FCC Test Report

Product Name	Bar Code Printer
Model No	Alpha-4L-W, PR40-W, GR40-W, 4400-W, TSC-40-W, CN-40W, BP-40W, Alpha-4L-D-W, PR40-D-W, GR40-D-W, 4400-D-W, TSC-40-D-W, CN-40LW, BP-40LW, Alpha-4L-W-R, PR40-W-R, GR40-W-R, 4400-W-R, TSC-40-W-R, Alpha-4L-D-W-R, PR40-D-W-R, GR40-D-W-R, 4400-D-W-R, TSC-40-D-W-R
FCC ID.	VTV0521302

Applicant	TSC Auto ID Technology Co., Ltd.
Address	9F., No. 95, Minquan Rd. Xindian Dist. New Taipei City 23141, Taiwan (R.O.C.)

Date of Receipt	Mar. 21, 2013
Issue Date	Jun. 28, 2013
Report No.	133393R-RFUSP28V01
Report Version	V1.0

Testing Laboratory
0914

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: Jun. 28, 2013
Report No.: 133393R-RFUSP28V01

Product Name	Bar Code Printer
Applicant	TSC Auto ID Technology Co., Ltd.
Address	9F., No. 95, Minquan Rd. Xindian Dist. New Taipei City 23141, Taiwan (R.O.C.)
Manufacturer	TSC Auto ID Technology Co., Ltd.
Model No.	Alpha-4L-W, PR40-W, GR40-W, 4400-W, TSC-40-W, CN-40W, BP-40W, Alpha-4L-D-W, PR40-D-W, GR40-D-W, 4400-D-W, TSC-40-D-W, CN-40LW, BP-40LW, Alpha-4L-W-R, PR40-W-R, GR40-W-R, 4400-W-R, TSC-40-W-R, Alpha-4L-D-W-R, PR40-D-W-R, GR40-D-W-R, 4400-D-W-R, TSC-40-D-W-R
FCC ID.	VTV0521302
EUT Rated Voltage	DC 7.2V (Power by Battery), DC 12V(Power by Adapter)
EUT Test Voltage	AC 120V/60Hz
Trade Name	TSC
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2012 ANSI C63.4: 2003, ANSI C63.10: 2009
Test Result	Complied

The test results relate only to the samples tested.
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(Manager / Vincent Lin)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	Bar Code Printer
Trade Name	TSC
Model No.	Alpha-4L-W, PR40-W, GR40-W, 4400-W, TSC-40-W, CN-40W, BP-40W, Alpha-4L-D-W, PR40-D-W, GR40-D-W, 4400-D-W, TSC-40-D-W, CN-40LW, BP-40LW, Alpha-4L-W-R, PR40-W-R, GR40-W-R, 4400-W-R, TSC-40-W-R, Alpha-4L-D-W-R, PR40-D-W-R, GR40-D-W-R, 4400-D-W-R, TSC-40-D-W-R
FCC ID.	VTV0521302
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	Printed on PCB, PIFA
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
USB Cable	Shielded, 1.0m, with one ferrite core bonded.
RS-232 to USB Cable	Shielded, 1.0m
Power Adapter (1)	MFR: L.T.E., M/N: LTE24W-S2 Input: AC 100-240V, 1A, 50/60Hz Output: DC 12V⎓2A Cable in: Non-Shielded, 1.8m, with one ferrite core bonded.
Power Adapter (2)	MFR: L.T.E., M/N: LTE12W-S2 Input: AC 100-240V, 1A, 50/60Hz Output: DC 12V⎓1A Cable in: Non-Shielded, 1.8m, with one ferrite core bonded.
Power Adapter (3)	MFR: Wearnes, M/N: WWS02412U Input: AC 100-240V, 0.8A, 50-60Hz Output: 12V⎓2A Cable in: Non-Shielded, 1.8m, with one ferrite core bonded.
Power Adapter (4)	MFR: Powertron Electronics Corp., M/N: PA1015-2DU Input: AC 100-240V, 50-60Hz, 0.4A Output: 12V⎓1.0A Cable in: Non-Shielded, 1.2m, with one ferrite core bonded.
Power Adapter (5)	MFR: CWT, M/N: SAG024F 4 US Input: AC 100-240V, 47-63Hz, 0.8A Output: 12V⎓2.0A Cable in: Non-Shielded, 1.45m, with one ferrite core bonded.
Power Adapter (6) Car Charge	MFR: Atech OEM Inc., M/N: C11A-1215CD0-S0 Input: DC 12 ~ 24V Output: DC 12V⎓1.5A(MAX) Cable Out: Non-Shielded, 1.5m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain	Note
1	GainSpan	GS-AN042	Printed on PCB	2.26 dBi for 2.4 GHz	Internal Antenna
2	Mgear	Cxxx-xxx001-A	PIFA	1.30 dBi for 2.4 GHz	External Antenna

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 Bar Code Printer with a built-in 2.4GHz WLAN and Bluetooth transceiver, this report for WLAN.
2. The different of the twenty-four model is shown as below:
   (In the same configuration conditions, the hardware is identical, the differences between the models is pre-reserved model name, available to suppliers to put their own trademark.):

Model No.	Configuration
Alpha-4L-W PR40-W GR40-W 4400-W TSC-40-W CN-40W BP-40W	USB +Bluetooth+ non-LCD display + 802.11b/g/n
Alpha-4L-D-W PR40-D-W GR40-D-W 4400-D-W TSC-40-D-W CN-40LW BP-40LW	USB +Bluetooth+ LCD display + 802.11b/g/n
Alpha-4L-W-R PR40-W-R GR40-W-R 4400-W-R TSC-40-W-R	USB +Bluetooth+ non-LCD display + 802.11b/g/n + USB to RS232 Cable
Alpha-4L-D-W-R PR40-D-W-R GR40-D-W-R 4400-D-W-R TSC-40-D-W-R	USB +Bluetooth+ LCD display + 802.11b/g/n + USB to RS232 Cable

3. Each model through the pretest, only the worst case (Alpha-4L-D-W-R: USB +Bluetooth+ LCD display + 802.11b/g/n + USB to RS232 Cable) is shown in the test report.
4. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
5. 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 and)
6. 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.
7. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
8. The test item conducted emission and 30MHz – 1GHz radiated emission are tested at five adapter, the worst case are Adapter #1. The worst case are tested all test item.

Test Mode:	Mode 1: Transmit (802.11b 1Mbps)
	Mode 2: Transmit (802.11g 6Mbps)
	Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

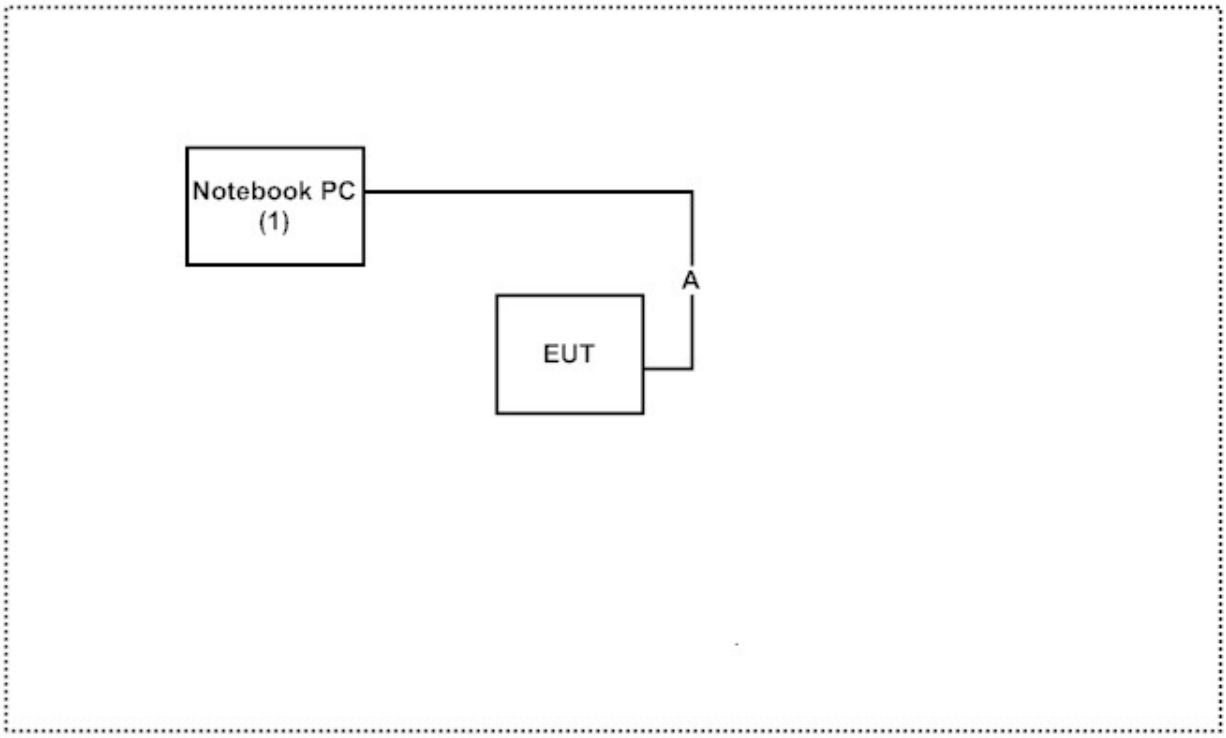
1.3. Tested System Details

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	Notebook PC	DELL	PP18L	36119001664	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	RS-232 to USB Cable	Shielded, 1.0m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in Section 1.4

(2) Execute software on the Notebook PC.

(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/

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FCC Accreditation Number: TW1014

2. Conducted Emission

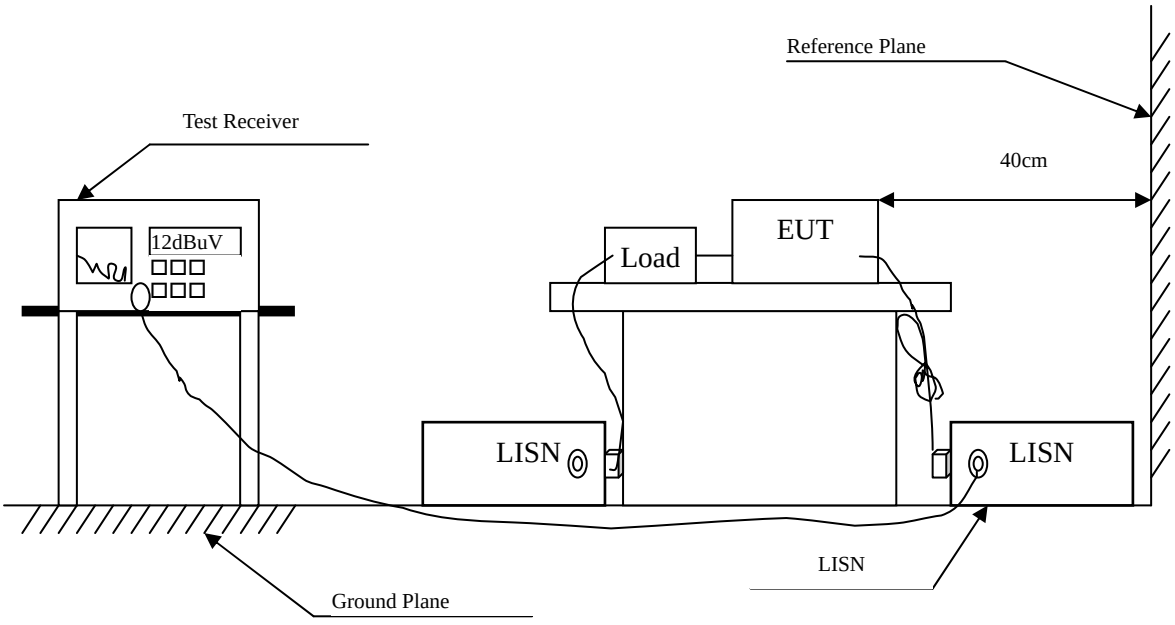
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2013	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2013	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2013	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2013	
	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(1) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.150	9.790	27.910	37.700	-28.300	66.000
0.197	9.790	25.400	35.190	-29.467	64.657
0.244	9.790	19.160	28.950	-34.364	63.314
7.986	9.921	18.640	28.561	-31.439	60.000
15.994	10.100	28.980	39.080	-20.920	60.000
22.287	10.110	22.400	32.510	-27.490	60.000
Average					
0.150	9.790	22.790	32.580	-23.420	56.000
0.197	9.790	22.030	31.820	-22.837	54.657
0.244	9.790	15.000	24.790	-28.524	53.314
7.986	9.921	10.760	20.681	-29.319	50.000
15.994	10.100	25.780	35.880	-14.120	50.000
22.287	10.110	17.570	27.680	-22.320	50.000

Note:

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

Product : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(1) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.162	9.770	26.480	36.250	-29.407	65.657
0.482	9.770	24.470	34.240	-22.274	56.514
0.685	9.770	18.670	28.440	-27.560	56.000
8.298	9.938	21.670	31.608	-28.392	60.000
16.349	10.170	27.920	38.090	-21.910	60.000
22.248	10.230	21.720	31.950	-28.050	60.000
Average					
0.162	9.770	19.850	29.620	-26.037	55.657
0.482	9.770	18.210	27.980	-18.534	46.514
0.685	9.770	13.770	23.540	-22.460	46.000
8.298	9.938	16.660	26.598	-23.402	50.000
16.349	10.170	22.970	33.140	-16.860	50.000
22.248	10.230	16.520	26.750	-23.250	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(2) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.166	9.790	17.660	27.450	-38.093	65.543
0.580	9.790	11.750	21.540	-34.460	56.000
1.494	9.800	10.630	20.430	-35.570	56.000
5.138	9.840	13.180	23.020	-36.980	60.000
9.115	9.956	20.110	30.066	-29.934	60.000
16.732	10.100	27.720	37.820	-22.180	60.000
Average					
0.166	9.790	14.090	23.880	-31.663	55.543
0.580	9.790	6.880	16.670	-29.330	46.000
1.494	9.800	8.080	17.880	-28.120	46.000
5.138	9.840	9.160	19.000	-31.000	50.000
9.115	9.956	13.940	23.896	-26.104	50.000
16.732	10.100	22.320	32.420	-17.580	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(2) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.166	9.770	22.200	31.970	-33.573	65.543
0.248	9.770	18.540	28.310	-34.890	63.200
0.334	9.770	16.090	25.860	-34.883	60.743
0.580	9.770	19.130	28.900	-27.100	56.000
2.482	9.790	14.750	24.540	-31.460	56.000
18.400	10.200	25.150	35.350	-24.650	60.000
Average					
0.166	9.770	21.270	31.040	-24.503	55.543
0.248	9.770	17.200	26.970	-26.230	53.200
0.334	9.770	14.710	24.480	-26.263	50.743
0.580	9.770	17.270	27.040	-18.960	46.000
2.482	9.790	9.020	18.810	-27.190	46.000
18.400	10.200	18.620	28.820	-21.180	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(3)(2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.162	9.790	45.390	55.180	-10.477	65.657
0.205	9.790	32.830	42.620	-21.809	64.429
0.232	9.790	36.400	46.190	-17.467	63.657
1.002	9.790	18.250	28.040	-27.960	56.000
4.127	9.820	19.330	29.150	-26.850	56.000
18.970	10.110	22.300	32.410	-27.590	60.000
Average					
0.162	9.790	32.000	41.790	-13.867	55.657
0.205	9.790	13.650	23.440	-30.989	54.429
0.232	9.790	20.090	29.880	-23.777	53.657
1.002	9.790	8.620	18.410	-27.590	46.000
4.127	9.820	7.430	17.250	-28.750	46.000
18.970	10.110	17.200	27.310	-22.690	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(3) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.177	9.770	43.060	52.830	-12.399	65.229
0.248	9.770	34.330	44.100	-19.100	63.200
0.384	9.770	33.070	42.840	-16.474	59.314
3.955	9.810	13.280	23.090	-32.910	56.000
17.326	10.190	23.490	33.680	-26.320	60.000
21.904	10.230	24.200	34.430	-25.570	60.000
Average					
0.177	9.770	30.750	40.520	-14.709	55.229
0.248	9.770	20.650	30.420	-22.780	53.200
0.384	9.770	23.380	33.150	-16.164	49.314
3.955	9.810	2.530	12.340	-33.660	46.000
17.326	10.190	18.540	28.730	-21.270	50.000
21.904	10.230	18.950	29.180	-20.820	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(4)(2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.181	9.790	31.940	41.730	-23.384	65.114
0.396	9.790	37.900	47.690	-11.281	58.971
0.865	9.790	25.730	35.520	-20.480	56.000
1.584	9.800	24.480	34.280	-21.720	56.000
2.279	9.810	23.340	33.150	-22.850	56.000
14.595	10.075	26.340	36.415	-23.585	60.000
Average					
0.181	9.790	19.220	29.010	-26.104	55.114
0.396	9.790	31.230	41.020	-7.951	48.971
0.865	9.790	20.790	30.580	-15.420	46.000
1.584	9.800	17.070	26.870	-19.130	46.000
2.279	9.810	17.600	27.410	-18.590	46.000
14.595	10.075	21.860	31.935	-18.065	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(4) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.205	9.770	29.210	38.980	-25.449	64.429
0.396	9.770	35.430	45.200	-13.771	58.971
0.556	9.770	25.040	34.810	-21.190	56.000
1.318	9.780	22.900	32.680	-23.320	56.000
2.826	9.800	21.720	31.520	-24.480	56.000
14.189	10.118	25.700	35.818	-24.182	60.000
Average					
0.205	9.770	15.810	25.580	-28.849	54.429
0.396	9.770	27.880	37.650	-11.321	48.971
0.556	9.770	17.370	27.140	-18.860	46.000
1.318	9.780	14.780	24.560	-21.440	46.000
2.826	9.800	12.740	22.540	-23.460	46.000
14.189	10.118	19.740	29.858	-20.142	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(5)(2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.189	9.790	37.020	46.810	-18.076	64.886
0.267	9.790	28.610	38.400	-24.257	62.657
0.474	9.790	32.390	42.180	-14.563	56.743
1.009	9.790	32.130	41.920	-14.080	56.000
2.341	9.810	29.690	39.500	-16.500	56.000
23.095	10.110	20.500	30.610	-29.390	60.000
Average					
0.189	9.790	28.550	38.340	-16.546	54.886
0.267	9.790	13.500	23.290	-29.367	52.657
0.474	9.790	19.450	29.240	-17.503	46.743
1.009	9.790	17.070	26.860	-19.140	46.000
2.341	9.810	19.060	28.870	-17.130	46.000
23.095	10.110	11.290	21.400	-28.600	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 : Bar Code Printer
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(5) (2437MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.189	9.770	39.640	49.410	-15.476	64.886
0.338	9.770	26.110	35.880	-24.749	60.629
0.470	9.770	28.090	37.860	-18.997	56.857
1.002	9.780	30.570	40.350	-15.650	56.000
3.498	9.803	27.180	36.983	-19.017	56.000
8.834	9.950	27.770	37.720	-22.280	60.000
Average					
0.189	9.770	28.950	38.720	-16.166	54.886
0.338	9.770	9.660	19.430	-31.199	50.629
0.470	9.770	14.570	24.340	-22.517	46.857
1.002	9.780	14.150	23.930	-22.070	46.000
3.498	9.803	13.390	23.193	-22.807	46.000
8.834	9.950	17.490	27.440	-22.560	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

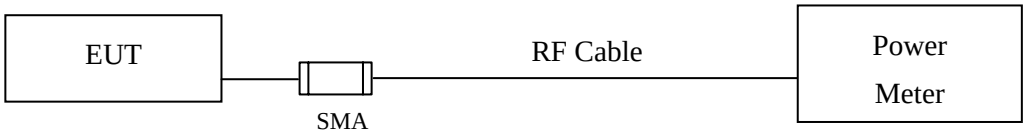
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2013
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2013

Note:

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

3.2. Test Setup



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements. The maximum peak conducted output power using KDB 558074 section 9.1.3 PKPM1 Peak power meter method.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : Bar Code Printer
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	12.97	--	--	--	15.4	<30dBm	Pass
06	2437	12.87	12.85	12.54	12.53	15.56	<30dBm	Pass
11	2462	12.91	--	--	--	15.50	<30dBm	Pass

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

Product : Bar Code Printer
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		6	9	12	18	24	36	48	54	6		
		Measurement Level (dBm)										
01	2412	12.70	--	--	--	--	--	--	--	21.09	<30dBm	Pass
06	2437	12.58	12.57	12.56	12.53	12.52	12.5	12.49	12.49	21.35	<30dBm	Pass
11	2462	12.45	--	--	--	--	--	--	--	21.22	<30dBm	Pass

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

Product : Bar Code Printer
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	7.2		
		Measurement Level (dBm)										
01	2412	11.52	--	--	--	--	--	--	--	20.81	<30dBm	Pass
06	2437	11.51	11.5	11.49	11.48	11.47	11.46	11.45	11.43	20.76	<30dBm	Pass
11	2462	11.68	--	--	--	--	--	--	--	20.66	<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:

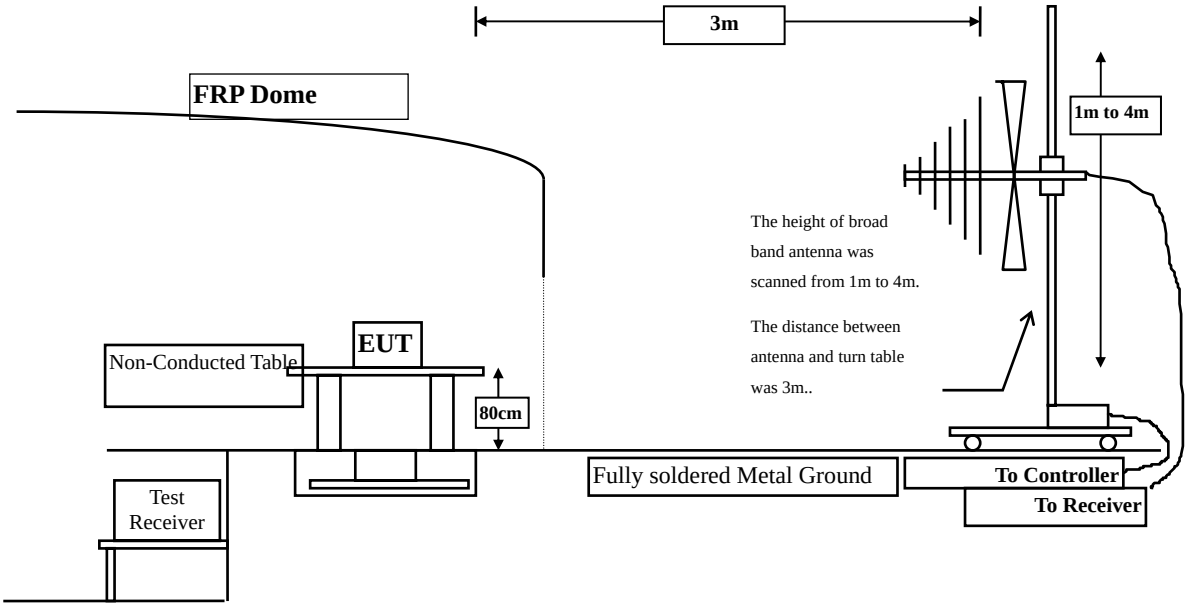
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	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.

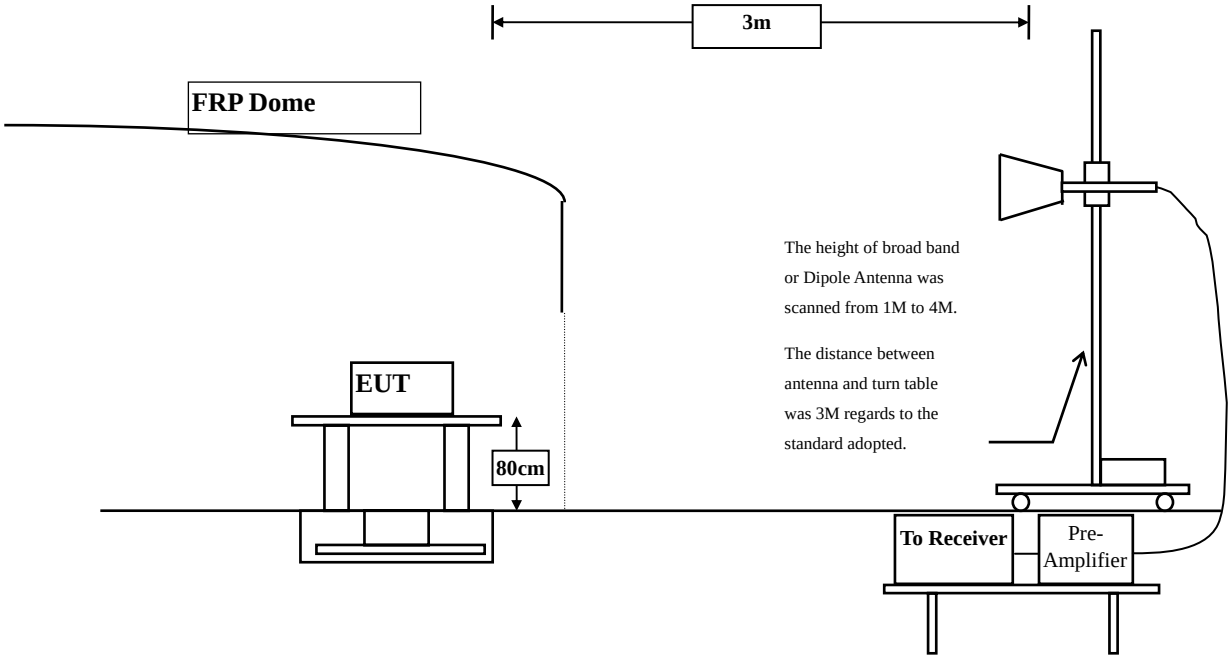
2. The test instruments marked with “X” are used to measure the final test results.

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 C63.4: 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 harminics is checked.

4.5. Uncertainty

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

4.6. Test Result of Radiated Emission

Product : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	38.360	41.621	-32.379	74.000
7236.000	10.650	37.900	48.550	-25.450	74.000
9648.000	13.337	37.170	50.506	-23.494	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	38.600	45.021	-28.979	74.000
7236.000	11.495	37.280	48.775	-25.225	74.000
9648.000	13.807	37.420	51.226	-22.774	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	40.350	43.387	-30.613	74.000
7311.000	11.795	36.490	48.284	-25.716	74.000
9748.000	12.635	37.480	50.115	-23.885	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	38.470	44.281	-29.719	74.000
7311.000	12.630	36.380	49.009	-24.991	74.000
9748.000	13.126	38.050	51.176	-22.824	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	40.620	43.477	-30.523	74.000
7386.000	12.127	36.550	48.678	-25.322	74.000
9848.000	12.852	37.530	50.383	-23.617	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	39.520	45.040	-28.960	74.000
7386.000	13.254	36.740	49.994	-24.006	74.000
9848.000	13.367	37.450	50.817	-23.183	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	41.660	44.921	-29.079	74.000
7236.000	10.650	37.470	48.120	-25.880	74.000
9648.000	13.337	37.530	50.866	-23.134	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	40.570	46.991	-27.009	74.000
7236.000	11.495	37.440	48.935	-25.065	74.000
9648.000	13.807	37.380	51.186	-22.814	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	42.940	45.977	-28.023	74.000
7311.000	11.795	36.510	48.304	-25.696	74.000
9748.000	12.635	37.930	50.565	-23.435	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	5.812	40.550	46.361	-27.639	74.000
7311.000	12.630	36.810	49.439	-24.561	74.000
9748.000	13.126	38.100	51.226	-22.774	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	43.160	46.017	-27.983	74.000
7386.000	12.127	35.910	48.038	-25.962	74.000
9848.000	12.852	37.900	50.753	-23.247	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.310	46.830	-27.170	74.000
7386.000	13.254	36.760	50.014	-23.986	74.000
9848.000	13.367	37.500	50.867	-23.133	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	41.960	45.221	-28.779	74.000
7236.000	10.650	38.510	49.160	-24.840	74.000
9648.000	13.337	37.040	50.376	-23.624	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	40.350	46.771	-27.229	74.000
7236.000	11.495	37.540	49.035	-24.965	74.000
9648.000	13.807	38.150	51.956	-22.044	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 : Bar Code Printer
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)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	42.620	45.657	-28.343	74.000
7311.000	11.795	36.740	48.534	-25.466	74.000
9748.000	12.635	38.620	51.255	-22.745	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	33.306	42.620	45.657	-28.343	74.000
7311.000	39.698	36.740	48.534	-25.466	74.000
9748.000	41.160	38.620	51.255	-22.745	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 : Bar Code Printer
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)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	43.300	46.157	-27.843	74.000
7386.000	12.127	36.130	48.258	-25.742	74.000
9848.000	12.852	37.480	50.333	-23.667	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.680	47.200	-26.800	74.000
7386.000	13.254	37.310	50.564	-23.436	74.000
9848.000	13.367	37.600	50.967	-23.033	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	41.890	45.151	-28.849	74.000
7236.000	10.650	37.170	47.820	-26.180	74.000
9648.000	13.337	36.600	49.936	-24.064	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	40.130	46.551	-27.449	74.000
7236.000	11.495	36.680	48.175	-25.825	74.000
9648.000	13.807	36.960	50.766	-23.234	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	41.590	44.627	-29.373	74.000
7311.000	11.795	36.890	48.684	-25.316	74.000
9748.000	12.635	36.150	48.785	-25.215	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	40.190	46.001	-27.999	74.000
7311.000	12.630	36.480	49.109	-24.891	74.000
9748.000	13.126	36.780	49.906	-24.094	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	40.650	43.507	-30.493	74.000
7386.000	12.127	36.180	48.308	-25.692	74.000
9848.000	12.852	36.480	49.333	-24.667	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.590	47.110	-26.890	74.000
7386.000	13.254	36.480	49.734	-24.266	74.000
9846.000	13.343	37.040	50.384	-23.616	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	40.870	44.131	-29.869	74.000
7236.000	10.650	36.890	47.540	-26.460	74.000
9648.000	13.337	37.480	50.816	-23.184	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	40.590	47.011	-26.989	74.000
7236.000	11.495	37.150	48.645	-25.355	74.000
9648.000	13.807	37.140	50.946	-23.054	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	41.590	44.627	-29.373	74.000
7311.000	11.795	36.490	48.284	-25.716	74.000
9748.000	12.635	36.840	49.475	-24.525	74.000
Average Detector:					
--					
Peak Detector:					
4874.000	5.812	41.590	47.401	-26.599	74.000
7311.000	12.630	37.180	49.809	-24.191	74.000
9748.000	13.126	37.480	50.606	-23.394	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	43.530	46.387	-27.613	74.000
7386.000	12.127	36.150	48.278	-25.722	74.000
9848.000	12.852	36.590	49.443	-24.557	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.590	47.110	-26.890	74.000
7386.000	13.254	37.260	50.514	-23.486	74.000
9848.000	13.367	36.890	50.257	-23.743	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 : Bar Code Printer
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)(2412MHz)
-Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4824.000	3.261	42.590	45.851	-28.149	74.000
7236.000	10.650	38.150	48.800	-25.200	74.000
9648.000	13.337	37.140	50.476	-23.524	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4824.000	6.421	41.590	48.011	-25.989	74.000
7236.000	11.495	37.560	49.055	-24.945	74.000
9648.000	13.807	36.150	49.956	-24.044	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 : Bar Code Printer
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)
-Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4874.000	3.038	42.140	45.177	-28.823	74.000
7311.000	11.795	36.150	47.944	-26.056	74.000
9748.000	12.635	36.140	48.775	-25.225	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4874.000	5.812	41.180	46.991	-27.009	74.000
7311.000	12.630	36.180	48.809	-25.191	74.000
9748.000	13.126	37.870	50.996	-23.004	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 : Bar Code Printer
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)
-Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
4924.000	2.858	43.450	46.307	-27.693	74.000
7386.000	12.127	36.180	48.308	-25.692	74.000
9848.000	12.852	37.140	49.993	-24.007	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
4924.000	5.521	41.260	46.780	-27.220	74.000
7386.000	13.254	37.590	50.844	-23.156	74.000
9848.000	13.367	36.890	50.257	-23.743	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Adapter(1) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
107.600	-7.597	43.995	36.398	-7.102	43.500
299.660	-4.751	36.373	31.622	-14.378	46.000
466.500	3.156	35.861	39.017	-6.983	46.000
602.300	3.794	32.582	36.376	-9.624	46.000
697.360	3.231	34.962	38.193	-7.807	46.000
930.160	7.530	30.645	38.175	-7.825	46.000
Vertical					
132.820	-3.932	38.740	34.808	-8.692	43.500
299.660	-4.061	36.373	32.312	-13.688	46.000
495.600	-1.237	36.991	35.754	-10.246	46.000
660.500	-1.111	36.337	35.226	-10.774	46.000
827.340	2.711	30.459	33.170	-12.830	46.000
967.020	3.889	25.839	29.728	-24.272	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(1) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
132.820	-7.442	38.740	31.298	-12.202	43.500
299.660	-4.751	36.373	31.622	-14.378	46.000
398.600	0.879	38.202	39.081	-6.919	46.000
468.440	3.544	35.443	38.987	-7.013	46.000
689.600	3.642	35.886	39.528	-6.472	46.000
881.660	6.789	29.286	36.075	-9.925	46.000
Vertical					
132.820	-3.932	38.740	34.808	-8.692	43.500
299.660	-4.061	36.373	32.312	-13.688	46.000
493.660	-1.656	38.400	36.745	-9.255	46.000
660.500	-1.111	36.337	35.226	-10.774	46.000
825.400	3.016	31.903	34.919	-11.081	46.000
949.560	3.156	33.641	36.797	-9.203	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)-Adapter(1) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
132.820	-7.442	38.740	31.298	-12.202	43.500
299.660	-4.751	36.373	31.622	-14.378	46.000
443.220	-0.031	35.227	35.196	-10.804	46.000
598.420	3.524	33.118	36.642	-9.358	46.000
790.480	6.363	31.298	37.661	-8.339	46.000
928.220	7.230	29.390	36.620	-9.380	46.000
Vertical					
148.340	-5.406	36.882	31.476	-12.024	43.500
365.620	0.282	29.982	30.264	-15.736	46.000
528.580	1.164	29.905	31.069	-14.931	46.000
674.080	0.003	34.801	34.804	-11.196	46.000
806.000	3.686	28.937	32.623	-13.377	46.000
920.460	3.272	27.840	31.112	-14.888	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Adapter(2) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
111.480	-7.489	39.003	31.515	-11.985	43.500
299.660	-4.751	33.429	28.678	-17.322	46.000
400.540	0.942	32.067	33.009	-12.991	46.000
530.520	3.062	32.787	35.849	-10.151	46.000
716.760	3.809	34.682	38.491	-7.509	46.000
949.560	7.036	30.357	37.393	-8.607	46.000
Vertical					
59.100	-11.291	47.281	35.990	-4.010	40.000
198.780	-5.708	42.525	36.817	-6.683	43.500
396.660	-2.039	42.244	40.205	-5.795	46.000
598.420	1.114	32.340	33.454	-12.546	46.000
800.180	2.637	37.601	40.238	-5.762	46.000
949.560	3.156	34.179	37.335	-8.665	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(2) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
59.100	-11.901	47.281	35.380	-4.620	40.000
154.160	-8.002	42.524	34.522	-8.978	43.500
381.140	1.386	34.581	35.967	-10.033	46.000
598.420	3.524	34.012	37.536	-8.464	46.000
767.200	5.099	35.460	40.560	-5.440	46.000
930.160	7.530	33.178	40.708	-5.292	46.000
Vertical					
84.320	-4.204	34.730	30.526	-9.474	40.000
177.440	-1.248	42.387	41.139	-2.361	43.500
396.660	-2.039	42.244	40.205	-5.795	46.000
598.420	1.114	34.012	35.126	-10.874	46.000
800.180	2.637	37.601	40.238	-5.762	46.000
949.560	3.156	34.179	37.335	-8.665	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(2) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
154.160	-8.002	42.524	34.522	-8.978	43.500
266.680	-5.510	37.759	32.249	-13.751	46.000
381.140	1.386	34.581	35.967	-10.033	46.000
598.420	3.524	34.012	37.536	-8.464	46.000
738.100	3.332	33.974	37.306	-8.694	46.000
899.120	5.717	32.853	38.570	-7.430	46.000
Vertical					
154.160	-5.272	42.524	37.252	-6.248	43.500
297.720	-4.356	36.075	31.719	-14.281	46.000
396.660	-2.039	42.244	40.205	-5.795	46.000
598.420	1.114	34.012	35.126	-10.874	46.000
800.180	2.637	37.601	40.238	-5.762	46.000
963.140	3.581	32.562	36.143	-17.857	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Adapter(3) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
132.820	-7.442	38.829	31.387	-12.113	43.500
297.720	-4.756	35.519	30.763	-15.237	46.000
493.660	1.474	37.433	38.908	-7.092	46.000
635.280	1.798	34.208	36.006	-9.994	46.000
796.300	6.389	31.688	38.077	-7.923	46.000
967.020	7.299	32.353	39.652	-14.348	54.000
Vertical					
132.820	-3.932	38.829	34.897	-8.603	43.500
299.660	-4.061	36.659	32.598	-13.402	46.000
497.540	-0.713	37.241	36.528	-9.472	46.000
685.720	2.254	36.649	38.903	-7.097	46.000
848.680	0.299	34.123	34.422	-11.578	46.000
961.200	3.310	26.387	29.697	-24.303	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(3) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-9.958	39.228	29.270	-14.230	43.500
437.400	0.819	34.575	35.394	-10.606	46.000
598.420	3.524	34.746	38.270	-7.730	46.000
738.100	3.332	34.863	38.195	-7.805	46.000
881.660	6.789	30.918	37.707	-8.293	46.000
982.540	7.679	28.695	36.374	-17.626	54.000
Vertical					
132.820	-3.932	38.829	34.897	-8.603	43.500
299.660	-4.061	36.659	32.598	-13.402	46.000
499.480	-0.199	37.665	37.465	-8.535	46.000
677.960	0.840	35.141	35.981	-10.019	46.000
840.920	2.284	31.101	33.385	-12.615	46.000
967.020	3.889	32.353	36.242	-17.758	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(3) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
117.300	-7.350	40.808	33.458	-10.042	43.500
299.660	-4.751	36.997	32.246	-13.754	46.000
493.660	1.474	37.433	38.908	-7.092	46.000
666.320	1.879	35.700	37.579	-8.421	46.000
825.400	7.346	31.177	38.523	-7.477	46.000
974.780	7.039	29.921	36.960	-17.040	54.000
Vertical					
78.500	-5.604	36.455	30.851	-9.149	40.000
239.520	-6.138	33.141	27.003	-18.997	46.000
472.320	-3.508	34.845	31.337	-14.663	46.000
648.860	-3.146	35.372	32.226	-13.774	46.000
790.480	2.693	30.776	33.469	-12.531	46.000
903.000	1.418	29.544	30.962	-15.038	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)-Adapter(4) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
148.340	-7.806	37.606	29.800	-13.700	43.500
299.660	-4.751	36.061	31.310	-14.690	46.000
460.680	4.030	35.270	39.300	-6.700	46.000
652.740	1.899	35.481	37.380	-8.620	46.000
825.400	7.346	31.177	38.523	-7.477	46.000
949.560	7.036	33.892	40.928	-5.072	46.000
Vertical					
132.820	-3.932	38.829	34.897	-8.603	43.500
299.660	-4.061	36.318	32.257	-13.743	46.000
499.480	-0.199	37.665	37.465	-8.535	46.000
689.600	2.302	37.216	39.518	-6.482	46.000
848.680	0.299	34.123	34.422	-11.578	46.000
949.560	3.156	33.892	37.048	-8.952	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(4) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
132.820	-7.442	38.829	31.387	-12.113	43.500
299.660	-4.751	36.318	31.567	-14.433	46.000
431.580	0.757	39.762	40.519	-5.481	46.000
598.420	3.524	33.283	36.807	-9.193	46.000
755.560	5.039	35.349	40.388	-5.612	46.000
928.220	7.230	32.854	40.084	-5.916	46.000
Vertical					
132.820	-3.932	38.829	34.897	-8.603	43.500
299.660	-4.061	36.318	32.257	-13.743	46.000
499.480	-0.199	37.665	37.465	-8.535	46.000
693.480	1.748	38.216	39.964	-6.036	46.000
848.680	0.299	34.123	34.422	-11.578	46.000
967.020	3.889	26.834	30.723	-23.277	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(4) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
148.340	-7.806	37.606	29.800	-13.700	43.500
299.660	-4.751	36.318	31.567	-14.433	46.000
431.580	0.757	39.762	40.519	-5.481	46.000
598.420	3.524	33.283	36.807	-9.193	46.000
718.700	3.818	37.849	41.667	-4.333	46.000
926.280	6.832	32.457	39.289	-6.711	46.000
Vertical					
132.820	-3.932	38.829	34.897	-8.603	43.500
299.660	-4.061	36.329	32.268	-13.732	46.000
460.680	-1.930	35.270	33.340	-12.660	46.000
660.500	-1.111	35.328	34.217	-11.783	46.000
840.920	2.284	31.101	33.385	-12.615	46.000
967.020	3.889	26.914	30.803	-23.197	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Adapter(5) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
260.860	-5.032	46.618	41.586	-4.414	46.000
390.840	-1.849	44.785	42.936	-3.064	46.000
456.800	-0.067	39.853	39.786	-6.214	46.000
716.760	3.537	34.659	38.196	-7.804	46.000
782.720	4.325	34.105	38.430	-7.570	46.000
912.700	6.132	36.779	42.911	-3.089	46.000
Vertical					
64.920	-5.683	39.759	34.076	-5.924	40.000
194.900	-9.322	41.129	31.807	-11.693	43.500
390.840	-3.099	43.587	40.488	-5.512	46.000
520.820	-0.298	34.996	34.698	-11.302	46.000
782.720	3.035	29.769	32.804	-13.196	46.000
912.700	1.762	34.532	36.294	-9.706	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(5) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
260.860	-5.032	46.163	41.131	-4.869	46.000
390.840	-1.849	45.142	43.293	-2.707	46.000
456.800	-0.067	40.099	40.032	-5.968	46.000
586.780	3.436	35.676	39.112	-6.888	46.000
652.740	2.166	37.366	39.532	-6.468	46.000
912.700	6.132	36.319	42.451	-3.549	46.000
Vertical					
64.920	-5.683	40.688	35.005	-4.995	40.000
194.900	-9.322	41.787	32.465	-11.035	43.500
390.840	-3.099	40.907	37.808	-8.192	46.000
456.800	-4.697	39.205	34.508	-11.492	46.000
782.720	3.035	29.599	32.634	-13.366	46.000
912.700	1.762	34.569	36.331	-9.669	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(5) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
260.860	-5.032	45.234	40.202	-5.798	46.000
390.840	-1.849	44.620	42.771	-3.229	46.000
456.800	-0.067	38.228	38.161	-7.839	46.000
586.780	3.436	35.102	38.538	-7.462	46.000
782.720	4.325	33.915	38.240	-7.760	46.000
912.700	6.132	34.828	40.960	-5.040	46.000
Vertical					
64.920	-5.683	40.262	34.579	-5.421	40.000
194.900	-9.322	39.213	29.891	-13.609	43.500
390.840	-3.099	40.047	36.948	-9.052	46.000
520.820	-0.298	32.229	31.931	-14.069	46.000
782.720	3.035	29.975	33.010	-12.990	46.000
912.700	1.762	33.025	34.787	-11.213	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)-Adapter(6) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
194.900	-11.012	47.415	36.403	-7.097	43.500
282.200	-5.211	37.794	32.583	-13.417	46.000
472.320	0.637	34.162	34.799	-11.201	46.000
625.580	1.770	37.736	39.506	-6.494	46.000
802.120	5.091	36.061	41.152	-4.848	46.000
912.700	6.132	34.010	40.142	-5.858	46.000
Vertical					
107.600	-0.318	36.273	35.955	-7.545	43.500
224.000	-8.699	41.584	32.885	-13.115	46.000
472.320	-4.613	40.868	36.255	-9.745	46.000
662.440	-2.026	34.534	32.508	-13.492	46.000
817.640	3.272	34.699	37.971	-8.029	46.000
912.700	1.762	34.476	36.238	-9.762	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Adapter(6) (2437 MHz)
-Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-10.661	30.841	20.180	-23.320	43.500
297.720	-3.633	30.711	27.079	-18.921	46.000
398.600	-2.268	32.266	29.998	-16.002	46.000
596.480	4.017	28.659	32.676	-13.324	46.000
796.300	5.161	27.606	32.767	-13.233	46.000
897.180	5.182	28.268	33.450	-12.550	46.000
Vertical					
198.780	-8.221	33.490	25.269	-18.231	43.500
297.720	-7.143	31.684	24.542	-21.458	46.000
365.620	-2.179	27.903	25.724	-20.276	46.000
460.680	-3.221	25.460	22.239	-23.761	46.000
596.480	-3.113	33.050	29.937	-16.063	46.000
749.740	2.510	28.755	31.265	-14.735	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) -Adapter(6) (2437 MHz) -Antenna Printed on PCB

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
198.780	-10.661	29.952	19.291	-24.209	43.500
297.720	-3.633	28.755	25.123	-20.877	46.000
497.540	-0.273	36.676	36.403	-9.597	46.000
598.420	3.991	28.726	32.717	-13.283	46.000
697.360	3.171	29.906	33.077	-12.923	46.000
897.180	5.182	27.832	33.014	-12.986	46.000
Vertical					
198.780	-8.221	32.181	23.960	-19.540	43.500
249.220	-7.634	31.082	23.448	-22.552	46.000
344.280	-3.171	29.950	26.780	-19.220	46.000
596.480	-3.113	32.251	29.138	-16.862	46.000
749.740	2.510	29.642	32.152	-13.848	46.000
844.800	3.181	25.210	28.391	-17.609	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)- Adapter(1) - (2437 MHz)
-Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
97.900	-7.650	24.725	17.074	-26.426	43.500
268.620	-4.942	24.930	19.988	-26.012	46.000
447.100	-2.726	30.038	27.312	-18.688	46.000
542.160	3.011	27.341	30.352	-15.648	46.000
699.300	2.875	35.388	38.263	-7.737	46.000
934.040	6.612	24.875	31.487	-14.513	46.000
Vertical					
103.720	-0.151	23.558	23.406	-20.094	43.500
256.980	-7.573	26.765	19.192	-26.808	46.000
346.220	-3.093	28.050	24.957	-21.043	46.000
542.160	-0.269	28.859	28.590	-17.410	46.000
755.560	3.281	23.282	26.563	-19.437	46.000
968.960	8.191	22.658	30.849	-23.151	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) - Adapter(1) -(2437 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
105.660	-6.673	23.023	16.350	-27.150	43.500
348.160	-2.268	26.104	23.836	-22.164	46.000
542.160	3.011	29.312	32.323	-13.677	46.000
697.360	3.171	27.498	30.669	-15.331	46.000
840.920	5.191	25.422	30.613	-15.387	46.000
939.860	6.400	23.263	29.663	-16.337	46.000
Vertical					
111.480	-0.954	23.813	22.859	-20.641	43.500
348.160	-3.458	28.034	24.576	-21.424	46.000
547.980	-2.088	28.364	26.276	-19.724	46.000
687.660	2.444	22.866	25.310	-20.690	46.000
827.340	3.162	23.709	26.871	-19.129	46.000
968.960	8.191	22.309	30.500	-23.500	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 : Bar Code Printer
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) - Adapter(1) -(2437 MHz) -Antenna PIFA

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
256.980	-5.073	24.291	19.218	-26.782	46.000
443.220	-2.738	30.584	27.846	-18.154	46.000
542.160	3.011	29.514	32.525	-13.475	46.000
695.420	3.438	24.796	28.234	-17.766	46.000
879.720	6.115	22.466	28.581	-17.419	46.000
968.960	6.981	23.285	30.266	-23.734	54.000
Vertical					
111.480	-0.954	23.527	22.573	-20.927	43.500
346.220	-3.093	30.901	27.808	-18.192	46.000
524.700	-0.379	24.573	24.194	-21.806	46.000
639.160	-3.538	28.586	25.048	-20.952	46.000
784.660	3.012	23.259	26.271	-19.729	46.000
968.960	8.191	24.050	32.241	-21.759	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

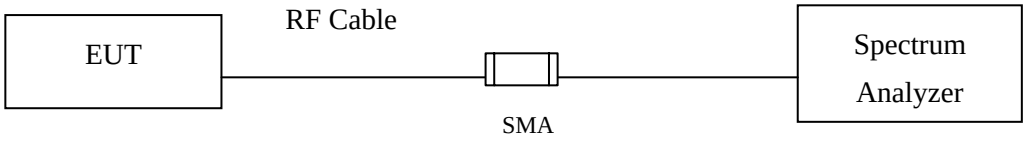
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

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.

