

FCC Test Report

Product Name : Portable Stereo Speaker
Model No. : foxL DASH 7, foxL DASH A
FCC ID. : YOSDASH7

Applicant : Soundmatters International Inc.
Address : 8060 Double R. Blvd. Suite 100, Reno NV 89511, U.S.A.

Date of Receipt : 2013/04/08
Issued Date : 2013/07/16
Report No. : 135128R-RFUSP43V01
Report Version : V1.0



The test results relate only to the samples tested.


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Test Report Certification

Issued Date : 2013/07/16

Report No. : 135128R-RFUSP43V01



Product Name : Portable Stereo Speaker
 Applicant : Soundmatters International Inc.
 Address : 8060 Double R. Blvd. Suite 100, Reno NV 89511, U.S.A.
 Manufacturer : Dongguan Wellshin Electronic Products
 Model No. : foxL DASH 7, foxL DASH A
 FCC ID. : YOSDASH7
 EUT Voltage : DC 5V
 Trade Name : 
 Applicable Standard : FCC CFR Title 47 Part 15 Subpart C Section 15.247: 2012
 Test Result : Complied

The test results relate only to the samples tested.

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Documented By :

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Reviewed By :

(Sabrina Tsai / Assistant Engineer)

Approved By :

(Roy Wang / Manager)

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: 1313
		NCC, Certificate No: NCC-RCB-07
USA	:	FCC, Registration Number: 365520
Canada	:	IC, Submission No: 150981

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/tw/ctg/cts/accreditations.htm>

The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site :
<http://www.quietek.com/>

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1. General Information

1.1. EUT Description

Product Name	Portable Stereo Speaker
Trade Name	
Model No.	foxL DASH 7, foxL DASH A
Frequency Range/Channel Number	2402~2480MHz / 79 Channels
Type of Modulation	GFSK (1Mbps), $\pi/4$ -DQPSK (2Mbps), 8-DPSK (3Mbps)
Antenna Type	Soldered on PCB
Antenna Gain	Peak gain: 0.8dBi, Average gain: -1.9dBi

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		

Component	
USB Cable	Shielded, 1.0m
Audio Cable	Non-Shielded, 1.0m
Battery	FOX L, 8390-zu02-0k80
Battery	McNair, LP523048A
Power Adapter	Asian Power Devices Inc., WA-10K05R I/P: 100V-240V~50-60Hz 0.3A Max O/P: 5.0V  2A Cable In: Shielded, 1.8m

Note:

1. This device is a Portable Stereo Speaker including a 2.4GHz receiving function, and transmitting 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. 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.
4. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 135128R-RFUSP37V02 .
5. The different of the each model is shown as below:

Model No.	Description (Sub Out & DC 5V IN)
foxL DASH 7	With
foxL DASH A	With out

1.3. 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 (GFSK)_Power Cable to adapter Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter Mode 3: Transmit (8DPSK)_Power Cable to adapter Mode 4: Transmit(GFSK)_USB Cable to adapter Mode 5: Transmit(GFSK)_Power Cable to PC Mode 6: Transmit(GFSK)_USB Cable to PC
Final Test Mode	
TX	Mode 1: Transmit (GFSK)_Power Cable to adapter Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter Mode 3: Transmit (8DPSK)_Power Cable to adapter Mode 4: Transmit(GFSK)_USB Cable to adapter Mode 5: Transmit(GFSK)_Power Cable to PC Mode 6: Transmit(GFSK)_USB Cable to PC

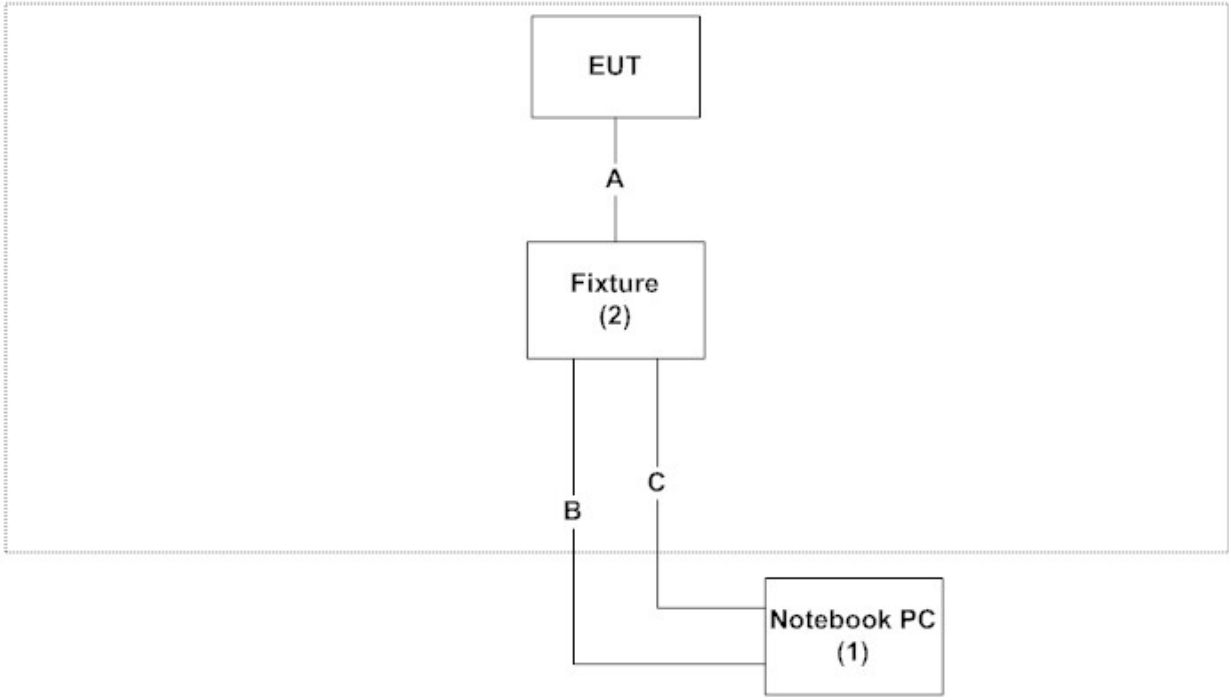
Emission	Mode 1	Mode 2	Mode 3	Mode 4	Mode 5	Mode 6
Conducted Emission	Yes	No	No	Yes	Yes	Yes
Peak Power Output	Yes	Yes	Yes	No	No	No
Radiated Emission	Yes	No	No	Yes	Yes	Yes
RF antenna conducted test	Yes	Yes	Yes	No	No	No
Band Edge	Yes	No	No	No	No	No
Number of hopping Frequency	Yes	Yes	Yes	No	No	No
Carrier Frequency Separation	Yes	Yes	Yes	No	No	No
Occupied Bandwidth	Yes	Yes	Yes	No	No	No
Dwell Time	Yes	Yes	Yes	No	No	No

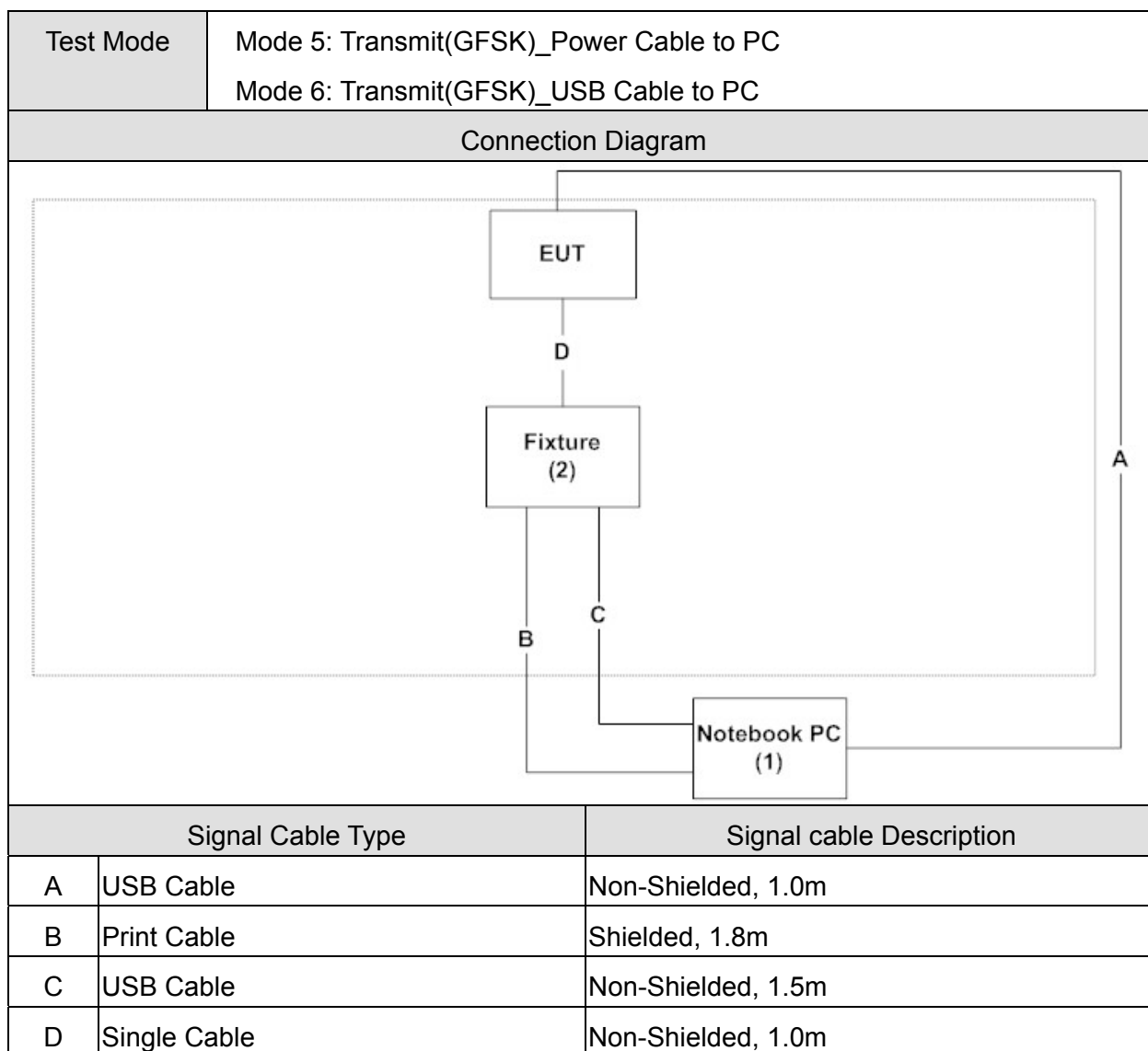
1.4. Tested System Details

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

Test Mode		Mode 1: Transmit (GFSK)_Power Cable to adapter Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter Mode 3: Transmit (8DPSK)_Power Cable to adapter Mode 4: Transmit(GFSK)_USB Cable to adapter Mode 5: Transmit(GFSK)_Power Cable to PC Mode 6: Transmit(GFSK)_USB Cable to PC				
Product		Manufacturer	Model No.	Serial No.	FCC ID	Power Cord
1	Notebook PC	HP Compaq	NX6320FF	CNU7020BXT	DoC	Non-Shielded, 1.8m
2	Fixture	N/A	N/A	N/A	DoC	--

1.5. Configuration of tested System

Test Mode		Mode 1: Transmit (GFSK)_Power Cable to adapter Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter Mode 3: Transmit (8DPSK)_Power Cable to adapter Mode 4: Transmit(GFSK)_USB Cable to adapter
Connection Diagram		
 <pre> graph TD EUT[EUT] --- A[A] --- Fixture[Fixture (2)] Fixture --- B[B] --- PC[Notebook PC (1)] Fixture --- C[C] --- PC </pre>		
Signal Cable Type		Signal cable Description
A	Single Cable	Non-Shielded, 1.0m
B	Print Cable	Shielded, 1.8m
C	USB Cable	Non-Shielded, 1.5m



1.6. EUT Exercise Software

1	Setup the EUT as shown in Section 1.5
2	Execute the “CSR Blue Suite3” which is installed on the Notebook.
3	Configure the test mode, the test channel to start the continuous Transmit.
4	Verify that the EUT works properly.

1.7. 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	15 - 35	23
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Peak Power Output (FHSS)	15 - 35	23
Humidity (%RH)		25 - 75	50
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	23
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Carrier Frequency Separation (FHSS)	15 - 35	23
Humidity (%RH)		25 - 75	50
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	48
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	48
Barometric pressure (mbar)		860 - 1060	950-1000
Temperature (°C)	FCC PART 15 C 15.247 Dwell Time (FHSS)	15 - 35	23
Humidity (%RH)		25 - 75	50
Barometric pressure (mbar)		860 - 1060	950-1000

2. Conducted Emission

2.1. Test Equipment

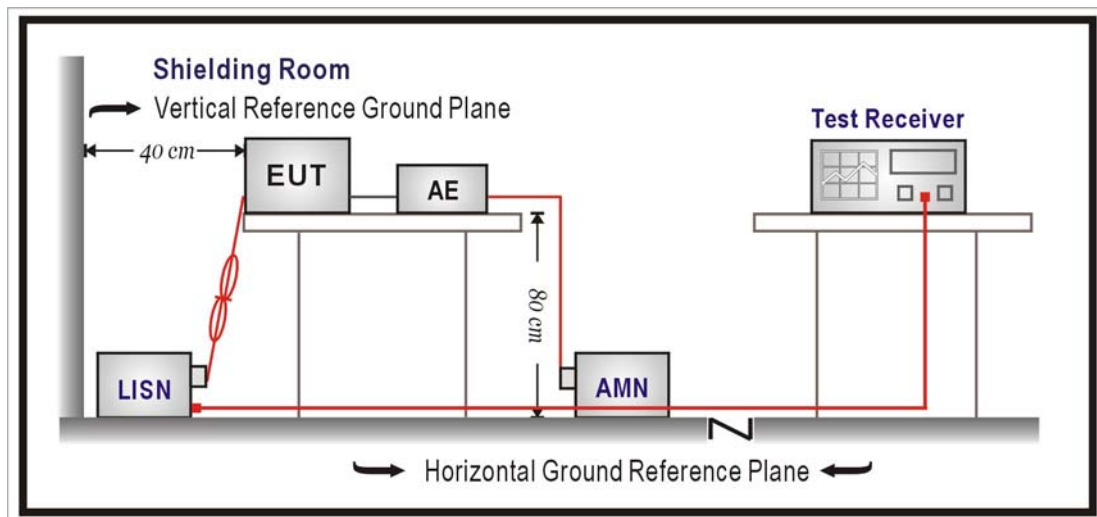
The following test equipments are used during the test:

Conducted Emission / SR2

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
LISN	R&S	ENV216	100096	2013/08/12
LISN	R&S	ESH3-Z5	836679/022	2014/01/20
Test Receiver	R&S	ESCS 30	825442/017	2014/01/01

Note: 1. 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 C63.4: 2009 on conducted measurement.

Conducted emissions were investigated over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9 kHz.

2.5. Test Specification

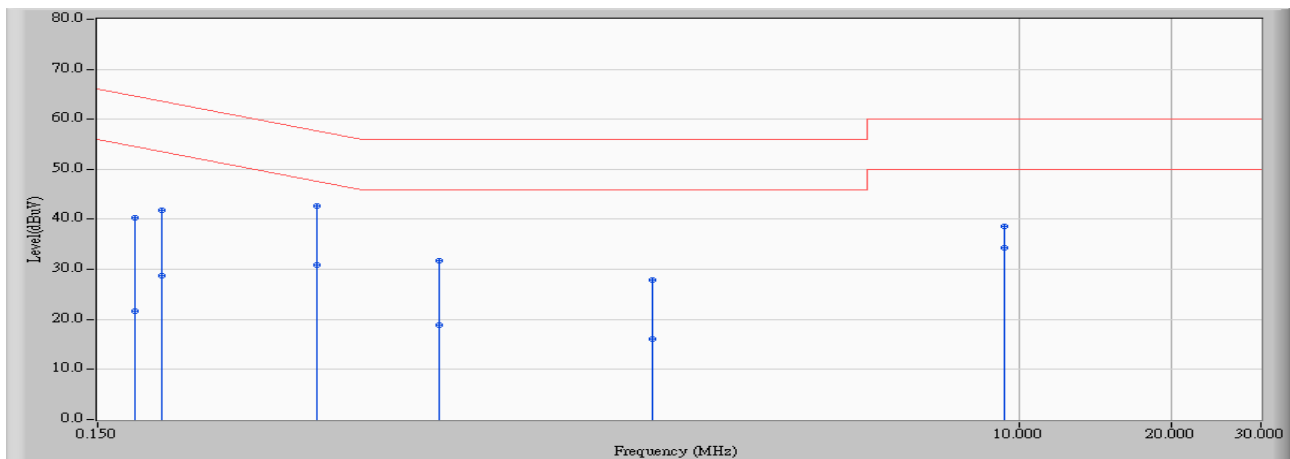
According to FCC Part 15 Subpart C Paragraph 15.207: 2012

2.6. Uncertainty

The measurement uncertainty is defined as ± 2.26 dB.

2.7. Test Result

Site : SR3	Time : 2013/05/21 - 16:58
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter

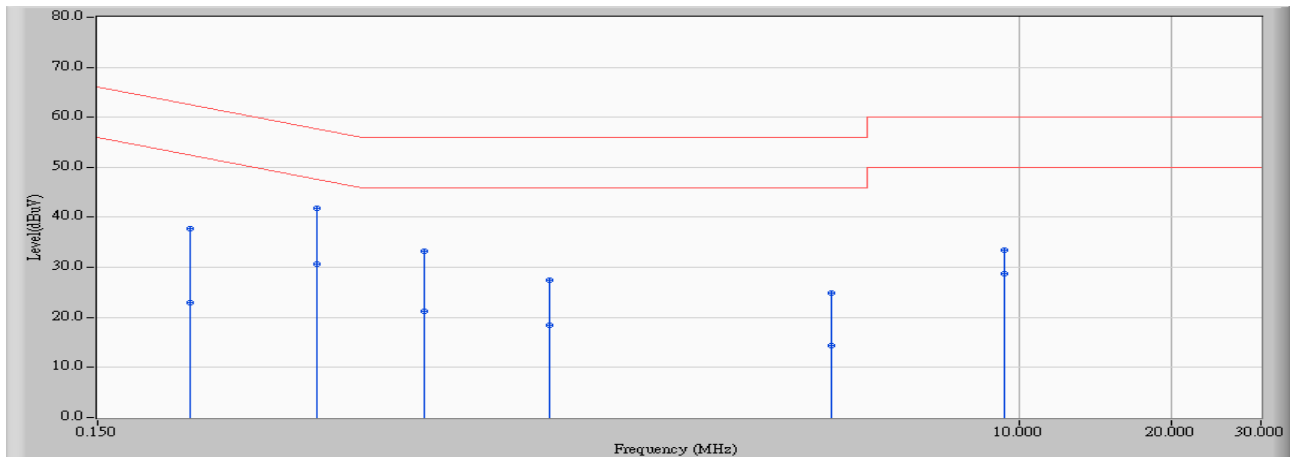


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.177	9.735	30.570	40.305	-24.304	64.609	QUASIPeAK
2		0.177	9.735	11.960	21.695	-32.914	54.609	AVERAGE
3		0.201	9.685	32.230	41.915	-21.663	63.578	QUASIPeAK
4		0.201	9.685	19.070	28.755	-24.823	53.578	AVERAGE
5	*	0.408	9.777	32.820	42.597	-15.096	57.693	QUASIPeAK
6		0.408	9.777	21.080	30.857	-16.836	47.693	AVERAGE
7		0.713	9.877	21.850	31.728	-24.272	56.000	QUASIPeAK
8		0.713	9.877	9.050	18.928	-27.072	46.000	AVERAGE
9		1.873	9.957	17.970	27.927	-28.073	56.000	QUASIPeAK
10		1.873	9.957	6.180	16.137	-29.863	46.000	AVERAGE
11		9.298	10.110	28.390	38.500	-21.500	60.000	QUASIPeAK
12		9.298	10.110	24.210	34.320	-15.680	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 : 2013/05/21 - 17:02
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter

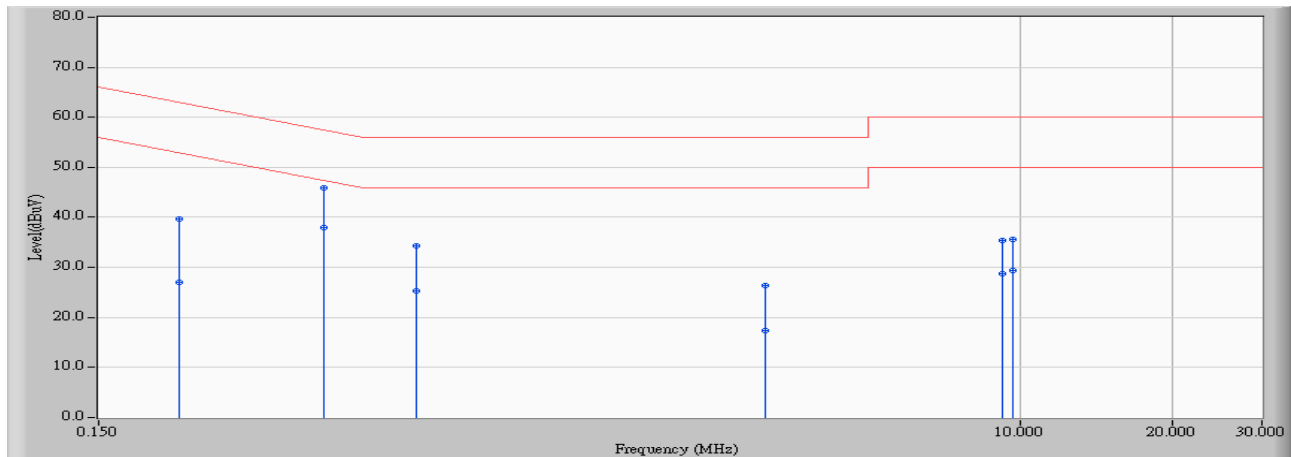


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.228	9.673	28.160	37.833	-24.685	62.518	QUASIPeAK
2		0.228	9.673	13.230	22.903	-29.615	52.518	AVERAGE
3	*	0.408	9.767	32.080	41.847	-15.846	57.693	QUASIPeAK
4		0.408	9.767	20.960	30.727	-16.966	47.693	AVERAGE
5		0.666	9.857	23.290	33.147	-22.853	56.000	QUASIPeAK
6		0.666	9.857	11.430	21.287	-24.713	46.000	AVERAGE
7		1.177	9.932	17.480	27.412	-28.588	56.000	QUASIPeAK
8		1.177	9.932	8.580	18.512	-27.488	46.000	AVERAGE
9		4.252	10.039	14.890	24.929	-31.071	56.000	QUASIPeAK
10		4.252	10.039	4.420	14.459	-31.541	46.000	AVERAGE
11		9.302	10.140	23.350	33.490	-26.510	60.000	QUASIPeAK
12		9.302	10.140	18.560	28.700	-21.300	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 : 2013/05/21 - 18:33
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 4: Transmit(GFSK)_USB Cable to adapter

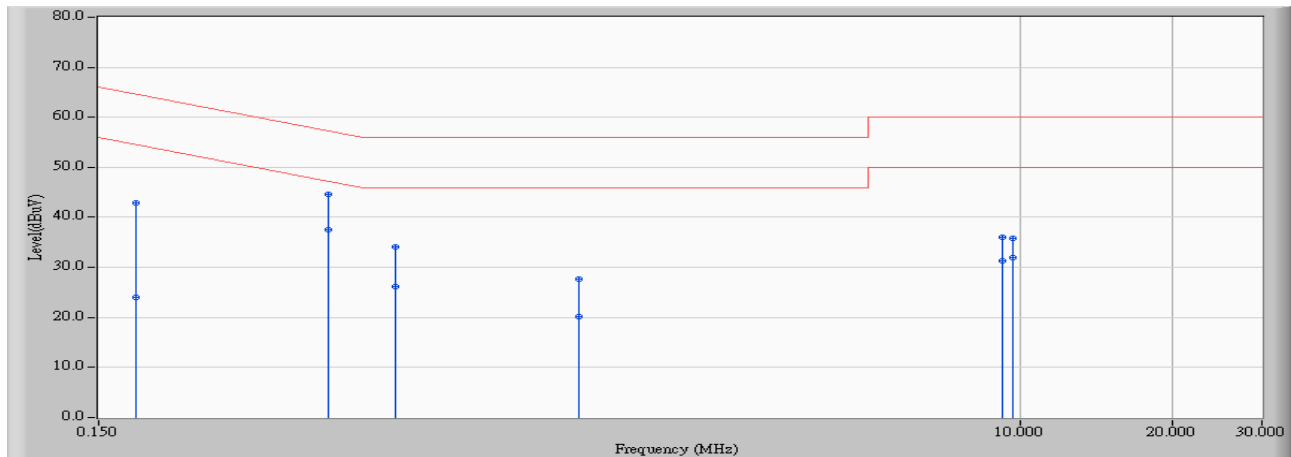


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.216	9.672	29.940	39.612	-23.343	62.956	QUASIPeAK
2		0.216	9.672	17.430	27.102	-25.853	52.956	AVERAGE
3		0.420	9.783	36.060	45.844	-11.614	57.457	QUASIPeAK
4	*	0.420	9.783	28.120	37.904	-9.554	47.457	AVERAGE
5		0.638	9.861	24.460	34.321	-21.679	56.000	QUASIPeAK
6		0.638	9.861	15.540	25.401	-20.599	46.000	AVERAGE
7		3.115	10.025	16.370	26.395	-29.605	56.000	QUASIPeAK
8		3.115	10.025	7.250	17.275	-28.725	46.000	AVERAGE
9		9.177	10.110	25.250	35.360	-24.640	60.000	QUASIPeAK
10		9.177	10.110	18.690	28.800	-21.200	50.000	AVERAGE
11		9.670	10.110	25.540	35.650	-24.350	60.000	QUASIPeAK
12		9.670	10.110	19.370	29.480	-20.520	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 : 2013/05/21 - 18:40
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 4: Transmit(GFSK)_USB Cable to adapter

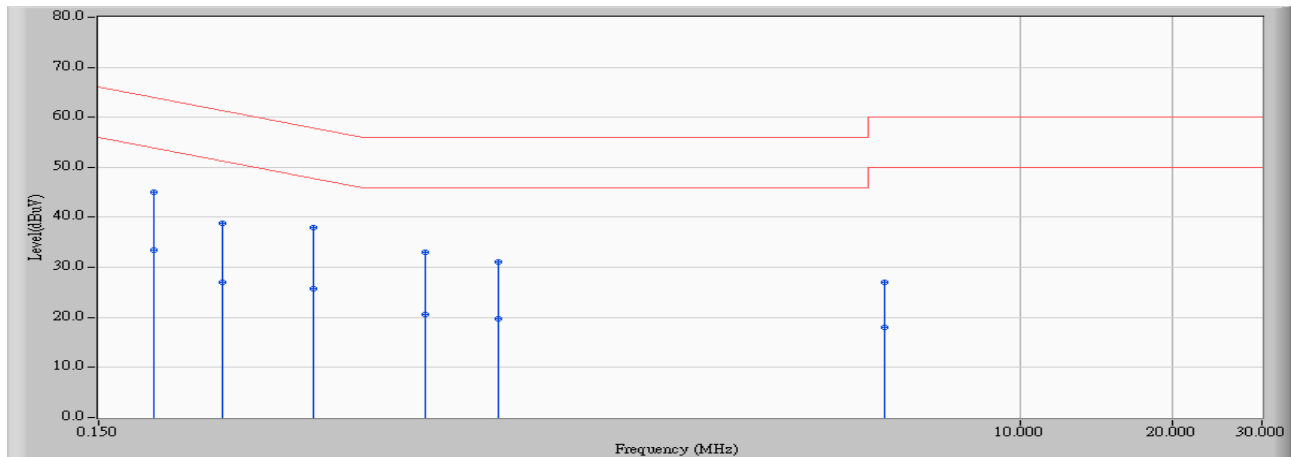


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.177	9.647	33.170	42.817	-21.792	64.609	QUASIPeAK
2		0.177	9.647	14.450	24.097	-30.512	54.609	AVERAGE
3		0.427	9.778	34.730	44.508	-12.796	57.304	QUASIPeAK
4	*	0.427	9.778	27.860	37.638	-9.666	47.304	AVERAGE
5		0.580	9.839	24.310	34.149	-21.851	56.000	QUASIPeAK
6		0.580	9.839	16.420	26.259	-19.741	46.000	AVERAGE
7		1.337	9.933	17.660	27.593	-28.407	56.000	QUASIPeAK
8		1.337	9.933	10.130	20.063	-25.937	46.000	AVERAGE
9		9.181	10.138	25.810	35.948	-24.052	60.000	QUASIPeAK
10		9.181	10.138	21.200	31.338	-18.662	50.000	AVERAGE
11		9.673	10.145	25.710	35.855	-24.145	60.000	QUASIPeAK
12		9.673	10.145	21.840	31.985	-18.015	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 : 2013/05/21 - 19:51
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 5: Transmit(GFSK)_Power Cable to PC

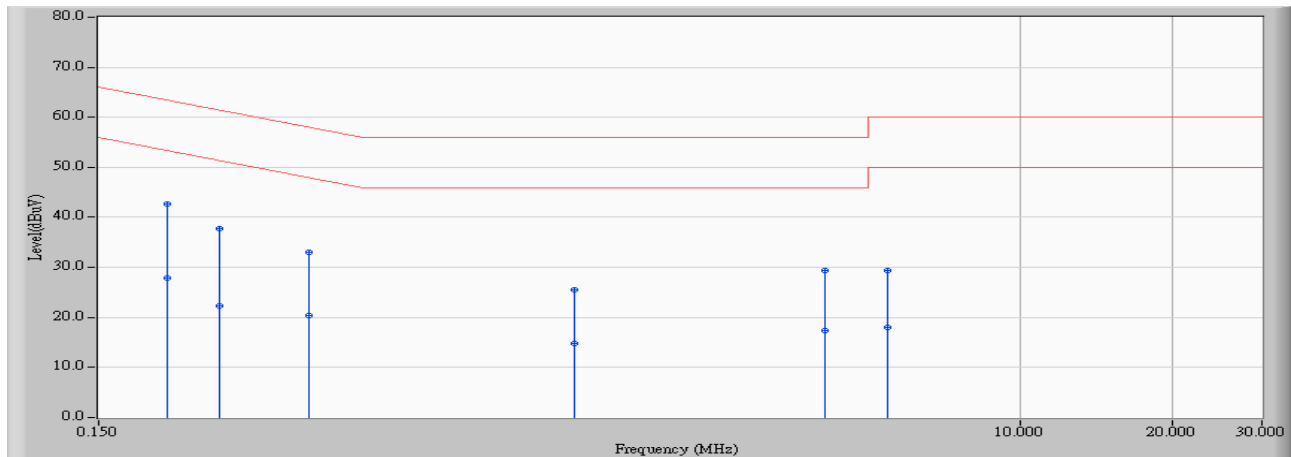


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.193	9.692	35.310	45.002	-18.906	63.908	QUASIPeAK
2		0.193	9.692	23.870	33.562	-20.346	53.908	AVERAGE
3		0.263	9.694	29.080	38.774	-22.553	61.327	QUASIPeAK
4		0.263	9.694	17.350	27.044	-24.283	51.327	AVERAGE
5		0.400	9.772	28.220	37.992	-19.861	57.853	QUASIPeAK
6		0.400	9.772	16.010	25.782	-22.071	47.853	AVERAGE
7		0.666	9.867	23.080	32.947	-23.053	56.000	QUASIPeAK
8		0.666	9.867	10.640	20.507	-25.493	46.000	AVERAGE
9		0.927	9.924	21.180	31.104	-24.896	56.000	QUASIPeAK
10		0.927	9.924	9.760	19.684	-26.316	46.000	AVERAGE
11		5.369	10.110	16.870	26.980	-33.020	60.000	QUASIPeAK
12		5.369	10.110	7.990	18.100	-31.900	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 : 2013/05/21 - 19:46
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 5: Transmit(GFSK)_Power Cable to PC

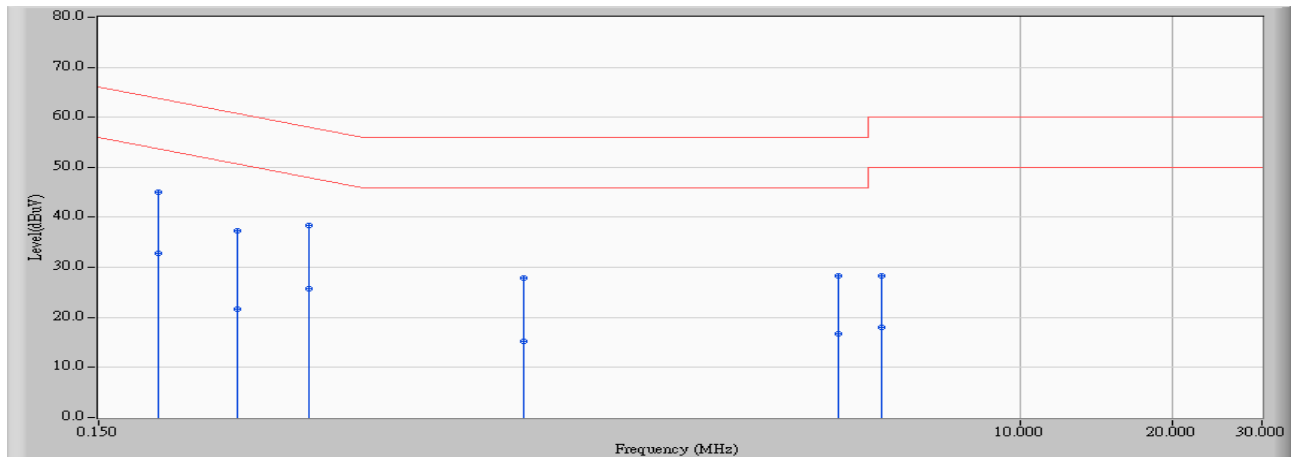


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.205	9.661	32.940	42.601	-20.817	63.418	QUASIPeAK
2		0.205	9.661	18.150	27.811	-25.607	53.418	AVERAGE
3		0.259	9.689	28.140	37.829	-23.622	61.451	QUASIPeAK
4		0.259	9.689	12.720	22.409	-29.042	51.451	AVERAGE
5		0.392	9.758	23.190	32.948	-25.069	58.017	QUASIPeAK
6		0.392	9.758	10.520	20.278	-27.739	48.017	AVERAGE
7		1.306	9.933	15.660	25.593	-30.407	56.000	QUASIPeAK
8		1.306	9.933	4.790	14.723	-31.277	46.000	AVERAGE
9		4.088	10.031	19.300	29.331	-26.669	56.000	QUASIPeAK
10		4.088	10.031	7.320	17.351	-28.649	46.000	AVERAGE
11		5.470	10.082	19.290	29.372	-30.628	60.000	QUASIPeAK
12		5.470	10.082	7.990	18.072	-31.928	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.

