



# Test Report

Product Name	DOCK FOR iPhone/iPad WITH AirPlay
Model No	DMI-40.4, DS-A5
FCC ID.	PPQ-DSA5

Applicant	Lite-On Technology Corp.
Address	4F, 90, Chien 1 Road, Chung-Ho, Taipei Hsien 235, Taiwan, R.O.C.

Date of Receipt	June 25, 2012
Issue Date	July 12, 2012
Report No.	126416R-RFUSP42V01
Report Version	V1.0



The test results relate only to the samples tested.  
 The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.  
 This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

# Test Report Certification

Issue Date: July 12, 2012

Report No.: 126416R-RFUSP42V01


**Accredited by NIST (NVLAP)**

NVLAP Lab Code: 200533-0

Product Name	DOCK FOR iPhone/iPad WITH AirPlay
Applicant	Lite-On Technology Corp.
Address	4F, 90, Chien 1 Road, Chung-Ho, Taipei Hsien 235, Taiwan, R.O.C.
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD
Model No.	DMI-40.4, DS-A5
FCC ID.	PPQ-DSA5
EUT Rated Voltage	AC 100-240V, 50/60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Integra, ONKYO
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003
Test Result	Complied

The test results relate only to the samples tested.

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( Assistant Engineer / Vincent Chu )

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( Manager / Vincent Lin )

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## 1. GENERAL INFORMATION

### 1.1. EUT Description

Product Name	DOCK FOR iPhone/iPad WITH AirPlay
Trade Name	Integra, ONKYO
Model No.	DMI-40.4, DS-A5
FCC ID.	PPQ-DSA5
Frequency Range	2412-2462MHz for 802.11b/g
Number of Channels	802.11b/g: 11
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Dipole Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
Audio Cable	Non-Shielded, 1.2m
RCA Cable	Non-Shielded, 1.2m
Power Adapter	MFR: APD, M/N: WA-15C05R Input: AC 100-240V~50-60Hz, 0.5A Output: DC 5V, 3A Cable Out: Non-shielded, 1.5m

#### Antenna List

No.	Manufacturer	Model No.	Peak Gain
1	MAGLAYERS	EDA-6309-2G4C1-A1	2.35 dBi for 2.4GHz

Note: The antenna of EUT is conform to FCC 15.203.

## 802.11b/g Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

## Note:

1. The EUT is a DOCK FOR iPhone/iPad WITH AirPlay with a built-in 2.4GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11b is 1Mbps 、 802.11g is 6Mbps)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.
5. The different of each model is shown as below:

Model Number	Description
DMI-40.4	Trade Name: Integra
DS-A5	Trade Name: ONKYO

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)

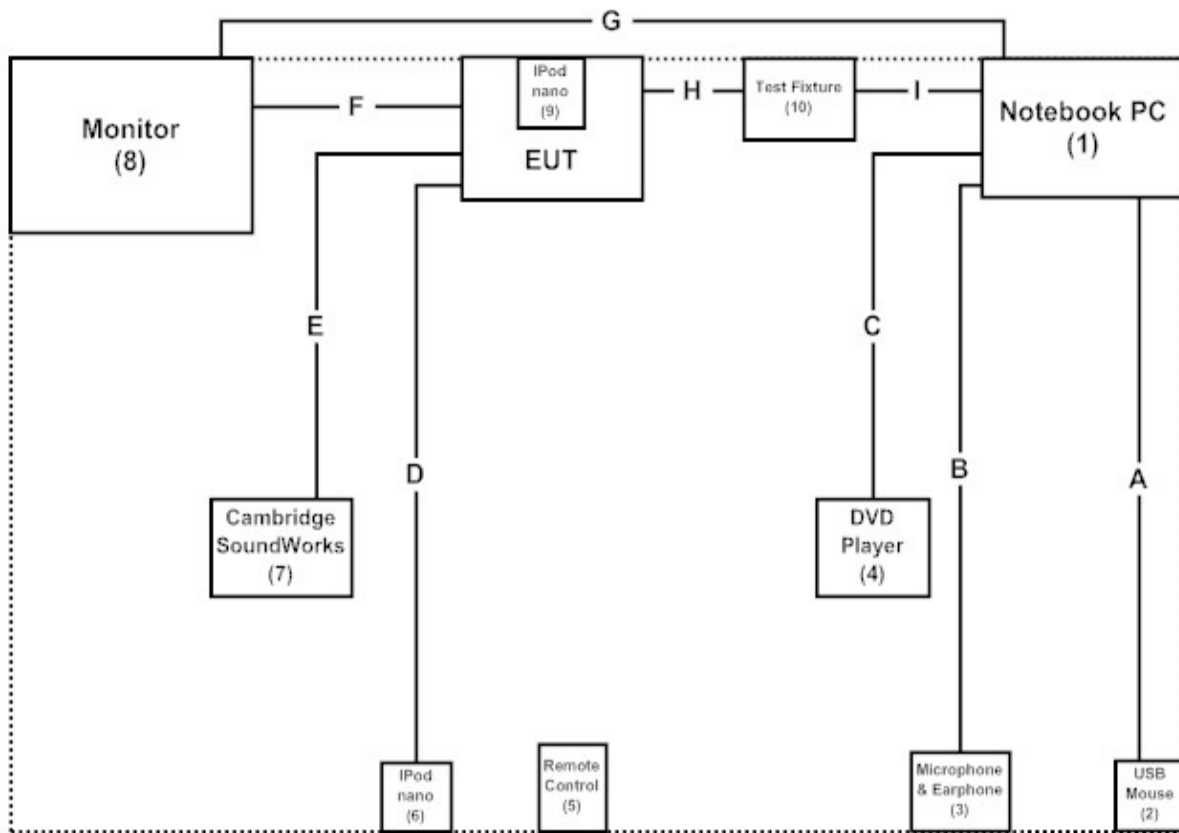
### 1.3. Tested System Details

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 USB Mouse	Logitech	M-BE58	LZE20852002	DoC	N/A
3 Microphone & Earphone	PCHOME	N/A	N/A	N/A	N/A
4 DVD Player	DELL	PD01S	N/A	N/A	N/A
5 Remote Control	Lite-on	N/A	N/A	N/A	N/A
6 IPod nano	Apple	A1199	SU7047UXVQ5	N/A	N/A
7 Cambridge SoundWorks	Creative	S80130	AM01303200000941	N/A	Non-Shielded, 1.9m
8 Monitor	CHIMEI	N-5221	22T51802N0401	DoC	Non-Shielded, 1.8m
9 IPod nano	Apple	A1199	YM709R27VQ5	N/A	N/A
10 Test Fixture	Lite-on	N/A	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A USB Cable	Shielded, 1.8m
B Microphone & Earphone Cable	Non-Shielded, 2.0m
C DVD Player Cable	Shielded, 0.5m
D Audio Cable	Shielded, 1.2m
E Fiber Cable	Non-Shielded, 1.8m
F RCA Cable	Non-Shielded, 1.2m
G VGA Cable	Shielded, 1.8m, with two ferrite cores bonded.
H Test Fixture Cable	Non-Shielded, 0.15m
I RS-232 Cable	Non-Shielded, 2.0m

### 1.4. Configuration of Tested System



### 1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Execute HyperTerminal.exe on the notebook.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Start the continuous transmission.
- (5) Verify that the EUT works properly.



## 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

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/>

Site Description: File on  
Federal Communications Commission  
FCC Engineering Laboratory  
7435 Oakland Mills Road  
Columbia, MD 21046  
Registration Number: 92195

Accreditation on NVLAP  
NVLAP Lab Code: 200533-0

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E-Mail : [service@quietek.com](mailto:service@quietek.com)

FCC Accreditation Number: TW1014

## 2. Conducted Emission

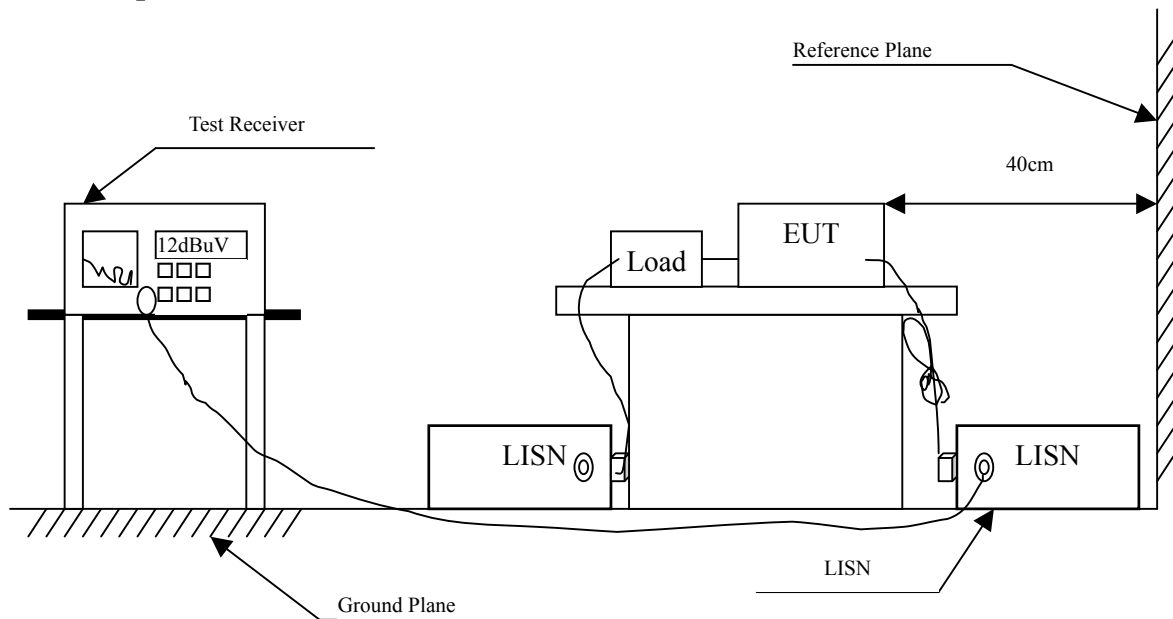
### 2.1. Test Equipment

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, 2012	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2012	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2012	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2012	
5	No.1 Shielded Room			N/A	

Note: All instruments are calibrated every one year.

### 2.2. Test Setup



**2.3. Limits**

<b>FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit</b>		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
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 : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Conducted Emission Test  
 Power Line : Line 1  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>Line 1</b>					
<b>Quasi-Peak</b>					
0.150	9.720	47.690	57.410	-8.590	66.000
0.197	9.689	42.150	51.839	-12.818	64.657
0.252	9.656	37.040	46.696	-16.390	63.086
0.502	9.640	36.570	46.210	-9.790	56.000
5.818	9.710	19.960	29.670	-30.330	60.000
17.662	9.890	23.320	33.210	-26.790	60.000
<b>Average</b>					
0.150	9.720	38.350	48.070	-7.930	56.000
0.197	9.689	33.270	42.959	-11.698	54.657
0.252	9.656	34.710	44.366	-8.720	53.086
0.502	9.640	28.560	38.200	-7.800	46.000
5.818	9.710	15.030	24.740	-25.260	50.000
17.662	9.890	16.790	26.680	-23.320	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 : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Conducted Emission Test  
 Power Line : Line 2  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
<b>Line 2</b>					
<b>Quasi-Peak</b>					
0.150	9.730	46.760	56.490	-9.510	66.000
0.197	9.689	40.490	50.179	-14.478	64.657
0.248	9.657	35.540	45.197	-18.003	63.200
0.498	9.650	33.040	42.690	-13.367	56.057
5.611	9.730	19.660	29.390	-30.610	60.000
18.412	10.060	21.590	31.650	-28.350	60.000
<b>Average</b>					
0.150	9.730	37.690	47.420	-8.580	56.000
0.197	9.689	33.400	43.089	-11.568	54.657
0.248	9.657	25.810	35.467	-17.733	53.200
0.498	9.650	30.250	39.900	-6.157	46.057
5.611	9.730	12.100	21.830	-28.170	50.000
18.412	10.060	16.470	26.530	-23.470	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

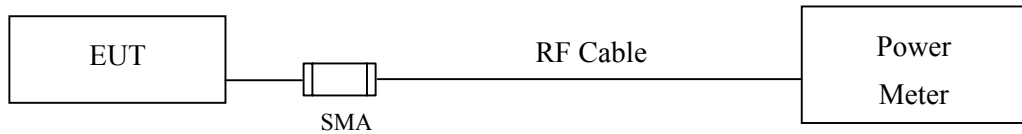
#### 3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

#### 3.2. Test Setup



#### 3.3. Limits

The maximum peak power shall be less 1 Watt.

#### 3.4. Test Procedure

The EUT was tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

#### 3.5. Uncertainty

± 1.27 dB

### 3.6. Test Result of Peak Power Output

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)				Peak Power	Required Limit	Result
		1	2	5.5	11	1		
		Measurement Level (dBm)						
01	2412	15.60	--	--	--	18.14	<30dBm	Pass
06	2437	15.82	15.75	15.62	15.51	18.28	<30dBm	Pass
11	2462	15.87	--	--	--	18.37	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Peak Power Output Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	12.26	--	--	--	--	--	--	--	22.01	<30dBm	Pass
06	2437	12.17	12.05	11.95	11.86	11.75	11.64	11.53	11.45	22.48	<30dBm	Pass
11	2462	12.01	--	--	--	--	--	--	--	21.93	<30dBm	Pass

Note: Peak Power Output Value = Reading value on power meter + cable loss



#### 4. Radiated Emission

##### 4.1. Test Equipment

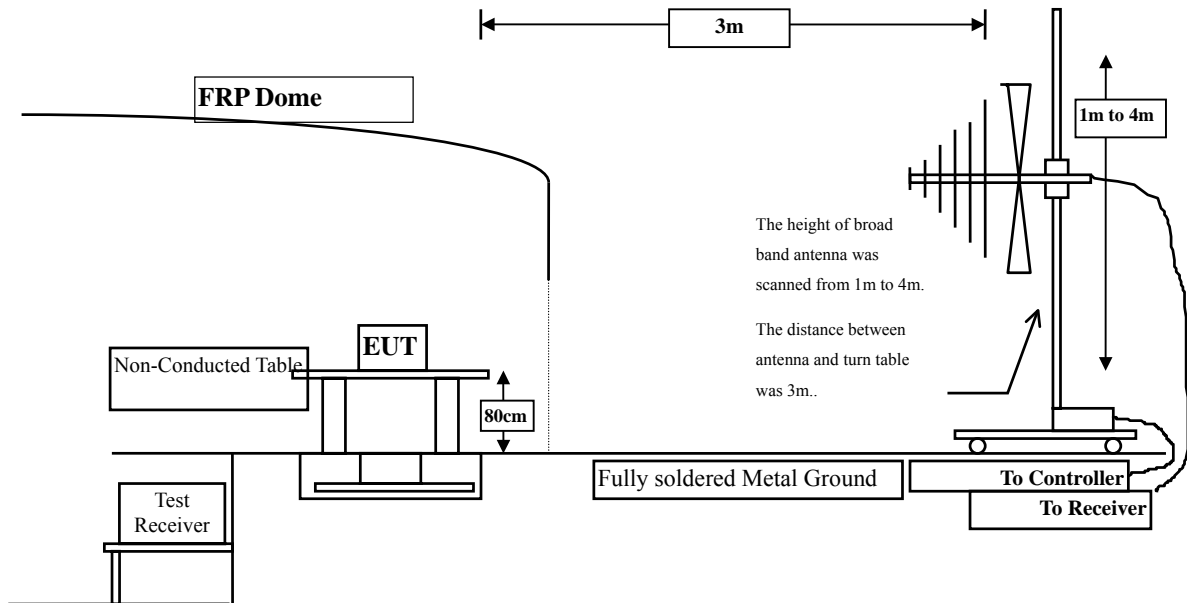
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2011
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

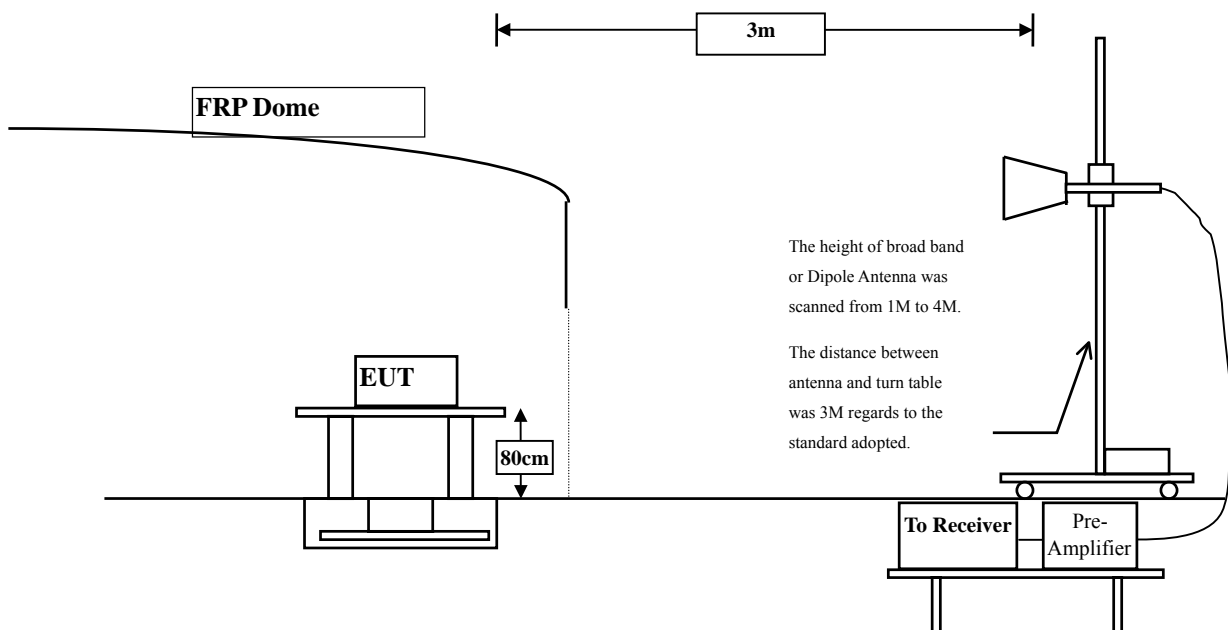
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

## 4.2. Test Setup

### Radiated Emission Below 1GHz



### Radiated Emission Above 1GHz



### 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.

<b>FCC Part 15 Subpart C Paragraph 15.209(a) Limits</b>		
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: E field strength (dBuV/m) = 20 log E field strength (uV/m)

#### 4.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

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

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

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 : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4824.000	0.428	41.340	41.769	-32.231	74.000
7236.000	7.177	38.910	46.087	-27.913	74.000
9648.000	8.019	39.620	47.640	-26.360	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4824.000	0.836	41.000	41.837	-32.163	74.000
7236.000	7.676	40.700	48.376	-25.624	74.000
9648.000	8.556	39.760	48.317	-25.683	74.000

**Average Detector:**

--

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4874.000	0.076	41.310	41.387	-32.613	74.000
7311.000	7.512	38.350	45.862	-28.138	74.000
9748.000	7.630	39.000	46.630	-27.370	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4874.000	0.532	41.520	42.052	-31.948	74.000
7311.000	8.089	38.970	47.059	-26.941	74.000
9748.000	8.266	38.740	47.007	-26.993	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	0.191	41.420	41.611	-32.389	74.000
7386.000	8.373	37.940	46.314	-27.686	74.000
9848.000	7.964	39.010	46.974	-27.026	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	0.805	41.550	42.355	-31.645	74.000
7386.000	9.180	38.010	47.190	-26.810	74.000
9848.000	8.801	39.350	48.151	-25.849	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
------------------	-------------------------	--------------------------	--------------------------------	--------------	-----------------

**Horizontal**
**Peak Detector:**

4824.000	0.428	41.120	41.549	-32.451	74.000
7236.000	7.177	39.330	46.507	-27.493	74.000
9648.000	8.019	39.570	47.590	-26.410	74.000

**Average Detector:**

--

**Vertical**
**Peak Detector:**

4824.000	0.836	41.520	42.357	-31.643	74.000
7236.000	7.676	38.980	46.656	-27.344	74.000
9648.000	8.556	39.340	47.897	-26.103	74.000

**Average Detector:**

--

**Note:**

- All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
- Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
- Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
- Measurement Level = Reading Level + Correct Factor.
- Correct Factor = Antenna factor + Cable loss – Amplifier gain.
- The average measurement was not performed when the peak measured data under the limit of average detection.
- The emission levels of other frequencies are very lower than the limit and not show in test report.



