



Test Report

Product Name	Mobile HD Snap Camera
Model No	MHS-TS55
FCC ID.	AK8MHSTS55

Applicant	Sony Corporation
Address	1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan

Date of Receipt	Sep. 01, 2011
Issue Date	Sep. 29, 2011
Report No.	119121R-RFUSP42V01
Report Version	V1.0

The test results relate only to the samples tested.

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

Test Report Certification

Issue Date: Sep. 29, 2011

Report No.: 119121R-RFUSP42V01



Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	Mobile HD Snap Camera
Applicant	Sony Corporation
Address	1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan
Manufacturer	ABILITY ENTERPRISE CO., LTD.
Model No.	MHS-TS55
FCC ID.	AK8MHSTS55
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	SONY
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2010 ANSI C63.4: 2009
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	Mobile HD Snap Camera
Trade Name	SONY
Model No.	MHS-TS55
FCC ID.	AK8MHSTS55
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 150Mbps
Type of Modulation	802.11b:DSSS (DBPSK, DQPSK, CCK) 802.11g/n:OFDM (BPSK, QPSK, 16QAM, 64QAM)
Antenna Type	Chip Antenna
Antenna Gain	Refer to the table "Antenna List"
Channel Control	Auto
USB Cable	Shielded, 0.165m
Power Adapter	MFR: SONY M/N: AC-UD20 Input: AC 100-240V ~ 50/60 Hz, 0.2A, 11W Output: DC 5V  1.5A

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	INPAQ	ACA-2012-A1-CC-S	Chip Antenna	1.72 dBi for 2.4 GHz

Note:

- 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 a Mobile HD Snap 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 1Mbps 、 802.11g is 6Mbps 、 802.11n(20M-BW) is 7.2Mbps)
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.

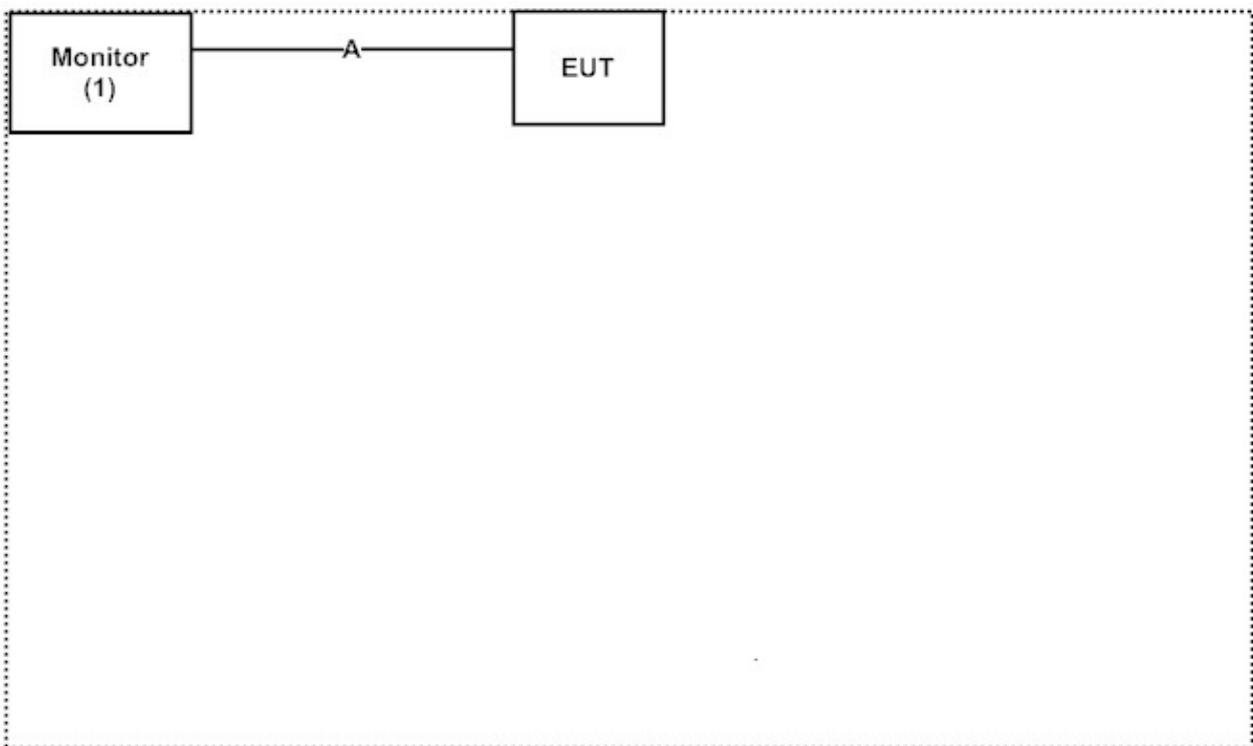
1.3. Tested System Details

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	Dell	2408WFPb	CN-0G293H-74261-95M-1H6S	Non-Shielded, 1.8m

	Signal Cable Type	Signal cable Description
A	HDMI Cable	Non-Shielded, 1.6m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

- (1) Connect EUT and Notebook via USB Cable
- (2) Execute Telnet program on the Notebook
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press “OK” to start the continuous transmission.
- (5) Remove notebook and USB cable, Setup the EUT as shown in Section 1.4
- (6) 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
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Accreditation on NVLAP
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FCC Accreditation Number: TW1014



2. Conducted Emission

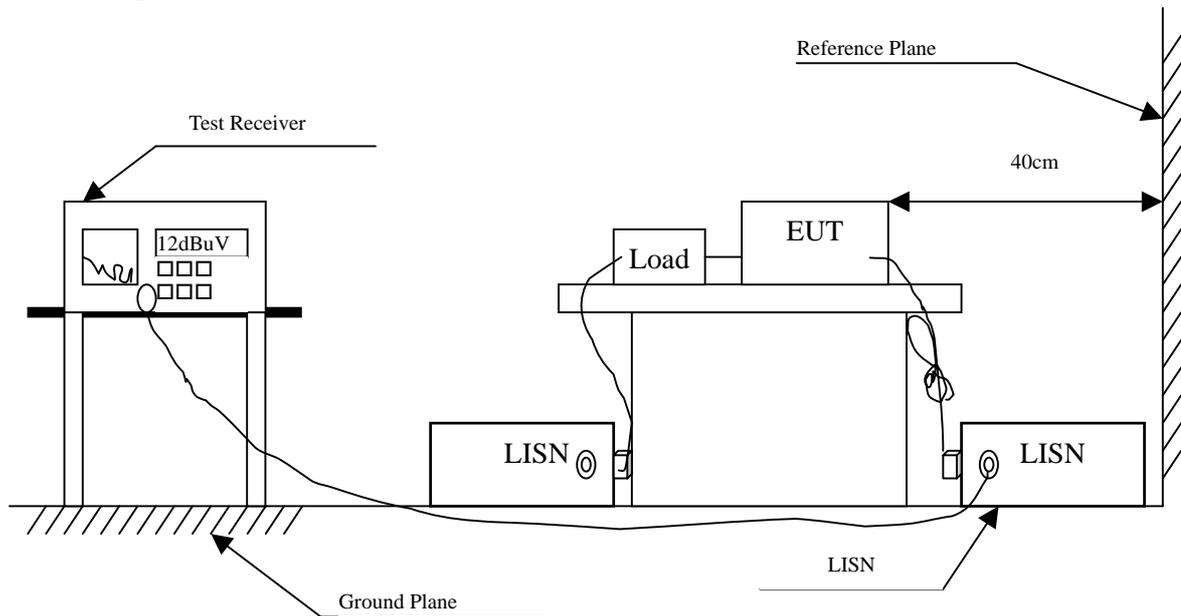
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2011	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2011	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2011	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2011	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2011	
	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: 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 : Mobile HD Snap 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					
0.201	9.706	28.240	37.946	-26.597	64.543
0.212	9.698	25.740	35.438	-28.791	64.229
0.287	9.654	23.340	32.994	-29.092	62.086
0.298	9.650	23.500	33.150	-28.621	61.771
0.720	9.631	30.440	40.071	-15.929	56.000
9.970	9.830	19.600	29.430	-30.570	60.000
Average					
0.201	9.706	20.190	29.896	-24.647	54.543
0.212	9.698	16.220	25.918	-28.311	54.229
0.287	9.654	13.720	23.374	-28.712	52.086
0.298	9.650	14.650	24.300	-27.471	51.771
0.720	9.631	21.800	31.431	-14.569	46.000
9.970	9.830	12.550	22.380	-27.620	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 : Mobile HD Snap 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					
0.194	9.721	29.660	39.381	-25.362	64.743
0.201	9.716	29.480	39.196	-25.347	64.543
0.306	9.660	24.580	34.240	-27.303	61.543
0.420	9.650	19.240	28.890	-29.396	58.286
0.744	9.659	32.620	42.279	-13.721	56.000
9.271	9.820	17.220	27.040	-32.960	60.000
Average					
0.194	9.721	20.190	29.911	-24.832	54.743
0.201	9.716	20.730	30.446	-24.097	54.543
0.306	9.660	15.820	25.480	-26.063	51.543
0.420	9.650	12.000	21.650	-26.636	48.286
0.744	9.659	23.220	32.879	-13.121	46.000
9.271	9.820	11.180	21.000	-29.000	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

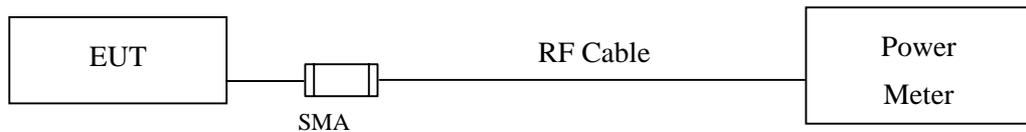
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2011
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2011

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

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 Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Mobile HD Snap 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	1		
		Measurement Level (dBm)						
01	2412	15.8	--	--	--	18.02	<30dBm	Pass
06	2437	15.55	15.51	15.42	15.38	17.90	<30dBm	Pass
11	2462	15.59	--	--	--	17.91	<30dBm	Pass

