NVLAP LAB CODE 200707-0

FCC PART 15.249

MEASUREMENT AND TEST REPORT

For

PageFlip, Inc.

111 Woodmere Blvd. South, Woodmere, NY 11598, USA

FCC ID: XKEPFLITE01
Model: PFLITE-001

Report Type:	**Product Type:**
Original Report	PageFlip Lite

Test Engineer:	Cookies Bu
Report Number:	RSZ09072002
Report Date:	2009-08-14
Reviewed By:	Merry Zhao EMC Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *PageFlip, Inc.* 's product, model *PFLITE-001 (FCC ID: XKEPFLITE01)*, or the "EUT" as referred to in this report is a *PageFlip Lite*, which measures approximately 14.7 cm L x 8.2 cm W x 3.00 cm H, rated input voltage: DC 3*1.5VAA Battery, the frequency range of EUT is 2405-2465 MHz.

All measurement and test data in this report was gathered from production sample serial number: 0907045 (Assigned by BACL, Shenzhen). The EUT was received on 2009-07-20.

Objective

This Type approval report is prepared on behalf of *PageFlip, Inc.* in accordance with Part 2, Subpart J, and Part 15, Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209, 15.249, 15.215 rules.

Related Submittal(s)/Grant(s)

No Related Submittals.

Test Methodology

All measurements contained in this report were conducted 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.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located in the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on November 21, 2007. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is a National Institute of Standards and Technology (NIST) accredited laboratory, under the National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

NVLAP LAB CODE 200707-0

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Justification

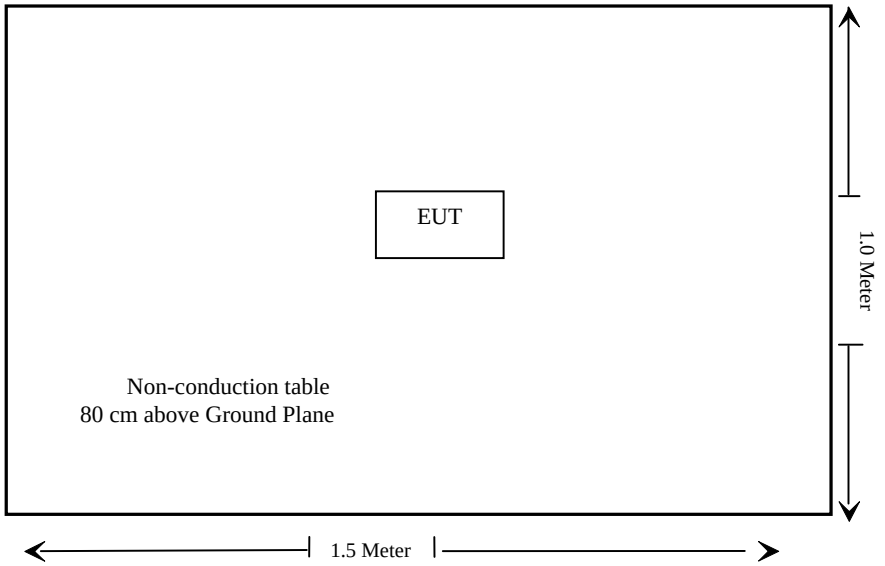
The system was configured for testing in a typical fashion (as normally used by a typical user).

Equipment Modifications

No modifications were made to the unit tested.

Configuration of Test Setup

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliant
§15.207(a)	Conduction Emissions	N/A*
§15.205(a), §15.209(a), 15.249(a), §15.249(c), §15.35	Radiated Emissions	Compliant**
§15.249(d)	Out of Band Emissions	Compliant
§15.215(c)	20 dB Bandwidth	Compliant

N/A: * The EUT was powered by battery only.
** Within measurement uncertainty

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

Antenna Connector Construction

The EUT has a printed antenna on PCB, which in accordance to section 15.203, is considered sufficient to comply with the provisions of this section, the antenna gain is -2 dBi.

Result: Compliant.

