



FCC CFR47 PART 15 SUBPART E
INDUSTRY CANADA RSS-210 ISSUE 7

CERTIFICATION TEST REPORT*

FOR

802.11A/B/G/N MINI-PCI MODULE

MODEL NUMBER: 62009015

FCC ID: UDX-62009015

IC: 6961A-62009015

REPORT NUMBER: 09U12366-1

ISSUE DATE: MARCH 09, 2009

Prepared for

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** This report only covers partial (Radiated) testing; the rest of the testing is contained in a separate report, number 093S015-RF-US-P05V01.*

This report has conditional passing results for a specific antenna, see section 5.2 for details.

Revision History

Rev.	Issue Date	Revisions	Revised By
--	03/09/09	Initial Issue	F. Ibrahim

TABLE OF CONTENTS

1. ATTESTATION OF TEST RESULTS.....	5
2. TEST METHODOLOGY	6
3. FACILITIES AND ACCREDITATION.....	6
4. CALIBRATION AND UNCERTAINTY	6
4.1. <i>MEASURING INSTRUMENT CALIBRATION.....</i>	<i>6</i>
4.2. <i>MEASUREMENT UNCERTAINTY.....</i>	<i>6</i>
5. EQUIPMENT UNDER TEST	7
5.1. <i>DESCRIPTION OF EUT.....</i>	<i>7</i>
5.2. <i>DESCRIPTION OF ANTENNAS</i>	<i>7</i>
5.3. <i>SOFTWARE AND FIRMWARE.....</i>	<i>7</i>
5.4. <i>WORST-CASE CONFIGURATION AND MODE</i>	<i>7</i>
5.5. <i>DESCRIPTION OF TEST SETUP.....</i>	<i>8</i>
6. TEST AND MEASUREMENT EQUIPMENT	10
7. RADIATED TEST RESULTS	11
7.1. <i>LIMITS AND PROCEDURE</i>	<i>11</i>
7.2. <i>DUAL BAND OMNI - DIRECTIONAL ANTENNA (2.4GHz)</i>	<i>12</i>
7.2.1. TX ABOVE 1 GHz FOR 802.11b.....	12
7.2.2. TX ABOVE 1 GHz FOR 802.11g.....	44
7.2.3. TX ABOVE 1 GHz FOR 802.11a IN THE 5.8GHz BAND.....	69
7.2.4. TX BELOW 1 GHz (WORST-CASE CONFIGURATION).....	70
7.3. <i>MONOPOLE OMNI 2.4GHZ ANTENNA</i>	<i>72</i>
7.3.1. TX ABOVE 1 GHz FOR 802.11b DUAL CHAIN LEGACY MODE.....	72
7.3.2. TX ABOVE 1 GHz FOR 802.11g DUAL CHAIN LEGACY MODE.....	88
7.3.3. TX ABOVE 1 GHz FOR HT20 DUAL CHAIN LEGACY MODE.....	104
7.3.4. TX ABOVE 1 GHz FOR HT 40 DUAL CHAIN LEGACY MODE.....	128
7.3.5. TX BELOW 1 GHz (WORST-CASE CONFIGURATION).....	153
7.4. <i>DIRECTIONAL ANTENNA FOR 2.4GHz 11.5dBi</i>	<i>155</i>
7.4.1. TX ABOVE 1 GHz FOR 802.11b.....	155
7.4.2. TX ABOVE 1 GHz FOR 802.11g.....	187
7.4.3. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND	220
7.4.4. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND	221
7.4.5. TX BELOW 1 GHz (WORST-CASE CONFIGURATION).....	222
7.5. <i>FLAT PANEL ANTENNA 2.4GHz, 19 dBi GAIN</i>	<i>224</i>
7.5.1. TX ABOVE 1 GHz FOR 802.11b.....	224
7.5.2. TX ABOVE 1 GHz FOR 802.11g DUAL CHAIN LEGACY MODE.....	290
7.6. <i>HIGH GAIN PATCH ANTENNA</i>	<i>358</i>
7.6.1. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND	358
7.7. <i>DIRECTIONAL ANTENNA (2.4GHz)</i>	<i>359</i>

7.7.1.	TX ABOVE 1 GHz FOR 802.11b.....	359
7.7.2.	TX ABOVE 1 GHz FOR 802.11g.....	391
7.7.3.	TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND	424
7.7.4.	TX BELOW 1 GHz (WORST-CASE CONFIGURATION).....	425
7.8.	OMNI-DIRECTIONAL LOW GAIN ANTENNA	427
7.8.1.	TX ABOVE 1 GHz FOR 802.11a IN THE 5.8GHz BAND.....	427
7.8.2.	TX BELOW 1 GHz (WORST-CASE CONFIGURATION).....	428
8.	SETUP PHOTOS.....	430
8.1.	RADIATED RF MEASUREMENT SETUP	430
8.1.1.	DUAL BAND OMNI-DIRECTIONAL ANTENNA.....	430
8.1.2.	MONOPOLE OMNI 2.4GHz ANTENNA.....	432
8.1.3.	DIRECTIONAL ANTENNA (11.5dBi).....	434
8.1.4.	OMNI DIRECTIONAL ANTENNA (4dBi).....	436
8.1.5.	DIRECTIONAL ANTENNA (14.5dBi).....	438
8.1.6.	FLAT PANEL ANTENNA 19dBi.....	440
8.1.7.	FLAT PANEL ANTENNA 23dBi.....	442

1. ATTESTATION OF TEST RESULTS

COMPANY NAME: MERAKI, INC.
99 RHODE ISLAND ST.
SAN FRANCISCO, CA 94103

EUT DESCRIPTION: 802.11A/B/G/N MINI-PCI MODULE

MODEL NUMBER : 62009015

FCC MODULE ID: UDX-62009015
IC MODULE ID: 6961A-62009015

SERIAL NUMBER: Q2AH-4HP3-7fTA

DATE TESTED: JANUARY 27 - FEBRUARY 03, 2009

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
CFR 47 Part 15 Subpart E	PASS (see section 5.2)
INDUSTRY CANADA RSS-210 Issue 7 Annex 9	PASS (see section 5.2)
INDUSTRY CANADA RSS-GEN Issue 2	PASS (see section 5.2)

Compliance Certification Services, Inc. (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 CCS based on interpretations and/or observations of test results. 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 CCS and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by CCS will constitute fraud and shall nullify the document. No part of this report may be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any government agency.

Approved & Released For CCS By:



FRANK IBRAHIM
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:



THANH NGUYEN
EMC ENGINEER
COMPLIANCE CERTIFICATION SERVICES

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with ANSI C63.4-2003, FCC CFR 47 Part 2, FCC CFR 47 Part 15, RSS-GEN Issue 2, and RSS-210 Issue 7.

3. FACILITIES AND ACCREDITATION

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

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. MEASUREMENT UNCERTAINTY

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

PARAMETER	UNCERTAINTY
Power Line Conducted Emission	+/- 2.3 dB
Radiated Emission	+/- 3.4 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is an 802.11A/B/G/N MINI-PCI MODULE, FCC Module ID: UDX-62009015 IC Module ID: 6961A-62009015.

5.2. DESCRIPTION OF ANTENNAS

- 1) Dual-Band Omni-Directional antenna, Manufacturer: Grand-Tek Technology, 2.4GHz 2.5dBi gain; 5GHz 5dBi gain.
- 2) Monopole Omni Low gain antenna for 2.4GHz. Manufacturer: Grand-Tek Technology, Model R-0A24-03-11; 3dBi gain.
- 3) Directional antenna for 2.4GHz. Manufacturer: Grand-Tek Technology, Model 24-SE-001, 11.5dBi gain. Omni-Directional Low Gain Antenna for 5GHz. Manufacturer: Grand-Tek Technology, Model: R-0A-58-04-11; 4dBi gain.
- 4) Flat-Panel Directional Antenna for 2.4 GHz, Laird Technologies, Model PA-19, antenna gain 19dBi gain.
(Don't use high channel 2452 MHz for this antenna)
- 5) Directional Antenna 5GHz. Manufacturer: Grand-Tek Technology, Model: 50-SE-001; 14.5dBi gain.
- 6) High Gain Patch Antenna for 5G. Manufacturer: Mti Wireless Edge, Model: MT-485025/NVH; 23dBi gain.

Note:

Power Levels are mentioned in the Separate Report no: 093S015-RF-US-P05V01.

5.3. SOFTWARE AND FIRMWARE

The test utility and driver software used during testing was ART Revision 0.7 Build #30 Art_11n.

5.4. WORST-CASE CONFIGURATION AND MODE

802.11a mode on chain 100 was selected as worst-case, data rate is 6 Mbps.

5.5. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
Laptop	Dell	Latitude D620	C01091	DoC
AC Adapter	Dell	LA65NS0-00	CN-ODF263-71615-72M2925	DoC

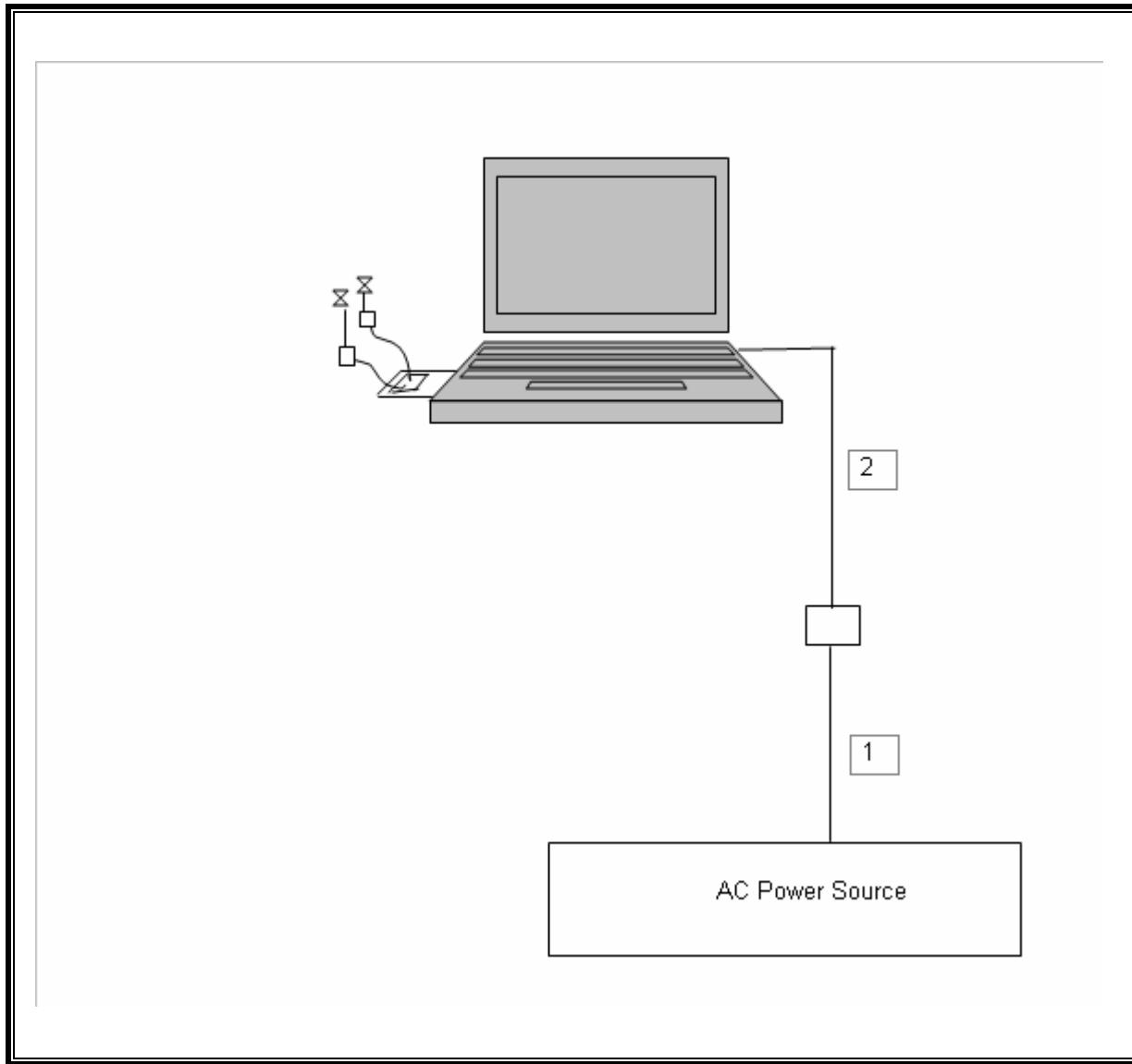
I/O CABLES

I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	AC	1	US 115V	Un-shielded	1m	NA
2	DC	1	DC	Un-shielded	2m	NA

TEST SETUP

The EUT is installed in an extender card plug in to the host laptop computer during the tests. Test software exercised the radio card.

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, Horn, 18 GHz	EMCO	3115	C00945	04/22/08	04/22/09
Preamplifier, 26.5 GHz	Agilent / HP	8449B	C01052	08/05/08	08/05/09
HP Power meter	Agilent / HP	E4416A	C00963	12/04/07	12/04/09
Peak / Average Power Sensor	Agilent / HP	E9327A	C00964	12/07/07	12/07/09
Preamplifier, 40 GHz	Miteq	NSP4000-SP2	C00990	10/11/07	10/11/09
Antenna, Horn, 26.5 GHz	ARA	SWH-28	C01015	09/29/07	11/29/09
Spectrum Analyzer, 40 GHz	Agilent / HP	8564E	C00951	12/12/08	06/12/10
EM Receiver, 2.9 GHz	Agilent / HP	8542E	C00957	06/19/08	09/19/09
RF Filter Section, 2.9 GHz	Agilent / HP	85420E	C00958	06/19/08	09/19/09
Antenna, BiLog, 2 GHz	Sund Sciences	JB1	C01011	01/14/09	01/14/10
EM Test Receiver, 30 MHz	R & S	ESHS 20	N02396	02/06/08	08/06/09
Antenna, Horn, 18 GHz	EMCO	3115	C00945	04/22/08	04/22/09
Reject Filter, 5.15-5.35 GHz	Micro-Tronics	BRC13190	N02679	CNR	CNR
Reject Filter, 5.725-5875 GHz	Micro-Tronics	BRC13192	N02678	CNR	CNR

7. RADIATED TEST RESULTS

7.1. 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. The EUT is configured in accordance with ANSI C63.4. The EUT is set to transmit in a continuous mode.

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, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz 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.

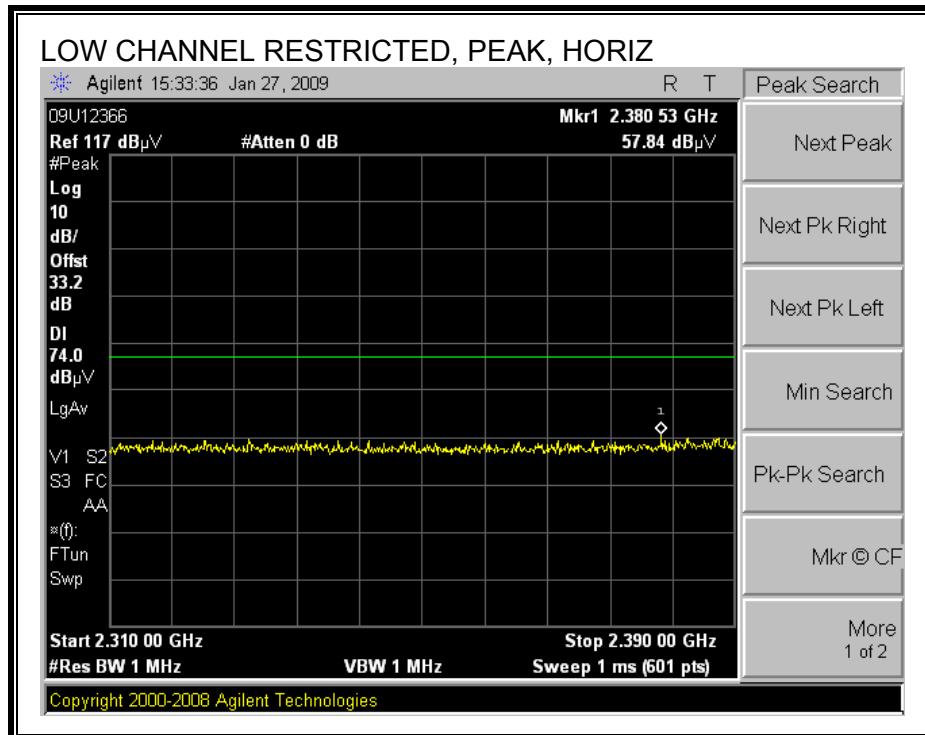
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized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

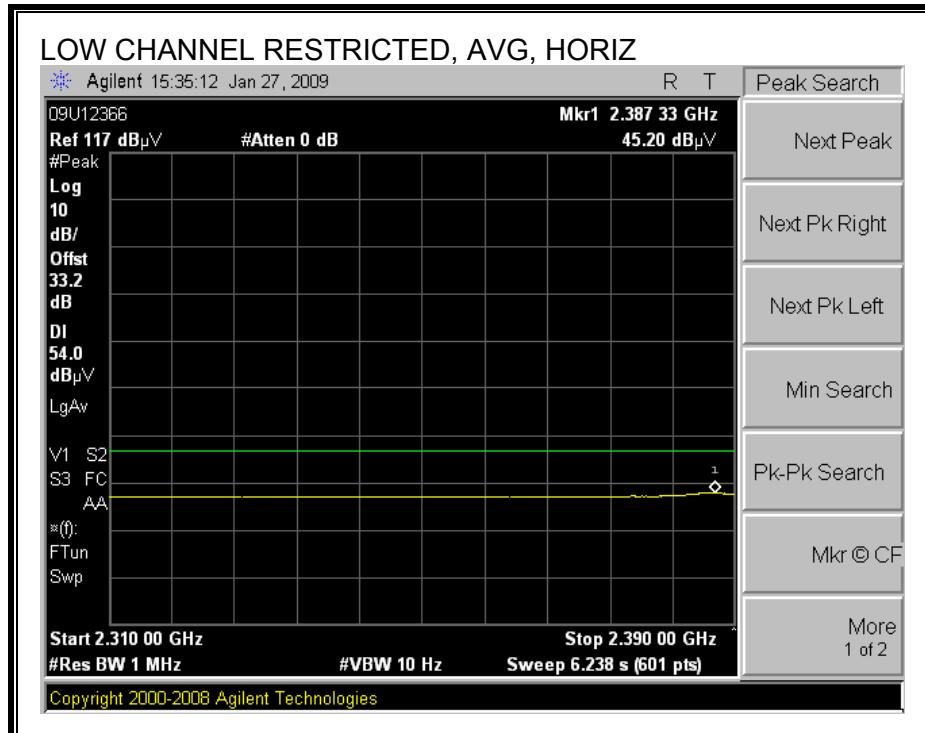
7.2. DUAL BAND OMNI - DIRECTIONAL ANTENNA (2.4GHz)

7.2.1. TX ABOVE 1 GHz FOR 802.11b

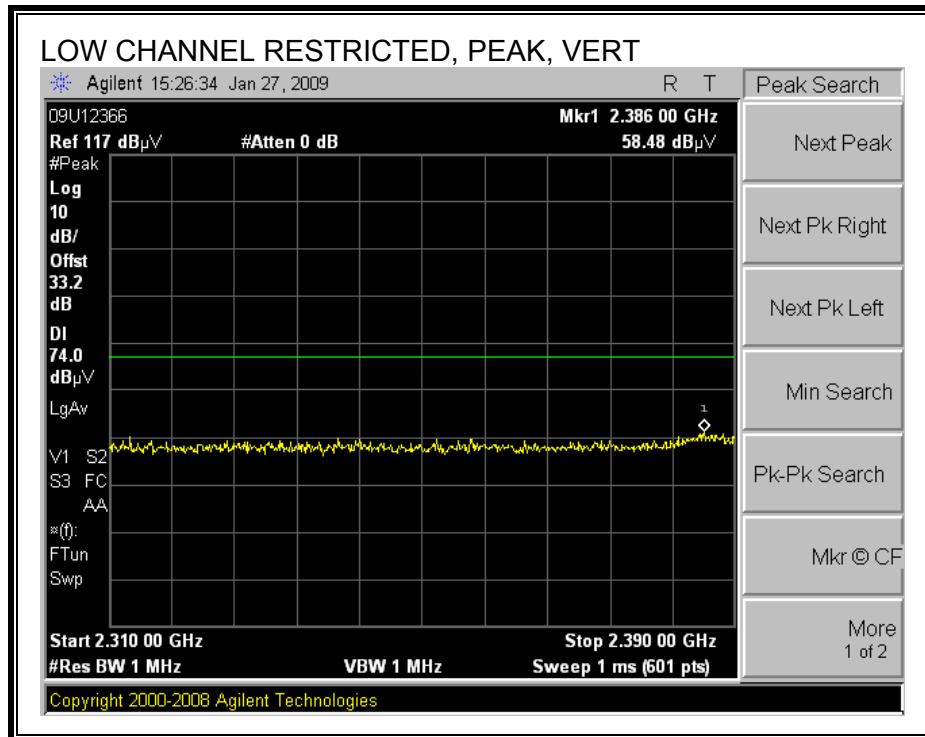
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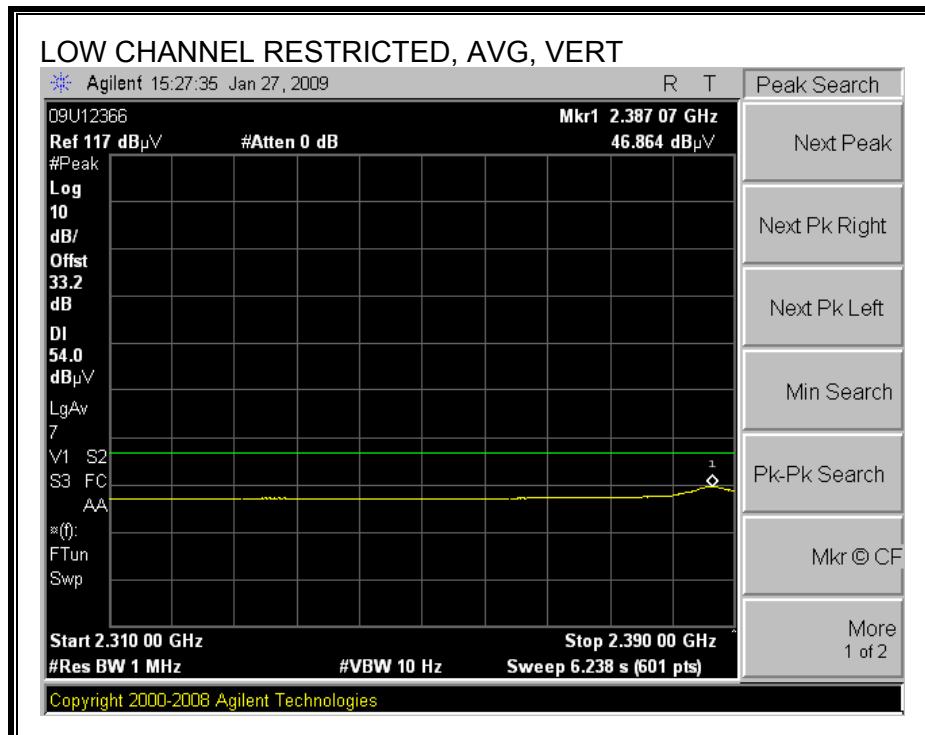
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



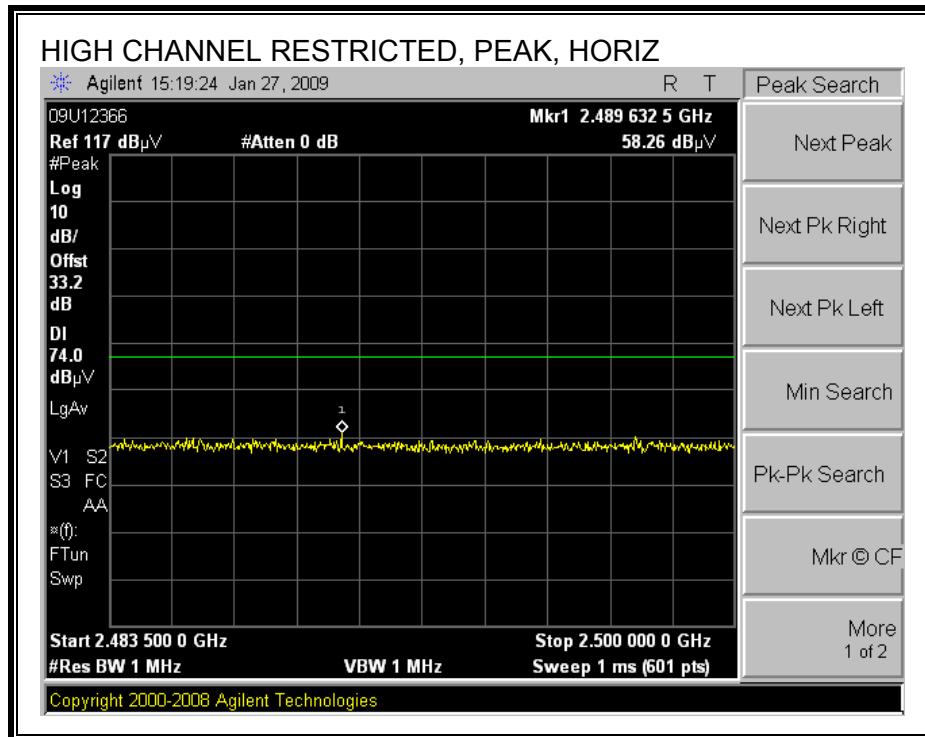


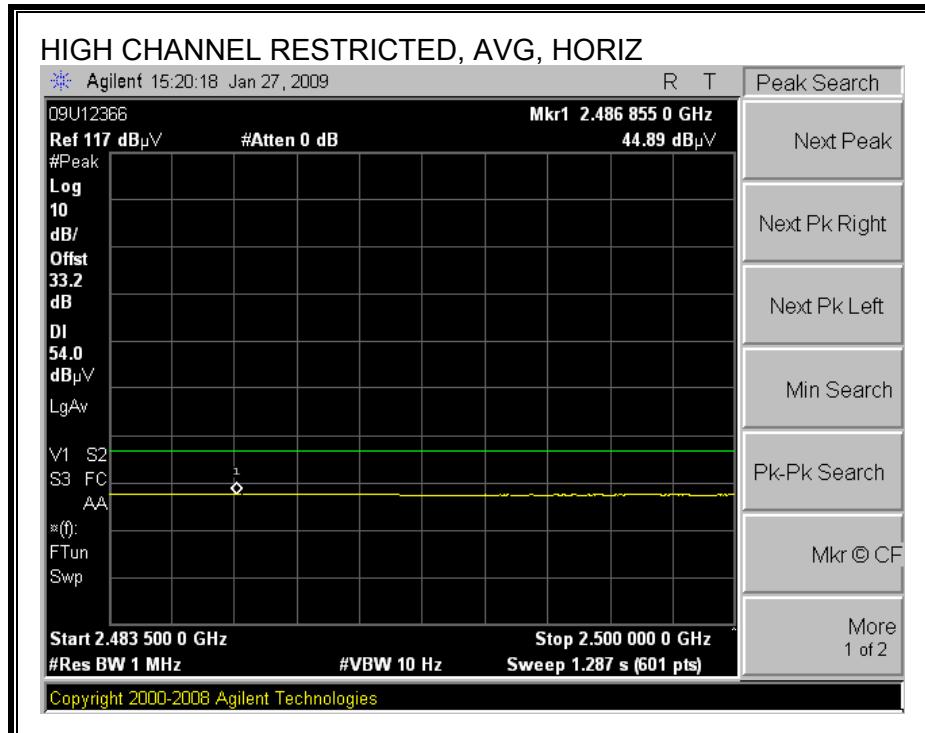
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



