FCC 47 CFR PART 15 SUBPART C
INDUSTRY CANADA RSS-210 ISSUE 8
CLASS II PERMISSIVE CHANGE

CERTIFICATION TEST REPORT

FOR

WIRELESS LAN MODULE

MODEL NUMBER: DWM-W082

FCC ID: EW4DWMW082
IC: 4250A-DWMW082

REPORT NUMBER: 13J15369-1

ISSUE DATE: June 26, 2013

Prepared for
Mitsumi Electric Co., Ltd.
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Kanagawa-ken 243-8533, Japan

Prepared by
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NVLAP LAB CODE 200065-0

Revision History

Rev.	Issue Date	Revisions	Revised By
--	06/26/2013	Initial Issue	G. Quizon

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME: Mitsumi Electric Co., Ltd.
1601, Sakai, Atsugi-shi, Kanagawa-ken 243, Japan

EUT DESCRIPTION: Wireless LAN Module

MODEL: DWM-W082

SERIAL NUMBER: PW908015489 & PW908016196
(Radiated and Conducted tests)
PW9080155564 (Antenna Terminal Conducted test)

DATE TESTED: June 17th to June 26th, 2013

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 Part 15 Subpart C	Pass
INDUSTRY CANADA RSS-210 Issue 8 Annex 8	Pass
INDUSTRY CANADA RSS-GEN Issue 3	Pass

UL Verification Services Inc. 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 Verification Services Inc. 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 Verification Services Inc. and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by UL Verification Services Inc. 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 Verification Services Inc. By:

George A. Quizon
WiSE PROJECT LEADER
UL Verification Services Inc.

Tested By:

Steve Aguilar
EMC ENGINEER
UL Verification Services Inc.

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC CFR 47 Part 2, FCC CFR 47 Part 15, ANSI C63.10-2009, 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 Verification Services Inc. 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 a Mitsumi Wireless LAN module (802.11b/g).

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum average conducted output power as follows:

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2472	802.11b	5.52	3.56
2412 - 2462	802.11g	5.35	3.43

The measured average power values were within ± 0.5 dB of the original values. Refer to original report number 32FE0108-HO-01-B for exact output power values and for all antenna port results.

5.1. DESCRIPTION OF CLASS II PERMISSIVE CHANGE

The change filed under this application has the following changes.

The major change filed under this application is the addition of a new host.

5.2. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a PIFA antenna, with a maximum gain of -0.16 dBi.

5.3. SOFTWARE AND FIRMWARE

Host of EUT Firmware verison 0.19.2 (r51853)

Test Utility for RF: HOSTIO-ART ver. 1.02

5.4. WORST-CASE CONFIGURATION AND MODE

The worst-case data rate for each mode is determined to be as follows, based on preliminary tests of the chipset utilized in this radio.

All final tests in the 802.11b mode were made at 2 Mb/s.
All final tests in the 802.11g mode were made at 24 Mb/s.

For radiated emissions below 1 GHz the worst-case configuration is determined to be the mode and channel with the highest output power.

The EUT was investigated in three orthogonal orientations X, Y, and Z. Orientation Y was found to be worst-case orientation.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Support Equipment List				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
Laptop	Lenovo	T61	L3A1589	DoC
AC Adapter	Lenovo	92P1160	11S92P1160ZBGH74LH2M	N/A
UIC-MIDI Intercade	Kyoto Microcomputer Co.	Partner CTR	IO200282-UBA	N/A
EUT AC Adapter	Mitsumi	WAP-002(USA)	E1VFK20	N/A
EUT AC Adapter	Tabuchi	WAP-002(USA)	F63T223	N/A
EUT AC Adapter	Nichicon	WAP-002(USA)	G17C312	N/A
Headset	--	--	--	N/A

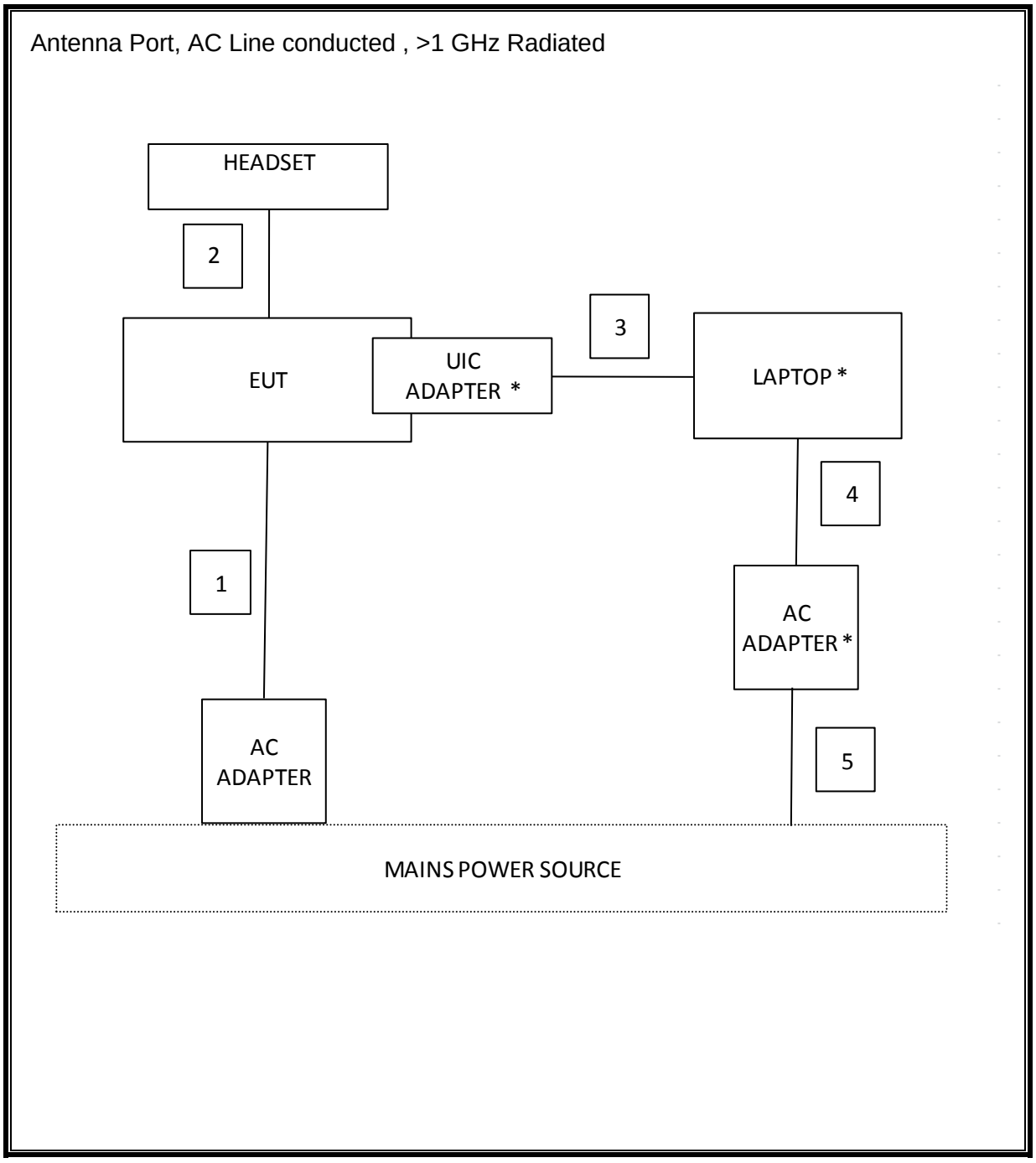
I/O CABLES

I/O Cable List						
Cable No	**Port**	**# of identical ports**	**Connector Type**	**Cable Type**	**Cable Length (m)**	**Remarks**
1	DC	1	USB	Unshielded	1.9	--
2	Audio	1	Earphone	Unshielded	0.8	--
3	Data	1	USB	Shielded	1.6	For testing only
4	DC	1	DC	Unshielded	1.8	For testing only
5	AC	1	AC Pwr	Unshielded	0.9	For testing only

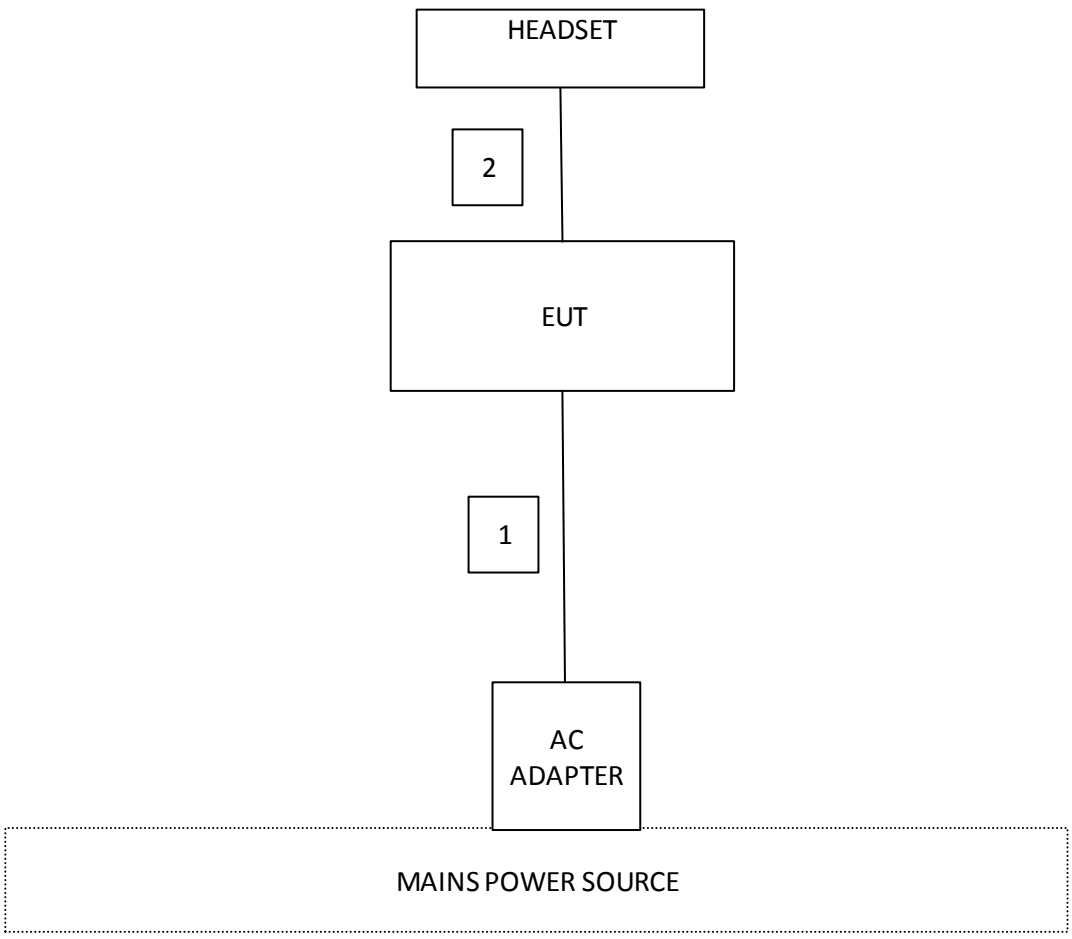
TEST SETUP

The EUT is installed in a host laptop computer during the tests. Test software exercised EUT and Host equipment.

SETUP DIAGRAM FOR TESTS



<1GHz Radiated



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**
P-Series single channel Power Meter	Agilent	N1911A	F00050	10/12/2012	10/12/2013
Peak / Average Power Sensor	Agilent	E9323A	F00051	10/11/2012	10/11/2013
EMI Test Receiver, 30 MHz	R & S	ESHS 20	N02396	8/8/2012	8/8/2013
LISN, 30 MHz	FCC	50/250-25-2	C00626	1/14/2013	1/14/2014
Multimeter, handheld	Extech	410	110410541	8/10/2012	8/10/2013
Spectrum Analyzer, 26.5 GHz	Agilent	E4440A	--	3/19/2013	3/19/2014
Spectrum Analyzer, 44 GHz	Agilent / HP	E4446A	C00986	4/1/2013	4/1/2014
Antenna, Horn, 18 GHz	ETS	3117	C01022	2/21/2013	2/21/2014
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	10/22/2012	10/22/2013
Spectrum Analyzer	Agilent	N9030A	F00128	2/22/2013	2/22/2014
Antenna, Biconolog, 30MHz-1 GHz	Sunol Sciences	JB3	F00168	3/7/2013	3/7/2014
Amplifier	Sonoma	310	F00008	9/19/2012	9/19/2013
Antenna, Horn, 26.5 GHz	ARA	MWH-1826/B	C00589	12/17/2012	12/17/2013

7. MEASUREMENT METHODS

Unwanted emissions within Restricted Bands are measured using traditional radiated procedures.

8. ANTENNA PORT TEST RESULTS

8.1.1. AVERAGE POWER

LIMITS

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

The cable assembly insertion loss of 10.73dB (including 10.05 dB pad and 0.68 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

RESULTS -11b Mode

Channel	Frequency (MHz)	Power (dBm)		Original report Power (dBm)
Low	2412	5.52		5.50
Mid	2442	5.32		5.24
High	2472	-0.49		-0.64

RESULTS -11g Mode

Channel	Frequency (MHz)	Power (dBm)		Original report Power (dBm)
Low	2412	5.35		5.04
Mid	2437	5.20		5.08
High	2462	4.97		5.04

- Original Mitsumi Report 32FE0108-HO-01-B

9. RADIATED TEST RESULTS

9.1. LIMITS AND PROCEDURE

LIMITS

FCC §15.205 and §15.209

IC RSS-210 Clause 2.6 (Transmitter)

IC RSS-GEN Clause 6 (Receiver)

Frequency Range (MHz)	Field Strength Limit (uV/m) at 3 m	Field Strength Limit (dBuV/m) at 3 m
30 - 88	100	40
88 - 216	150	43.5
216 - 960	200	46
Above 960	500	54

TEST PROCEDURE

The EUT is placed on a non-conducting table 80 cm above the ground plane. The antenna to EUT distance is 3 meters.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz; the video bandwidth is set to 1 MHz for peak measurements and as applicable for average measurements.

