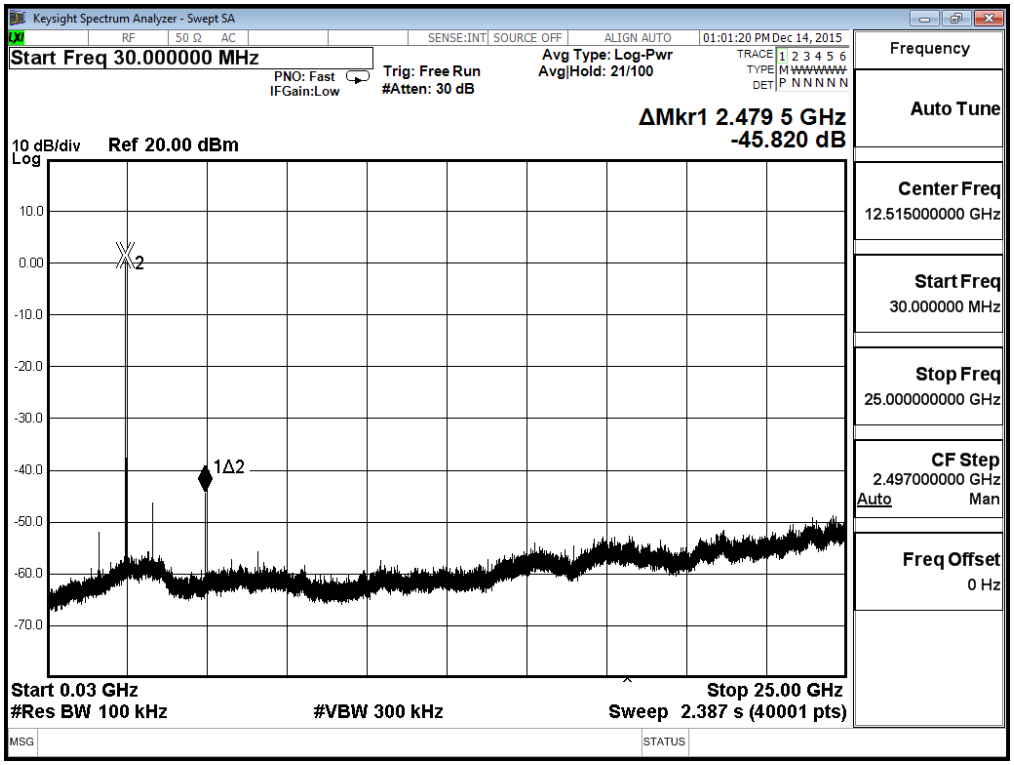
Channel 78 (30MHz-25GHz)- GFSK



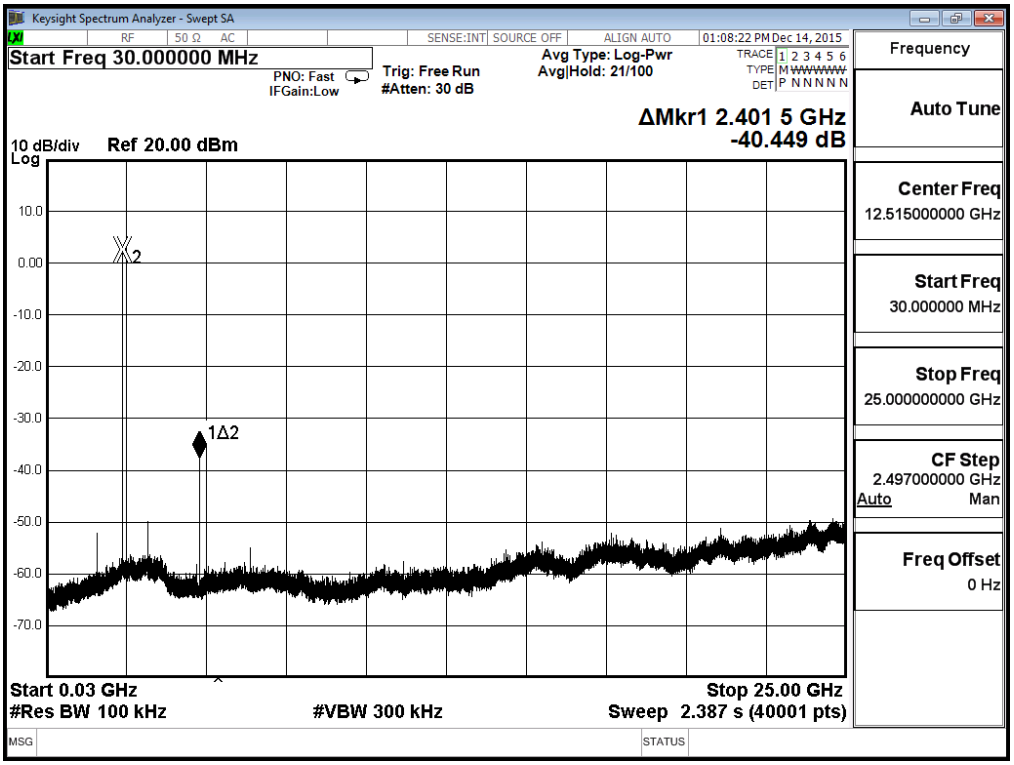
Channel 00 (30MHz-25GHz)- π/4-DQPSK



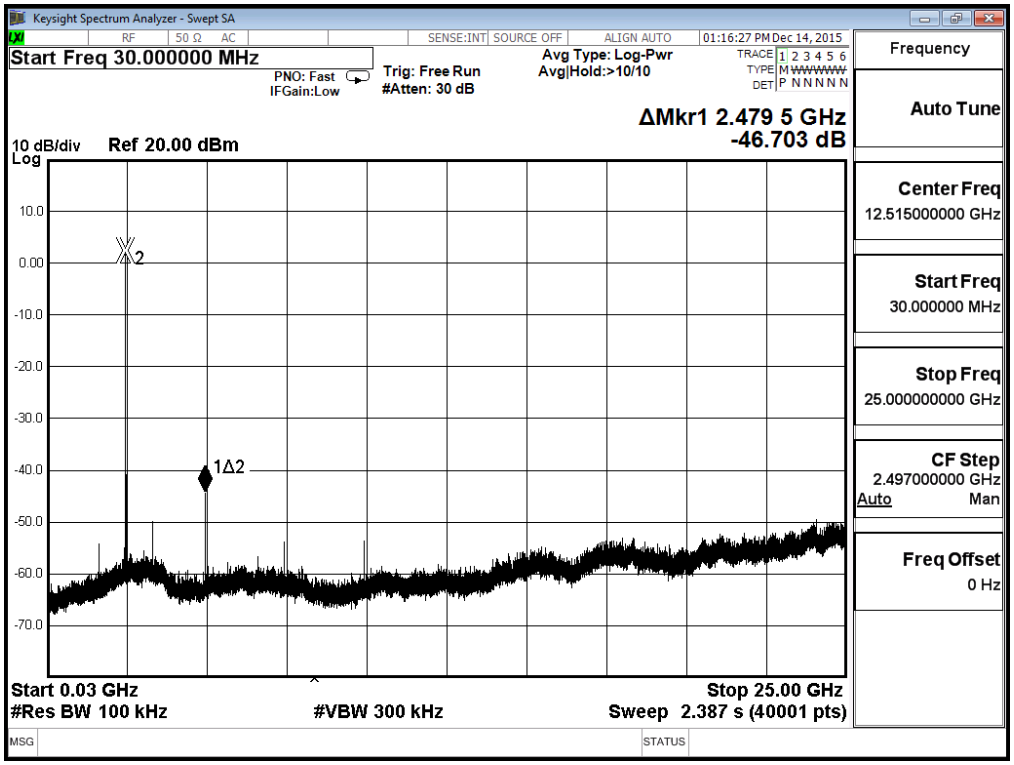
Channel 78 (30MHz-25GHz)- π/4-DQPSK



Channel 00 (30MHz-25GHz)- 8-DPSK



Channel 78 (30MHz-25GHz)- 8-DPSK



6. Band Edge

6.1. Test Equipment

The following test equipments are used during the test:

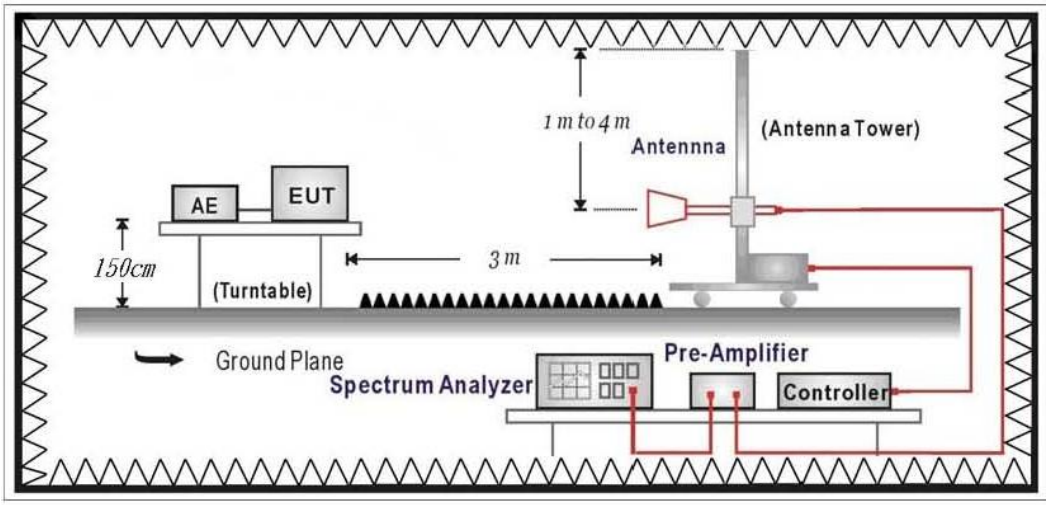
Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2016/01/26
Spectrum Analyzer	Agilent	E4440A	MY46187335	2016/01/07
k Type Cable	Huber Suhner	Sucoflex 102	25623/2	2016/01/26
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2016/01/18

Note: All equipments that need to calibrate are with calibration period of 1 year.

6.2. Test Setup

RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

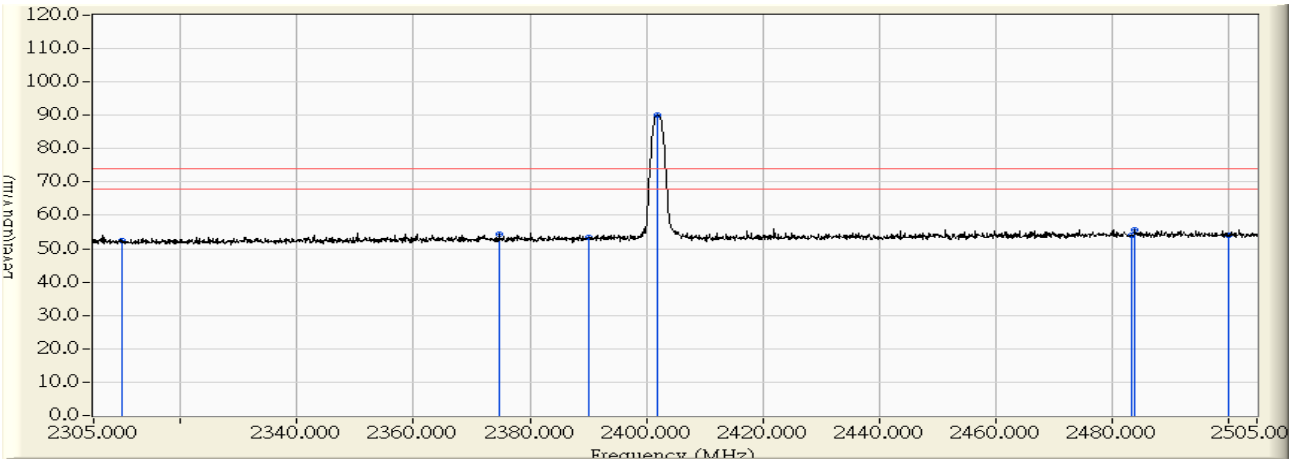
The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements
The EUT and its simulators are placed on a turn table which is 1.5 meter above ground.
The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

6.6. Test Result

Site : CB1	**Time : 2015/12/22 - 21:41**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

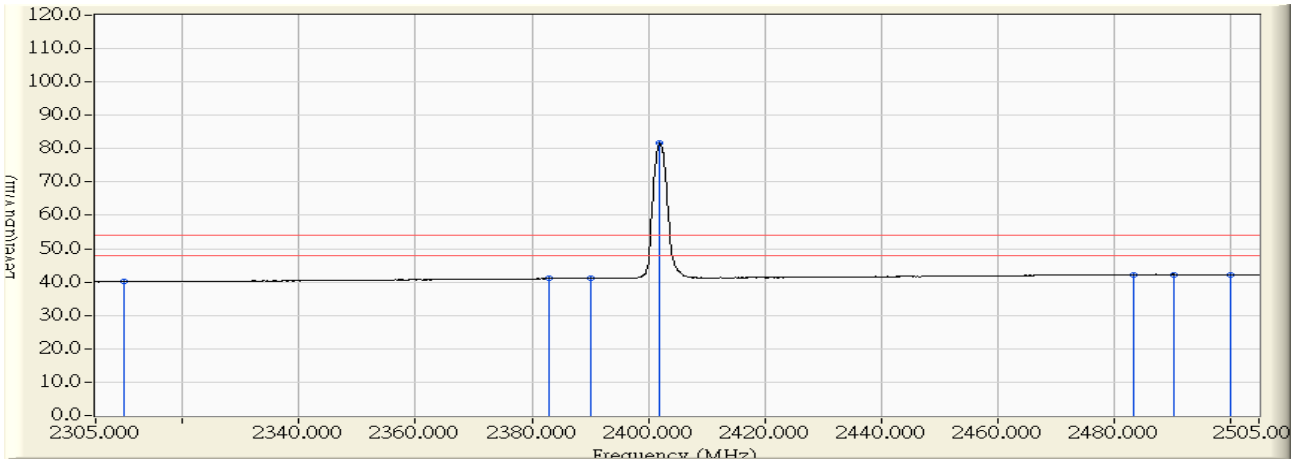


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.130	24.205	52.335	-21.665	74.000	PEAK
2		2374.700	28.779	25.538	54.317	-19.683	74.000	PEAK
3		2390.000	28.933	24.604	53.537	-20.463	74.000	PEAK
4	*	2402.000	29.053	60.948	90.002	16.002	74.000	PEAK
5		2483.500	29.829	24.155	53.984	-20.016	74.000	PEAK
6		2484.100	29.830	25.980	55.809	-18.191	74.000	PEAK
7		2500.000	29.826	24.265	54.090	-19.910	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 21:42**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

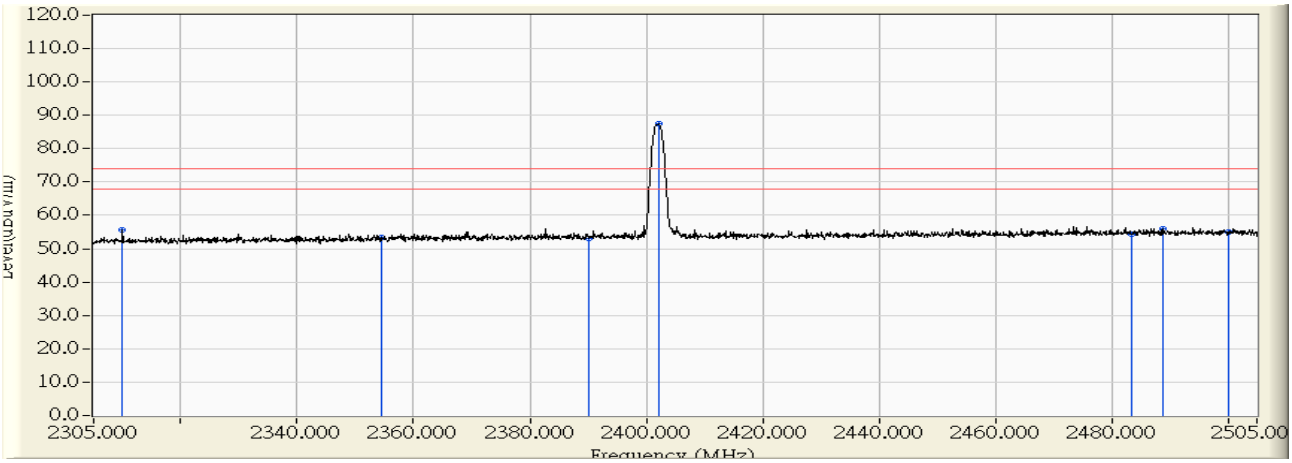


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.130	12.002	40.132	-13.868	54.000	AVERAGE
2		2382.900	28.862	12.183	41.045	-12.955	54.000	AVERAGE
3		2390.000	28.933	12.167	41.100	-12.900	54.000	AVERAGE
4	*	2402.000	29.053	52.523	81.577	27.577	54.000	AVERAGE
5		2483.500	29.829	12.409	42.238	-11.762	54.000	AVERAGE
6		2490.300	29.832	12.423	42.255	-11.745	54.000	AVERAGE
7		2500.000	29.826	12.381	42.206	-11.794	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 21:51**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