Site : SR3	Time : 2013/05/21 - 19:36
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line1	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 6: Transmit(GFSK)_USB Cable to PC

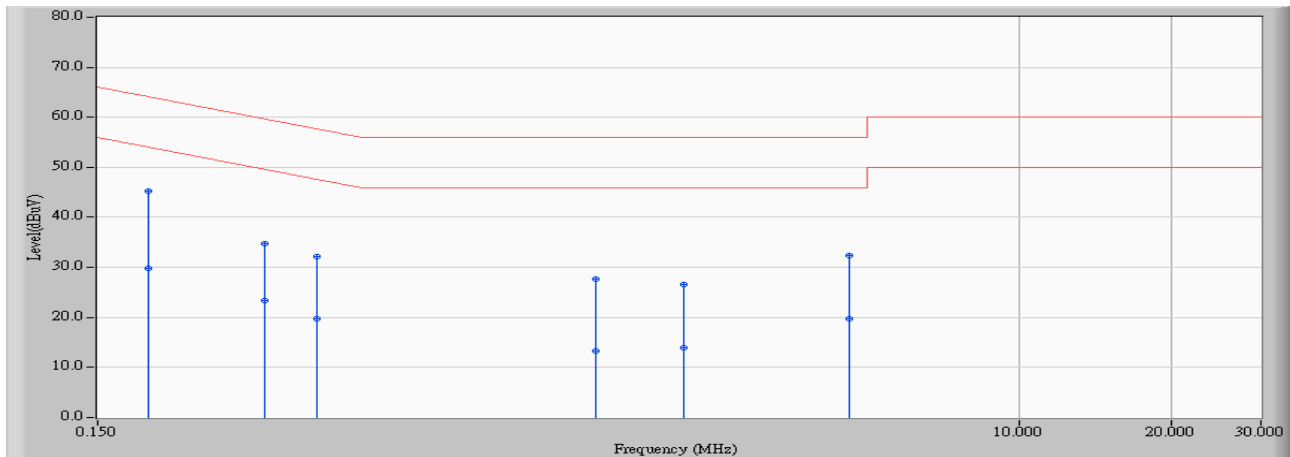


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.197	9.688	35.440	45.129	-18.613	63.741	QUASIPeAK
2		0.197	9.688	23.230	32.919	-20.823	53.741	AVERAGE
3		0.283	9.705	27.540	37.245	-23.487	60.733	QUASIPeAK
4		0.283	9.705	11.880	21.585	-29.147	50.733	AVERAGE
5		0.392	9.768	28.540	38.308	-19.709	58.017	QUASIPeAK
6		0.392	9.768	15.920	25.688	-22.329	48.017	AVERAGE
7		1.037	9.941	17.990	27.931	-28.069	56.000	QUASIPeAK
8		1.037	9.941	5.270	15.211	-30.789	46.000	AVERAGE
9		4.349	10.088	18.170	28.258	-27.742	56.000	QUASIPeAK
10		4.349	10.088	6.600	16.688	-29.312	46.000	AVERAGE
11		5.322	10.110	18.170	28.280	-31.720	60.000	QUASIPeAK
12		5.322	10.110	7.930	18.040	-31.960	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 : 2013/05/21 - 19:41
Limit : CISPR_B_00M_QP	Margin : 10
Probe : SR3_LISN(16A)-2_0813 - Line2	Power : AC 120V 60Hz
EUT : Portable Stereo Speaker	Note : Mode 6: Transmit(GFSK)_USB Cable to PC



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.189	9.653	35.530	45.183	-18.895	64.078	QUASIPeAK
2		0.189	9.653	20.140	29.793	-24.285	54.078	AVERAGE
3		0.322	9.722	25.110	34.832	-24.827	59.658	QUASIPeAK
4		0.322	9.722	13.670	23.392	-26.267	49.658	AVERAGE
5		0.408	9.767	22.380	32.147	-25.546	57.693	QUASIPeAK
6		0.408	9.767	9.980	19.747	-27.946	47.693	AVERAGE
7		1.447	9.934	17.660	27.594	-28.406	56.000	QUASIPeAK
8		1.447	9.934	3.440	13.374	-32.626	46.000	AVERAGE
9		2.170	9.948	16.600	26.547	-29.453	56.000	QUASIPeAK
10		2.170	9.948	4.100	14.047	-31.953	46.000	AVERAGE
11		4.607	10.056	22.340	32.396	-23.604	56.000	QUASIPeAK
12		4.607	10.056	9.620	19.676	-26.324	46.000	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. Peak Power Output

3.1. Test Equipment

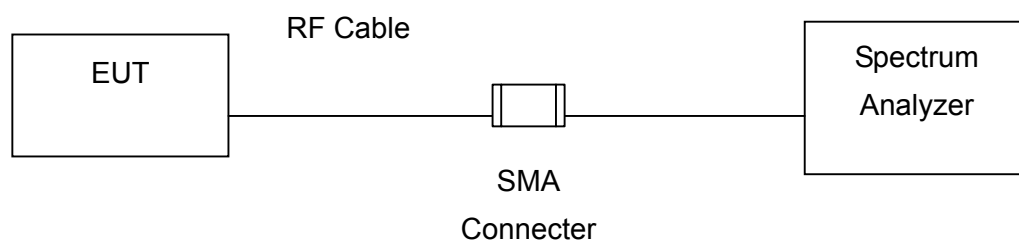
The following test equipment is used during the test:

Peak Power Output / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31

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 C63.4, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

3.4. Limits

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.

For frequency hopping systems in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1Watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watt.

3.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

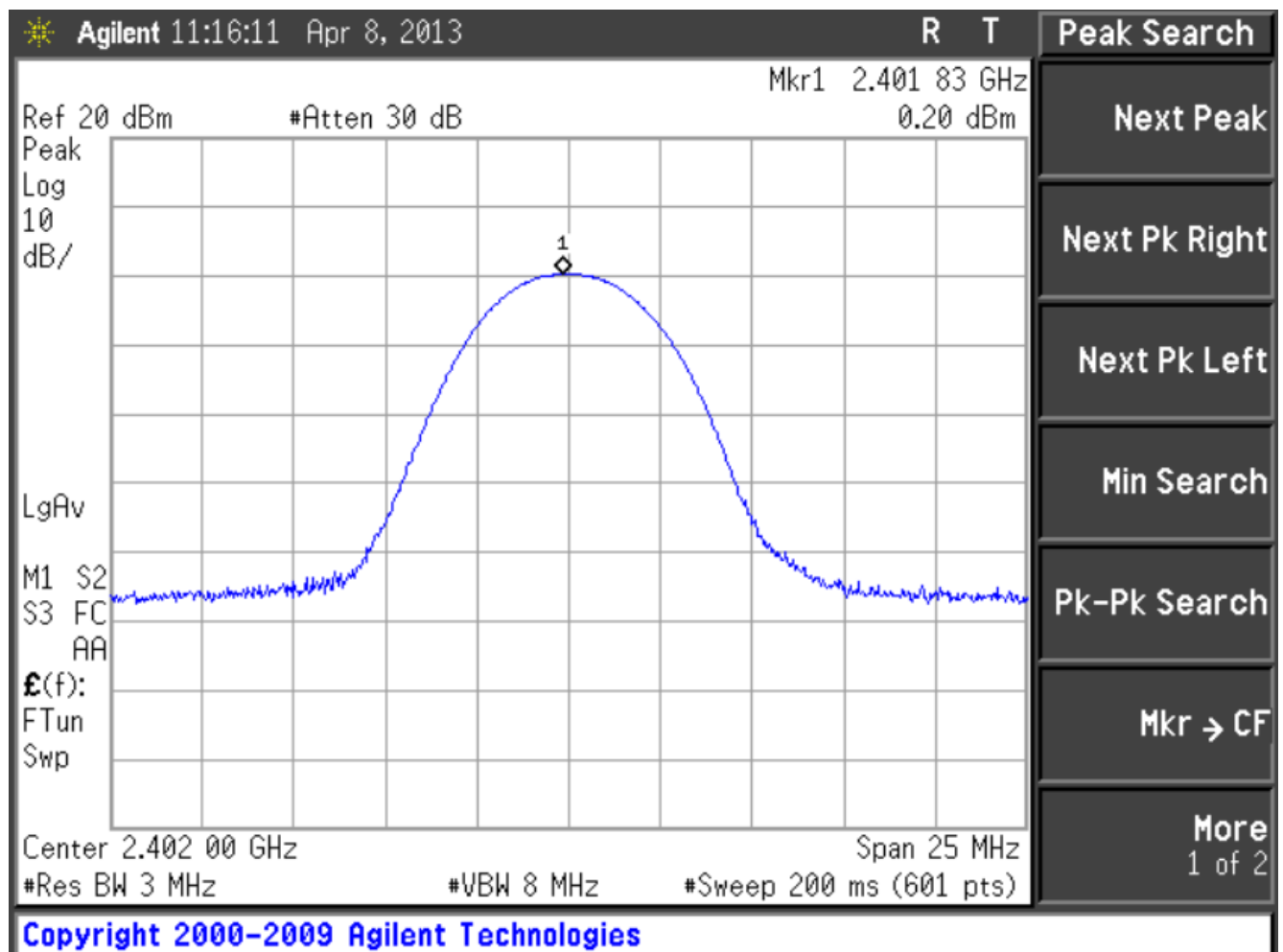
3.6. Test Result

Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	0.20	1Watt= 30 dBm	Pass

Channel 00

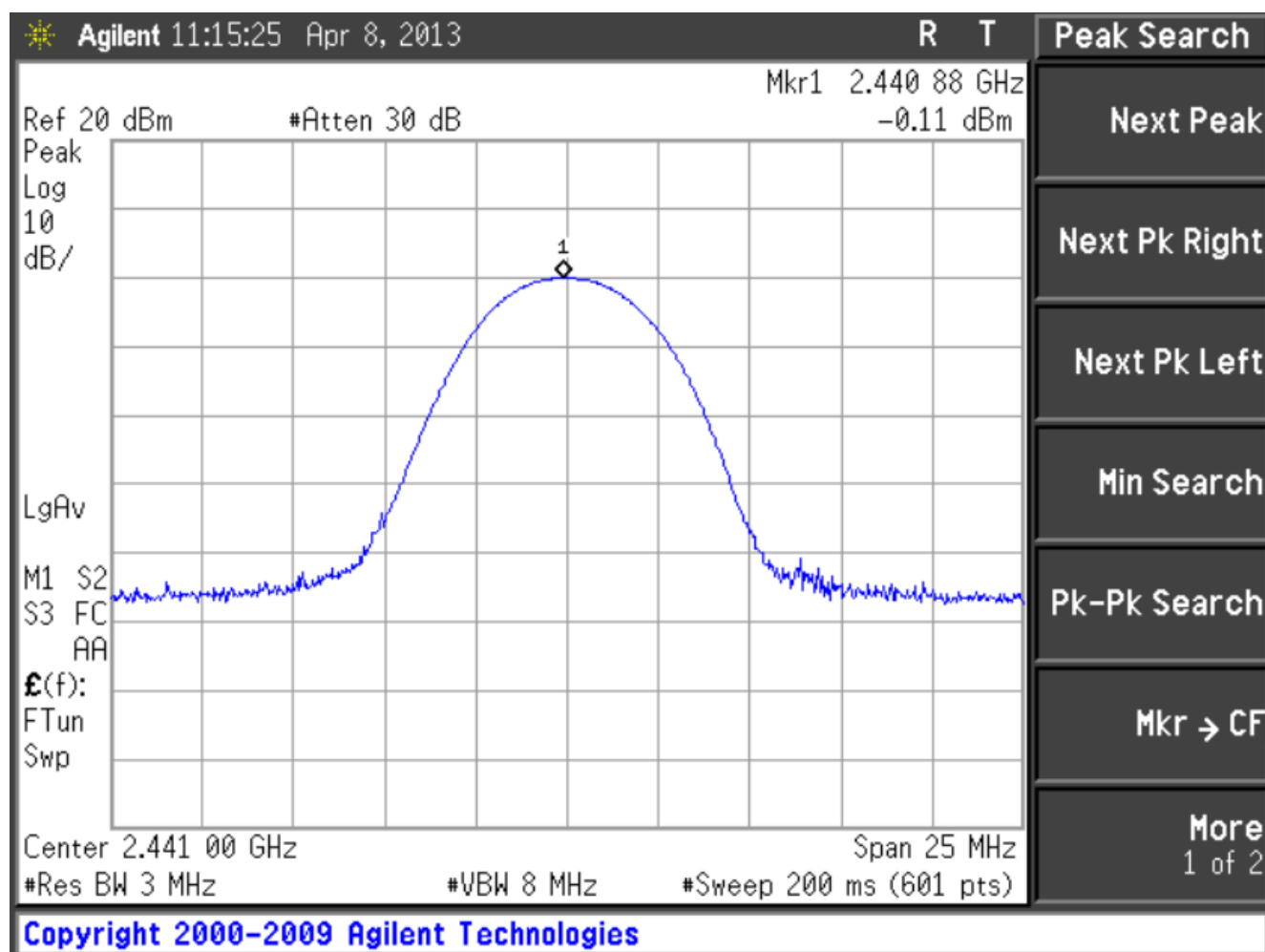


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2441	-0.11	1Watt= 30 dBm	Pass

Channel 39

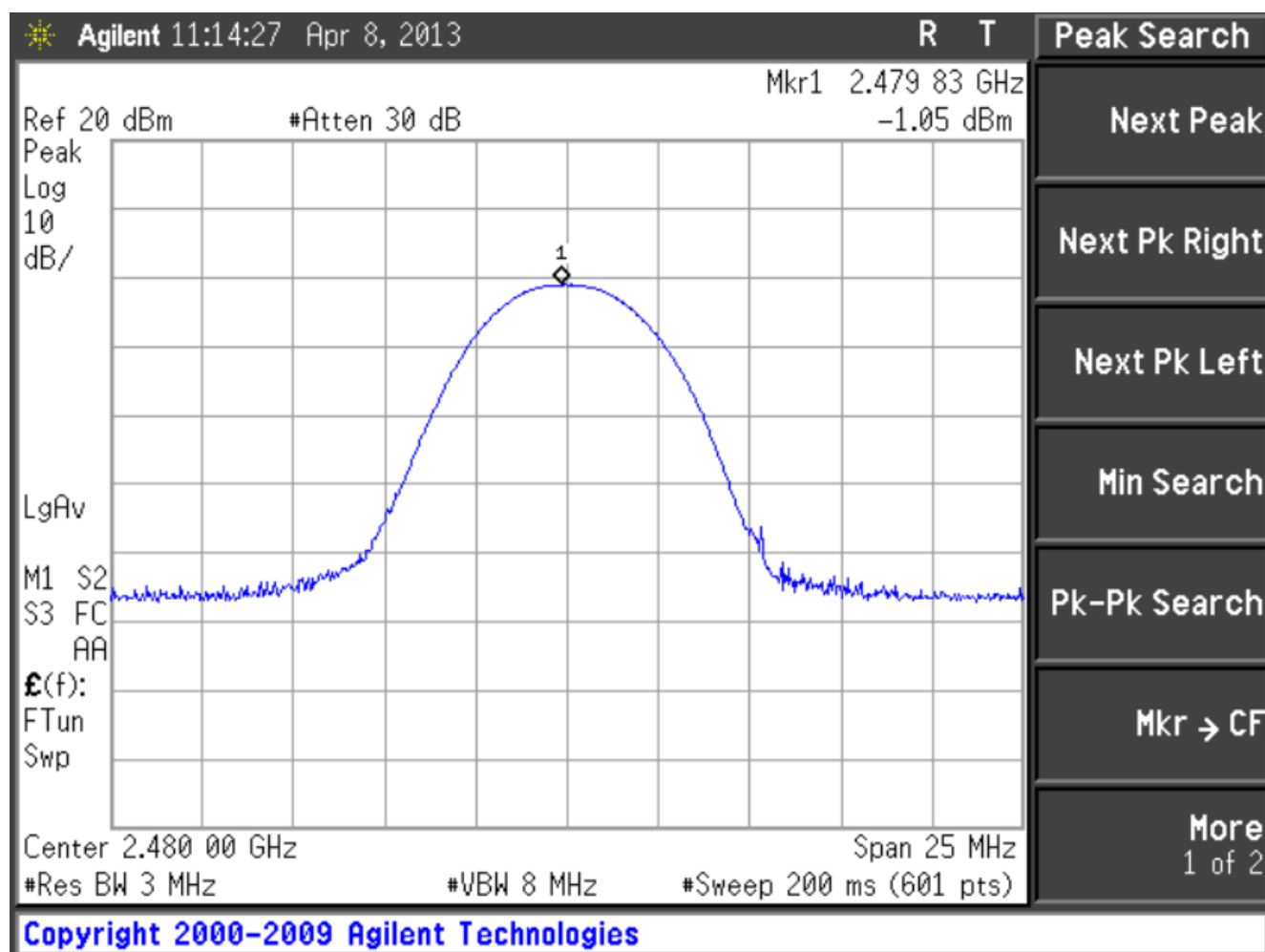


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
78	2480	-1.05	1Watt= 30 dBm	Pass

Channel 78

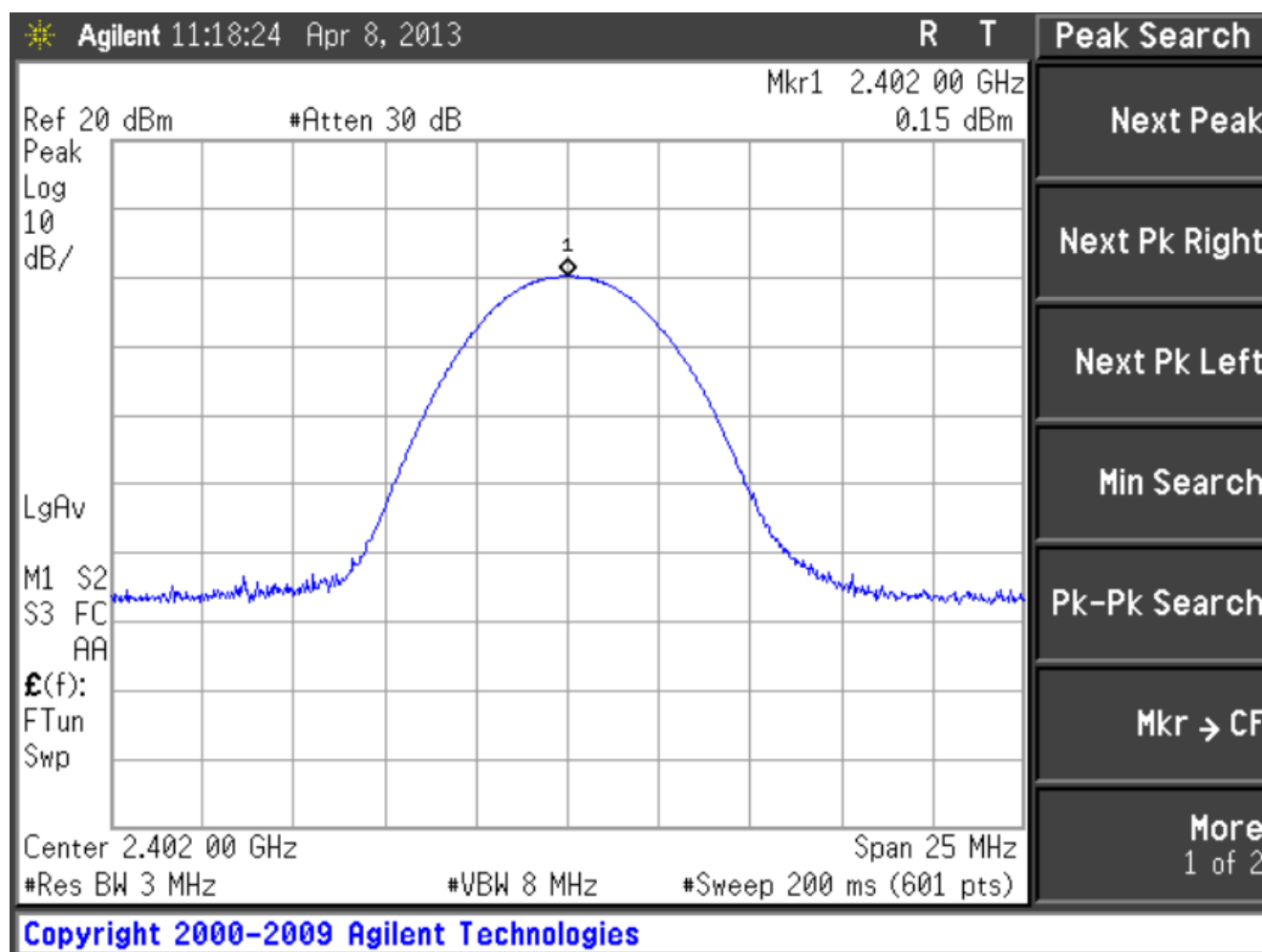


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

$\pi/4$ -DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	0.15	1Watt= 30 dBm	Pass

Channel 00

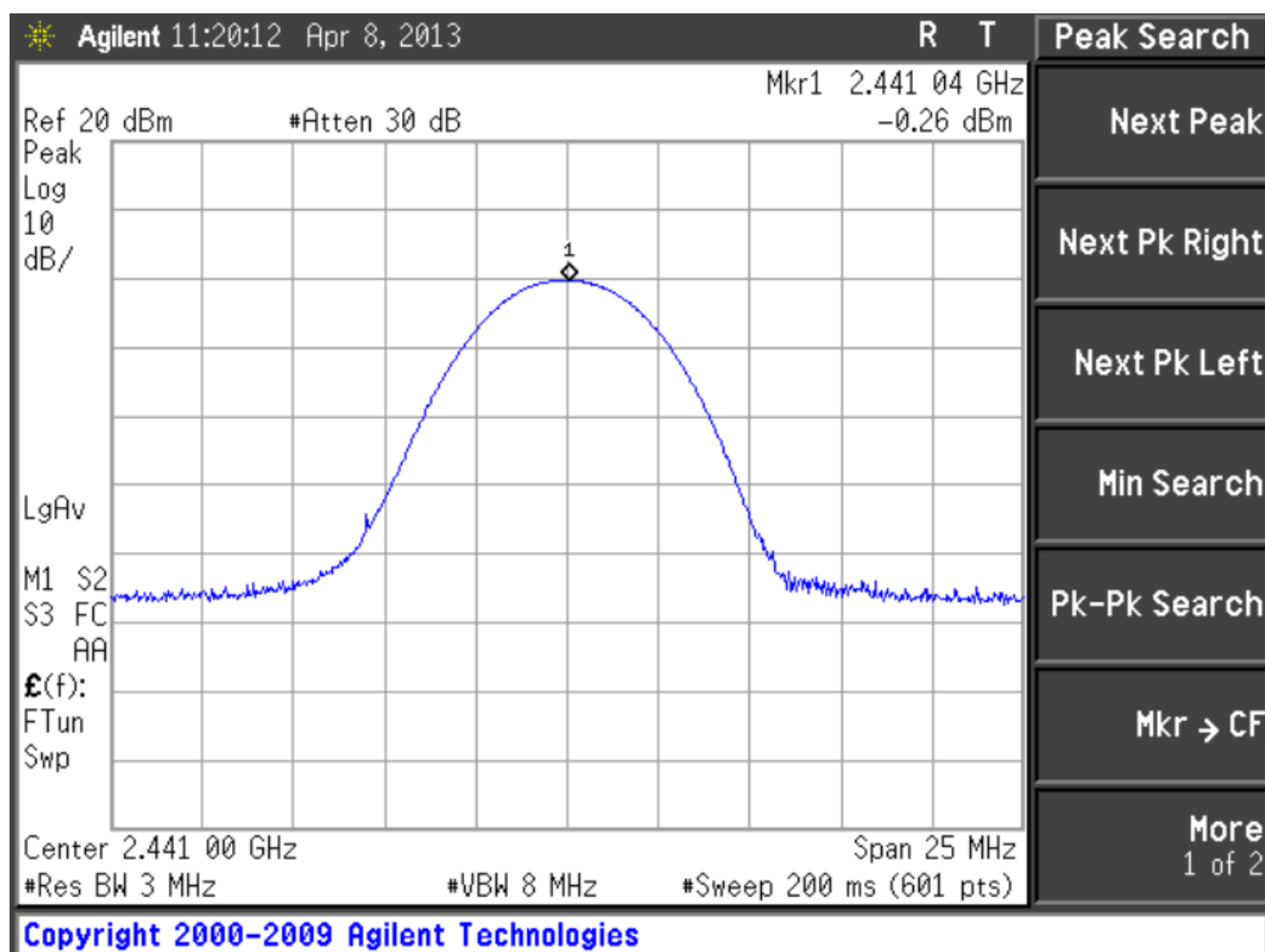


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

$\pi/4$ -DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2441	-0.26	1Watt= 30 dBm	Pass

Channel 39

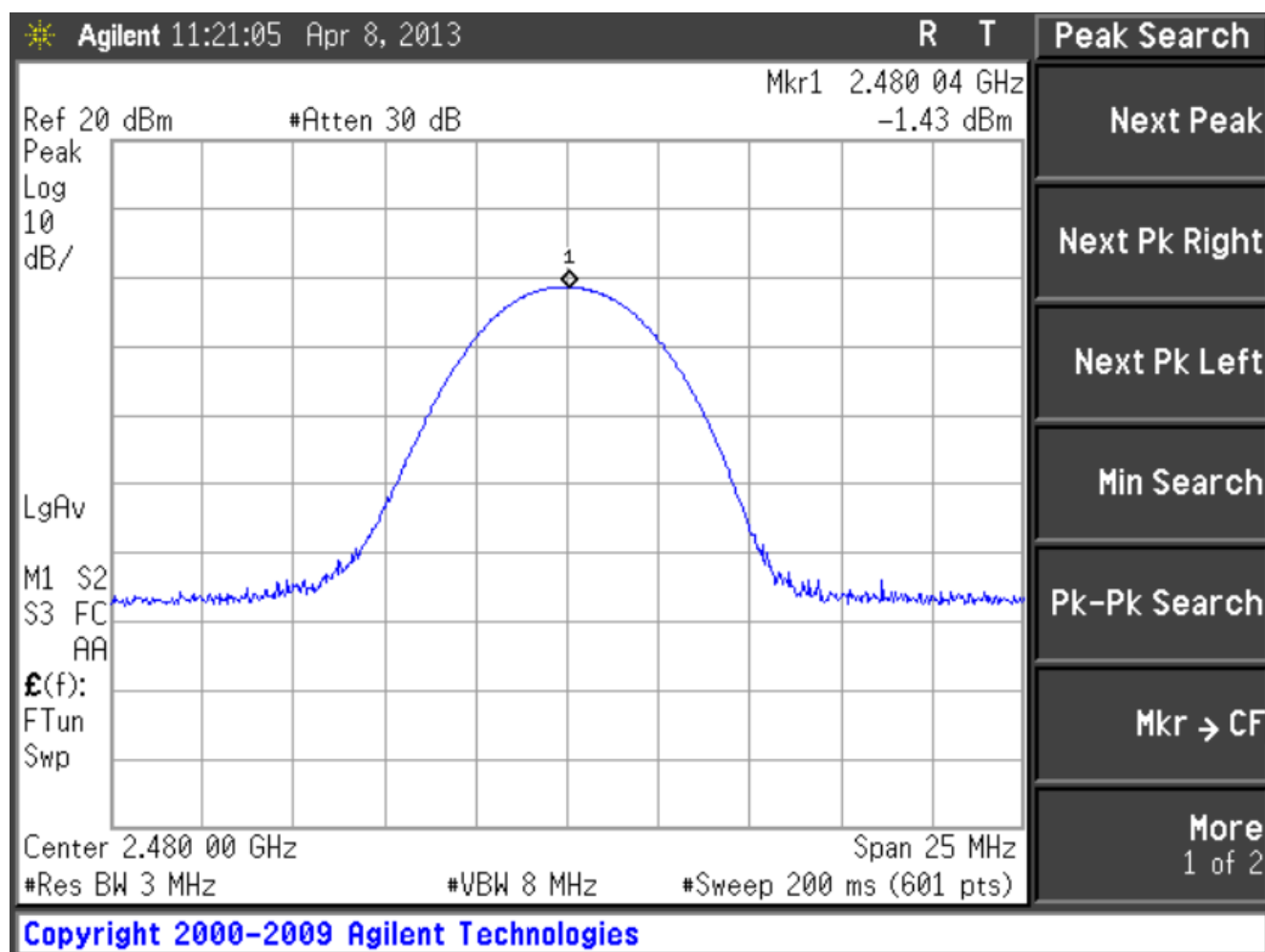


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

$\pi/4$ -DQPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
78	2480	-1.43	1Watt= 30 dBm	Pass