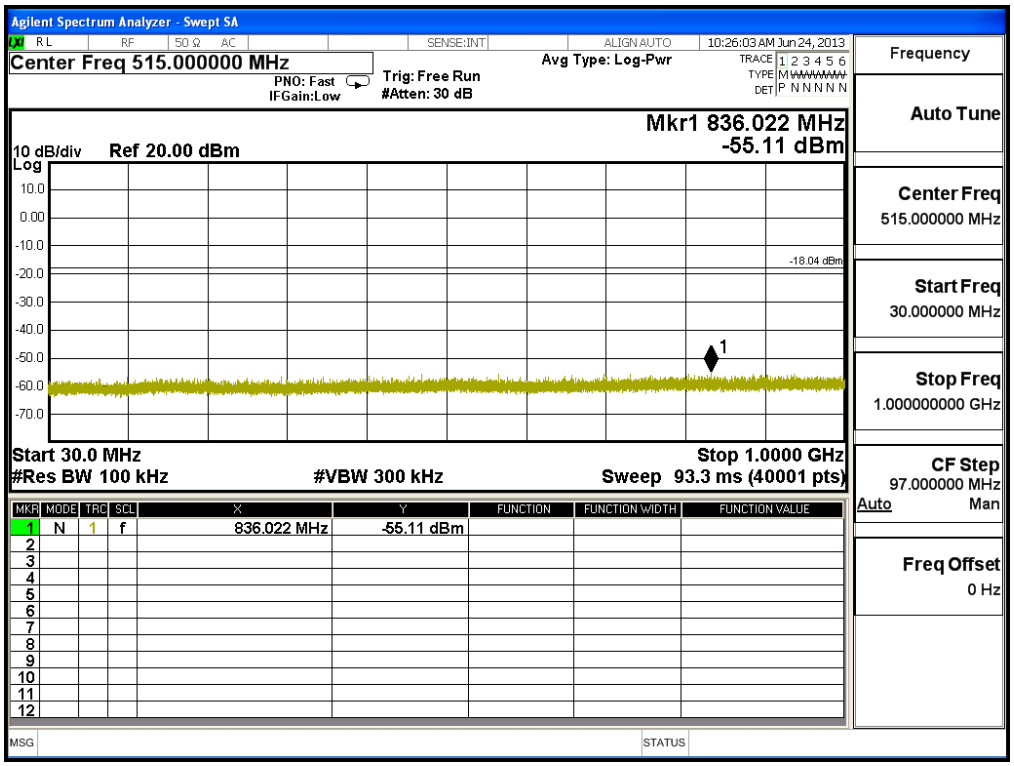
5.5. Uncertainty

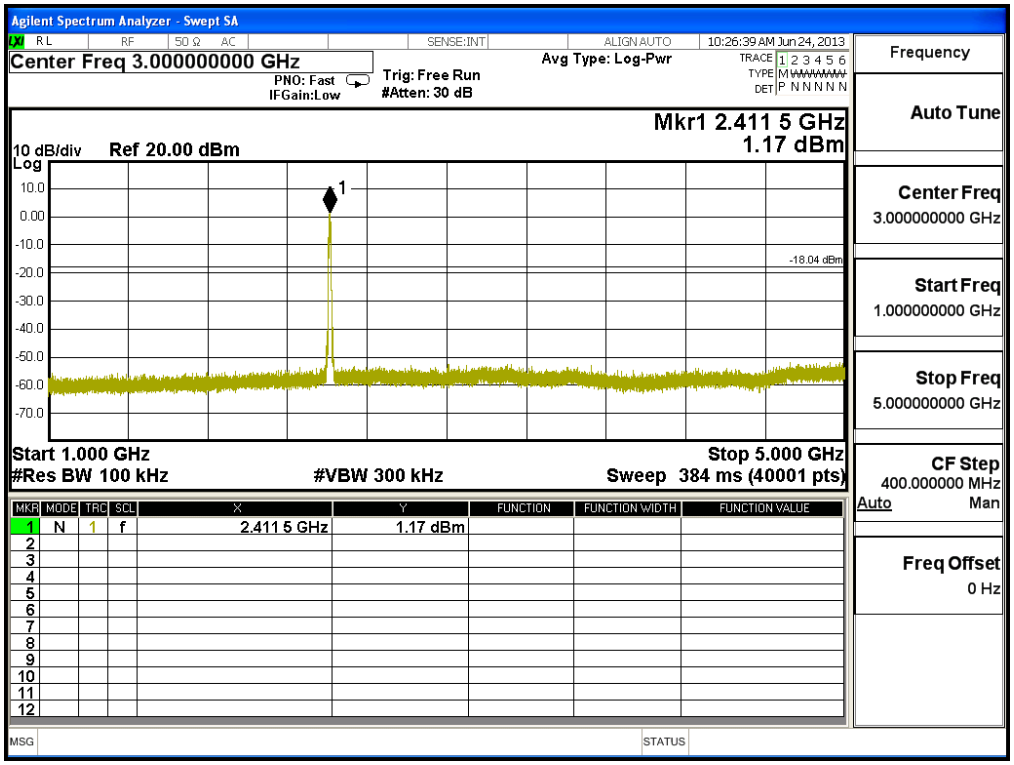
The measurement uncertainty
Conducted is defined as ± 1.27dB

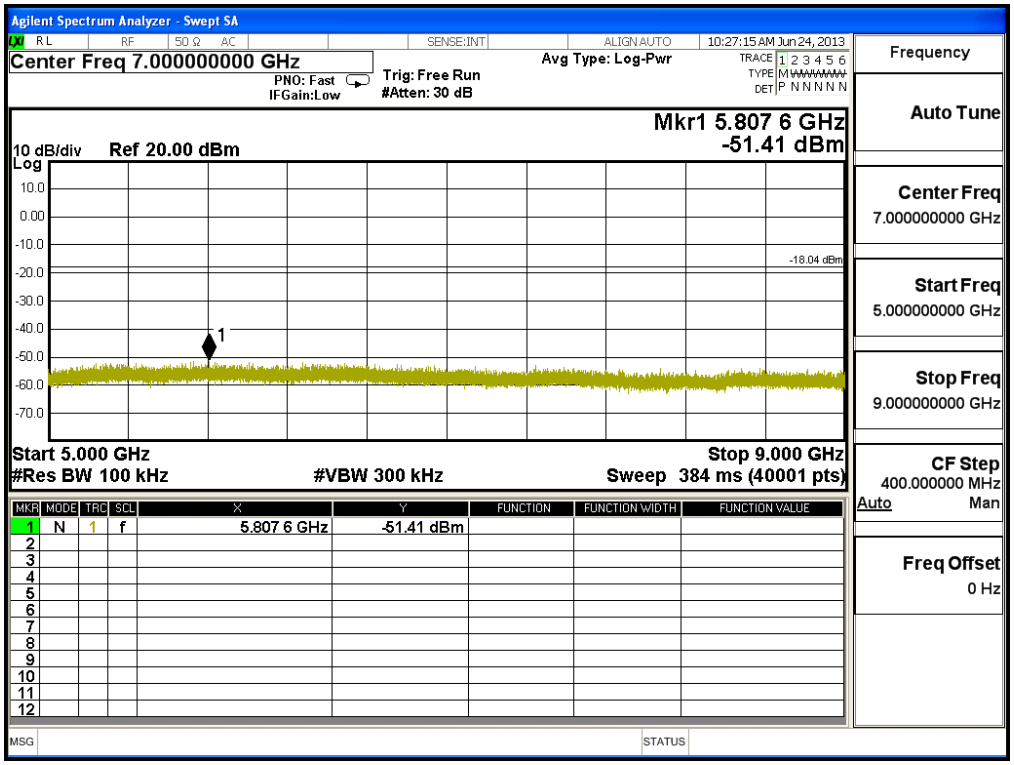
5.6. Test Result of RF antenna conducted test

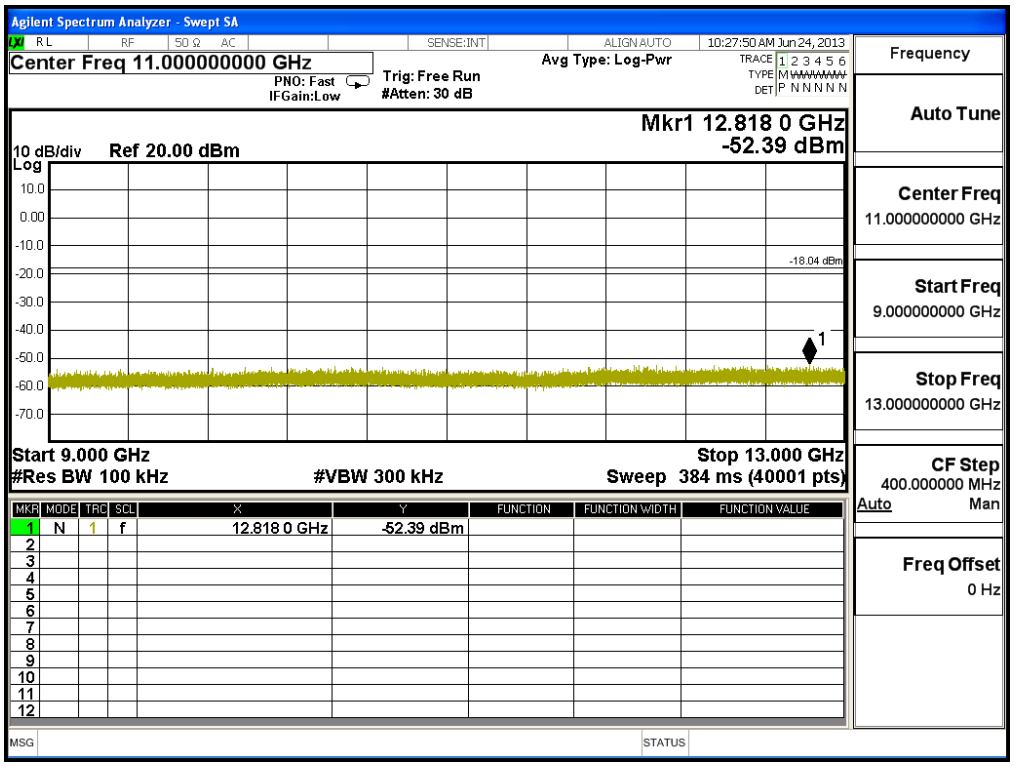
Product : Bar Code Printer
Test Item : RF antenna conducted test
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps)

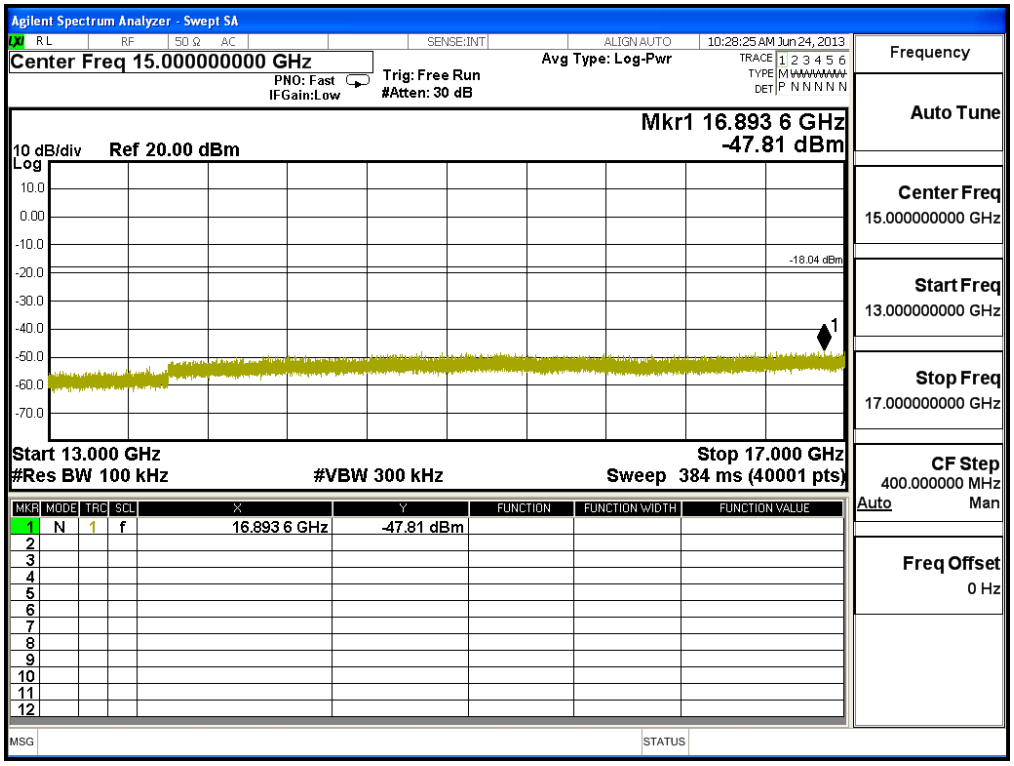
Channel 01 (2412MHz)

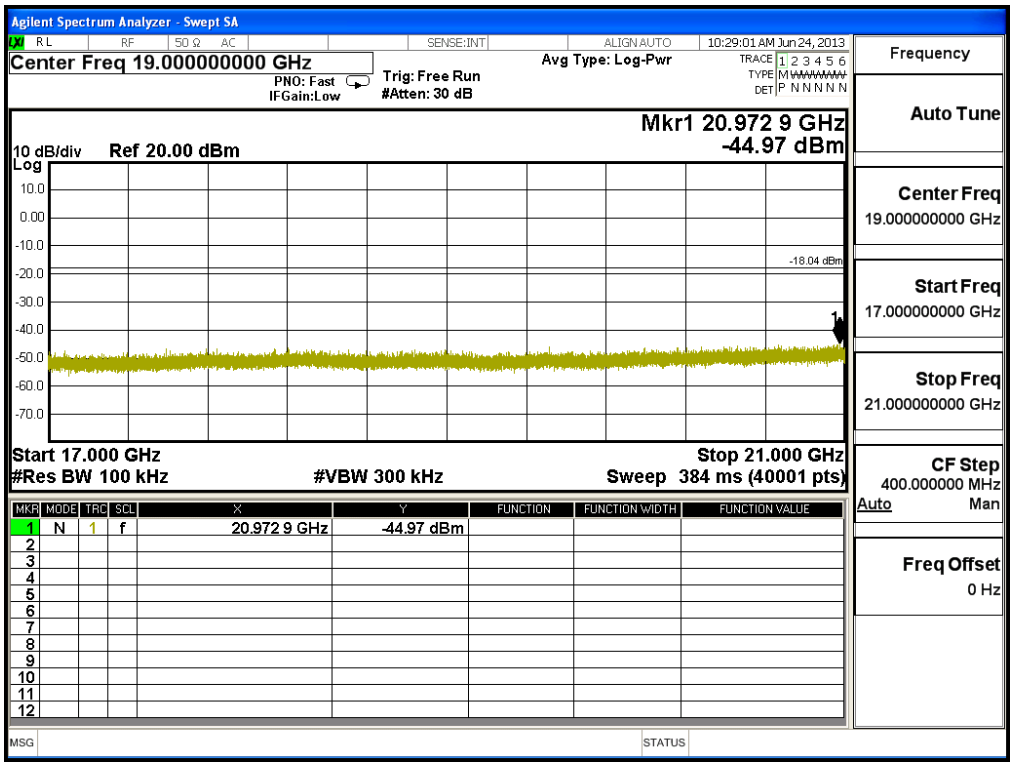


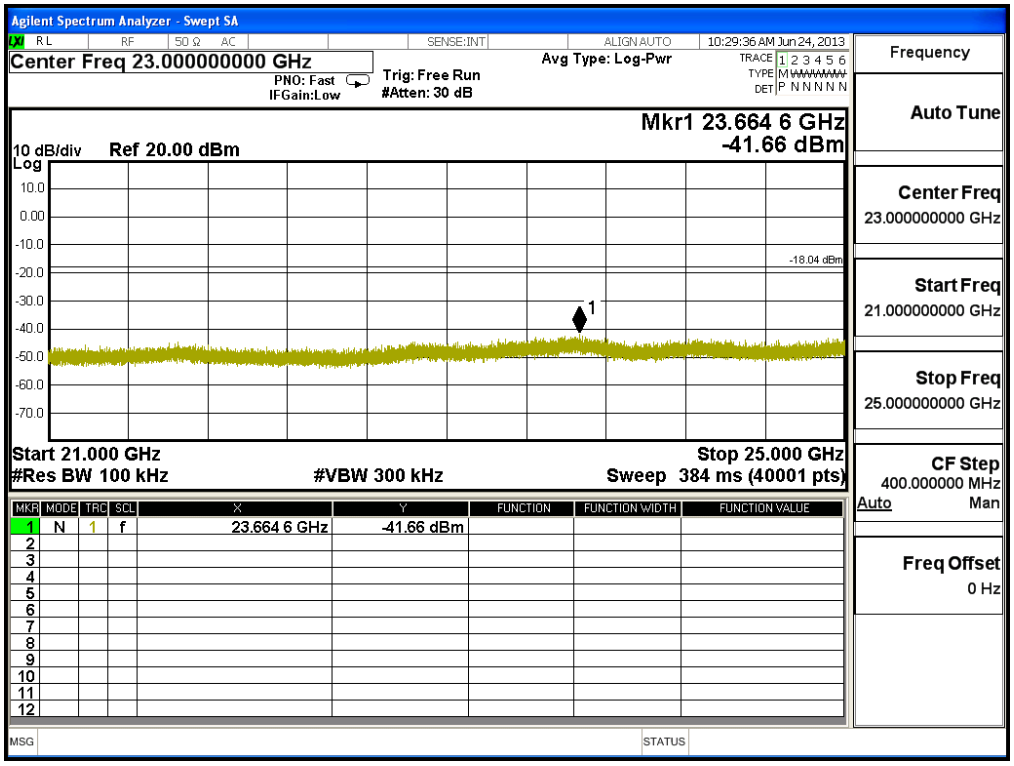

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:26:39 AM Jun 24, 2013
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 2.411 5 GHz
1.17 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.04 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 2.411 5 GHz 1.17 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:27:15 AM Jun 24, 2013
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 5.807 6 GHz
-51.41 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.04 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.807 6 GHz -51.41 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

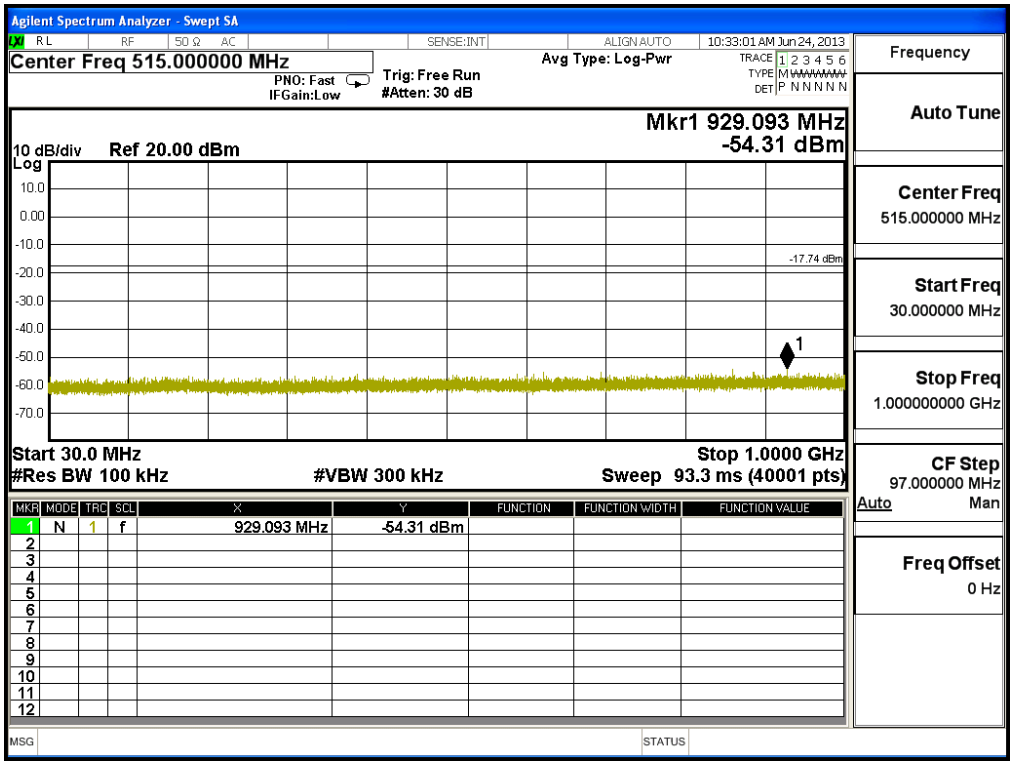

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:27:50 AM Jun 24, 2013
Mkr1 12.818 0 GHz
-52.39 dBm
10 dB/div
Log
Ref 20.00 dBm
-18.04 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.818 0 GHz -52.39 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

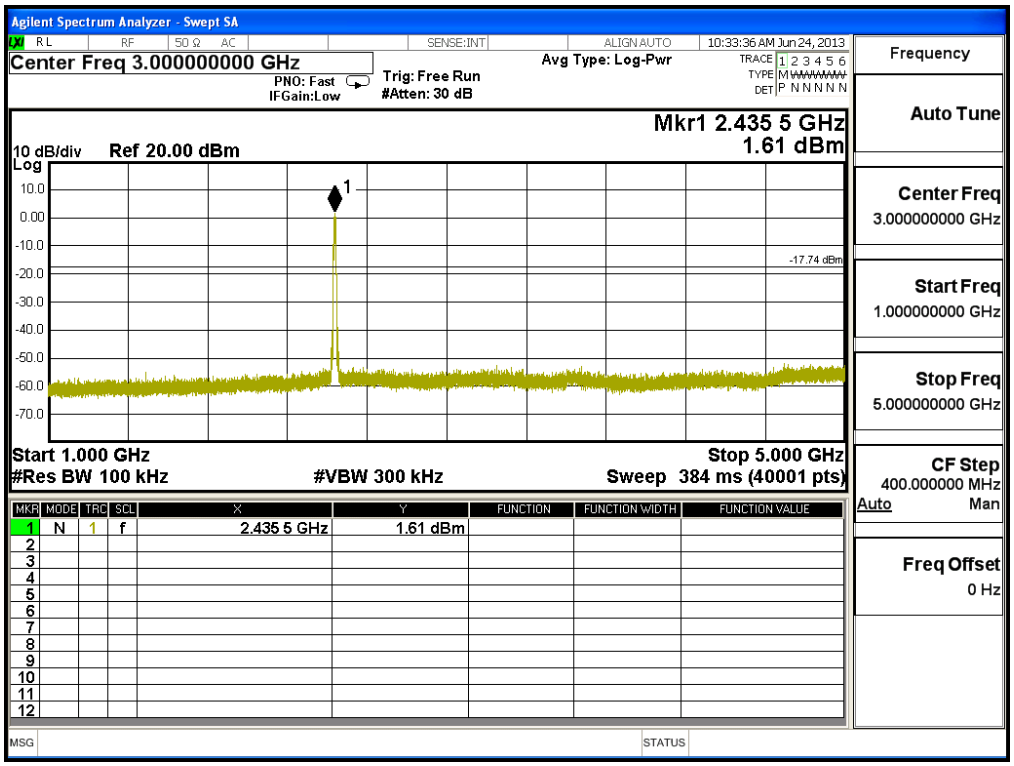

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:28:25 AM Jun 24, 2013
Mkr1 16.893 6 GHz
-47.81 dBm
10 dB/div
Log
Ref 20.00 dBm
-18.04 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.893 6 GHz -47.81 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

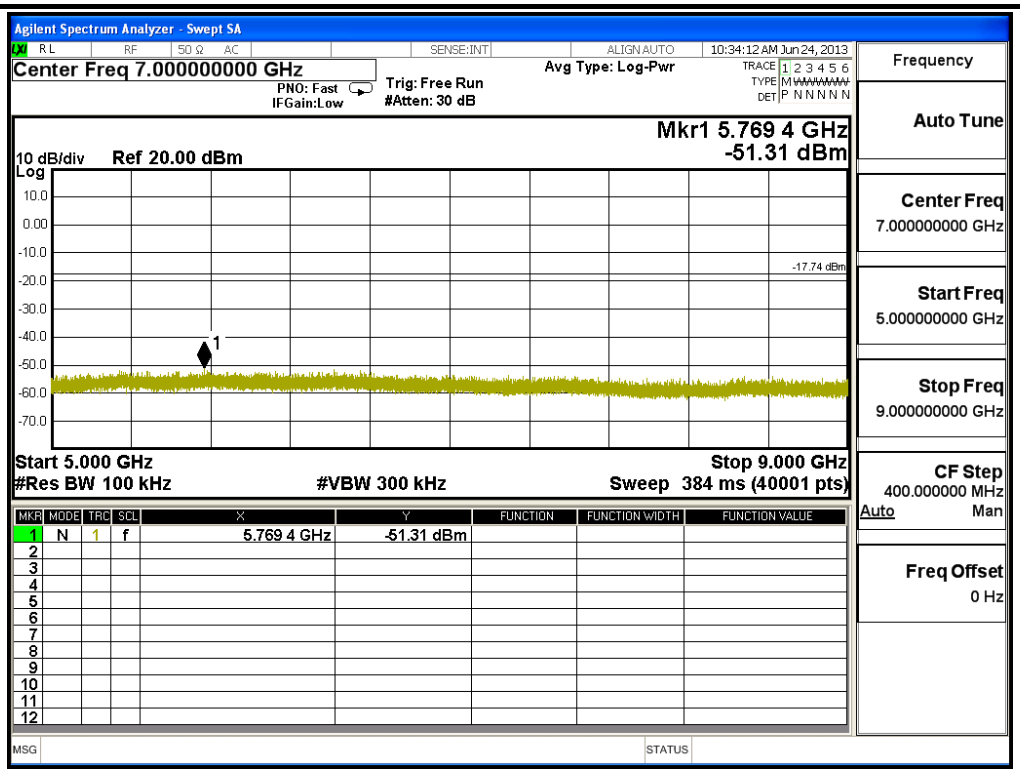

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:29:01 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 20.972 9 GHz
-44.97 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.04 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.972 9 GHz -44.97 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

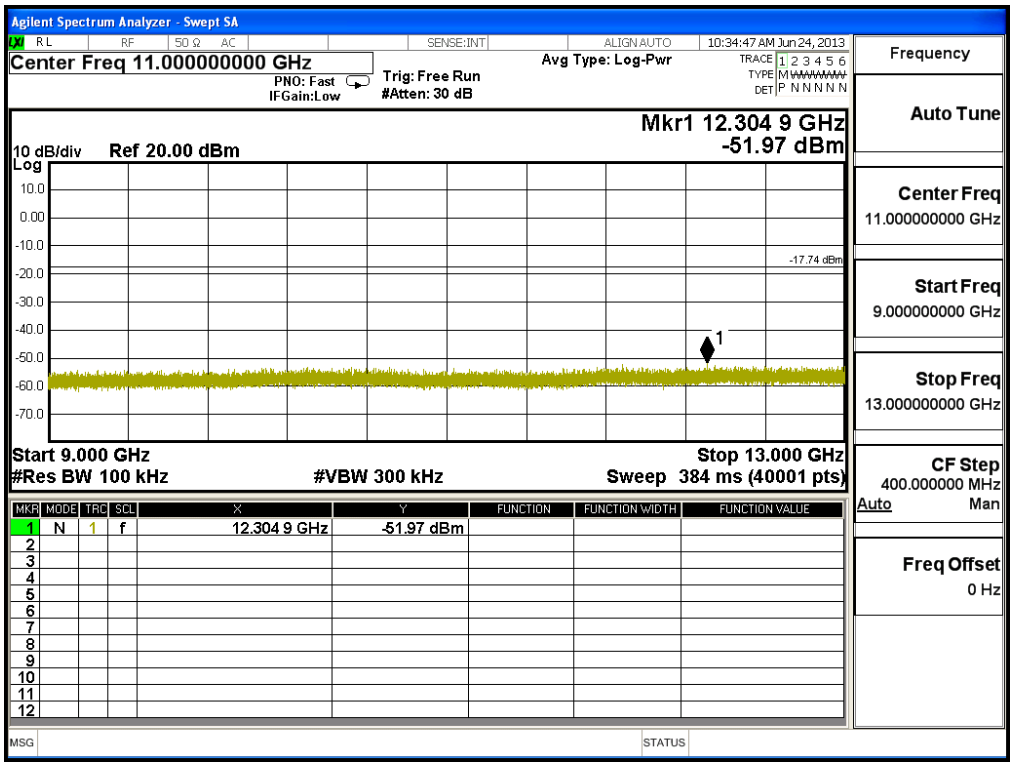

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:29:36 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.664 6 GHz
-41.66 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.04 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.664 6 GHz -41.66 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

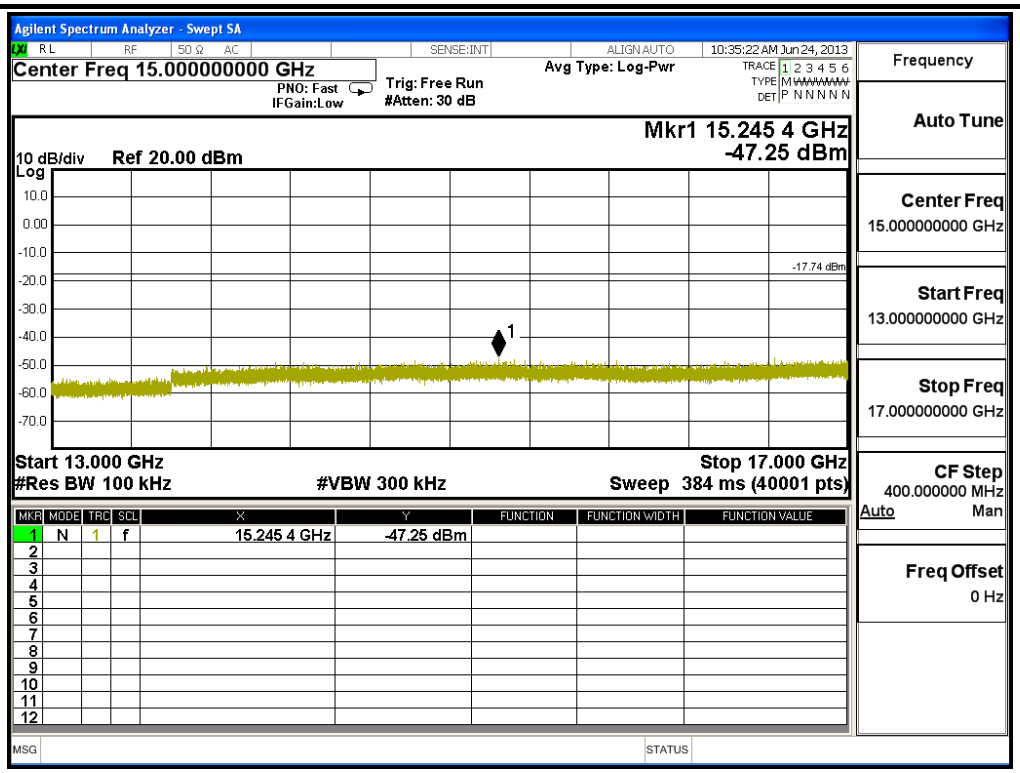
Channel 06 (2437MHz)

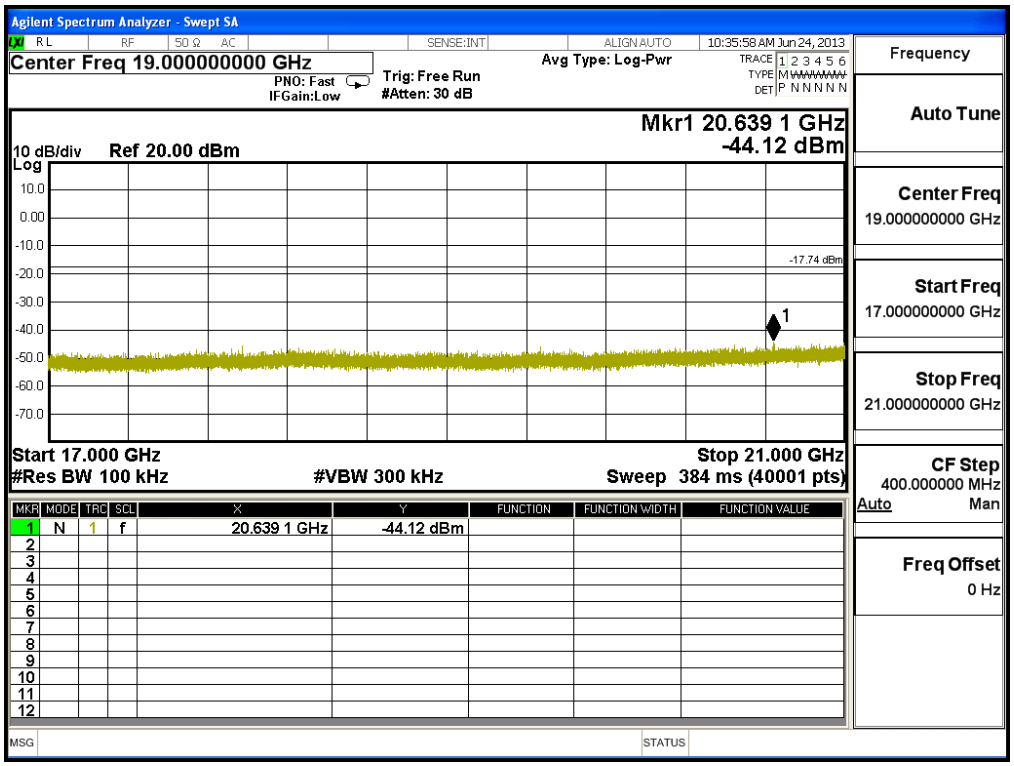


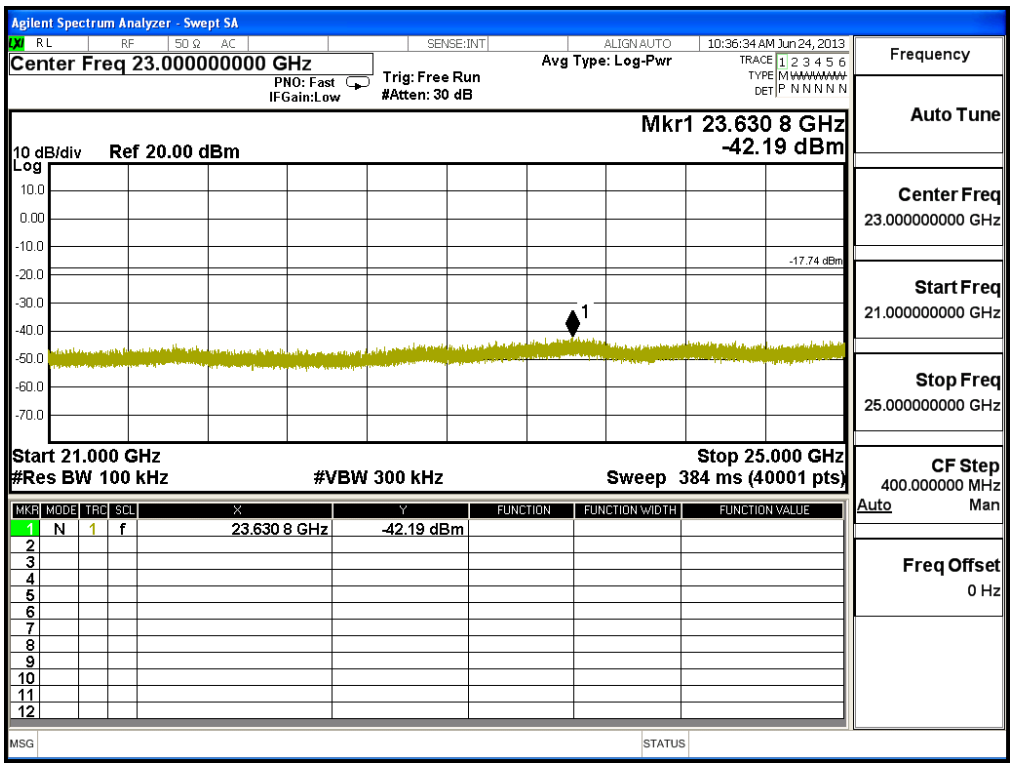



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:34:12 AM Jun 24, 2013
Mkr1 5.769 4 GHz
-51.31 dBm
10 dB/div
Log
Ref 20.00 dBm
-17.74 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 5.769 4 GHz -51.31 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

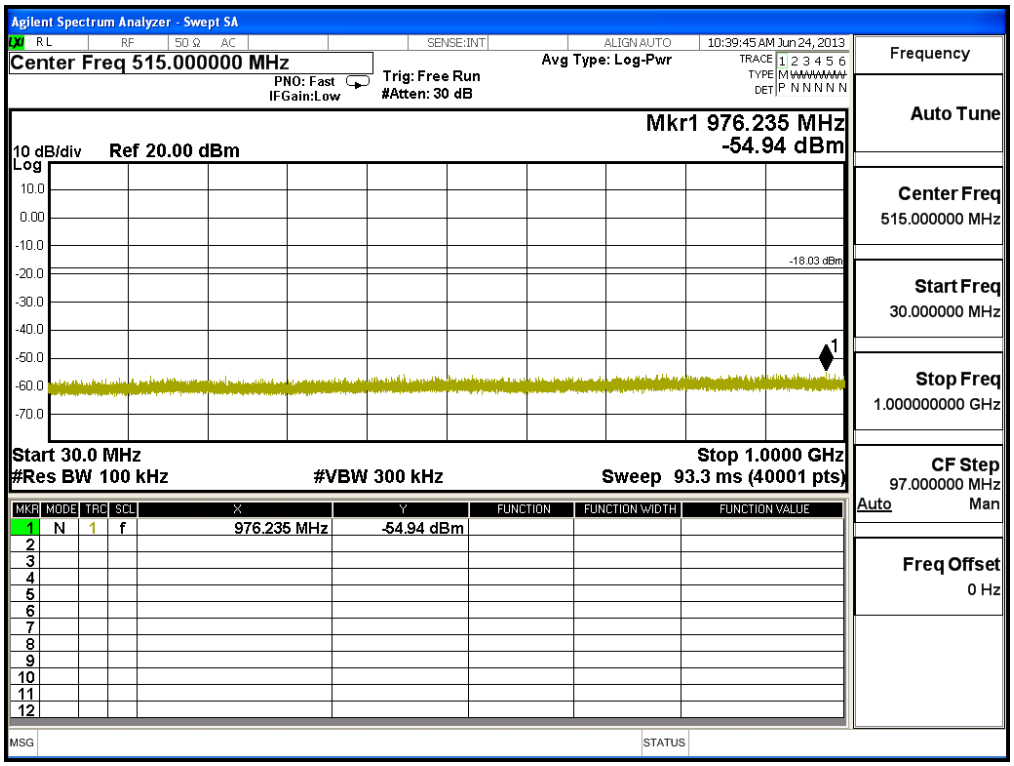

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:34:47 AM Jun 24, 2013
Mkr1 12.304 9 GHz
-51.97 dBm
10 dB/div
Log
Ref 20.00 dBm
-17.74 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.304 9 GHz -51.97 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

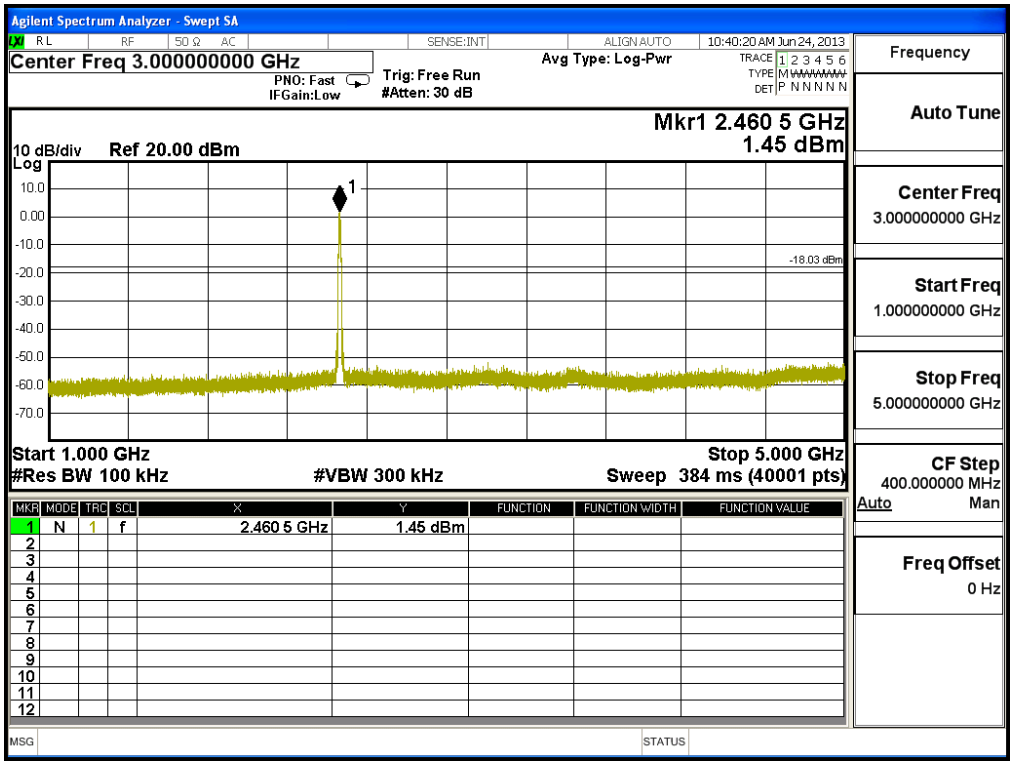

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:35:22 AM Jun 24, 2013
Mkr1 15.245 4 GHz
-47.25 dBm
10 dB/div
Log
Ref 20.00 dBm
-17.74 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 15.245 4 GHz -47.25 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

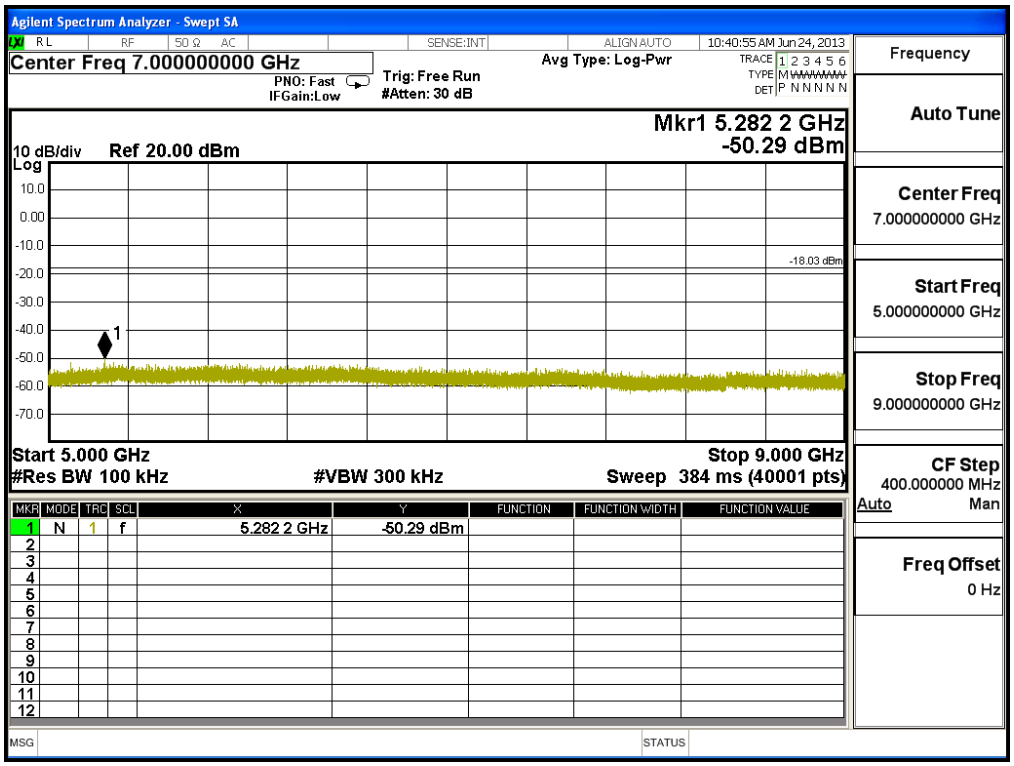

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:35:58 AM Jun 24, 2013
Mkr1 20.639 1 GHz
-44.12 dBm
10 dB/div
Log
Ref 20.00 dBm
-17.74 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.639 1 GHz -44.12 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