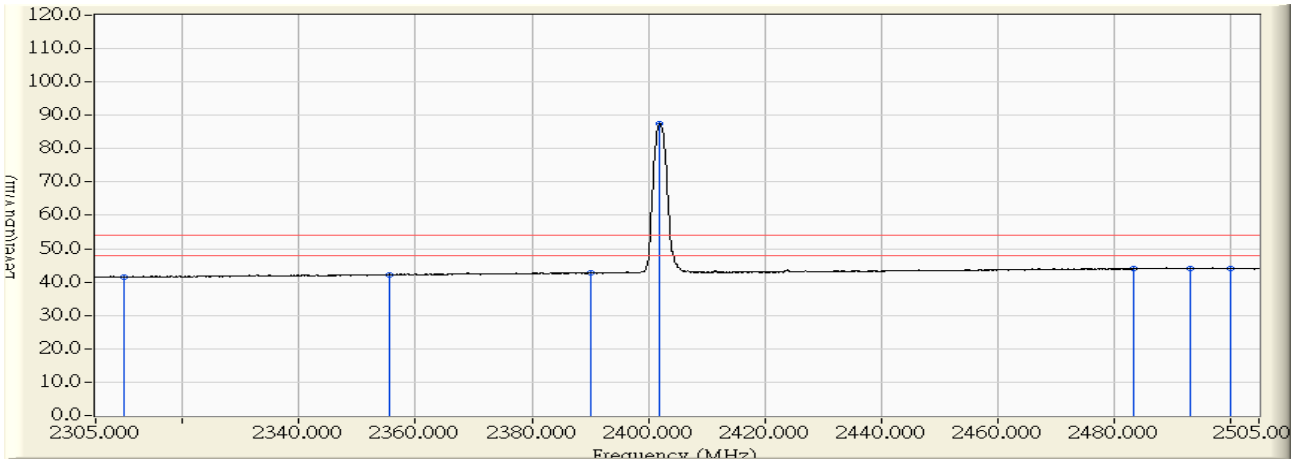


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	26.824	55.608	-18.392	74.000	PEAK
2		2354.400	29.318	23.937	53.255	-20.745	74.000	PEAK
3		2390.000	29.747	23.448	53.195	-20.805	74.000	PEAK
4	*	2402.200	29.894	57.473	87.367	13.367	74.000	PEAK
5		2483.500	30.830	23.550	54.380	-19.620	74.000	PEAK
6		2488.900	30.844	25.040	55.883	-18.117	74.000	PEAK
7		2500.000	30.860	24.240	55.099	-18.901	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 21:46**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2402MHz**

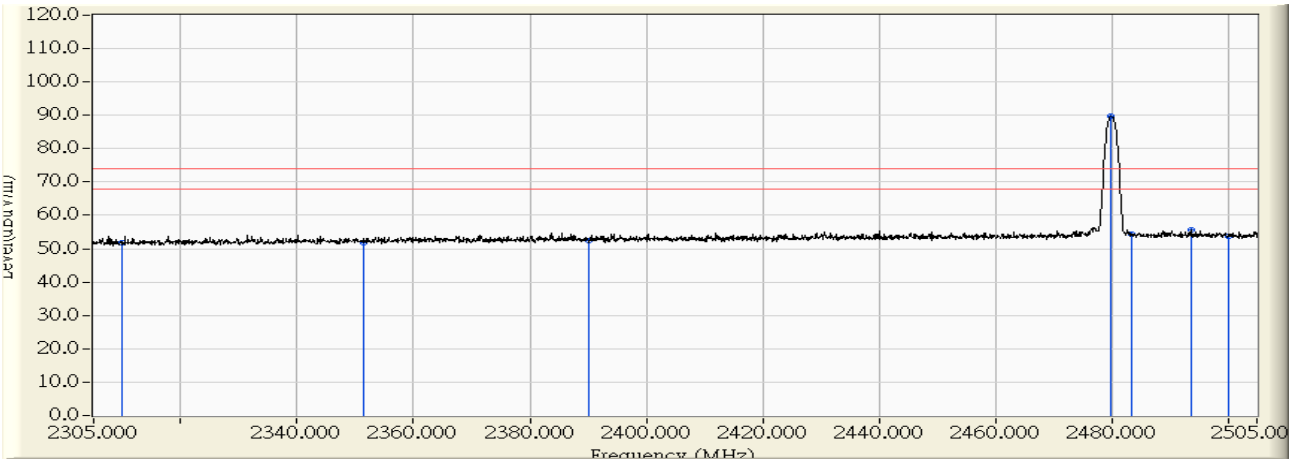


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.780	41.564	-12.436	54.000	AVERAGE
2		2355.400	29.330	12.922	42.252	-11.748	54.000	AVERAGE
3		2390.000	29.747	12.955	42.702	-11.298	54.000	AVERAGE
4	*	2402.000	29.891	57.659	87.551	33.551	54.000	AVERAGE
5		2483.500	30.830	13.114	43.944	-10.056	54.000	AVERAGE
6		2493.100	30.854	13.205	44.059	-9.941	54.000	AVERAGE
7		2500.000	30.860	13.143	44.002	-9.998	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 22:07**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**

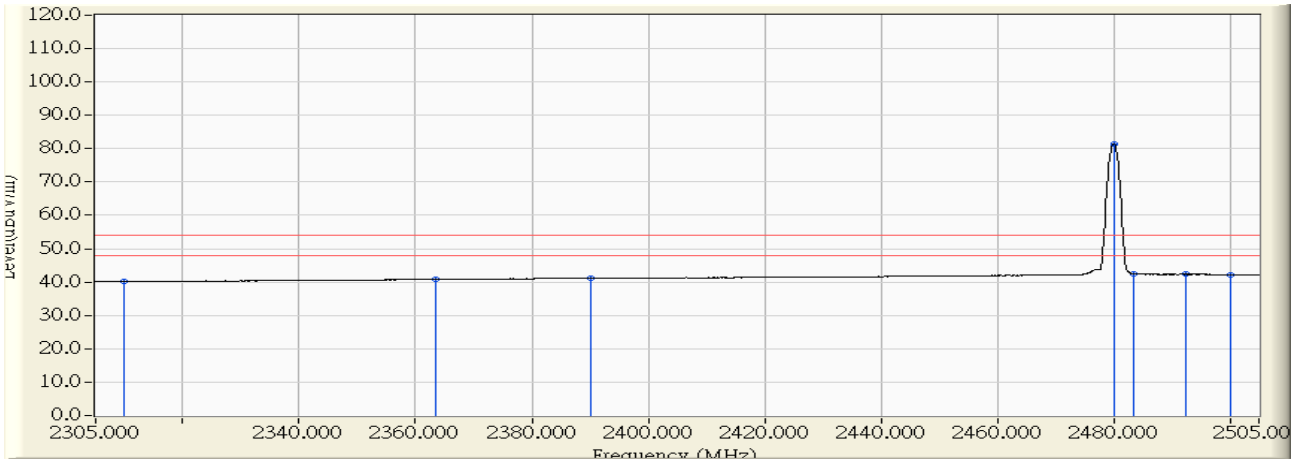


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.130	23.610	51.740	-22.260	74.000	PEAK
2		2351.300	28.545	23.324	51.868	-22.132	74.000	PEAK
3		2390.000	28.933	23.549	52.482	-21.518	74.000	PEAK
4	*	2479.800	29.827	59.806	89.633	15.633	74.000	PEAK
5		2483.500	29.829	24.565	54.394	-19.606	74.000	PEAK
6		2493.800	29.834	25.928	55.762	-18.238	74.000	PEAK
7		2500.000	29.826	23.867	53.692	-20.308	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 22:08**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - HORIZONTAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**

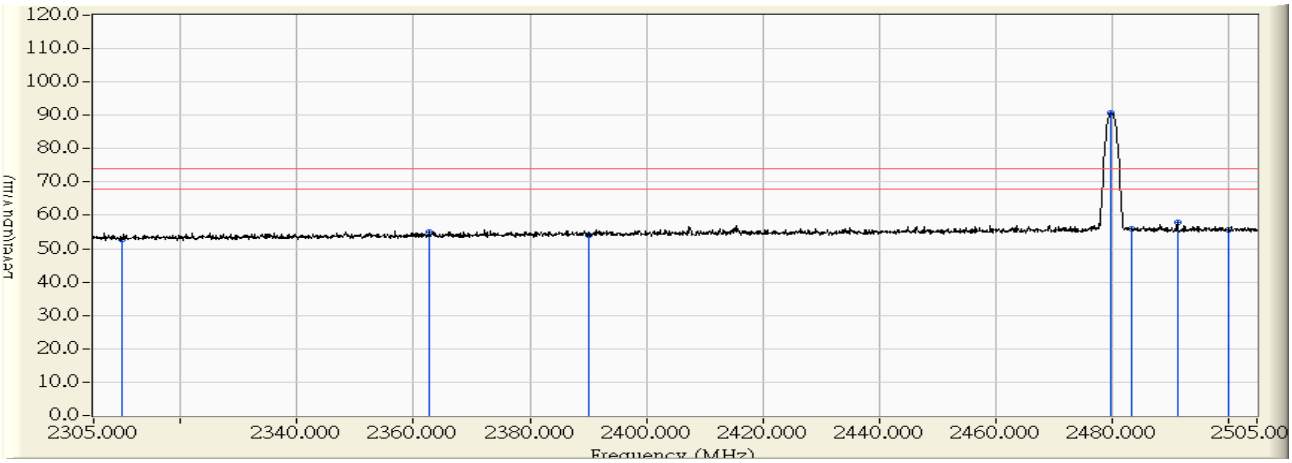


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.130	11.995	40.125	-13.875	54.000	AVERAGE
2		2363.400	28.666	12.118	40.784	-13.216	54.000	AVERAGE
3		2390.000	28.933	12.292	41.225	-12.775	54.000	AVERAGE
4	*	2480.000	29.827	51.704	81.531	27.531	54.000	AVERAGE
5		2483.500	29.829	12.585	42.414	-11.586	54.000	AVERAGE
6		2492.400	29.833	12.498	42.331	-11.669	54.000	AVERAGE
7		2500.000	29.826	12.439	42.264	-11.736	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 22:18**
Limit : FCC_SpartC_15.247_H_03M_PK	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**

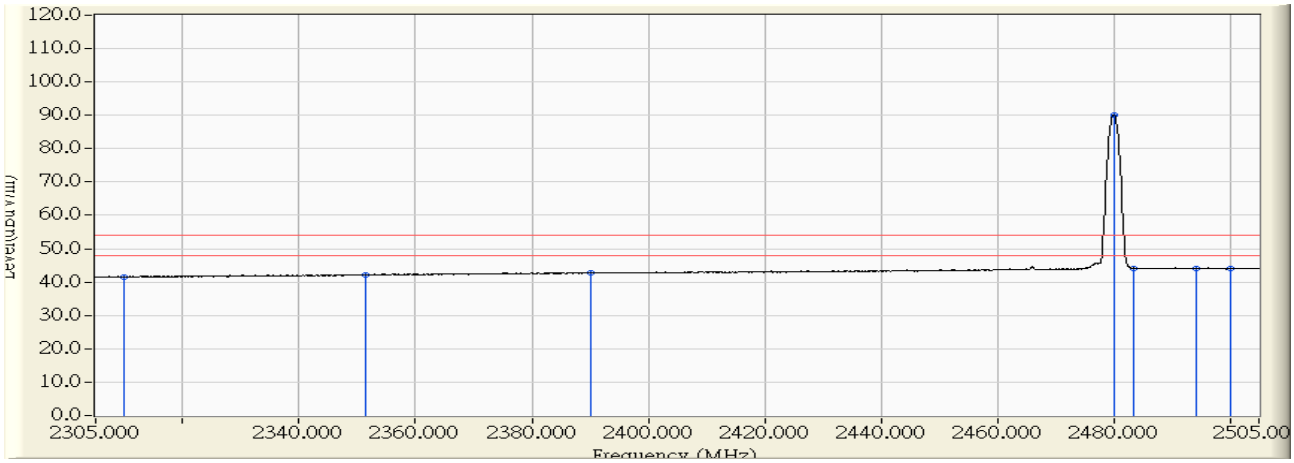


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	24.037	52.821	-21.179	74.000	PEAK
2		2362.800	29.420	25.445	54.865	-19.135	74.000	PEAK
3		2390.000	29.747	24.457	54.204	-19.796	74.000	PEAK
4	*	2479.800	30.821	59.782	90.603	16.603	74.000	PEAK
5		2483.500	30.830	24.997	55.827	-18.173	74.000	PEAK
6		2491.300	30.850	27.004	57.853	-16.147	74.000	PEAK
7		2500.000	30.860	24.922	55.781	-18.219	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Site : CB1	**Time : 2015/12/22 - 22:13**
Limit : FCC_SpartC_15.247_H_03M_AV	**Margin : 6**
Probe : CB1_FCC_EFS_1-18G_H2 - VERTICAL	**Power : DC 5V (Power by PC)**
EUT : Portable Stereo Speaker	**Note : Mode 1: Transmit Mode_2480MHz**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	28.784	12.716	41.500	-12.500	54.000	AVERAGE
2		2351.400	29.282	12.984	42.266	-11.734	54.000	AVERAGE
3		2390.000	29.747	12.935	42.682	-11.318	54.000	AVERAGE
4	*	2480.000	30.821	59.390	90.211	36.211	54.000	AVERAGE
5		2483.500	30.830	13.361	44.191	-9.809	54.000	AVERAGE
6		2494.200	30.857	13.186	44.043	-9.957	54.000	AVERAGE
7		2500.000	30.860	13.187	44.046	-9.954	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 1MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. " * ", means this data is the worst emission level.
5. Measurement Level = Reading Level + Correct Factor.
6. The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

7. Number of hopping frequency

7.1. Test Equipment

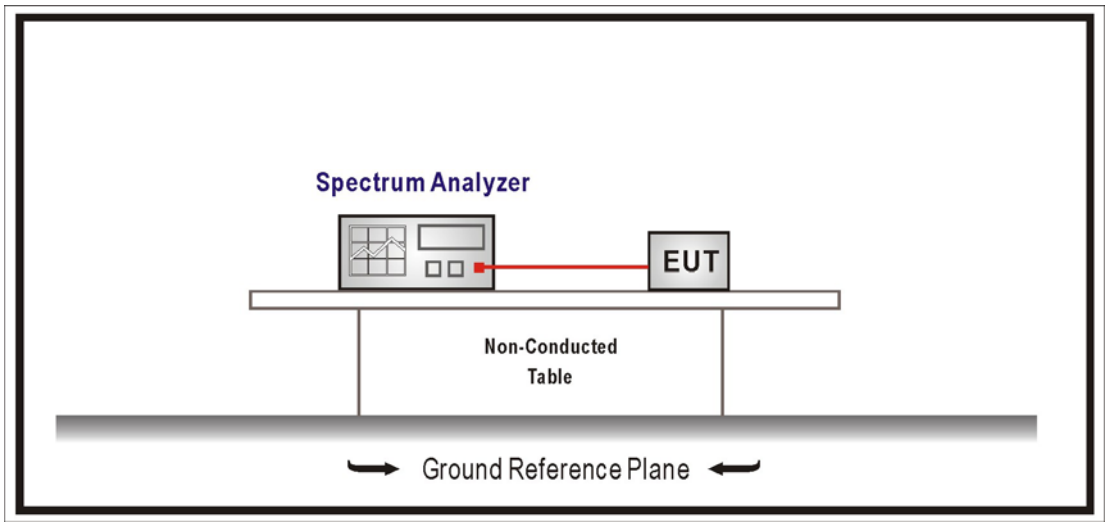
The following test equipment is used during the test:

Number of hopping frequency / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23

Note: All equipments that need to calibrate are with calibration period of 1 year.

7.2. Test Setup



7.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
For frequency hopping systems operating in the 2400-2483.5 MHz bands, which use fewer than 75 hopping frequencies, may employ intelligent hopping techniques to avoid interference to other transmissions. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 non-overlapping channels are used.
For frequency hopping systems operating in the 5725-5850 MHz band shall use at least 75 hopping frequencies.

7.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements , Span = the frequency band of operation ,RBW ≥ 1% of the span , VBW ≥ RBW , Sweep = auto, Detector function = peak, Trace = max hold.