Please refer to the EUT photos.

FCC §15.205(a) §15.209(a) §15.249 §15.35 - RADIATED EMISSIONS

Applicable Standard

As per §15.249 (a), except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental frequency	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per §15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) 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 §15.209, whichever is the lesser attenuation.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is ±4.0 dB.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Below 1000 MHz:

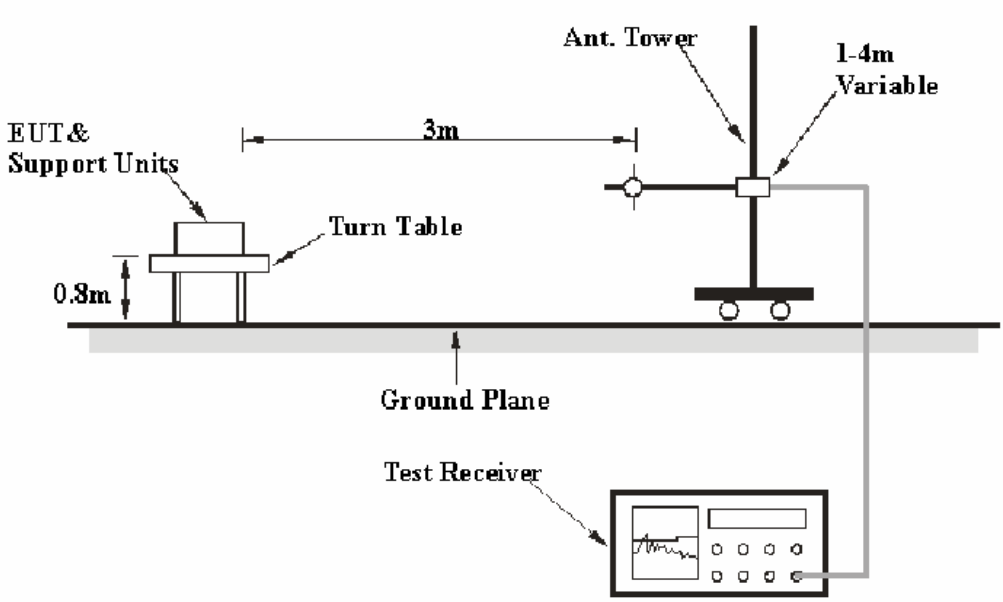
Quasi-Peak: RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000 MHz:

Peak: RBW = 1MHz / VBW = 3 MHz / Sweep = Auto

Average: RBW = 1MHz / VBW = 10 Hz / Sweep = Auto

EUT Setup



The radiated emission and out of band emission tests were performed in the 3 meters chamber B, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC 15.209, FCC 15.249.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2008-11-15	2009-11-15
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-10-16	2009-10-16
Sunol Sciences	Bilog Antenna	JB1	A040904-2	2009-04-12	2010-04-12
HP	Amplifier	8449B	3008A00277	2008-09-29	2009-09-29
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25
Rohde & Schwarz	Spectrum Analyzer	FSEM30	849720/019	2008-08-28	2009-08-27

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

For the radiated emissions test, the EUT of transmitter was connected to the AC floor outlet and the EUT of receiver was connected to the AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209 & 15.249, with the worst margin reading of:

Below 1 GHz:

Transmitting Mode: **14.9 dB** at **30.8165 MHz** in the **Horizontal** polarization.

Above 1 GHz:

Transmitting Mode: **3.22 dB** at **4810 MHz** in the **Horizontal** polarization, Low Channel (2405 MHz)
Transmitting Mode: **3.78 dB** at **4870 MHz** in the **Horizontal** polarization, Middle channel (2435 MHz)
Transmitting Mode: **5.14 dB** at **2465 MHz** in the **Horizontal** polarization, High channel (2465 MHz)