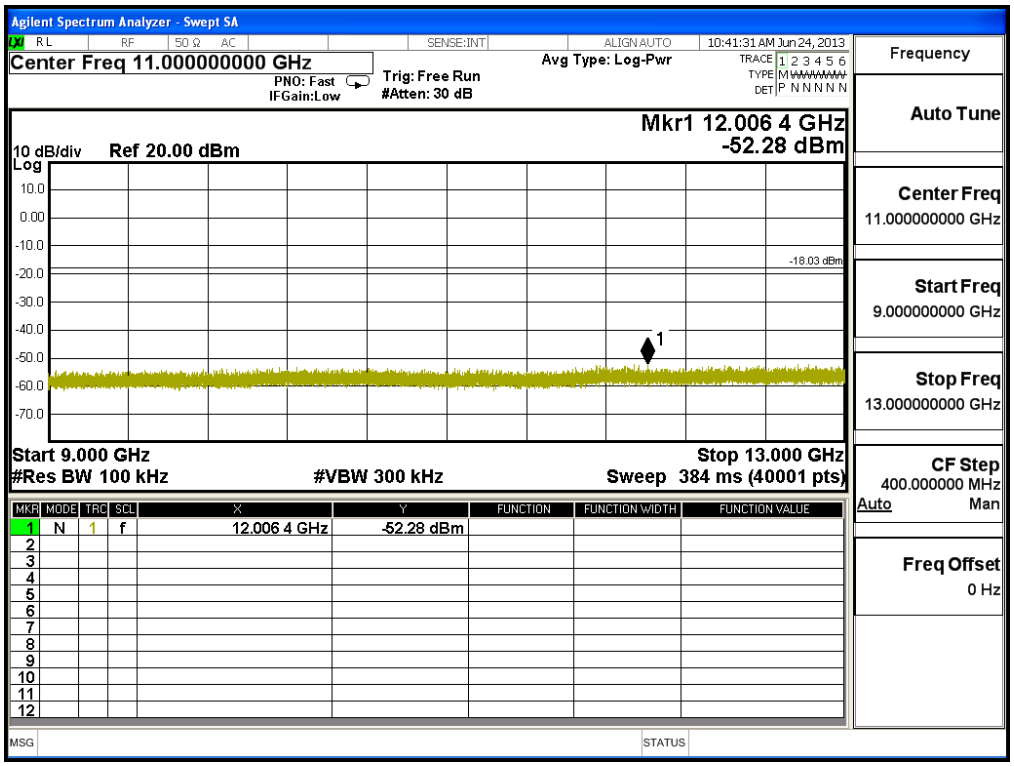

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:36:34 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.630 8 GHz
-42.19 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-17.74 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.630 8 GHz -42.19 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

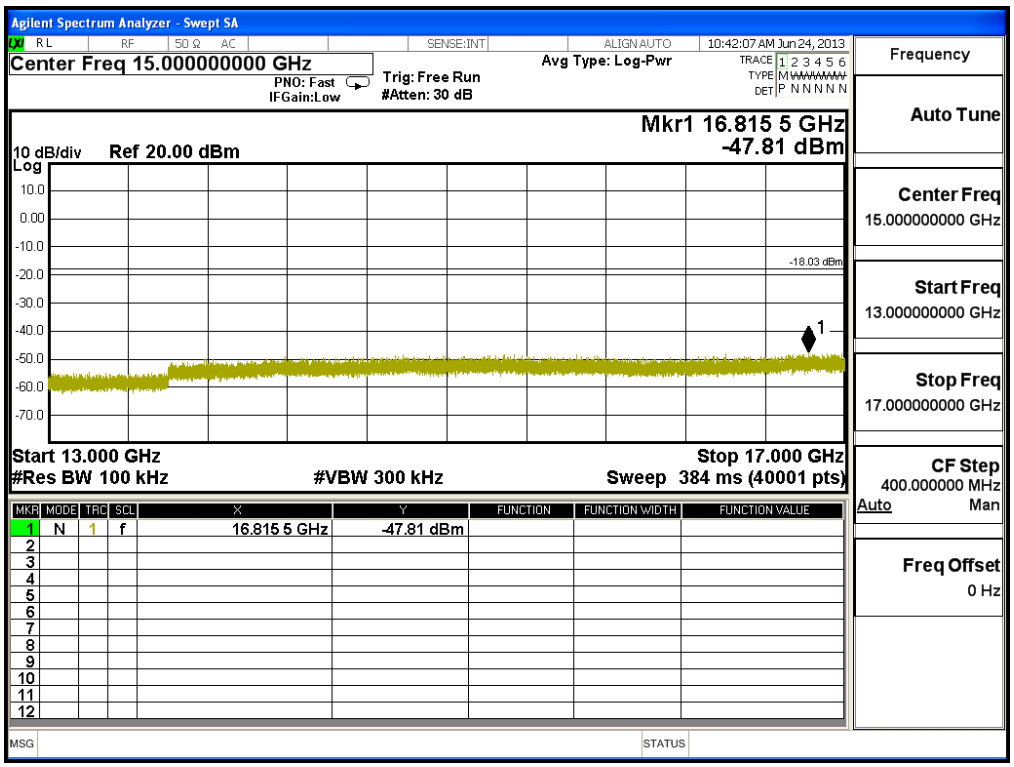
Channel 11 (2462MHz)

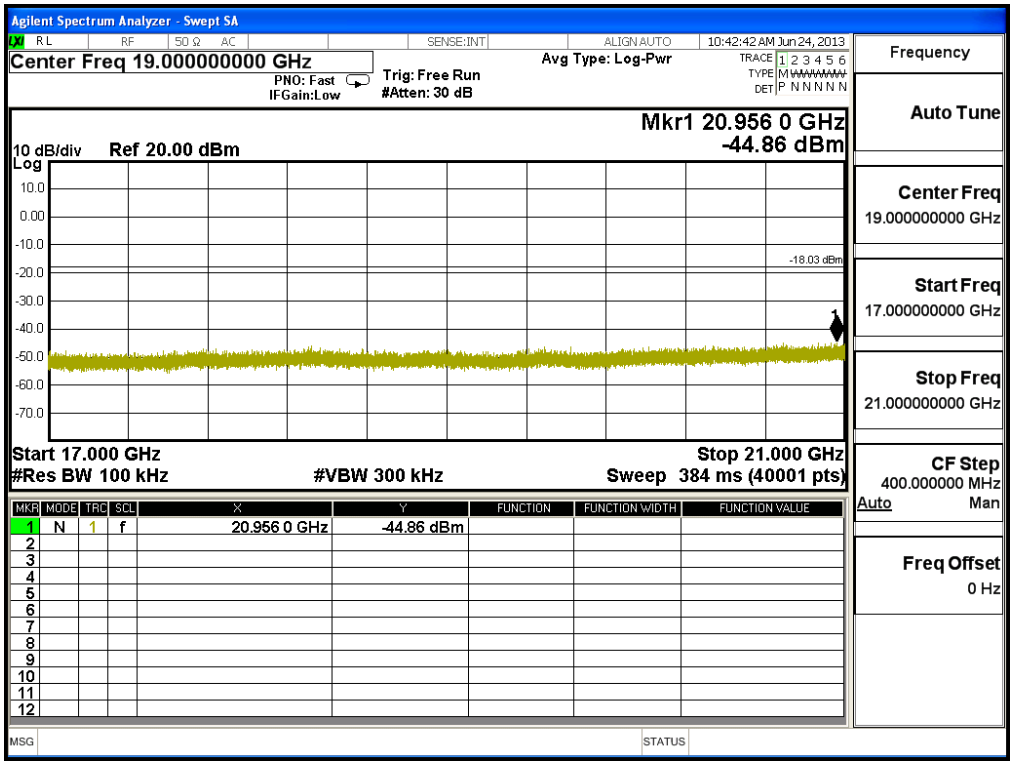


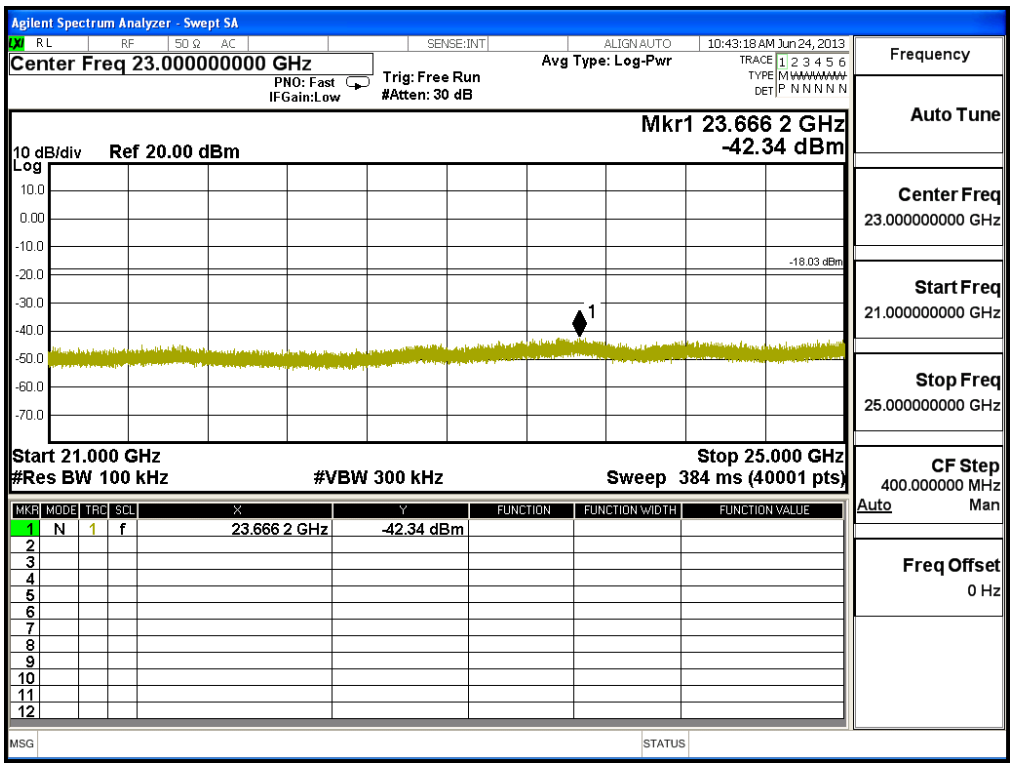



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:40:55 AM Jun 24, 2013
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 5.282 2 GHz
-50.29 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.03 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.282 2 GHz -50.29 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:41:31 AM Jun 24, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 12.006 4 GHz
-52.28 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.03 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 12.006 4 GHz -52.28 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

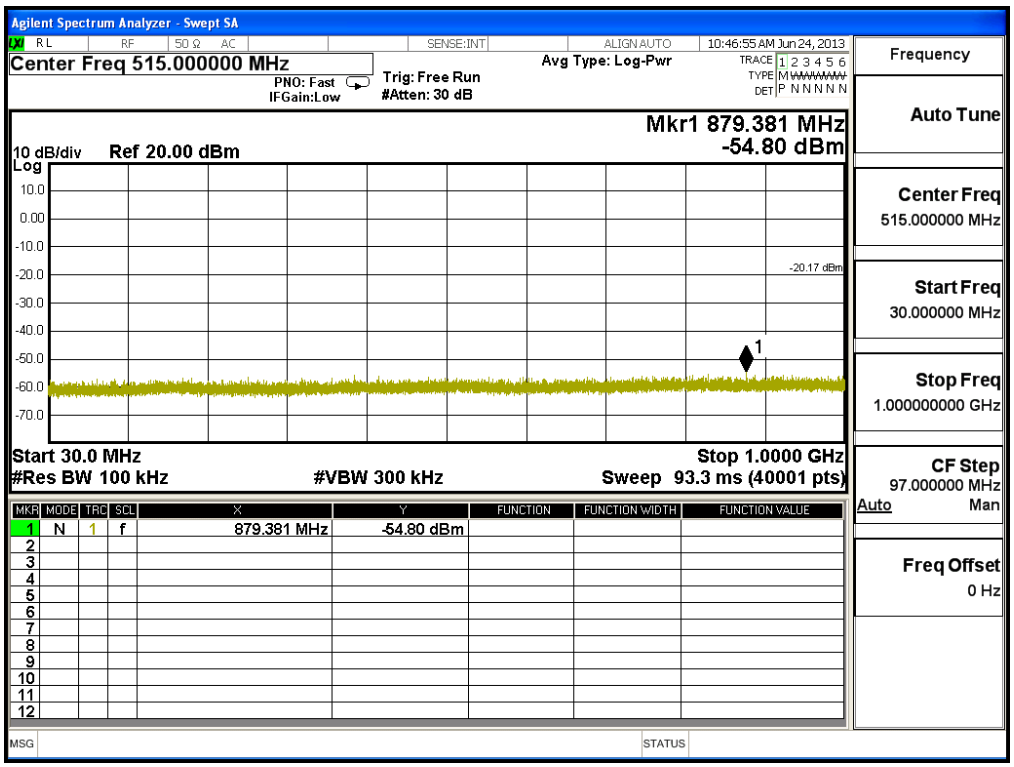

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:42:07 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 16.815 5 GHz
-47.81 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.03 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.815 5 GHz -47.81 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

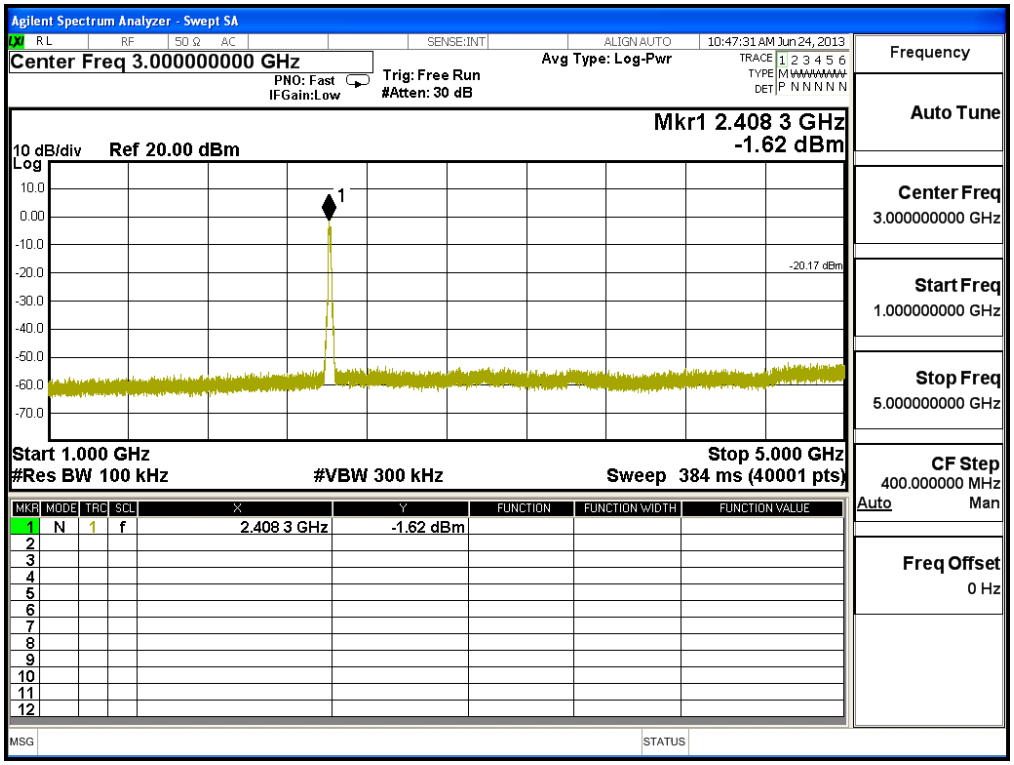

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:42:42 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 20.956 0 GHz
-44.86 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.03 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.956 0 GHz -44.86 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

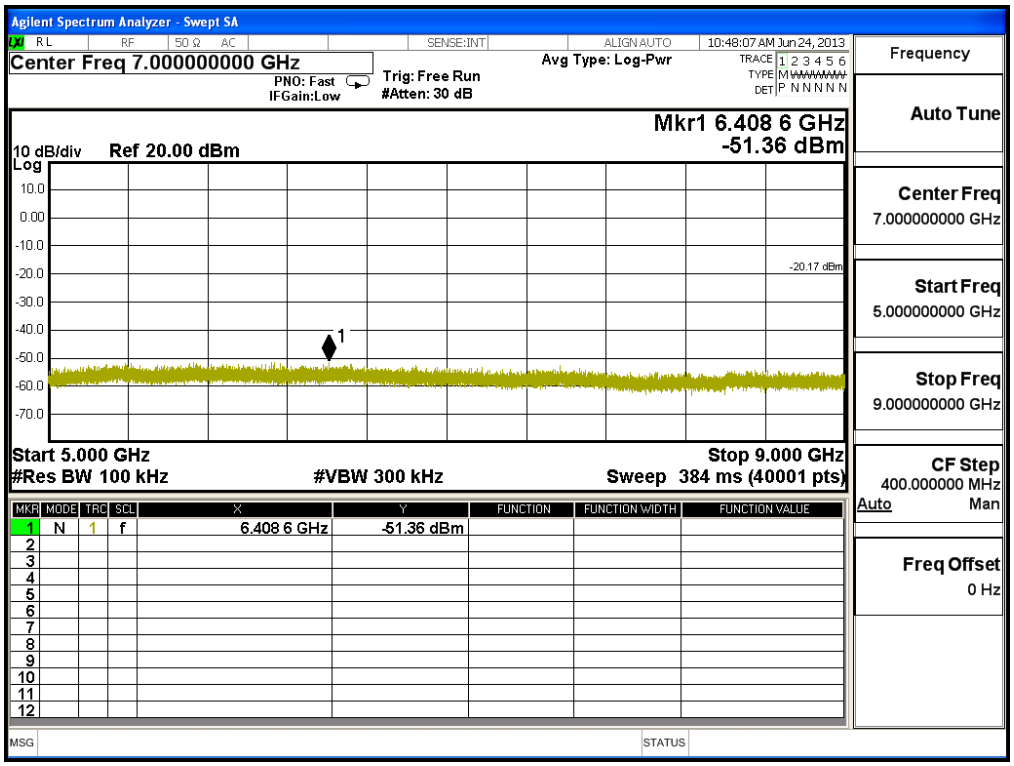

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:43:18 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.666 2 GHz
-42.34 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-18.03 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.666 2 GHz -42.34 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

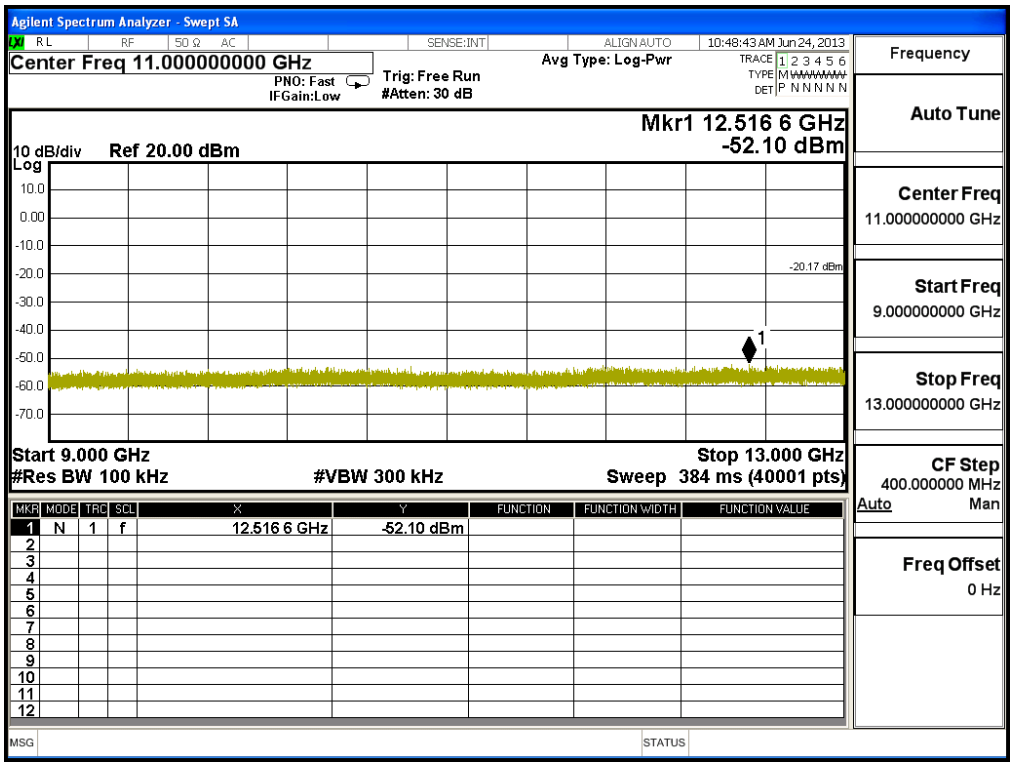
Product : Bar Code Printer
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps)

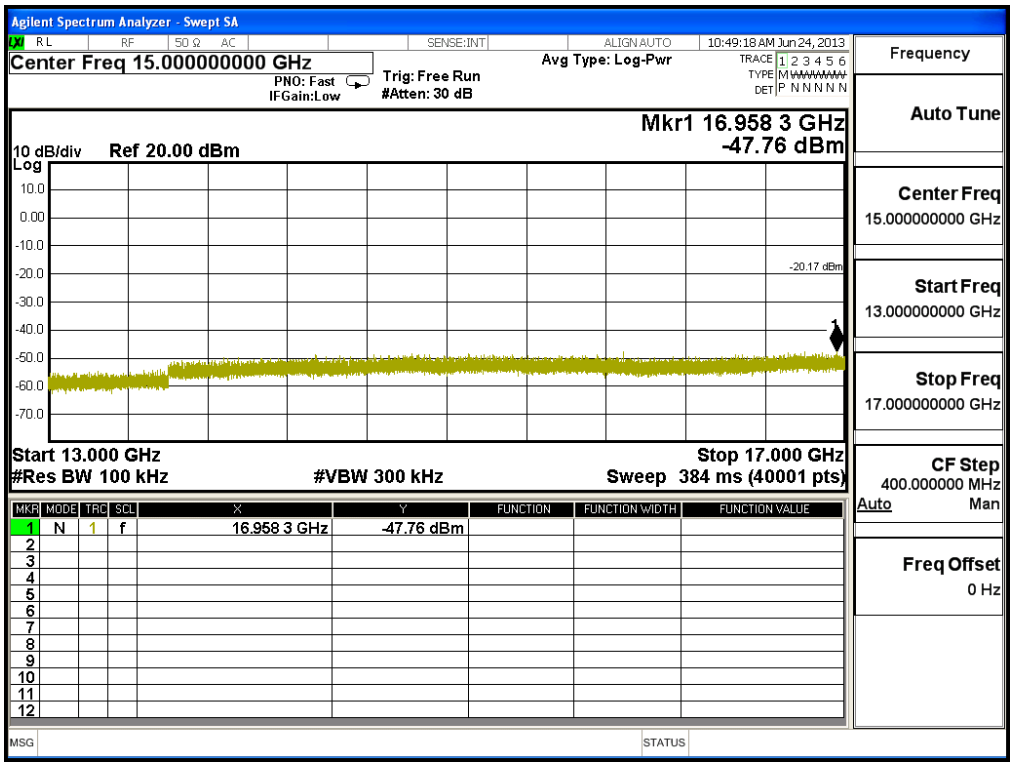
Channel 01 (2412MHz)

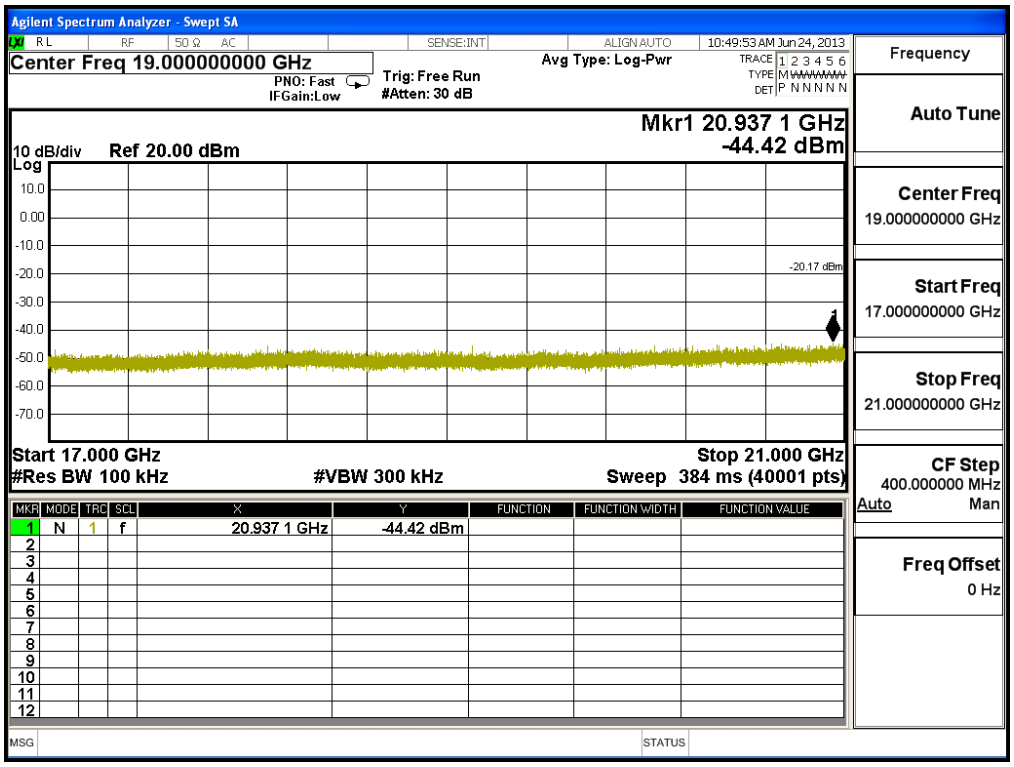


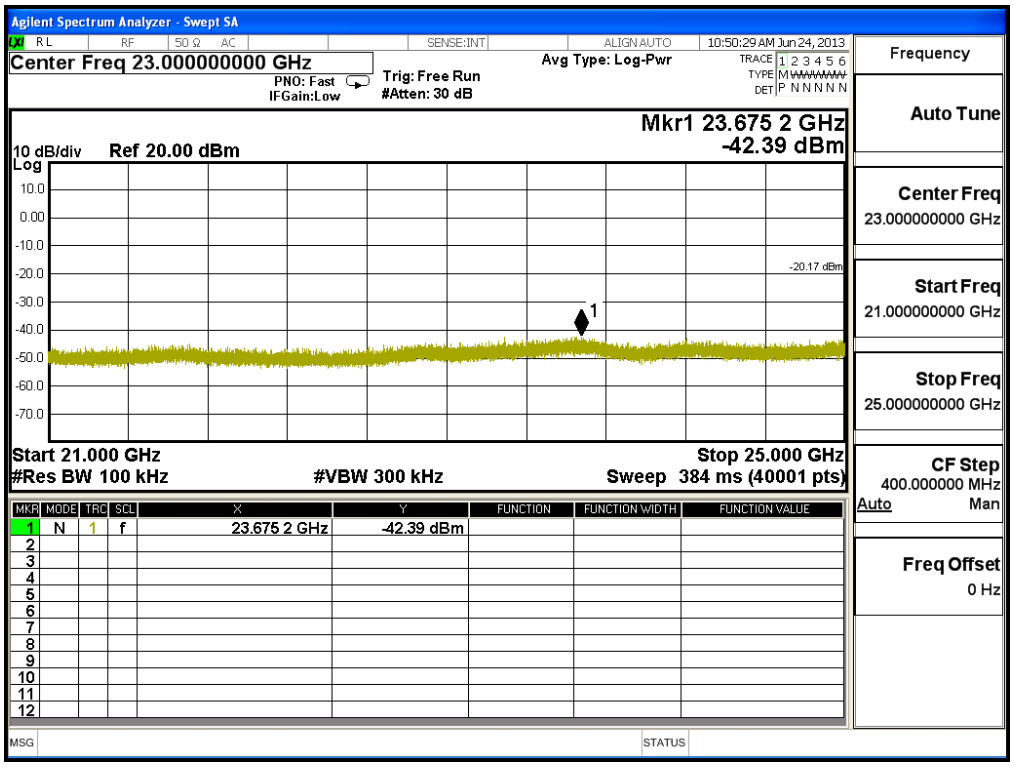

Agilent Spectrum Analyzer - Swept SA
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:47:31 AM Jun 24, 2013
Mkr1 2.408 3 GHz
-1.62 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 2.408 3 GHz -1.62 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:48:07 AM Jun 24, 2013
Mkr1 6.408 6 GHz
-51.36 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.408 6 GHz -51.36 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

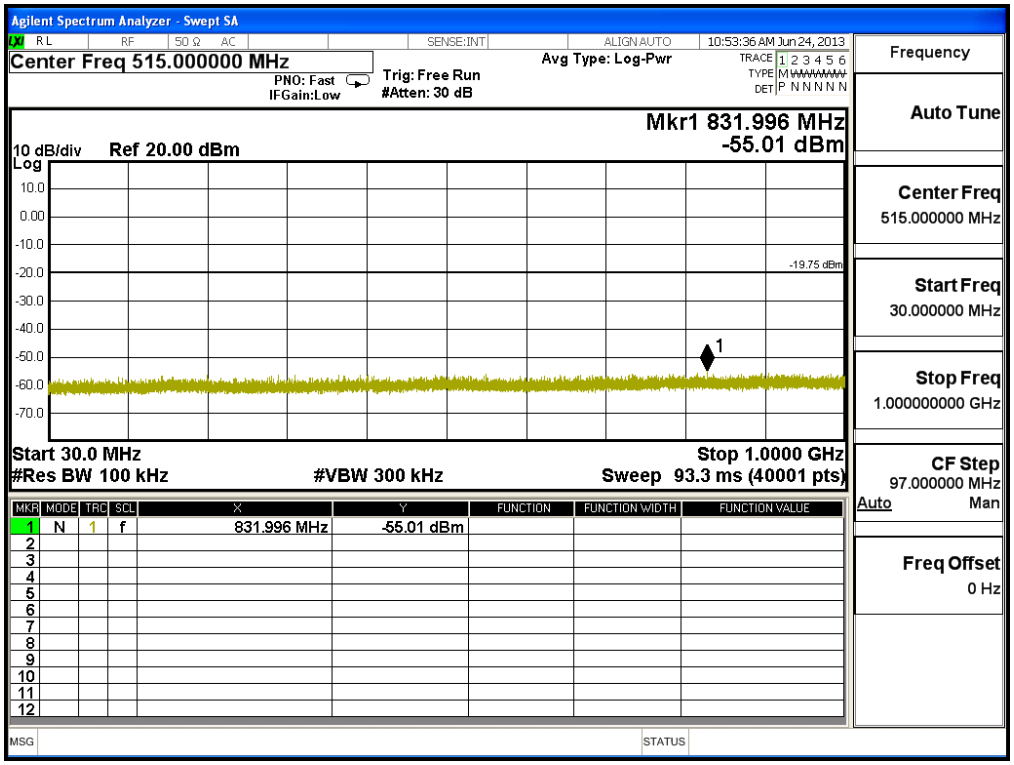

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:48:43 AM Jun 24, 2013
Mkr1 12.516 6 GHz
-52.10 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.516 6 GHz -52.10 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

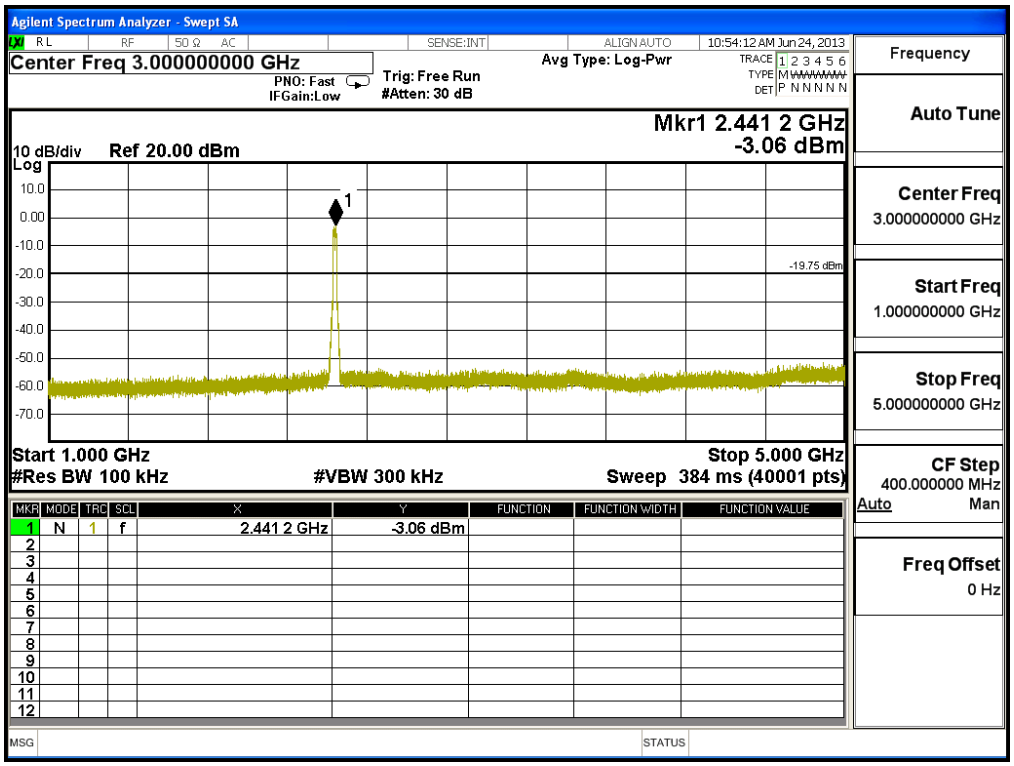

Agilent Spectrum Analyzer - Swept SA
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:49:18 AM Jun 24, 2013
Mkr1 16.958 3 GHz
-47.76 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 16.958 3 GHz -47.76 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

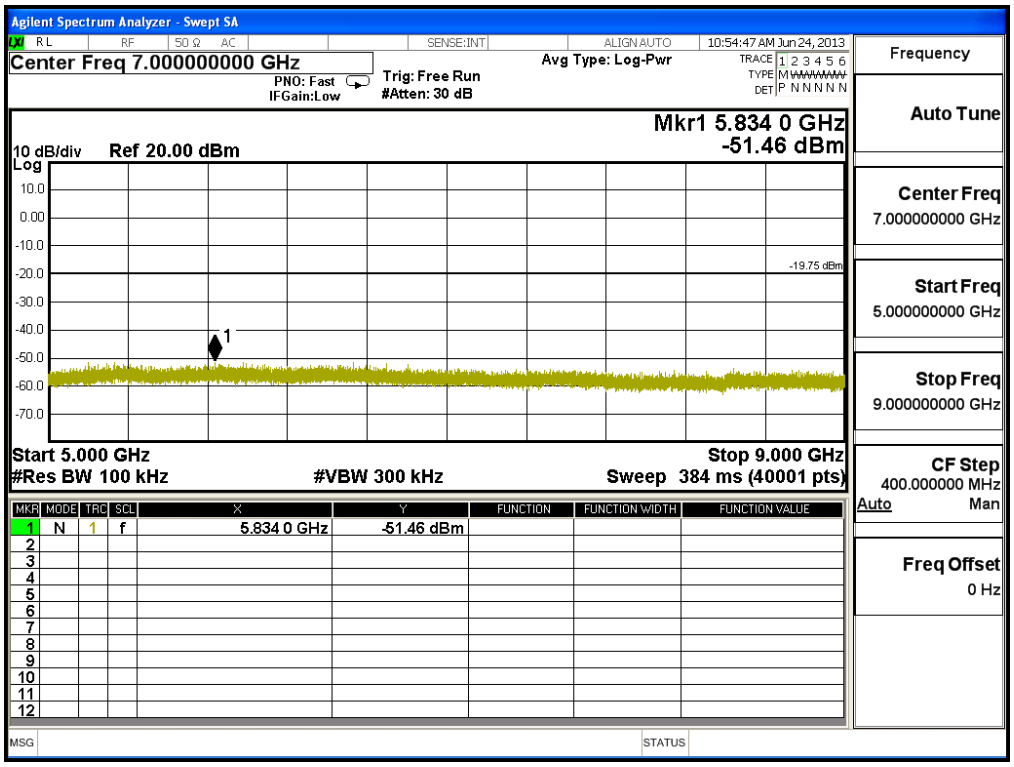

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:49:53 AM Jun 24, 2013
Mkr1 20.937 1 GHz
-44.42 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.937 1 GHz -44.42 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

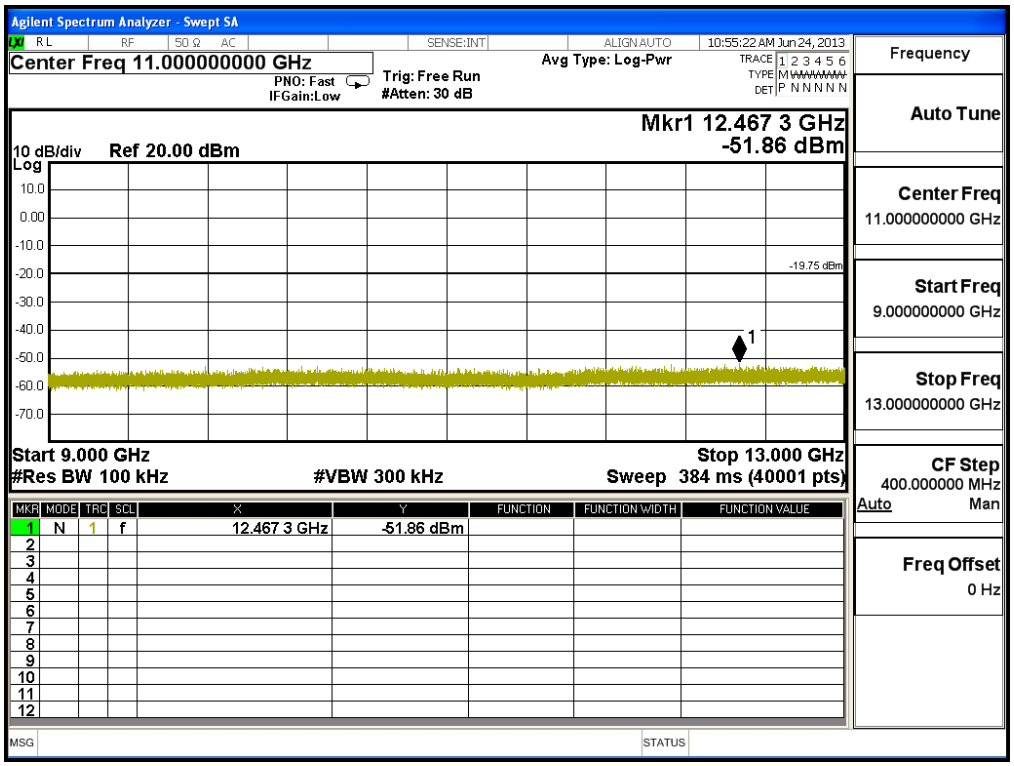

Agilent Spectrum Analyzer - Swept SA
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:50:29 AM Jun 24, 2013
Mkr1 23.675 2 GHz
-42.39 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.17 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 23.675 2 GHz -42.39 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

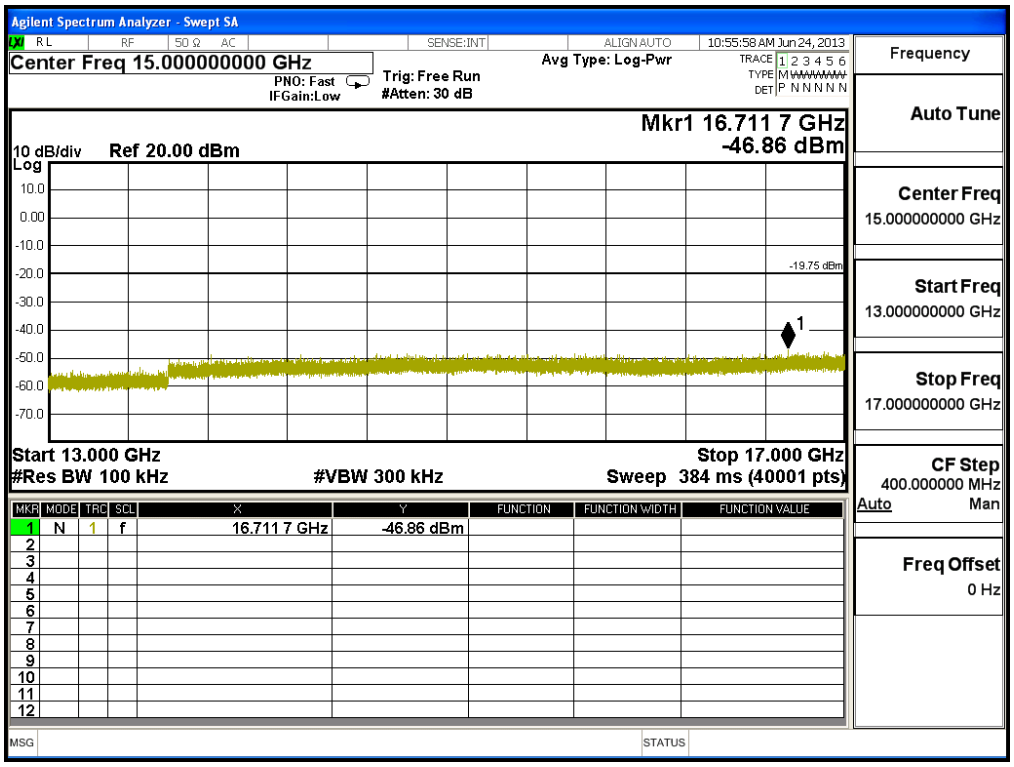
Channel 06 (2437MHz)

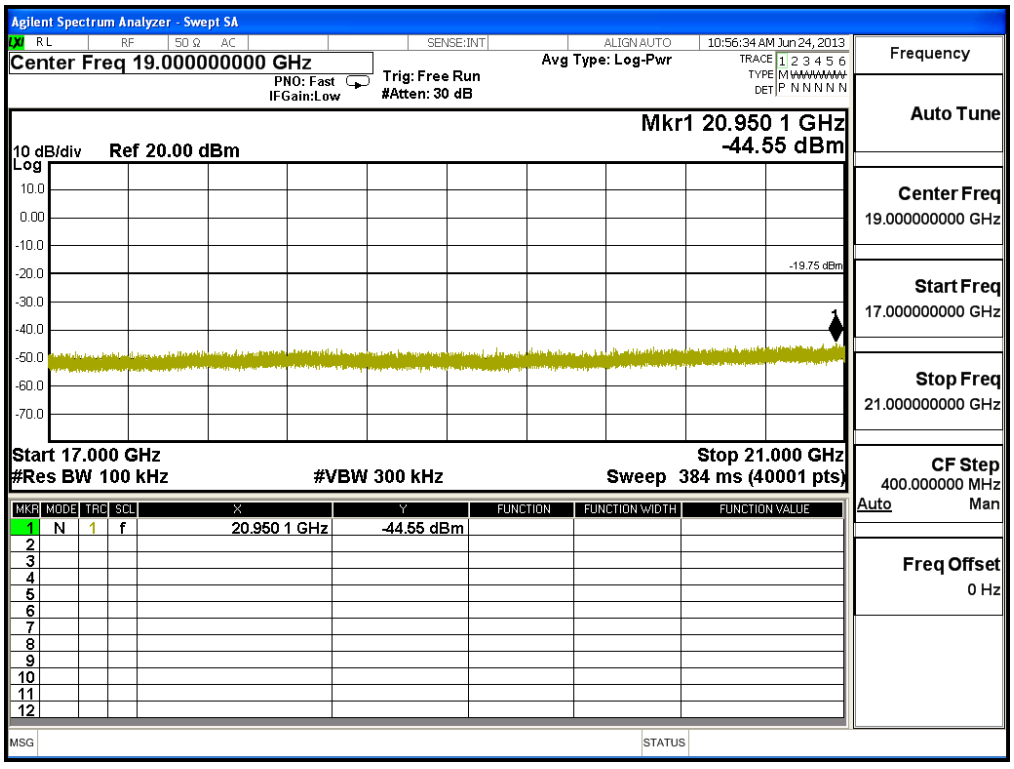


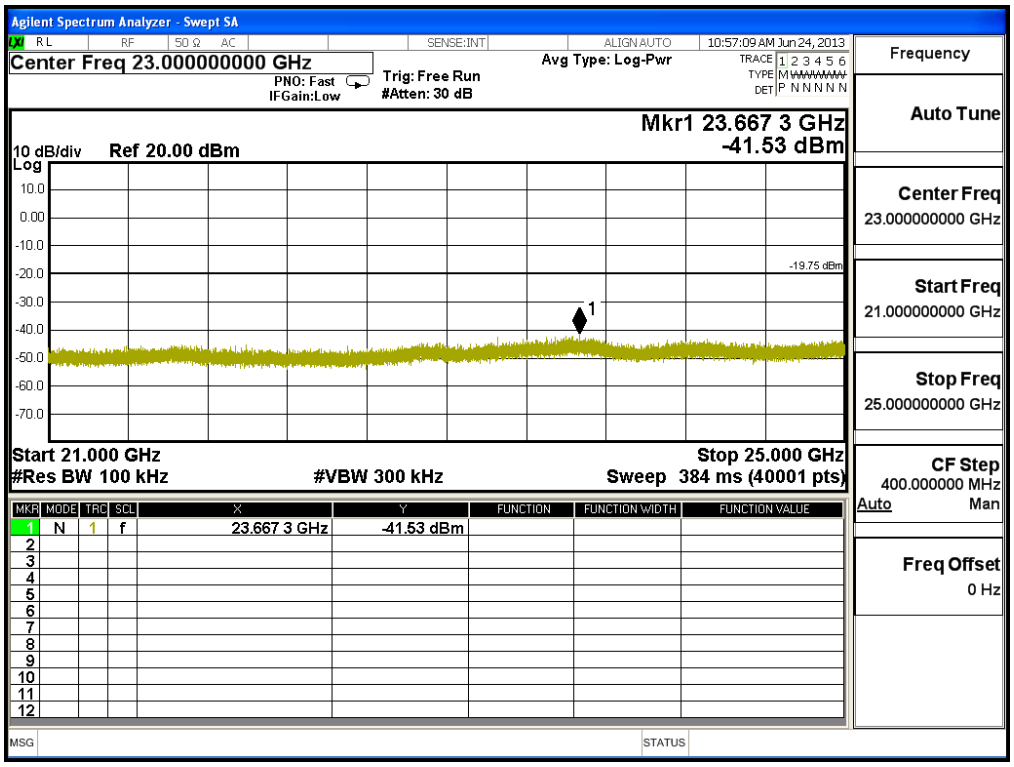



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:54:47 AM Jun 24, 2013
Mkr1 5.834 0 GHz
-51.46 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.75 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 5.834 0 GHz -51.46 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