7.5. Test Specification

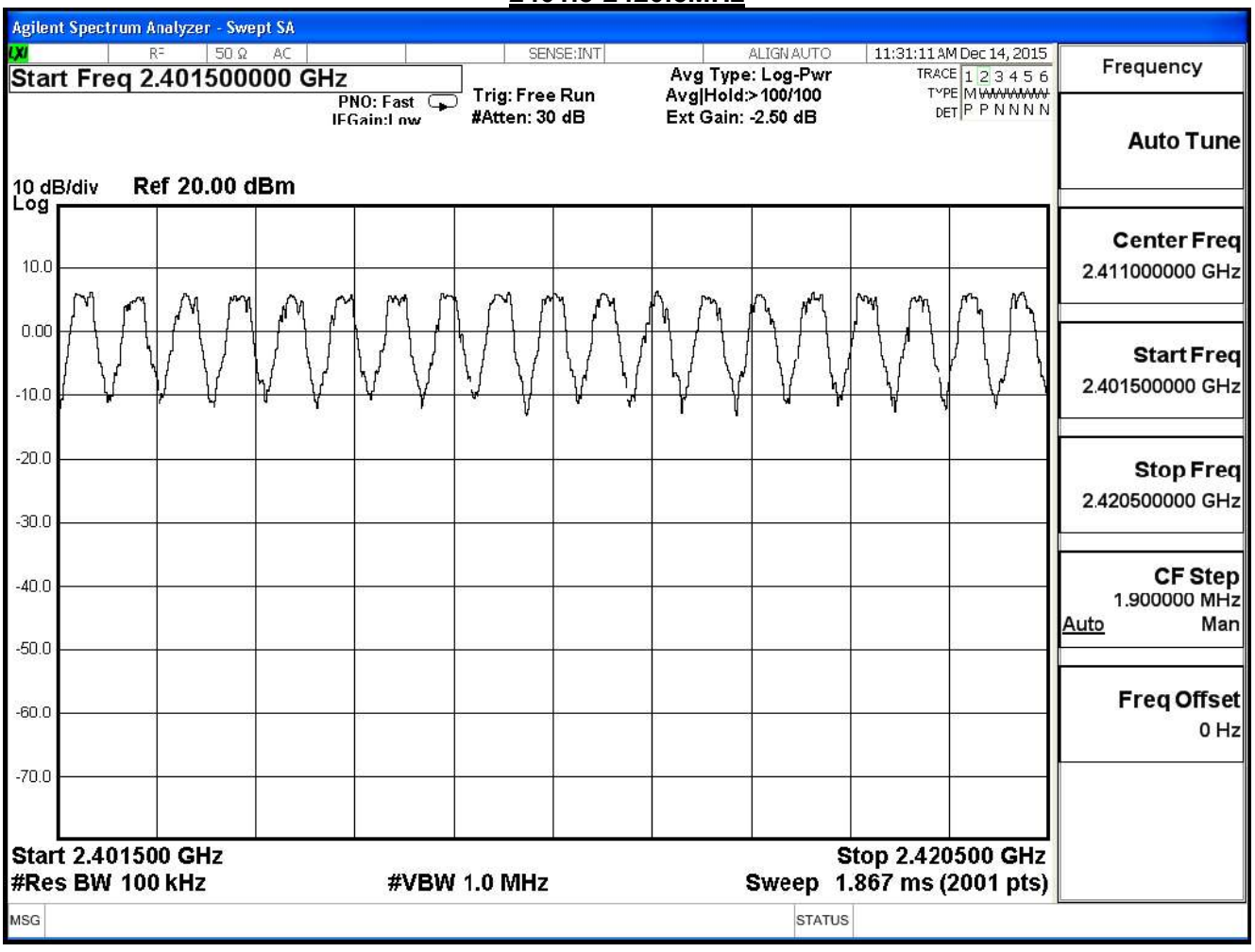
According to FCC Part 15 Subpart C Paragraph 15.247: 2015

7.6. Test Result

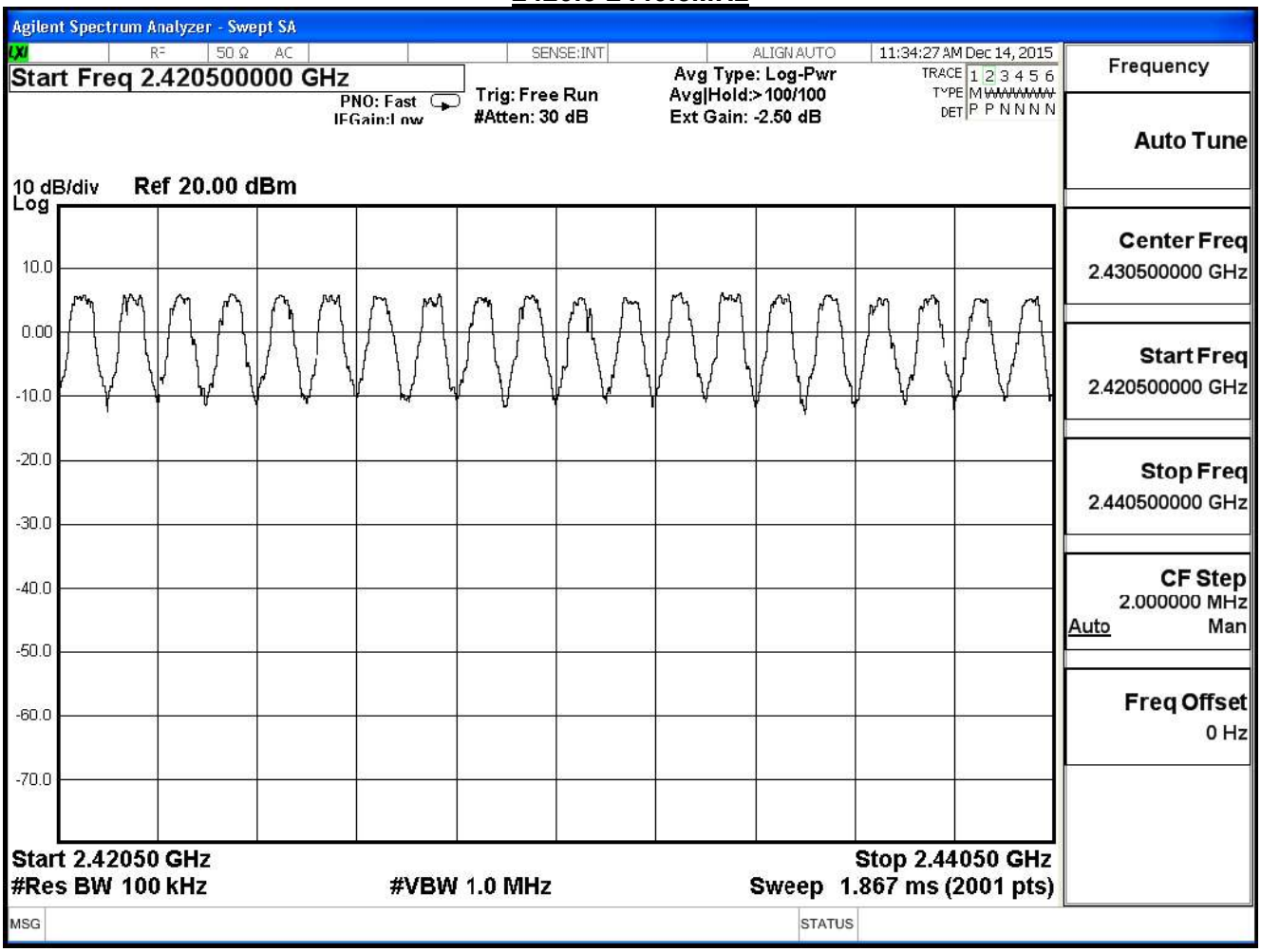
Product	Portable Stereo Speaker		
Test Item	Number of hopping frequency		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

Frequency Range (MHz)	Measure Level (Channels)	Limit (Channels)	Result
2402 - 2480	78	≧ 75	Pass

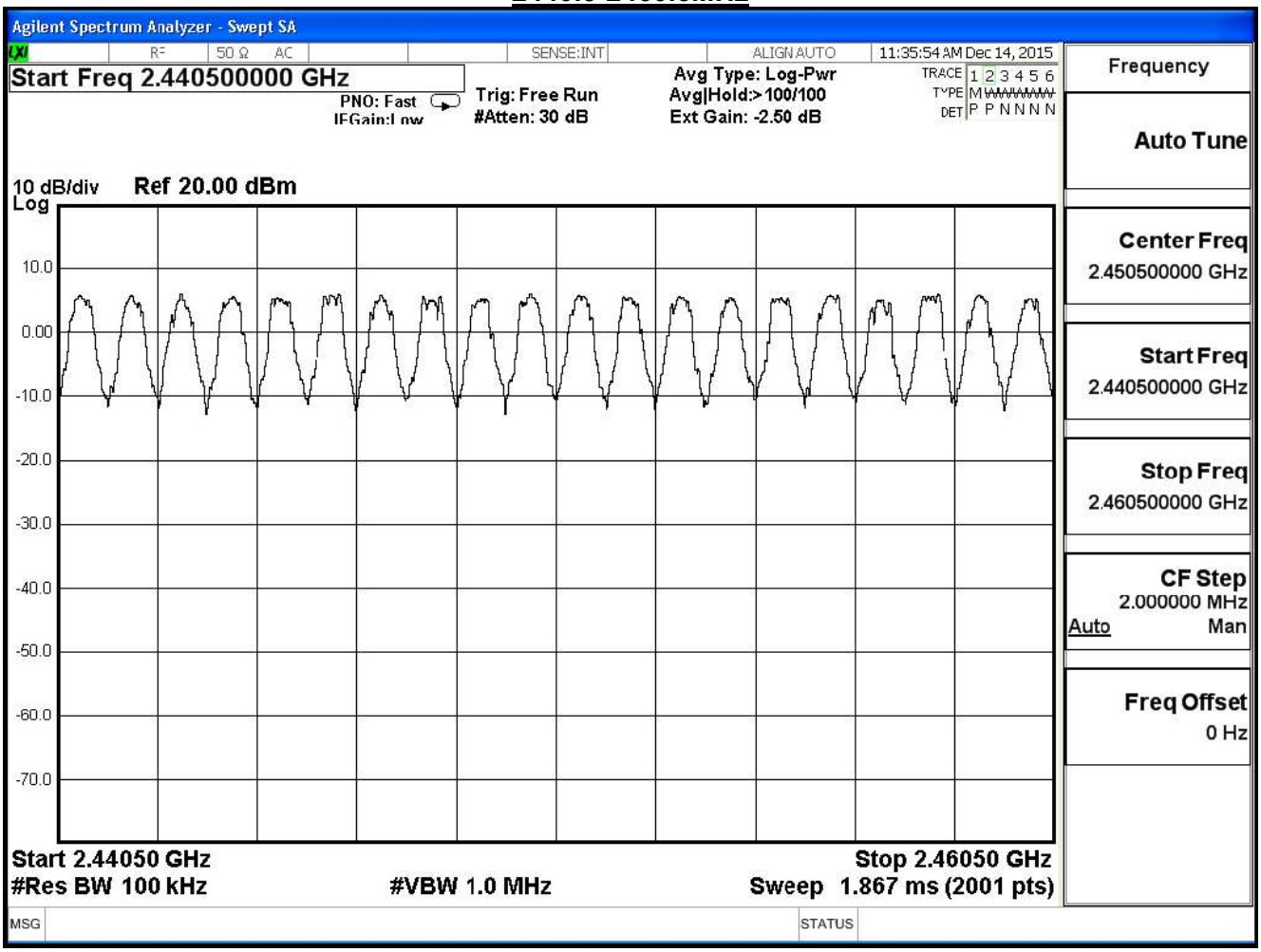
2401.5-2420.5MHz



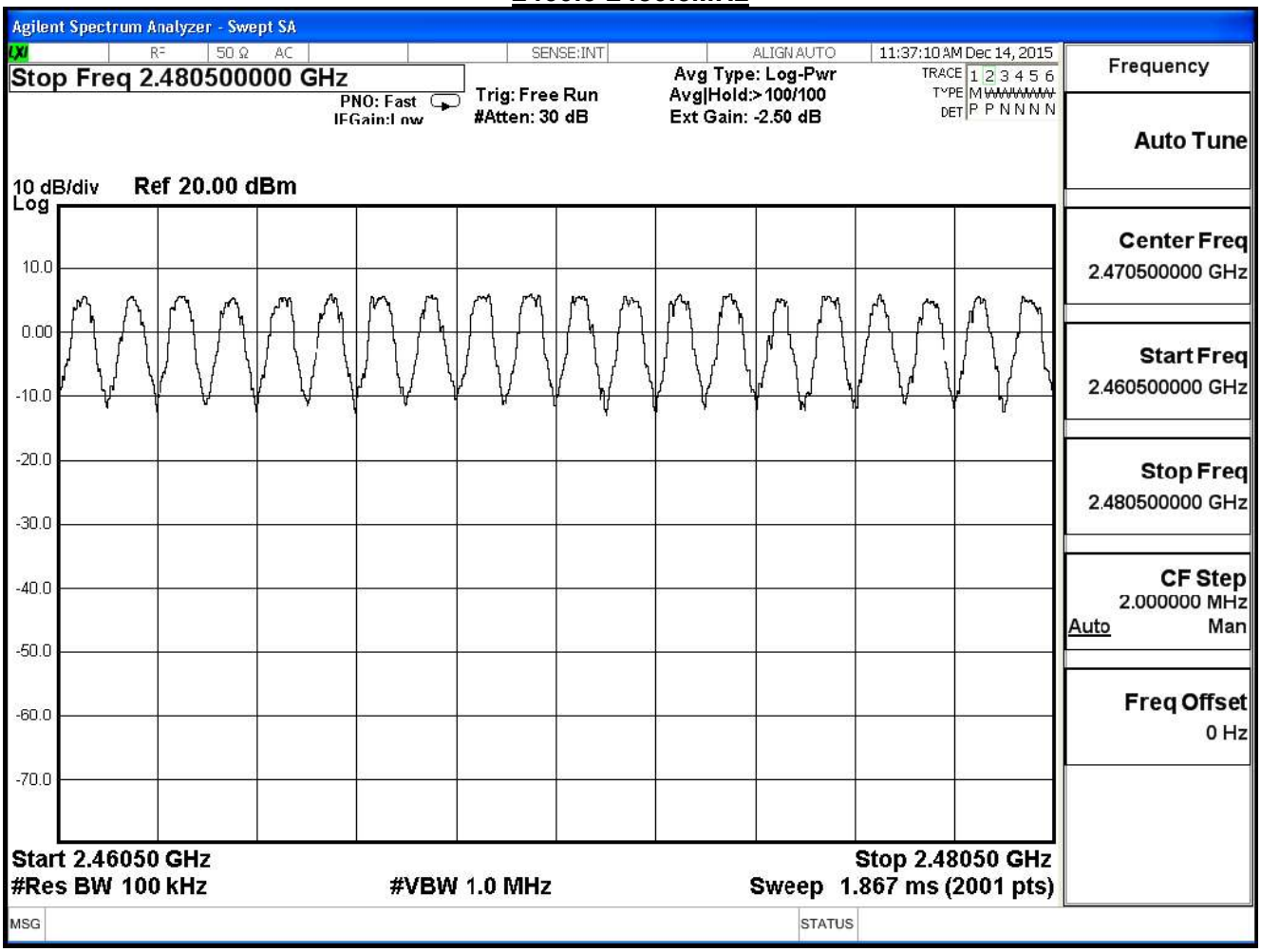
2420.5-2440.5MHz



2440.5-2460.5MHz



2460.5-2480.5MHz



8. Carrier Frequency Separation

8.1. Test Equipment

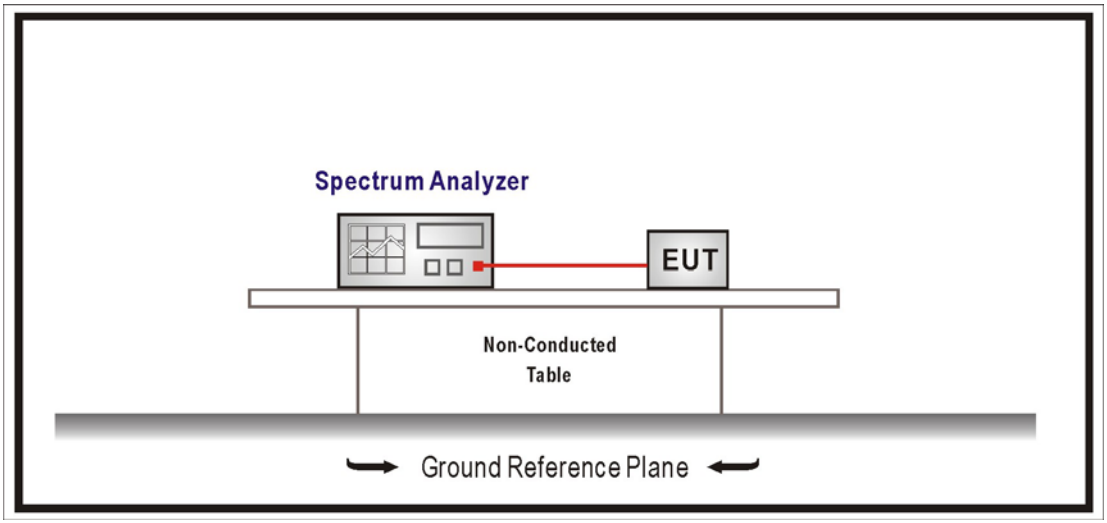
The following test equipment is used during the test:

Carrier Frequency Separation / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23

Note: All equipments that need to calibrate are with calibration period of 1 year.

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements
Span = wide enough to capture the peaks of two adjacent channels
Resolution Bandwidth (RBW) ≥ 1% of the span, VBW ≥ RBW
Sweep = auto, Detector function = peak, Trace = max hold

8.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

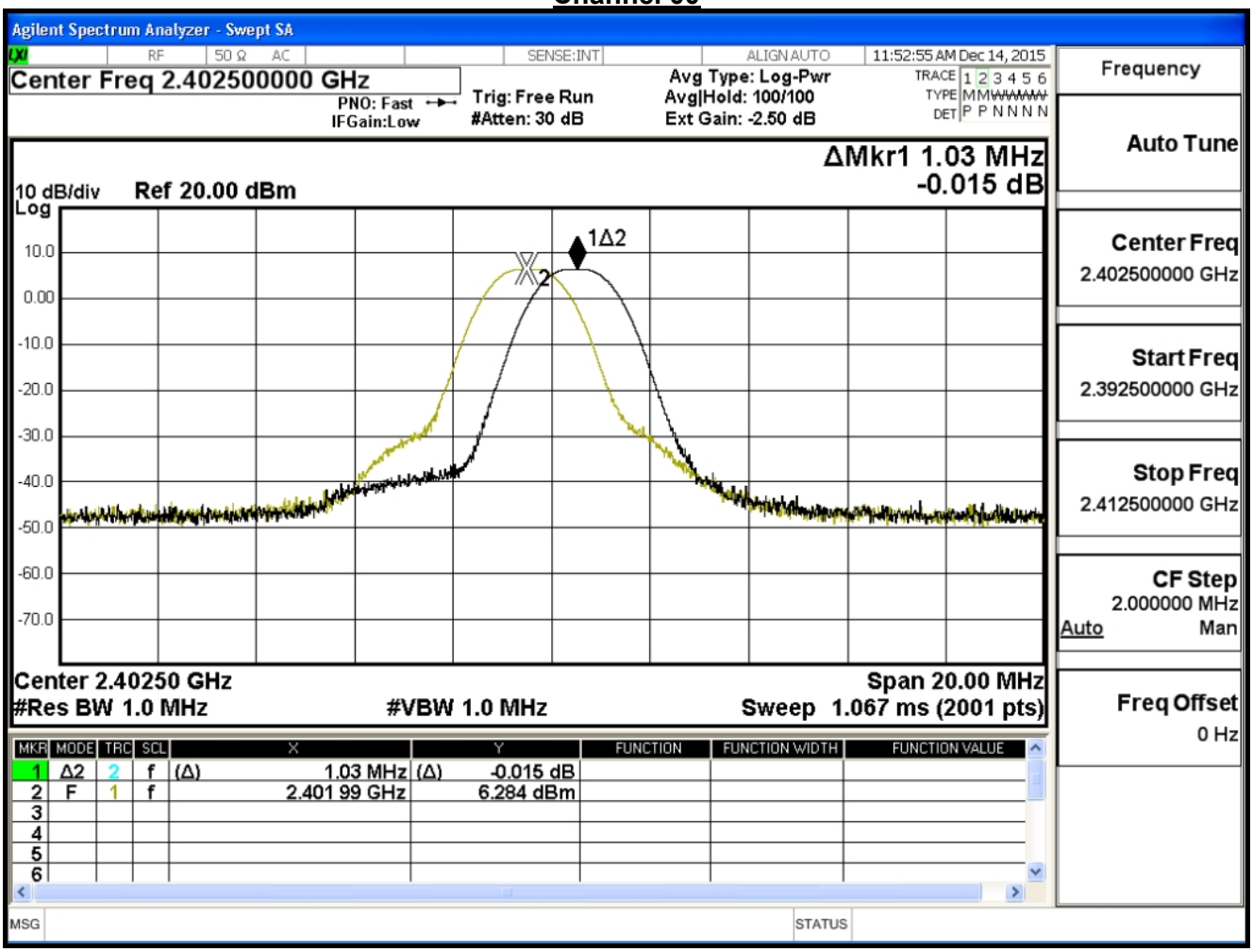
8.6. Test Result

Product	Portable Stereo Speaker		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