Test Data

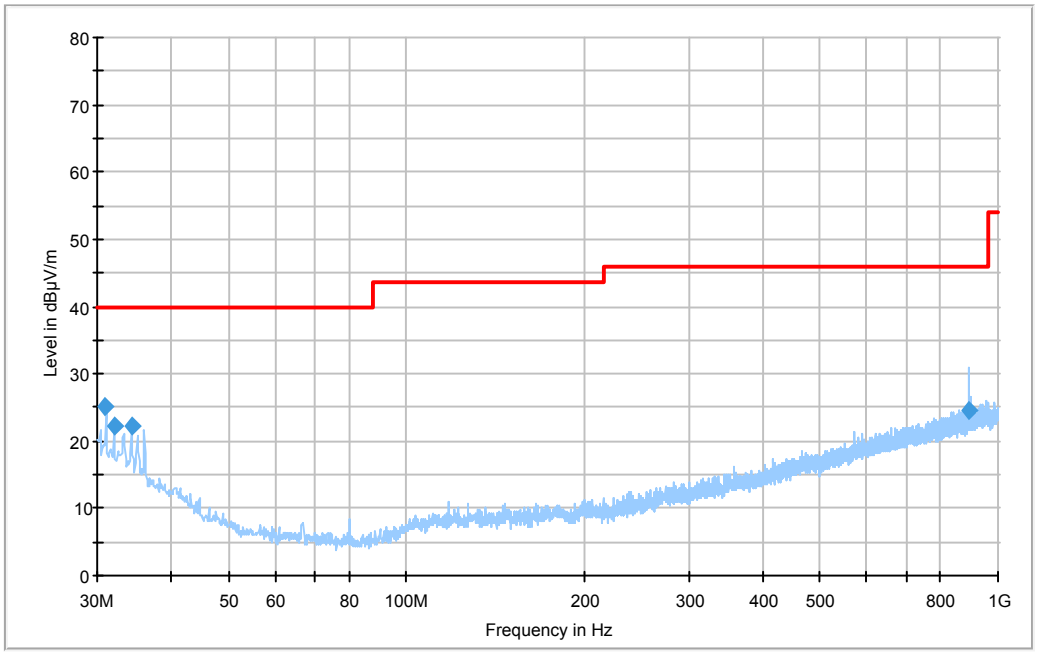
Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.0 kPa

The testing was performed by Cookies Bu on 2009-07-26.

Test Mode: Transmitting

Below 1 GHz:



Frequency (MHz)	Corrected Amplitude (dBµV/m)	Antenna Height (cm)	Antenna Polarity (H/V)	Turntable Position (deg)	Correction Factor (dB)	Limit (dBµV/m)	Margin (dB)
30.816500	25.1	312.0	H	90.0	-9.1	40.0	14.9
34.243750	22.4	154.0	H	210.0	-3.9	40.0	17.6
32.061250	22.1	121.0	H	126.0	-3.6	40.0	17.9
891.657000	24.6	216.0	V	40.0	-3.9	46.0	21.4

Note: The data which below the limit of 20 dB was not recorded.

Above 1GHz: (*Within measurement uncertainty)