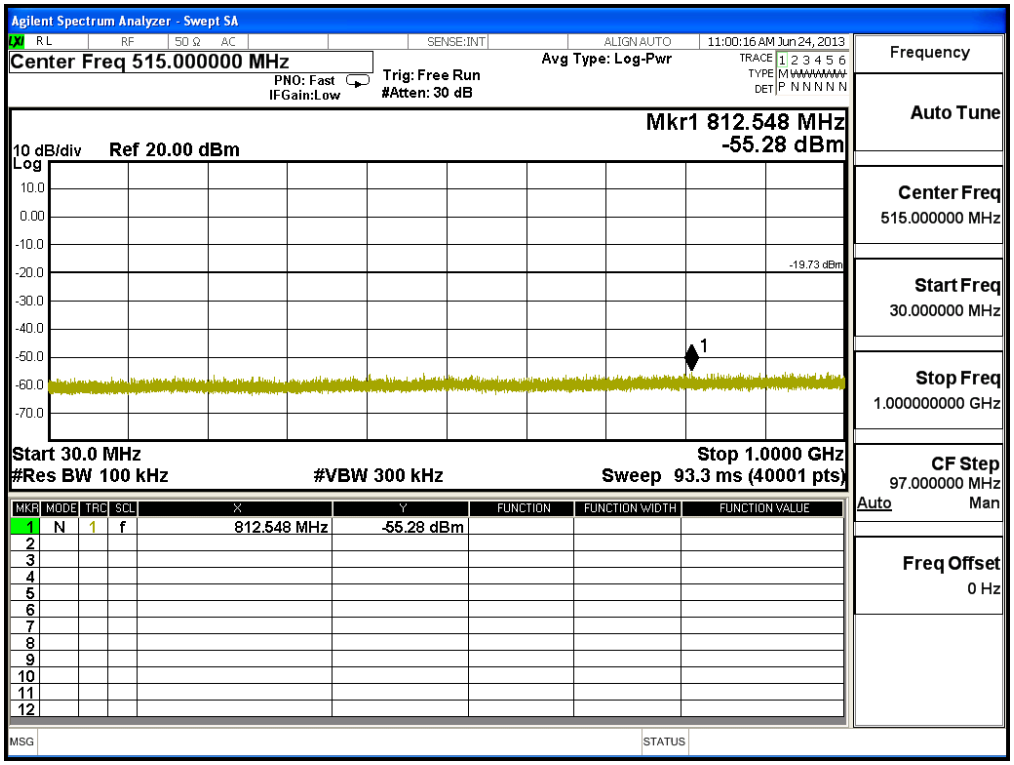

Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
10:55:22 AM Jun 24, 2013
Mkr1 12.467 3 GHz
-51.86 dBm
10 dB/div
Log
Ref 20.00 dBm
-19.75 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.467 3 GHz -51.86 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

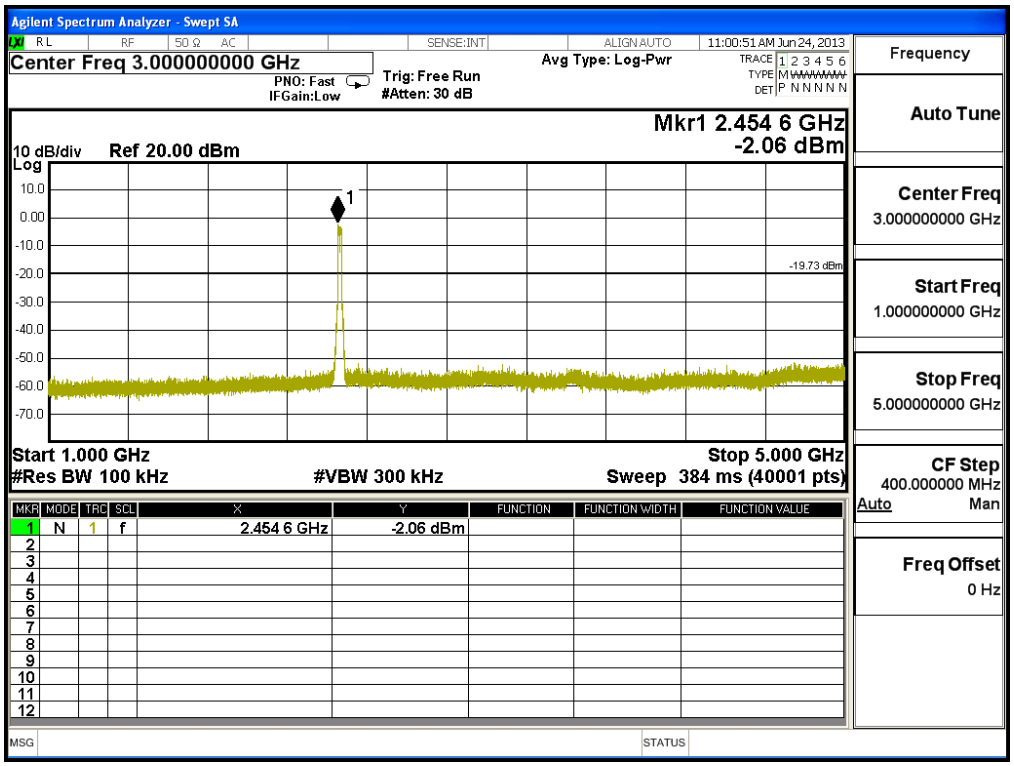

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:55:58 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 16.711 7 GHz
-46.86 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.75 dBm
1
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.711 7 GHz -46.86 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

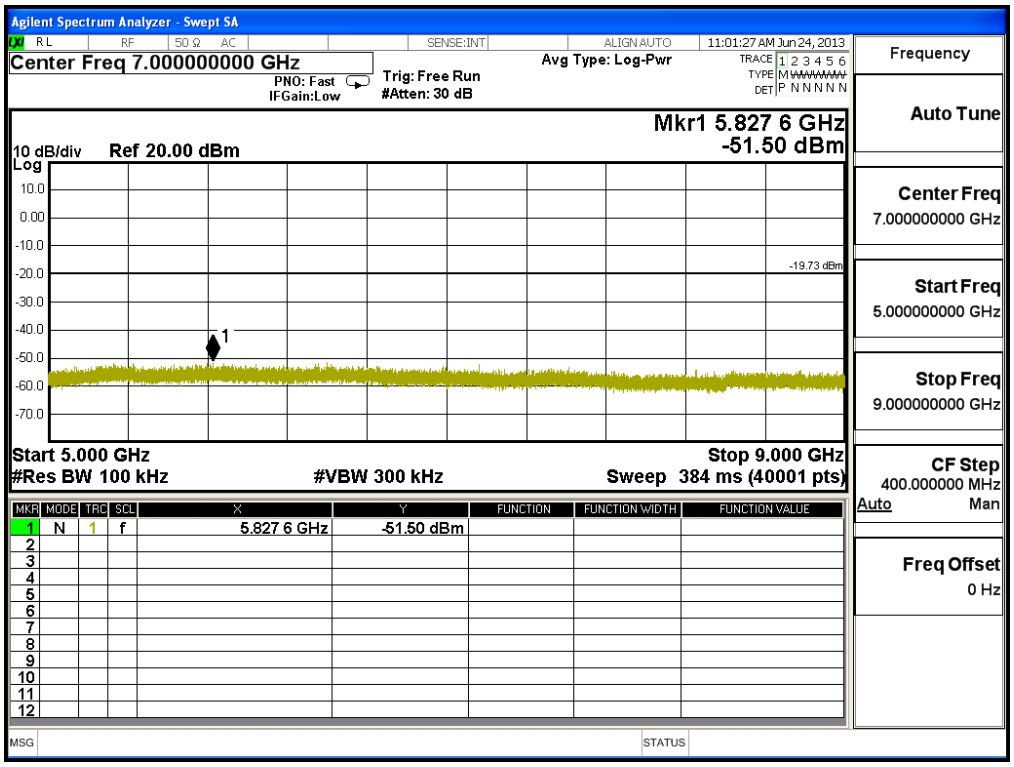

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
10:56:34 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 20.950 1 GHz
-44.55 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.75 dBm
1
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.950 1 GHz -44.55 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

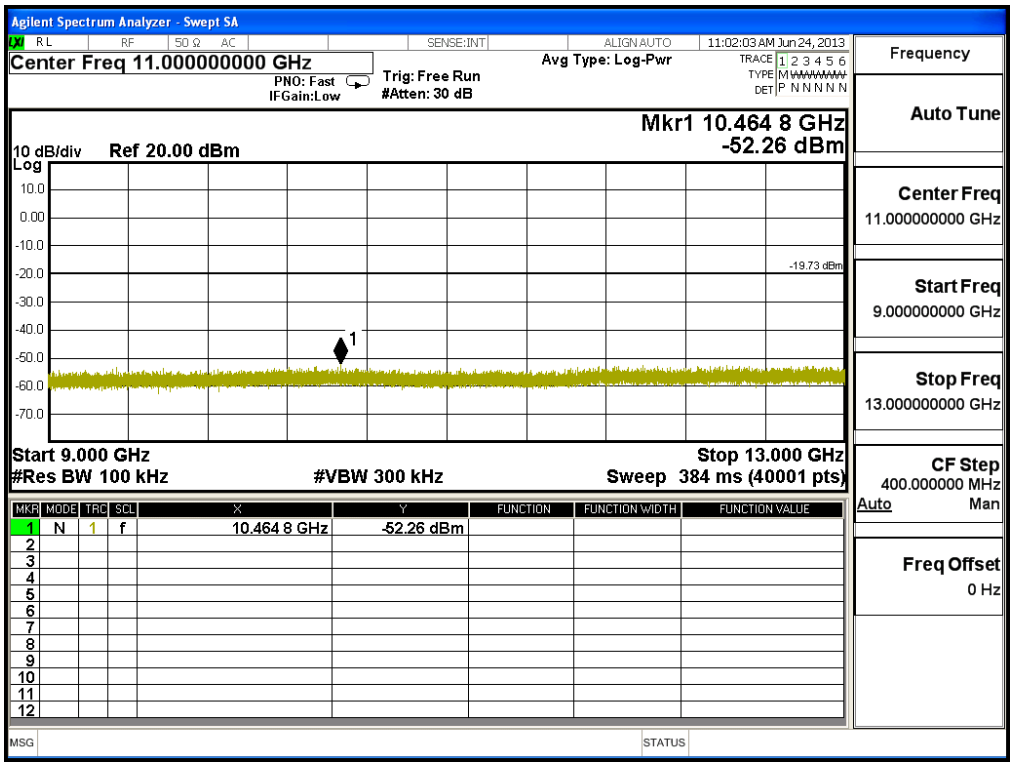

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
10:57:09 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.667 3 GHz
-41.53 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.75 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.667 3 GHz -41.53 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

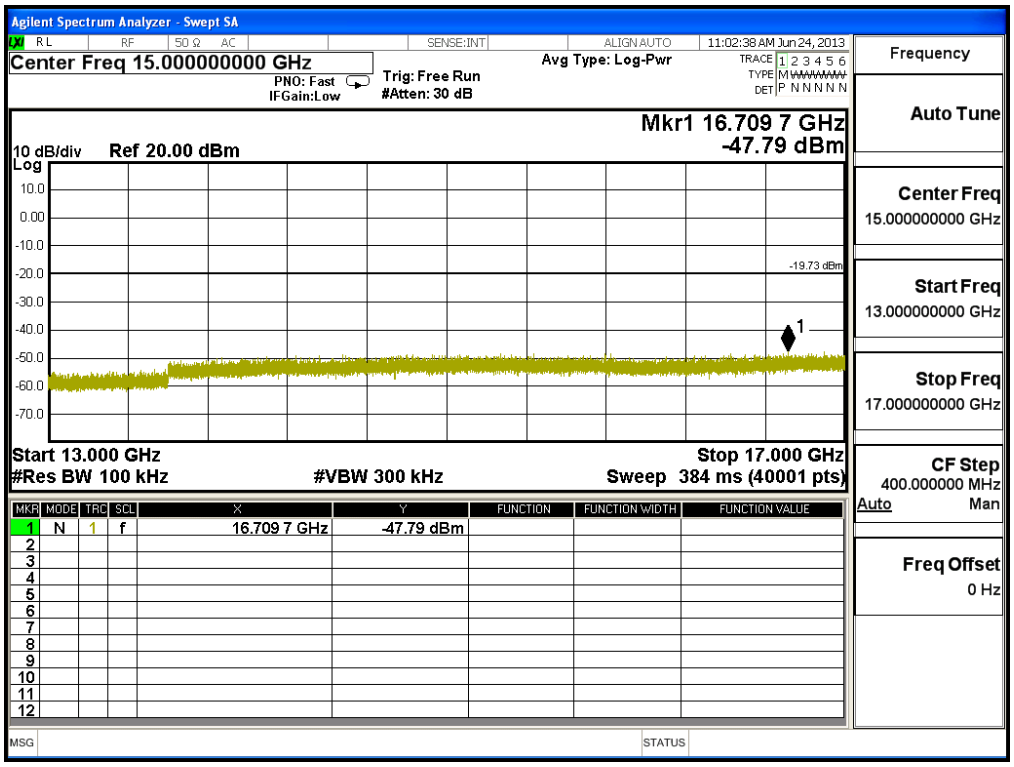
Channel 11 (2462MHz)

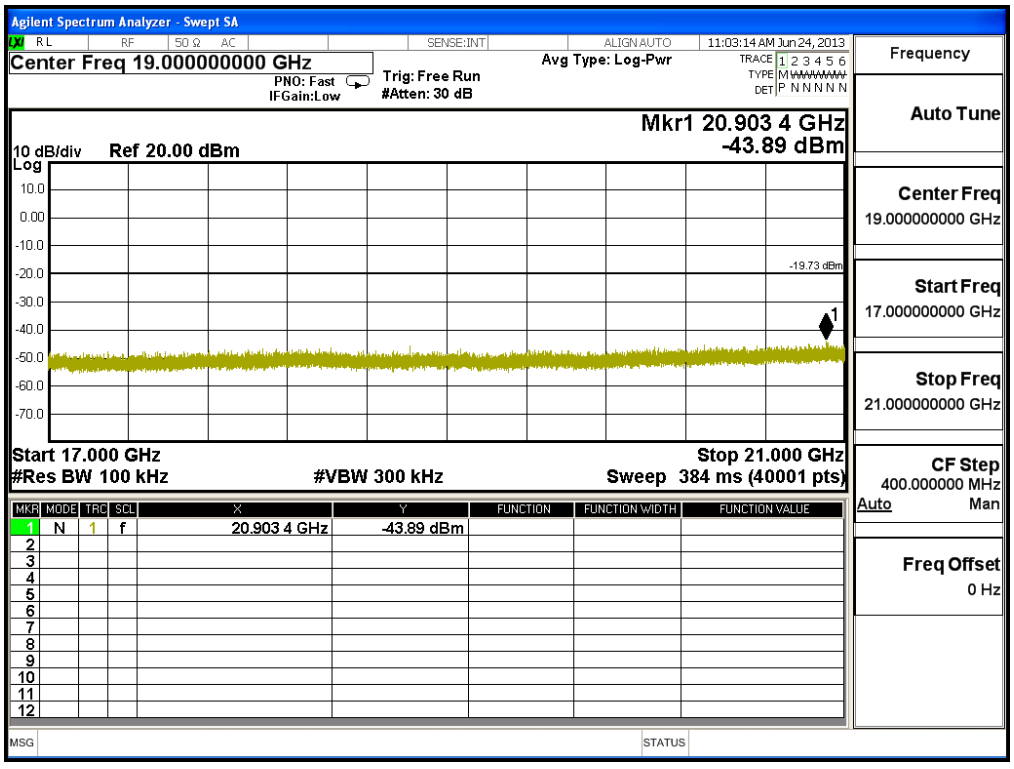


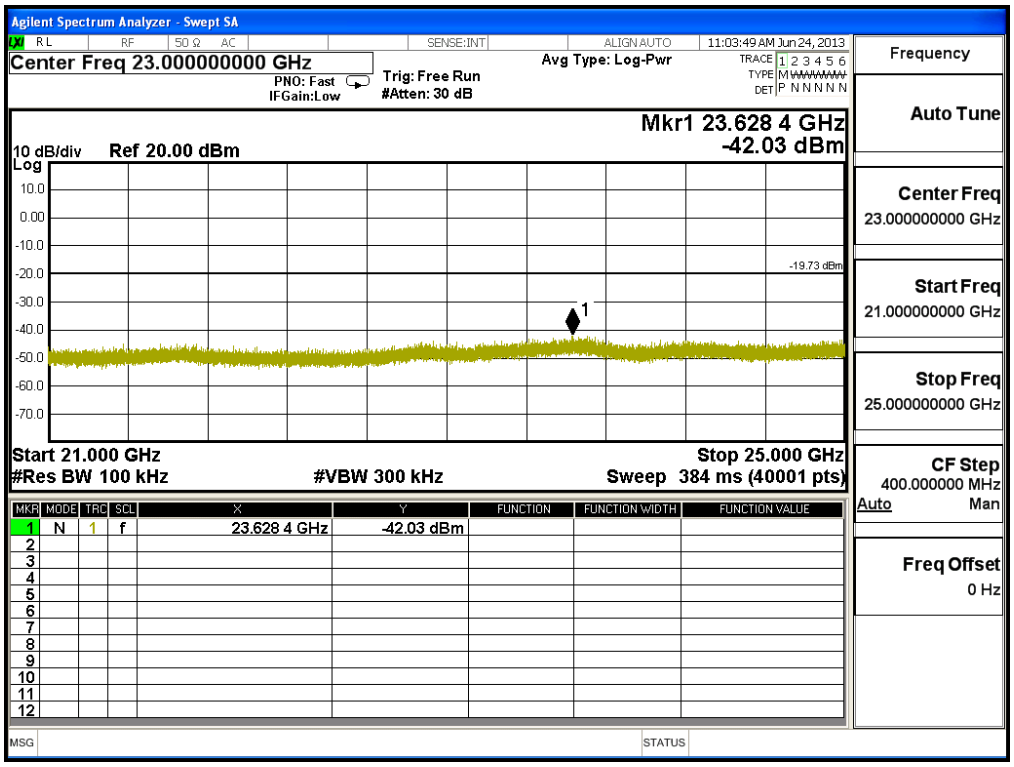



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:01:27 AM Jun 24, 2013
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 5.827 6 GHz
-51.50 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.73 dBm
1
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.827 6 GHz -51.50 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:02:03 AM Jun 24, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 10.464 8 GHz
-52.26 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.73 dBm
1
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 10.464 8 GHz -52.26 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

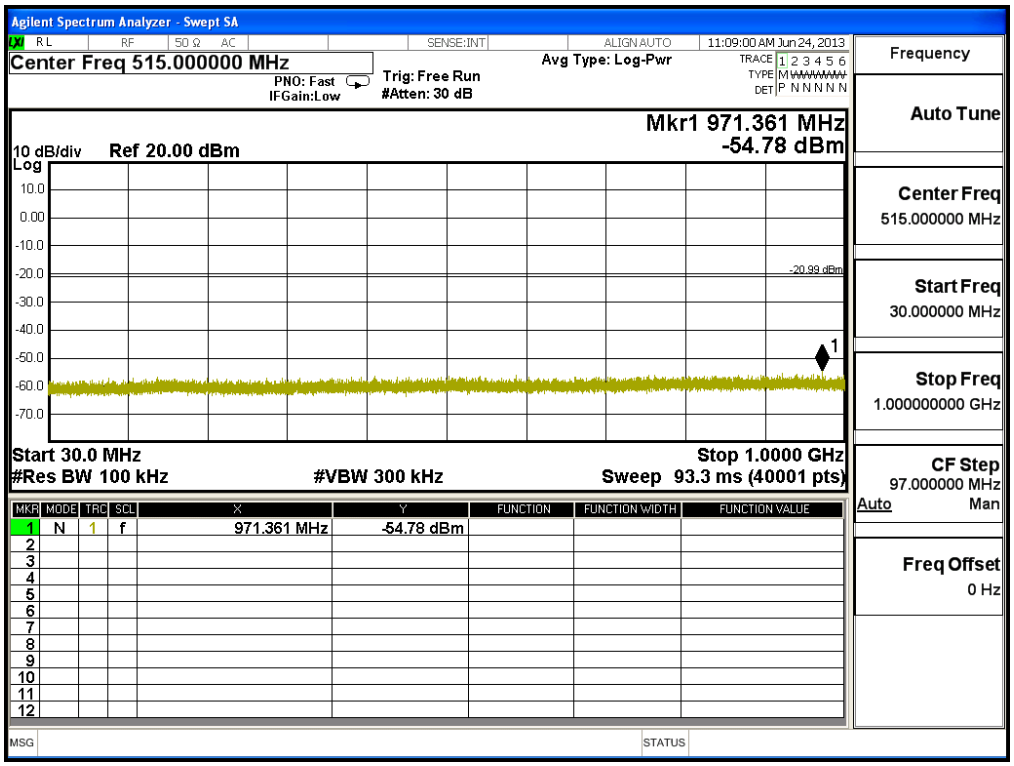

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:02:38 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 16.709 7 GHz
-47.79 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.73 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.709 7 GHz -47.79 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

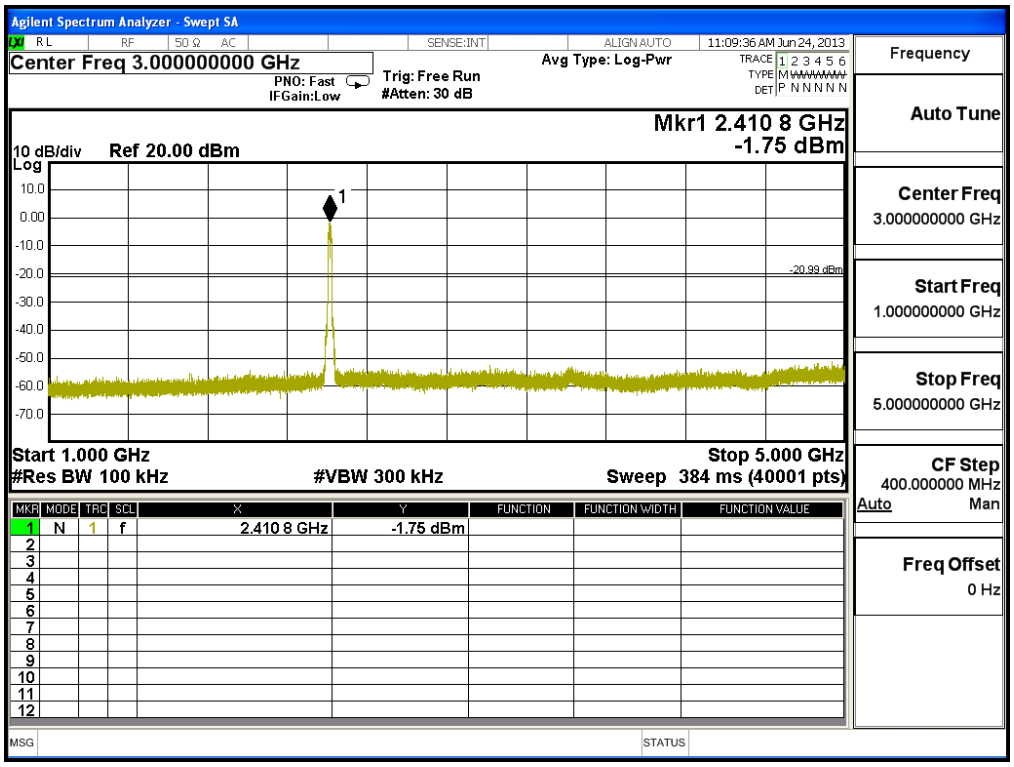

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:03:14 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 20.903 4 GHz
-43.89 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.73 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.903 4 GHz -43.89 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

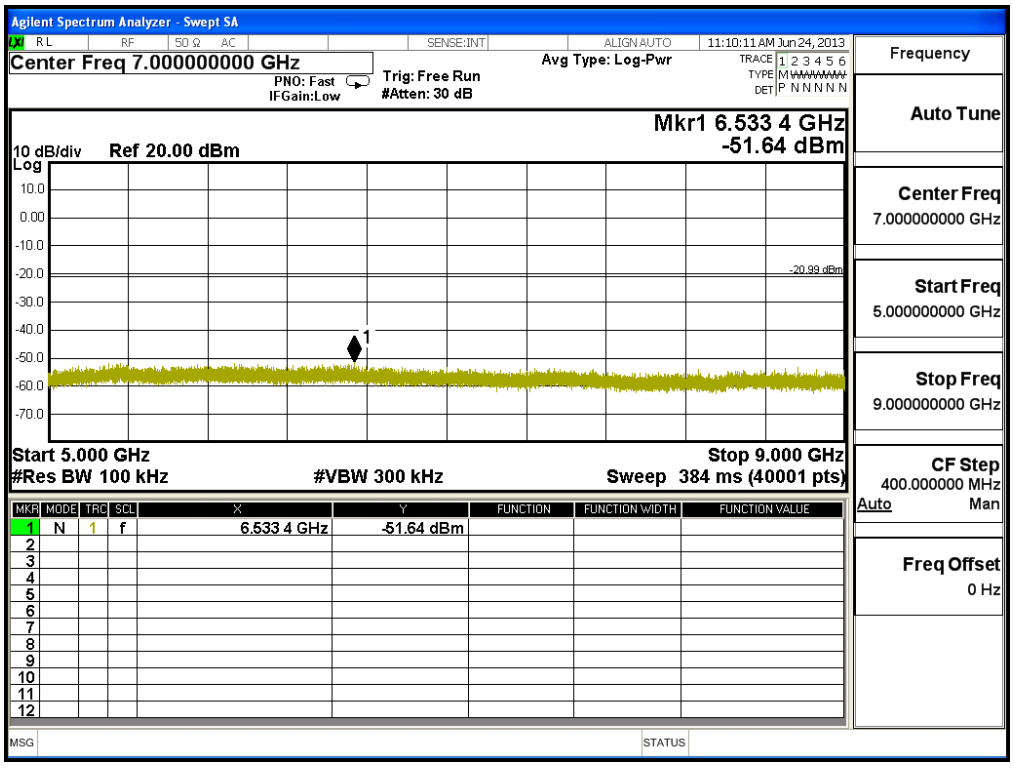

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:03:49 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.628 4 GHz
-42.03 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-19.73 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.628 4 GHz -42.03 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

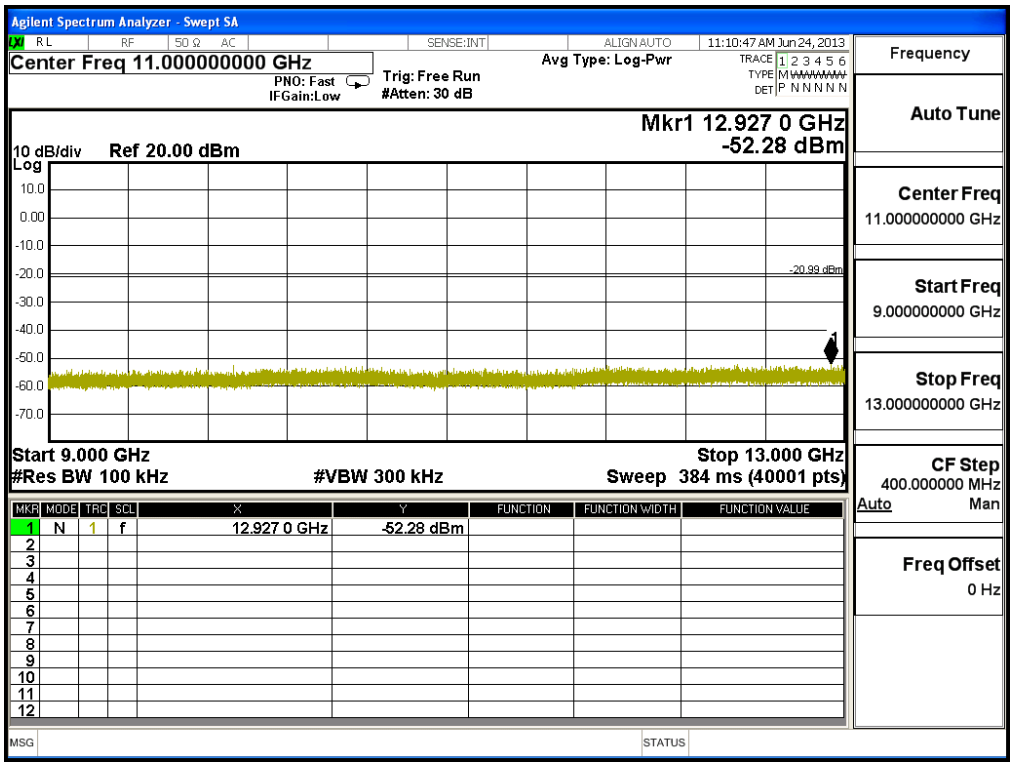
Product : Bar Code Printer
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)

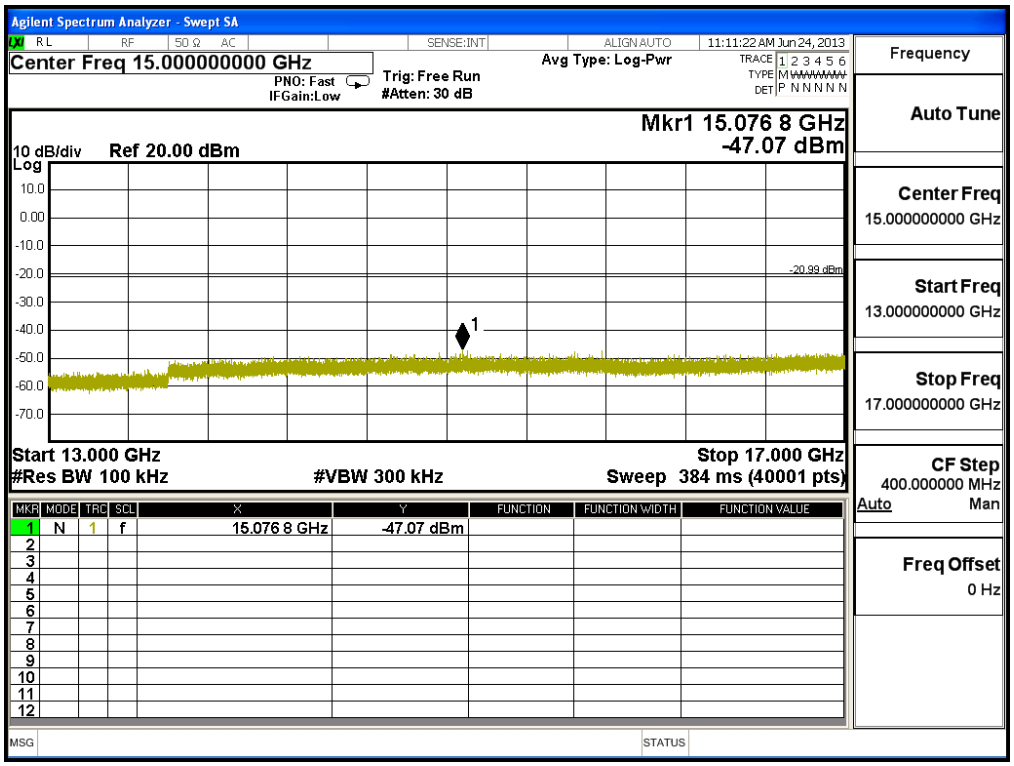
Channel 01 (2412MHz)

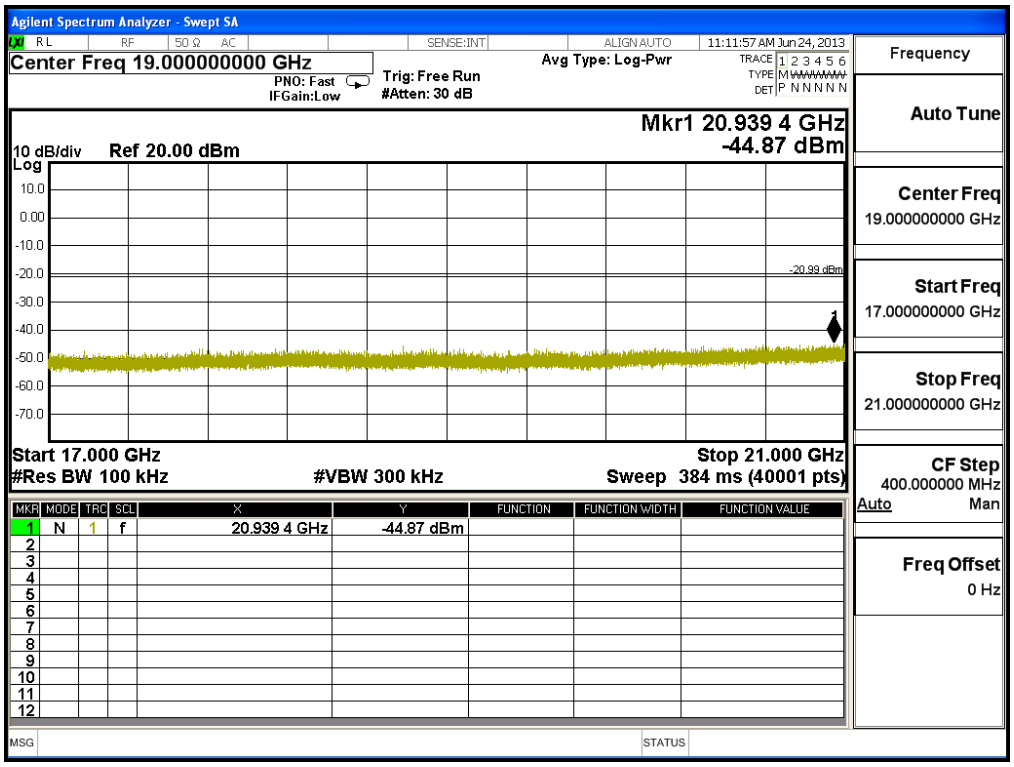


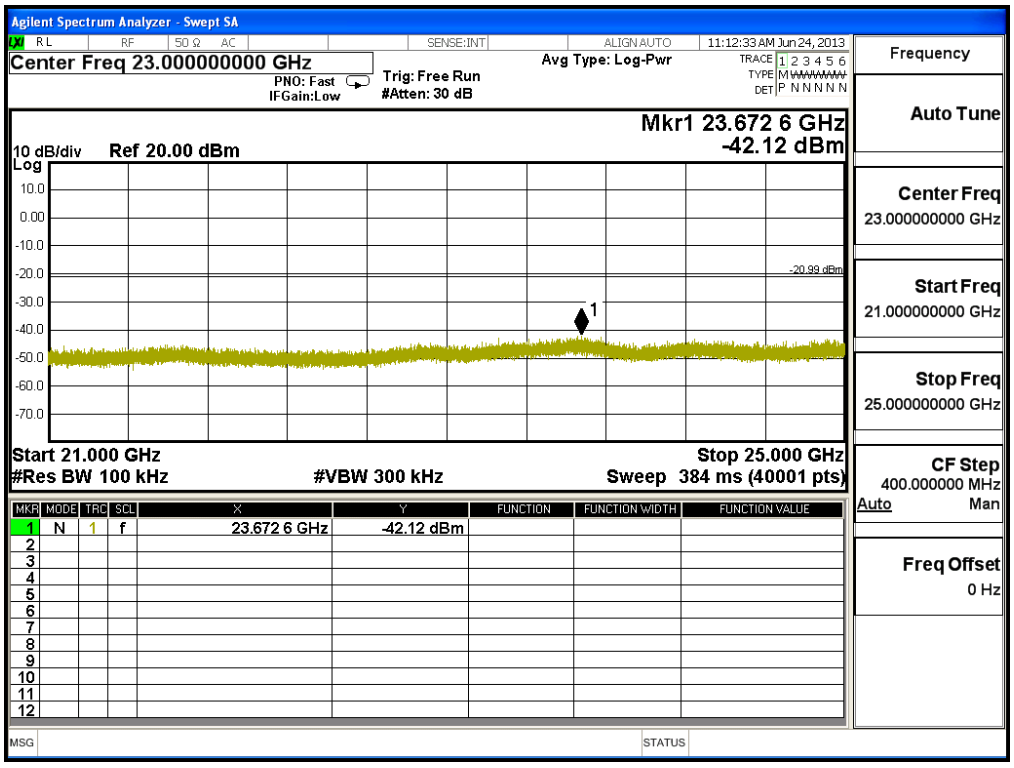

Agilent Spectrum Analyzer - Swept SA
Center Freq 3.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:09:36 AM Jun 24, 2013
Mkr1 2.410 8 GHz
-1.75 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.99 dBm
Start 1.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 5.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 2.410 8 GHz -1.75 dBm
Frequency
Auto Tune
Center Freq
3.000000000 GHz
Start Freq
1.000000000 GHz
Stop Freq
5.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:10:11 AM Jun 24, 2013
Mkr1 6.533 4 GHz
-51.64 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.99 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.533 4 GHz -51.64 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

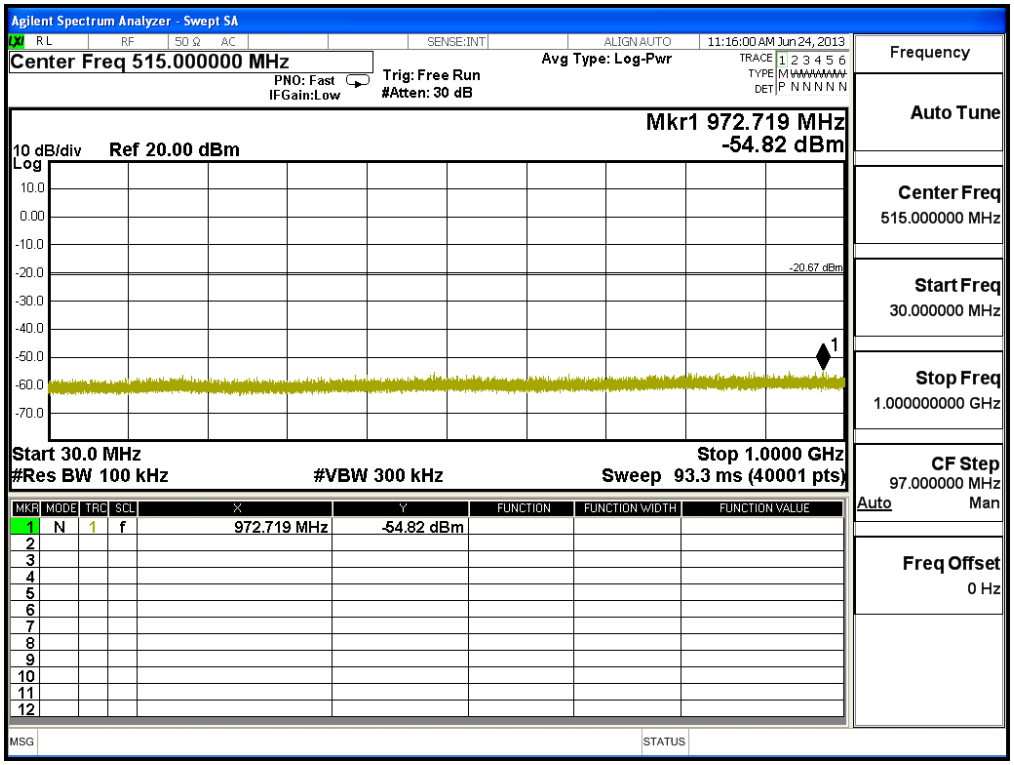

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:10:47 AM Jun 24, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 12.927 0 GHz
-52.28 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.99 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 12.927 0 GHz -52.28 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

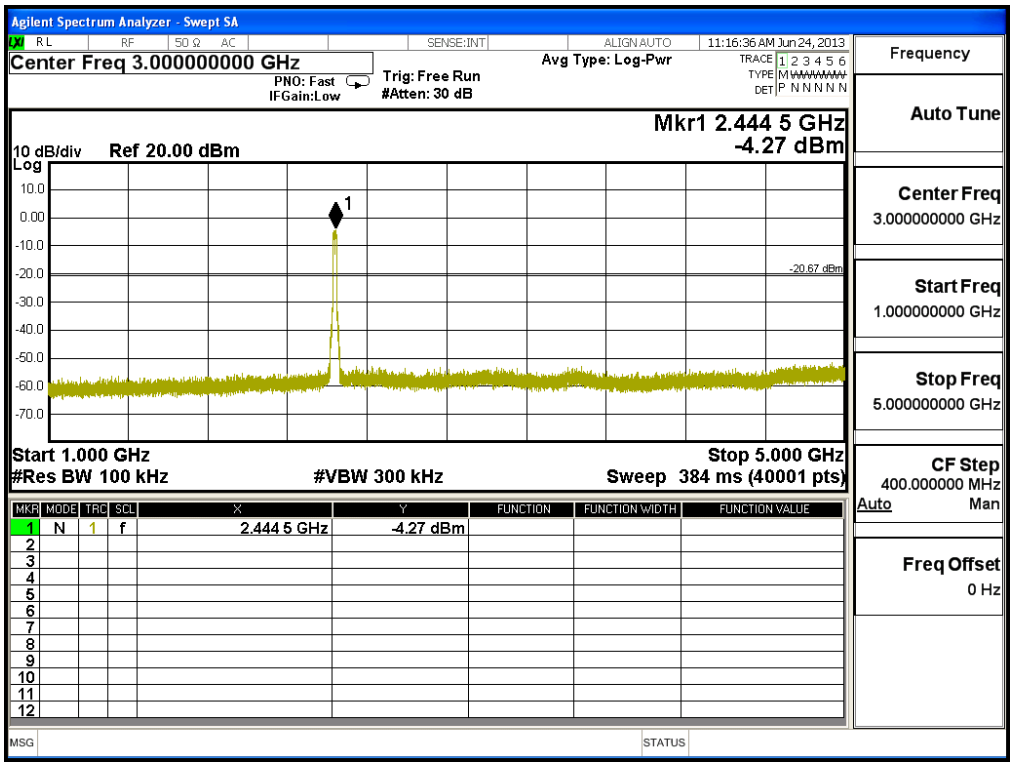

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:11:22 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 15.076 8 GHz
-47.07 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.99 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 15.076 8 GHz -47.07 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

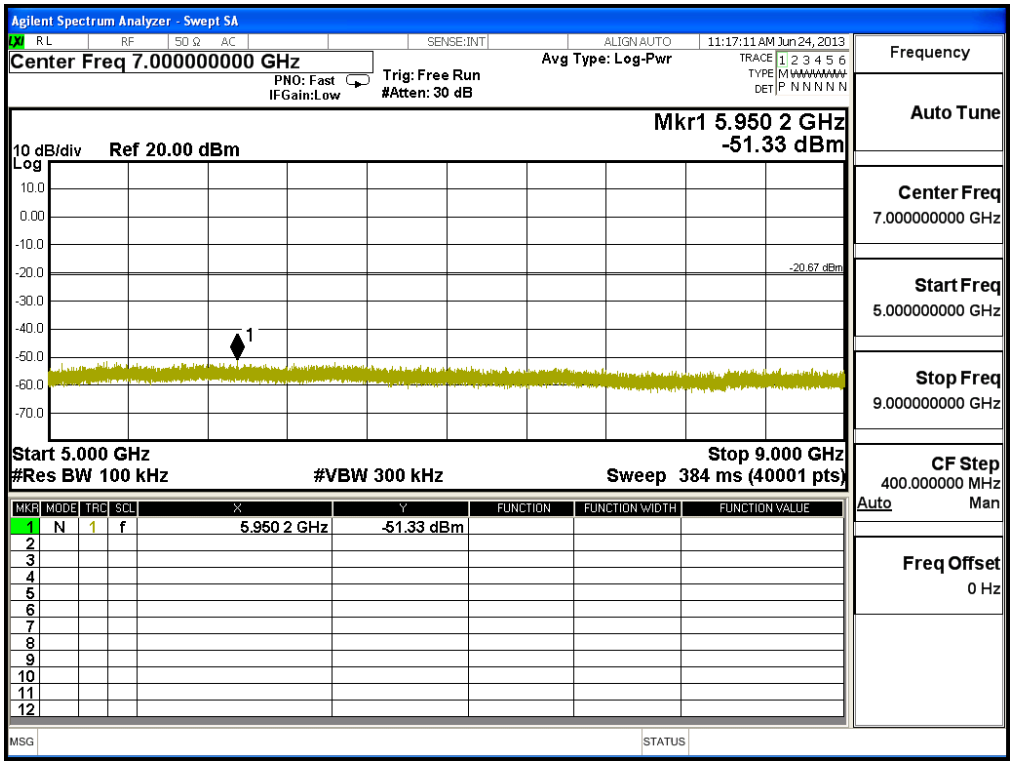

Agilent Spectrum Analyzer - Swept SA
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:11:57 AM Jun 24, 2013
Mkr1 20.939 4 GHz
-44.87 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.99 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 20.939 4 GHz -44.87 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