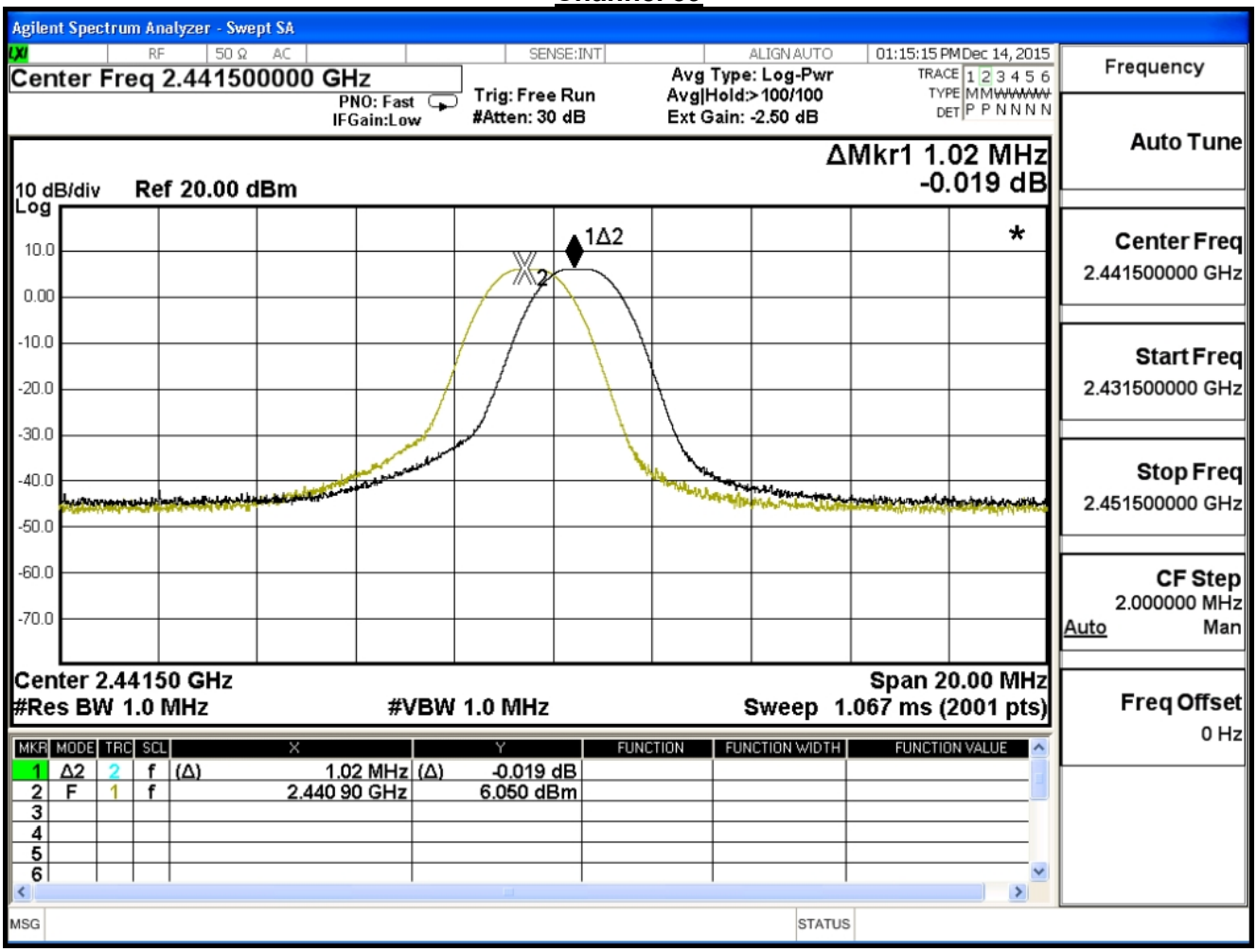
GFSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.03	0.743	Pass
39	2441	1.02	0.732	Pass
78	2480	1.06	0.719	Pass

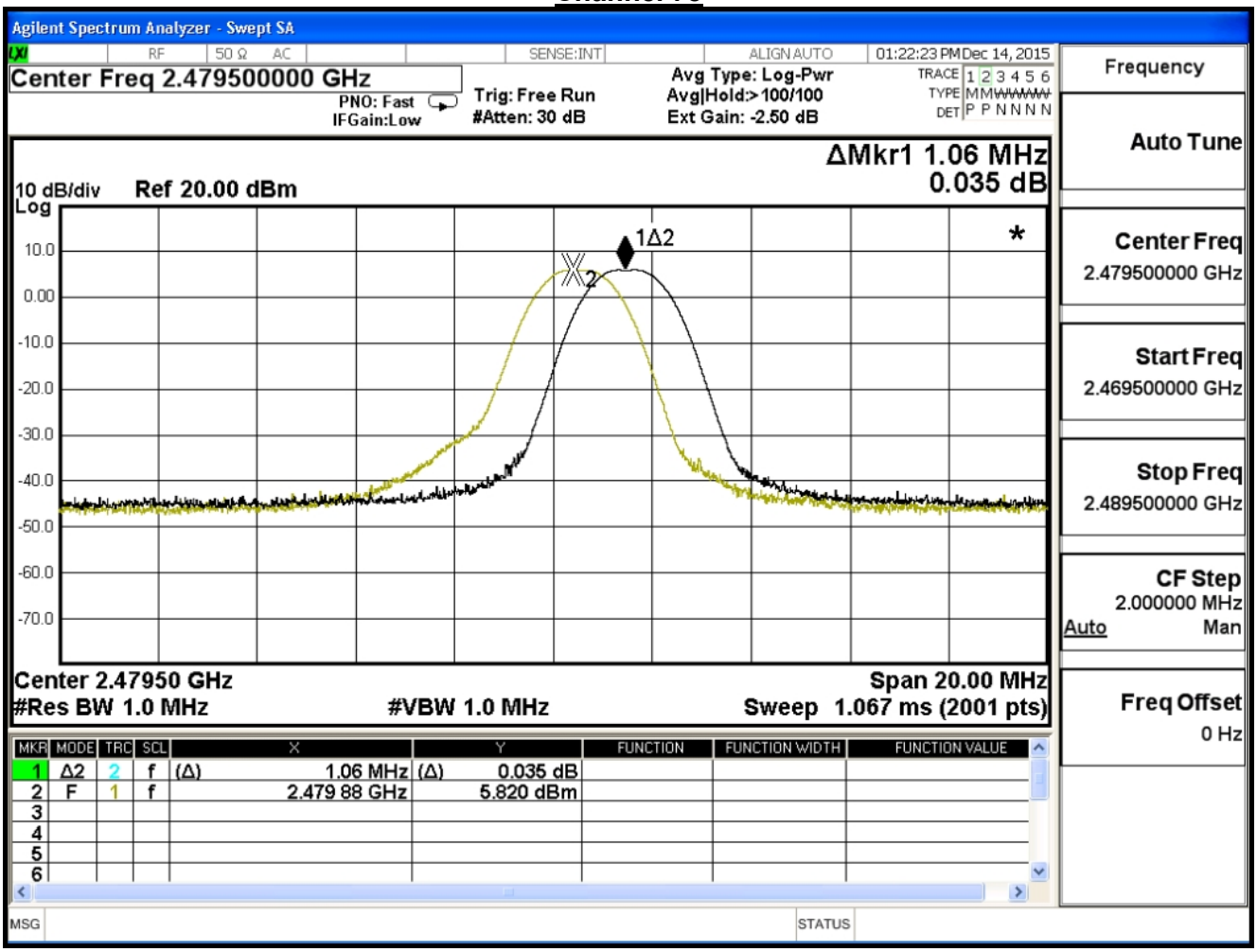
Channel 00



Channel 39


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:15:15 PM Dec 14, 2015
ΔMkr1 1.02 MHz
-0.019 dB
10 dB/div
Log
Ref 20.00 dBm
Center 2.44150 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 (Δ) 1.02 MHz (Δ) -0.019 dB
2 F 2.440 90 GHz 6.050 dBm
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.431500000 GHz
Stop Freq
2.451500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 78

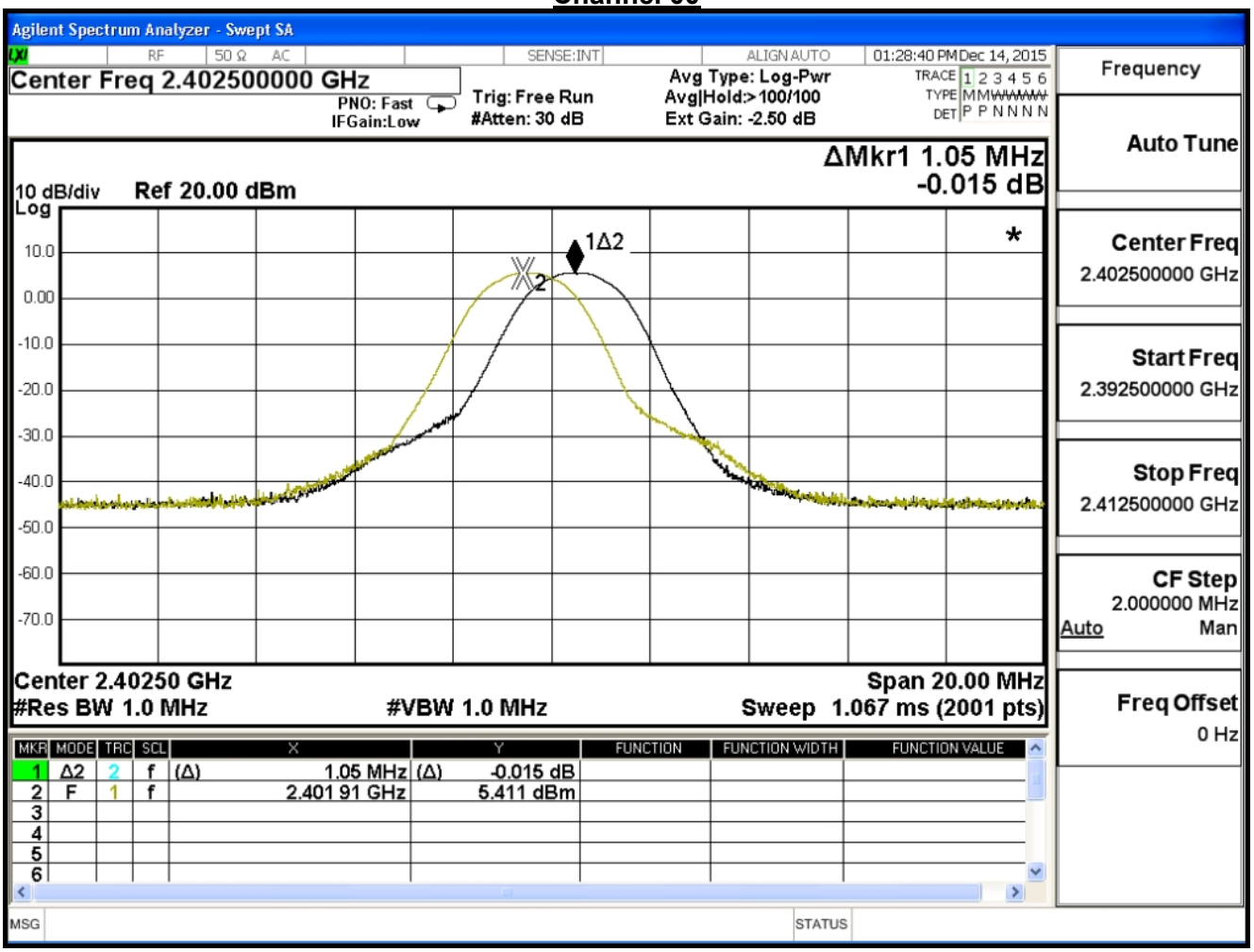

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.479500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:22:23 PM Dec 14, 2015
ΔMkr1 1.06 MHz
0.035 dB
10 dB/div
Log
Ref 20.00 dBm
Center 2.47950 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 1.06 MHz 0.035 dB
2 F 2.479 88 GHz 5.820 dBm
Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.469500000 GHz
Stop Freq
2.489500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Portable Stereo Speaker		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

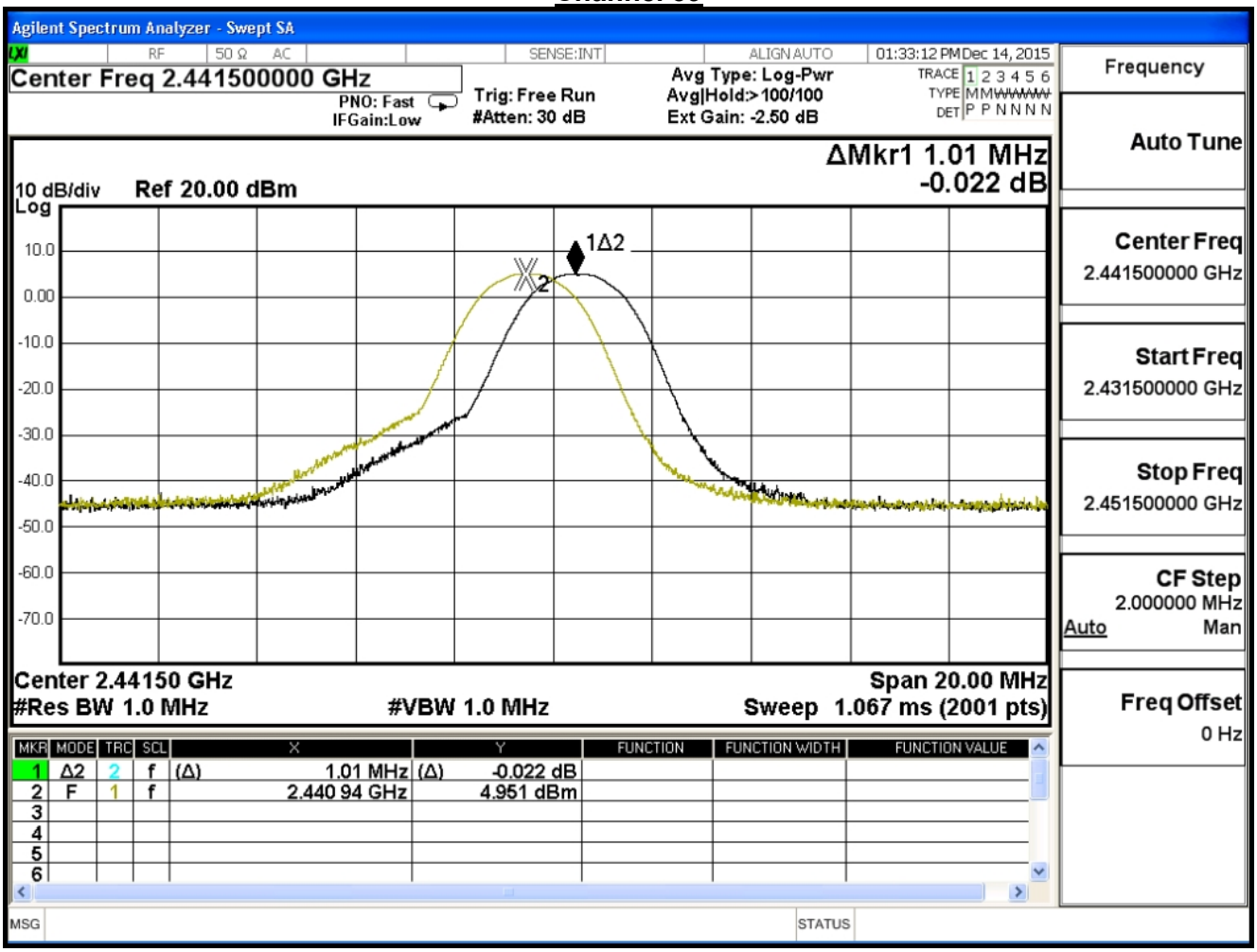
π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.05	0.946	Pass
39	2441	1.01	0.927	Pass
78	2480	1.04	0.914	Pass