Channel 78

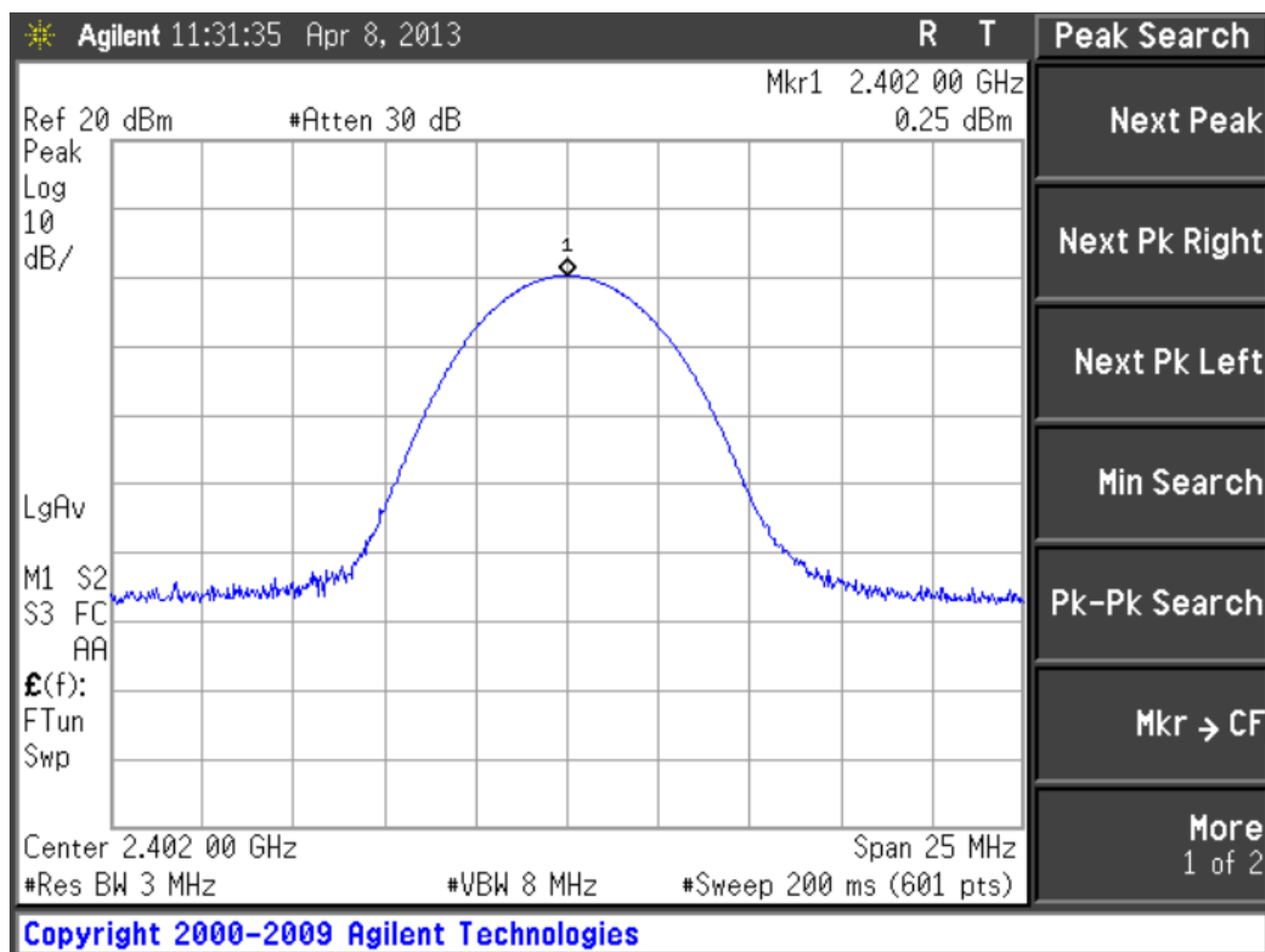


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
00	2402	0.25	1Watt= 30 dBm	Pass

Channel 00

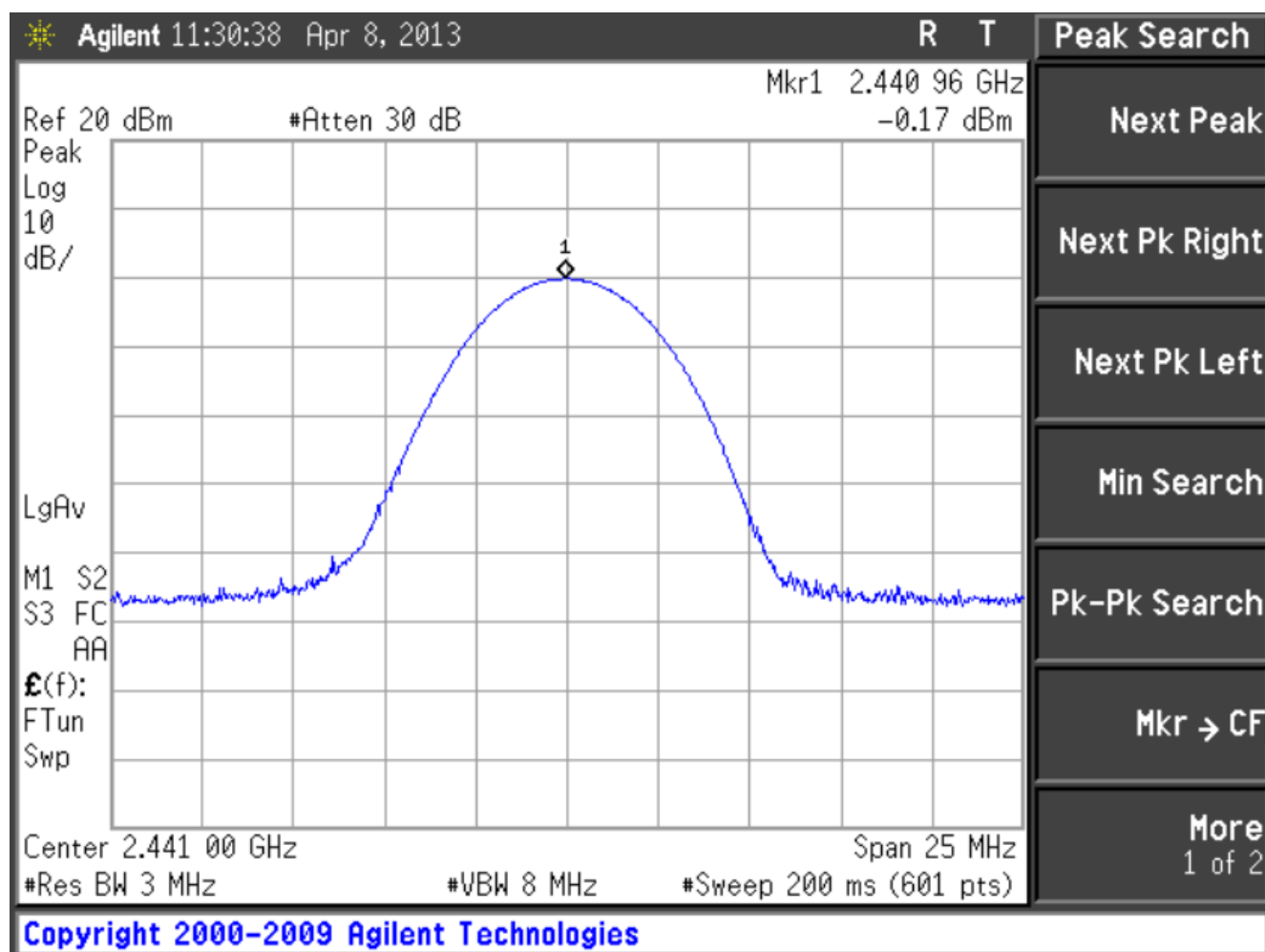


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
39	2441	-0.17	1Watt= 30 dBm	Pass

Channel 39

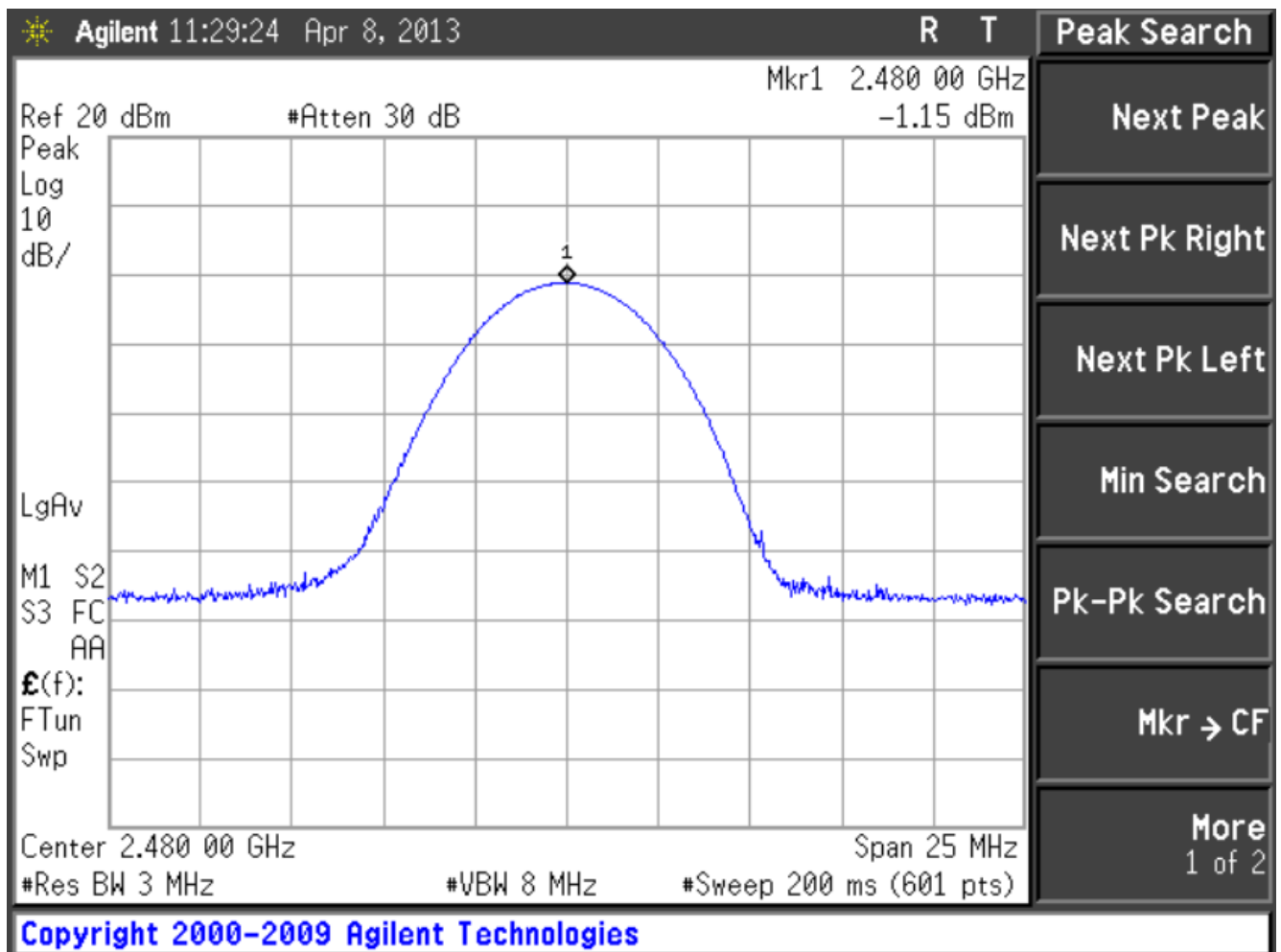


Product	Portable Stereo Speaker		
Test Item	Peak Power Output		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/04/08	Test Site	SR7

8-DPSK

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
78	2480	-1.15	1Watt= 30 dBm	Pass

Channel 78



4. Radiated Emission

4.1. Test Equipment

The following test equipments are used during the test:

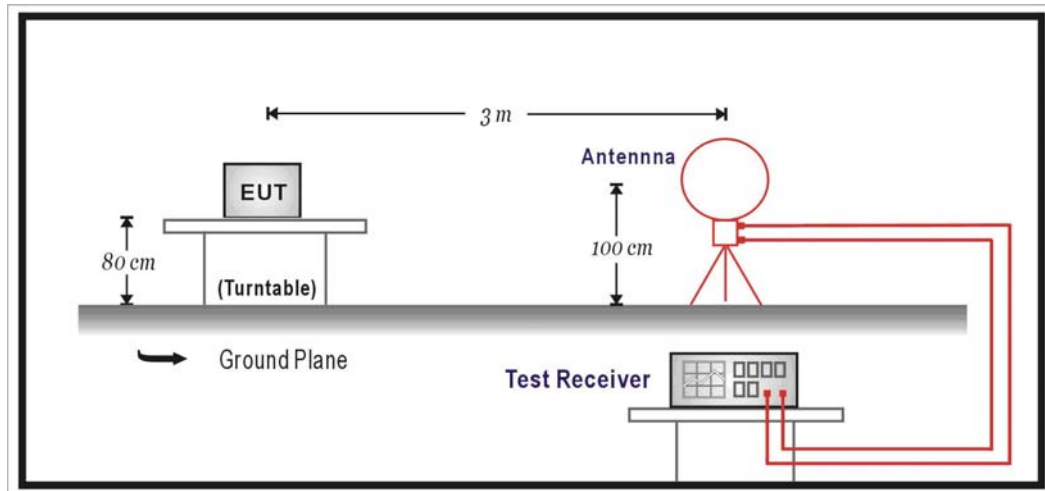
Radiated Emission / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Magnetic Loop Antenna	Teseq	HLA6120	26739	2013/11/09
Bilog Antenna	SCHAFFNER	CBL6112B	2895	2013/08/14
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Horn Antenna	Schwarzbeck	BBHA 9170	203	2013/10/25
Pre-Amplifier	MITEQ	AMF-4D-005180-24-10P	888003	2013/12/02
Pre-Amplifier	QuieTek	AP-025C	CHM-0706049	2014/02/19
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
Coaxial Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

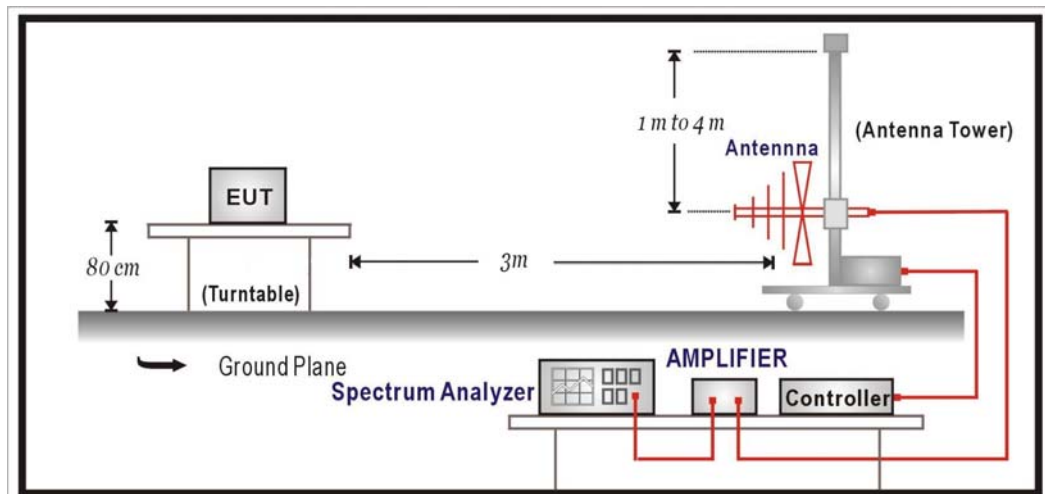
Note: 1. All equipments that need to calibrate are with calibration period of 1 year.

4.2. Test Setup

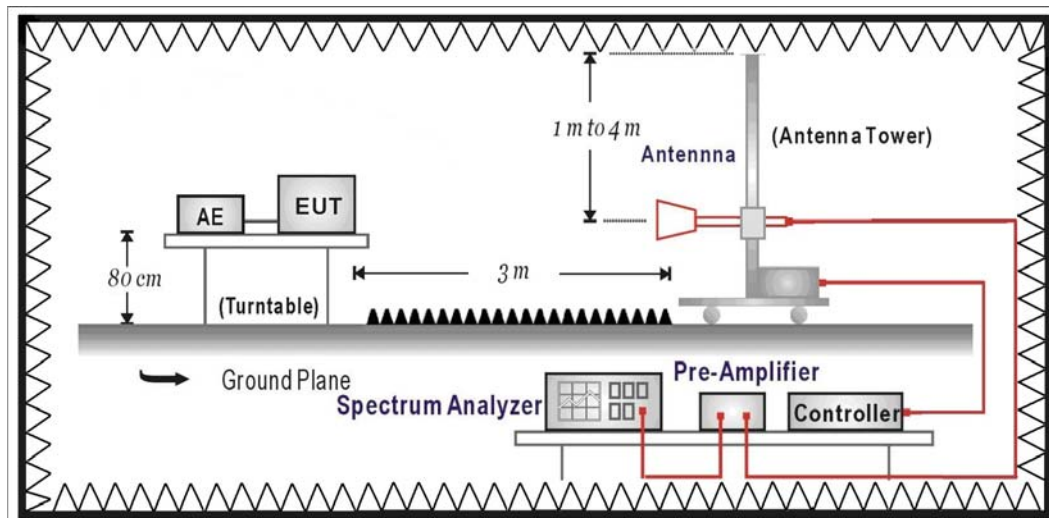
Under 30MHz Test Setup:



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	Measurement Distance(meter)
0.009-0.490	2400/F(kHz)	67.60	300
0.490-1.705	24000/F(kHz)	87.60	30
1.705-30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

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 C63.4, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements.

The EUT and its simulators are placed on a turn table which is 0.8 meter 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 C63.4:2009 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: 2012

4.6. Test Result

Under 30MHz Spurious

Site : CB1	Time : 2013/07/16 - 10:11
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter

Spurious(<30MHz)

Frequency:<30MHz				
Frequency (MHz)	Cable loss (dB)	Reading Level (dB μ V/m)	Emission Level (dB μ V/m)	Limit (dB μ V/m)
12.015	0.29	46.63	46.92	69.54
13.848	0.29	37.73	38.02	69.54
15.955	0.29	35.31	35.6	69.54
17.962	0.29	35.53	35.82	69.54
18.662	0.29	32.84	33.13	69.54
21.941	0.29	38.53	38.82	69.54

*Emission Level = Reading Level + Cable loss

3m Limit (dB μ V/m) = 30m Limit + $40\log(30/3)$ = 29.5 + 40 = 69.5 (dB μ V/m)

Site : CB1	Time : 2013/07/16 - 10:24
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 4: Transmit(GFSK)_USB Cable to adapter

Spurious(<30MHz)

Frequency:<30MHz				
Frequency (MHz)	Cable loss (dB)	Reading Level (dB μ V/m)	Emission Level (dB μ V/m)	Limit (dB μ V/m)
12.076	0.29	44.60	44.89	69.54
14.008	0.29	36.37	36.66	69.54
15.816	0.29	34.71	35.00	69.54
18.031	0.29	33.35	33.64	69.54
18.812	0.29	30.72	31.01	69.54
21.801	0.29	37.05	37.34	69.54

*Emission Level = Reading Level + Cable loss

3m Limit (dB μ V/m) = 30m Limit + $40\log(30/3)$ = 29.5 + 40 = 69.5 (dB μ V/m)

Site : CB1	Time : 2013/07/16 - 10:32
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 5: Transmit(GFSK)_Power Cable to PC

Spurious(<30MHz)

Frequency:<30MHz				
Frequency (MHz)	Cable loss (dB)	Reading Level (dB μ V/m)	Emission Level (dB μ V/m)	Limit (dB μ V/m)
11.860	0.29	44.02	44.31	69.54
13.982	0.29	46.44	46.73	69.54
15.951	0.29	41.84	42.13	69.54
17.928	0.29	42.76	43.05	69.54
18.853	0.29	39.93	40.22	69.54
21.937	0.29	45.63	45.92	69.54

*Emission Level = Reading Level + Cable loss

3m Limit (dB μ V/m) = 30m Limit + $40\log(30/3)$ = 29.5 + 40 = 69.5 (dB μ V/m)

Site : CB1	Time : 2013/07/16 - 10:47
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 6: Transmit(GFSK)_USB Cable to PC

Spurious(<30MHz)

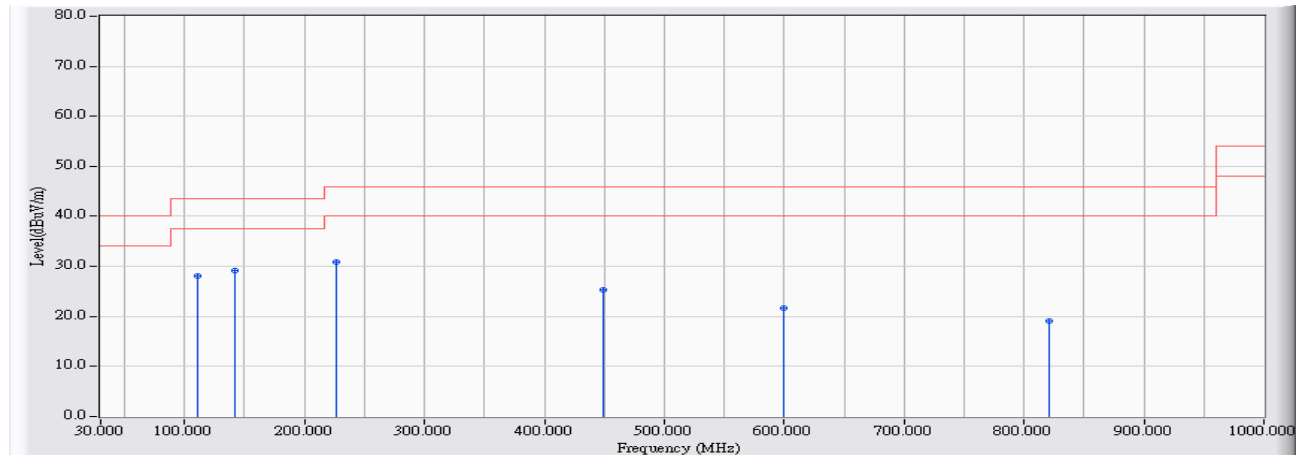
Frequency:<30MHz				
Frequency (MHz)	Cable loss (dB)	Reading Level (dB μ V/m)	Emission Level (dB μ V/m)	Limit (dB μ V/m)
11.919	0.29	45.70	45.99	69.54
13.914	0.29	45.64	45.93	69.54
15.680	0.29	44.98	45.27	69.54
18.011	0.29	44.01	44.30	69.54
18.881	0.29	40.76	41.05	69.54
21.736	0.29	48.23	48.52	69.54

*Emission Level = Reading Level + Cable loss

3m Limit (dB μ V/m) = 30m Limit + $40\log(30/3)$ = 29.5 + 40 = 69.5 (dB μ V/m)

30MHz-1GHz Spurious

Site : CB1	Time : 2013/05/24 - 13:51
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter

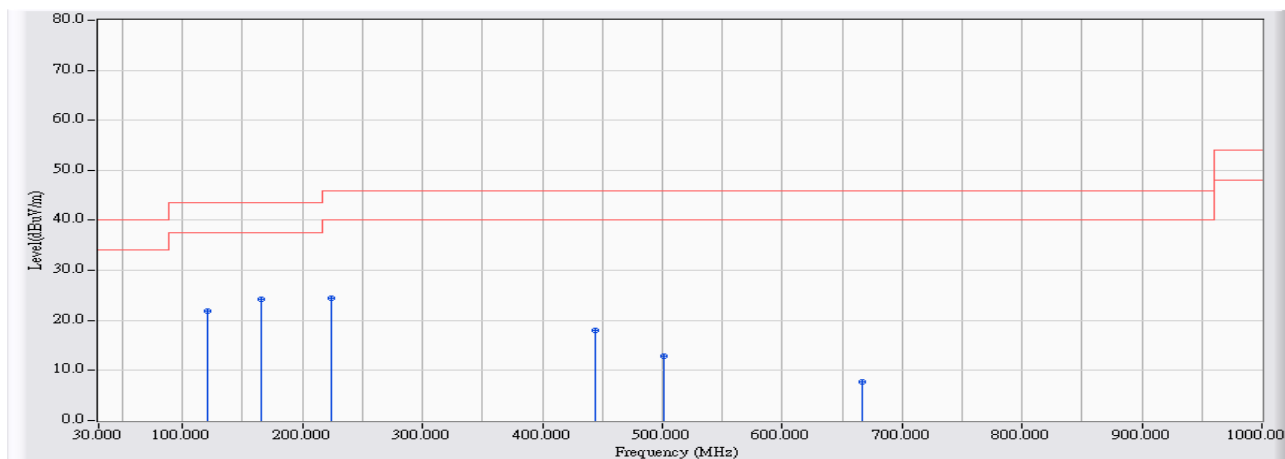


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		110.510	-43.409	71.556	28.147	-15.353	43.500	QUASIPeAK
2	*	142.520	-43.883	73.037	29.154	-14.346	43.500	QUASIPeAK
3		226.910	-43.682	74.482	30.801	-15.199	46.000	QUASIPeAK
4		449.040	-37.164	62.394	25.230	-20.770	46.000	QUASIPeAK
5		599.390	-34.623	56.376	21.754	-24.246	46.000	QUASIPeAK
6		821.520	-32.864	51.961	19.097	-26.903	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 : 2013/05/24 - 13:53
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter

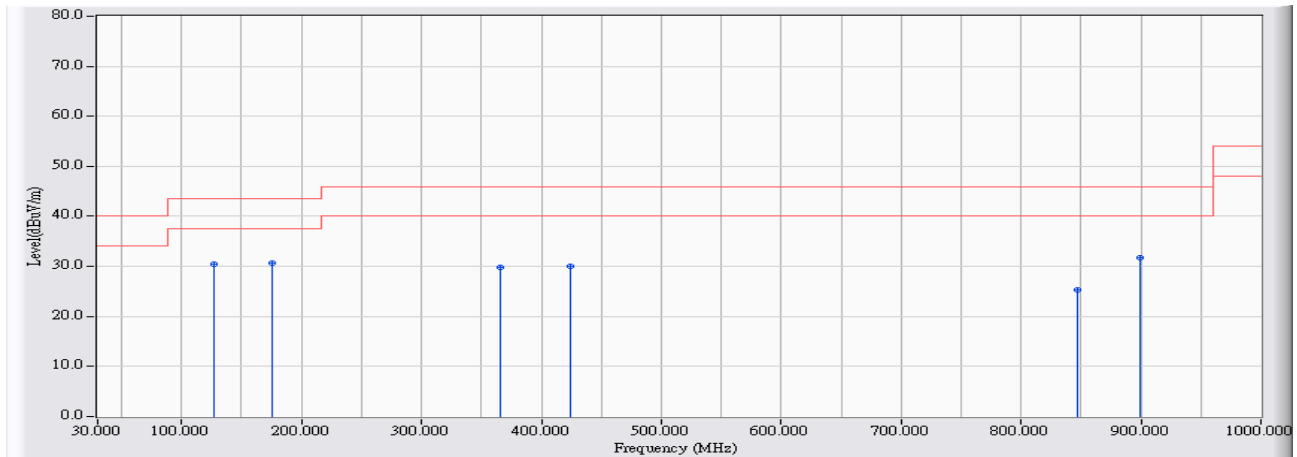


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		120.210	-42.604	64.451	21.848	-21.652	43.500	QUASIPeAK
2	*	165.800	-45.018	69.333	24.315	-19.185	43.500	QUASIPeAK
3		224.000	-43.896	68.370	24.474	-21.526	46.000	QUASIPeAK
4		444.190	-37.249	55.318	18.068	-27.932	46.000	QUASIPeAK
5		501.420	-36.148	49.086	12.939	-33.061	46.000	QUASIPeAK
6		666.320	-34.217	41.981	7.765	-38.235	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 : 2013/05/28 - 10:42
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 4: Transmit(GFSK)_USB Cable to adapter

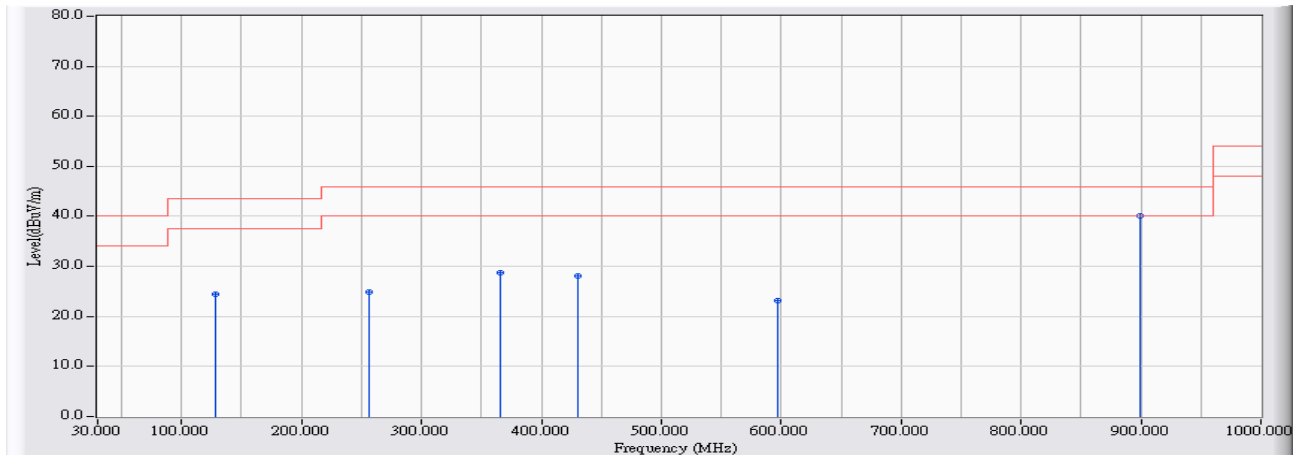


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		127.000	-42.998	73.481	30.483	-13.017	43.500	QUASIPeAK
2	*	175.500	-45.423	76.041	30.618	-12.882	43.500	QUASIPeAK
3		366.267	-39.079	68.798	29.719	-16.281	46.000	QUASIPeAK
4		424.467	-37.599	67.542	29.944	-16.056	46.000	QUASIPeAK
5		846.417	-32.643	57.912	25.269	-20.731	46.000	QUASIPeAK
6		899.767	-32.182	63.948	31.766	-14.234	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 : 2013/05/28 - 10:46
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 4: Transmit(GFSK)_USB Cable to adapter

