

COMPLIANCE WORLDWIDE INC. TEST REPORT 451-11

**In Accordance with the Requirements of
Federal Communications Commission CFR Title 47 Part 15.249, Subpart C
Industry Canada RSS 210, Issue 8**

**Low Power License-Exempt Radio Communication Devices
Intentional Radiators**

Issued to

**The Coca Cola Company
1 Coca-Cola Plaza
Atlanta, GA 30313**

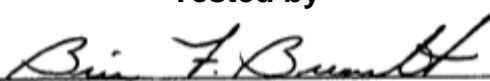
for the

Freestyle Dispensing Machine

**FCC ID: XQ4-GFS-SHEAR2
IC: 8593A-GFSSHEAR2**

Report Issued on November 18, 2011

Tested by



Brian F. Breault

Reviewed by



Larry K. Stillings

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1. Scope

This test report certifies that the Freestyle Dispensing Machine, as tested, meets the FCC Part 15, Subpart C and Industry Canada RSS 210, Issue 8 requirements. The scope of this test report is limited to the test sample provided by the client, only in as much as that sample represents other production units. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

2. Product Details

2.1. Manufacturer: The Coca Cola Company

2.2. Model Number: Freestyle Dispensing Machine

2.3. Serial Number: ZPL0001136
Item Code: 45907

2.4. Description: The Freestyle dispenser is a free-standing ice-beverage combo fountain machine with a single nozzle that is capable of dispensing a substantially wider variety of beverages than is possible with any current dispenser. The machine contains closed-loop controls for dispensing macro fluids (water, soda and HFCS), 36 micro ingredient pumps (for brands and flavors), NNS pumps, cold-carbonation, ice handling (for ice dispensing and chilling the macro fluids) and a 15" touch screen LCD for Consumer interaction. All of the microingredients (including NNS) are stored within the machine and are automatically identified using a set of EPC Gen 2 RFID tag readers. There are 4 main RFID readers in the system; one in the door of the unit referred to as the Easy Access Reader, and one on each of the 3 micro ingredient shelves referred to as the Shelf Reader.

2.5. Power Source: 120 Volts, 60 Hz

2.6. Hardware Revs.:	UIM ESN	3-09	QPM - Top Left	3-01
	Easy Access Reader	3-03	QPM - Top Middle	3-01
	ADA Keypad		QPM - Top Right	3-01
	PSM	3-00	QPM - Mid Left	3-01
	Main	3-00	QPM - Mid Middle	3-01
	Backplane	1-03	QPM - Mid Right	3-01
	HFCS FCM	3-01	QPM - Bottom Left	3-01
	Carb FCM	3-00	QPM - Bottom Middle	3-01
	Water FCM	3-01	QPM - Bottom Right	3-01
			QPM - NNS	3-01
			Shelf - Top	3-01
			Shelf - Middle	3-01
			Shelf - Bottom	3-01

2.7. Software Rev.: 7.0.7

2.8. EMC Modifications: None.

3. Product Configuration

3.1. Support Equipment

Device	Manufacturer	Model	Serial No.	Comment
No Support Equipment				

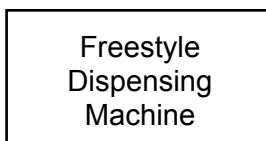
3.2. Cables

Cable Type	Length	Shield	From	To
No external cables other than the AC line cord	2M	No	EUT	120 VAC

3.3. Operational Characteristics & Software

1. Open the top door and toggle the green on/off switch to the on position. The unit will begin a POST/Boot process similar to that of a PC.
2. Once the POST is complete, the touch screen will prompt: "Touch Screen." Touching the screen places the Freestyle Dispensing Machine into its normal operating state.
3. The transmitters will default to continuous transmit mode.

3.4. Block Diagram



4. Measurements Parameters

4.1. Measurement Equipment Used to Perform Test

Device	Manufacturer	Model No.	Serial No.	Cal Due
Spectrum Analyzer	Agilent	E4407B	MY45104493	12/22/2012
Spectrum Analyzer	Rohde & Schwarz	FSV40	100899	5/26/2012
Microwave Preamp	Hewlett Packard	8449B	3008A01323	12/1/2012
Bilog Antenna	Com-Power	AC-220	25509	8/30/2012
Horn Antenna	Electro-Metrics	EM-6961	6337	10/19/2012
DMM / Temperature	Fluke	187	79690058	11/29/2011
Digital Barometer	Control Company	4195	ID236	11/9/2012

4.2. Measurement & Equipment Setup

Test Dates:	11/9/2011 - 11/16/2011
Test Engineers:	Brian Breault, Cody Merry
Normal Site Temperature (15 - 35°C):	21.2
Relative Humidity (20 -75%RH):	33
Frequency Range:	30 MHz to 9.6 GHz
Measurement Distance:	3 Meters
EMI Receiver IF Bandwidth:	100 kHz - 30 MHz to 1 GHz
	1 MHz - Above 1 GHz
EMI Receiver Avg Bandwidth:	300 kHz - 30 MHz to 1 GHz
	3 MHz - Above 1 GHz
Detector Function:	Peak, Quasi-Peak & Average

4. Measurements Parameters (continued)

4.3. Measurement Procedure

Test measurements were made in accordance FCC Part 15.249, IC RSS-210 Annex II: Operation within the bands 902 - 928 MHz, 2400 - 2483.5 MHz, 5725 - 5875 MHz, and 24.0 - 24.25 GHz.

The test methods used to generate the data in this test report is in accordance with ANSI C63.4: 2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

4.4. Choice of Operating Frequencies

The Freestyle Dispensing Machine cartridges employ 24 channels in the 903 MHz to 928 MHz frequency range. In accordance with ANSI C63.4, Section 13.1.1, three channels are detailed in this test report:

- Low Channel – 903 MHz
- Middle Channel – 909 MHz
- High Channel – 927 MHz

5. Measurement Summary

Test Requirement	FCC Requirement	IC Requirement	Test Section	Result	Comment
Antenna Requirement	15.203	RSS-GEN 7.1.2	6.1	Compliant	Unit has internal PCB antennas.
Radiated Field Strength of Fundamental	15.249 (a),(c)	RSS-210 A2.9	6.2	Compliant	
Radiated Field Strength of Harmonics	15.249 (a),(c)	RSS-210 A2.9	6.3	Compliant	
Fixed, Point-to-Point Operation	15.249 (b)	N/A	---	Not Required	
Band Edge Measurements	15.249 (d) 15.209	RSS GEN 4.9	6.4	Compliant	
Spurious Radiated Emissions	15.249 (d), 15.209	RSS-210 A2.9(b)	6.5	Compliant	
Occupied Bandwidth 26 dB	ANSI C63.4 § 13.1.7	N/A	6.6	Compliant	
99% Bandwidth	N/A	RSS-GEN 4.6.1	6.7	Compliant	
Conducted Emissions	15.207	RSS-GEN 7.2.2	6.8	Compliant	
Public Exposure to Radio Frequency Energy Levels	1.1307 (b) (1)	RSS GEN 5.5	N/A	Compliant	

6. Measurement Data

6.1. Antenna Requirement (Section 15.203, RSS-GEN)

Requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section.

Status: The unit under test employs permanent, non-user accessible antennas.