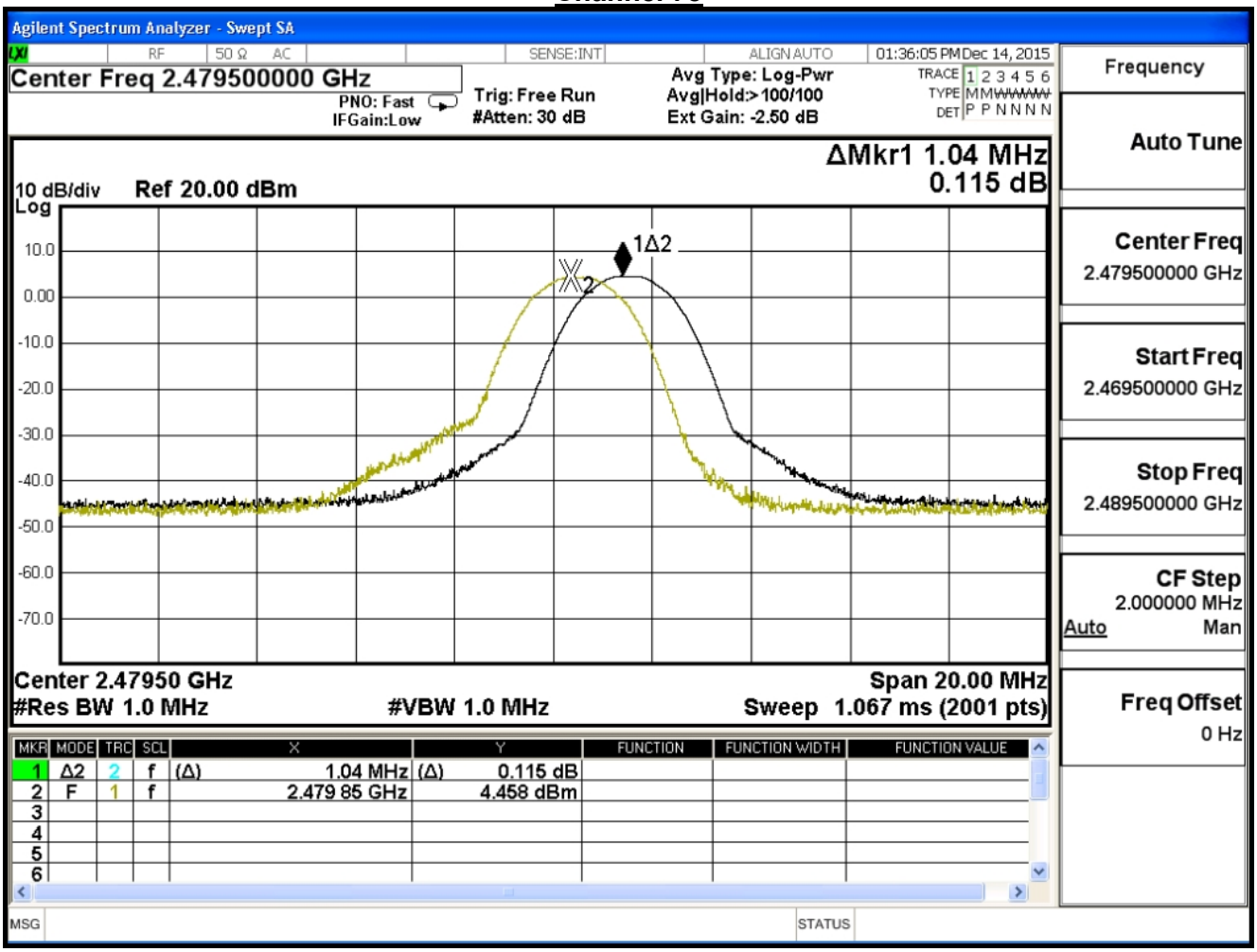
Channel 00



Channel 39


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:33:12 PM Dec 14, 2015
ΔMkr1 1.01 MHz
-0.022 dB
10 dB/div
Log
Ref 20.00 dBm
Center 2.44150 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 (Δ) 1.01 MHz (Δ) -0.022 dB
2 F 2.440 94 GHz 4.951 dBm
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.431500000 GHz
Stop Freq
2.451500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 78

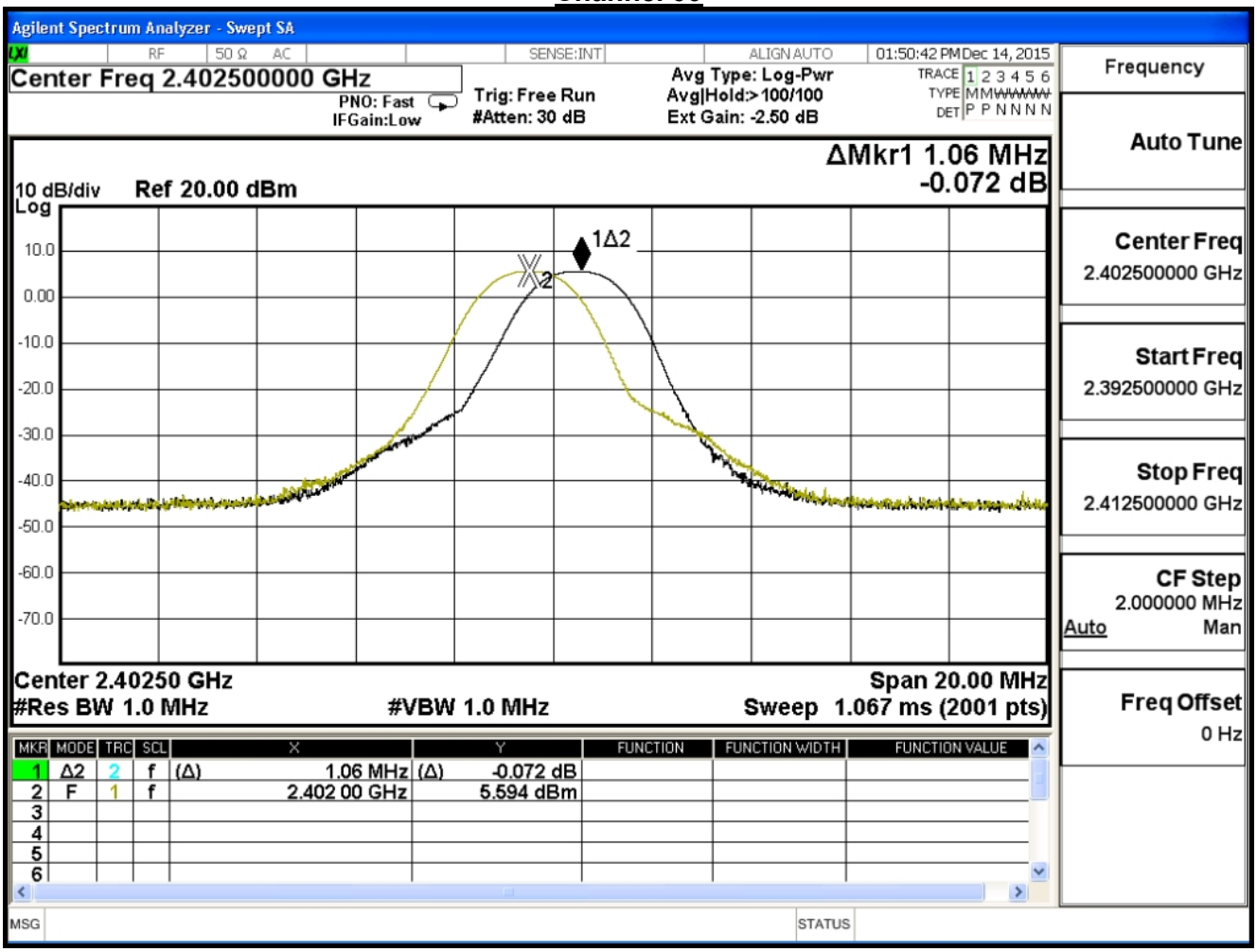

Agilent Spectrum Analyzer - Swept SA
Center Freq 2.479500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:36:05 PM Dec 14, 2015
ΔMkr1 1.04 MHz
0.115 dB
10 dB/div
Log
Ref 20.00 dBm
1Δ2
Center 2.47950 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 1 f (Δ) 1.04 MHz (Δ) 0.115 dB
2 F 1 f 2.479 85 GHz 4.458 dBm
Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.469500000 GHz
Stop Freq
2.489500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Product	Portable Stereo Speaker		
Test Item	Carrier Frequency Separation		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/14	Test Site	SR7

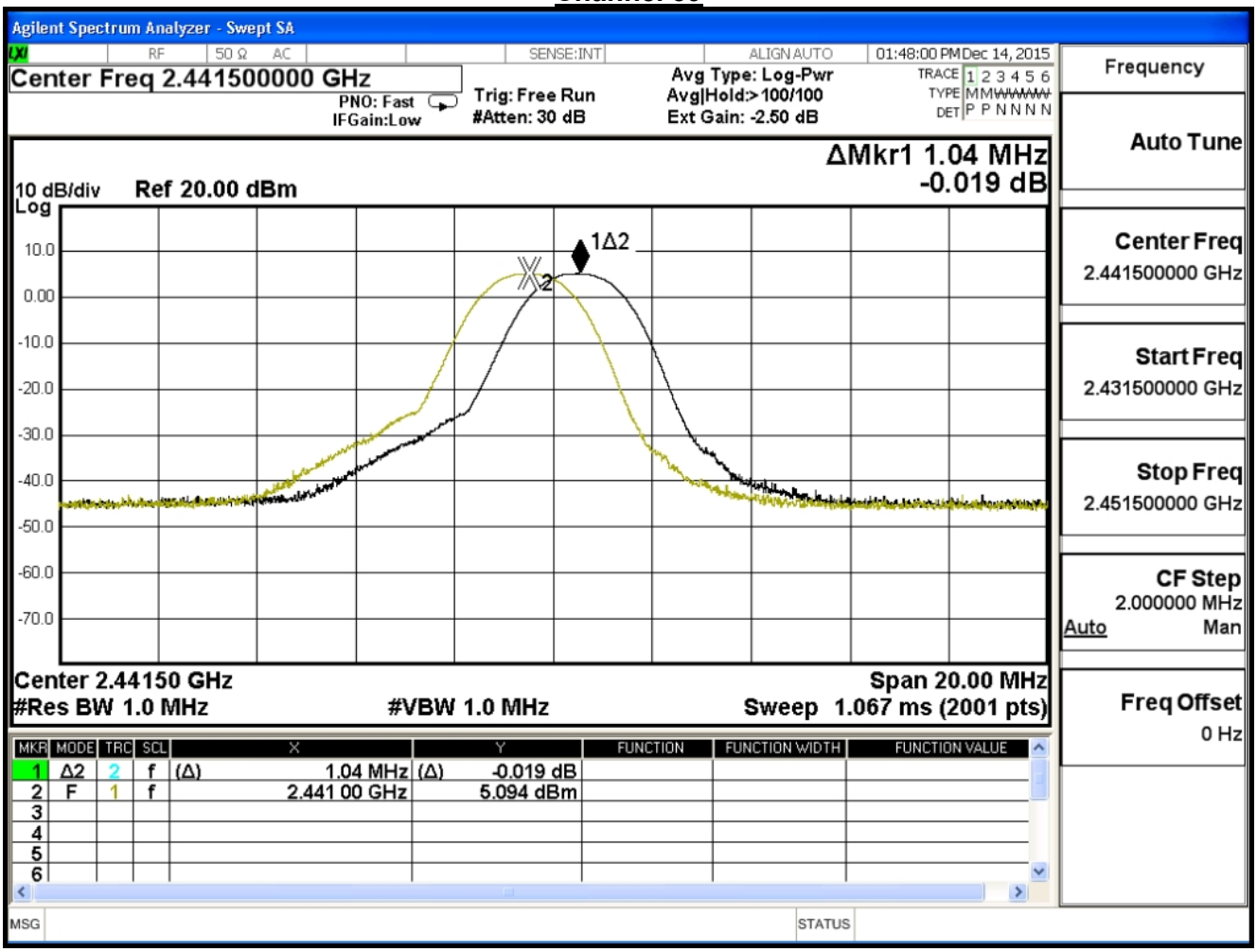
8-DPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.06	0.926	Pass
39	2441	1.04	0.913	Pass
78	2480	1.06	0.908	Pass

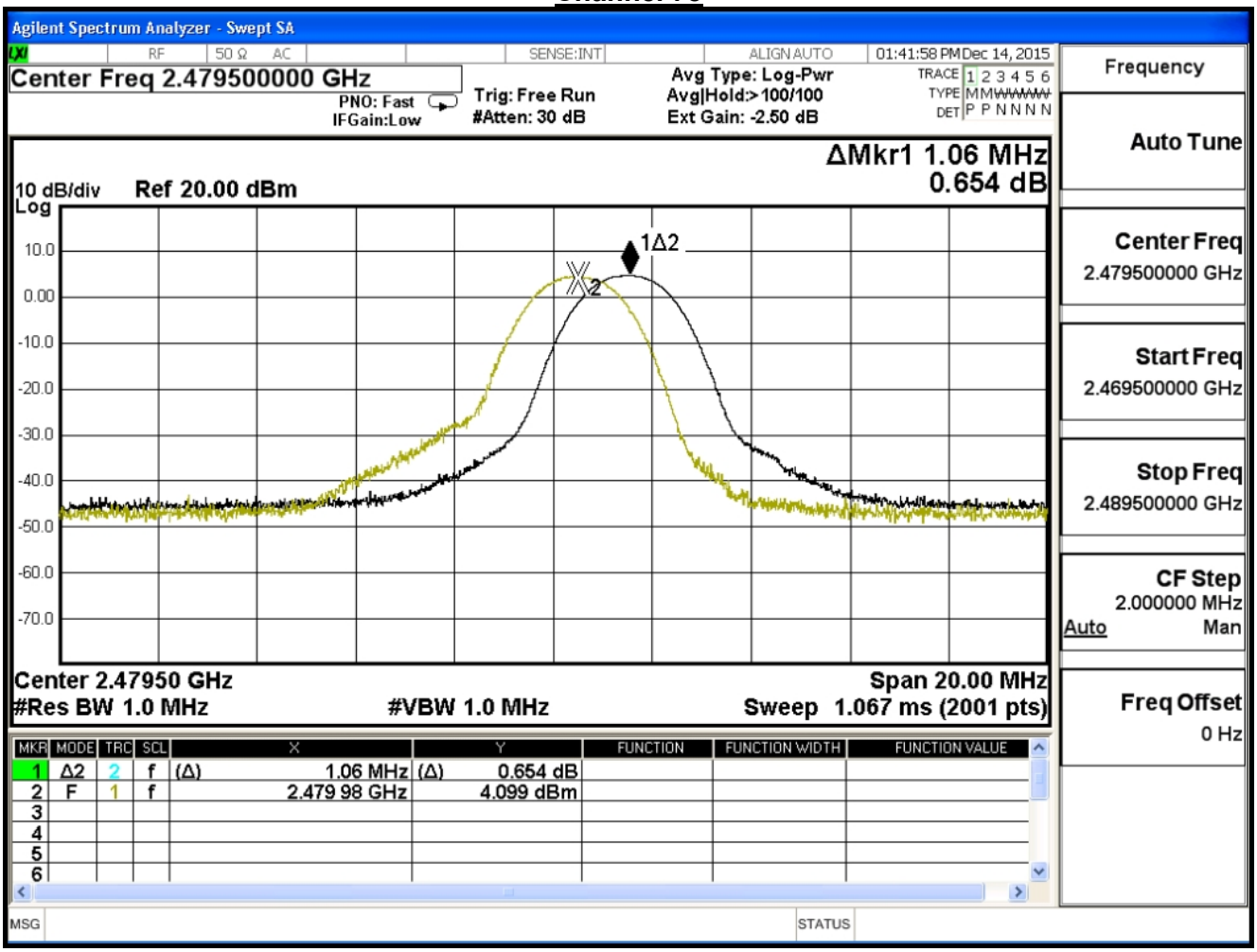
Channel 00



Channel 39


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.441500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:48:00 PM Dec 14, 2015
ΔMkr1 1.04 MHz
-0.019 dB
10 dB/div
Log
Ref 20.00 dBm
1Δ2
Center 2.44150 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 2 f (Δ) 1.04 MHz (Δ) -0.019 dB
2 F 1 f 2.441 00 GHz 5.094 dBm
Frequency
Auto Tune
Center Freq
2.441500000 GHz
Start Freq
2.431500000 GHz
Stop Freq
2.451500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

Channel 78


Agilent Spectrum Analyzer - Swept SA
Center Freq 2.479500000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
Avg|Hold:>100/100
Ext Gain: -2.50 dB
01:41:58 PM Dec 14, 2015
ΔMkr1 1.06 MHz
0.654 dB
10 dB/div
Log
Ref 20.00 dBm
Center 2.47950 GHz
#Res BW 1.0 MHz
#VBW 1.0 MHz
Span 20.00 MHz
Sweep 1.067 ms (2001 pts)
1 Δ2 (Δ) 1.06 MHz (Δ) 0.654 dB
2 F 2.479 98 GHz 4.099 dBm
Frequency
Auto Tune
Center Freq
2.479500000 GHz
Start Freq
2.469500000 GHz
Stop Freq
2.489500000 GHz
CF Step
2.000000 MHz
Auto
Man
Freq Offset
0 Hz

9. Occupied Bandwidth

9.1. Test Equipment

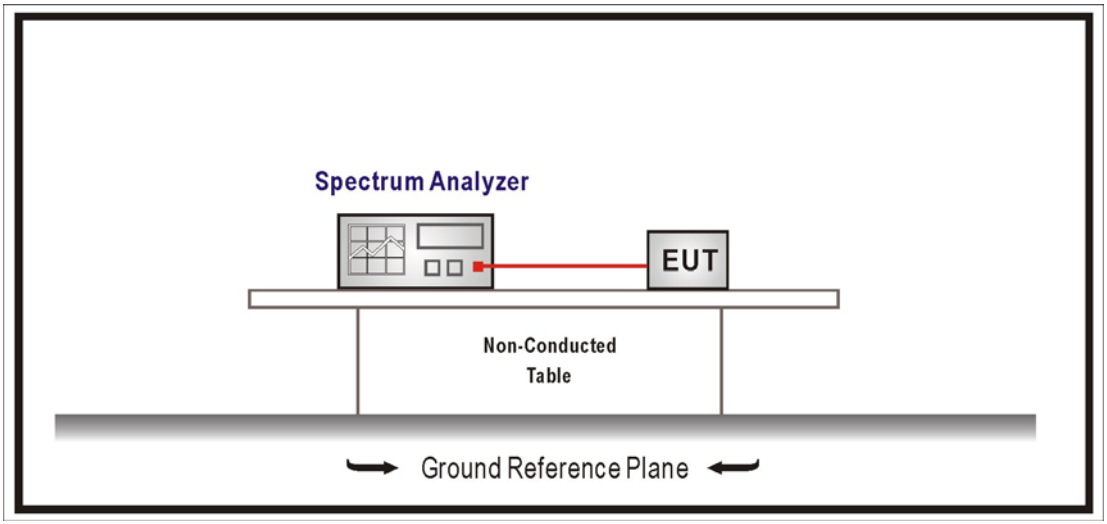
The following test equipment is used during the test:

Occupied Bandwidth / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23

Note: All equipments that need to calibrate are with calibration period of 1 year.