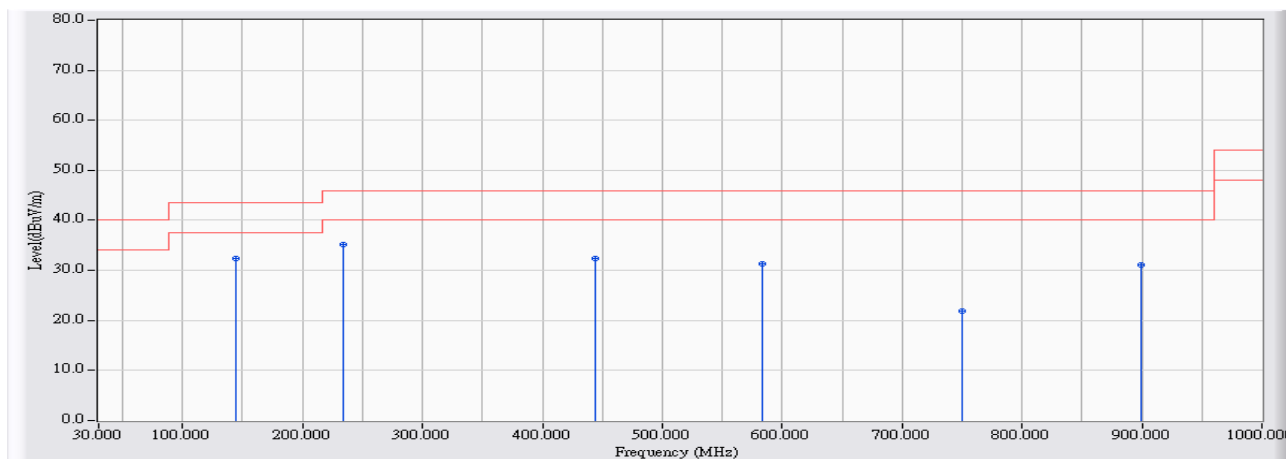


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		128.617	-43.092	67.574	24.482	-19.018	43.500	QUASIPeAK
2		256.333	-41.862	66.654	24.792	-21.208	46.000	QUASIPeAK
3		366.267	-39.079	67.745	28.666	-17.334	46.000	QUASIPeAK
4		430.933	-37.484	65.492	28.008	-17.992	46.000	QUASIPeAK
5		597.450	-34.652	57.785	23.133	-22.867	46.000	QUASIPeAK
6	*	899.767	-32.182	72.282	40.100	-5.900	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 : 2013/05/27 - 13:53
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 5: Transmit(GFSK)_Power Cable to PC

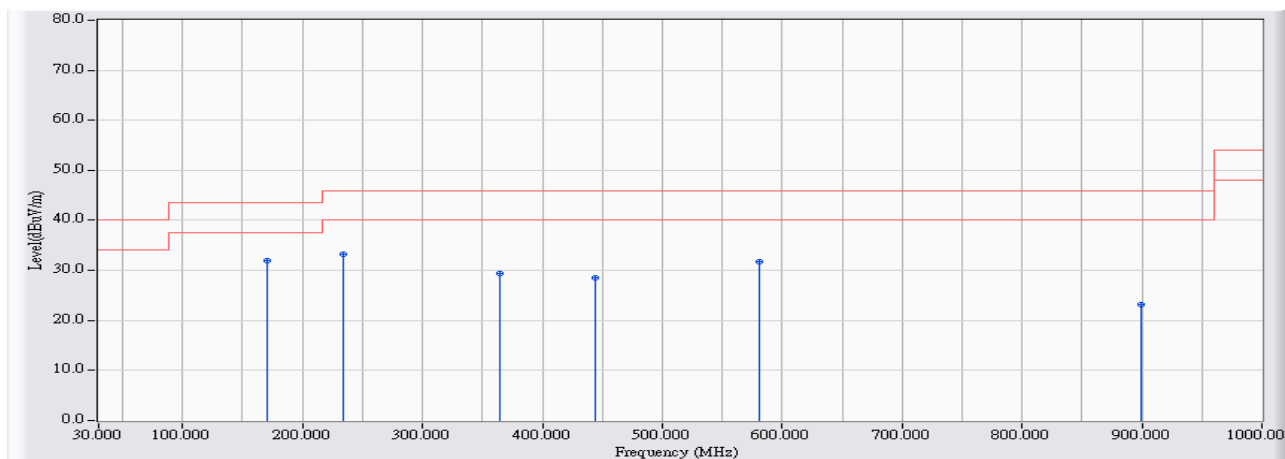


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		144.783	-43.997	76.440	32.443	-11.057	43.500	QUASIPeAK
2	*	233.700	-43.181	78.392	35.212	-10.788	46.000	QUASIPeAK
3		443.867	-37.255	69.680	32.425	-13.575	46.000	QUASIPeAK
4		582.900	-34.872	66.216	31.344	-14.656	46.000	QUASIPeAK
5		749.417	-33.525	55.405	21.880	-24.120	46.000	QUASIPeAK
6		899.767	-32.182	63.383	31.201	-14.799	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 : 2013/05/27 - 13:58
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 5: Transmit(GFSK)_Power Cable to PC

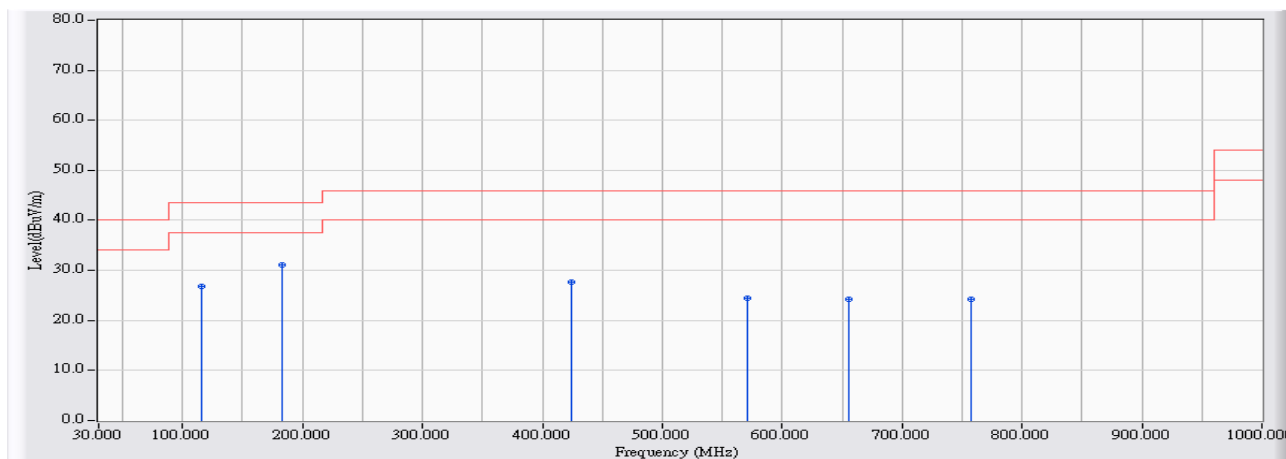


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	170.650	-45.221	77.112	31.891	-11.609	43.500	QUASIPeAK
2		233.700	-43.181	76.426	33.246	-12.754	46.000	QUASIPeAK
3		364.650	-39.130	68.512	29.382	-16.618	46.000	QUASIPeAK
4		443.867	-37.255	65.792	28.537	-17.463	46.000	QUASIPeAK
5		581.283	-34.897	66.667	31.770	-14.230	46.000	QUASIPeAK
6		899.767	-32.182	55.293	23.111	-22.889	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 : 2013/05/28 - 10:51
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable speaker foxl DASH	Note : Mode 6: Transmit(GFSK)_USB Cable to PC

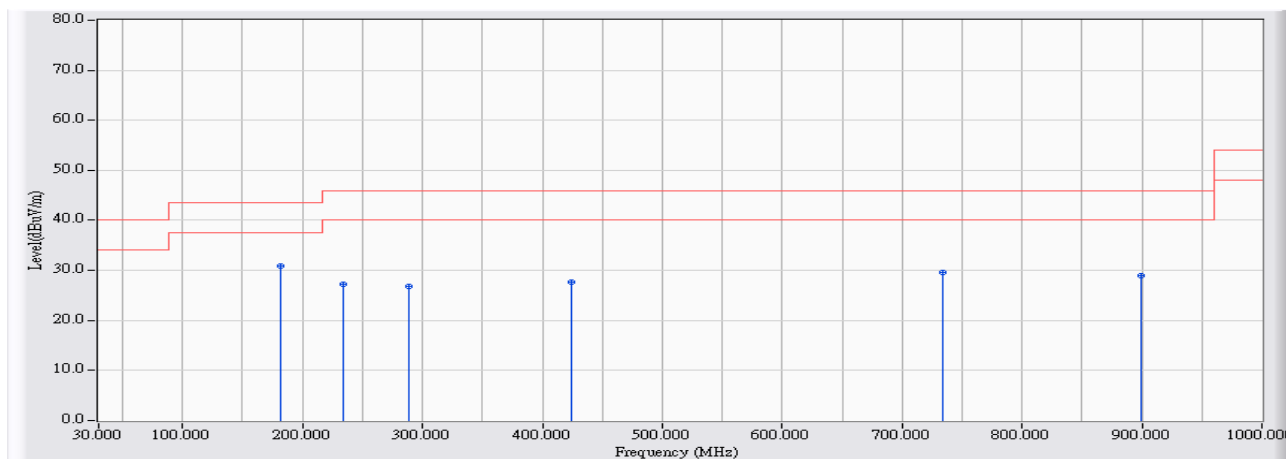


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		115.683	-42.963	69.864	26.901	-16.599	43.500	QUASIPeAK
2	*	183.583	-45.621	76.685	31.063	-12.437	43.500	QUASIPeAK
3		424.467	-37.599	65.206	27.608	-18.392	46.000	QUASIPeAK
4		571.583	-35.044	59.594	24.550	-21.450	46.000	QUASIPeAK
5		655.650	-34.279	58.447	24.167	-21.833	46.000	QUASIPeAK
6		757.500	-33.450	57.721	24.271	-21.729	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 : 2013/05/28 - 10:54
Limit : FCC_CLASS_B_03M_QP	Margin : 6
Probe : CB1_FCC_EFS_30-1G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable speaker foxl DASH	Note : Mode 6: Transmit(GFSK)_USB Cable to PC



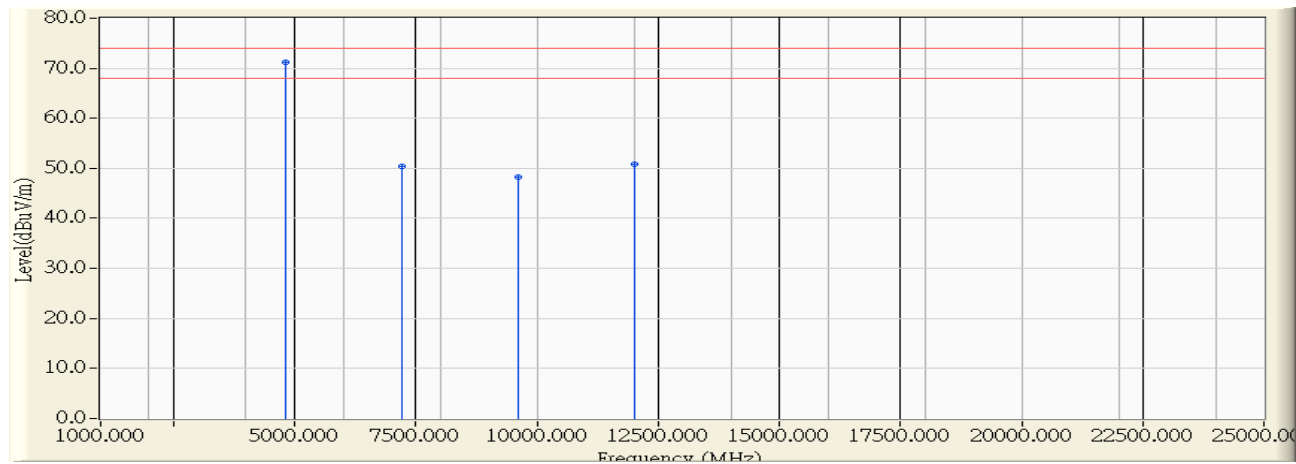
		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	181.967	-45.618	76.594	30.977	-12.523	43.500	QUASIPeAK
2		233.700	-43.181	70.435	27.255	-18.745	46.000	QUASIPeAK
3		288.667	-41.281	68.129	26.848	-19.152	46.000	QUASIPeAK
4		424.467	-37.599	65.206	27.608	-18.392	46.000	QUASIPeAK
5		733.250	-33.685	63.237	29.551	-16.449	46.000	QUASIPeAK
6		899.767	-32.182	61.083	28.901	-17.099	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

Harmonic & Spurious:

Site : CB1	Time : 2013/07/12 - 15:22
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2402

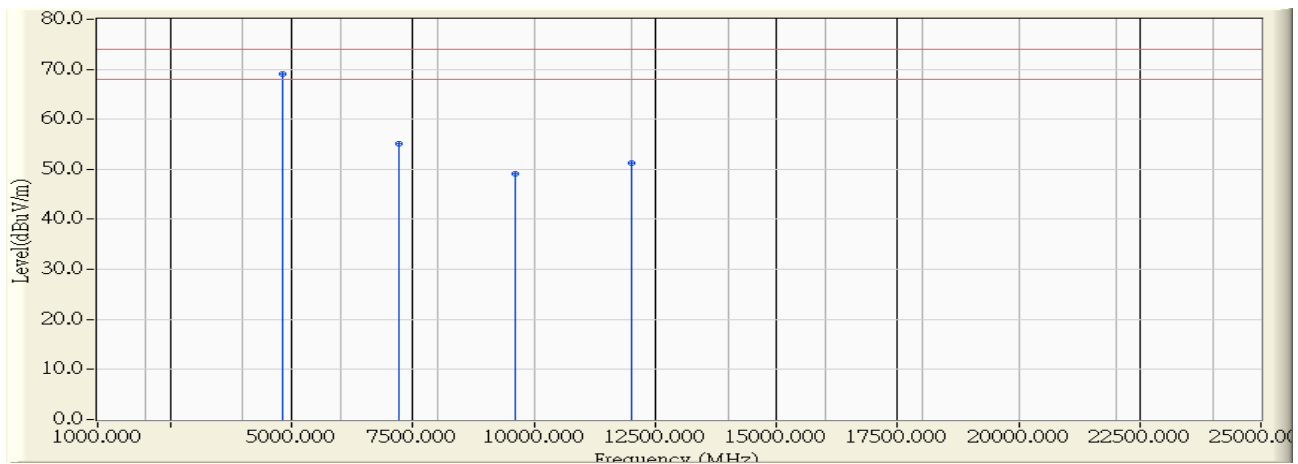


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4804.000	-0.856	72.000	71.144	-2.856	74.000	PEAK
2		7205.900	5.424	44.920	50.344	-23.656	74.000	PEAK
3		9608.700	8.945	39.220	48.166	-25.834	74.000	PEAK
4		12011.030	11.543	39.200	50.744	-23.256	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 = 3 MHz, 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 : 2013/07/12 - 15:46
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2402MHz

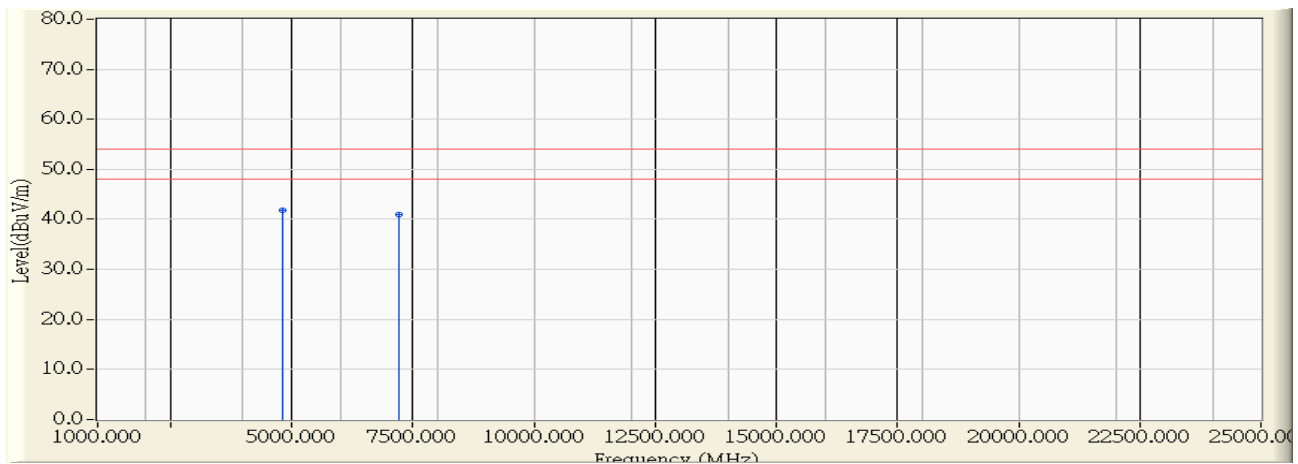


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4804.000	-0.856	70.020	69.164	-4.836	74.000	PEAK
2		7206.533	5.426	49.680	55.105	-18.895	74.000	PEAK
3		9608.650	8.945	40.140	49.085	-24.915	74.000	PEAK
4		12009.250	11.545	39.790	51.335	-22.665	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 = 3 MHz, 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 : 2013/07/12 - 15:52
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB1_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2402MHz

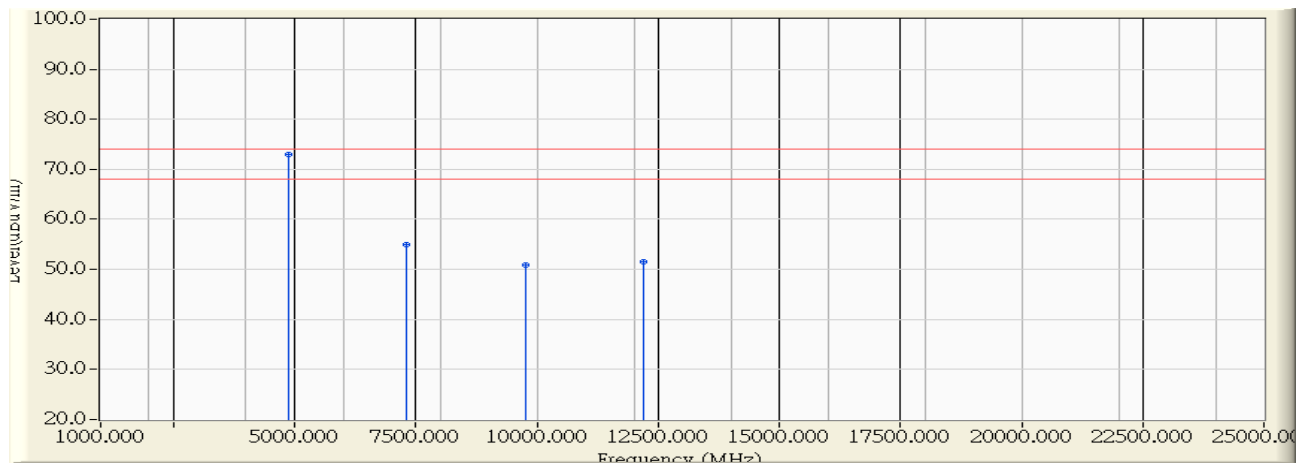


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4804.000	-0.856	42.620	41.764	-12.236	54.000	AVERAGE
2		7205.983	5.424	35.450	40.874	-13.126	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/07/12 - 16:05
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2441MHz

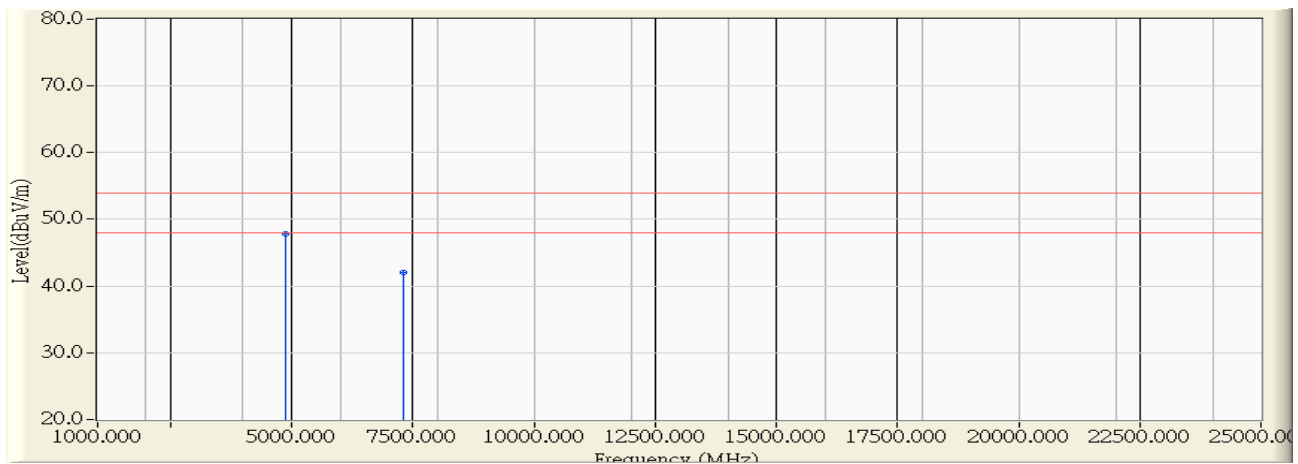


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4881.983	3.456	69.510	72.966	-1.034	74.000	PEAK
2		7322.450	8.744	46.200	54.943	-19.057	74.000	PEAK
3		9763.783	11.553	39.420	50.972	-23.028	74.000	PEAK
4		12204.350	13.200	38.350	51.551	-22.449	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 = 3 MHz, 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 : 2013/07/12 - 16:12
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2441MHz

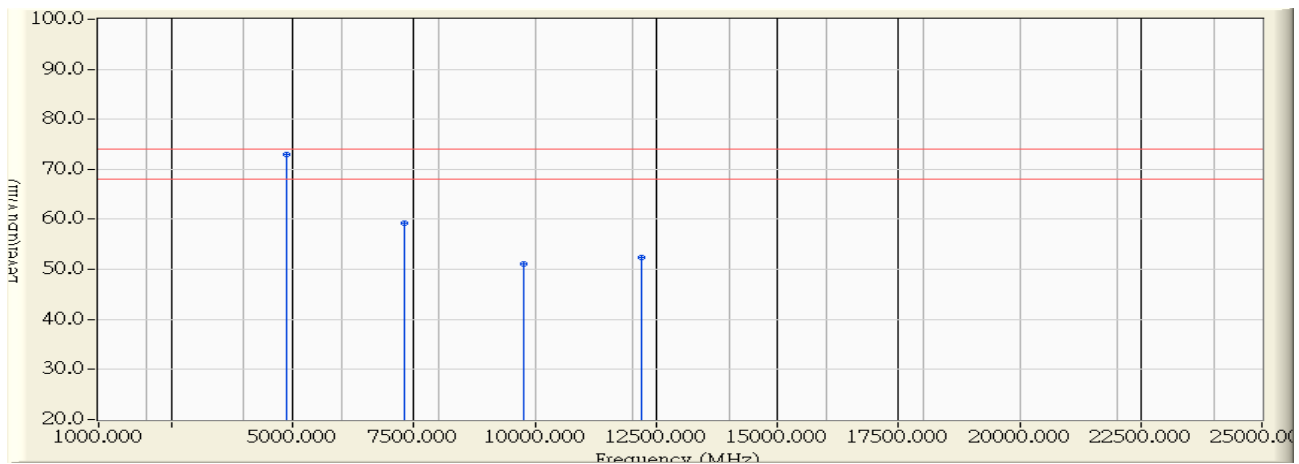


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4881.983	3.456	44.390	47.846	-6.154	54.000	AVERAGE
2		7323.033	8.743	33.230	41.973	-12.027	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/07/12 - 16:18
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2441MHz

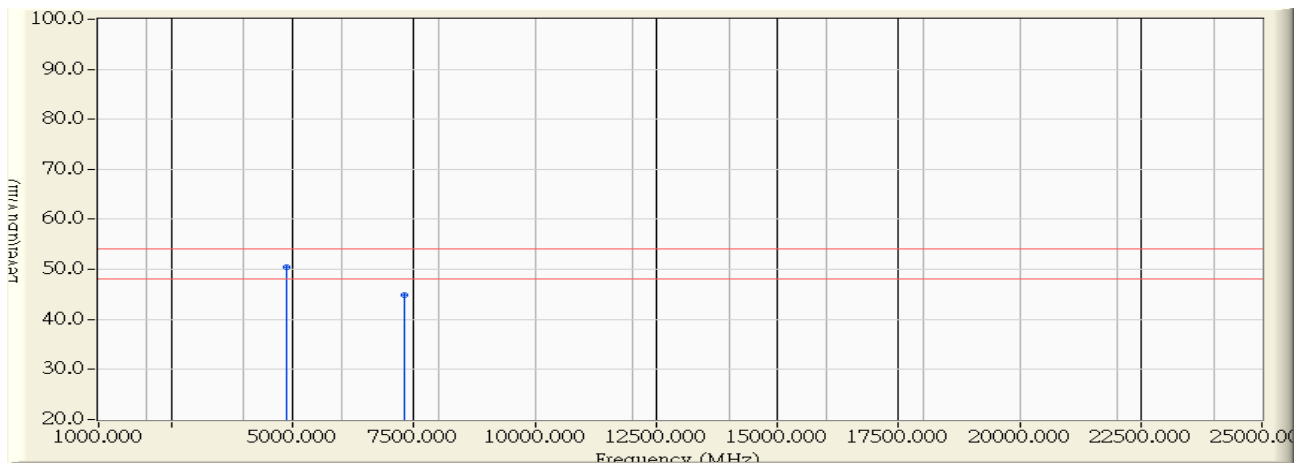


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4882.000	3.456	69.421	72.878	-1.122	74.000	PEAK
2		7322.500	8.743	50.510	59.253	-14.747	74.000	PEAK
3		9768.000	11.566	39.460	51.027	-22.973	74.000	PEAK
4		12206.467	13.216	39.070	52.286	-21.714	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 = 3 MHz, 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 : 2013/07/12 - 16:21
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2441MHz

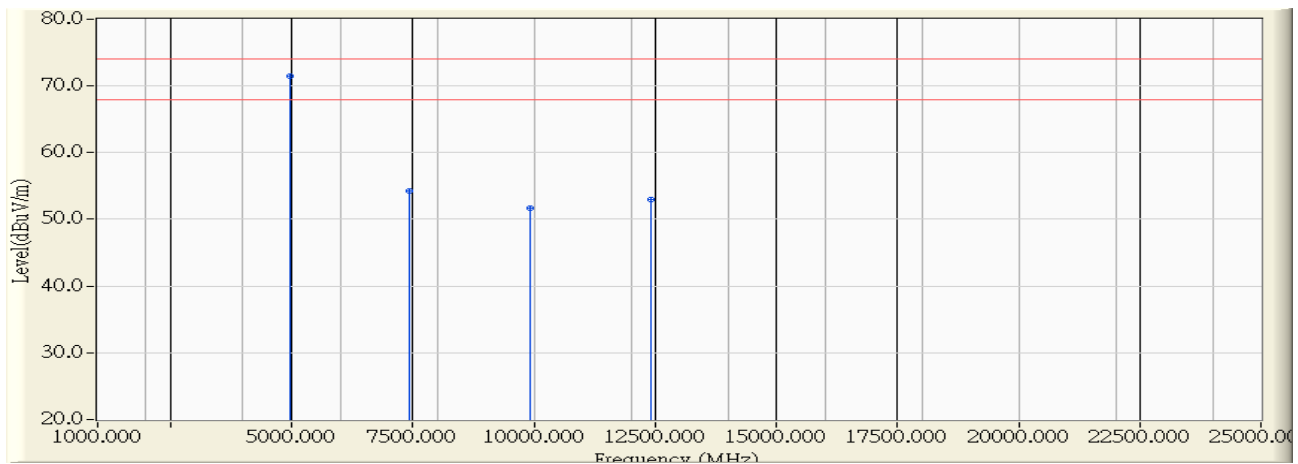


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4882.000	3.456	47.040	50.497	-3.503	54.000	AVERAGE
2		7323.033	8.743	36.080	44.823	-9.177	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/07/12 - 16:28
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2480MHz

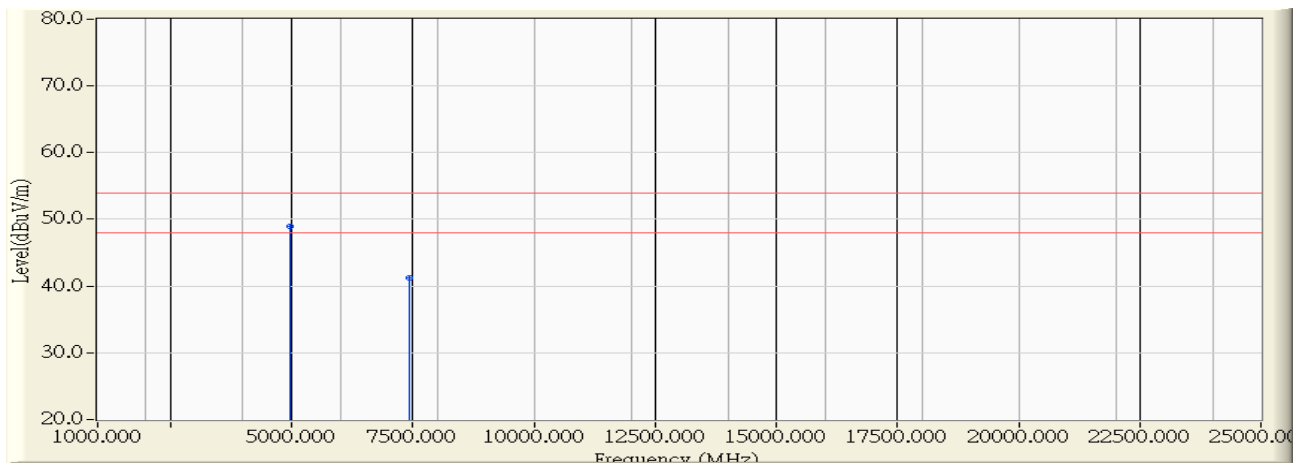


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4959.933	3.812	67.630	71.441	-2.559	74.000	PEAK
2		7439.433	9.029	45.170	54.199	-19.801	74.000	PEAK
3		9923.833	12.143	39.500	51.643	-22.357	74.000	PEAK
4		12400.283	14.386	38.610	52.997	-21.003	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 = 3 MHz, 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 : 2013/07/12 - 16:34
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2480MHz