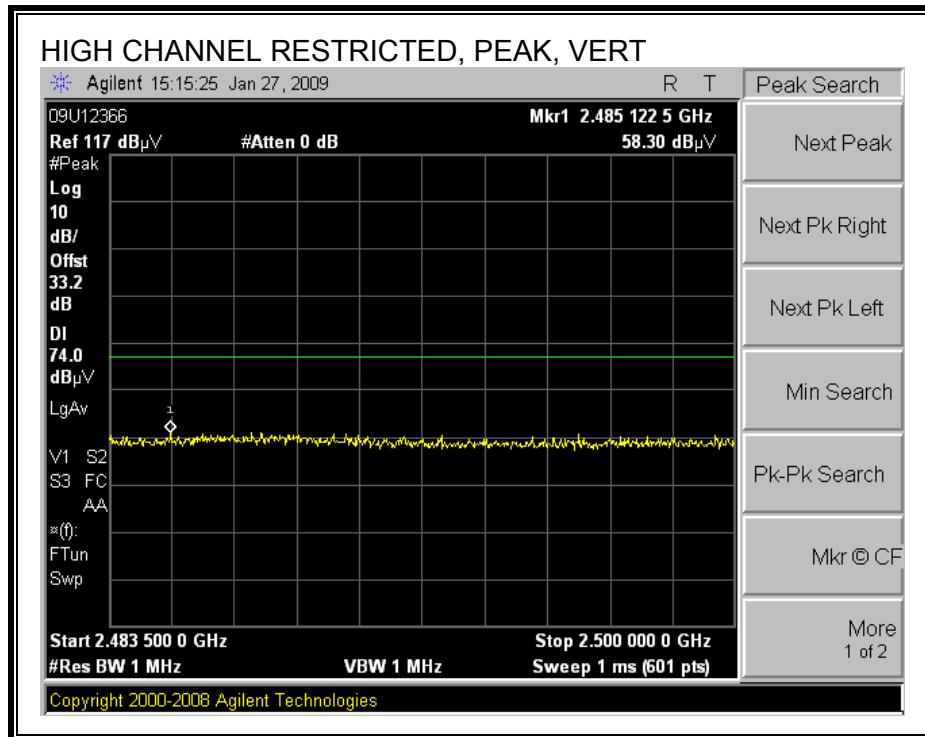


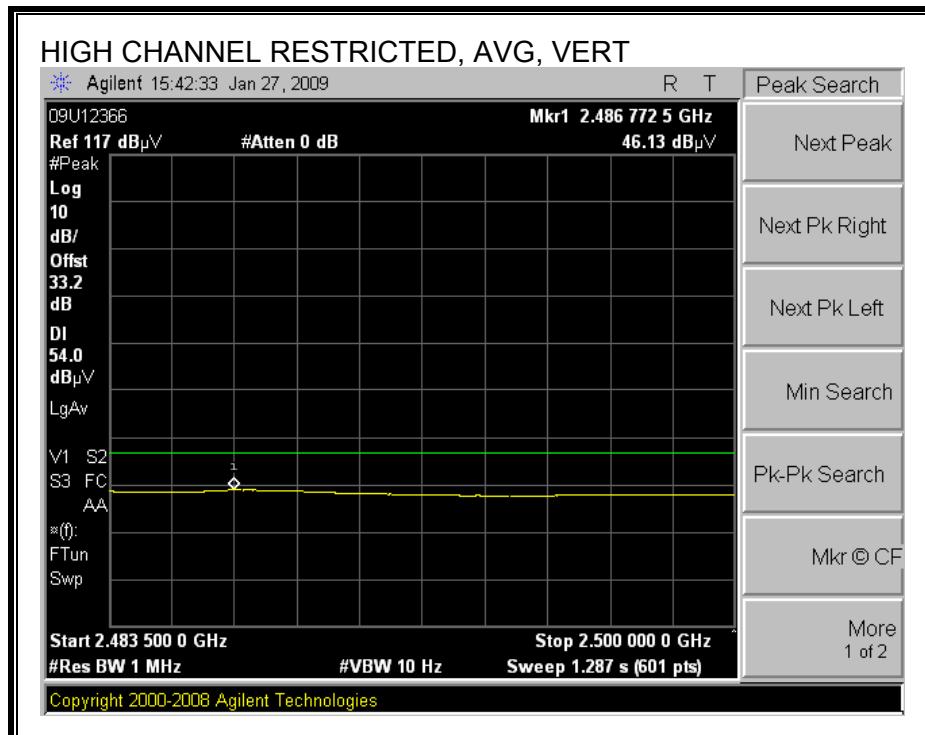
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





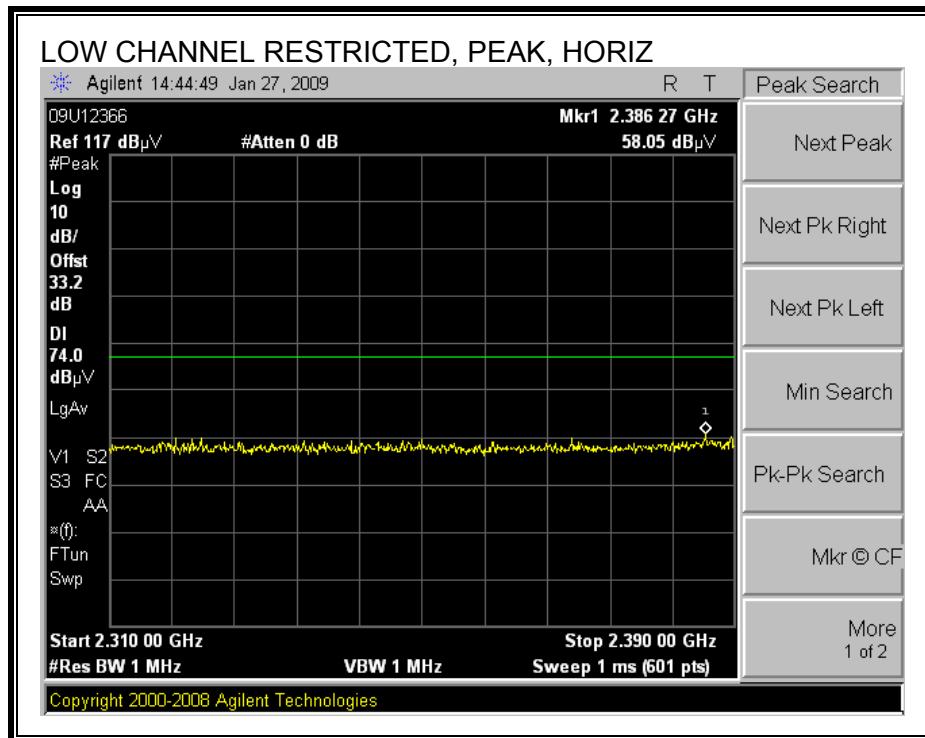
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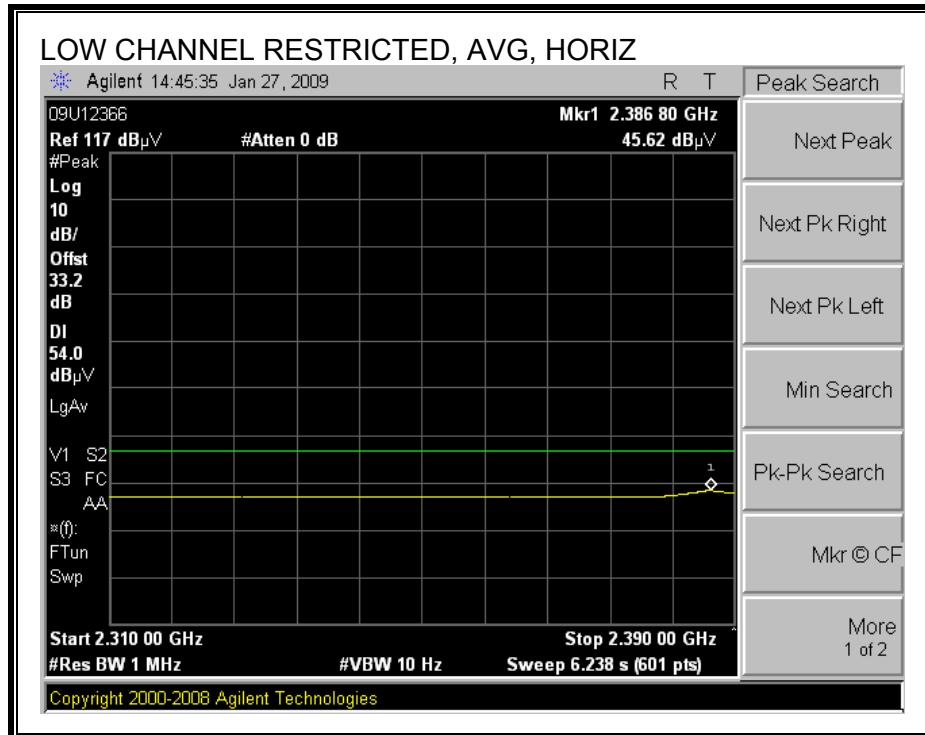




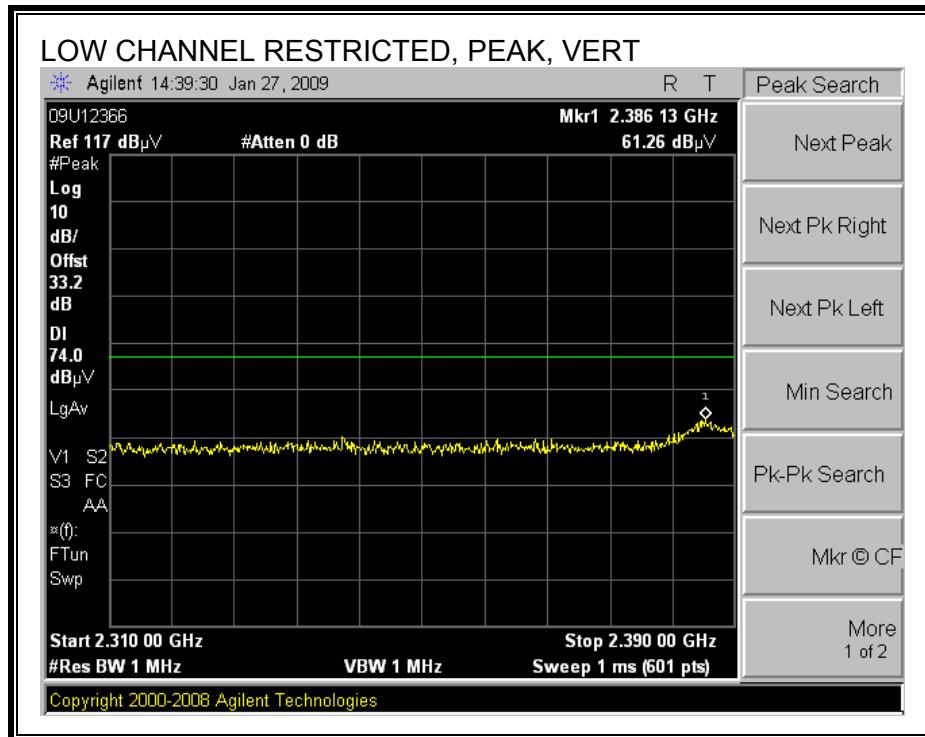
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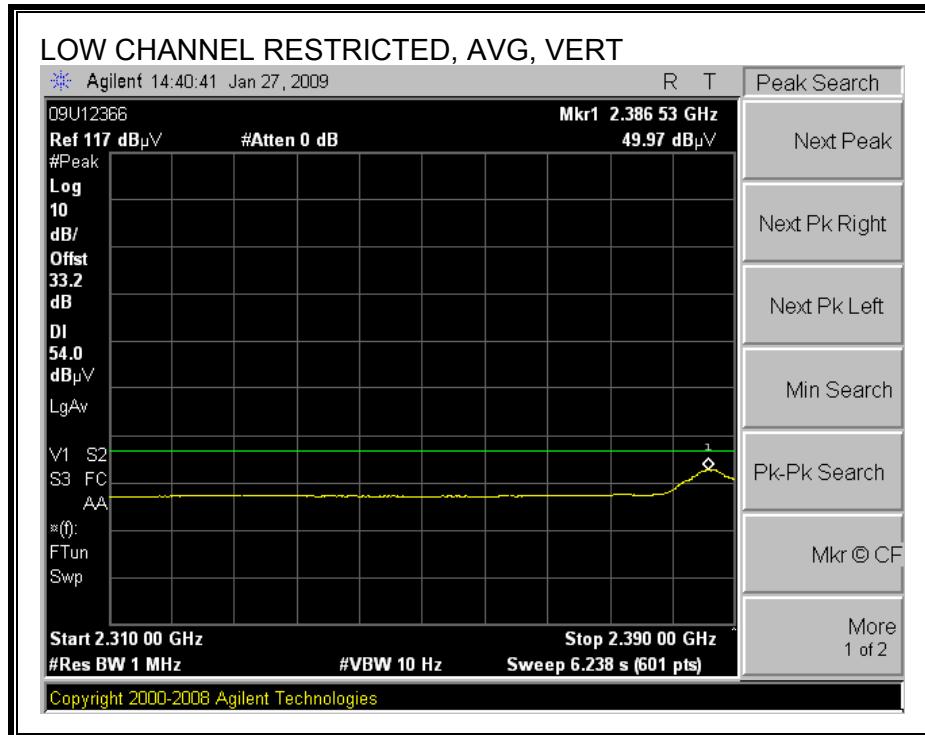
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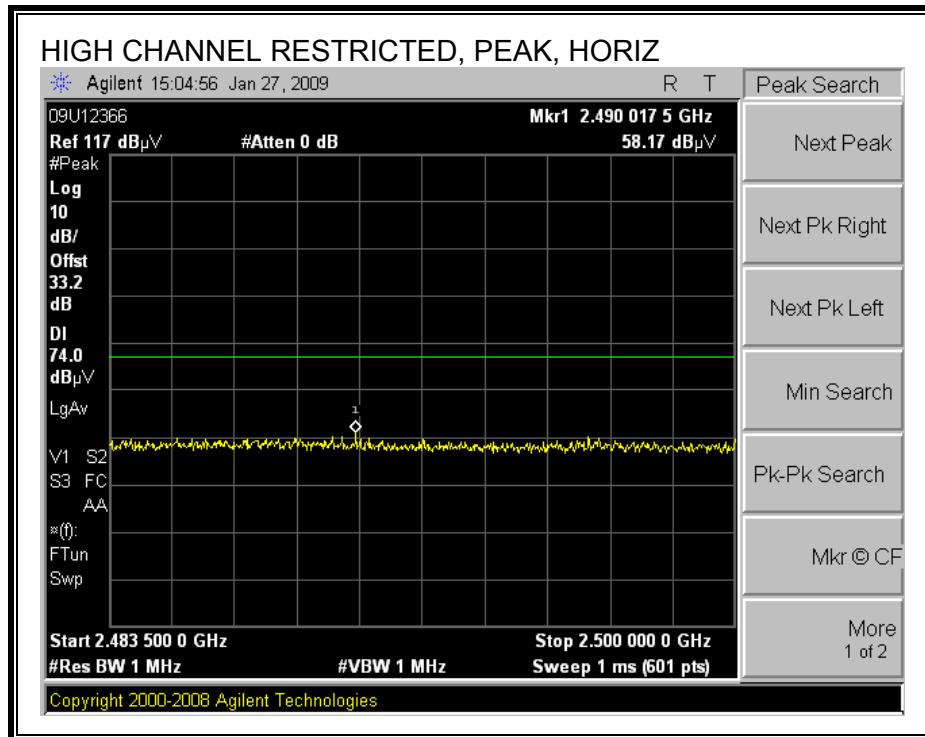


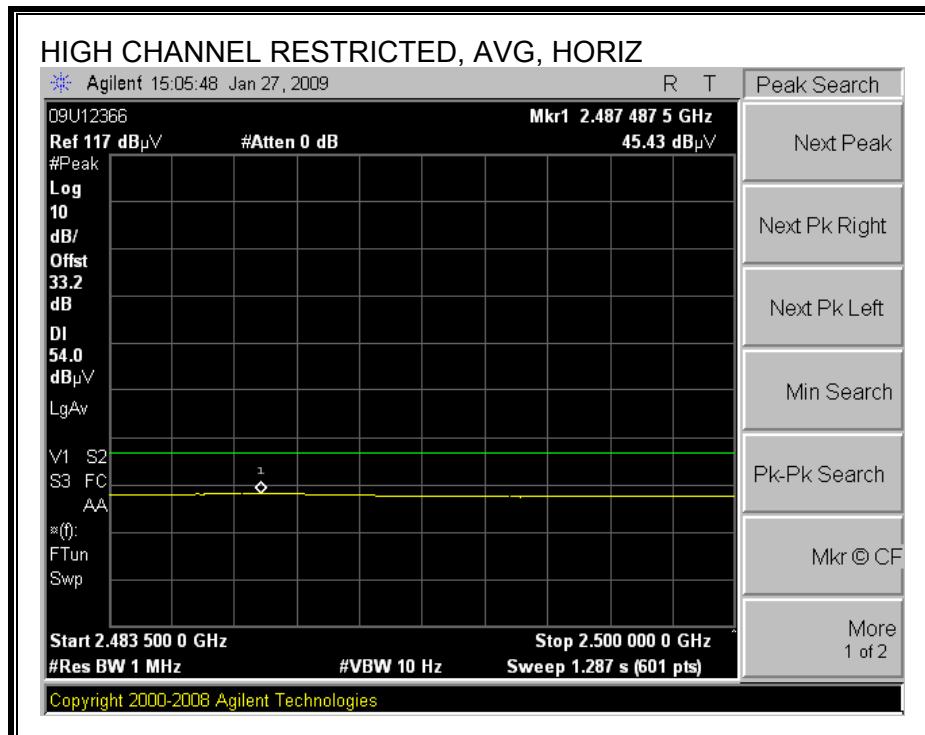
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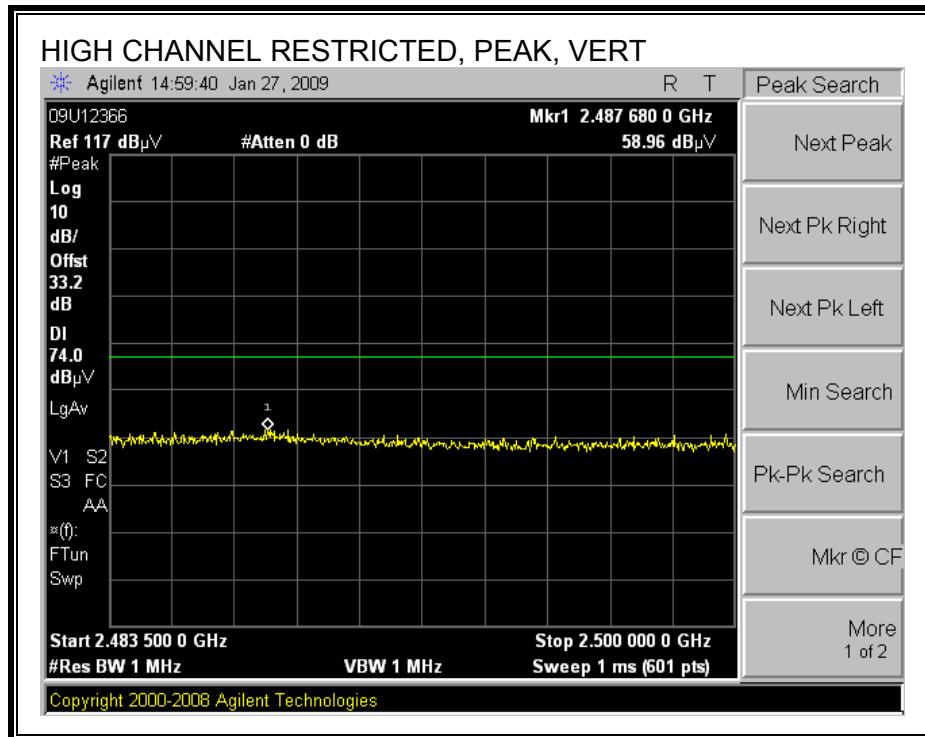


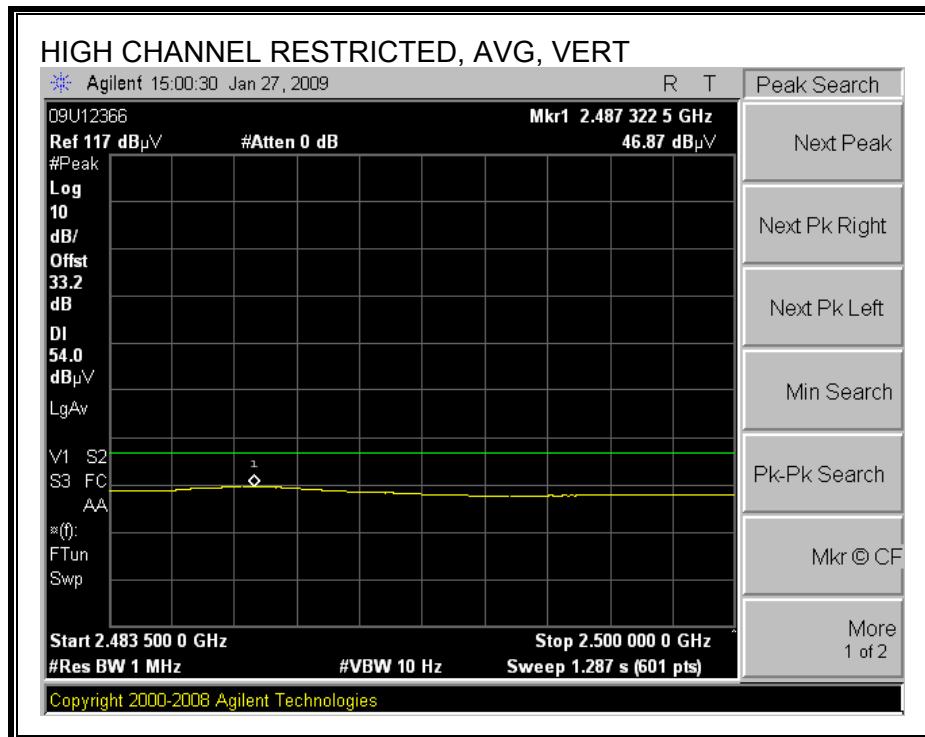
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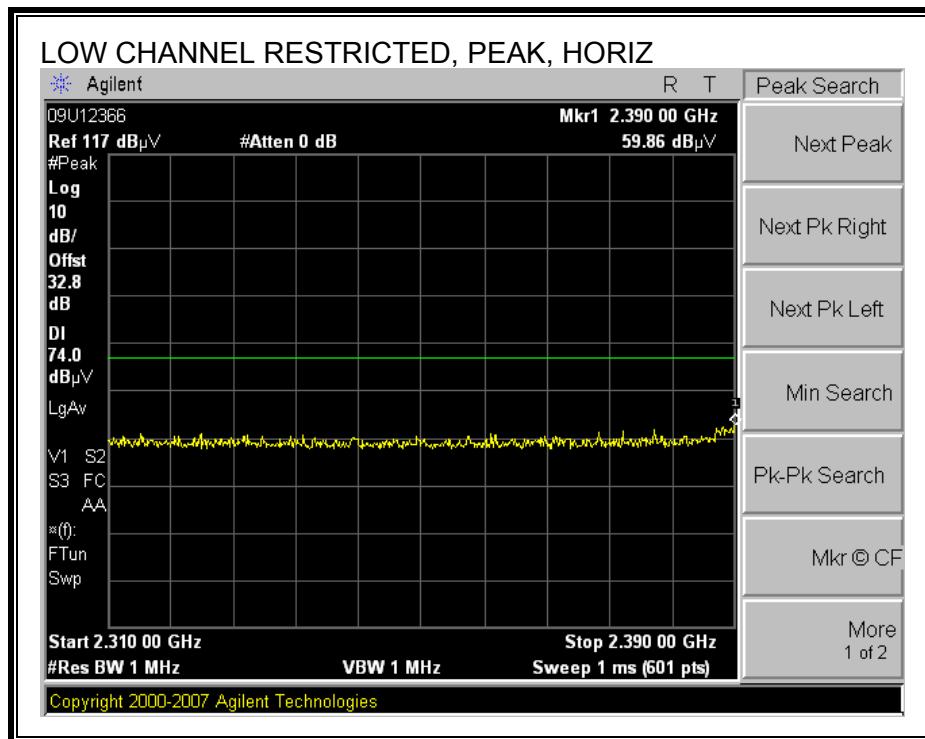
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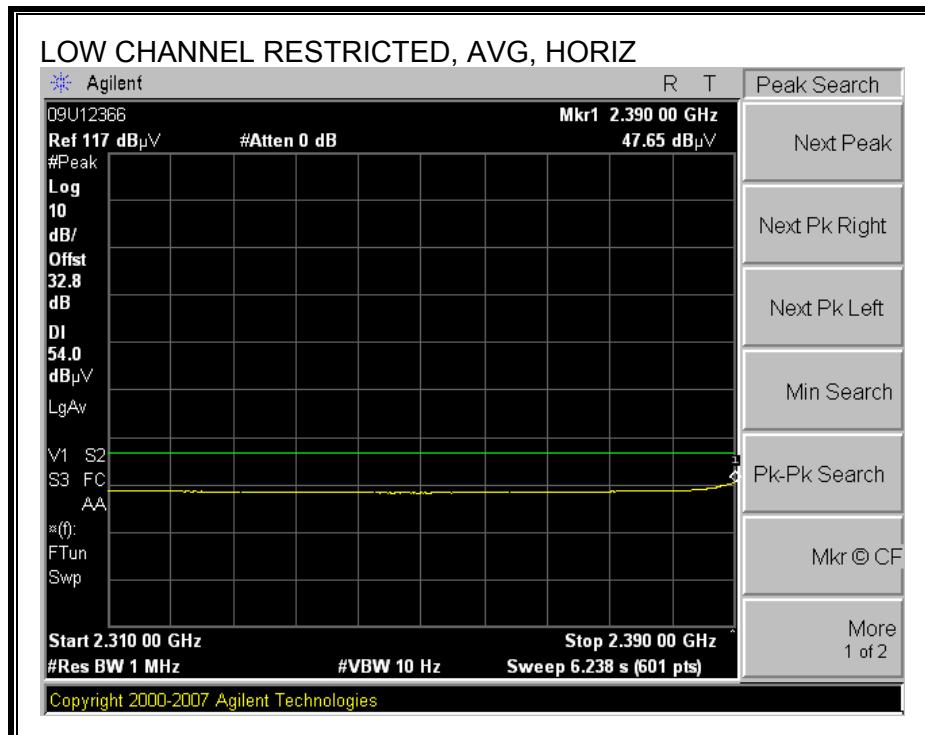




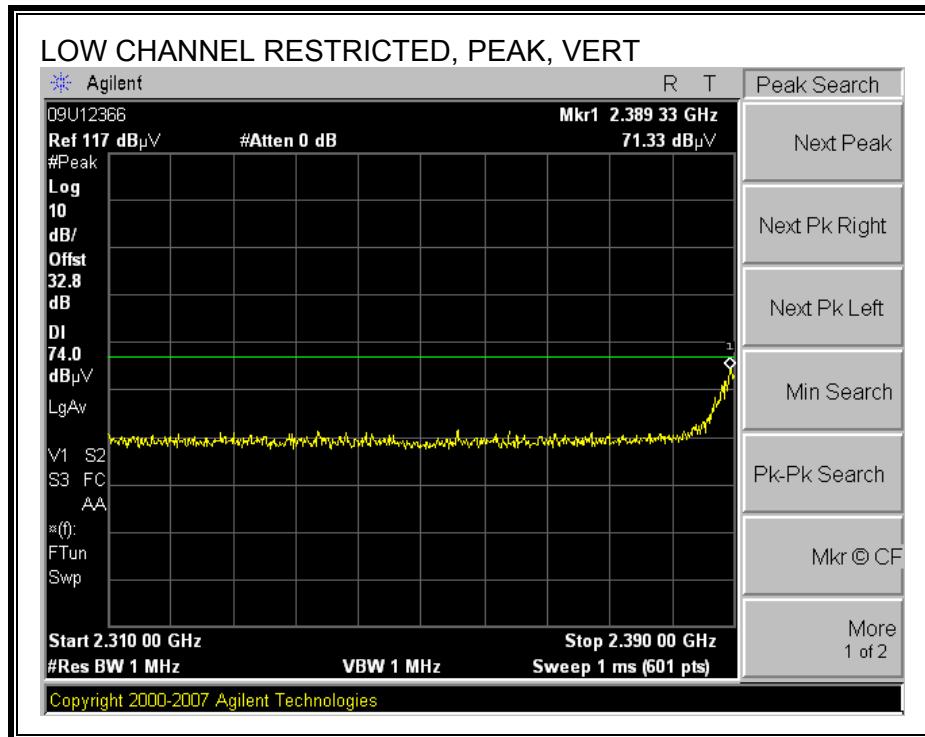
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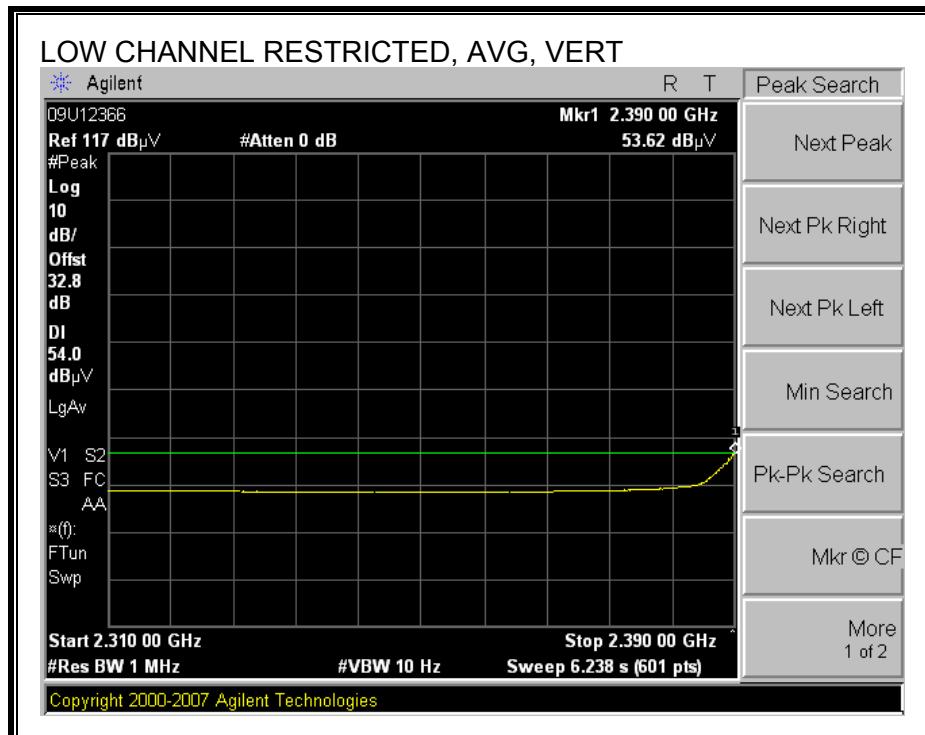
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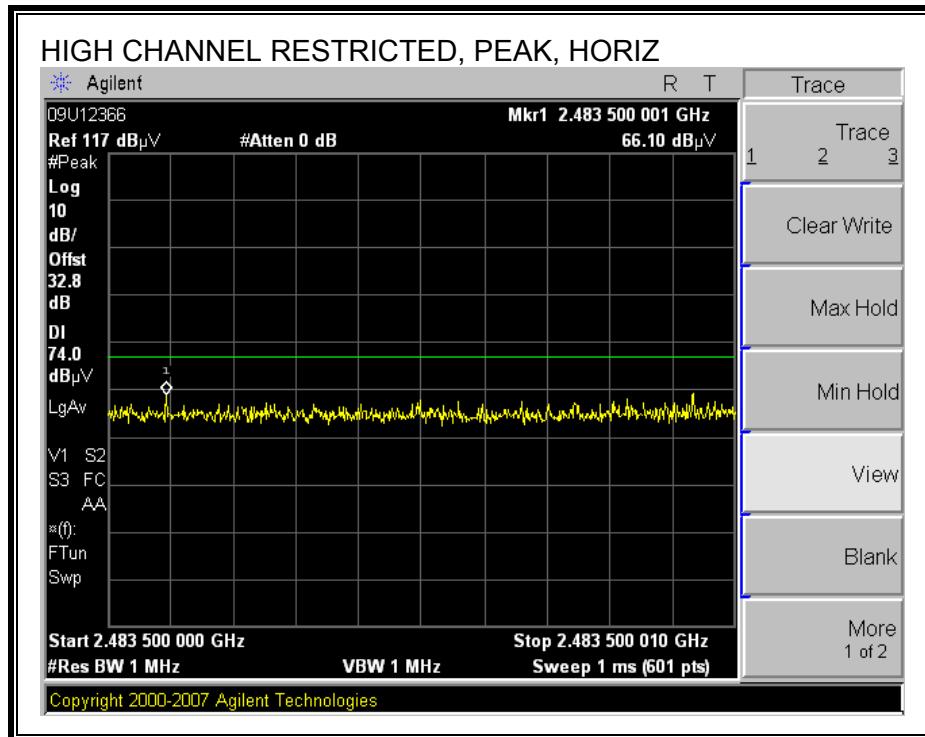