9.2. Test Setup



9.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period. The maximum allowed 20 dB bandwidth of the hopping channel is 500 kHz.
For frequency hopping systems operating in the 5725-5850 MHz bands. The maximum 20 dB bandwidth of the hopping channel is 1 MHz.
For 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.

9.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements
Use the following spectrum analyzer settings:
Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel
RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW , Sweep = auto, Detector function = peak, Trace = max hold , The EUT should be transmitting at its maximum data rate.

9.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

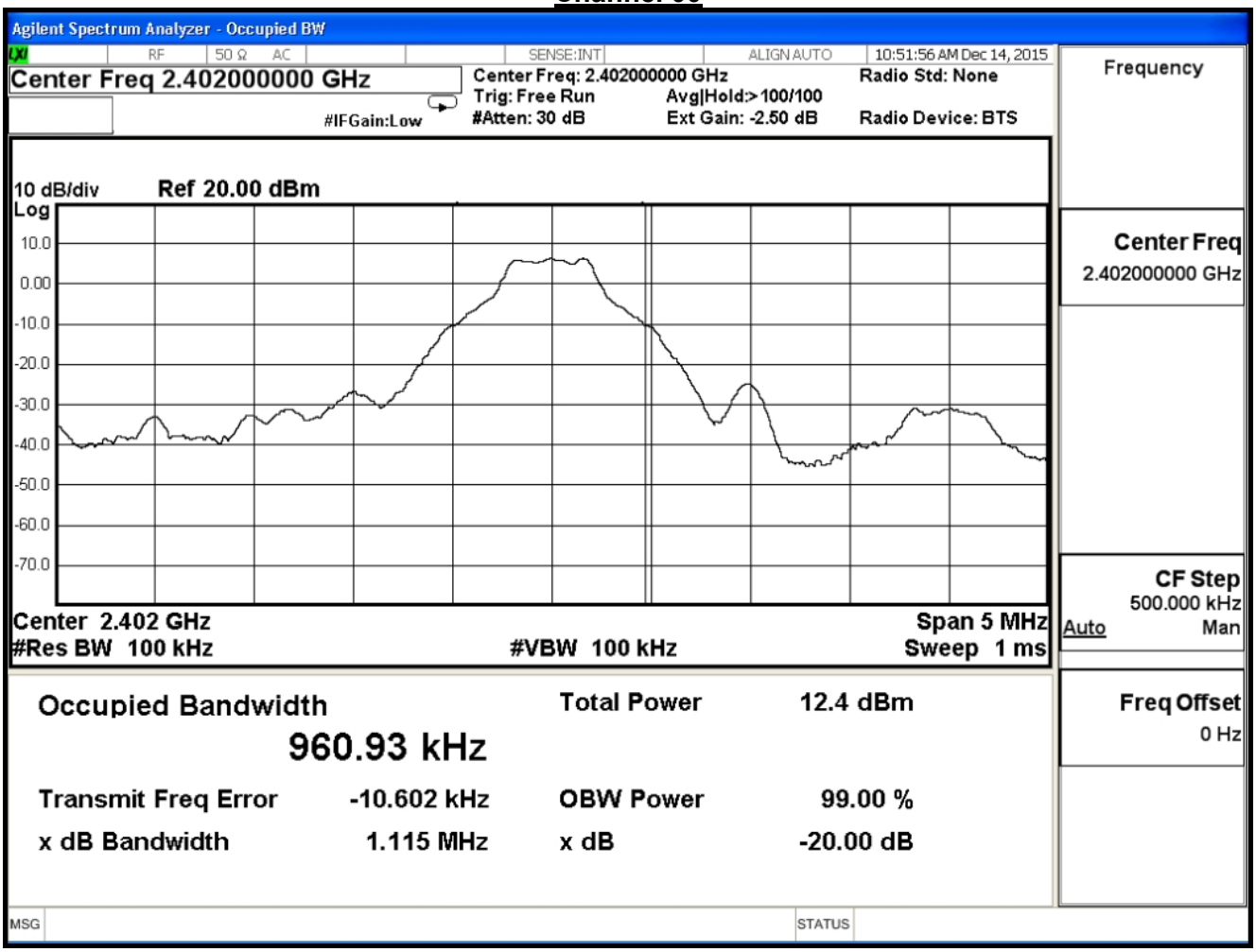
9.6. Test Result

Product	Portable Stereo Speaker		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/20	Test Site	SR7

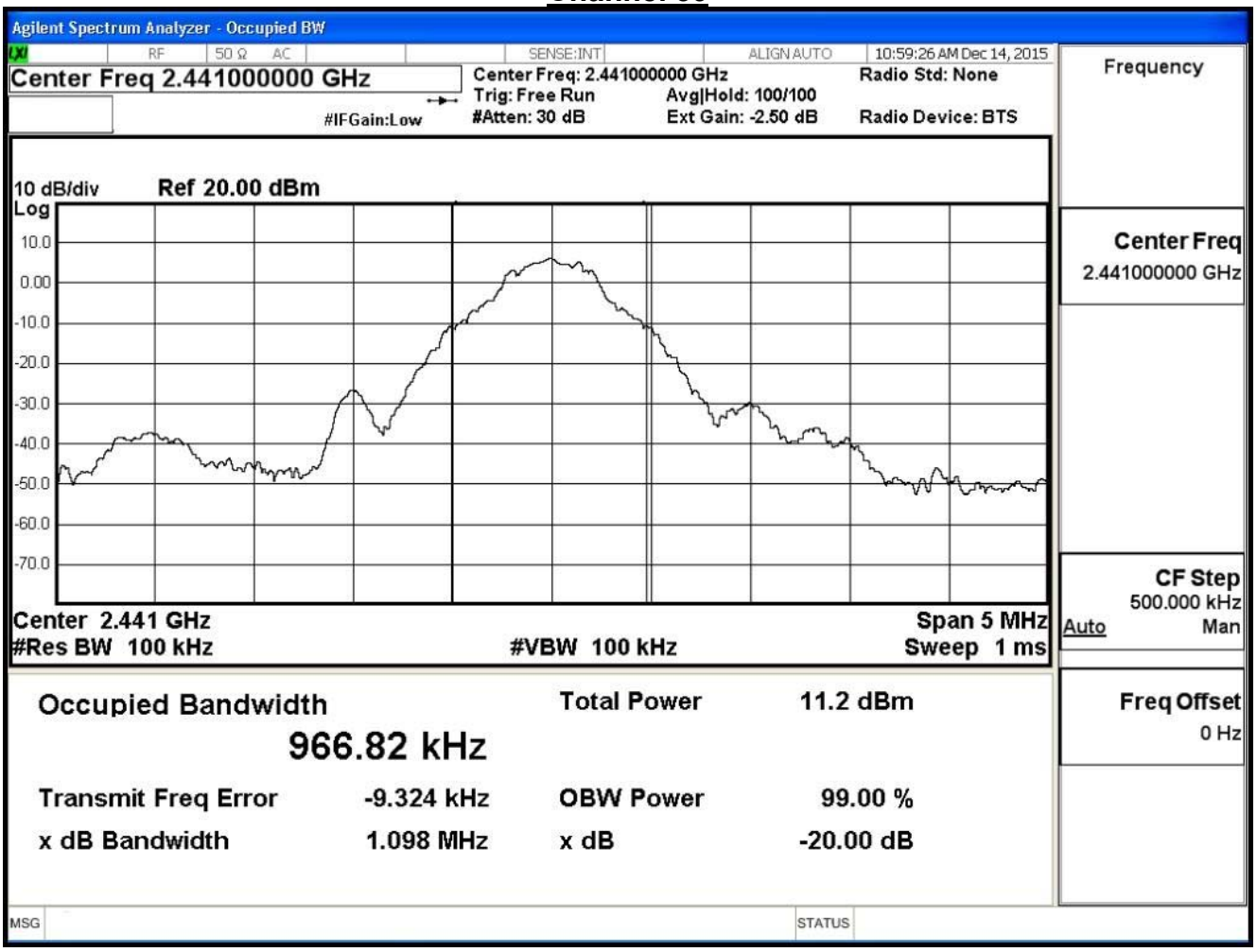
π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.115	--	Pass
39	2441	1.098	--	Pass
78	2480	1.078	--	Pass

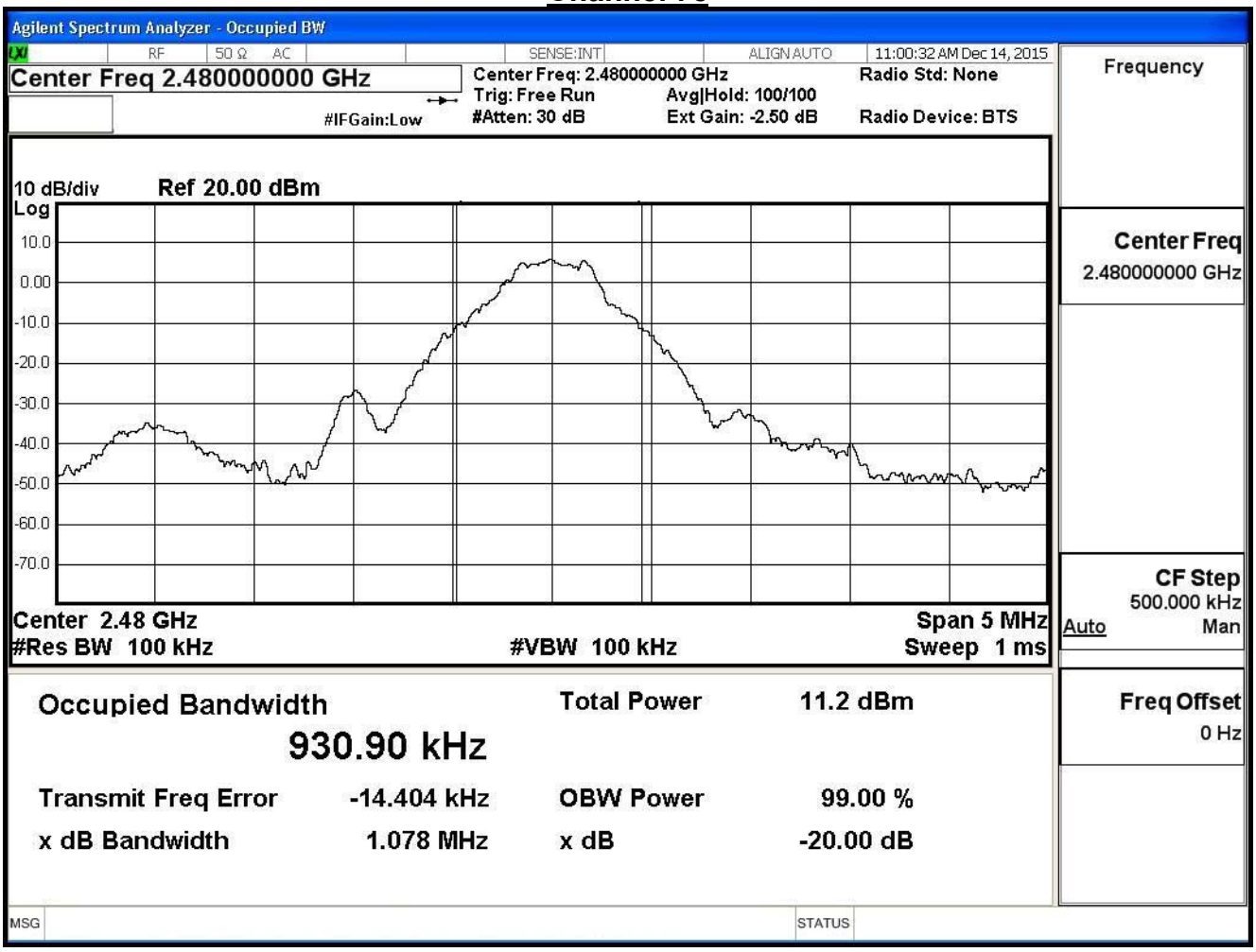
Channel 00



Channel 39


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
10:59:26 AM Dec 14, 2015
Center Freq 2.441000000 GHz
Center Freq: 2.441000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.441000000 GHz
Center 2.441 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
CF Step
500.000 kHz
Auto
Man
Occupied Bandwidth
966.82 kHz
Total Power
11.2 dBm
Freq Offset
0 Hz
Transmit Freq Error
-9.324 kHz
OBW Power
99.00 %
x dB Bandwidth
1.098 MHz
x dB
-20.00 dB
MSG
STATUS

Channel 78

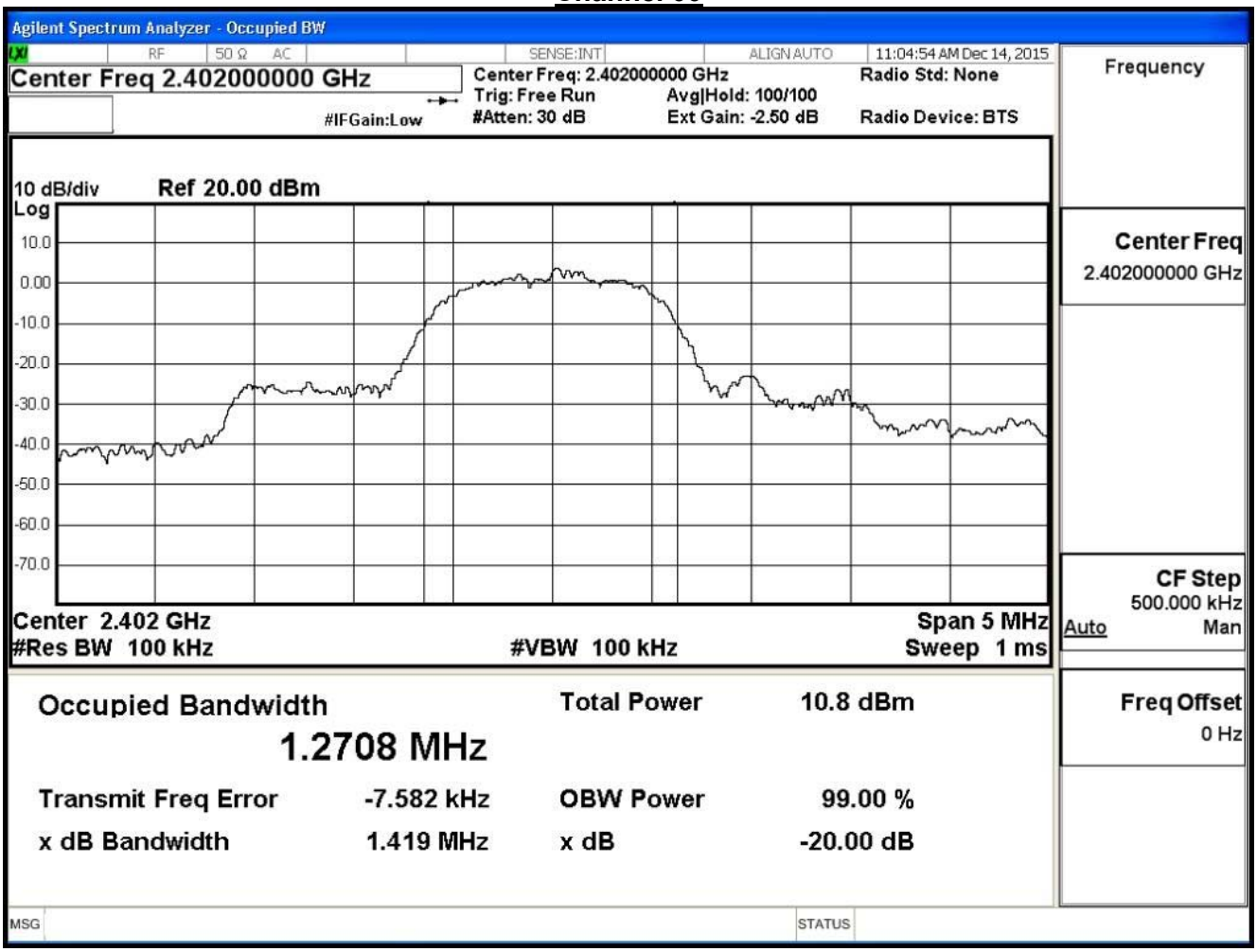

Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:00:32 AM Dec 14, 2015
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
CF Step
500.000 kHz
Auto
Man
Occupied Bandwidth
930.90 kHz
Total Power
11.2 dBm
Transmit Freq Error
-14.404 kHz
OBW Power
99.00 %
x dB Bandwidth
1.078 MHz
x dB
-20.00 dB
Freq Offset
0 Hz
MSG
STATUS

Product	Portable Stereo Speaker		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/20	Test Site	SR7