Frequency (MHz)	S.A. Reading (dBμV/m)	Detector (PK/AV)	Turntable Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. (dB)	Cord. Amp. (dBμV/m)	FCC 15.249/15.209		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2405 MHz)												
4810.000	40.62	AV	235	1.2	H	36.30	7.56	33.70	50.78	54	3.22*	harmonic
4810.000	40.90	AV	136	1.4	V	35.00	7.56	33.70	49.76	54	4.24	harmonic
7215.000	32.28	AV	96	1.5	H	39.20	9.12	33.60	47.00	54	7.00	harmonic
7215.000	32.21	AV	69	1.5	V	38.00	9.12	33.60	45.73	54	8.27	harmonic
4810.000	52.07	PK	235	1.2	H	36.30	7.56	33.70	62.23	74	11.77	harmonic
4810.000	52.68	PK	136	1.4	V	35.00	7.56	33.70	61.54	74	12.46	harmonic
2389.198	36.34	AV	277	1.1	H	30.90	7.90	33.90	41.24	54	12.76	Spurious
2387.915	36.19	AV	167	1.3	V	30.30	7.90	33.90	40.49	54	13.51	Spurious
7215.000	43.94	PK	96	1.5	H	39.20	9.12	33.60	58.66	74	15.34	harmonic
2405.000	72.93	AV	110	1.1	H	30.90	7.90	33.90	77.83	94	16.17	Fund.
7215.000	44.19	PK	69	1.5	V	38.00	9.12	33.60	57.71	74	16.29	harmonic
2405.000	70.51	AV	0	1.3	V	30.30	7.90	33.90	74.81	94	19.19	Fund.
2389.198	47.56	PK	277	1.1	H	30.90	7.90	33.90	52.46	74	21.54	Spurious
2387.915	47.49	PK	167	1.3	V	30.30	7.90	33.90	51.79	74	22.21	Spurious
2405.000	82.99	PK	110	1.1	H	30.90	7.90	33.90	87.89	114	26.11	Fund.
2405.000	80.25	PK	0	1.3	V	30.30	7.90	33.90	84.55	114	29.45	Fund.
Middle Channel (2435 MHz)												
4870.000	40.06	AV	118	1.3	H	36.30	7.56	33.70	50.22	54	3.78*	harmonic
4870.000	38.96	AV	102	1.4	V	35.00	7.56	33.70	47.82	54	6.18	harmonic
7305.000	32.43	AV	265	1.5	H	39.20	9.12	33.60	47.15	54	6.85	harmonic
7305.000	32.12	AV	248	1.5	V	38.00	9.12	33.60	45.64	54	8.36	harmonic
4870.000	51.64	PK	118	1.3	H	36.30	7.56	33.70	61.80	74	12.20	harmonic
4870.000	51.01	PK	102	1.4	V	35.00	7.56	33.70	59.87	74	14.13	harmonic
7305.000	44.63	PK	265	1.5	H	39.20	9.12	33.60	59.35	74	14.65	harmonic
2435.000	73.41	AV	233	1.1	H	30.90	7.90	33.90	78.31	94	15.69	Fund.
7305.000	44.34	PK	248	1.5	V	38.00	9.12	33.60	57.86	74	16.14	harmonic
2435.000	71.68	AV	87	1.0	V	30.30	7.90	33.90	75.98	94	18.02	Fund.
2435.000	83.54	PK	233	1.1	H	30.90	7.90	33.90	88.44	114	25.56	Fund.
2435.000	81.46	PK	87	1.0	V	30.30	7.90	33.90	85.76	114	28.24	Fund.
High Channel (2465 MHz)												
2465.000	79.89	PK	147	1.2	V	30.30	7.90	33.90	84.19	114	5.14	Fund.
4930.000	49.29	PK	355	1.5	H	36.60	7.95	33.70	60.14	74	13.37	harmonic
2485.3507	36.29	AV	42	1.2	V	30.30	7.90	33.90	40.59	54	13.41	Spurious
7395.000	39.28	AV	97	1.4	H	39.40	9.17	33.60	54.25	54	13.86	harmonic
4930.000	49.11	PK	158	1.6	V	35.40	7.95	33.70	58.76	74	15.24	harmonic
7395.000	35.12	AV	274	1.3	V	38.10	9.17	33.60	48.79	54	15.24	harmonic
2494.598	33.65	AV	315	1.1	H	30.90	7.90	33.90	38.55	54	15.45	Spurious
2465.000	69.75	AV	147	1.2	V	30.30	7.90	33.90	74.05	94	17.47	Fund.
7395.000	41.56	PK	97	1.4	H	39.40	9.17	33.60	56.53	74	17.65	harmonic
7395.000	44.78	PK	274	1.3	V	38.10	9.17	33.60	58.45	74	19.95	harmonic
2465.000	71.45	AV	146	1.1	H	30.9	7.90	33.90	76.35	94	20.08	Fund.
2485.3507	48.08	PK	42	1.2	V	30.30	7.90	33.90	52.38	74	21.62	Spurious
2494.598	45.36	PK	315	1.1	H	30.90	7.90	33.90	50.26	74	23.74	Spurious
4930.000	38.01	AV	355	1.5	H	36.60	7.95	33.70	48.86	54	27.54	harmonic
4930.000	37.76	AV	158	1.6	V	35.40	7.95	33.70	47.41	54	29.81	harmonic
2465.000	81.56	PK	146	1.1	H	30.90	7.9	33.90	86.46	114	37.22	Fund.