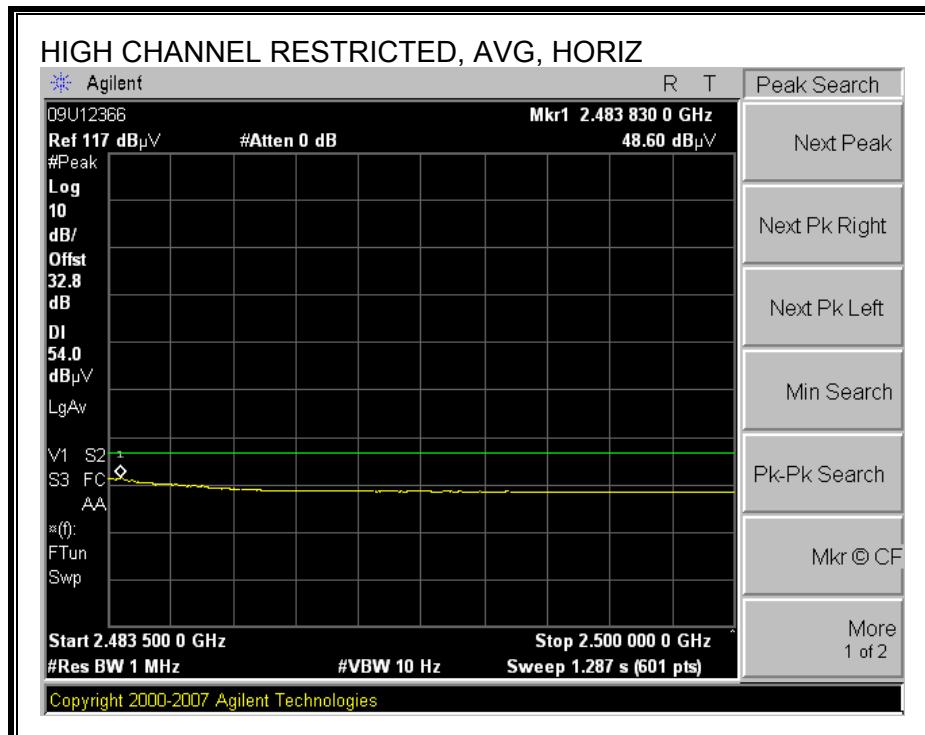
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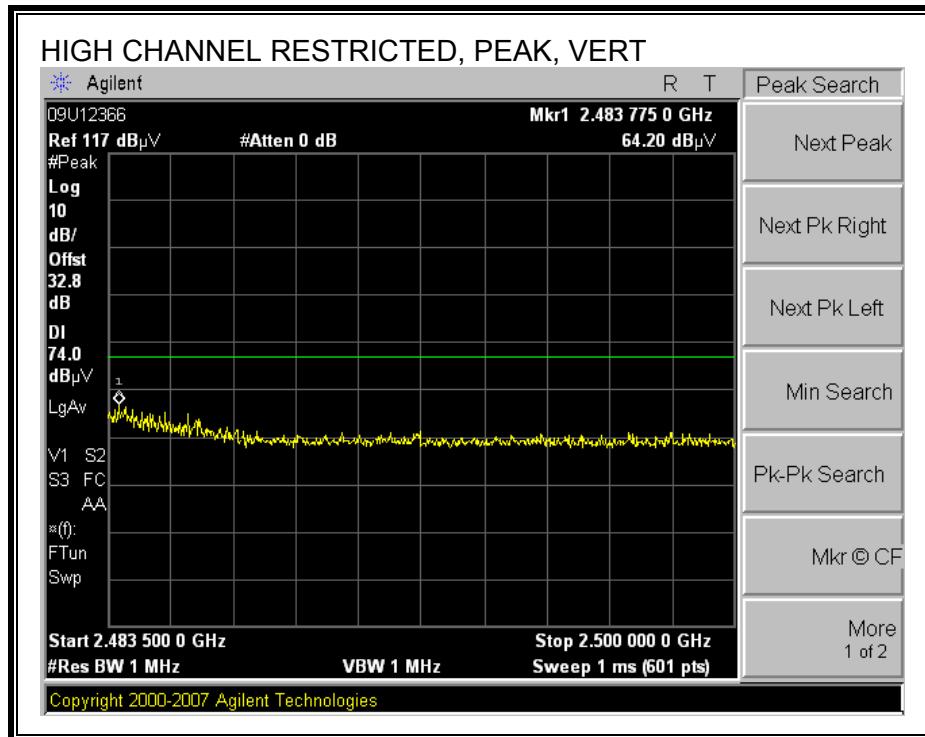


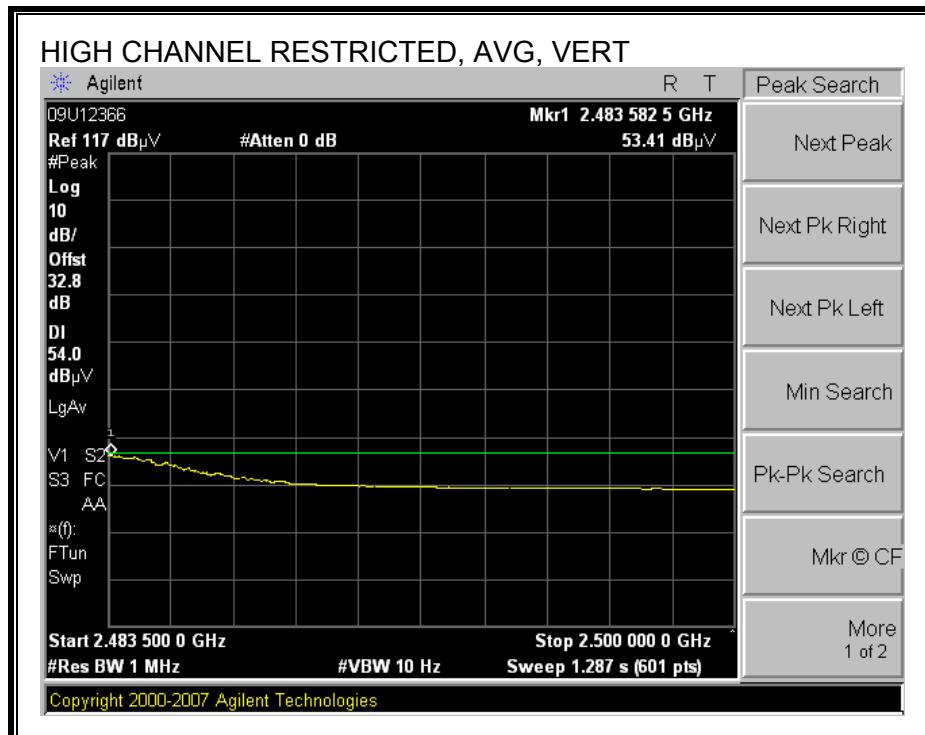
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





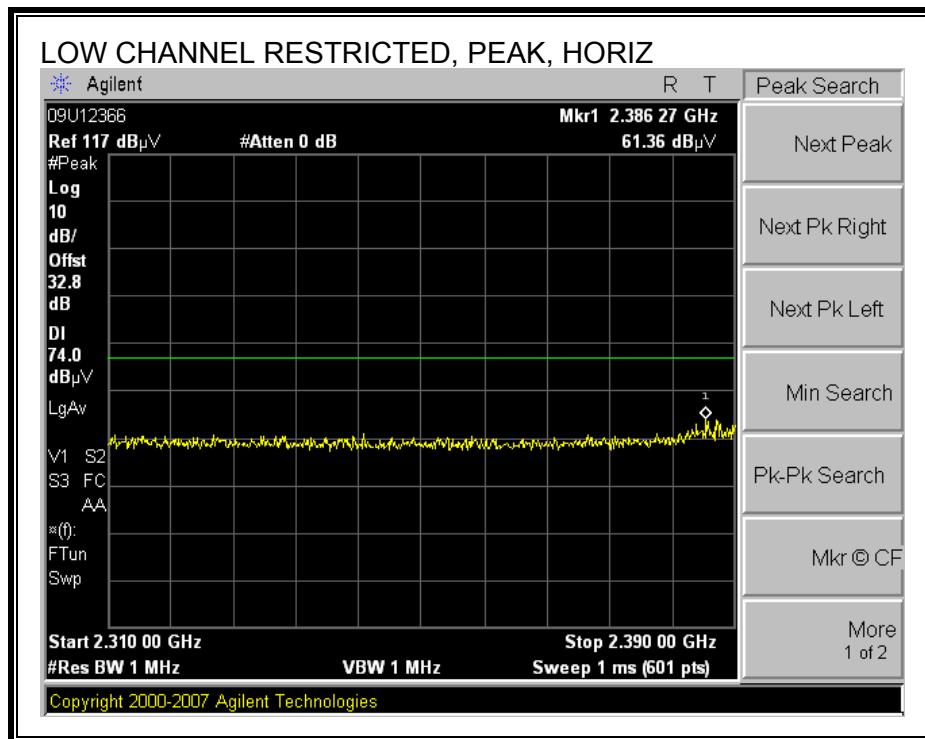
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

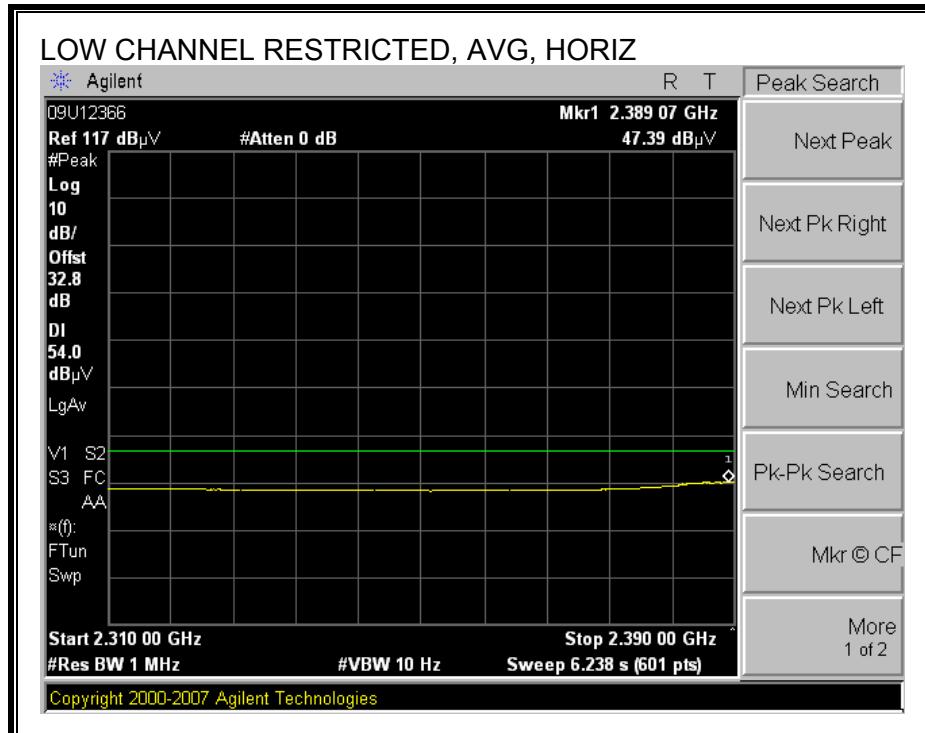




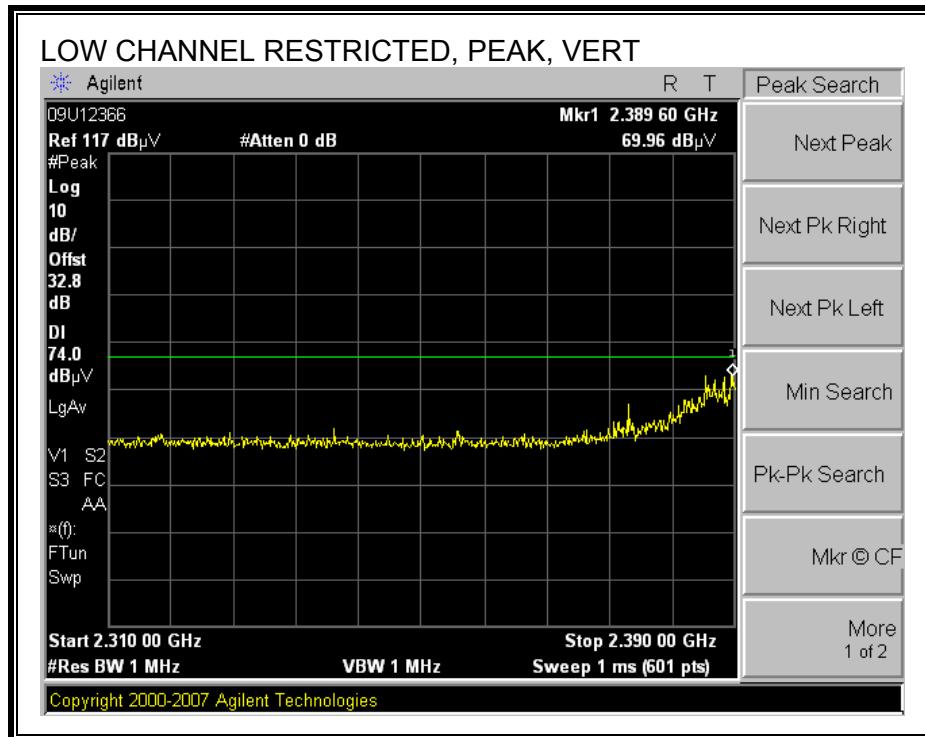
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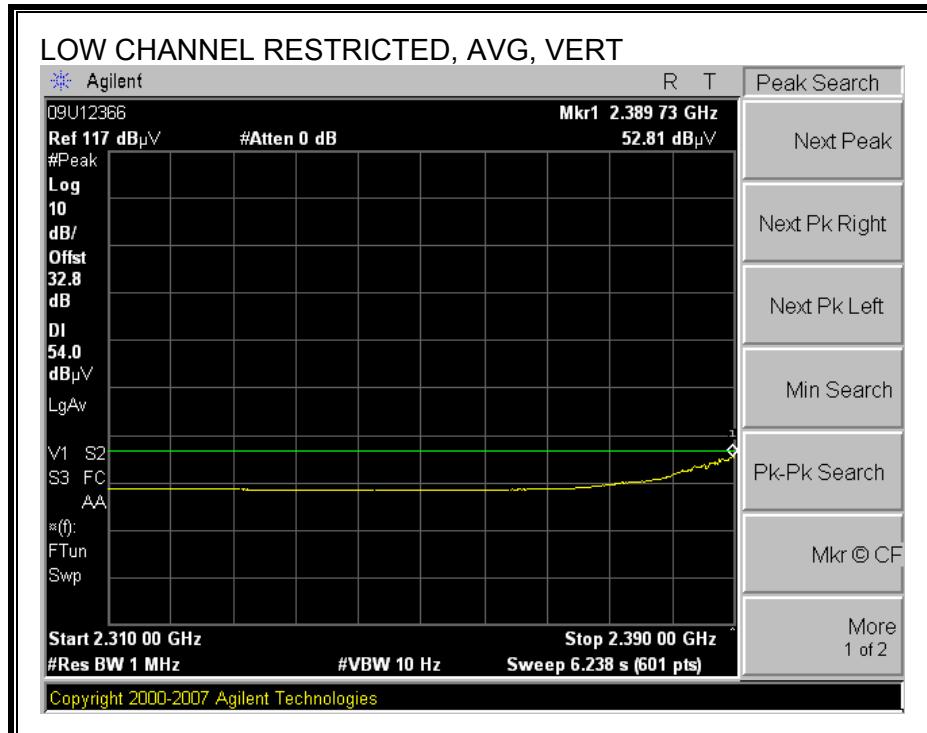
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



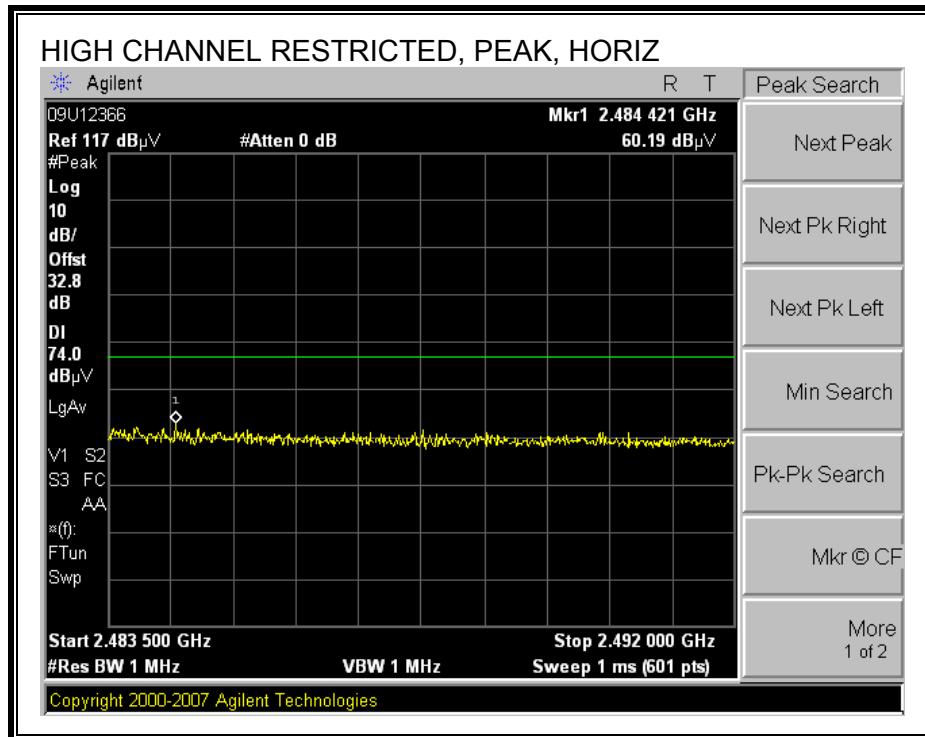


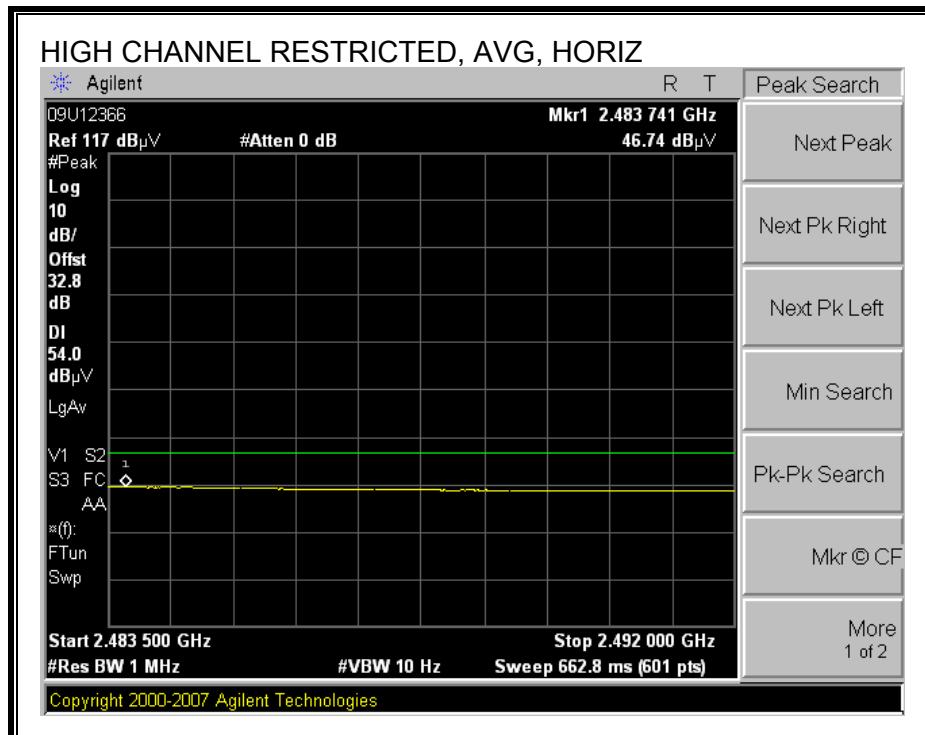
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



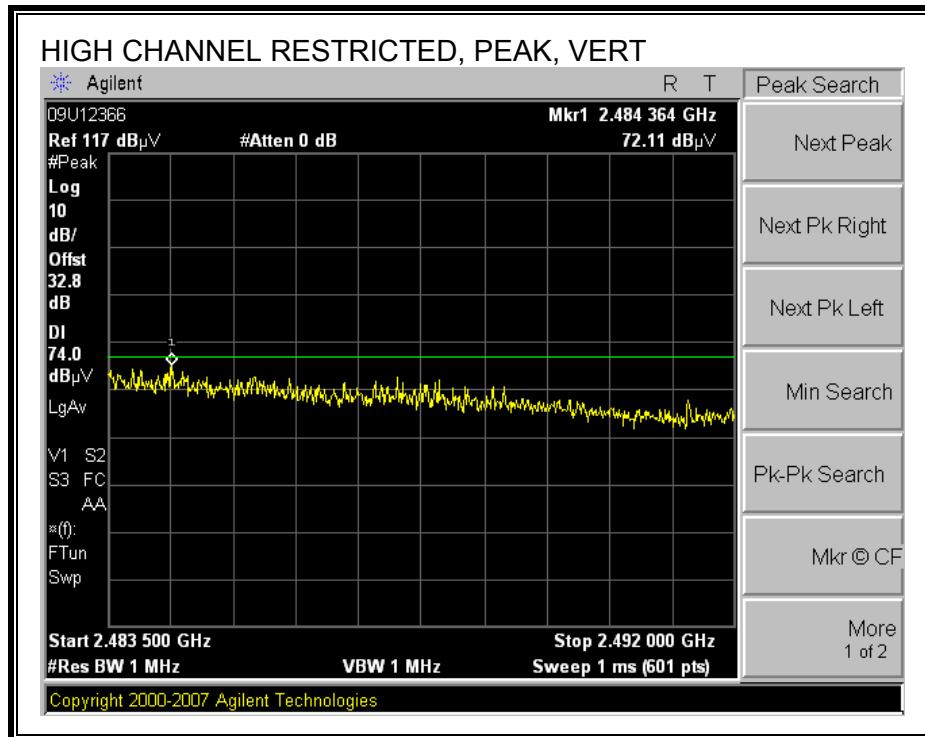


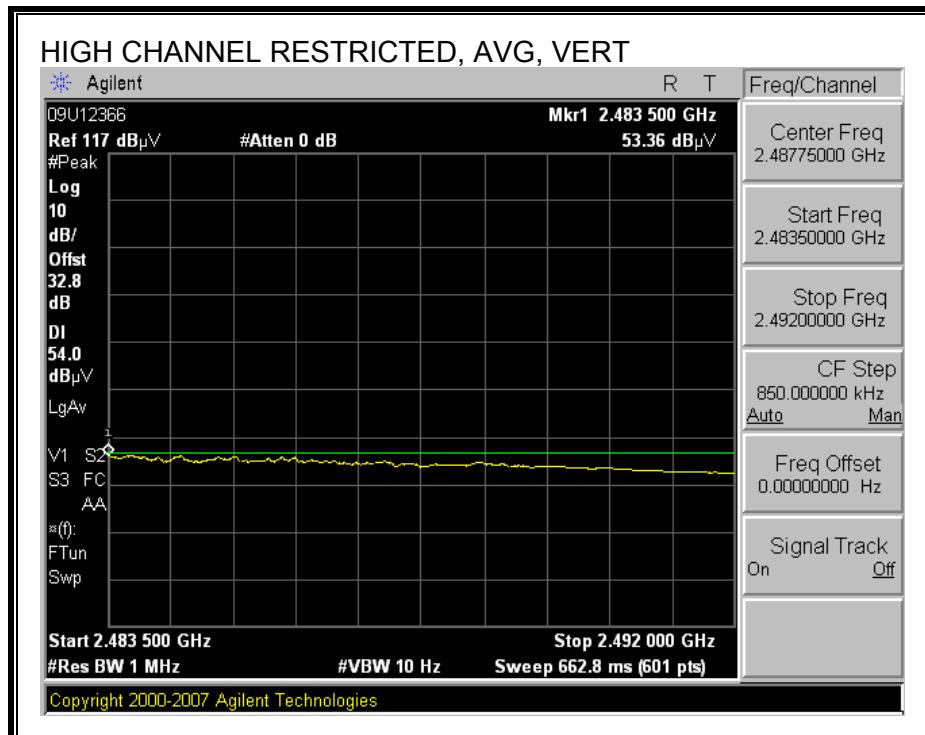
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

