

FC

Test Report

Product Name	modlet IQ
Model No	TE7010
FCC ID.	Y38TE7010

Applicant	ThinkEco Inc.
Address	148 Madison Avenue, 8th Floor, New York, NY, United States, 10016

Date of Receipt	Jan, 15. 2013
Issue Date	Jan. 16, 2013
Report No.	131305R-RFUSP42V01
Report Version	V1.0



The test results relate only to the samples tested.
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Test Report Certification

Issue Date: Jan. 16, 2013

Report No.: 131305R-RFUSP42V01


Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

Product Name	modlet IQ
Applicant	ThinkEco Inc.
Address	148 Madison Avenue, 8th Floor, New York, NY, United States,10016
Manufacturer	DONG GUAN G-COM COMPUTER CO., LTD
Model No.	TE7010
EUT Rated Voltage	DC 3.3V
EUT Test Voltage	AC 120V/ 60Hz
Trade Name	Thinkeco Inc.
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2012 ANSI C63.4: 2003, ANSI C63.10: 2009
Test Result	Complied

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Documented By : Anita Chou
(Senior Engineering Adm. Specialist / Anita Chou)

Tested By : Alan Chen
(Engineer / Alan Chen)

Approved By : Vincent Lin
(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	modlet IQ
Trade Name	Thinkeco Inc.
Model No.	TE7010
FCC ID.	Y38TE7010
Frequency Range	2405~2475MHz
Channel Separation	5 MHz
Channel Number	15
Type of Modulation	OQPSK
Antenna Type	Chip Antenna, PIFA Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	JOHANSON	2450AT18A100	Chip Antenna	0.5dBi for 2.4 GHz
2.	MAGLAYERS	PCA-5015-2G4C2-A1	PIFA Antenna	2.69dBi for 2.4 GHz

Note: The antenna of EUT is conform to FCC 15.203

Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2405MHz	Channel 02:	2410MHz	Channel 03:	2415 MHz	Channel 04:	2420 MHz
Channel 05:	2425MHz	Channel 06:	2430MHz	Channel 07:	2435 MHz	Channel 08:	2440 MHz
Channel 09:	2445 MHz	Channel 10:	2450 MHz	Channel 11:	2455 MHz	Channel 12:	2460 MHz
Channel 13:	2465MHz	Channel 14:	2470 MHz	Channel 15:	2475 MHz		

Note:

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

Test Mode:	Mode 1: Transmit
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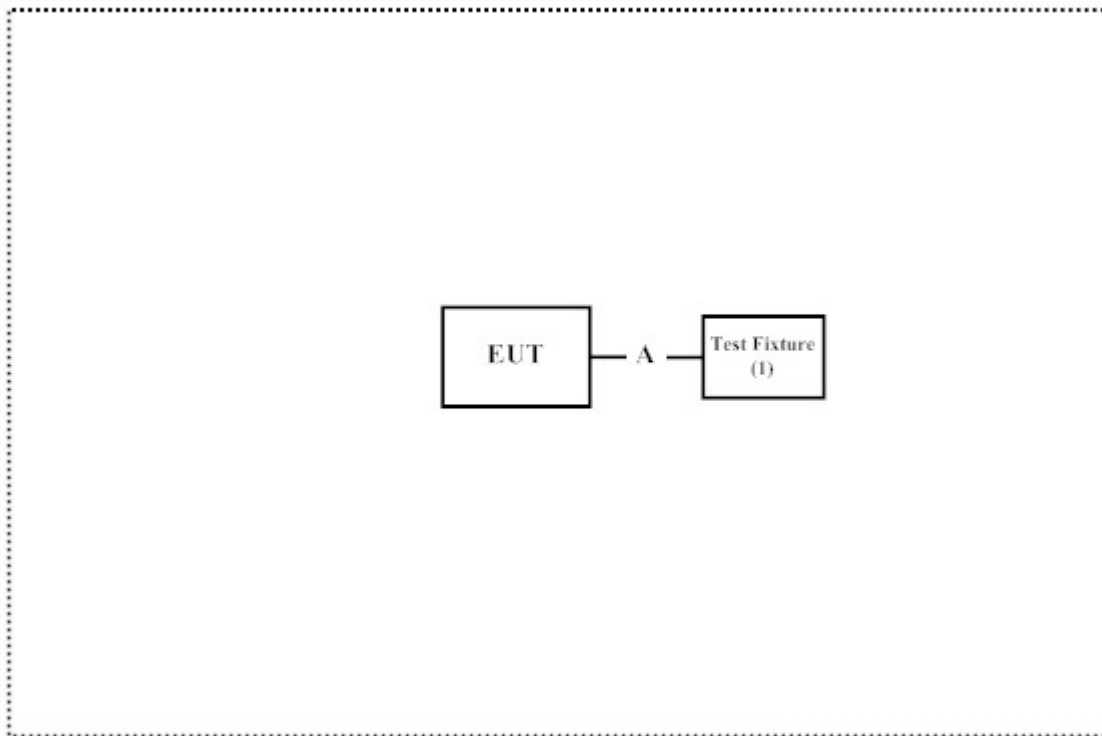
1.3. Tested System Details

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.	Power Cord
1 Test Fixture	LITE-ON	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A Signal Cable	Non-Shielded, 0.13m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4.
- (2) Press and hold the button of Test Fixture.
- (3) Configure the test mode, the test channel to start the continuous transmit
- (4) 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://tw.quietek.com/tw/emc/accreditations/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

Site Name: Quietek Corporation
 Site Address: No.5-22, Ruishukeng,
 Linkou Dist. New Taipei City 24451,
 Taiwan, R.O.C.
 TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
 E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

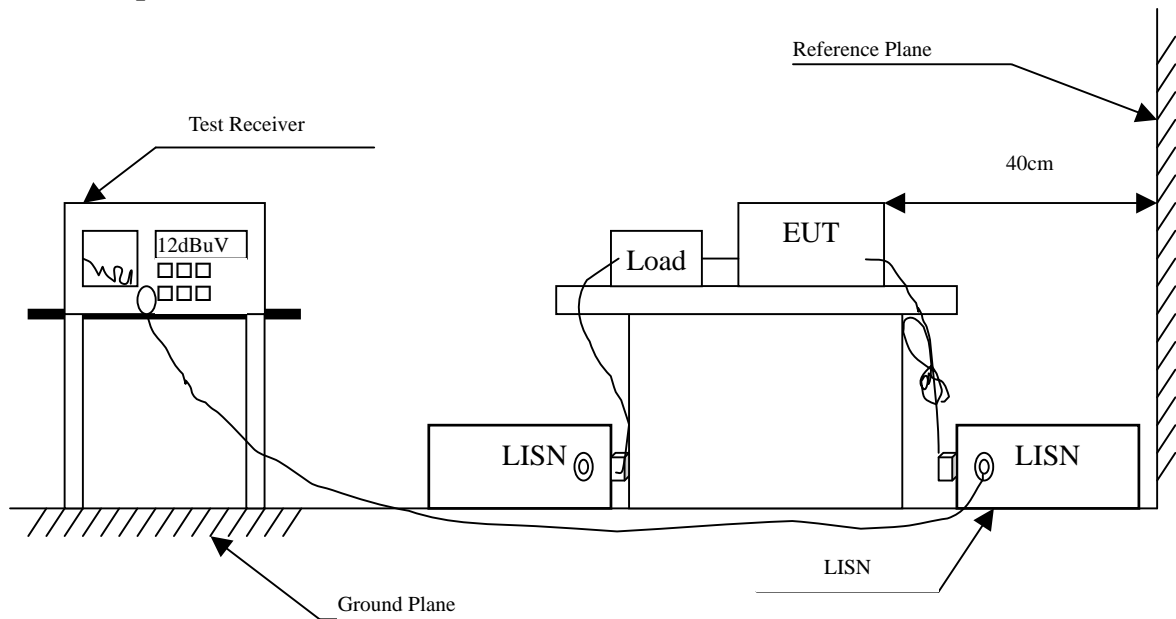
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2012	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2012	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2012	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2012	
	No.8 Shielded Room				

Note:

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

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
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 C63.10: 2009 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 : modlet IQ
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.201	9.830	14.440	24.270	-40.273	64.543
0.318	9.830	26.050	35.880	-25.320	61.200
0.595	9.830	15.880	25.710	-30.290	56.000
0.795	9.830	14.880	24.710	-31.290	56.000
2.017	9.840	12.940	22.780	-33.220	56.000
6.810	9.905	9.380	19.285	-40.715	60.000
Average					
0.201	9.830	7.730	17.560	-36.983	54.543
0.318	9.830	19.580	29.410	-21.790	51.200
0.595	9.830	5.260	15.090	-30.910	46.000
0.795	9.830	8.500	18.330	-27.670	46.000
2.017	9.840	6.680	16.520	-29.480	46.000
6.810	9.905	1.780	11.685	-38.315	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 : modlet IQ
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.185	9.832	15.620	25.452	-39.548	65.000
0.310	9.840	25.300	35.140	-26.289	61.429
0.673	9.840	22.580	32.420	-23.580	56.000
0.927	9.850	12.660	22.510	-33.490	56.000
1.951	9.860	10.950	20.810	-35.190	56.000
3.193	9.870	8.830	18.700	-37.300	56.000
Average					
0.185	9.832	5.620	15.452	-39.548	55.000
0.310	9.840	17.000	26.840	-24.589	51.429
0.673	9.840	11.660	21.500	-24.500	46.000
0.927	9.850	4.910	14.760	-31.240	46.000
1.951	9.860	3.890	13.750	-32.250	46.000
3.193	9.870	1.910	11.780	-34.220	46.000

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 : modlet IQ
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.177	9.830	21.390	31.220	-34.009	65.229
0.314	9.830	28.480	38.310	-23.004	61.314
0.396	9.830	17.740	27.570	-31.401	58.971
0.588	9.830	17.700	27.530	-28.470	56.000
1.170	9.830	15.360	25.190	-30.810	56.000
4.275	9.860	13.230	23.090	-32.910	56.000
Average					
0.177	9.830	14.680	24.510	-30.719	55.229
0.314	9.830	22.030	31.860	-19.454	51.314
0.396	9.830	11.330	21.160	-27.811	48.971
0.588	9.830	7.600	17.430	-28.570	46.000
1.170	9.830	8.630	18.460	-27.540	46.000
4.275	9.860	5.430	15.290	-30.710	46.000

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 : modlet IQ
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.197	9.830	18.750	28.580	-36.077	64.657
0.298	9.836	24.570	34.406	-27.365	61.771
0.654	9.840	21.980	31.820	-24.180	56.000
1.181	9.850	14.460	24.310	-31.690	56.000
2.302	9.860	11.900	21.760	-34.240	56.000
4.013	9.870	8.350	18.220	-37.780	56.000
Average					
0.197	9.830	9.990	19.820	-34.837	54.657
0.298	9.836	17.380	27.216	-24.555	51.771
0.654	9.840	12.330	22.170	-23.830	46.000
1.181	9.850	5.950	15.800	-30.200	46.000
2.302	9.860	3.970	13.830	-32.170	46.000
4.013	9.870	1.310	11.180	-34.820	46.000

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

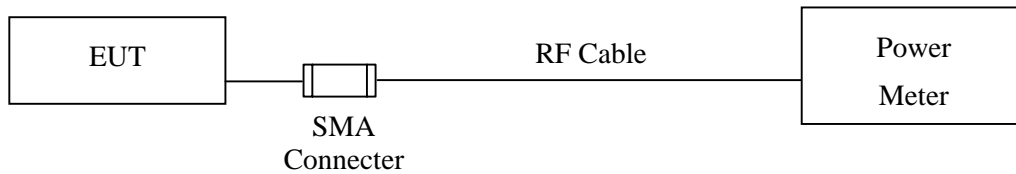
3.1. Test Equipment

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

3.2. Test Setup

Conducted Measurement



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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : modlet IQ
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	2405.00	0.78	<30dBm	Pass
08	2440.00	0.99	<30dBm	Pass
15	2475.00	1.12	<30dBm	Pass

Product : modlet IQ
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	2405.00	3.31	<30dBm	Pass
08	2440.00	3.36	<30dBm	Pass
15	2475.00	3.44	<30dBm	Pass

4. Radiated Emission

4.1. Test Equipment

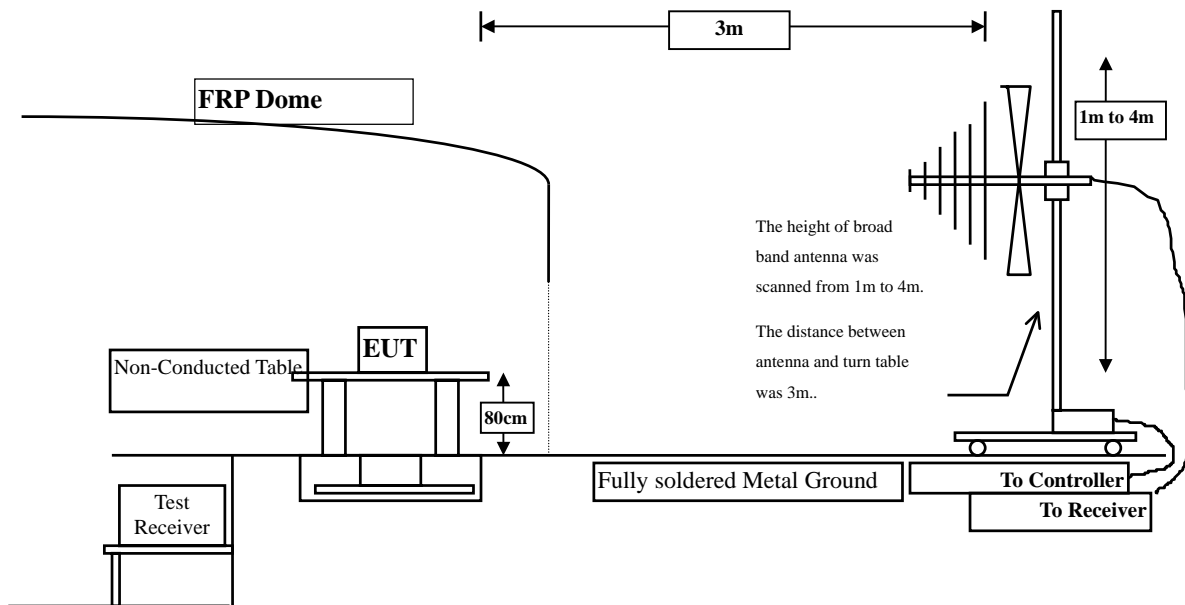
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	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

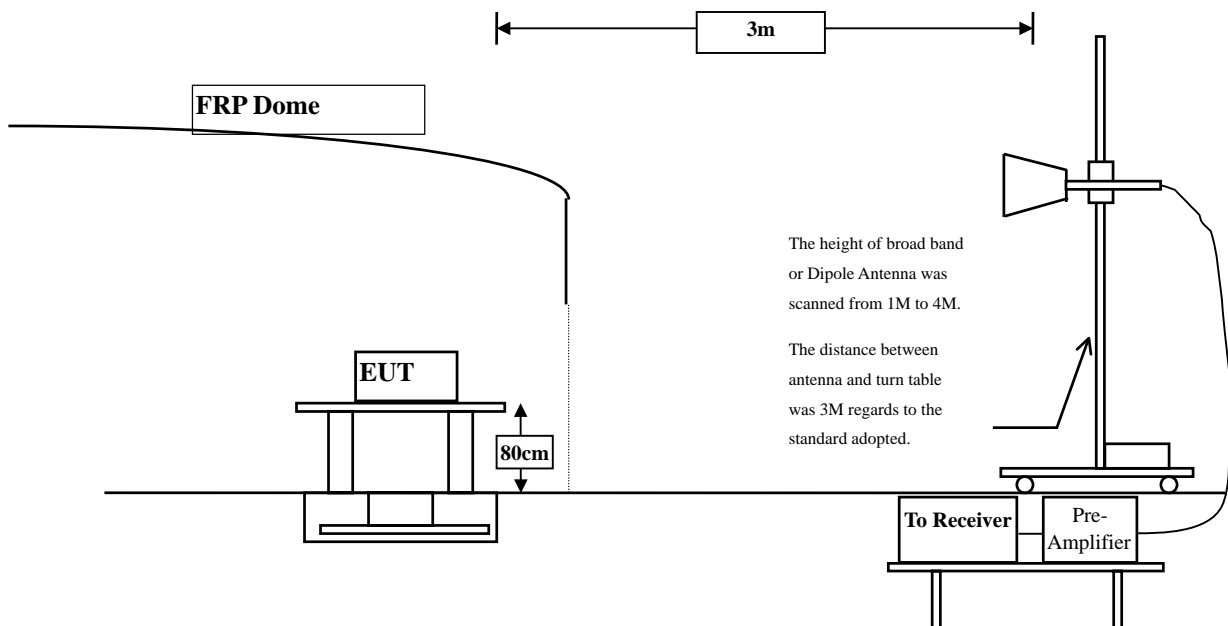
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with "X" are used to measure the final test results.

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.