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

Product : Mobile HD Snap 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	13.29	--	--	--	--	--	--	--	21.64	<30dBm	Pass
06	2437	12.9	12.89	12.89	12.86	12.84	12.83	12.81	12.78	21.55	<30dBm	Pass
11	2462	12.98	--	--	--	--	--	--	--	21.69	<30dBm	Pass

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

Product : Mobile HD Snap 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 For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		7.2	14.4	21.7	28.9	43.3	57.8	65	72.2			
		Measurement Level (dBm)										
01	2412	11.59	--	--	--	--	--	--	--	19.88	<30dBm	Pass
06	2437	11.13	11.1	11.08	11.07	11.05	11.04	11.02	11.01	19.60	<30dBm	Pass
11	2462	11.18	--	--	--	--	--	--	--	19.71	<30dBm	Pass

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

4. Radiated Emission

4.1. Test Equipment

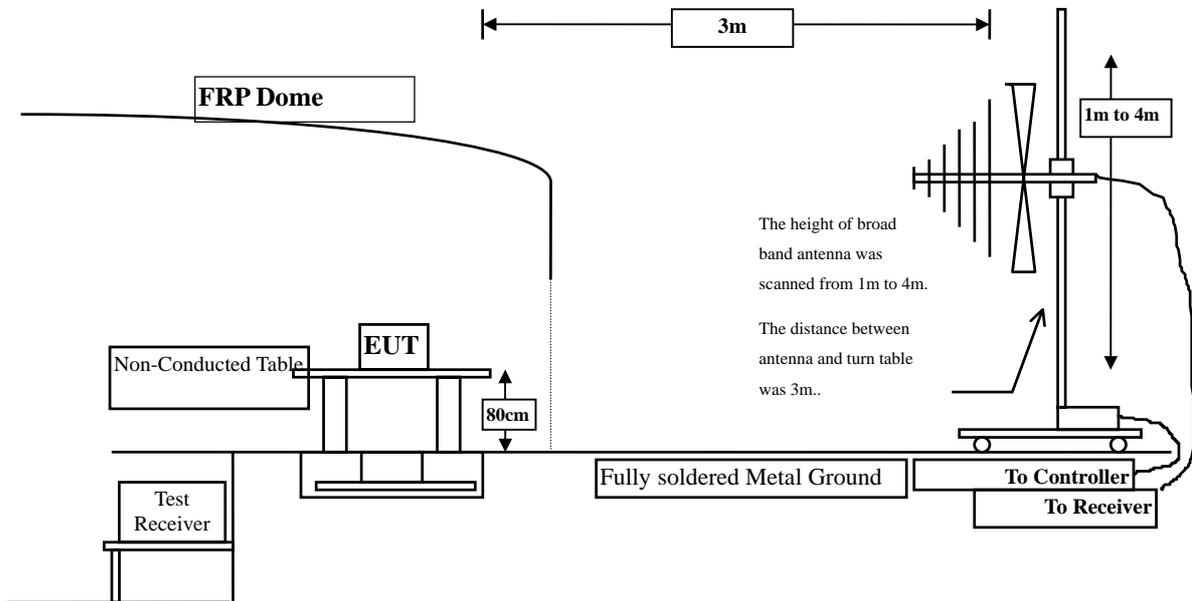
The following test equipment are used during the radiated emission test:

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

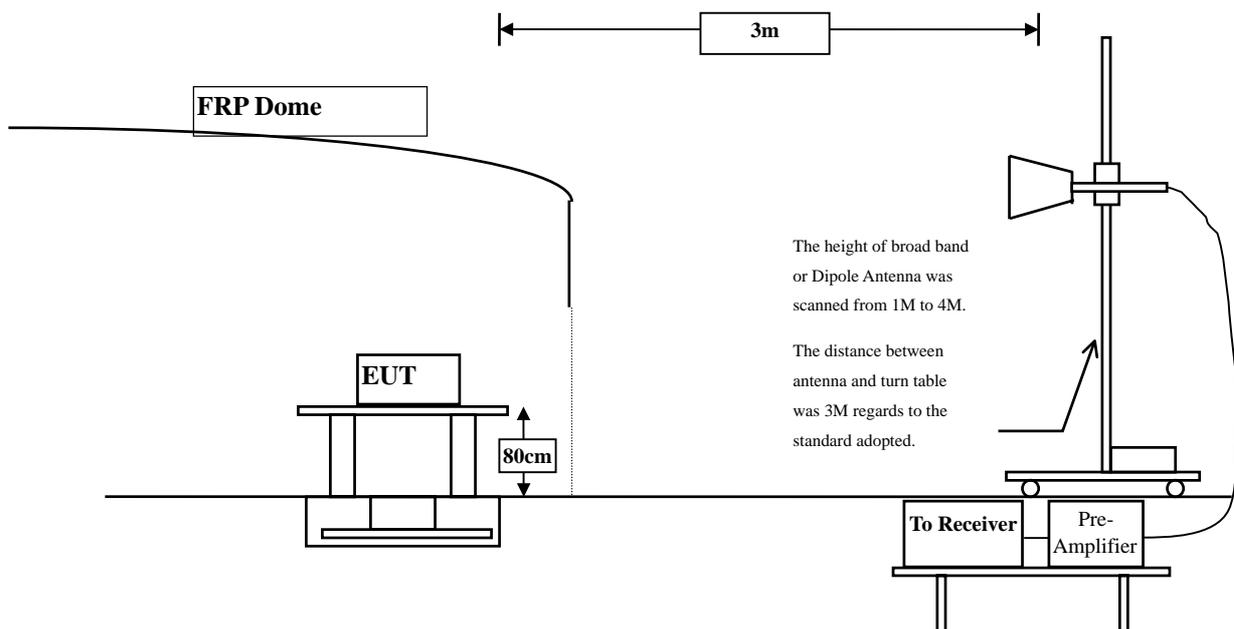
- Note:
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
 2. The test instruments marked with “X” are used to measure the final test results.

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, 2009 and tested according to DTS test procedure of Mar. 2005 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 C63.4:2009 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 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 : Mobile HD Snap 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	39.200	42.461	-31.539	74.000
7236.000	10.650	36.540	47.190	-26.810	74.000
9648.000	13.337	36.330	49.666	-24.334	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	38.210	44.631	-29.369	74.000
7236.000	11.495	35.780	47.275	-26.725	74.000
9648.000	13.807	35.830	49.636	-24.364	74.000
Average Detector:					
--					

Note:

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

Product : Mobile HD Snap Camera
 Test Item : Harmonic Radiated Emission Data
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV/m	Margin dB	Limit dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	38.800	41.837	-32.163	74.000
7311.000	11.795	35.150	46.944	-27.056	74.000
9748.000	12.635	36.590	49.225	-24.775	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	37.270	43.081	-30.919	74.000
7311.000	12.630	35.060	47.689	-26.311	74.000
9748.000	13.126	36.400	49.526	-24.474	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 : Mobile HD Snap 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	41.620	44.477	-29.523	74.000
7386.000	12.127	35.250	47.378	-26.622	74.000
9848.000	12.852	36.250	49.103	-24.897	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	38.440	43.960	-30.040	74.000
7386.000	13.254	35.220	48.474	-25.526	74.000
9848.000	13.367	36.220	49.587	-24.413	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 : Mobile HD Snap 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
Horizontal					
Peak Detector:					
4824.000	3.261	38.350	41.611	-32.389	74.000
7236.000	10.650	36.050	46.700	-27.300	74.000
9648.000	13.337	36.030	49.366	-24.634	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	3.038	36.860	39.897	-34.103	74.000
7311.000	12.630	34.990	47.619	-26.381	74.000
9748.000	13.126	36.220	49.346	-24.654	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 : Mobile HD Snap 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	36.660	39.697	-34.303	74.000
7311.000	11.795	36.470	48.264	-25.736	74.000
9748.000	12.635	36.320	48.955	-25.045	74.000

Average Detector:

--

Peak Detector:

4874.000	5.812	36.710	42.521	-31.479	74.000
7311.000	12.630	35.000	47.629	-26.371	74.000
9748.000	13.126	36.460	49.586	-24.414	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 : Mobile HD Snap 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
Horizontal					
Peak Detector:					
4924.000	3.261	37.610	40.871	-33.129	74.000
7386.000	12.127	35.210	47.338	-26.662	74.000
9848.000	12.852	36.120	48.973	-25.027	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	37.520	43.040	-30.960	74.000
7386.000	13.254	35.290	48.544	-25.456	74.000
9848.000	13.367	36.430	49.797	-24.203	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 : Mobile HD Snap 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	37.540	40.801	-33.199	74.000
7236.000	10.650	36.580	47.230	-26.770	74.000
9648.000	13.337	36.080	49.416	-24.584	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	37.170	43.591	-30.409	74.000
7236.000	11.495	35.420	46.915	-27.085	74.000
9648.000	13.807	36.000	49.806	-24.194	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 : Mobile HD Snap 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	37.750	40.787	-33.213	74.000
7311.000	11.795	35.230	47.024	-26.976	74.000
9748.000	12.635	36.070	48.705	-25.295	74.000

Average Detector:

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Vertical

Peak Detector:

4874.000	5.812	36.930	42.741	-31.259	74.000
7311.000	12.630	34.980	47.609	-26.391	74.000
9748.000	13.126	36.150	49.276	-24.724	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 : Mobile HD Snap 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	37.780	40.637	-33.363	74.000
7386.000	12.127	34.790	46.918	-27.082	74.000
9848.000	12.852	36.160	49.013	-24.987	74.000

Average Detector:

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Vertical

Peak Detector:

4924.000	5.521	37.390	42.910	-31.090	74.000
7386.000	13.254	34.820	48.074	-25.926	74.000
9848.000	13.367	36.230	49.597	-24.403	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 : Mobile HD Snap 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					
32.425	-0.135	32.447	32.312	-7.688	40.000
102.750	-7.880	33.343	25.463	-18.037	43.500
398.600	-2.900	33.643	30.743	-15.257	46.000
534.400	-0.210	29.591	29.381	-16.619	46.000
672.625	2.190	30.186	32.376	-13.624	46.000
796.300	3.460	28.454	31.914	-14.086	46.000
Vertical					
32.425	-6.620	35.651	29.031	-10.969	40.000
102.750	-7.670	44.879	37.209	-6.291	43.500
211.875	-4.330	35.493	31.163	-12.337	43.500
398.600	-3.670	33.004	29.334	-16.666	46.000
672.625	0.050	36.636	36.686	-9.314	46.000
798.725	1.610	34.989	36.599	-9.401	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 : Mobile HD Snap 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					
34.850	-0.060	32.457	32.397	-7.603	40.000
102.750	-7.880	34.263	26.383	-17.117	43.500
398.600	-2.900	34.067	31.167	-14.833	46.000
599.875	2.995	26.920	29.915	-16.085	46.000
672.625	2.190	31.151	33.341	-12.659	46.000
798.725	3.500	30.913	34.413	-11.587	46.000
Vertical					
56.675	-17.410	43.605	26.195	-13.805	40.000
102.750	-7.670	45.345	37.675	-5.825	43.500
211.875	-4.330	34.706	30.376	-13.124	43.500
599.875	-0.345	29.851	29.506	-16.494	46.000
672.625	0.050	35.980	36.030	-9.970	46.000
798.725	1.610	33.325	34.935	-11.065	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 : Mobile HD Snap 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					
32.425	-0.135	32.233	32.098	-7.902	40.000
102.750	-7.880	31.997	24.117	-19.383	43.500
398.600	-2.900	30.424	27.524	-18.476	46.000
531.975	-0.335	28.441	28.106	-17.894	46.000
672.625	2.190	30.141	32.331	-13.669	46.000
801.150	3.510	27.764	31.274	-14.726	46.000
Vertical					
56.675	-17.410	45.091	27.681	-12.319	40.000
102.750	-7.670	43.572	35.902	-7.598	43.500
434.975	-3.425	29.143	25.718	-20.282	46.000
599.875	-0.345	29.228	28.883	-17.117	46.000
672.625	0.050	36.899	36.949	-9.051	46.000
798.725	1.610	34.865	36.475	-9.525	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

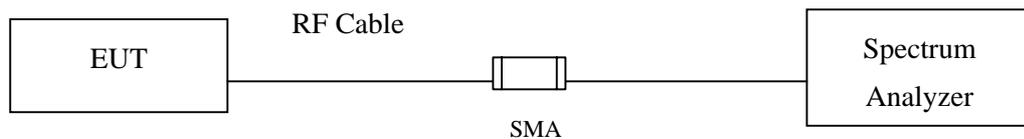
5.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2011
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2011
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2011

- 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 Mar. 2005 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

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

5.5. Uncertainty

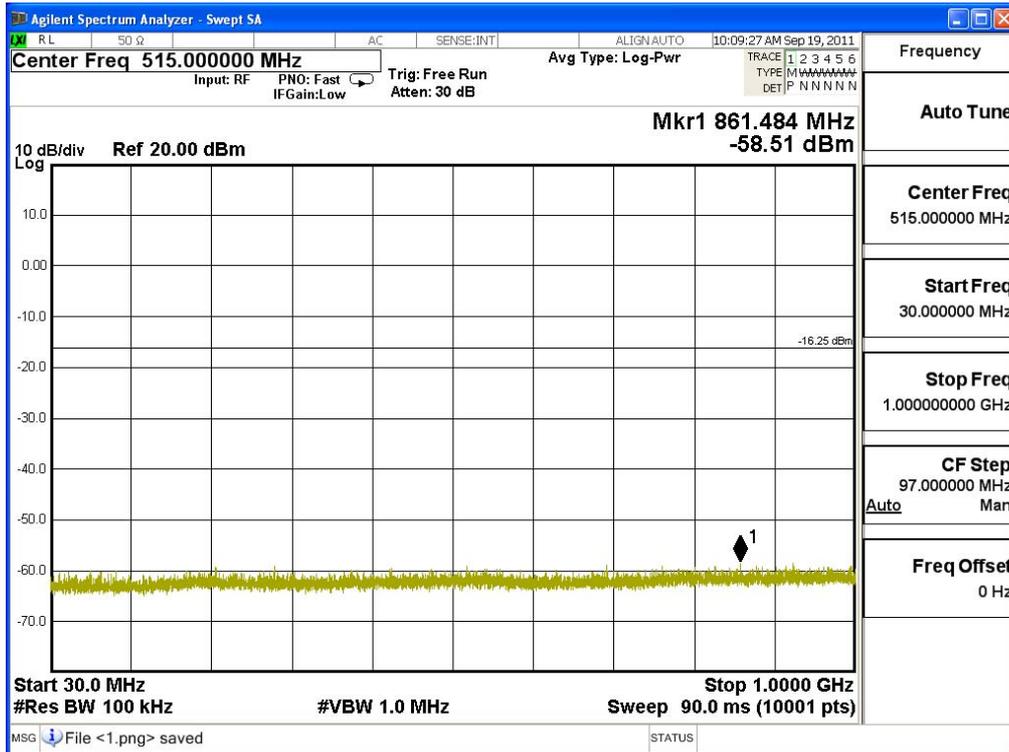
The measurement uncertainty

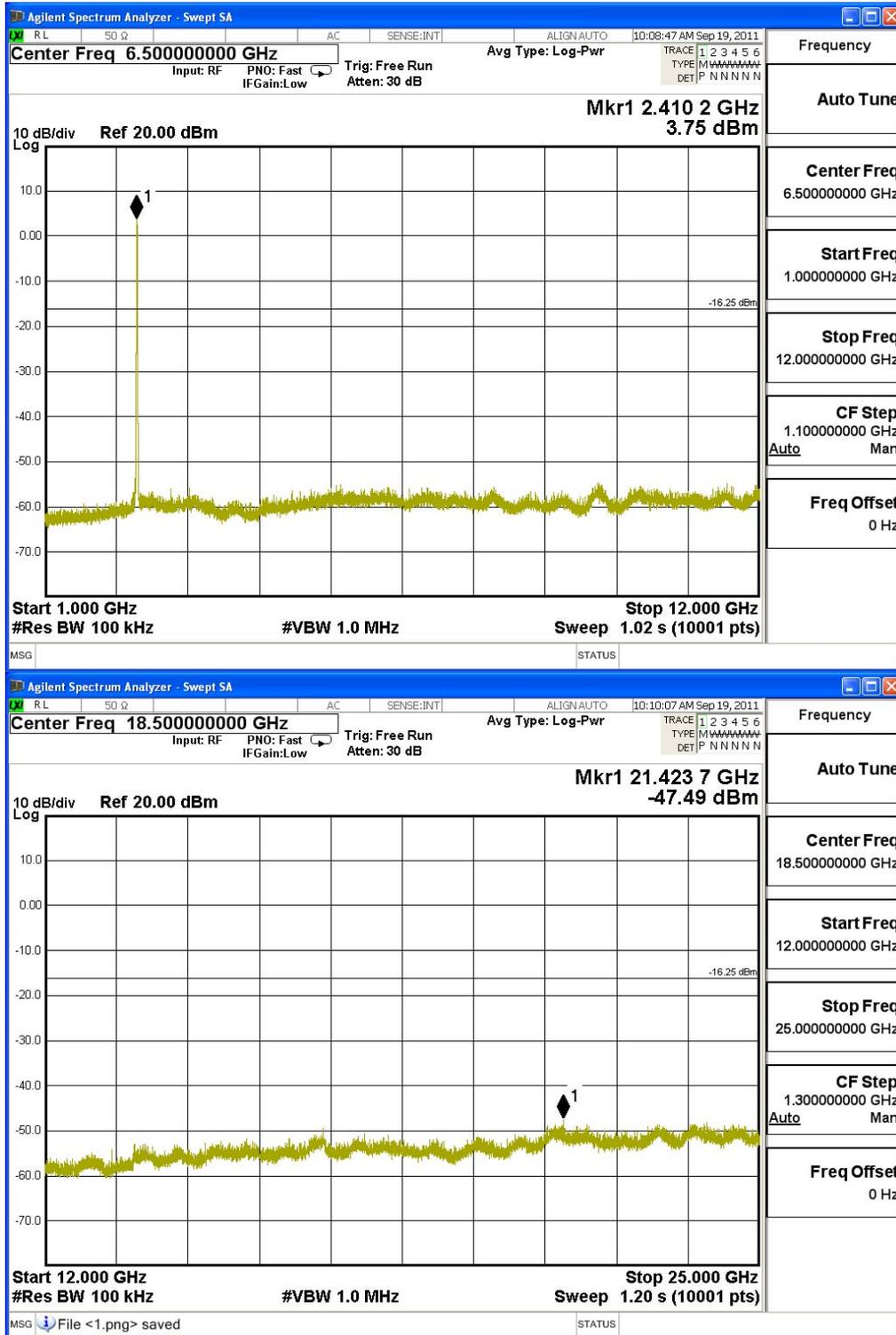
Conducted is defined as $\pm 1.27\text{dB}$

5.6. Test Result of RF antenna conducted test

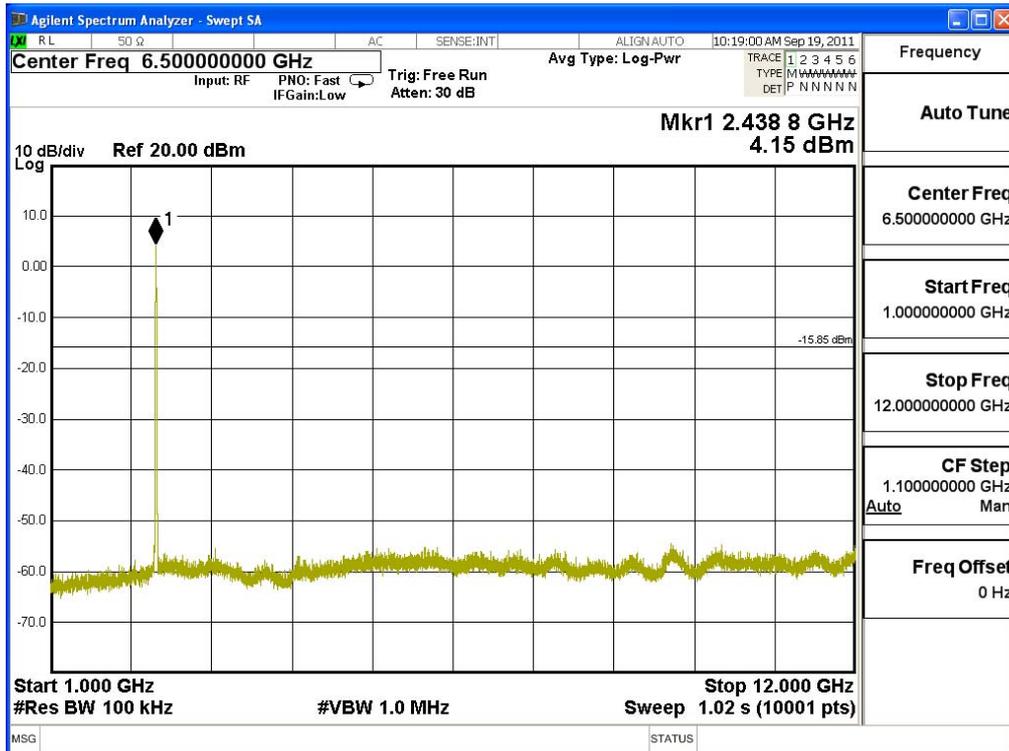
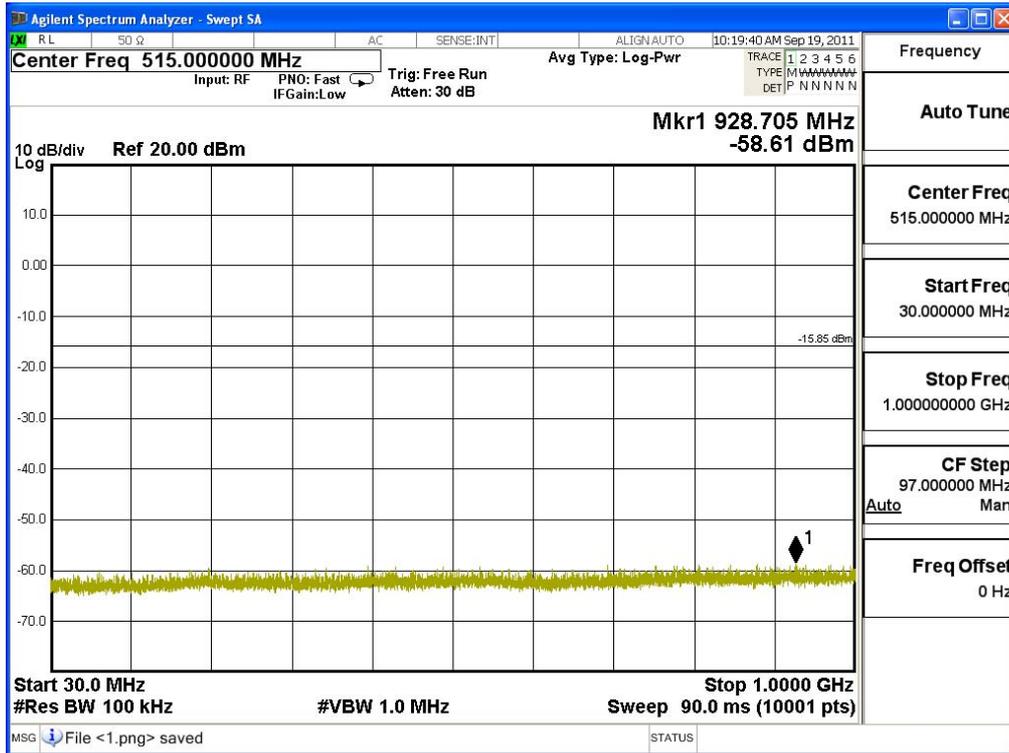
Product : Mobile HD Snap Camera
 Test Item : RF antenna conducted test
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmit (802.11b 1Mbps)

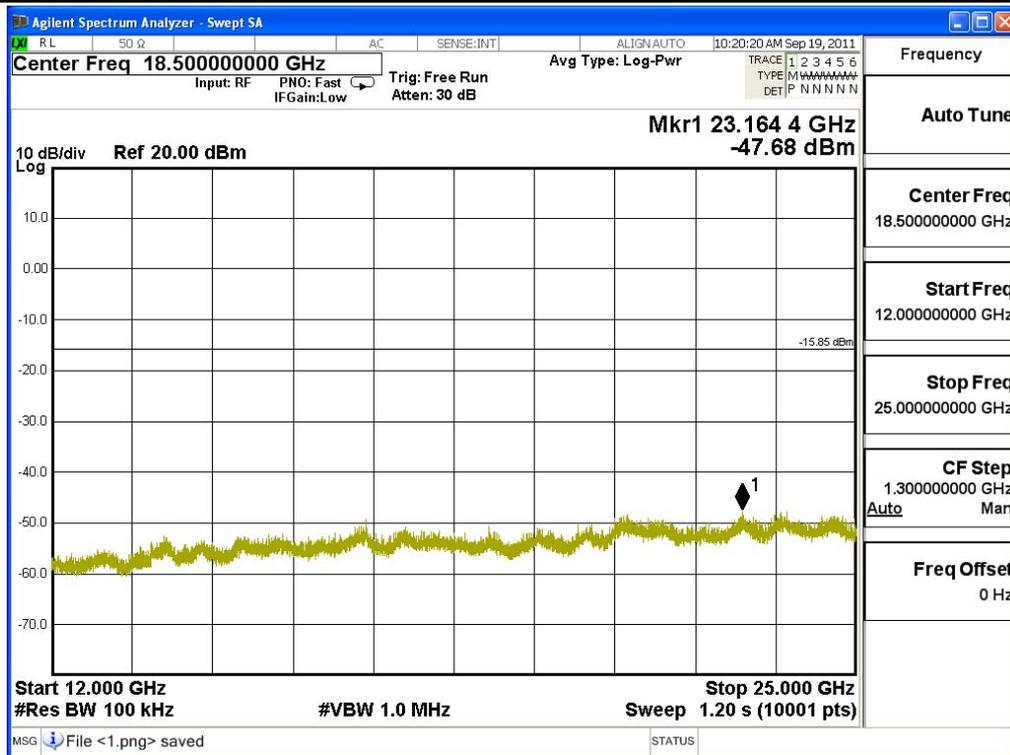
Channel 01 (2412MHz)



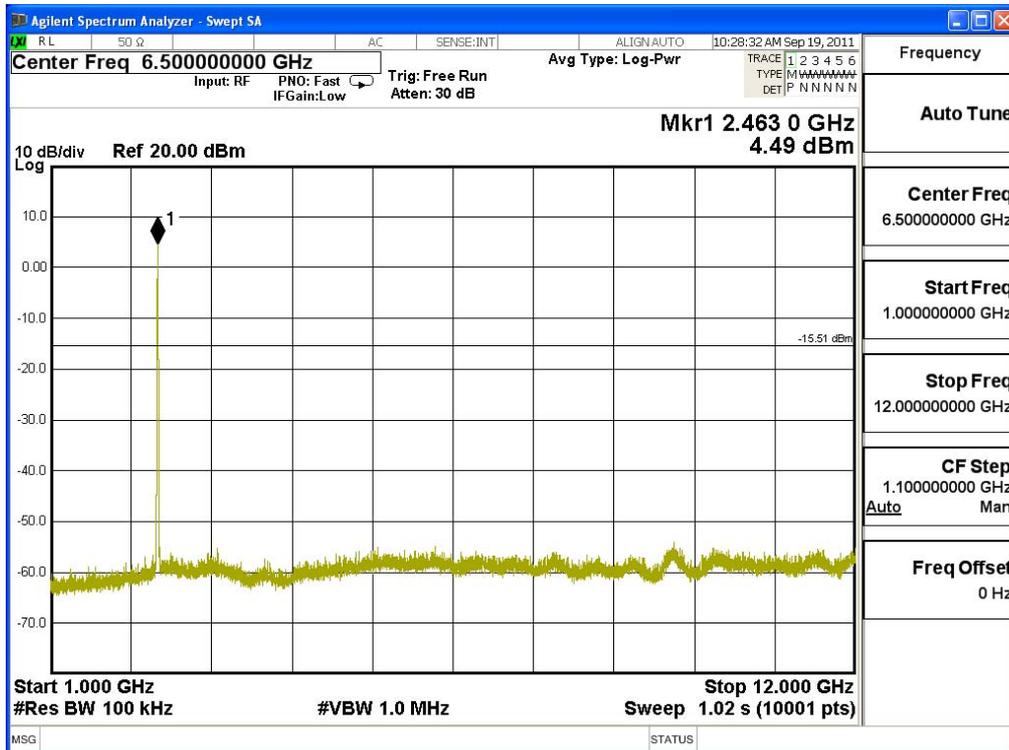
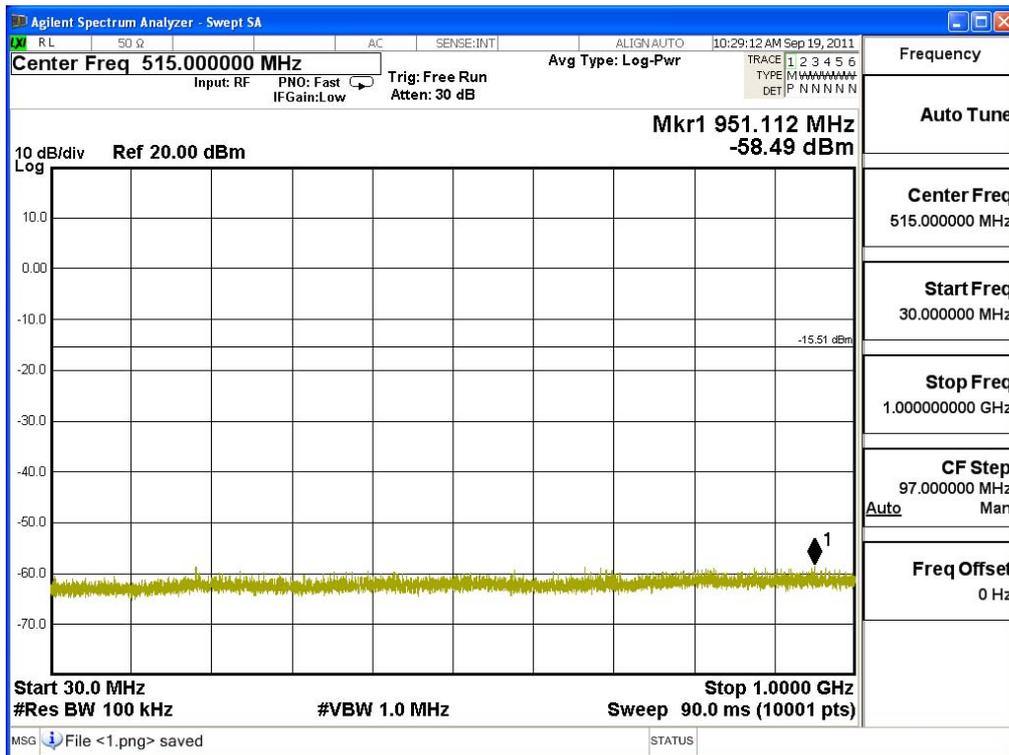


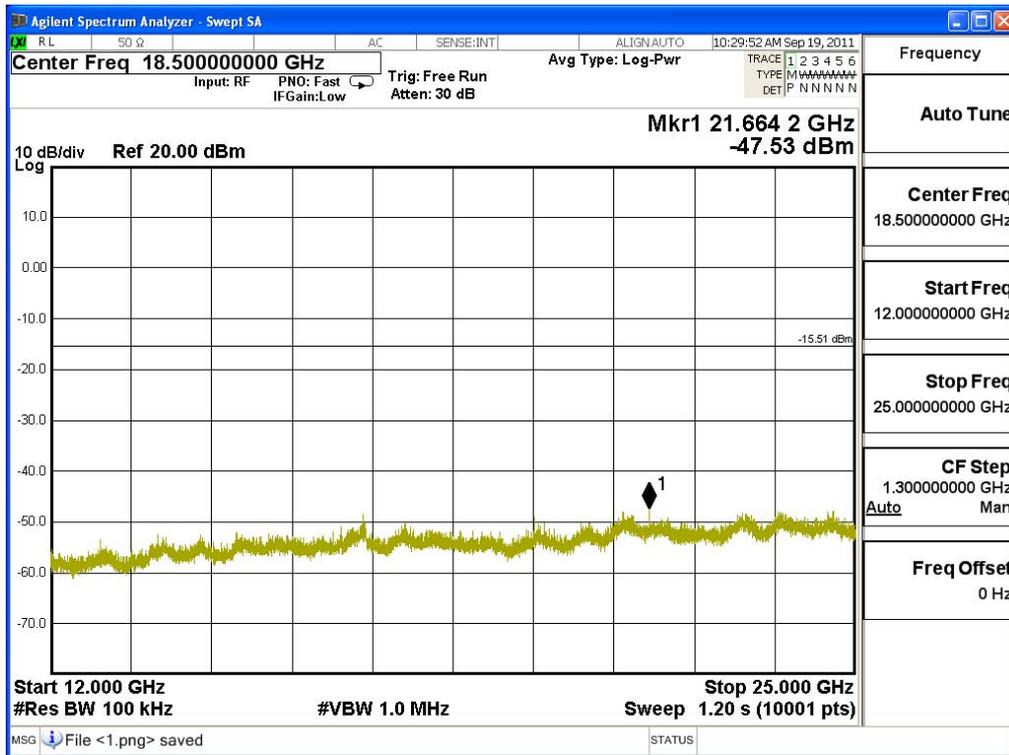
Channel 06 (2437MHz)





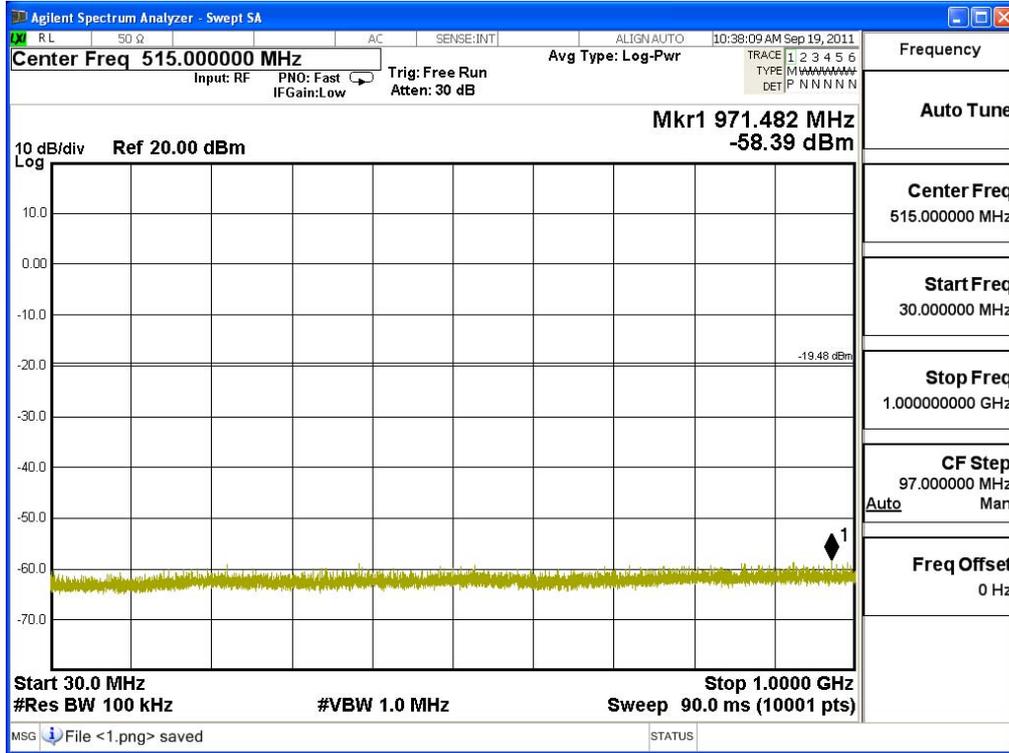
Channel 11 (2462MHz)

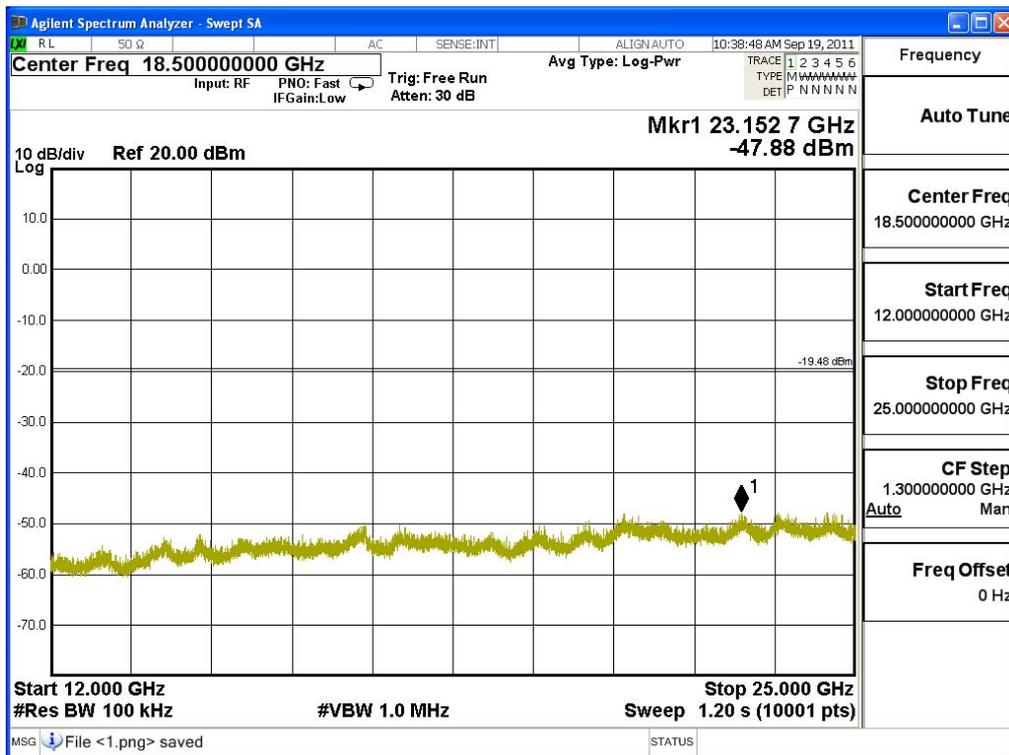
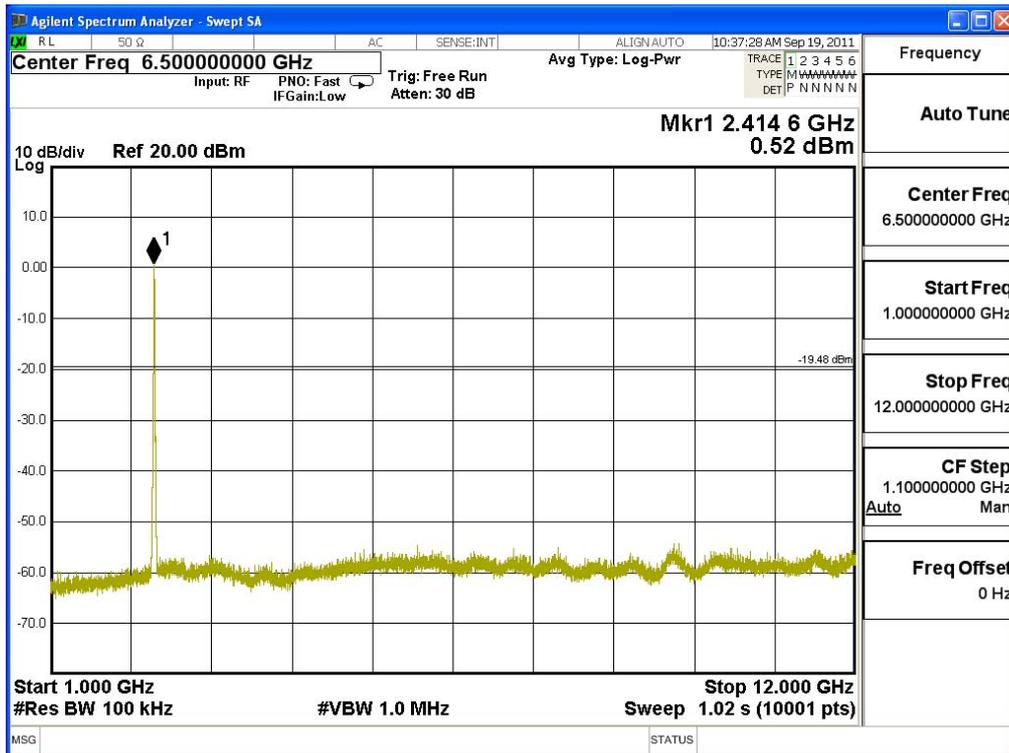




