



Test Report

Product Name	Music transmitter
Model No.	AT-1C
FCC ID	BJM-AT1C

Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.

Date of Receipt	May. 18, 2007
Issued Date	Jun. 07, 2007
Report No.	075L125-RFUSP06V01

The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: Jun. 07, 2007

Report No.: 075L125-RFUSP06V01



Product Name	Music transmitter
Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.
Manufacturer	TATUNG CO.
Model No.	AT-1C
Rated Voltage	AC 120V/60Hz
Working Voltage	AC 120V/60Hz
Trade Name	Sound On
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2006 ANSI C63.4: 2003
Test Result	Complied



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Approved By :

Gene Chang

(President / Gene Chang)

0914

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Music transmitter
Trade Name	Sound On
Model No.	AT-1C
FCC ID	BJM-AT1C
Frequency Range	2405-2477MHz
Number of Channels	37
Channel Separation	2MHz
Data Rate	48KHz
Type of Modulation	$\pi/4$ DQPSK (Differential Quadrature Phase Shift Keying)
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Power Adapter (1)	MFR: Ktec, M/N: KSAFB0500100W1US Input: AC 100-240V,50-60Hz,0.15A Output: DC 5V,1A Cable Out: Non-Shielded,1.2m
Power Adapter (2)	MFR: AK,M/N:AK01G-0500100U Input: AC 100-240V,50-60 Hz,0.2A Output: DC 5V, 1A Cable Out: Non-Shielded,1.2m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	Walsin	RFANT7635110A1T	2dBi for 2.4 GHz

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 2:	2405 MHz	Channel 3:	2407 MHz	Channel 4:	2409 MHz
Channel 5:	2411 MHz	Channel 6:	2413 MHz	Channel 7:	2415 MHz
Channel 8:	2417 MHz	Channel 9:	2419 MHz	Channel 10:	2421 MHz
Channel 11:	2423 MHz	Channel 12:	2425 MHz	Channel 13:	2427 MHz
Channel 14:	2429 MHz	Channel 15:	2431 MHz	Channel 16:	2433 MHz
Channel 17:	2435 MHz	Channel 18:	2437 MHz	Channel 19:	2439 MHz
Channel 20:	2441 MHz	Channel 21:	2443 MHz	Channel 22:	2445 MHz
Channel 23:	2447 MHz	Channel 24:	2449 MHz	Channel 25:	2451 MHz
Channel 26:	2453 MHz	Channel 27:	2455 MHz	Channel 28:	2457 MHz
Channel 29:	2459 MHz	Channel 30:	2461 MHz	Channel 31:	2463 MHz
Channel 32:	2465 MHz	Channel 33:	2467 MHz	Channel 34:	2469 MHz
Channel 35:	2471 MHz	Channel 36:	2473 MHz	Channel 37:	2475 MHz
Channel 38:	2477 MHz				

Note:

1. The EUT is a Music transmitter with a built-in 2.4GHz transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. These tests are conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
4. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

1.2. Operational Description

The EUT is a Music transmitter with a built-in 2.4GHz transceiver. There are 37 channels in 2405 – 2477MHz. The channels are separated by 2MHz. The signals are modulated by $\pi/4$ DQPSK. The antenna type is chip antenna.

Test Mode	Mode 1: Transmitter
-----------	---------------------

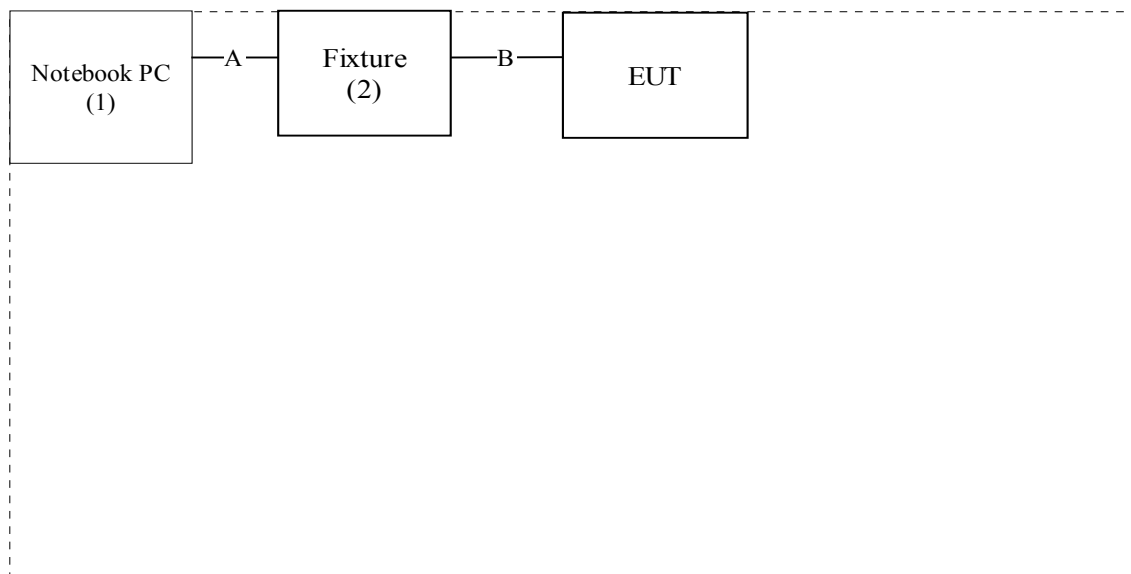
1.3. Tested System Details

The types for all equipment, 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	DELL	PPT	N/A	DoC	Non-Shielded, 0.8m
2.	Fixture	Aardvark	N/A	N/A	N/A	Non-Shielded, 1.8m

	Signal Cable Type	Signal Cable Description
A.	USB Cable	Shielded, 1.5m
B.	Control Cable	Non-Shielded, 0.5m

1.4. Configuration of Test System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Connect the EUT to a notebook via a USB cable.
- (3) Execute AWAflash.exe on the notebook.
- (4) Double-click “AV7101” and select USB as a primary connection interface.
- (5) Setup the test channel.
- (6) Press “Apply” to start the continuous transmission.
- (7) Verify that the EUT works correctly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Reference 31040/SIT1300F2



Accreditation on NVLAP
NVLAP Lab Code: 200533-0



Test site: TW1014
Site Name: Quietek Corporation
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com



2. Conducted Emission

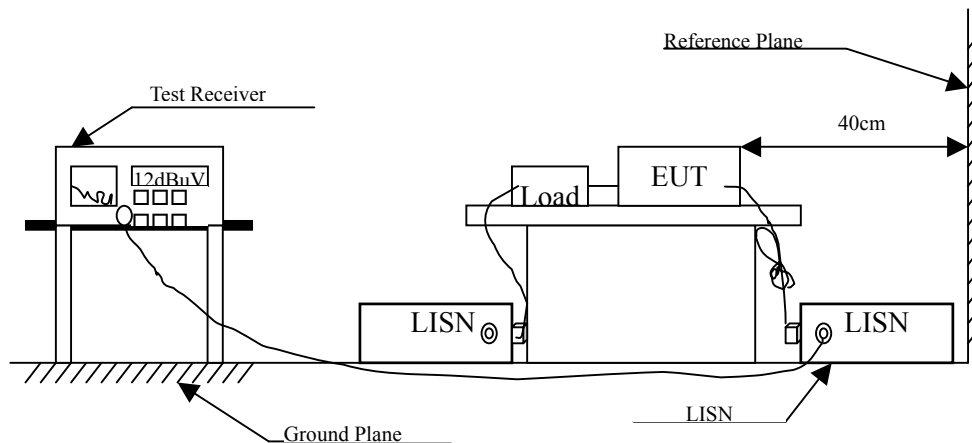
2.1. Test Equipment

The following test equipment are used during the conducted emission test:

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2007	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2007	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2007	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2007	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

2.2. Test Setup



2.3. Limits

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

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 refers 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: 2003 on conducted measurement.

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

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : Music transmitter
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 1: Transmitter (2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.170	0.202	47.140	47.342	-18.087	65.429
0.295	0.214	42.030	42.244	-19.613	61.857
0.591	0.218	35.480	35.698	-20.302	56.000
1.537	0.260	34.980	35.240	-20.760	56.000
3.474	0.335	43.110	43.445	-12.555	56.000
7.173	0.505	25.180	25.685	-34.315	60.000
Average					
0.170	0.202	38.440	38.642	-16.787	55.429
0.295	0.214	33.880	34.094	-17.763	51.857
0.591	0.218	23.130	23.348	-22.652	46.000
1.537	0.260	26.190	26.450	-19.550	46.000
3.474	0.335	27.720	28.055	-17.945	46.000
7.173	0.505	15.840	16.345	-33.655	50.000

Note:

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

Product : Music transmitter
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmitter (2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.173	0.202	44.920	45.122	-20.221	65.343
0.228	0.203	41.070	41.273	-22.498	63.771
0.298	0.210	41.410	41.620	-20.151	61.771
0.818	0.230	34.790	35.020	-20.980	56.000
3.361	0.324	38.610	38.934	-17.066	56.000
10.529	0.560	24.520	25.080	-34.920	60.000
Average					
0.173	0.202	36.680	36.882	-18.461	55.343
0.228	0.203	28.480	28.683	-25.088	53.771
0.298	0.210	32.210	32.420	-19.351	51.771
0.818	0.230	19.780	20.010	-25.990	46.000
3.361	0.324	26.080	26.404	-19.596	46.000
10.529	0.560	16.560	17.120	-32.880	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

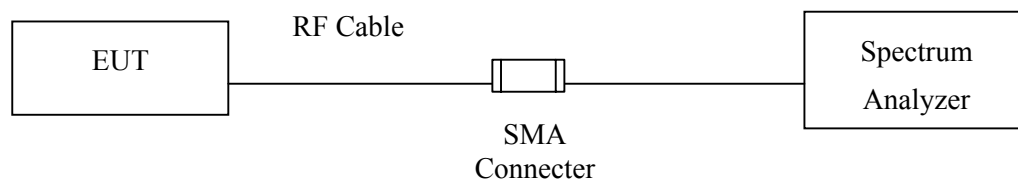
3. Peak Power Output

3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov., 2006

Note: 1. All equipments are calibrated every one year.
 2. Test instruments marked by “X” are used to measure the final test results.

3.2. Test Setup



3.3. Limit

The maximum peak power shall be less 1Watt.

3.4. Uncertainty

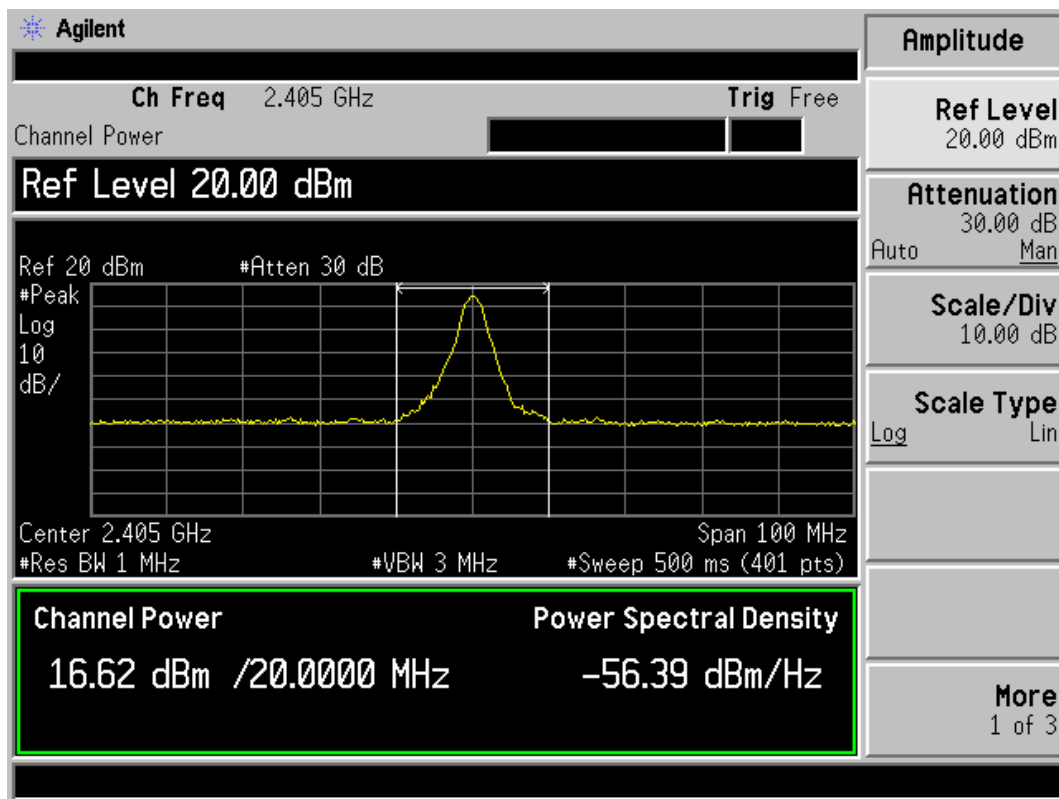
± 1.27 dB

3.5. Test Result of Peak Power Output

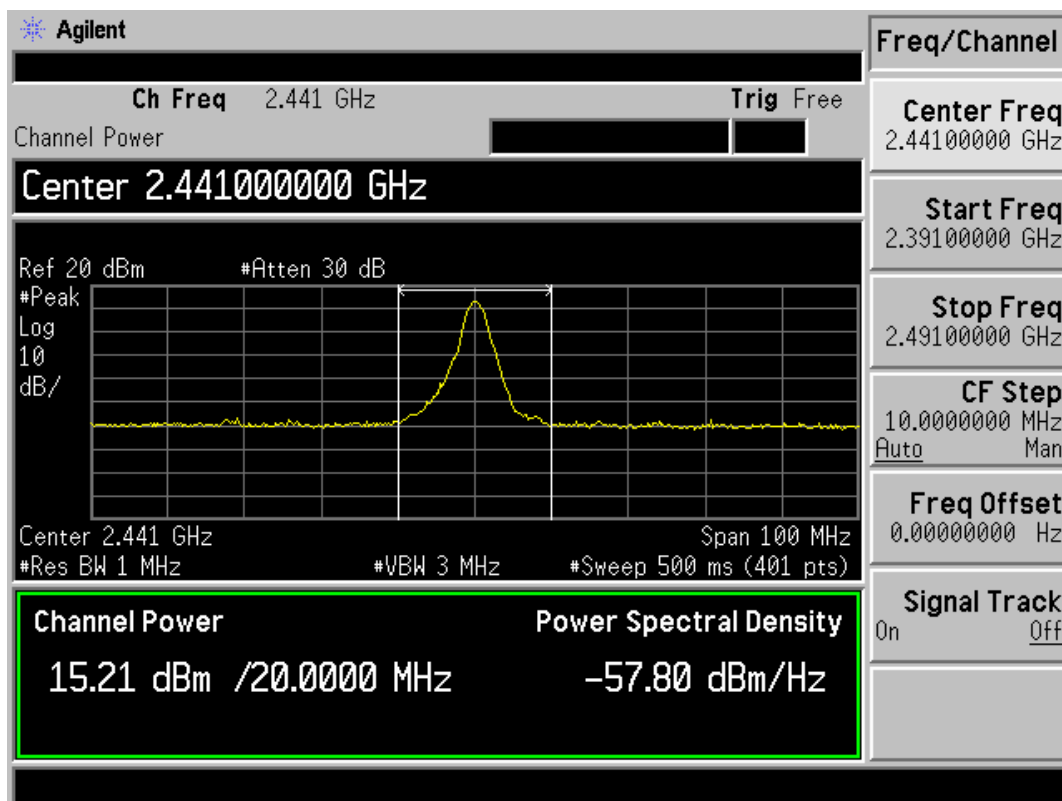
Product : Music transmitter
 Test Item : Peak Power Output
 Test Site : CTR1
 Test Mode : Mode 1: Transmitter

Channel No.	Frequency (MHz)	Channel Power (dBm)	Required Limit	Result
02	2405.00	16.62	1 Watt= 30 dBm	Pass
20	2441.00	15.21	1 Watt= 30 dBm	Pass
38	2477.00	12.36	1 Watt= 30 dBm	Pass

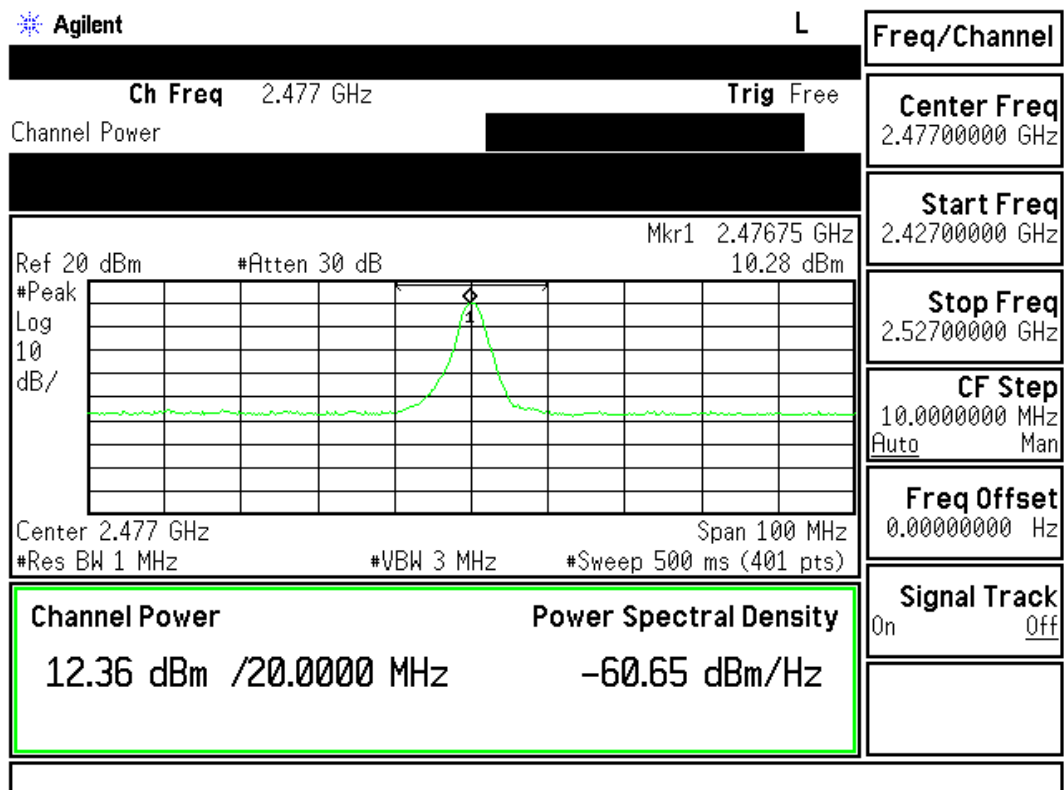
Channel 02



Channel 20



Channel 38



4. Radiated Emission

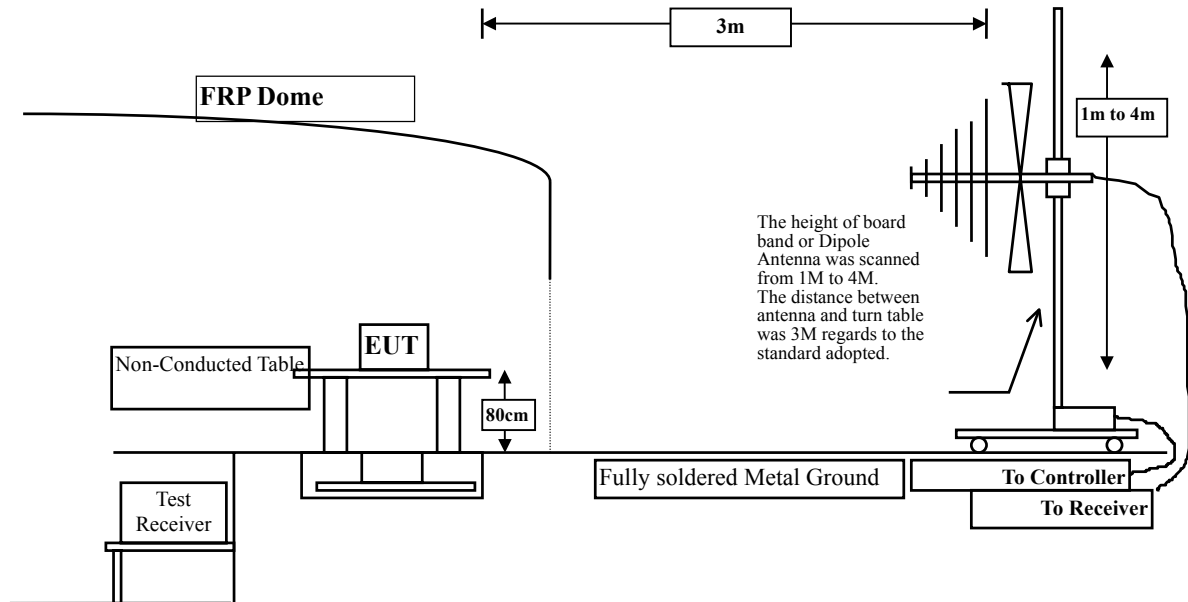
4.1. Test Equipment

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☐ Site # 1		Test Receiver	R & S	ESVS 10 / 834468/003	May, 2007
		Spectrum Analyzer	Advantest	R3162/ 00803480	May, 2007
		Pre-Amplifier	Advantest	BB525C/ 3307A01812	May, 2007
		Bilog Antenna	SCHAFFNER	CBL6112B / 2697	Sep., 2006
☐ Site # 2		Test Receiver	R & S	ESCS 30 / 836858 / 022	May, 2007
		Spectrum Analyzer	Advantest	R3162 / 100803466	May, 2007
		Pre-Amplifier	Advantest	BB525C/3307A01814	May, 2007
		Bilog Antenna	SCHAFFNER	CBL6112B / 2705	May, 2007
		Horn Antenna	ETS	3115 / 0005-6160	Sep., 2006
		Pre-Amplifier	QTK	QTK-AMP-01/ 0001	May, 2007
☒ Site # 3	X	Test Receiver	R & S	ESI 26 / 838786/004	May, 2007
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
	X	Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
	X	Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2006
	X	Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2006
	X	Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
	X	Pre-Amplifier	HP	8449B / 3008A01123	July, 2006

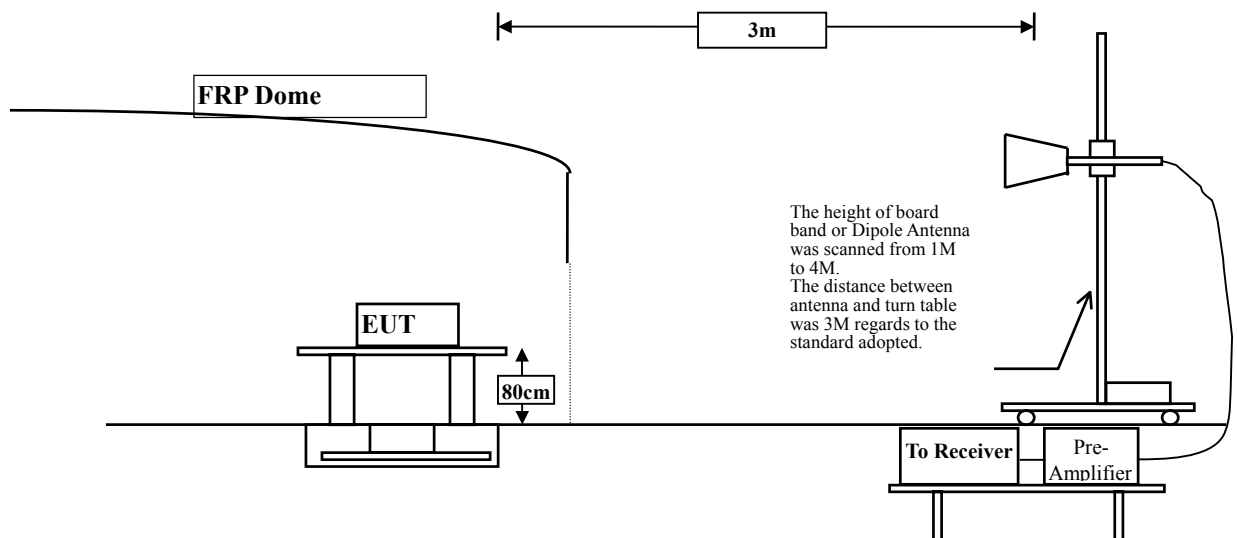
Note: 1. All equipments are calibrated every one year.
2. Test equipments marked by "X" are used to measure the final test results.

4.2. Test Setup

Below 1GHz



Above 1GHz



4.3. Limits

➤ General Radiated Emission Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in FCC 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must also comply in FCC 15.209(a) (see FCC 15.205(c)).

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
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 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: 2003 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz. The frequency range from 30MHz to 10th harmonics is checked.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : Music transmitter
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2405MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4810.000	3.681	41.349	45.029	-28.971	74.000
7215.000	9.381	38.049	47.430	-26.570	74.000
9620.000	11.834	47.905	59.739	-14.261	74.000
12025.000	15.073	34.344	49.416	-24.584	74.000
Average Detector:					
9620.000	11.834	40.015	51.849	-2.151	54.000
Vertical					
Peak Detector:					
4810.000	3.681	46.319	49.999	-24.001	74.000
7215.000	9.381	47.972	57.353	-16.647	74.000
9620.000	11.834	49.537	61.371	-12.629	74.000
12025.000	15.073	37.775	52.847	-21.153	74.000
Average Detector:					
7215.000	9.381	36.961	46.342	-7.658	54.000
9620.000	11.834	41.110	52.944	-1.056	54.000

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. 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.

Product : Music transmitter
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (2441 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
	Factor	Level	Level		
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4882.000	3.921	40.790	44.711	-29.289	74.000
7323.000	9.657	37.024	46.681	-27.319	74.000
9764.000	11.798	44.721	56.519	-17.481	74.000
12205.000	15.213	34.067	49.280	-24.720	74.000
Average Detector:					
9764.000	11.668	36.622	48.290	-5.710	54.000
Vertical					
Peak Detector:					
4882.000	3.921	45.234	49.155	-24.845	74.000
7323.000	9.657	40.241	49.898	-24.102	74.000
9764.000	11.798	49.204	61.002	-12.998	74.000
12205.000	15.213	34.976	50.189	-23.811	74.000
Average Detector:					
9764.000	11.798	41.200	52.998	-1.002	54.000

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. 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.

Product : Music transmitter
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2477 MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4954.000	4.176	37.469	41.645	-32.355	74.000
7431.000	9.933	35.852	45.784	-28.216	74.000
9908.000	11.851	39.258	51.109	-22.891	74.000
12385.000	14.764	30.872	45.636	-28.364	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4954.000	4.176	42.680	46.856	-27.144	74.000
7431.000	9.933	39.816	49.748	-24.252	74.000
9908.000	11.851	47.624	59.475	-14.525	74.000
12385.000	14.764	32.384	47.148	-26.852	74.000
Average Detector:					
9908.000	11.851	40.373	52.224	-1.776	54.000

Note:

1. The reading levels below 1GHz and above 1GHz are quasi-peak values and peak/average values, respectively.
2. Receiver setting (Peak Detector) : RBW:1MHz; VBW:1MHz; Span:100MHz °
3. Receiver setting (AVG Detector) : RBW:1MHz; VBW:30Hz; Span:20MHz °
4. Emission Level = Reading Level + Correct Factor.
5. 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.

Product : Music transmitter
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2441MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
321.000	12.578	15.575	28.153	-17.847	46.000
384.050	14.600	24.548	39.148	-6.852	46.000
415.575	16.477	15.948	32.425	-13.575	46.000
546.525	19.232	10.187	29.418	-16.582	46.000
587.750	18.659	12.868	31.527	-14.473	46.000
740.525	19.382	12.397	31.779	-14.221	46.000
Vertical					
287.050	12.609	11.916	24.525	-21.475	46.000
342.825	13.520	13.444	26.964	-19.036	46.000
384.050	15.661	15.207	30.868	-15.132	46.000
524.700	17.483	9.871	27.354	-18.646	46.000
614.425	20.184	7.415	27.599	-18.401	46.000
842.375	19.778	8.854	28.632	-17.368	46.000

Note:

1. The reading levels below 1GHz are quasi-peak values.
2. “ ” means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor.
4. The radiated emissions below 1GHz of the lowest, middle, highest frequency are pretested. Only the worst case is shown on the report.

5. Band Edge

5.1. Test Equipment

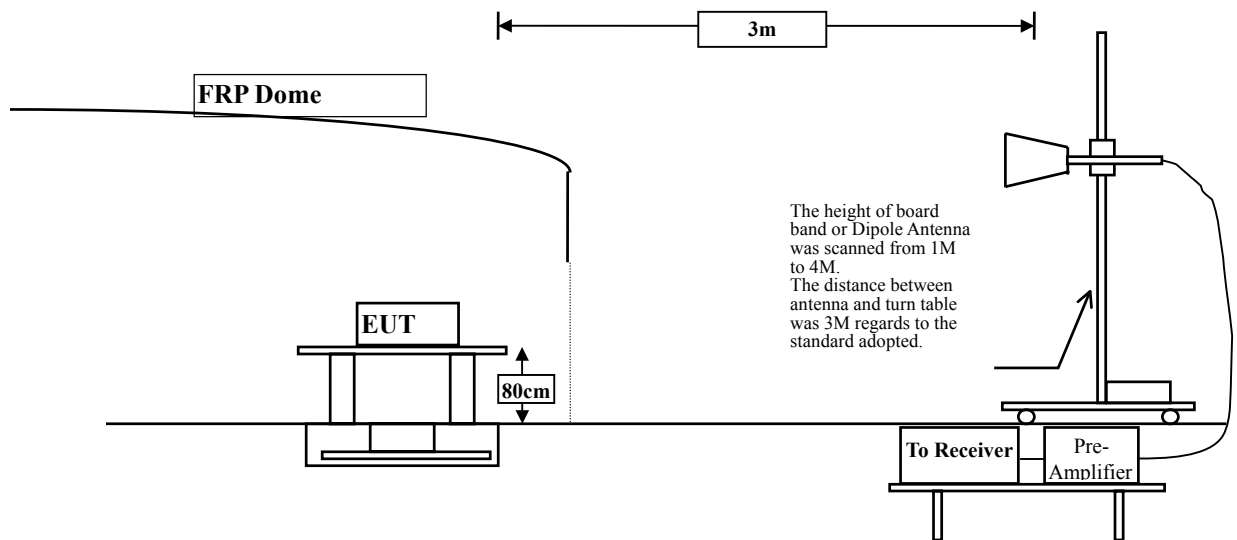
Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X Test Receiver	R & S	ESI 26 / 838786/004	May, 2007
X Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
X Bilog Antenna	SCHAFFNER	CBL6112B / 2697	May, 2007
X Horn Antenna	Schwarzbeck	BBHA9120D / 305, 306	July, 2006
X Horn Antenna	Schwarzbeck	BBHA9170 / 208, 209	July, 2006
X Pre-Amplifier	QTK	QTK-AMP-01 / 0001	July, 2006
X Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2007
X Pre-Amplifier	HP	8449B / 3008A01123	July, 2006

OATS No.3

- Note:
1. All equipments are calibrated every one year.
 2. The test equipments marked by "X" are used to measure the final test results.

5.2. Test Setup

RF Radiated Measurement:



5.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in FCC 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a), must also comply in FCC 15.209(a) (see FCC 15.205(c)).

5.4. Test Procedure

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 C63.4:2003 on radiated measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

5.5. Uncertainty

Conducted is ± 1 MHz

Radiated is ± 3.9 dB

5.6. Test Result of Band Edge

Product : Music transmitter
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

RF Radiated Measurement:

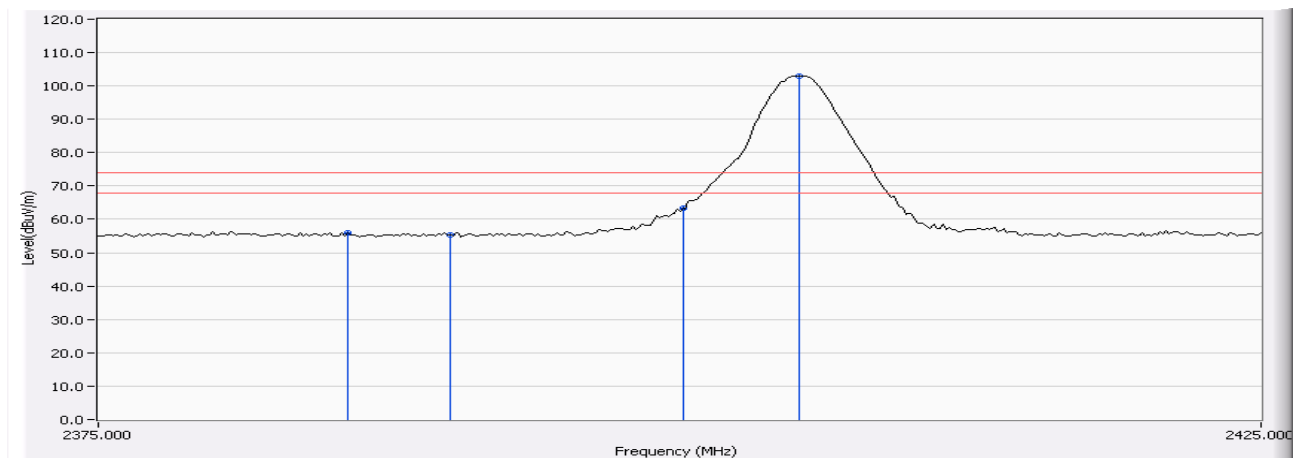
Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
2 (Horizontal)	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
2 (Peak)	2385.625	-1.420	57.441	56.020	74.00	54.00	Pass
2 (Average)	2385.625	-1.420	39.703	38.282	74.00	54.00	Pass

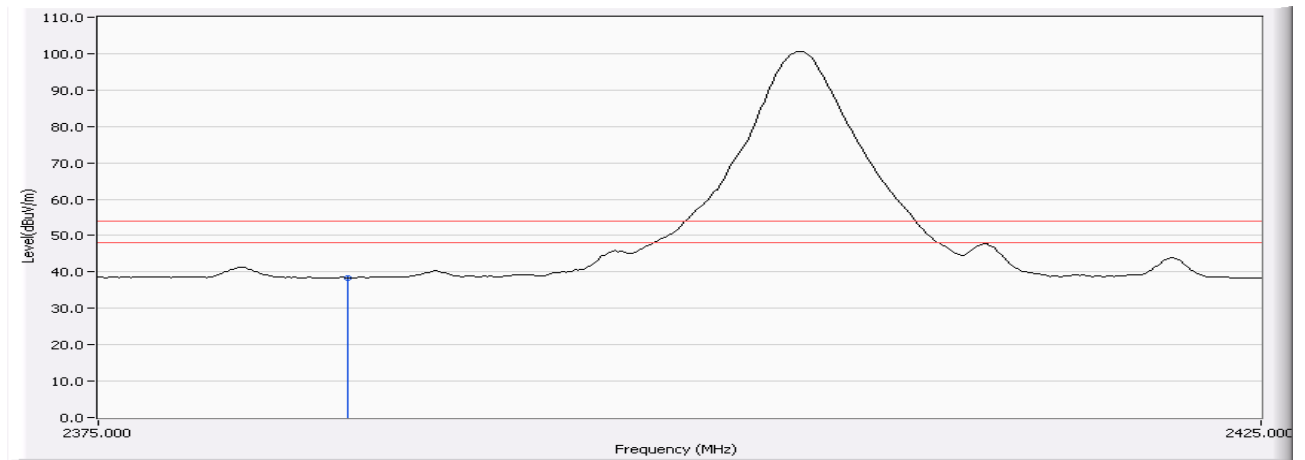
Figure Channel 2:

Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 2: Horizontal (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : Music transmitter
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

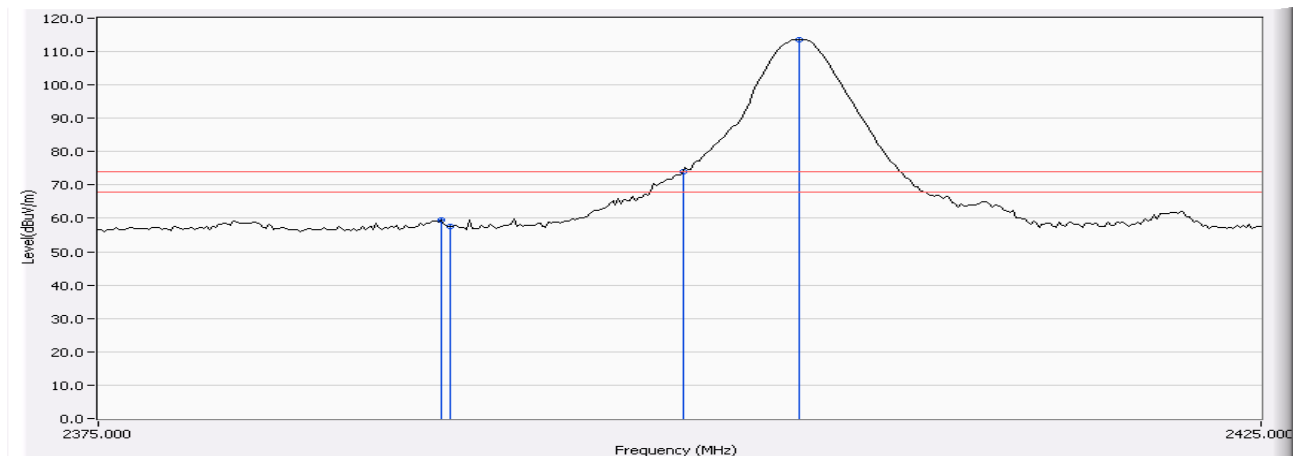
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
2 (Vertical)	<2400	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
2 (Peak)	2389.625	-1.408	60.923	59.515	74.00	54.00	Pass
2 (Average)	2389.625	-1.408	48.866	47.458	74.00	54.00	Pass

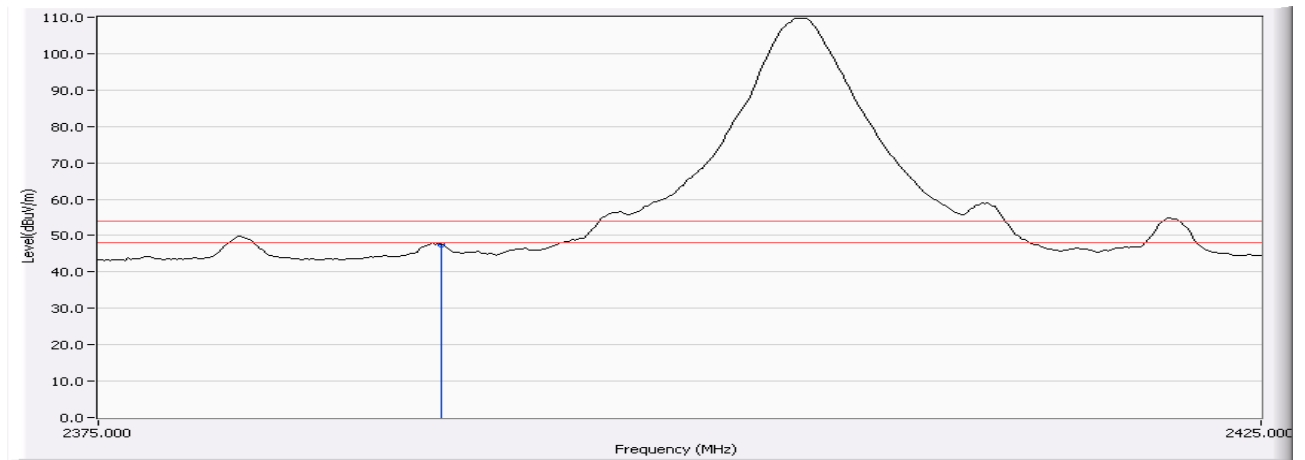
Figure Channel 2: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 2:

Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : Music transmitter
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

RF Radiated Measurement:

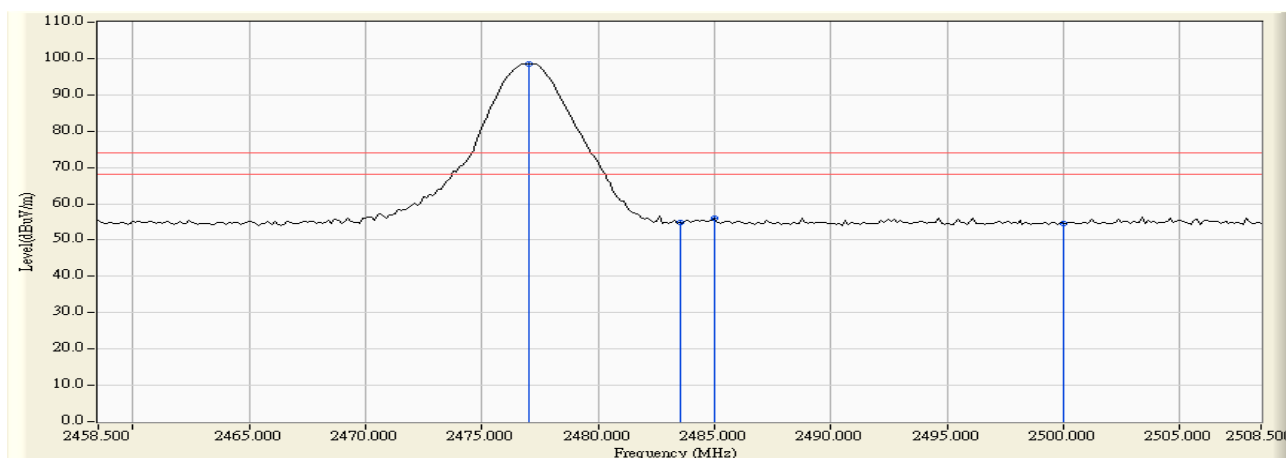
Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
38(Horizontal)	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38(Peak)	2485.000	-1.933	58.092	56.160	74.00	54.00	Pass
38(Average)	2485.000	-1.933	44.109	42.177	74.00	54.00	Pass