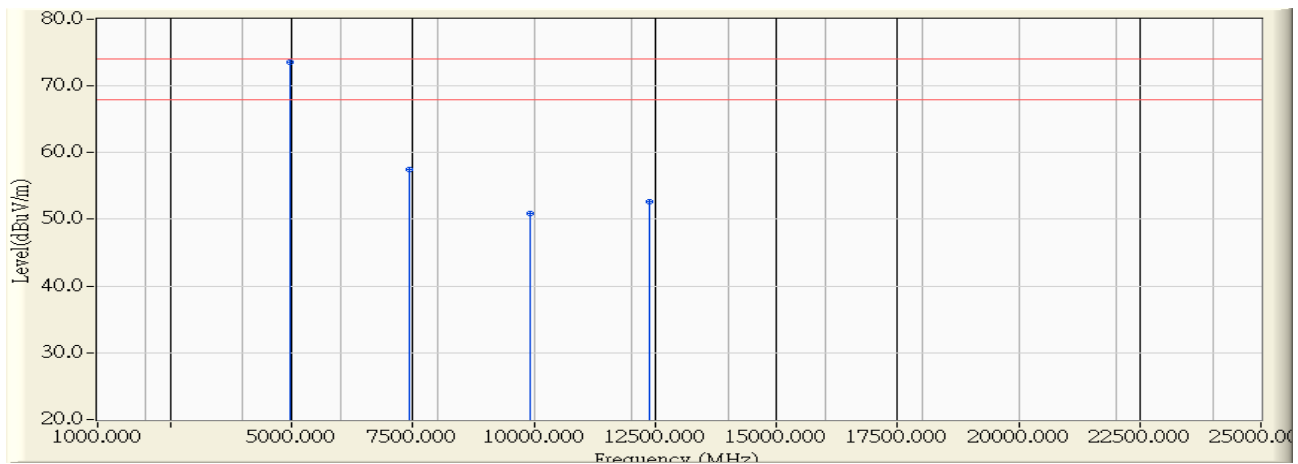


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4959.967	3.812	45.130	48.942	-5.058	54.000	AVERAGE
2		7440.000	9.031	32.230	41.261	-12.739	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/07/12 - 16:39
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2480MHz

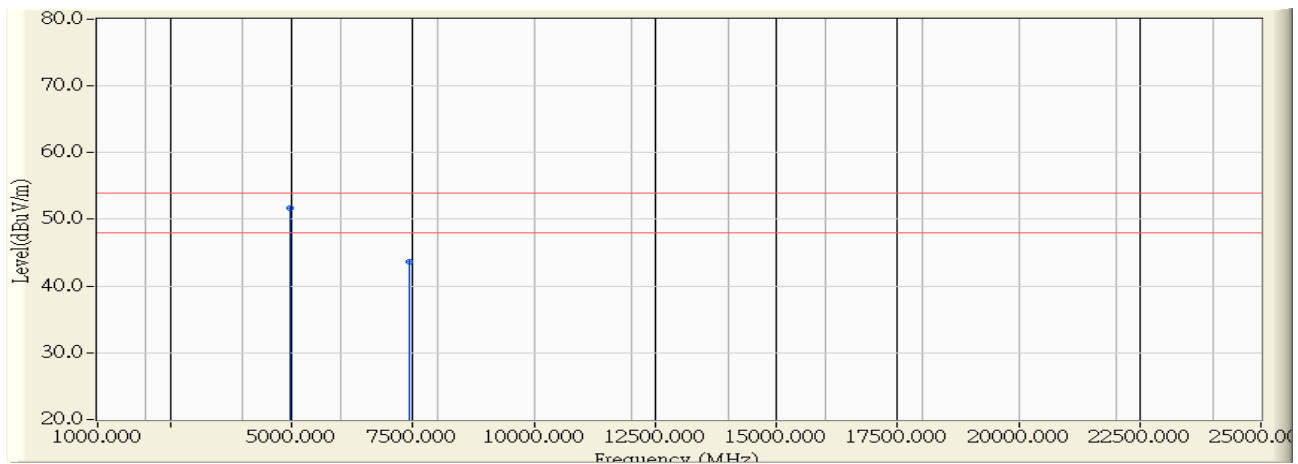


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4960.000	3.812	69.829	73.641	-0.359	74.000	PEAK
2		7439.667	9.029	48.420	57.450	-16.550	74.000	PEAK
3		9920.567	12.130	38.830	50.960	-23.040	74.000	PEAK
4		12395.233	14.361	38.320	52.681	-21.319	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 = 3 MHz, 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 : 2013/07/12 - 16:45
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V/60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _GFSK_2480MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	4960.000	3.812	47.880	51.692	-2.308	54.000	AVERAGE
2		7441.017	9.034	34.579	43.613	-10.387	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 = 3 MHz, 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:

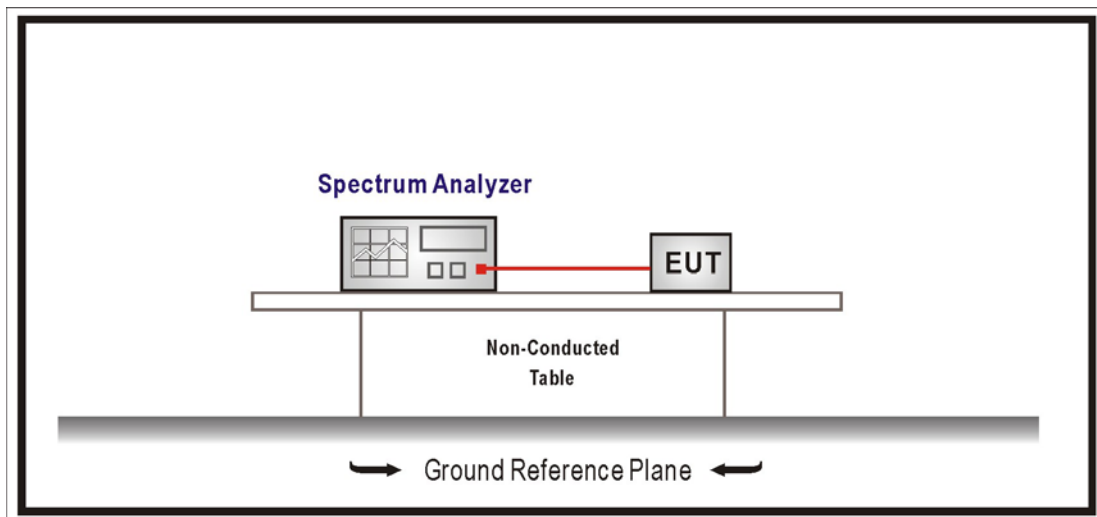
RF antenna conducted test / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31

Note: 1. 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 C63.4, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 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: 2012

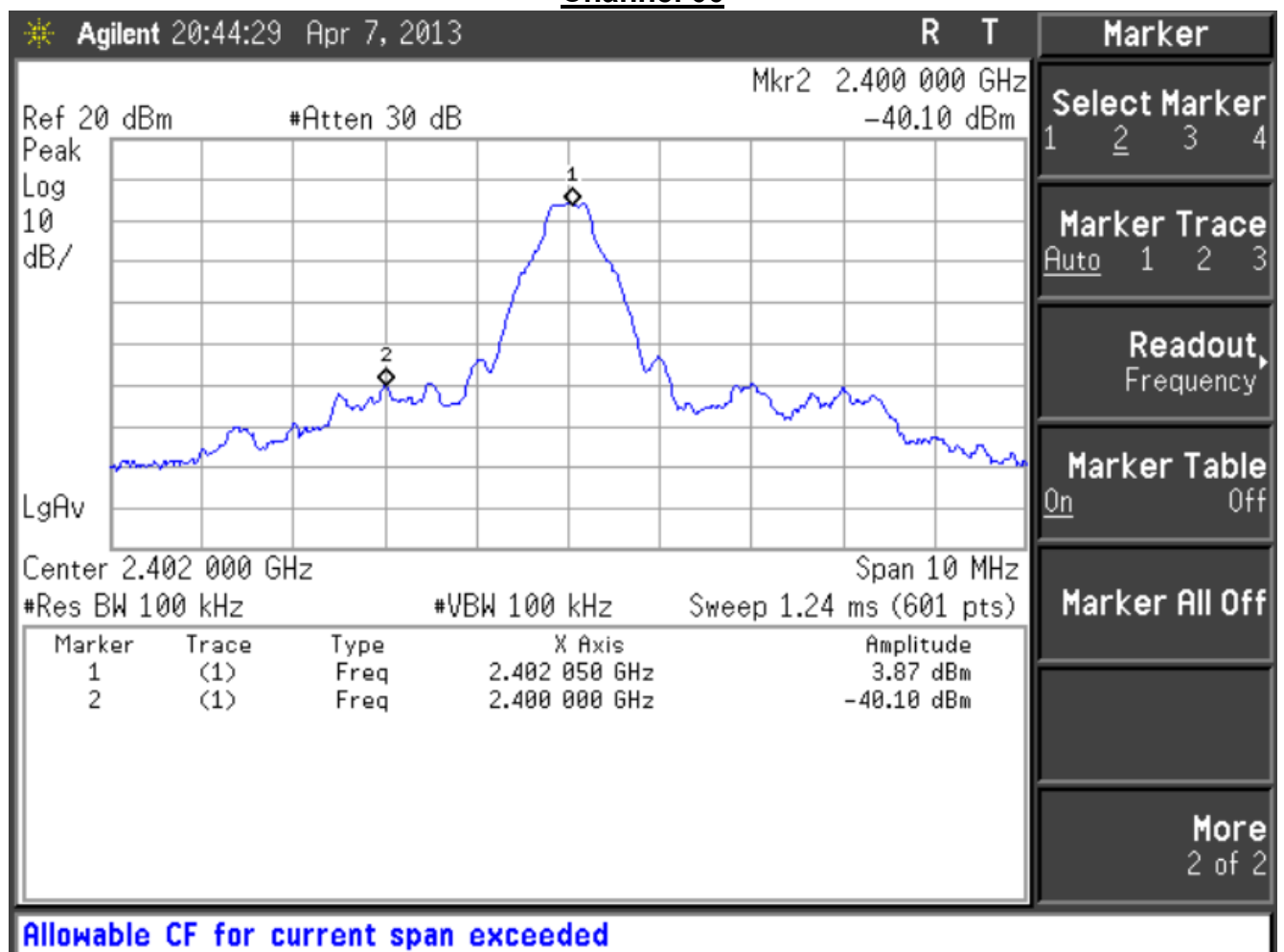
5.6. Test Result

Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
00	2402	43.97	≥ 20	Pass

Channel 00

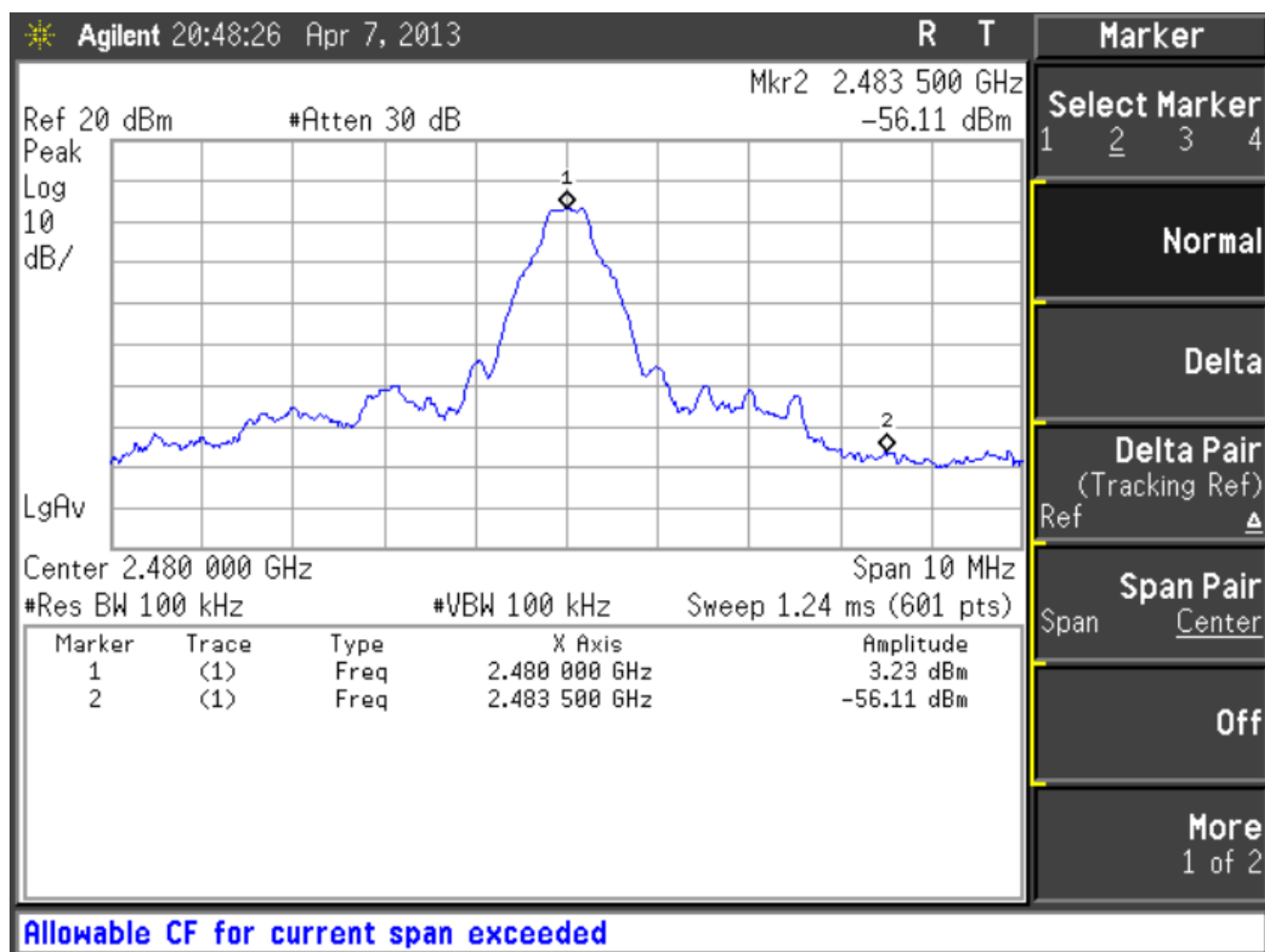


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

GFSK

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
78	2480	59.34	≥ 20	Pass

Channel 78

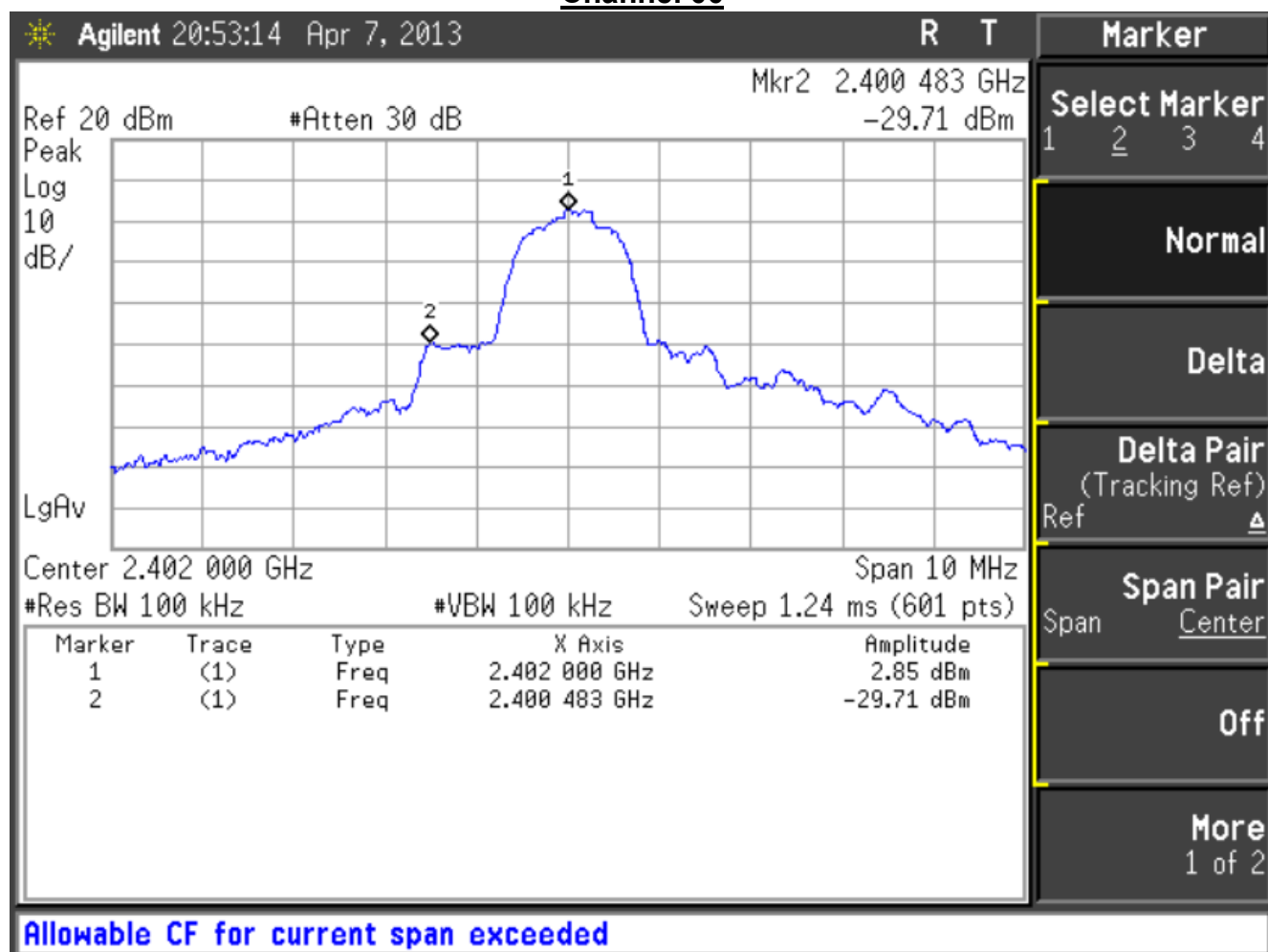


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power by PC		
Date of Test	2013/05/20	Test Site	SR7

$\pi/4$ DQPSK

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
00	2402	32.56	≥ 20	Pass

Channel 00

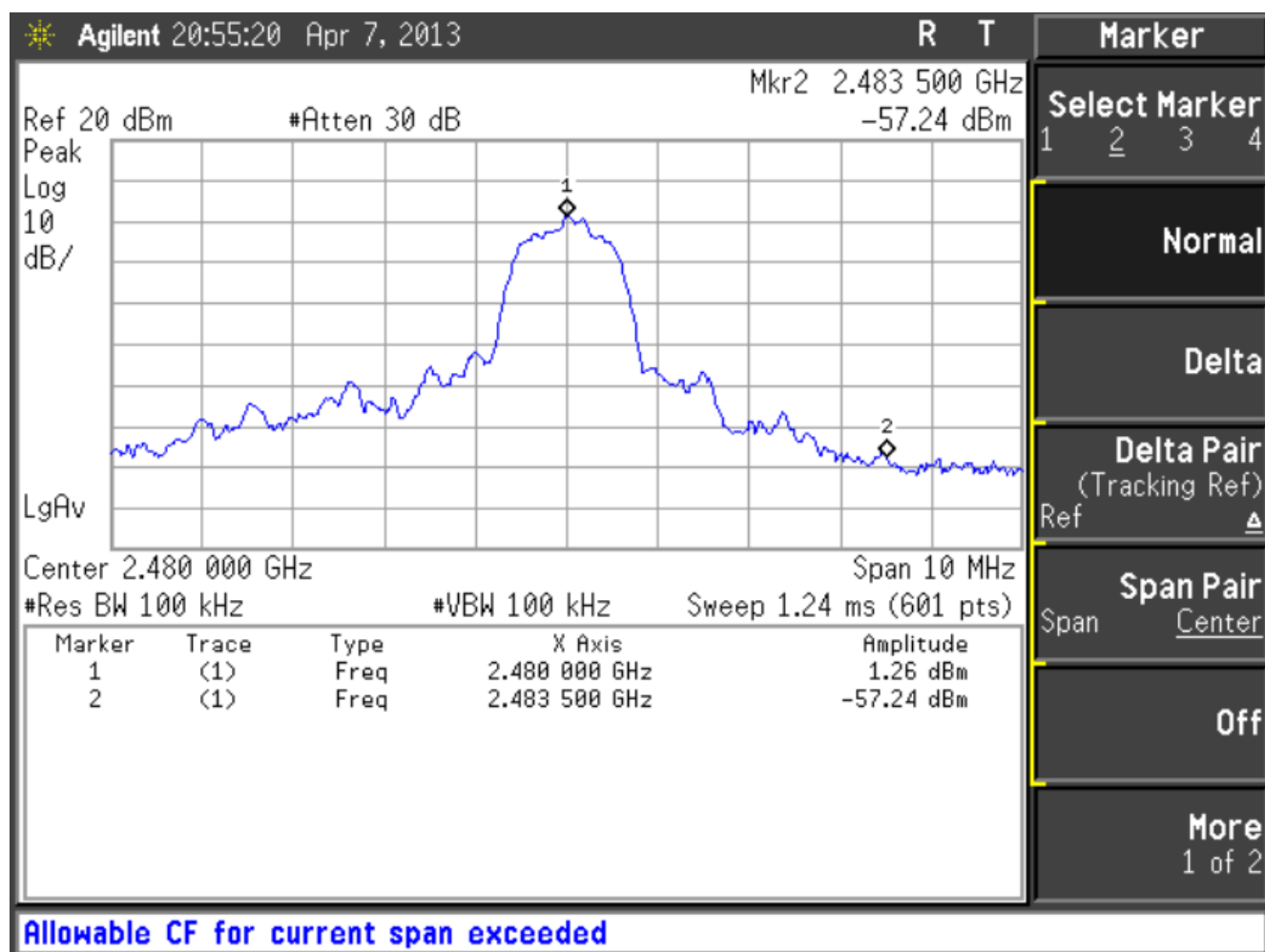


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power by PC		
Date of Test	2013/05/20	Test Site	SR7

$\pi/4$ DQPSK

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
78	2480	58.50	≥ 20	Pass

Channel 78

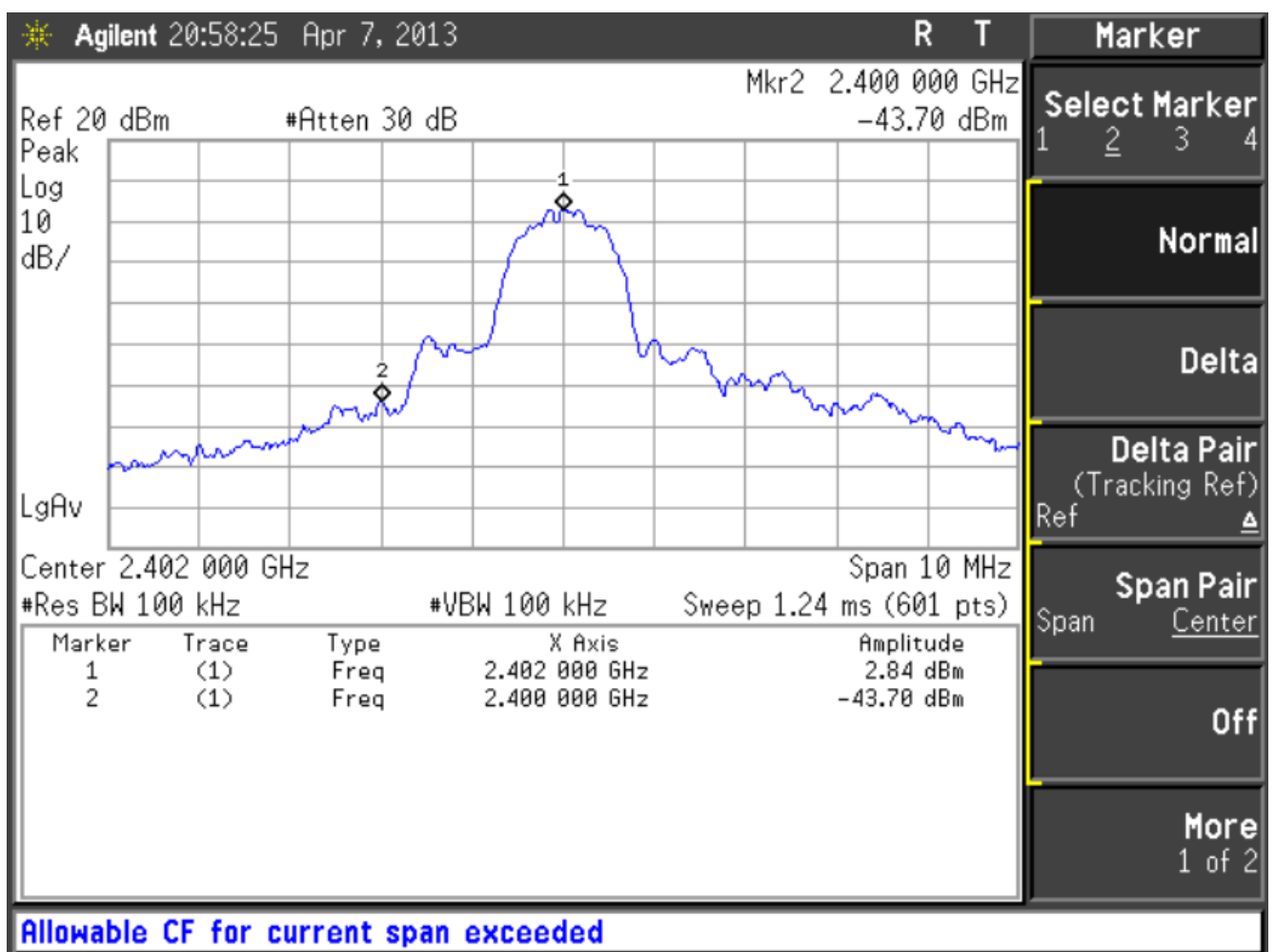


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power by PC		
Date of Test	2013/05/20	Test Site	SR7

8DPSK

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
00	2402	46.54	≥ 20	Pass

Channel 00

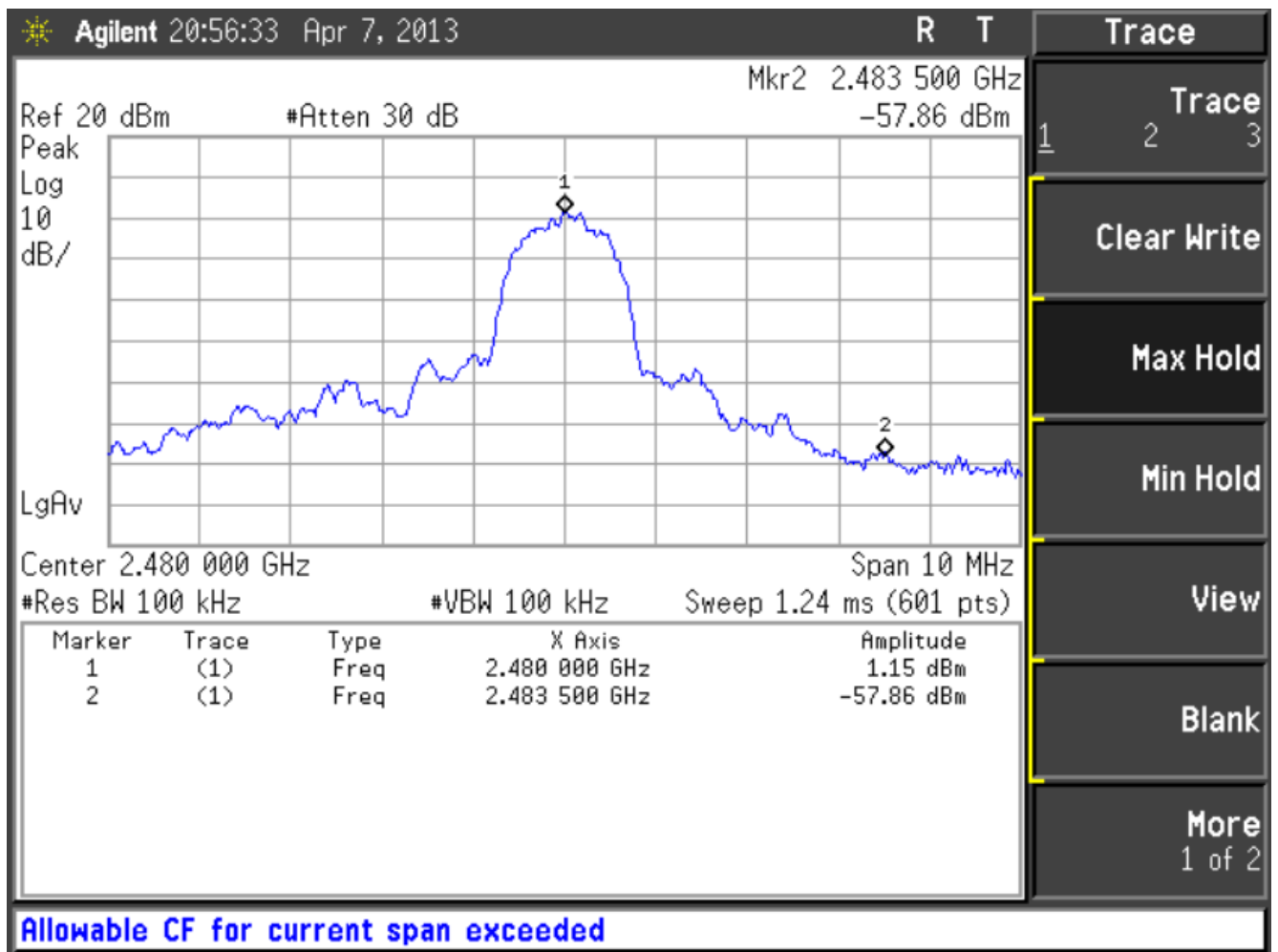


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power by PC		
Date of Test	2013/05/20	Test Site	SR7

8DPSK

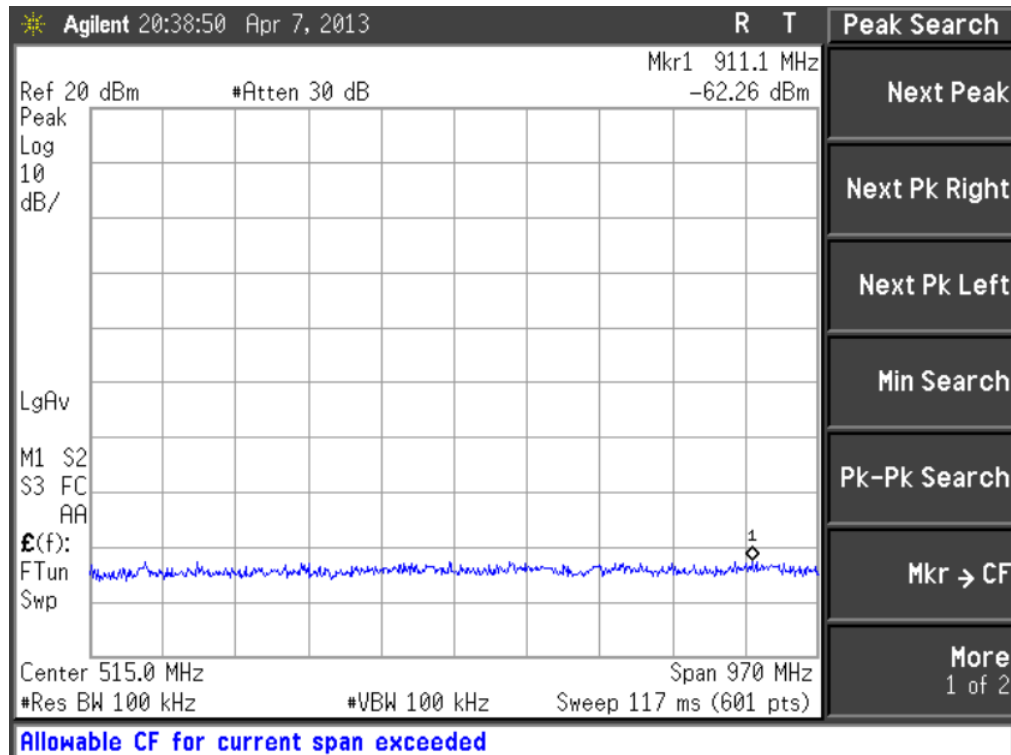
Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dBc)	Result
78	2480	59.01	≥ 20	Pass