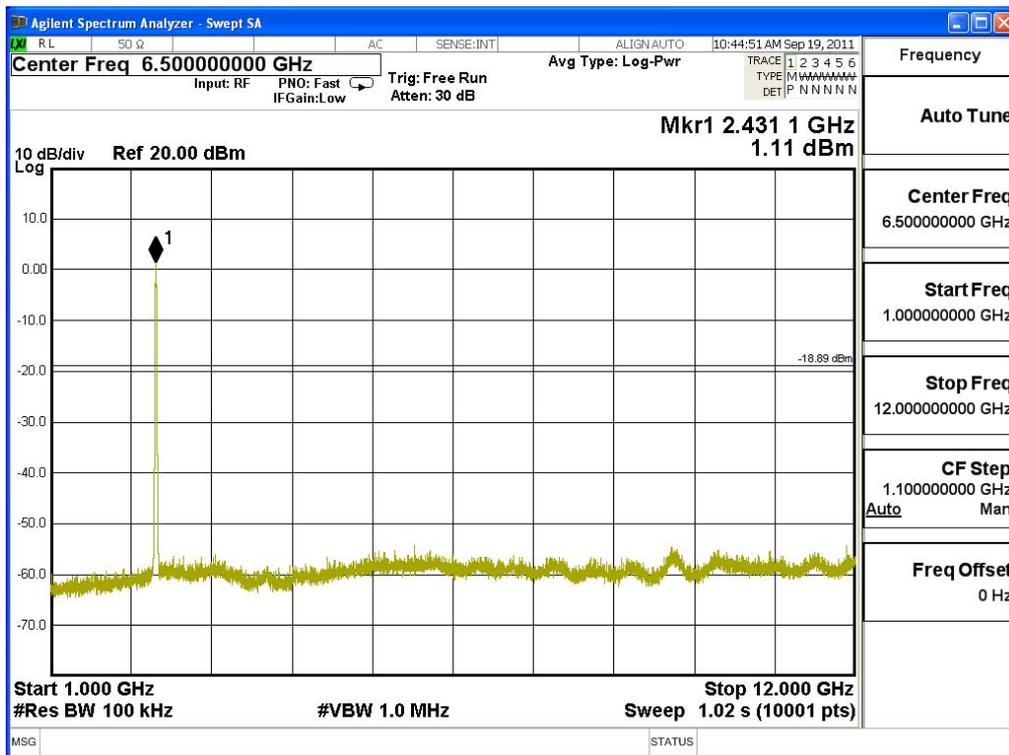
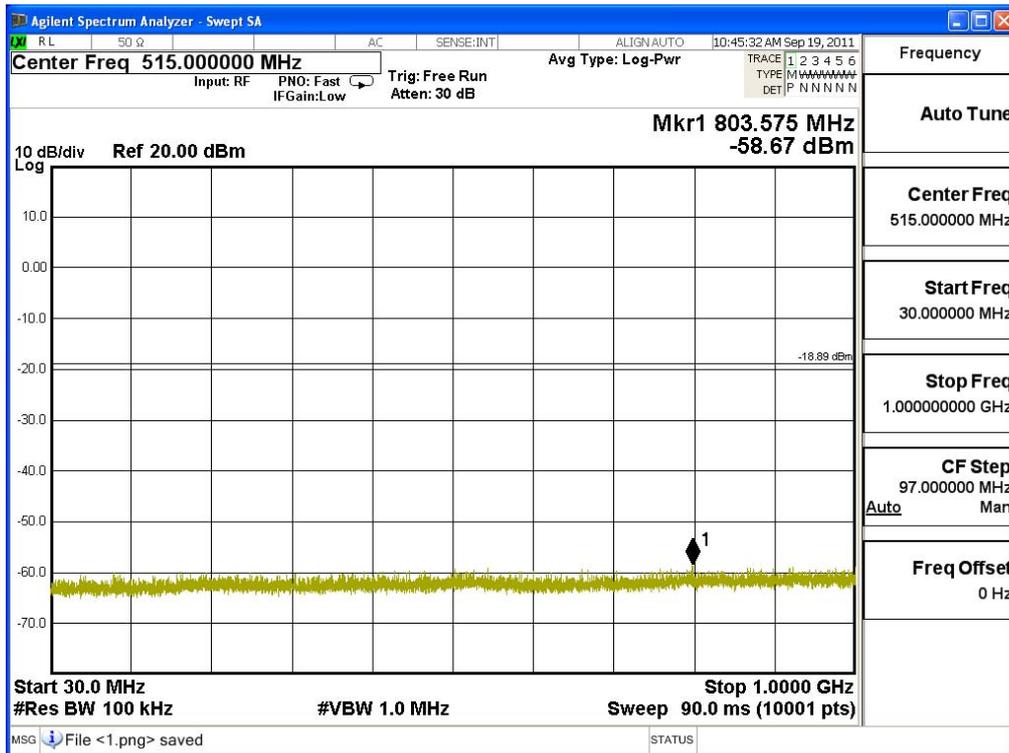
Product : Mobile HD Snap Camera
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmit (802.11g 6Mbps)

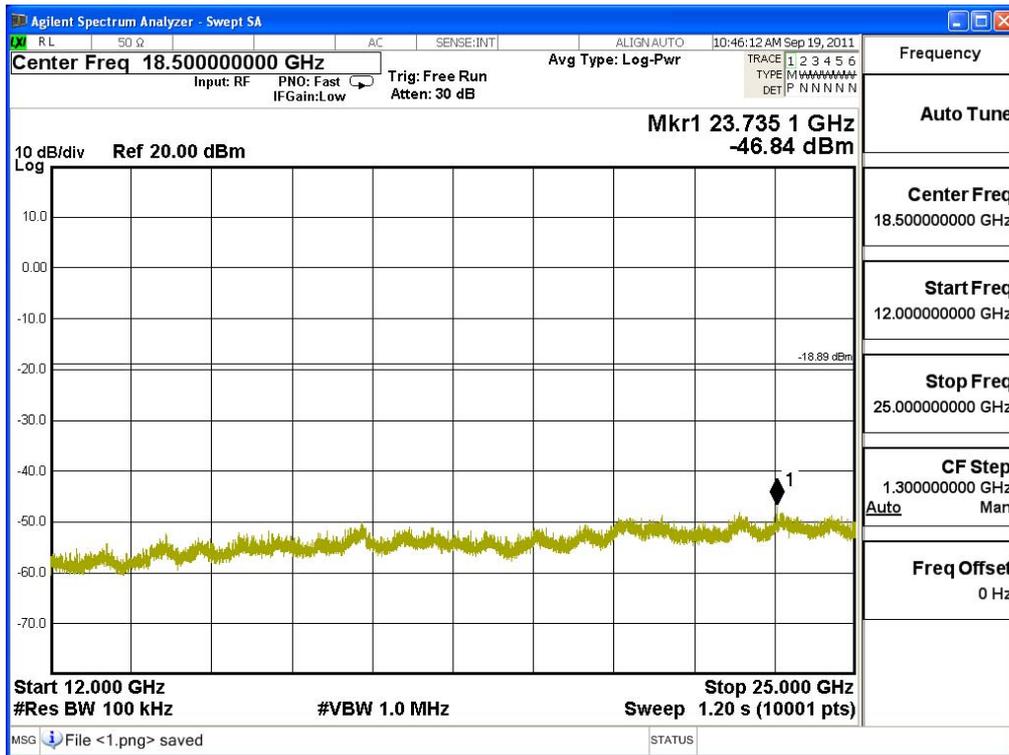
Channel 01 (2412MHz)