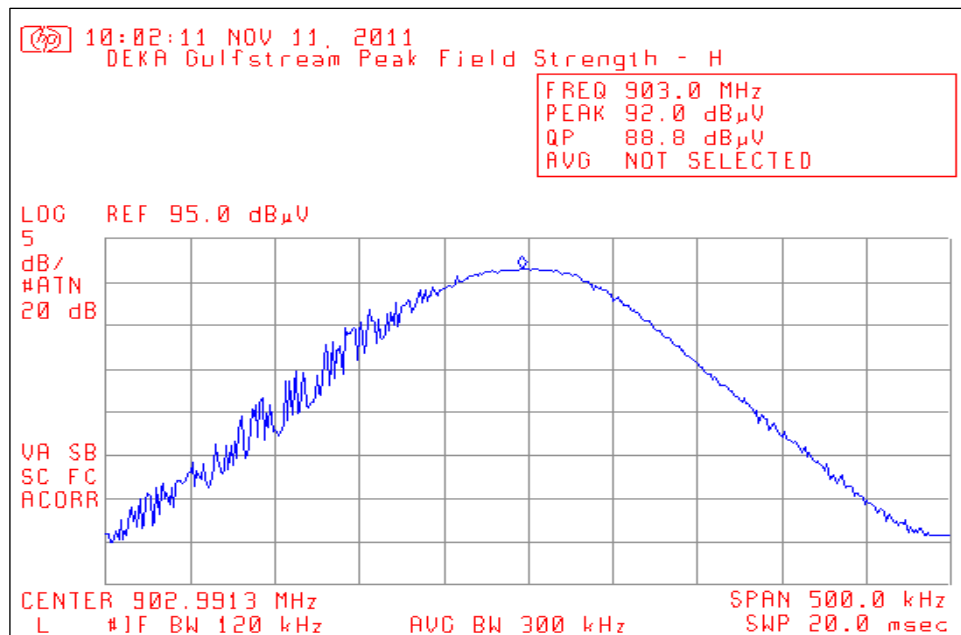
6.2. Radiated Field Strength of Fundamental (15.249, Section (a), (c)), IC RSS-210 A2.9

Requirement: The 3 meter field strength of the fundamental emissions from intentional radiators operated within the 902-928 MHz frequency bands shall comply with the following requirement: 50 millivolts/meter (94 dBμV/m), quasi-peak mode measurement.

Site Temperature: 22.4°C Site Humidity: 31% RH

Chan.	Freq. MHz	Amplitude ¹ (dBμV/m) at 3Meters		Quasi-Peak Limit at 3 Meters	Margin	Ant Polarity	Ant Height	Turntable Azimuth	Result
		Peak	Quasi-Peak						
Low	903	92.00	88.8	94	-5.2	H	100	324	Compliant
Middle	909	89.40	82.3	94	-11.7	H	112	310	Compliant
High	927	89.20	88.6	94	-5.4	H	111	10	Compliant

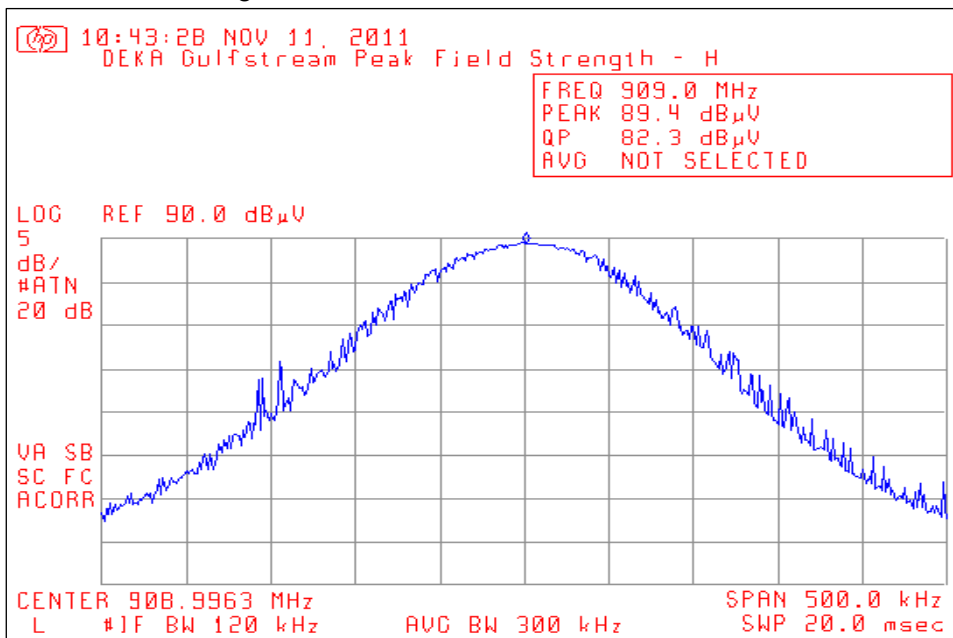
6.2.1. Radiated Field Strength of Fundamental – Low Channel



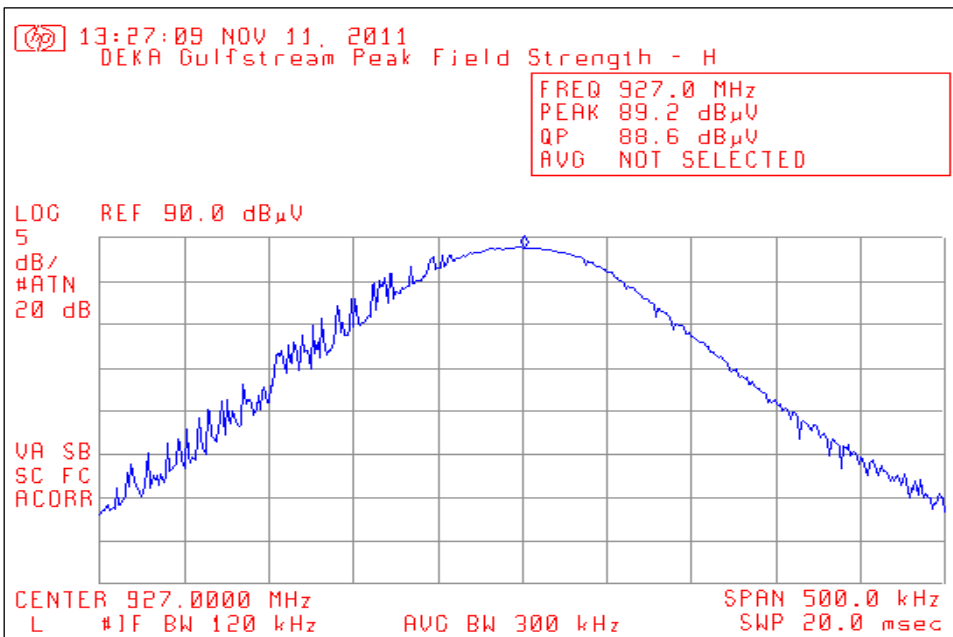
6. Measurement Data (continued)

6.2. Radiated Field Strength of Fundamental (15.249, Section (a)), IC RSS-210 A2.9

6.2.2. Radiated Field Strength of Fundamental – Middle Channel



6.2.3. Radiated Field Strength of Fundamental – Middle Channel



6. Measurement Data (continued)

6.3. Radiated Field Strength of Harmonics (15.249, Section (a)), IC RSS-210 A2.9

Requirement: The 3 meter field strength of the harmonic emissions from intentional radiators operated within the 902-928 MHz frequency bands shall comply with the following: 500 microvolts/meter (54 dB μ V/m), average mode measurement. Peak field strength may not be greater than 20 dB above the average limit (74 dB μ V/m).