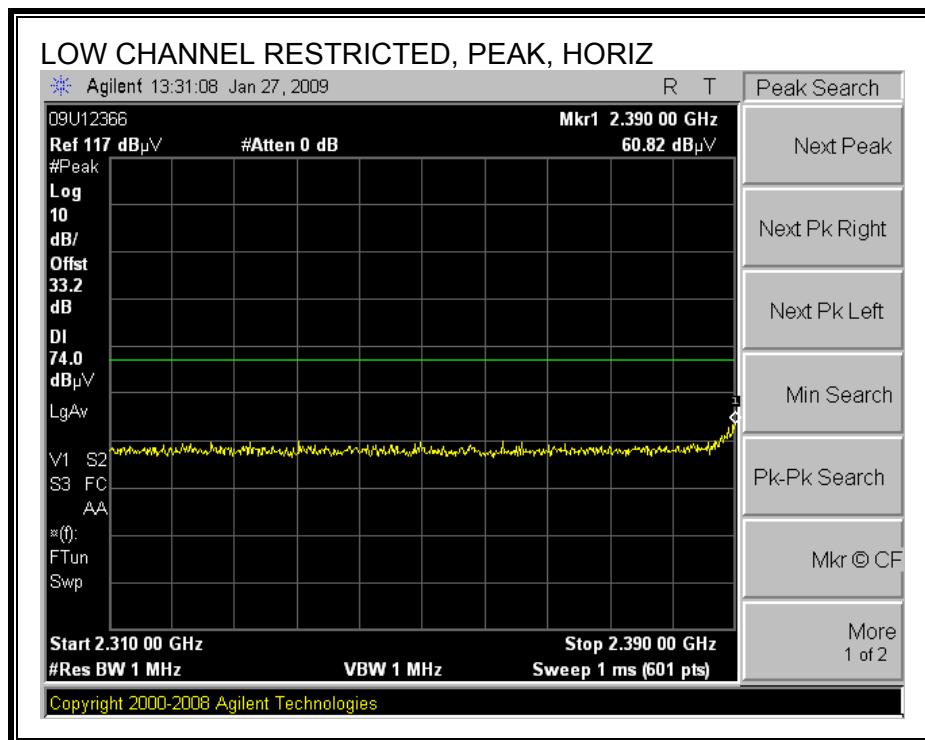


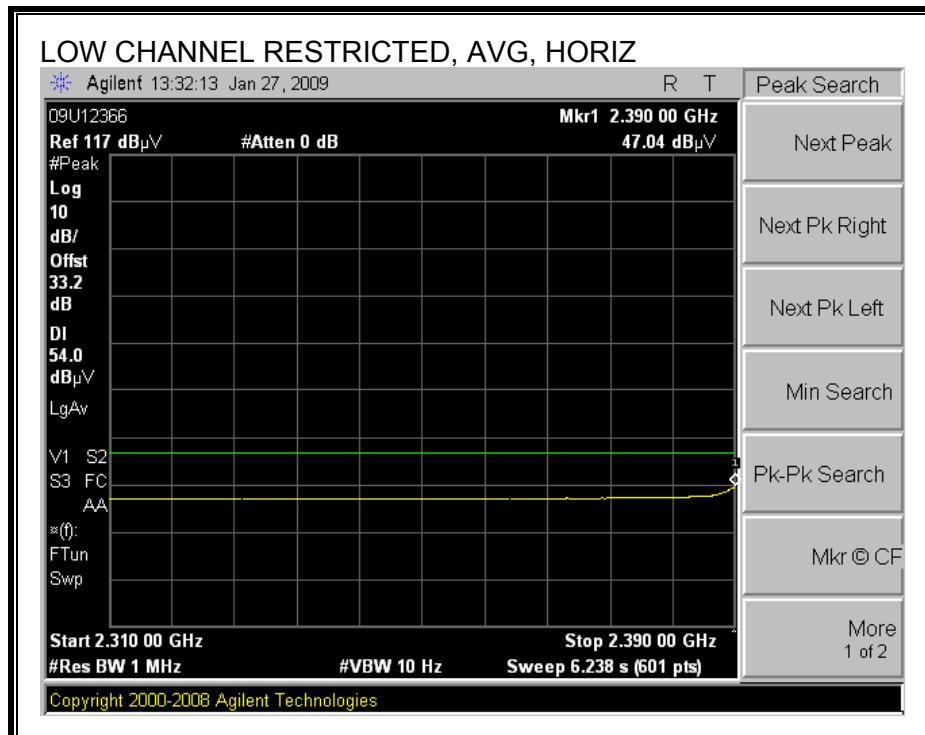


7.2.2. TX ABOVE 1 GHz FOR 802.11g

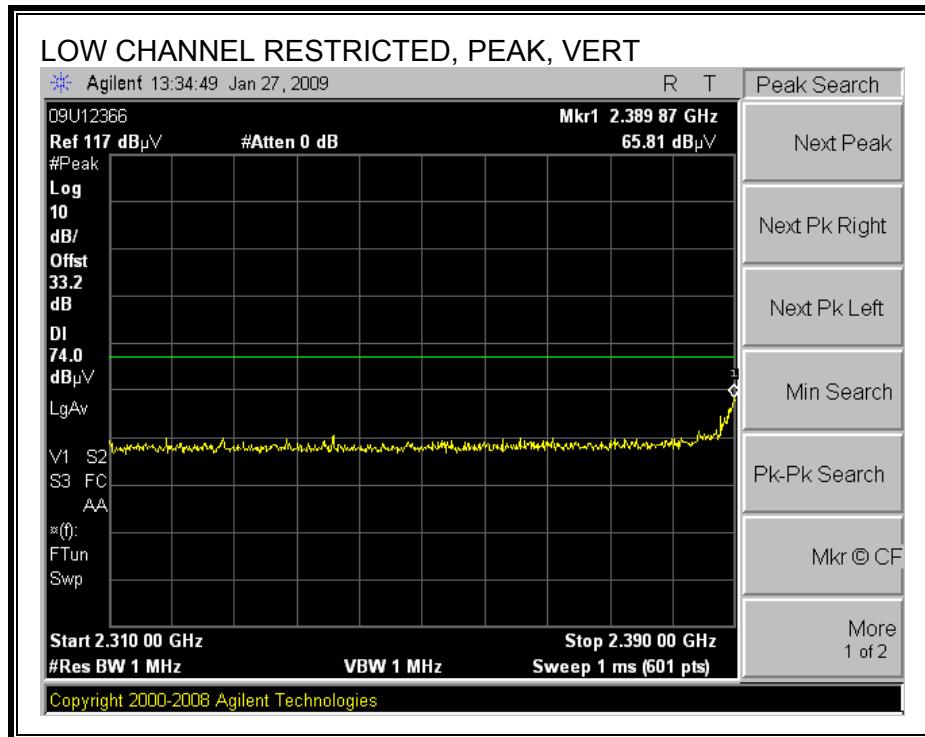
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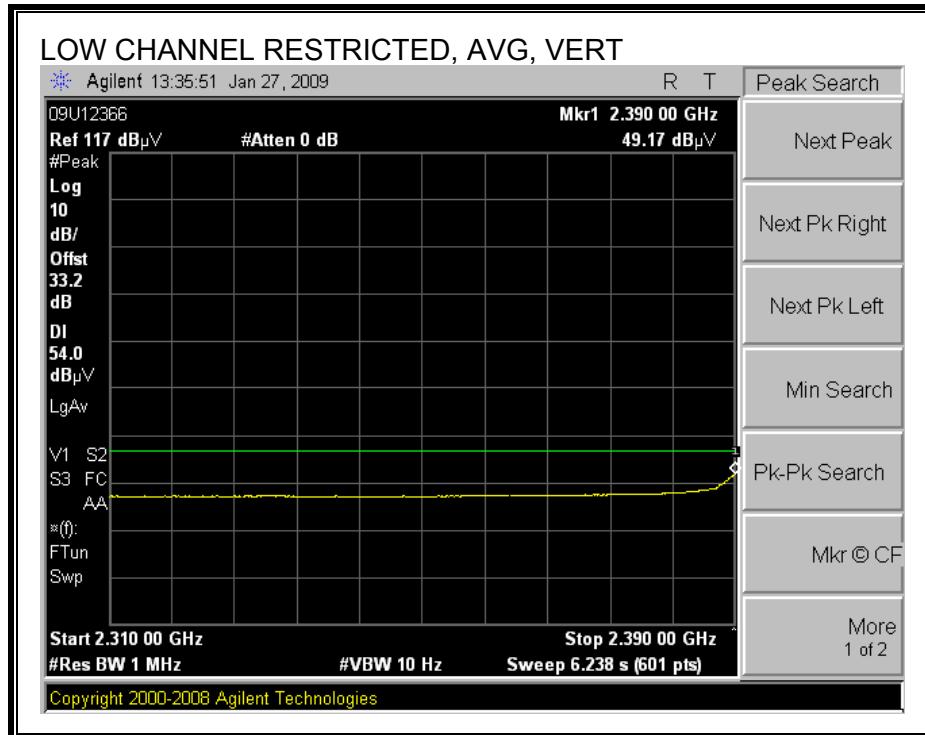
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



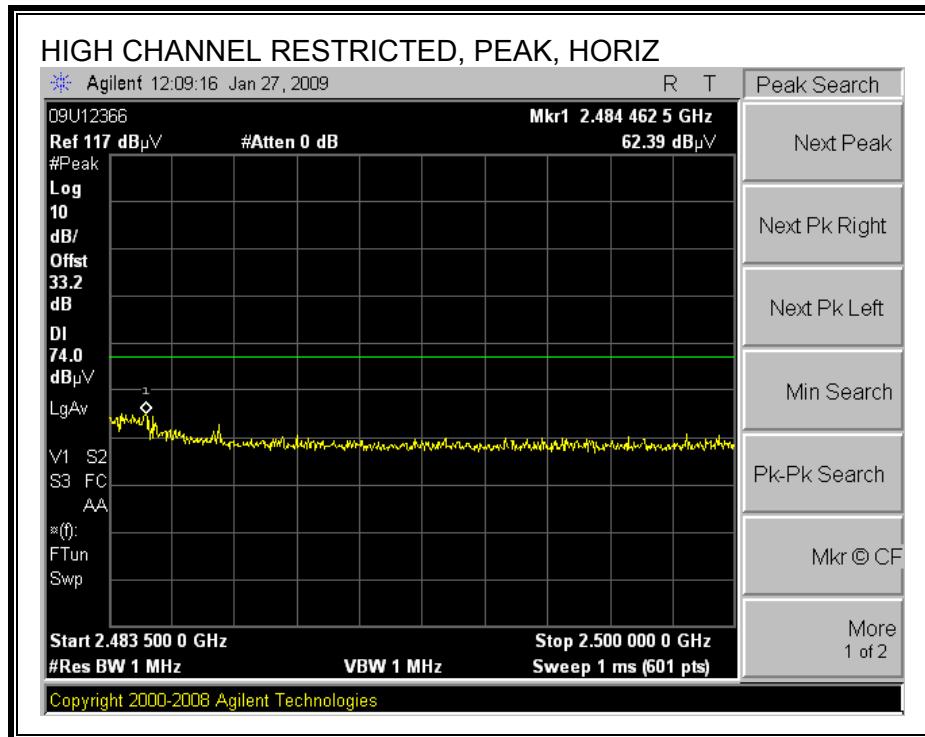


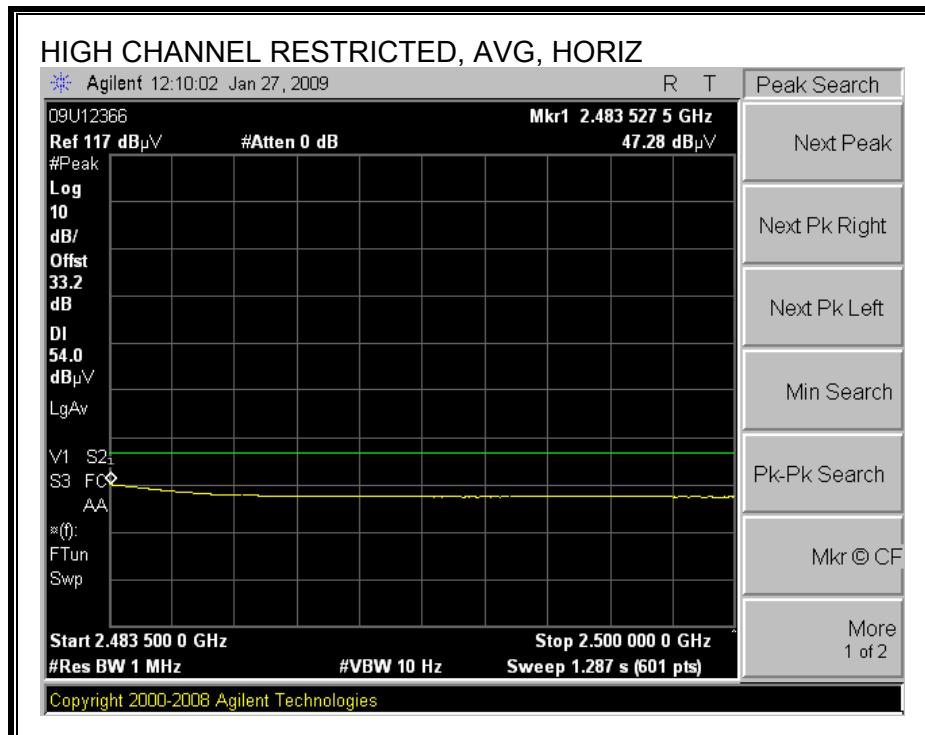
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



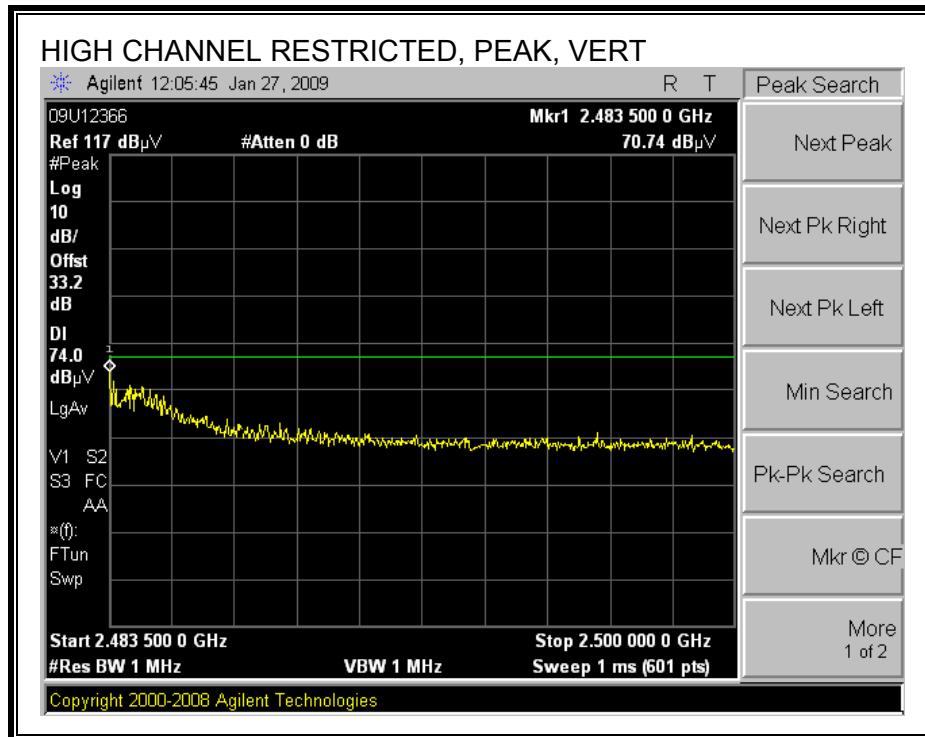


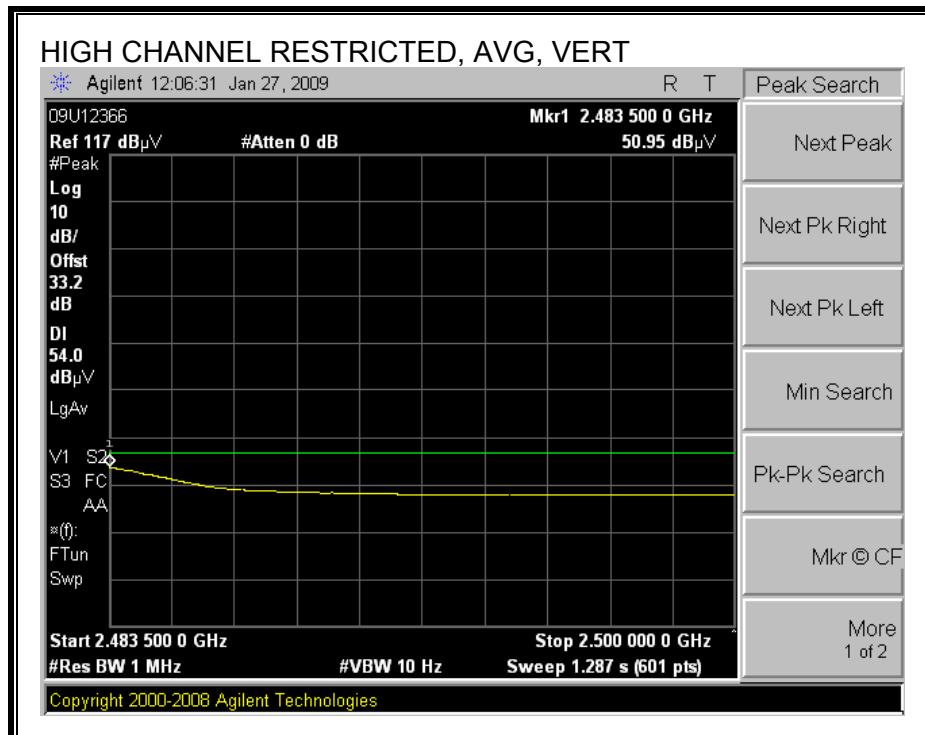
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





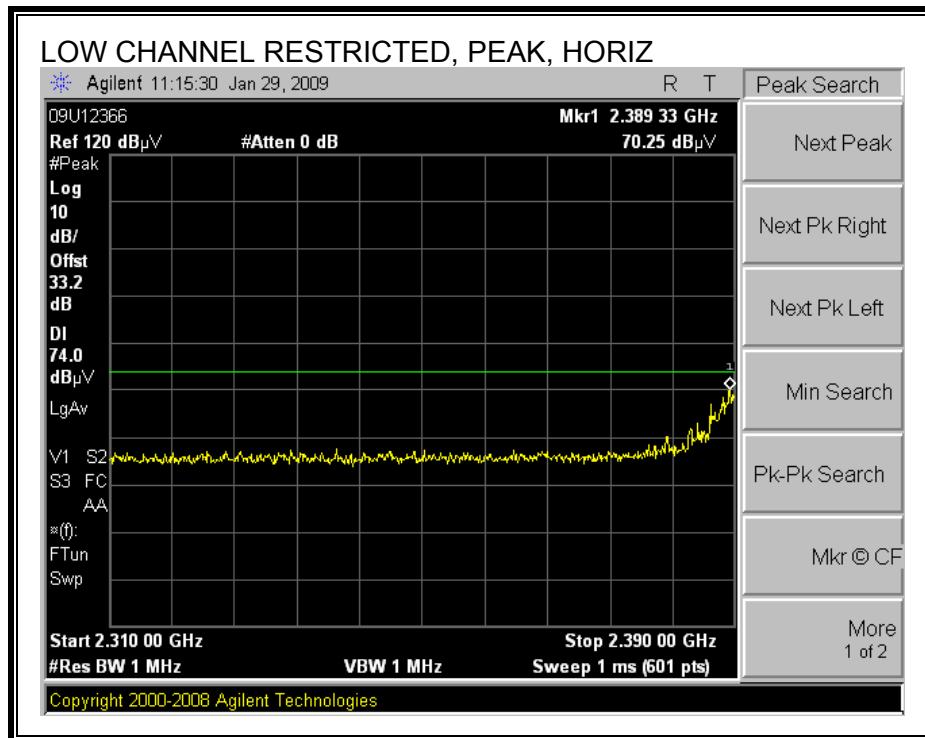
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

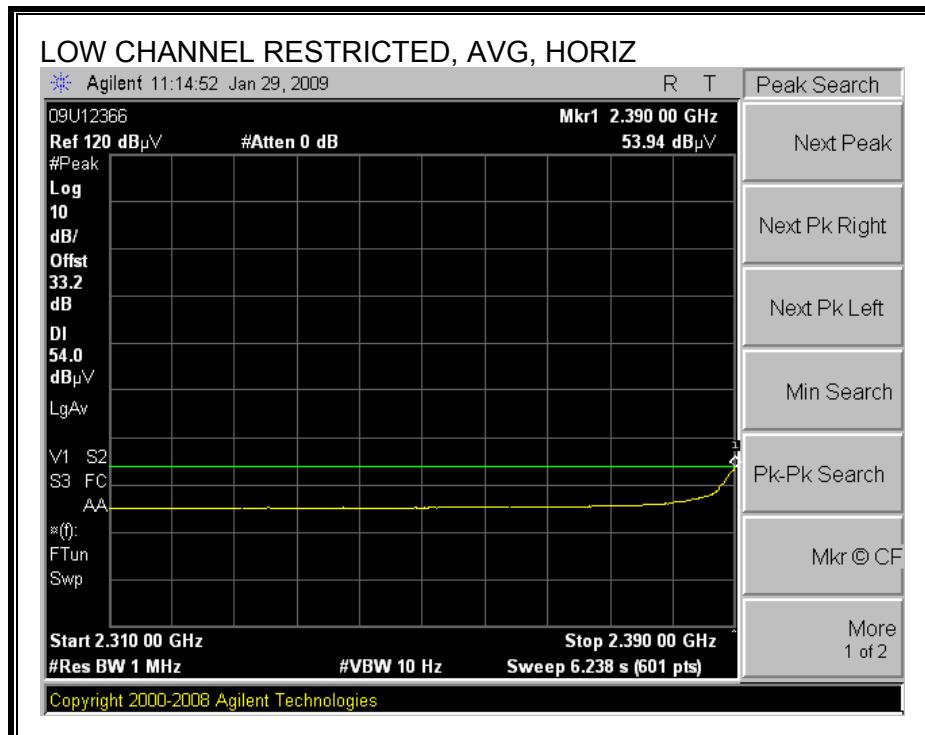




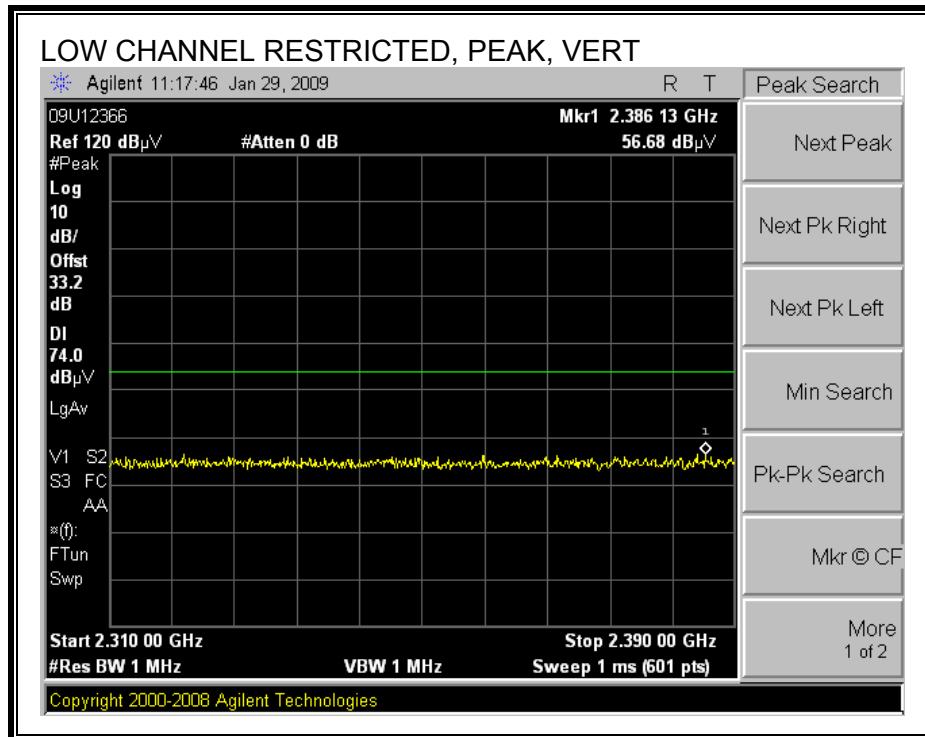
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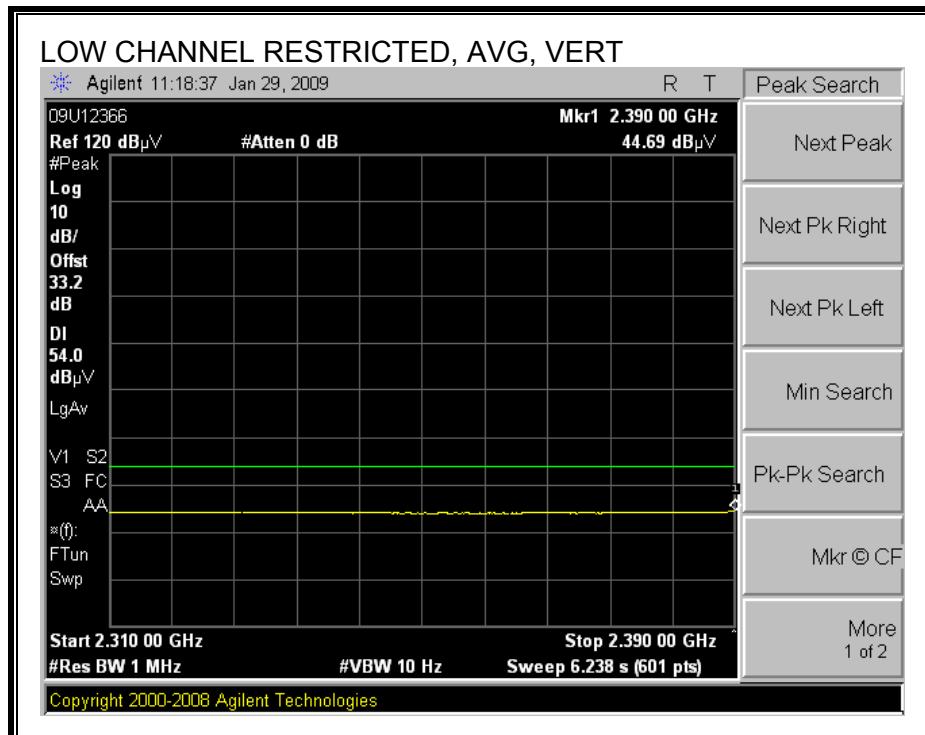
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



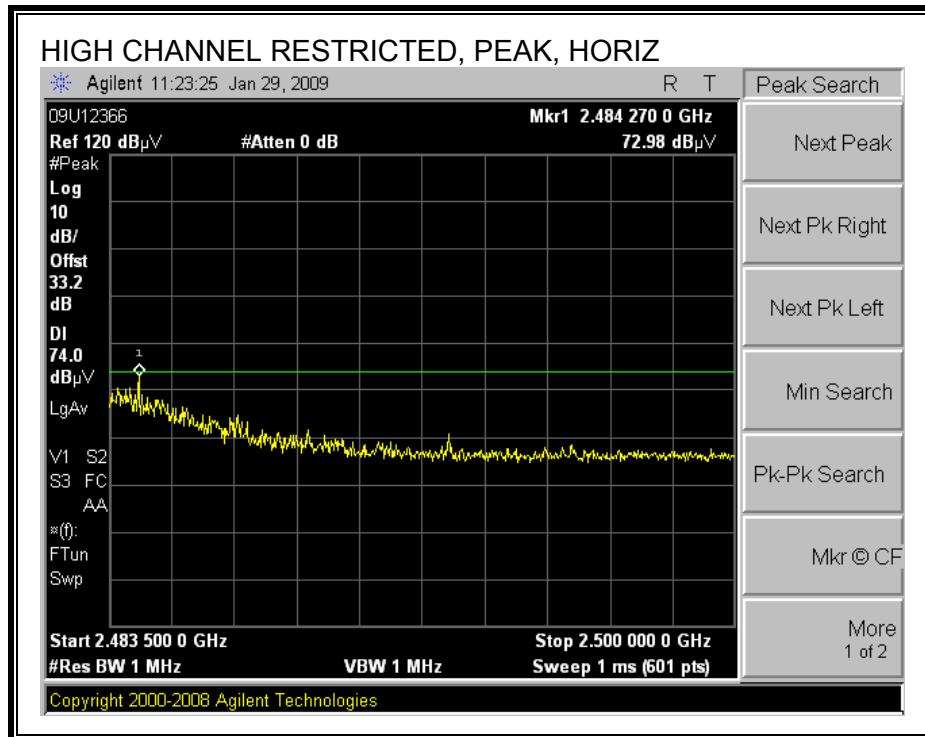


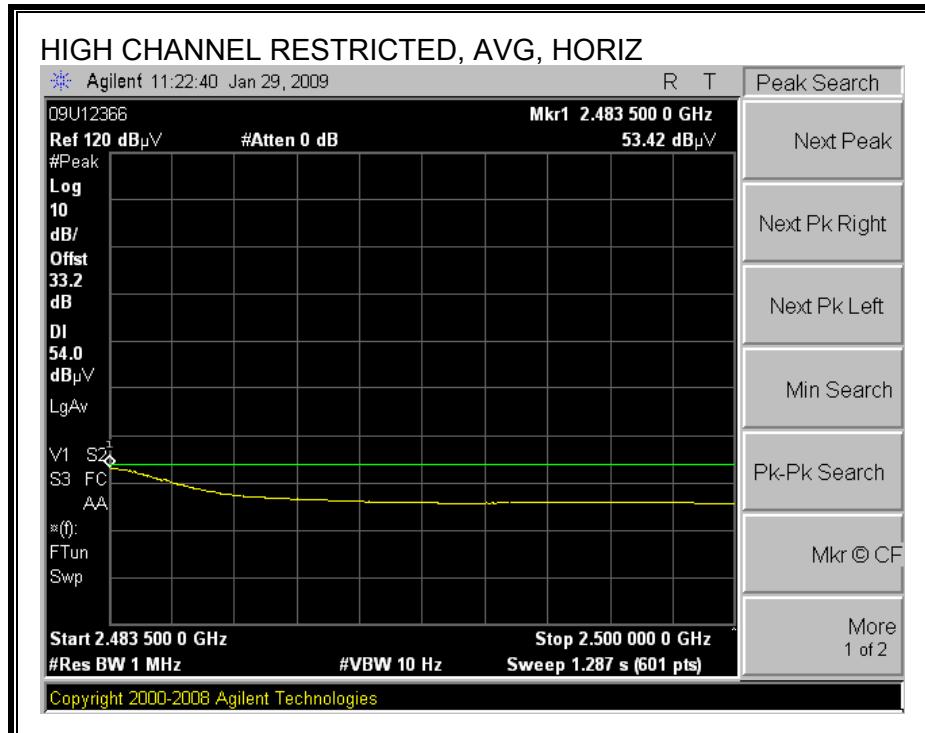
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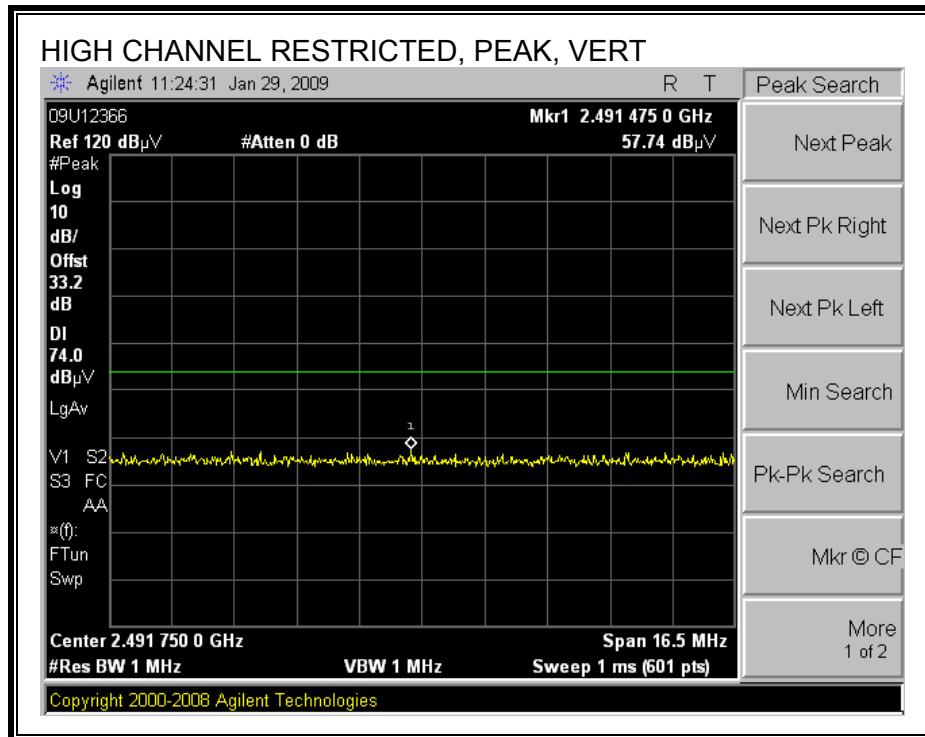