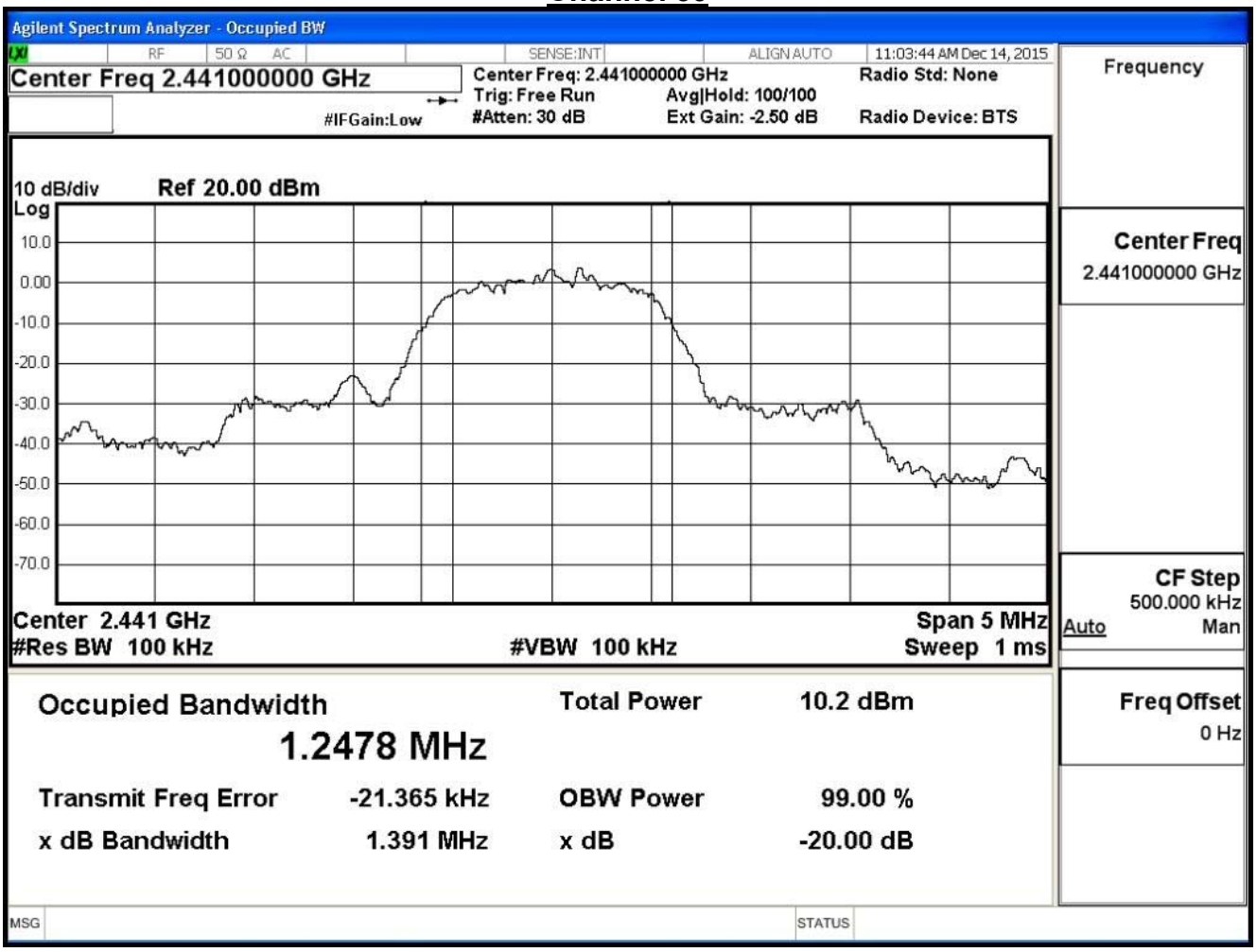
π/4-DQPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.419	--	Pass
39	2441	1.391	--	Pass
78	2480	1.371	--	Pass

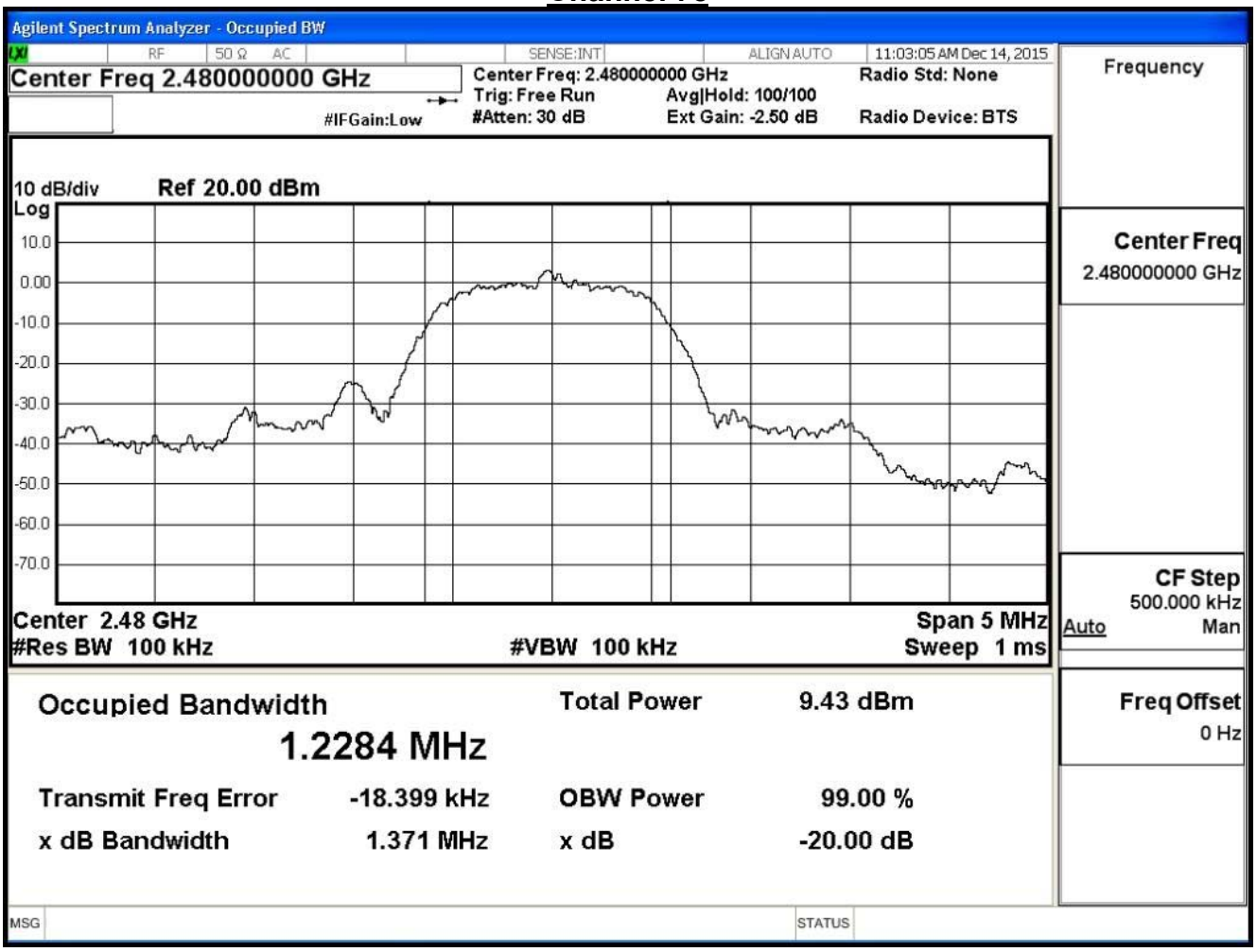
Channel 00



Channel 39


Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:03:44 AM Dec 14, 2015
Center Freq 2.441000000 GHz
Center Freq: 2.441000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.441000000 GHz
Center 2.441 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
CF Step
500.000 kHz
Auto
Man
Occupied Bandwidth
1.2478 MHz
Total Power
10.2 dBm
Transmit Freq Error
-21.365 kHz
OBW Power
99.00 %
x dB Bandwidth
1.391 MHz
x dB
-20.00 dB
Freq Offset
0 Hz
MSG
STATUS

Channel 78

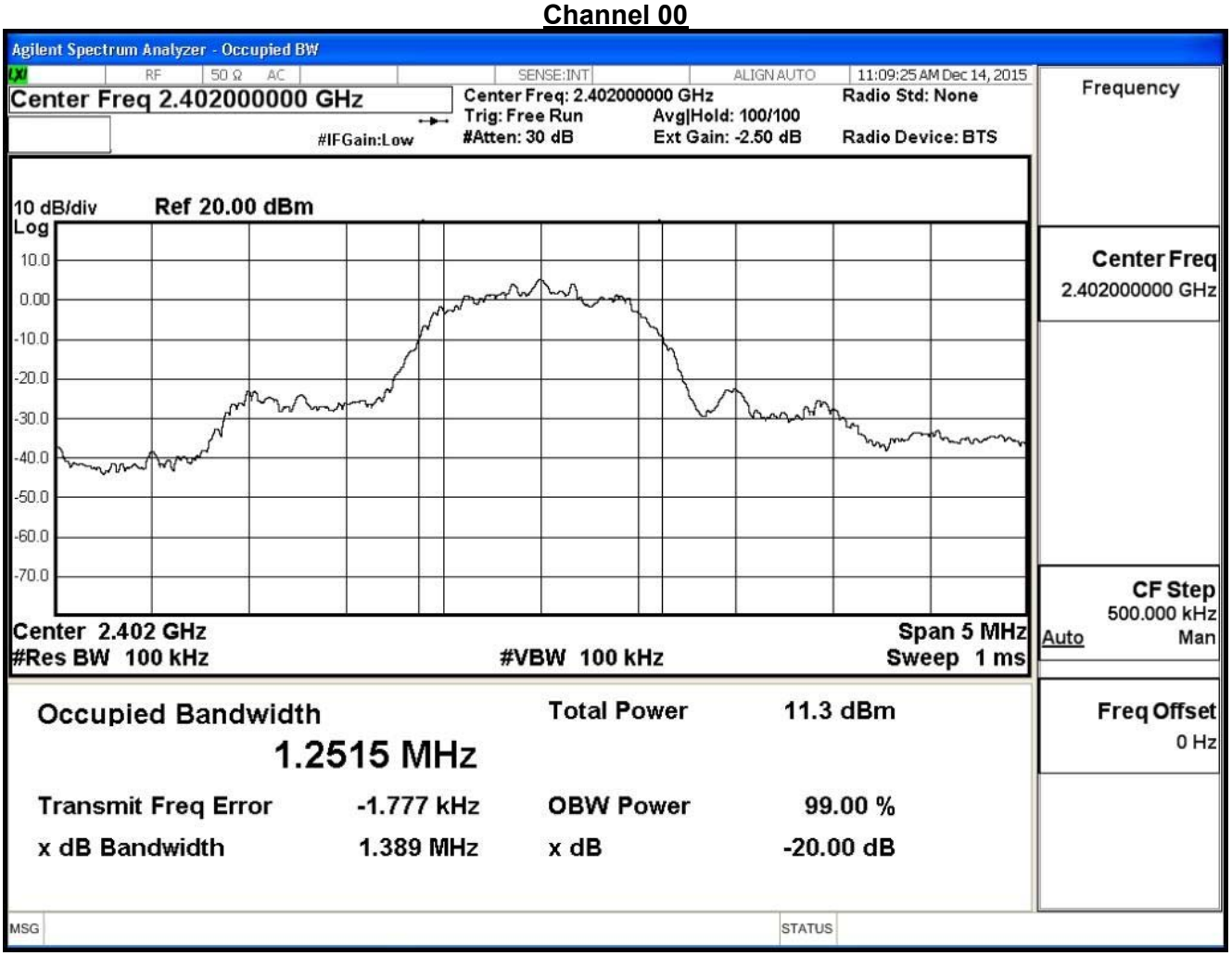

Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:03:05 AM Dec 14, 2015
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
CF Step
500.000 kHz
Auto
Man
Occupied Bandwidth
1.2284 MHz
Total Power
9.43 dBm
Freq Offset
0 Hz
Transmit Freq Error
-18.399 kHz
OBW Power
99.00 %
x dB Bandwidth
1.371 MHz
x dB
-20.00 dB
MSG
STATUS

Product	Portable Stereo Speaker		
Test Item	Occupied Bandwidth		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/20	Test Site	SR7

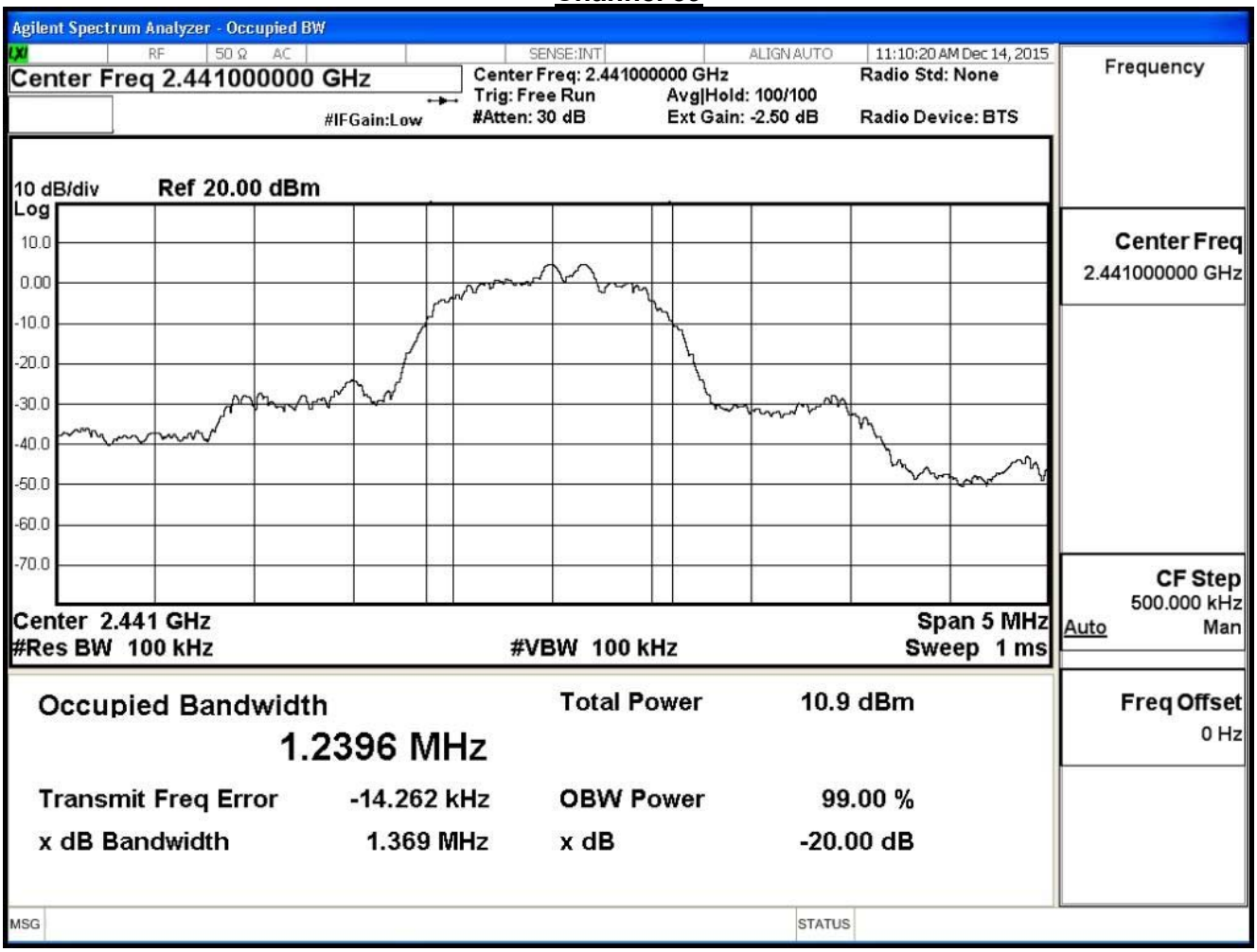
8-DPSK

Channel No.	Frequency (MHz)	Measure Level (MHz)	Limit (MHz)	Result
00	2402	1.389	--	Pass
39	2441	1.369	--	Pass
78	2480	1.362	--	Pass

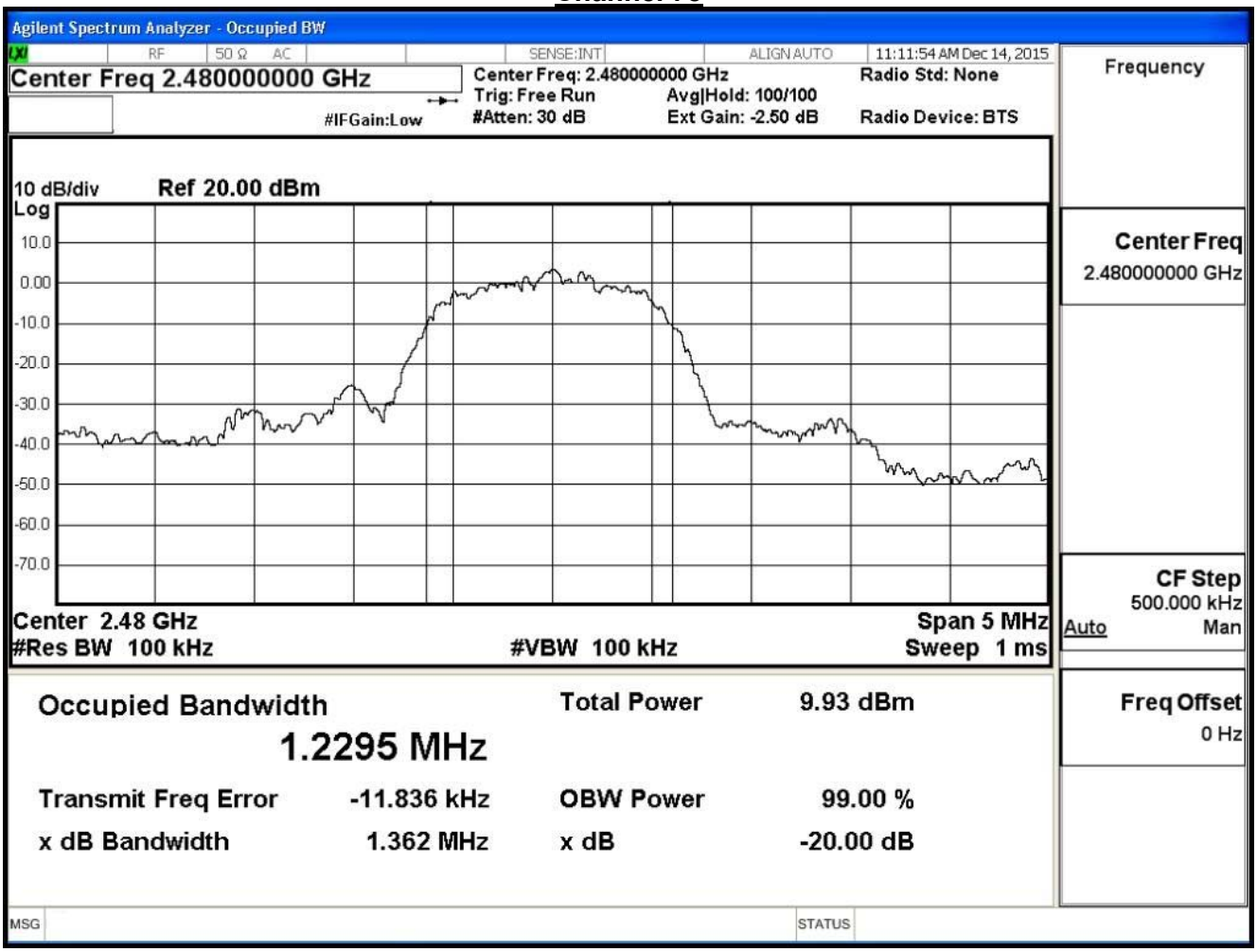
Channel 00



Channel 39


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:10:20 AM Dec 14, 2015
Center Freq 2.441000000 GHz
Center Freq: 2.441000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center 2.441 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
Occupied Bandwidth
1.2396 MHz
Total Power 10.9 dBm
Transmit Freq Error -14.262 kHz
OBW Power 99.00 %
x dB Bandwidth 1.369 MHz
x dB -20.00 dB
MSG
STATUS
Frequency
Center Freq
2.441000000 GHz
CF Step
500.000 kHz
Auto
Man
Freq Offset
0 Hz