Note: The harmonic emissions detailed in this section represent the combined worst case emissions of the low, middle and high operating frequencies.

All correction factors are included in the field strength values.

Freq. (MHz)	Field Strength (dB μ V/m)		Limit (dB μ V/m)		Margin (dB μ V/m)		Antenna Polarity (H/V)	Result
	Peak	Average	Peak	Average	Peak	Average		
1806.000	44.41	39.28	74.00	54.00	-29.59	-14.72	H	Compliant
1818.000	56.64	51.73	74.00	54.00	-17.36	-2.27	V	Compliant
1854.000	46.84	39.72	74.00	54.00	-27.16	-14.28	V	Compliant
2709.000	42.78	33.50	74.00	54.00	-31.22	-20.50	H	Compliant
2727.000	43.17	33.16	74.00	54.00	-30.83	-20.84	H	Compliant
2781.000	42.45	33.19	74.00	54.00	-31.55	-20.81	H	Compliant
3612.000	47.75	38.95	74.00	54.00	-26.25	-15.05	V	Compliant
3636.000	54.17	40.12	74.00	54.00	-19.83	-13.88	V	Compliant
3708.000	46.26	35.33	74.00	54.00	-27.74	-18.67	V	Compliant
4515.000	44.09	34.74	74.00	54.00	-29.91	-19.26	H	Compliant
4545.000	44.07	35.15	74.00	54.00	-29.93	-18.85	H	Compliant
4635.000	44.79	32.43	74.00	54.00	-29.21	-21.57	V	Compliant
5418.000	44.43	34.55	74.00	54.00	-29.57	-19.45	V	Compliant
5454.000	47.05	34.63	74.00	54.00	-26.95	-19.37	V	Compliant
5562.000	46.86	34.09	74.00	54.00	-27.14	-19.91	V	Compliant
6321.000	47.26	34.69	74.00	54.00	-26.74	-19.31	V	Compliant
6363.000	47.85	35.80	74.00	54.00	-26.15	-18.20	V	Compliant
6489.000	47.10	34.54	74.00	54.00	-26.90	-19.46	V	Compliant
7224.000	49.40	37.36	74.00	54.00	-24.60	-16.64	V	Compliant
7272.000	49.86	37.86	74.00	54.00	-24.14	-16.14	H	Compliant
7416.000	50.52	37.96	74.00	54.00	-23.48	-16.04	H	Compliant
8127.000	50.51	38.62	74.00	54.00	-23.49	-15.38	H	Compliant
8181.000	50.82	38.60	74.00	54.00	-23.18	-15.40	H	Compliant
8343.000	50.61	38.48	74.00	54.00	-23.39	-15.52	H	Compliant
9030.000	53.14	40.80	74.00	54.00	-20.86	-13.20	H	Compliant
9090.000	52.99	40.47	74.00	54.00	-21.01	-13.53	H	Compliant
9270.000	53.81	40.23	74.00	54.00	-20.19	-13.77	V	Compliant

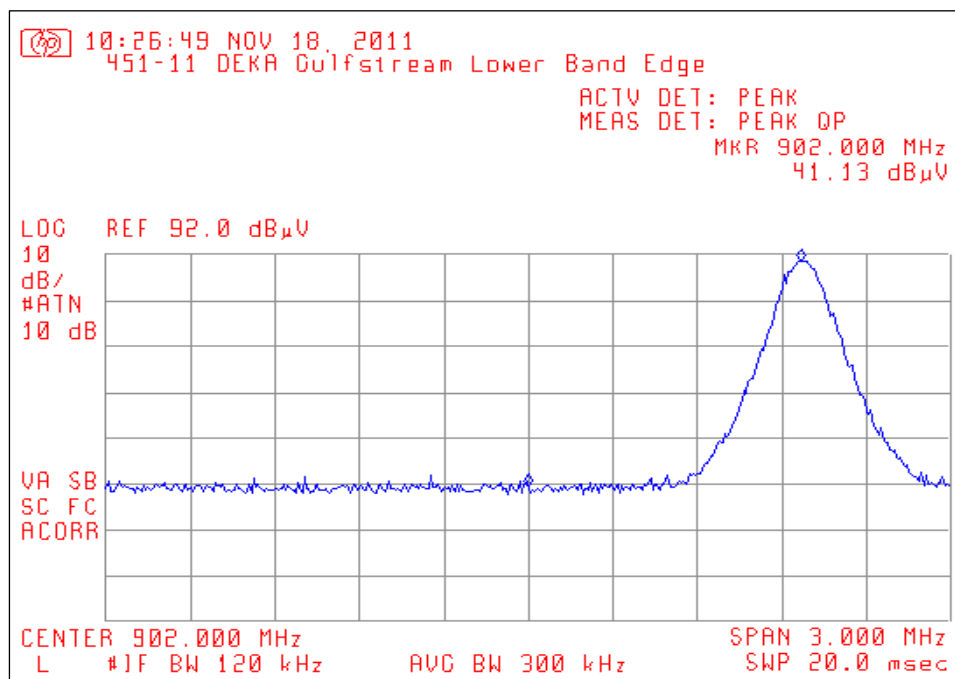
6. Measurement Data (continued)

6.4. Band Edge Measurements

Requirement: Emissions radiated outside of the specified frequency band of 902 MHz to 928 MHz, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

Frequency	Band Edge (dBμV/m)			Limit (dBμV/m)	Margin (dB)	Result
	Freq MHz	Peak	Q-Peak	Q-Peak		
903.0	902	41.1	37.6	46.0	-8.4	Compliant
927.0	928	49.2	38.1	46.0	-7.9	Compliant

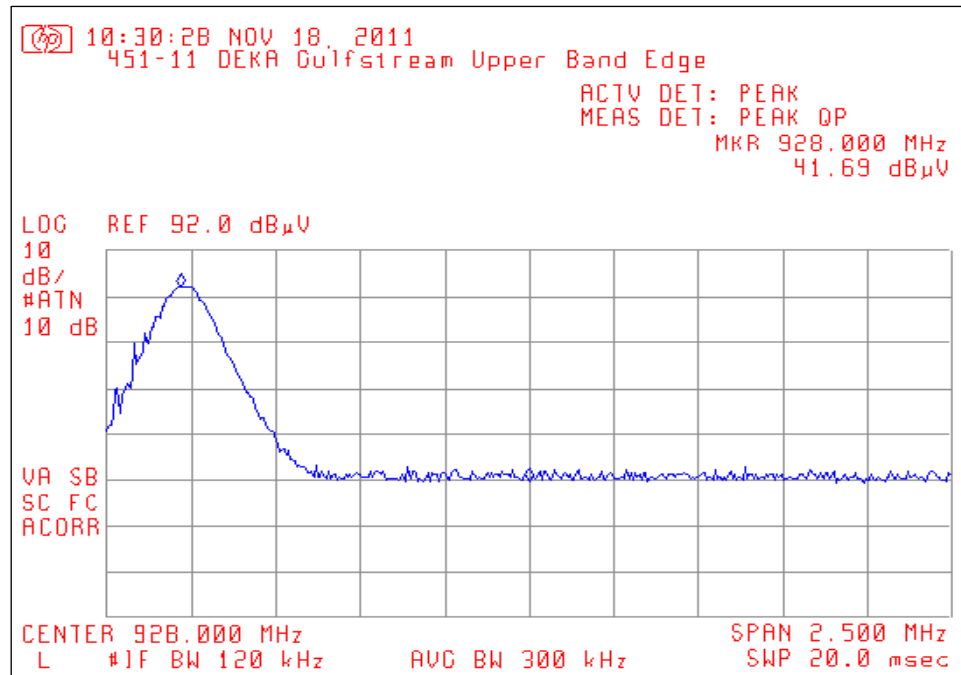
6.4.1. Band Edge Measurements - Lower Band Edge



6. Measurement Data (continued)

6.4. Band Edge Measurements (continued)

6.4.2. Band Edge Measurements - Upper Band Edge



6. Measurement Data (continued)

6.5. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d)), IC RSS-GEN

Requirement: Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209, whichever is the lesser attenuation.