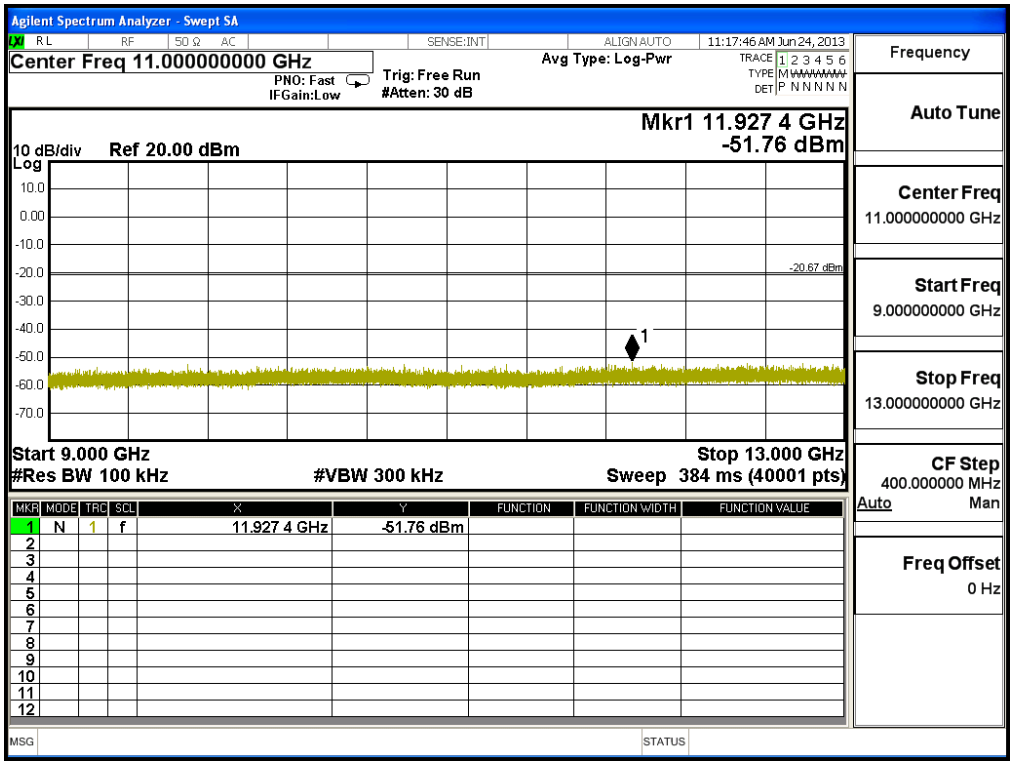

Agilent Spectrum Analyzer - Swept SA
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:12:33 AM Jun 24, 2013
Mkr1 23.672 6 GHz
-42.12 dBm
10 dB/div
Log
Ref 20.00 dBm
-20.99 dBm
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 23.672 6 GHz -42.12 dBm
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

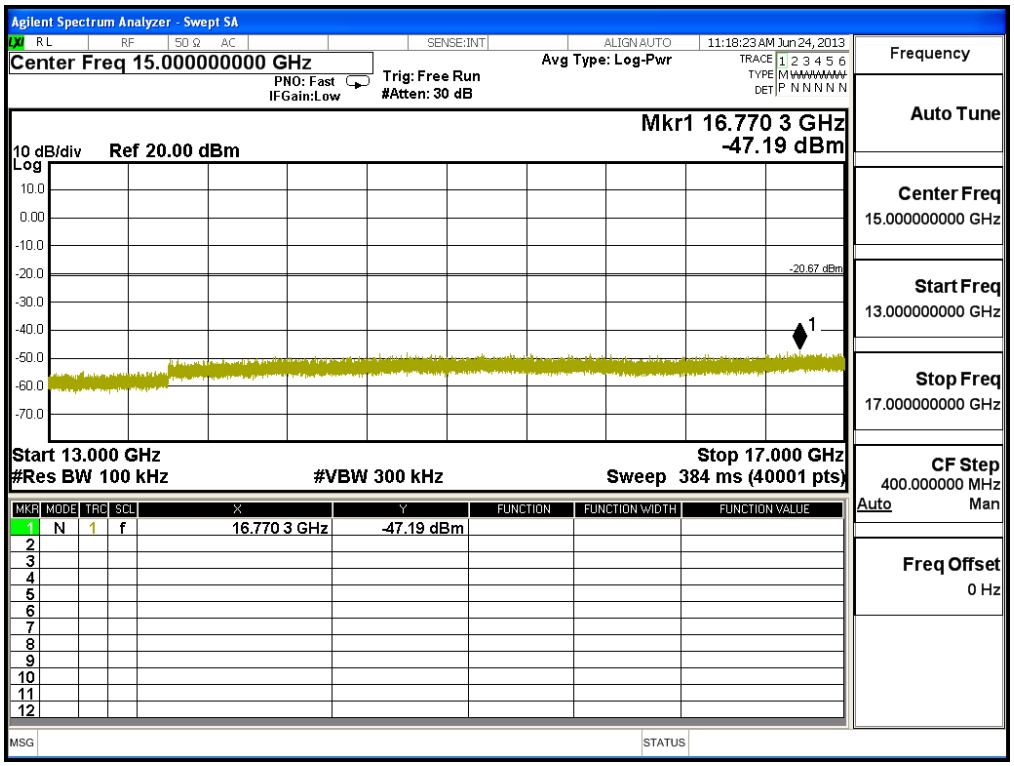
Channel 06 (2437MHz)

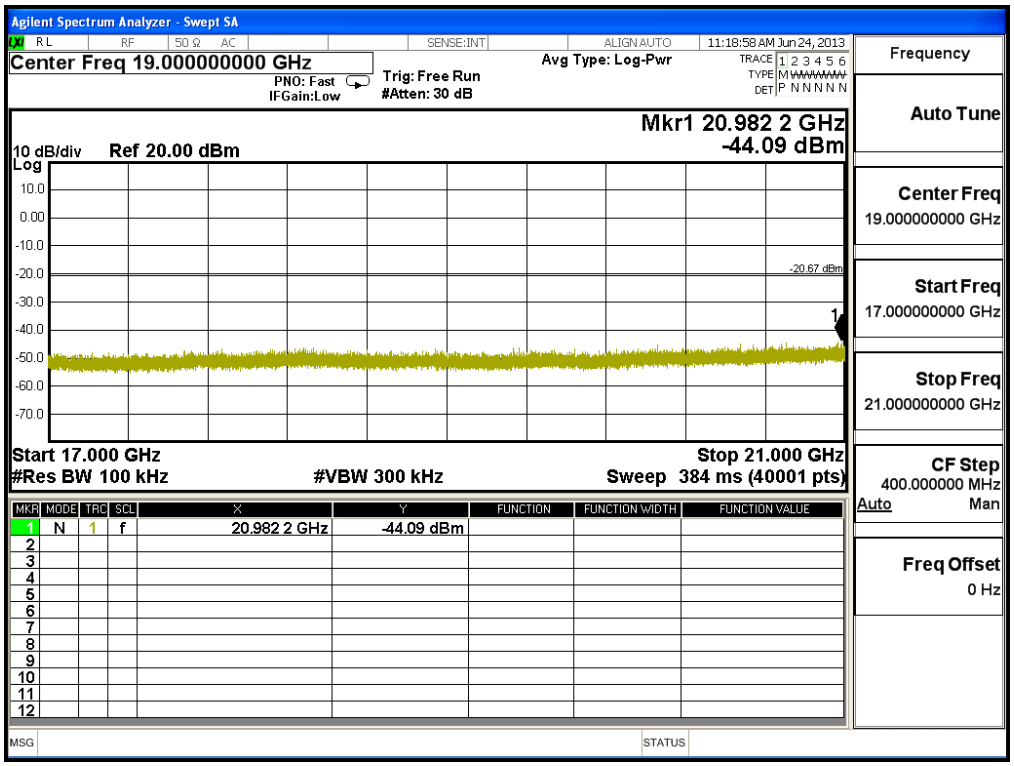


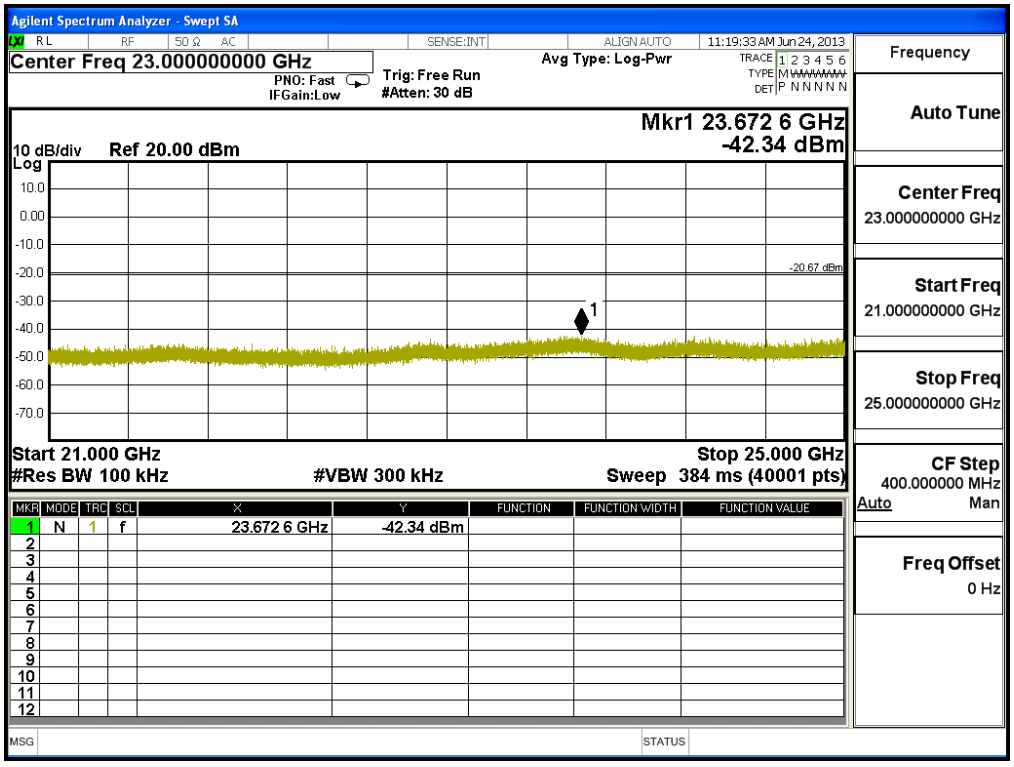



Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:17:11 AM Jun 24, 2013
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 5.950 2 GHz
-51.33 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 5.950 2 GHz -51.33 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

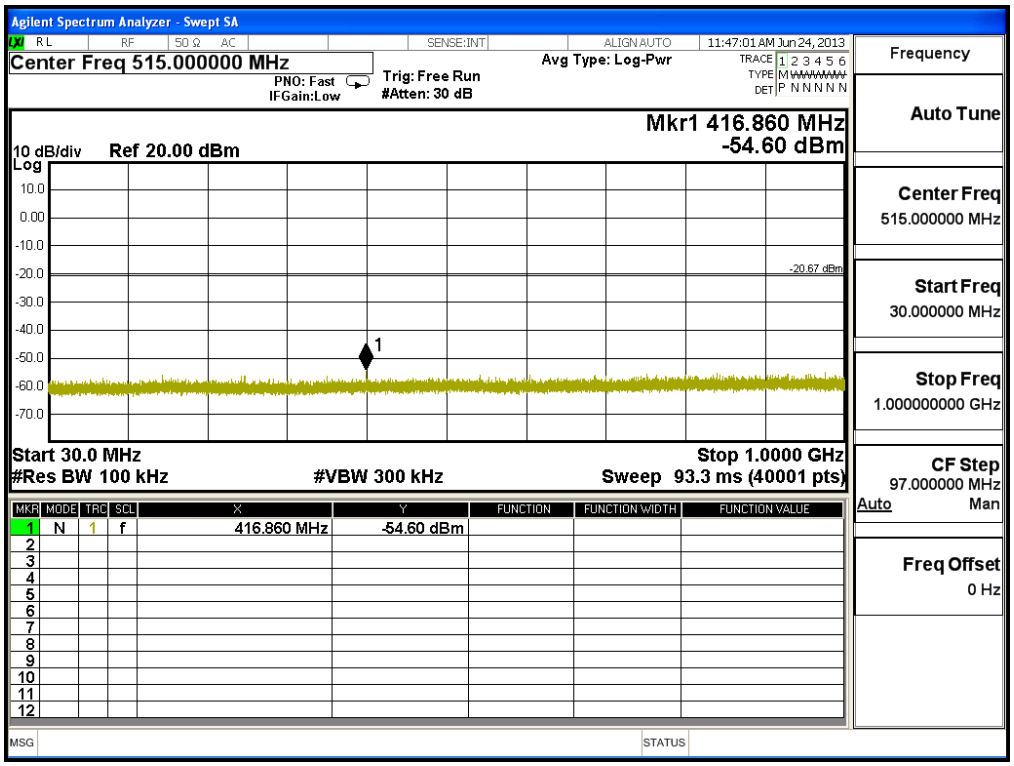

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:17:46 AM Jun 24, 2013
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M
DET P N N N N N
Mkr1 11.927 4 GHz
-51.76 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 11.927 4 GHz -51.76 dBm
MSG
STATUS
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

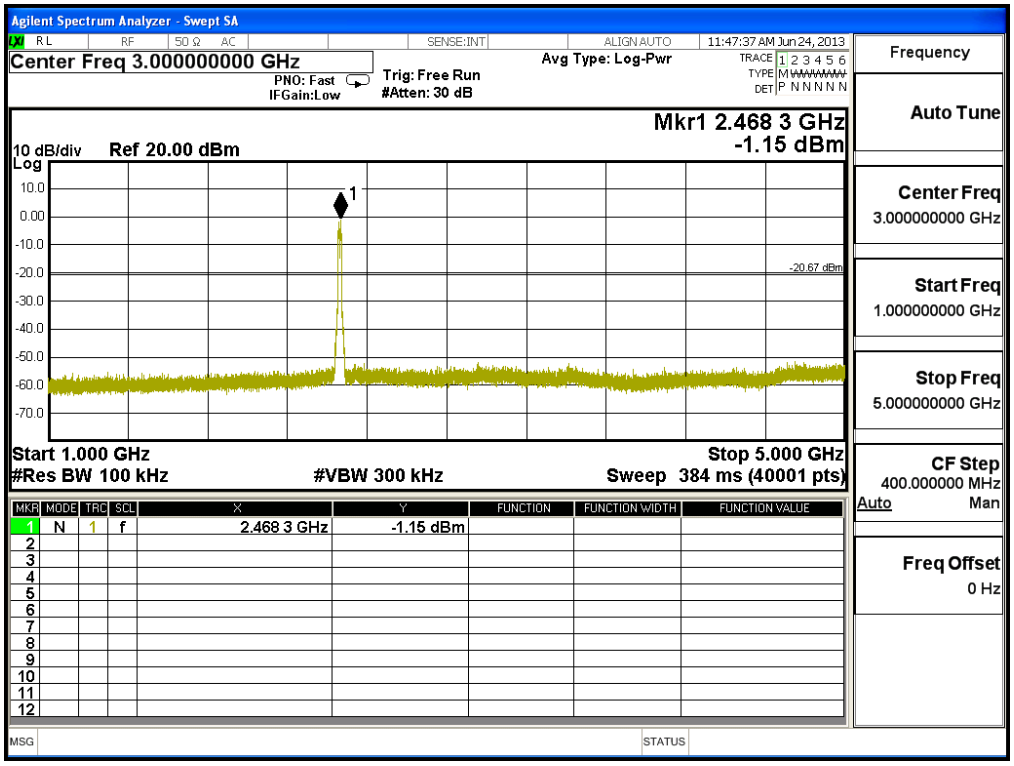

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:18:23 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 16.770 3 GHz
-47.19 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.770 3 GHz -47.19 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

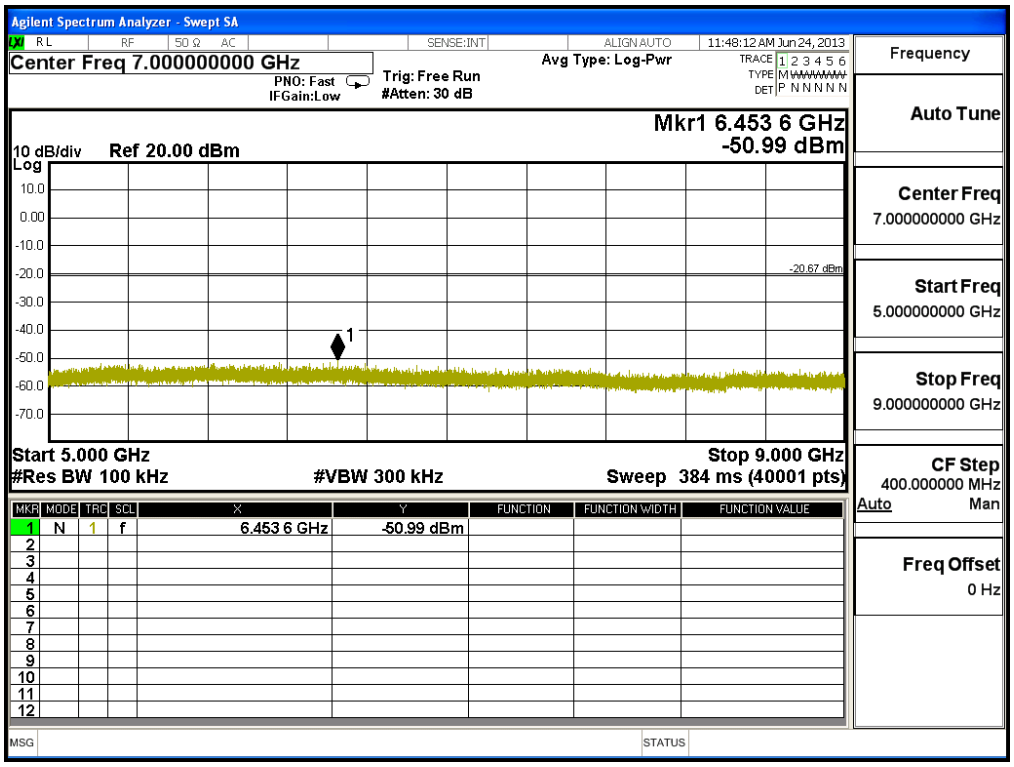

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:18:58 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 20.982 2 GHz
-44.09 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.982 2 GHz -44.09 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS

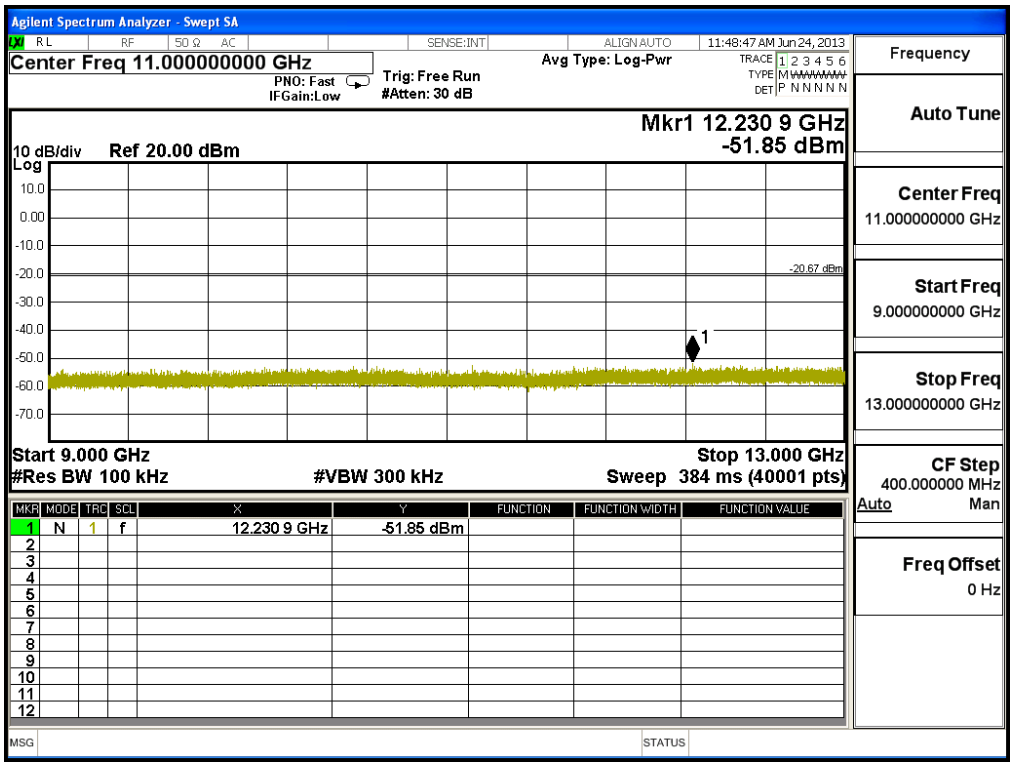

Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:19:33 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.672 6 GHz
-42.34 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.672 6 GHz -42.34 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

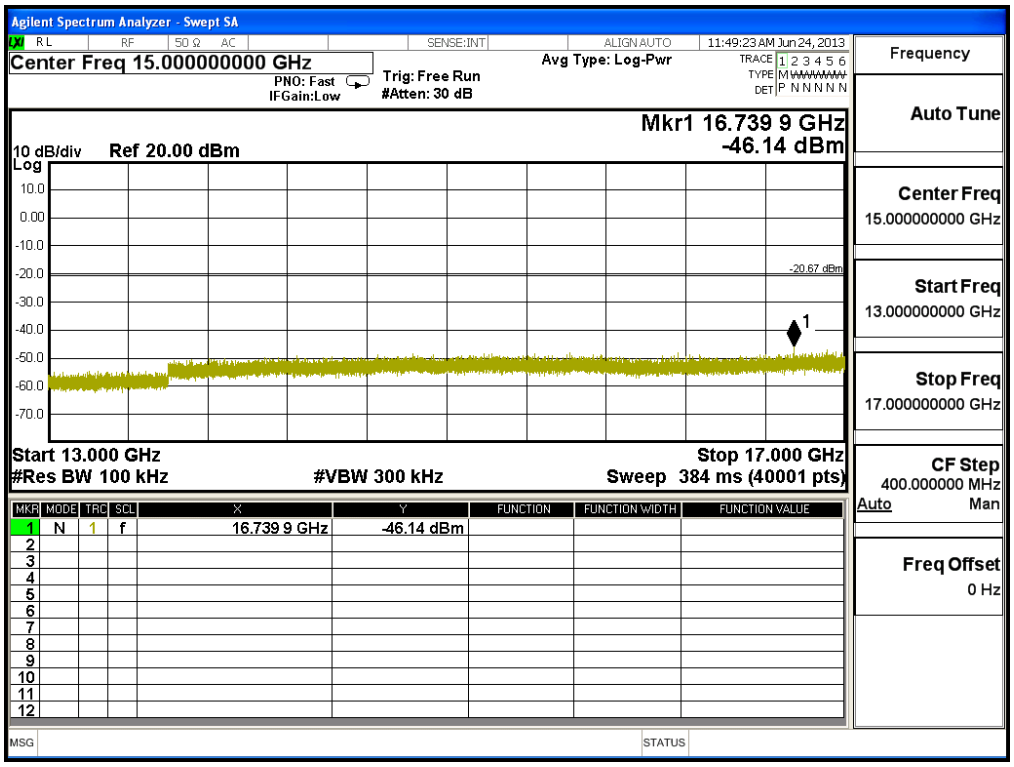
Channel 11 (2462MHz)

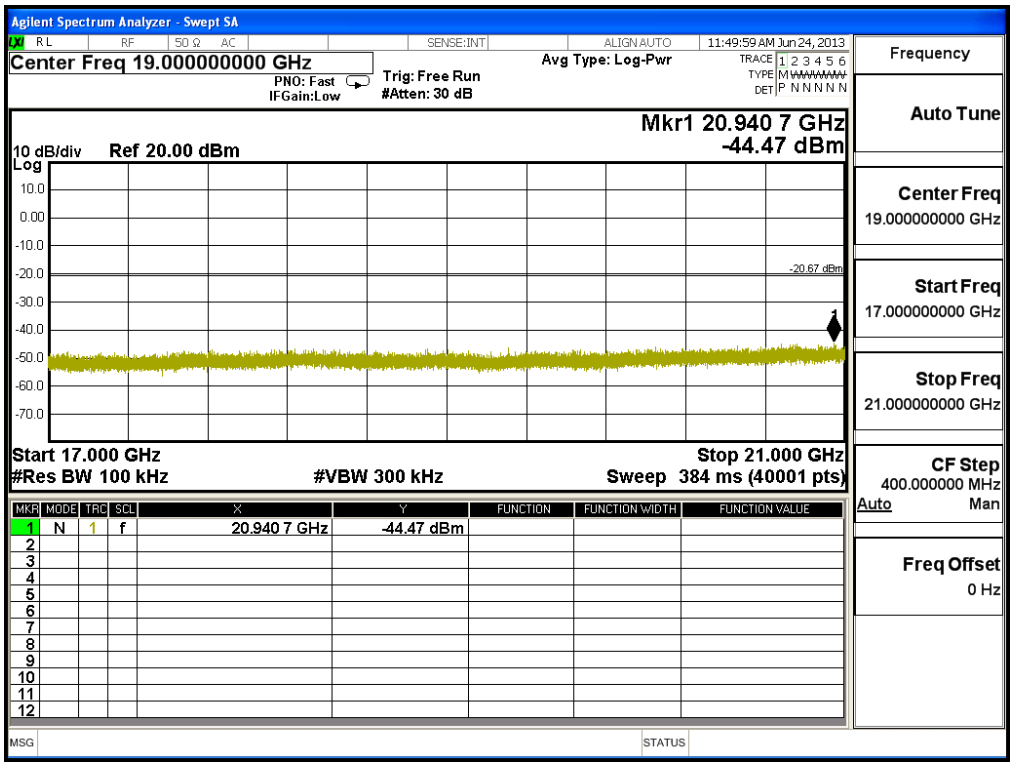


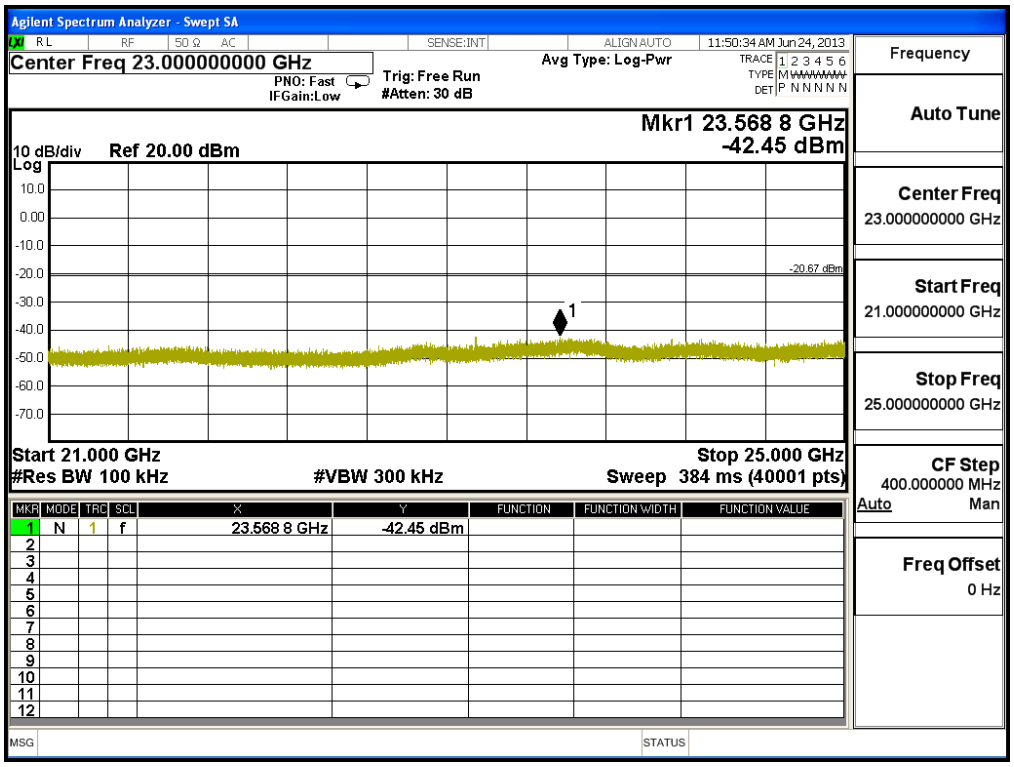



Agilent Spectrum Analyzer - Swept SA
Center Freq 7.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:48:12 AM Jun 24, 2013
Mkr1 6.453 6 GHz
-50.99 dBm
10 dB/div
Ref 20.00 dBm
Log
-20.67 dBm
Start 5.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 9.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 6.453 6 GHz -50.99 dBm
Frequency
Auto Tune
Center Freq
7.000000000 GHz
Start Freq
5.000000000 GHz
Stop Freq
9.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
Center Freq 11.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
11:48:47 AM Jun 24, 2013
Mkr1 12.230 9 GHz
-51.85 dBm
10 dB/div
Ref 20.00 dBm
Log
-20.67 dBm
Start 9.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 13.000 GHz
Sweep 384 ms (40001 pts)
1 N 1 f 12.230 9 GHz -51.85 dBm
Frequency
Auto Tune
Center Freq
11.000000000 GHz
Start Freq
9.000000000 GHz
Stop Freq
13.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:49:23 AM Jun 24, 2013
Center Freq 15.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 16.739 9 GHz
-46.14 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 13.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 17.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 16.739 9 GHz -46.14 dBm
Frequency
Auto Tune
Center Freq
15.000000000 GHz
Start Freq
13.000000000 GHz
Stop Freq
17.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω AC
SENSE:INT
ALIGN AUTO
11:49:59 AM Jun 24, 2013
Center Freq 19.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 20.940 7 GHz
-44.47 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
Start 17.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 21.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 20.940 7 GHz -44.47 dBm
Frequency
Auto Tune
Center Freq
19.000000000 GHz
Start Freq
17.000000000 GHz
Stop Freq
21.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Swept SA
RL
RF
50 Ω
AC
SENSE:INT
ALIGN AUTO
11:50:34 AM Jun 24, 2013
Center Freq 23.000000000 GHz
PNO: Fast
IFGain:Low
Trig: Free Run
#Atten: 30 dB
Avg Type: Log-Pwr
TRACE 1 2 3 4 5 6
TYPE M WWWWW
DET P N N N N N
Mkr1 23.568 8 GHz
-42.45 dBm
10 dB/div
Log
Ref 20.00 dBm
10.0
0.00
-10.0
-20.0
-30.0
-40.0
-50.0
-60.0
-70.0
-20.67 dBm
1
Start 21.000 GHz
#Res BW 100 kHz
#VBW 300 kHz
Stop 25.000 GHz
Sweep 384 ms (40001 pts)
MKR MODE TRC SCL X Y FUNCTION FUNCTION WIDTH FUNCTION VALUE
1 N 1 f 23.568 8 GHz -42.45 dBm
2
3
4
5
6
7
8
9
10
11
12
MSG
STATUS
Frequency
Auto Tune
Center Freq
23.000000000 GHz
Start Freq
21.000000000 GHz
Stop Freq
25.000000000 GHz
CF Step
400.000000 MHz
Auto
Man
Freq Offset
0 Hz

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, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

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:

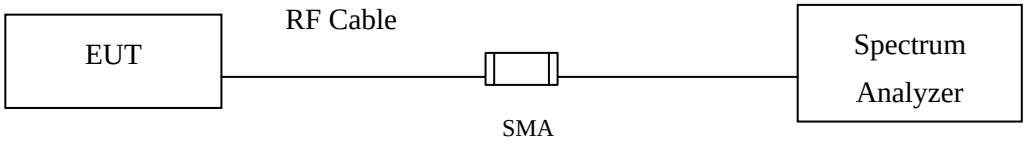
Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	Agilent	8447D/2944A09549	Sep., 2012
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2013
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	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.

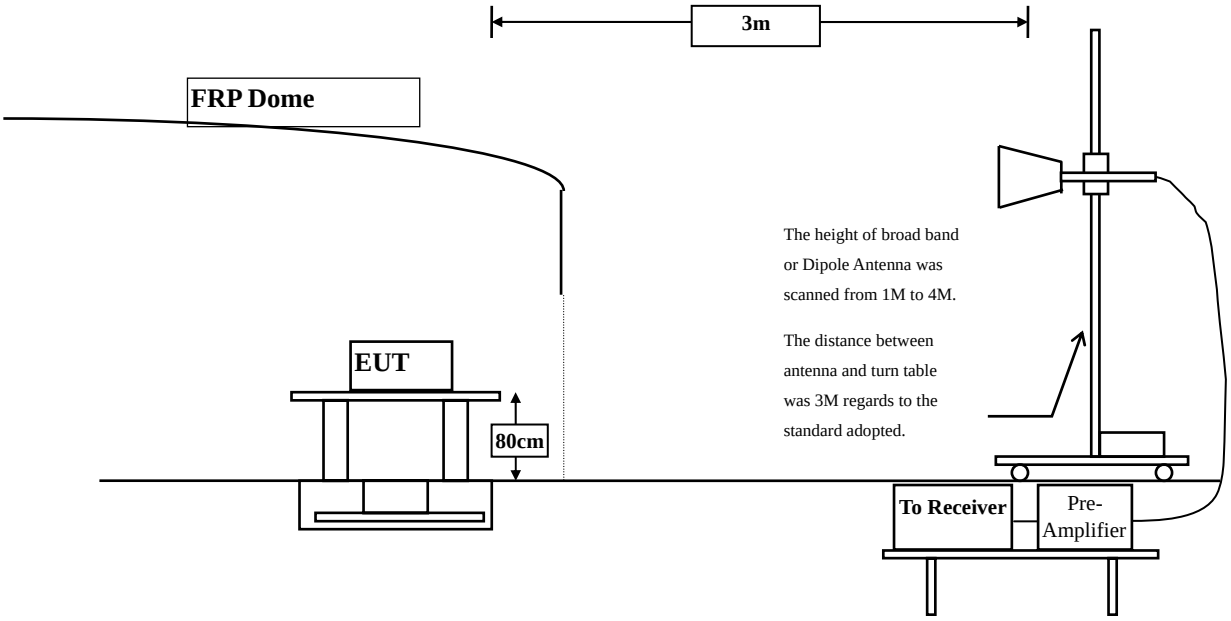
2. The test instruments marked by "X" are used to measure the final test results.

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 C63.4: 2003 on radiated measurement.

6.5. Uncertainty

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

6.6. Test Result of Band Edge

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	25.054	56.563	74.000	54.000	Pass
01 (Peak)	2413.200	31.647	59.919	91.566	--	--	--
01 (Average)	2390.000	31.509	12.074	43.583	74.000	54.000	Pass
01 (Average)	2411.200	31.632	56.175	87.807	--	--	--

Figure Channel 01: Horizontal (Peak)

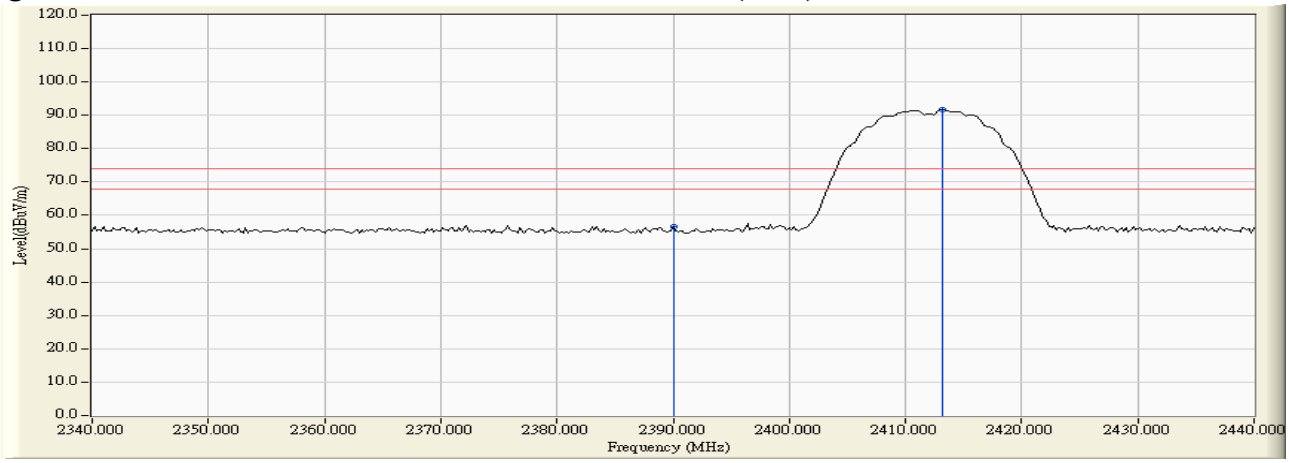
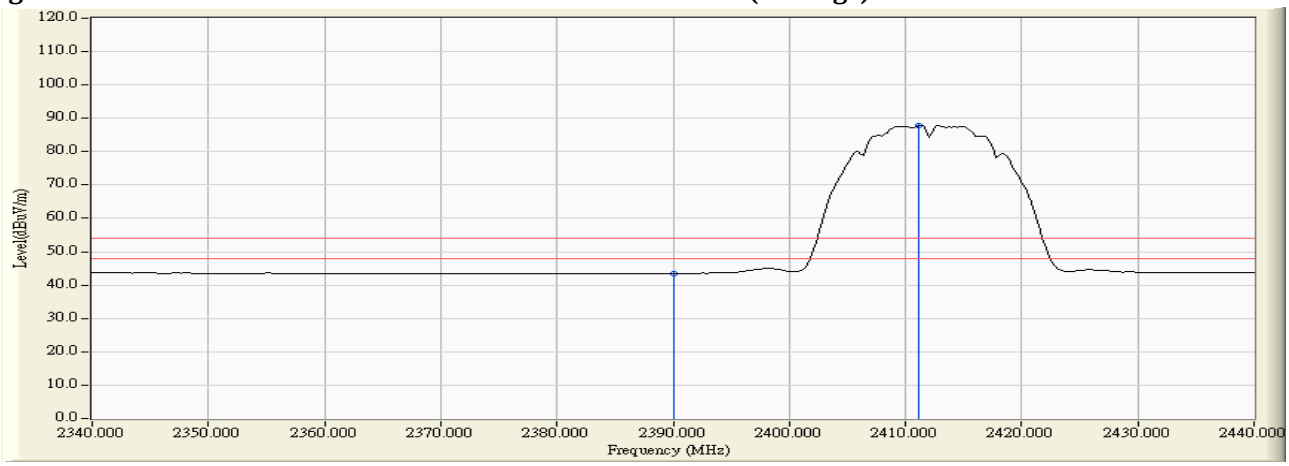


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2386.000	30.934	24.870	55.804	74.000	54.000	Pass
01 (Peak)	2390.000	30.915	23.622	54.537	74.000	54.000	Pass
01 (Peak)	2413.000	30.956	55.795	86.751	--	--	--
01 (Average)	2386.000	30.934	12.017	42.951	74.000	54.000	Pass
01 (Average)	2390.000	30.915	12.036	42.951	74.000	54.000	Pass
01 (Average)	2409.400	30.939	52.075	83.013	--	--	--

Figure Channel 01: Vertical (Peak)

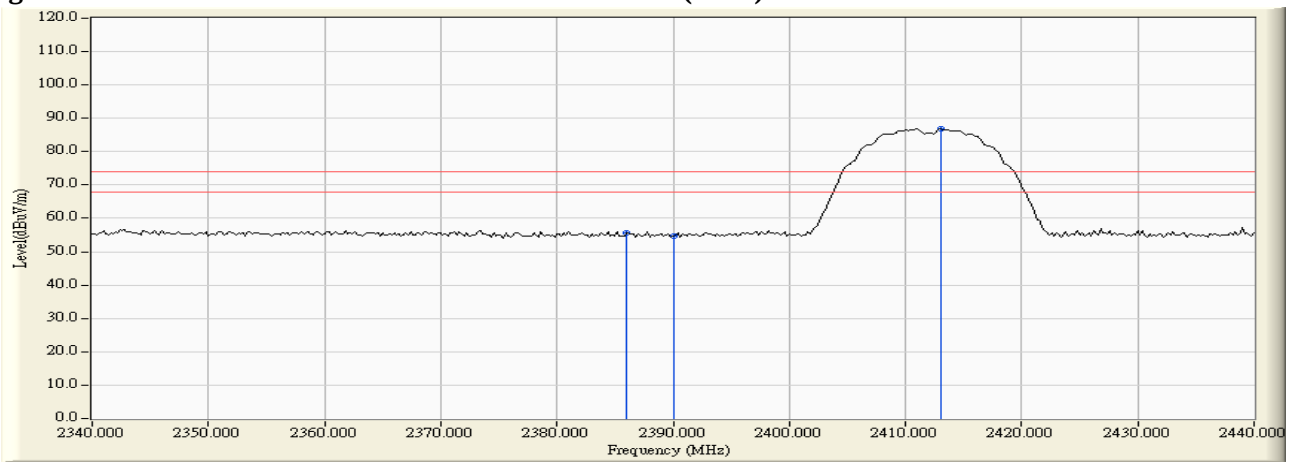
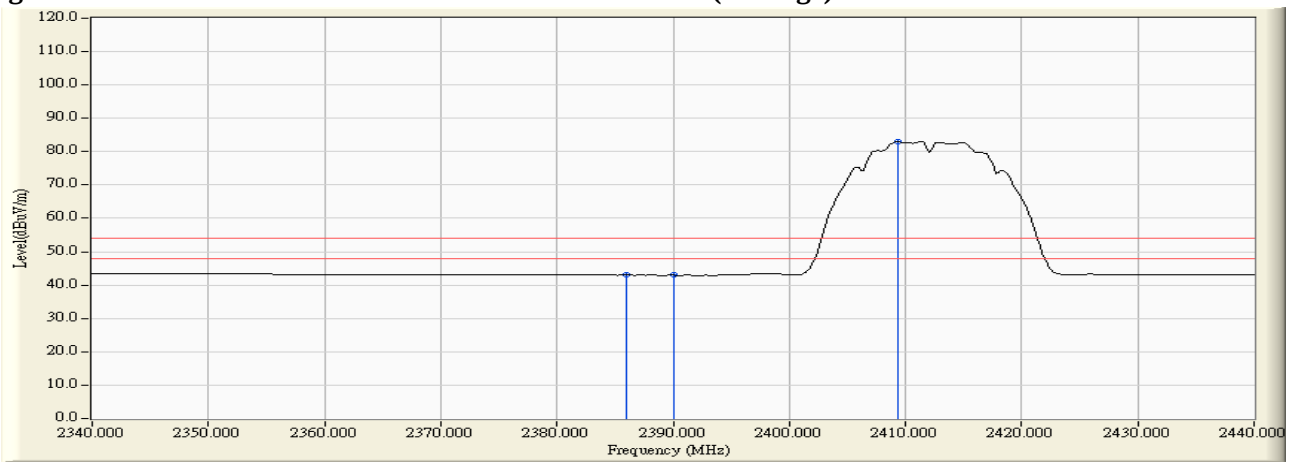


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.900	32.011	59.935	91.946	--	--	--
11 (Peak)	2483.500	32.182	23.093	55.275	74.000	54.000	Pass
11 (Peak)	2486.700	32.207	24.813	57.019	74.000	54.000	Pass
11 (Average)	2461.300	32.014	56.341	88.355	--	--	--
11 (Average)	2483.500	32.182	12.052	44.234	74.000	54.000	Pass
11 (Average)	2486.700	32.207	12.083	44.289	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

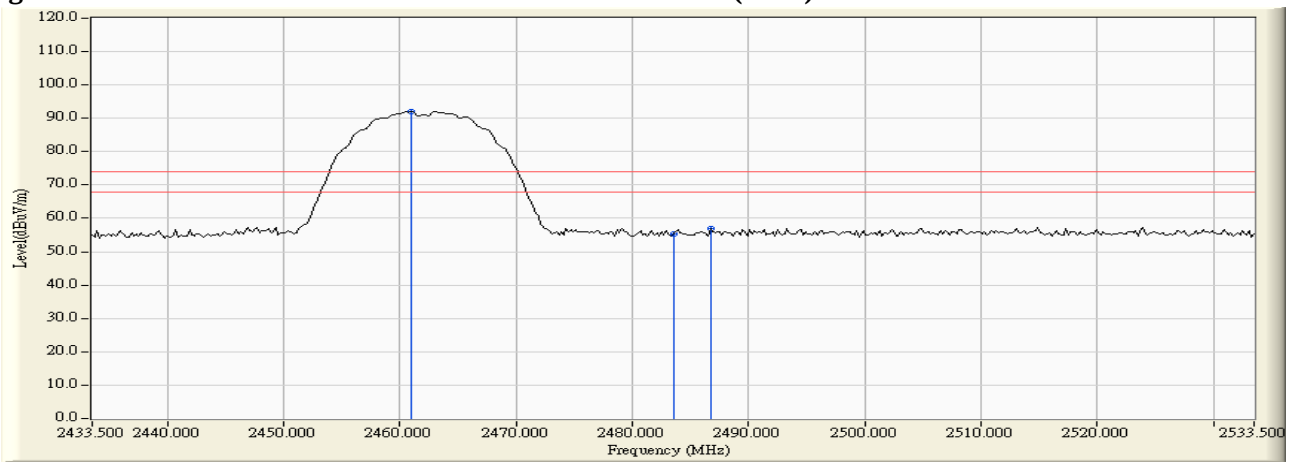
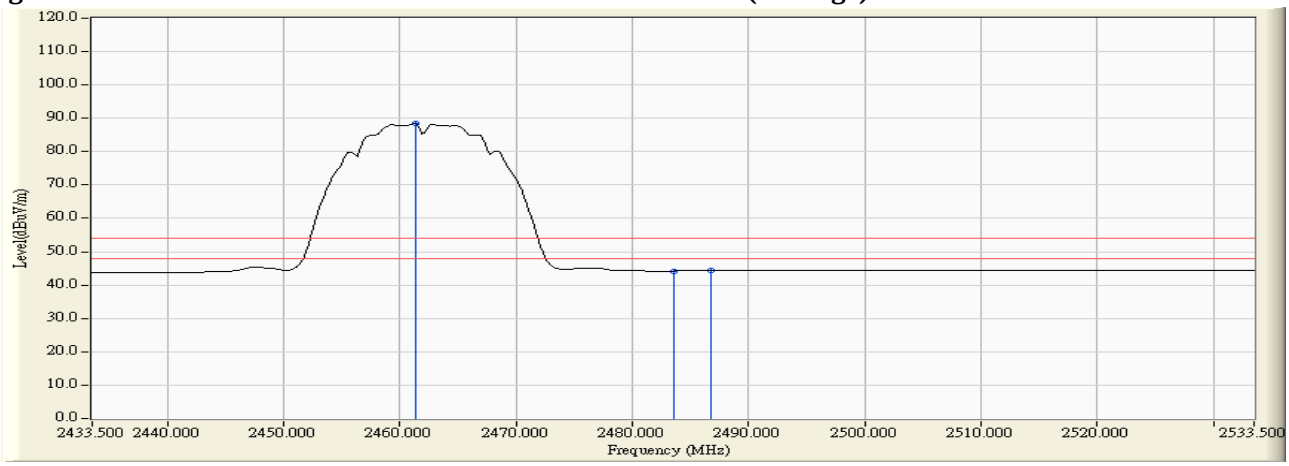