Channel 78

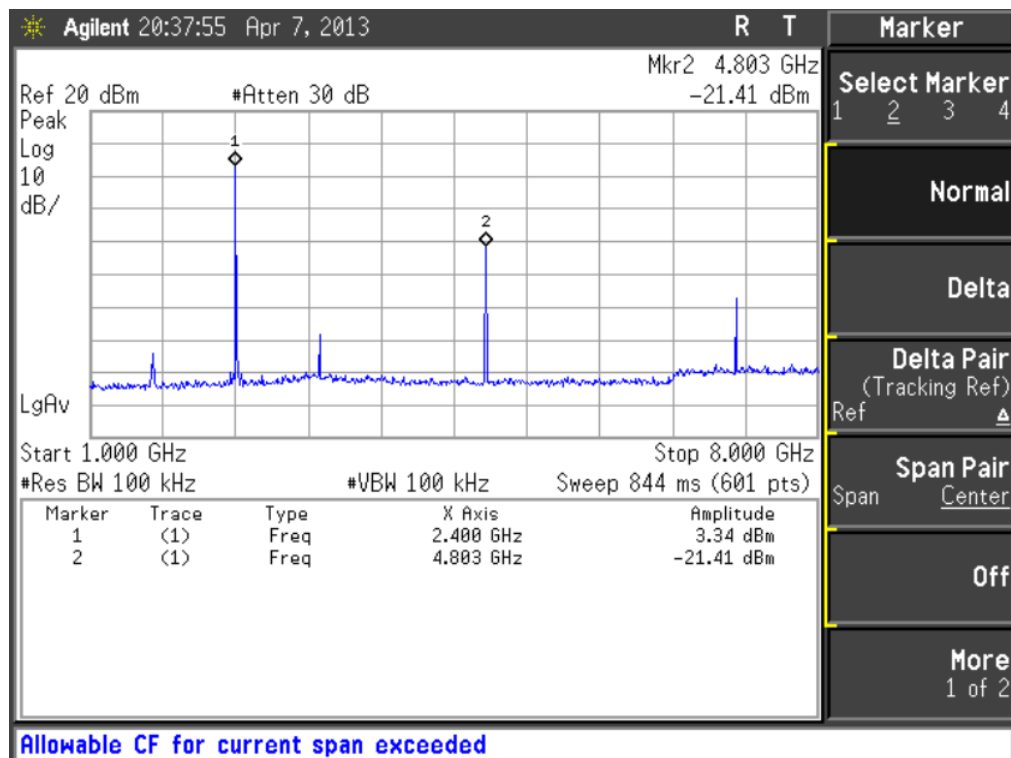


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (30MHz-1GHz)- GFSK

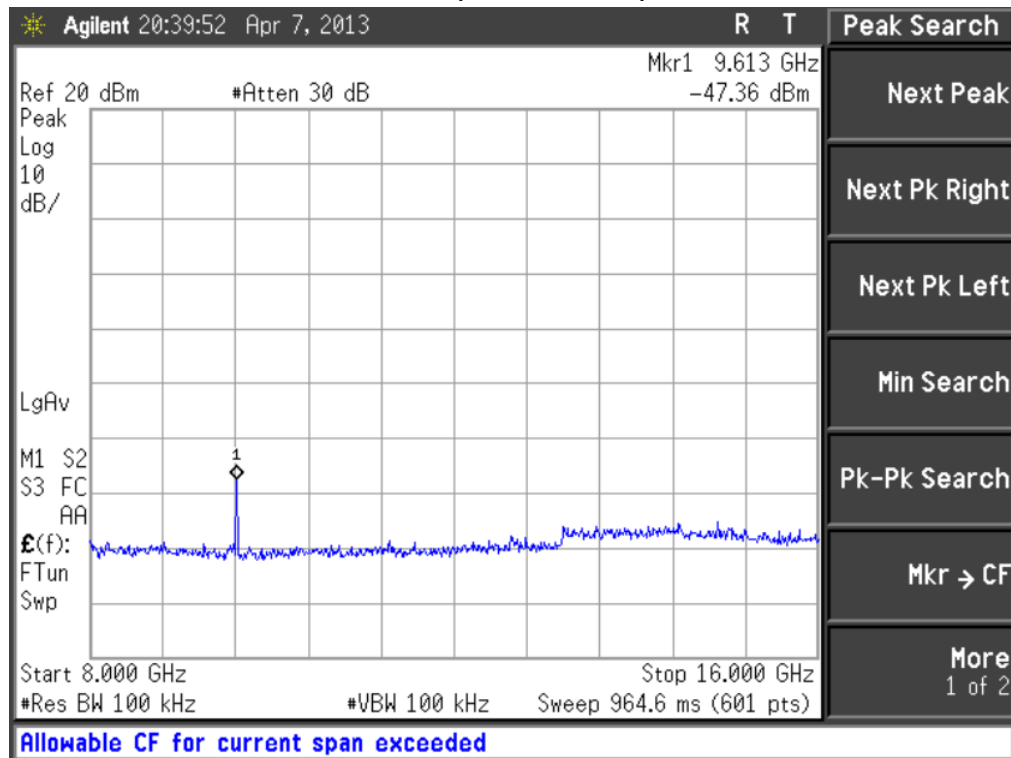


Channel 00 (1GHz~8GHz)- GFSK

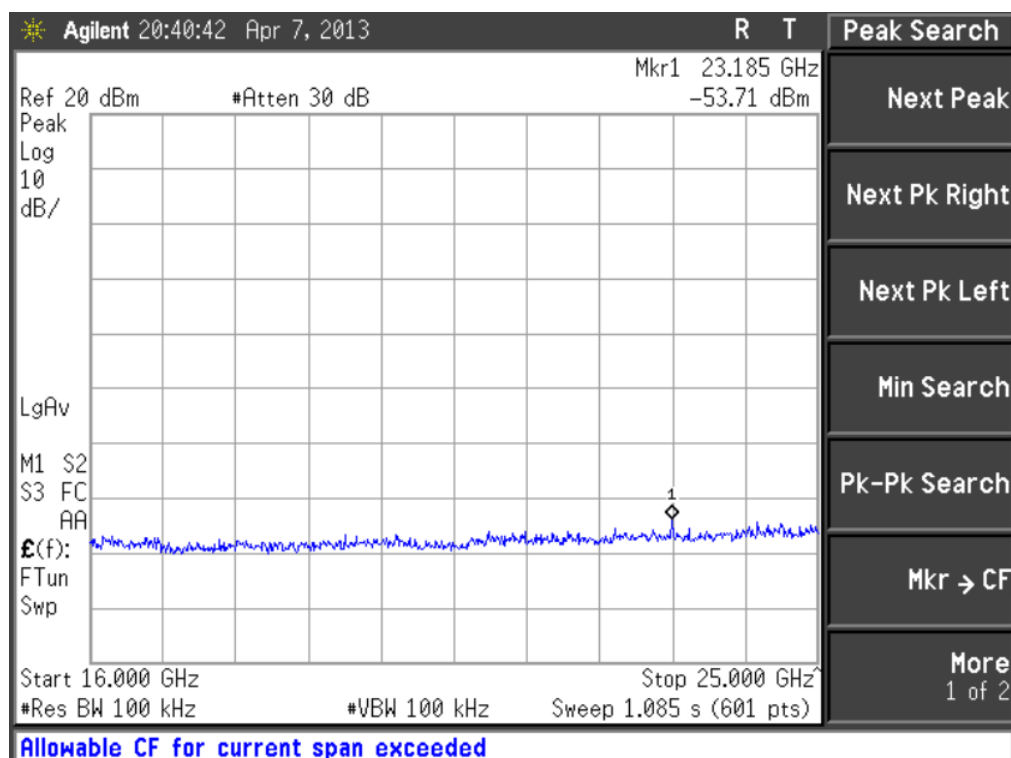


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (8GHz-16GHz)- GFSK

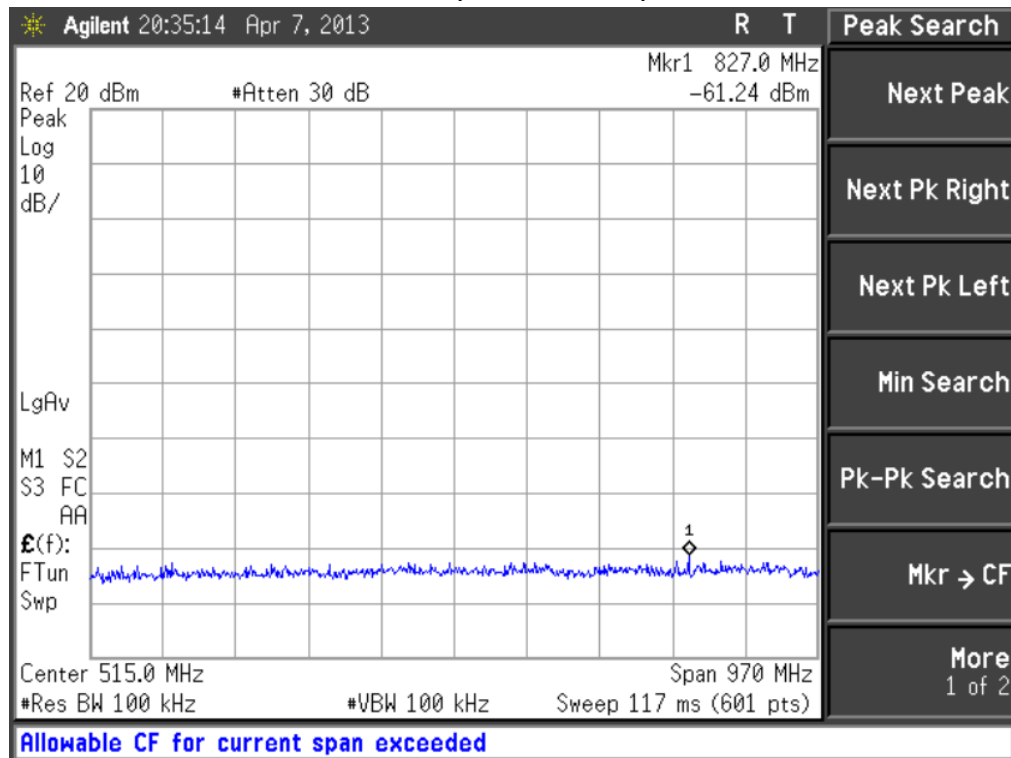


Channel 00 (16GHz~25GHz)- GFSK

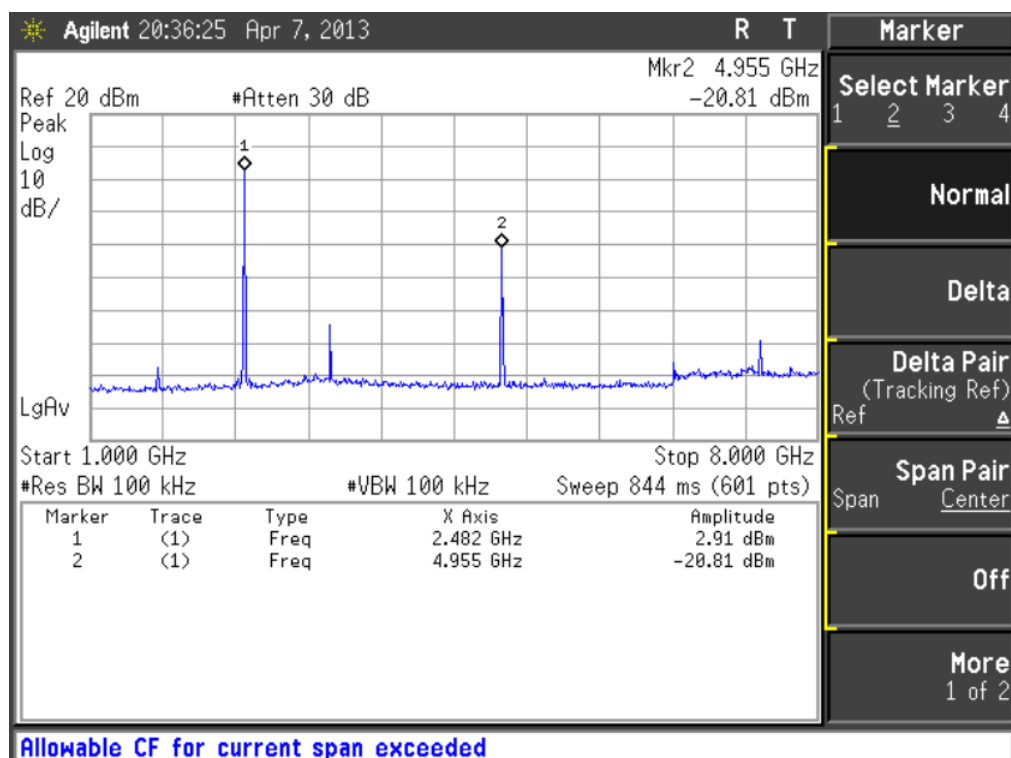


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (30MHz-1GHz)- GFSK

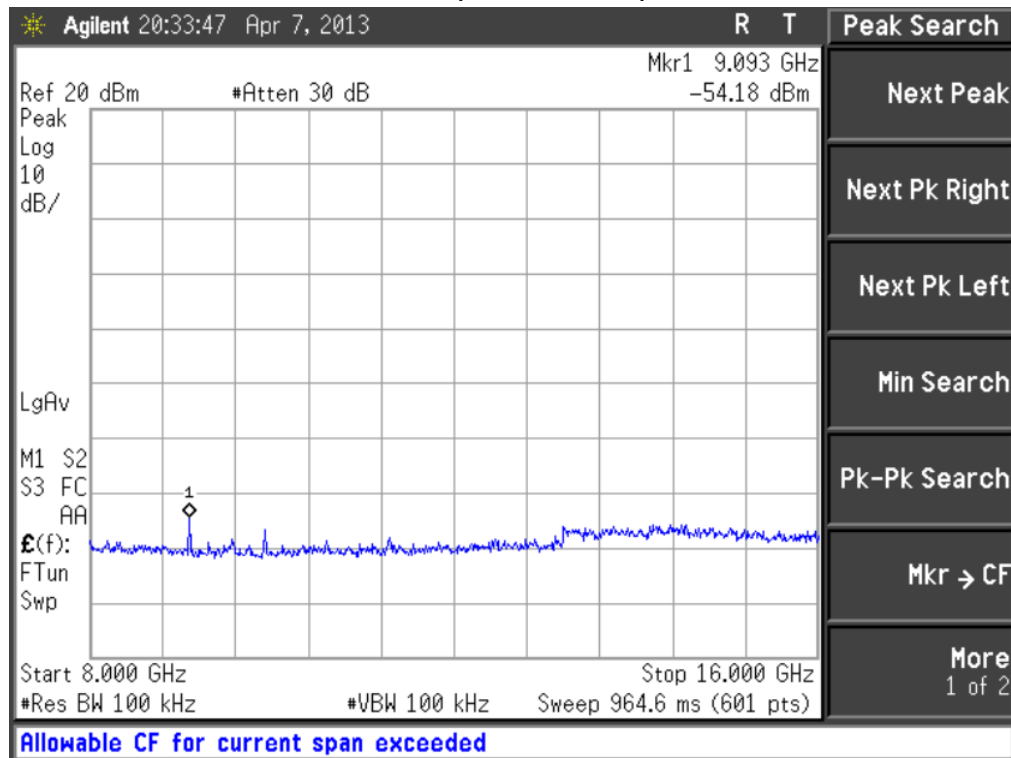


Channel 78 (1GHz~8GHz)- GFSK

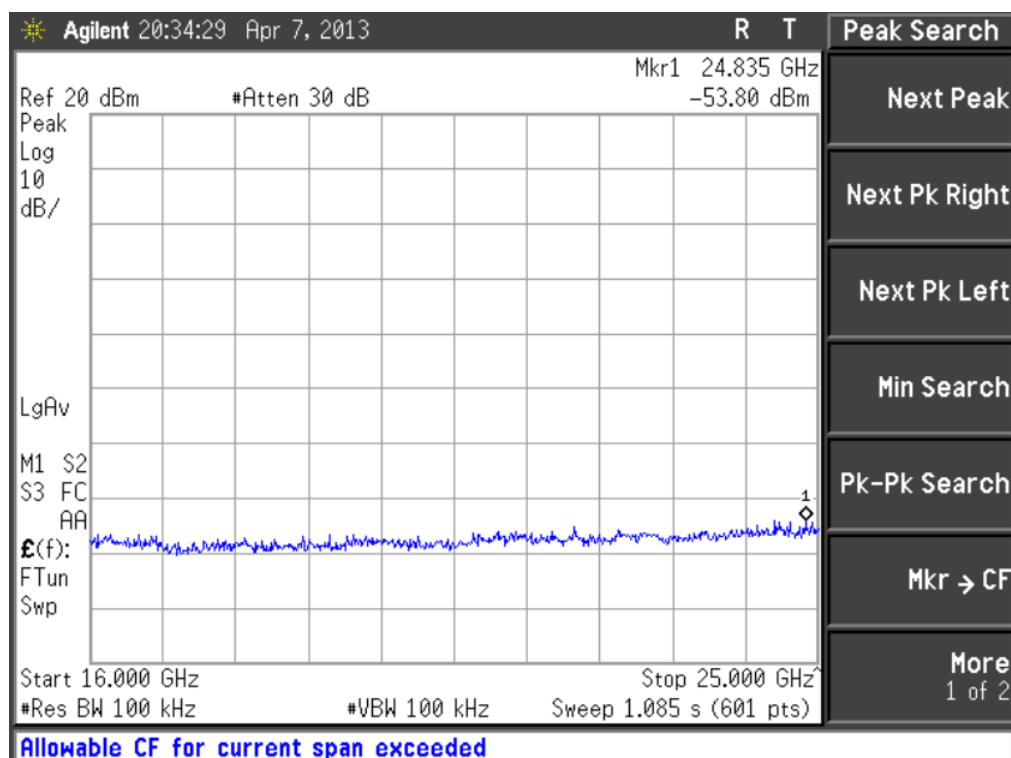


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (8GHz-16GHz)- GFSK

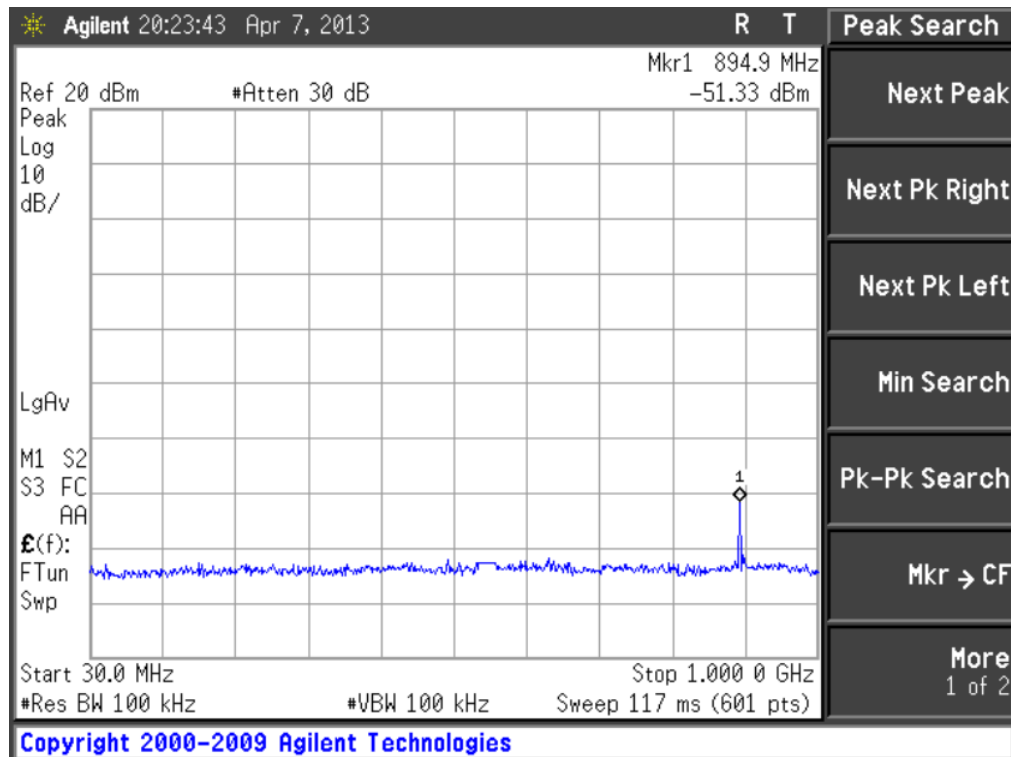


Channel 78 (16GHz~25GHz)- GFSK

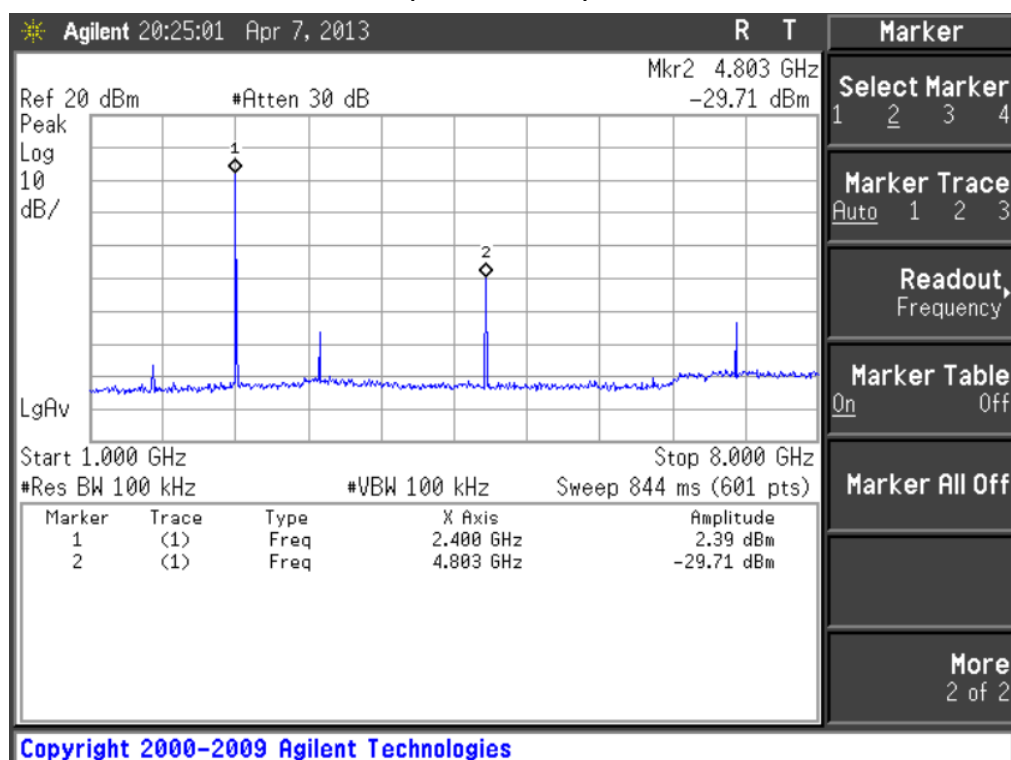


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (30MHz-1GHz)- $\pi/4$ -DQPSK

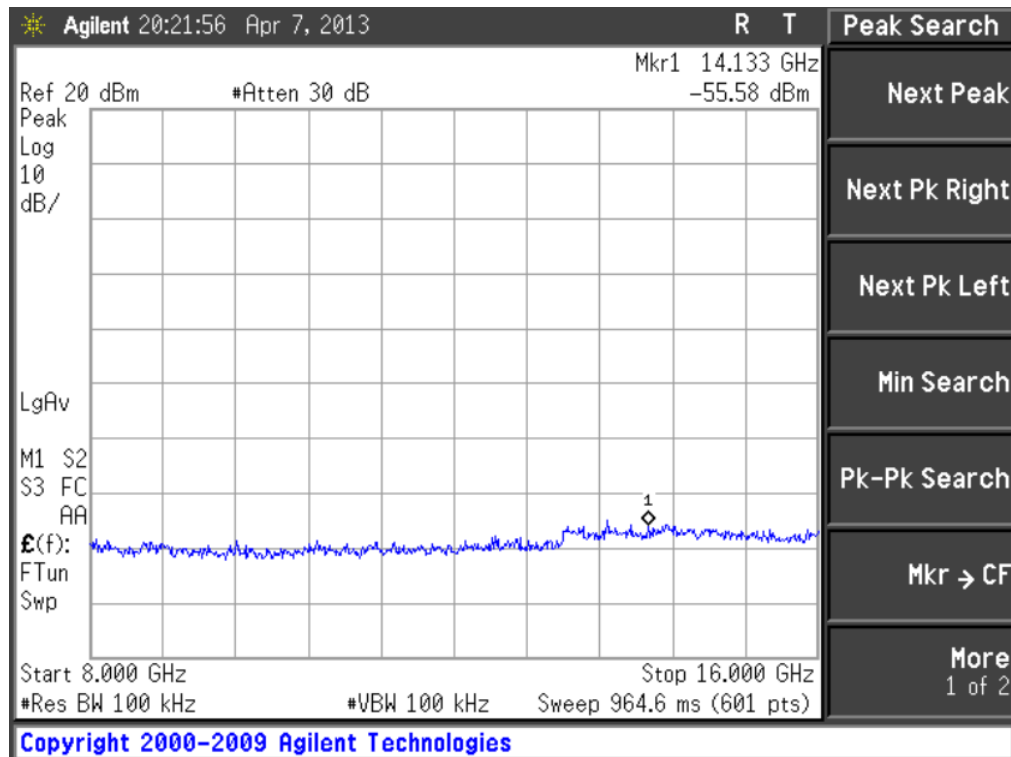


Channel 00 (1GHz~8GHz)- $\pi/4$ -DQPSK

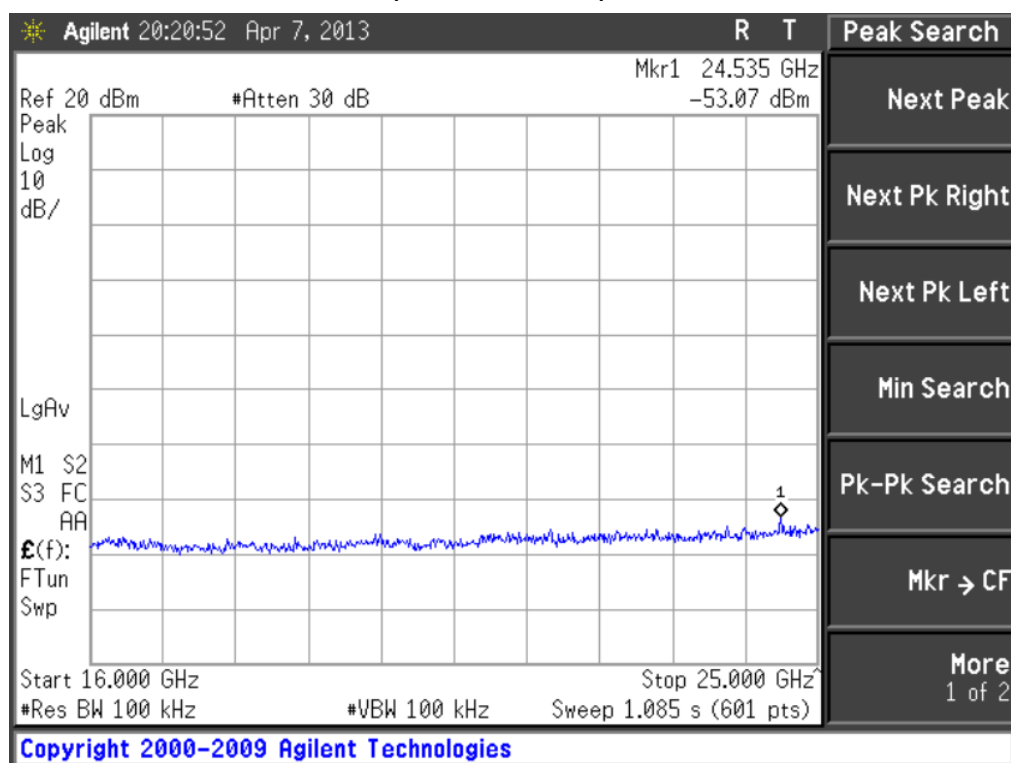


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (8GHz-16GHz)- $\pi/4$ -DQPSK

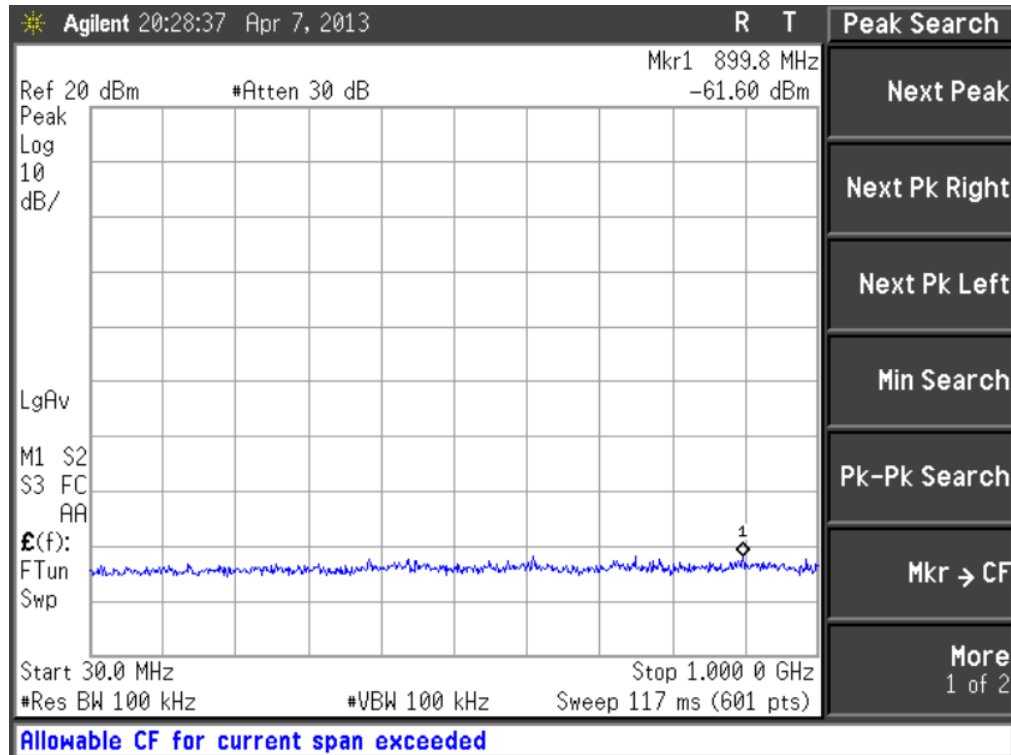


Channel 00 (16GHz-25GHz)- $\pi/4$ -DQPSK

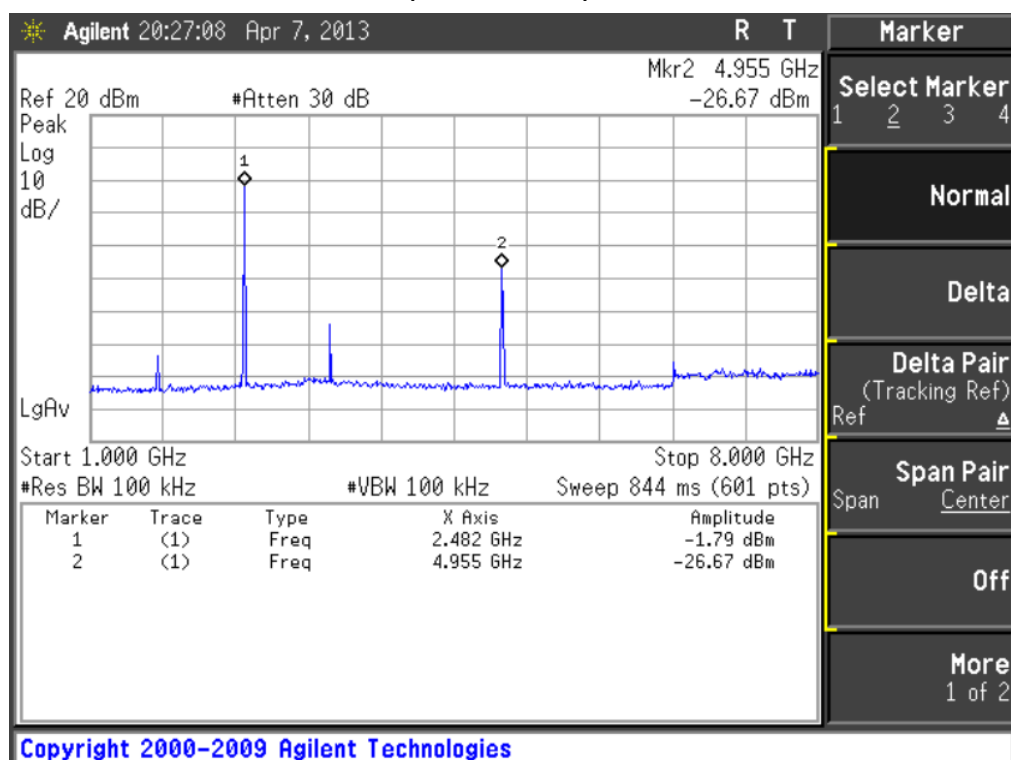


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (30MHz-1GHz)- $\pi/4$ -DQPSK

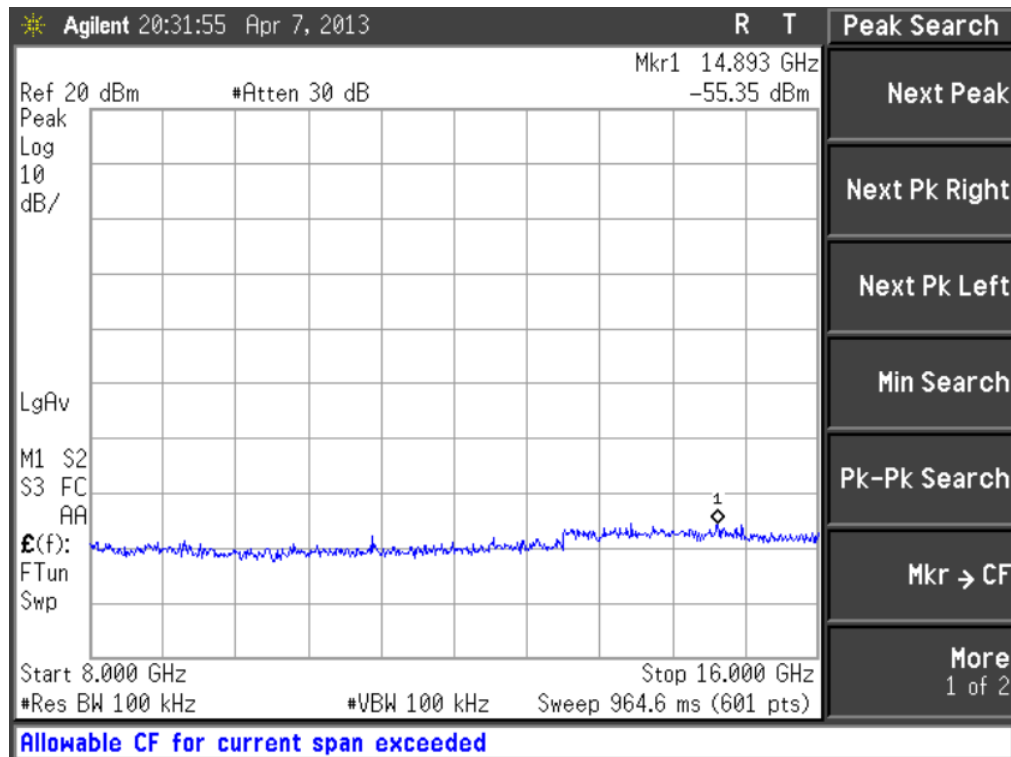


Channel 78 (1GHz~8GHz)- $\pi/4$ -DQPSK

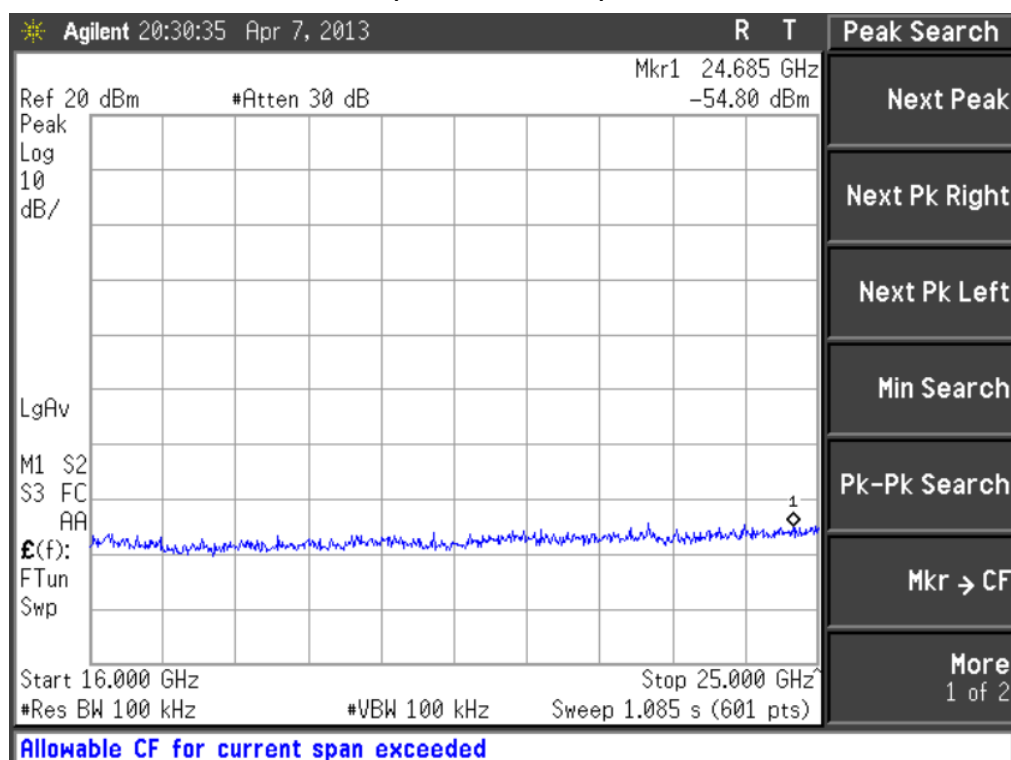


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 2: Transmit ($\pi/4$ DQPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (8GHz-16GHz)- $\pi/4$ -DQPSK

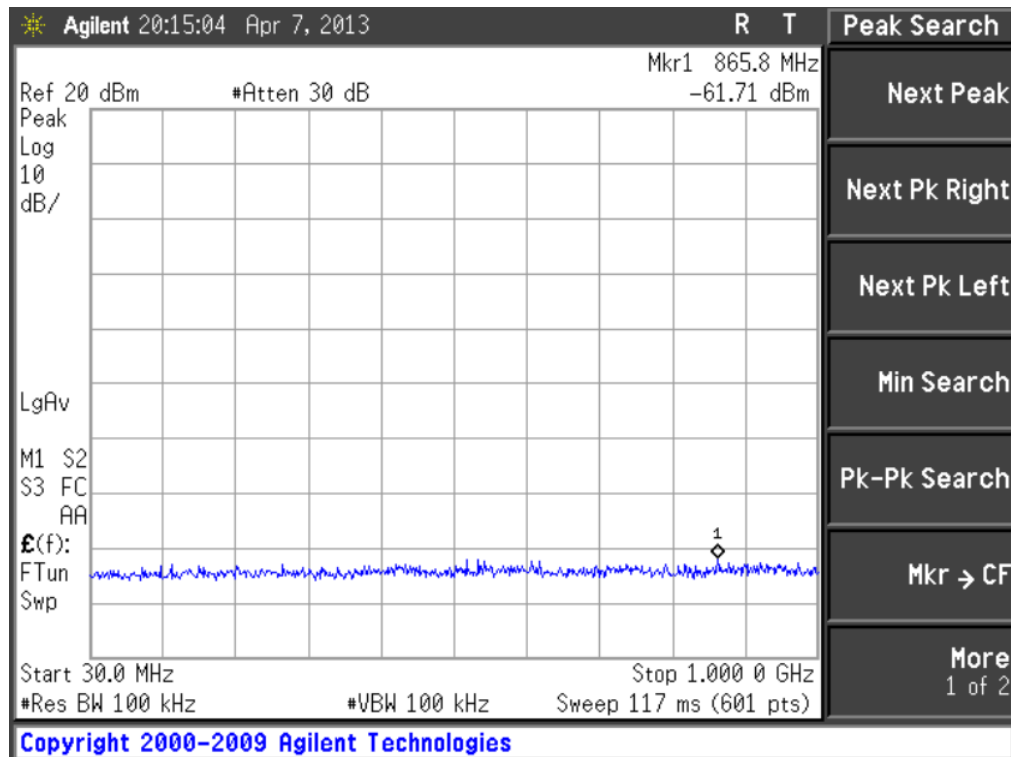


Channel 78 (16GHz~25GHz)- $\pi/4$ -DQPSK

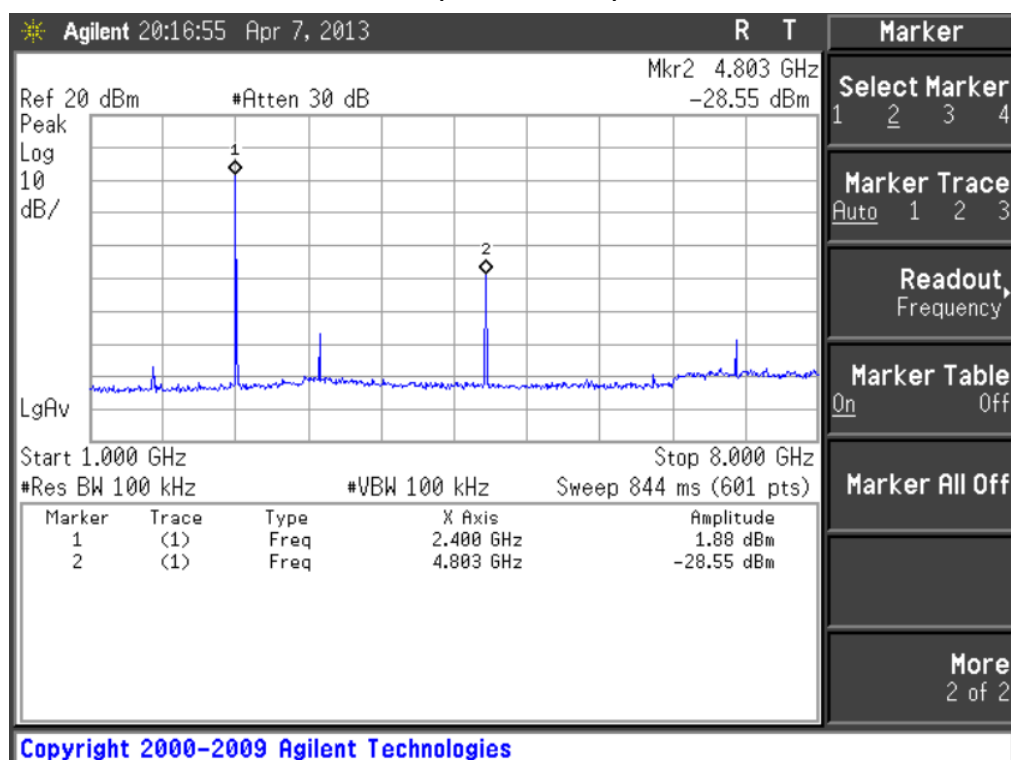


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (30MHz-1GHz)- 8-DPSK

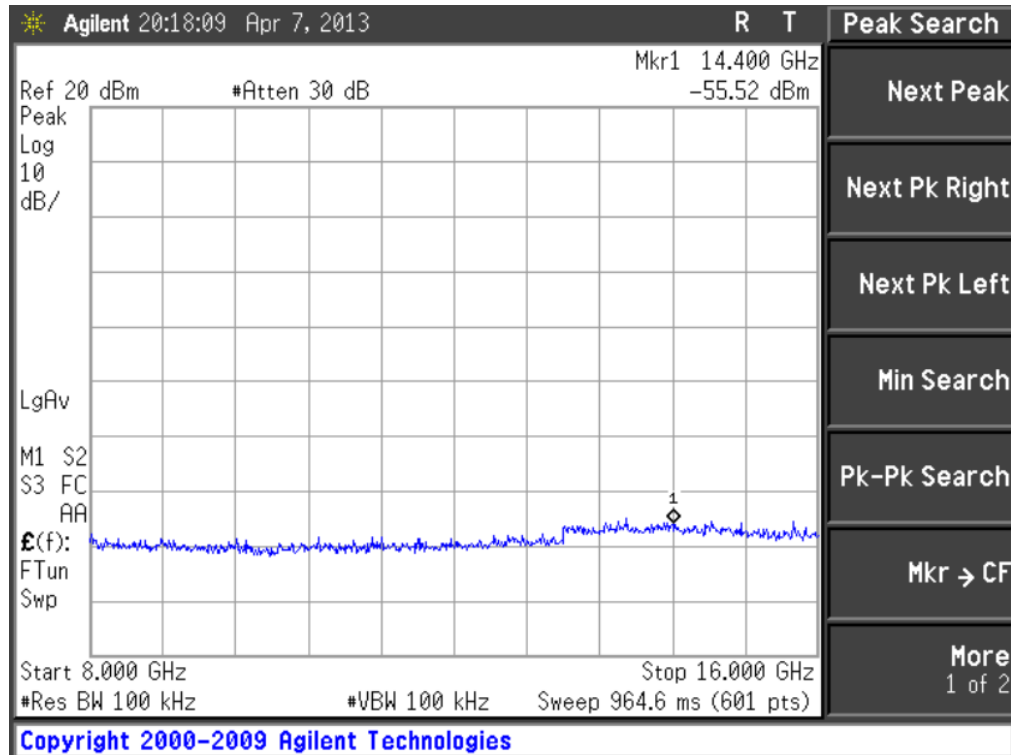


Channel 00 (1GHz~8GHz)- 8-DPSK

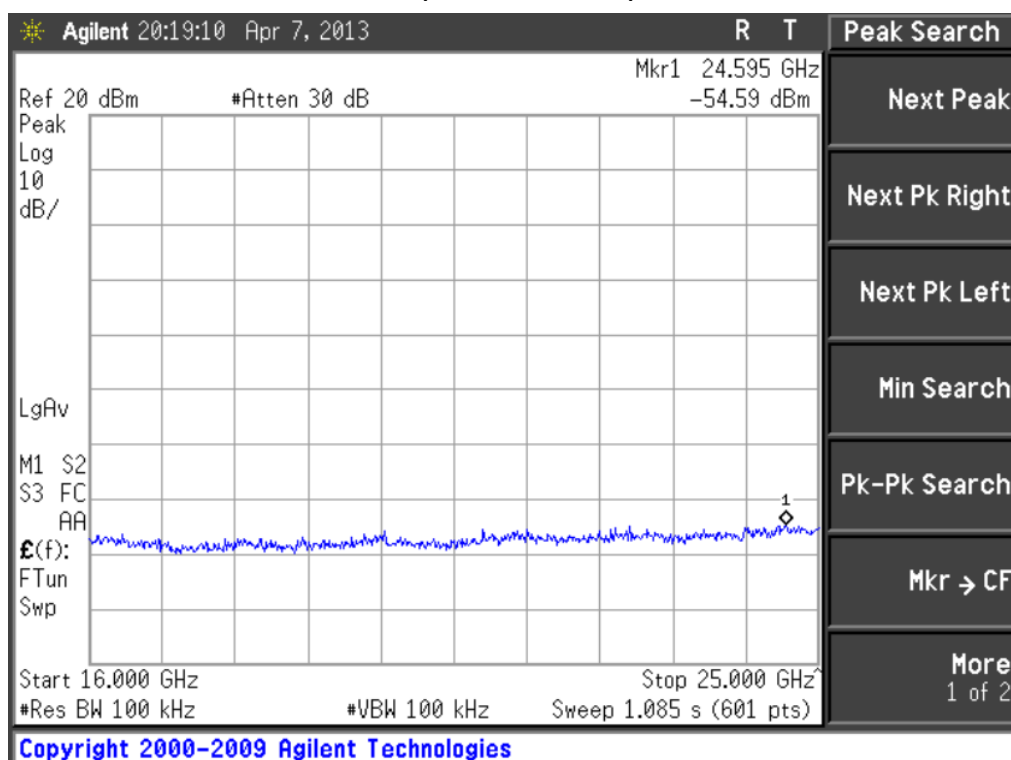


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 00 (8GHz-16GHz)- 8-DPSK

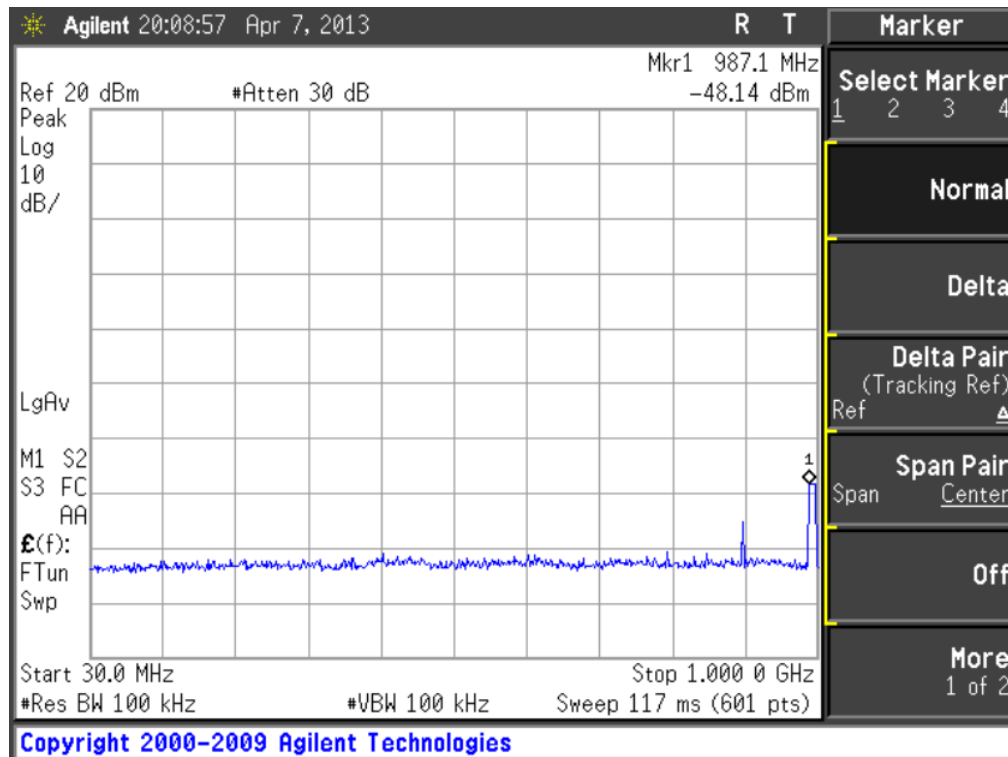


Channel 00 (16GHz~25GHz)- 8-DPSK

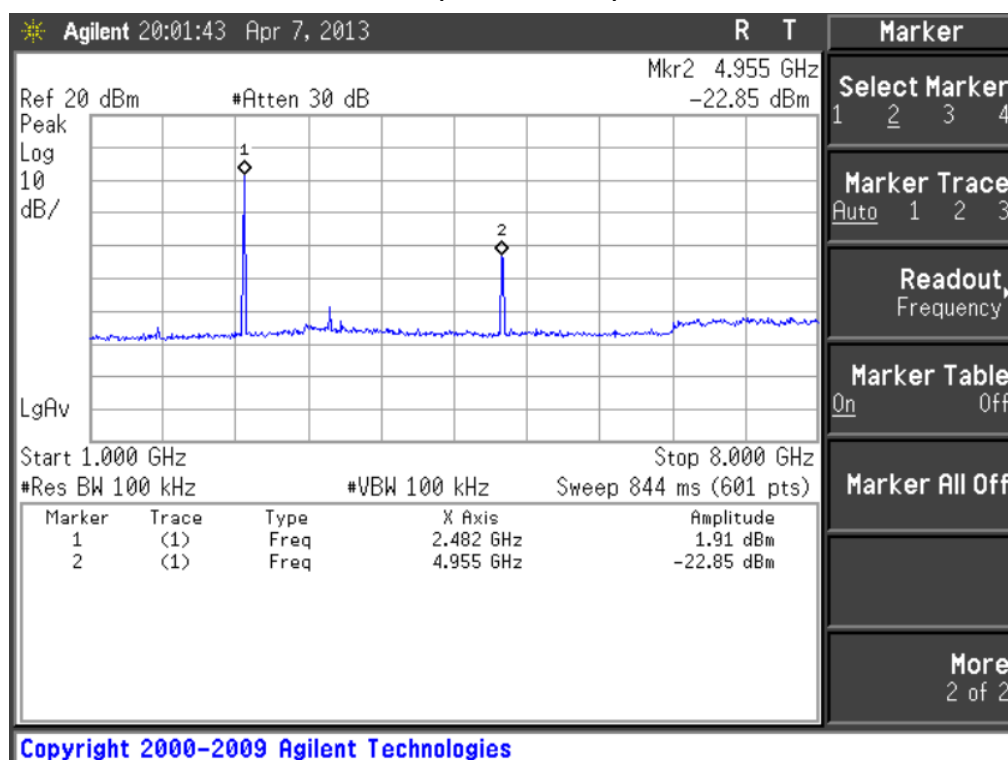


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (30MHz-1GHz)- 8-DPSK

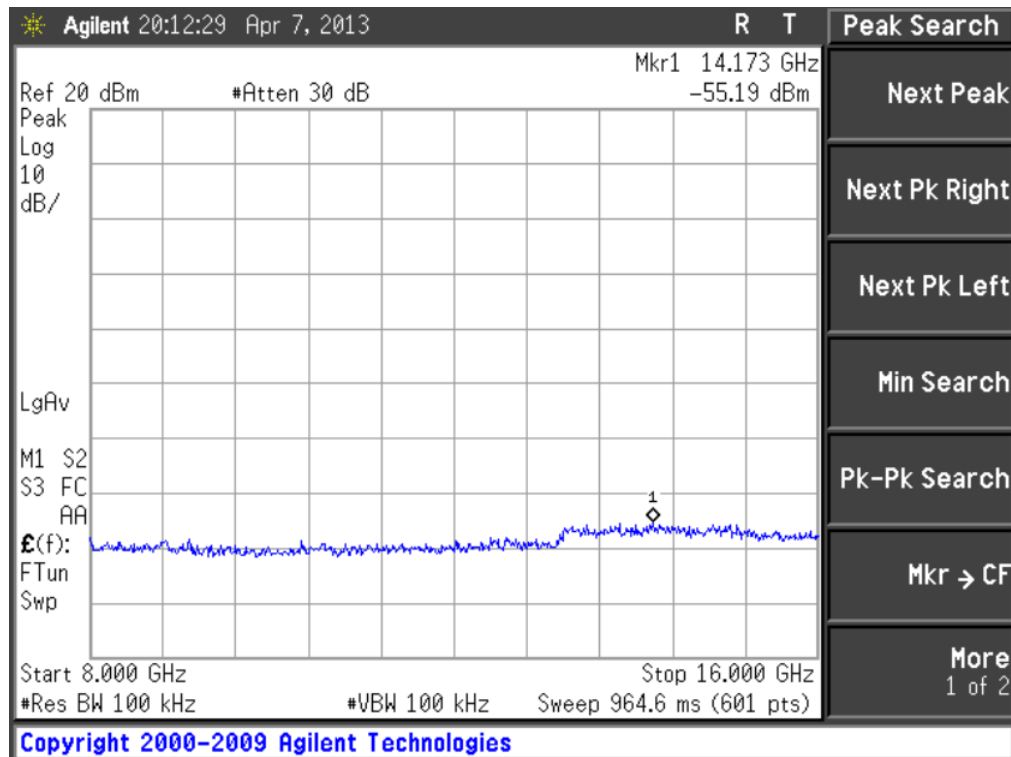


Channel 78 (1GHz~8GHz)- 8-DPSK

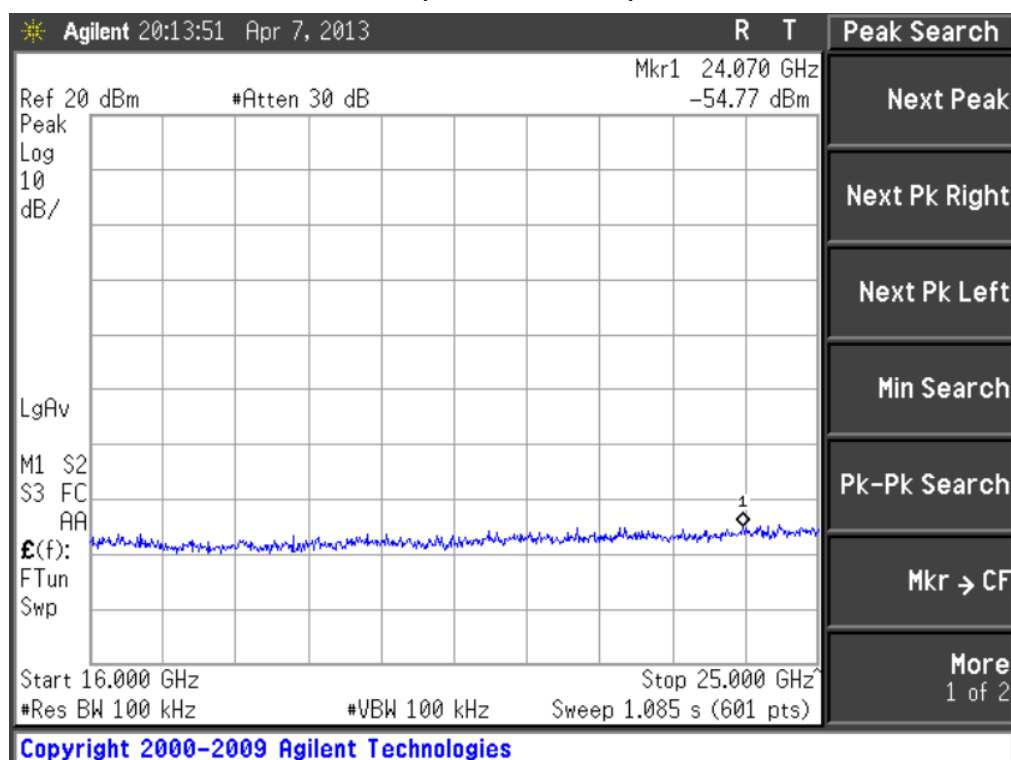


Product	Portable Stereo Speaker		
Test Item	RF antenna conducted test		
Test Mode	Mode 3: Transmit (8DPSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Channel 78 (8GHz-16GHz)- 8-DPSK



Channel 78 (16GHz~25GHz)- 8-DPSK



6. Band Edge

6.1. Test Equipment

The following test equipments are used during the test:

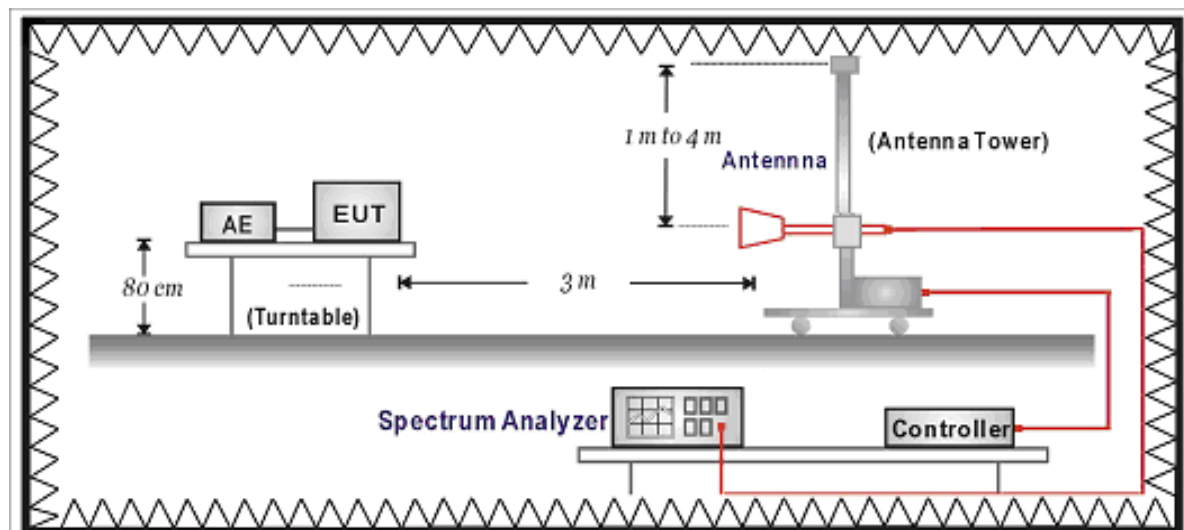
Band Edge / CB1

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Double Ridged Guide Horn Antenna	Schwarzback	BBHA 9120	D743	2014/02/17
Spectrum Analyzer	Agilent	E4440A	MY46187335	2014/01/27
Coaxial Cable	Huber Suhner	Sucoflex 102	25623/2	2014/02/21

Note: 1. 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 C63.4, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

The EUT and its simulators are placed on a turn table which is 0.8 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.

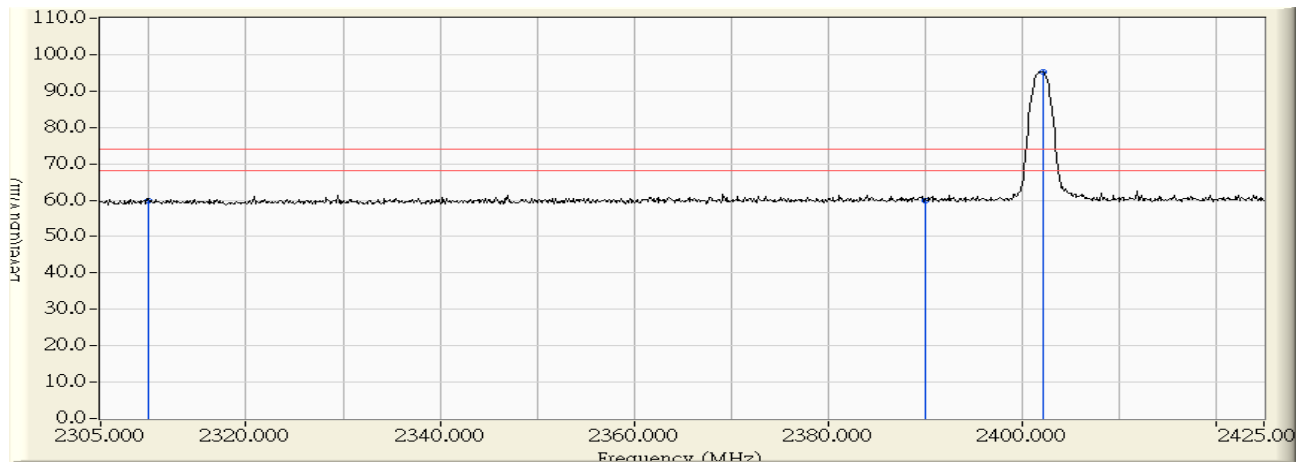
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:2009 on radiated measurement.

6.5. Test Specification

According to FCC Part 15 Subpart C Paragraph 15.247: 2012

6.6. Test Result

Site : CB1	Time : 2013/05/24 - 17:33
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2402MHz

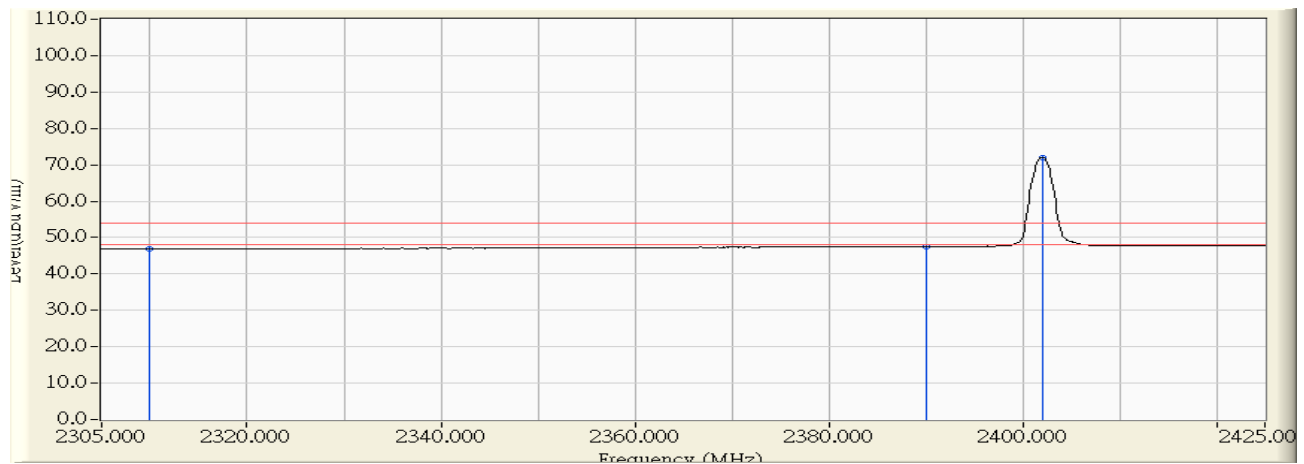


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.981	29.846	59.827	-14.173	74.000	PEAK
2		2390.000	30.316	29.655	59.971	-14.029	74.000	PEAK
3	*	2402.200	30.367	64.827	95.194	21.194	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/05/24 - 17:33
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2402MHz

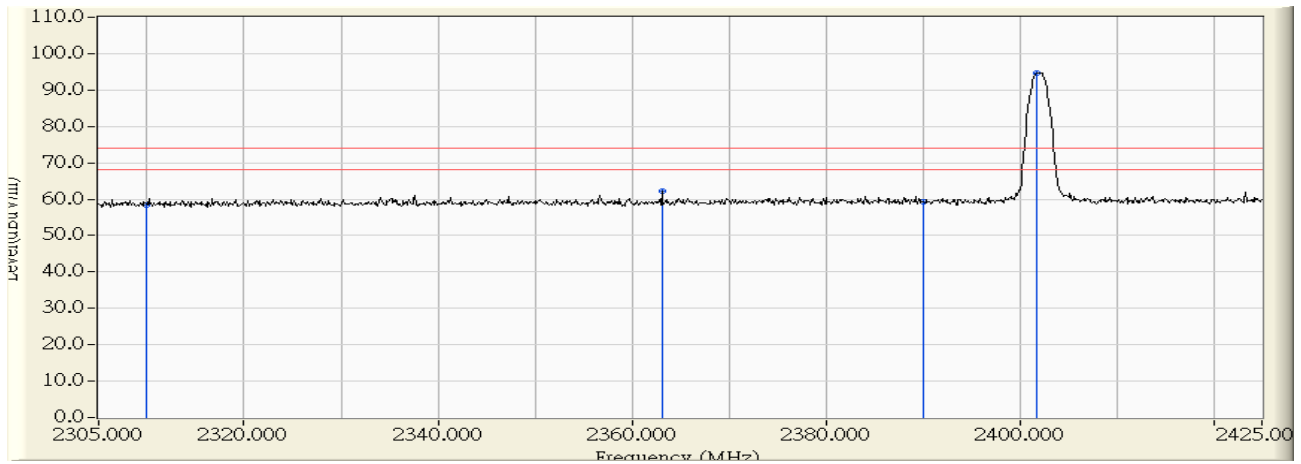


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.981	16.837	46.818	-7.182	54.000	AVERAGE
2		2390.000	30.316	17.220	47.536	-6.464	54.000	AVERAGE
3	*	2402.080	30.366	41.678	72.045	18.045	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/05/24 - 17:37
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2402MHz

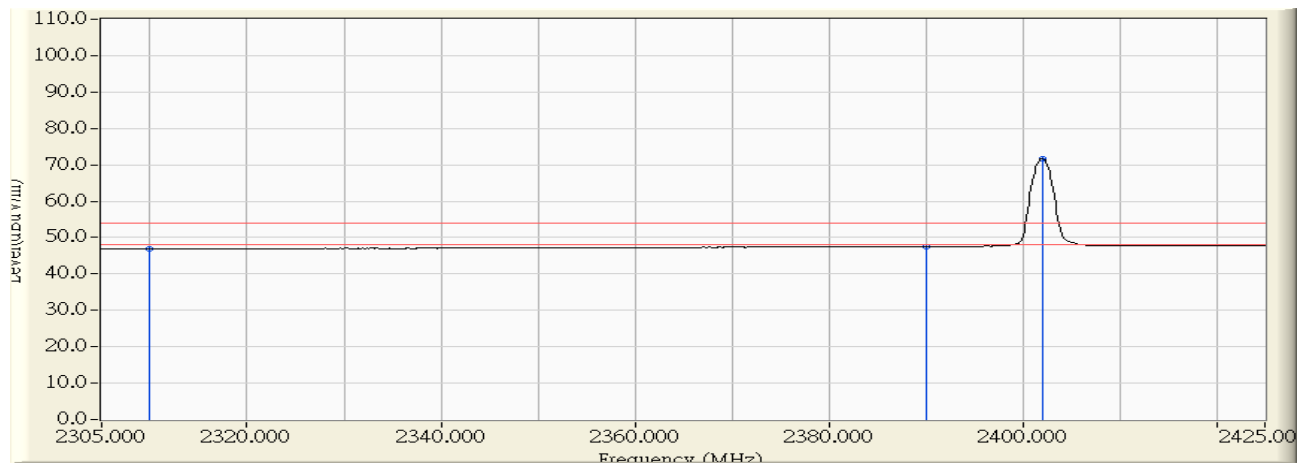


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2310.000	29.981	28.510	58.491	-15.509	74.000	PEAK
2		2363.080	30.203	31.941	62.144	-11.856	74.000	PEAK
3		2390.000	30.316	28.923	59.239	-14.761	74.000	PEAK
4	*	2401.840	30.365	64.302	94.668	20.668	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 = 3 MHz, 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 : 2013/05/24 - 17:37
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2402MHz

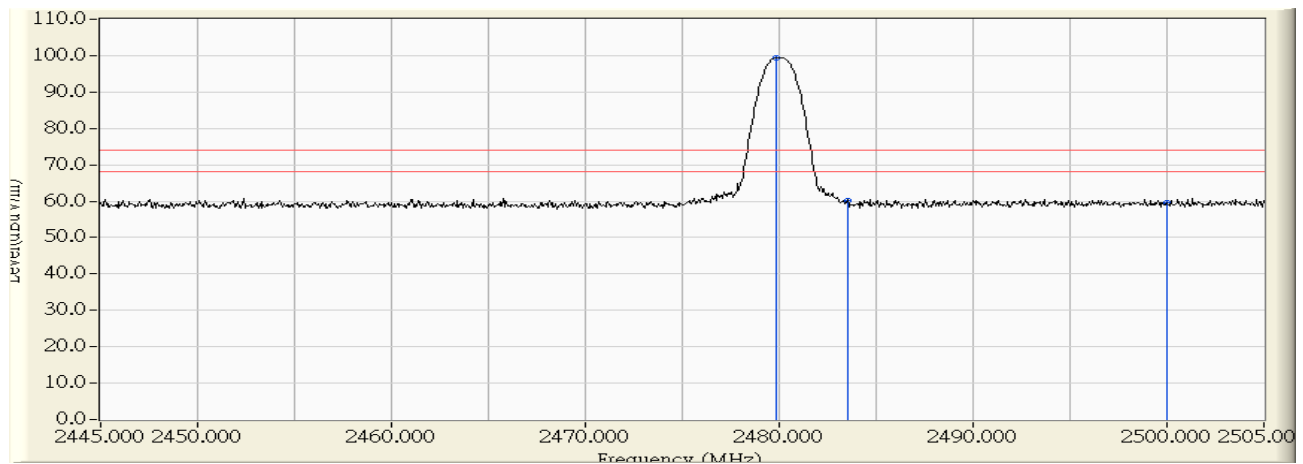


	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	2310.000	29.981	16.899	46.880	-7.120	54.000	AVERAGE
2	2390.000	30.316	17.229	47.545	-6.455	54.000	AVERAGE
3	* 2402.080	30.366	41.344	71.711	17.711	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/05/24 - 17:41
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2480MHz

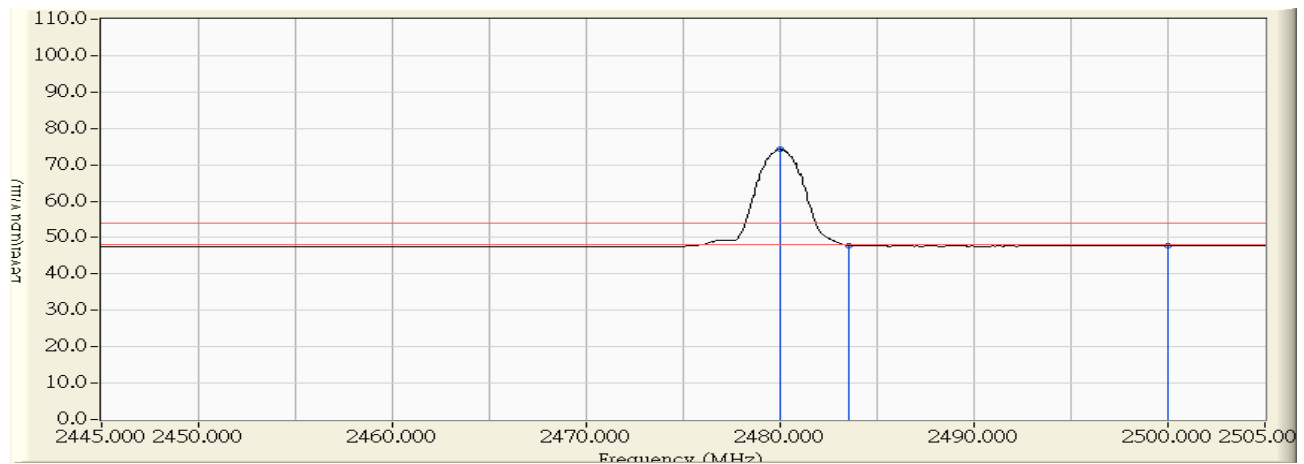


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.860	30.480	68.916	99.396	25.396	74.000	PEAK
2		2483.500	30.484	29.756	60.240	-13.760	74.000	PEAK
3		2500.000	30.502	29.029	59.531	-14.469	74.000	PEAK

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/05/24 - 17:42
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - HORIZONTAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2480MHz

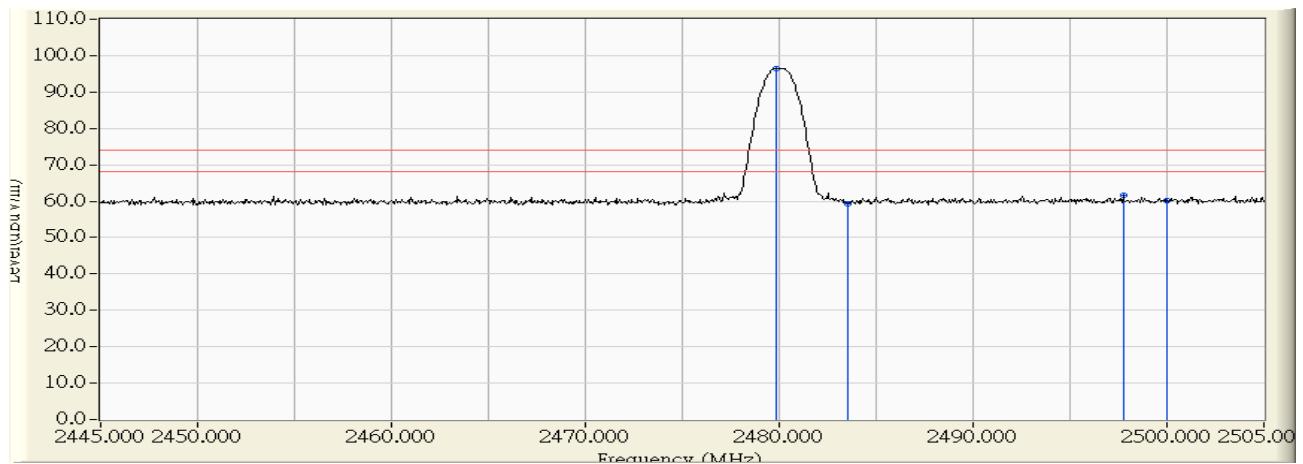


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.980	30.480	43.763	74.243	20.243	54.000	AVERAGE
2		2483.500	30.484	17.385	47.869	-6.131	54.000	AVERAGE
3		2500.000	30.502	17.263	47.765	-6.235	54.000	AVERAGE

Note:

1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, 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 : 2013/05/24 - 17:43
Limit : FCC_SpartC_15.247_H_03M_PK	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2480MHz

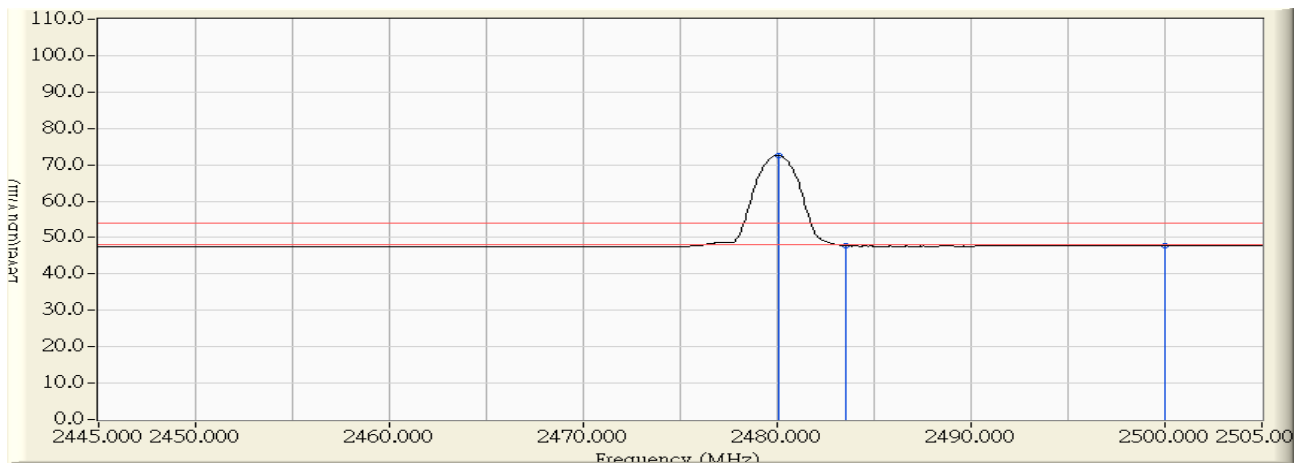


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2479.860	30.480	66.068	96.548	22.548	74.000	PEAK
2		2483.500	30.484	28.853	59.337	-14.663	74.000	PEAK
3		2497.740	30.499	31.196	61.696	-12.304	74.000	PEAK
4		2500.000	30.502	29.616	60.118	-13.882	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 = 3 MHz, 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 : 2013/05/24 - 17:43
Limit : FCC_SpartC_15.247_H_03M_AV	Margin : 6
Probe : CB3_FCC_EFS_1-18G-1_0901 - VERTICAL	Power : AC 120V / 60Hz
EUT : Portable Stereo Speaker	Note : Mode 1: Transmit (GFSK)_Power Cable to adapter _2480MHz



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	2480.040	30.480	42.067	72.547	18.547	54.000	AVERAGE
2		2483.500	30.484	17.253	47.737	-6.263	54.000	AVERAGE
3		2500.000	30.502	17.276	47.778	-6.222	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 = 3 MHz, 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

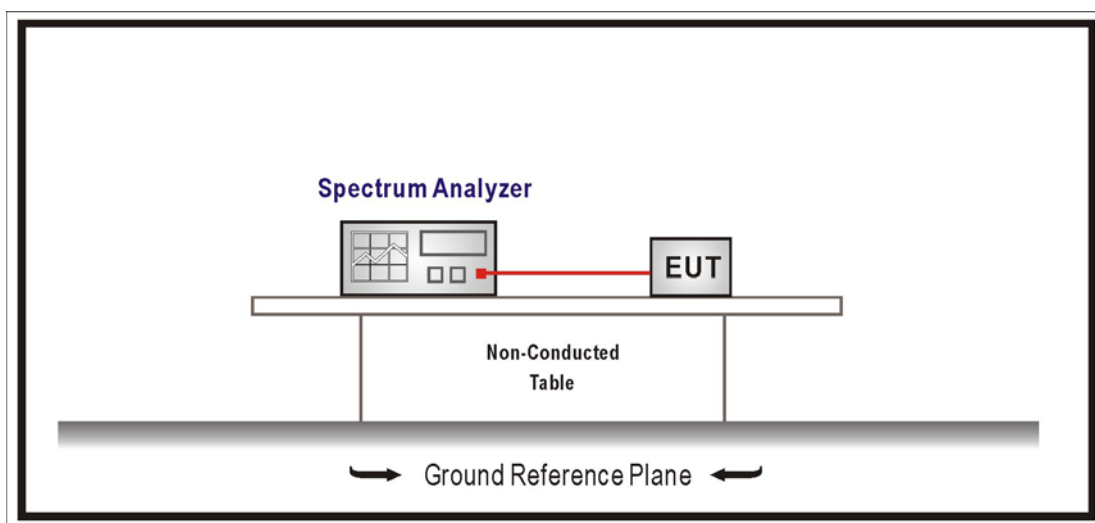
The following test equipment is used during the test:

Number of hopping frequency / SR7

Instrument	Manufacturer	Model No.	Serial No	Next Cal. Date
Spectrum Analyzer	Agilent	N9010A-EXA	US47140172	2013/07/31

Note: 1. 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 C63.4, 2009 and tested according to FHSS test procedure of FCC Public Notice DA 00-705 for compliance to FCC 47CFR 15.247 requirements

Span = the frequency band of operation

$RBW \geq 1\%$ of the span , $VBW \geq RBW$

Sweep = auto, Detector function = peak, Trace = max hold

7.5. Test Specification

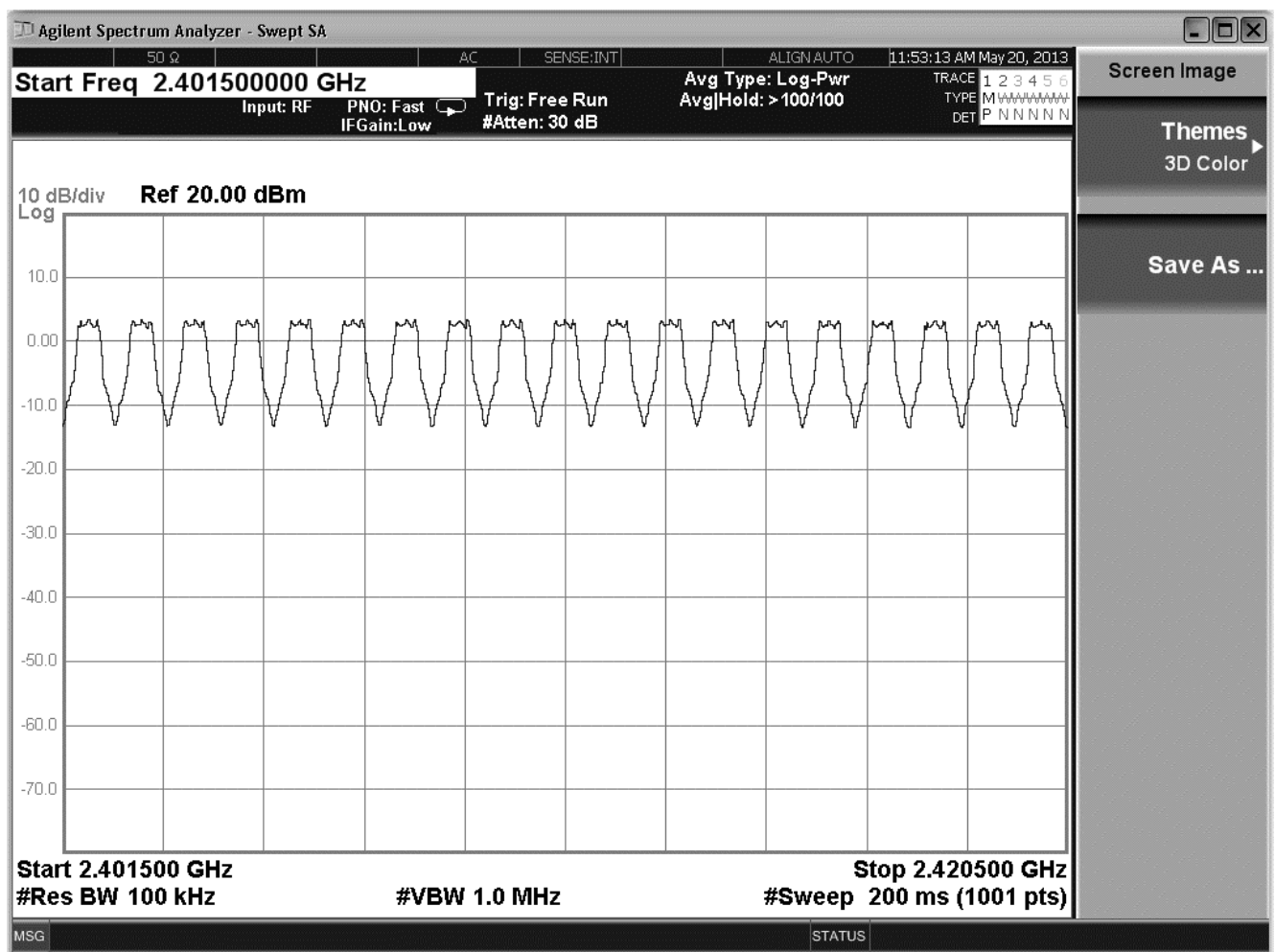
According to FCC Part 15 Subpart C Paragraph 15.247: 2012

7.6. Test Result

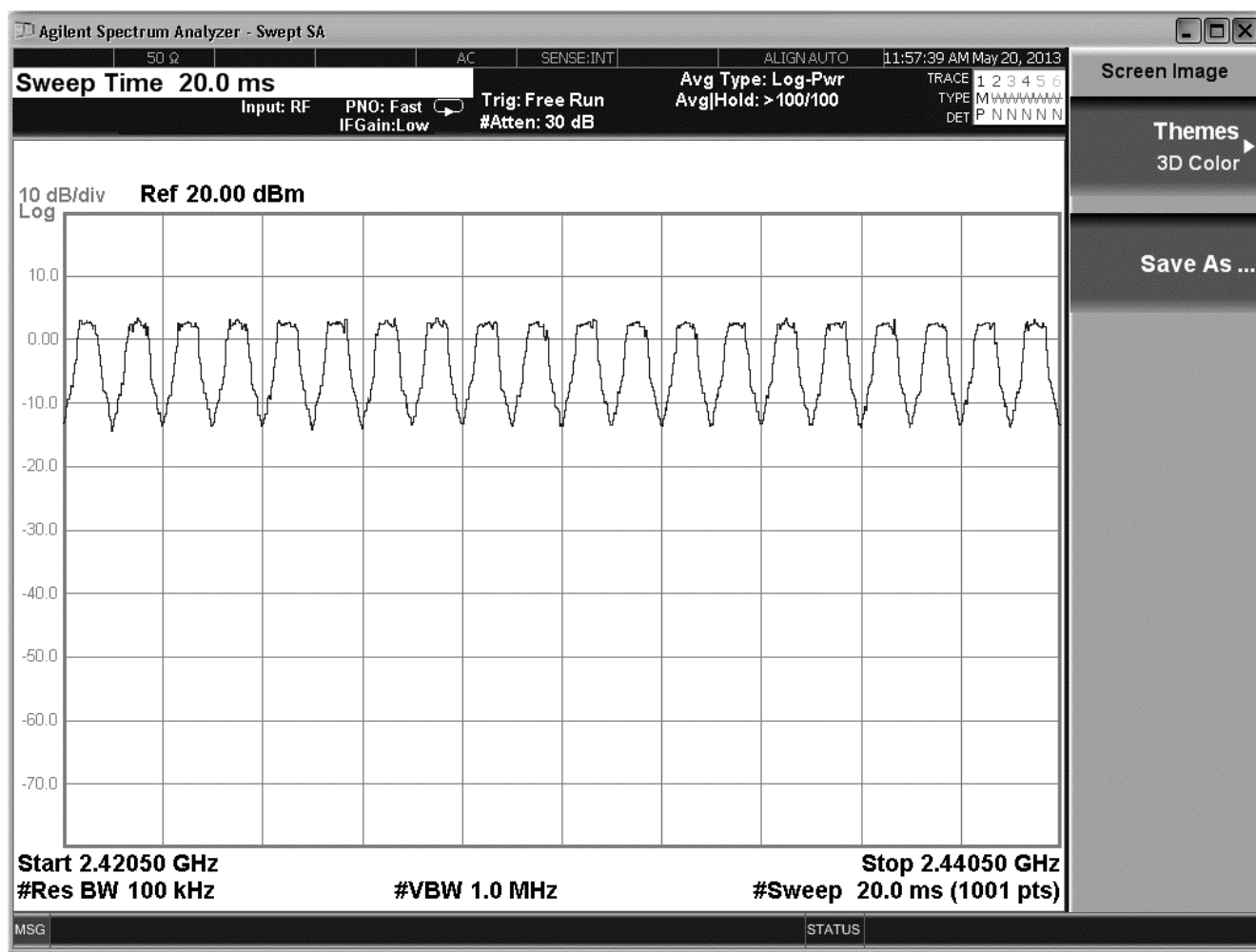
Product	Portable Stereo Speaker		
Test Item	Number of hopping frequency		
Test Mode	Mode 1: Transmit (GFSK)_Power Cable to adapter		
Date of Test	2013/05/20	Test Site	SR7

Frequency Range (MHz)	Measure Level (Channels)	Limit (Channels)	Result
2402 ~ 2480	79	≥ 75	Pass

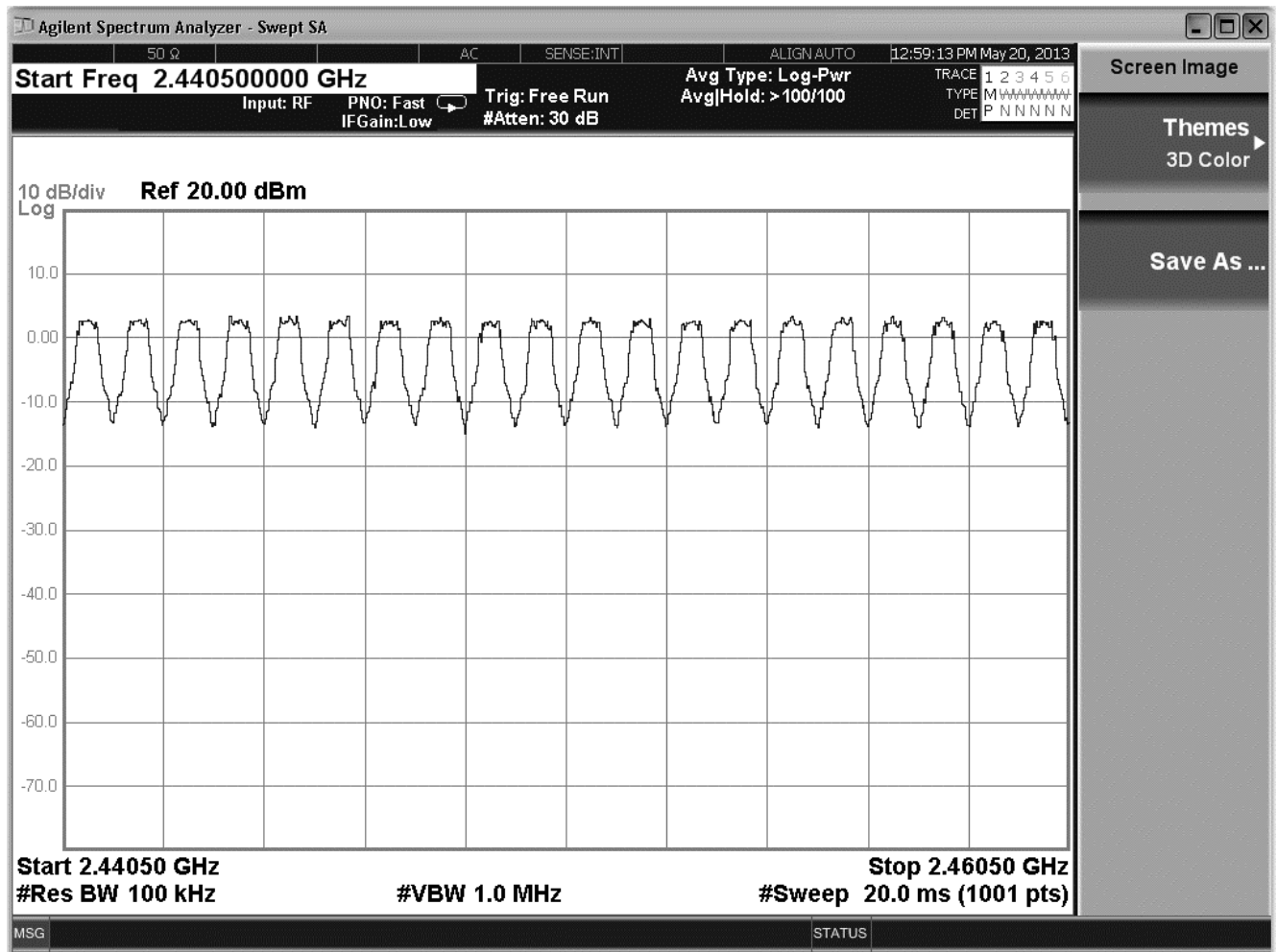
2401.5-2420.5MHz



2420.5-2440.5MHz



2440.5-2460.5MHz



2460.5-2480.5MHz