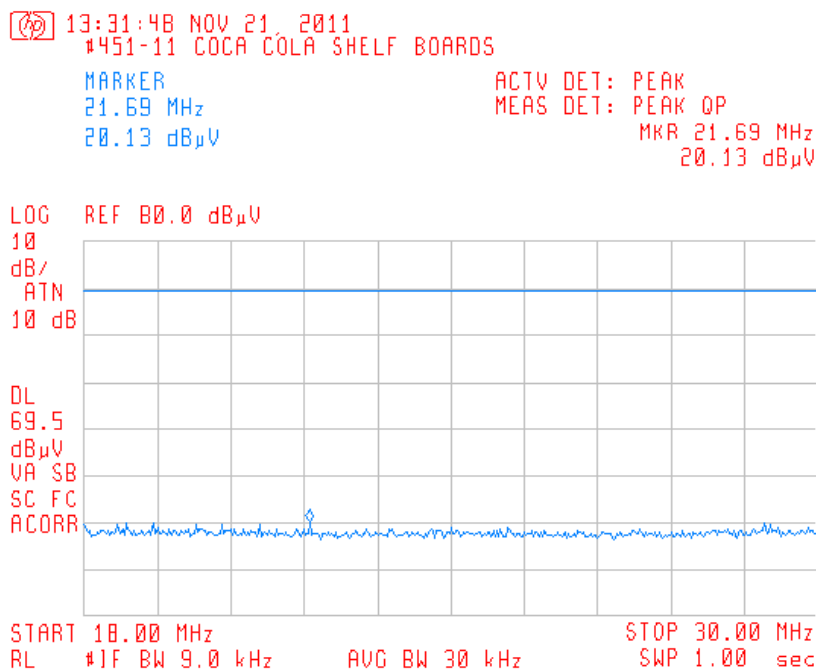
Note: The spurious emissions detailed in this section represent the combined worst case emissions of the low, middle and high operating frequencies.

6.5.1. Regulatory Limit: FCC Part 209, Quasi-Peak & Average

Frequency Range (MHz)	Distance (Meters)	Limit (dBμV/m)
18 to 30	3	69.5
30 to 88	3	40.0
88 to 216	3	43.5
216 to 960	3	46.0
Above 960	3	54.0

6.5.2. Spurious Radiated Emissions (18 MHz to 30 MHz) Test Results

6.5.2.1. Measurement Results – Parallel



Test Number: 451-11

Issue Date: 11/18/2011

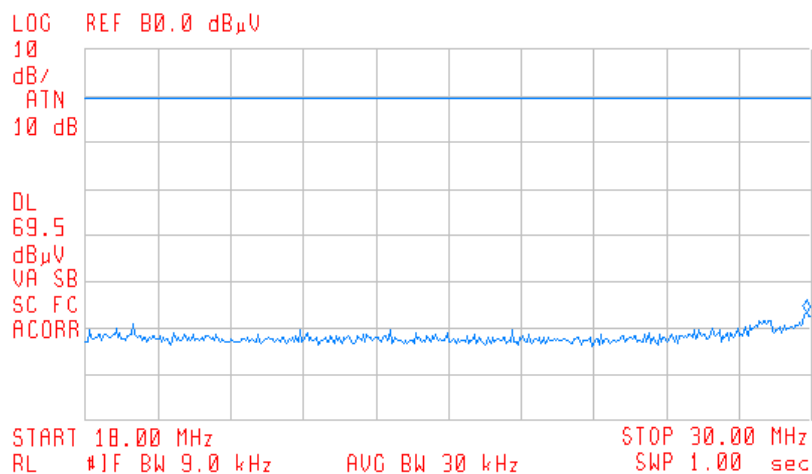
6. Measurement Data (continued)

6.5. Spurious Radiated Emissions (18 MHz to 10 GHz) (continued)

6.5.2. Spurious Radiated Emissions (18 MHz to 30 MHz) Test Results

6.5.2.2. Measurement Results – Perpendicular

13:33:28 NOV 21, 2011
#451-11 COCA COLA SHELF BOARDS
MARKER 29.91 MHz
23.15 dBμV
ACTV DET: PEAK
MEAS DET: PEAK QP
MKR 29.91 MHz
23.15 dBμV



6. Measurement Data (continued)

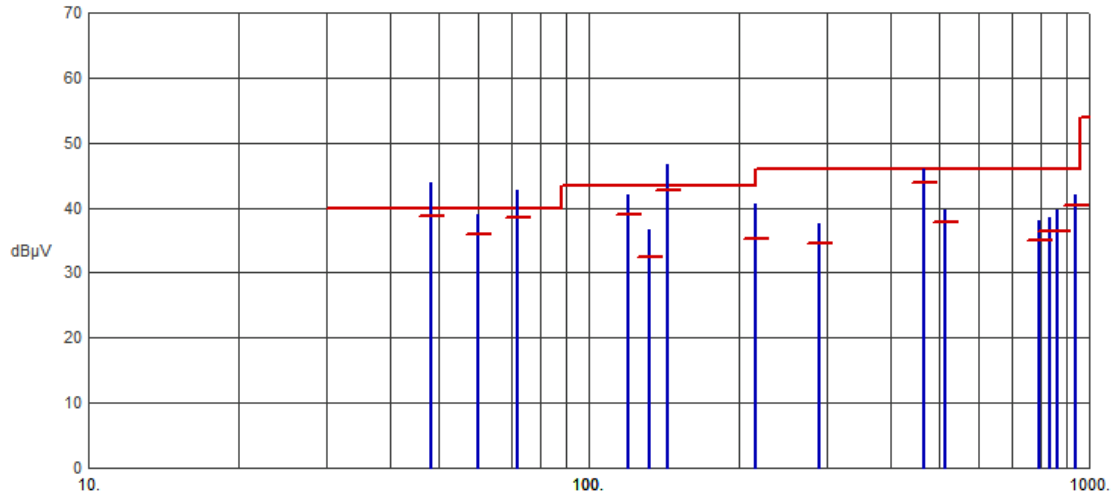
6.5. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d)), IC RSS-GEN