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
------------------	-------------------------	--------------------------	--------------------------------	--------------	-----------------

**Horizontal**
**Peak Detector:**

4874.000	0.076	41.480	41.557	-32.443	74.000
7311.000	7.512	38.500	46.012	-27.988	74.000
9748.000	7.630	39.420	47.050	-26.950	74.000

**Average Detector:**

--

**Peak Detector:**

4874.000	0.532	41.950	42.482	-31.518	74.000
7311.000	8.089	38.980	47.069	-26.931	74.000
9748.000	8.266	38.970	47.237	-26.763	74.000

**Average Detector:**

--

**Note:**

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Harmonic Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
<b>Peak Detector:</b>					
4924.000	0.191	41.850	42.041	-31.959	74.000
7386.000	8.373	38.910	47.284	-26.716	74.000
9848.000	7.964	40.330	48.294	-25.706	74.000
<b>Average Detector:</b>					
--					
<b>Vertical</b>					
<b>Peak Detector:</b>					
4924.000	0.805	41.940	42.745	-31.255	74.000
7386.000	9.180	38.830	48.010	-25.990	74.000
9848.000	8.801	41.850	50.651	-23.349	74.000
<b>Average Detector:</b>					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
319.060	-4.585	43.511	38.926	-7.074	46.000
431.580	0.757	37.690	38.447	-7.553	46.000
602.300	3.794	35.424	39.218	-6.782	46.000
745.860	3.906	34.449	38.355	-7.645	46.000
881.660	6.789	30.570	37.359	-8.641	46.000
961.200	6.810	33.179	39.989	-14.011	54.000
<b>Vertical</b>					
253.100	-5.039	44.070	39.031	-6.969	46.000
400.540	-2.868	39.088	36.220	-9.780	46.000
480.080	-3.390	38.846	35.456	-10.544	46.000
602.300	1.704	34.759	36.463	-9.537	46.000
769.140	2.558	34.432	36.990	-9.010	46.000
961.200	3.310	30.226	33.536	-20.464	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : General Radiated Emission Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
<b>Horizontal</b>					
239.520	-6.878	43.686	36.808	-9.192	46.000
400.540	0.942	34.853	35.795	-10.205	46.000
602.300	3.794	36.408	40.202	-5.798	46.000
720.640	3.826	35.458	39.284	-6.716	46.000
875.840	5.816	31.014	36.830	-9.170	46.000
961.200	6.810	34.534	41.344	-12.656	54.000
<b>Vertical</b>					
375.320	0.388	35.480	35.868	-10.132	46.000
480.080	-3.390	38.470	35.080	-10.920	46.000
602.300	1.704	35.192	36.896	-9.104	46.000
769.140	2.558	33.727	36.285	-9.715	46.000
881.660	1.379	33.089	34.468	-11.532	46.000
961.200	3.310	30.909	34.219	-19.781	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, 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. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss – Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

**5. RF antenna conducted test**

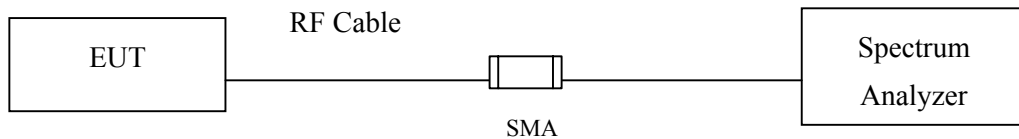
**5.1. Test Equipment**

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
  2. The test instruments marked with “X” are used to measure the final test results.

**5.2. Test Setup**

**RF antenna 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 either an RF conducted or a 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 tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW > RBW, scan up through 10th harmonic.

## 5.5. Uncertainty

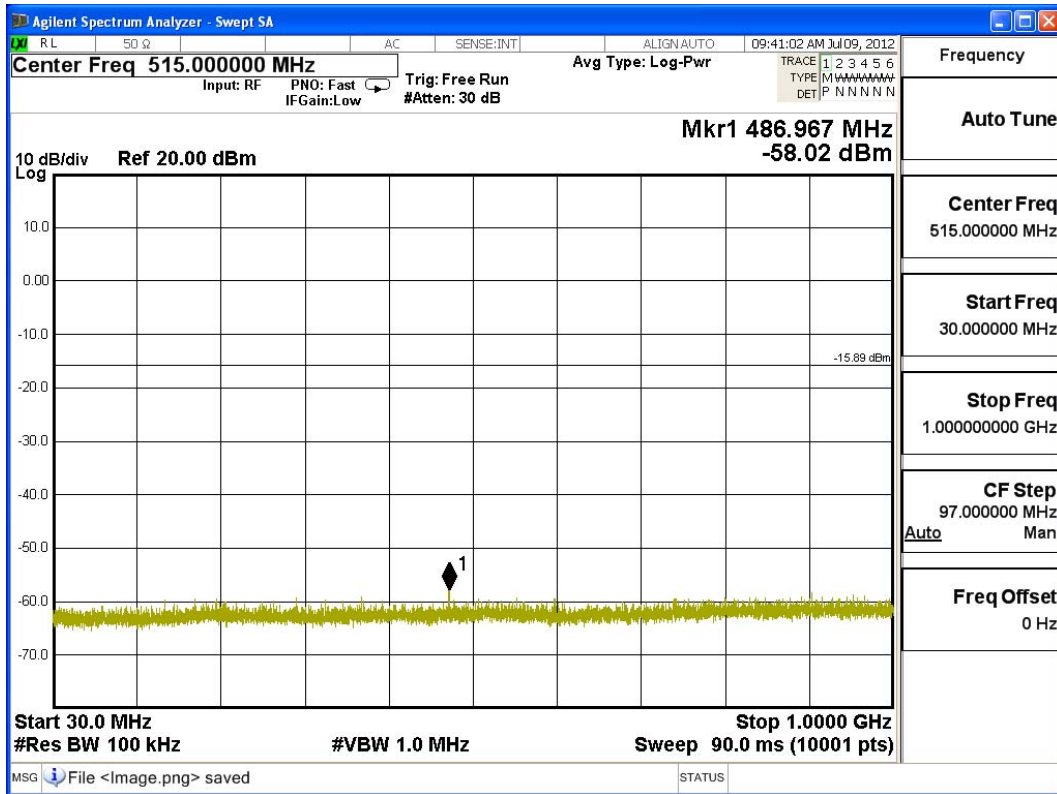
The measurement uncertainty

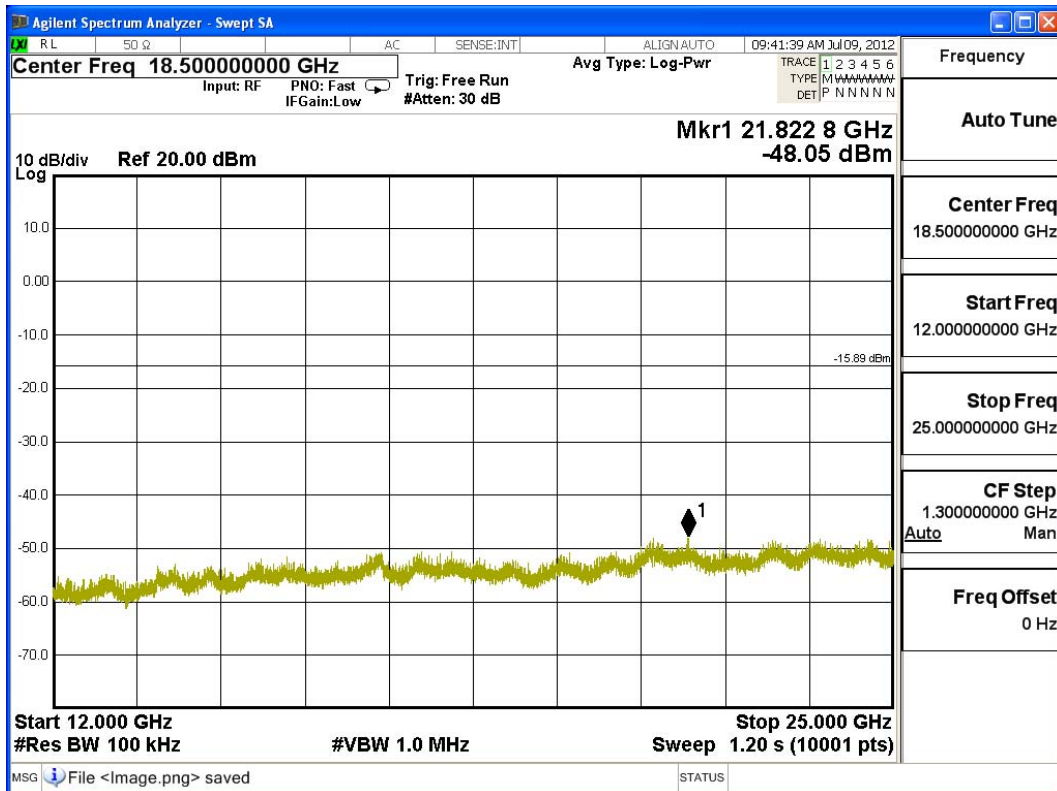
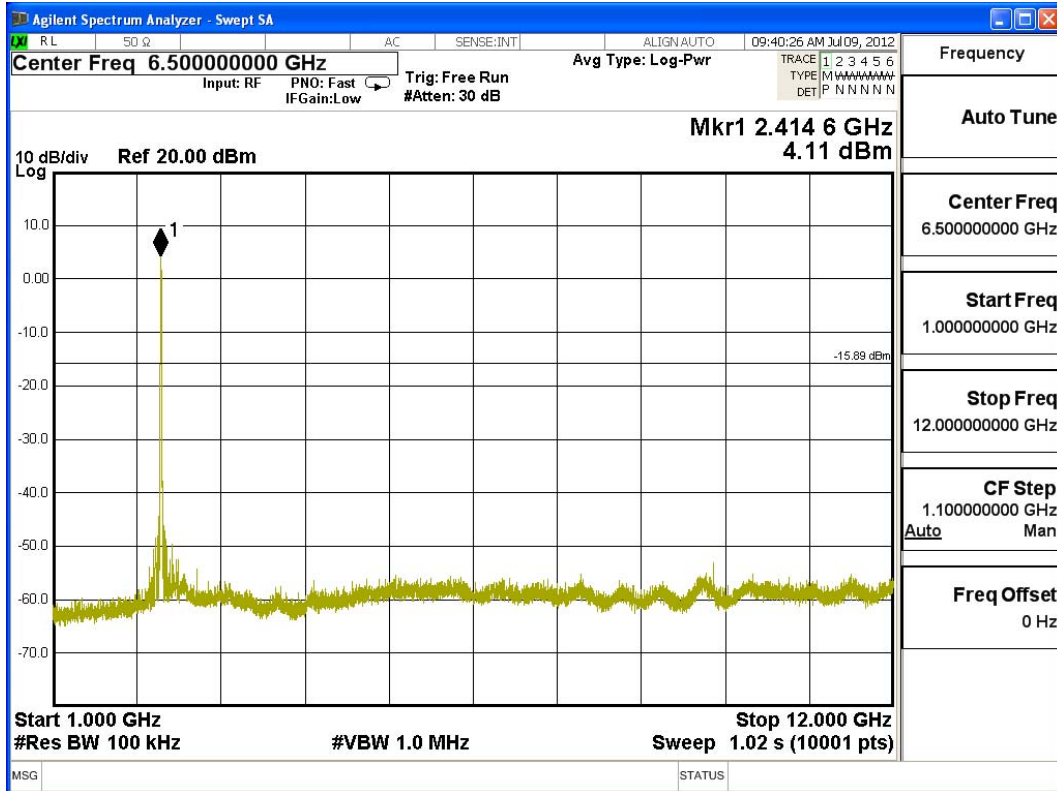
Conducted is defined as  $\pm 1.27\text{dB}$

**5.6. Test Result of RF antenna conducted test**

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : RF antenna conducted test  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

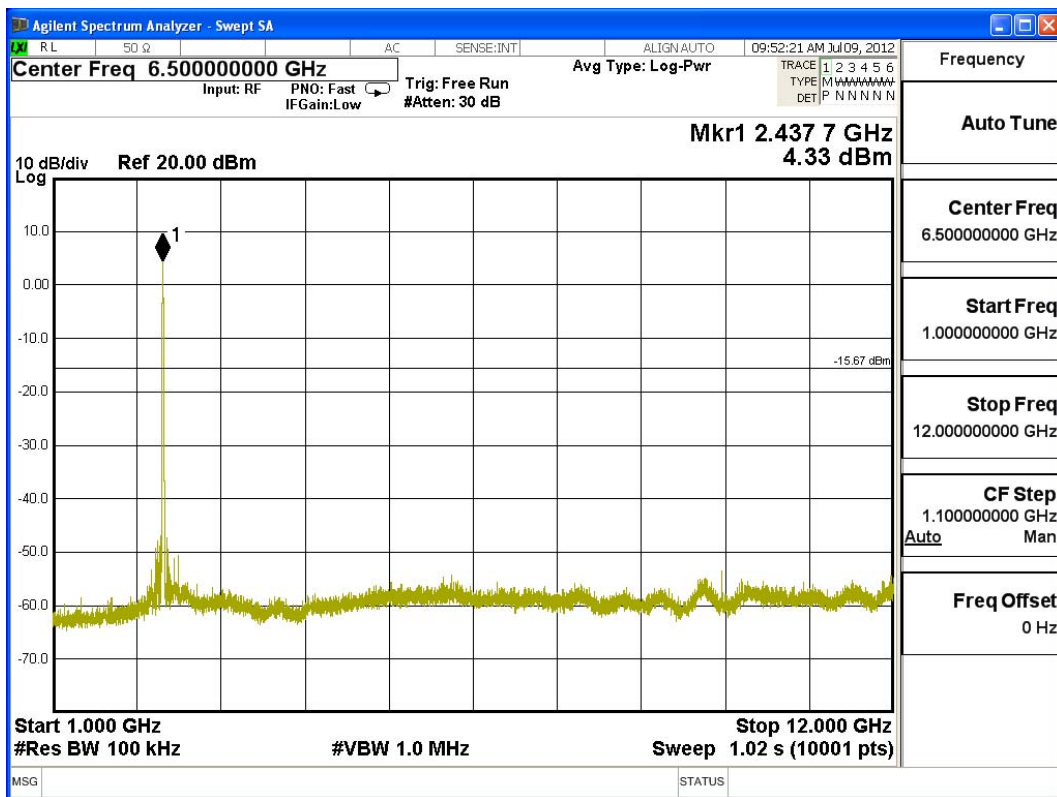
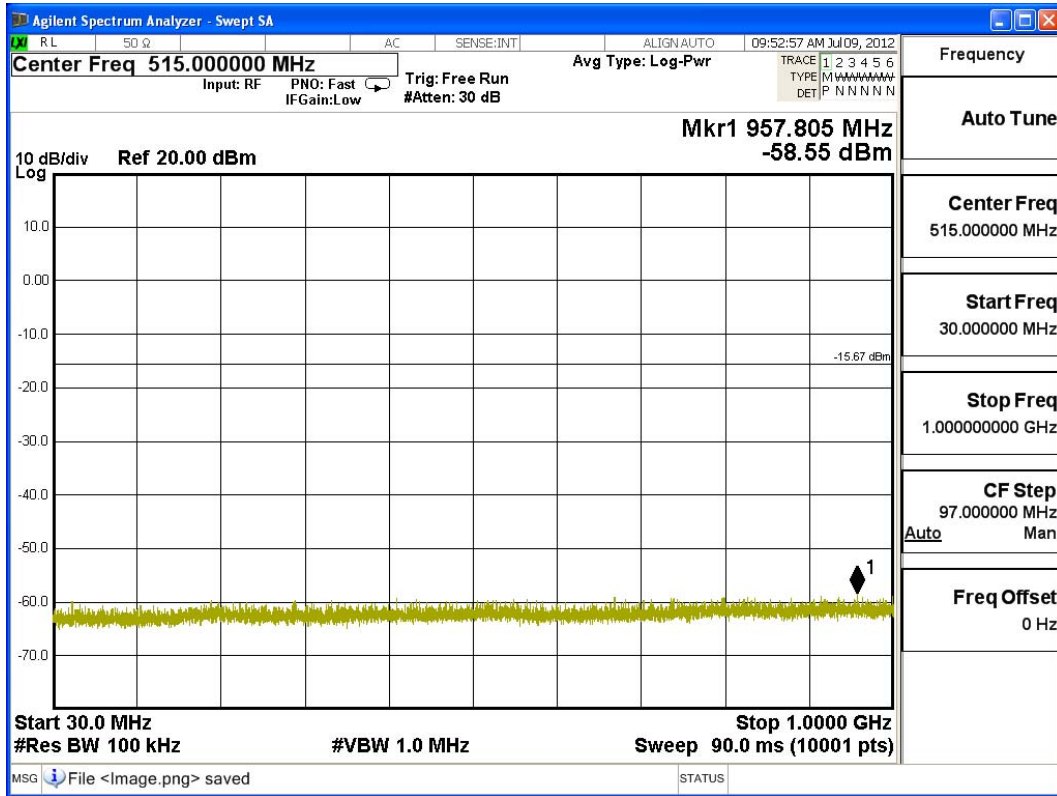
**Channel 01 (2412MHz)**