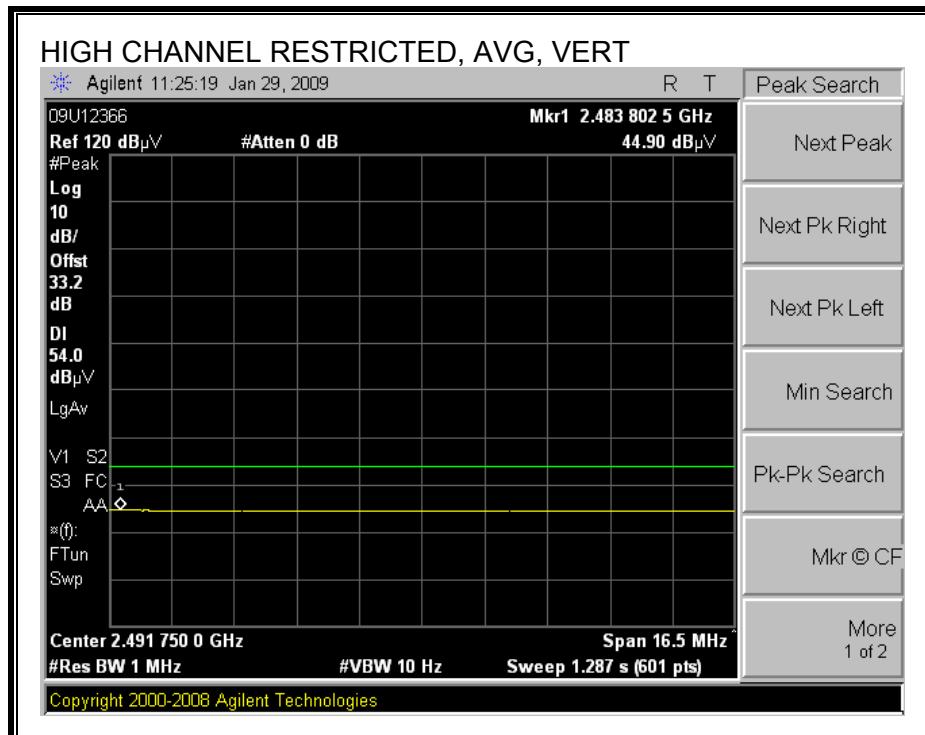
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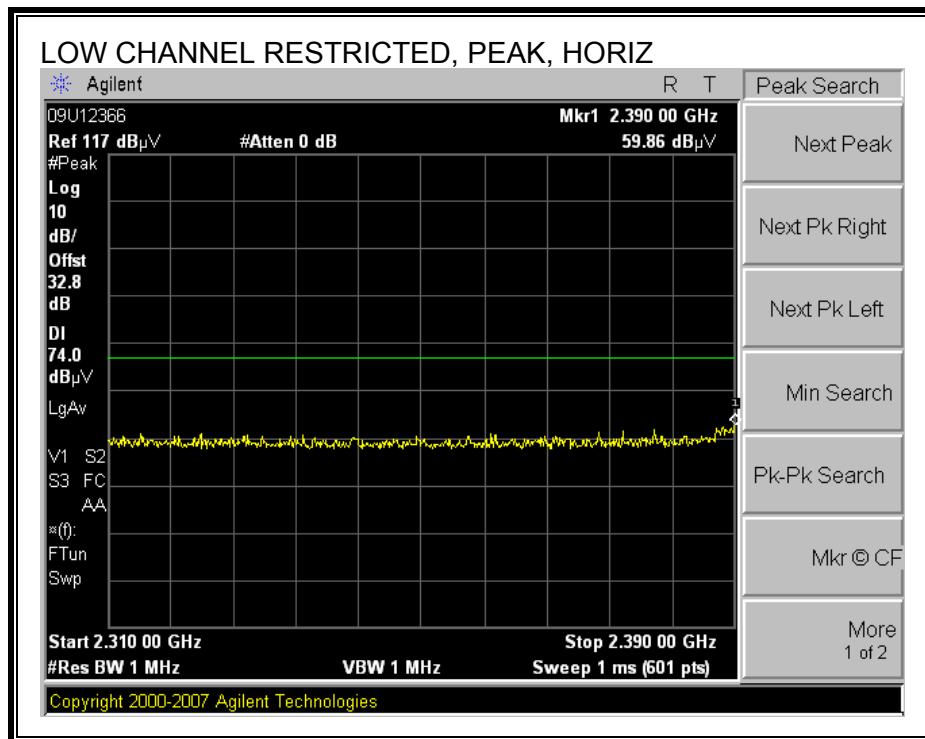
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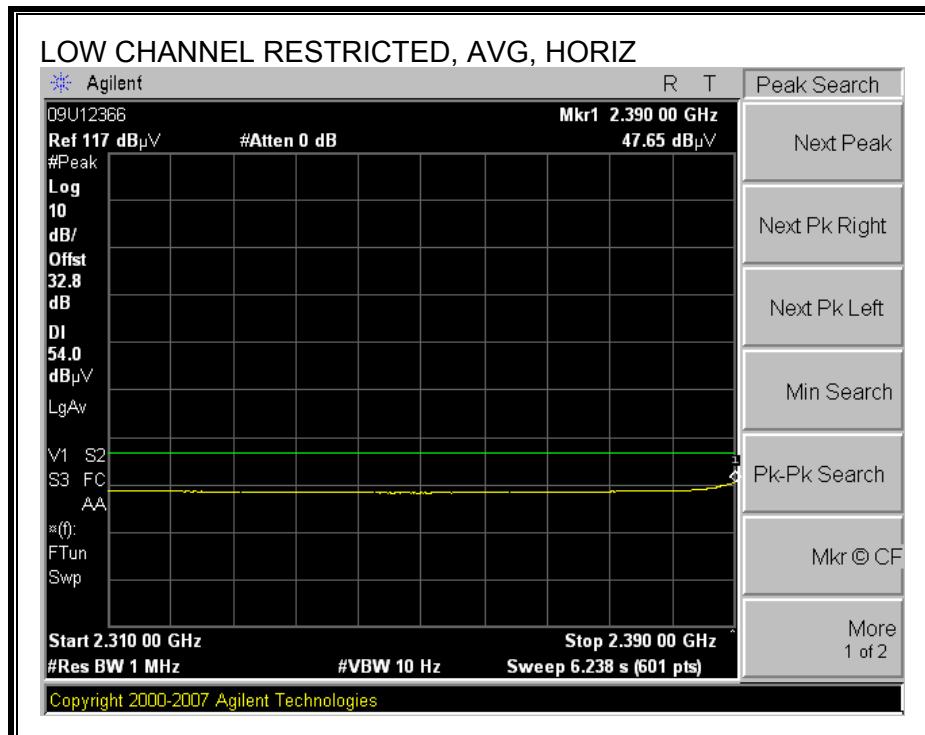




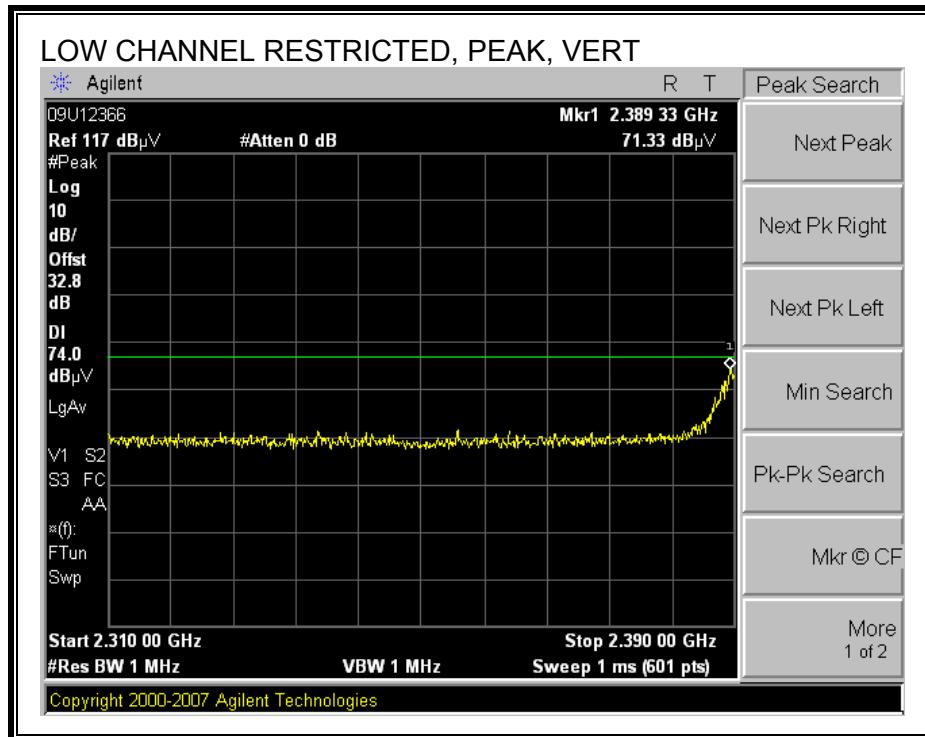
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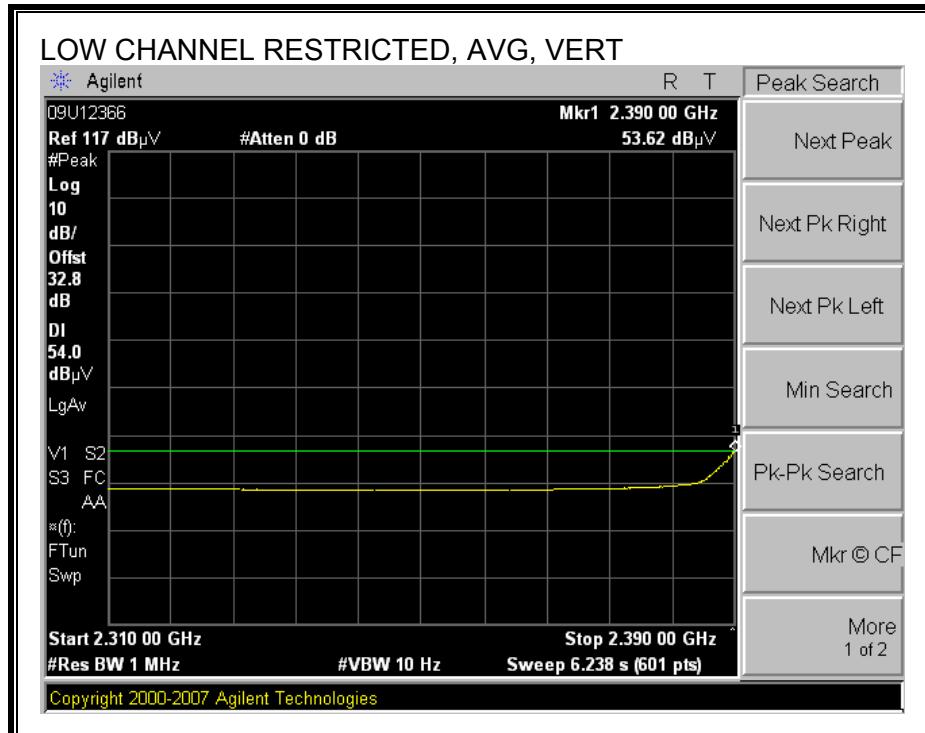
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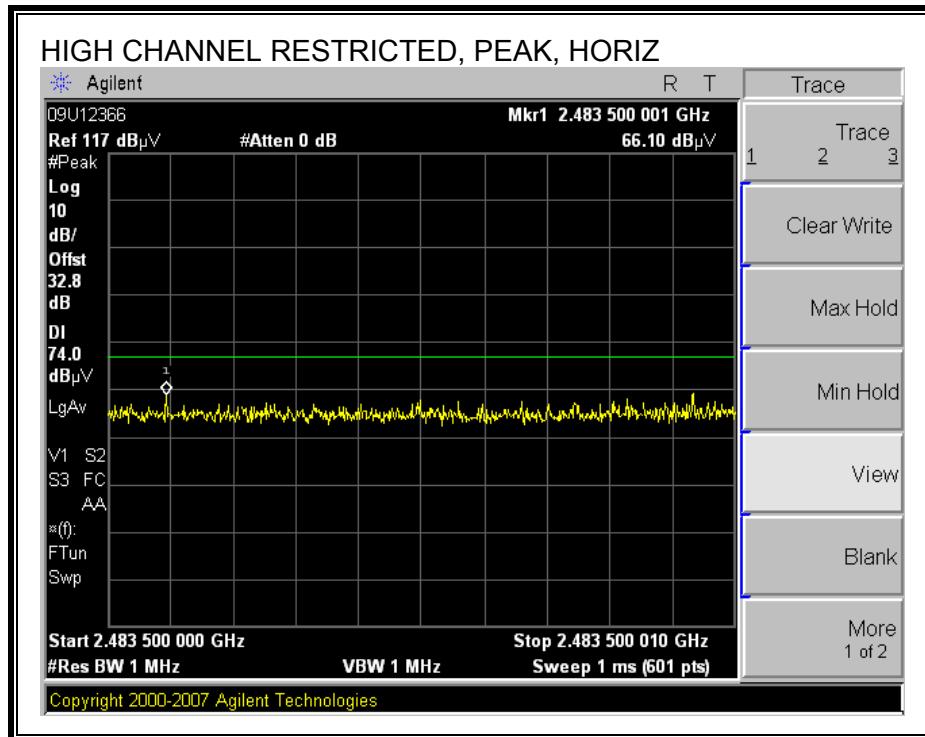


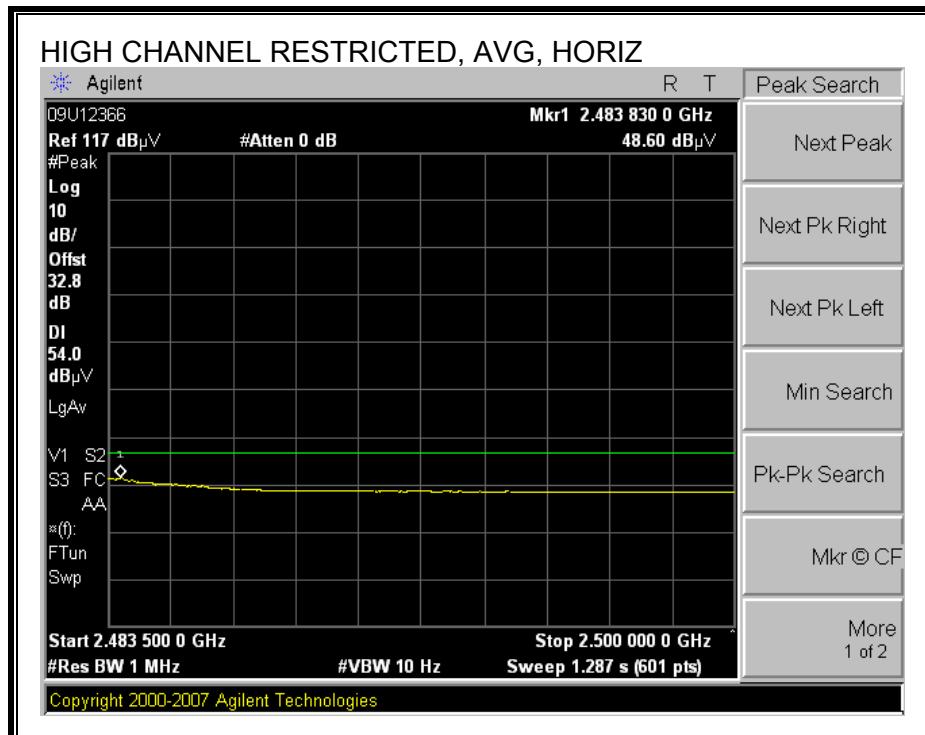
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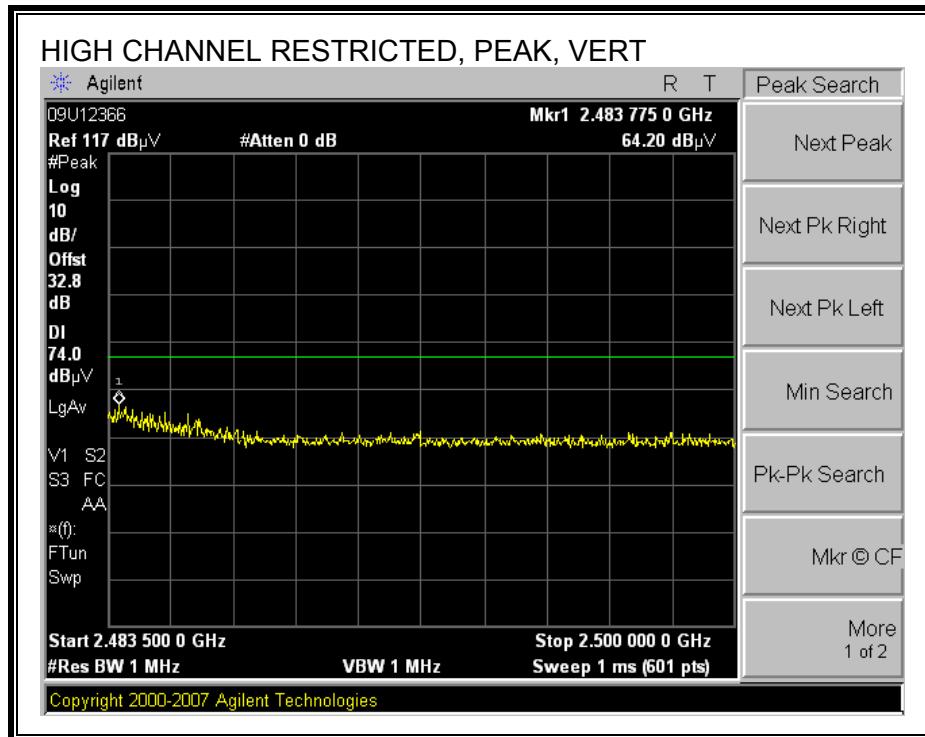


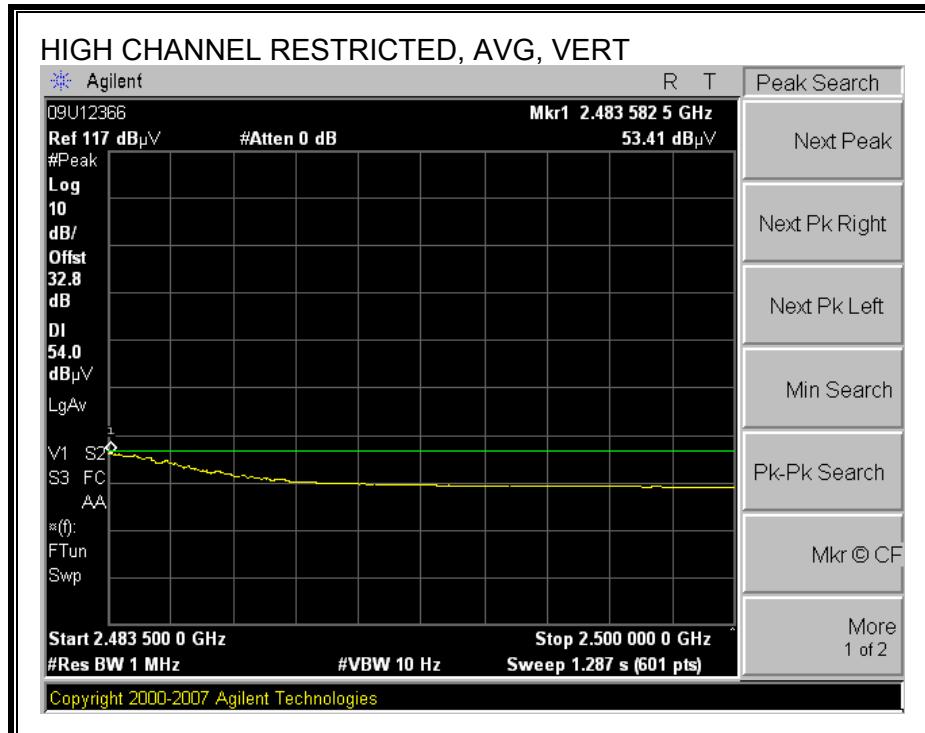
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RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

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S/N: 6717 @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	Peak Measurements RBW=VBW=1MHz		3' cable 22807700	12' cable 22807600	20' cable 22807500			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)	Low channel															4.824	3.0	41.5	28.3	33.7	5.8	-34.8	0.0	0.0	46.2	33.0	74	54	-27.8	-21.0	V	7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor	4.824	3.0	40.6	28.0	33.7	5.8	-34.8	0.0	0.0	45.3	32.7	74	54	-28.7	-21.3	H	7.236	3.0	40.9	28.7	36.2	7.2	-34.1	0.0	0.0	50.2	37.9	74	54	-23.8	-16.1	Noise floor	Mid channel															4.874	3.0	41.2	28.0	33.8	5.8	-34.8	0.0	0.0	46.1	32.8	74	54	-27.9	-21.2	V	7.311	3.0	41.8	28.7	36.2	7.3	-34.1	0.0	0.0	51.2	38.0	74	54	-22.8	-16.0	Noise floor	4.874	3.0	39.7	28.0	33.8	5.8	-34.8	0.0	0.0	44.5	32.8	74	54	-29.5	-21.2	H	7.311	3.0	40.2	28.6	36.2	7.3	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor	High channel															4.924	3.0	40.6	28.6	33.9	5.9	-34.8	0.0	0.0	45.5	33.5	74	54	-28.5	-20.5	V	7.386	3.0	41.3	28.1	36.3	7.3	-34.1	0.0	0.0	50.8	37.6	74	54	-23.2	-16.4	Noise floor	4.924	3.0	40.3	28.0	33.9	5.9	-34.8	0.0	0.0	45.2	33.0	74	54	-28.8	-21.0	H	7.386	3.0	41.9	28.6	36.3	7.3	-34.1	0.0	0.0	51.4	38.1	74	54	-22.6	-15.9	Noise floor	No other emissions were detected above noise floor.															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HARMONICS AND SPURIOUS EMISSIONS

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<p><u>Test Equipment:</u></p> <table border="1"><tr><td>Horn 1-18GHz</td><td>Pre-amplifier 1-26GHz</td><td>Pre-amplifier 26-40GHz</td><td colspan="4">Horn > 18GHz</td><td>Limit</td></tr><tr><td>T73; S/N: 6717 @3m</td><td>T34 HP 8449B</td><td></td><td colspan="4">T125; ARA 18-26GHz; S/N:1007</td><td>FCC 15.209</td></tr><tr><td colspan="16">Hi Frequency Cables</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="4">HPF</td><td>Reject Filter</td><td colspan="8">Peak Measurements RBW=VBW=1MHz</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="4"></td><td></td><td colspan="8">Average Measurements RBW=1MHz, VBW=10Hz</td></tr></table>																Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit	T73; S/N: 6717 @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	Peak Measurements RBW=VBW=1MHz								3' cable 22807700	12' cable 22807600	20' cable 22807500						Average Measurements RBW=1MHz, VBW=10Hz							
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T73; S/N: 6717 @3m	T34 HP 8449B		T125; ARA 18-26GHz; S/N:1007				FCC 15.209																																																																								
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3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF				Reject Filter	Peak Measurements RBW=VBW=1MHz																																																																							
3' cable 22807700	12' cable 22807600	20' cable 22807500						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)																																																																
LOW CHANNEL, 5745 MHz																																																																															
11.490	3.0	41.1	27.7	38.6	9.5	-32.5	0.0	0.0	56.7	43.3	74	54	-17.3	-10.7	V, Noise Floor																																																																
11.490	3.0	40.6	27.7	38.6	9.5	-32.5	0.0	0.0	56.2	43.2	74	54	-17.8	-10.8	H, Noise floor																																																																
MID CHANNEL, 5785 MHz																																																																															
11.570	3.0	40.3	27.9	38.7	9.5	-32.5	0.0	0.0	55.9	43.6	74	54	-18.1	-10.4	V, Noise Floor																																																																
11.570	3.0	40.8	28.0	38.7	9.5	-32.5	0.0	0.0	56.5	43.6	74	54	-17.5	-10.4	H, Noise floor																																																																
HI CHANNEL, 5825 MHz																																																																															
11.650	3.0	40.7	28.4	38.7	9.6	-32.5	0.0	0.0	56.4	44.1	74	54	-17.6	-9.9	V, Noise Floor																																																																
11.650	3.0	41.1	28.3	38.7	9.6	-32.5	0.0	0.0	56.9	44.1	74	54	-17.1	-9.9	H, Noise floor																																																																
No other emissions were detected above noise floor.																																																																															
Rev. 10.15.08																																																																															
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																																																																											

7.2.4. TX BELOW 1 GHz (WORST-CASE CONFIGURATION)

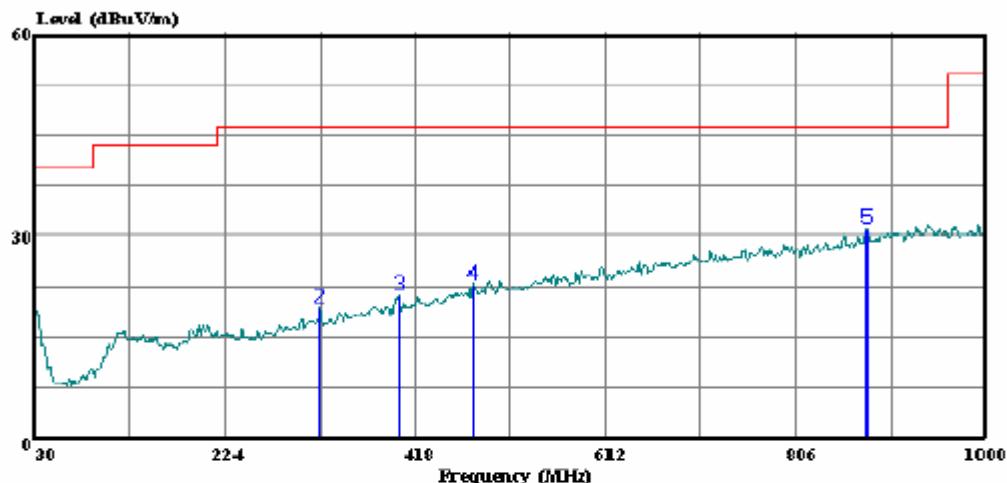
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)

HORIZONTAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 31 File#: 09U12366.EMI Date: 02-02-2009 Time: 16:28:36



(Fremont)

Ref Trace:

Condition: FCC CLASS-B 3m HORIZONTAL
Test Operator:: Thanh Nguyen
Project #: 09U12336
Company: Meraki Inc.
Model: MR58
Configuration:: EUT, Laptop, Antenna
Mode : EUT Power up with DC PWR Supply
Target: FCC Class B
: EUT w/2452-57-ON Ant
: DC Power on

Page: 1

Freq	Read		Limit	Over	Remark
	Level	Factor			
MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	30.000	27.97	-7.41	20.56	40.00 -19.44 Peak
2	320.030	29.85	-10.50	19.35	46.00 -26.65 Peak
3	400.540	29.42	-8.23	21.19	46.00 -24.81 Peak
4	476.200	28.49	-5.53	22.97	46.00 -23.03 Peak
5	877.780	28.47	2.43	30.90	46.00 -15.10 Peak

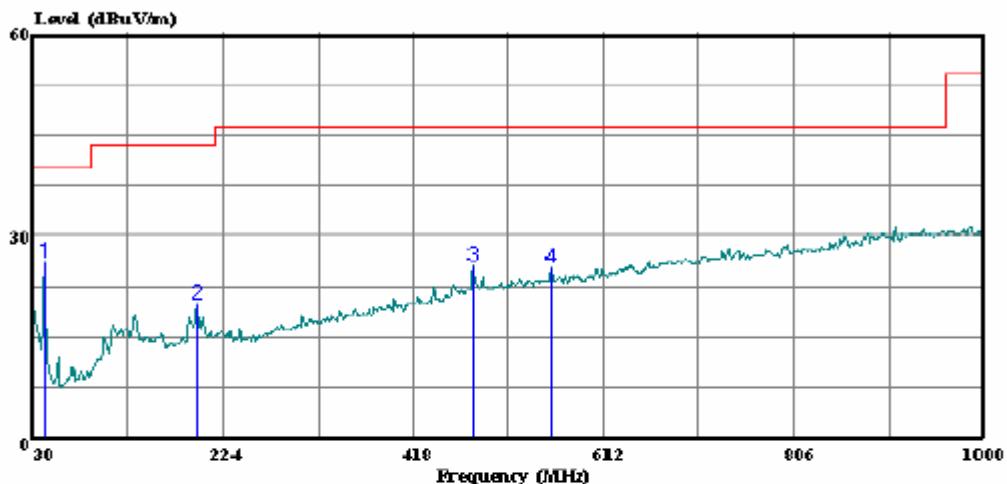
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 29 File#: 09U12366.EMI Date: 02-02-2009 Time: 16:25:02



(Fremont)
Trace: 28

Ref Trace:

Condition: FCC CLASS-B 3m VERTICAL
Test Operator:: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration:: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/2452-57-ON Ant
: DC Power on