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.900	31.283	57.284	88.567	--	--	--
11 (Peak)	2483.500	31.435	22.654	54.089	74.000	54.000	Pass
11 (Peak)	2484.900	31.445	24.356	55.801	74.000	54.000	Pass
11 (Average)	2461.300	31.286	53.569	84.855	--	--	--
11 (Average)	2483.500	31.435	12.000	43.435	74.000	54.000	Pass
11 (Average)	2484.900	31.445	11.991	43.436	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

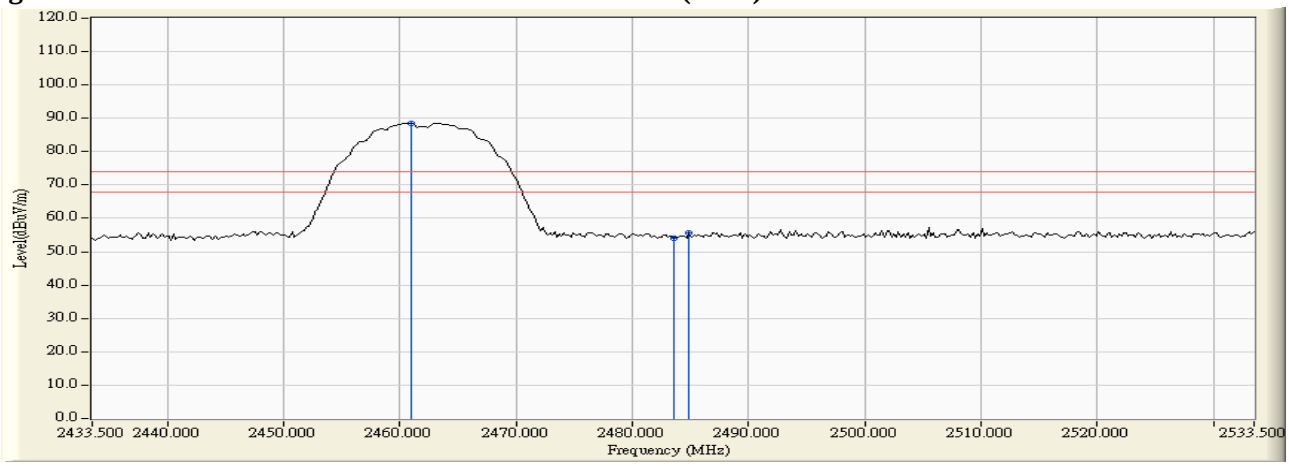
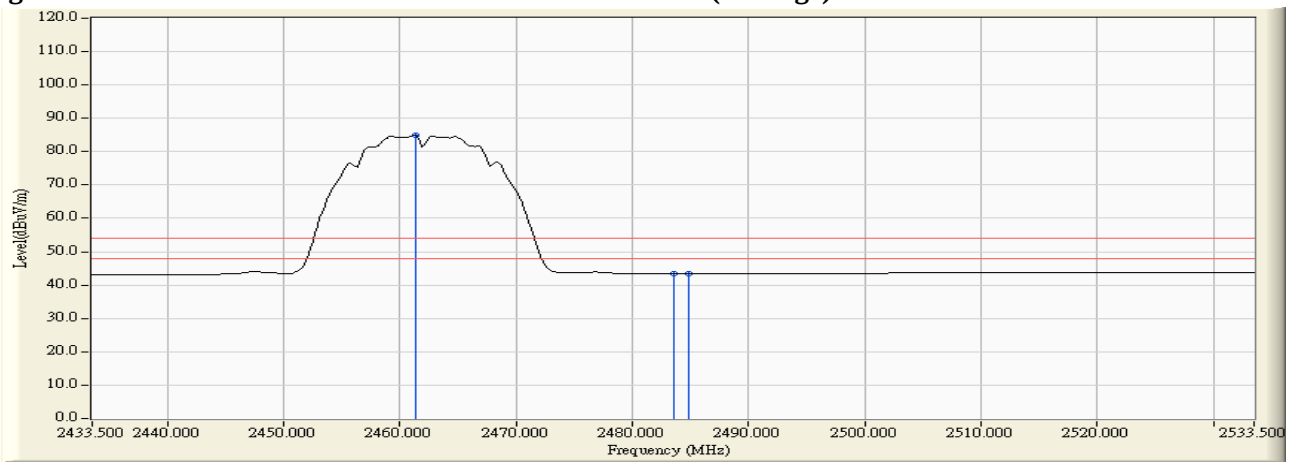


Figure Channel 11: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	27.844	59.353	74.000	54.000	Pass
01 (Peak)	2405.600	31.596	62.196	93.792	--	--	--
01 (Average)	2390.000	31.509	13.447	44.956	74.000	54.000	Pass
01 (Average)	2406.800	31.604	52.047	83.651	--	--	--

Figure Channel 01: Horizontal (Peak)

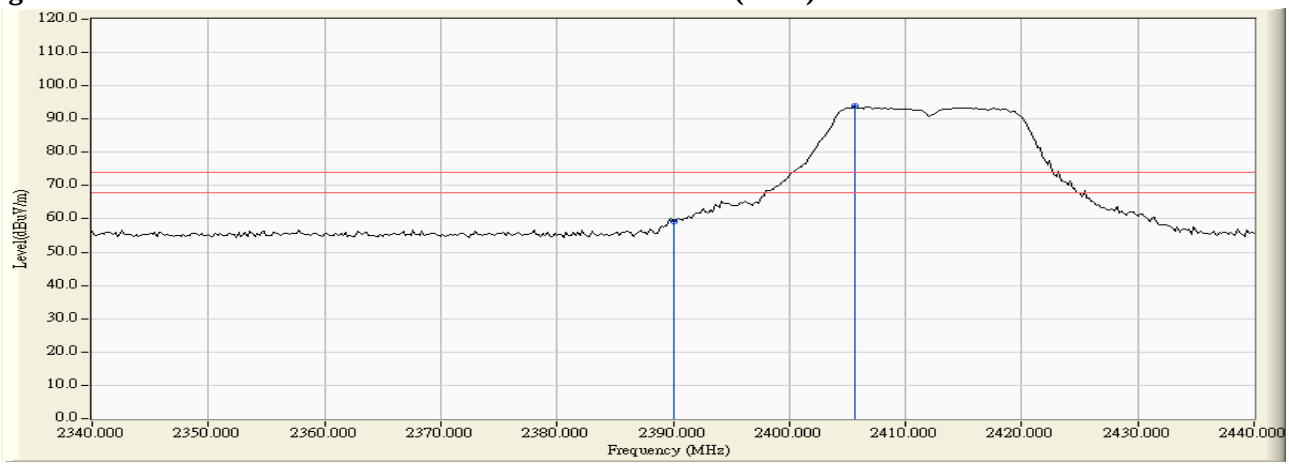
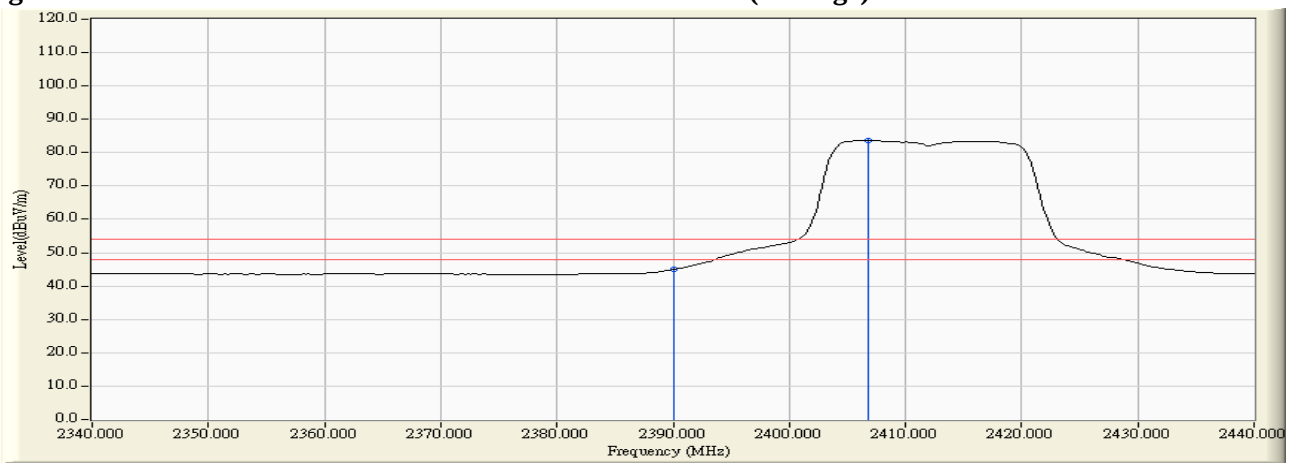


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.915	27.446	58.361	74.000	54.000	Pass
01 (Peak)	2408.000	30.934	60.263	91.197	--	--	--
01 (Average)	2390.000	30.915	12.990	43.905	74.000	54.000	Pass
01 (Average)	2407.000	30.931	50.005	80.936	--	--	--

Figure Channel 01: Vertical (Peak)

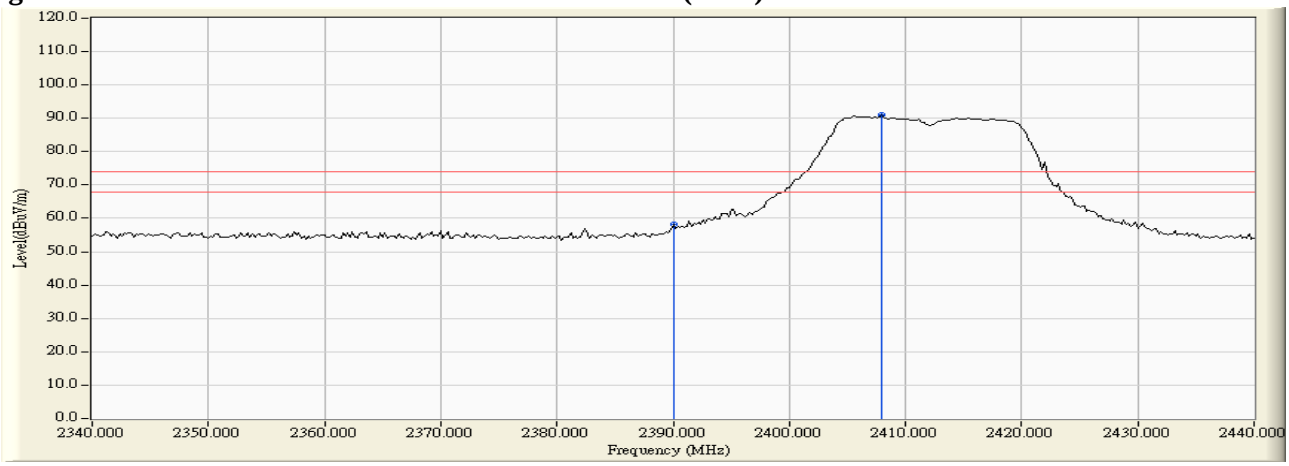
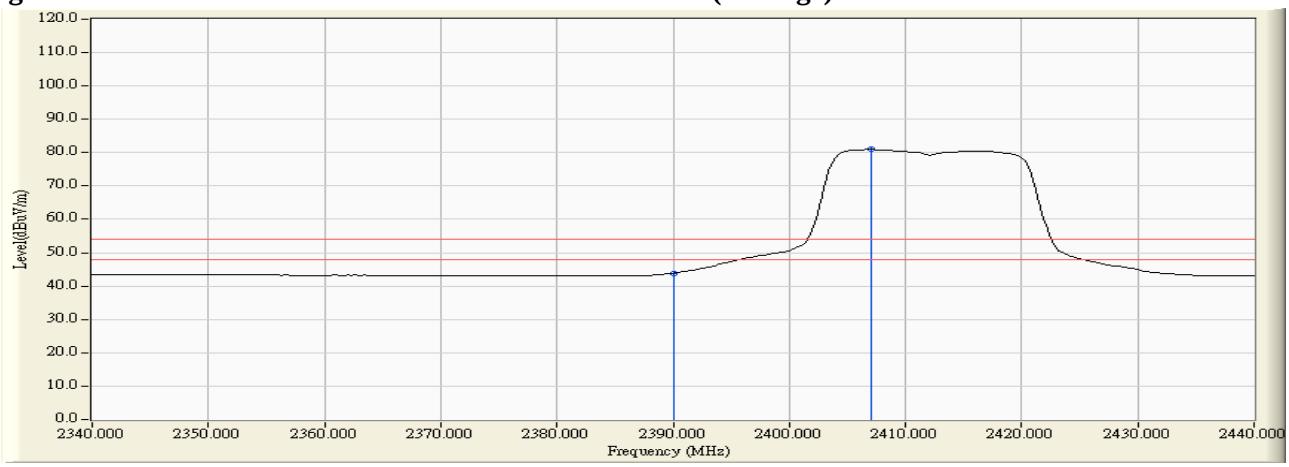


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2459.500	32.001	61.598	93.598	--	--	--
11 (Peak)	2483.500	32.182	24.742	56.924	74.000	54.000	Pass
11 (Average)	2467.300	32.059	51.915	83.974	--	--	--
11 (Average)	2483.500	32.182	12.973	45.155	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

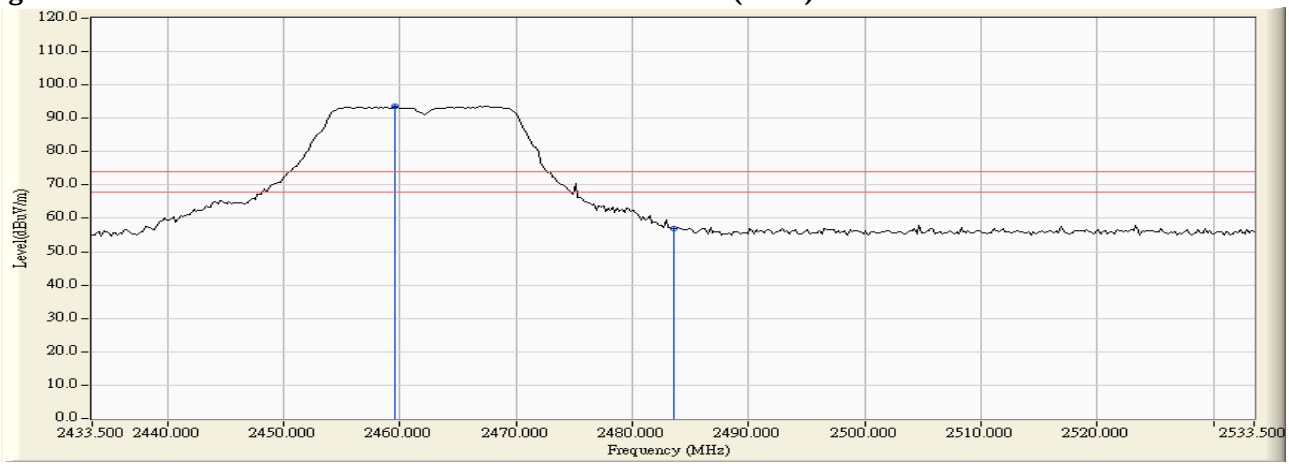
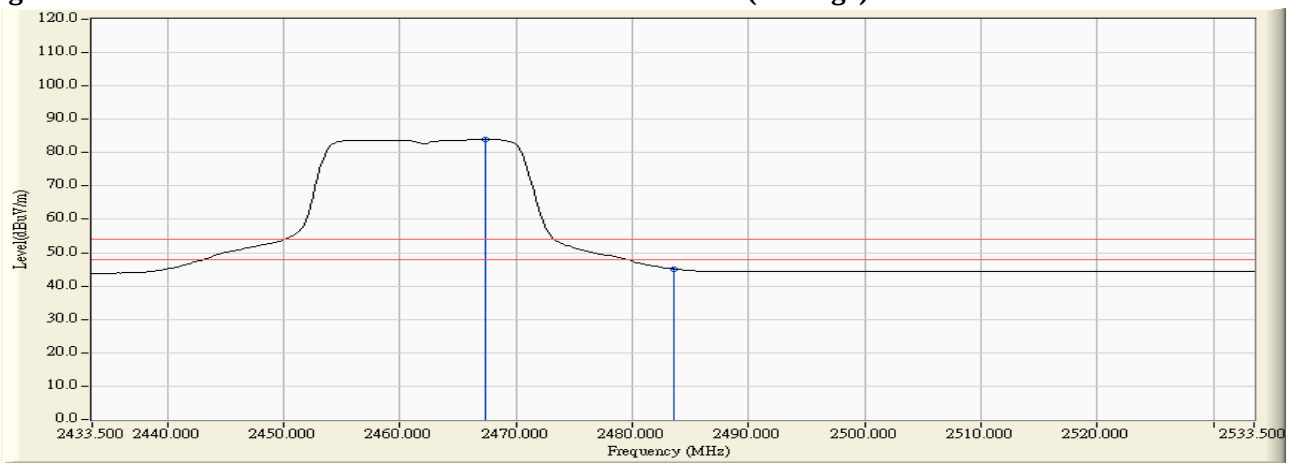


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2464.700	31.308	59.379	90.688	--	--	--
11 (Peak)	2483.500	31.435	25.016	56.451	74.000	54.000	Pass
11 (Peak)	2491.900	31.492	26.264	57.756	74.000	54.000	Pass
11 (Average)	2467.300	31.326	49.207	80.533	--	--	--
11 (Average)	2483.500	31.435	12.575	44.010	74.000	54.000	Pass
11 (Average)	2491.100	31.487	11.995	43.482	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

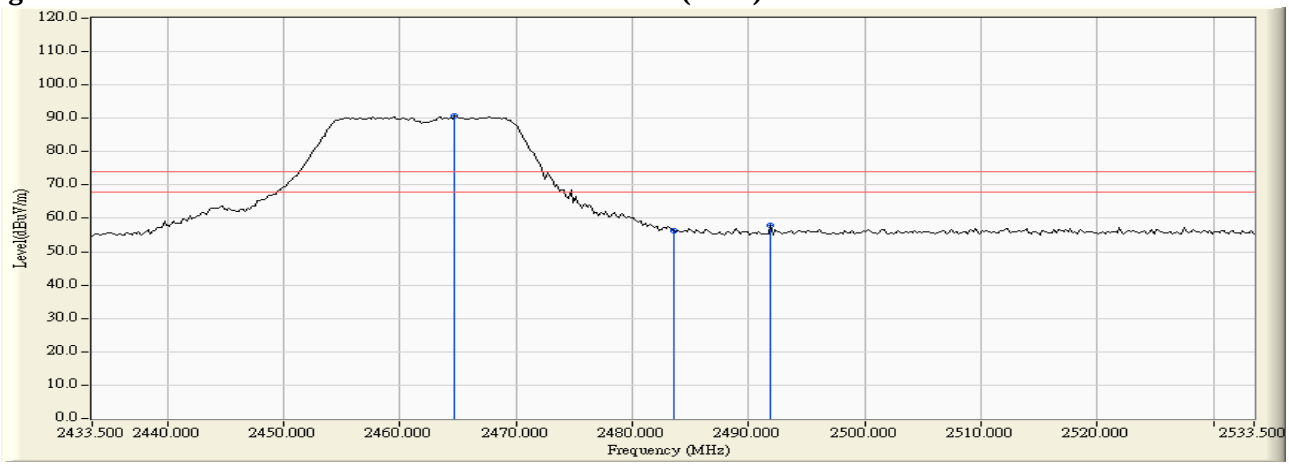
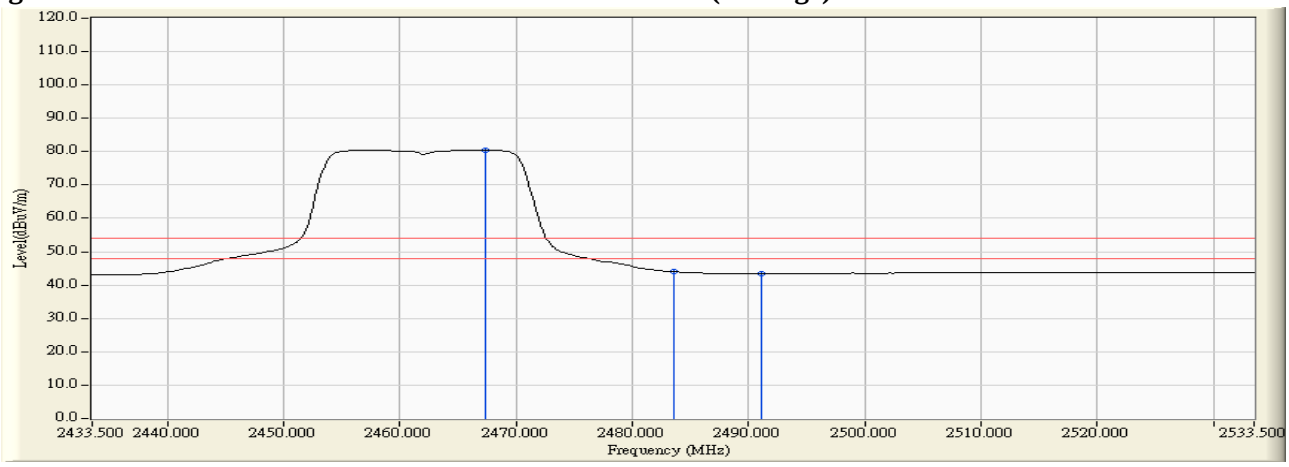


Figure Channel 11: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	32.689	64.198	74.000	54.000	Pass
01 (Peak)	2408.000	31.611	62.269	93.881	--	--	--
01 (Average)	2390.000	31.509	14.564	46.073	74.000	54.000	Pass
01 (Average)	2406.800	31.604	51.818	83.422	--	--	--

Figure Channel 01: Horizontal (Peak)

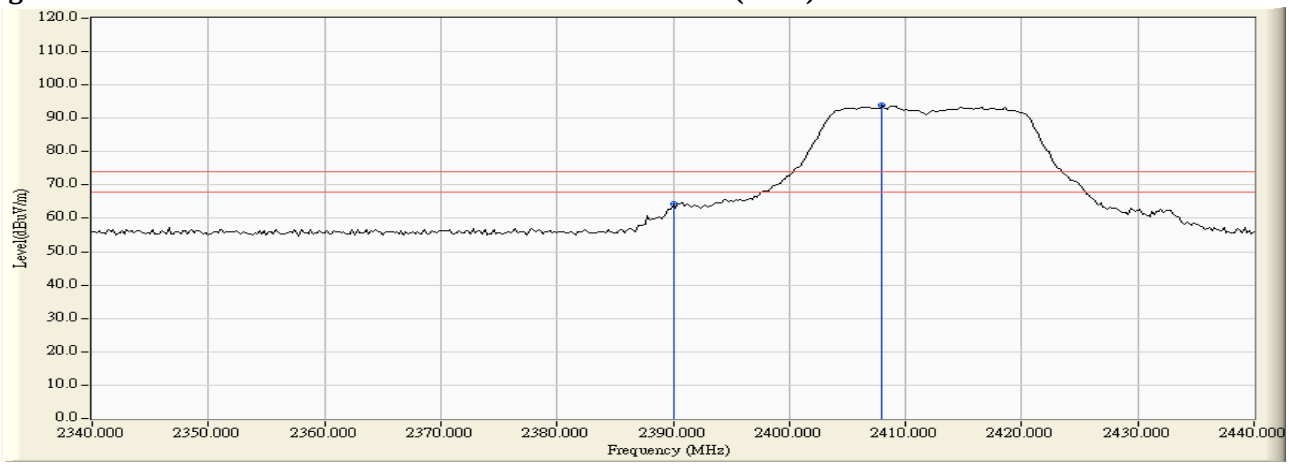
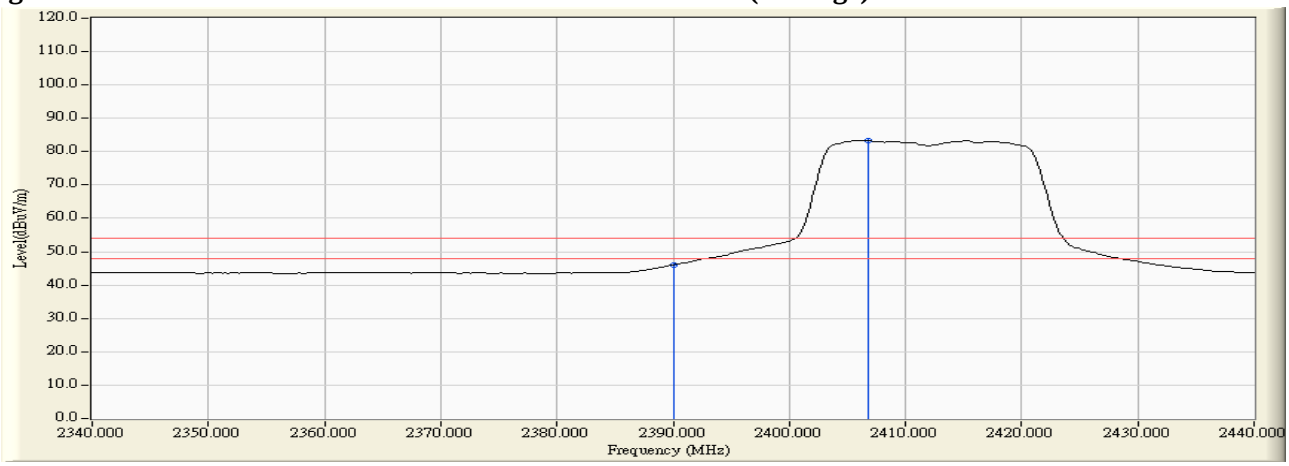


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.915	29.333	60.248	74.000	54.000	Pass
01 (Peak)	2408.800	30.937	60.067	91.003	--	--	--
01 (Average)	2390.000	30.915	13.930	44.845	74.000	54.000	Pass
01 (Average)	2406.600	30.930	49.964	80.894	--	--	--

Figure Channel 01: Vertical (Peak)

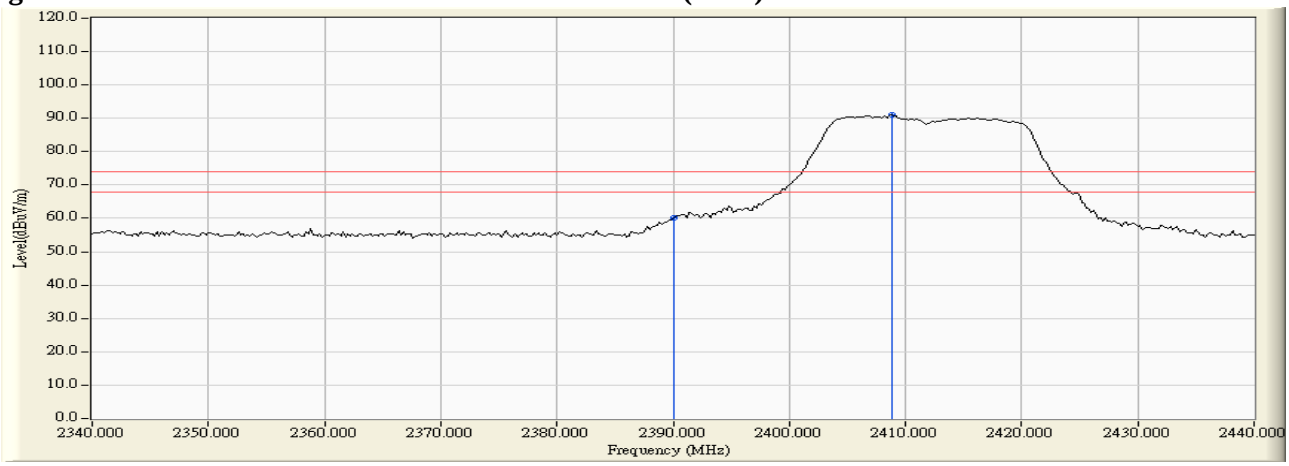
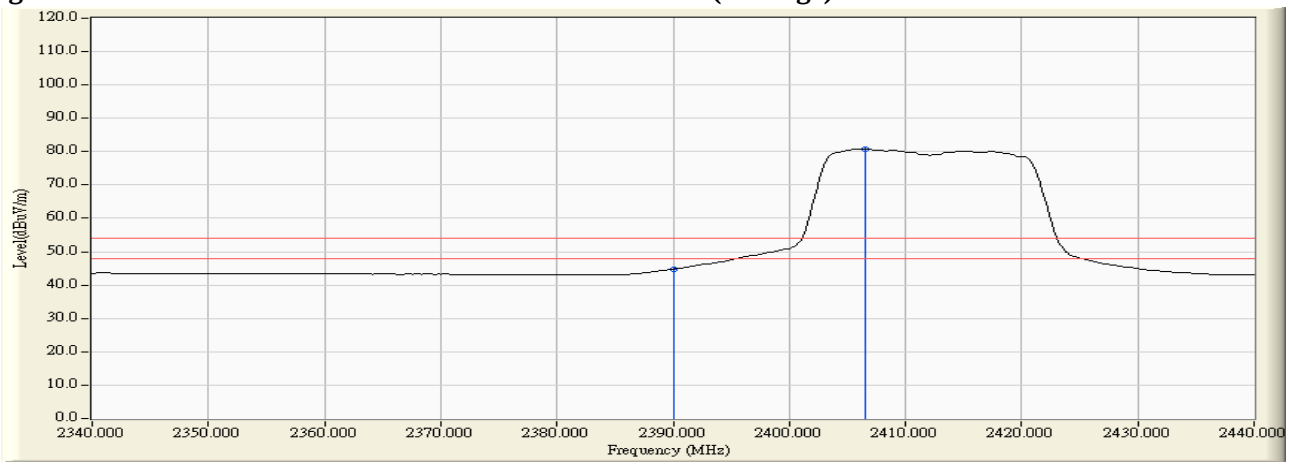


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna Printed on PCB

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.900	31.997	62.133	94.129	--	--	--
11 (Peak)	2483.500	32.182	27.198	59.380	74.000	54.000	Pass
11 (Average)	2467.300	32.059	51.668	83.727	--	--	--
11 (Average)	2483.500	32.182	13.409	45.591	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

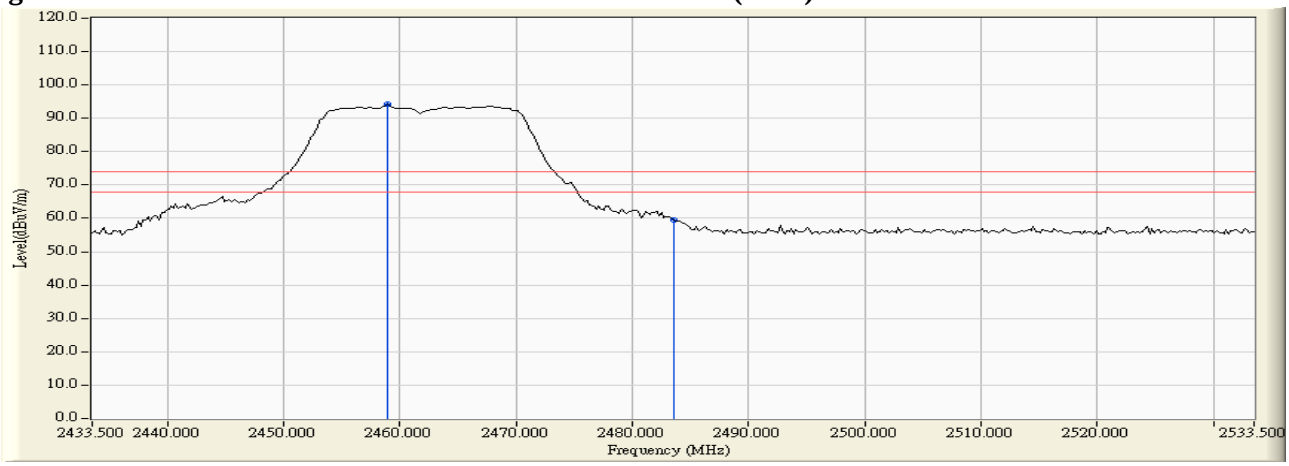
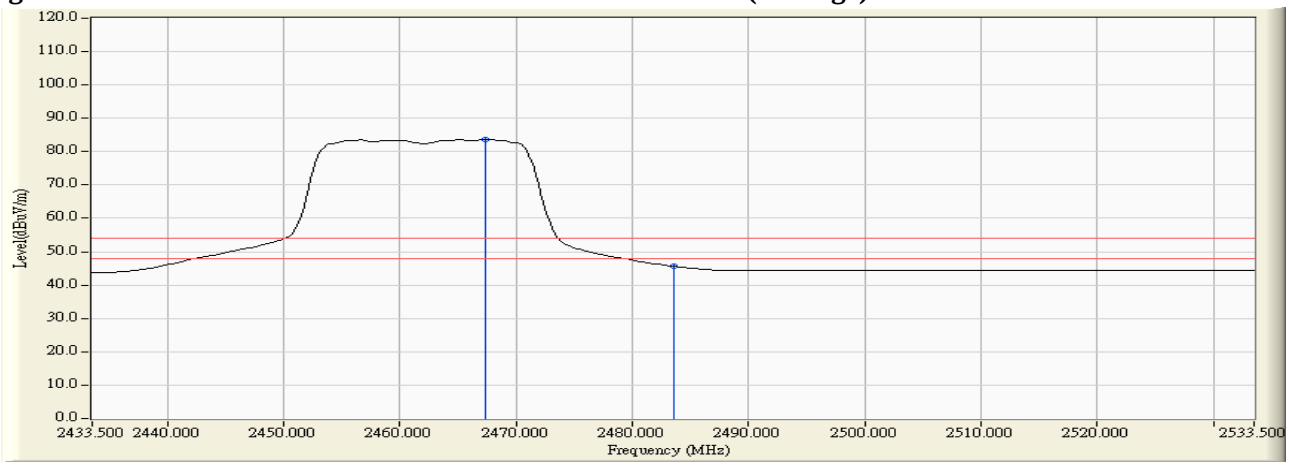


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna Printed on PCB

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2457.700	31.261	59.250	90.511	--	--	--
11 (Peak)	2483.500	31.435	24.228	55.663	74.000	54.000	Pass
11 (Peak)	2484.100	31.439	25.477	56.916	74.000	54.000	Pass
11 (Average)	2467.300	31.326	48.873	80.199	--	--	--
11 (Average)	2483.500	31.435	12.962	44.397	74.000	54.000	Pass
11 (Average)	2484.100	31.439	12.767	44.206	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

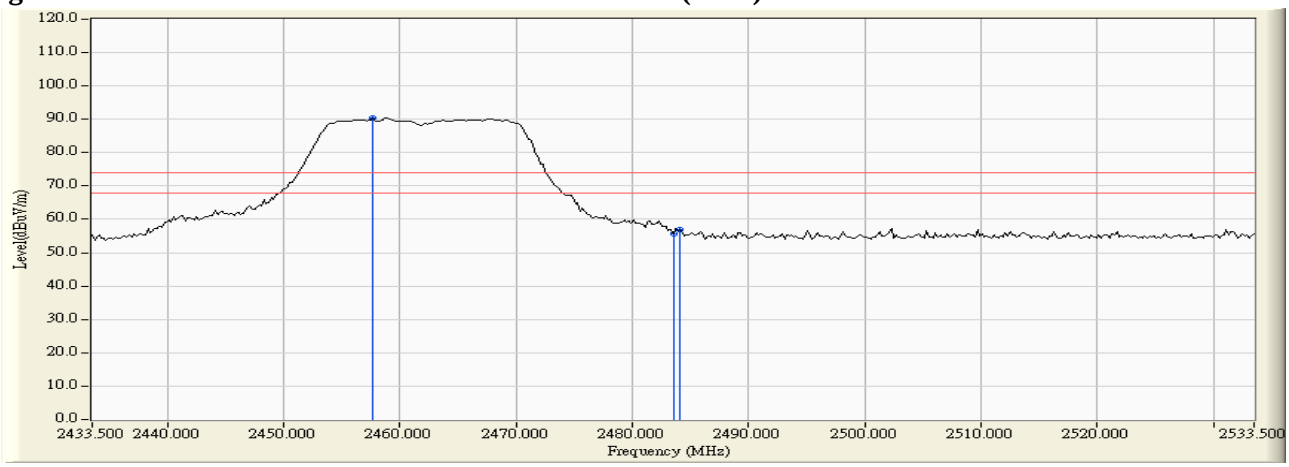
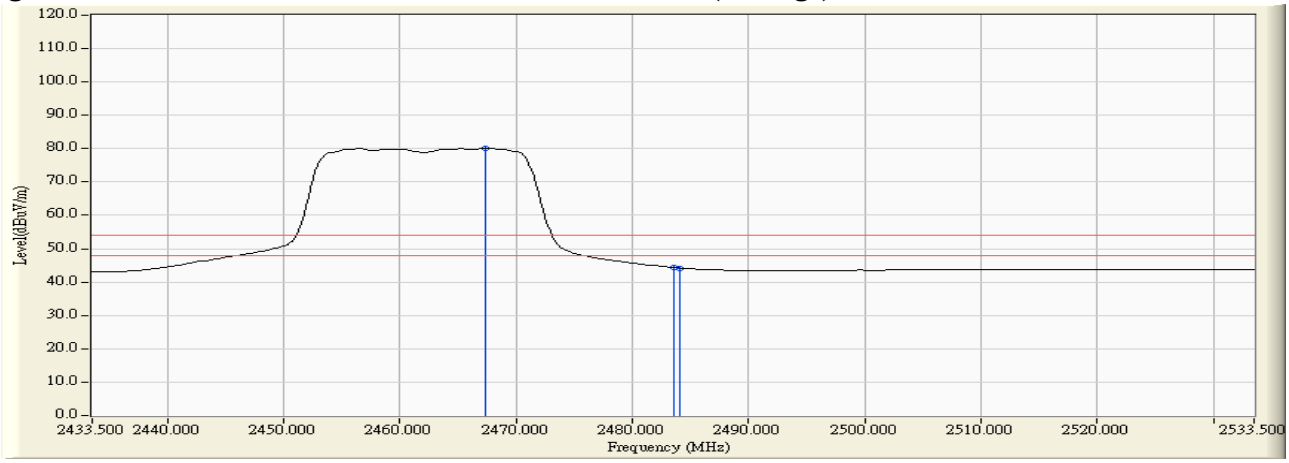


Figure Channel 11: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	25.156	56.665	74.000	54.000	Pass
01 (Peak)	2413.000	31.646	69.447	101.093	--	--	--
01 (Average)	2390.000	31.509	13.815	45.324	74.000	54.000	Pass
01 (Average)	2411.200	31.632	65.548	97.180	--	--	--

Figure Channel 01: Horizontal (Peak)

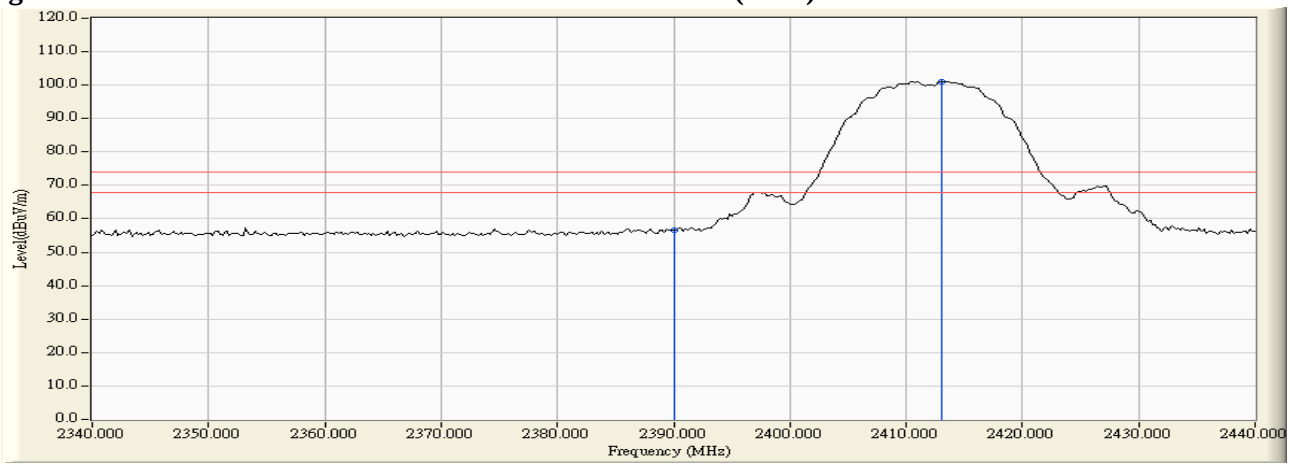
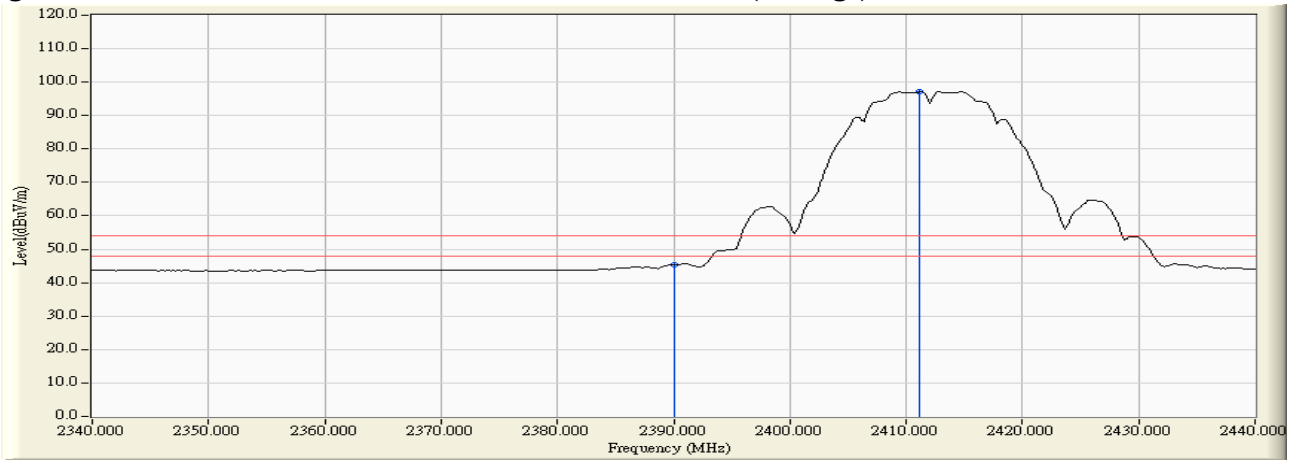


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2383.200	30.947	25.860	56.807	74.000	54.000	Pass
01 (Peak)	2390.000	30.915	24.594	55.509	74.000	54.000	Pass
01 (Peak)	2413.000	30.956	65.211	96.167	--	--	--
01 (Average)	2390.000	30.915	12.437	43.352	74.000	54.000	Pass
01 (Average)	2414.800	30.968	61.326	92.294	--	--	--

Figure Channel 01: Vertical (Peak)