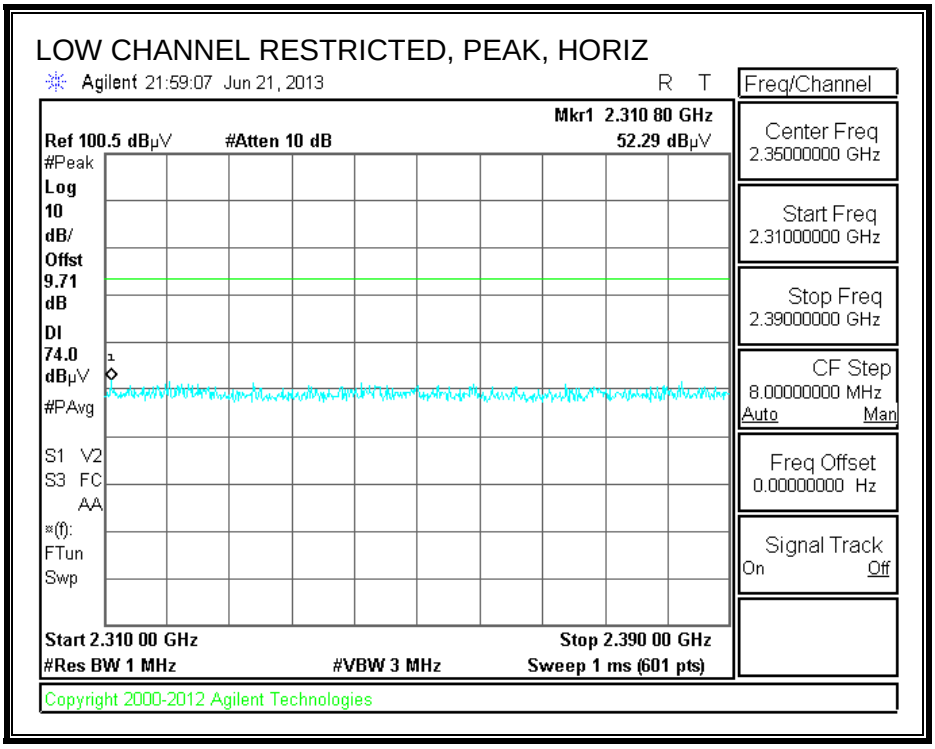
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each applicable band.

The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

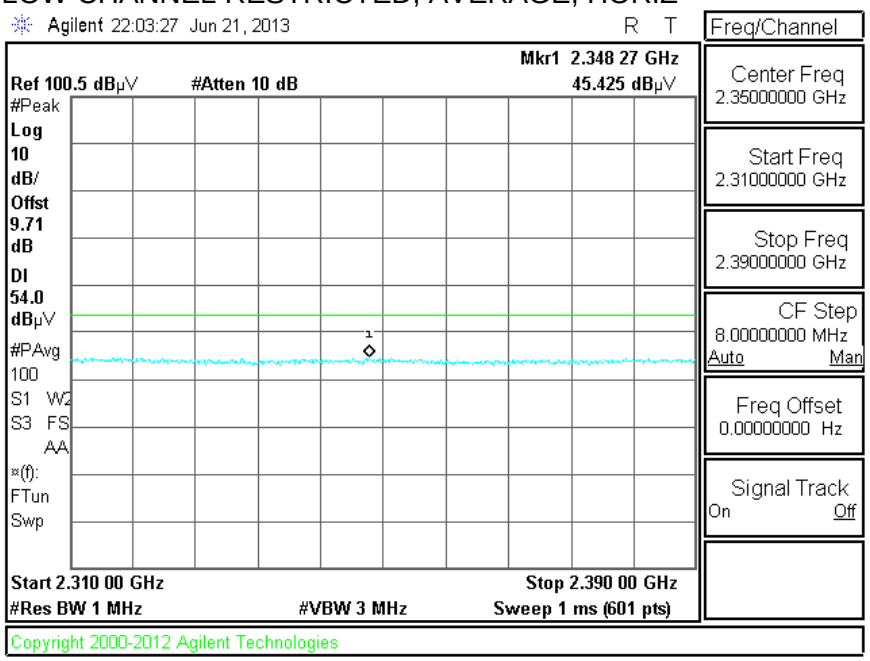
9.2. TRANSMITTER ABOVE 1 GHz

9.3. TX ABOVE 1 GHz 802.11b MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

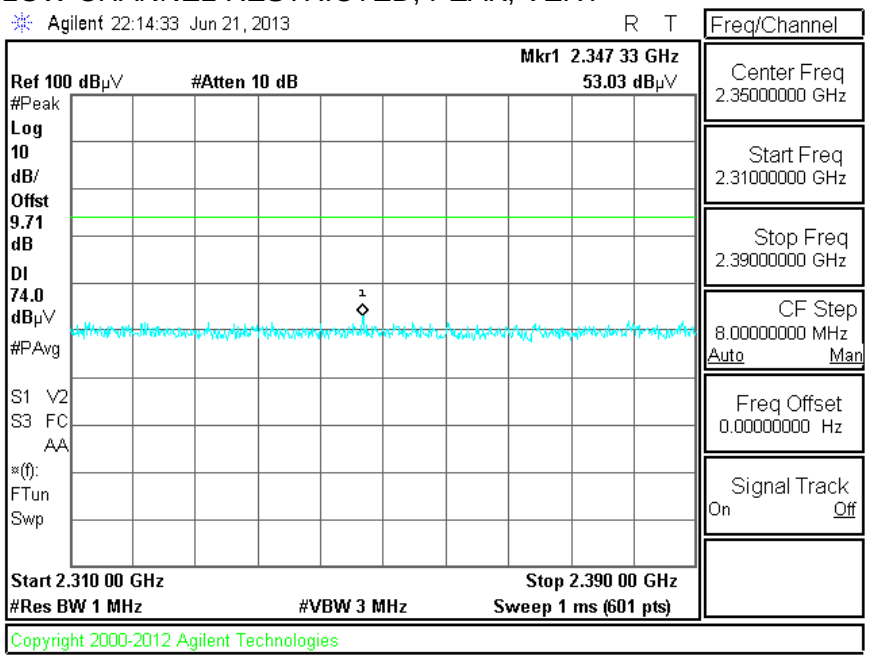


LOW CHANNEL RESTRICTED, AVERAGE, HORIZ

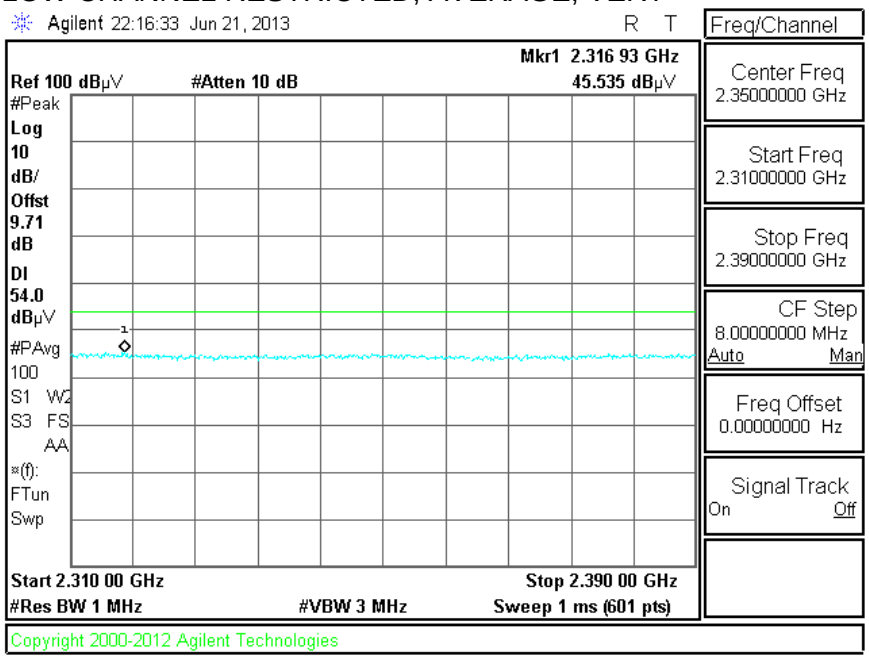


Pk detector considered worse case.

LOW CHANNEL RESTRICTED, PEAK, VERT



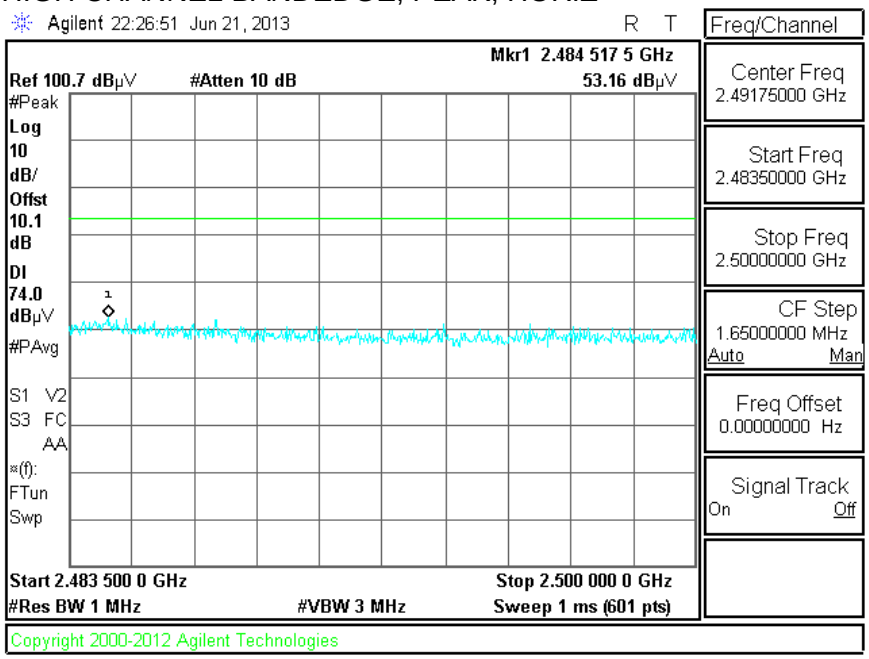
LOW CHANNEL RESTRICTED, AVERAGE, VERT



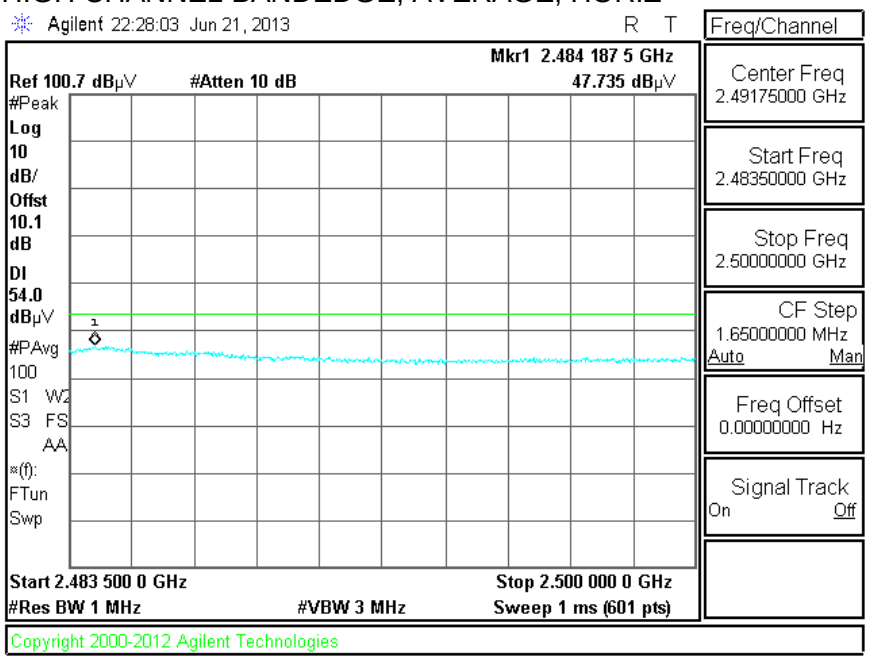
Pk detector considered worse case.

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ

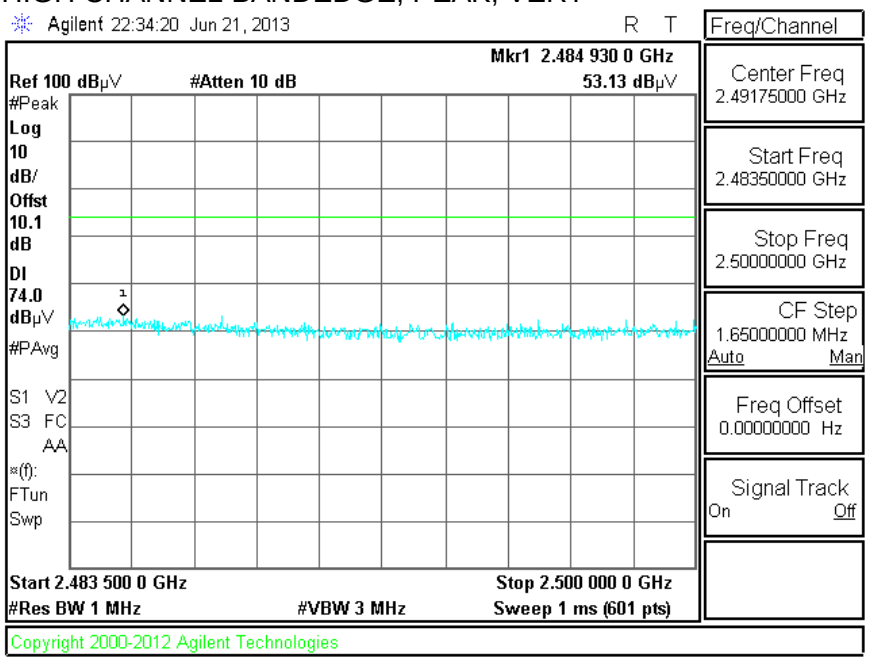


HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ

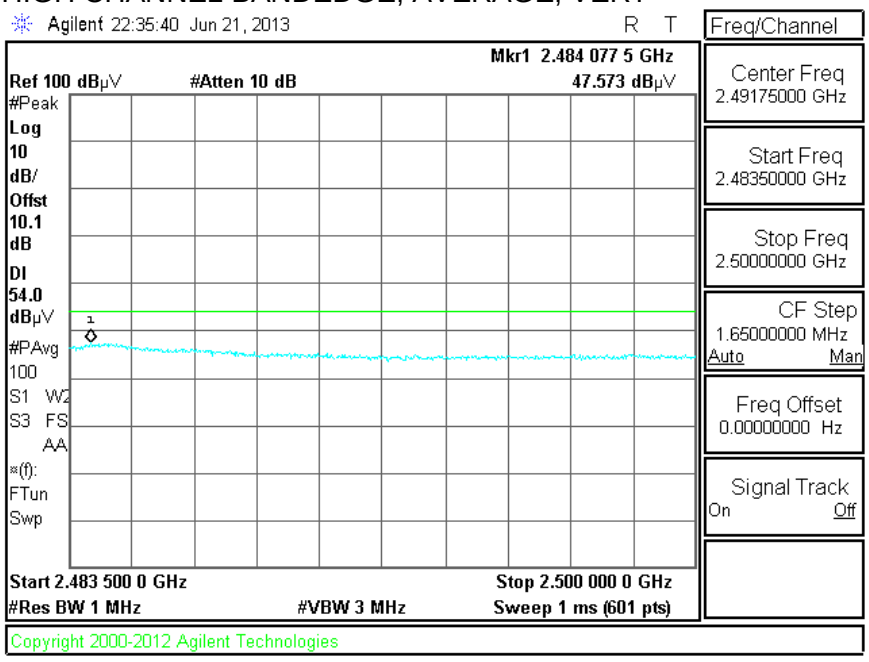


Pk detector considered worse case.

HIGH CHANNEL BANDEDGE, PEAK, VERT



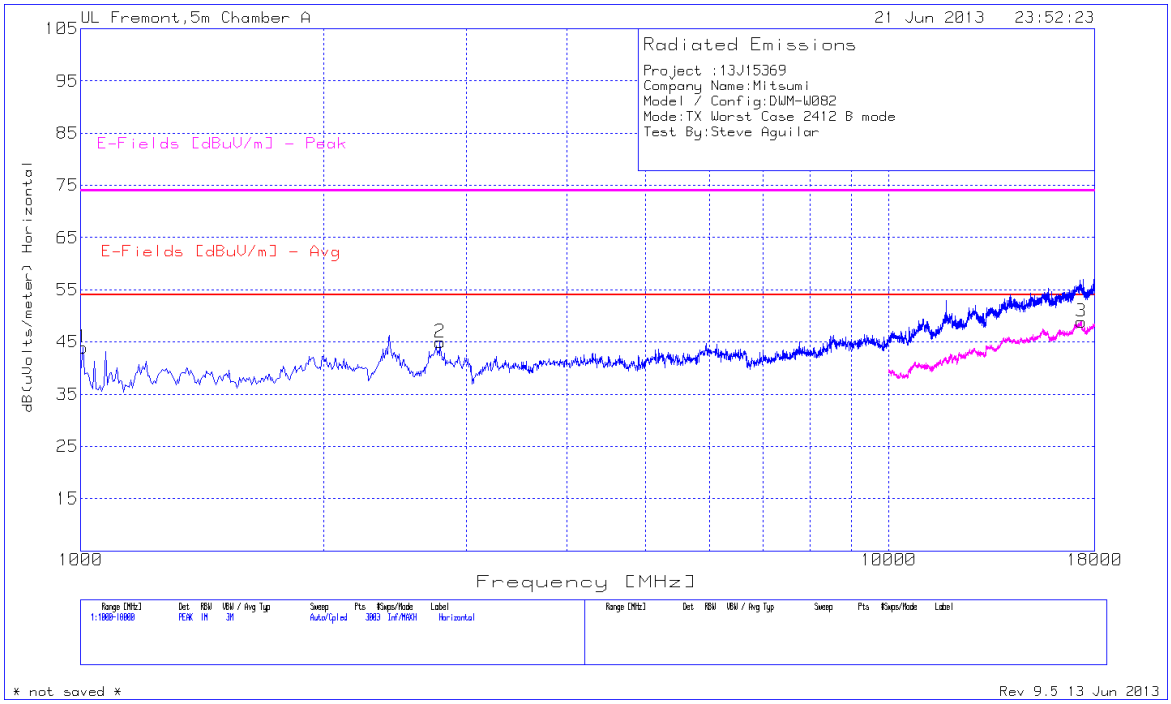
HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Pk detector considered worse case.

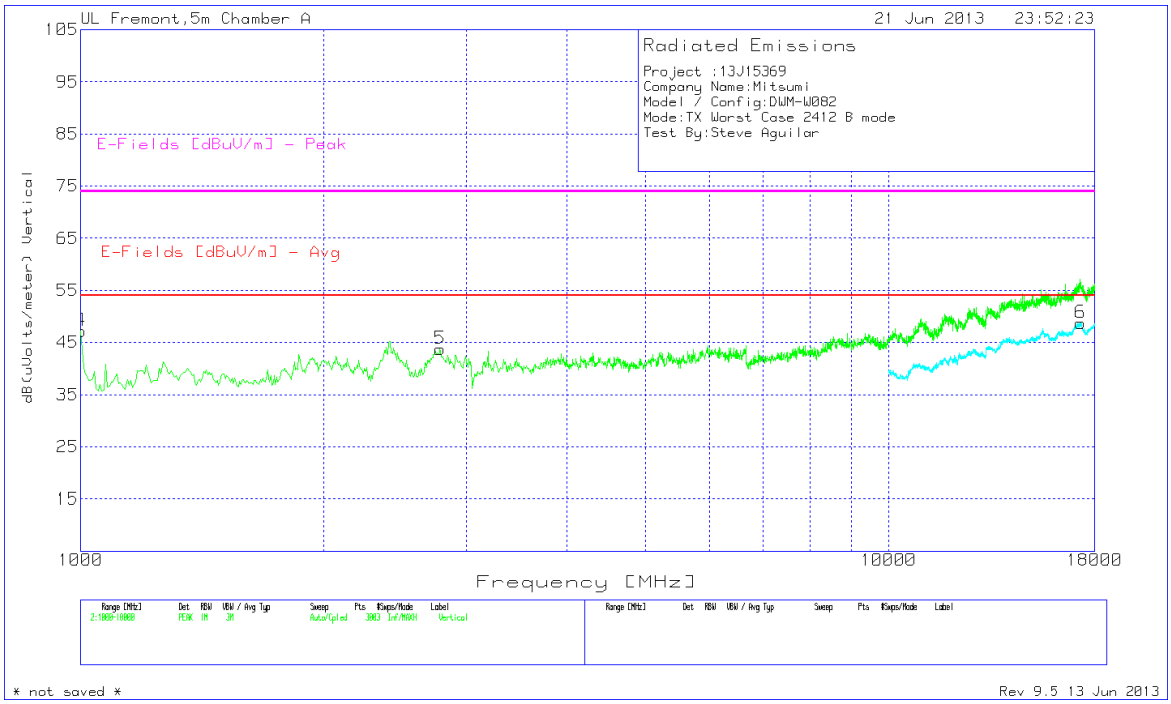
HARMONICS AND SPURIOUS EMISSIONS

Low channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

Low channel – Vertical



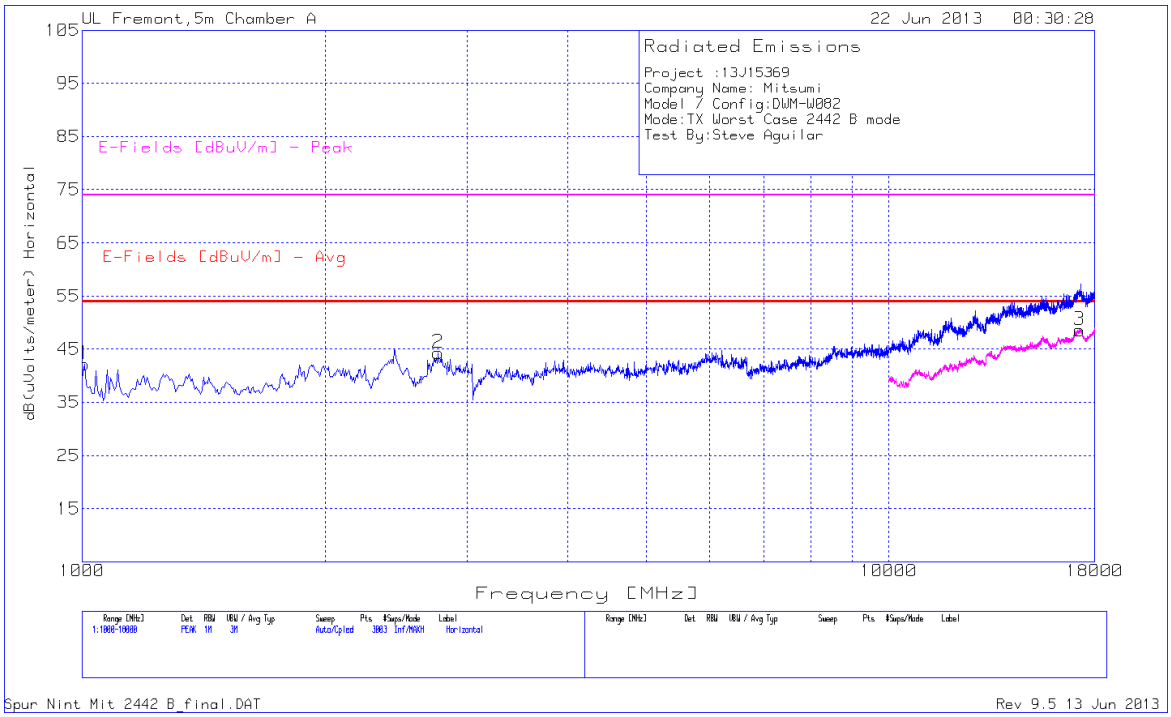
No other emissions above 18 Gig were found above the noise floor.

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts /meter)	E-Fields [dBuV/ m] - Avg	Margin (dB)	E-Fields [dBuV/ m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	51.45	PK	28.1	-38.9	3	.3	43.95	53.97	-10.02	74	-30.05	200	Horz
2	2.784	43.35	PK	32.6	-36.7	4.8	.9	44.95	53.97	-9.02	74	-29.05	200	Horz
4	1	54.73	PK	28.1	-38.9	3	.3	47.23	53.97	-6.74	74	-26.77	100	Vert
5	2.784	42.15	PK	32.6	-36.7	4.8	.9	43.75	53.97	-10.22	74	-30.25	100	Vert
3	17.324	27.56	PK	41	-34.4	14.1	.6	48.86	53.97	-5.11	74	-25.14	200	Horz
6	17.292	27.52	PK	41	-34.4	14.1	.5	48.72	53.97	-5.25	74	-25.28	200	Vert

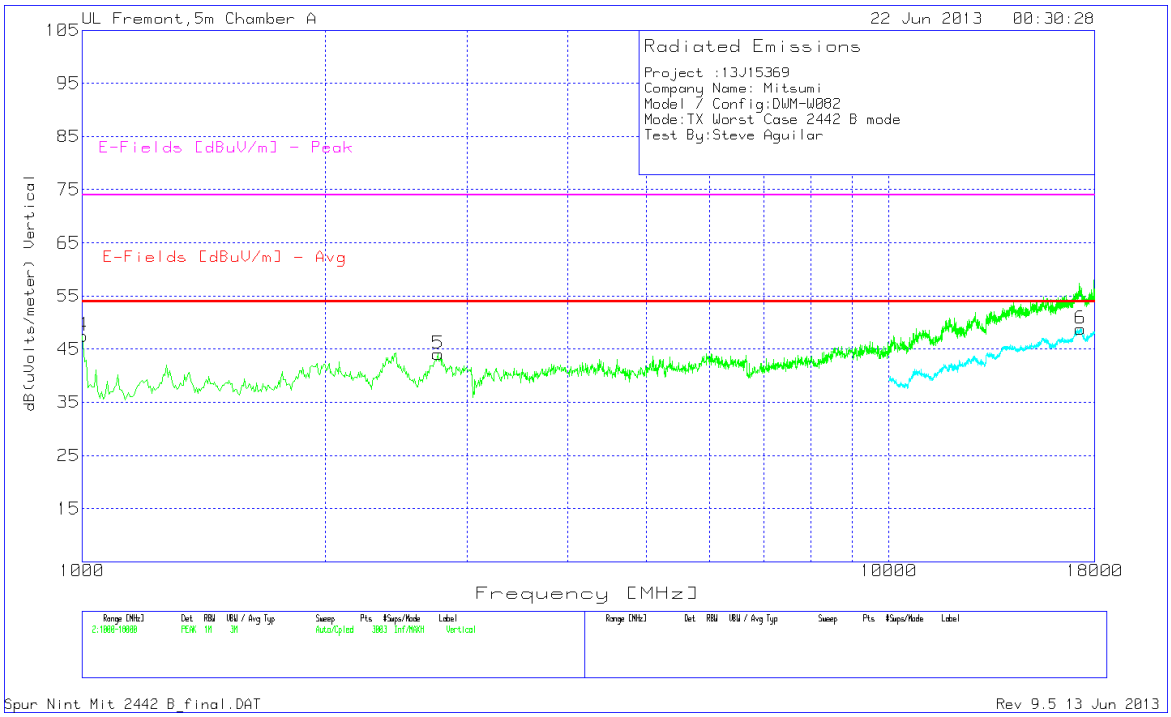
PK - Peak detector

Mid channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

Mid channel – Vertical



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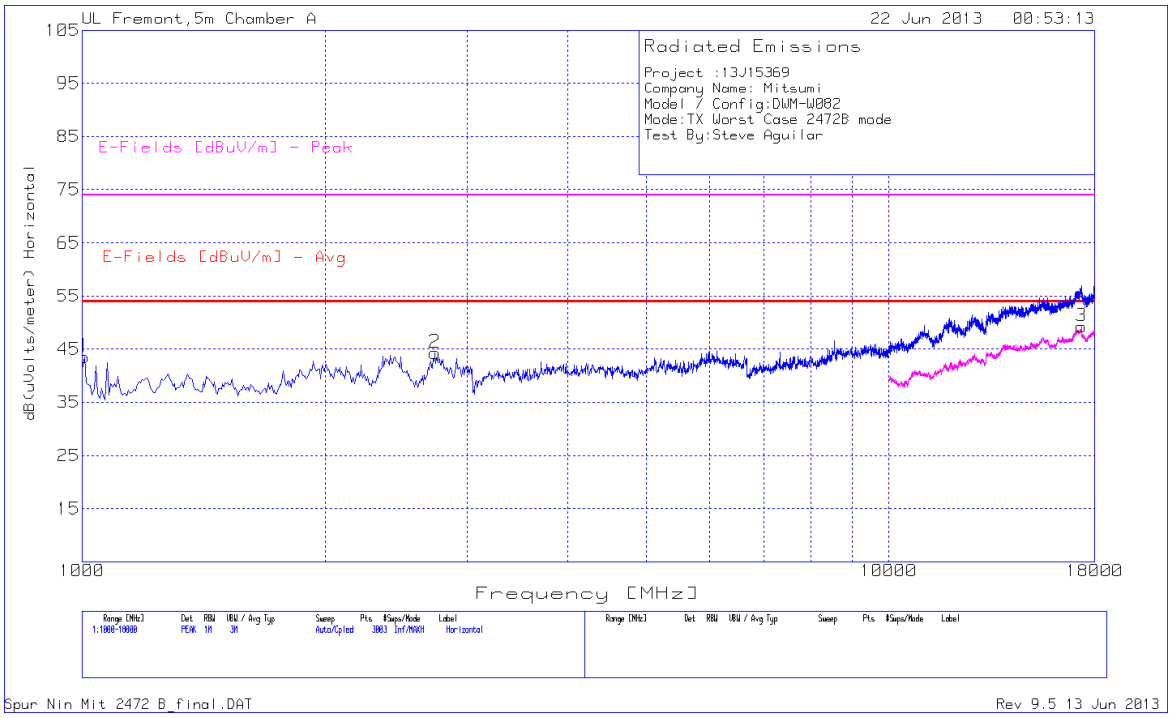
Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	49.67	PK	28.1	-38.9	3	.3	42.17	53.97	-11.8	74	-31.83	101	Horz
2	2.761	42.8	PK	32.6	-36.8	4.8	.9	44.3	53.97	-9.67	74	-29.7	200	Horz
4	1	54.99	PK	28.1	-38.9	3	.3	47.49	53.97	-6.48	74	-26.51	200	Vert
5	2.761	42.6	PK	32.6	-36.8	4.8	.9	44.1	53.97	-9.87	74	-29.9	200	Vert
3	17.24	27.37	PK	40.9	-34.3	14.1	.5	48.57	53.97	-5.4	74	-25.43	100	Horz
6	17.28	27.61	PK	41	-34.4	14.1	.5	48.81	53.97	-5.16	74	-25.19	100	Vert

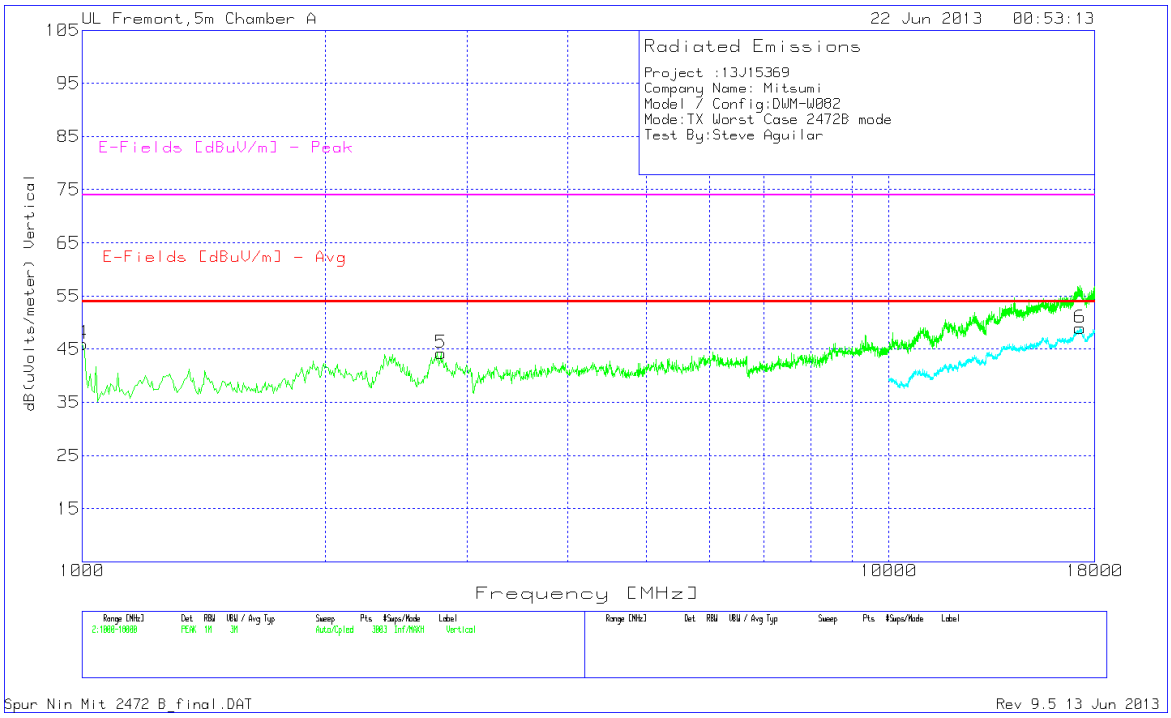
PK - Peak detector

High channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

High channel – Vertical



No other emissions above 18 Gig were found above the noise floor.

Trace Markers

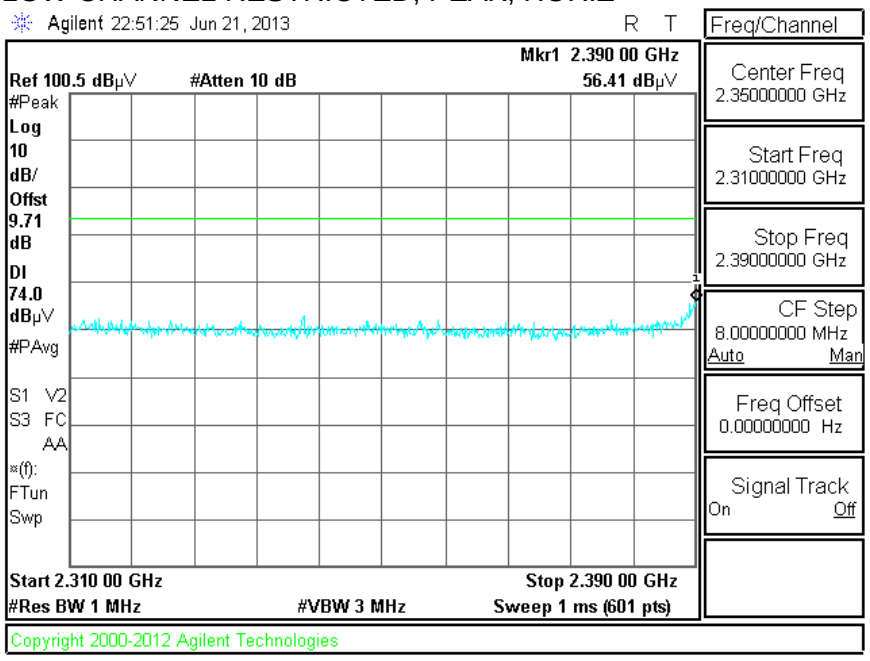
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	51.09	PK	28.1	-38.9	3	.3	43.59	53.97	-10.38	74	-30.41	200	Horz
2	2.739	42.69	PK	32.7	-36.8	4.8	.9	44.29	53.97	-9.68	74	-29.71	101	Horz
4	1	53.49	PK	28.1	-38.9	3	.3	45.99	53.97	-7.98	74	-28.01	200	Vert
5	2.784	42.63	PK	32.6	-36.7	4.8	.9	44.23	53.97	-9.74	74	-29.77	200	Vert
3	17.328	27.97	PK	41	-34.4	14.1	.6	49.27	53.97	-4.7	74	-24.73	100	Horz
6	17.26	27.57	PK	41	-34.3	14.1	.6	48.97	53.97	-5	74	-25.03	100	Vert

PK - Peak detector

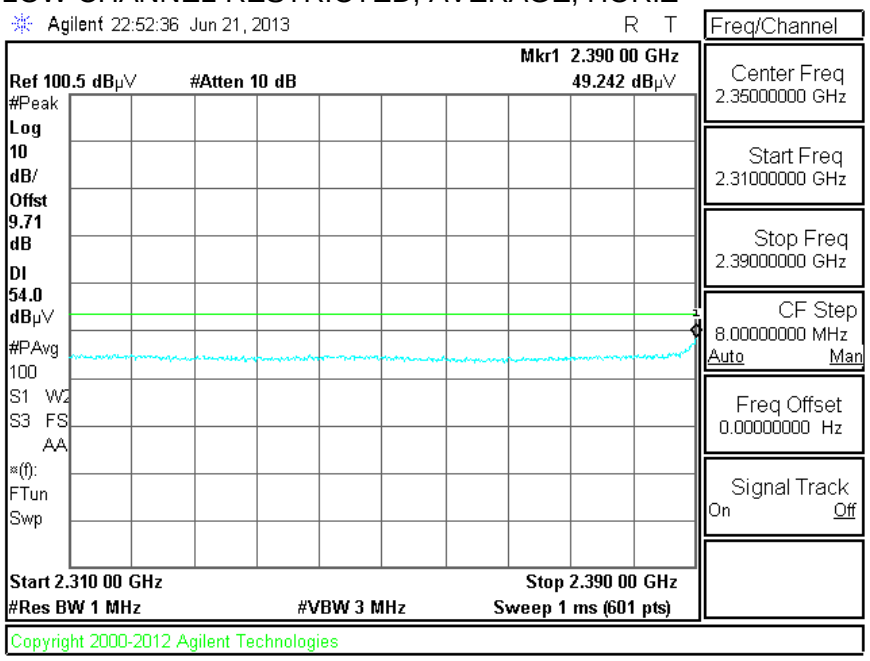
9.4. TX ABOVE 1 GHz 802.11g MODE IN THE 2.4 GHz BAND

RESTRICTED BANDEDGE (LOW CHANNEL)

LOW CHANNEL RESTRICTED, PEAK, HORIZ

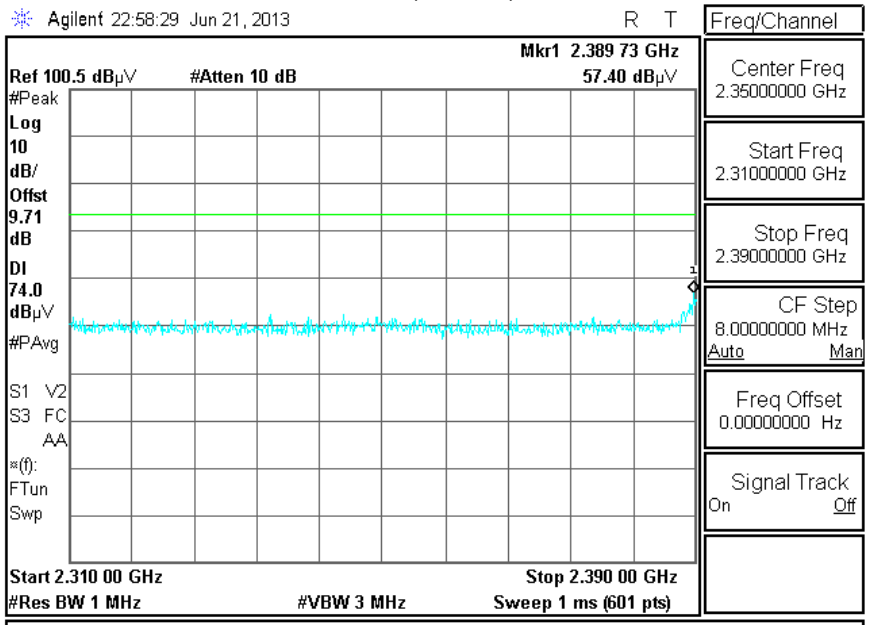


LOW CHANNEL RESTRICTED, AVERAGE, HORIZ

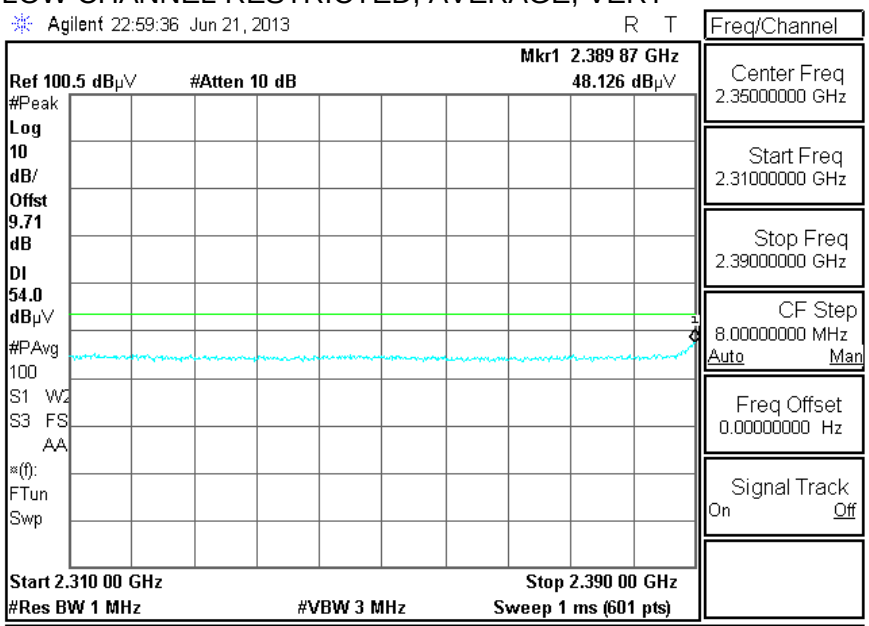


Pk detector considered worse case.

LOW CHANNEL RESTRICTED, PEAK, VERT



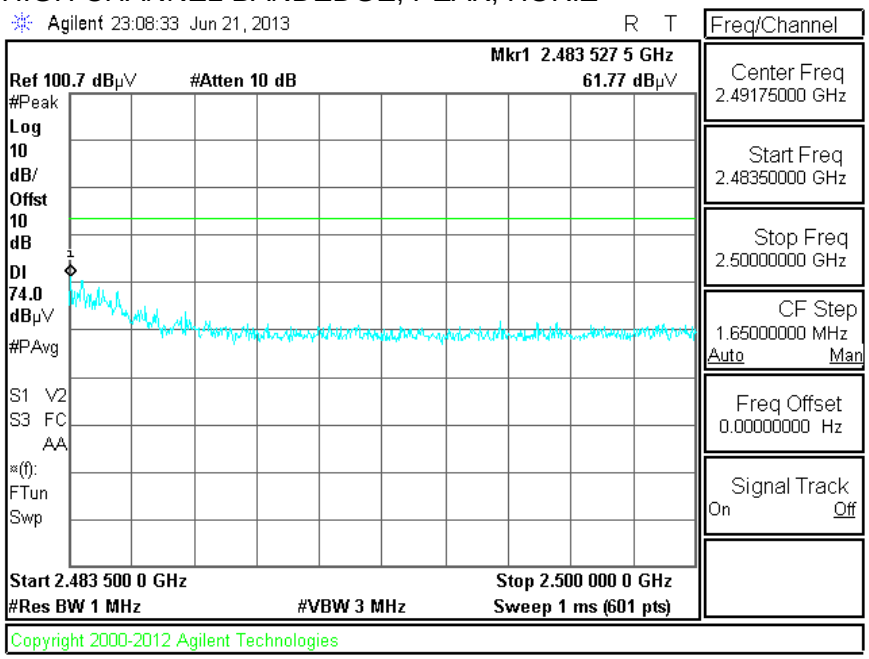
LOW CHANNEL RESTRICTED, AVERAGE, VERT



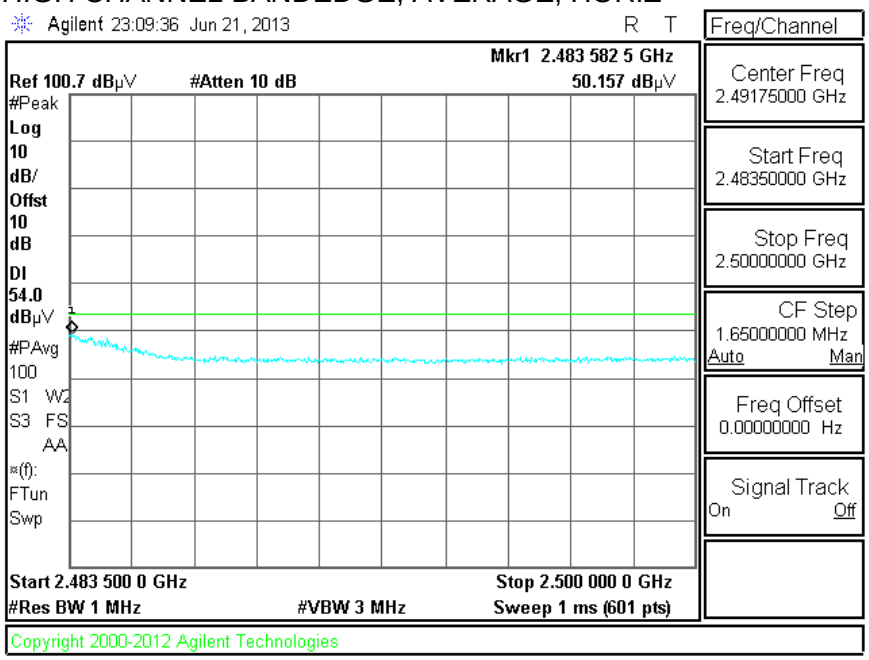
Pk detector considered worse case.

AUTHORIZED BANDEDGE (HIGH CHANNEL)

HIGH CHANNEL BANDEDGE, PEAK, HORIZ

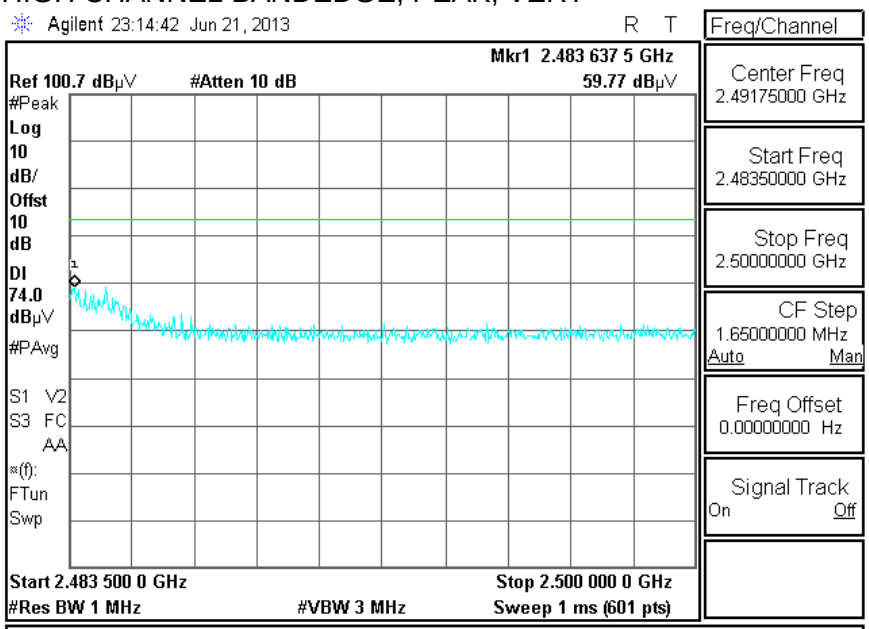


HIGH CHANNEL BANDEDGE, AVERAGE, HORIZ

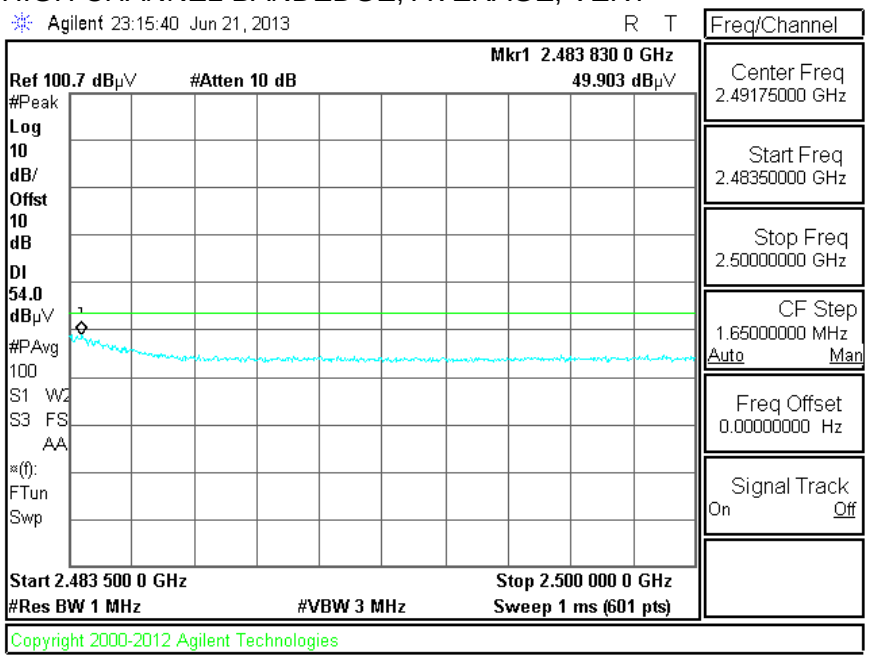


Pk detector considered worse case.

HIGH CHANNEL BANDEDGE, PEAK, VERT



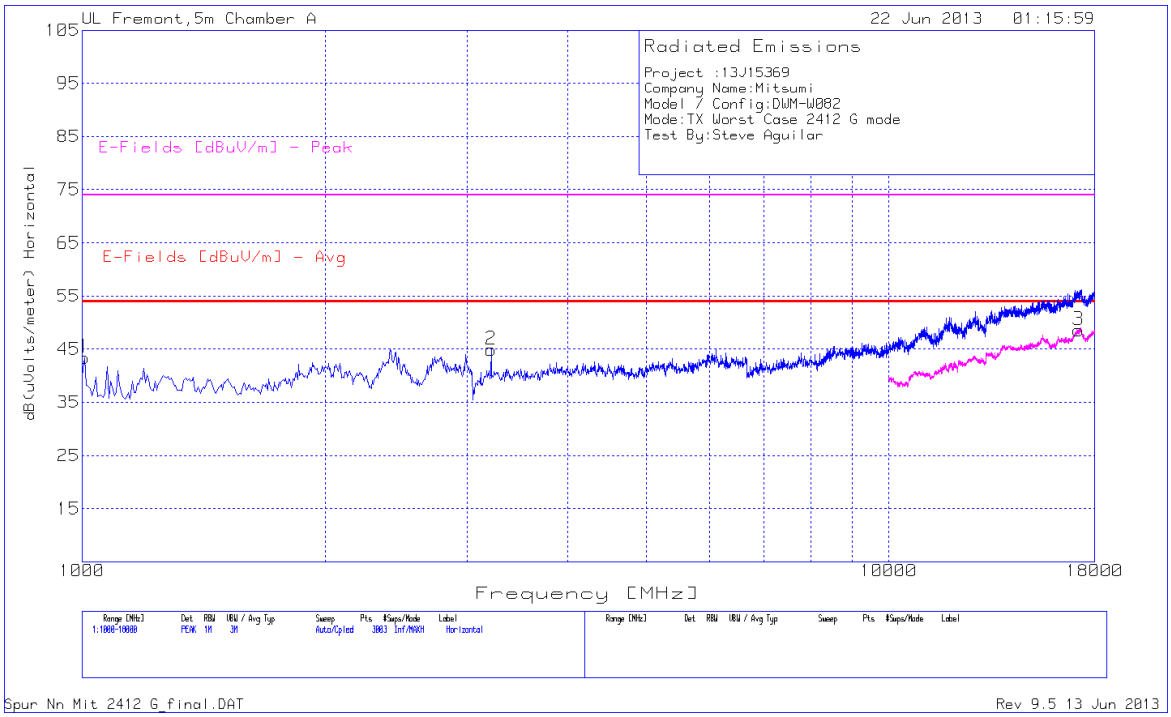
HIGH CHANNEL BANDEDGE, AVERAGE, VERT



Pk detector considered worse case.

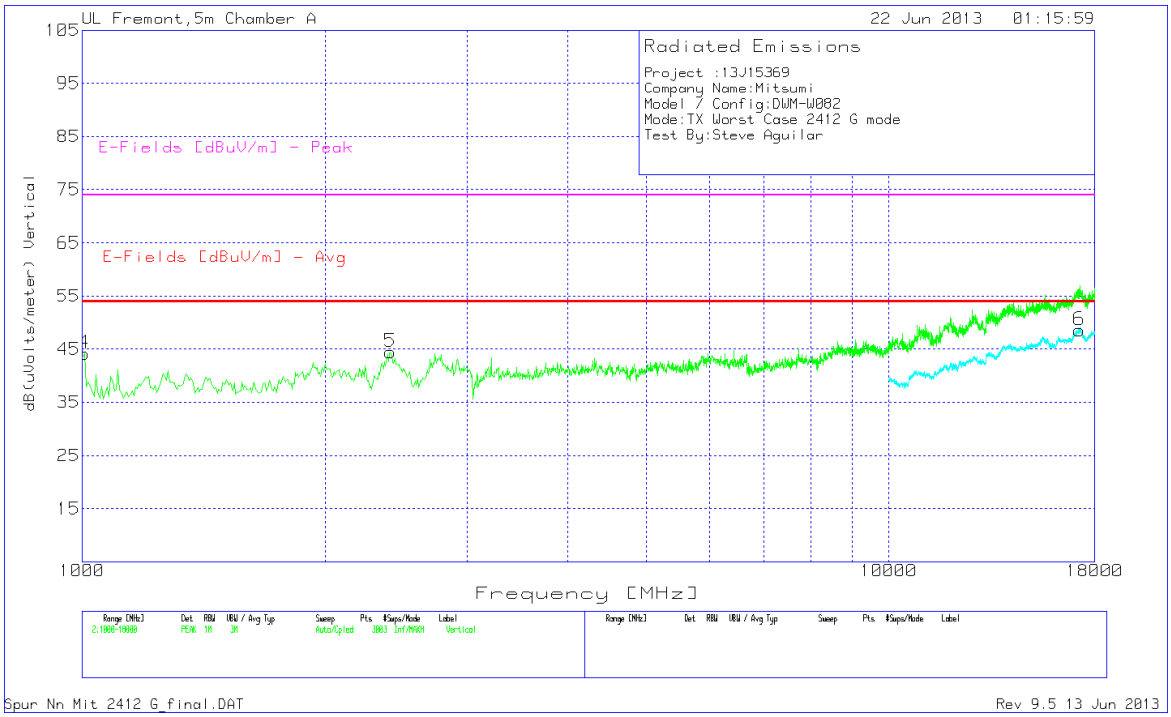
HARMONICS AND SPURIOUS EMISSIONS

Low channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

Low channel – Vertical



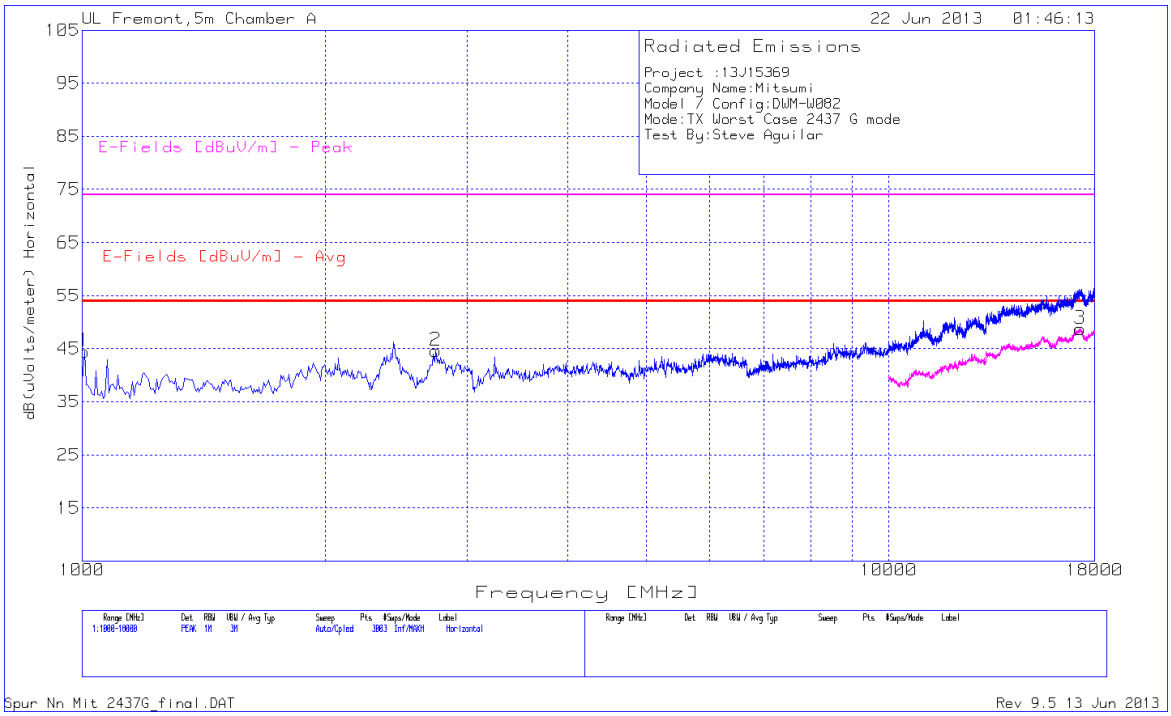
No other emissions above 18 Gig were found above the noise floor.

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	50.96	PK	28.1	-38.9	3	.3	43.46	53.97	-10.51	74	-30.54	200	Horz
2	3.214	42.12	PK	33.5	-36.5	5.3	.5	44.92	53.97	-9.05	74	-29.08	101	Horz
4	1.006	51.72	PK	28.1	-38.9	3	.3	44.22	53.97	-9.75	74	-29.78	100	Vert
5	2.41	43.9	PK	32.2	-36.9	4.4	.9	44.5	53.97	-9.47	74	-29.5	200	Vert
3	17.184	27.43	PK	40.9	-34.3	14.1	.5	48.63	53.97	-5.34	74	-25.37	200	Horz
6	17.236	27.43	PK	40.9	-34.3	14.1	.5	48.63	53.97	-5.34	74	-25.37	100	Vert

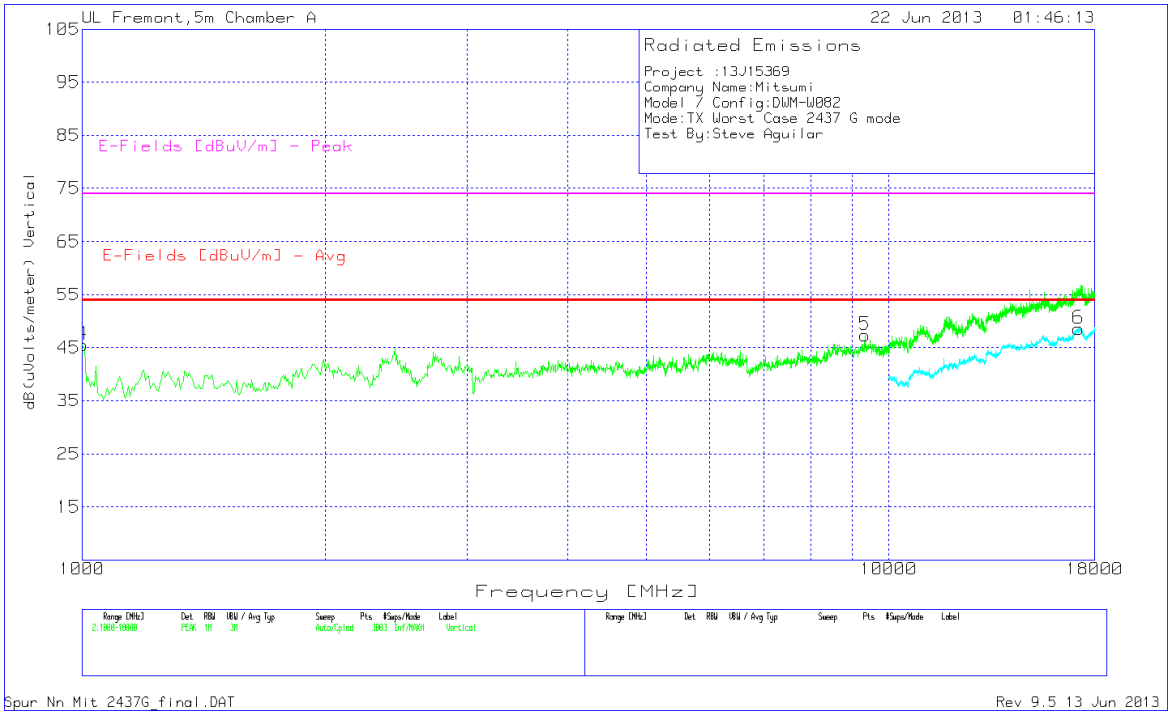
PK - Peak detector

Mid channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

Mid channel – Vertical



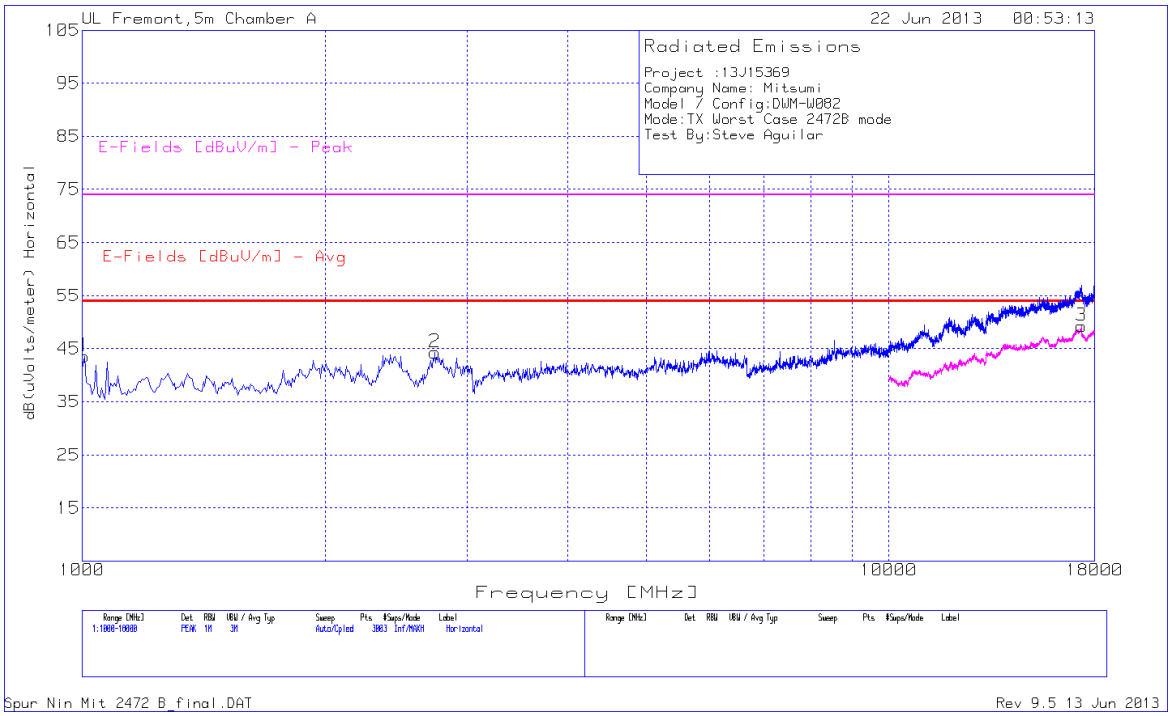
No other emissions above 18 Gig were found above the noise floor.

Trace Markers

Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	51.93	PK	28.1	-38.9	3	.3	44.43	53.97	-9.54	74	-29.57	101	Horz
2	2.744	43.08	PK	32.7	-36.8	4.8	.9	44.68	53.97	-9.29	74	-29.32	101	Horz
4	1	53.07	PK	28.1	-38.9	3	.3	45.57	53.97	-8.4	74	-28.43	100	Vert
5	9.341	36.82	PK	36.3	-36.2	10	.5	47.42	53.97	-6.55	74	-26.58	100	Vert
3	17.272	27.44	PK	41	-34.3	14.1	.5	48.74	53.97	-5.23	74	-25.26	100	Horz
6	17.184	27.43	PK	40.9	-34.3	14.1	.5	48.63	53.97	-5.34	74	-25.37	100	Vert

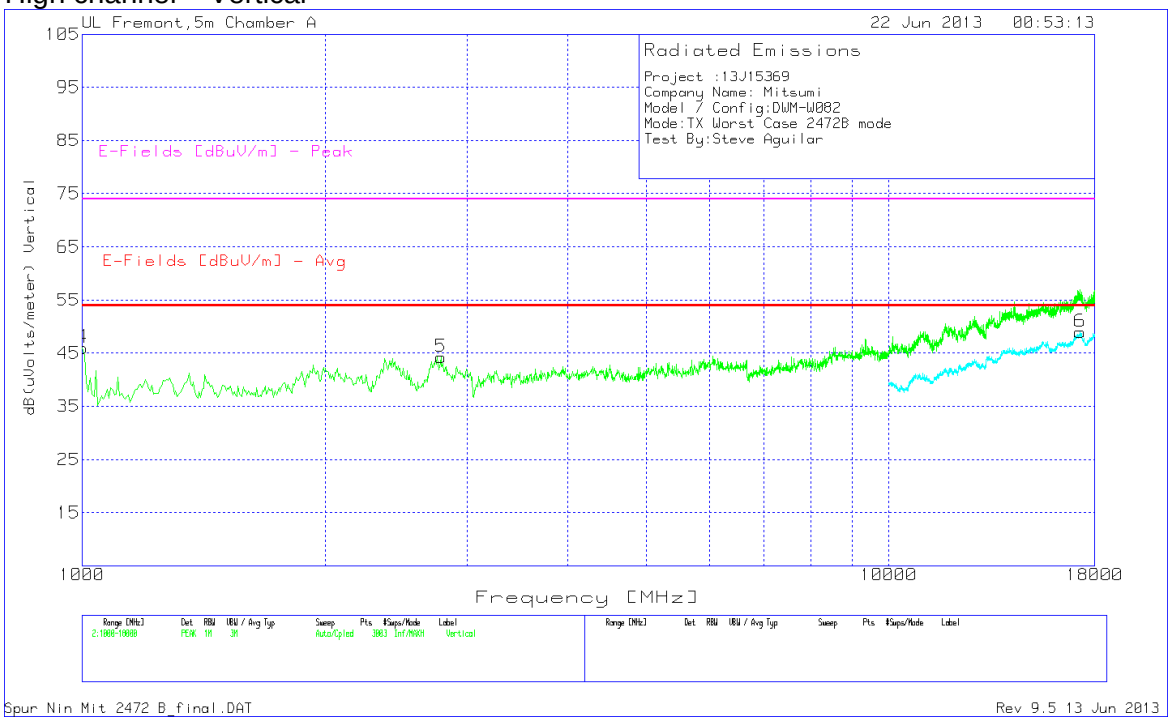
PK - Peak detector

High channel – Horizontal



No other emissions above 18 Gig were found above the noise floor.

High channel – Vertical



No other emissions above 18 Gig were found above the noise floor.

Trace Markers

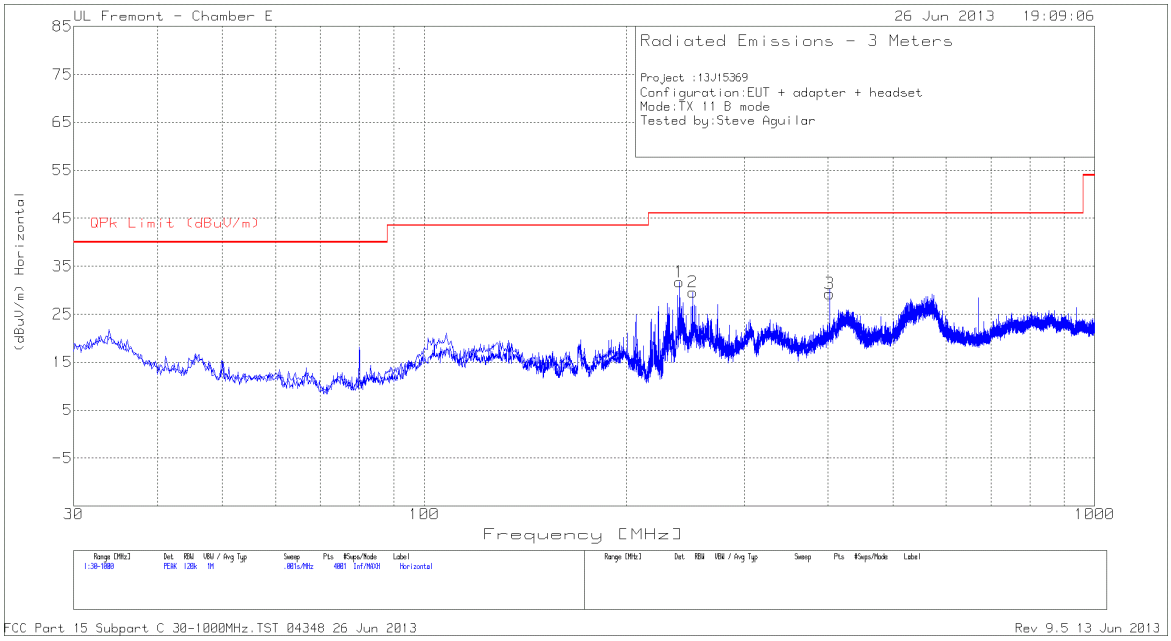
Marker	Frequency (GHz)	Meter Reading (dBuV)	Det	T136 Ant Factor [dB/m]	T144 Preamp Gain [dB]	Cable Factor [dB]	T160 BRF [dB]	Corrected Reading dB(uVolts/meter)	E-Fields [dBuV/m] - Avg	Margin (dB)	E-Fields [dBuV/m] - Peak	Margin (dB)	Height (cm)	Polarity
1	1.006	51.09	PK	28.1	-38.9	3	.3	43.59	53.97	-10.38	74	-30.41	200	Horz
2	2.739	42.69	PK	32.7	-36.8	4.8	.9	44.29	53.97	-9.68	74	-29.71	101	Horz
4	1	53.49	PK	28.1	-38.9	3	.3	45.99	53.97	-7.98	74	-28.01	200	Vert
5	2.784	42.63	PK	32.6	-36.7	4.8	.9	44.23	53.97	-9.74	74	-29.77	200	Vert
3	17.328	27.97	PK	41	-34.4	14.1	.6	49.27	53.97	-4.7	74	-24.73	100	Horz
6	17.26	27.57	PK	41	-34.3	14.1	.6	48.97	53.97	-5	74	-25.03	100	Vert

PK - Peak detector

9.5. WORST-CASE BELOW 1 GHz

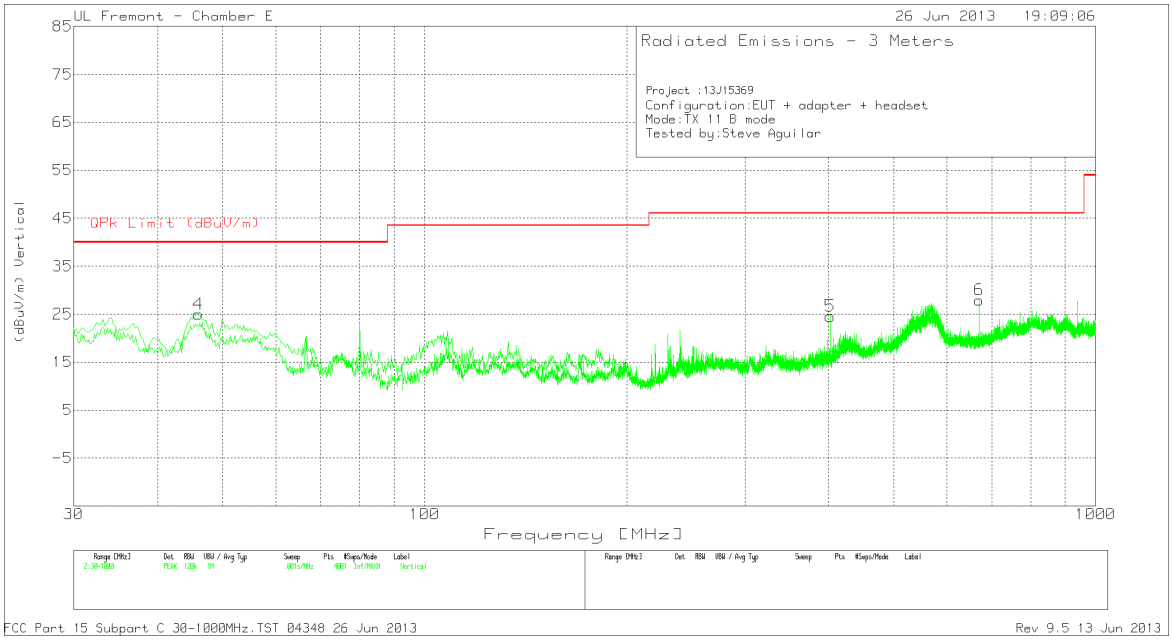
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT



SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT



HORIZONTAL AND VERTICAL DATA

Trace Markers

Marker	Frequency (MHz)	Meter Reading (dBuV)	Det	AF T408 (dB/m)	Amp/Cbl (dB)	Corrected Reading (dBuV/m)	QPk Limit (dBuV/m)	Margin (dB)	Height (cm)	Polarity
1	240.2475	46.5	PK	11.5	-26.3	31.7	46.02	-14.32	100	H
2	251.4025	45.31	PK	11.5	-27.2	29.61	46.02	-16.41	100	H
3	402.2375	41.78	PK	15.7	-28.2	29.28	46.02	-16.74	200	H
4	46.005	42.61	PK	9.9	-27.5	25.01	40	-14.99	100	V
5	402.2375	37.06	PK	15.7	-28.2	24.56	46.02	-21.46	100	V
6	670.2	35.96	PK	19.3	-27.3	27.96	46.02	-18.06	100	V

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 – Mitsumi Adapter

Project No:13J15369
Client Name: Mitsumi
Model/Device:DWM-W082 / Mitsumi Adap
Test Volt/Freq:120VAC/60Hz
Test By:Steve Aguilar

Line-L1 .15 - 30MHz

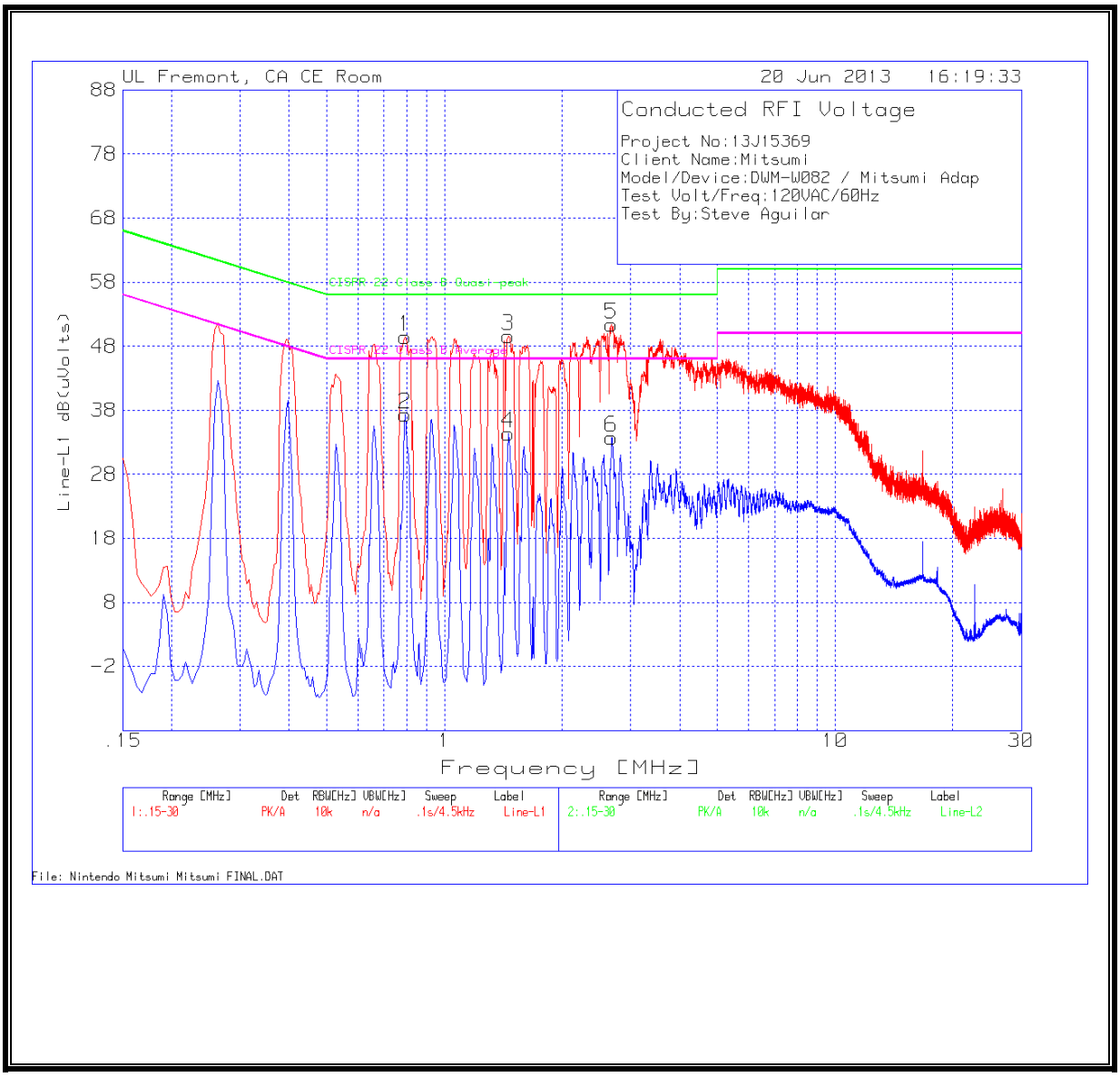
Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
0.7935	49.39	PK	0.1	0	49.49	56	-6.51	-	-
0.7935	37.22	Av	0.1	0	37.32	-	-	46	-8.68
1.4595	49.4	PK	0.1	0.1	49.6	56	-6.4	-	-
1.4595	34.19	Av	0.1	0.1	34.39	-	-	46	-11.61
2.679	51.2	PK	0.1	0.1	51.4	56	-4.6	-	-
2.679	33.48	Av	0.1	0.1	33.68	-	-	46	-12.32

Line-L2 .15 - 30MHz

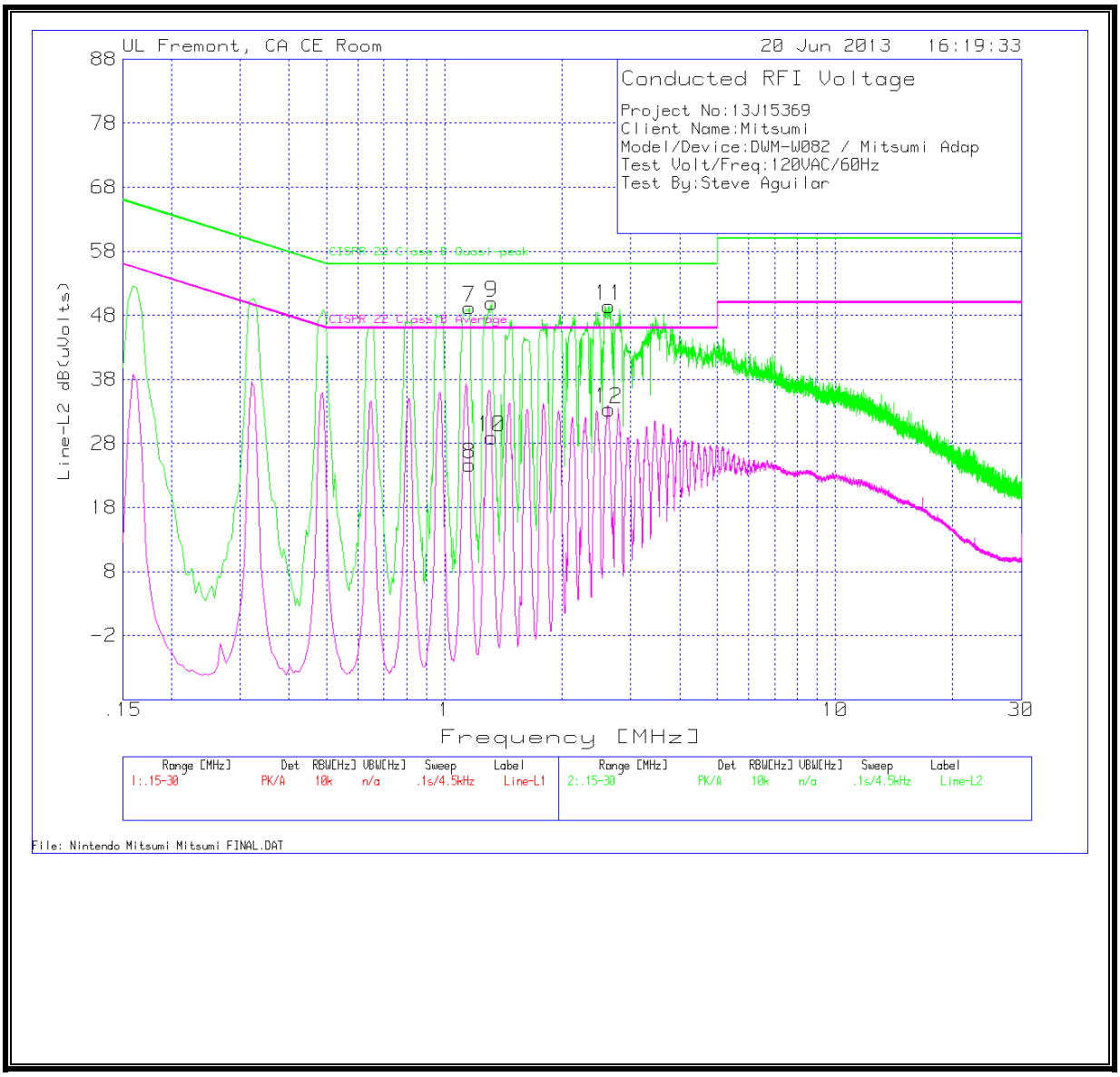
Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
1.158	49.15	PK	0.1	0	49.25	56	-6.75	-	-
1.158	24.61	Av	0.1	0	24.71	-	-	46	-21.29
1.32	49.78	PK	0.1	0.1	49.98	56	-6.02	-	-
1.32	28.75	Av	0.1	0.1	28.95	-	-	46	-17.05
2.634	49.24	PK	0.1	0.1	49.44	56	-6.56	-	-
2.634	33.13	Av	0.1	0.1	33.33	-	-	46	-12.67

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS– Mitsumi Adapter



LINE 2 RESULTS– Mitsumi Adapter



WORST EMISSIONS – Tabuchi Adapter

Project No:13J15369
Client Name: Mitsumi
Model/Device:DWM-W082 / Tabuchi Adap
Test Volt/Freq:120VAC/60Hz
Test By:Steve Aguilar

Line-L1 .15 - 30MHz

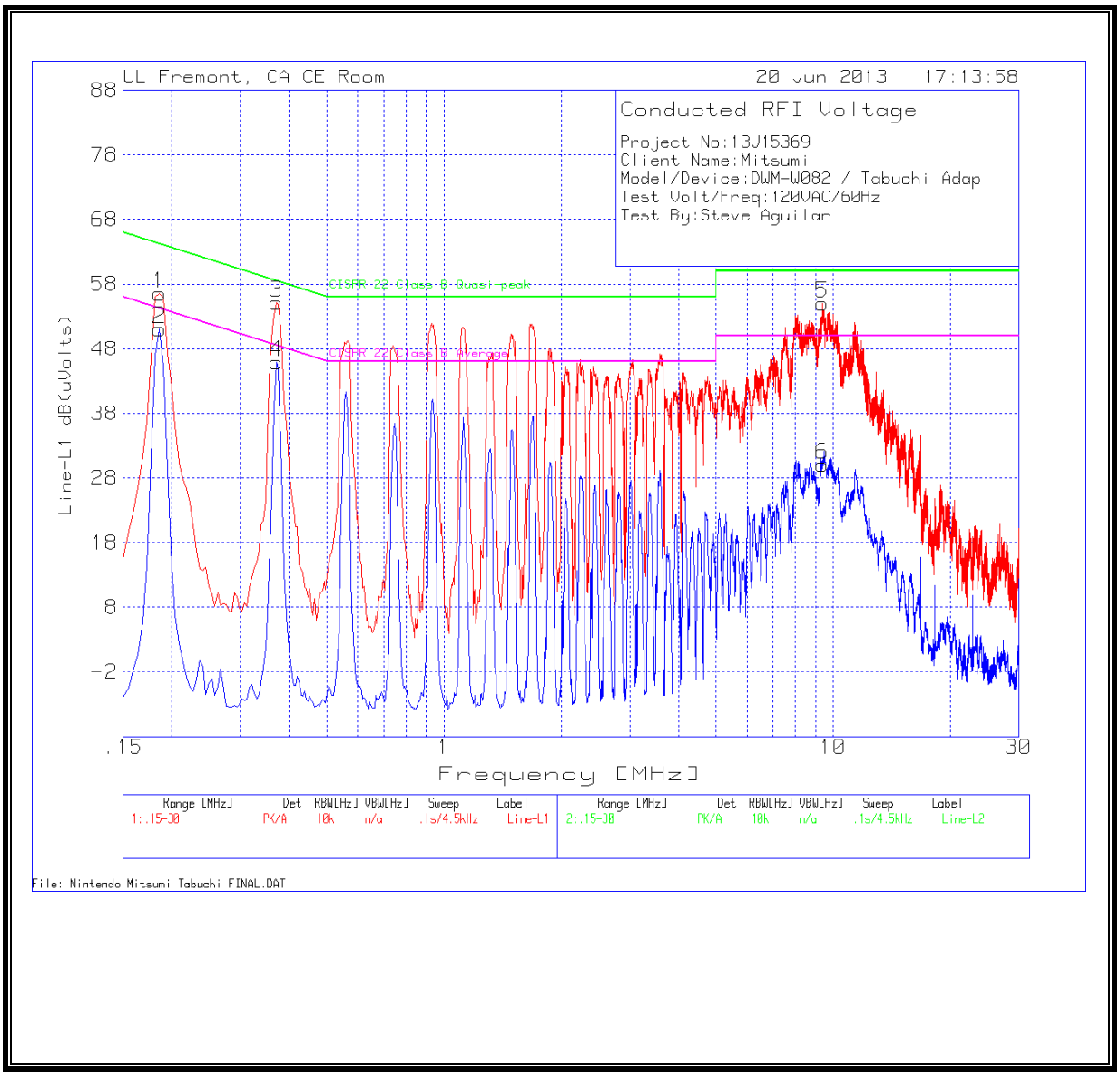
Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
0.186	56.41	PK	0.1	0	56.51	64.2	-7.69	-	-
0.186	50.99	Av	0.1	0	51.09	-	-	54.2	-3.11
0.3705	54.99	PK	0.1	0	55.09	58.5	-3.41	-	-
0.3705	45.86	Av	0.1	0	45.96	-	-	48.5	-2.54
9.3975	54.76	PK	0.1	0.1	54.96	60	-5.04	-	-
9.3975	29.9	Av	0.1	0.1	30.1	-	-	50	-19.9

Line-L2 .15 - 30MHz

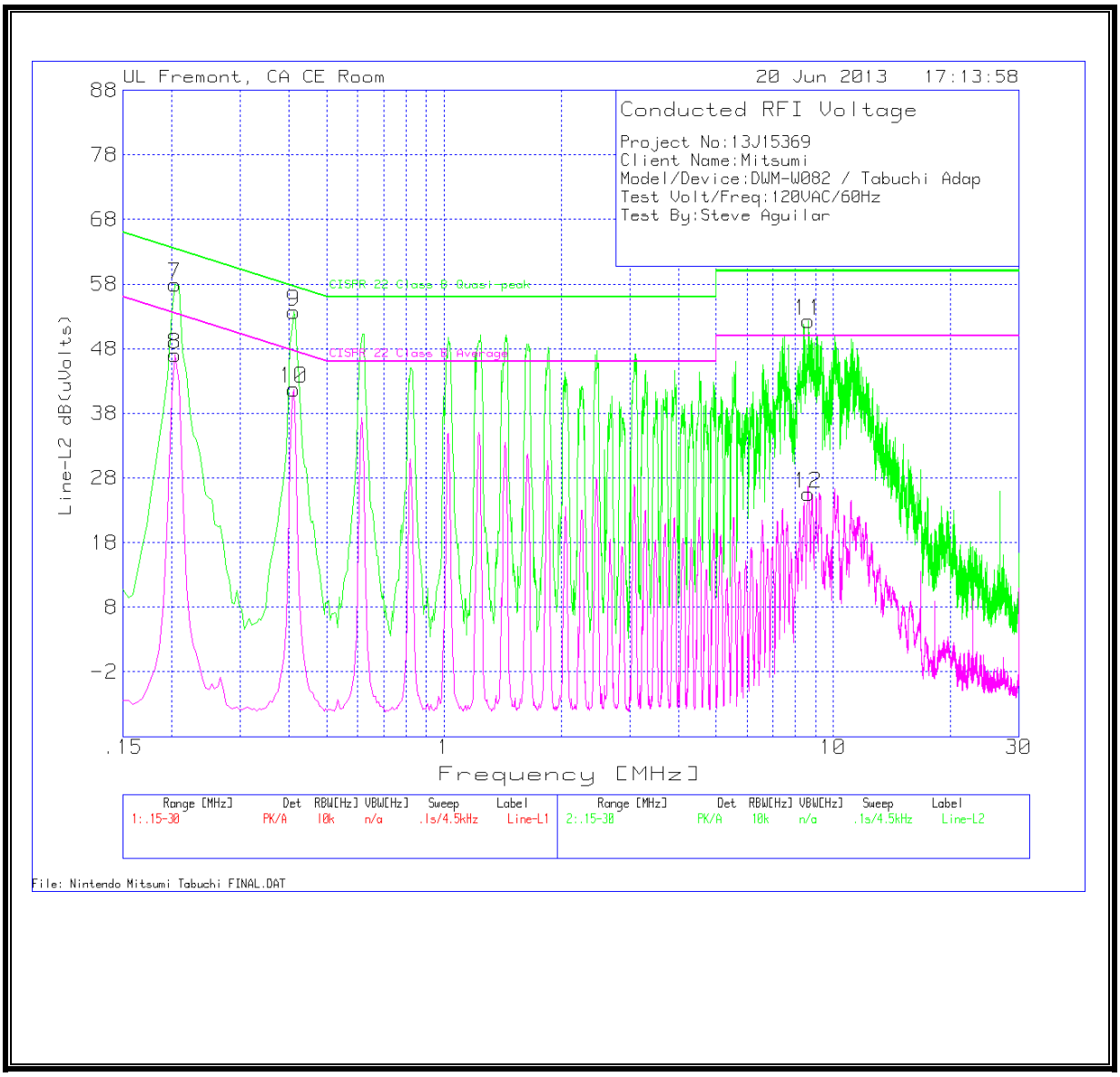
Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
0.204	57.87	PK	0.1	0	57.97	63.4	-5.43	-	-
0.204	46.96	Av	0.1	0	47.06	-	-	53.4	-6.34
0.411	53.57	PK	0.1	0	53.67	57.6	-3.93	-	-
0.411	41.66	Av	0.1	0	41.76	-	-	47.6	-5.84
8.646	52.06	PK	0.1	0.1	52.26	60	-7.74	-	-
8.646	25.35	Av	0.1	0.1	25.55	-	-	50	-24.45

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS– Tabuchi Adapter



LINE 2 RESULTS– Tabuchi Adapter



6 WORST EMISSIONS – Nichicon Adapter

Project No:13J15369
Client Name :Mitsumi
Model/Device:DWM-W082 /Nichicon Adap
Test Volt/Freq:120VAC/60Hz
Test By:Steve Aguilar

Line-L1 .15 - 30MHz

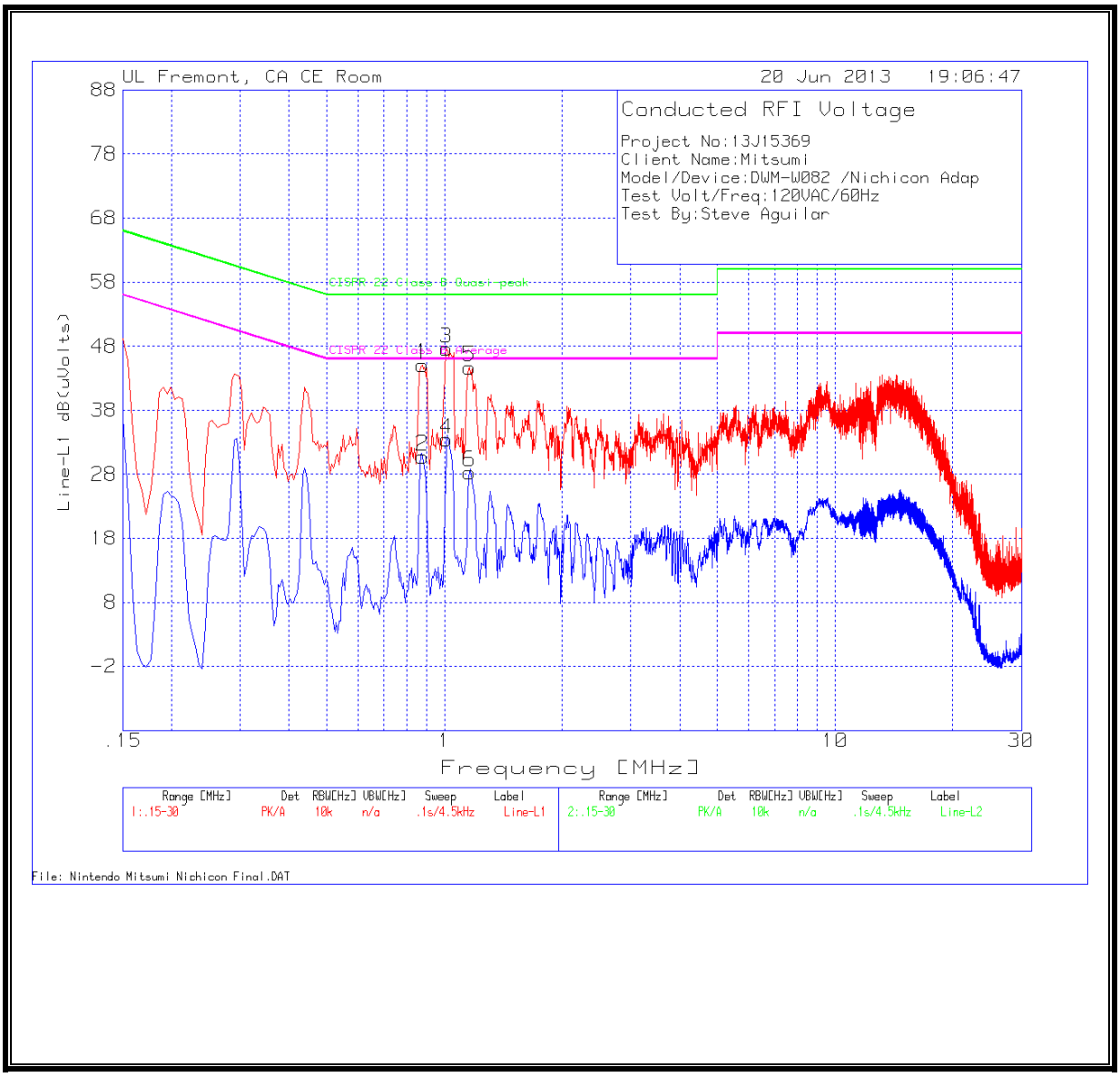
Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
0.879	44.91	PK	0.1	0	45.01	56	-10.99	-	-
0.879	30.65	Av	0.1	0	30.75	-	-	46	-15.25
1.014	47.48	PK	0.1	0	47.58	56	-8.42	-	-
1.014	33.3	Av	0.1	0	33.4	-	-	46	-12.6
1.158	44.53	PK	0.1	0	44.63	56	-11.37	-	-
1.158	28.2	Av	0.1	0	28.3	-	-	46	-17.7

Line-L2 .15 - 30MHz

Test Frequency [MHz]	Meter Reading dB(µVolts)	Detector Type	LISN [dB]	Cables loss [dB]	Corrected Reading dB(µVolts)	Class B QP Limit	QP Margin	Class B Av Limit dB(µVolts)	Av Margin [dB]
0.906	44.91	PK	0.1	0	45.01	56	-10.99	-	-
0.906	16.39	Av	0.1	0	16.49	-	-	46	-29.51
1.014	48.81	PK	0.1	0	48.91	56	-7.09	-	-
1.014	31.59	Av	0.1	0	31.69	-	-	46	-14.31
1.1805	43.86	PK	0.1	0	43.96	56	-12.04	-	-
1.1805	23.23	Av	0.1	0	23.33	-	-	46	-22.67

PK - Peak detector
QP - Quasi-Peak detector
Av - Average detector

LINE 1 RESULTS– Nichicon Adapter



LINE 2 RESULTS– Nichicon Adapter