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

4.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of ANSI C63.10: 2009 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 C63.10: 2009 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 measurement frequency range from 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

- ± 3.9 dB above 1GHz
- ± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2405MHz) (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4810.000	2.532	41.350	43.882	-30.118	74.000
7215.000	9.411	37.590	47.001	-26.999	74.000
9620.000	10.282	38.590	48.872	-25.128	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4810.000	2.927	38.260	41.187	-32.813	74.000
7215.000	9.895	37.260	47.155	-26.845	74.000
9620.000	10.760	36.590	47.350	-26.650	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 : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4880.000	2.038	40.150	42.188	-31.812	74.000
7320.000	9.699	38.590	48.289	-25.711	74.000
9760.000	9.665	38.230	47.895	-26.105	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4880.000	2.499	40.220	42.719	-31.281	74.000
7320.000	10.303	37.290	47.593	-26.407	74.000
9760.000	10.299	38.150	48.450	-25.550	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 : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475 MHz) (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4950.000	2.483	41.590	44.073	-29.927	74.000
7425.000	10.496	38.230	48.726	-25.274	74.000
9900.000	10.163	38.890	49.052	-24.948	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4950.000	3.243	41.580	44.823	-29.177	74.000
7425.000	11.225	37.590	48.816	-25.184	74.000
9900.000	11.202	38.220	49.421	-24.579	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 : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2405MHz) (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4810.000	2.532	43.260	45.792	-28.208	74.000
7215.000	9.411	40.260	49.671	-24.329	74.000
9620.000	10.282	38.150	48.432	-25.568	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4810.000	2.927	42.590	45.517	-28.483	74.000
7215.000	9.895	39.150	49.045	-24.955	74.000
9620.000	10.760	39.260	50.020	-23.980	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 : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4880.000	2.038	42.260	44.298	-29.702	74.000
7320.000	9.699	38.260	47.959	-26.041	74.000
9760.000	9.665	39.180	48.845	-25.155	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4880.000	2.499	42.150	44.649	-29.351	74.000
7320.000	10.303	39.150	49.453	-24.547	74.000
9760.000	10.299	41.160	51.460	-22.540	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 : modlet IQ
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475 MHz) (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4950.000	2.483	42.590	45.073	-28.927	74.000
7425.000	10.496	38.590	49.086	-24.914	74.000
9900.000	10.163	39.150	49.312	-24.688	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4950.000	3.243	42.110	45.353	-28.647	74.000
7425.000	11.225	38.590	49.816	-24.184	74.000
9900.000	11.202	39.220	50.421	-23.579	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 : modlet IQ
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440 MHz) (Antenna Type: Chip)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
152.220	-7.926	35.360	27.434	-16.066	43.500
251.160	-5.988	43.329	37.341	-8.659	46.000
460.680	4.030	35.294	39.324	-6.676	46.000
600.360	3.472	35.773	39.245	-6.755	46.000
780.780	5.259	24.541	29.800	-16.200	46.000
939.860	6.750	22.331	29.081	-16.919	46.000
Vertical					
152.220	-5.306	35.360	30.054	-13.446	43.500
315.180	-4.108	38.444	34.336	-11.664	46.000
398.600	-2.371	38.368	35.997	-10.003	46.000
540.220	2.169	33.412	35.581	-10.419	46.000
683.780	2.011	35.713	37.724	-8.276	46.000
844.800	2.462	23.042	25.504	-20.496	46.000

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 : modlet IQ
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440 MHz) (Antenna Type: PIFA)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
148.340	-7.806	34.634	26.828	-16.672	43.500
245.340	-6.478	44.454	37.976	-8.024	46.000
400.540	0.942	38.578	39.520	-6.480	46.000
602.300	3.794	35.497	39.291	-6.709	46.000
753.620	4.750	26.029	30.779	-15.221	46.000
943.740	6.843	22.919	29.762	-16.238	46.000
Vertical					
181.320	-1.910	35.514	33.604	-9.896	43.500
381.140	0.816	36.483	37.299	-8.701	46.000
524.700	1.130	34.549	35.679	-10.321	46.000
683.780	2.011	34.383	36.394	-9.606	46.000
831.220	2.041	24.331	26.372	-19.628	46.000
968.960	3.936	21.999	25.935	-28.065	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

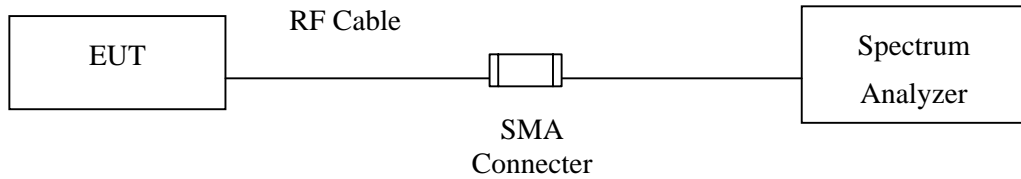
5.1. Test Equipment

	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 ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

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

5.5. Uncertainty

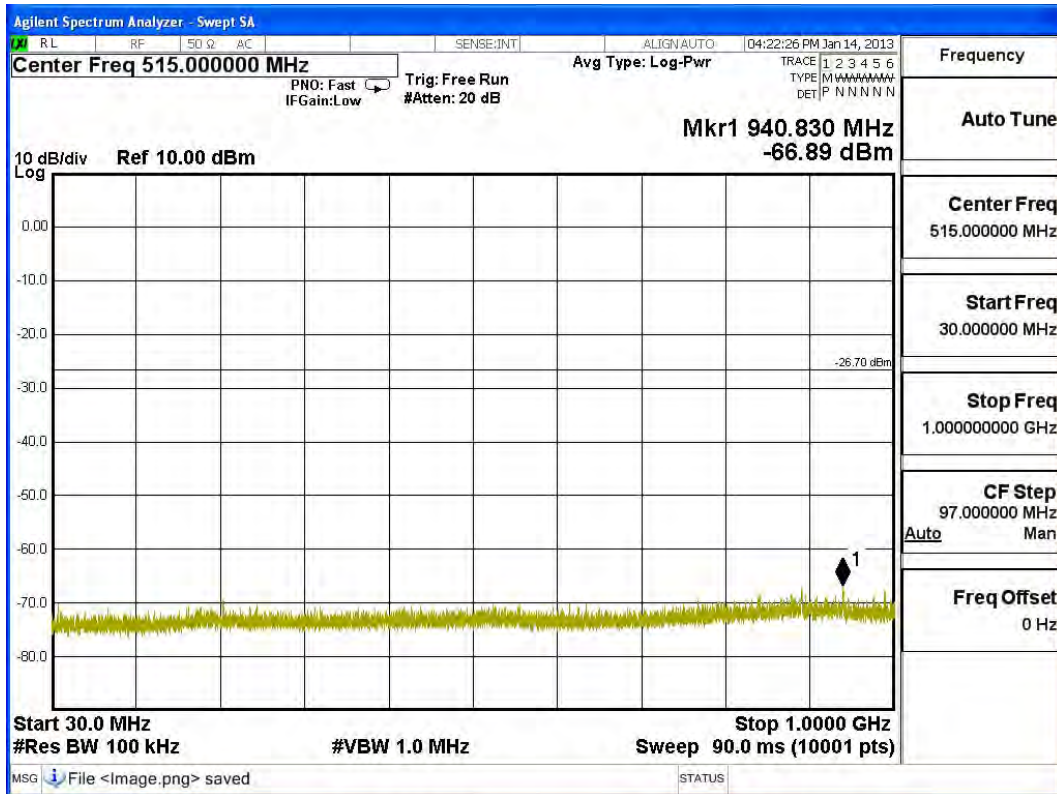
The measurement uncertainty

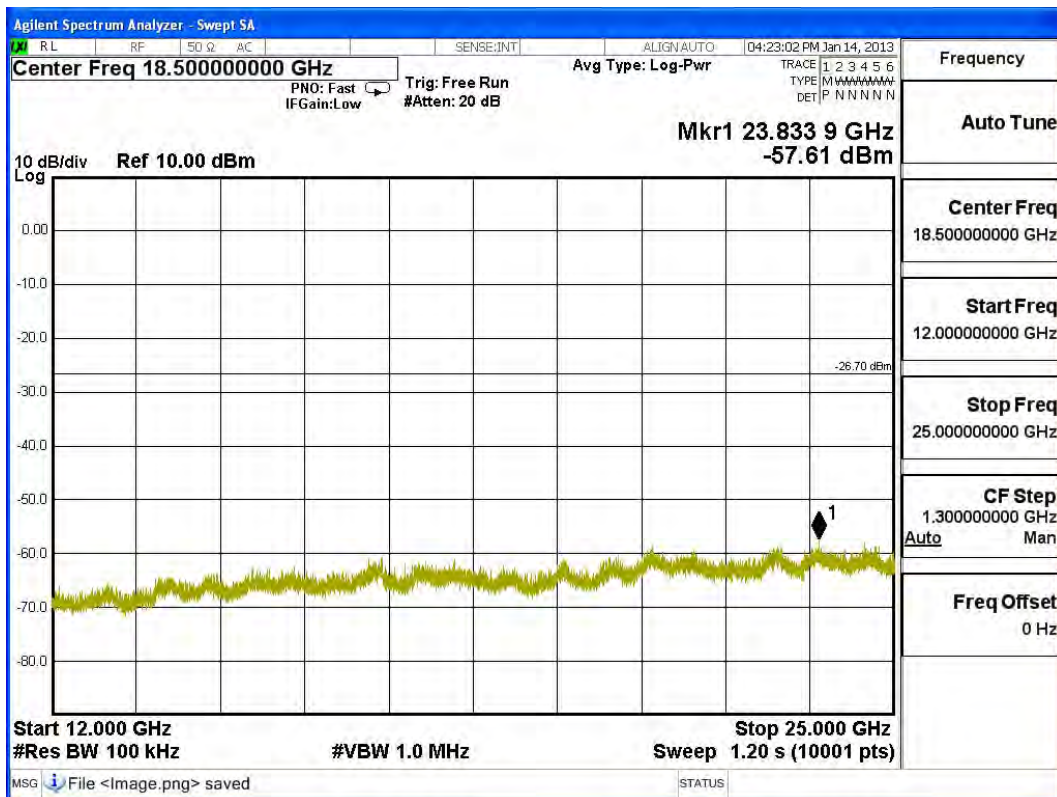
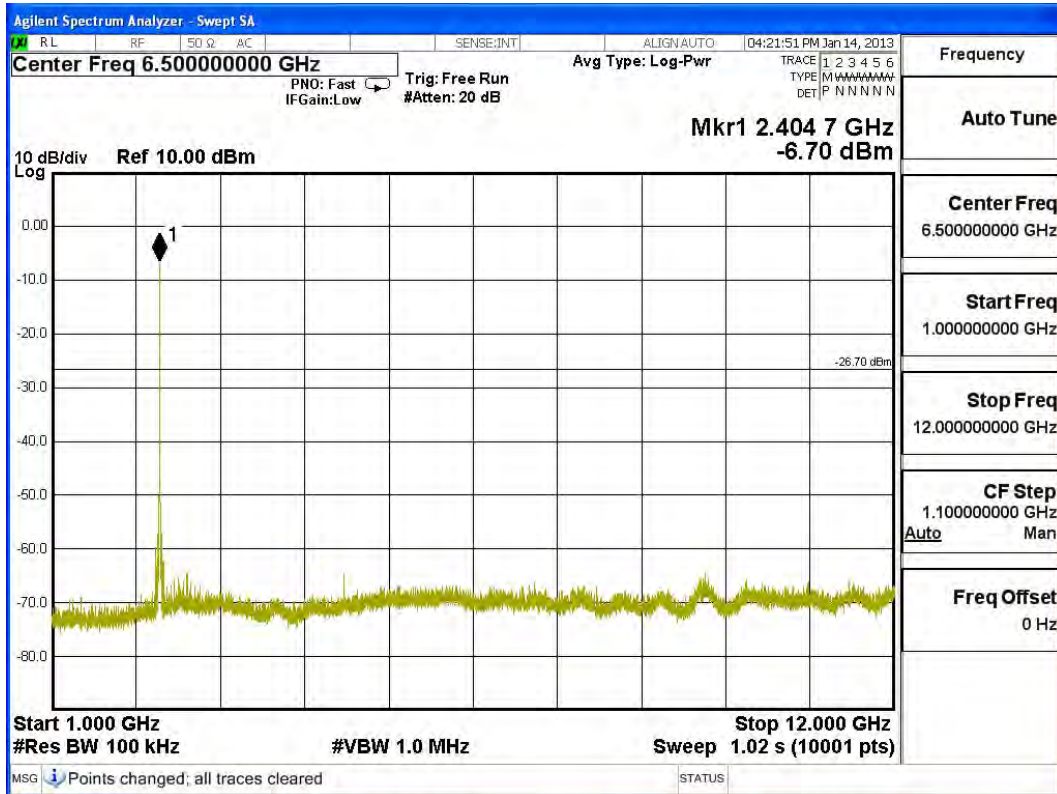
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

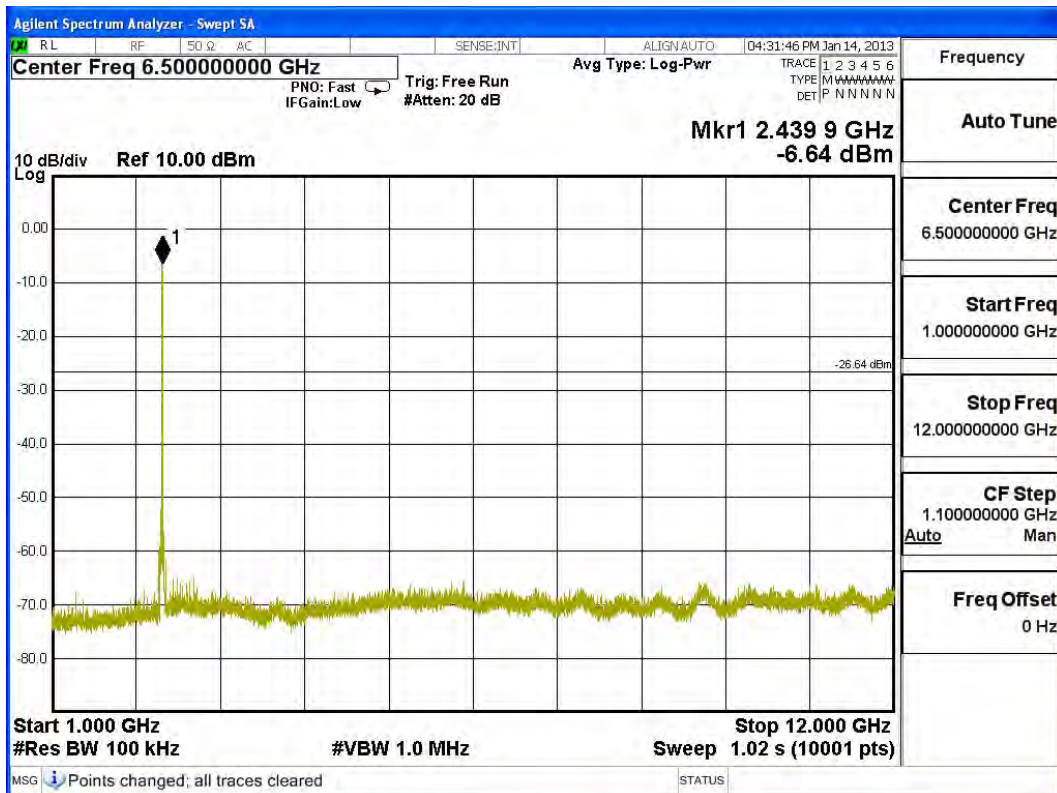
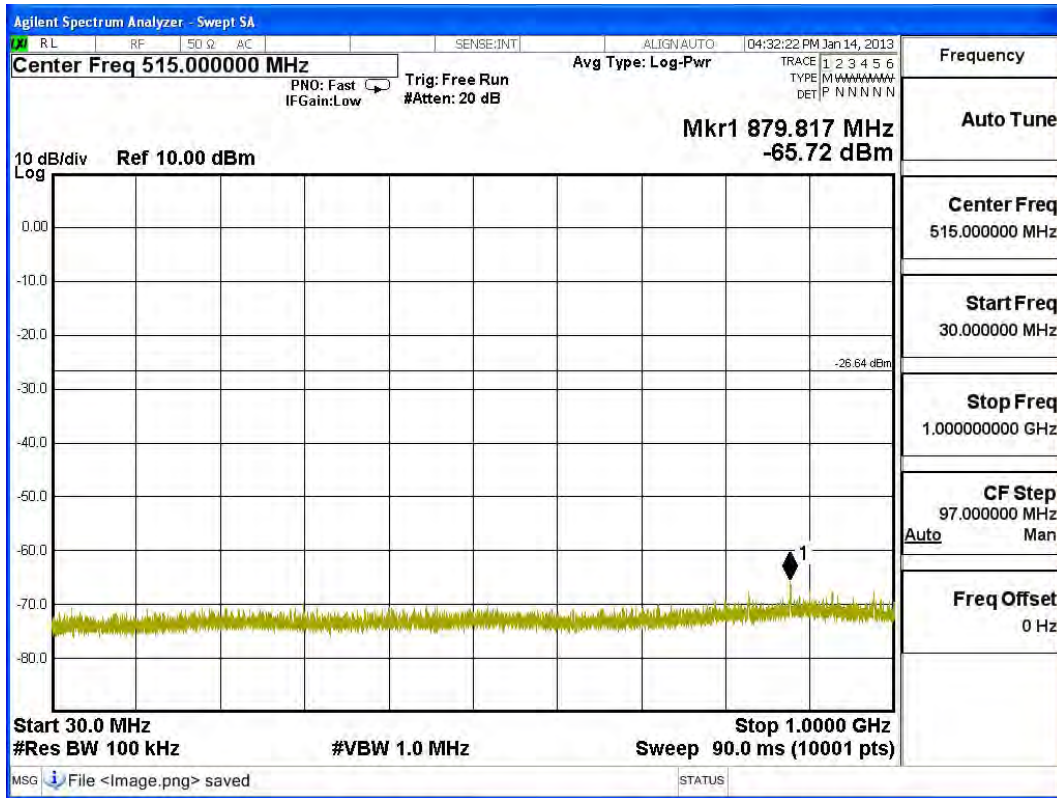
Product : modlet IQ
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