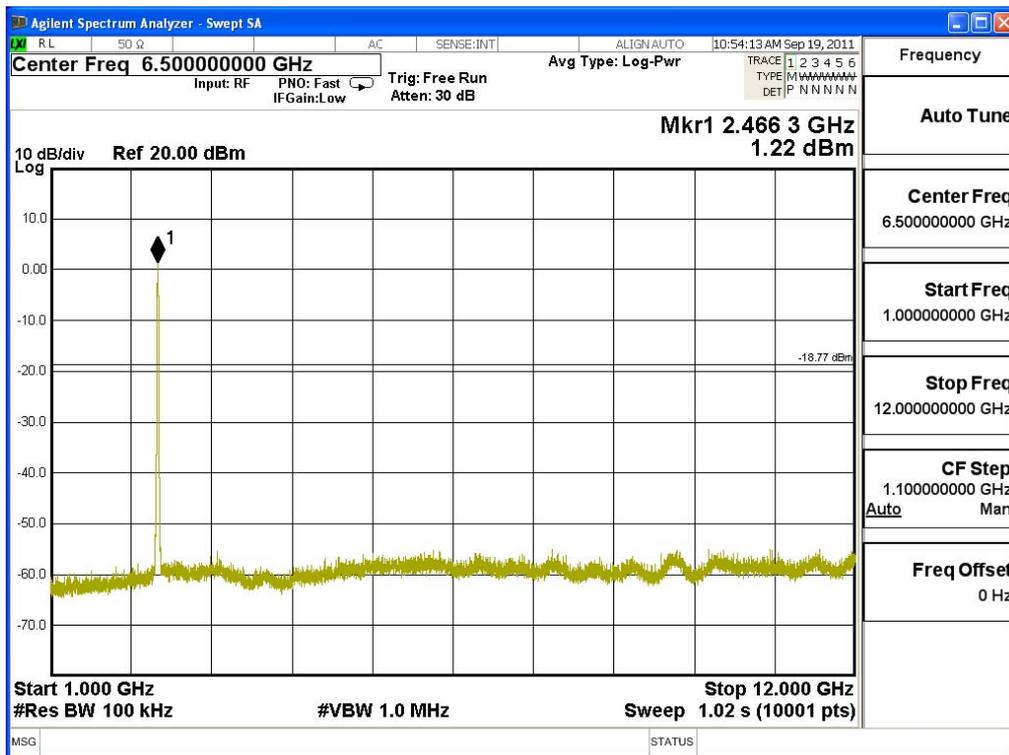
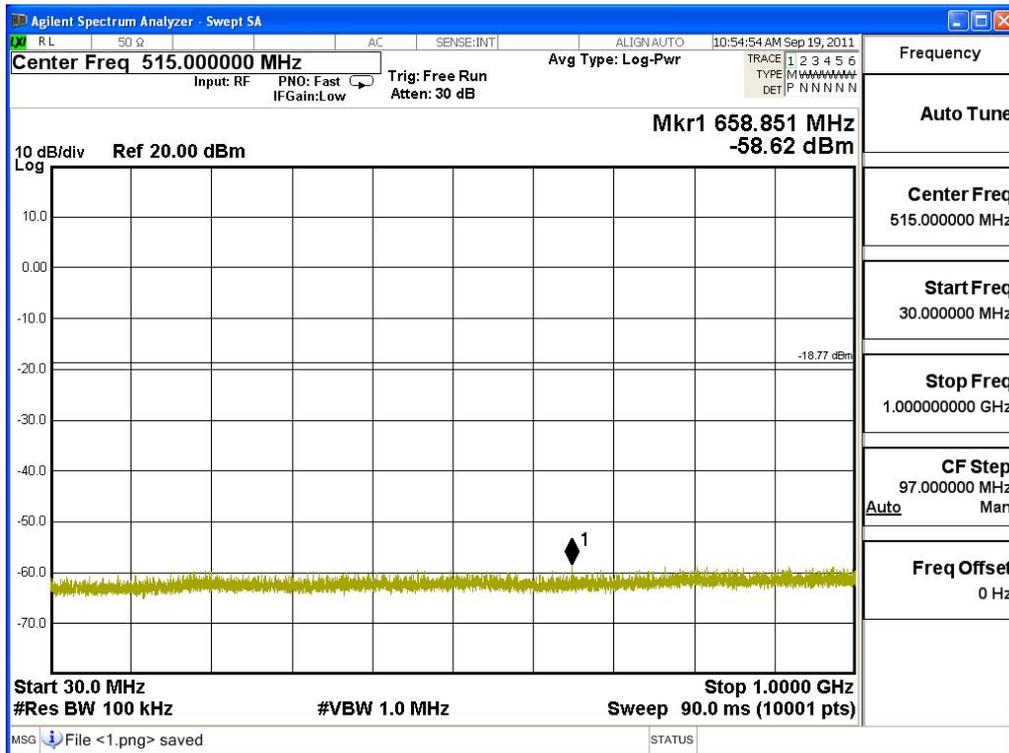


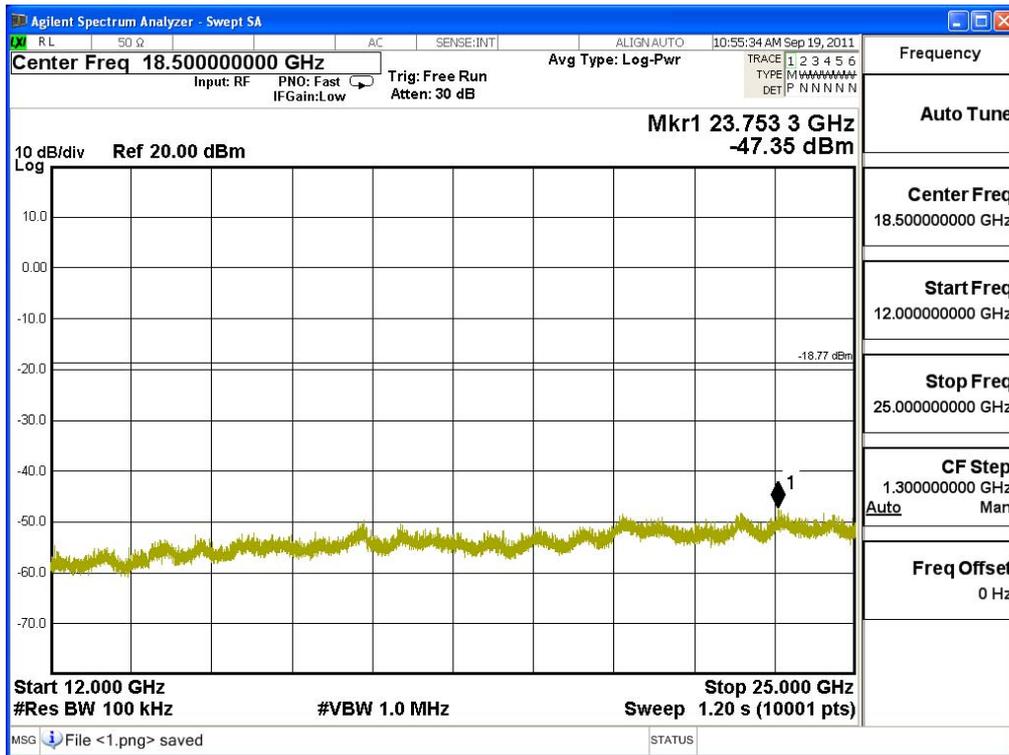
Channel 06 (2437MHz)





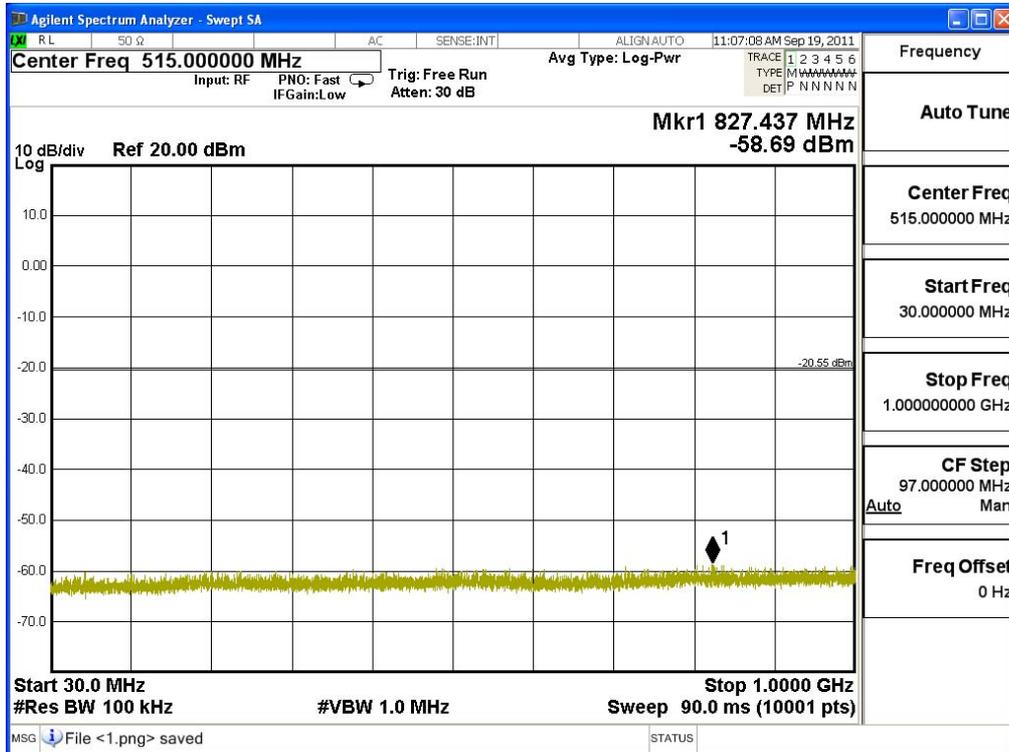
Channel 11 (2462MHz)