6.5.2. Spurious Radiated Emissions

6.5.2.3 Test Results, 30 MHz to 1 GHz, Horizontal Polarity

Test No.: 461-09, Radiated Emissions - Horizontal Polarity

FCC, Class B



Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
48.4442	43.92	38.79	40.00	-1.21	N/A	N/A	
60.0358	39.04	35.99	40.00	-4.01	N/A	N/A	
72.0280	42.75	38.52	40.00	-1.48	N/A	N/A	
120.0915	41.96	39.07	43.50	-4.43	N/A	N/A	
132.1162	36.74	32.36	43.50	-11.14	N/A	N/A	
143.9796	46.78	42.73	43.50	-.77	N/A	N/A	
215.9704	40.62	35.29	43.50	-8.21	N/A	N/A	
287.9847	37.62	34.63	46.00	-11.37	N/A	N/A	
468.4193	46.02	43.93	46.00	-2.07	N/A	N/A	
516.4831	39.66	37.69	46.00	-8.31	N/A	N/A	
792.0067	38.14	35.09	46.00	-10.91	N/A	N/A	
832.0020	38.39	36.42	46.00	-9.58	N/A	N/A	
863.9930	39.56	36.36	46.00	-9.64	N/A	N/A	
935.9902	42.11	40.43	46.00	-5.57	N/A	N/A	

6. Measurement Data (continued)

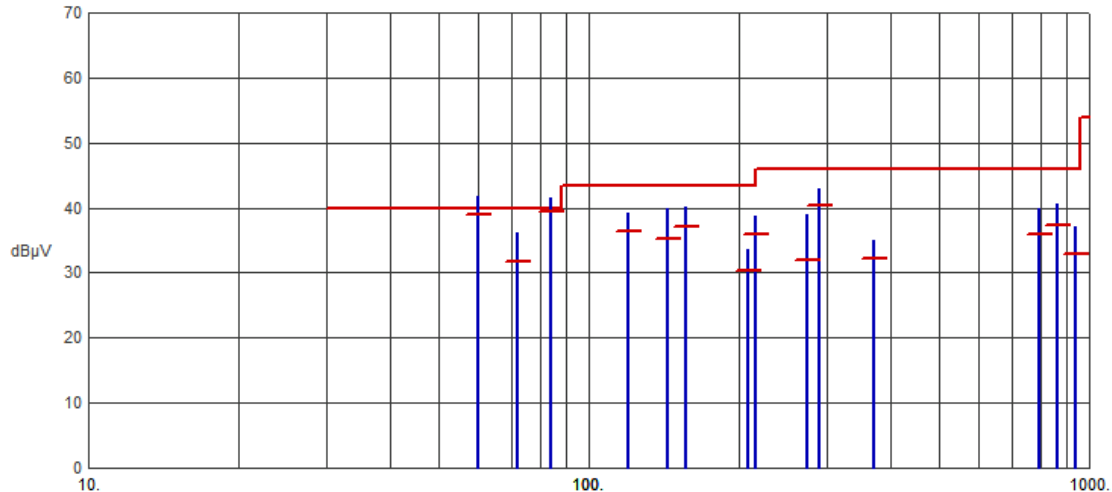
6.5. Spurious Radiated Emissions, 30 MHz to EUT 10th Harmonic (15.249, Section (d)), IC RSS-GEN

6.5.2. Spurious Radiated Emissions

6.5.2.4 Test Results, 30 MHz to 1 GHz, Vertical Polarity

Test No.: 461-09, Radiated Emissions - Vertical Polarity

FCC, Class B



Frequency (MHz)	Pk Amp (dBμV/m)	QP Amp (dBμV/m)	QP Limit (dBμV/m)	Margin (dB)	Ant Ht (cm)	Table (Deg)	Comments
60.0411	41.70	38.92	40.00	-1.08	N/A	N/A	
72.0444	36.14	31.75	40.00	-8.25	N/A	N/A	
84.0668	41.58	39.54	40.00	-.46	N/A	N/A	
120.0947	39.29	36.31	43.50	-7.19	N/A	N/A	
143.9948	39.99	35.33	43.50	-8.17	N/A	N/A	
155.9883	40.09	37.07	43.50	-6.43	N/A	N/A	
207.9878	33.61	30.31	43.50	-13.19	N/A	N/A	
216.0012	38.81	36.02	46.00	-9.98	N/A	N/A	
273.2097	38.94	31.89	46.00	-14.11	N/A	N/A	
288.0072	42.82	40.33	46.00	-5.67	N/A	N/A	
372.3342	34.91	32.28	46.00	-13.72	N/A	N/A	
792.0028	39.80	36.05	46.00	-9.95	N/A	N/A	
863.9807	40.52	37.36	46.00	-8.64	N/A	N/A	
935.9672	37.02	32.85	46.00	-13.15	N/A	N/A	

6.5.2.5 Test Results, Above 1 GHz

There were no measurable emissions above 1 GHz other than the emissions tabled in Section 6.3.

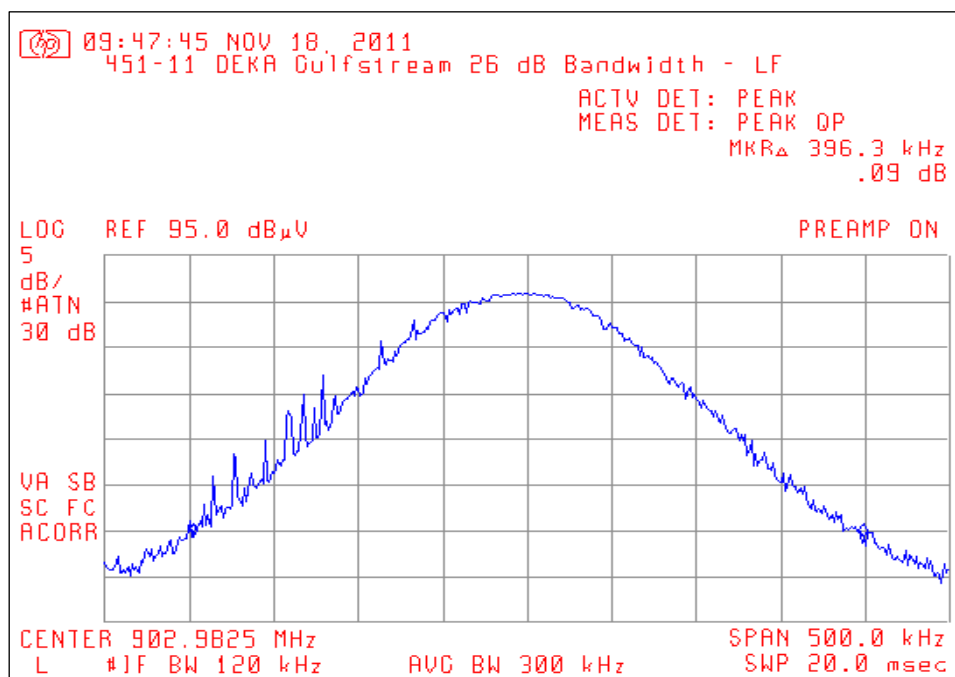
6. Measurement Data (continued)

6.6 Occupied Bandwidth (ANSI C63.4, Section 13.1.7)

Requirement: The occupied bandwidth measurements on an intentional radiator shall be made in accordance with the requirements outlined in ANSI C63.4-2003, Section 13.1.7. If no bandwidth requirement is specified by the procuring or regulatory agency, measure the bandwidth at -26 dB with respect to the reference level.