Channel 78


Agilent Spectrum Analyzer - Occupied BW
RF 50 Ω AC
SENSE:INT
ALIGN AUTO
11:11:54 AM Dec 14, 2015
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 100/100
#IFGain:Low
#Atten: 30 dB
Ext Gain: -2.50 dB
Radio Std: None
Radio Device: BTS
Frequency
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 100 kHz
#VBW 100 kHz
Span 5 MHz
Sweep 1 ms
CF Step
500.000 kHz
Auto
Man
Occupied Bandwidth
1.2295 MHz
Total Power
9.93 dBm
Freq Offset
0 Hz
Transmit Freq Error
-11.836 kHz
OBW Power
99.00 %
x dB Bandwidth
1.362 MHz
x dB
-20.00 dB
MSG
STATUS

10. Dwell Time

10.1. Test Equipment

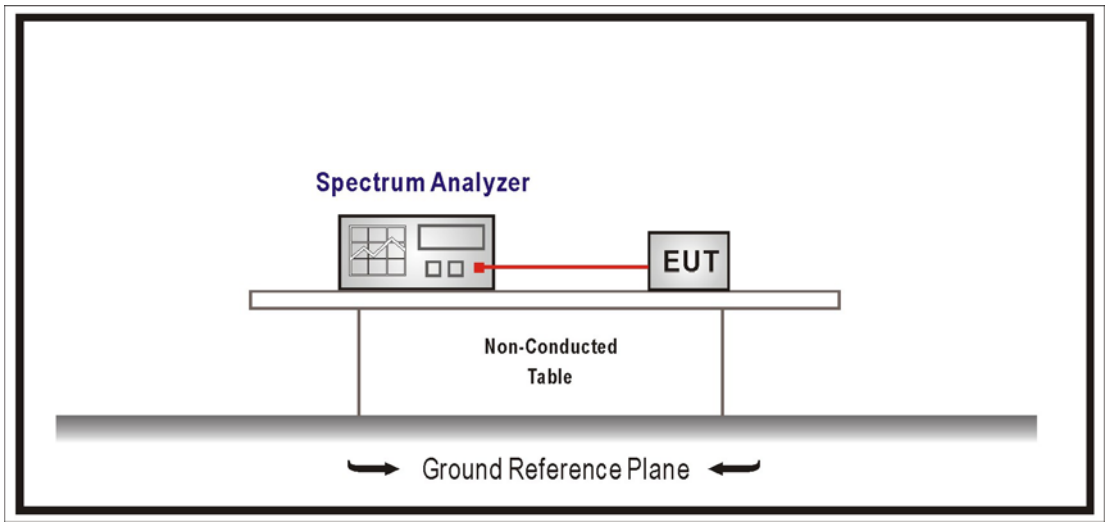
The following test equipment is used during the test:

Dwell Time / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2016/08/23

Note: All equipments that need to calibrate are with calibration period of 1 year.

10.2. Test Setup



10.3. Limits

For frequency hopping systems operating in the 902-928 MHz band: if the 20 dB bandwidth of the hopping channel is less than 250 kHz, the system shall use at least 50 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 20 second period; if the 20 dB bandwidth of the hopping channel is 250 kHz or greater, the system shall use at least 25 hopping frequencies and the average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 10 second period.
For frequency hopping systems operating in the 2400-2483.5 MHz bands. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
For frequency hopping systems operating in the 5725-5850 MHz bands. The average time of occupancy on any frequency shall not be greater than 0.4 seconds within a 30 second period.

10.4. Test Procedures

The EUT was setup according to ANSI C63.10: 2013 and tested according to FHSS test procedure of FCC KDB 558074 D01 for compliance to FCC 47CFR 15.247 requirements
Span = zero span, centered on a hopping channel , RBW = 1 MHz, VBW ≥ RBW ,
Sweep = as necessary to capture the entire dwell time per hopping channel ,
Detector function = peak, Trace = max hold.

10.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2015

10.6. Test Result

Product	Portable Stereo Speaker		
Test Item	Dwell Time		
Test Mode	Mode 1: Transmit Mode		
Date of Test	2015/12/16	Test Site	SR7

GFSK, DH5

Occupancy Time of Frequency Hopping System

A) 2402MHz Test Time Period: 0.4*79=31.60sec，Time slot length : 2.870 ms = 0.00287 sec

Dwell Time : 0.0029 *(266.67/79)* 31.60= 0.309sec。

B) 2441MHz Test Time Period: 0.4*79=31.60sec，Time slot length : 2.890ms = 0.00289 sec

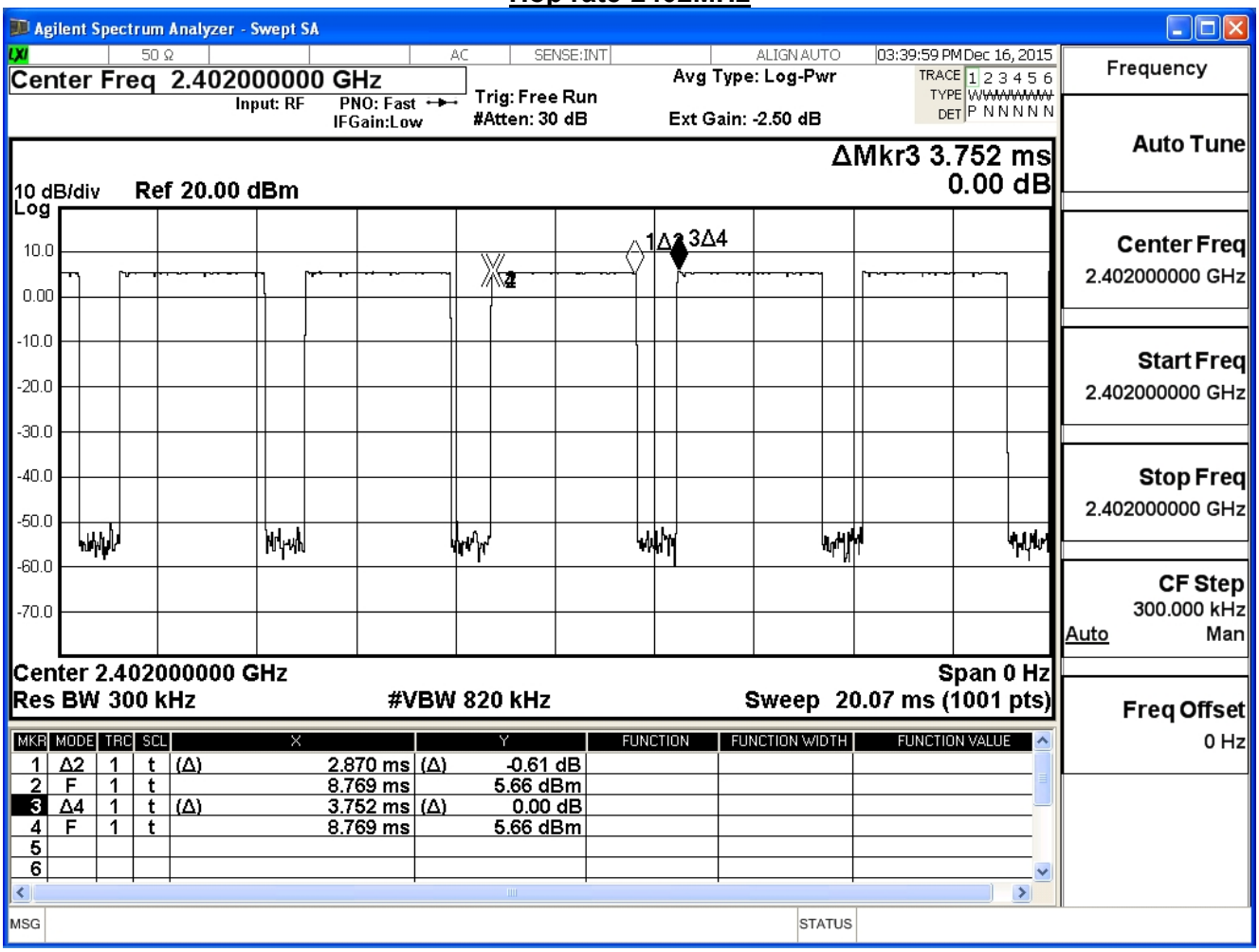
Dwell Time : 0.0029*(266.67/79)* 31.60= 0.309sec。

C) 2480MHz Test Time Period: 0.4*79=31.60sec，Time slot length : 2.890ms = 0.00289 sec

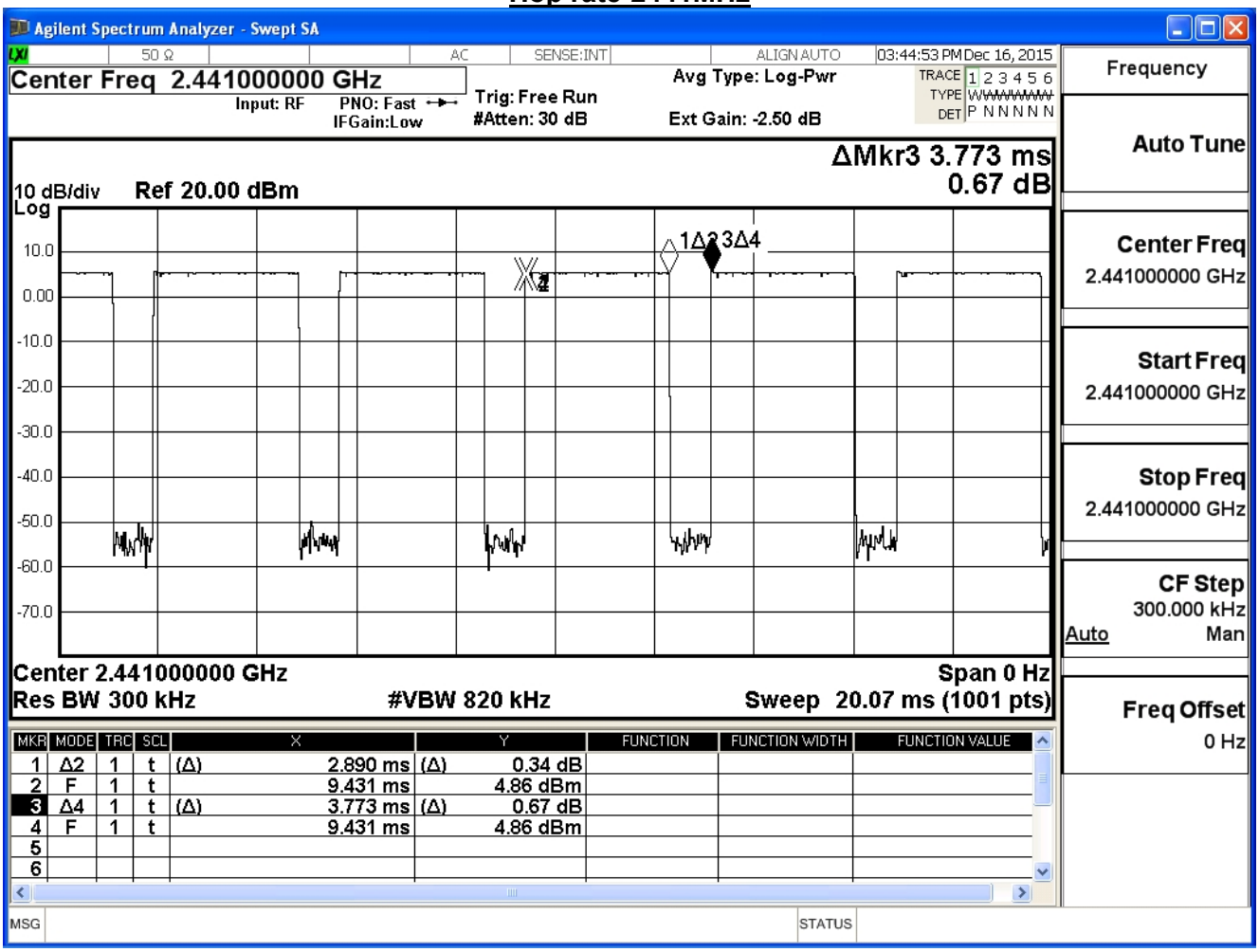
Dwell Time : 0.0029*(266.67/79)* 31.60=0.309sec。

Test Result: The Average Occupancy Time of Each Highest，Middle and Lowest Channel Is Less Than 0.4sec，And Corresponds to The Standard。

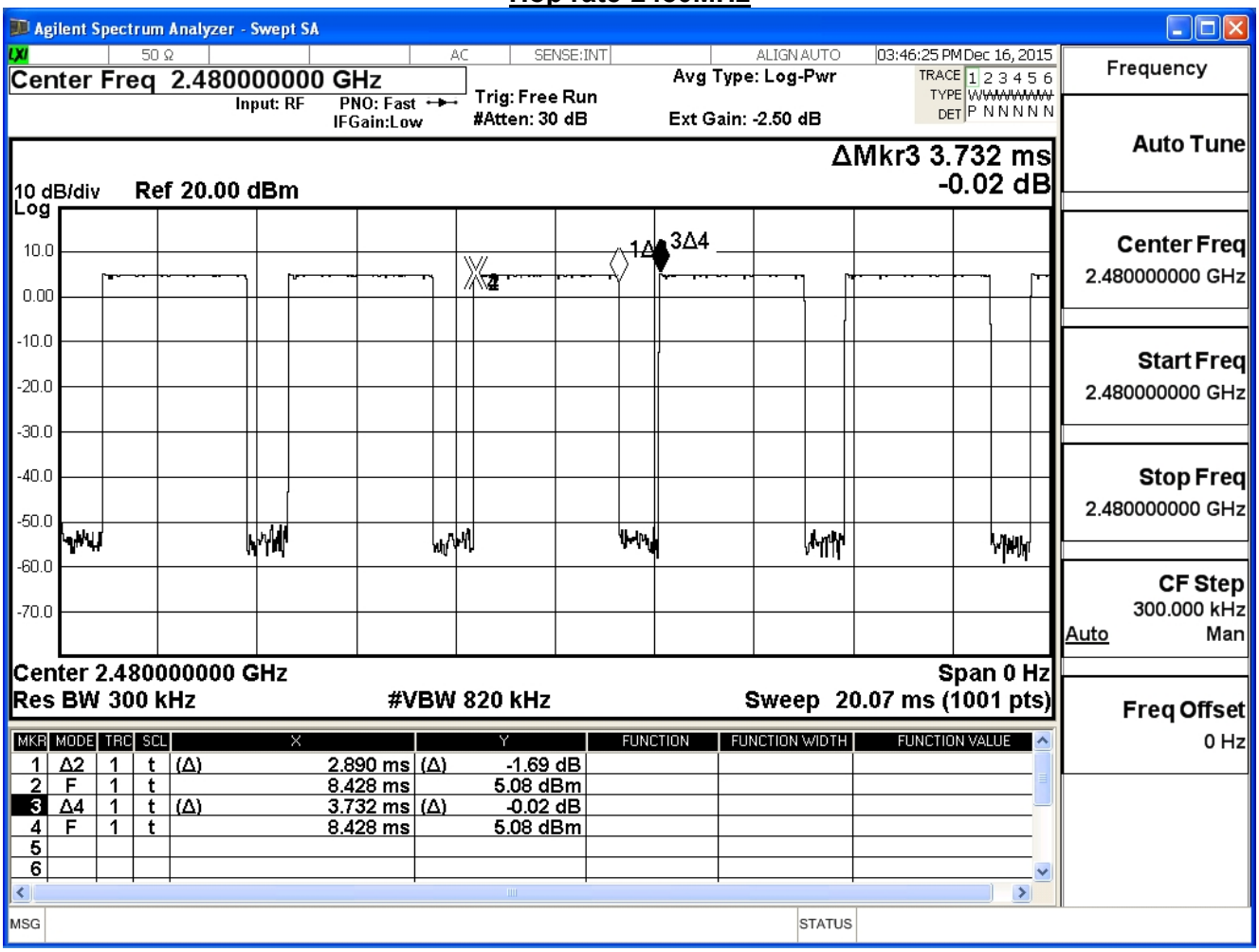
Hop rate-2402MHz



Hop rate-2441MHz



Hop rate-2480MHz



Note: Dwell time＝time slot length * hop rate / number of hopping channels * period