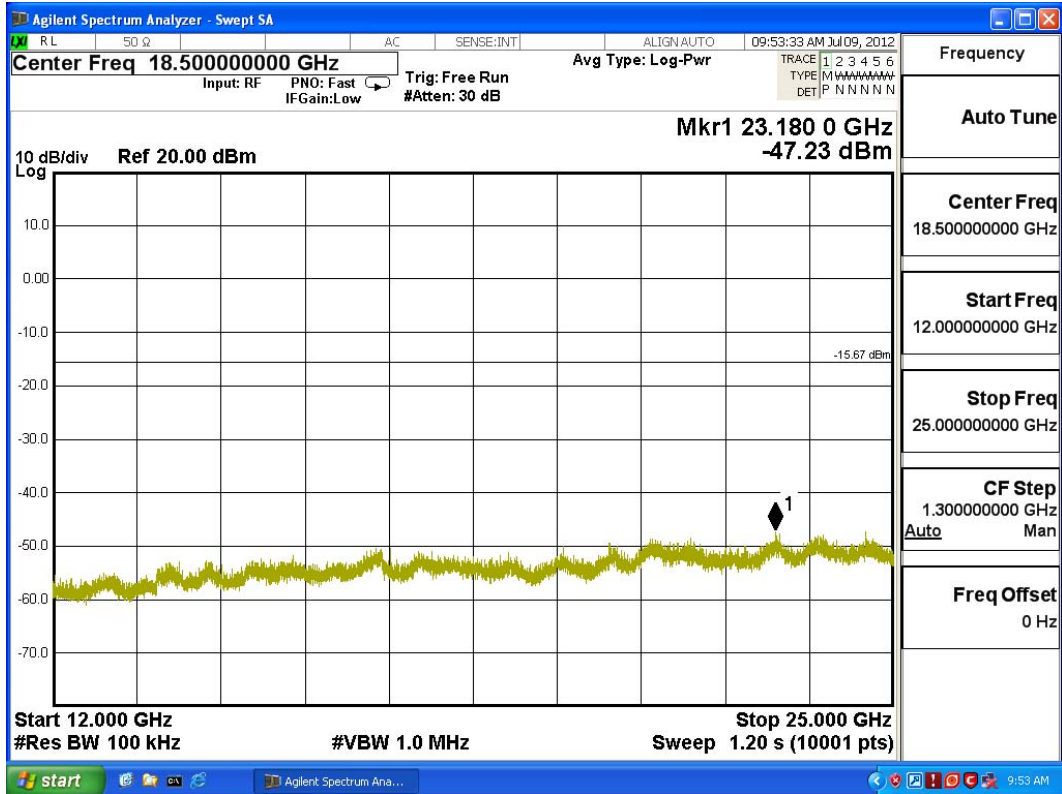




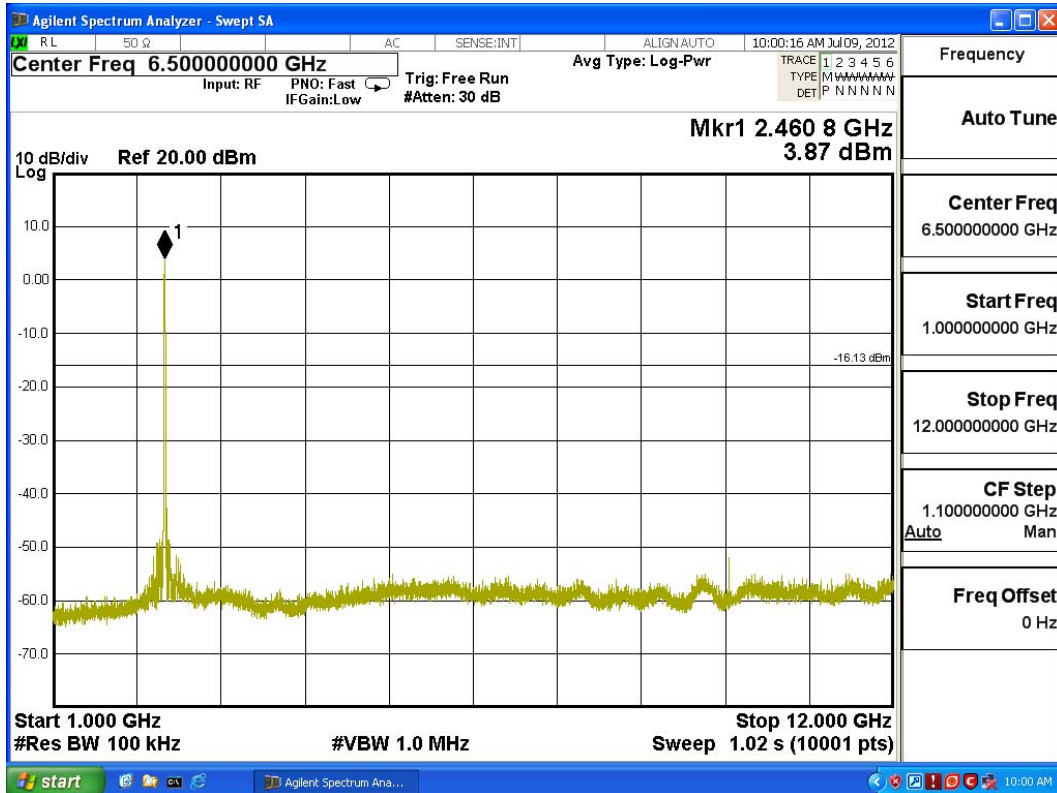
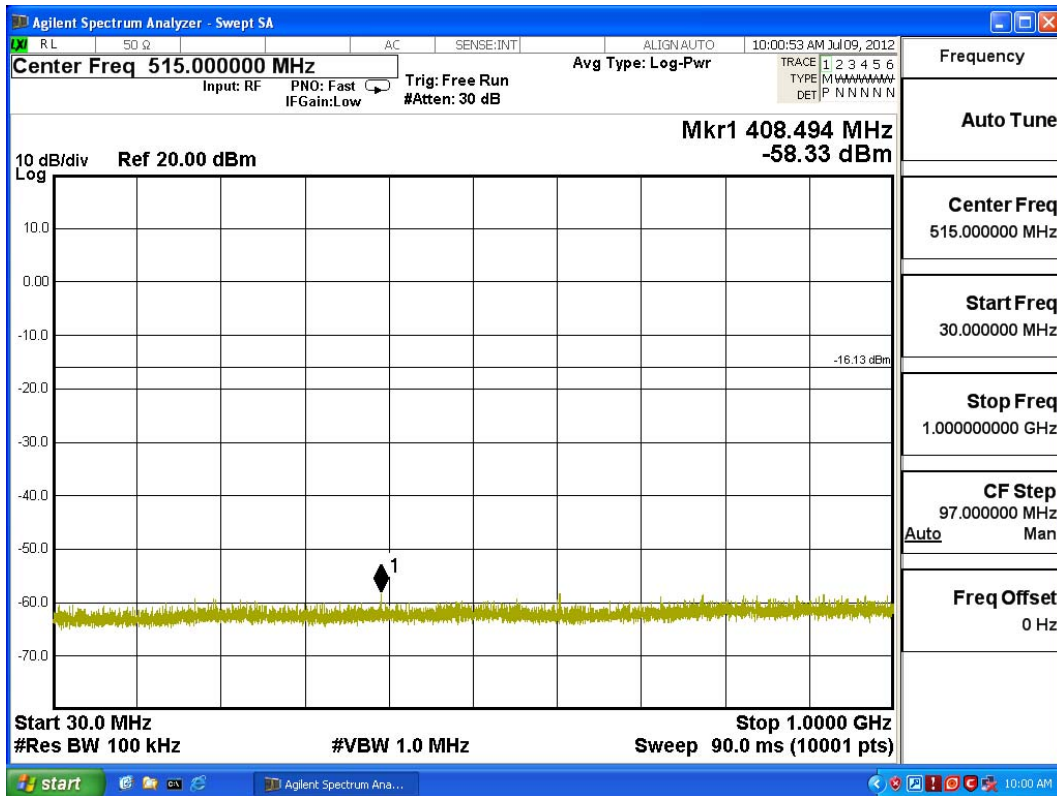


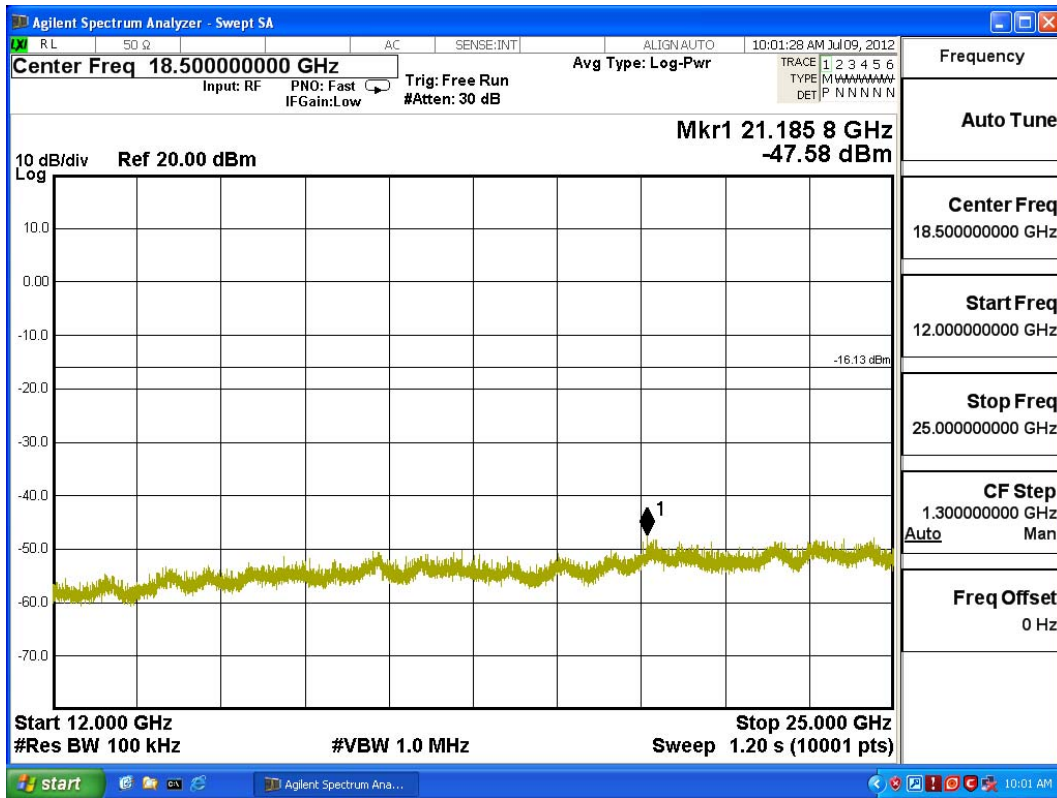
**Channel 06 (2437MHz)**





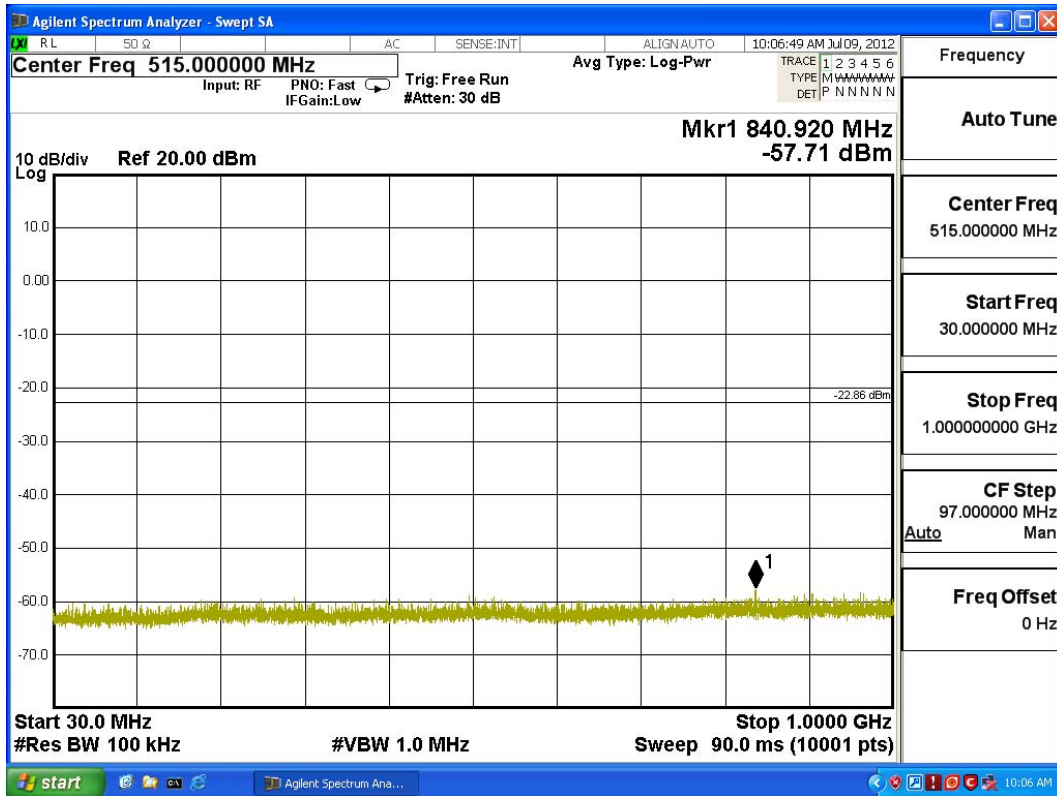
Channel 11 (2462MHz)

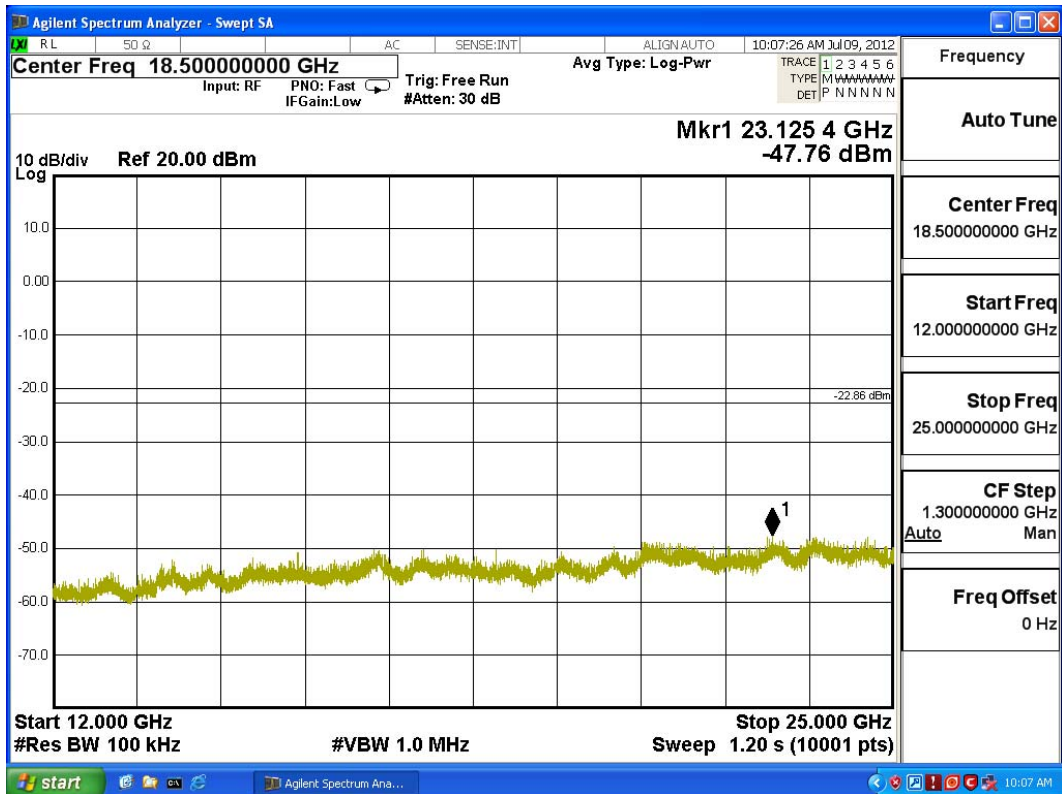
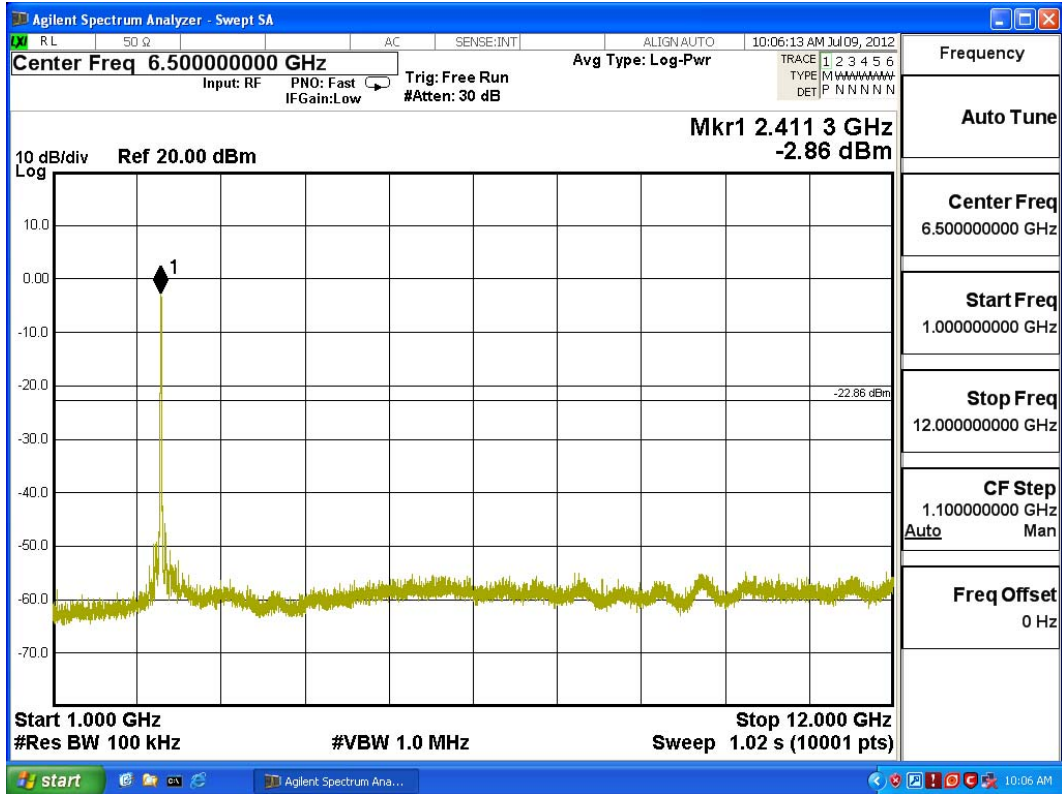