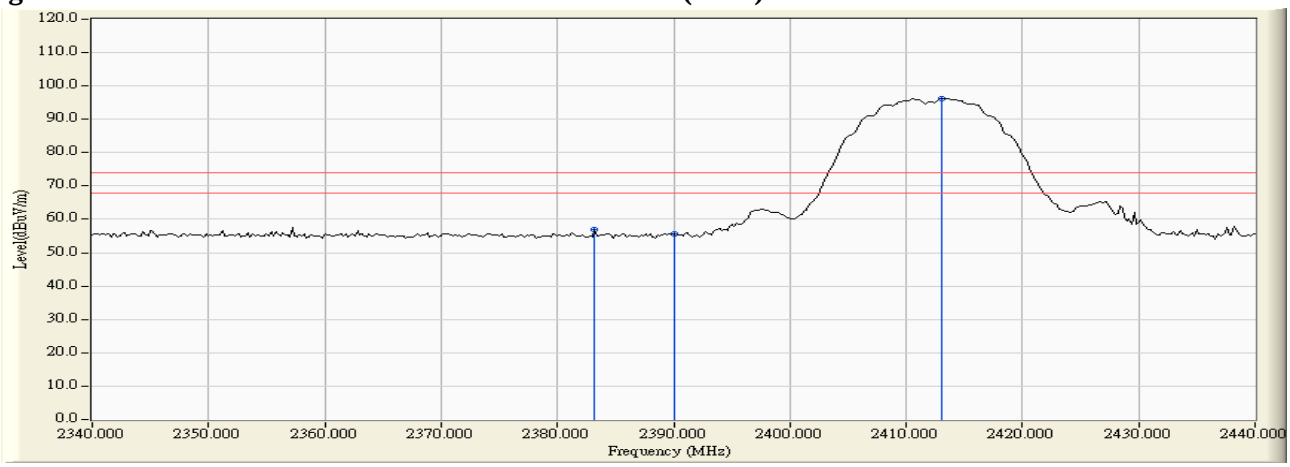
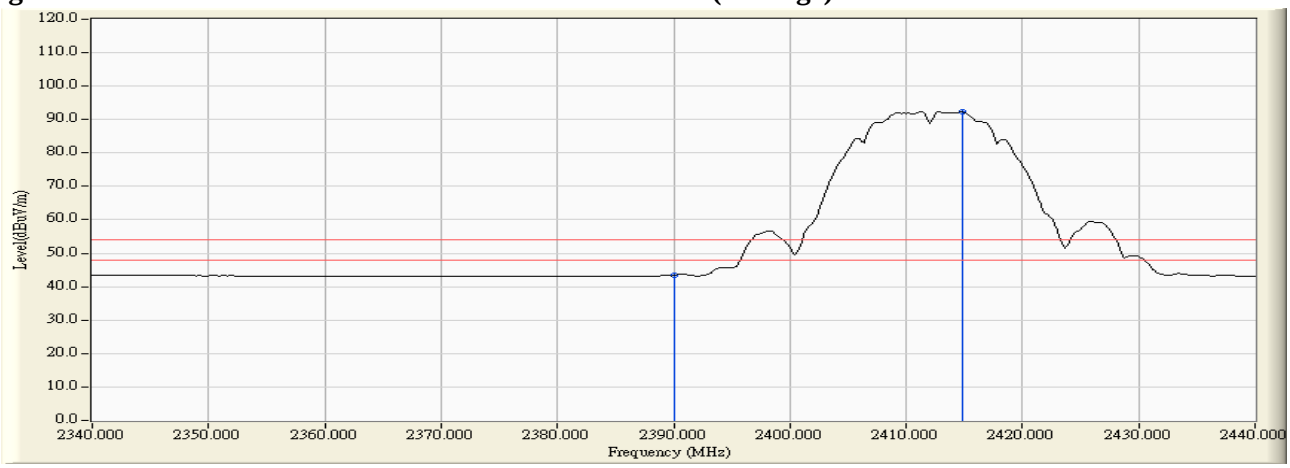


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.500	32.008	65.665	97.673	--	--	--
11 (Peak)	2483.500	32.182	22.534	54.716	74.000	54.000	Pass
11 (Peak)	2486.700	32.207	24.060	56.266	74.000	54.000	Pass
11 (Average)	2461.300	32.014	62.005	94.019	--	--	--
11 (Average)	2483.500	32.182	12.135	44.317	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

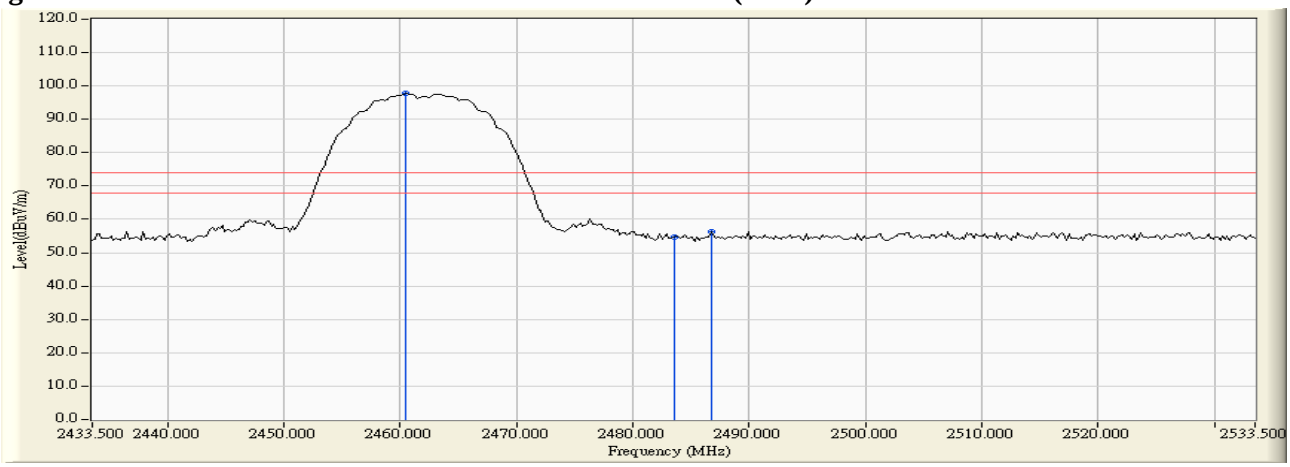
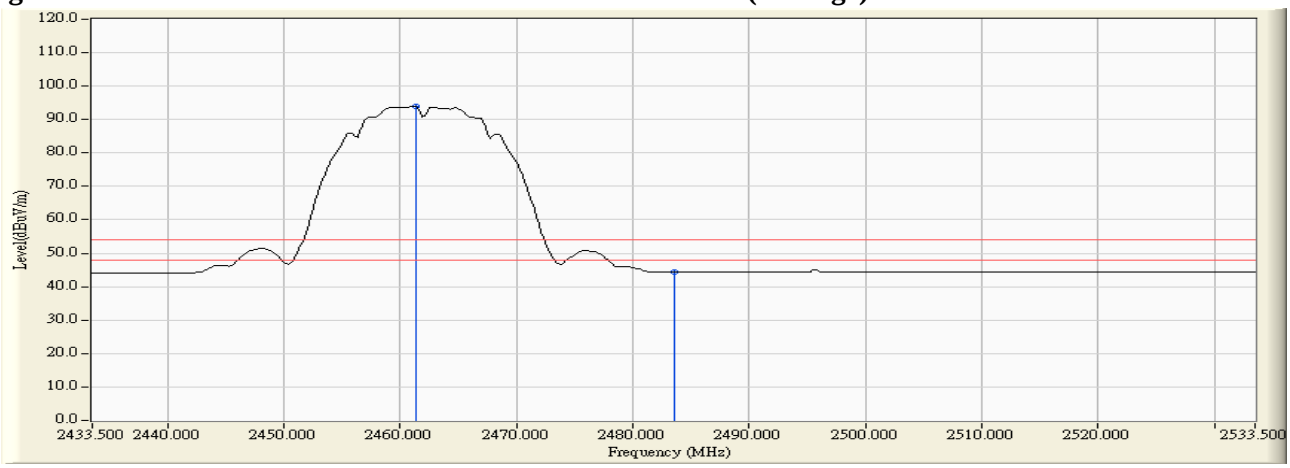


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) -Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2460.500	31.280	64.278	95.558	--	--	--
11 (Peak)	2483.500	31.435	23.896	55.331	74.000	54.000	Pass
11 (Peak)	2492.500	31.495	25.314	56.810	74.000	54.000	Pass
11 (Average)	2461.300	31.286	60.518	91.804	--	--	--
11 (Average)	2483.500	31.435	12.121	43.556	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

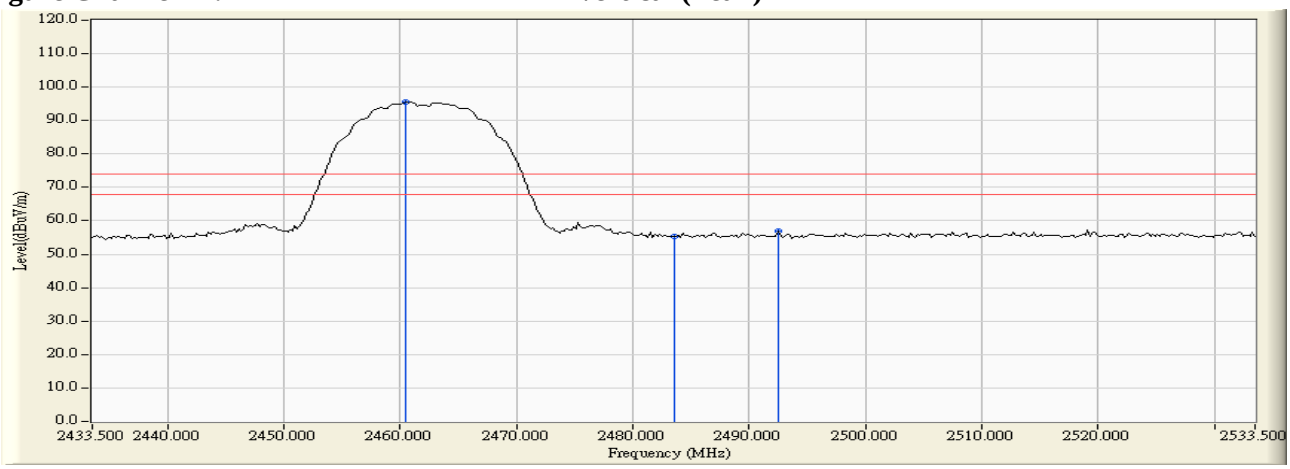
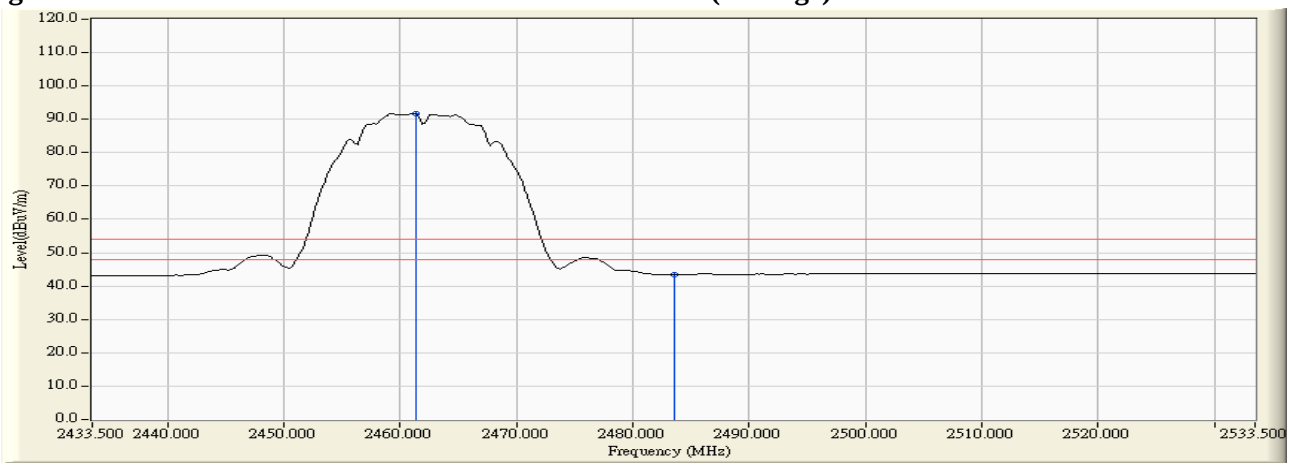


Figure Channel 11: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	36.827	68.336	74.000	54.000	Pass
01 (Peak)	2408.000	31.611	70.275	101.887	--	--	--
01 (Average)	2390.000	31.509	18.690	50.199	74.000	54.000	Pass
01 (Average)	2416.200	31.671	60.600	92.270	--	--	--

Figure Channel 01: Horizontal (Peak)

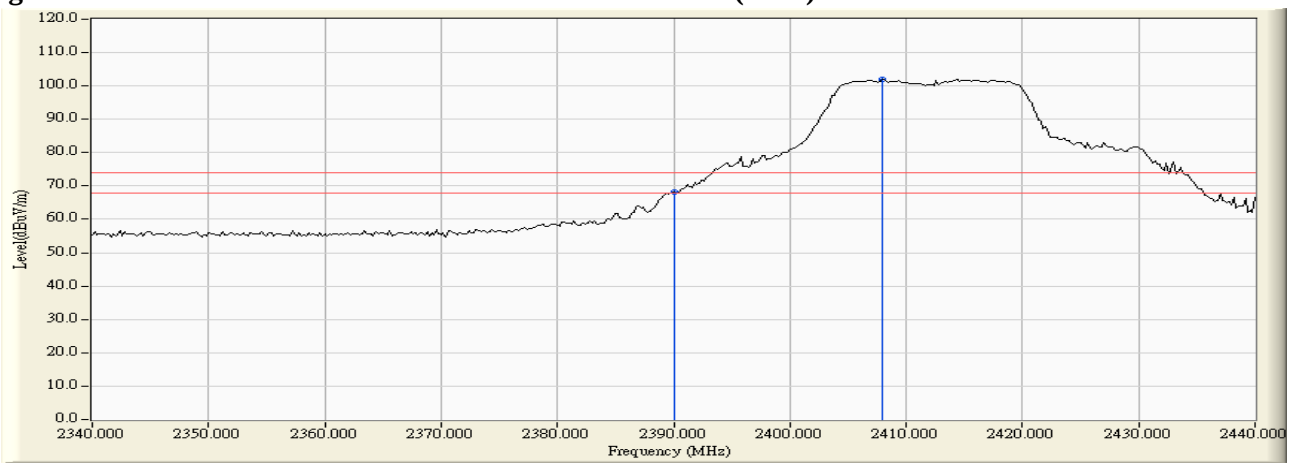
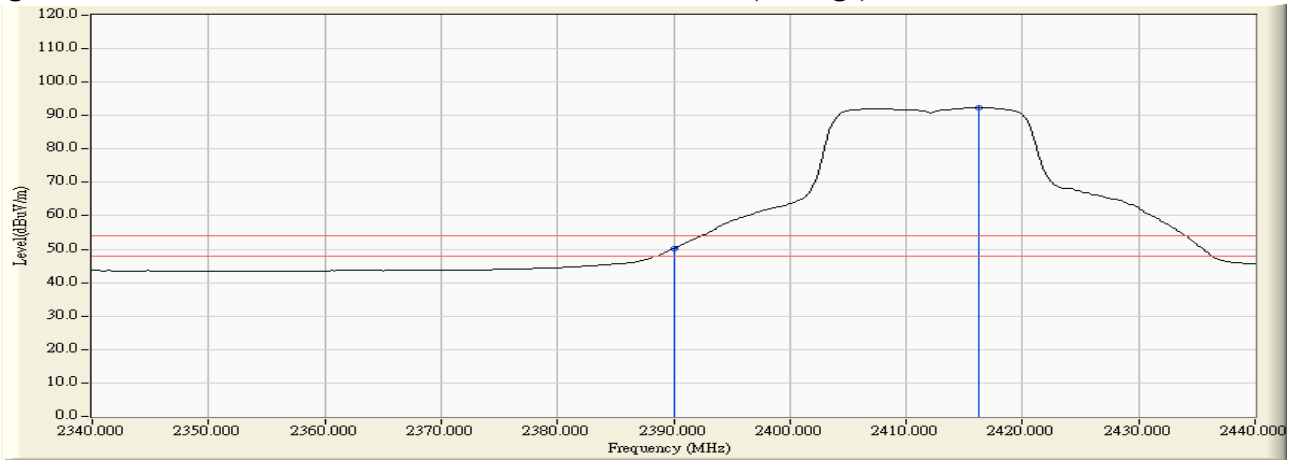


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.915	33.899	64.814	74.000	54.000	Pass
01 (Peak)	2414.600	30.967	66.948	97.915	--	--	--
01 (Average)	2390.000	30.915	16.101	47.016	74.000	54.000	Pass
01 (Average)	2416.200	30.978	56.887	87.865	--	--	--

Figure Channel 01: Vertical (Peak)

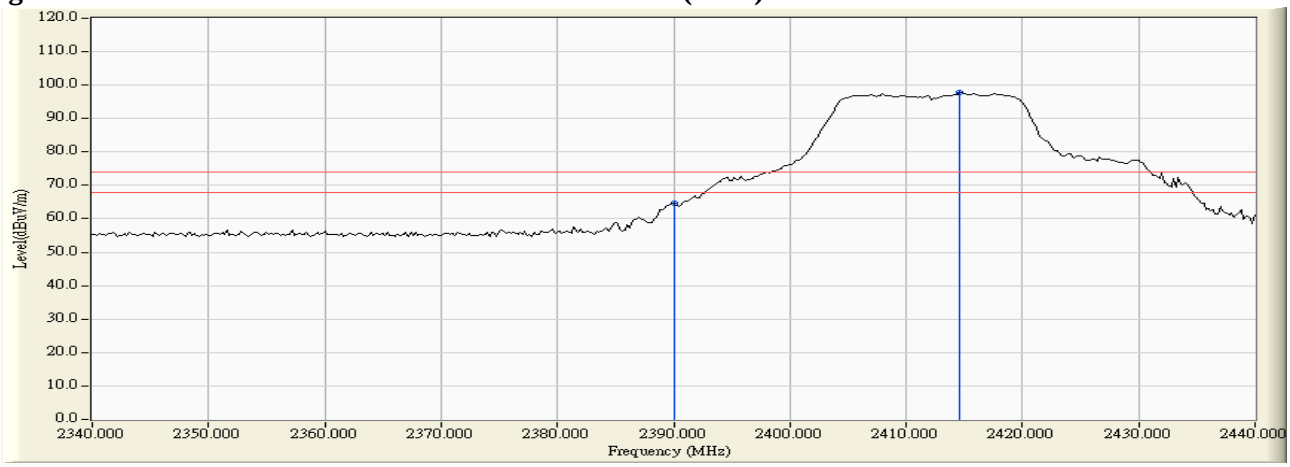
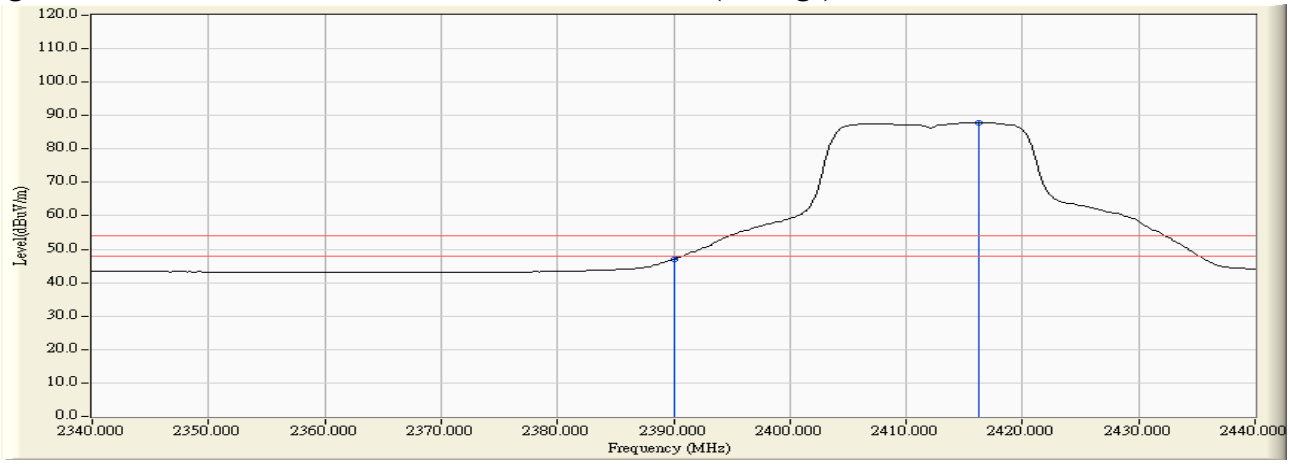


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2464.700	32.039	67.432	99.472	--	--	--
11 (Peak)	2483.500	32.182	32.129	64.311	74.000	54.000	Pass
11 (Average)	2456.900	31.982	57.894	89.875	--	--	--
11 (Average)	2483.500	32.182	14.889	47.071	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

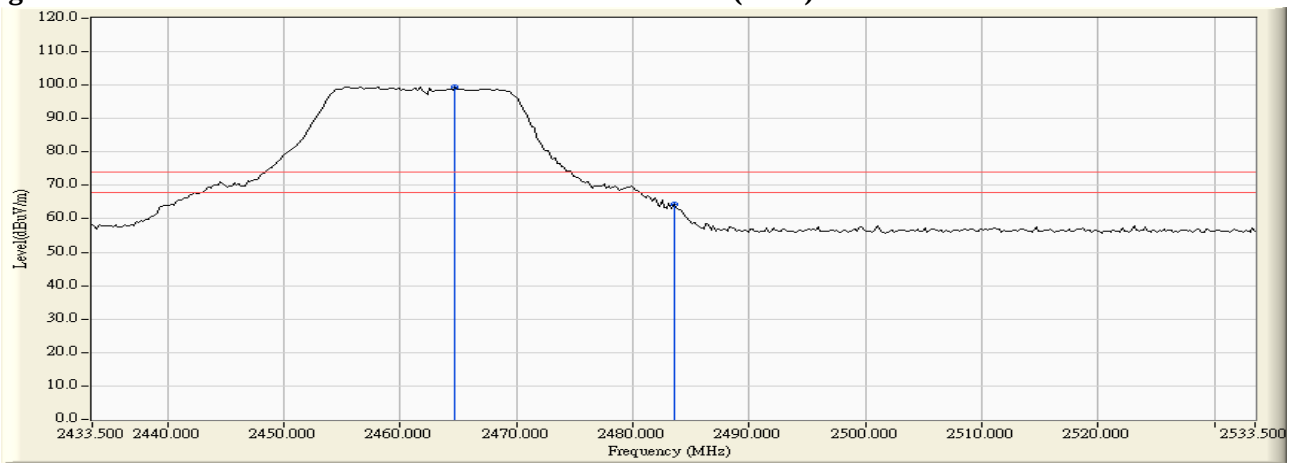
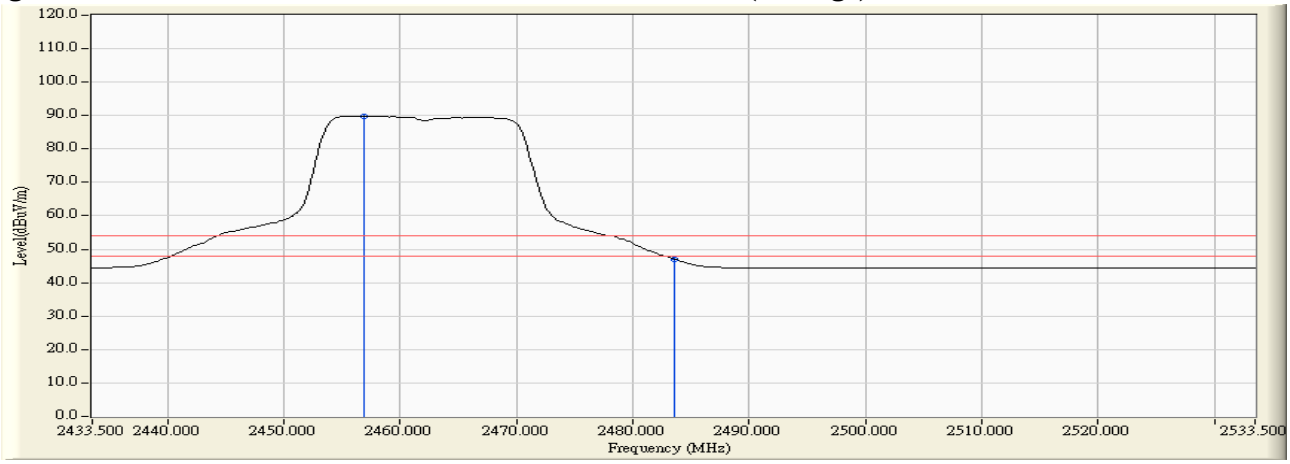


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) -Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2464.500	31.307	65.941	97.248	--	--	--
11 (Peak)	2483.500	31.435	29.526	60.961	74.000	54.000	Pass
11 (Average)	2456.900	31.256	56.379	87.634	--	--	--
11 (Average)	2483.500	31.435	14.186	45.621	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

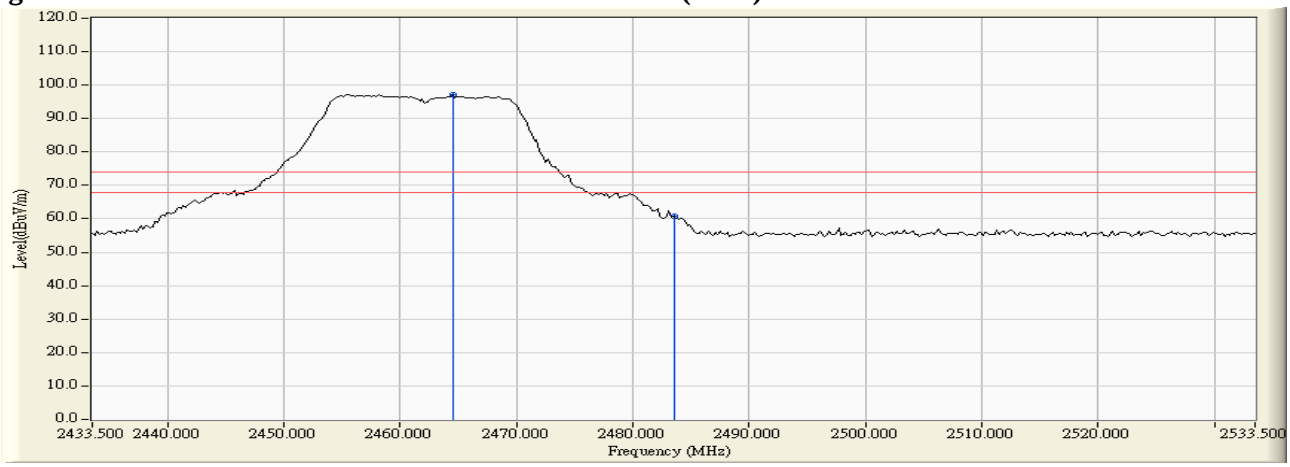
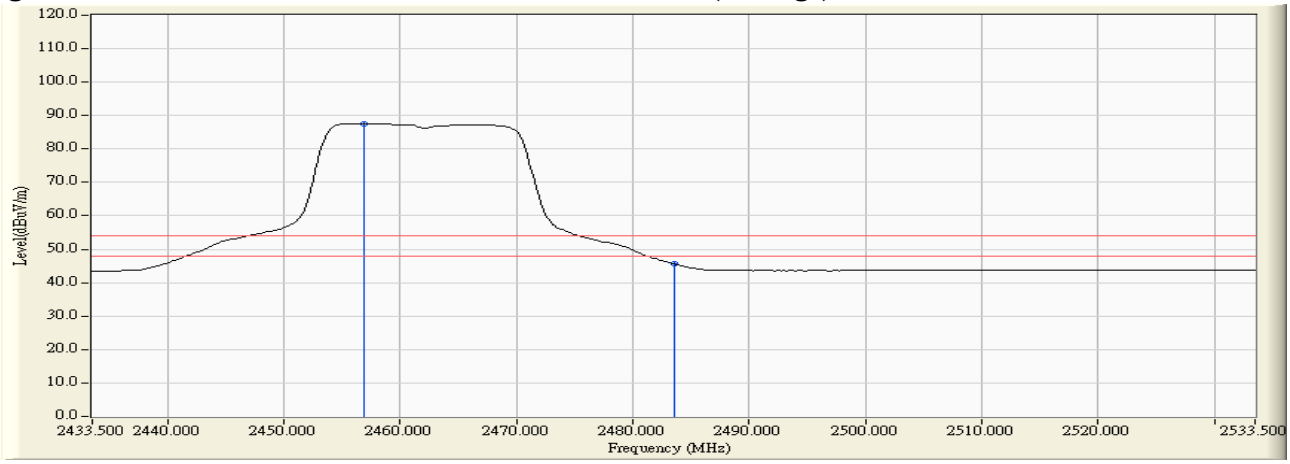


Figure Channel 11: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	31.509	39.973	71.482	74.000	54.000	Pass
01 (Peak)	2408.000	31.611	69.642	101.254	--	--	--
01 (Average)	2390.000	31.509	17.915	49.424	74.000	54.000	Pass
01 (Average)	2417.400	31.679	59.585	91.265	--	--	--

Figure Channel 01: Horizontal (Peak)

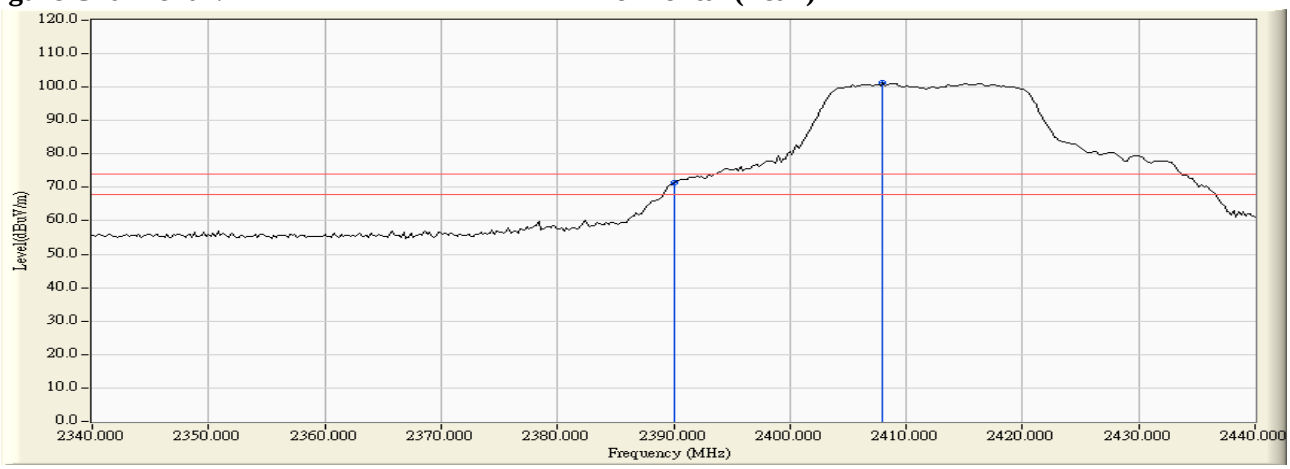
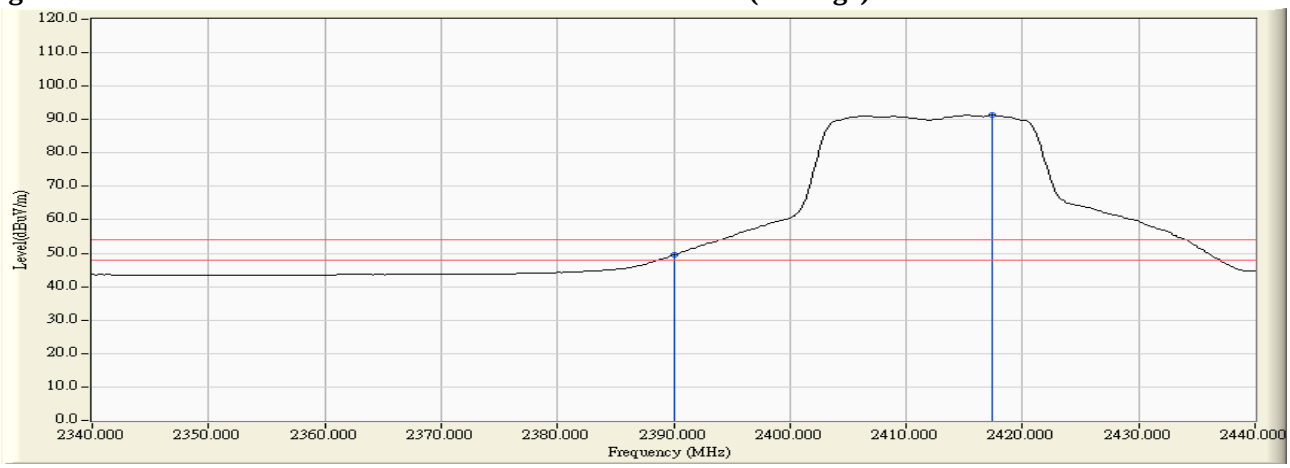


Figure Channel 01: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2390.000	30.915	35.631	66.546	74.000	54.000	Pass
01 (Peak)	2409.000	30.937	65.577	96.514	--	--	--
01 (Average)	2390.000	30.915	15.174	46.089	74.000	54.000	Pass
01 (Average)	2417.400	30.985	55.748	86.734	--	--	--

Figure Channel 01: Vertical (Peak)

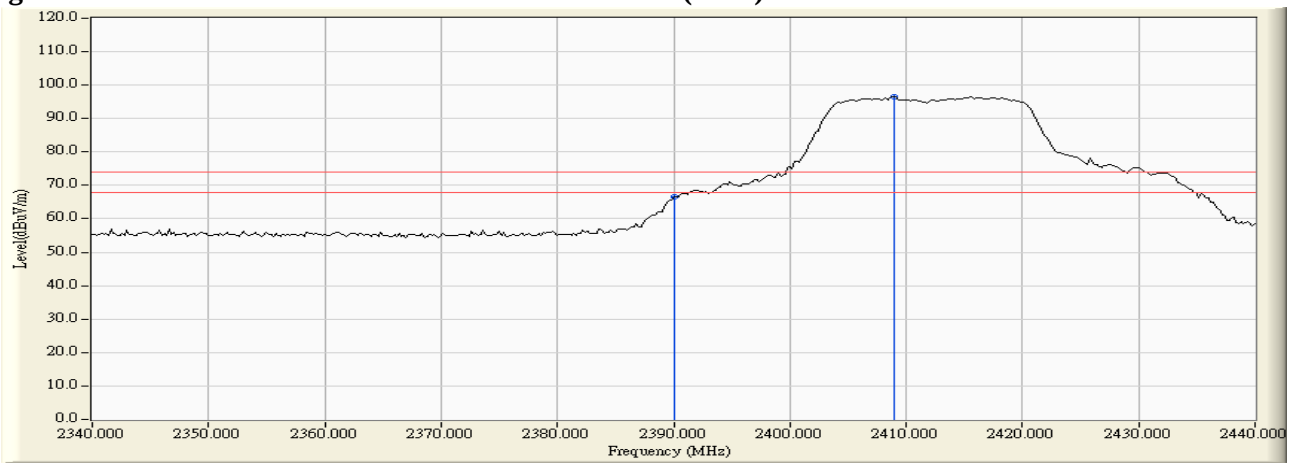
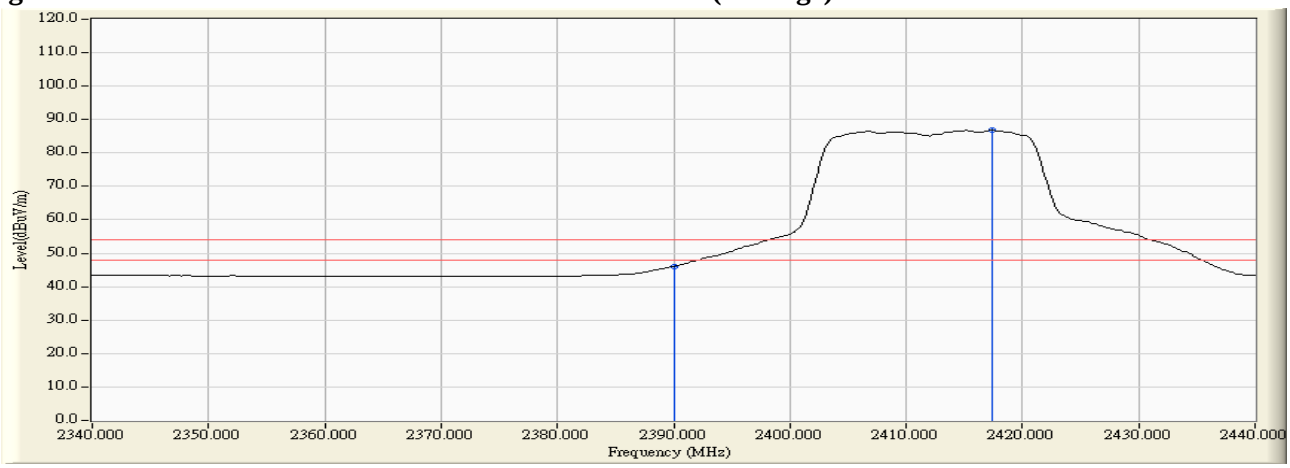


Figure Channel 01: Vertical (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna PIFA

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.900	31.997	66.732	98.728	--	--	--
11 (Peak)	2483.500	32.182	30.611	62.793	74.000	54.000	Pass
11 (Average)	2456.500	31.977	56.654	88.632	--	--	--
11 (Average)	2483.500	32.182	14.466	46.648	74.000	54.000	Pass

Figure Channel 11: Horizontal (Peak)

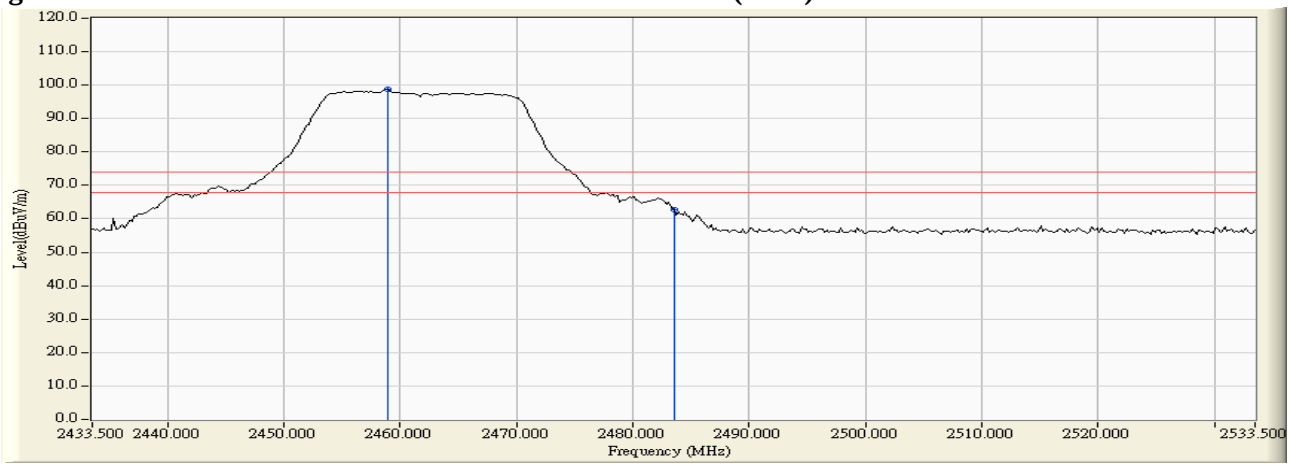
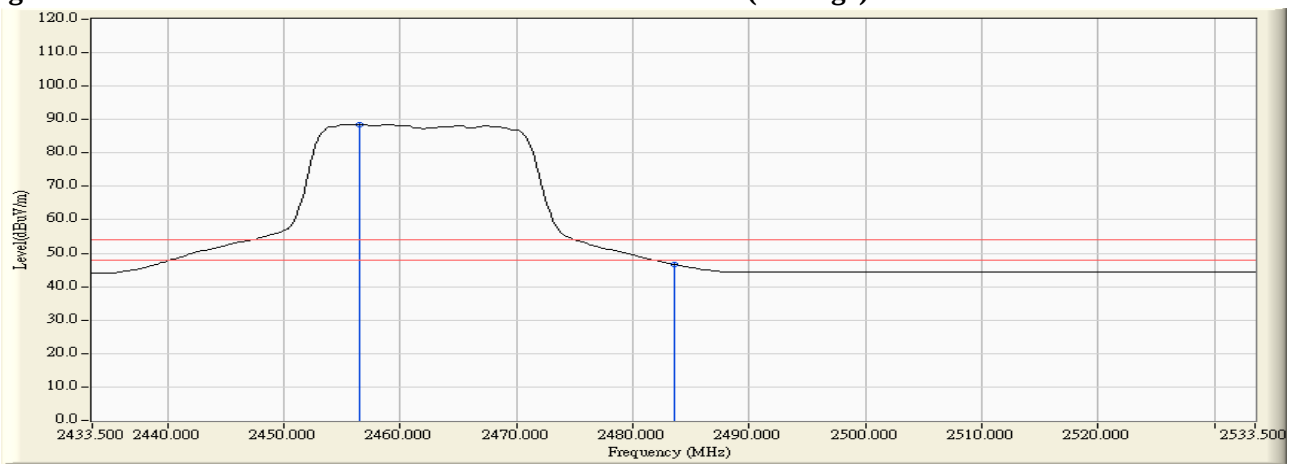


Figure Channel 11: Horizontal (Average)



Note:

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

Product : Bar Code Printer
Test Item : Band Edge Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW)
-Antenna PIFA

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11 (Peak)	2458.900	31.270	64.980	96.249	--	--	--
11 (Peak)	2483.500	31.435	28.890	60.325	74.000	54.000	Pass
11 (Average)	2456.500	31.252	54.984	86.237	--	--	--
11 (Average)	2483.500	31.435	14.210	45.645	74.000	54.000	Pass

Figure Channel 11: Vertical (Peak)

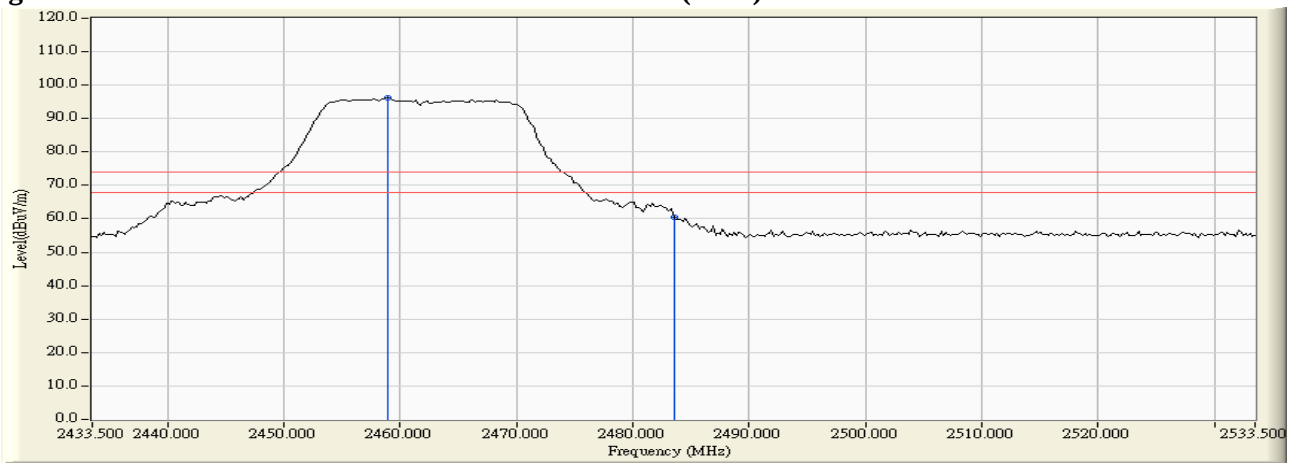
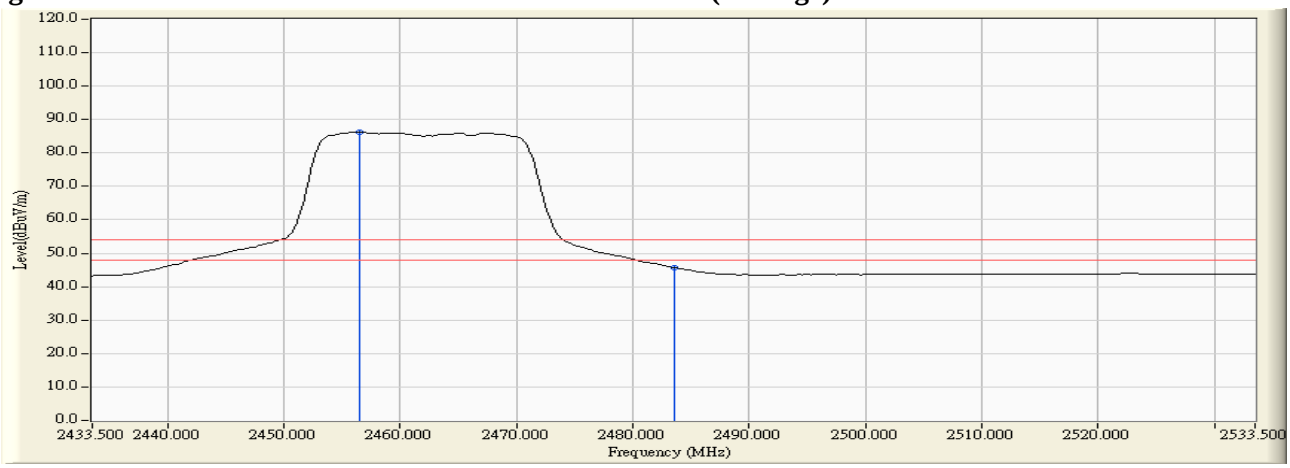


Figure Channel 11: Vertical (Average)



Note:

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

7. Occupied Bandwidth

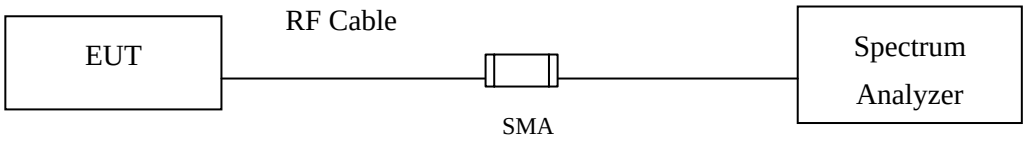
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