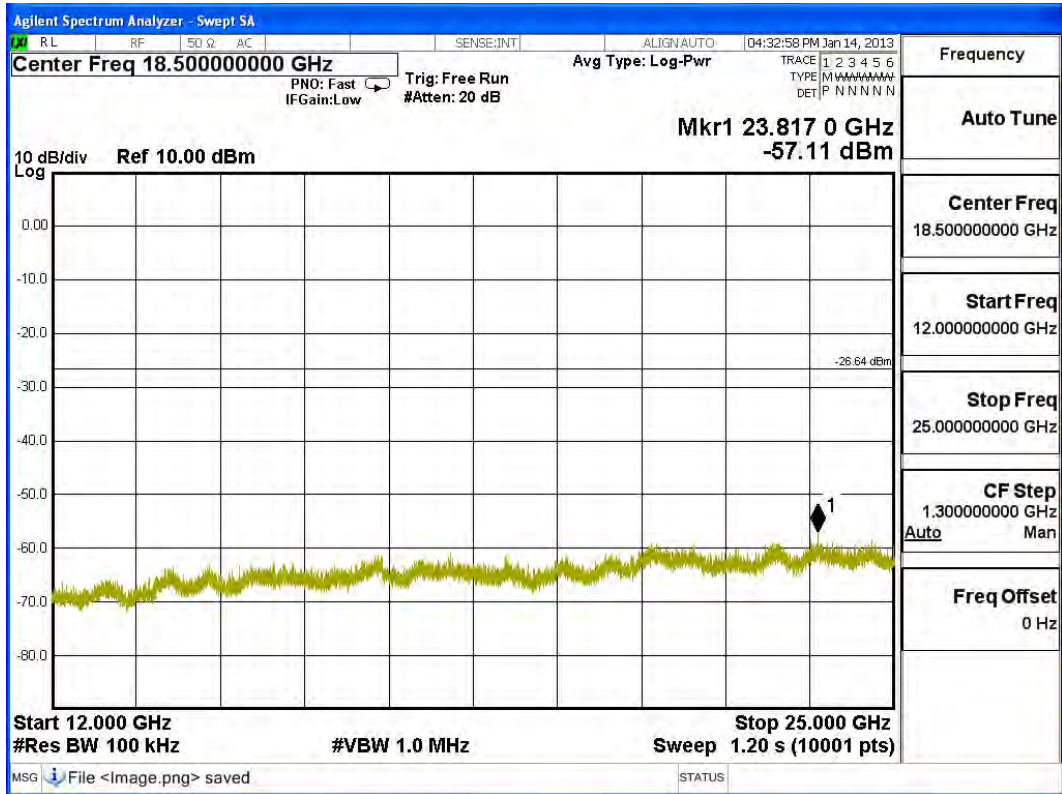
Channel 01(2405Hz)



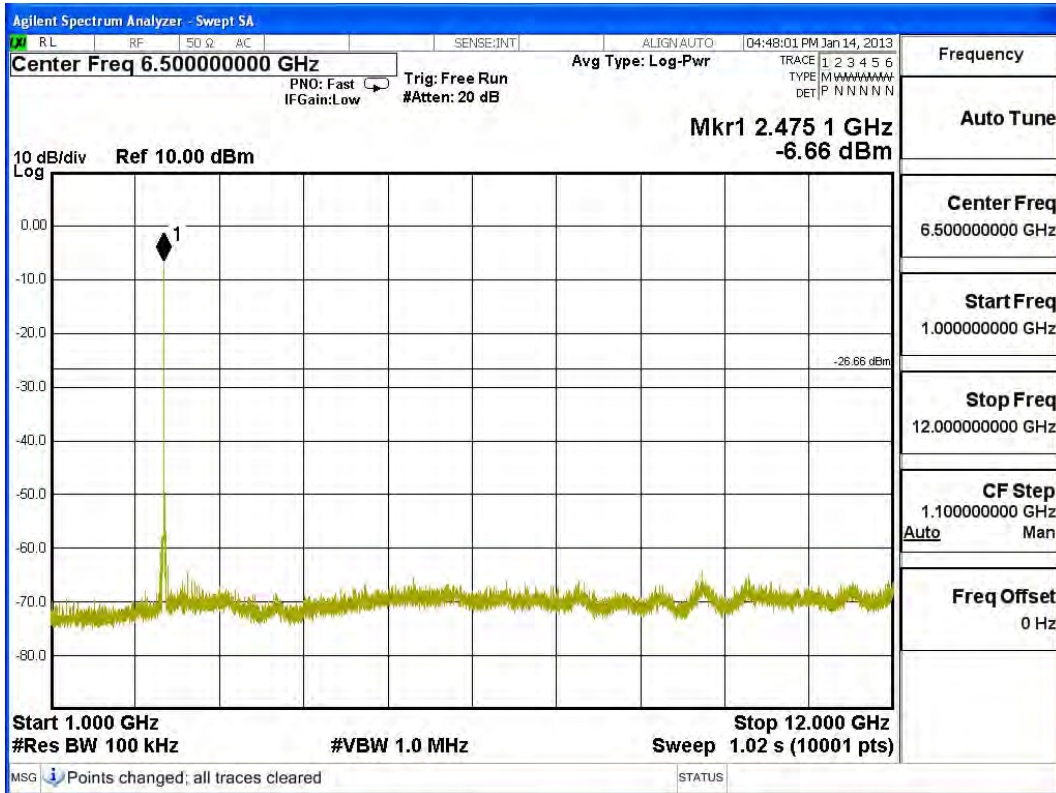
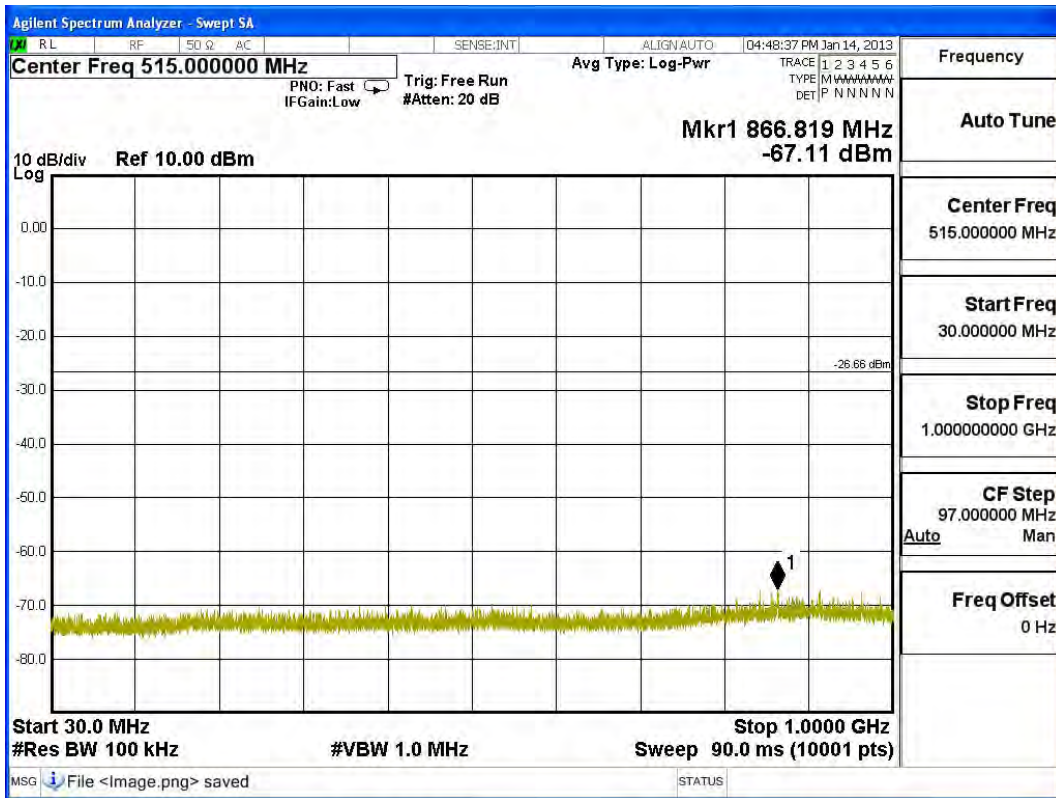


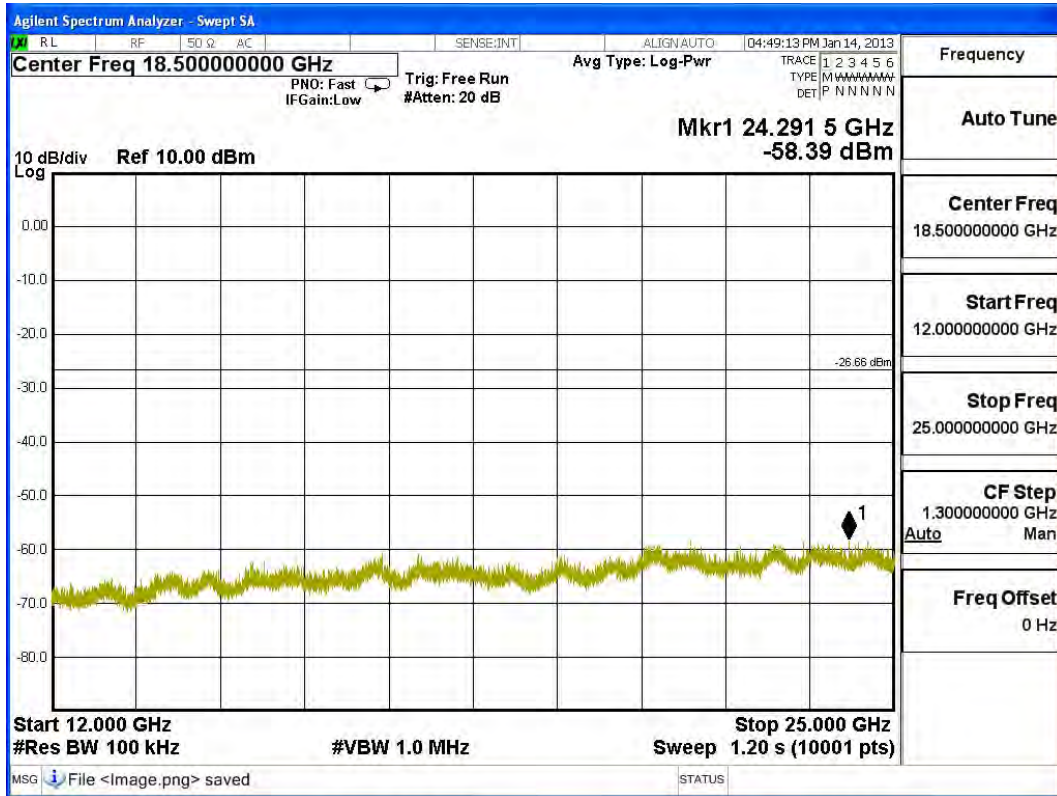
Channel 08 (2440MHz)





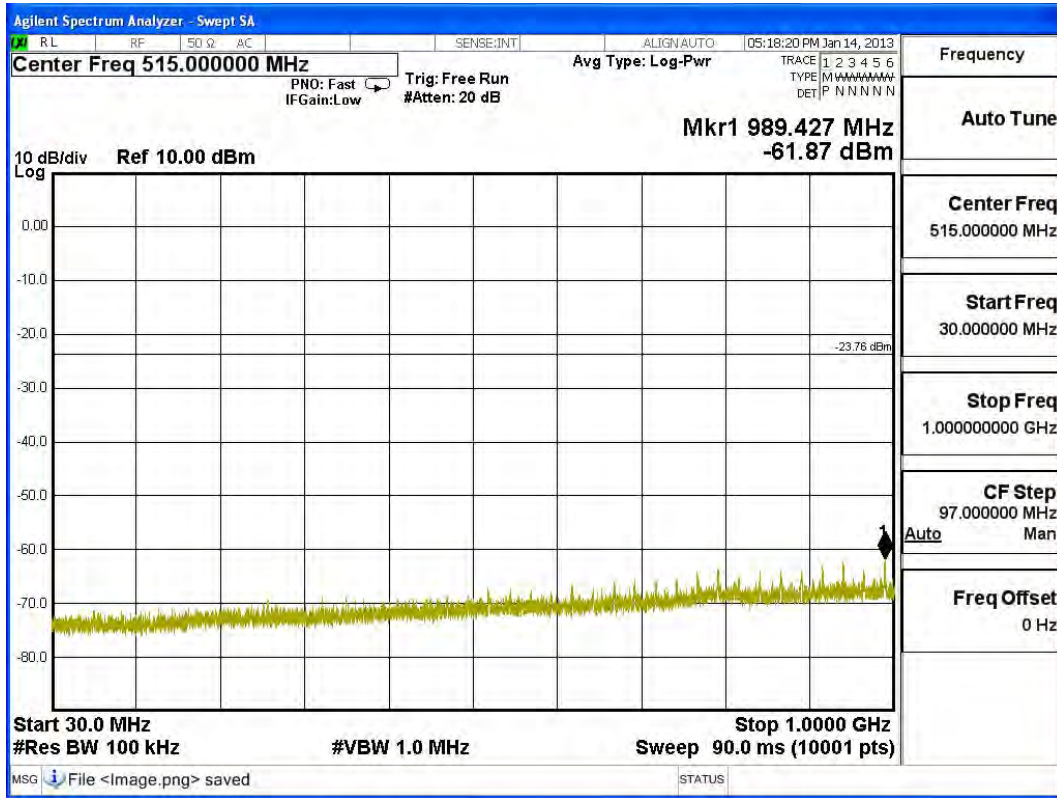
Channel 15 (2475MHz)

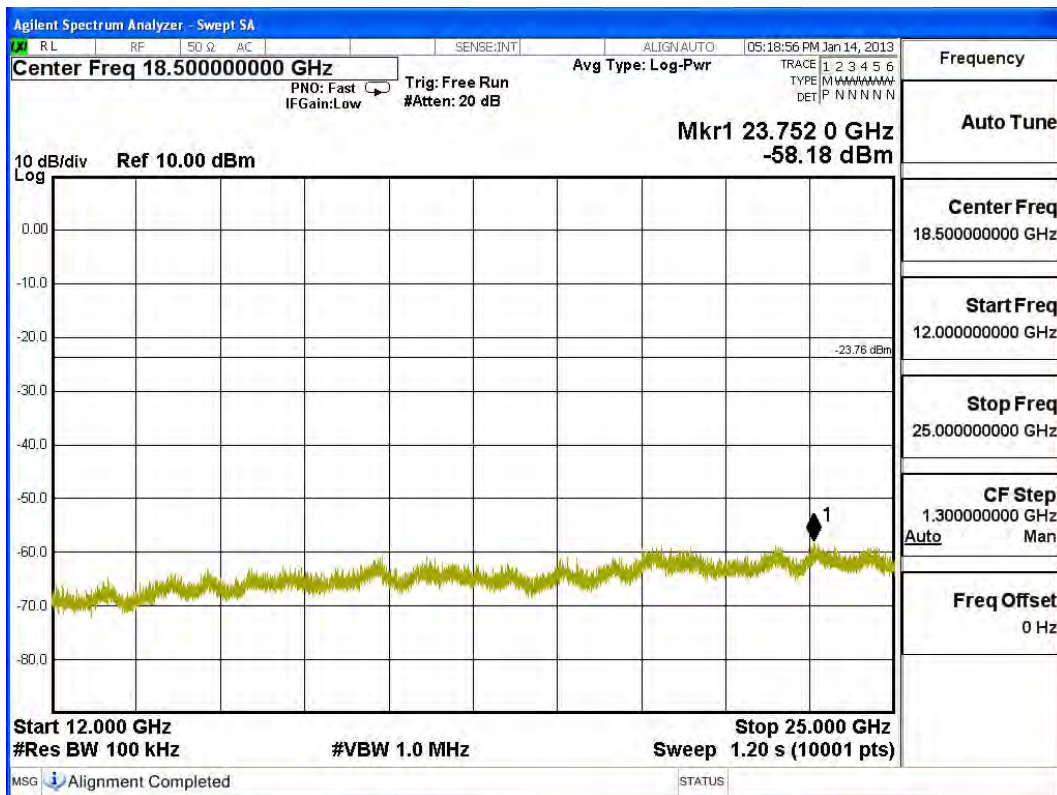
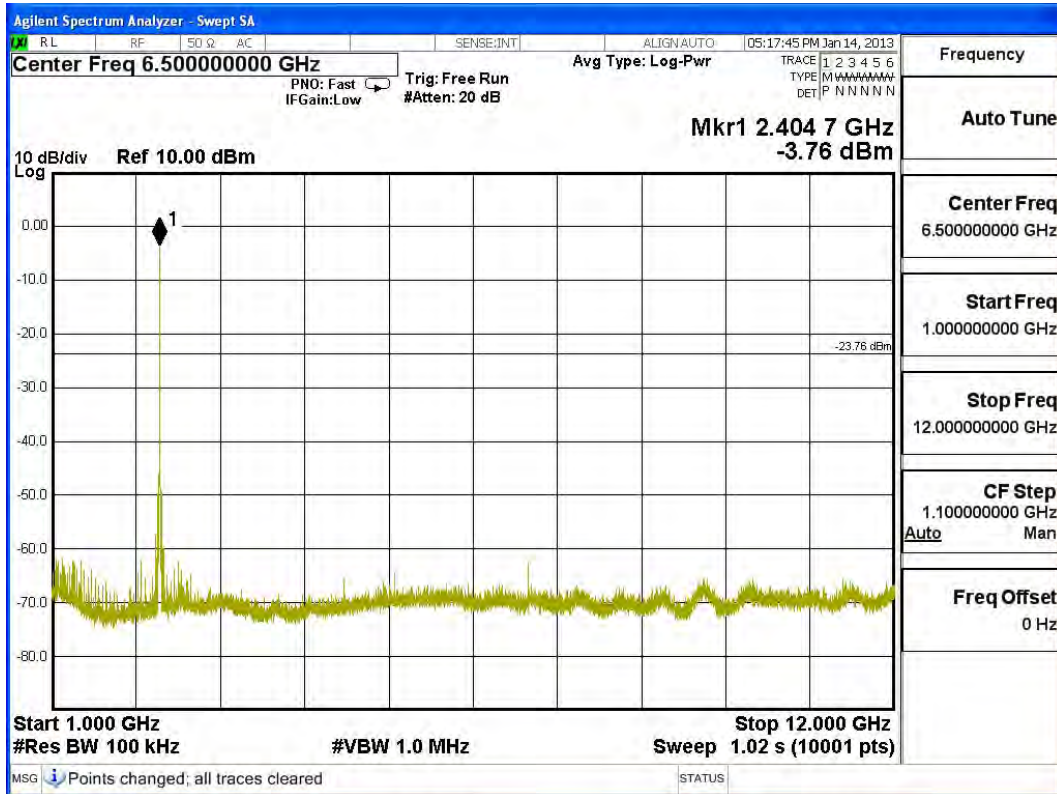




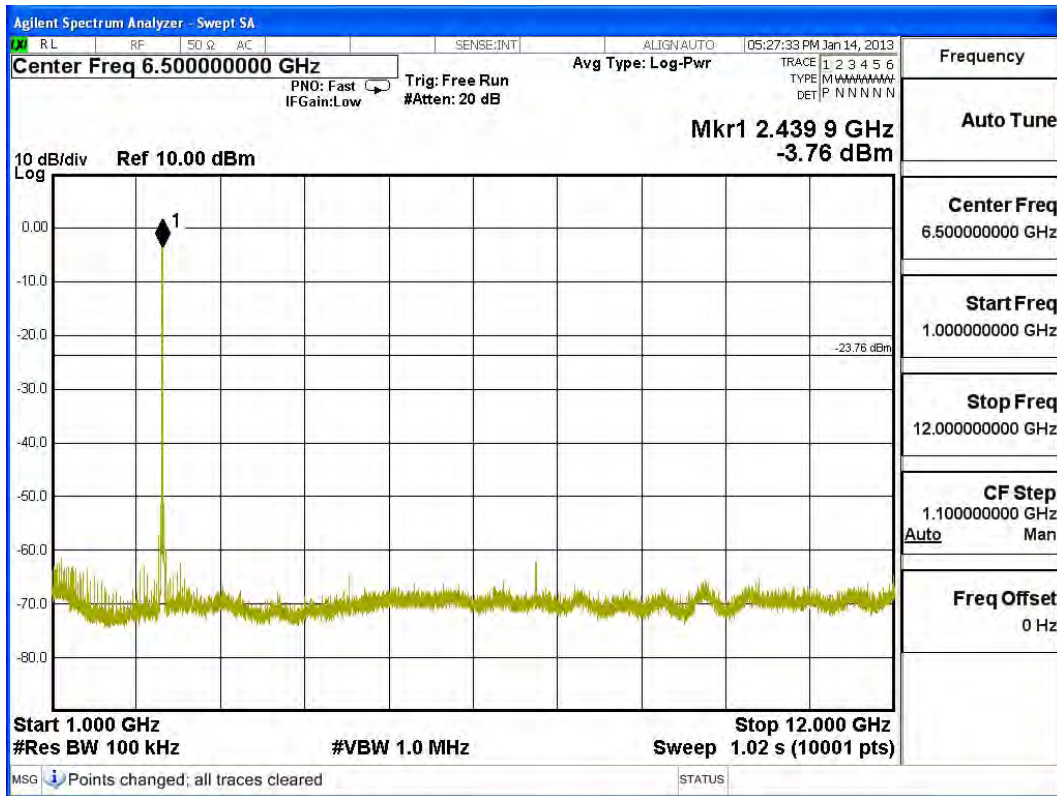
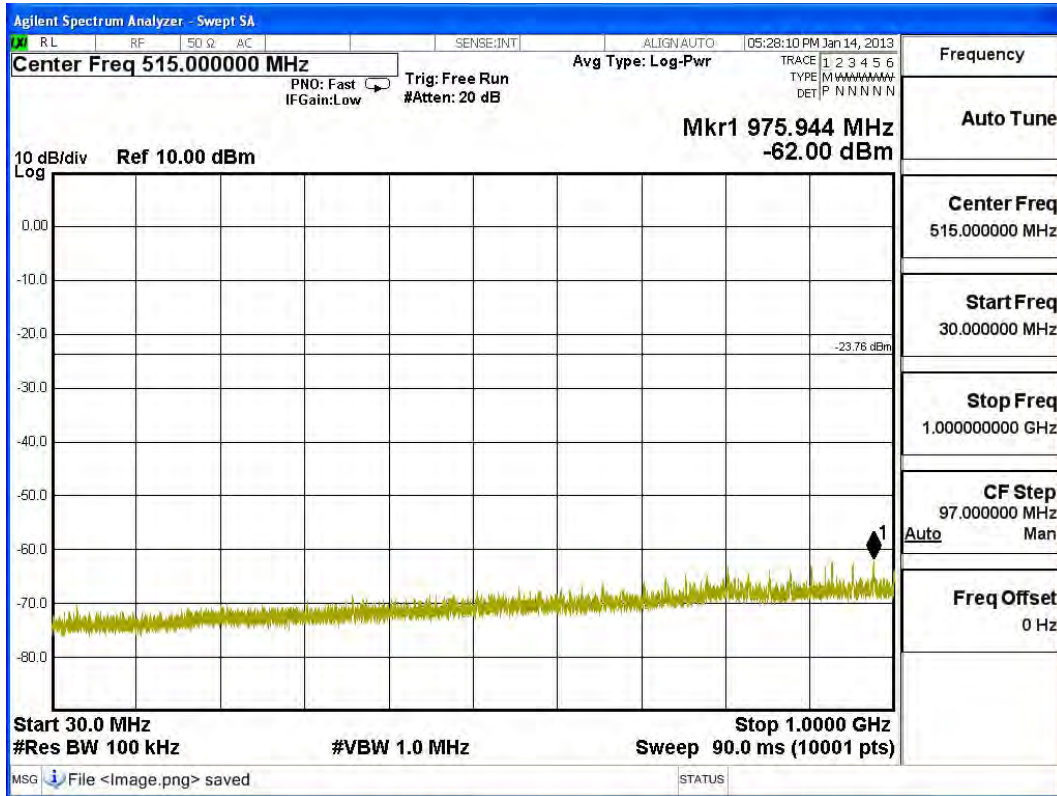
Product : modlet IQ
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

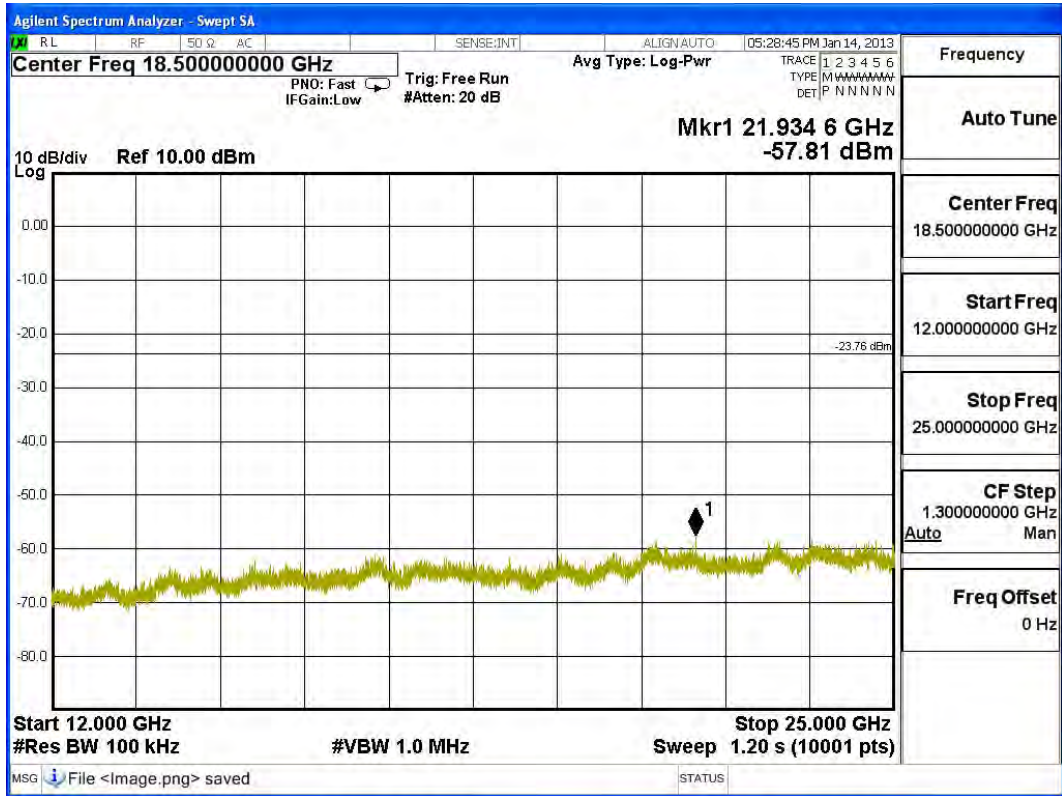
Channel 01(2405Hz)



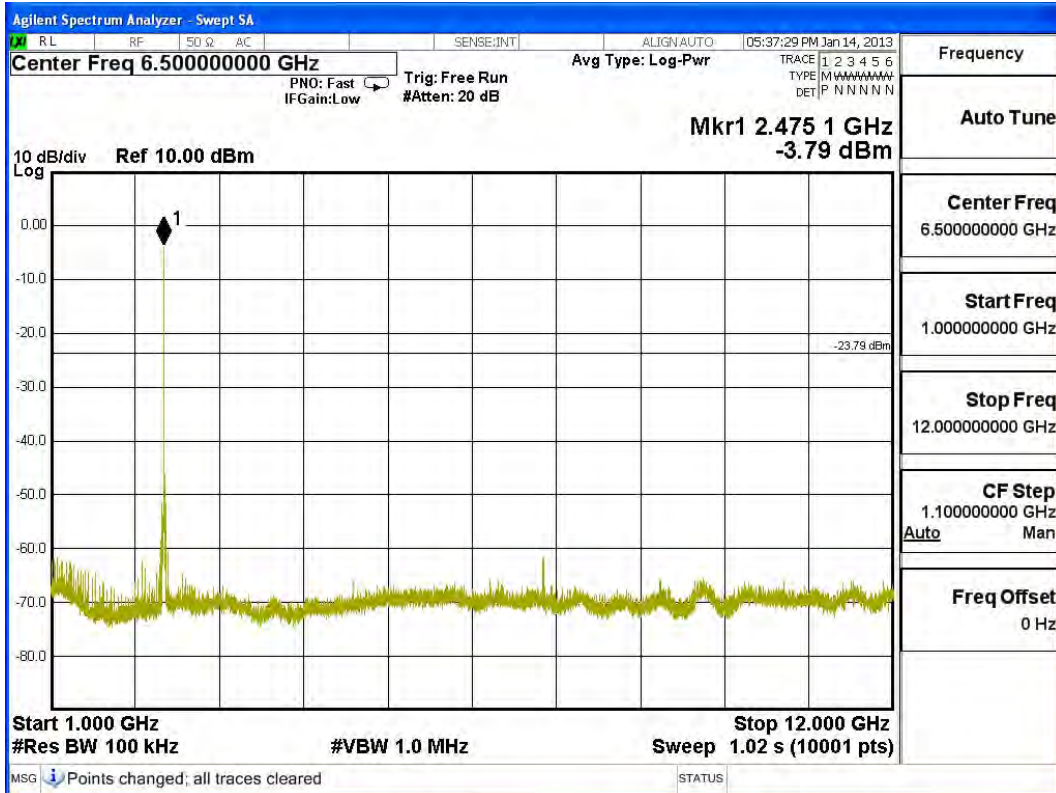
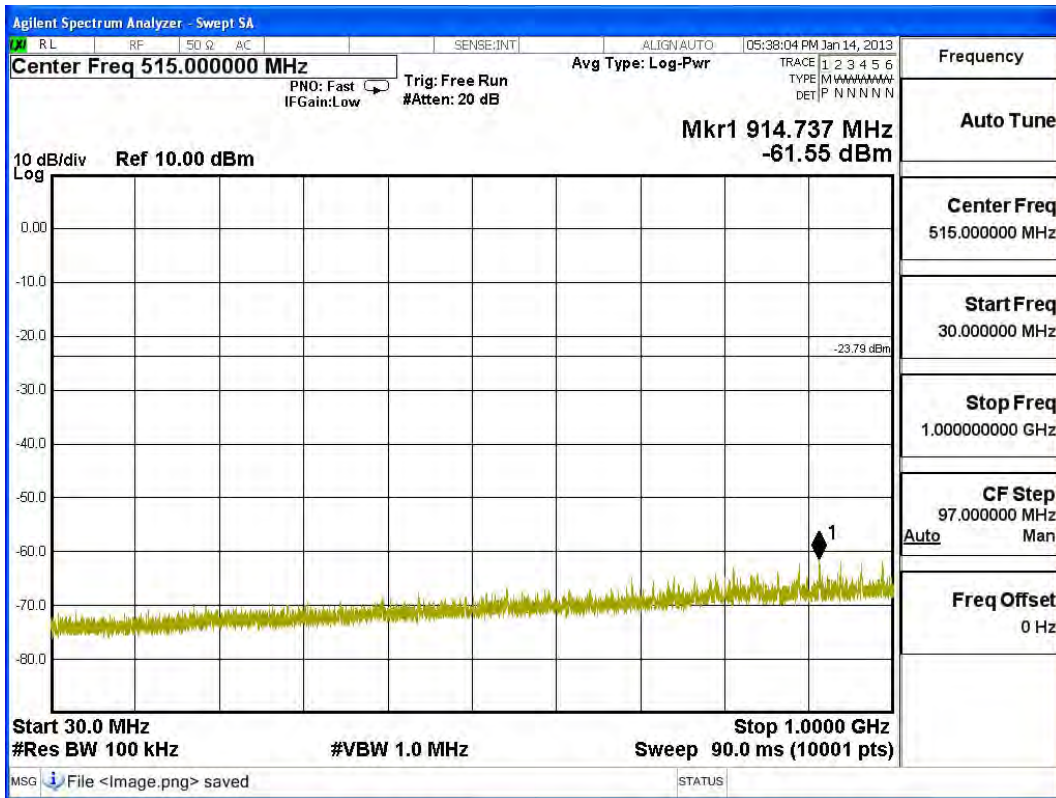


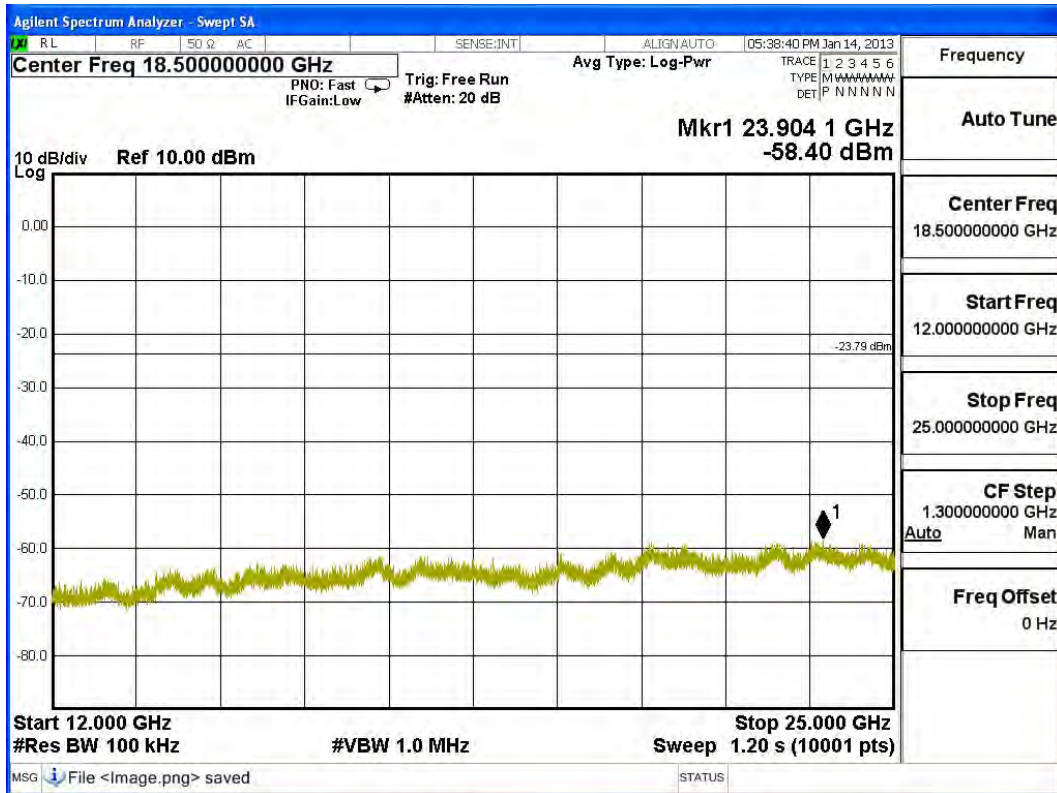
Channel 08 (2440MHz)





Channel 15 (2475MHz)





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:

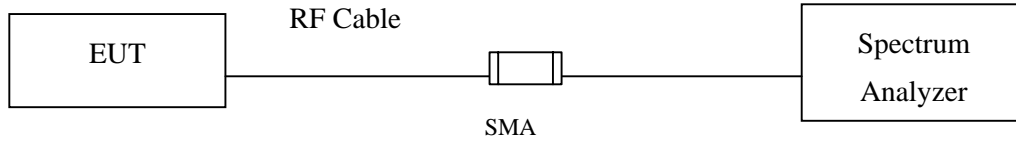
The following test equipments are used during the band edge tests:

Test Site	Equipment	Manufacturer	Model No./Serial No.	Last Cal.	
☒ Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	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

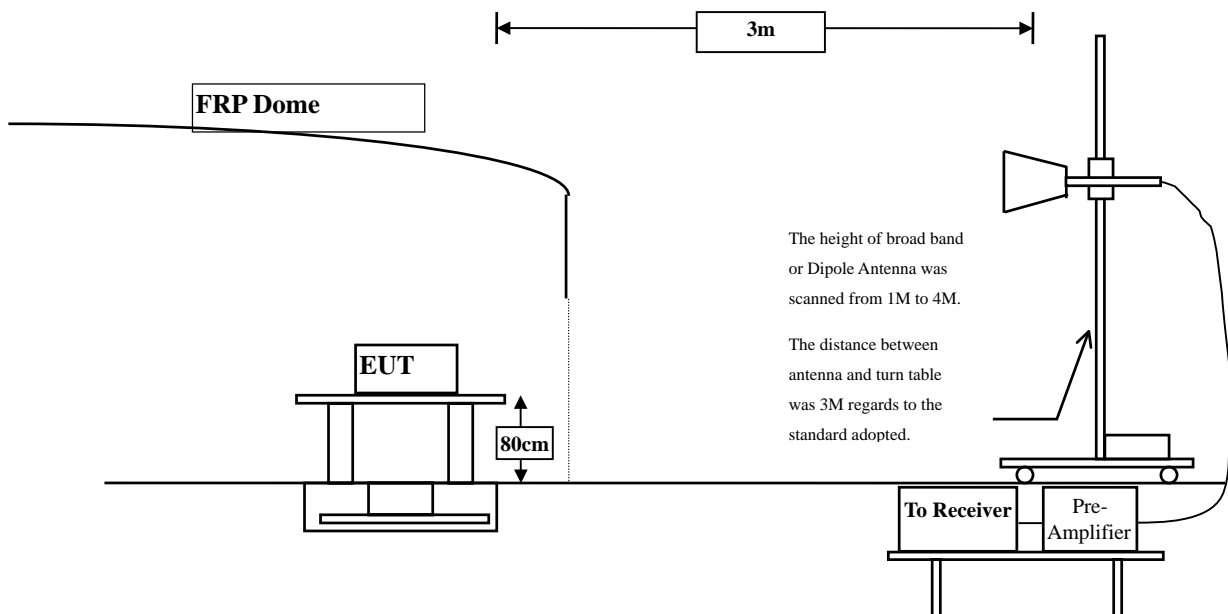
- Note:
1. All instruments are calibrated every one year.
 2. The test instruments marked by "X" are used to measure the final test results.

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 C63.10: 2009 and tested according to DTS test procedure of ANSI C63.10: 2009 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 C63.10: 2009 on radiated measurement.

6.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

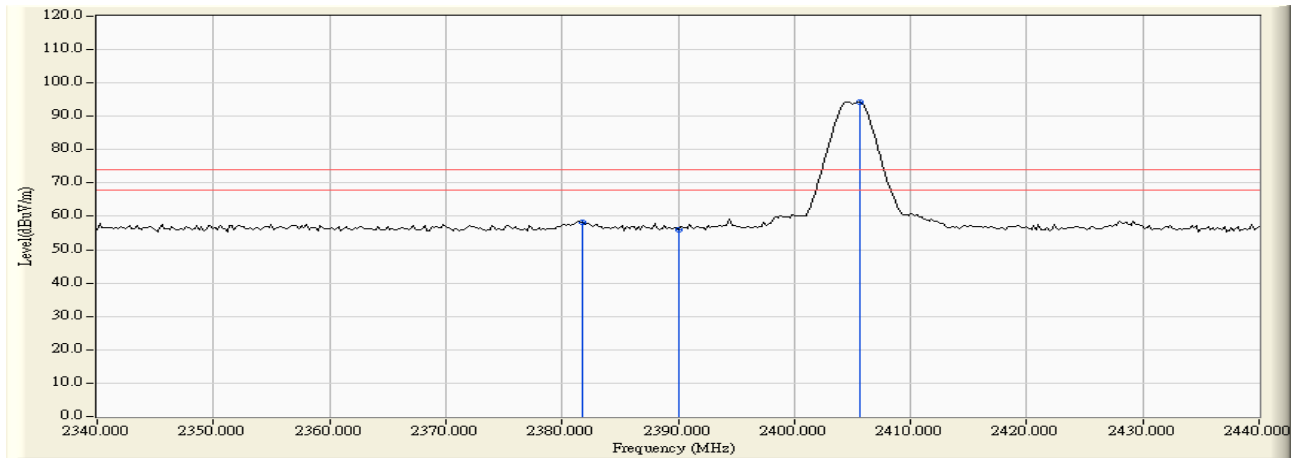
Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Result
01 (Peak)	2381.800	33.732	24.591	58.323	-15.677	74.000	Pass
01 (Peak)	2390.000	33.739	22.352	56.091	-17.909	74.000	Pass
01 (Peak)	2405.600	33.760	60.414	94.174	--	--	--

Figure Channel 01:

Horizontal (Peak)



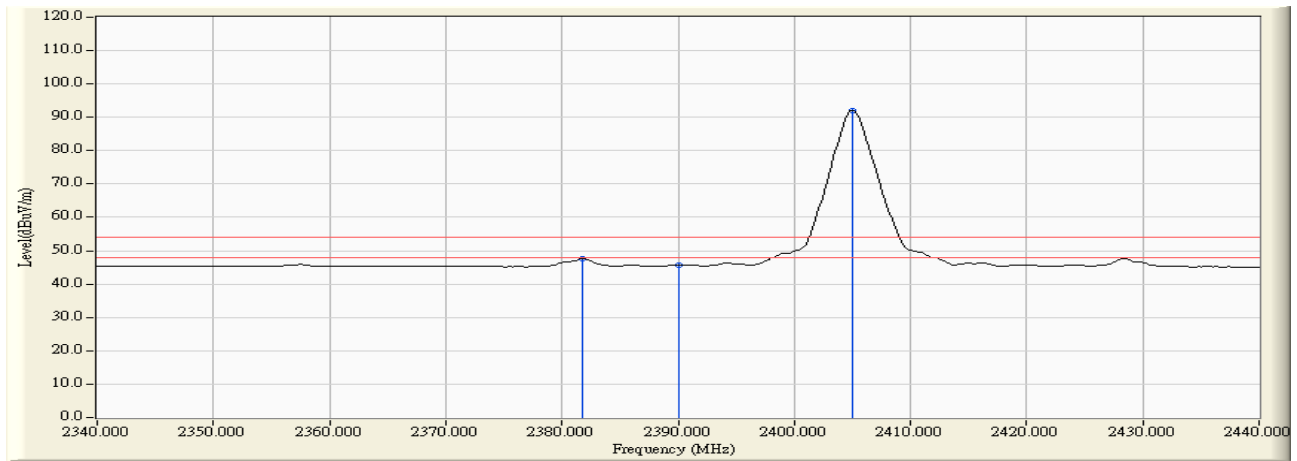
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Result
01 (Average)	2381.800	33.732	13.825	47.557	-6.443	54.000	Pass
01 (Average)	2390.000	33.739	12.034	45.773	-8.227	54.000	Pass
01 (Average)	2405.000	33.759	58.244	92.003	--	--	--

Figure Channel 01: Horizontal (Average)



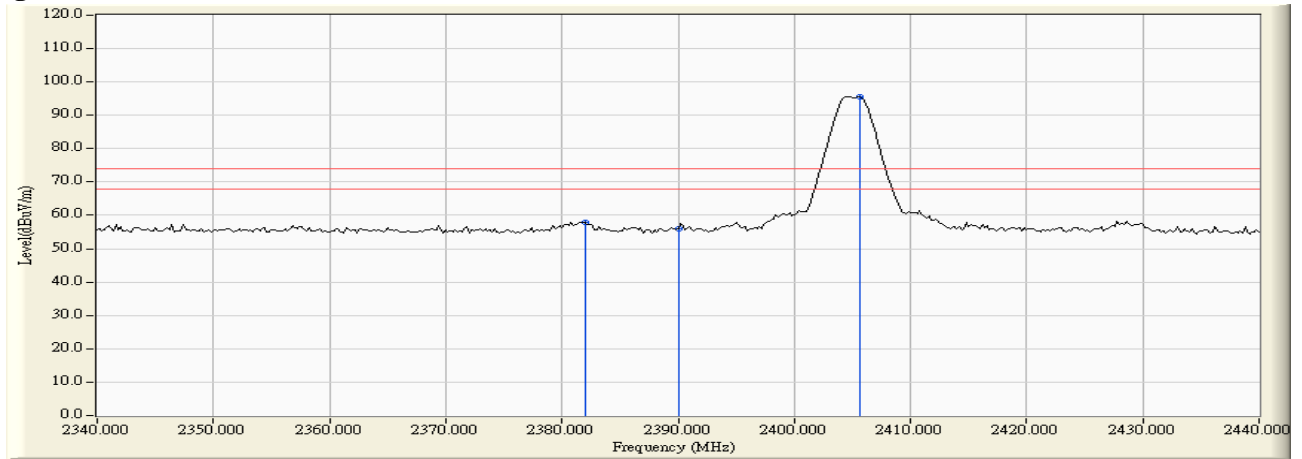
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
01 (Peak)	2382.000	32.323	25.443	57.766	-16.234	74.000	Pass
01 (Peak)	2390.000	32.267	23.633	55.900	-18.100	74.000	Pass
01 (Peak)	2405.600	32.242	63.336	95.578	--	--	--

Figure Channel 01: Vertical (Peak)



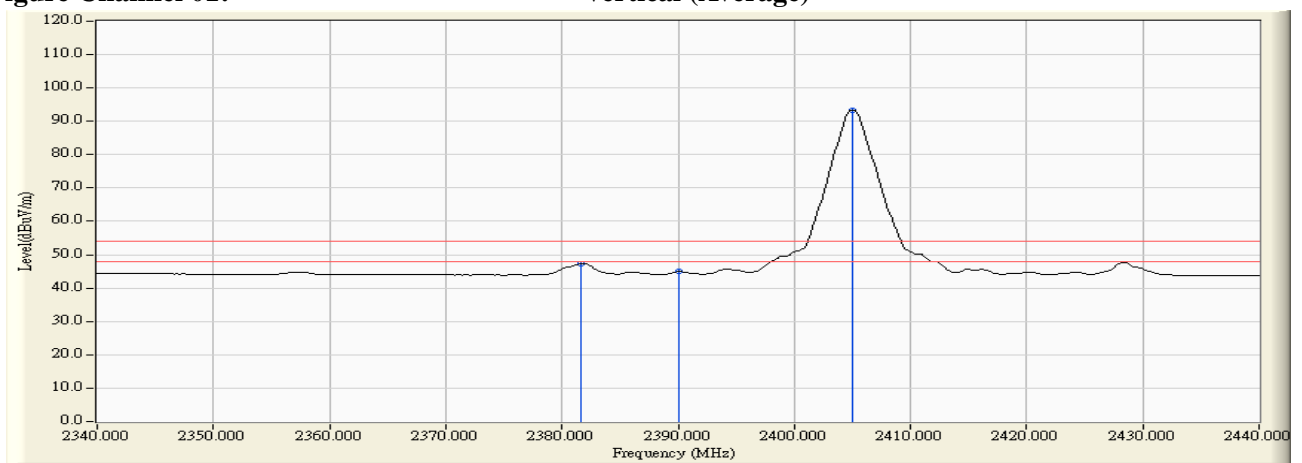
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
01 (Average)	2381.600	32.326	14.964	47.289	-6.711	54.000	Pass
01 (Average)	2390.000	32.267	12.629	44.896	-9.104	54.000	Pass
01 (Average)	2405.000	32.242	61.203	93.445	--	--	--

Figure Channel 01: Vertical (Average)



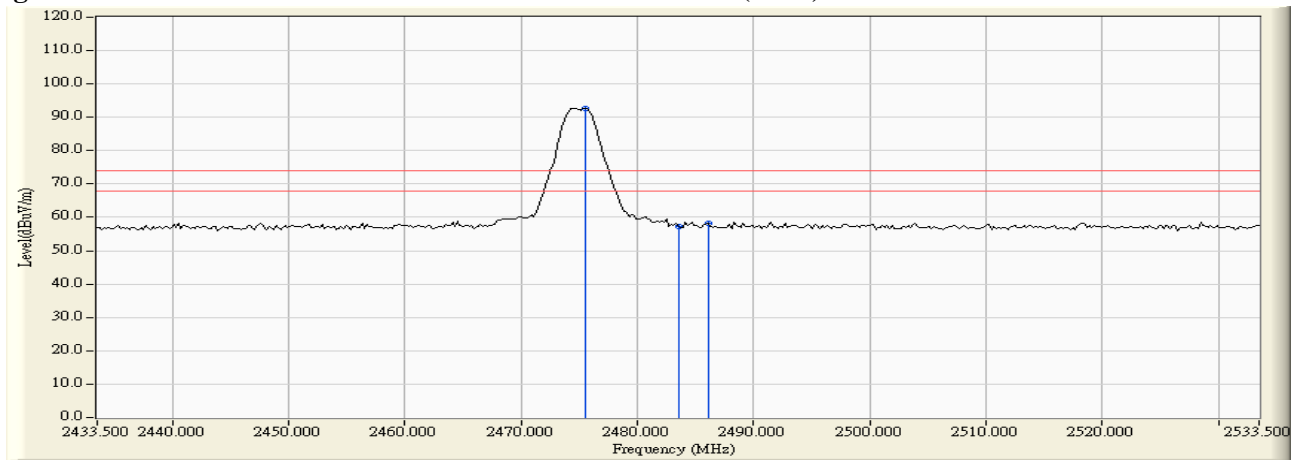
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Peak)	2475.500	33.929	58.750	92.679	--	--	--
15 (Peak)	2483.500	33.951	23.454	57.404	-16.596	74.000	Pass
15 (Peak)	2486.100	33.956	24.369	58.326	-15.674	74.000	Pass

Figure Channel 15: Horizontal (Peak)



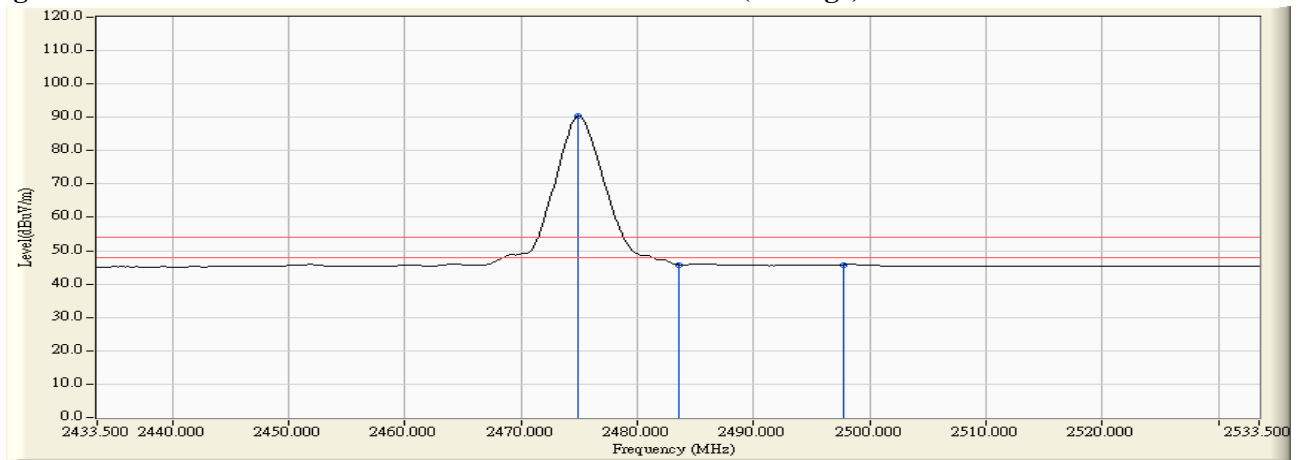
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Average)	2474.900	33.927	56.535	90.462	--	--	--
15 (Average)	2483.500	33.951	11.794	45.744	-8.256	54.000	Pass
15 (Average)	2497.700	33.975	11.793	45.767	-8.233	54.000	Pass

Figure Channel 15: Horizontal (Average)



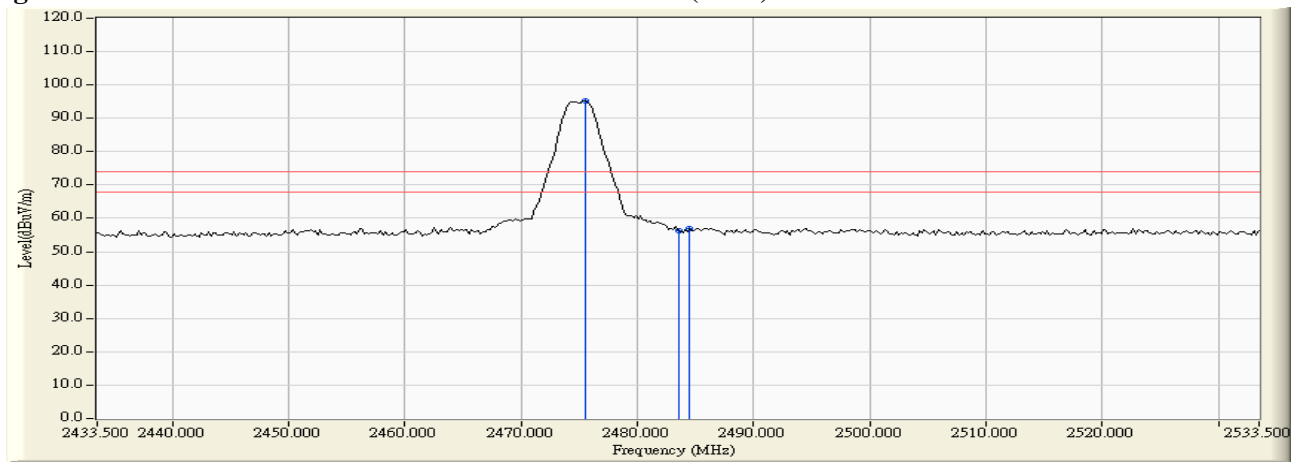
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Peak)	2475.500	32.546	62.608	95.154	21.154	--	--
15 (Peak)	2483.500	32.586	23.764	56.349	-17.651	74.000	Pass
15 (Peak)	2484.500	32.590	24.317	56.907	-17.093	74.000	Pass

Figure Channel 78: Vertical (Peak)



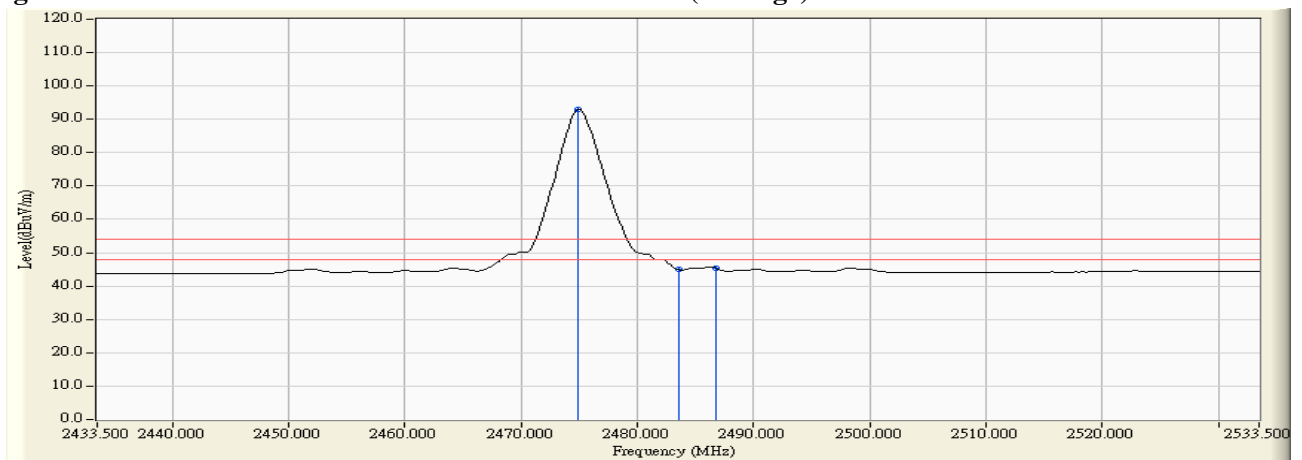
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: Chip)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Average)	2474.900	32.543	60.405	92.948	--	--	--
15 (Average)	2483.500	32.586	12.327	44.912	-9.088	54.000	Pass
15 (Average)	2486.700	32.601	12.733	45.333	-8.667	54.000	Pass

Figure Channel 78: Vertical (Average)



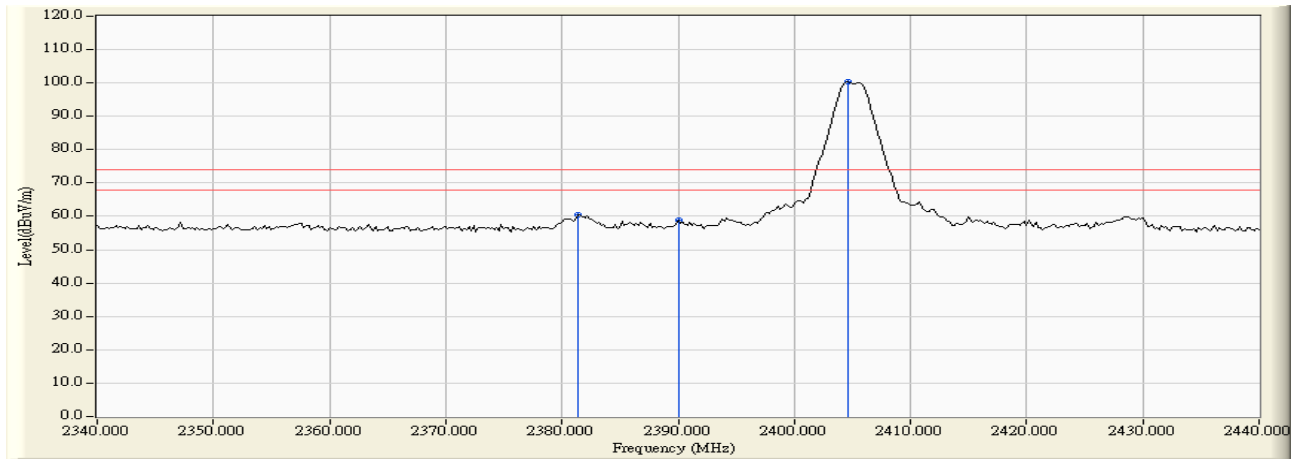
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Result
01 (Peak)	2381.400	33.732	26.901	60.633	-13.367	74.000	Pass
01 (Peak)	2390.000	33.739	25.183	58.922	-15.078	74.000	Pass
01 (Peak)	2404.600	33.759	66.459	100.218	--	--	--

Figure Channel 01: Horizontal (Peak)



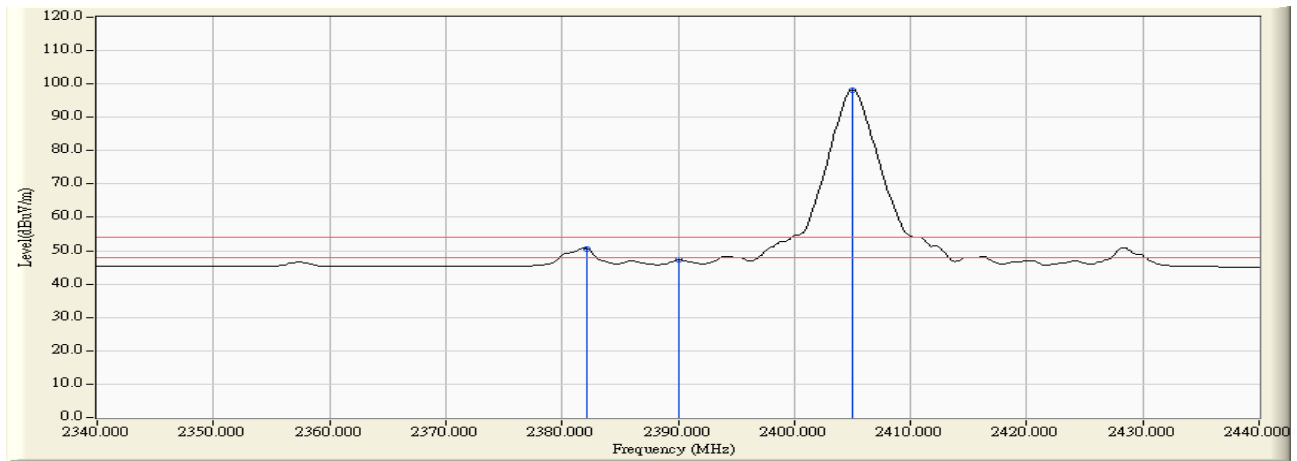
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Peak Limit (dBuV/m)	Result
01 (Average)	2382.200	33.732	16.790	50.523	-3.477	54.000	Pass
01 (Average)	2390.000	33.739	13.398	47.137	-6.863	54.000	Pass
01 (Average)	2405.000	33.759	64.419	98.178	--	--	--

Figure Channel 01: Horizontal (Average)



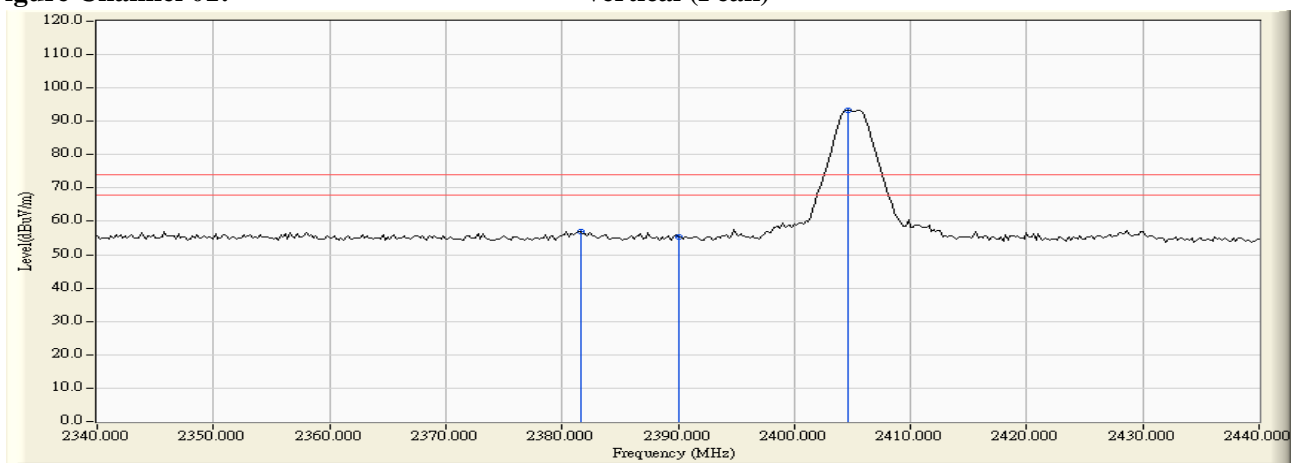
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
01 (Peak)	2381.600	32.326	24.460	56.785	-17.215	74.000	Pass
01 (Peak)	2390.000	32.267	23.201	55.468	-18.532	74.000	Pass
01 (Peak)	2404.600	32.242	61.135	93.377	--	--	--

Figure Channel 01: Vertical (Peak)



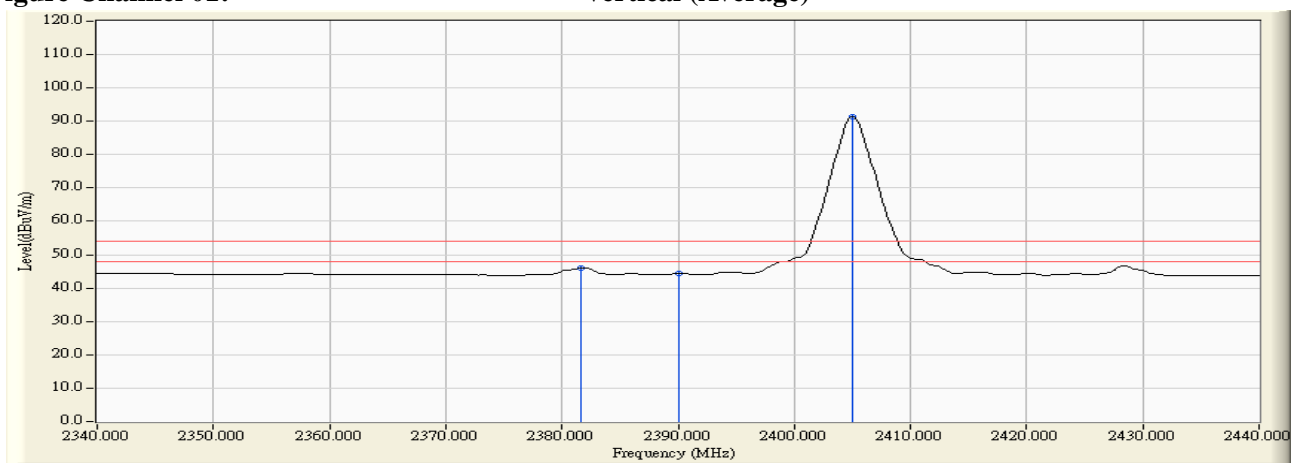
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
01 (Average)	2381.600	32.326	13.743	46.068	-7.932	54.000	Pass
01 (Average)	2390.000	32.267	12.169	44.436	-9.564	54.000	Pass
01 (Average)	2405.000	32.242	59.043	91.285	--	--	--

Figure Channel 01: Vertical (Average)



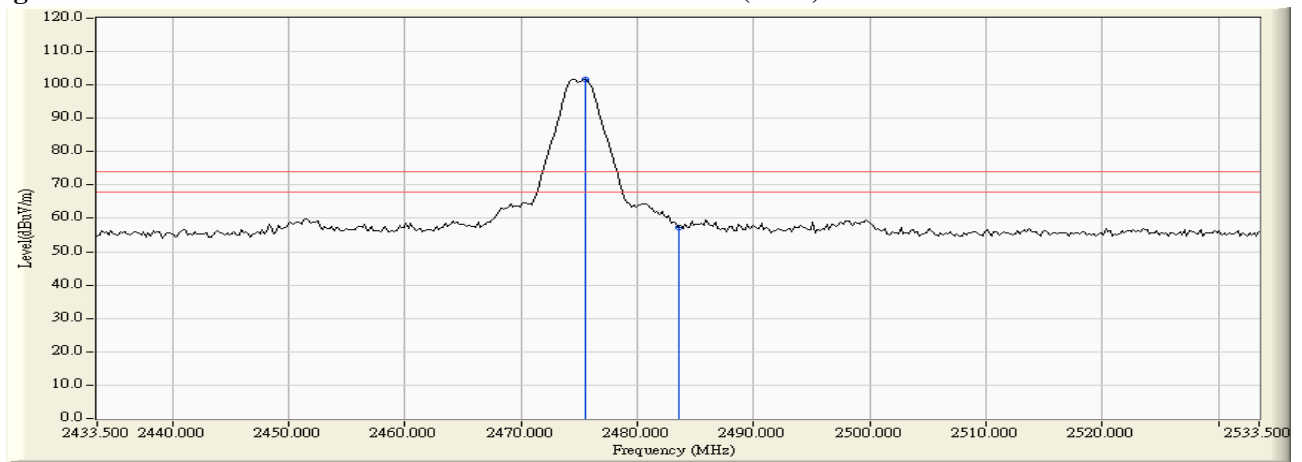
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Peak)	2475.500	33.929	67.622	101.551	--	--	--
15 (Peak)	2483.500	33.951	23.325	57.275	-16.725	74.000	Pass

Figure Channel 15: Horizontal (Peak)



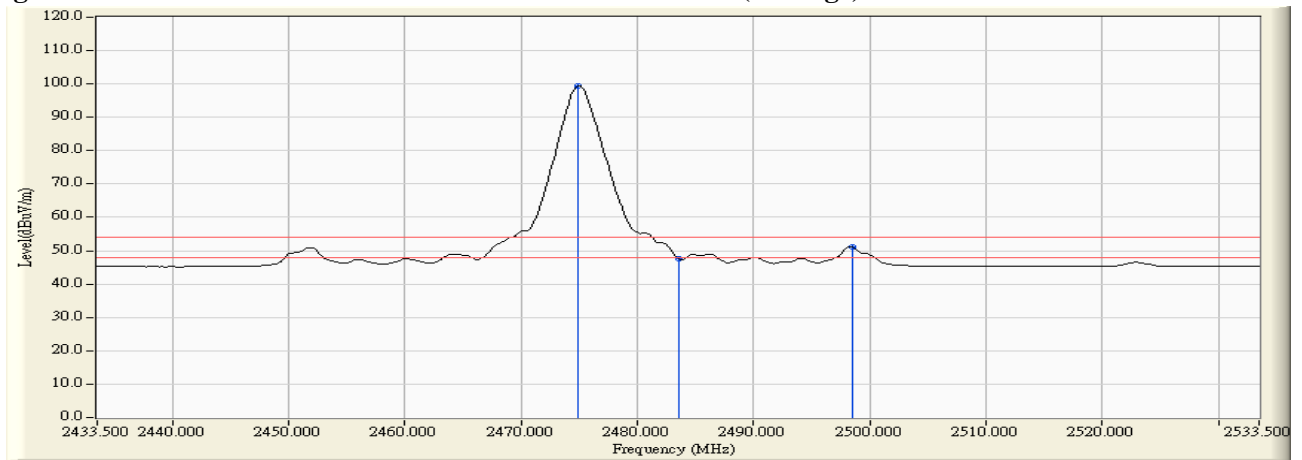
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Average)	2474.900	33.927	65.554	99.481	--	--	--
15 (Average)	2483.500	33.951	13.756	47.706	-6.294	54.000	Pass
15 (Average)	2498.500	33.970	17.078	51.048	-2.952	54.000	Pass

Figure Channel 15: Horizontal (Average)



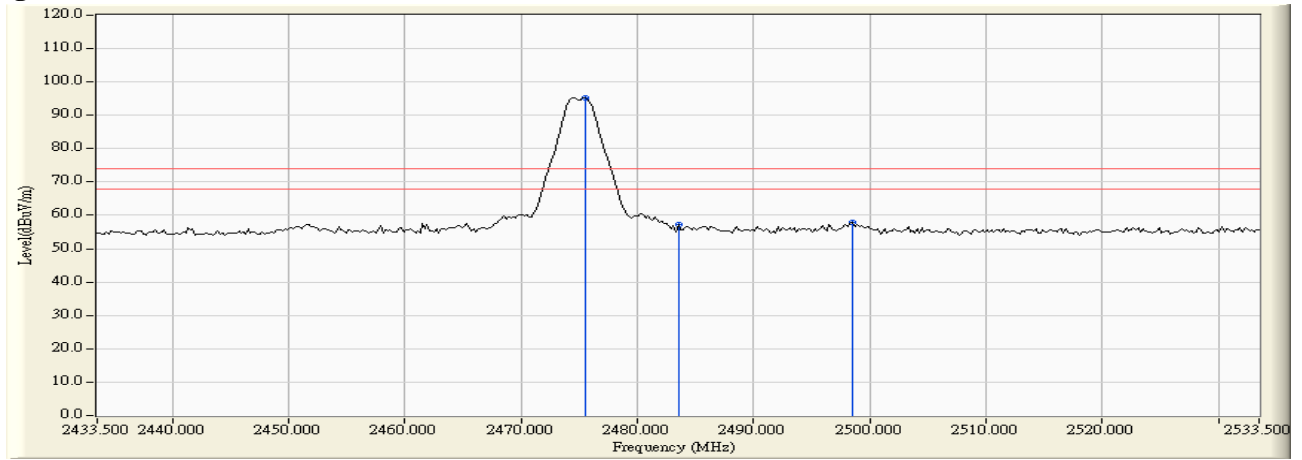
Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Peak)	2475.500	32.546	62.651	95.197	--	--	--
15 (Peak)	2483.500	32.586	24.736	57.321	-16.679	74.000	Pass
15 (Peak)	2498.500	32.657	25.208	57.866	-16.134	74.000	Pass

Figure Channel 78: Vertical (Peak)



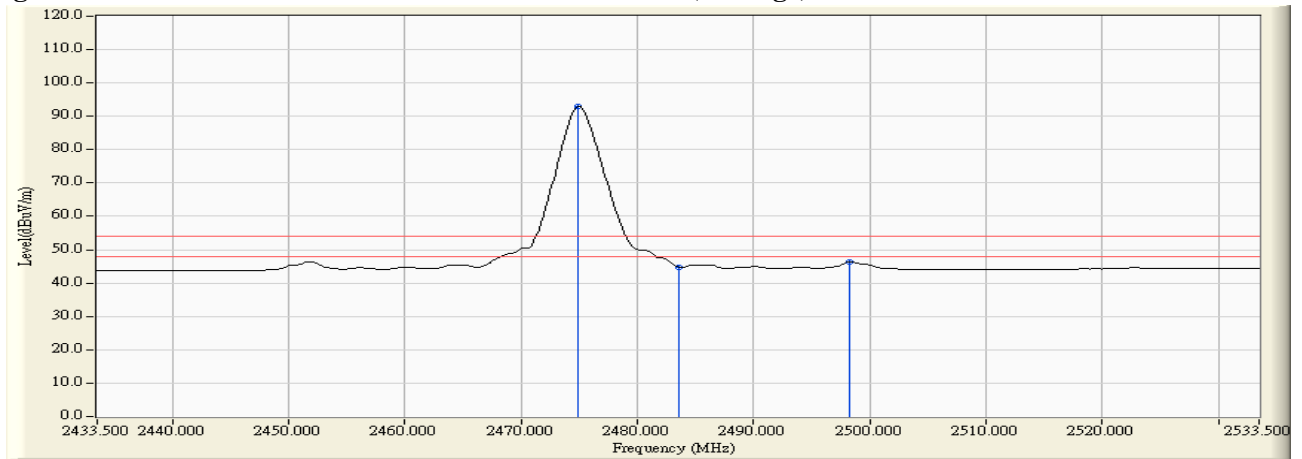
Note: RBW=1MHz, VBW=1MHz, Sweep=500ms

Product : modlet IQ
 Test Item : Band Edge Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (Antenna Type: PIFA)

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Result
15 (Average)	2474.900	32.543	60.503	93.046	--	--	--
15 (Average)	2483.500	32.586	12.254	44.839	-9.088	54.000	Pass
15 (Average)	2498.300	32.656	13.783	46.440	-8.667	54.000	Pass

Figure Channel 78: Vertical (Average)



Note: RBW=1MHz, VBW=10Hz, Sweep=Auto

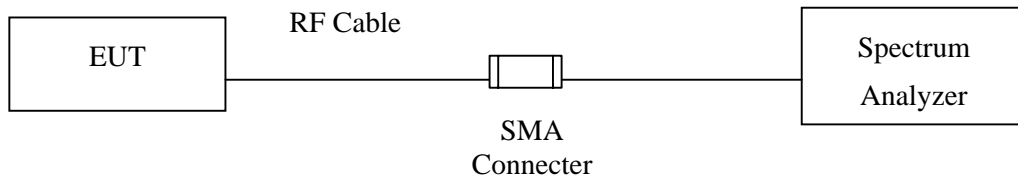
7. Occupied Bandwidth

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 instruments 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 minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

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

7.5. Uncertainty

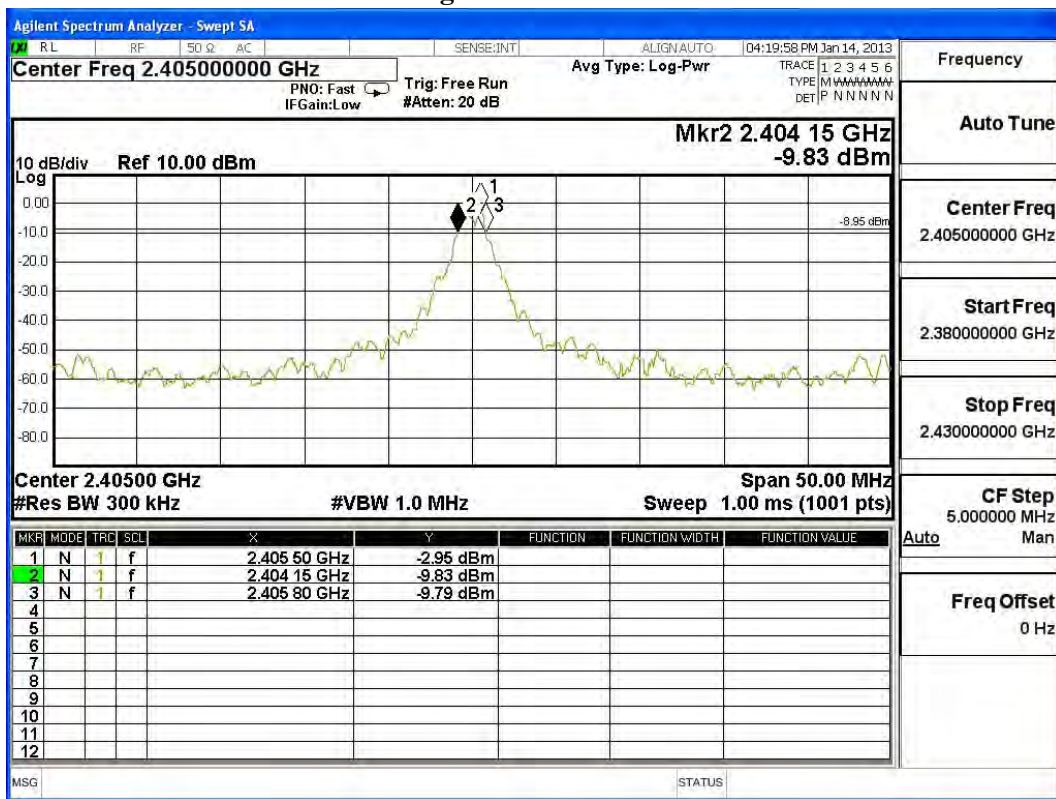
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2405MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2405.00	1650	>500	Pass

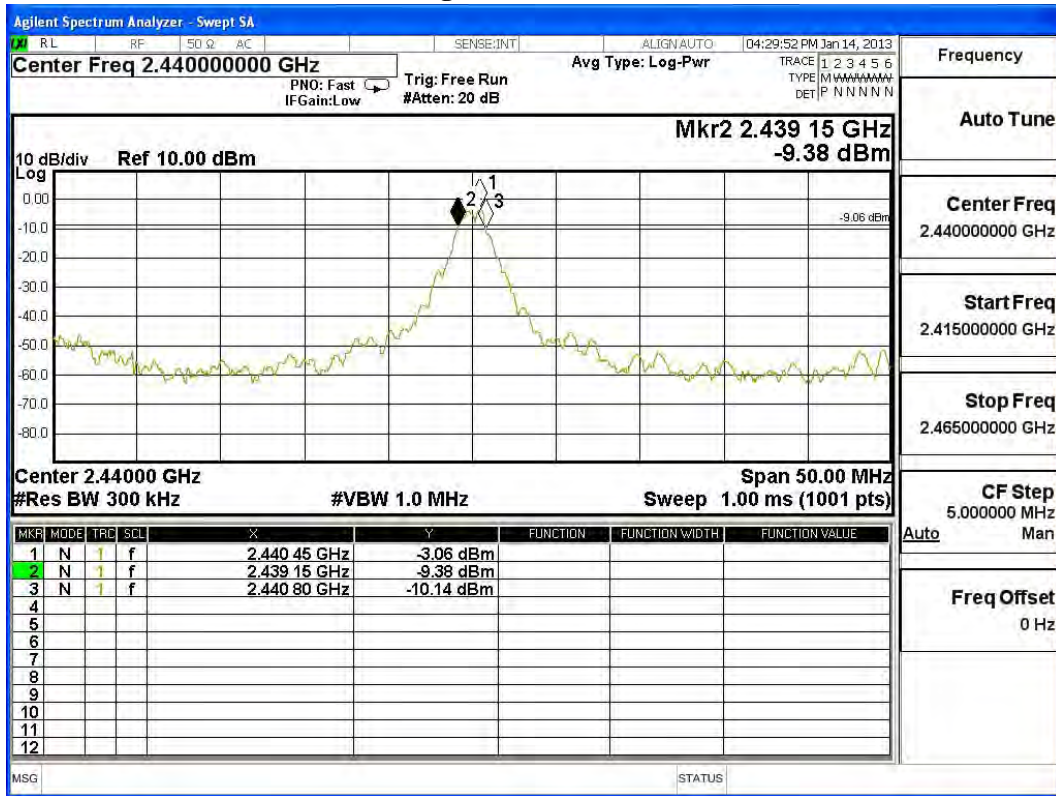
Figure Channel 01:



Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
08	2440.00	1650	>500	Pass

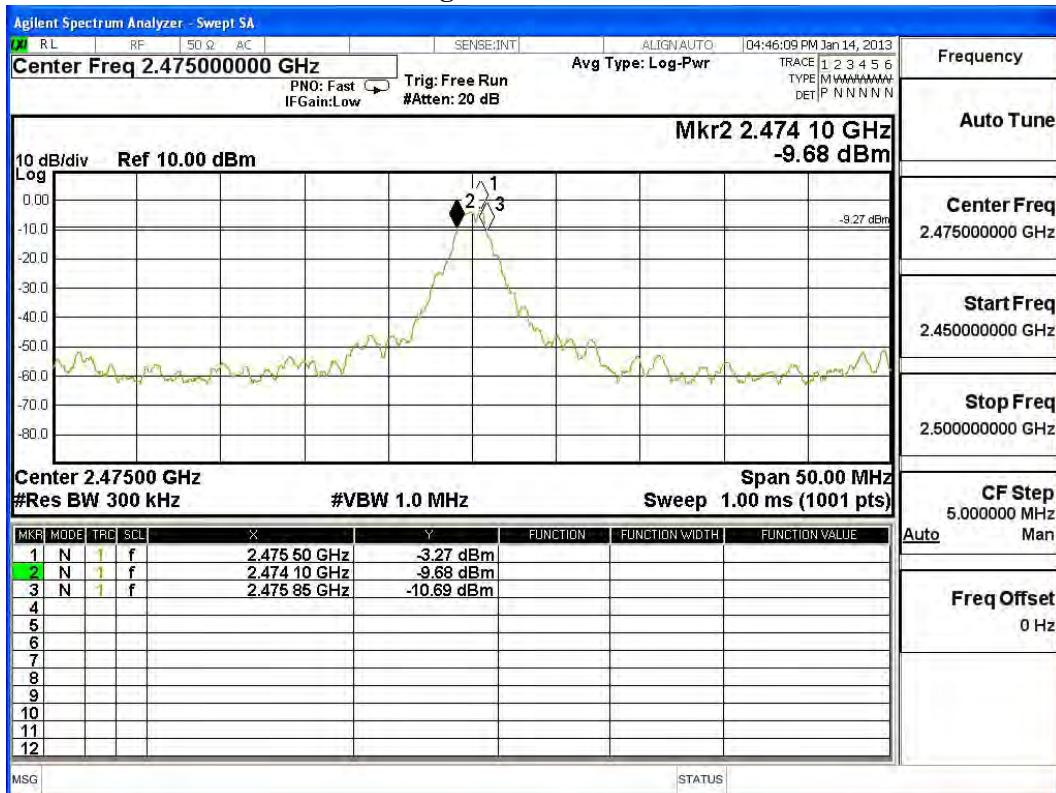
Figure Channel 08:



Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
15	2475.00	1750	>500	Pass

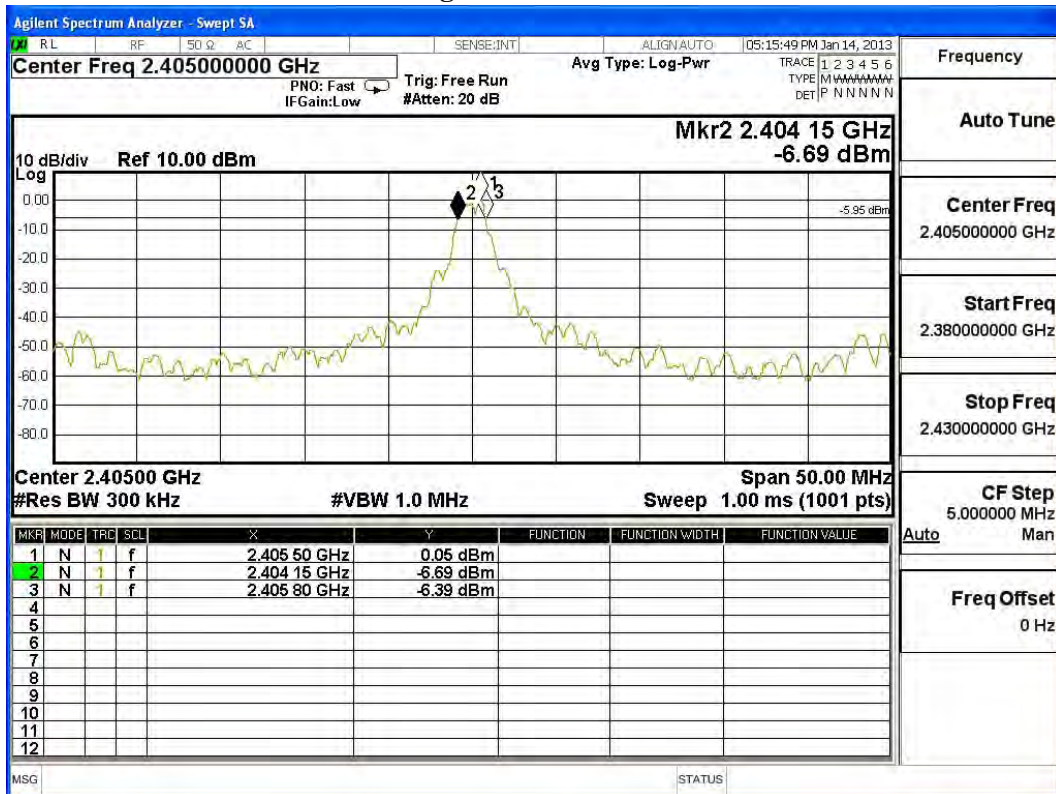
Figure Channel 15:



Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2405MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2405.00	1650	>500	Pass

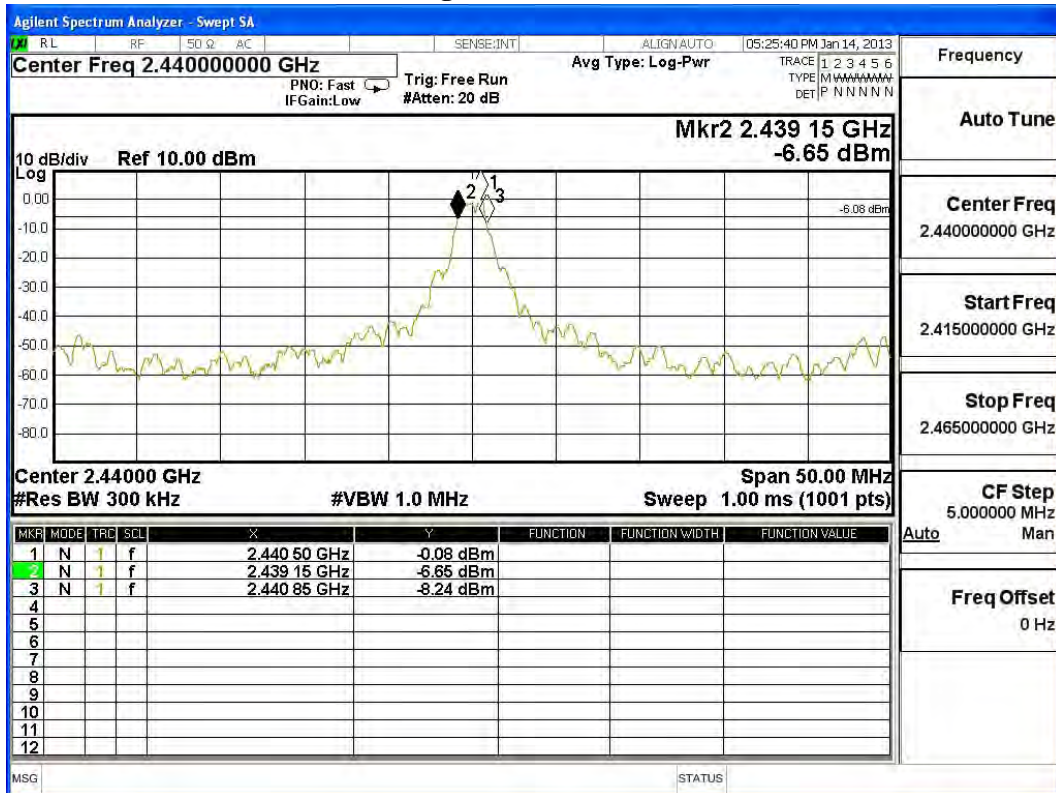
Figure Channel 01:



Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
08	2440.00	1700	>500	Pass

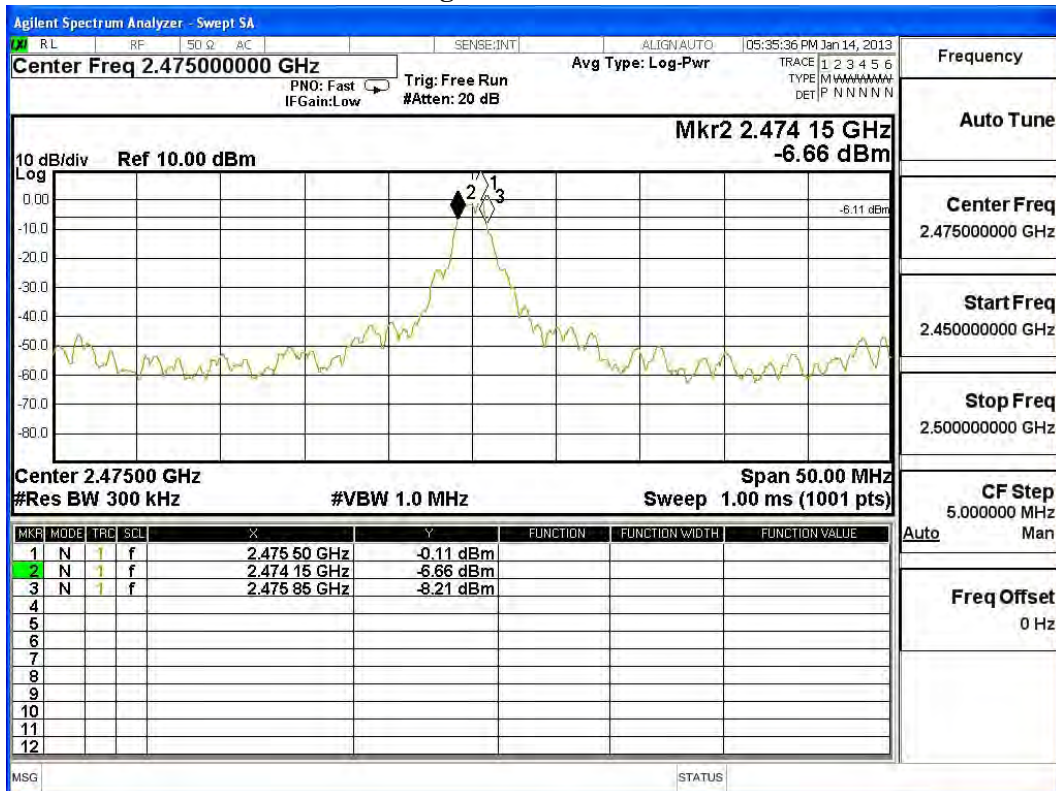
Figure Channel 08:



Product : modlet IQ
 Test Item : Occupied Bandwidth Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
15	2475.00	1700	>500	Pass

Figure Channel 15:



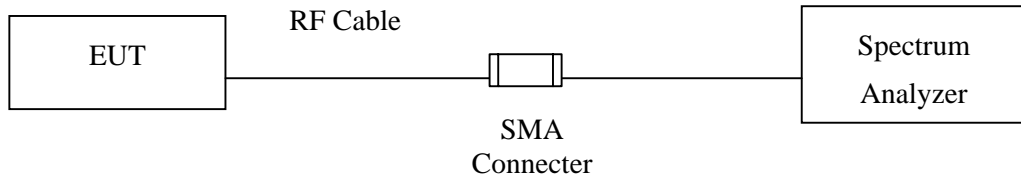
8. Power Density

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 every one year.
 2. The test instruments marked by “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 C63.10: 2009; tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 100 kHz, VBW≥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

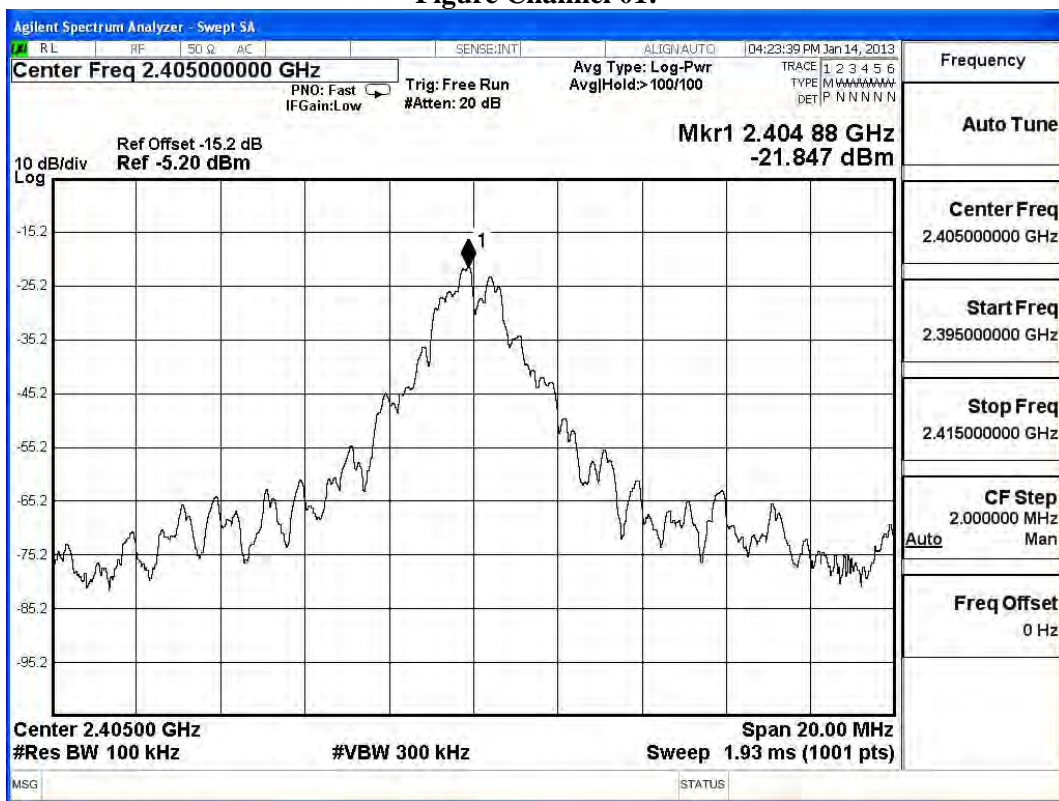
± 1.27 dB

8.6. Test Result of Power Density

Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit(2405MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2405.00	-21.847	< 8dBm	Pass

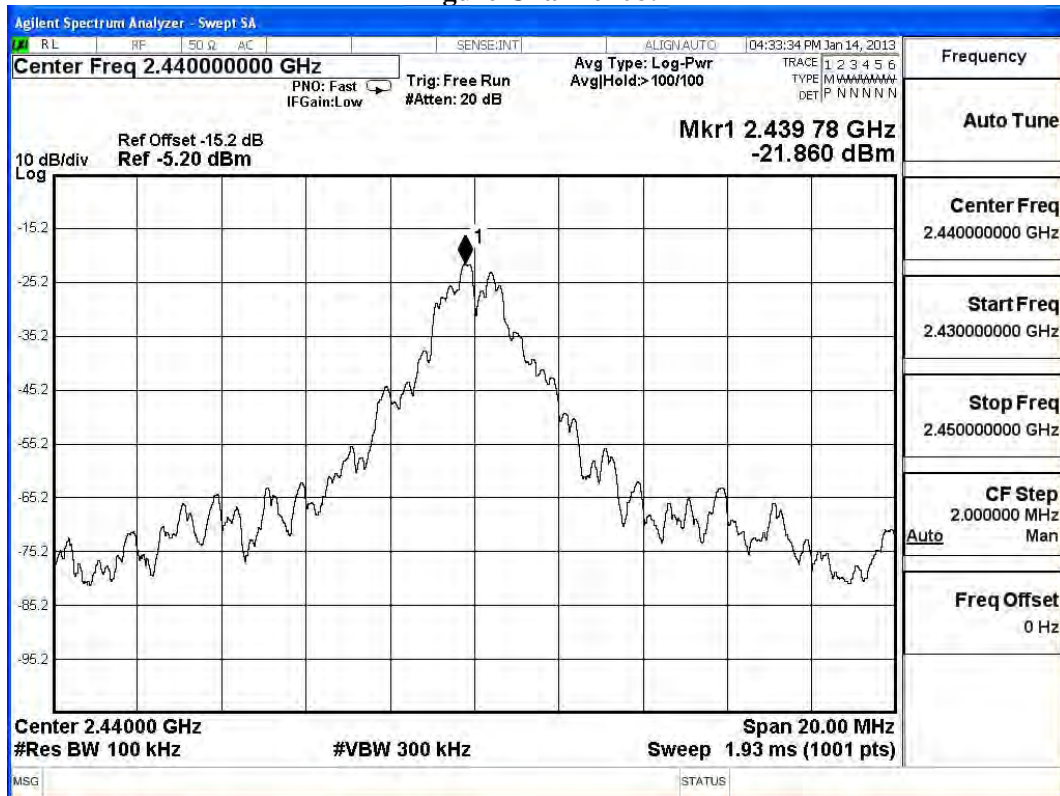
Figure Channel 01:



Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
08	2440.00	-21.860	< 8dBm	Pass

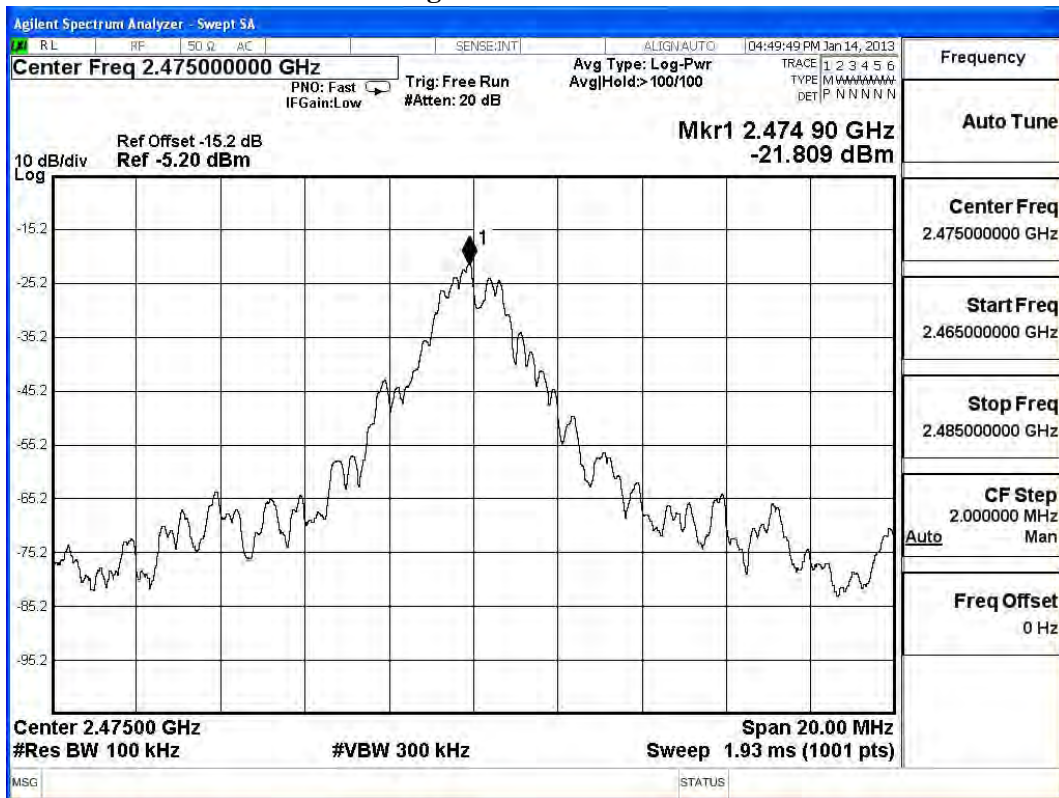
Figure Channel 08:



Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475MHz) (Antenna Type: Chip)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
15	2475.00	-21.809	< 8dBm	Pass

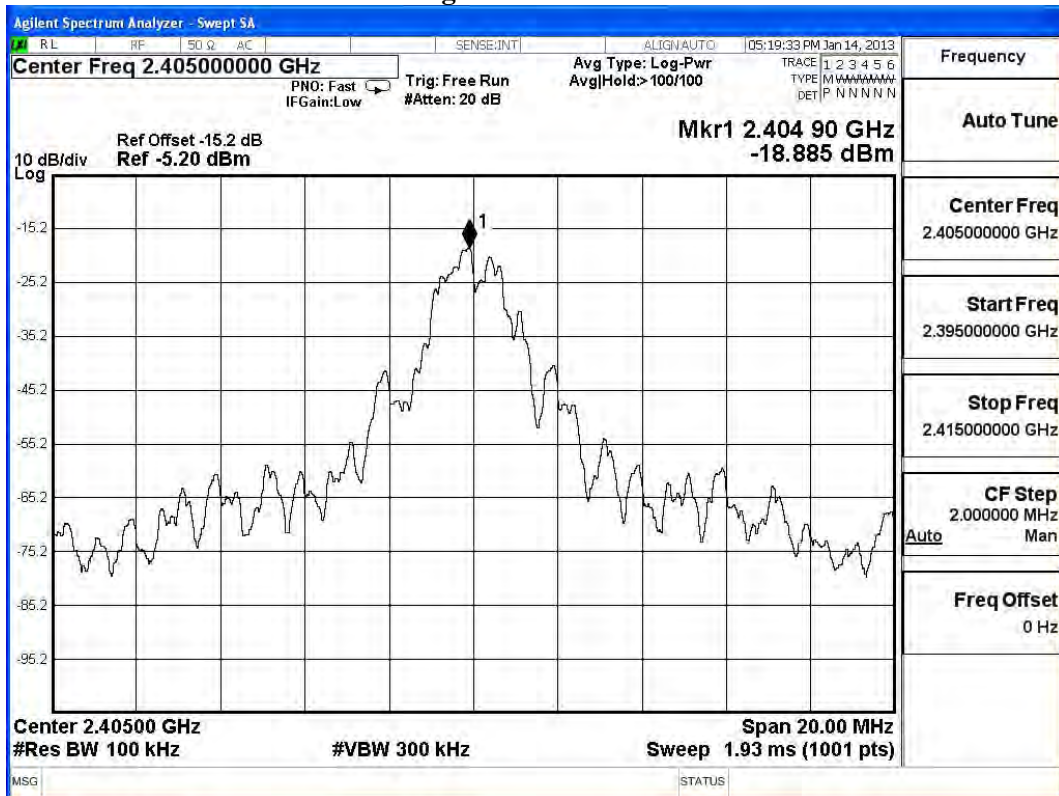
Figure Channel 15:



Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit(2405MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
01	2405.00	-18.885	< 8dBm	Pass

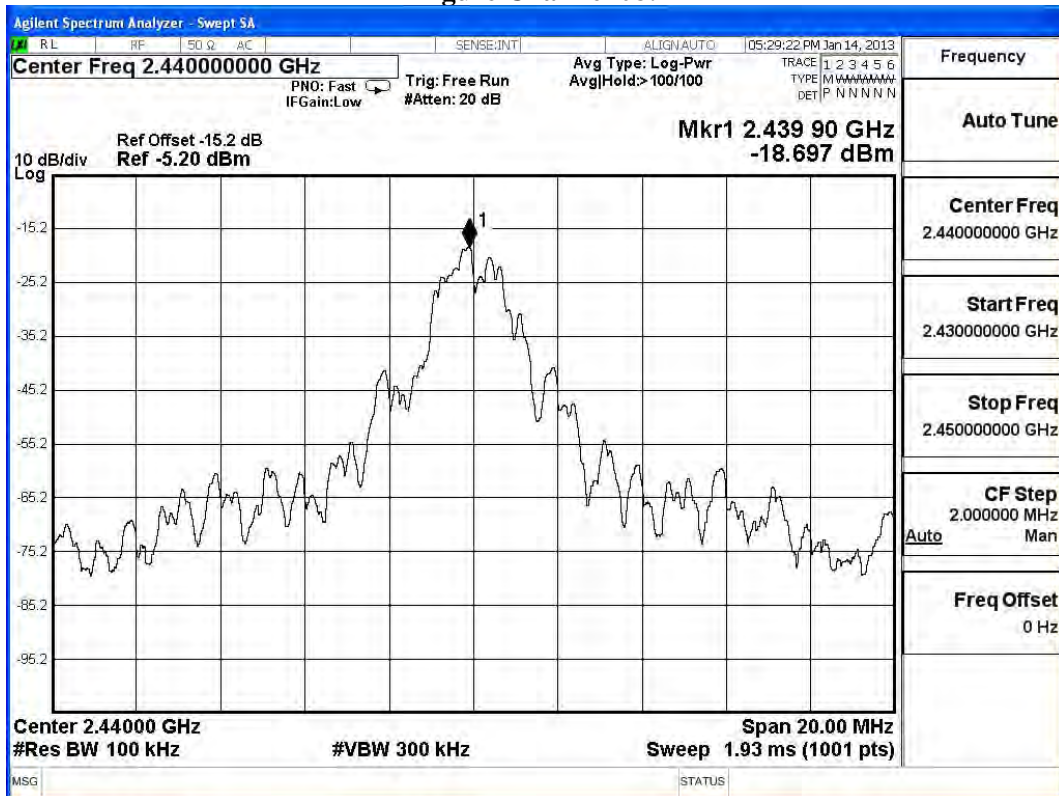
Figure Channel 01:



Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3OATS
 Test Mode : Mode 1: Transmit (2440MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
08	2440.00	-18.697	< 8dBm	Pass

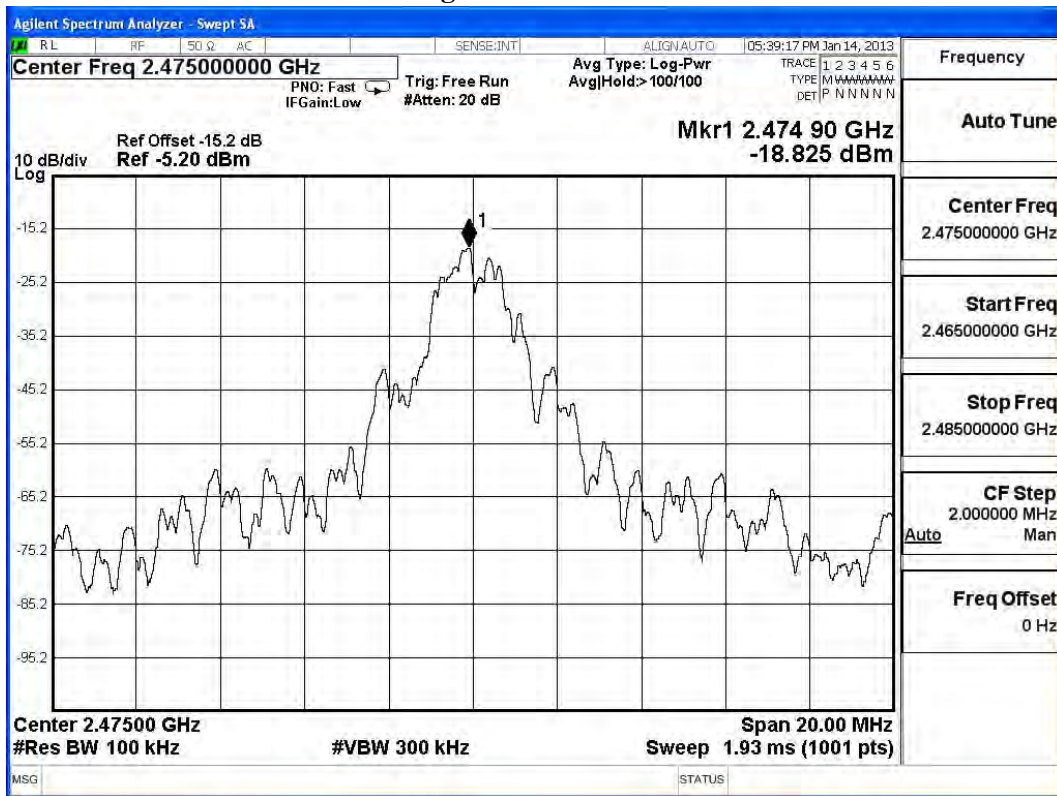
Figure Channel 08:



Product : modlet IQ
 Test Item : Power Density Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (2475MHz) (Antenna Type: PIFA)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
15	2475.00	-18.825	< 8dBm	Pass

Figure Channel 15:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.