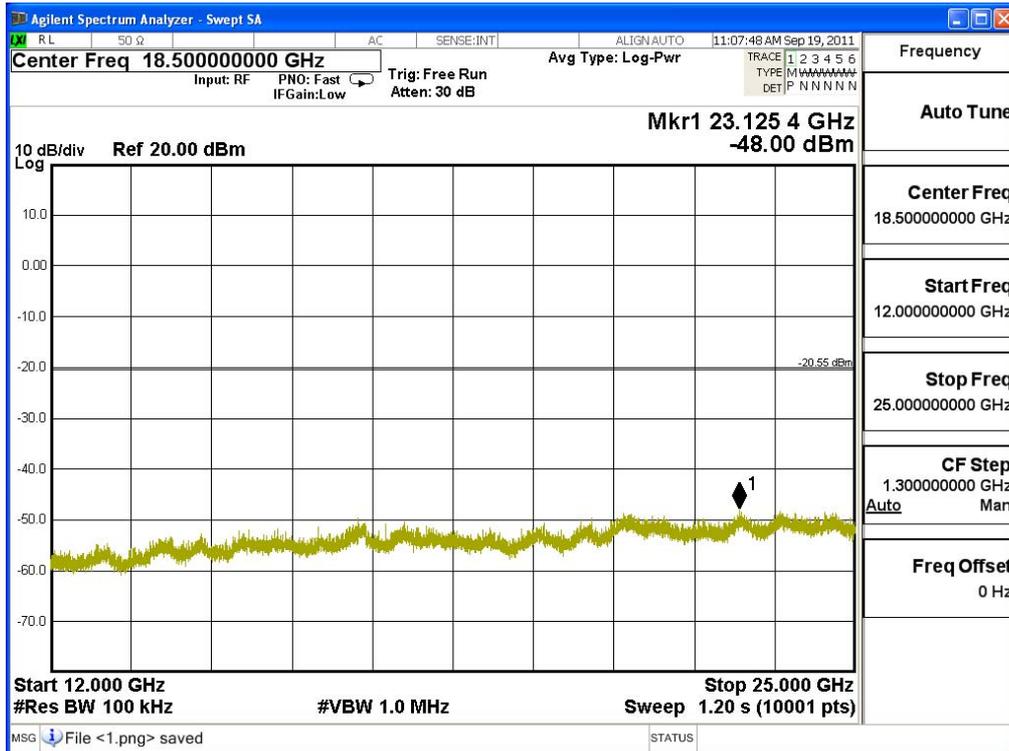
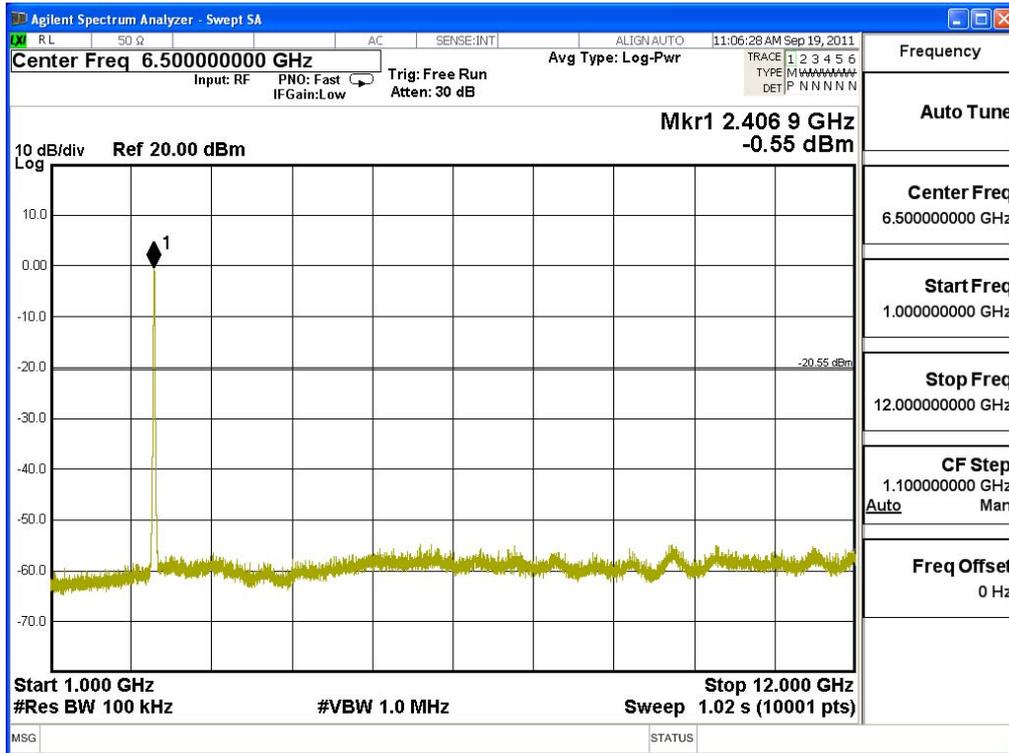




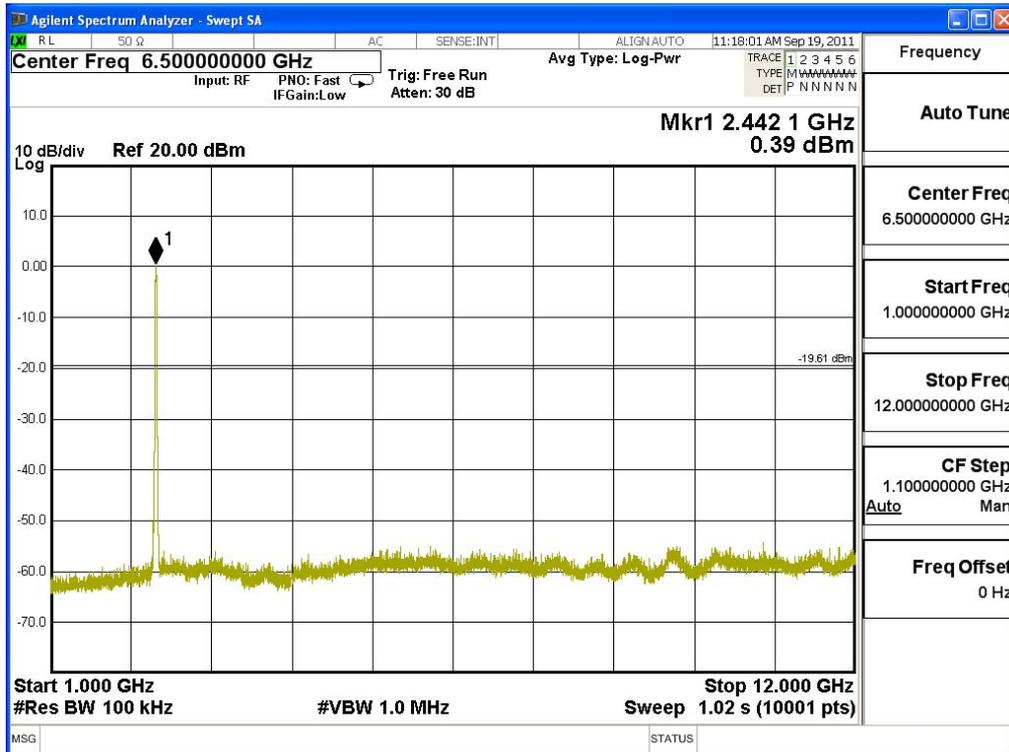
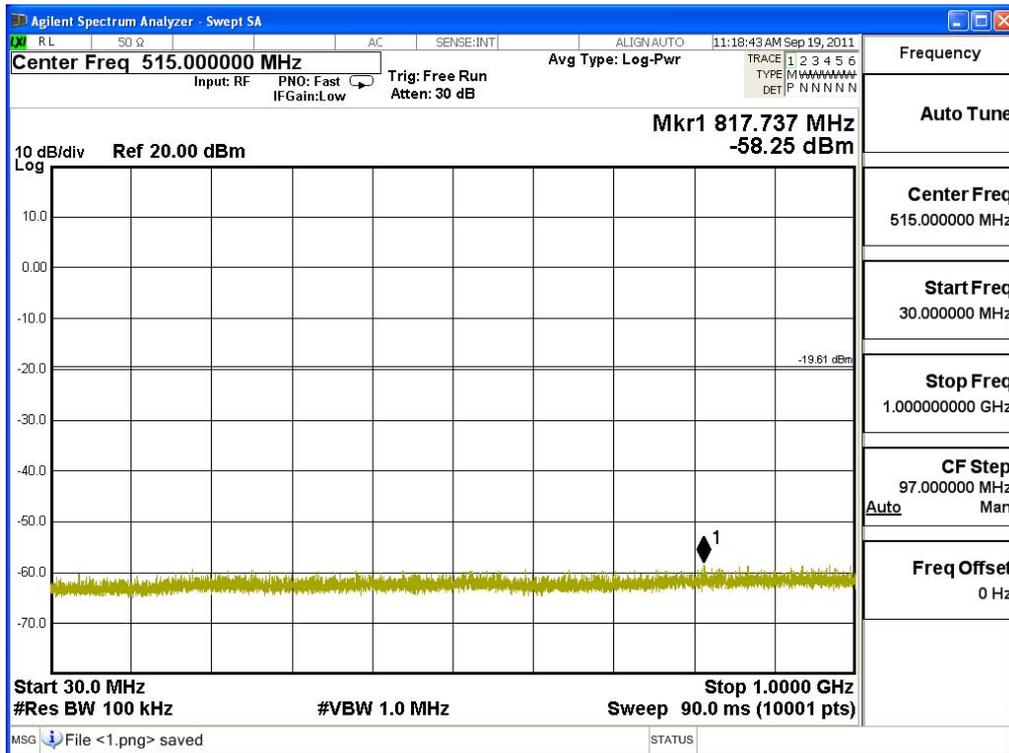
Product : Mobile HD Snap Camera
 Test Item : RF Antenna Conducted Spurious
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

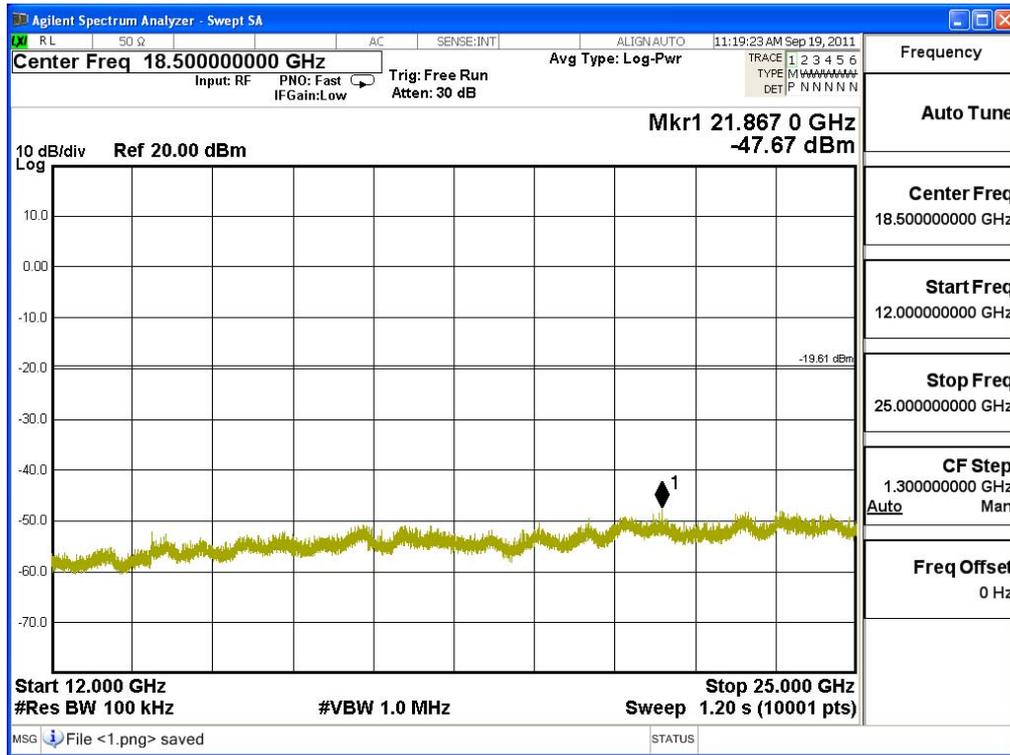
Channel 01 (2412MHz)





Channel 06 (2437MHz)





Channel 11 (2462MHz)