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

7.5. Uncertainty

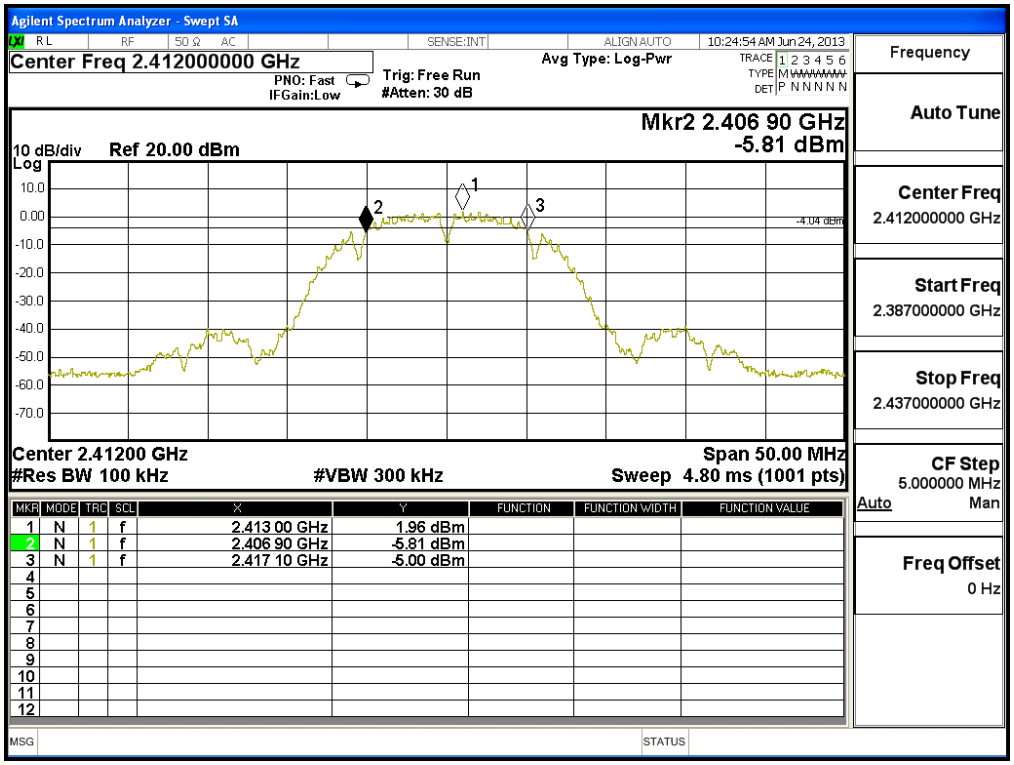
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	10200	>500	Pass

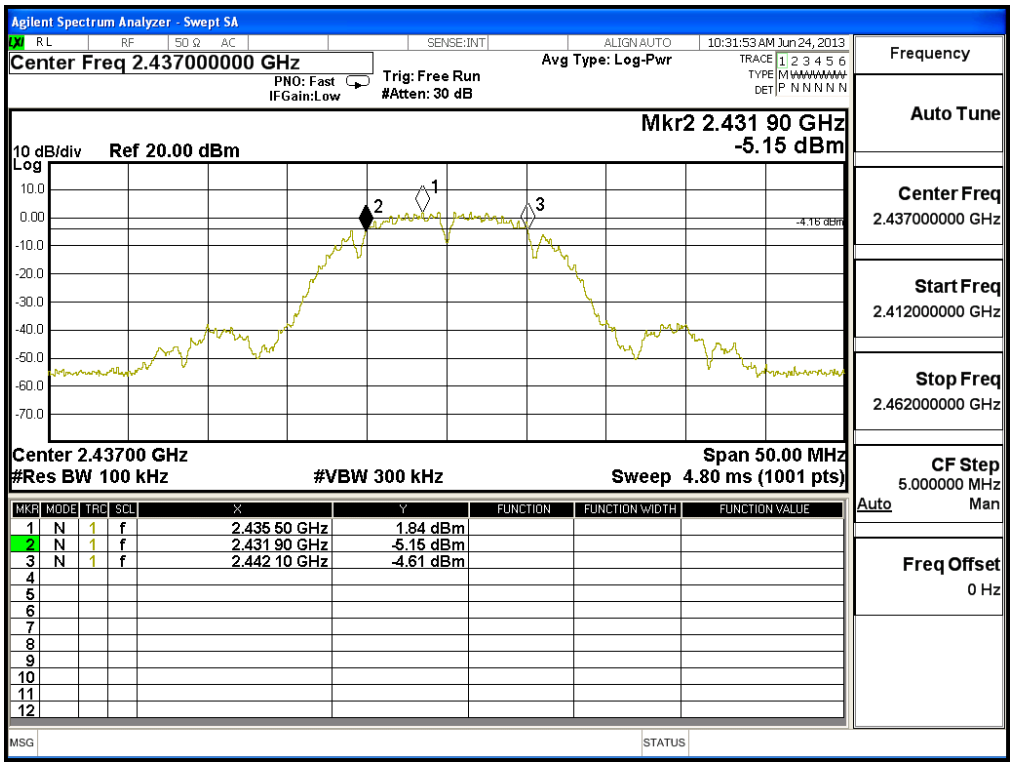
Figure Channel 1:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	10200	>500	Pass

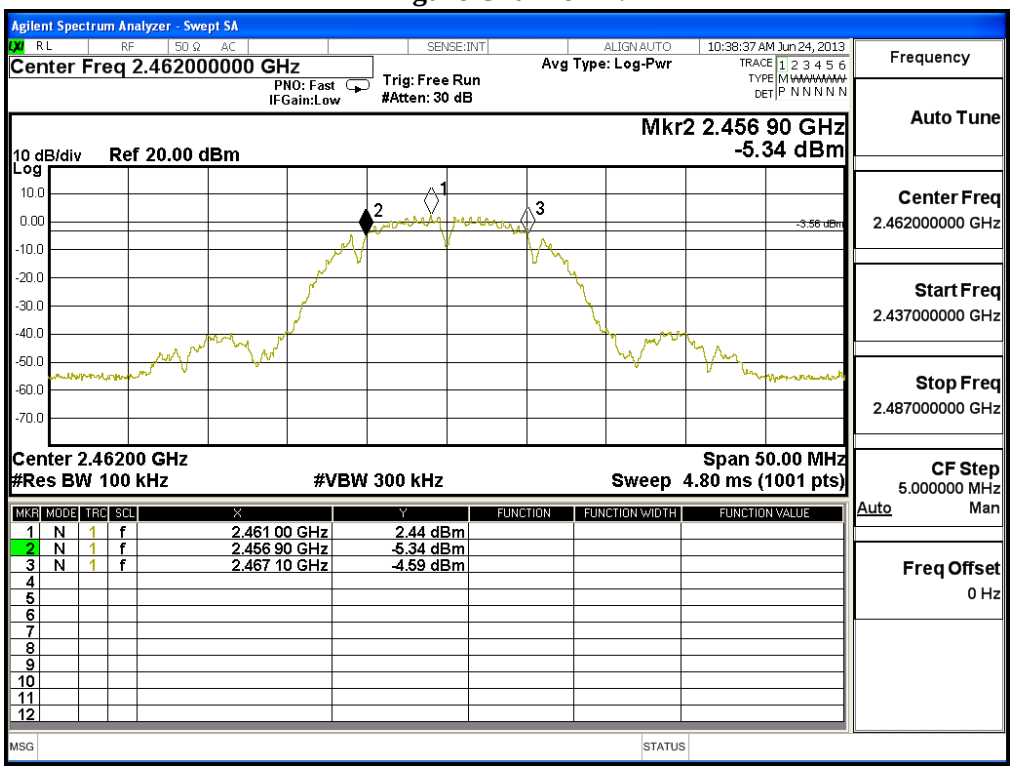
Figure Channel 6:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	10200	>500	Pass

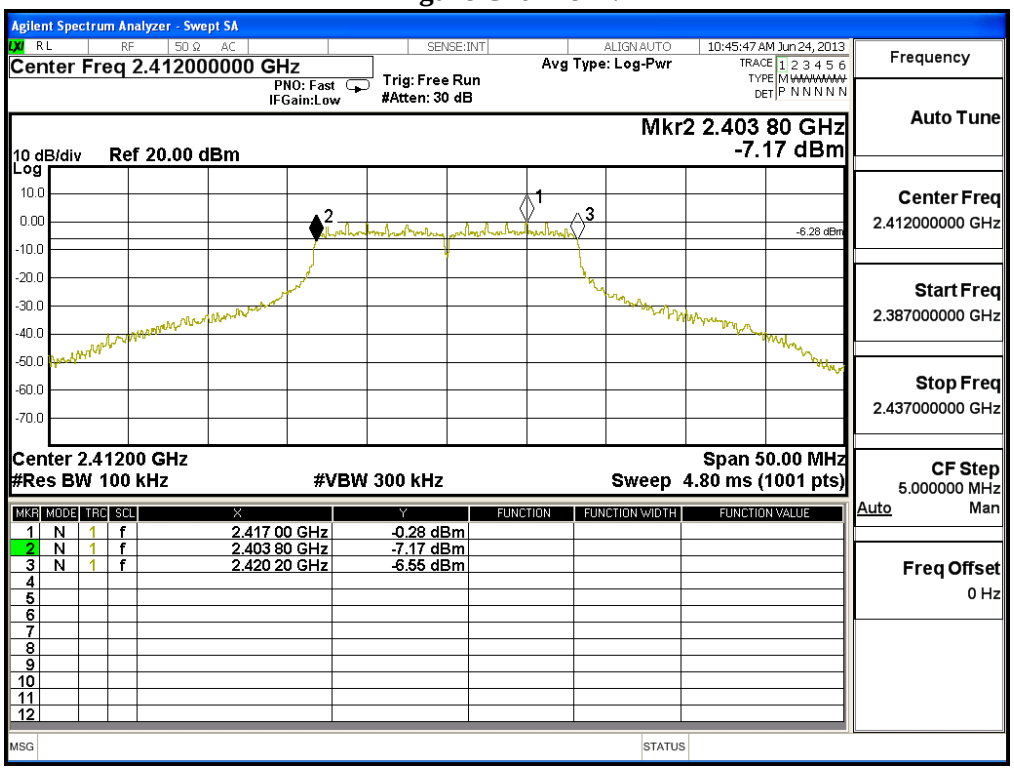
Figure Channel 11:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	16400	>500	Pass

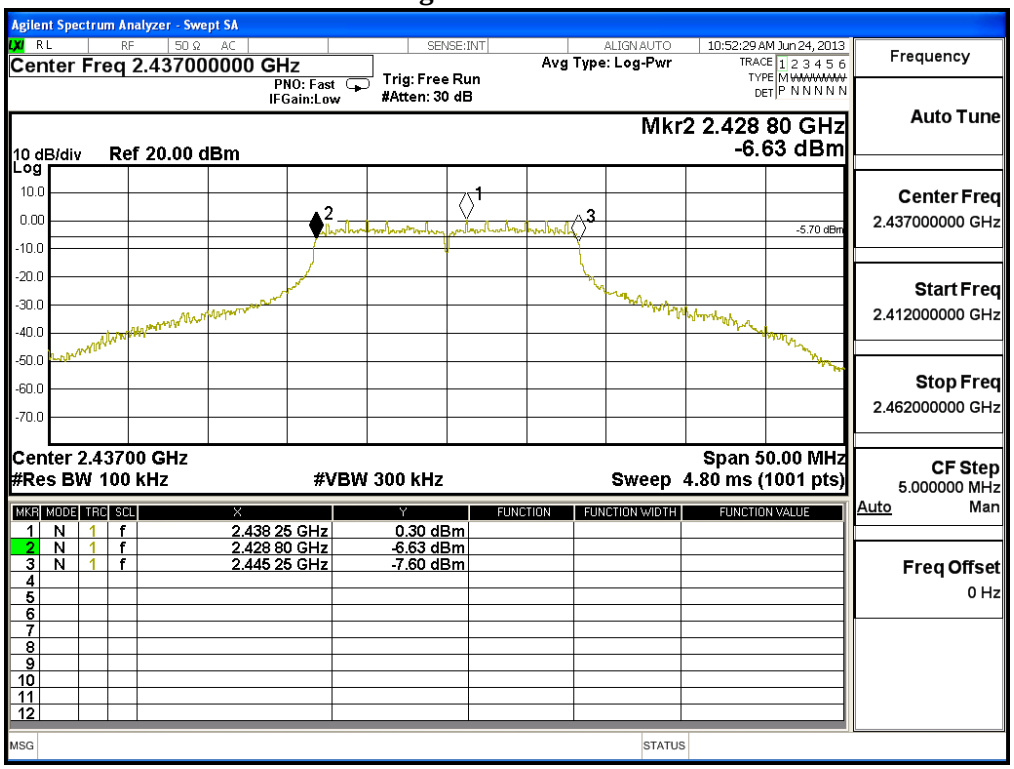
Figure Channel 1:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

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

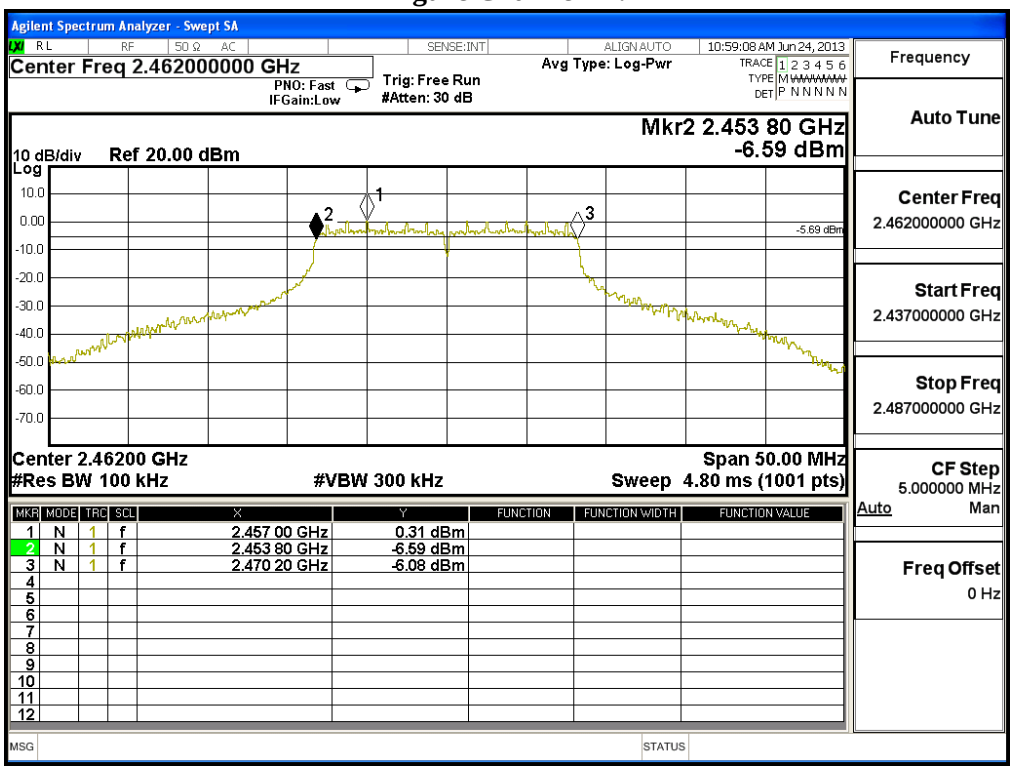
Figure Channel 6:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	16400	>500	Pass

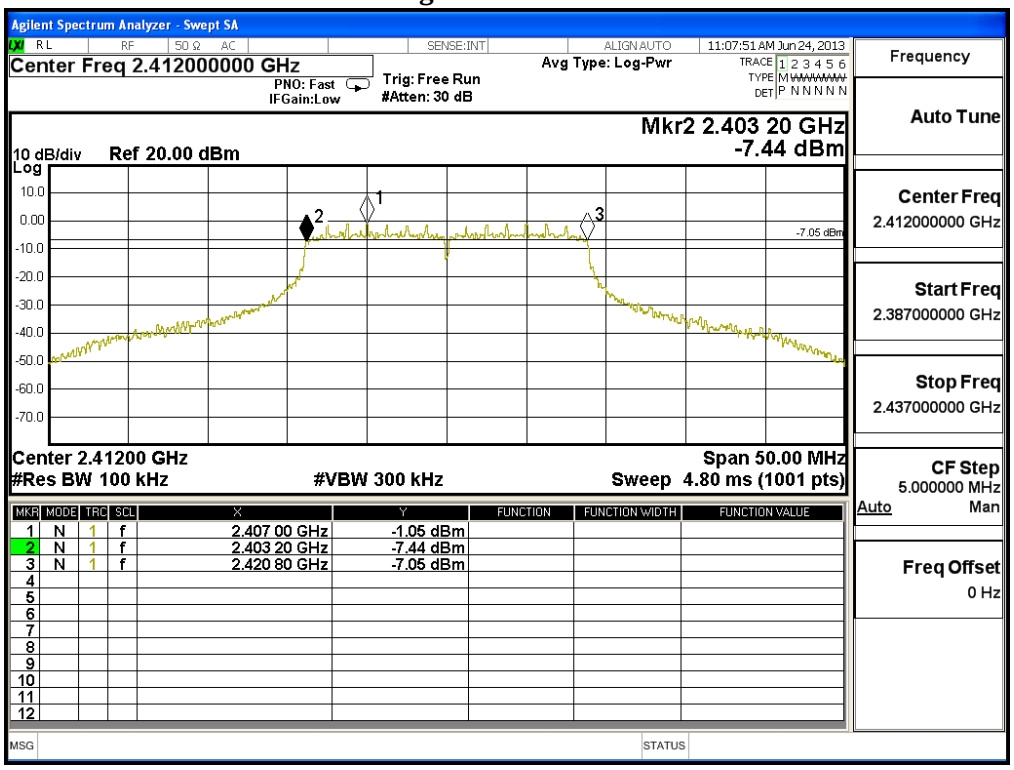
Figure Channel 11:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
1	2412	17600	>500	Pass

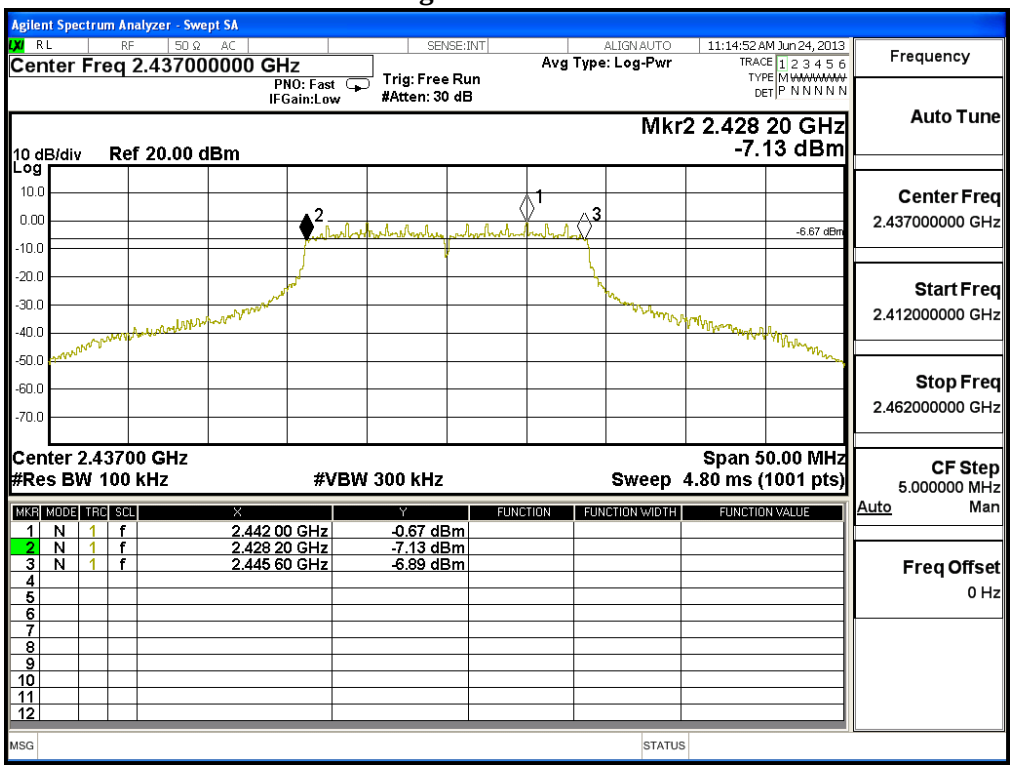
Figure Channel 1:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
6	2437	17400	>500	Pass

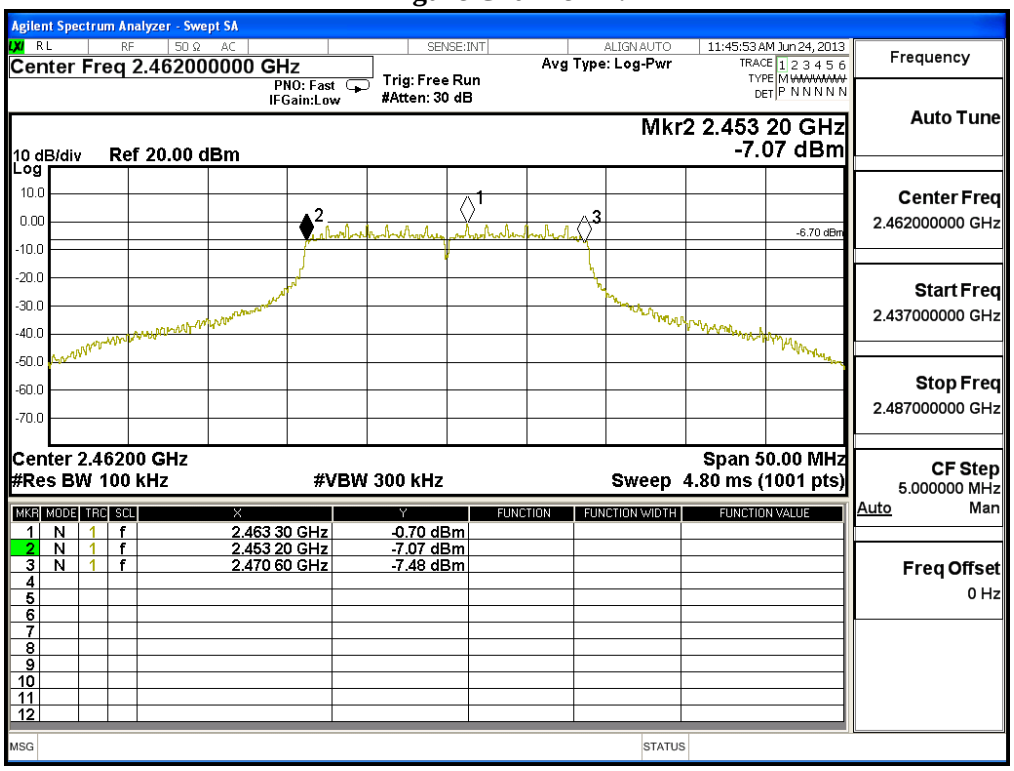
Figure Channel 6:



Product : Bar Code Printer
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
11	2462	17400	>500	Pass

Figure Channel 11:



8. Power Density

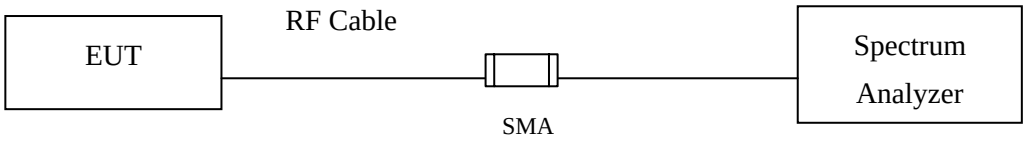
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2013
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2013
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

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

8.2. Test Setup



8.3. Limits

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

8.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009; tested according to DTS test procedure of KDB 558074 for compliance to FCC 47CFR 15.247 requirements.
The maximum power spectral density using KDB 558074 section 10.2 PKPSD (peak PSD) method.

8.5. Uncertainty

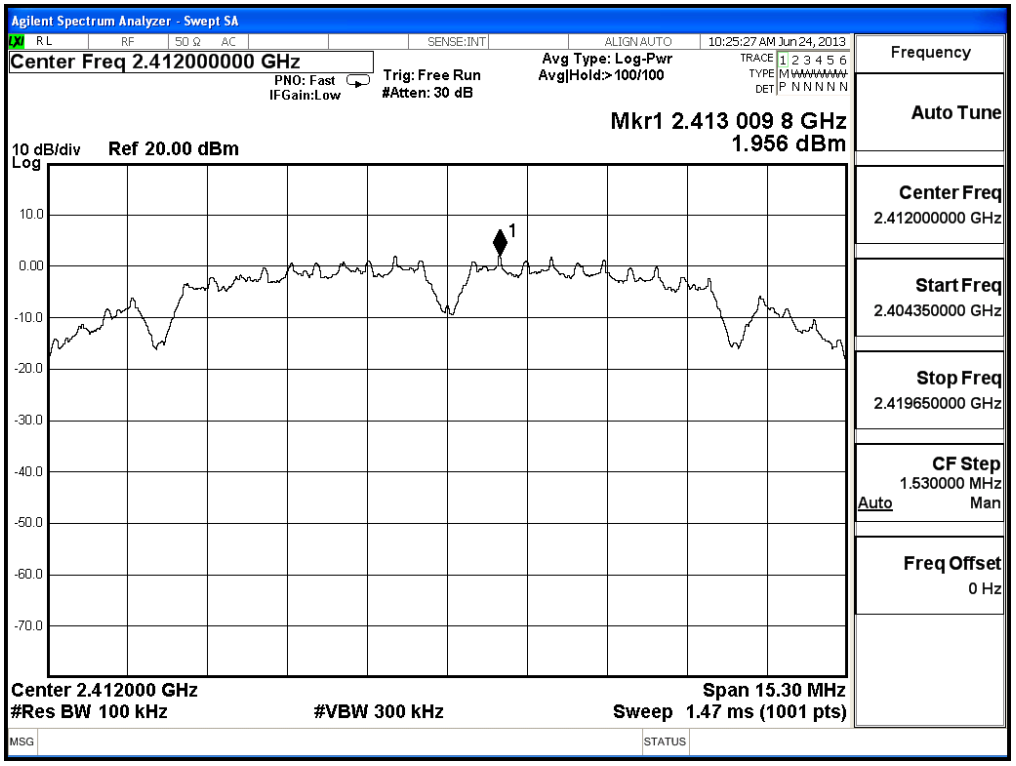
± 1.27 dB

8.6. Test Result of Power Density

Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	1.956	< 8dBm	Pass

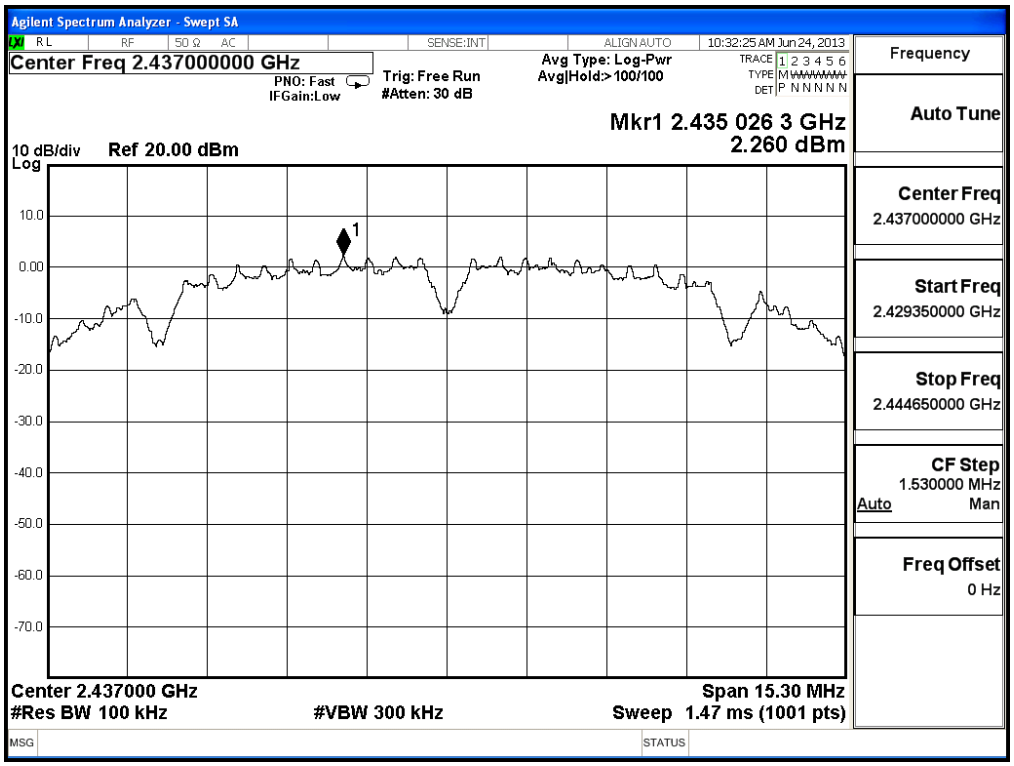
Figure Channel 1:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	2.260	< 8dBm	Pass

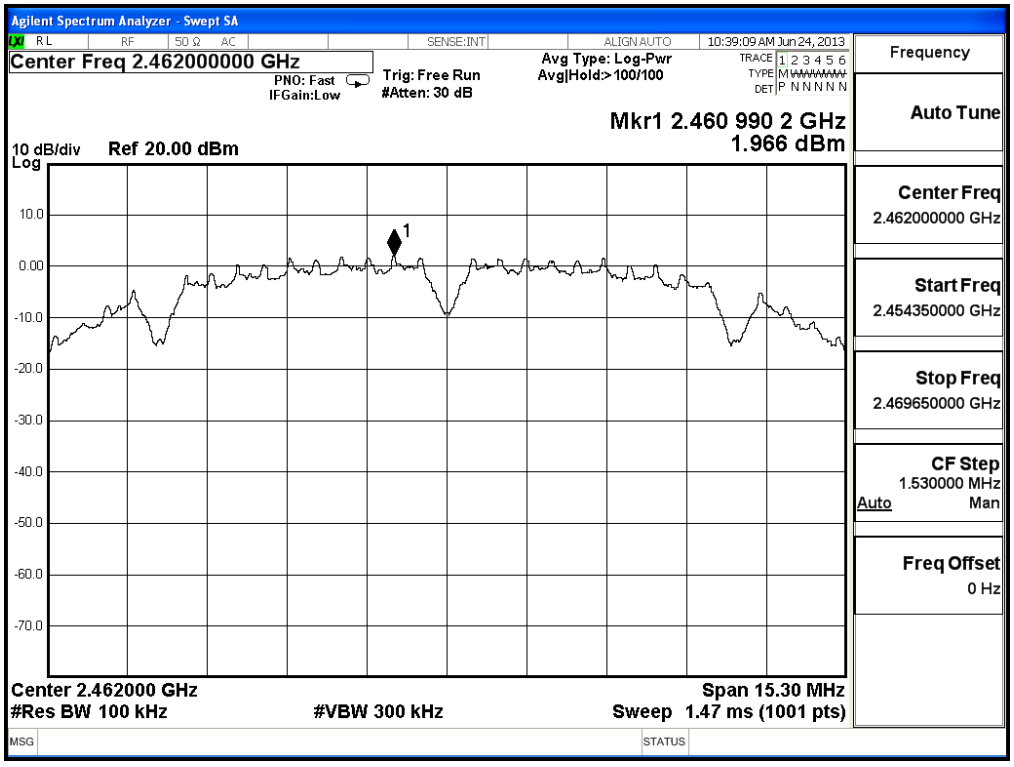
Figure Channel 6:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit (802.11b 1Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	1.966	< 8dBm	Pass

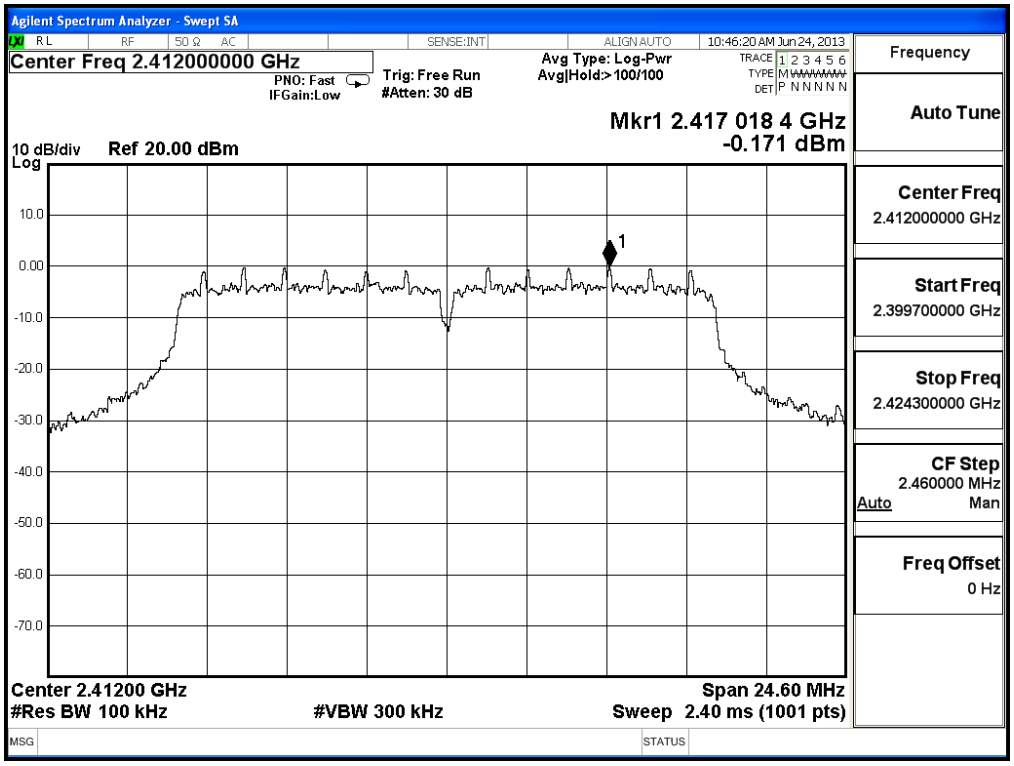
Figure Channel 11:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-0.171	< 8dBm	Pass

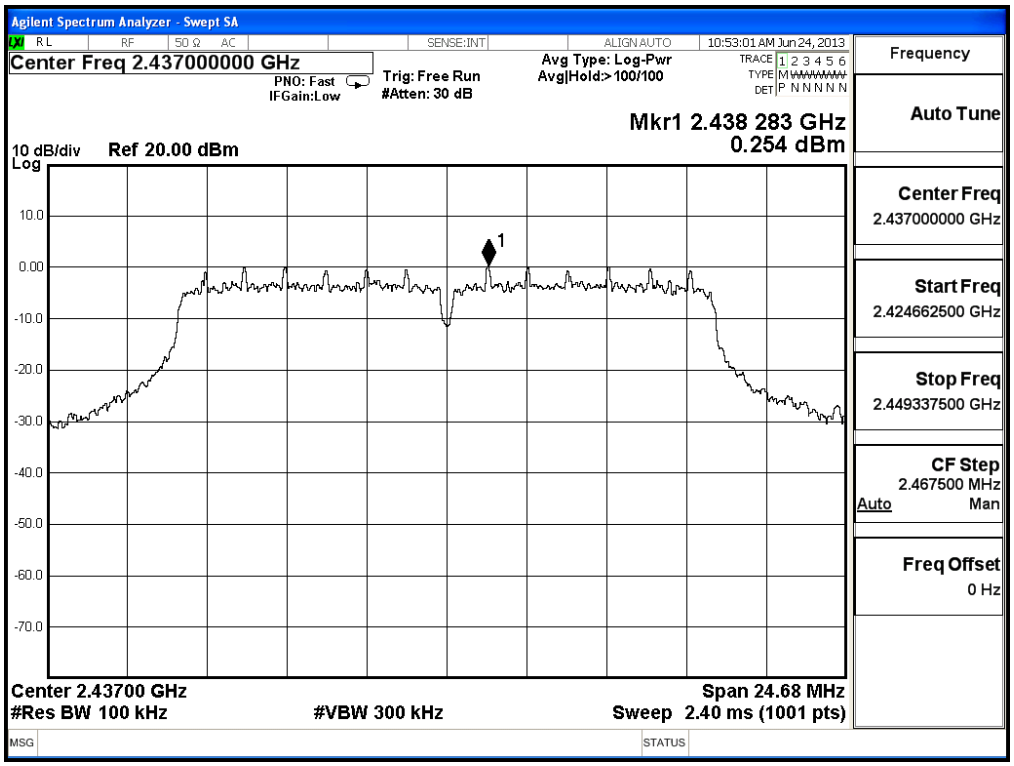
Figure Channel 1:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	0.254	< 8dBm	Pass

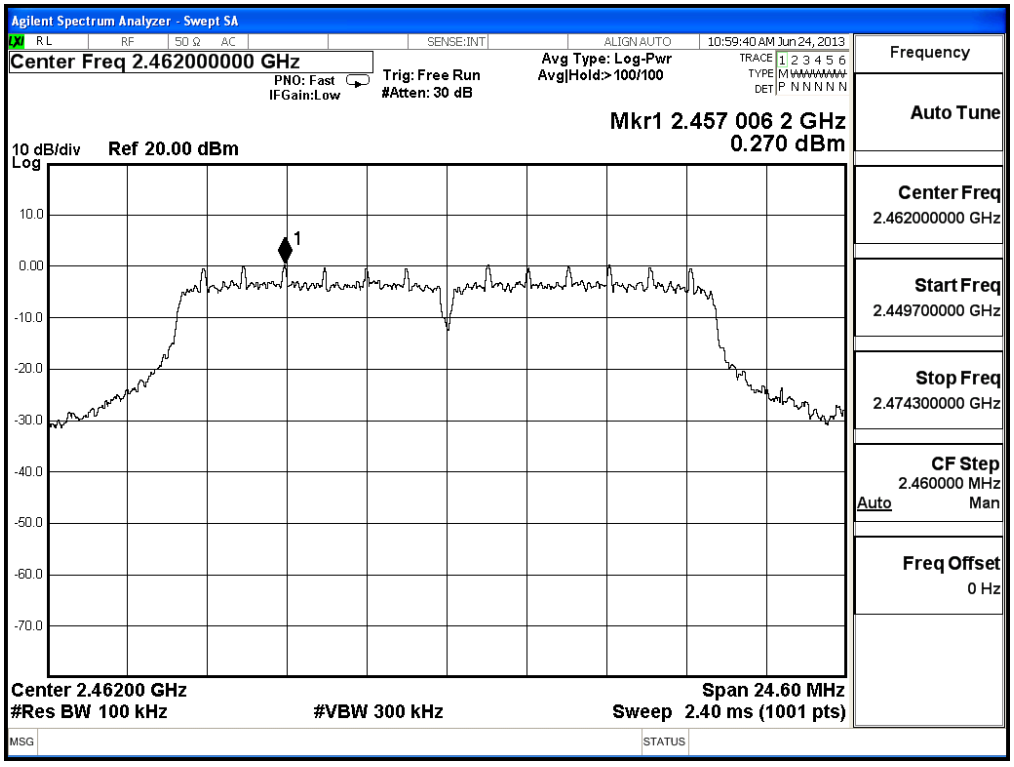
Figure Channel 6:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit (802.11g 6Mbps) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	0.270	< 8dBm	Pass

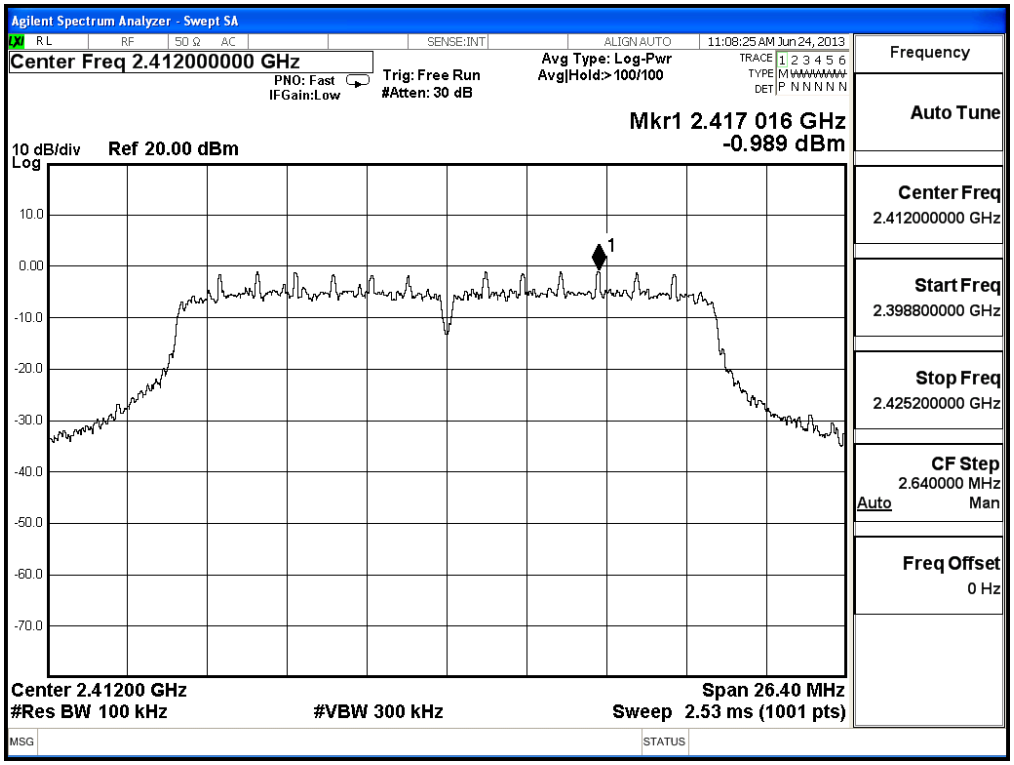
Figure Channel 11:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2412MHz)

Channel No.	Frequency (MHz)	Measure Level (dBm)	Limit (dBm)	Result
1	2412	-0.989	< 8dBm	Pass

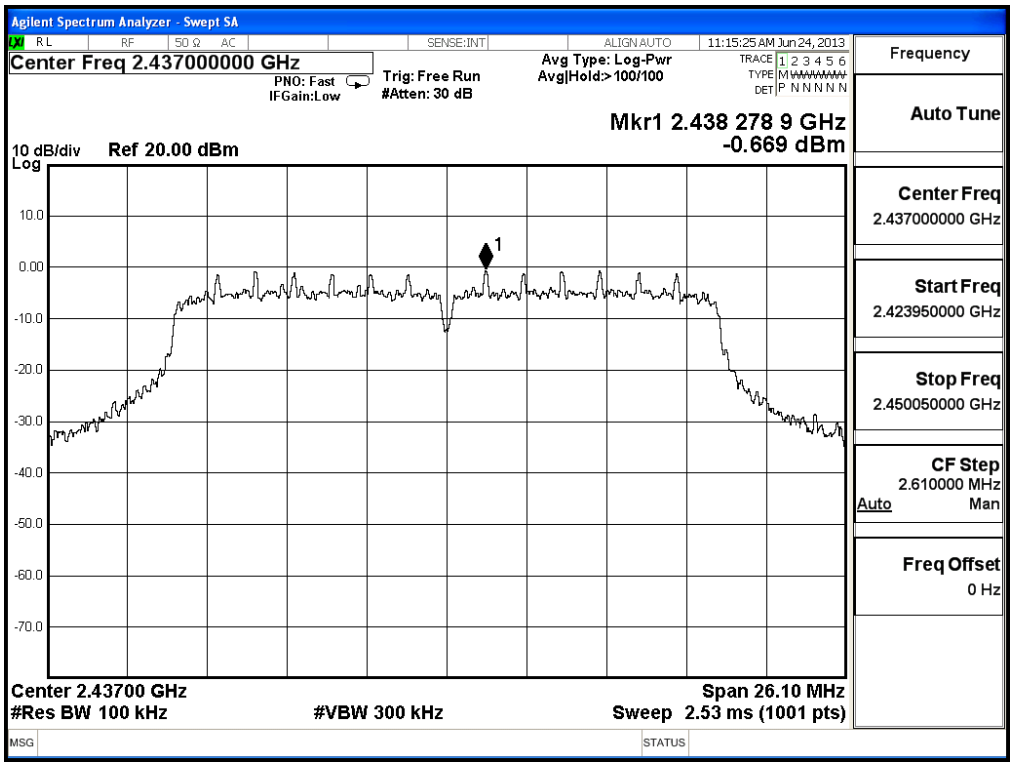
Figure Channel 1:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2437MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
6	2437	-0.669	< 8dBm	Pass

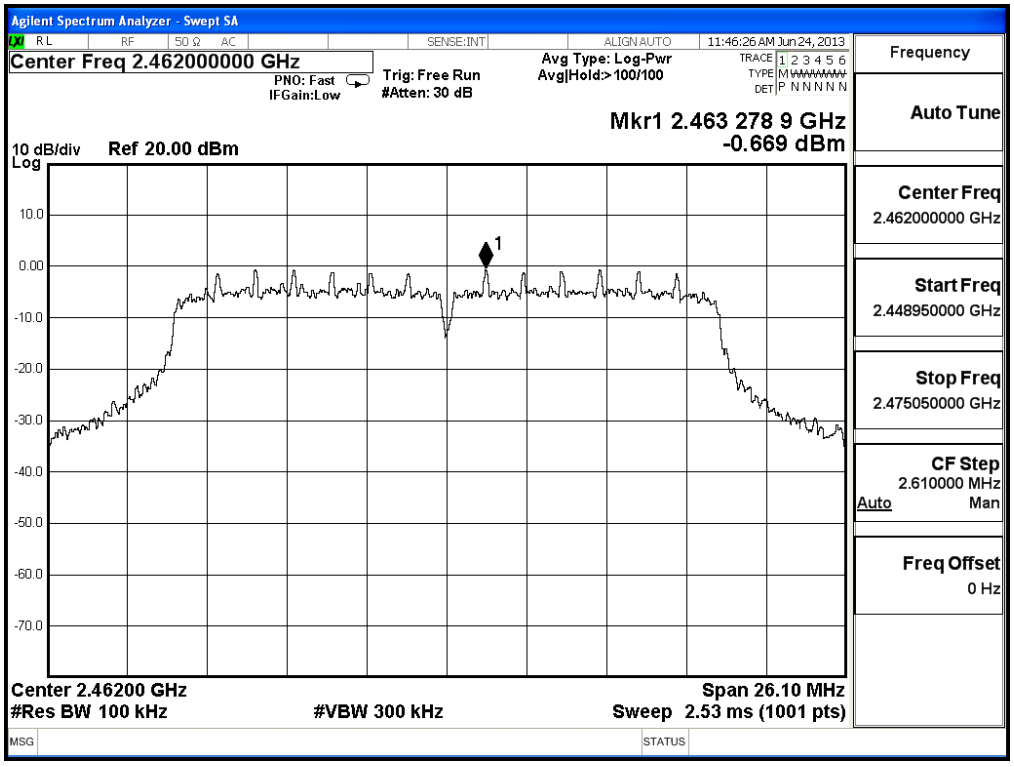
Figure Channel 6:



Product : Bar Code Printer
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 3: Transmit (802.11n MCS0 7.2Mbps 20M-BW) (2462MHz)

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
11	2462	-0.669	< 8dBm	Pass

Figure Channel 11:



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs