

FC

Test Report

Product Name	Digital Camera
Model No	COOLPIX S6500
FCC ID.	CGJ5149EB

Applicant	NIKON CORPORATION
Address	6-3, Nishiohi 1-chome, Shinagawa-ku, Tokyo 140-8601, Japan

Date of Receipt	Nov. 01, 2012
Issue Date	Dec. 10, 2012
Report No.	12B093R-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: Dec. 10, 2012

Report No.: 12B093R-RFUSP42V01


Accredited by NIST (NVLAP)

NVLAP Lab Code: 200533-0

Product Name	Digital Camera
Applicant	NIKON CORPORATION
Address	6-3, Nishiohi 1-chome, Shinagawa-ku, Tokyo 140-8601, Japan
Manufacturer	NIKON CORPORATION
Model No.	COOLPIX S6500
FCC ID.	CGJ5149EB
EUT Rated Voltage	DC 3.7V (Power by Battery)
EUT Test Voltage	AC 120V / 60Hz
Trade Name	Nikon
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2003
Test Result	Complied

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Digital Camera
Trade Name	Nikon
Model No.	COOLPIX S6500
FCC ID.	CGJ5149EB
Frequency Range	2412-2462MHz for 802.11b/g/n-20BW
Number of Channels	802.11b/g/n-20MHz: 11
Data Speed	802.11b: 1-11Mbps, 802.11g: 6-54Mbps, 802.11n: up to 72.2Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Internal Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
USB Cable	Non-Shielded, 1.5m, with one ferrite cord bonded.
Power Adapter (1)	MFR: Nikon, M/N: EH-70P Input: AC 100-240V, 50/60Hz, 0.07A-0.044A, 7VA-10.56VA Output: DC 5V, 0.55A
Power Adapter (2)	MFR: Nikon, M/N: EH-70PCH Input: AC 100-240V Output: DC 5V, 0.55A

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	Foxlink	669N-1006-0180	Internal Antenna	-4.5 dBi for 2.4 GHz

Note:

1. The antenna of EUT is conform to FCC 15.203.

802.11b/g/n-20MHz 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 Digital Camera 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 11Mbps 、 802.11g is 54Mbps 、 802.11n(20M-BW) is 72.2Mbps and)
4. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11b/g/n 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 (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

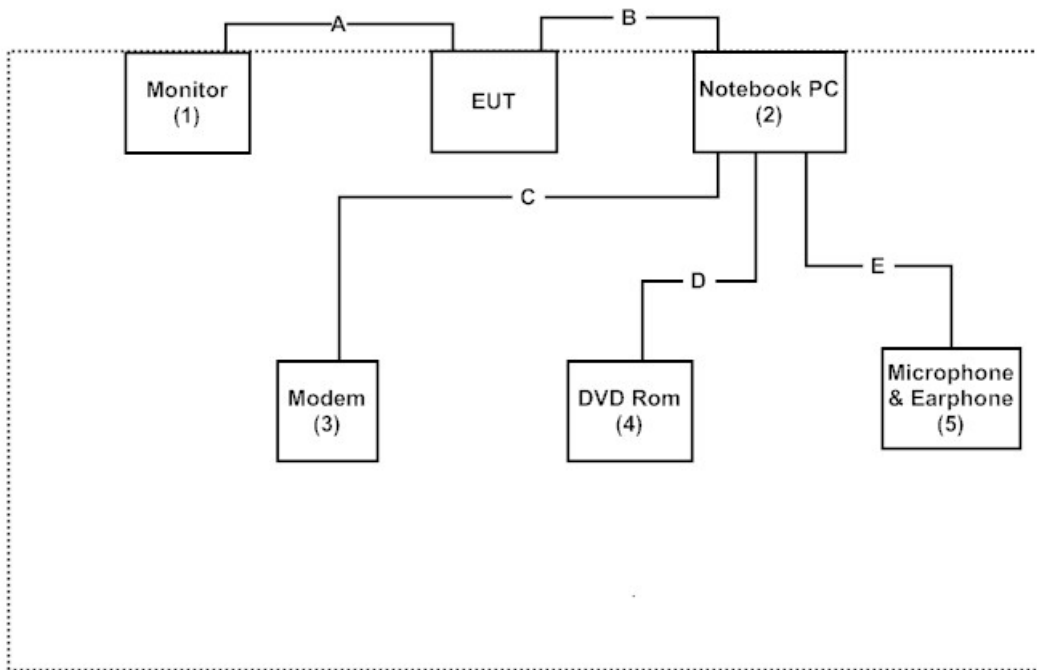
1.3. Tested System Details

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	Monitor	LG	W2261VT	907YHZK07373	Non-Shielded, 1.8m
2	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m
3	Modem	ACEEX	DM-1414	0102027533	Non-Shielded, 1.8m
4	DVD Rom	DELL	PD015	N/A	N/A
5	Microphone & Earphone	PCHOME	N/A	N/A	N/A

Signal Cable Type	Signal cable Description
A	Mini HDMI to HDMI Cable Non-Shielded, 1.8m
B	USB Cable Non-Shielded, 1.5m, with one ferrite core bonded.
C	Modem Cable Non-Shielded, 1.5m
D	DVD Rom Cable Non-Shielded, 0.8m
E	Microphone & Earphone Cable Non-Shielded, 1.2m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute program “Chiptest v.6.0.0.6” on the Notebook.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous Transmit.
- (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

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

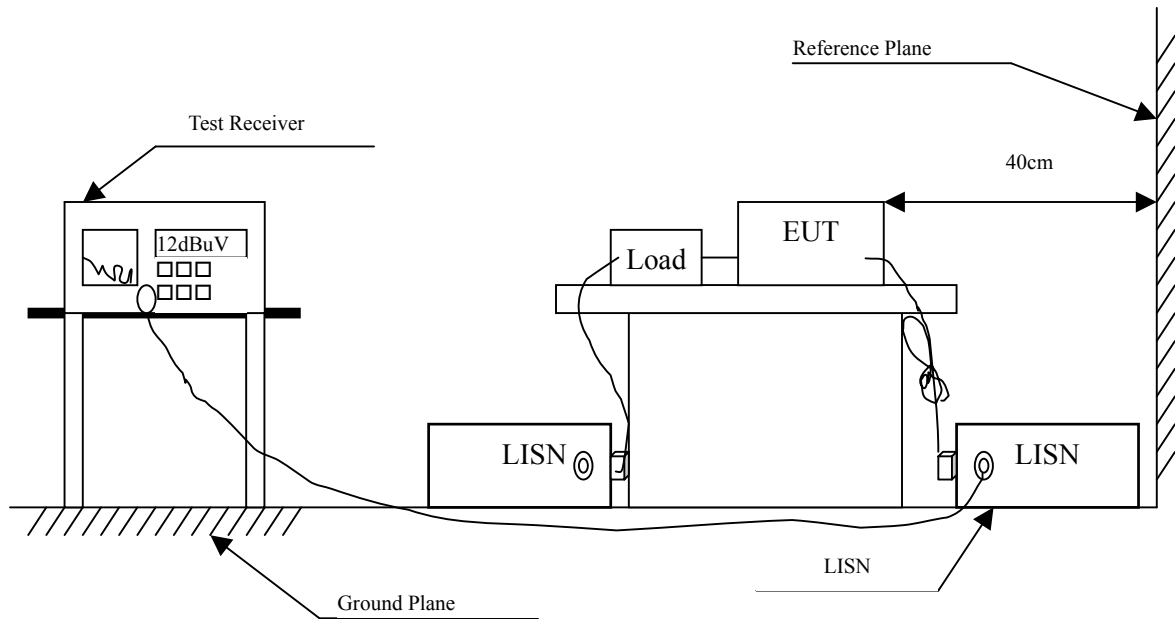
2.1. Test Equipment

	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.1 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 C63.4: 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 : Digital Camera
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 1					
Quasi-Peak					
0.166	9.830	27.980	37.810	-27.733	65.543
0.334	9.830	22.740	32.570	-28.173	60.743
0.502	9.830	25.940	35.770	-20.230	56.000
2.502	9.841	24.130	33.971	-22.029	56.000
6.002	9.892	22.250	32.142	-27.858	60.000
22.587	10.110	20.690	30.800	-29.200	60.000
Average					
0.166	9.830	27.520	37.350	-18.193	55.543
0.334	9.830	22.730	32.560	-18.183	50.743
0.502	9.830	25.740	35.570	-10.430	46.000
2.502	9.841	22.290	32.131	-13.869	46.000
6.002	9.892	9.340	19.232	-30.768	50.000
22.587	10.110	13.920	24.030	-25.970	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 : Digital Camera
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
Line 2					
Quasi-Peak					
0.166	9.838	25.830	35.668	-29.875	65.543
0.252	9.830	17.850	27.680	-35.406	63.086
0.502	9.840	19.970	29.810	-26.190	56.000
3.334	9.870	15.920	25.790	-30.210	56.000
6.005	9.922	18.420	28.342	-31.658	60.000
15.509	10.230	17.400	27.630	-32.370	60.000
Average					
0.166	9.838	25.460	35.298	-20.245	55.543
0.252	9.830	16.090	25.920	-27.166	53.086
0.502	9.840	19.960	29.800	-16.200	46.000
3.334	9.870	7.930	17.800	-28.200	46.000
6.005	9.922	7.780	17.702	-32.298	50.000
15.509	10.230	11.300	21.530	-28.470	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

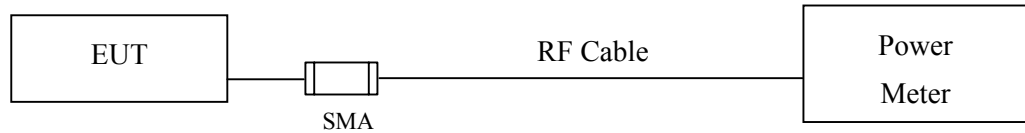
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2012

Note:

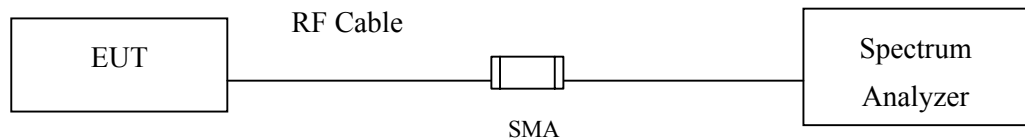
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

Average Power For different Data Rate (Mbps)



Peak Power 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 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 : Digital Camera
 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	11		
		Measurement Level (dBm)						
01	2412	15.14	--	--	--	18.42	<30dBm	Pass
06	2437	14.89	14.82	14.8	14.77	18.21	<30dBm	Pass
11	2462	14.52	--	--	--	17.83	<30dBm	Pass

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

Product : Digital Camera
 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			
		Measurement Level (dBm)										
01	2412	13.95	--	--	--	--	--	--	--	22.64	<30dBm	Pass
06	2437	13.88	13.84	13.54	13.11	12.98	12.55	12.01	11.57	22.11	<30dBm	Pass
11	2462	13.40	--	--	--	--	--	--	--	21.73	<30dBm	Pass

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

Product : Digital Camera
 Test Item : Peak Power Output Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

Channel No	Frequency (MHz)	Average Power								Peak Power	Required Limit	Result
		For different Data Rate (Mbps)										
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2	72.2		
Measurement Level (dBm)												
01	2412	12.31	--	--	--	--	--	--	--	22.78	<30dBm	Pass
06	2437	12.04	11.57	11.35	11.08	10.84	10.72	10.6	10.58	21.68	<30dBm	Pass
11	2462	11.74	--	--	--	--	--	--	--	21.66	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

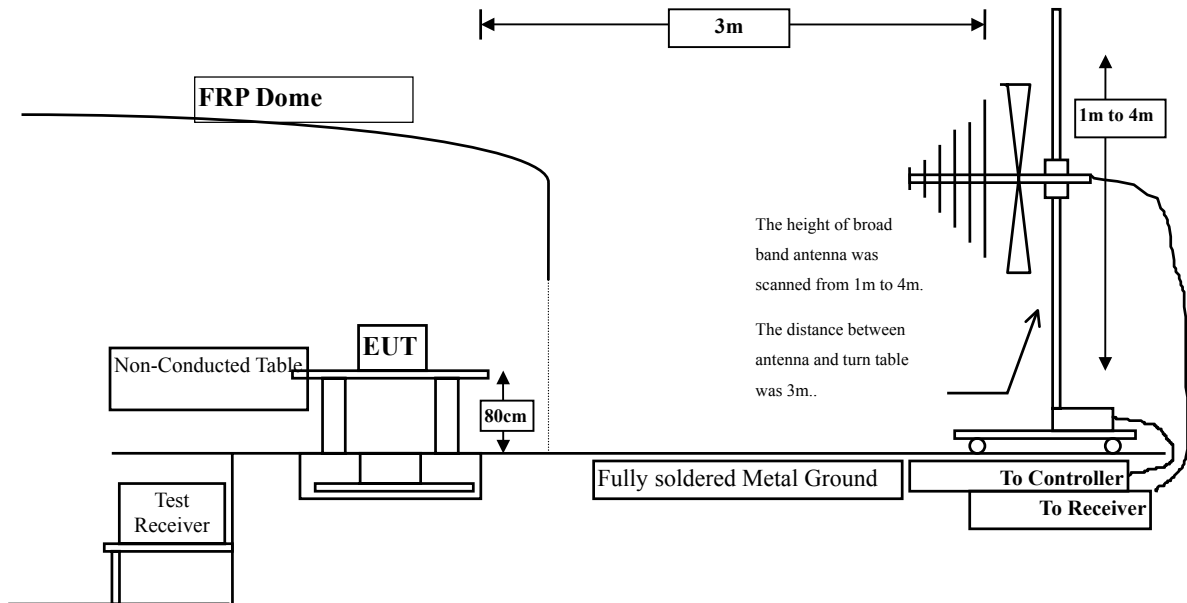
The following test equipment are used during the radiated emission test:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒ Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 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

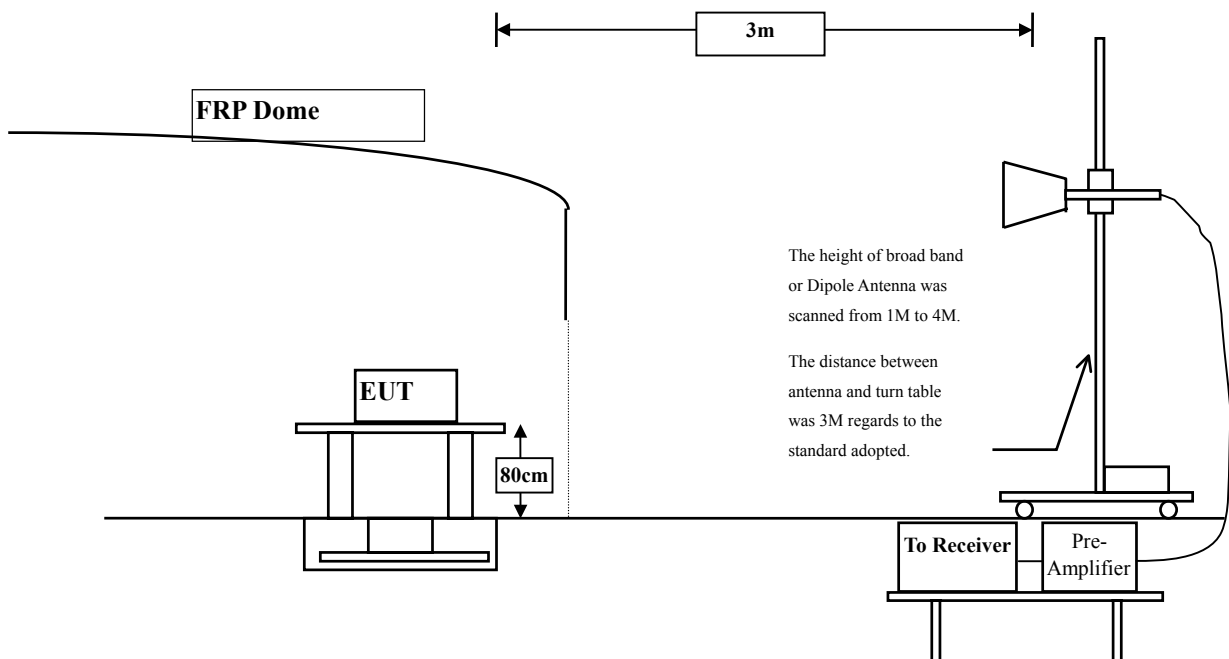
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

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 C63.4: 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 : Digital Camera
 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
Horizontal					
Peak Detector:					
4824.000	3.261	41.950	45.211	-28.789	74.000
7236.000	10.650	39.490	50.140	-23.860	74.000
9648.000	13.337	35.060	48.396	-25.604	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	42.570	48.991	-25.009	74.000
7236.000	11.495	37.770	49.265	-24.735	74.000
9648.000	13.807	35.510	49.316	-24.684	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 : Digital Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

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

Horizontal

Peak Detector:

4874.000	3.038	42.450	45.487	-28.513	74.000
7311.000	11.795	36.070	47.864	-26.136	74.000
9748.000	12.635	36.250	48.885	-25.115	74.000

Average Detector:

--

Vertical

Peak Detector:

4874.000	5.812	42.440	48.251	-25.749	74.000
7311.000	12.630	37.470	50.099	-23.901	74.000
9748.000	13.126	37.080	50.206	-23.794	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 : Digital Camera
 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
------------------	-------------------------	--------------------------	--------------------------------	--------------	-----------------

Horizontal

Peak Detector:

4924.000	2.858	41.160	44.017	-29.983	74.000
7386.000	12.127	41.580	53.708	-20.292	74.000
9848.000	12.852	36.510	49.363	-24.637	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	43.420	48.940	-25.060	74.000
7386.000	13.254	36.740	49.994	-24.006	74.000
9848.000	13.367	36.840	50.207	-23.793	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 : Digital Camera
 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
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Horizontal

Peak Detector:

4824.000	3.261	40.020	43.281	-30.719	74.000
7236.000	10.650	39.030	49.680	-24.320	74.000
9648.000	13.337	36.940	50.276	-23.724	74.000

Average Detector:

--

Vertical

Peak Detector:

4824.000	6.421	40.570	46.991	-27.009	74.000
7236.000	11.495	36.710	48.205	-25.795	74.000
9648.000	13.807	36.370	50.176	-23.824	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 : Digital Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz)

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

Horizontal

Peak Detector:

4874.000	3.038	38.210	41.247	-32.753	74.000
7311.000	11.795	38.080	49.874	-24.126	74.000
9748.000	12.635	37.500	50.135	-23.865	74.000

Average Detector:

--

Peak Detector:

4874.000	5.812	39.650	45.461	-28.539	74.000
7311.000	12.630	36.400	49.029	-24.971	74.000
9748.000	13.126	37.340	50.466	-23.534	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 : Digital Camera
 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
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Horizontal

Peak Detector:

4924.000	2.858	38.480	41.337	-32.663	74.000
7386.000	12.127	38.400	50.528	-23.472	74.000
9848.000	12.852	37.190	50.043	-23.957	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	40.110	45.630	-28.370	74.000
7386.000	13.254	36.780	50.034	-23.966	74.000
9848.000	13.367	37.630	50.997	-23.003	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 : Digital Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	39.220	42.481	-31.519	74.000
7236.000	10.650	37.490	48.140	-25.860	74.000
9648.000	13.337	36.520	49.856	-24.144	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	39.580	46.001	-27.999	74.000
7236.000	11.495	36.990	48.485	-25.515	74.000
9648.000	13.807	36.540	50.346	-23.654	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 : Digital Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437 MHz)

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

Peak Detector:

4874.000	3.038	38.300	41.337	-32.663	74.000
7311.000	11.795	37.900	49.694	-24.306	74.000
9748.000	12.635	37.490	50.125	-23.875	74.000

Average Detector:

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Vertical

Peak Detector:

4874.000	5.812	40.370	46.181	-27.819	74.000
7311.000	12.630	36.880	49.509	-24.491	74.000
9748.000	13.126	37.190	50.316	-23.684	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 : Digital Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462 MHz)

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

Peak Detector:

4924.000	2.858	38.310	41.167	-32.833	74.000
7386.000	12.127	37.420	49.548	-24.452	74.000
9848.000	12.852	36.910	49.763	-24.237	74.000

Average Detector:

--

Vertical

Peak Detector:

4924.000	5.521	37.910	43.430	-30.570	74.000
7386.000	13.254	36.640	49.894	-24.106	74.000
9848.000	13.367	36.950	50.317	-23.683	74.000

Average Detector:

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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 : Digital Camera
 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
Horizontal					
111.480	-7.914	37.484	29.570	-13.930	43.500
398.600	-2.268	35.000	32.732	-13.268	46.000
600.360	3.977	29.099	33.076	-12.924	46.000
749.740	3.320	27.617	30.937	-15.063	46.000
854.500	6.626	30.934	37.560	-8.440	46.000
943.740	6.492	28.624	35.117	-10.883	46.000
Vertical					
59.100	-4.097	35.018	30.921	-9.079	40.000
198.780	-8.221	35.093	26.872	-16.628	43.500
398.600	-4.678	38.360	33.682	-12.318	46.000
600.360	-2.833	29.809	26.976	-19.024	46.000
796.300	2.831	34.079	36.910	-9.090	46.000
941.800	6.585	26.535	33.120	-12.880	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 : Digital Camera
 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
Horizontal					
103.720	-6.751	30.718	23.966	-19.534	43.500
225.940	-9.878	41.927	32.048	-13.952	46.000
429.640	-2.242	37.477	35.235	-10.765	46.000
573.200	2.537	31.095	33.632	-12.368	46.000
800.180	5.141	34.052	39.193	-6.807	46.000
928.220	6.893	24.802	31.695	-14.305	46.000
Vertical					
198.780	-8.221	35.965	27.744	-15.756	43.500
396.660	-4.356	39.552	35.196	-10.804	46.000
532.460	-0.563	31.349	30.786	-15.214	46.000
679.900	1.000	31.495	32.495	-13.505	46.000
796.300	2.831	34.188	37.019	-8.981	46.000
961.200	7.260	27.447	34.707	-19.293	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 : Digital Camera
 Test Item : General Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
105.660	-6.673	33.972	27.299	-16.201	43.500
224.000	-10.339	39.840	29.501	-16.499	46.000
398.600	-2.268	36.329	34.061	-11.939	46.000
495.600	-0.535	38.559	38.024	-7.976	46.000
629.460	1.560	28.965	30.525	-15.475	46.000
852.560	6.342	30.471	36.813	-9.187	46.000
Vertical					
61.040	-4.316	33.882	29.566	-10.434	40.000
198.780	-8.221	37.873	29.652	-13.848	43.500
400.540	-5.156	40.716	35.561	-10.439	46.000
596.480	-3.113	32.013	28.900	-17.100	46.000
800.180	2.801	33.342	36.143	-9.857	46.000
947.620	6.609	30.600	37.209	-8.791	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.

5. RF antenna conducted test

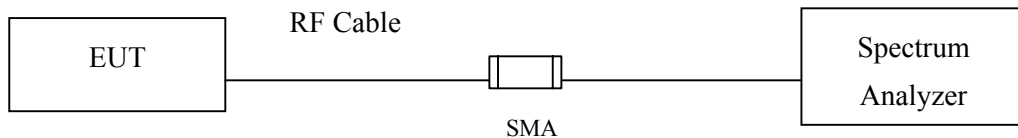
5.1. Test Equipment

	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

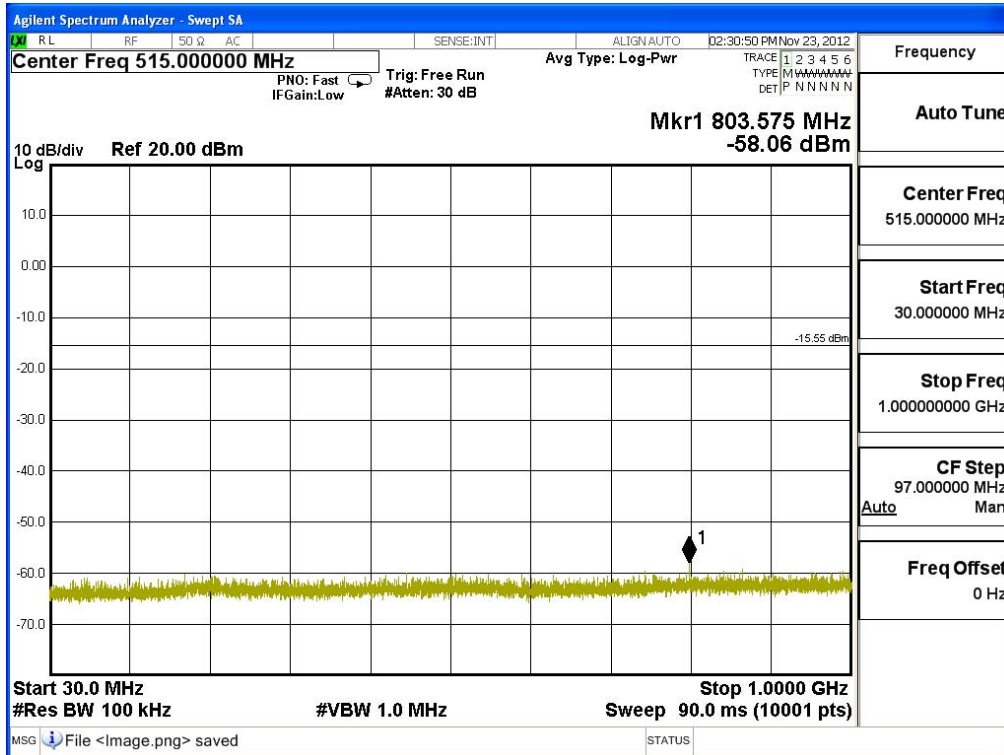
The measurement uncertainty

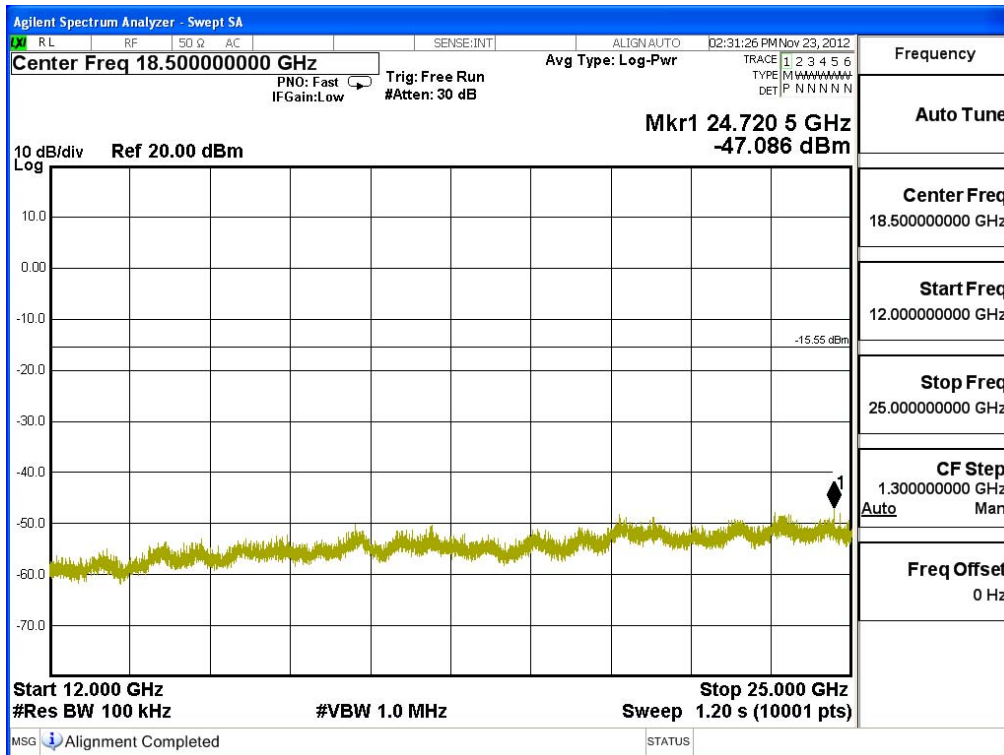
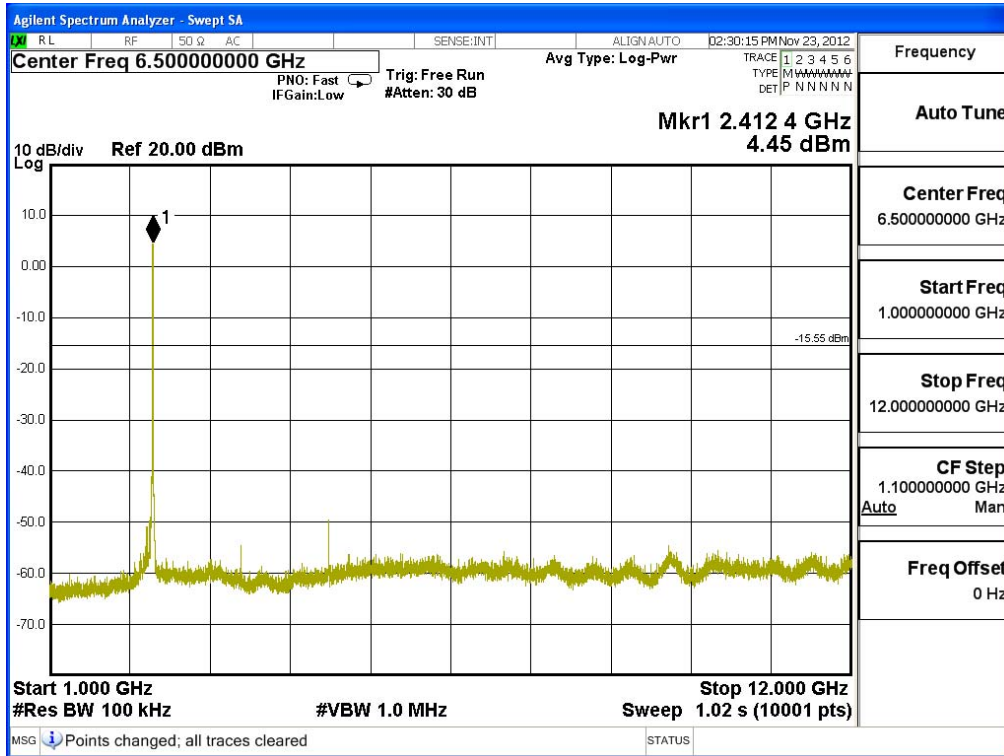
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

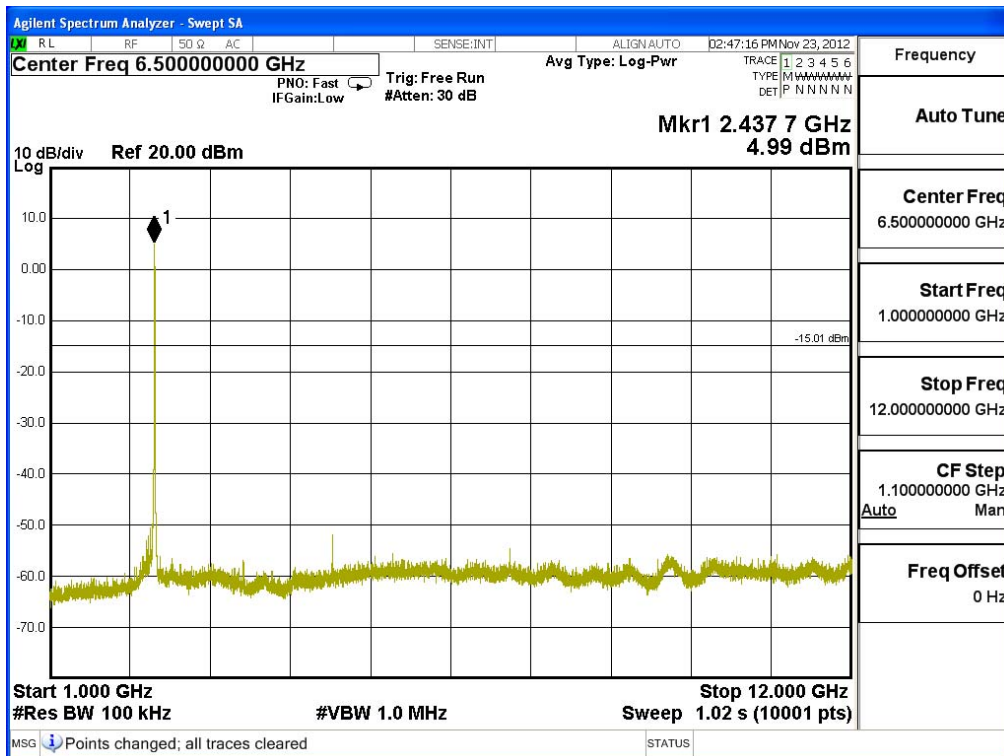
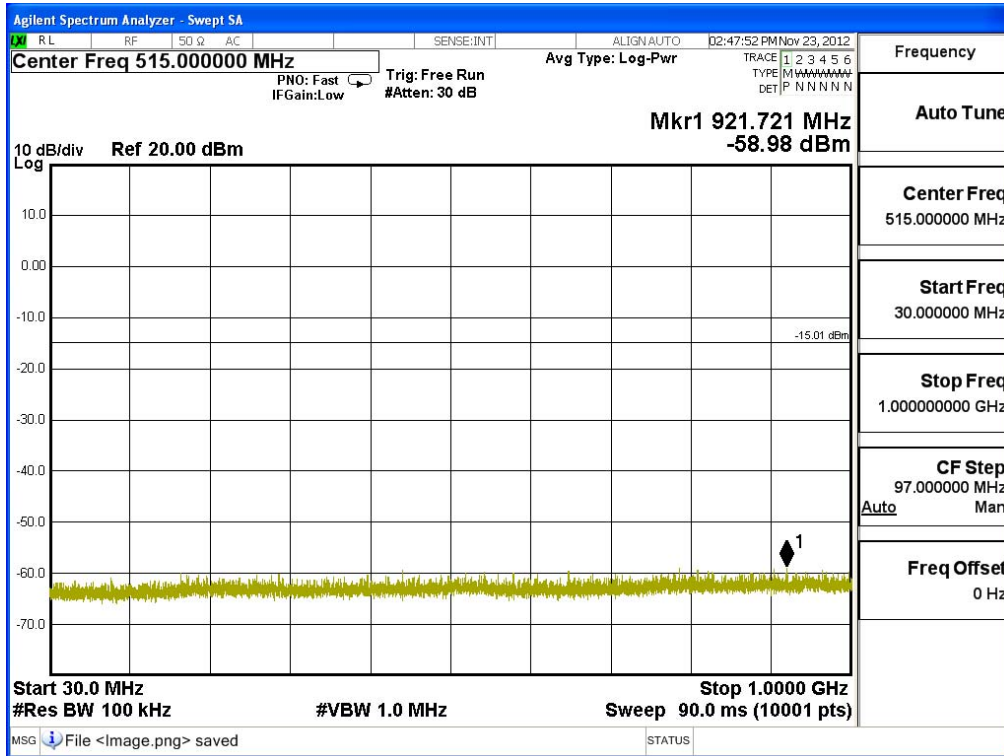
Product : Digital Camera
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

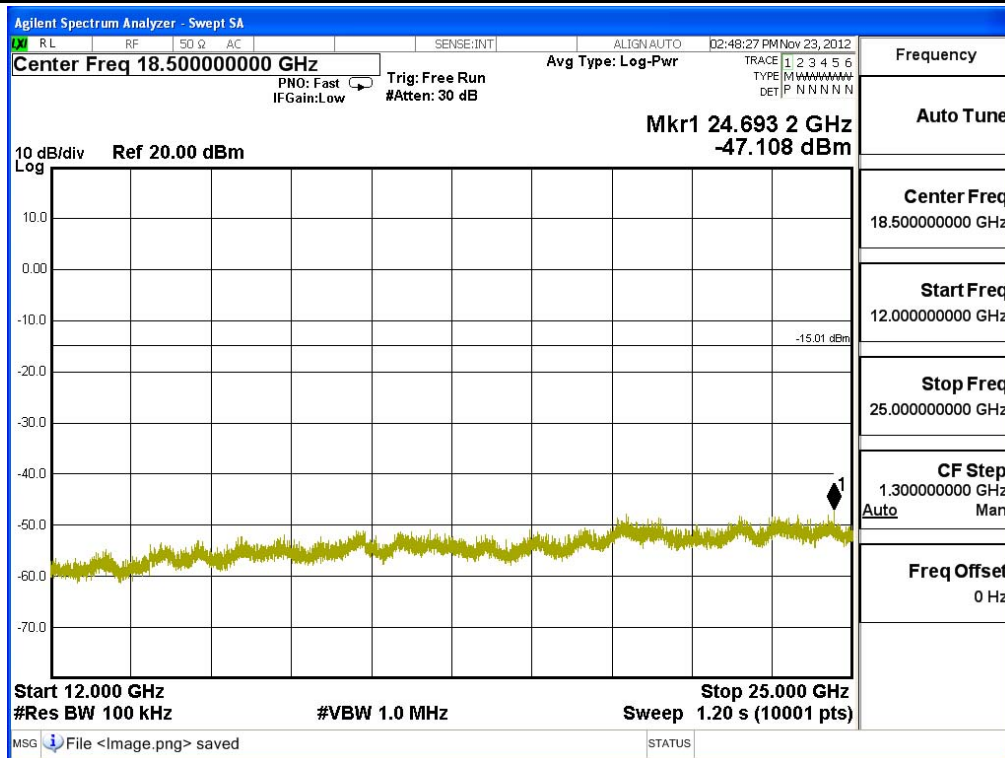
Channel 01 (2412MHz)



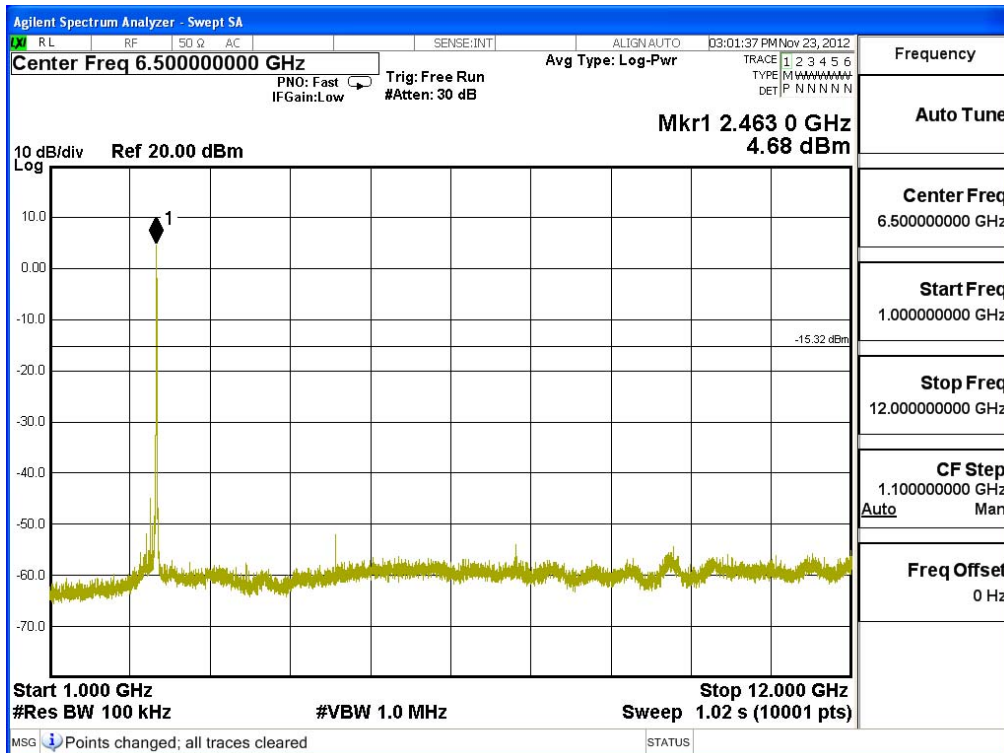
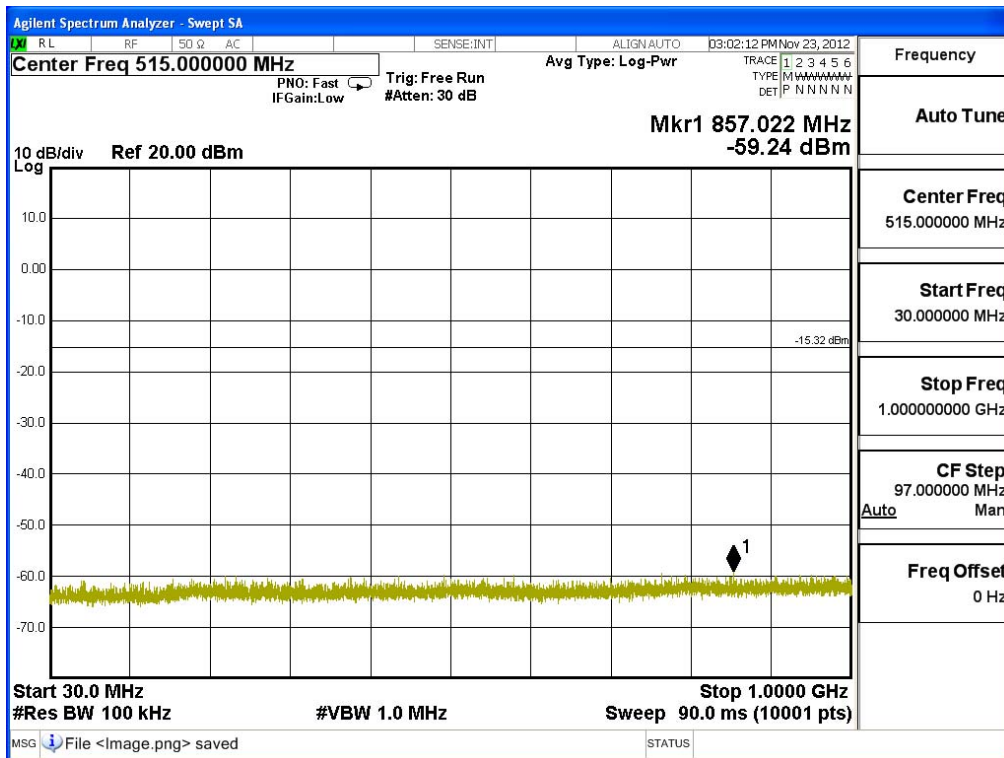


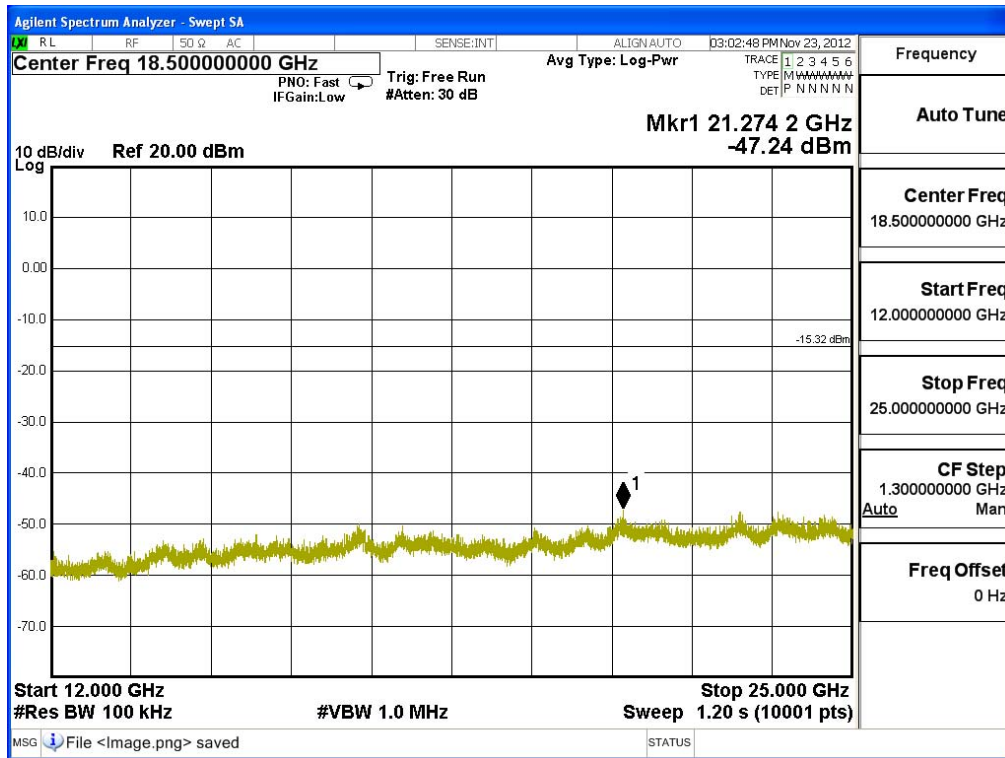
Channel 06 (2437MHz)





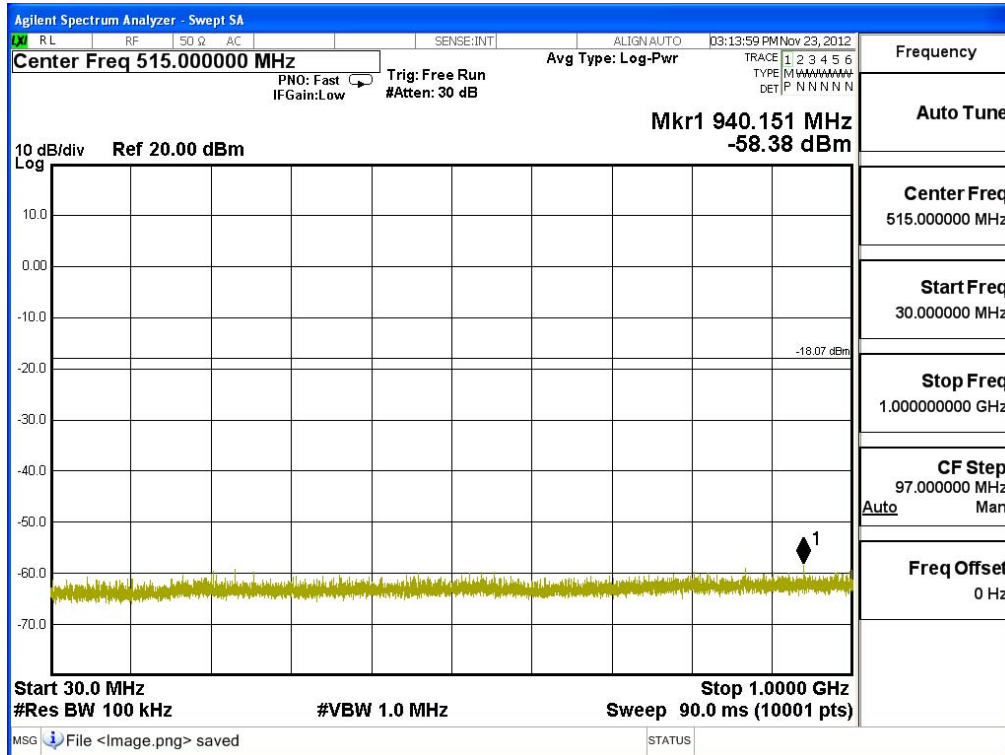
Channel 11 (2462MHz)

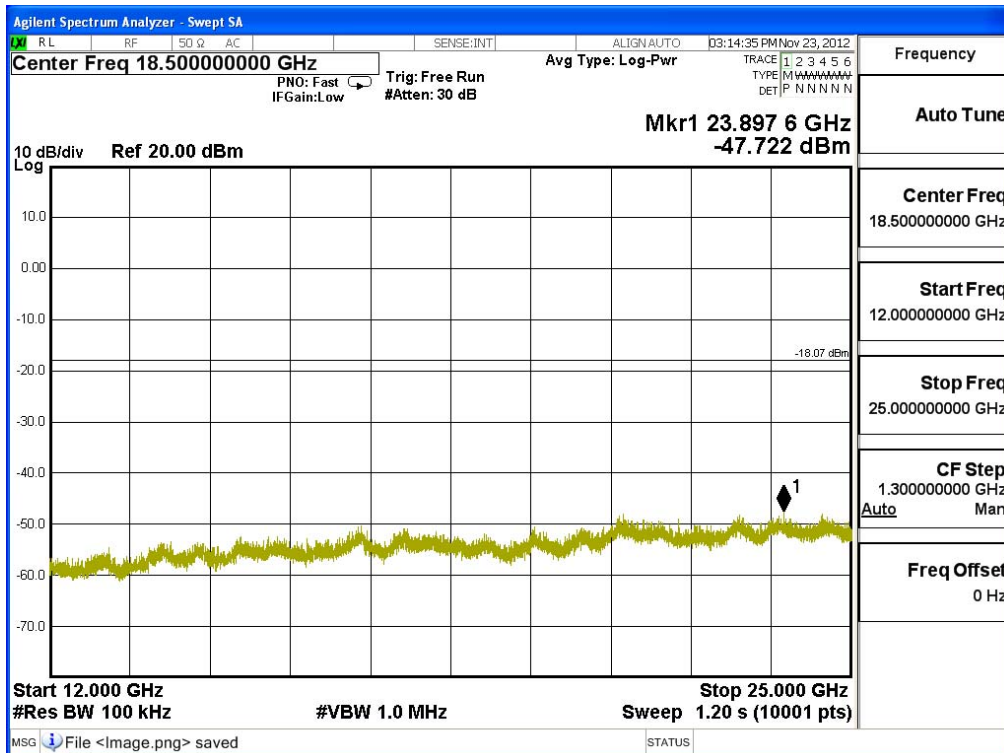
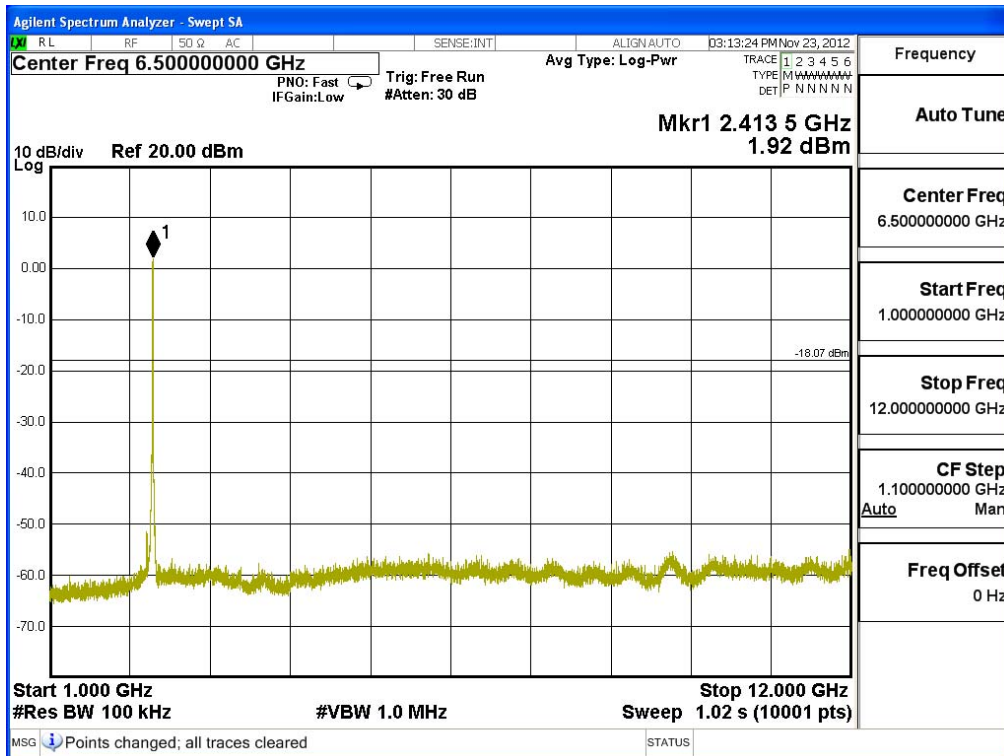




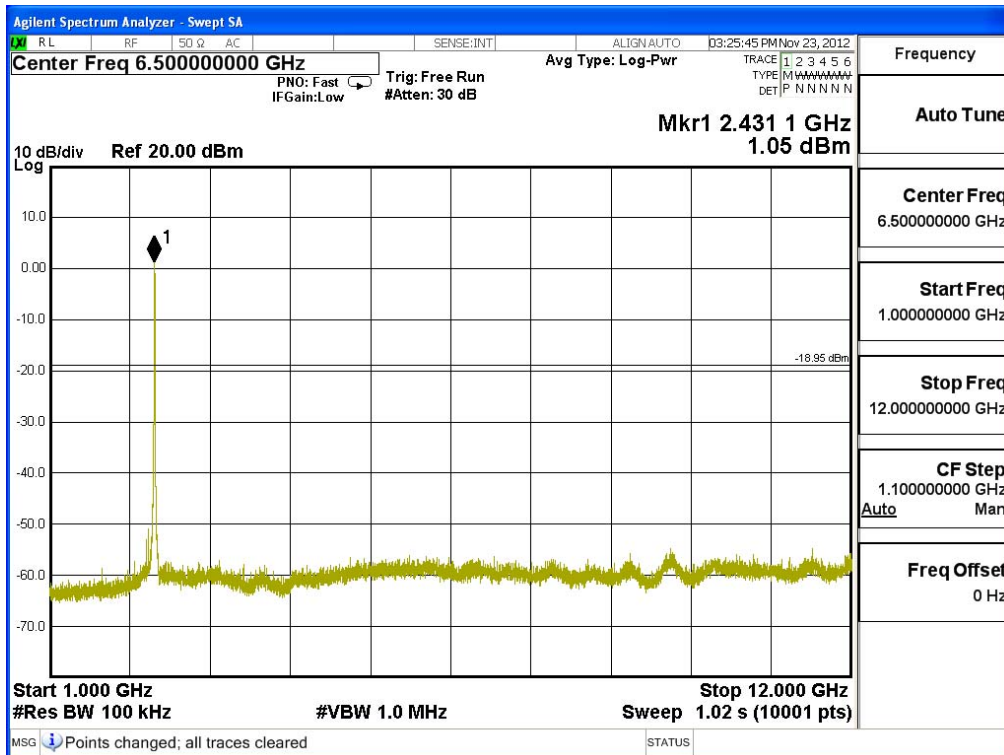
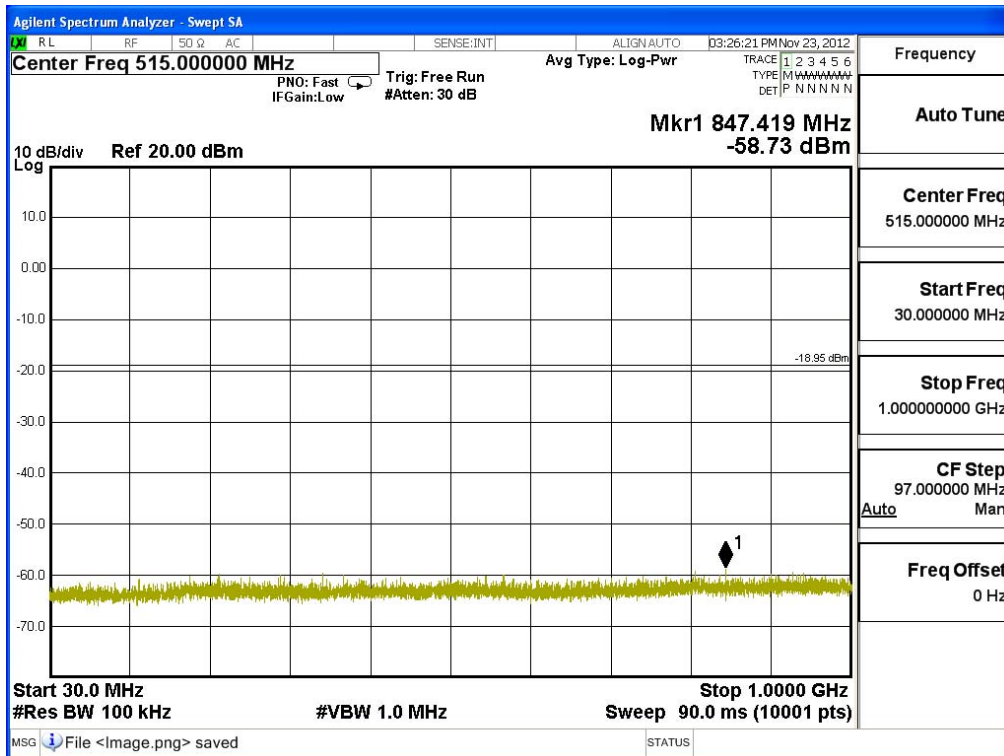
Product : Digital Camera
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

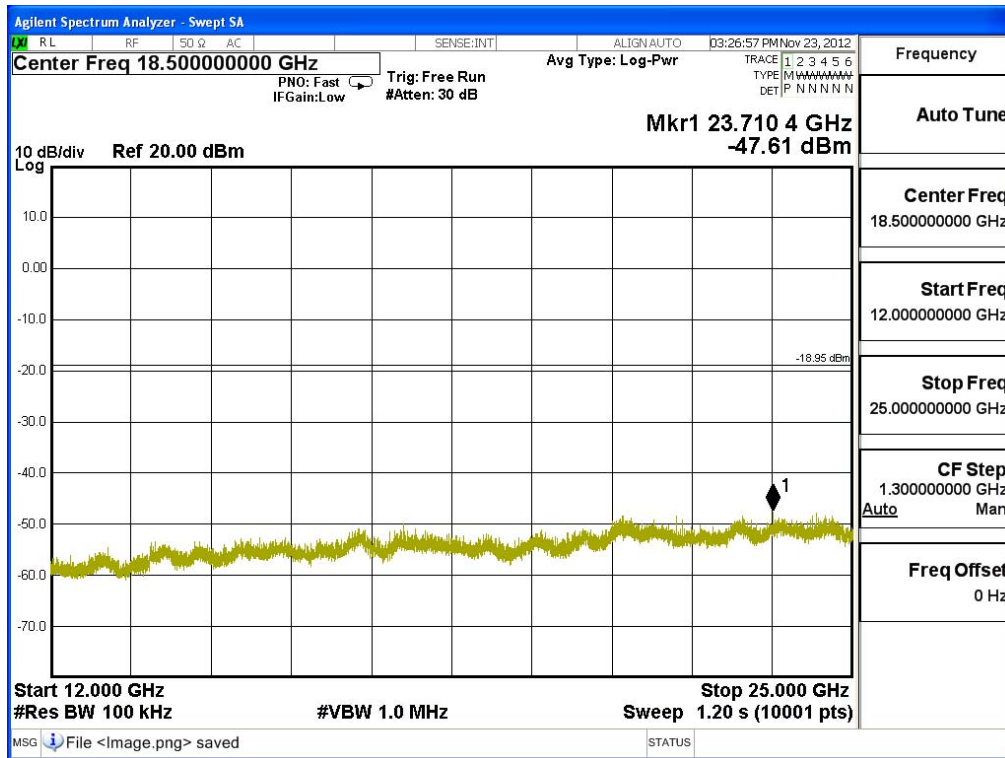
Channel 01 (2412MHz)



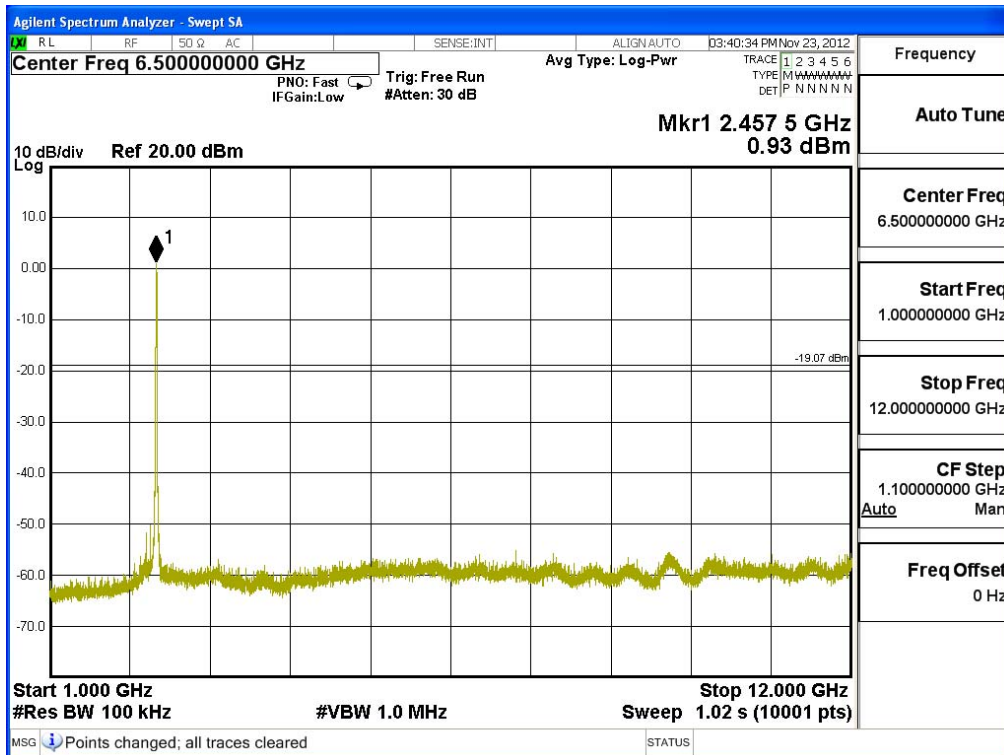
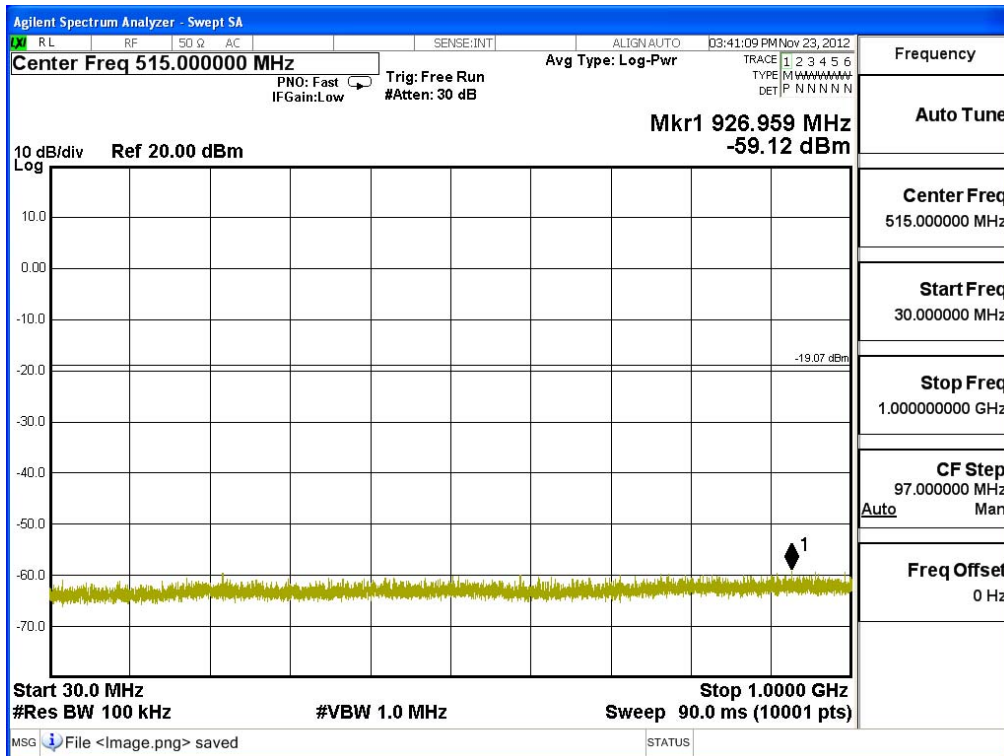


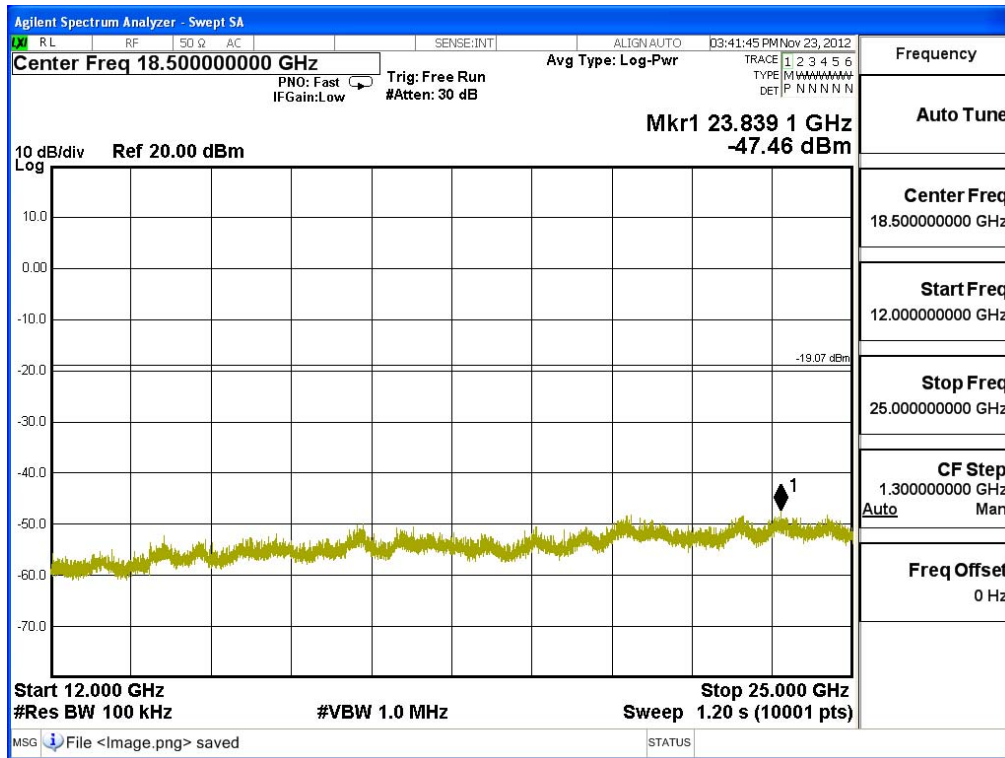
Channel 06 (2437MHz)





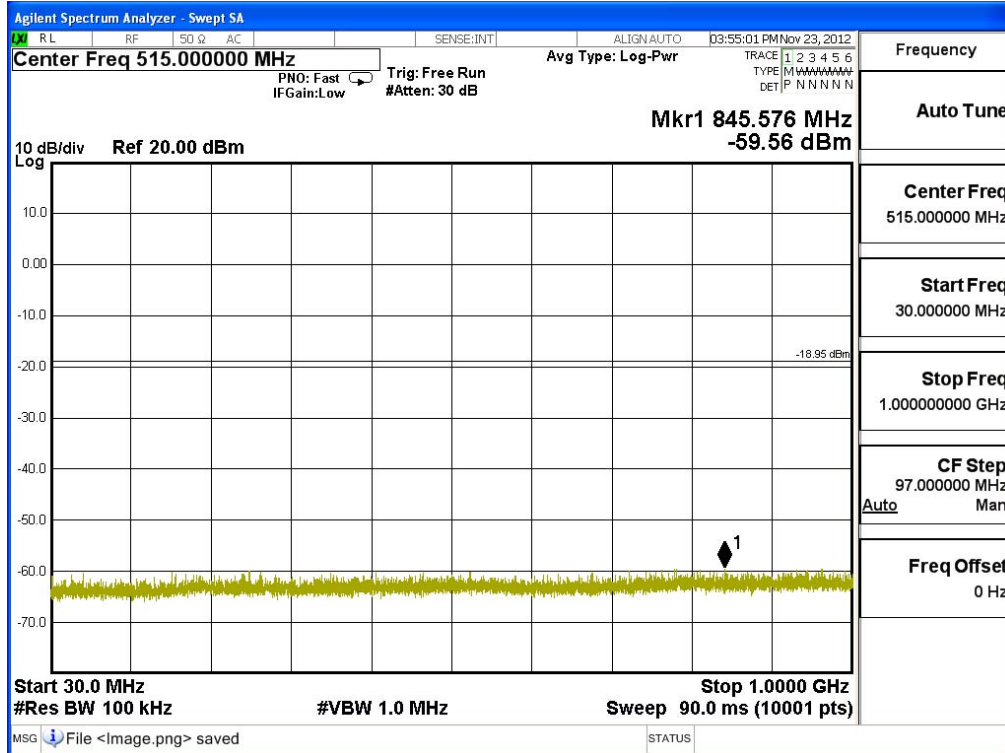
Channel 11 (2462MHz)

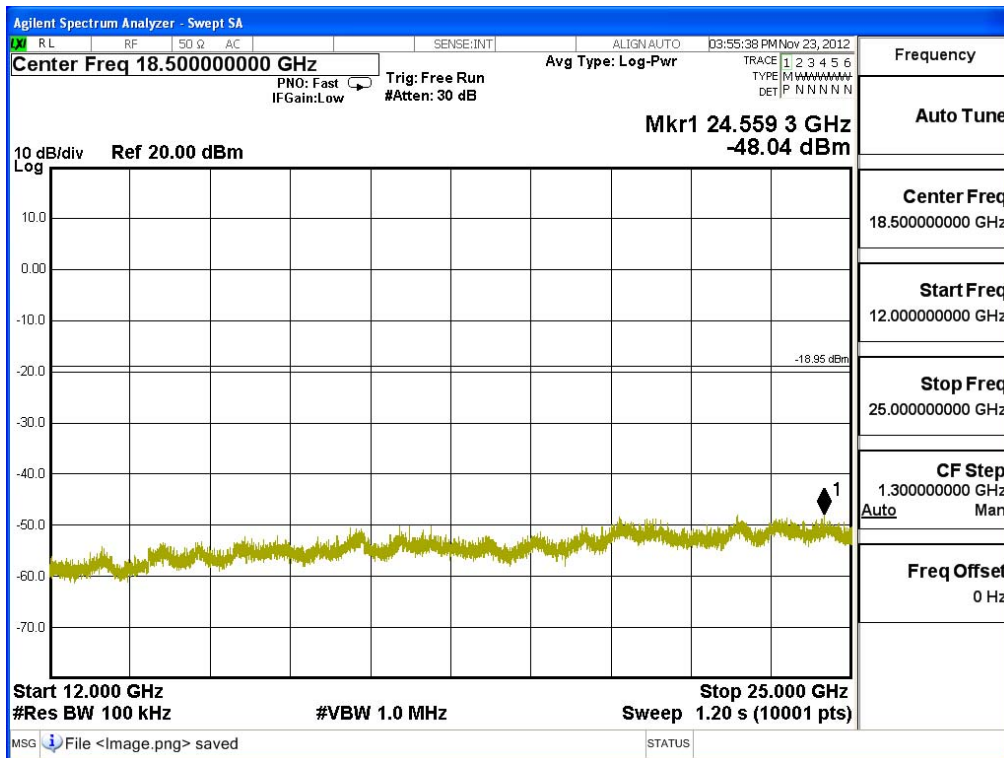
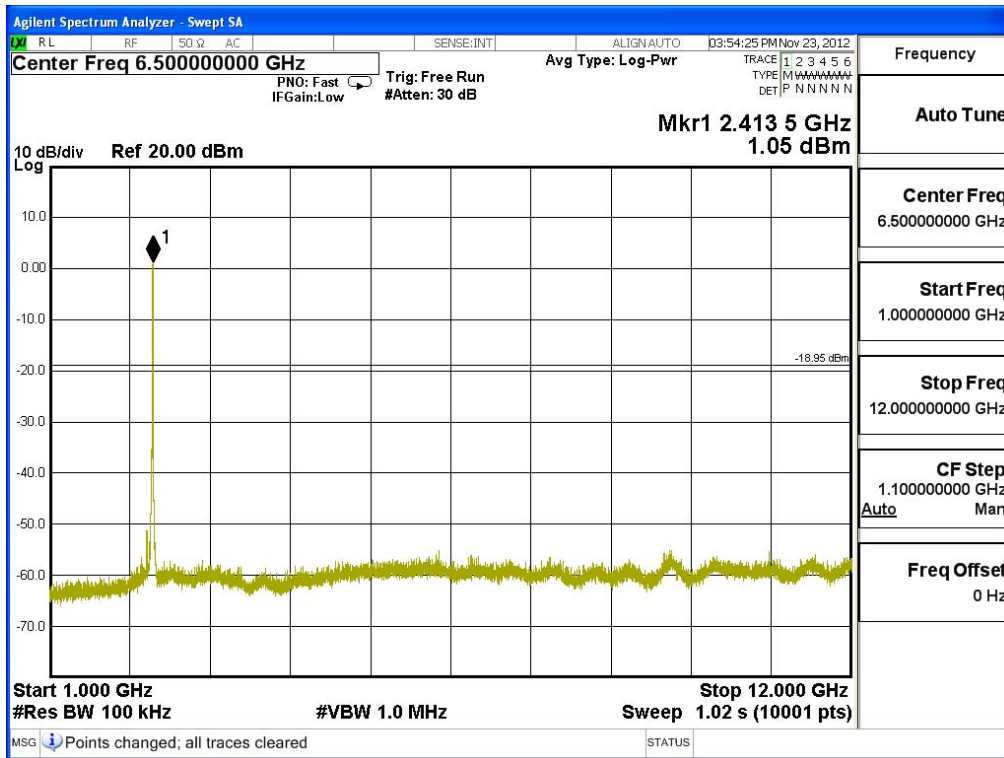




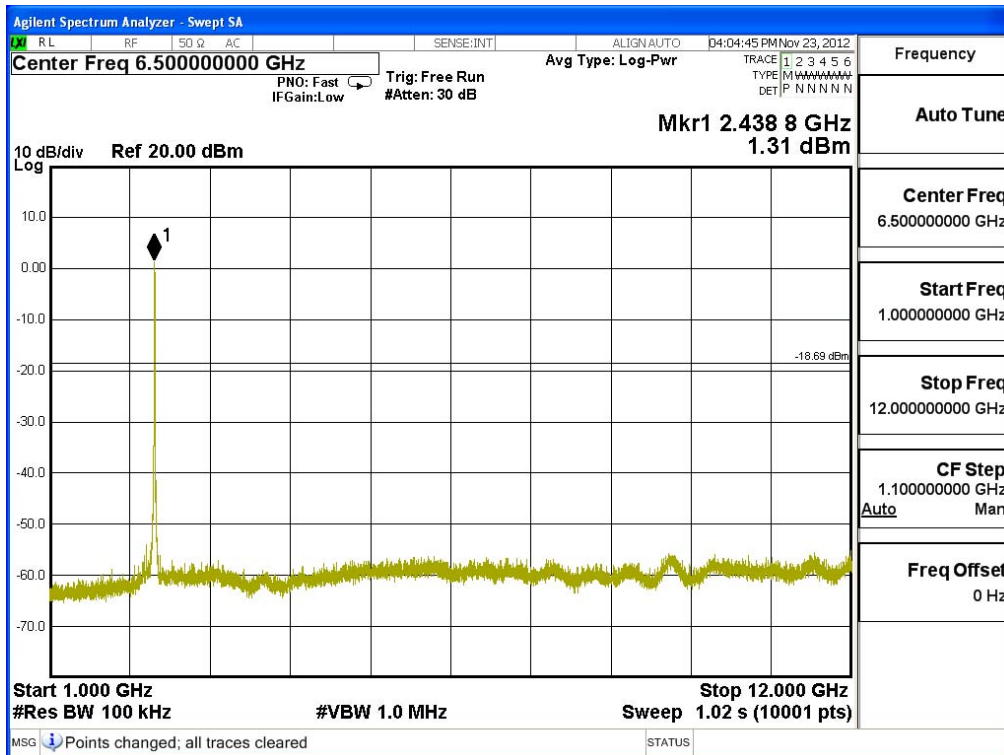
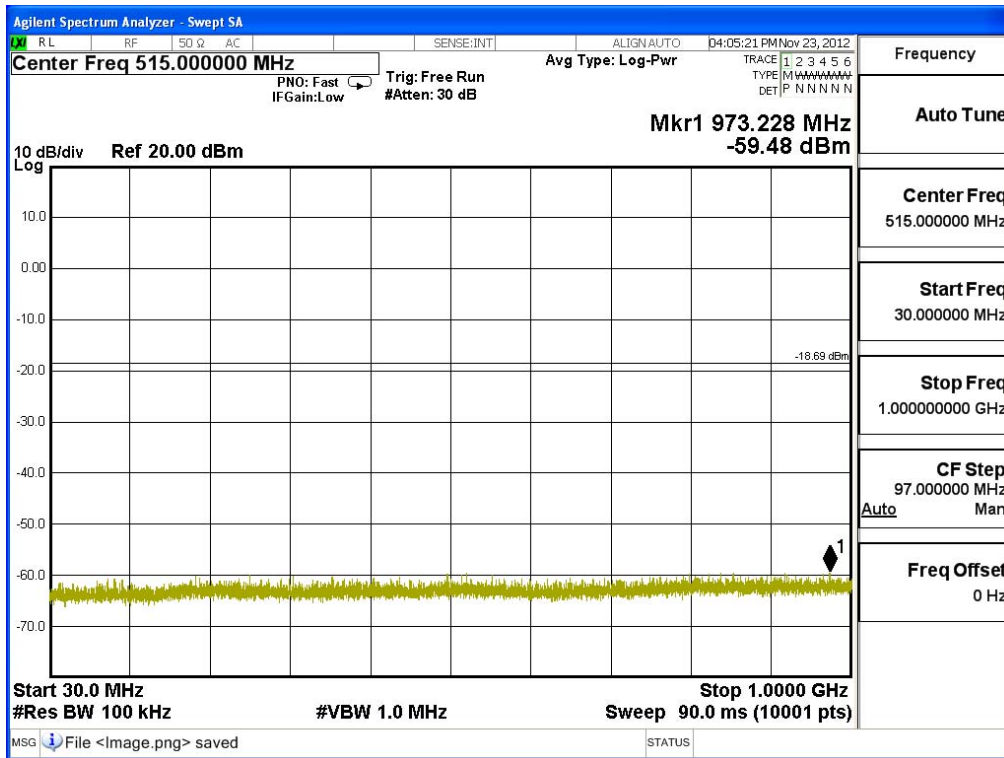
Product : Digital Camera
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

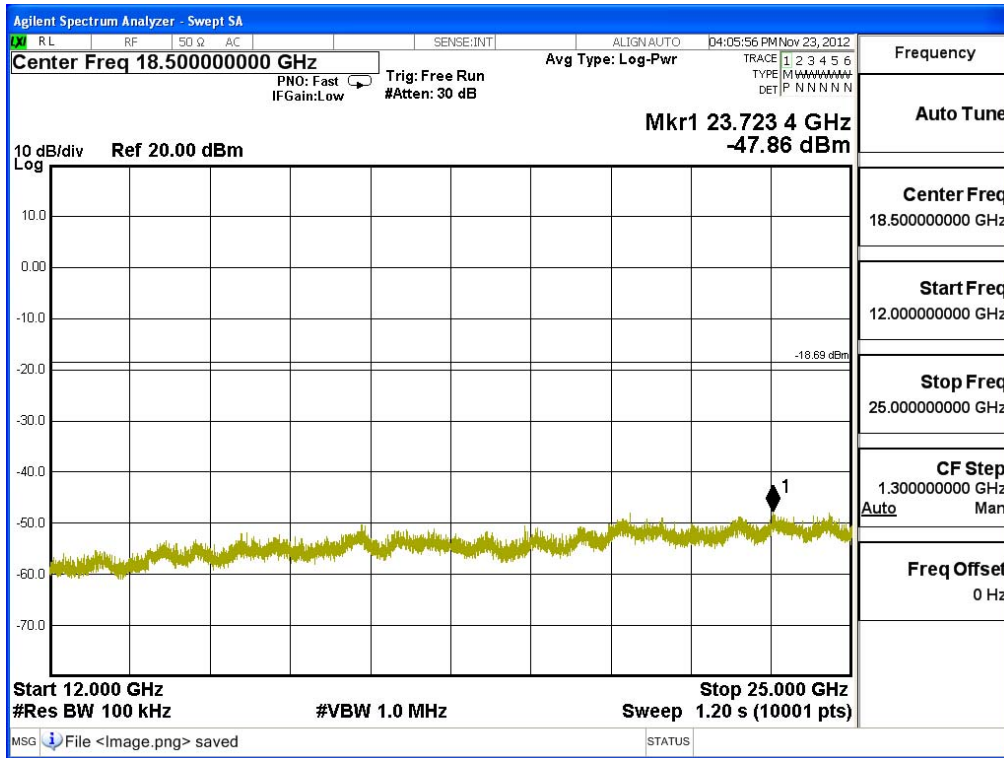
Channel 01 (2412MHz)





Channel 06 (2437MHz)





Channel 11 (2462MHz)