Channel	Frequency (MHz)	-26 dB Bandwidth (MHz)	Result
Low	903.0	0.3963	Compliant
Middle	909.0	0.3850	Compliant
High	927.0	0.4025	Compliant

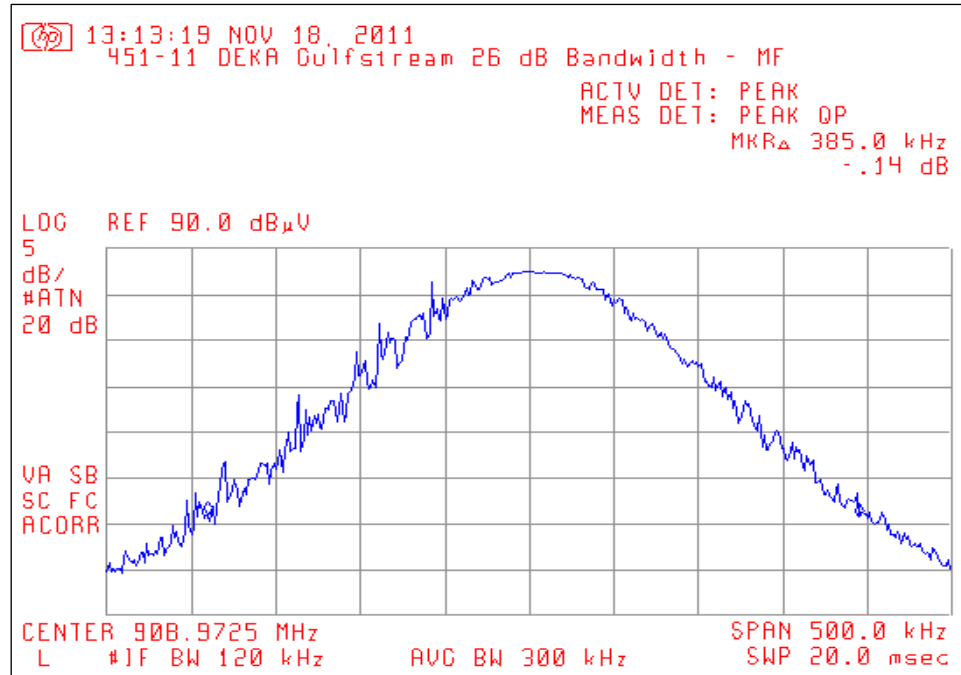
6.6.1. Occupied Bandwidth – Low Frequency



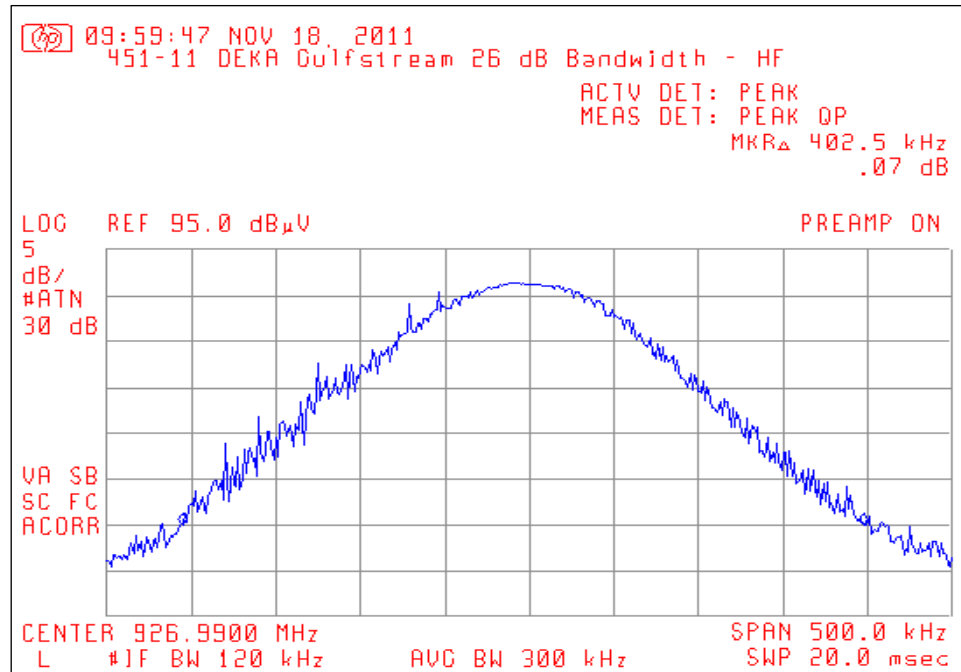
6. Measurement Data (continued)

6.6 Occupied Bandwidth (ANSI C63.4, Section 13.1.7) (continued)

6.6.2. Occupied Bandwidth – Middle Frequency



6.6.3. Occupied Bandwidth – High Frequency

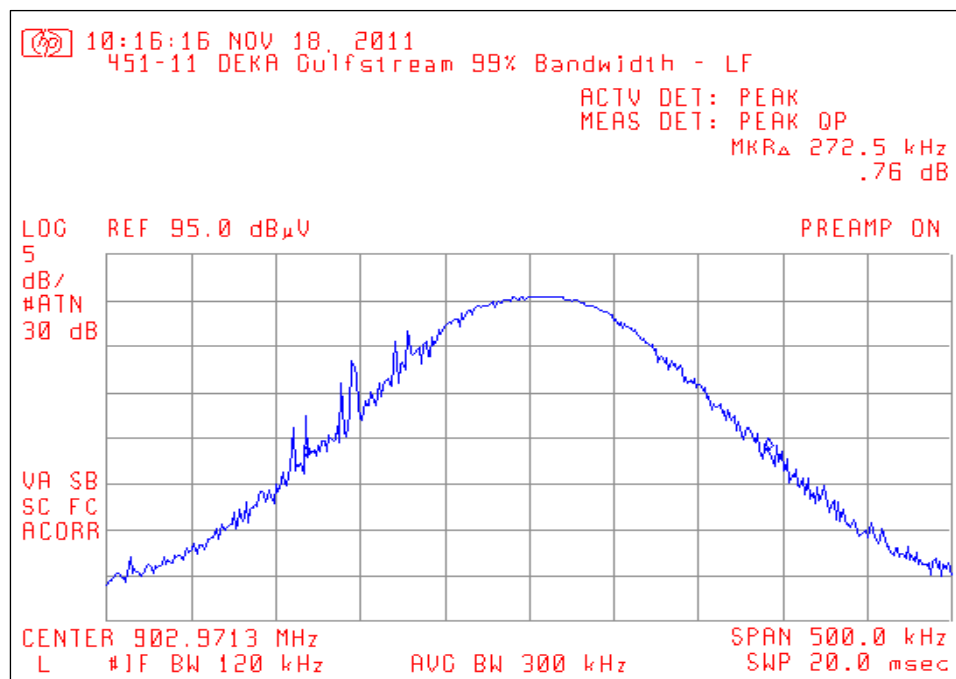


6. Measurement Data (continued)

6.7. 99% Bandwidth (RSS 210)

Channel	Channel Frequency	99% Power Bandwidth	Allowable Power Bandwidth	Result
	MHz	MHz	MHz	
Low	903.0	0.2725	4.515	Compliant
Middle	909.0	0.2738	4.545	Compliant
High	927.0	0.2888	4.635	Compliant

6.7.1. 99% Bandwidth – Low Frequency



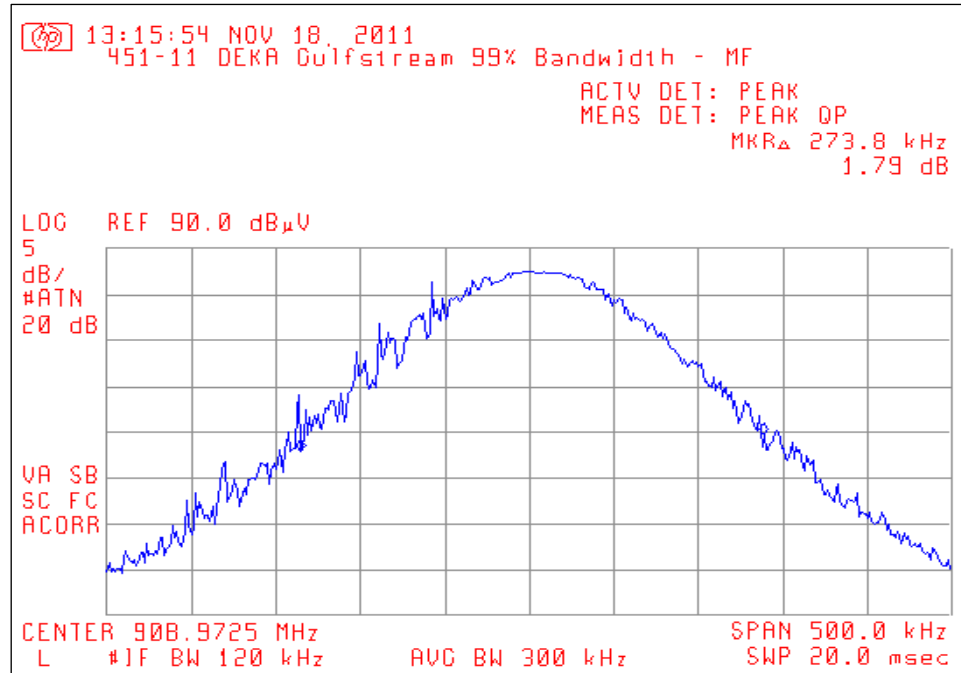
Test Number: 451-11

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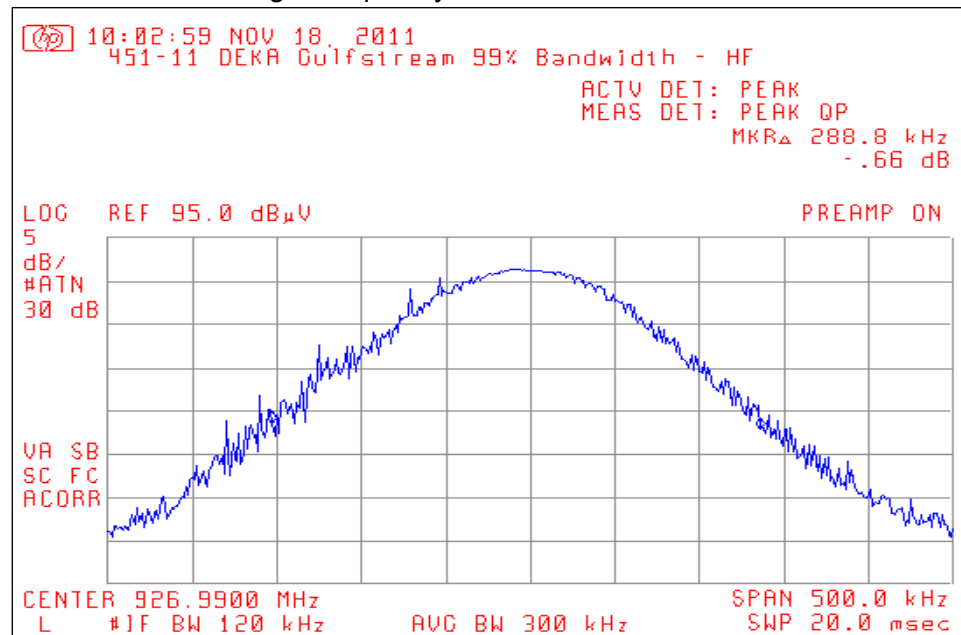
6. Measurement Data (continued)

6.7. 99% Bandwidth (RSS 210) (continued)

6.7.2. 99% Bandwidth – Middle Frequency



6.7.3. 99% Bandwidth – High Frequency



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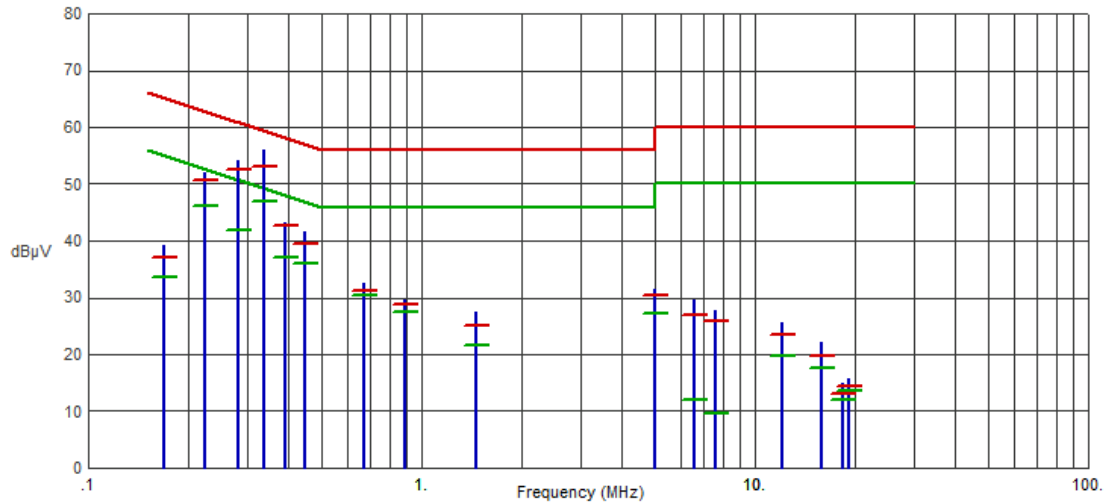
6. Measurement Data (continued)

6.8. Conducted Emissions (15.207)

6.8.1. 120 Volts, 60 Hz Phase

Test No.: 451-11, 120 Volts, 60 Hz Phase

FCC Part 15.207



Frequency (MHz)	Pk Amp (dBμV)	QP Amp (dBμV)	QP Limit (dBμV)	QP Margin (dB)	Avg Amp (dBμV)	Avg Limit (dBμV)	Avg Margin (dB)	Comments
.1690	39.28	37.15	65.01	-27.86	33.64	55.01	-21.37	
.2237	52.13	50.60	62.68	-12.08	46.04	52.68	-6.64	
.2809	54.23	52.60	60.79	-8.19	41.75	50.79	-9.04	
.3350	56.03	53.14	59.33	-6.19	47.05	49.33	-2.28	
.3916	43.27	42.57	58.03	-15.46	37.14	48.03	-10.89	
.4469	41.69	39.41	56.93	-17.52	35.87	46.93	-11.06	
.6704	32.52	31.23	56.00	-24.77	30.32	46.00	-15.68	
.8945	29.70	28.82	56.00	-27.18	27.36	46.00	-18.64	
1.4552	27.36	25.04	56.00	-30.96	21.55	46.00	-24.45	
5.0307	31.54	30.44	60.00	-29.56	27.20	50.00	-22.80	
6.5540	29.50	27.04	60.00	-32.96	11.90	50.00	-38.10	
7.5900	27.75	25.99	60.00	-34.01	9.67	50.00	-40.33	
12.0126	25.68	23.56	60.00	-36.44	19.72	50.00	-30.28	
15.8537	22.04	19.64	60.00	-40.36	17.54	50.00	-32.46	
18.3056	14.89	13.18	60.00	-46.82	11.94	50.00	-38.06	
19.1973	15.76	14.38	60.00	-45.62	13.54	50.00	-36.46	

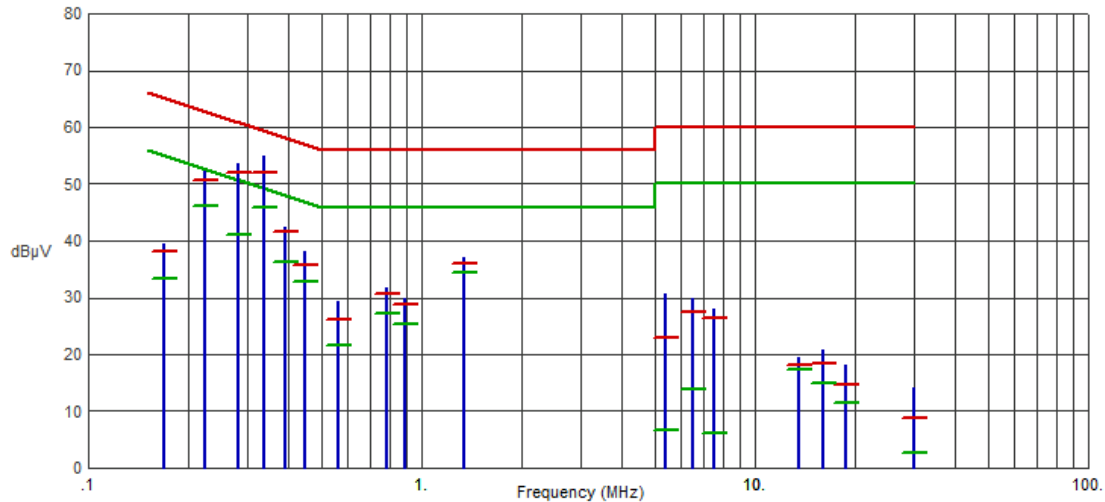
Test Number: 451-11

Issue Date: 11/18/2011

6. Measurement Data (continued)
6.8. Conducted Emissions (15.207)
6.8.2. 120 Volts, 60 Hz Neutral

Test No.: 451-11, 120 Volts, 60 Hz Neutral

FCC Part 15.207



Frequency (MHz)	Pk Amp (dBμV)	QP Amp (dBμV)	QP Limit (dBμV)	QP Margin (dB)	Avg Amp (dBμV)	Avg Limit (dBμV)	Avg Margin (dB)	Comments
.1681	39.57	38.24	65.05	-26.81	33.40	55.05	-21.65	
.2240	52.28	50.61	62.67	-12.06	46.04	52.67	-6.63	
.2804	53.49	51.88	60.80	-8.92	41.10	50.80	-9.70	
.3354	54.84	52.08	59.32	-7.24	45.87	49.32	-3.45	
.3912	42.31	41.63	58.04	-16.41	36.14	48.04	-11.90	
.4472	38.20	35.68	56.93	-21.25	32.76	46.93	-14.17	
.5598	29.22	26.23	56.00	-29.77	21.61	46.00	-24.39	
.7826	31.84	30.67	56.00	-25.33	27.18	46.00	-18.82	
.8942	29.92	28.74	56.00	-27.26	25.21	46.00	-20.79	
1.3404	37.16	35.90	56.00	-20.10	34.37	46.00	-11.63	
5.4037	30.63	22.80	60.00	-37.20	6.75	50.00	-43.25	
6.5176	30.00	27.43	60.00	-32.57	13.89	50.00	-36.11	
7.5240	28.11	26.29	60.00	-33.71	6.02	50.00	-43.98	
13.6157	19.43	18.16	60.00	-41.84	17.46	50.00	-32.54	
16.0697	20.77	18.43	60.00	-41.57	14.98	50.00	-35.02	
18.7542	18.19	14.70	60.00	-45.30	11.51	50.00	-38.49	
29.9216	14.21	8.67	60.00	-51.33	2.55	50.00	-47.45	

6. Measurement Data (continued)

6.9. Public Exposure to Radio Frequency Energy Levels (15.247(i) (1.1307 (b)(1)) RSS-GEN 5.5, RSS 102

Note: To determine the DUT output power from the measured field strength, the following formula was used and the results are displayed in the first table:

$$P = \frac{(E \times d)^2}{(30 \times G)}$$

- P = the power in Watts.
- E = the measured maximum field in V/m
- G = the numeric gain of the transmitting antenna over an isotropic radiator.
- d = the distance in meters of the field strength measurement.

Channel	Frequency	Peak Field Strength	Distance	Antenna Gain ¹	DUT Output Power
	(MHz)	(dBμV/m)	(m)	(dBi)	(mW)
Low	903	92.00	3.0	-6.0	1.8928720
Middle	909	89.40	3.0	-6.0	1.0402106
High	927	89.20	3.0	-6.0	0.9933934

Channel Frequency	MPE Distance (cm)	DUT Output Power (dBm)	DUT Antenna Gain (dBi)	Power Density		Limit (mW/cm ²)	Result
	(1)	(2)	(3)	(mW/cm ²)	(W/m ²)	(5)	
903	20	2.77	-6.0	0.0000946	0.0009459	1	Compliant
909	20	0.17	-6.0	0.0000520	0.0005198	1	Compliant
927	20	-0.03	-6.0	0.0000496	0.0004964	1	Compliant

$$PD = \frac{OP + AG}{(4 \times \pi \times d^2)}$$

- PD = Power Density (mW/cm²)
- OP = DUT Output Power (dBm)
- AG = DUT Antenna Gain (dBi)
- d = MPE Distance (cm)

1. Reference CFR 2.1093(b): For purposes of this section, a portable device is defined as a transmitting device designed to be used so that the radiating structure(s) of the device is/are within 2.5 centimeters of the body of the user.
2. Section 6.2 of this test report. Field strength was converted to power using the method described above.
3. Data supplied by the client. Antenna specification data of worst case antenna used by the DUT.
4. Power density is calculated from field strength measurement and antenna gain.
5. Reference CFR 1.1310, Table 1: Limits for Maximum Permissible Exposure (MPE), Section (B): Limits for General Population/Uncontrolled Exposure.

7. Test Site Description

Compliance Worldwide is located at 357 Main Street in Sandown, New Hampshire. The test sites at Compliance Worldwide are used for conducted and radiated emissions testing in accordance with Federal Communications Commission (FCC) and Industry Canada standards. A description of the test sites is on file with the FCC (registration number **96392**) and Industry Canada (file number **IC 3023A-1**).

The radiated emissions test site is a 3 and 10 meter enclosed open area test site (OATS). Personnel, support equipment and test equipment are located in the basement beneath the OATS ground plane.

The conducted emissions site is part of a 16' x 20' x 12' ferrite tile chamber and uses one of the walls for the vertical ground plane required by EN 55022.

Both sites are designed to test products or systems 1.5 meter W x 1.5 meter L x 2.0 meter H, floor standing or table top.