FCC CFR47 PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8

CERTIFICATION TEST REPORT

FOR

802.11a/b/g/n WiFi AND BLUETOOTH AUDIO/VIDEO DEVICE

MODEL NUMBER: W1

FCC ID: A4R-W1

REPORT NUMBER: 11U14119-4

ISSUE DATE: MAY 17, 2012

Prepared for
GOOGLE INC.
1600 AMPHITHEATRE PARKWAY
MONTAINVIEW
CA, 94043, U.S.A

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	05/17/12	Initial Issue	T. LEE

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	GOOGLE INC. 1600 AMPHITHEATRE PARKWAY MOUNTAIN VIEW, CA, 94043, U.S.A
EUT DESCRIPTION:	802.11a/b/g/n and Bluetooth Audio /Video Device
MODEL:	W1
SERIAL NUMBER:	AD3C12020005, AD6C12160093
DATE TESTED:	MARCH 30 ~ MAY 16, 2012

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	Pass
INDUSTRY CANADA RSS-210 Issue 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

Compliance Certification Services (UL CCS) tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by UL CCS based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Note: The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. This document may not be altered or revised in any way unless done so by UL CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL CCS will constitute fraud and shall nullify the document. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, any agency of the Federal Government, or any agency of any government.

Approved & Released For UL CCS By:

TIM LEE
STAFF ENGINEER
UL CCS

Tested By:

THANH NGUYEN
EMC ENGINEER
UL CCS

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.10-2009, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 3, and RSS-210 Issue 8.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 47173 Benicia Street, Fremont, California, USA.

UL CCS is accredited by NVLAP, Laboratory Code 200065-0. The full scope of accreditation can be viewed at http://www.ccsemc.com.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognized national standards.

4.2. SAMPLE CALCULATION

Where relevant, the following sample calculation is provided:

Field Strength (dBuV/m) = Measured Voltage (dBuV) + Antenna Factor (dB/m) + Cable Loss (dB) – Preamp Gain (dB)
36.5 dBuV + 18.7 dB/m + 0.6 dB – 26.9 dB = 28.9 dBuV/m

4.3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

PARAMETER	UNCERTAINTY
Conducted Disturbance, 0.15 to 30 MHz	3.52 dB
Radiated Disturbance, 30 to 1000 MHz	4.94 dB

Uncertainty figures are valid to a confidence level of 95%.

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an audio/video device incorporating 802.11x, Bluetooth, and near field communicator technology. The EUT has TOSLINK, audio, Ethernet, HDMI, and USB ports.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum E field as follows:

Frequency Range	Mode	Fundamental E field @ 10m distance (dBuv/m)
13.56	Normal Tx Mode	47.97

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PCB antenna, with a maximum gain of 2.3 dBi.

5.4. SOFTWARE AND FIRMWARE

The firmware installed in the EUT during testing was rev. 1.0

The EUT driver software installed during testing was rev. 1.0.

The test utility software used during testing was rev. 1.0

5.5. WORST-CASE CONFIGURATION AND MODE

The EUT was powered by the AC adapter. A demo card was used to confirm normal operation.

5.6. MODIFICATIONS

No modifications were made during testing.

5.7. DESCRIPTION OF TEST SETUP

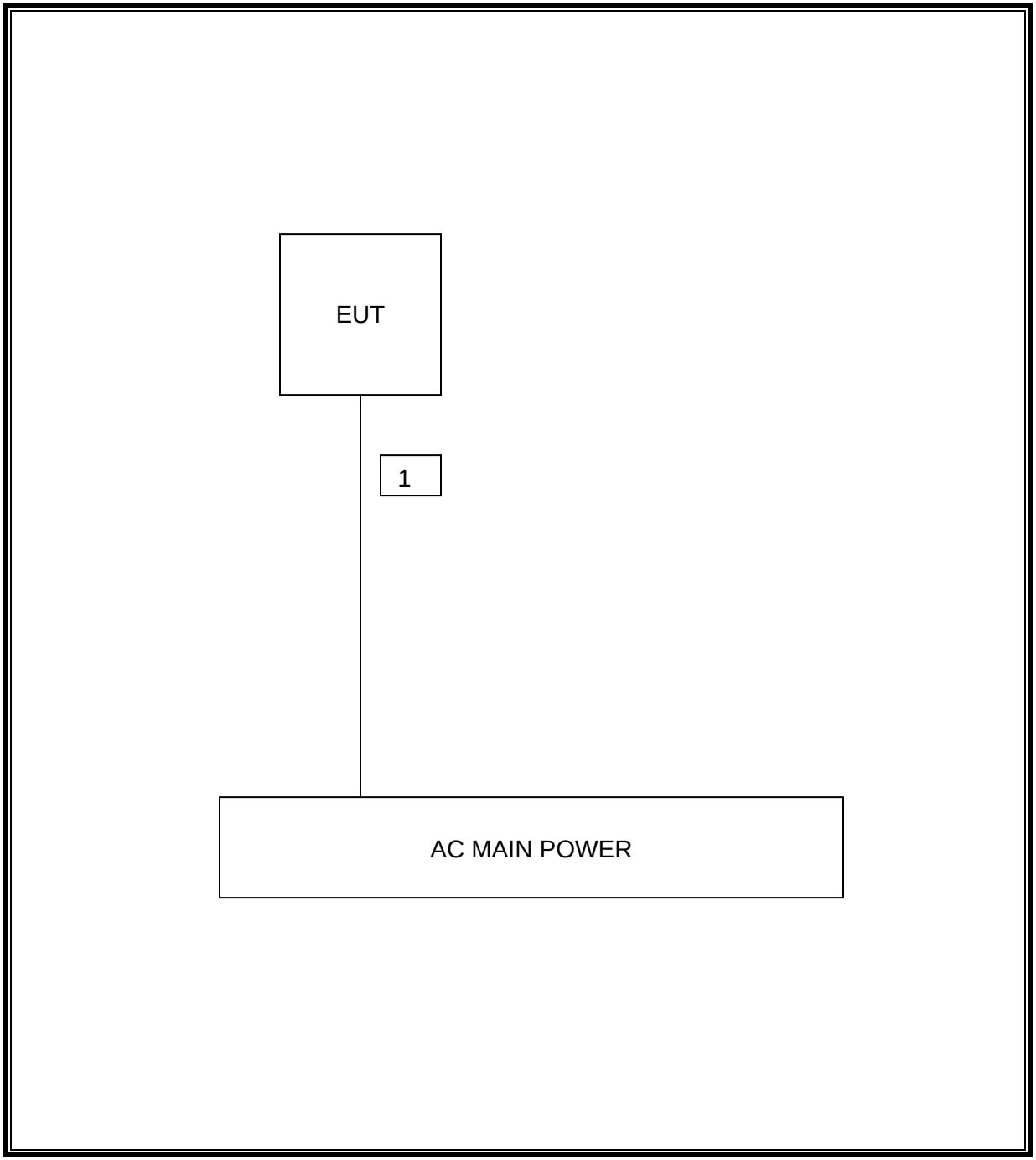
SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	2768-HH4	R8-PCNFE 210124	DoC
Laptop AC Adapter	Lenovo	92P1109	Z1ZBTZ85VM0	DoC

I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	AC	1	US 115V	Un-shielded	1.8m	N/A

SETUP DIAGRAM FOR TESTS



6. TEST AND MEASUREMENT EQUIPMENT

The following test and measurement equipment was utilized for the tests documented in this report:

TEST EQUIPMENT LIST					
Description	**Manufacturer**	**Model**	**Asset**	**Cal Date**	**Cal Due**
Antenna, Loop, 30 MHz	EMCO	6502	C00593	10/24/11	10/24/12
Spectrum Analyzer, 40 GHz	Agilent / HP	8564E	C00951	12/05/11	12/05/12
PSA	Agilent / HP	E4446A	C01012	08/07/11	08/07/12
Temperature / Humidity Chamber	Thermotron	SE 600-10-10	C00930	10/12/11	10/12/12
Power Meter	Agilent / HP	438B	N02785	08/04/11	08/04/12
Power Sensor	Agilent / HP	8481A	847#2	08/04/11	08/04/12

7. RADIATED EMISSION TEST RESULTS

7.1. LIMITS AND PROCEDURE

LIMIT

§15.225
IC RSS-210, Section 2.6 (Transmitter)

(a) The field strength of any emissions within the band 13.553–13.567 MHz shall not exceed 15,848 microvolts/ meter at 30 meters.

(b) Within the bands 13.410–13.553 MHz and 13.567–13.710 MHz, the field strength of any emissions shall not exceed 334 microvolts/meter at 30 meters.

(c) Within the bands 13.110–13.410 MHz and 13.710–14.010 MHz the field strength of any emissions shall not exceed 106 microvolts/meter at 30 meters.

(d) The field strength of any emissions appearing outside of the 13.110– 14.010 MHz and shall not exceed the general radiated emission limits in § 15.209 as follows:
§15.209 (a) Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Limits for radiated disturbance of an intentional radiator		
Frequency range (MHz)	Limits (µV/m)	Measurement Distance (m)
0.009 – 0.490	2400 / F (kHz)	300
0.490 – 1.705	24000 / F (kHz)	30
1.705 – 30.0	30	30
30 – 88	100**	3
88 - 216	150**	3
216 – 960	200**	3
Above 960	500	3

** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g. §§ 15.231 and 15.241.
§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

The formula for converting the field strength from µV/m to dBµV/m is:
Limit (dBµV/m) = 20 log limit (µV/m)

In addition:

§15.209 (d) The emission limits shown the above table are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emissions limits in these three bands are based on measurements employing an average detector.

§15.209 (d) The provisions in §§ 15.225, measuring emissions at distances other than the distances specified in the above table, determining the frequency range over which radiated emissions are to be measured, and limiting peak emissions apply to all devices operated under this part.

TEST PROCEDURE

ANSI C63.4

§15.209 specify that spurious emission is to be measured up to the tenth harmonic of the transmitter fundamental frequency. Thus, for this EUT spurious emissions were measured to 136 MHz (10 × the 13.56 MHz fundamental).

§15.209 also specifies that emissions that must be measured above the tenth harmonic applicable to an incorporated digital device are to comply with the general radiated emission limits in §15.109. As a digital device, with a highest frequency generated or used of 27.12 MHz (according to the manufacturer), radiated emissions were measured between 30 MHz and 1000 MHz.

The plots for spurious emissions show §15.209 limits applied to the range 30 MHz to 1000 MHz (equivalent to FCC Class B). The subsequent summary tables provide data for spurious emissions per §15.209 as wells as interpolated results applied to the limits for a Class A digital device per §15.109.

7.1.1. FUNDAMENTAL AND SPURIOUS EMISSIONS (0.15 – 30 MHz)

FCC Part 15, Subpart B & C **10 Meter Distance Measurement At Open Field**

Company: Google Inc.
Project #: 11U14119
Model #: W-1
Tester: Thanh Nguyen
Date: 4/9/2012

Frequency (MHz)	PK (dBu/V)	QP (dBu/V)	AV (dBuV)	AF dB/m	Distance Correction (dB)	PK Corrected Reading (dBuV/m)	AV Corrected Reading (dBuV/m)	QP Limit (dBuV/m)	AV Limit (dBuV/m)	PK Margin (dB)	AV Margin (dB)	Notes
Loop Antenna Face On:												
13.56	45.33		N/A	10.56	-19.08	36.80	N/A	84.00	N/A	-47.2	N/A	Fundamental @ 10m Dist
13.41	20		N/A	10.54	-19.08	11.46	N/A	50.48	N/A	-39.0	N/A	13.41-13.553MHz Spurious @ 10m
13.278	32.67		N/A	10.53	-19.08	24.11	N/A	50.48	N/A	-26.4	N/A	13.41-13.553MHz Spurious @ 10m
13.553	39.67		N/A	10.56	-19.08	31.14	N/A	50.48	N/A	-19.3	N/A	13.567-13.710MHz Spurious @ 10m
13.702	32.5		N/A	10.57	-19.08	23.99	N/A	50.48	N/A	-26.5	N/A	13.567-13.710MHz Spurious @ 10m
13.71	27.65		N/A	10.57	-19.08	19.14	N/A	40.51	N/A	-21.4	N/A	13.110-13.410MHz Spurious @ 10m
13.11	19.17		N/A	10.51	-19.08	10.60	N/A	40.51	N/A	-29.9	N/A	13.110-13.410MHz Spurious @ 10m
13.71	12.26		N/A	10.57	-19.08	3.75	N/A	40.51	N/A	-36.8	N/A	13.710-14.010MHz Spurious @ 10m
14.01	25.5		N/A	10.6	-19.08	17.02	N/A	40.51	N/A	-23.5	N/A	13.710-14.010MHz Spurious @ 10m
27.145	31		N/A	9.043	-19.08	20.96	N/A	29.54	N/A	-8.6	N/A	14.010-30MHz Spurious @ 10m
Loop Antenna Face Off:												
13.56	56.50		N/A	10.56	-19.08	47.97	N/A	84.00	N/A	-36.0	N/A	Fundamental @ 10m Dist
13.41	24.33		N/A	10.54	-19.08	15.79	N/A	50.48	N/A	-34.7	N/A	13.41-13.553MHz Sprious @ 10m
13.553	51.33		N/A	10.56	-19.08	42.80	N/A	50.48	N/A	-7.7	N/A	13.41-13.553MHz Sprious @ 10m
13.567	53.33		N/A	10.56	-19.08	44.80	N/A	50.48	N/A	-5.7	N/A	13.567-13.710MHz Spurious @ 10m
13.71	25.50		N/A	10.57	-19.08	16.99	N/A	50.48	N/A	-33.5	N/A	13.567-13.710MHz Spurious @ 10m
13.11	21.00		N/A	10.51	-19.08	12.43	N/A	40.51	N/A	-28.1	N/A	13.110-13.410MHz Spurious @ 10m
13.41	21.34		N/A	10.54	-19.08	12.80	N/A	40.51	N/A	-27.7	N/A	13.110-13.410MHz Spurious @ 10m
13.71	25.50		N/A	10.57	-19.08	16.99	N/A	40.51	N/A	-23.5	N/A	13.710-14.010MHz Spurious @ 10m
14.01	27.00		N/A	10.6	-19.08	18.52	N/A	40.51	N/A	-22.0	N/A	13.710-14.010MHz Spurious @ 10m
27.145	34.00		N/A	9.043	-19.08	23.96	N/A	29.54	N/A	-5.6	N/A	14.010-30MHz Spurious @ 10m

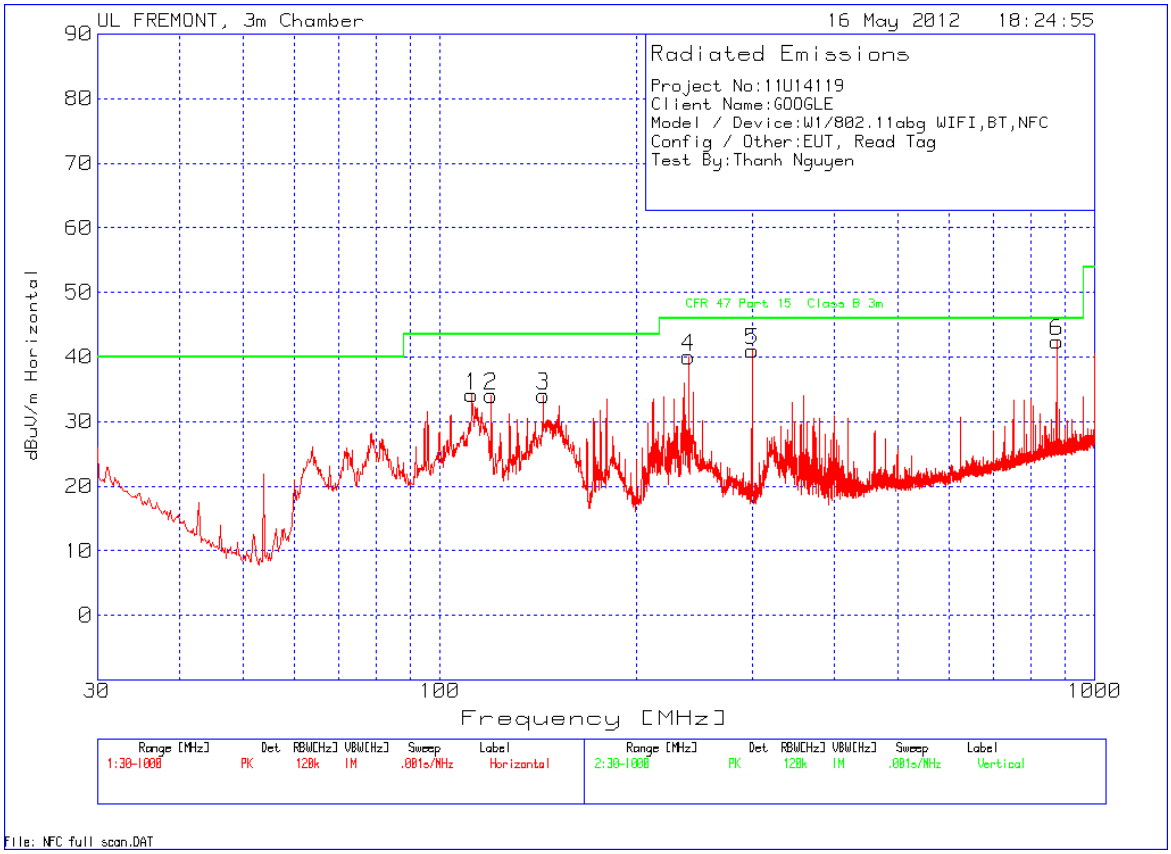
* No more emissions were found up to 30MHz

Note: The emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9–90 kHz, 110–490 kHz and above 10000Mhz. Radiated emission limits in these three bands are based on measurements employing an average detector.

P.K. = Peak
Q.P. = Quasi Peak Readings
A.F. = Antenna factor

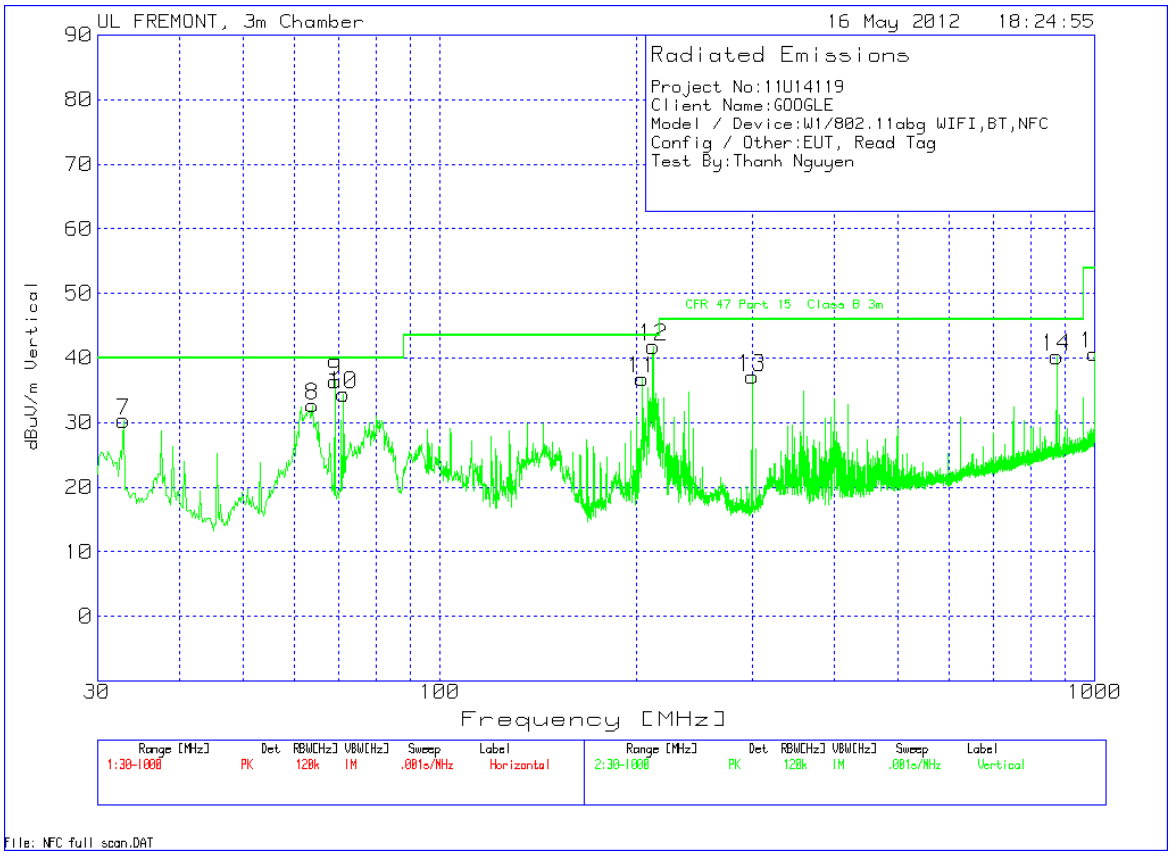
7.1.2. TX SPURIOUS EMISSION 30 TO 1000 MHz (HORIZONTAL)

HORIZONTAL PLOT



7.1.3. TX SPURIOUS EMISSION 30 TO 1000 MHz (VERTICAL)

VERTICAL PLOT



EMI DATA

Project No:11U14119
Client Name:GOOGLE
Model / Device:W1/802.11abg WIFI,BT,NFC
Config / Other:EUT, Read Tag
Test By:Thanh Nguyen

Horizontal 30 - 1000MHz									
Test Frequency	**Meter Reading**	**Detector**	**PreAmp Factor (dB)**	**Antenna gain (dB)**	**EMI(dBu V/m)**	**FCC Class B 3m**	**Margin**	**Height [cm]**	**Polarity**
111.9964	48.01	PK	-26.7	12.8	34.11	43.5	-9.39	201	Horz
119.944	46.87	PK	-26.6	13.8	34.07	43.5	-9.43	301	Horz
143.9808	47.78	PK	-26.4	12.7	34.08	43.5	-9.42	301	Horz
239.9341	53.95	PK	-25.5	11.6	40.05	46	-5.95	100	Horz
300.026	52.94	PK	-25.2	13.3	41.04	46	-4.96	100	Horz
875.1639	44.7	PK	-24.2	21.9	42.4	46	-3.6	100	Horz
Vertical 30 - 1000MHz									
Test Frequency	**Meter Reading**	**Detector**	**PreAmp Factor (dB)**	**Antenna gain (dB)**	**EMI(dBu V/m)**	**FCC Class B 3m**	**Margin**	**Height [cm]**	**Polarity**
32.9077	38.74	PK	-27.5	19.1	30.34	40	-9.66	301	Vert
63.9229	52.19	PK	-27.2	7.7	32.69	40	-7.31	201	Vert
69.1567	55.45	PK	-27.1	8.1	36.45	40	-3.55	201	Vert
71.289	53.44	PK	-27.1	8.1	34.44	40	-5.56	301	Vert
203.8789	51	PK	-25.8	11.6	36.8	43.5	-6.7	101	Vert
212.0204	57.23	PK	-25.8	10.4	41.83	43.5	-1.67	101	Vert
300.026	49	PK	-25.2	13.3	37.1	46	-8.9	201	Vert
875.1639	42.52	PK	-24.2	21.9	40.22	46	-5.78	101	Vert
1000	40.75	PK	-23.4	23.3	40.65	54	-13.35	101	Vert

7.1.4. TX SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber-A

Company: GOOGLE
Project #: 11U14119
Date: 4/10/2012
Test Engineer: Thanh Nguyen
Configuration: EUT only
Mode: Read Tag

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B		T125; ARA 18-26GHz; S/N:1007	FCC 15.209

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.000	3.0	47.7	38.6	24.9	2.7	-37.8	0.0	0.0	37.5	28.4	74	54	-36.5	-25.6	V
1.125	3.0	49.2	43.2	25.3	2.9	-37.6	0.0	0.0	39.7	33.8	74	54	-34.3	-20.2	V
1.933	3.0	44.3	31.6	27.8	3.8	-36.4	0.0	0.0	39.5	26.8	74	54	-34.5	-27.2	V
2.750	3.0	43.2	29.6	29.6	4.6	-35.5	0.0	0.0	41.9	28.4	74	54	-32.1	-25.6	V
1.125	3.0	48.4	41.2	25.3	2.9	-37.6	0.0	0.0	38.9	31.7	74	54	-35.1	-22.3	H
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No other emissions were detected above the system noise floor															

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f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

7.1.5. RX SPURIOUS EMISSIONS ABOVE 1 GHz

High Frequency Measurement
Compliance Certification Services, Fremont 5m Chamber-A

Company: GOOGLE
Project #: 11U14119
Date: 4/10/2012
Test Engineer: Thanh Nguyen
Configuration: EUT only
Mode: Receive mode

Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T60; S/N: 2238 @3m	T34 HP 8449B		T125; ARA 18-26GHz; S/N:1007	RX RSS 210

Hi Frequency Cables

3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF	Reject Filter
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_001

Peak Measurements
RBW=VBW=1MHz
Average Measurements
RBW=1MHz ; VBW=10Hz

f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
1.000	3.0	47.7	38.6	24.9	2.7	-37.8	0.0	0.0	37.5	28.4	74	54	-36.5	-25.6	V
1.125	3.0	49.2	43.2	25.3	2.9	-37.6	0.0	0.0	39.7	33.8	74	54	-34.3	-20.2	V
1.933	3.0	44.3	31.6	27.8	3.8	-36.4	0.0	0.0	39.5	26.8	74	54	-34.5	-27.2	V
2.750	3.0	43.2	29.6	29.6	4.6	-35.5	0.0	0.0	41.9	28.4	74	54	-32.1	-25.6	V
1.125	3.0	48.4	41.2	25.3	2.9	-37.6	0.0	0.0	38.9	31.7	74	54	-35.1	-22.3	H
															H

No other emissions were detected above the system noise floor

Rev. 11.10.11

f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field Strength	Pk Mar	Margin vs. Peak Limit
CL	Cable Loss	HPF	High Pass Filter		

8. FREQUENCY STABILITY

LIMIT

§15.225 (e) The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency, over a temperature variation of -20 degrees to +50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

TEST PROCEDURE

ANSI / TIA / EIA 603 Clause 2.3.1 and 2.3.2

RESULTS

No non-compliance noted.

Reference Frequency: EUT Channel 13.56 MHz @ 20ºC **Limit: ± 100 ppm = 135.595 kHz**				
Power Supply (Vac)	**Environment Temperature (ºC)**	**Frequency Deviation Measureed with Time Elapse**		
		(MHz)	**Delta (ppm)**	**Limit (ppm)**
115.00	50	13.5594840	0.008	± 100
115.00	40	13.5594910	0.002	± 100
115.00	30	13.5594870	0.005	± 100
115.00	***20***	***13.5594942***	***0.000***	***± 100***
115.00	10	13.5594966	-0.002	± 100
115.00	0	13.5594924	0.001	± 100
115.00	-10	13.5595332	-0.029	± 100
115.00	-20	13.5595380	-0.032	± 100
97.15	20	13.5594788	0.011	± 100
132.25	20	13.5594765	0.013	± 100

9. 99% BANDWIDTH

LIMITS

None; for reporting purposes only.

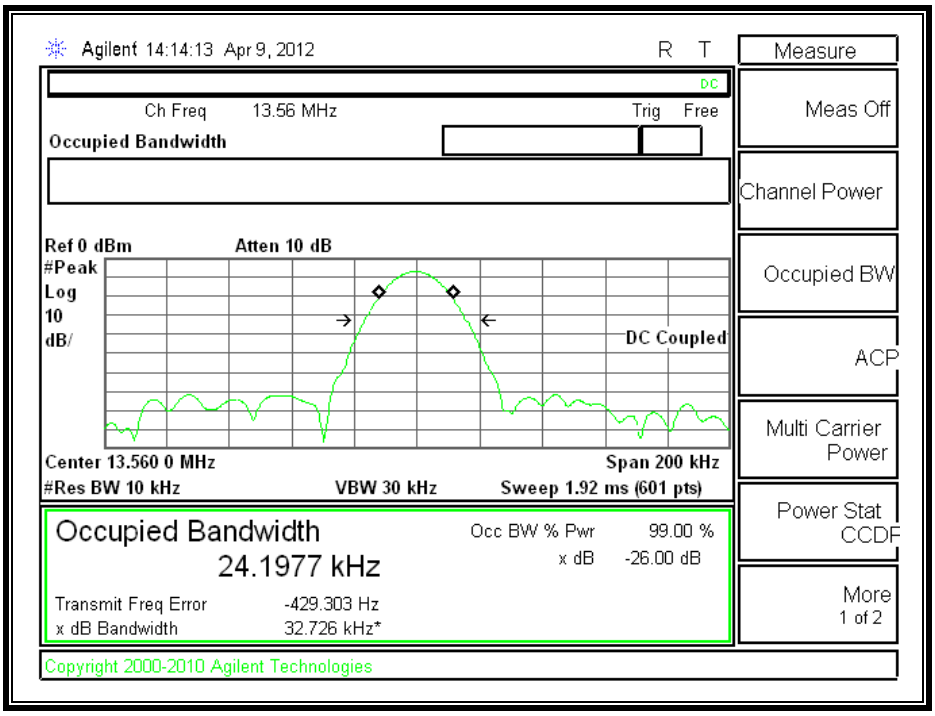
TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

Frequency (MHz)	99% Bandwidth (KHz)
13.56	24.1977

99% BANDWIDTH



10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

FCC §15.207 (a)

RSS-Gen 7.2.2

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

TEST PROCEDURE

The EUT is placed on a non-conducting table 40 cm from the vertical ground plane and 80 cm above the horizontal ground plane. The EUT is configured in accordance with ANSI C63.4.

The receiver is set to a resolution bandwidth of 9 kHz. Peak detection is used unless otherwise noted as quasi-peak or average.

Line conducted data is recorded for both NEUTRAL and HOT lines.

RESULTS

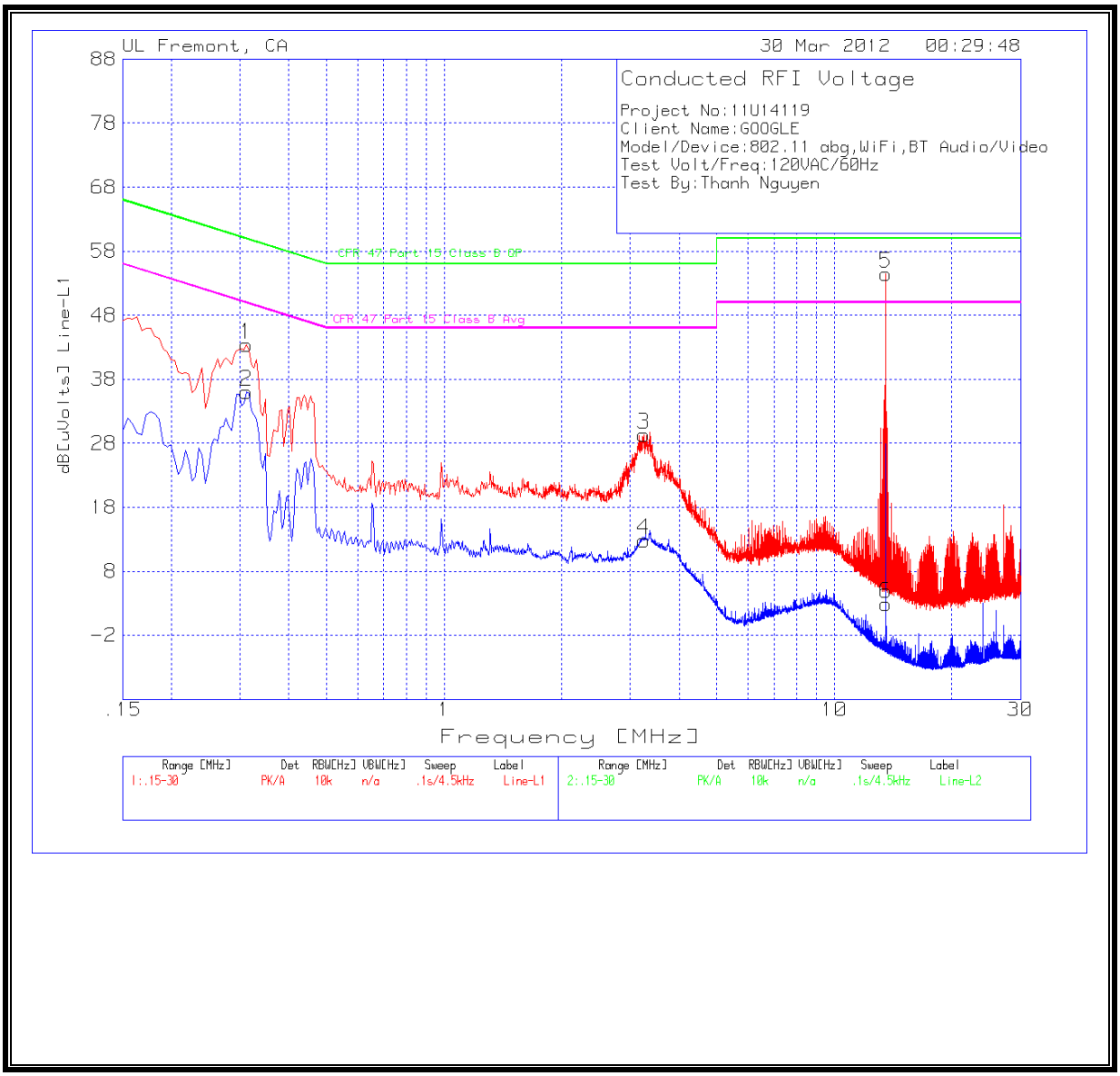
6 WORST EMISSIONS

Project No:11U14119
Client Name:GOOGLE
Model/Device:802.11 abg,WiFi,BT Audio/Video
Test Volt/Freq:120VAC/60Hz
Test By:Thanh Nguyen

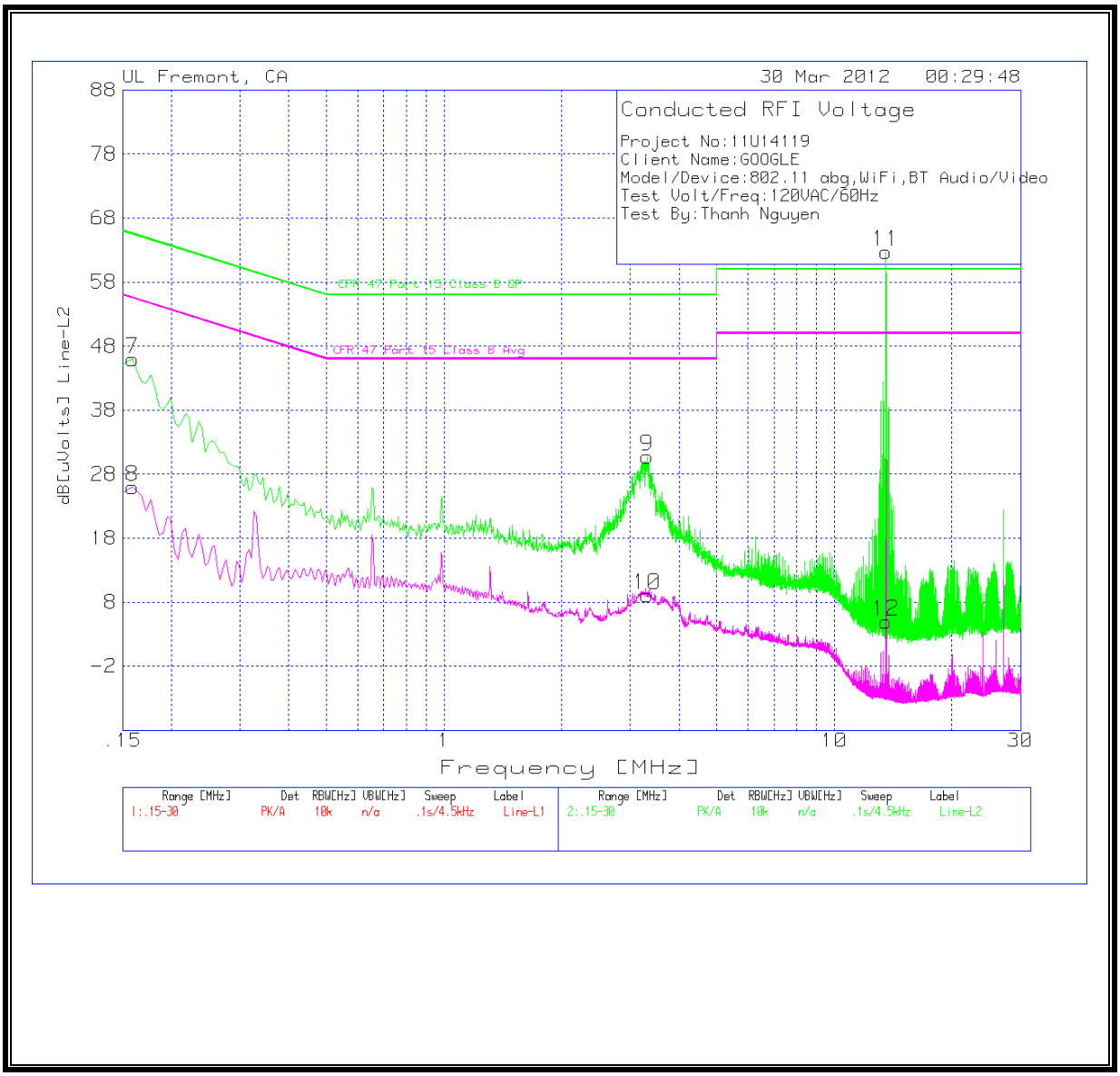
Line-L1 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L1.T	LC Cables	dB[uVolts	CFR 47 Part 15	Margin	CFR 47 Part 15	Margin
0.312	43.31	PK	0.1	0	43.41	59.9	-16.49	-	-
0.312	35.9	Av	0.1	0	36	-	-	49.9	-13.9
3.2505	29.09	PK	0.1	0.1	29.29	56	-26.71	-	-
3.2505	12.6	Av	0.1	0.1	12.8	-	-	46	-33.2
13.56	54.1	PK	0.2	0.2	54.5	60	-5.5	-	-
13.56	2.55	Av	0.2	0.2	2.95	-	-	50	-47.05

Line-L2 .15 - 30MHz									
Test Frequency	Meter Reading	Detector	T24 IL L1.T	LC Cables	dB[uVolts	CFR 47 Part 15	Margin	CFR 47 Part 15	Margin
0.159	45.83	PK	0.1	0	45.93	65.5	-19.57	-	-
0.159	25.84	Av	0.1	0	25.94	-	-	55.5	-29.56
3.3225	30.6	PK	0.1	0.1	30.8	56	-25.2	-	-
3.3225	8.87	Av	0.1	0.1	9.07	-	-	46	-36.93
13.56	62.27	PK	0.2	0.2	62.67	60	2.67	-	-
13.56	4.53	Av	0.2	0.2	4.93	-	-	50	-45.07

LINE 1 RESULTS



LINE 2 RESULTS



6 WORST EMISSIONS with Terminated antenna

Project No:11U14119
Client Name:GOOGLE
Model/Device:W1/802.11abg, BT Audio Video
Test Volt/Freq:115V/60Hz
Test By:Thanh Nguyen

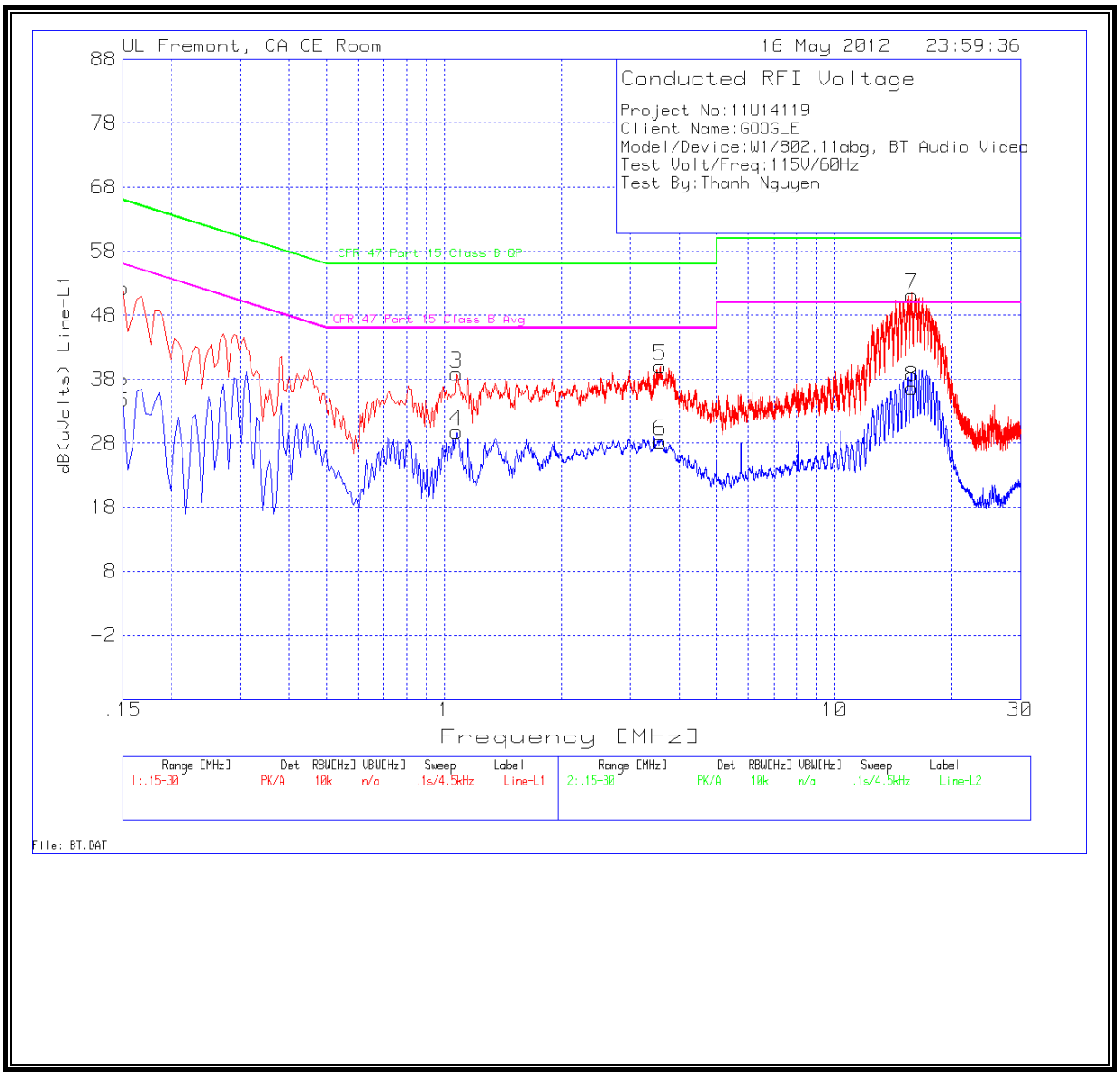
Line-L1 .15 - 30MHz

Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	Value dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.15	52.16	PK	0.1	0	52.26	66	-13.74	-	-
0.15	34.83	Av	0.1	0	34.93	-	-	56	-21.07
1.077	38.83	PK	0.1	0	38.93	56	-17.07	-	-
1.077	29.71	Av	0.1	0	29.81	-	-	46	-16.19
3.579	39.79	PK	0.2	0.1	40.09	56	-15.91	-	-
3.579	28.01	Av	0.2	0.1	28.31	-	-	46	-17.69
15.8325	50.71	PK	0.2	0.2	51.11	60	-8.89	-	-
15.8325	36.34	Av	0.2	0.2	36.74	-	-	50	-13.26

Line-L2 .15 - 30MHz

Test Frequency	Meter Reading	Detector	T24 IL L1.TXT (dB)	LC Cables 1&3.TXT (dB)	Value dB(uVolts)	CFR 47 Part 15 Class B QP	Margin	CFR 47 Part 15 Class B Avg	Margin
0.303	44.47	PK	0.1	0	44.57	60.2	-15.63	-	-
0.303	37.15	Av	0.1	0	37.25	-	-	50.2	-12.95
0.816	37.93	PK	0.1	0	38.03	56	-17.97	-	-
0.816	27.87	Av	0.1	0	27.97	-	-	46	-18.03
3.5025	38.01	PK	0.1	0.1	38.21	56	-17.79	-	-
3.5025	23.86	Av	0.1	0.1	24.06	-	-	46	-21.94
16.395	51.12	PK	0.2	0.2	51.52	60	-8.48	-	-
16.395	38.75	Av	0.2	0.2	39.15	-	-	50	-10.85

LINE 1 RESULTS



LINE 2 RESULTS