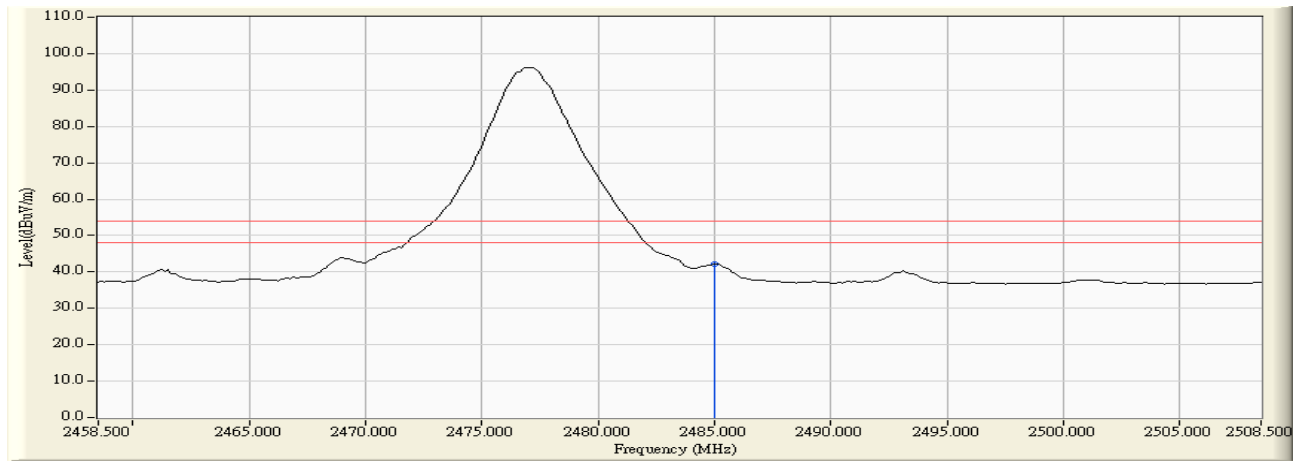
Figure Channel 38:

Horizontal (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 38: **Horizontal (Average)**



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Product : Music transmitter
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter

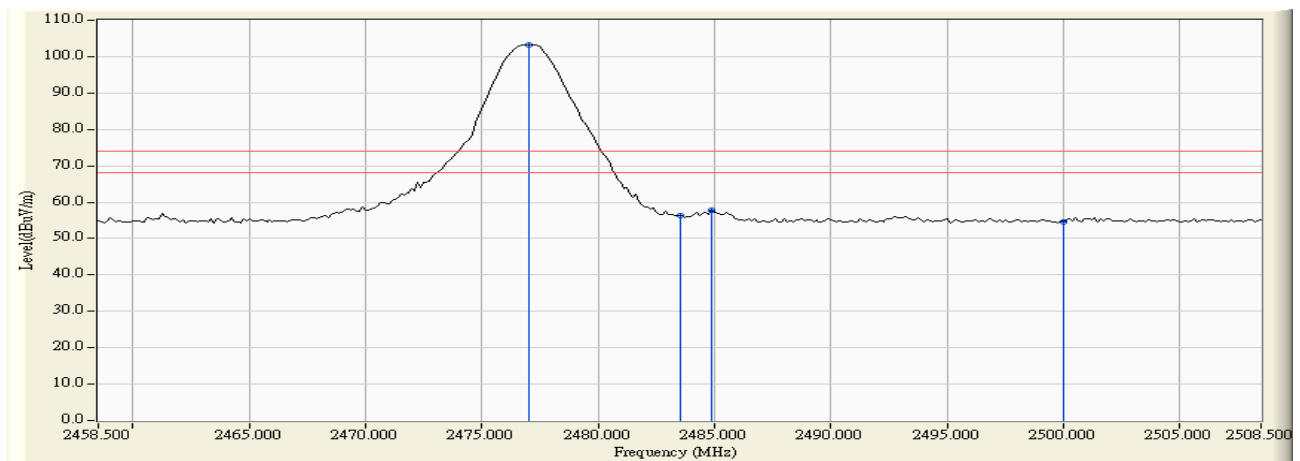
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
38(Vertical)	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

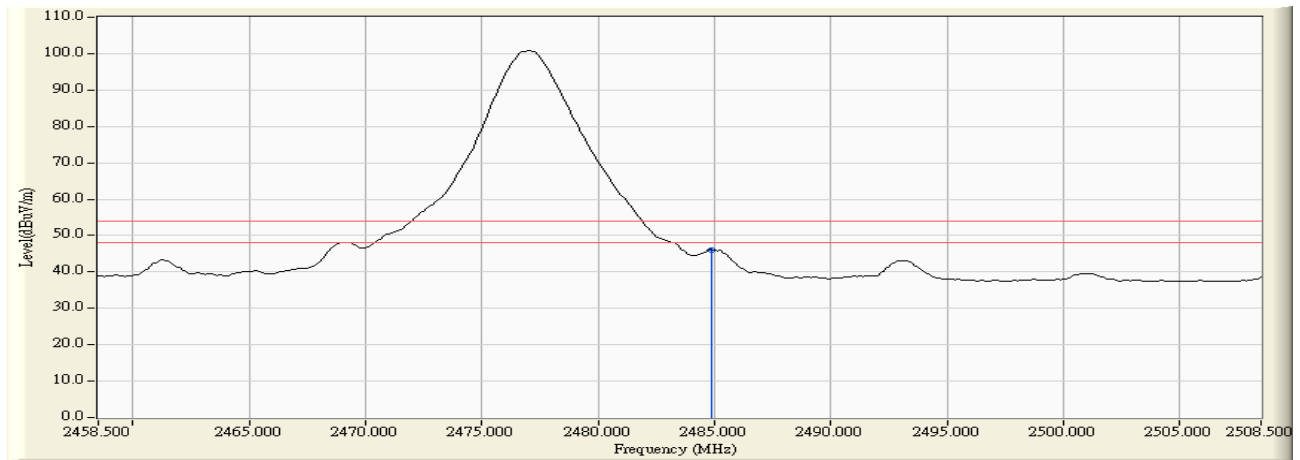
Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
38(Peak)	2484.875	-1.933	59.610	57.677	74.00	54.00	Pass
38(Average)	2484.875	-1.933	47.916	45.983	74.00	54.00	Pass

Figure Channel 38: Vertical (Peak)



Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Figure Channel 38: Vertical (Average)



Note: RBW=1MHz, VBW=300Hz, Sweep=500ms

Note: 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.

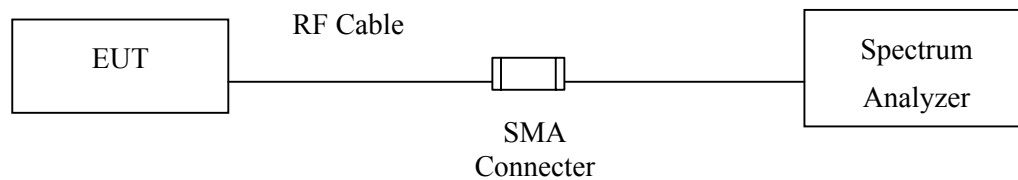
6. Occupied Bandwidth

6.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov., 2006

Note: 1. All equipments are calibrated every one year.
 2. The test instruments Marked "X" are used to measure the final test results.

6.2. Test Setup



6.3. Limits

>500KHz

6.4. Uncertainty

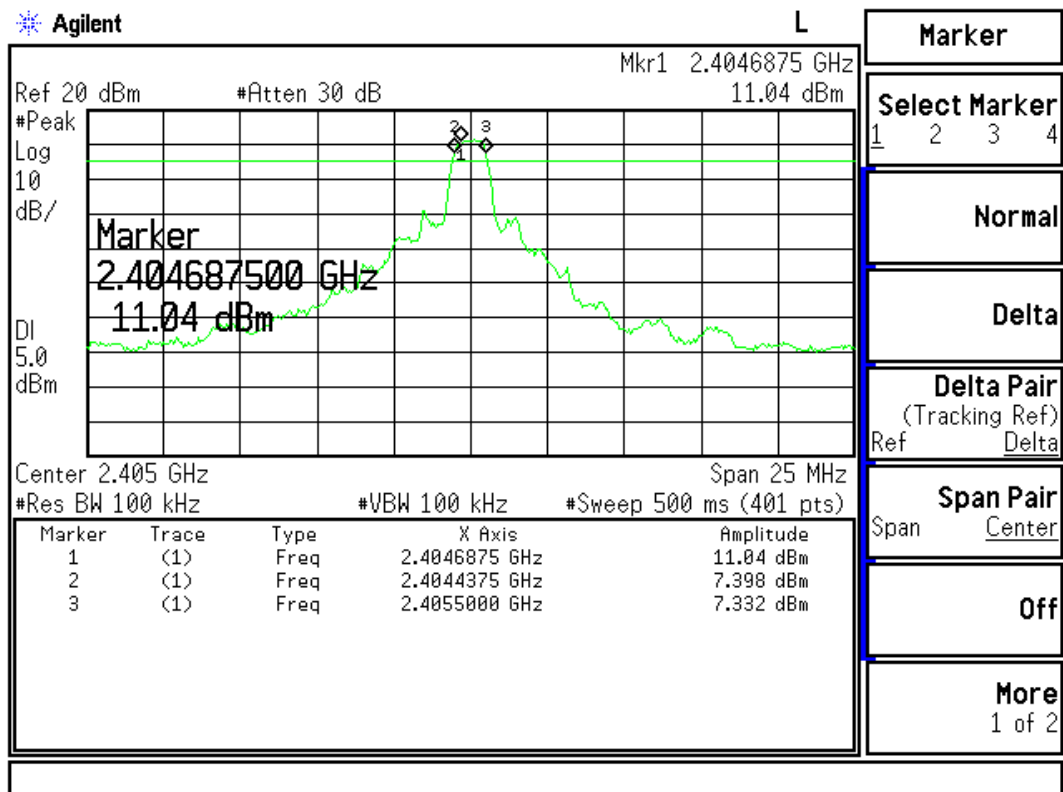
± 150Hz

6.5. Test Result of Occupied Bandwidth

Product : Music transmitter
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2405MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
2	2405.00	1062.5	>500	Pass

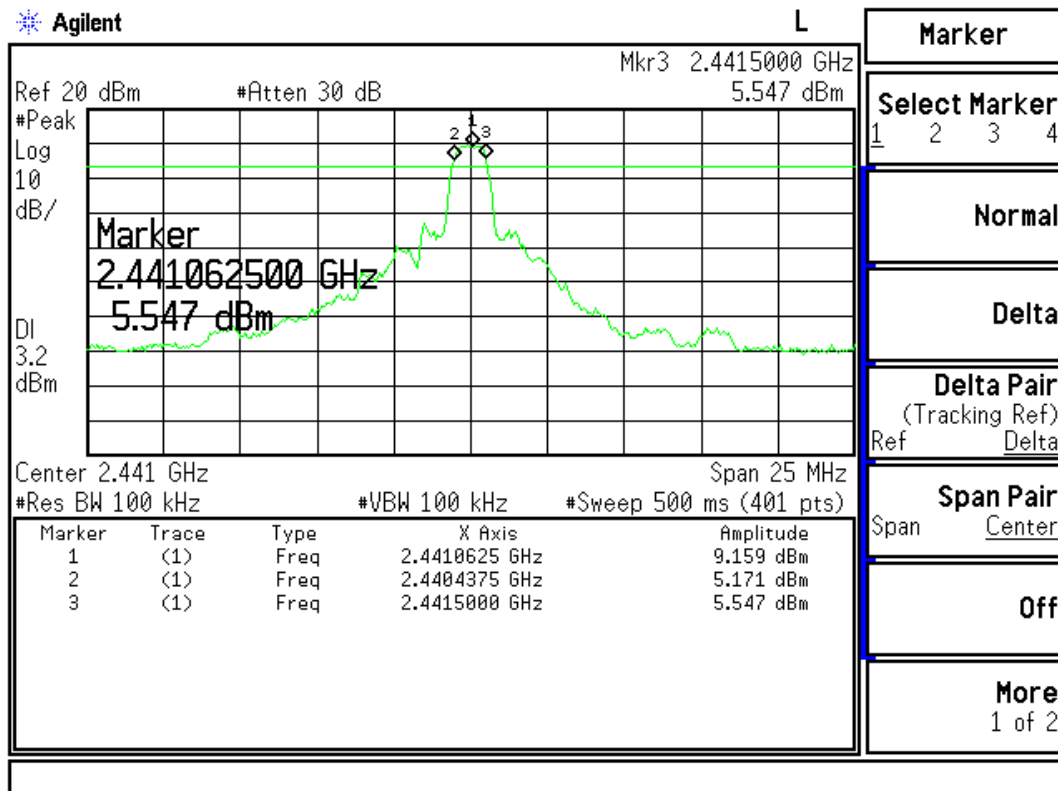
Figure Channel 2:



Product : Music transmitter
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
20	2441.00	1062.5	>500	Pass

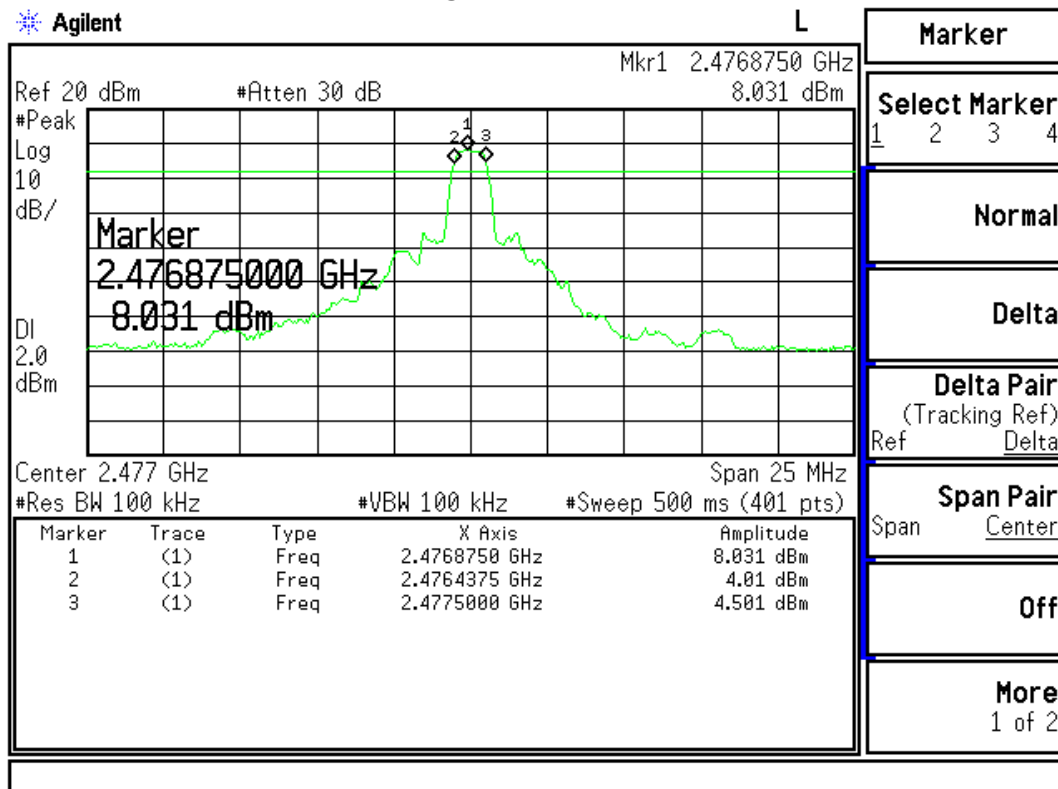
Figure Channel 20



Product : Music transmitter
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2477MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
38	2477.00	1062.5	>500	Pass

Figure Channel 38



7. Power Density

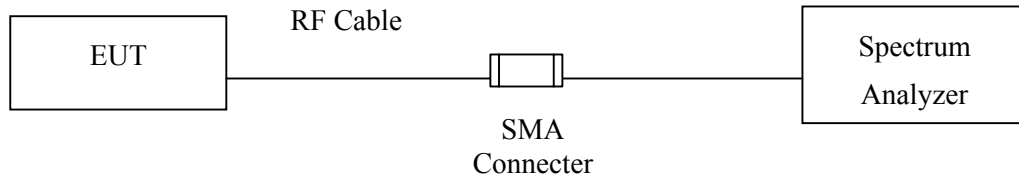
7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R & S	FSP40 / 100170	Nov., 2006

Note: 1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

7.4. Uncertainty

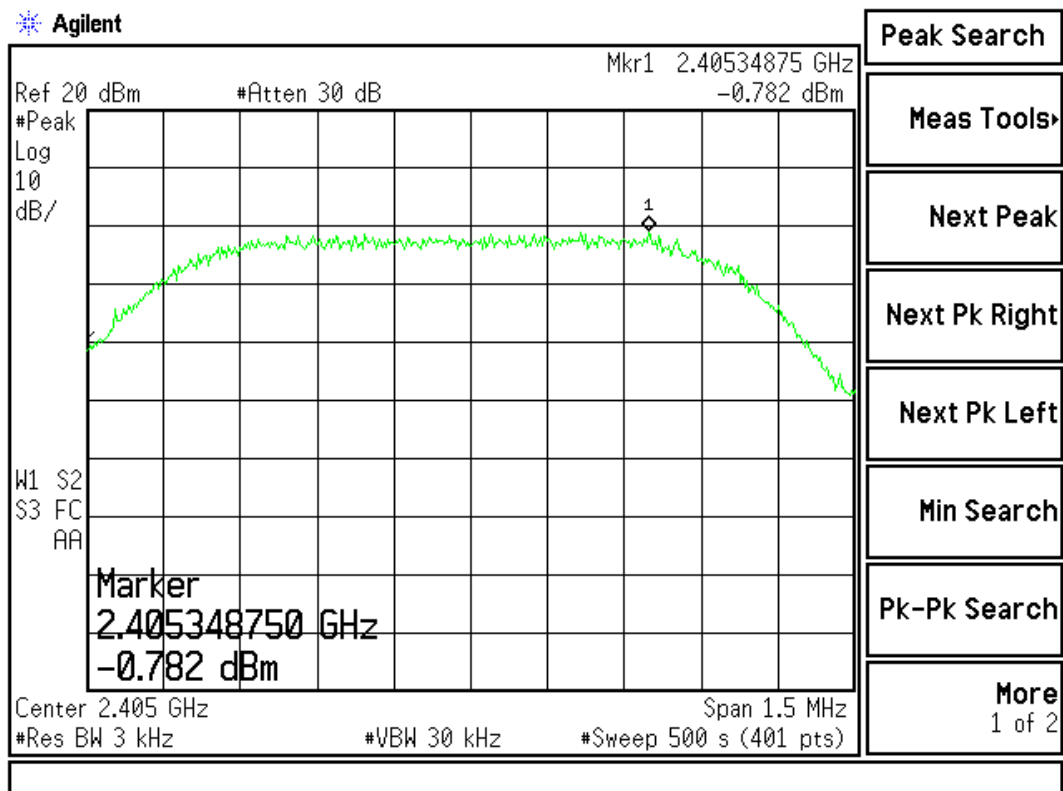
± 1.27 dB

7.5. Test Result of Power Density

Product : Music transmitter
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2405MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
2	2405.00	-0.782	< 8dBm	Pass

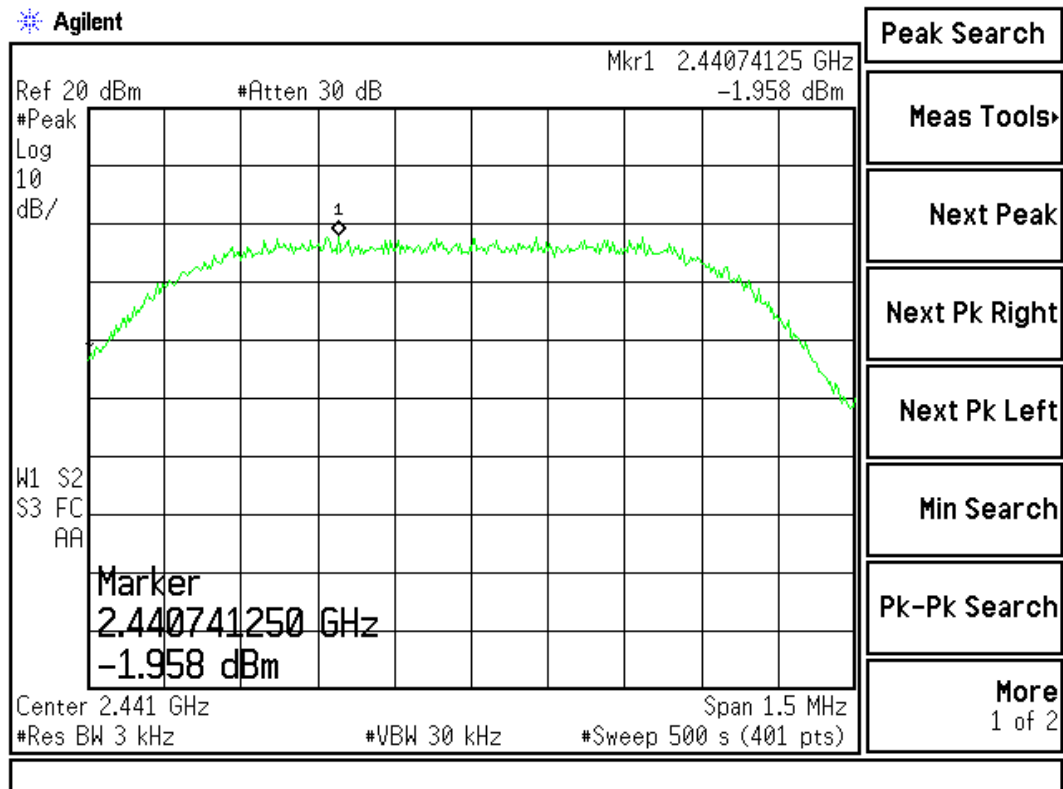
Figure Channel 2:



Product : Music transmitter
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmitter (2441MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
20	2441.000	-1.958	< 8dBm	Pass

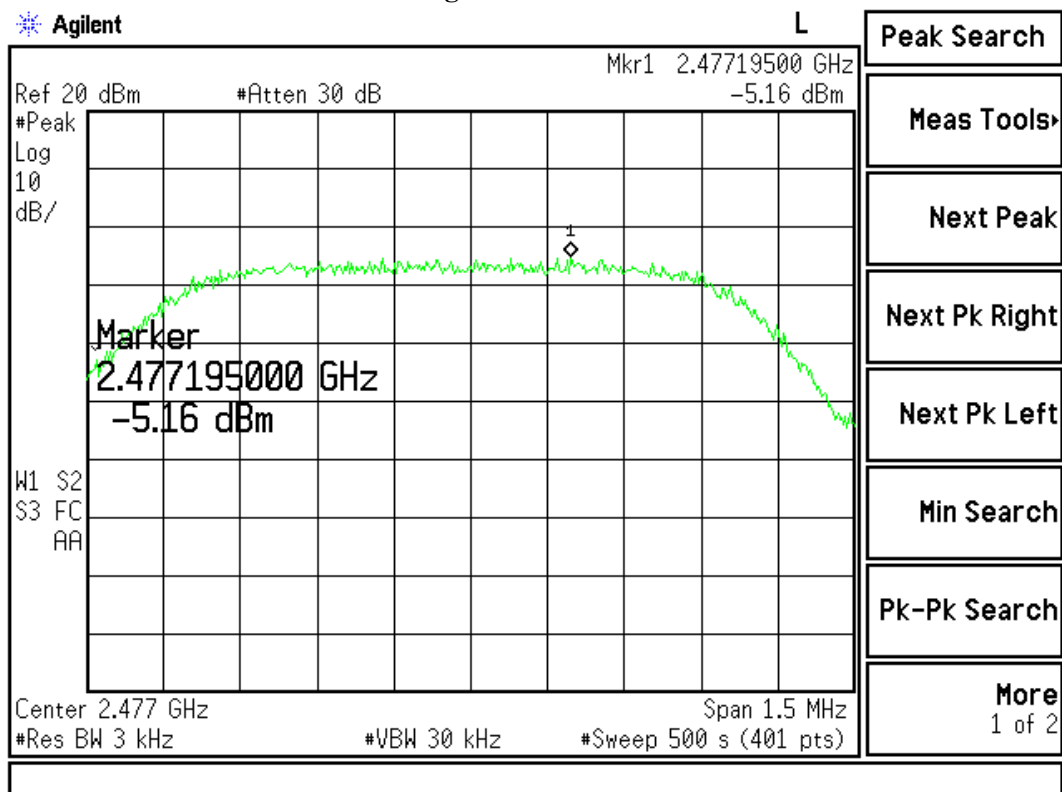
Figure Channel 20



Product : Music transmitter
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter (2477MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
38	2477.00	-5.16	< 8dBm	Pass

Figure Channel 39



8. EMI Reduction Method During Compliance Testing

No modification was made during testing.