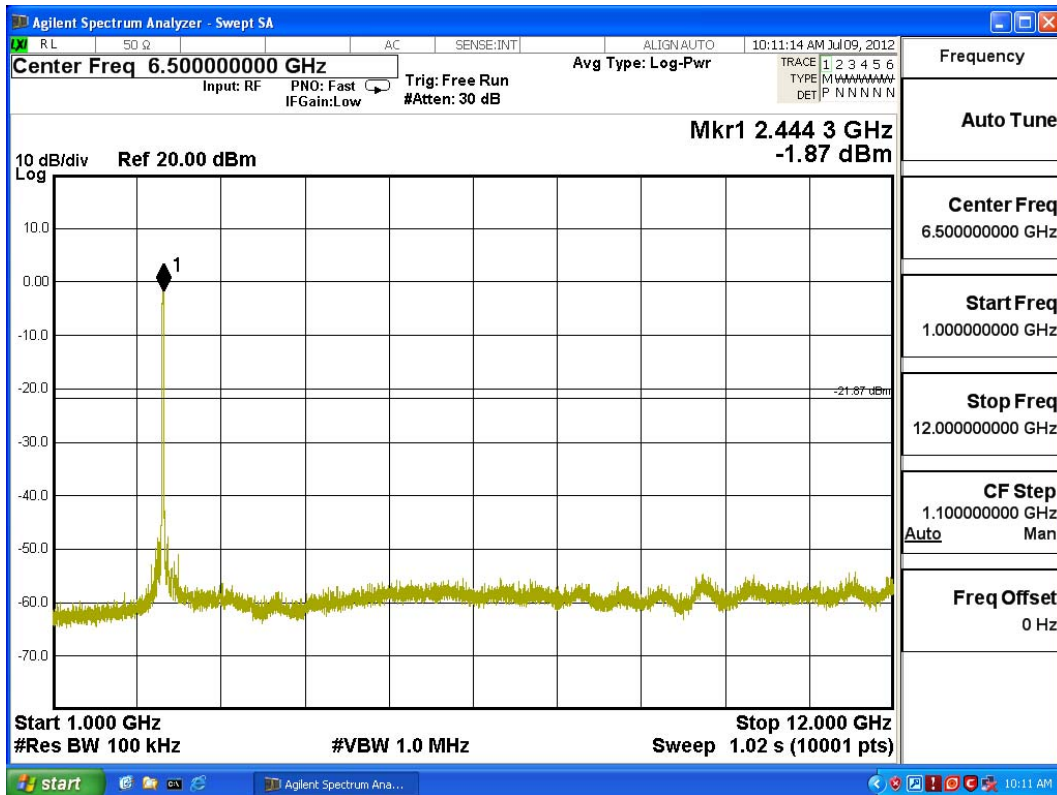
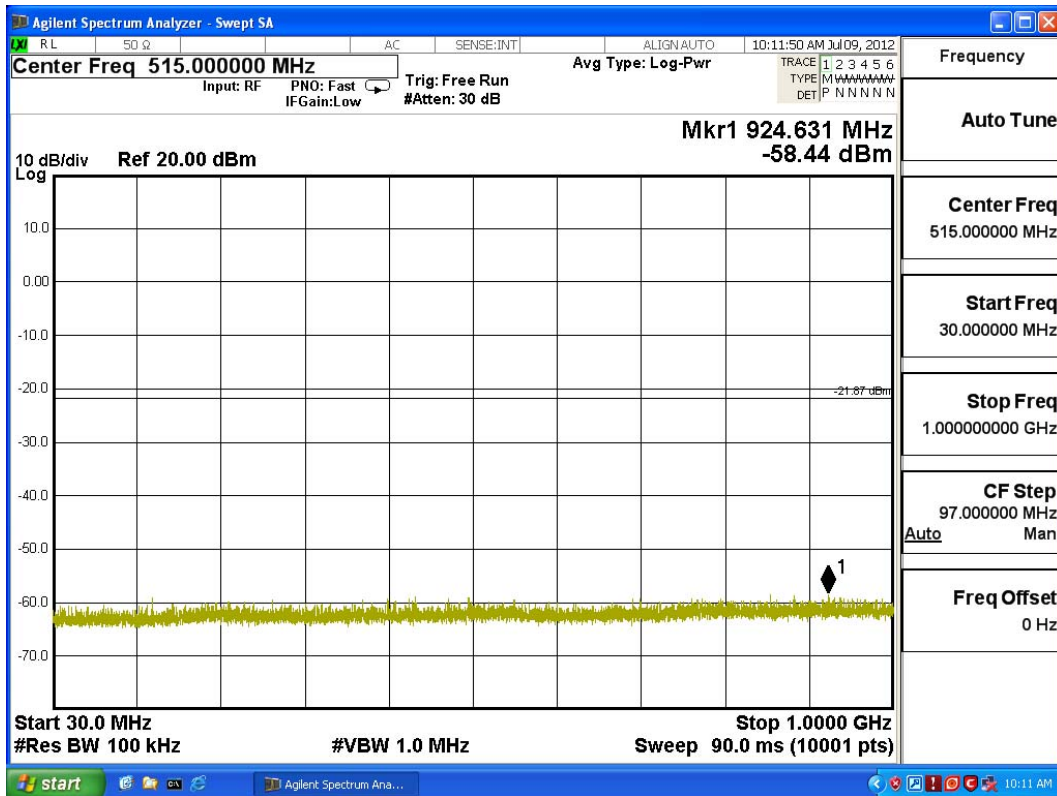
Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : RF Antenna Conducted Spurious  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

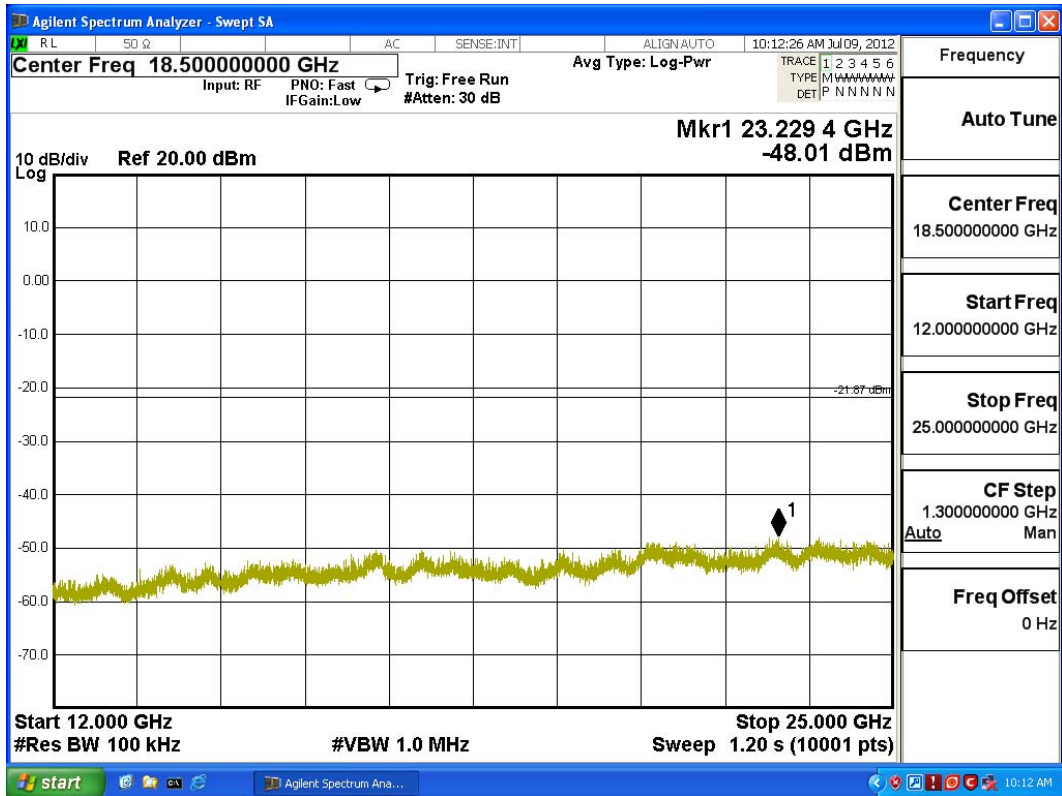
**Channel 01 (2412MHz)**





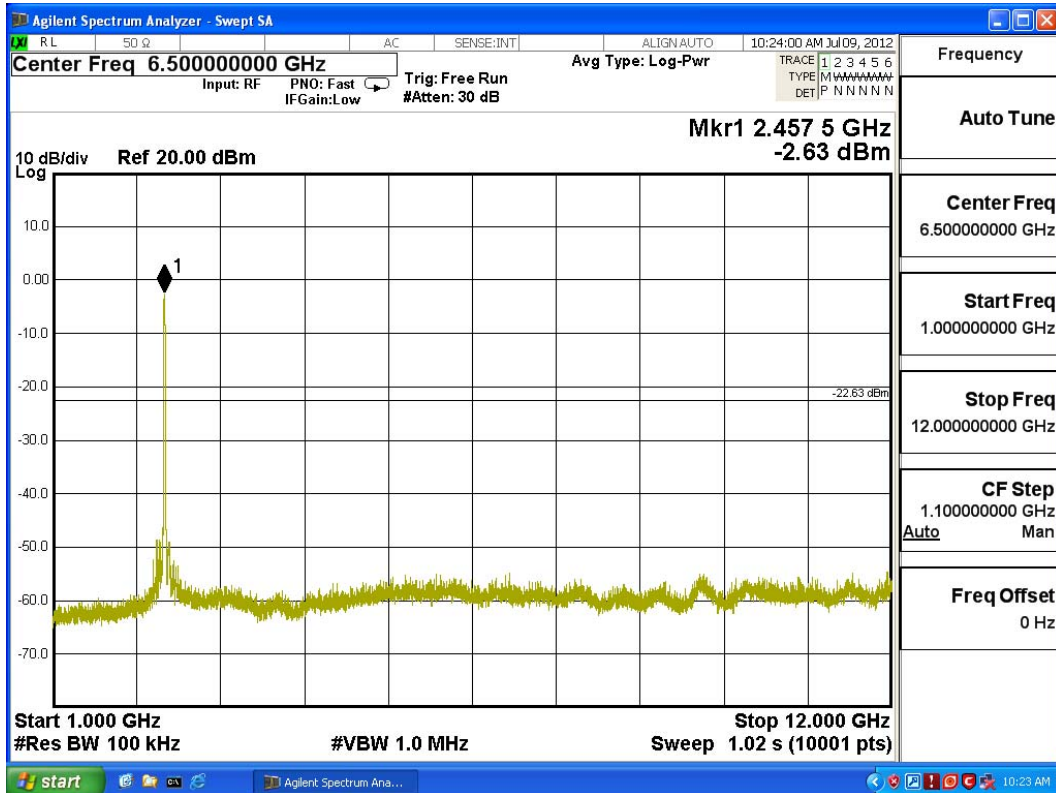
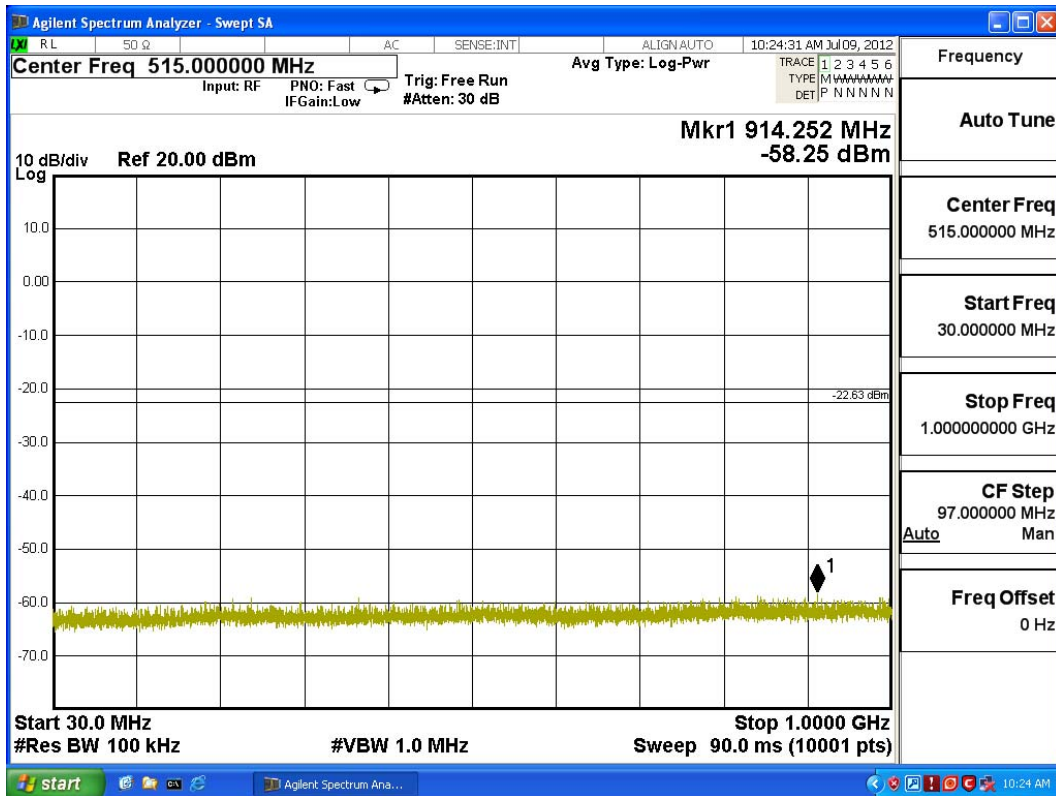
**Channel 06 (2437MHz)**







**Channel 11 (2462MHz)**





## 6. Band Edge

### 6.1. Test Equipment

#### RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

#### RF Radiated Measurement:

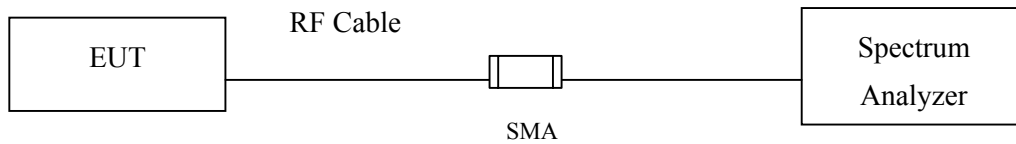
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2011
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2011
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2011
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2011
	X	Coaxial Cable	Quietek	QTK-CABLE/ CAB5	Feb., 2012
	X	Controller	Quietek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

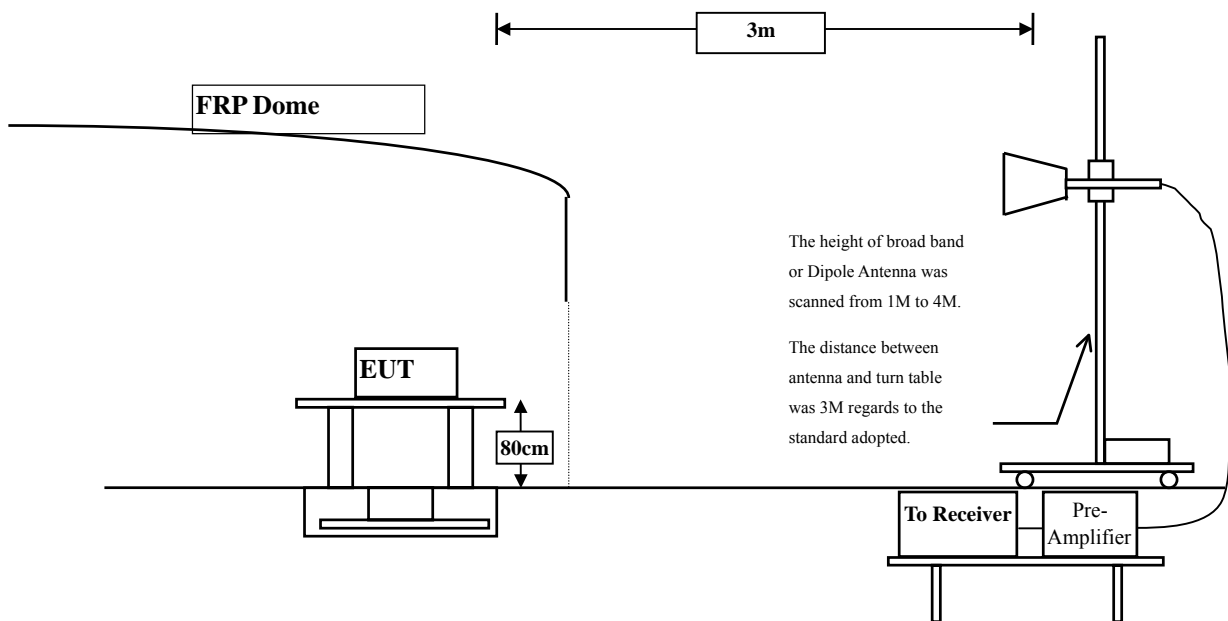
- Note:
1. All instruments are calibrated every one year.
  2. The test instruments marked by “X” are used to measure the final test results.

## 6.2. Test Setup

### RF Conducted Measurement:



### 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, 2003 and tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 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 is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.4:2003 on radiated measurement.

#### **6.5. Uncertainty**

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

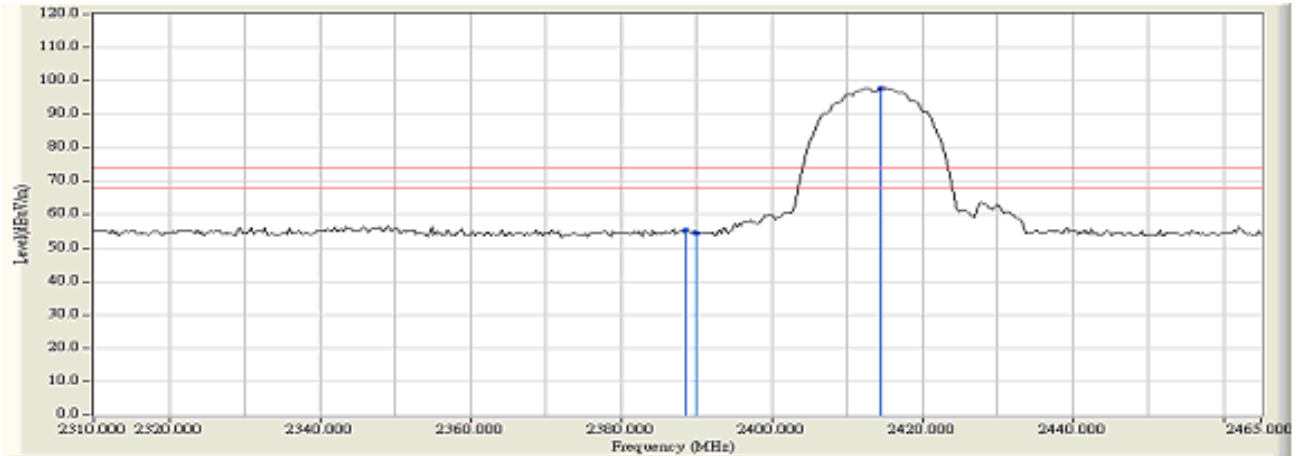
**6.6. Test Result of Band Edge**

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

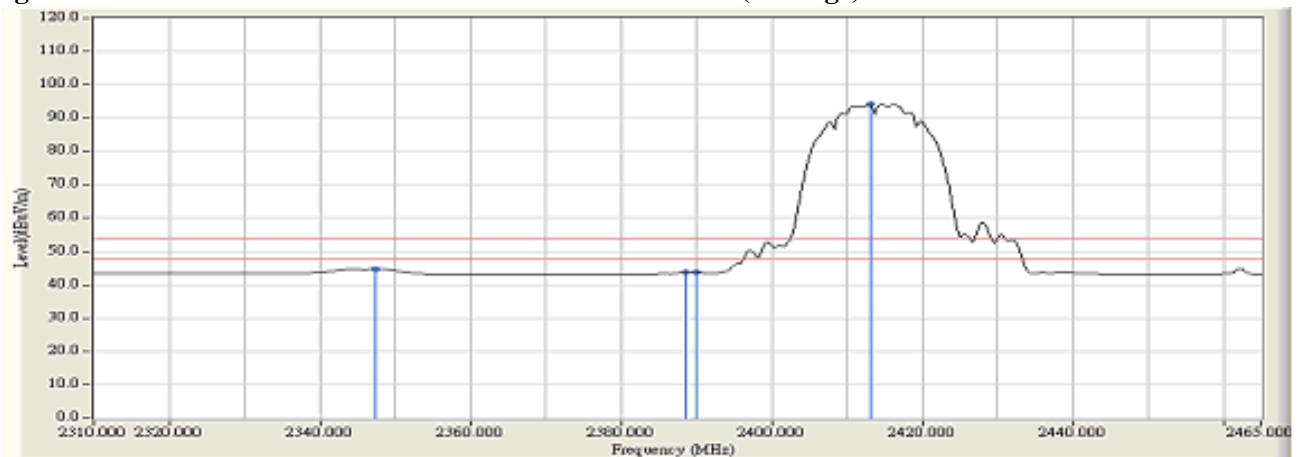
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2388.500	31.737	23.534	55.272	74.00	54.00	Pass
01 (Peak)	2390.000	31.739	22.611	54.350	74.00	54.00	Pass
01 (Peak)	2414.600	31.778	66.113	97.891	--	--	Pass
01 (Average)	2347.400	31.728	13.023	44.750	74.00	54.00	Pass
01 (Average)	2388.500	31.737	12.048	43.786	74.00	54.00	Pass
01 (Average)	2390.000	31.739	11.910	43.649	74.00	54.00	Pass
01 (Average)	2413.100	31.775	62.413	94.187	--	--	Pass

**Figure Channel 01: Horizontal (Peak)**



**Figure Channel 01: Horizontal (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.

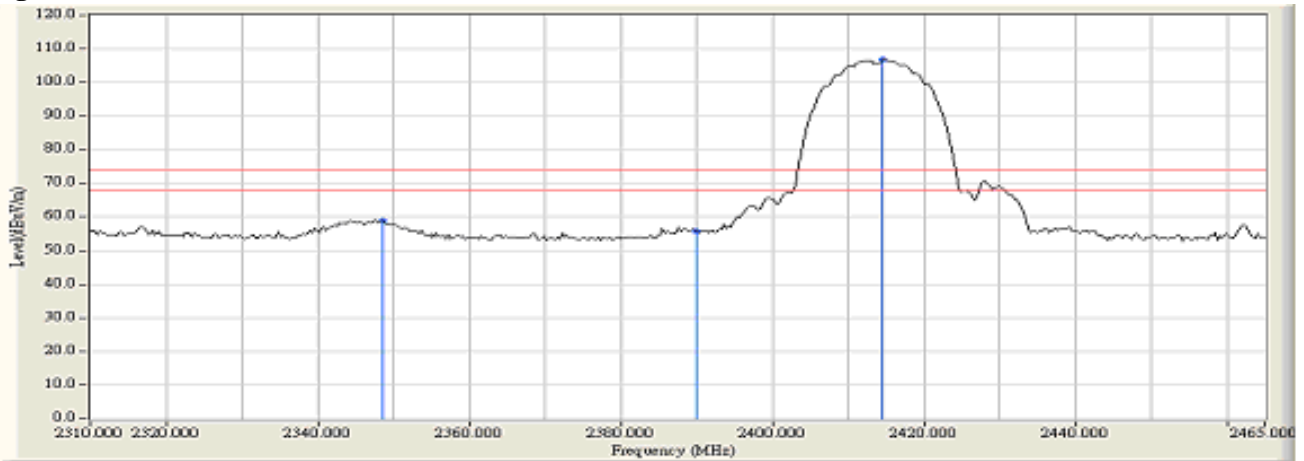
Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

**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
01 (Peak)	2348.600	30.577	28.366	58.944	74.00	54.00	Pass
01 (Peak)	2390.000	30.267	25.289	55.556	74.00	54.00	Pass
01 (Peak)	2414.600	30.261	76.471	106.732	--	--	Pass
01 (Average)	2348.600	30.577	19.348	49.926	74.00	54.00	Pass
01 (Average)	2390.000	30.267	15.987	46.254	74.00	54.00	Pass
01 (Average)	2413.100	30.254	72.755	103.009	--	--	Pass

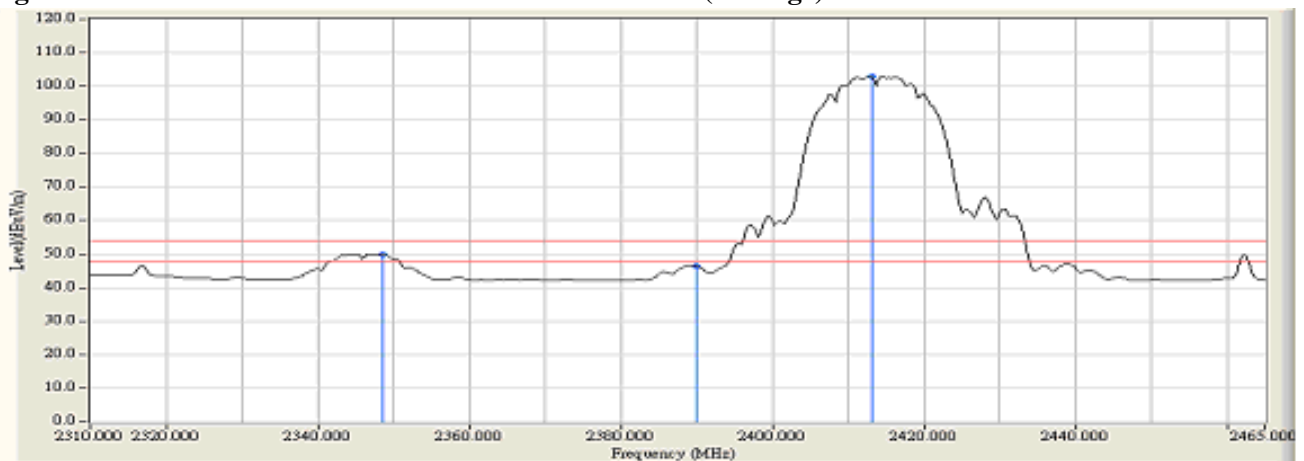
**Figure Channel 01:**

**Vertical (Peak)**



**Figure Channel 01:**

**Vertical (Average)**





## Note:

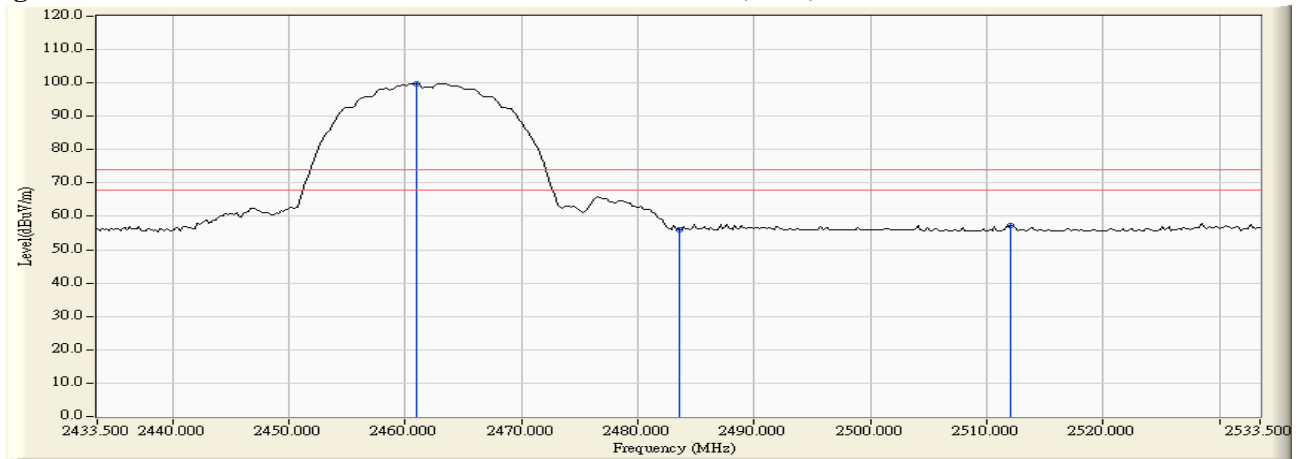
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

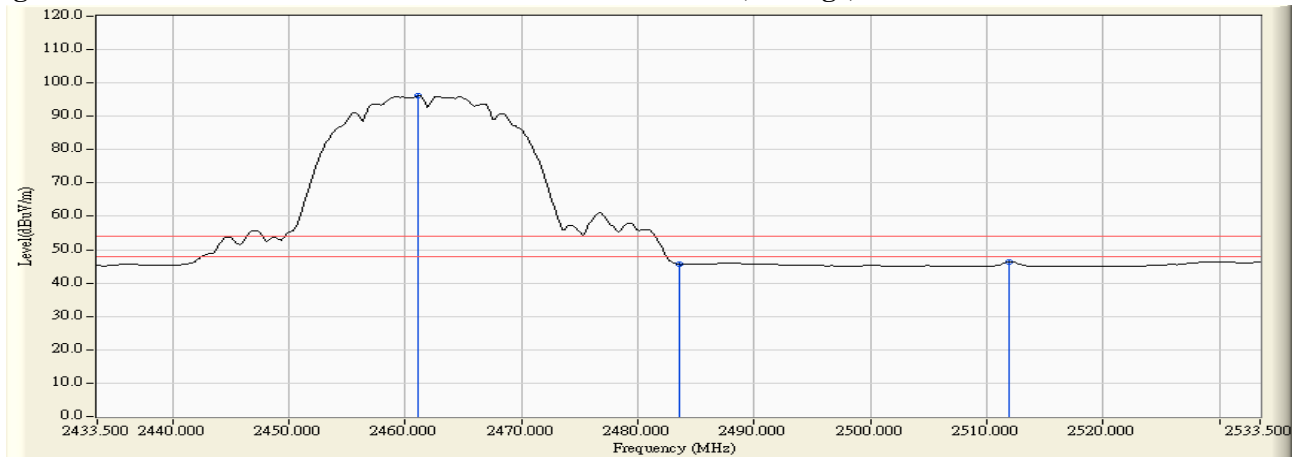
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.900	31.890	67.902	99.792	--	--	Pass
11 (Peak)	2483.500	31.951	24.162	56.112	74.00	54.00	Pass
11 (Peak)	2512.100	31.902	25.225	57.127	74.00	54.00	Pass
11 (Average)	2461.100	31.890	64.295	96.185	--	--	Pass
11 (Average)	2483.500	31.951	13.616	45.566	74.00	54.00	Pass
11 (Average)	2511.900	31.903	14.463	46.366	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Figure Channel 11: Horizontal (Average)**



## Note:

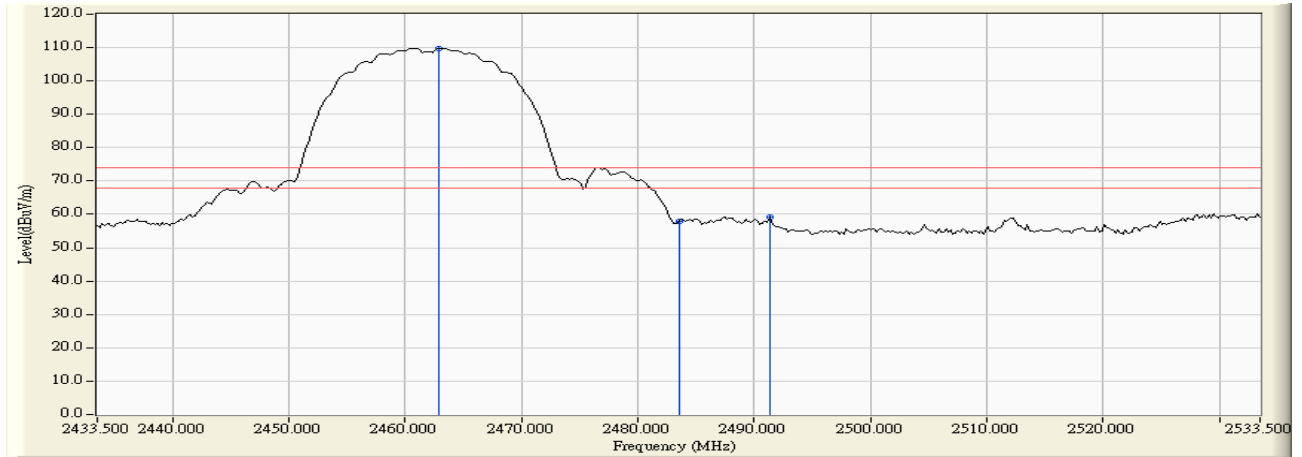
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

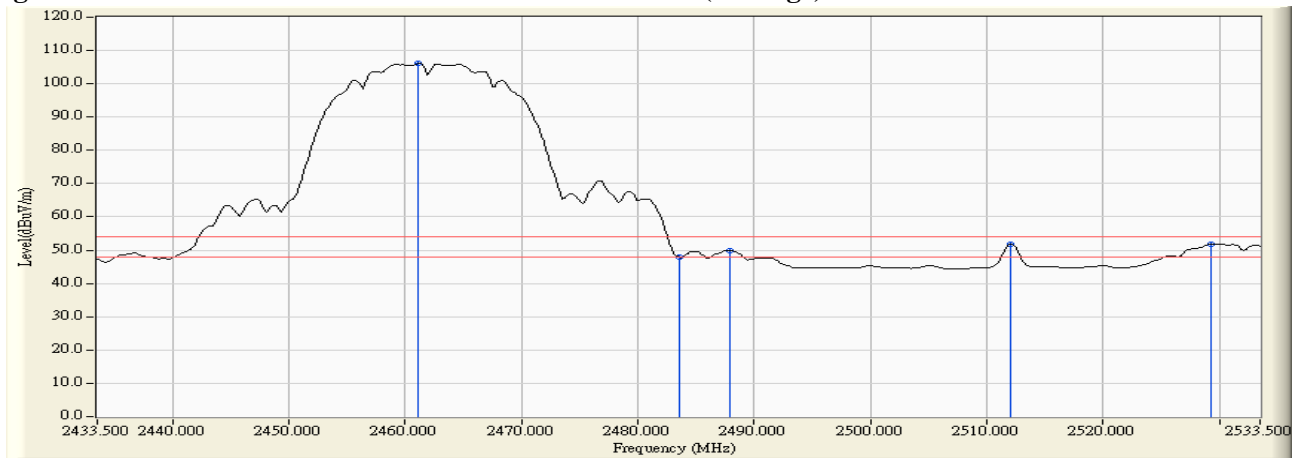
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2462.900	30.485	79.281	109.766	--	--	Pass
11 (Peak)	2483.500	30.586	27.325	57.910	74.00	54.00	Pass
11 (Peak)	2491.300	30.623	28.415	59.038	74.00	54.00	Pass
11 (Average)	2461.100	30.476	75.684	106.160	--	--	Pass
11 (Average)	2483.500	30.586	17.322	47.907	74.00	54.00	Pass
11 (Average)	2487.900	30.607	19.320	49.926	74.00	54.00	Pass
11 (Average)	2512.100	30.723	21.077	51.801	74.00	54.00	Pass
11 (Average)	2529.300	30.807	20.989	51.796	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 01: Vertical (Average)**



## Note:

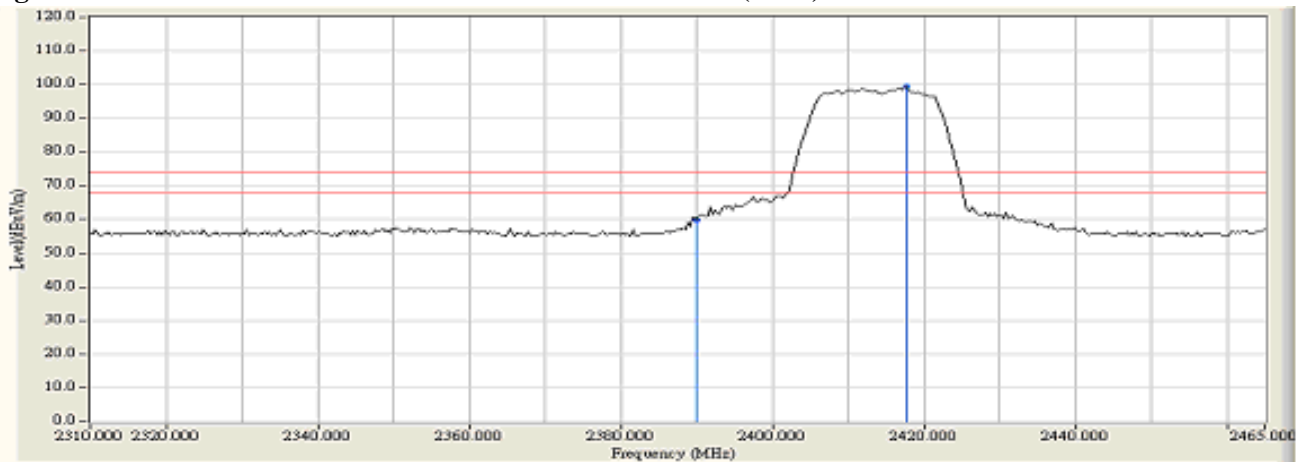
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

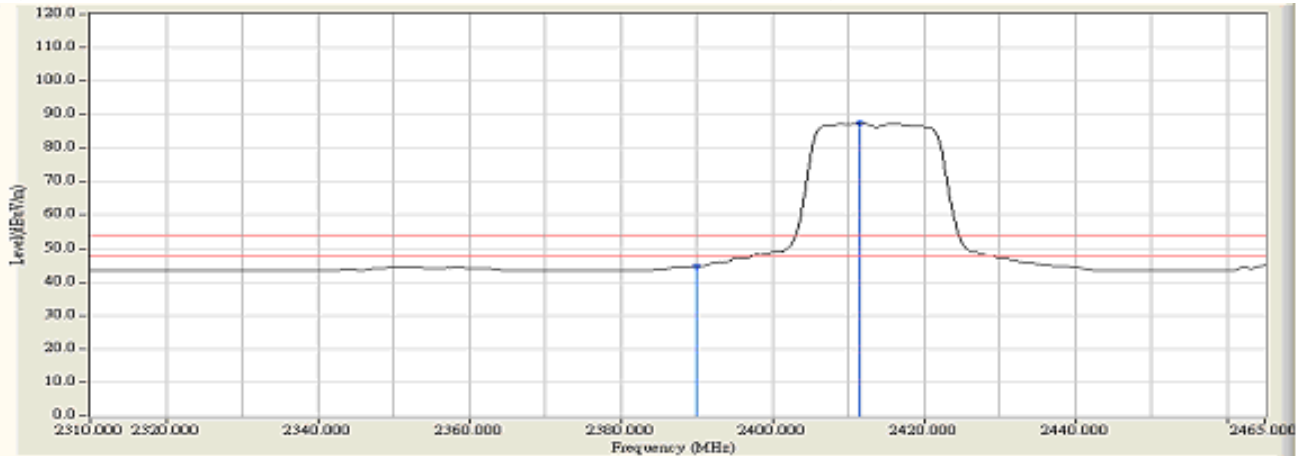
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.739	28.028	59.767	74.00	54.00	Pass
01 (Peak)	2417.600	31.785	67.546	99.331	--	--	Pass
01(Average)	2390.000	31.739	13.021	44.760	74.00	54.00	Pass
01 (Average)	2411.600	31.771	55.651	87.422	--	--	Pass

**Figure Channel 01: Horizontal (Peak)**



**Figure Channel 01: Horizontal (Average)**



## Note:

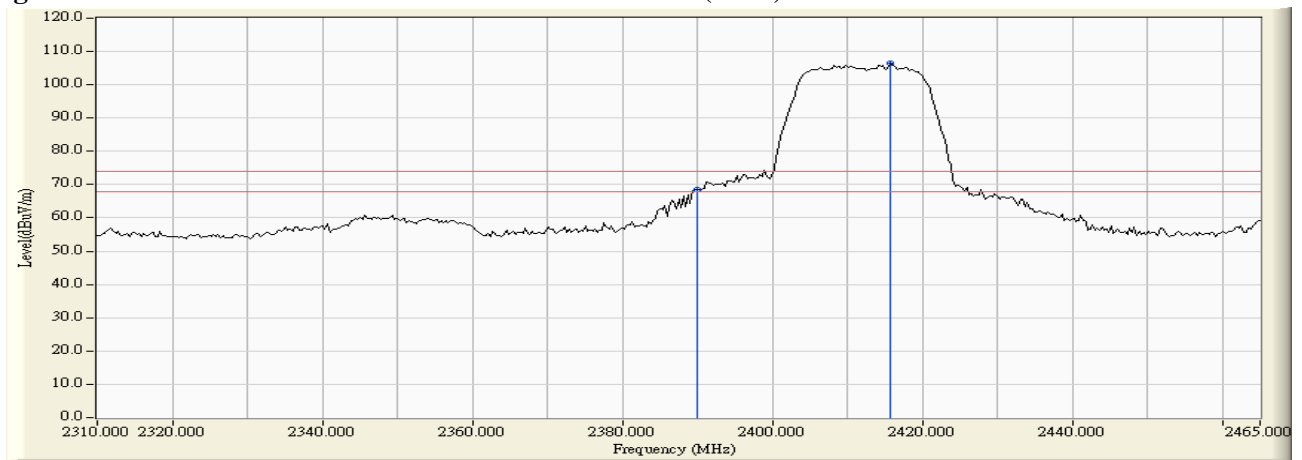
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

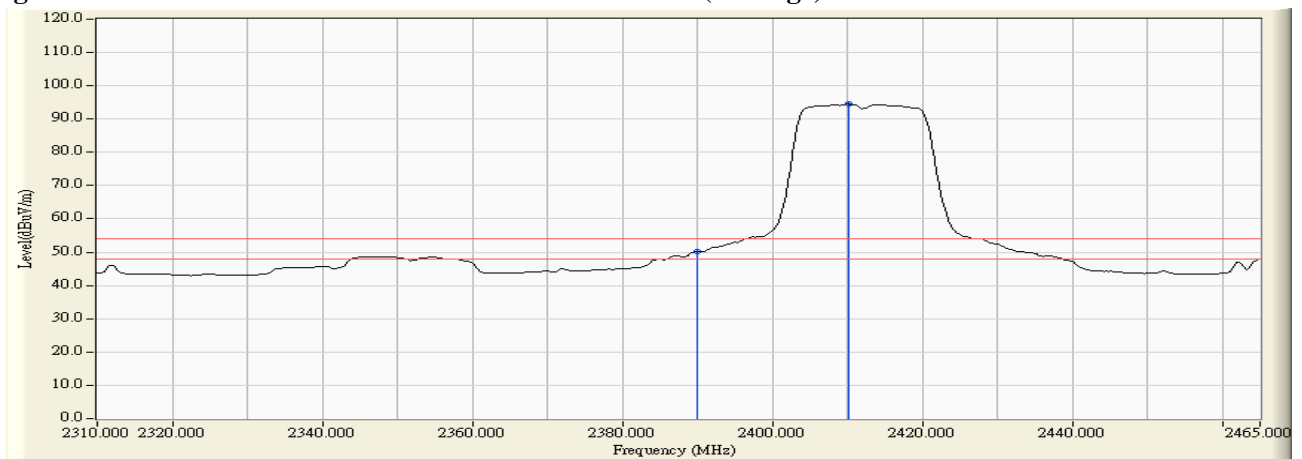
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.267	38.345	68.612	74.00	54.00	Pass
01 (Peak)	2415.710	30.266	76.218	106.484	--	--	Pass
01 (Average)	2390.000	30.267	20.001	50.268	74.00	54.00	Pass
01 (Average)	2410.130	30.244	64.243	94.487	--	--	Pass

**Figure Channel 01: Vertical (Peak)**



**Figure Channel 01: Vertical (Average)**





## Note:

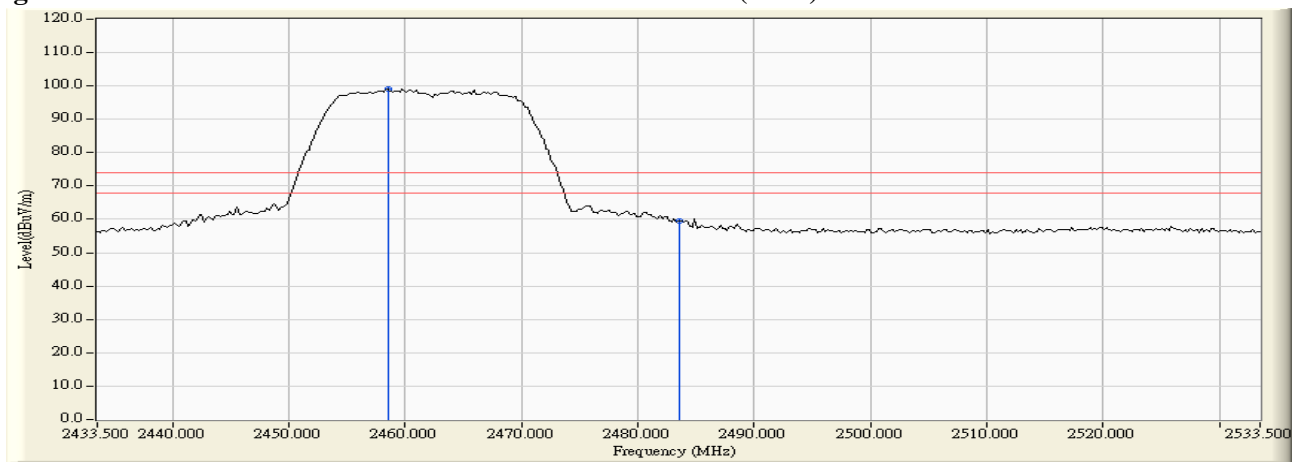
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

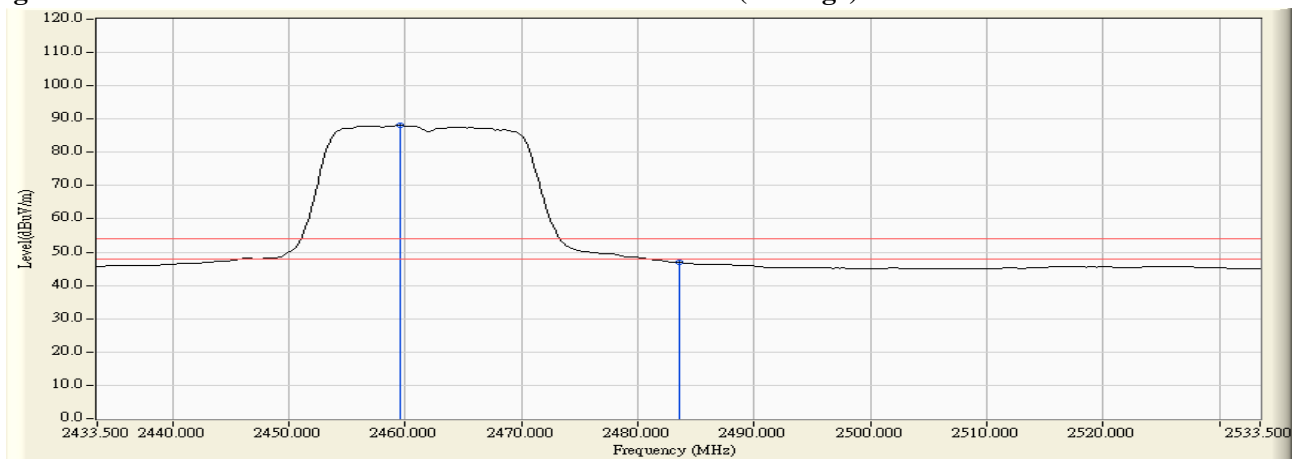
**RF Radiated Measurement (Horizontal):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.500	31.883	67.224	99.108	--	--	Pass
11 (Peak)	2483.500	31.951	27.686	59.636	74.00	54.00	Pass
11(Average)	2459.500	31.886	56.153	88.039	--	--	Pass
11 (Average)	2483.500	31.951	14.953	46.903	74.00	54.00	Pass

**Figure Channel 11: Horizontal (Peak)**



**Figure Channel 11: Horizontal (Average)**



## Note:

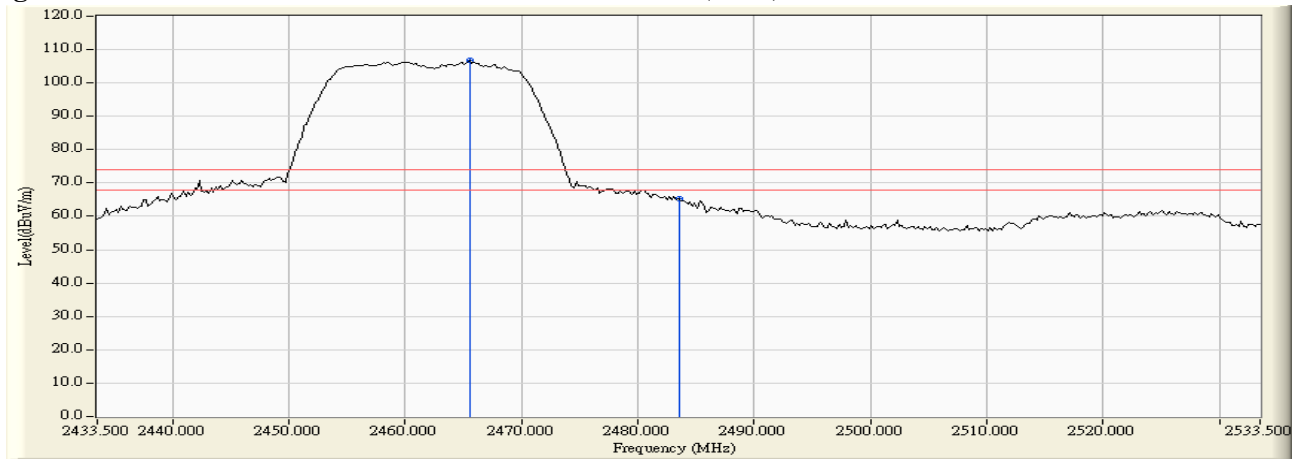
1. All readings above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. “ \* ”, means this data is the worst emission level.
5. Measurement Level = Reading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

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Band Edge Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

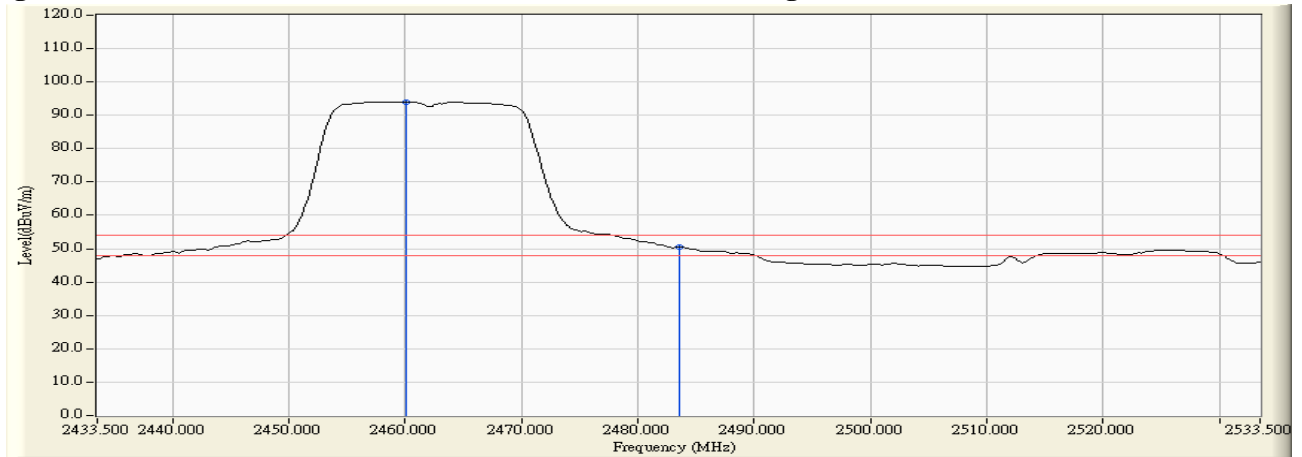
**RF Radiated Measurement (Vertical):**

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2465.500	30.497	76.154	106.651	--	--	Pass
11 (Peak)	2483.500	30.586	34.843	65.428	74.00	54.00	Pass
11 (Average)	2460.100	30.471	63.626	94.097	--	--	Pass
11 (Average)	2483.500	30.586	19.839	50.424	74.00	54.00	Pass

**Figure Channel 11: Vertical (Peak)**



**Figure Channel 11: Vertical (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. Occupied Bandwidth

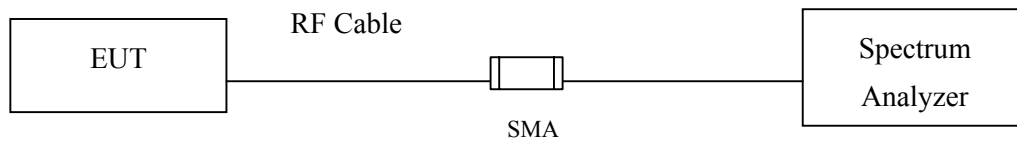
### 7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 7.2. Test Setup



### 7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

### 7.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, VBW ≥ 3\*RBW

### 7.5. Uncertainty

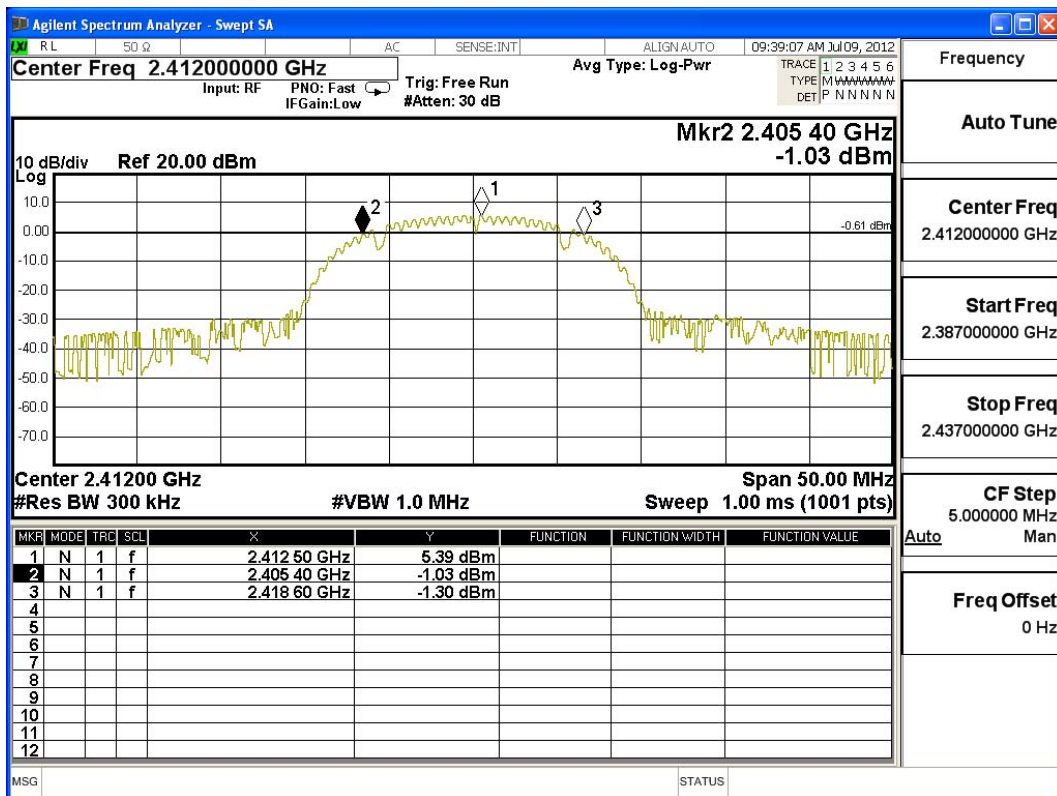
± 150Hz

### 7.6. Test Result of Occupied Bandwidth

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	13200	>500	Pass

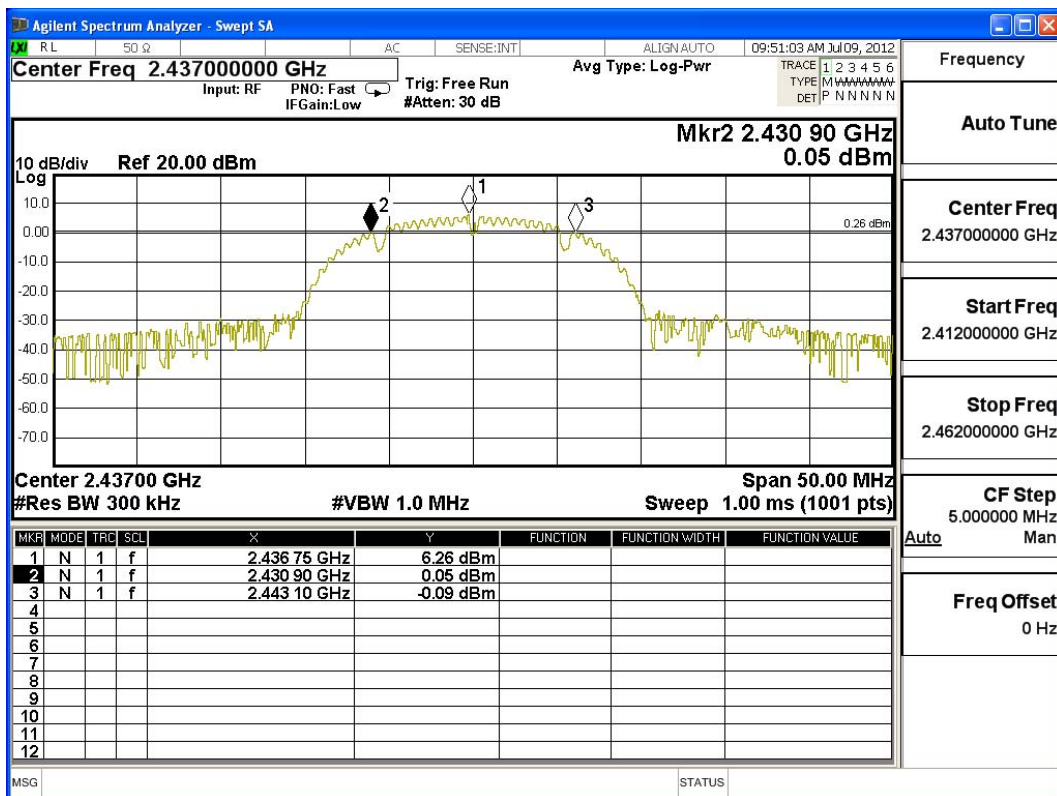
Figure Channel 1:



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	12200	>500	Pass

**Figure Channel 6:**

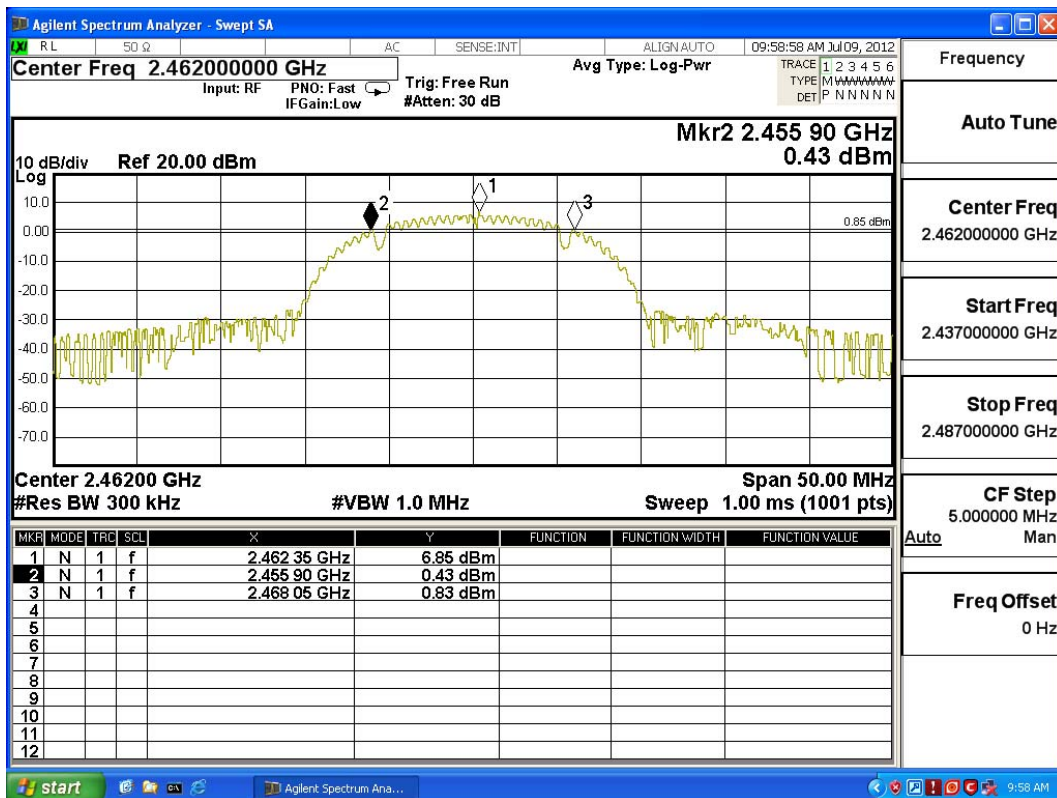




Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	12150	>500	Pass

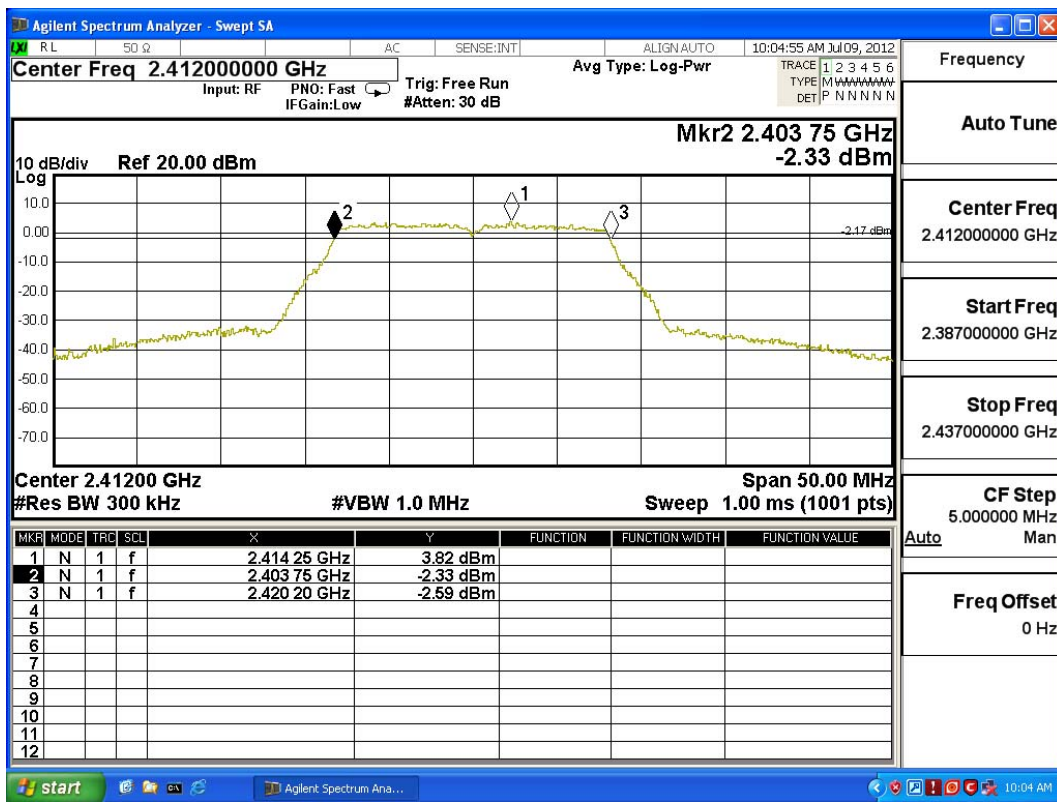
**Figure Channel 11:**



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	16450	>500	Pass

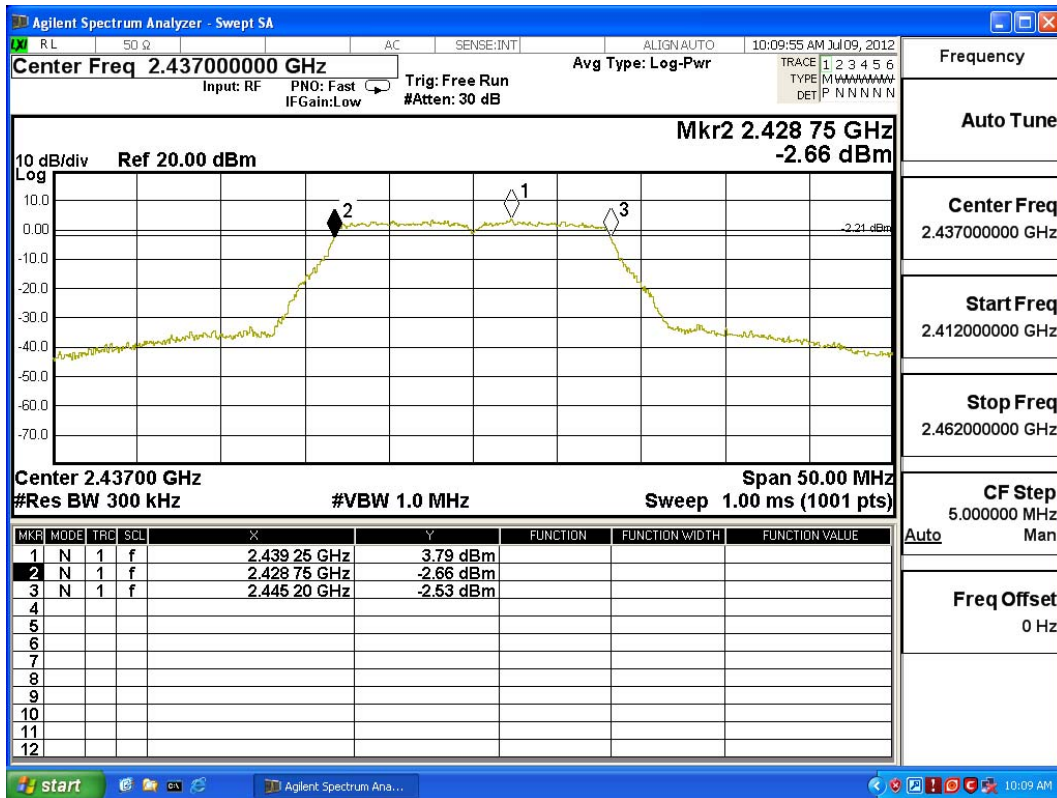
Figure Channel 1:



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	16450	>500	Pass

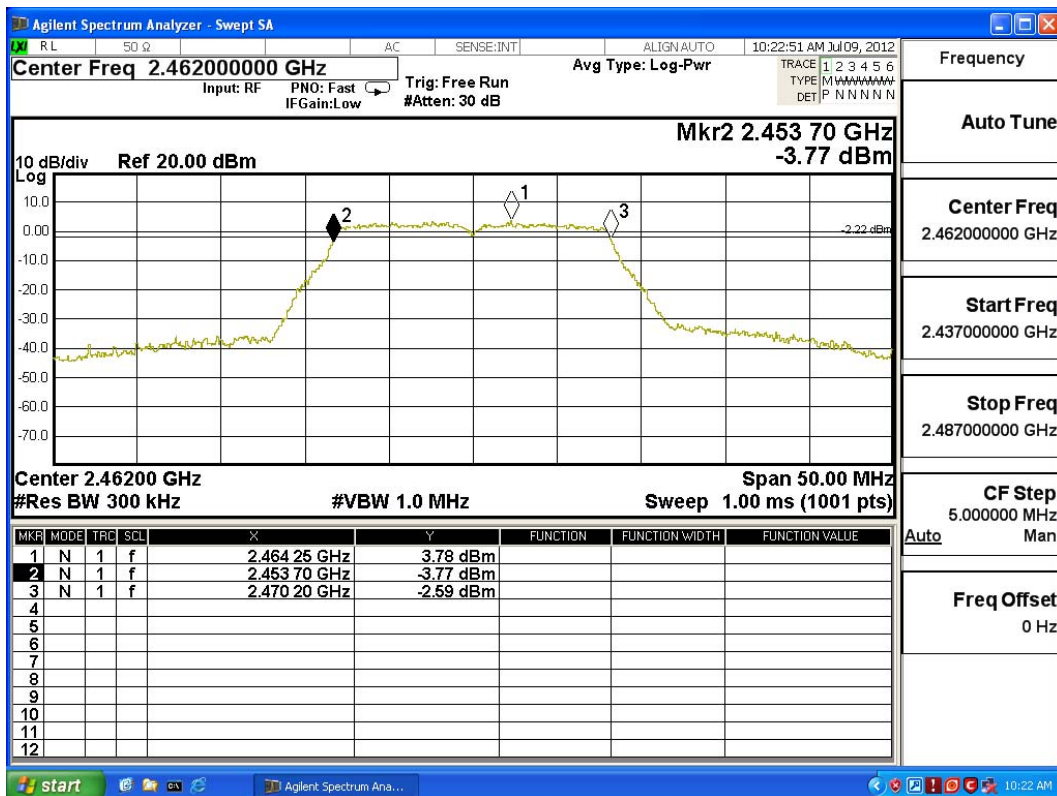
**Figure Channel 6:**



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Occupied Bandwidth Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16500	>500	Pass

**Figure Channel 11:**



## 8. Power Density

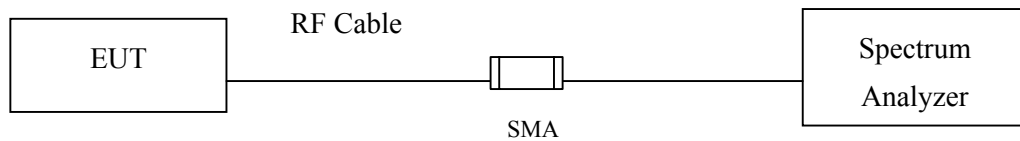
### 8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

### 8.2. Test Setup



### 8.3. Limits

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

### 8.4. Test Procedure

The EUT was setup according to ANSI C63.4, 2003; tested according to DTS test procedure of Jan. 2012 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 100 kHz, VBW $\geq$ 300KHz, SPAN to 5-30 % greater than the EBW,

Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where  $BWCF = 10\log(3\text{ kHz}/100\text{ kHz}) = -15.2\text{ dB}$ .

### 8.5. Uncertainty

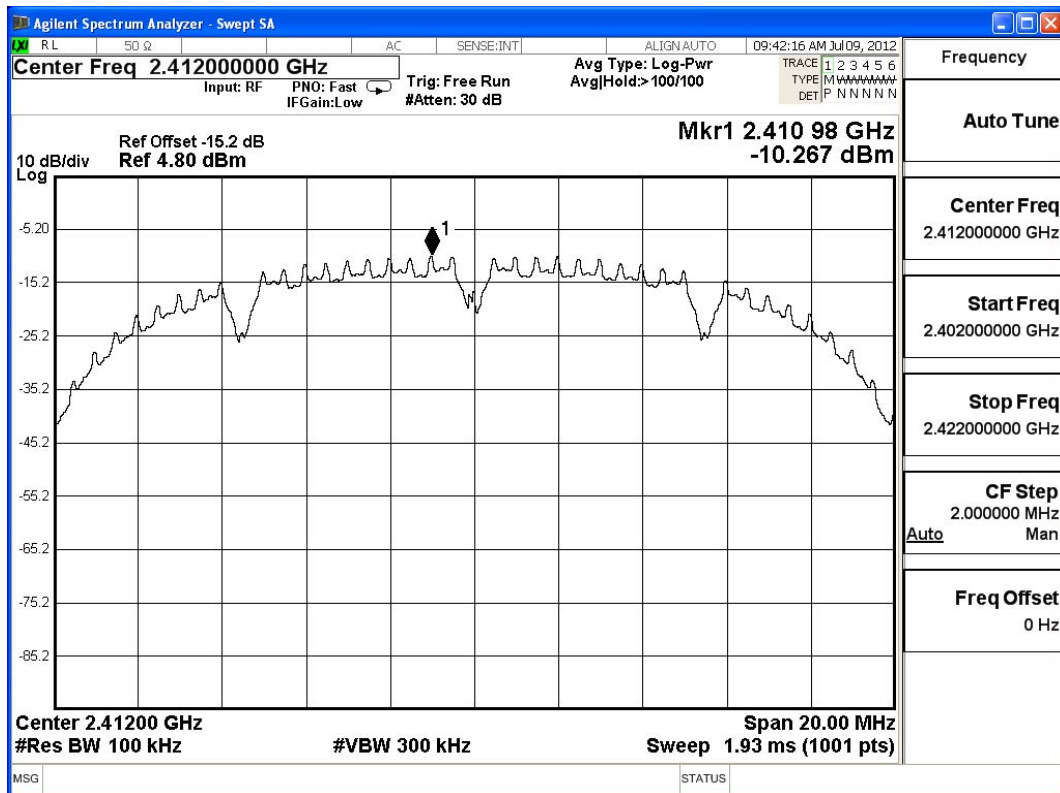
$\pm 1.27\text{ dB}$

### 8.6. Test Result of Power Density

Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-10.267	< 8dBm	Pass

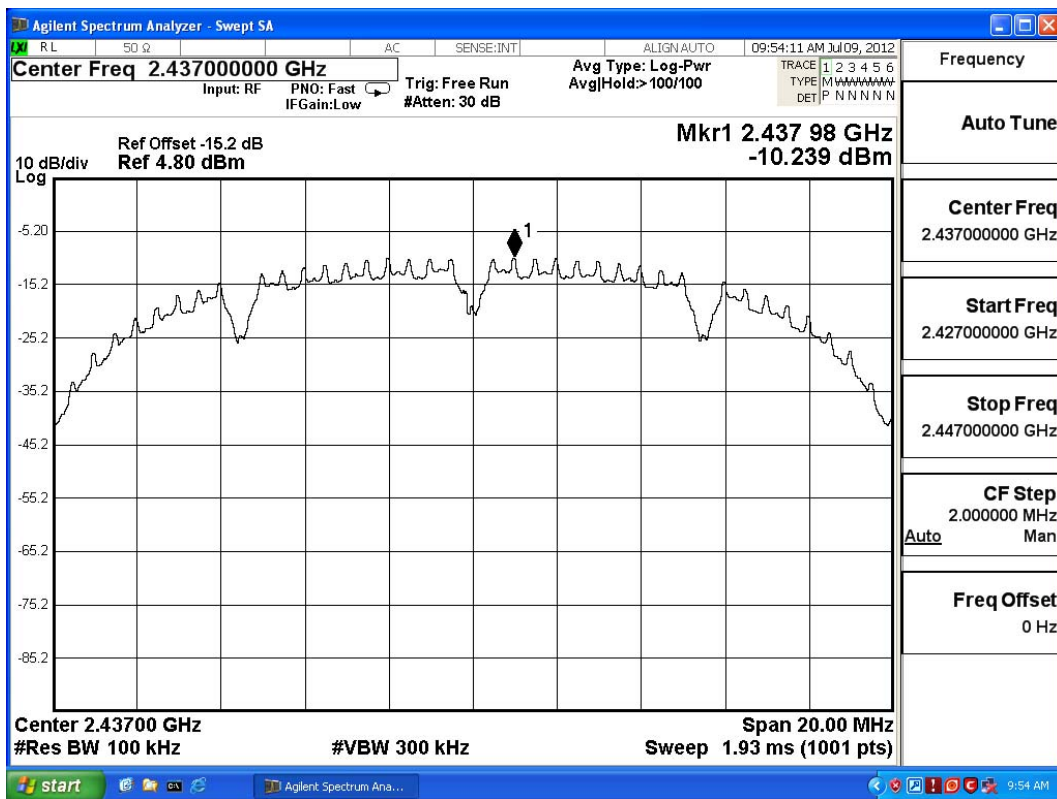
Figure Channel 1:



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-10.239	< 8dBm	Pass

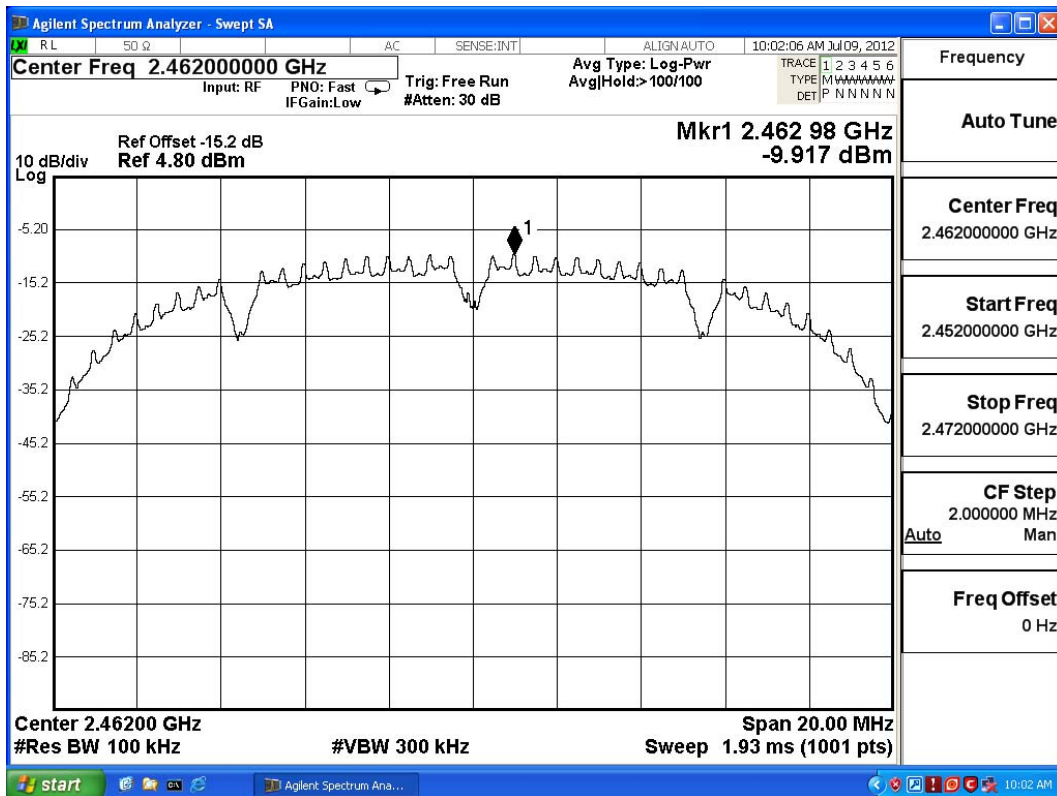
Figure Channel 6:



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-9.917	< 8dBm	Pass

**Figure Channel 11:**

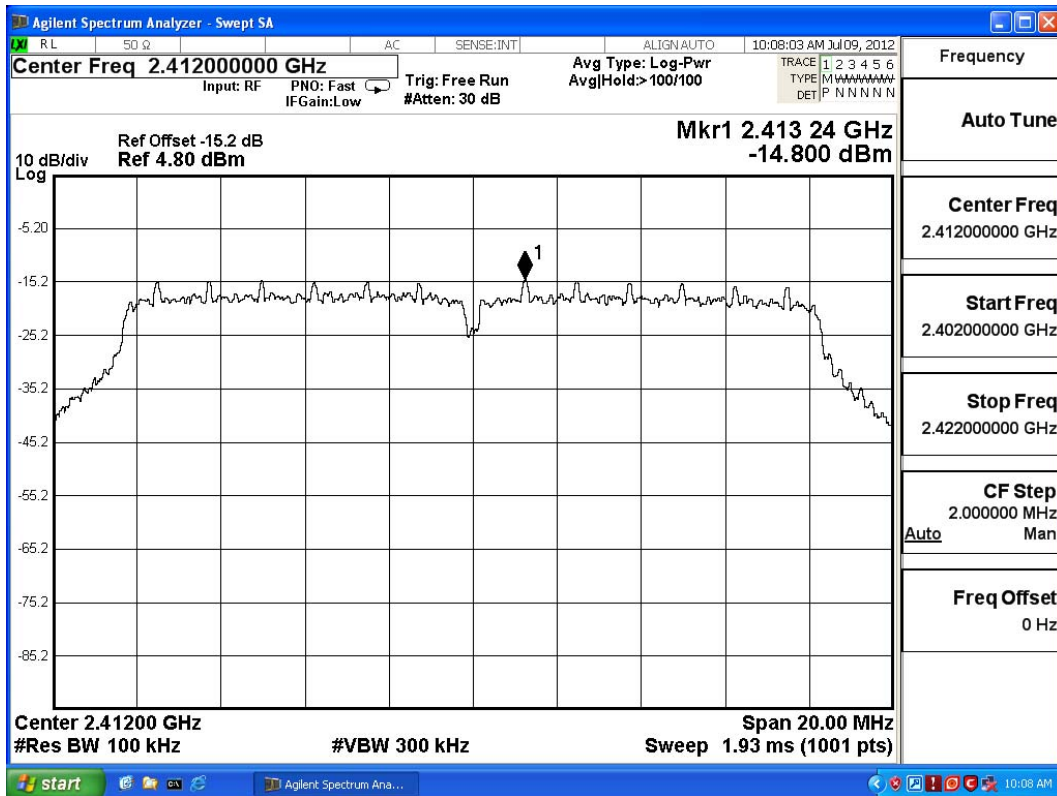




Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-14.800	< 8dBm	Pass

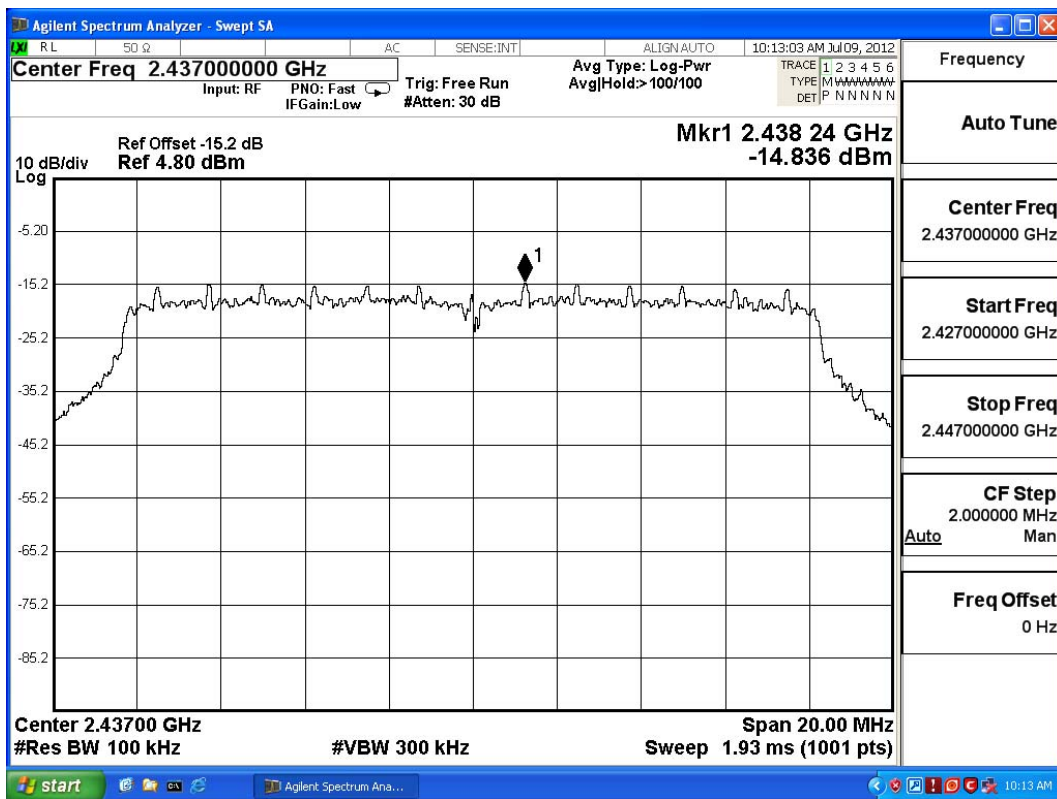
**Figure Channel 1:**



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-14.836	< 8dBm	Pass

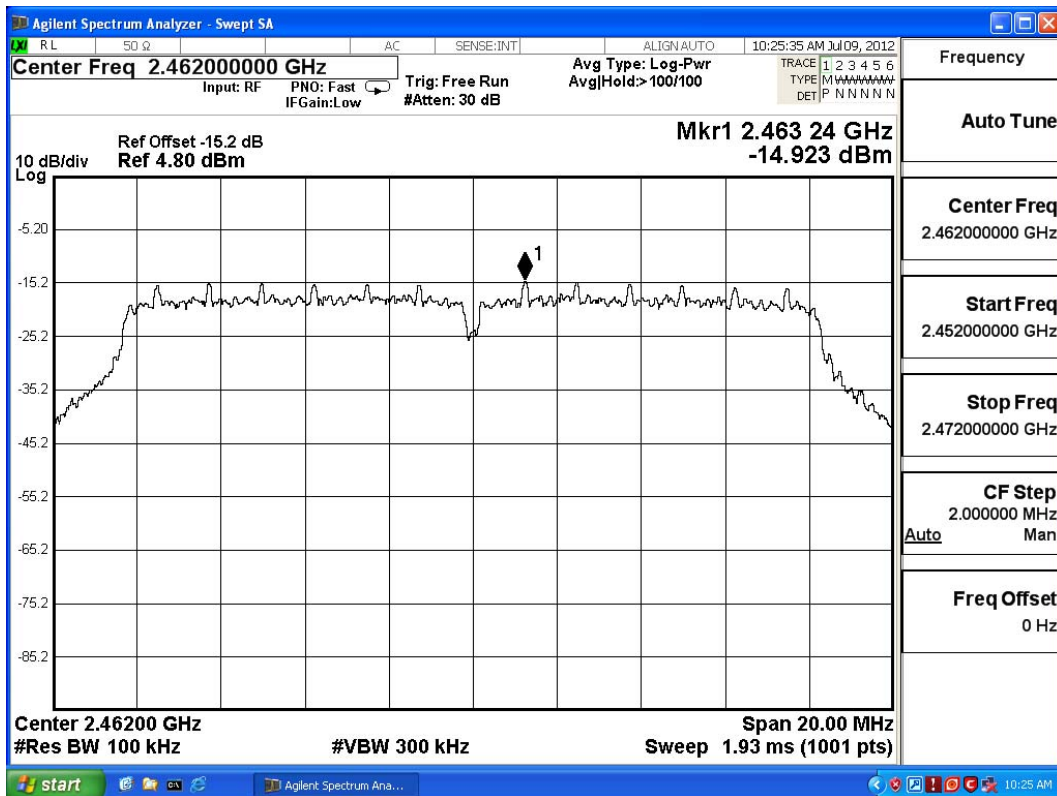
**Figure Channel 6:**



Product : DOCK FOR iPhone/iPad WITH AirPlay  
 Test Item : Power Density Data  
 Test Site : No.3 OATS  
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-14.923	< 8dBm	Pass

**Figure Channel 11:**



## 9. EMI Reduction Method During Compliance Testing

No modification was made during testing.