FCC §15.249(d) – OUT OF BAND EMISSIONS

Applicable Standard

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 §15.209, whichever is the lesser attenuation.

Test Procedure

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission at the band edge. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is $\pm$4.0 dB.

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Above 1000MHz:

Peak: RBW = 1MHz / VBW = 3MHz / Sweep = Auto

Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-11-07	2009-11-06
HP	Amplifier	8447E	1937A01046	2008-08-02	2009-08-02
A.H. System	Horn Antenna	SAS-200/571	135	2009-05-17	2010-05-17

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) Corp. attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.2 kPa

**The testing was performed by Cookies Bu on 2009-07-26.*

Test Result: Compliant

Please refer to the following table:

Test Mode: Transmitting

Frequency (MHz)	S.A. Reading (dBuV/m)	Detector (PK/AV)	Direction Degree	Test Antenna			Cable Loss (dB)	Pre-Amp. Gain (dB)	Cord. Amp. (dBuV/m)	FCC Part 15.249/209		
				Height (m)	Polar (H/V)	Factor (dB/m)				Limit (dBuV/m)	Margin (dB)	Remarks
Out of left side band (2390 ~ 2400 MHz)												
2399.124	39.56	PK	145	1.1	H	30.90	7.90	33.90	44.46	74	29.54	/
2394.568	36.25	PK	256	1.0	V	30.30	7.90	33.90	40.55	74	33.45	/
Out of right side band (2483.5 ~ 2500 MHz)												
2494.598	39.34	PK	250	1.5	H	30.90	7.90	33.90	44.24	74	29.76	/
2392.915	35.84	PK	108	1.0	V	30.30	7.90	33.90	40.14	74	33.86	/

Note: The table is the worst case result.
The peak radiated emission level is below the AV limit 54 dBμV/m, so AV radiated emission need not.

FCC §15.215(c) – 20 dB BANDWIDTH

Standard Applicable

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in § 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100224	2008-11-07	2009-11-06
HP	Amplifier	8449B	3008A00277	2008-09-12	2009-09-11
Sunol Sciences	Horn Antenna	DRH-118	A052604	2008-09-25	2009-09-25

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.

2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.

3. Measure the frequency difference of two frequencies that indicated 20dB bandwidth.

4. Repeat above procedures until all frequencies measured were complete.

Test Data

Environmental Conditions

Temperature:	25 ° C
Relative Humidity:	56%
ATM Pressure:	100.2kPa

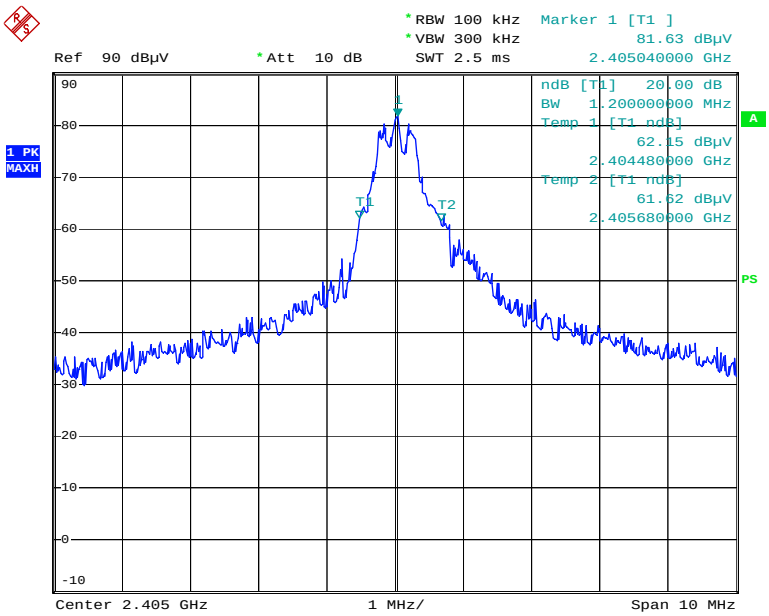
The testing was performed by Cookies Bu on 2009-08-13.

Test Mode: Transmitting

Pleas refer to the plot and tabular data sheet attached.

Channel	Frequency (MHz)	20 dB Occupied Bandwidth (kHz)
Low	2405	1200
Middle	2435	1320
High	2465	1220

Low Channel



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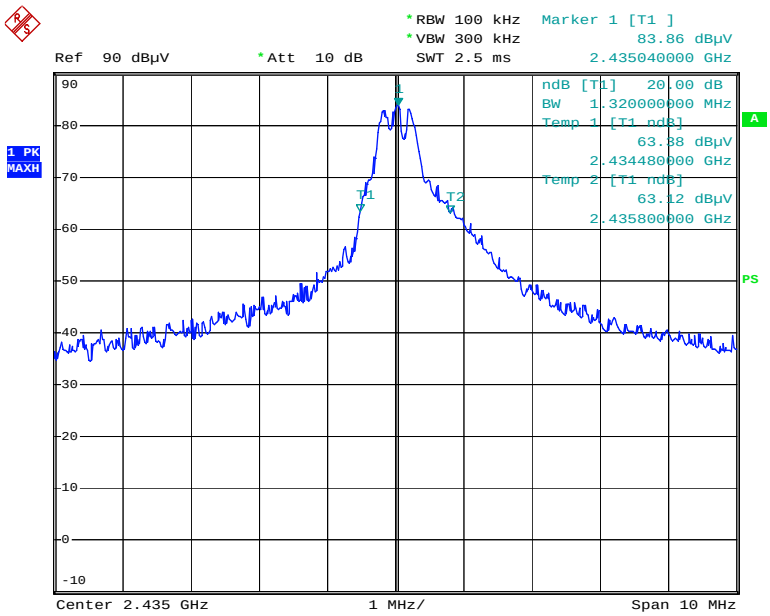
Middle Channel



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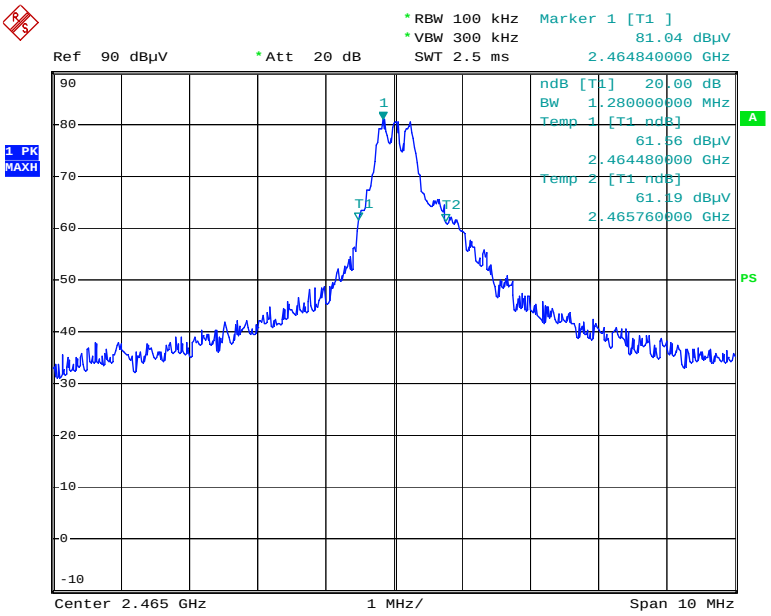
High Channel



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