Page: 1

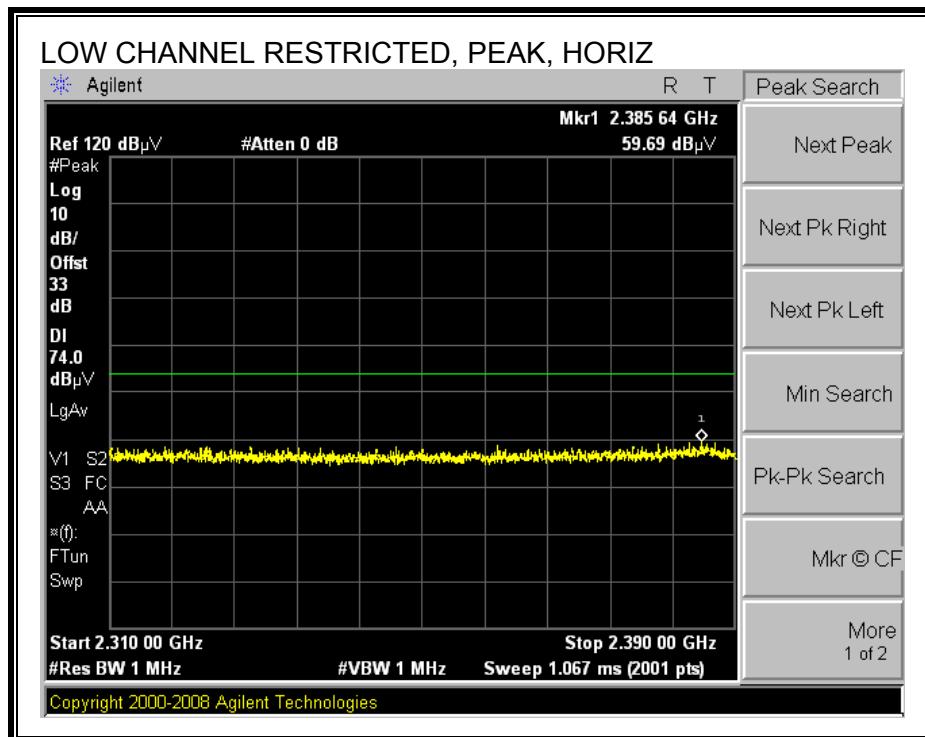
Freq	Read		Limit	Over	Remark
	Level	Factor			
MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	41.640	42.10	-15.74	26.36	40.00 -13.64 Peak
2	196.840	32.75	-12.71	20.04	43.50 -23.46 Peak
3	478.140	31.31	-5.48	25.83	46.00 -20.17 Peak
4	557.680	29.11	-3.65	25.46	46.00 -20.54 Peak

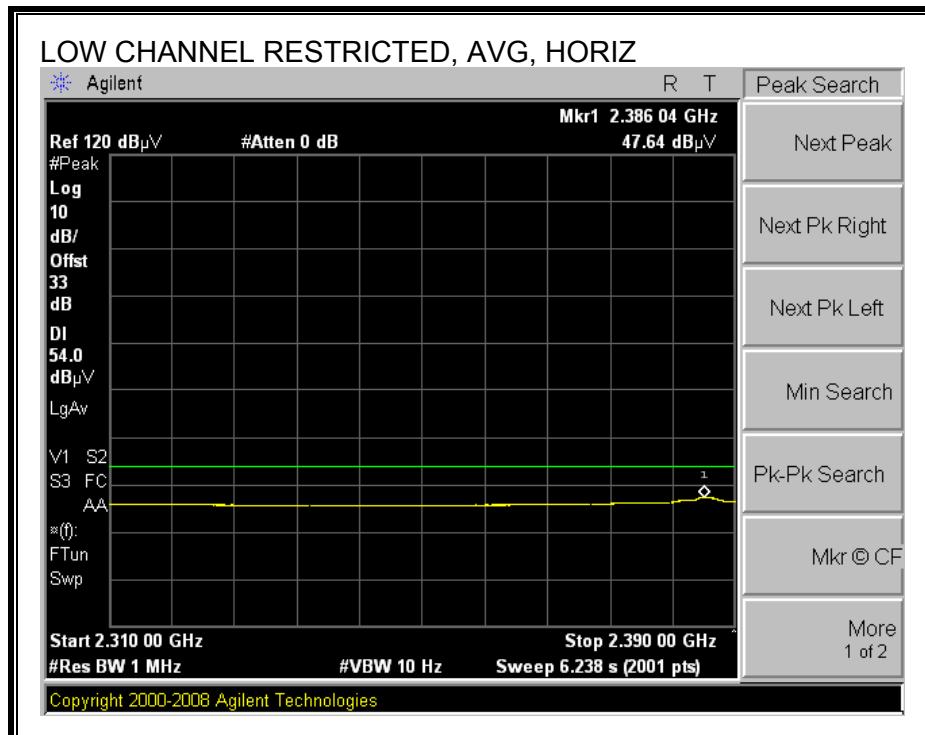
7.3. MONOPOLE OMNI 2.4GHZ ANTENNA

7.3.1. TX ABOVE 1 GHz FOR 802.11b DUAL CHAIN LEGACY MODE

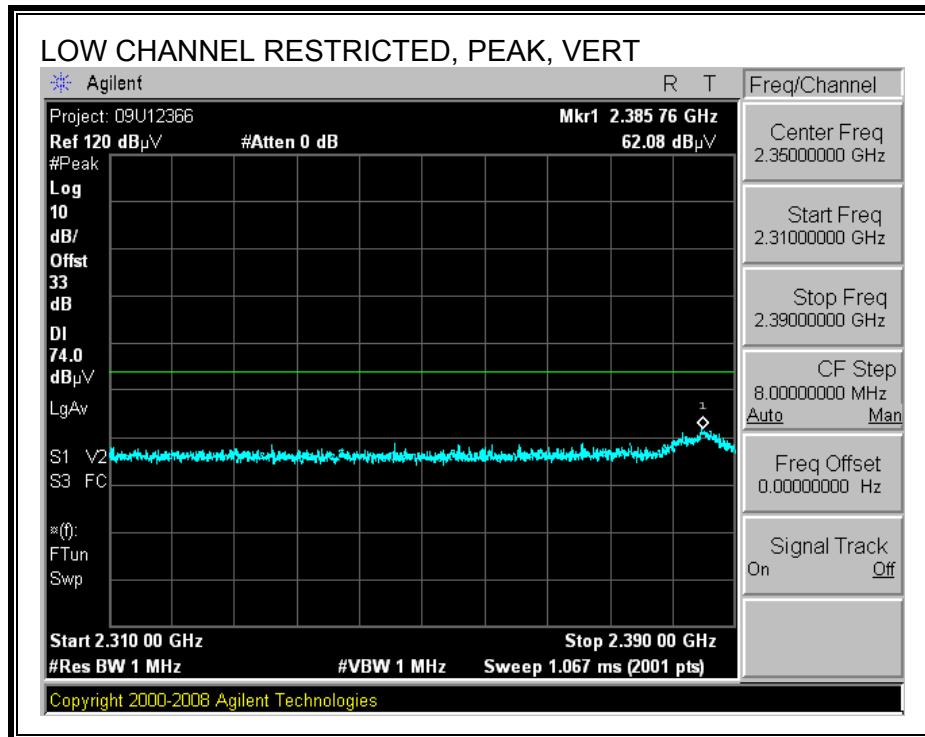
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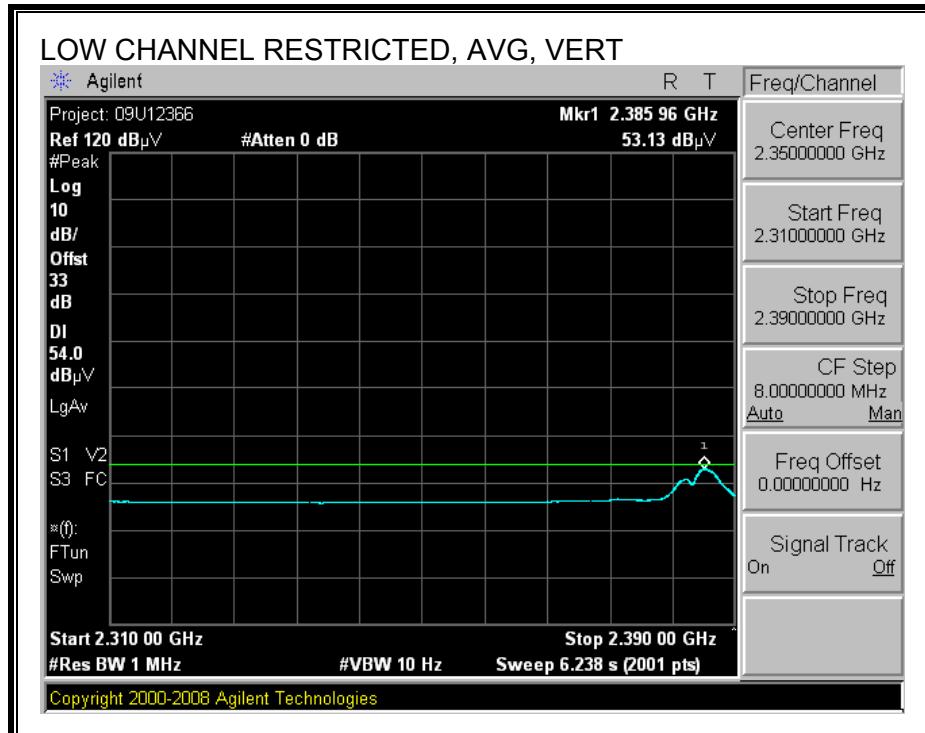
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



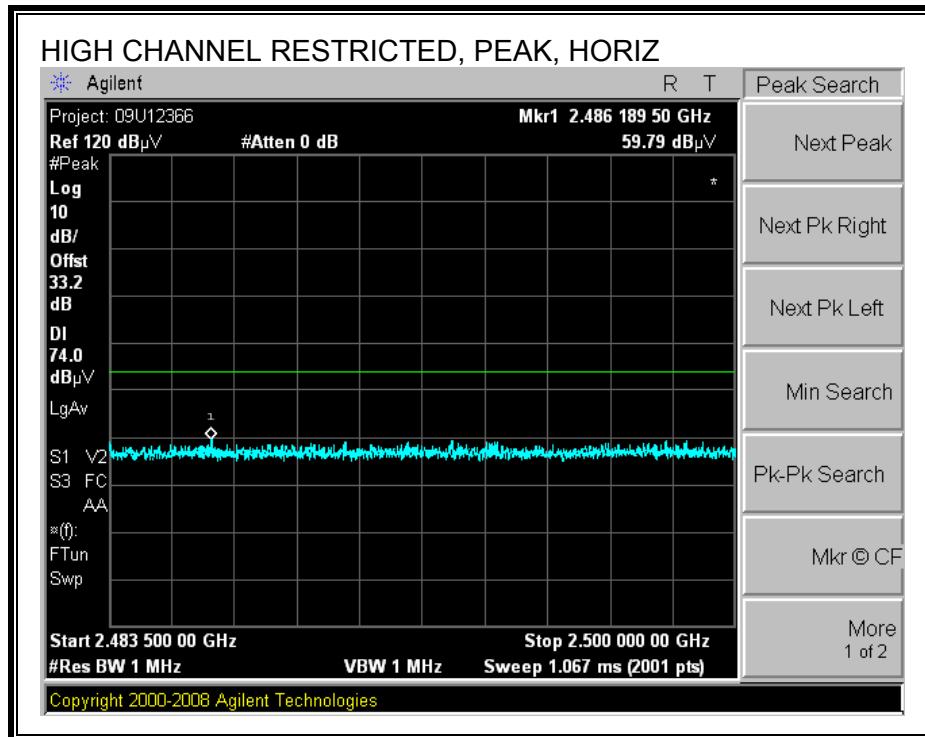


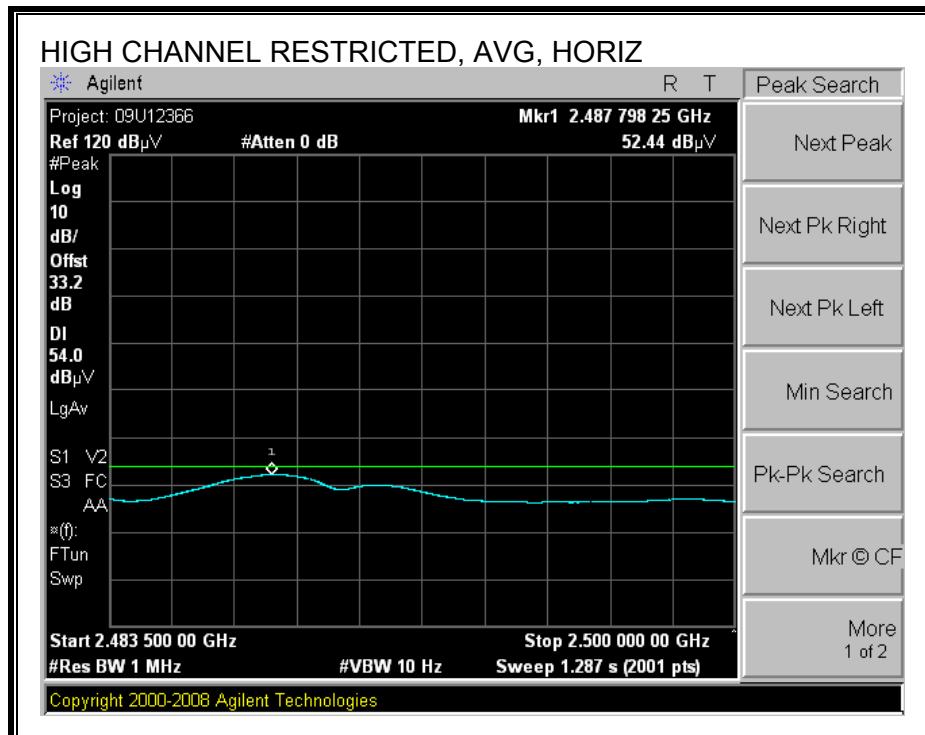
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



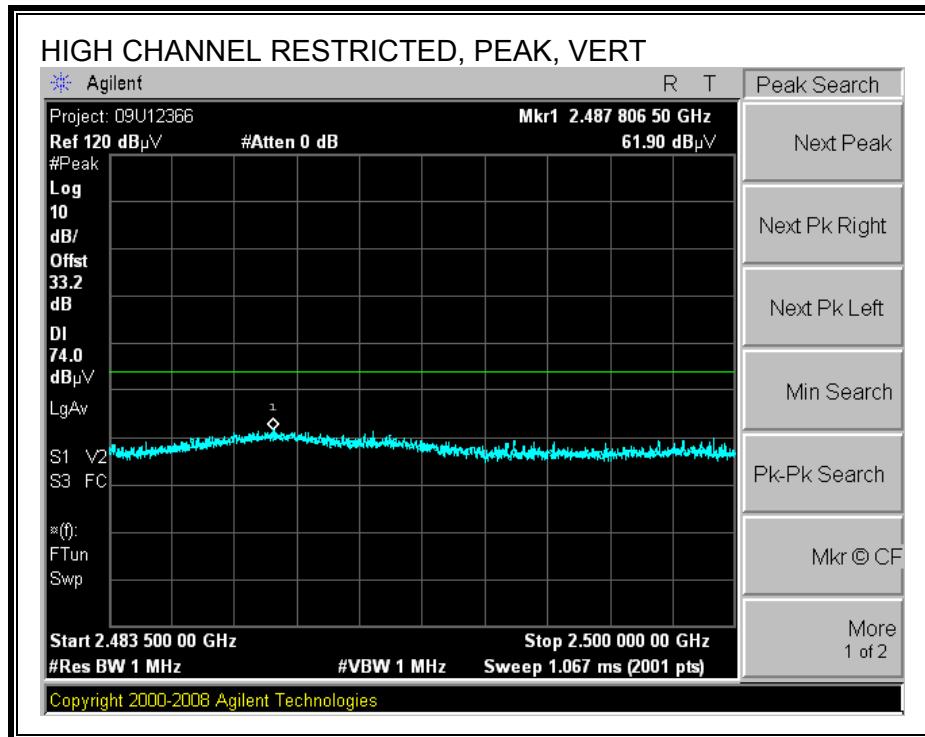


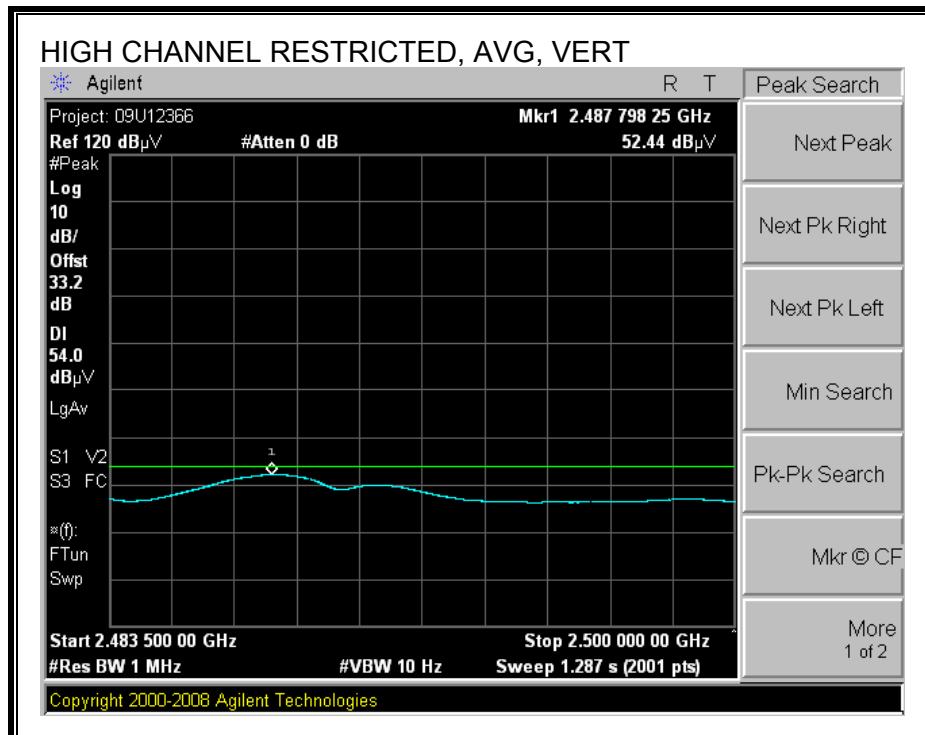
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





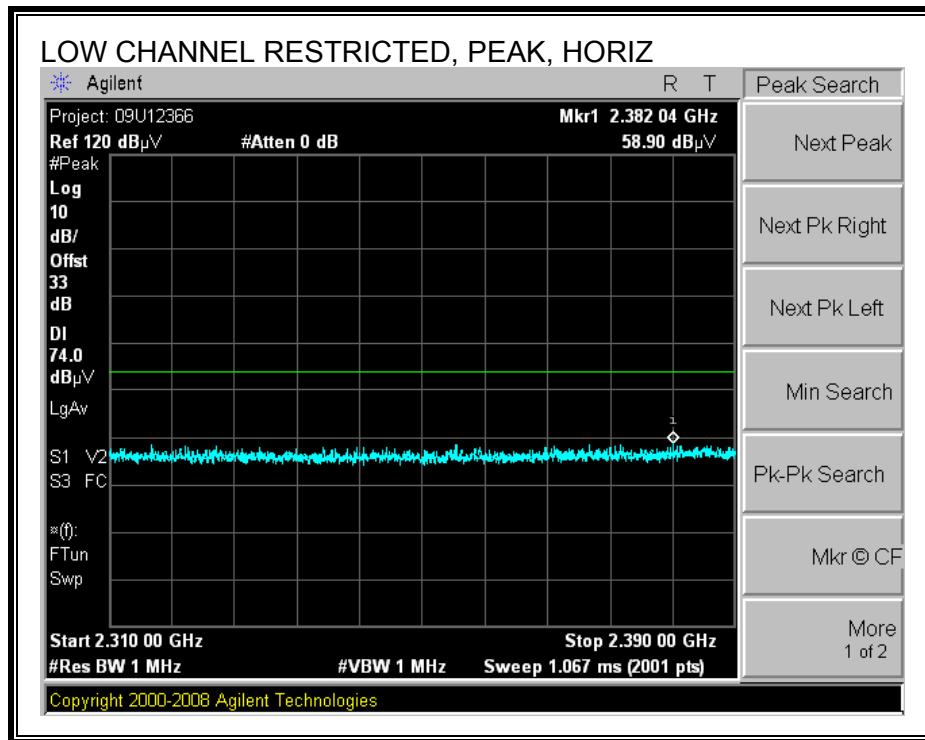
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

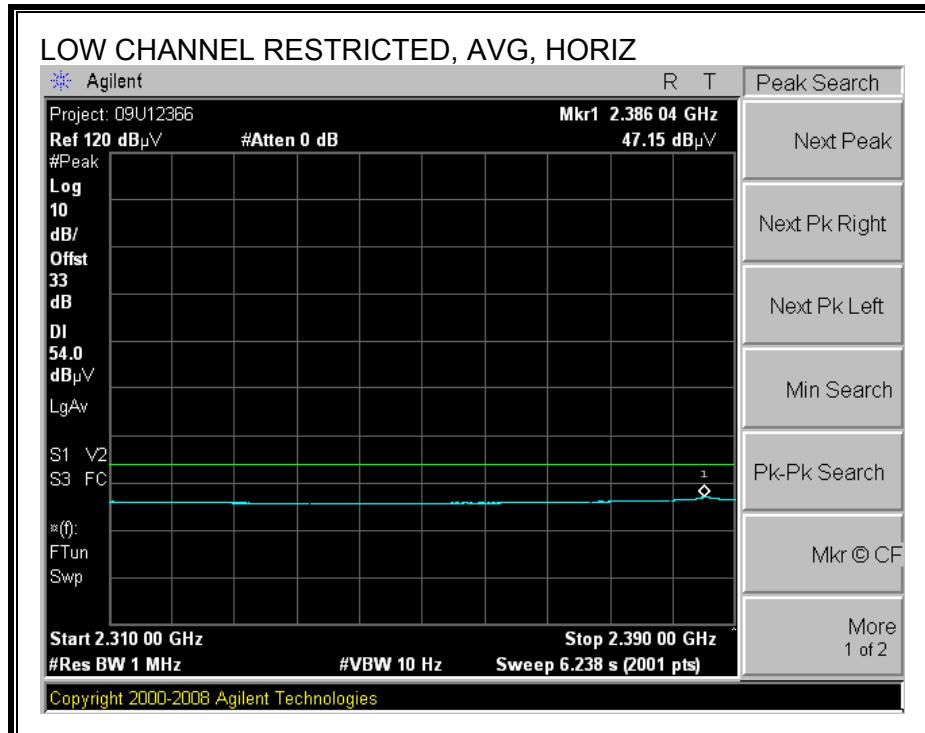




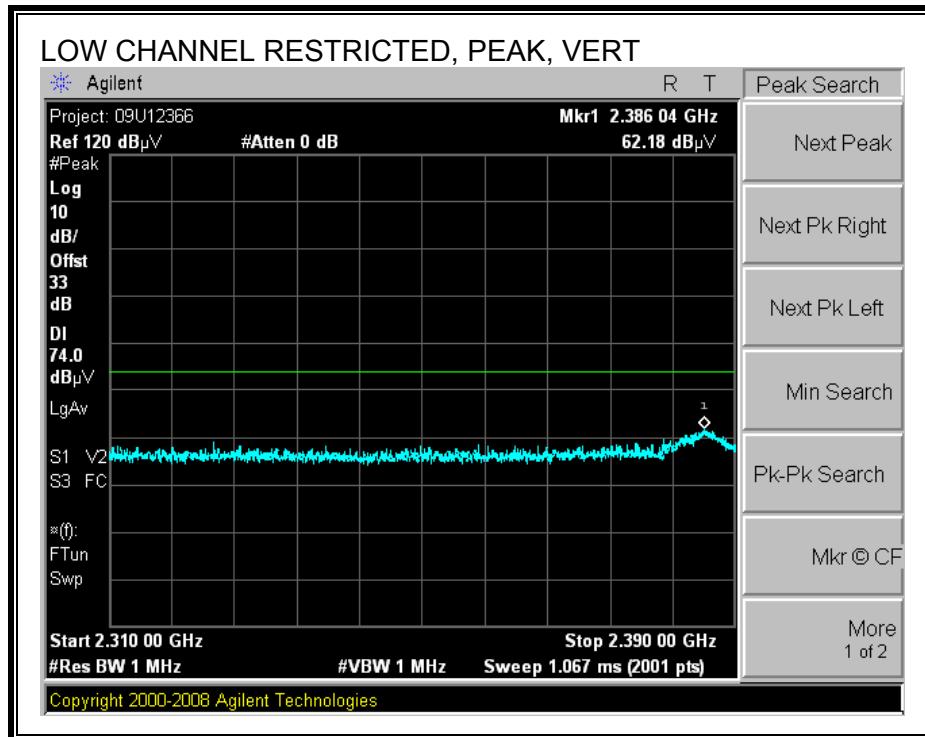
MODE 100

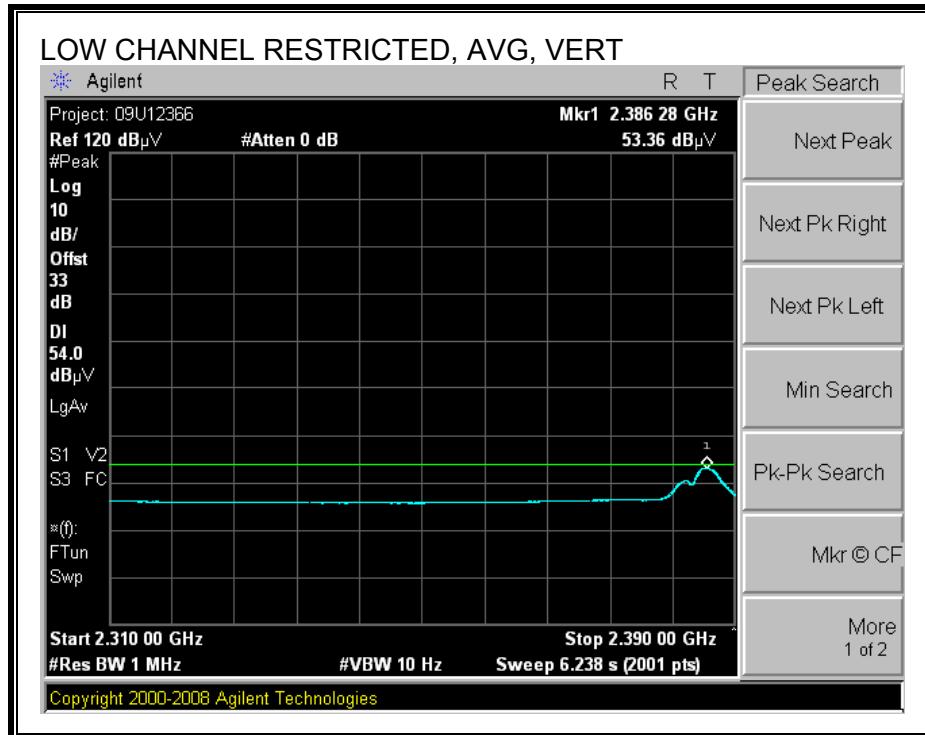
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



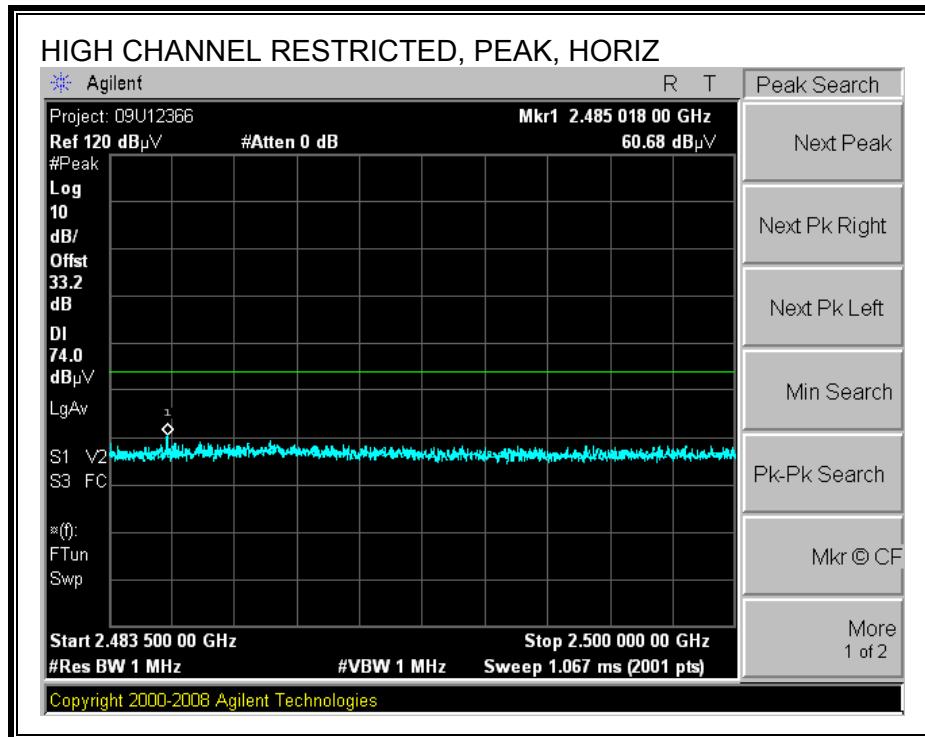


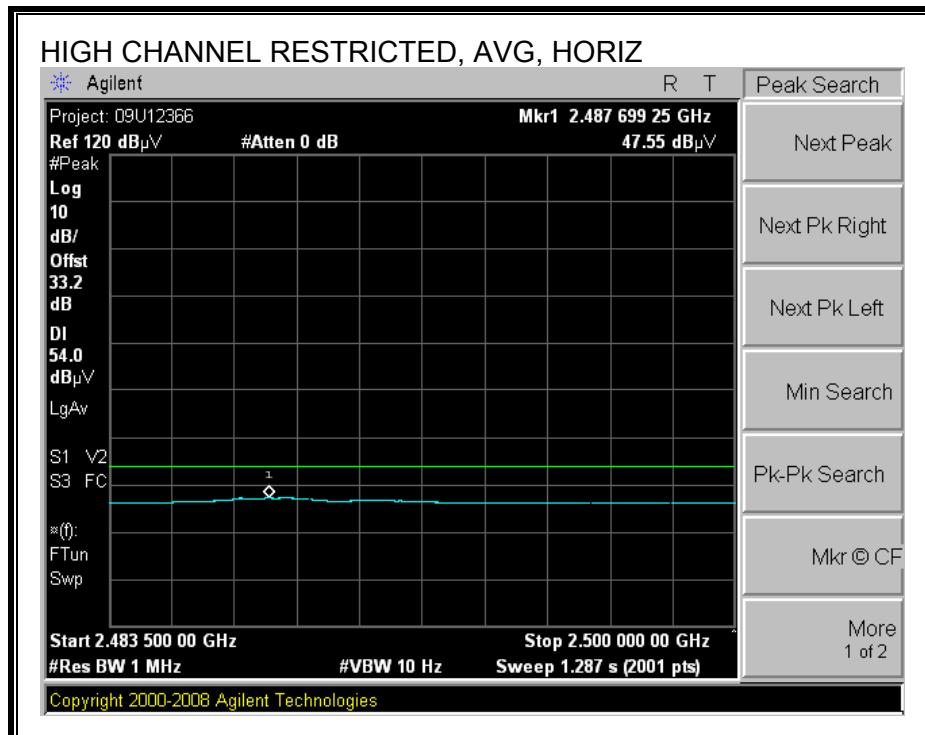
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



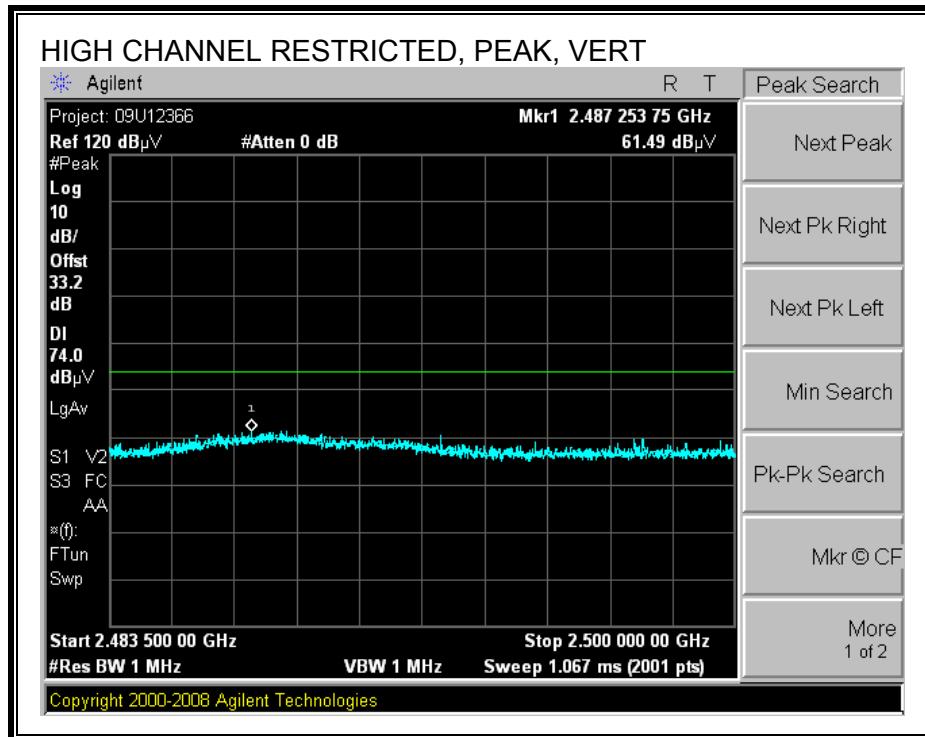


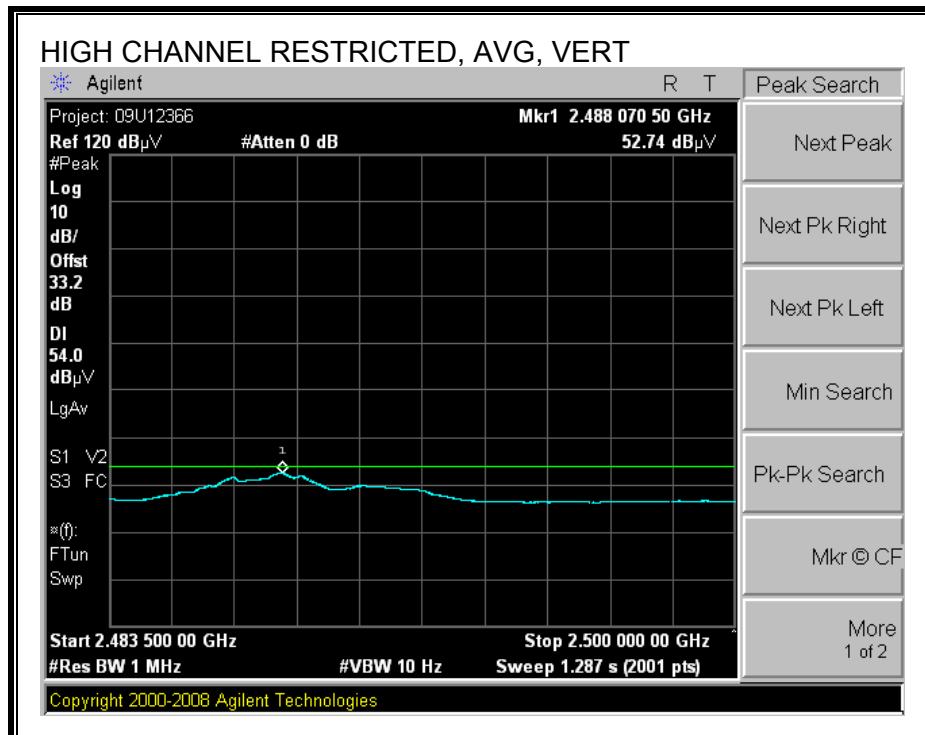
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

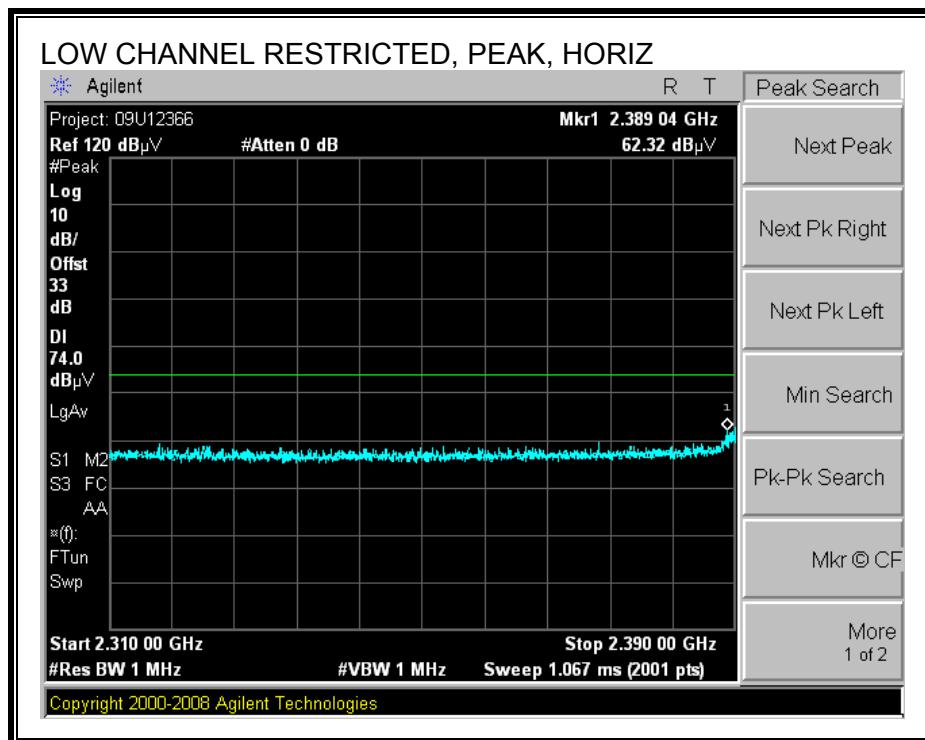


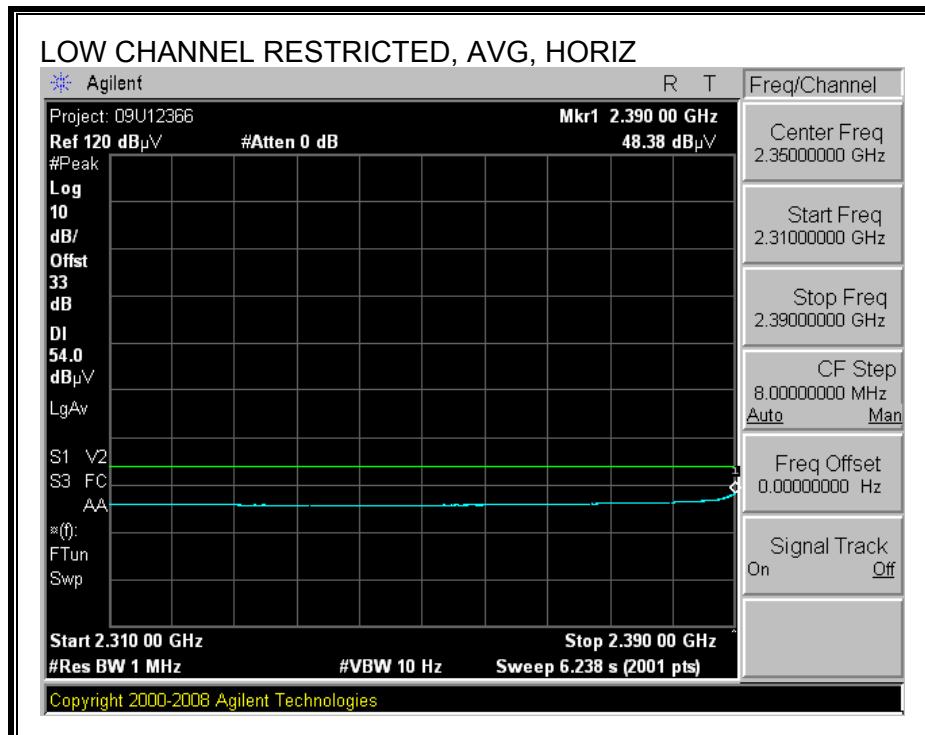


7.3.2. TX ABOVE 1 GHz FOR 802.11g DUAL CHAIN LEGACY MODE

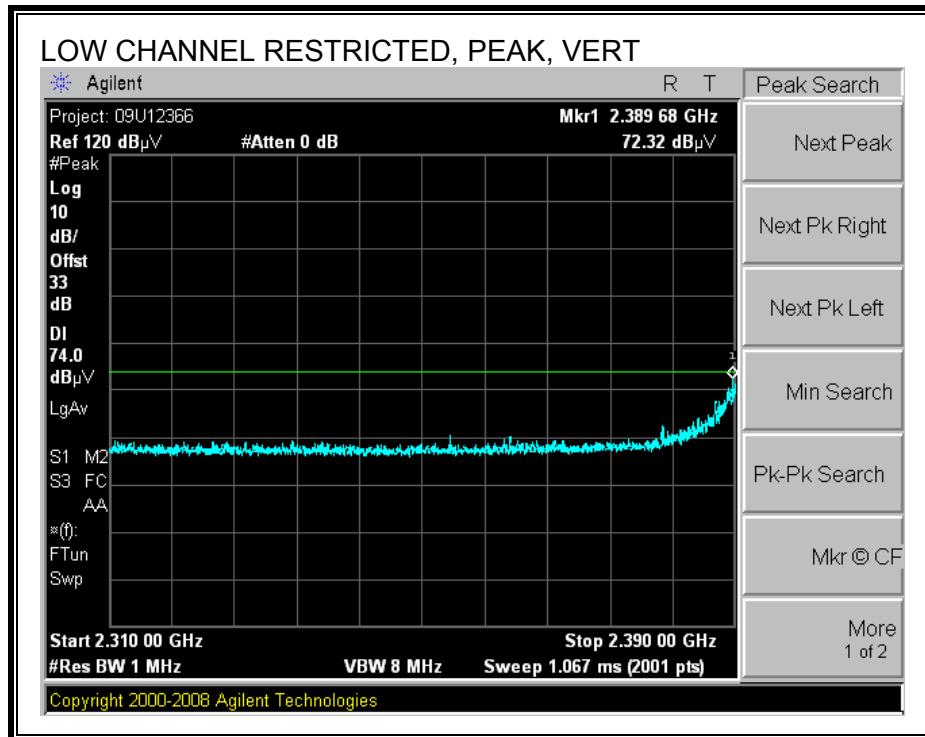
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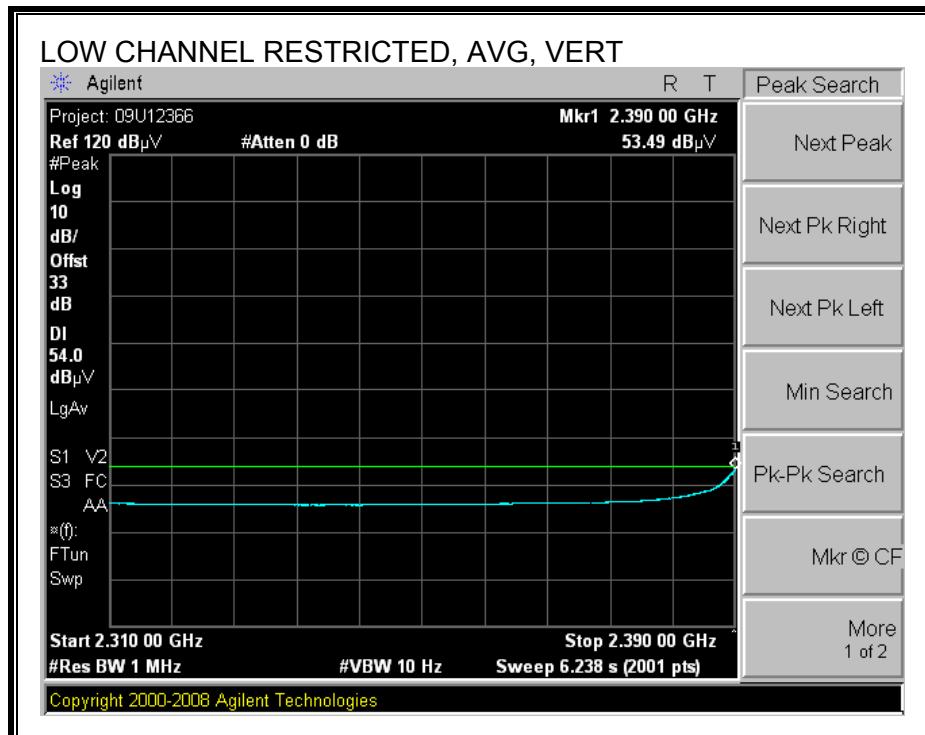
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



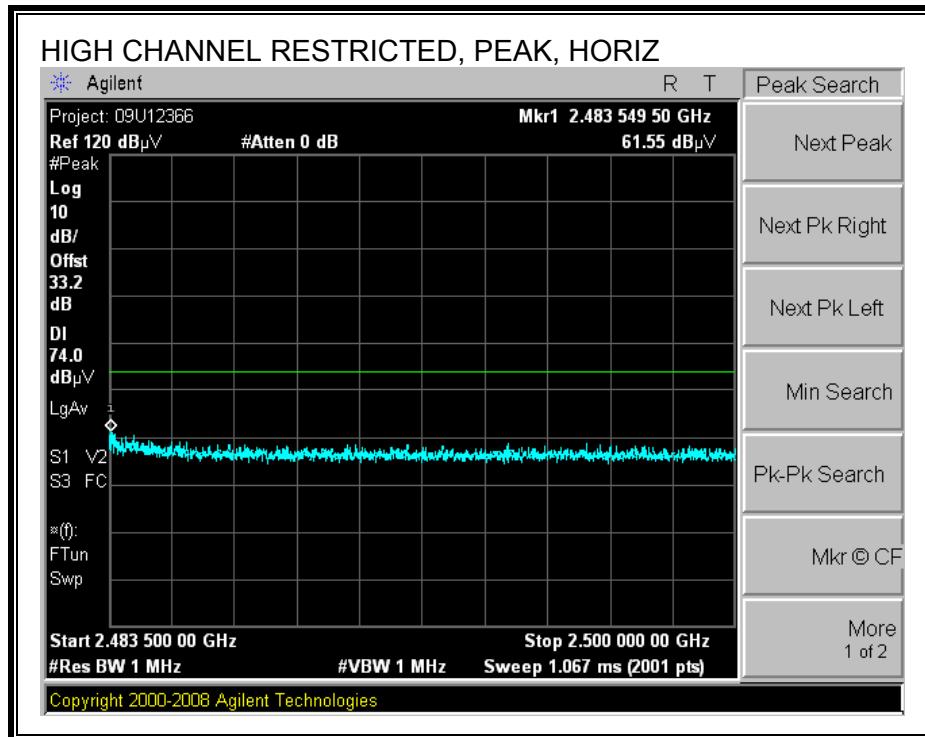


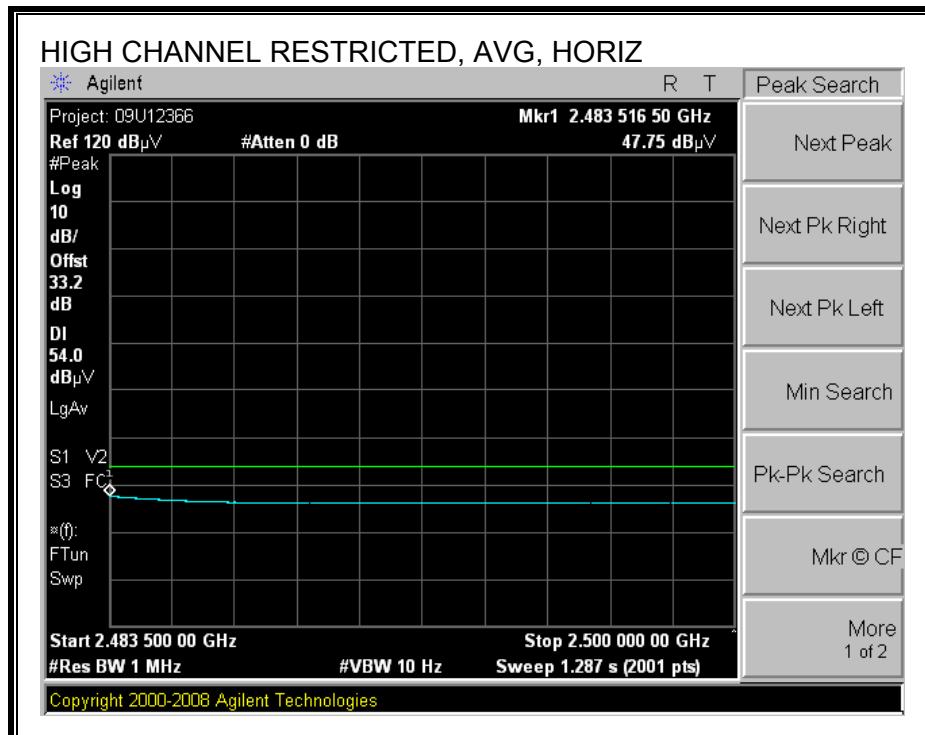
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



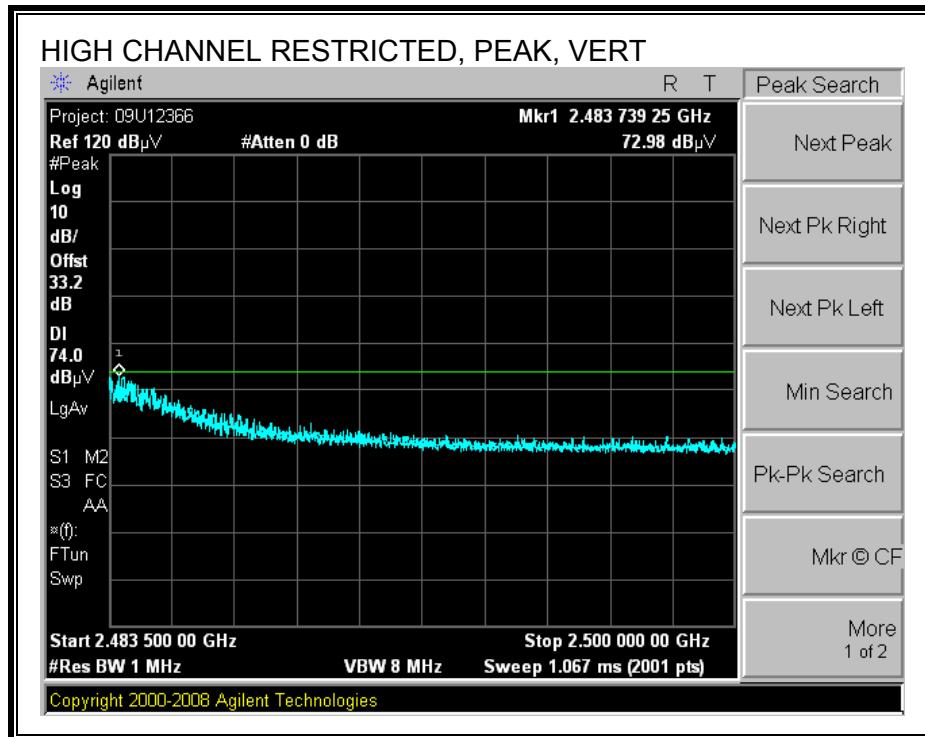


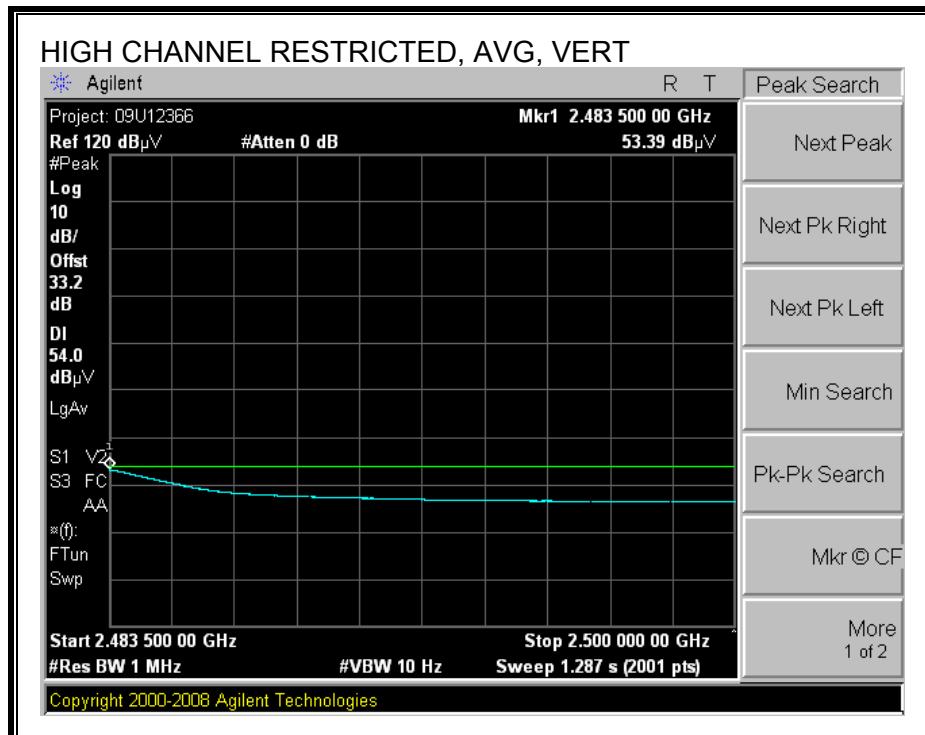
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





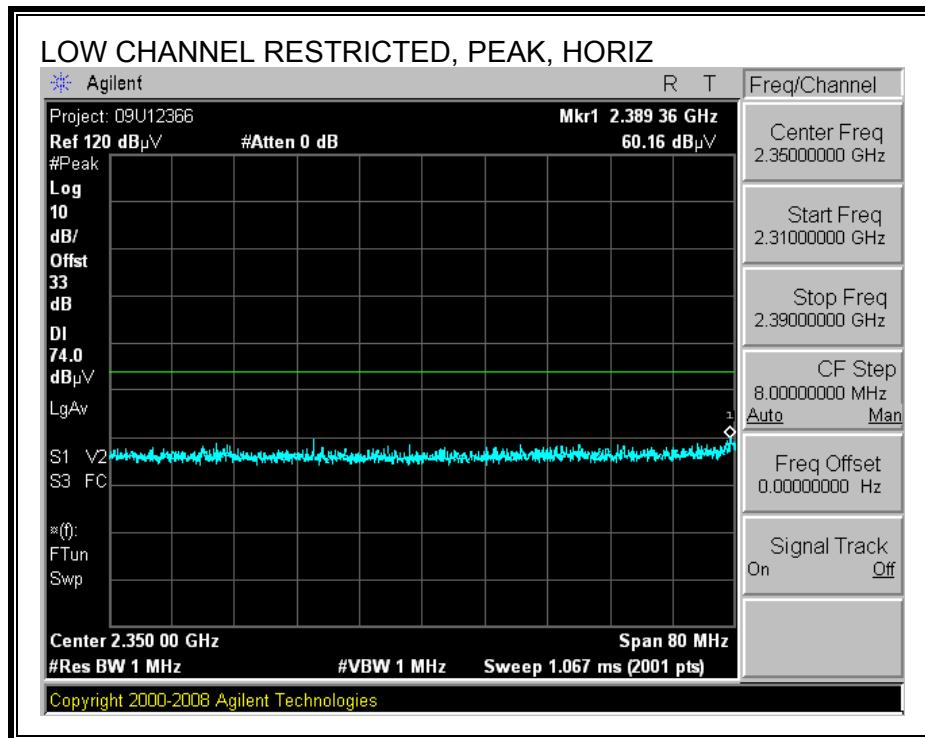
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

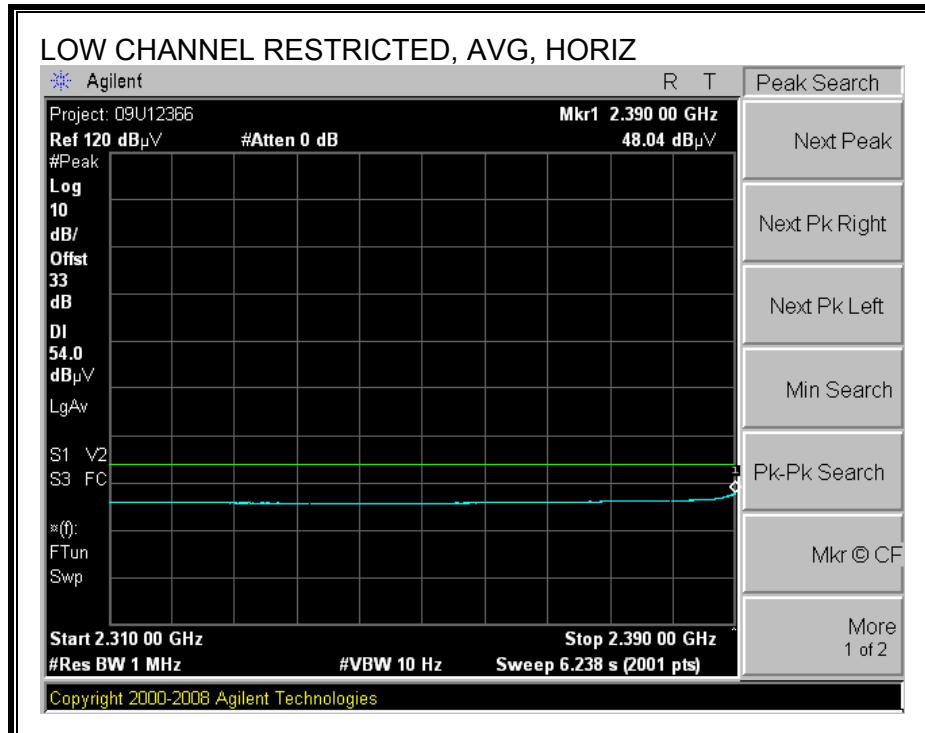




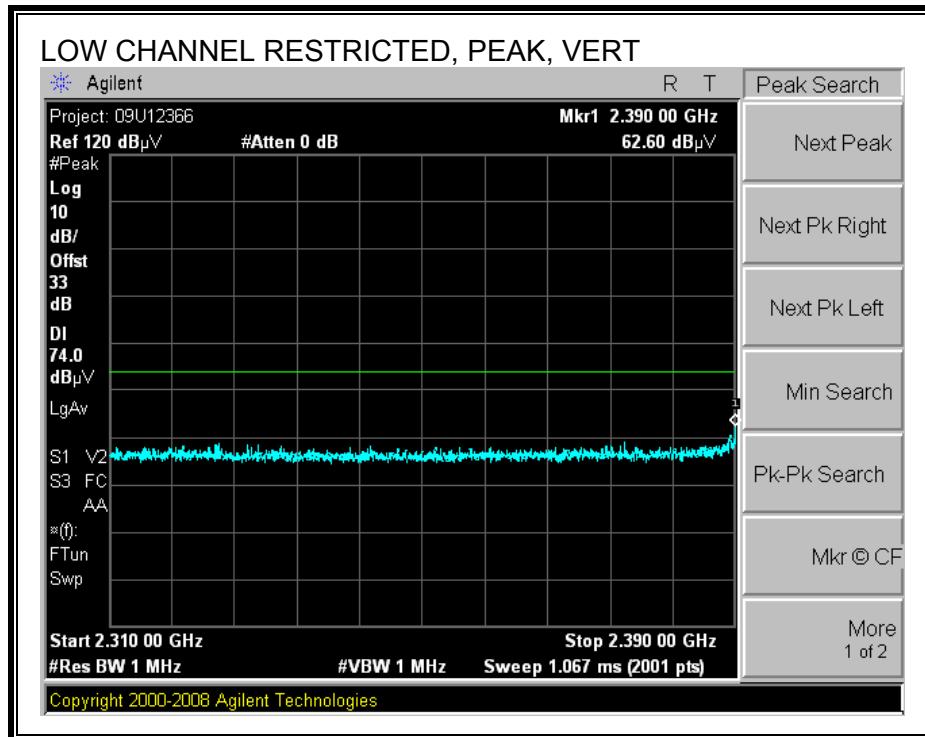
MODE 100:

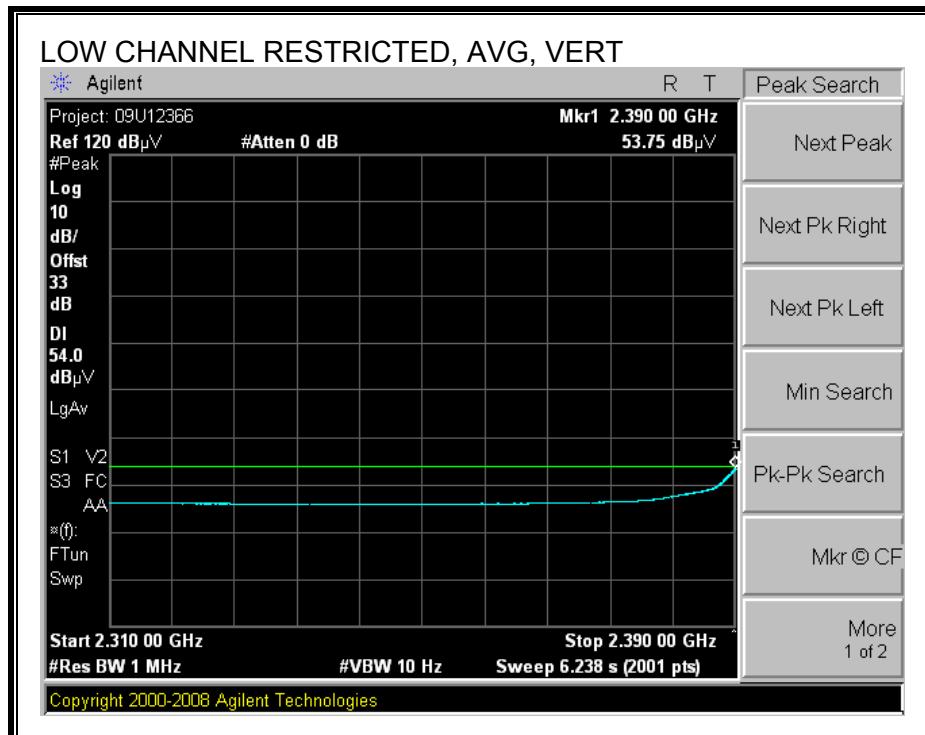
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



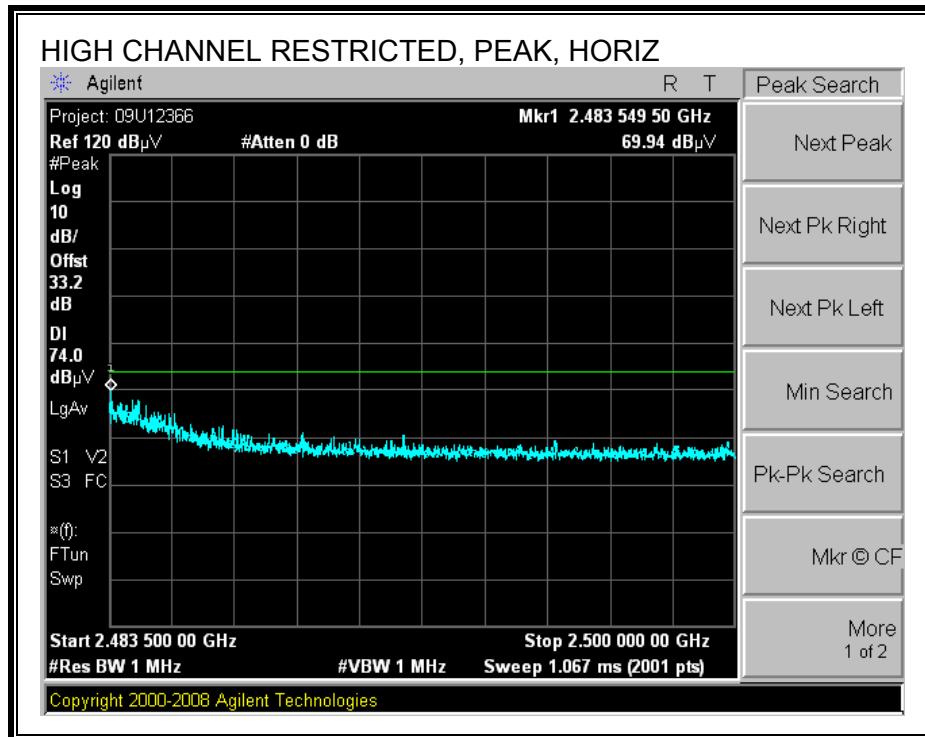


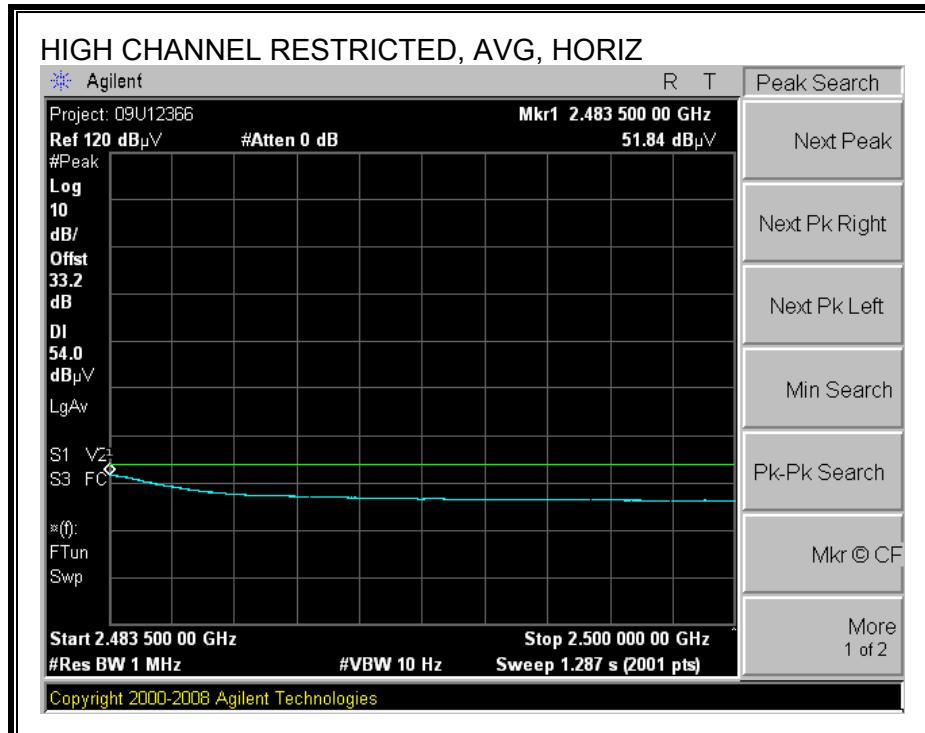
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



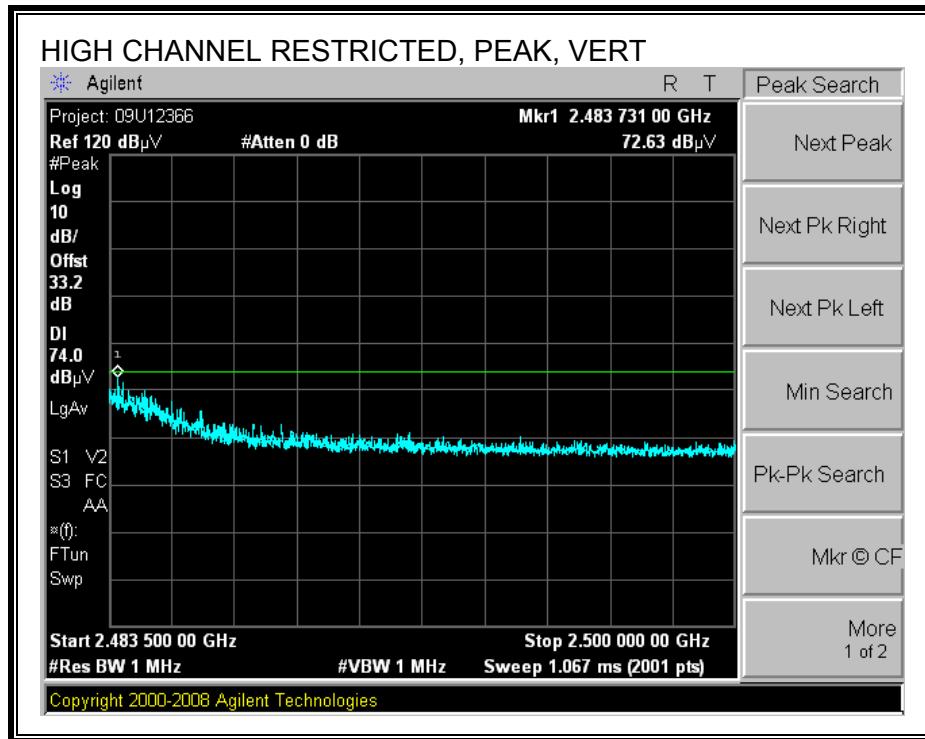


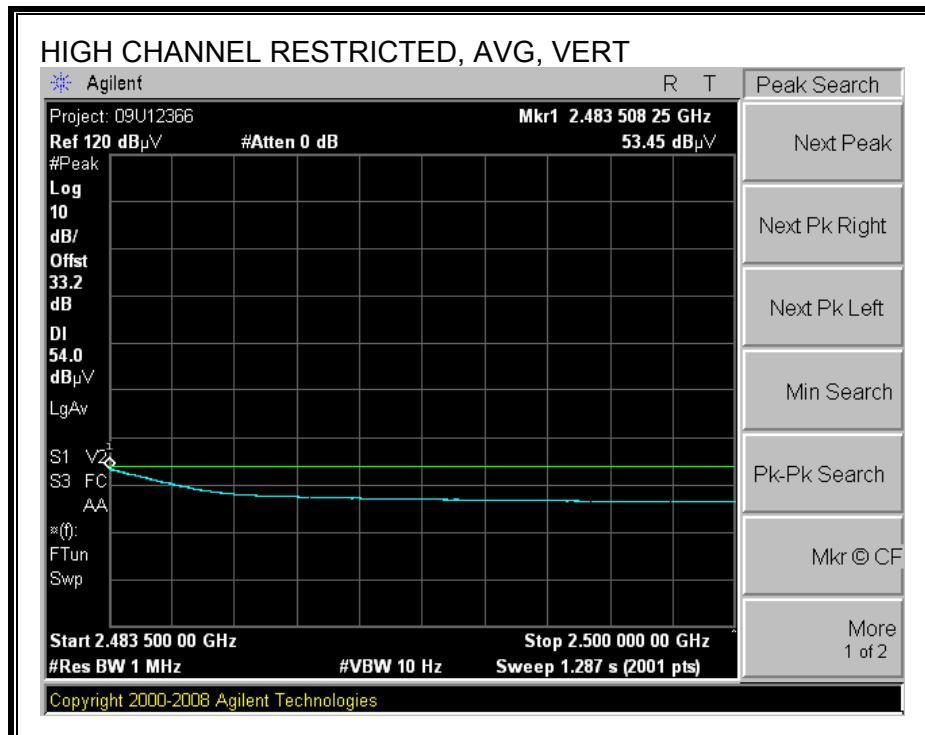
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

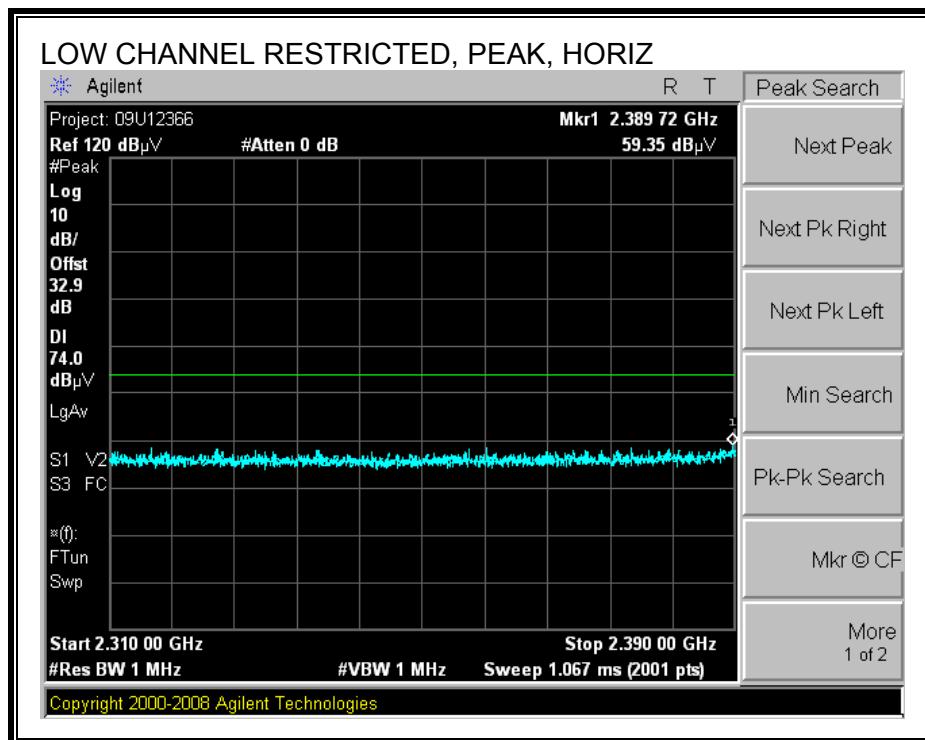


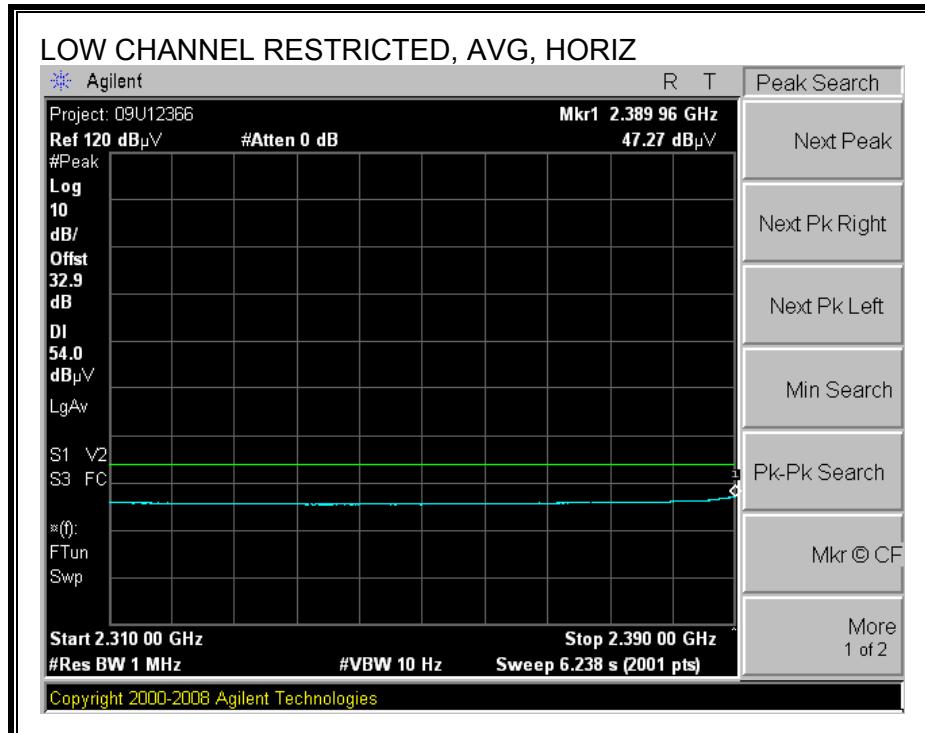


7.3.3. TX ABOVE 1 GHz FOR HT20 DUAL CHAIN LEGACY MODE

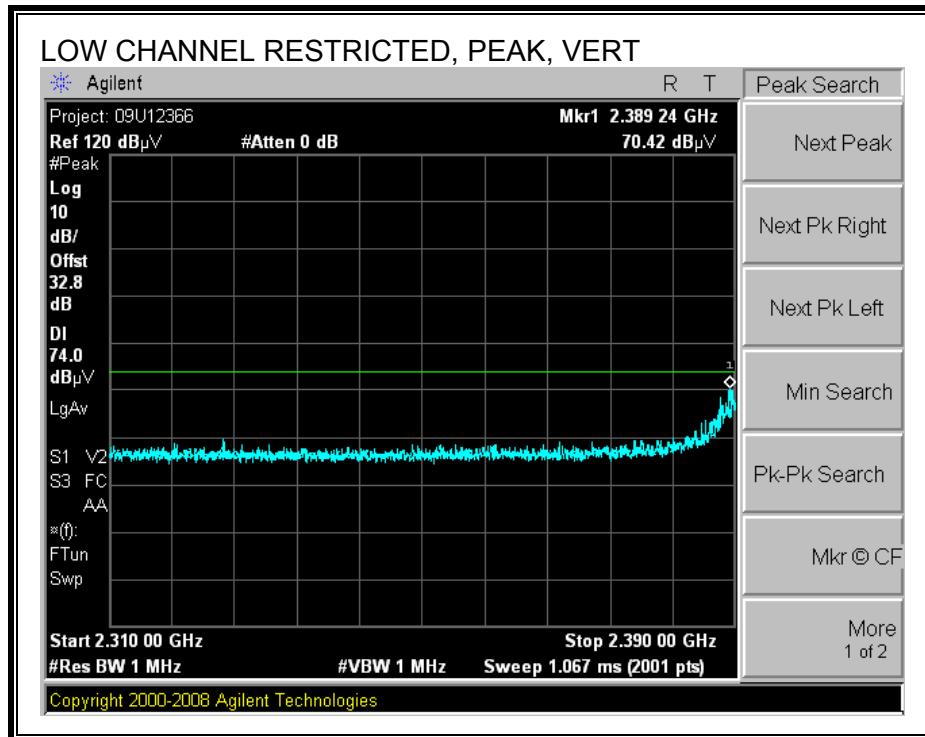
MODE 010:

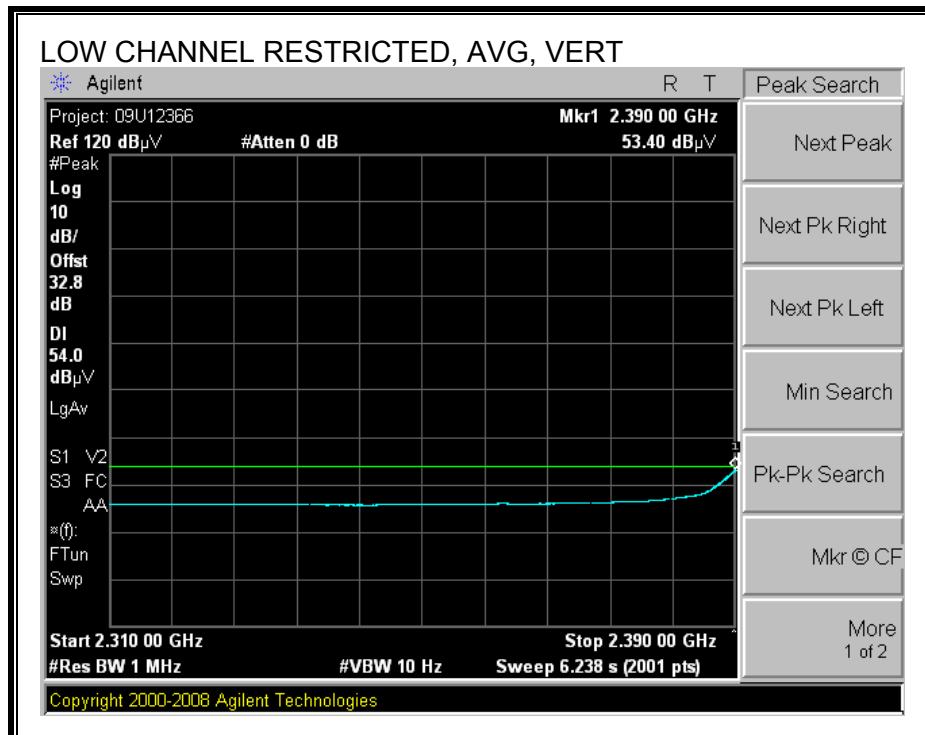
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



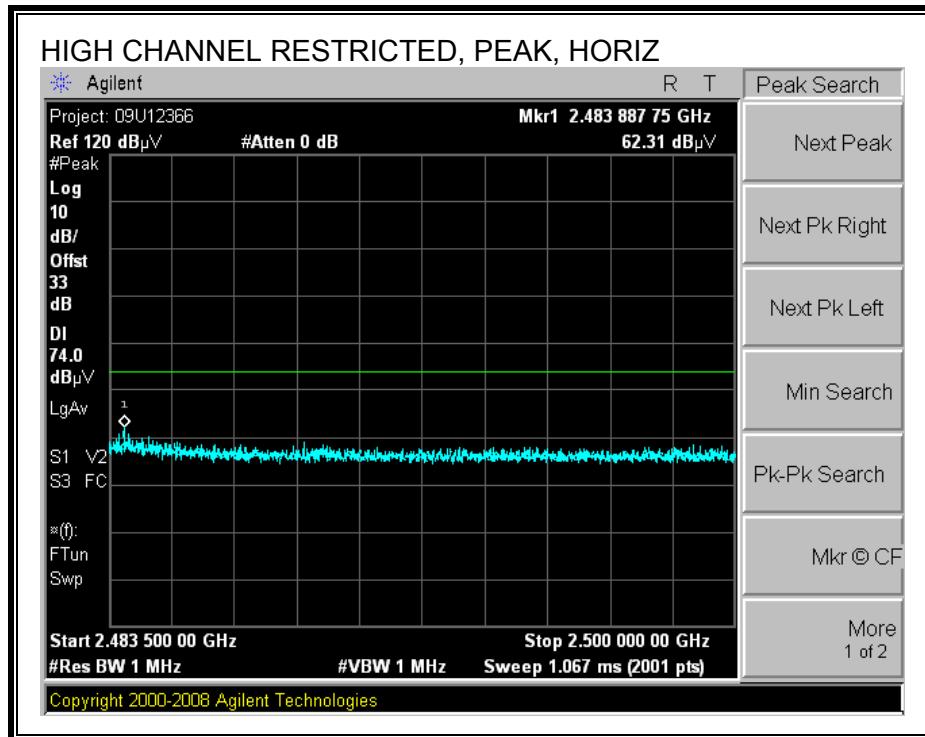


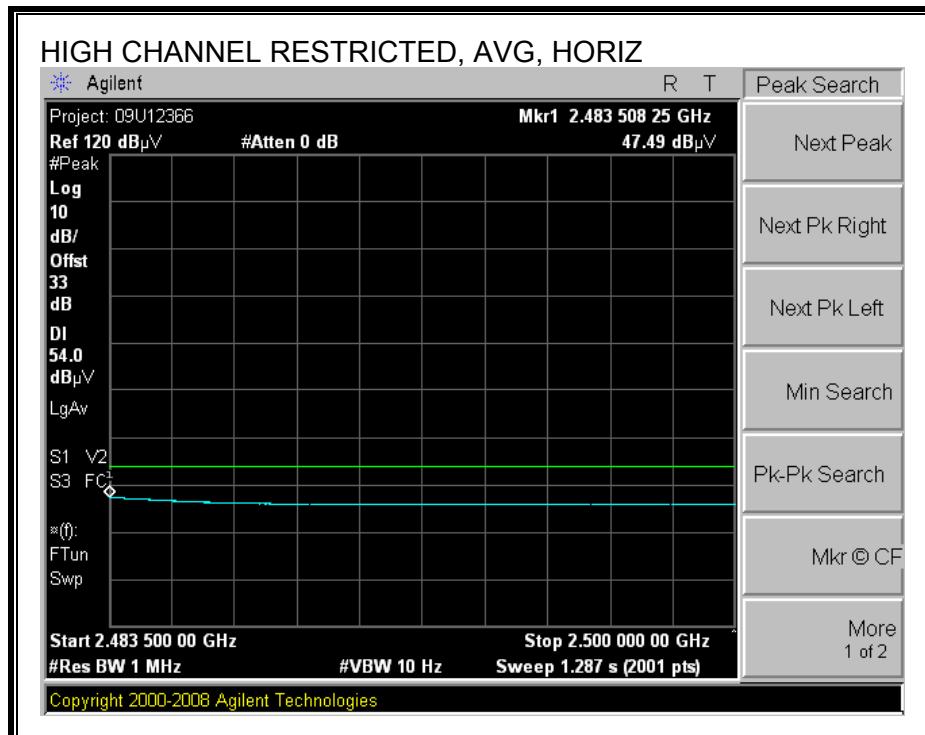
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



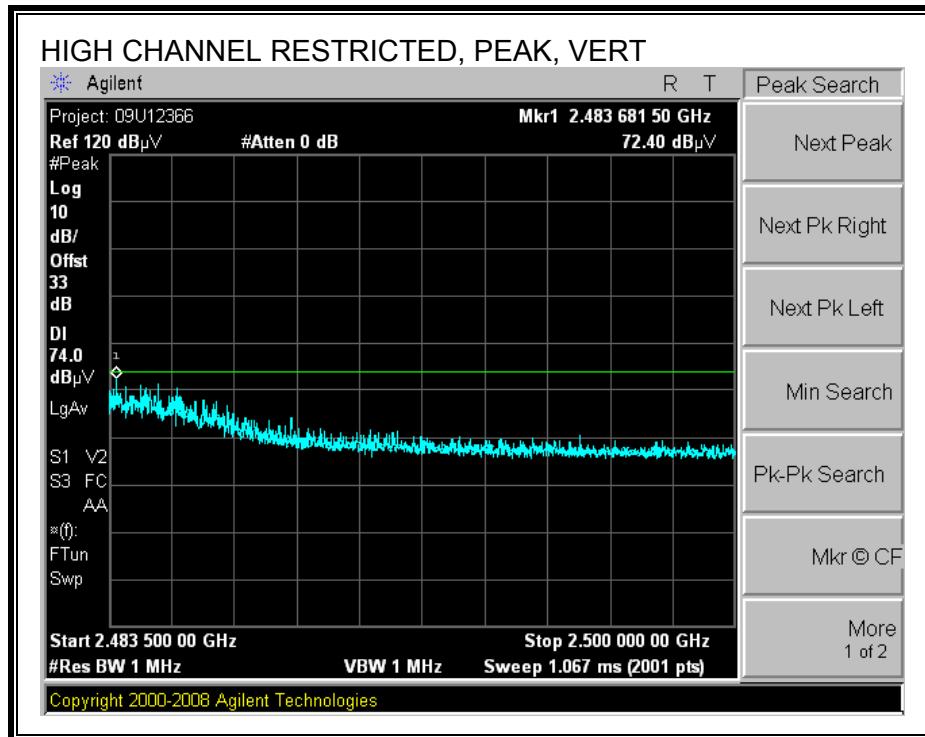


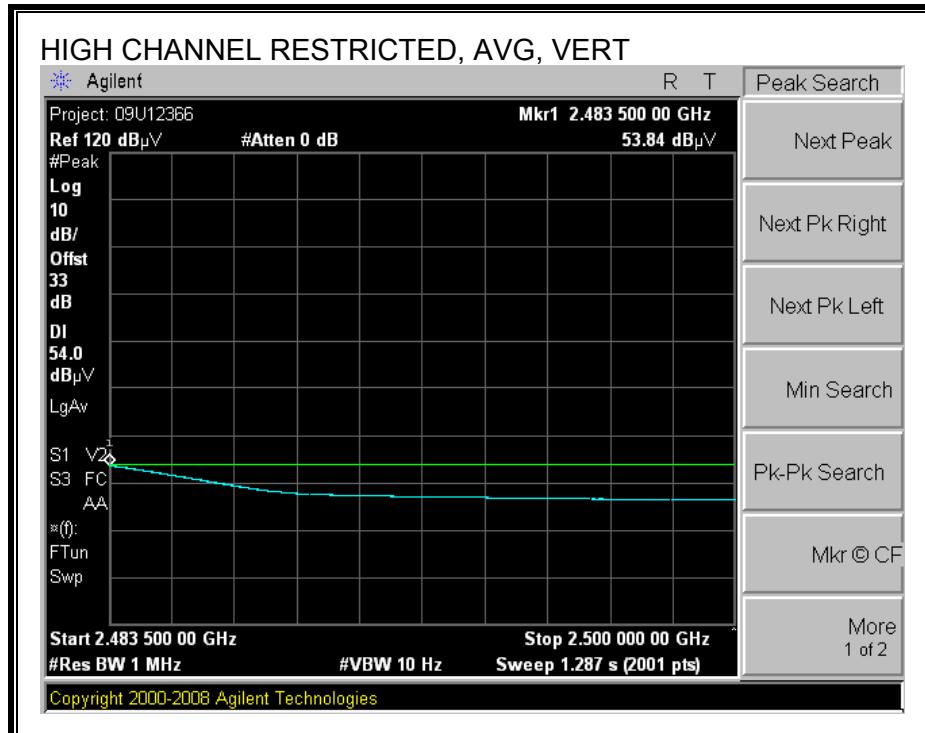
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





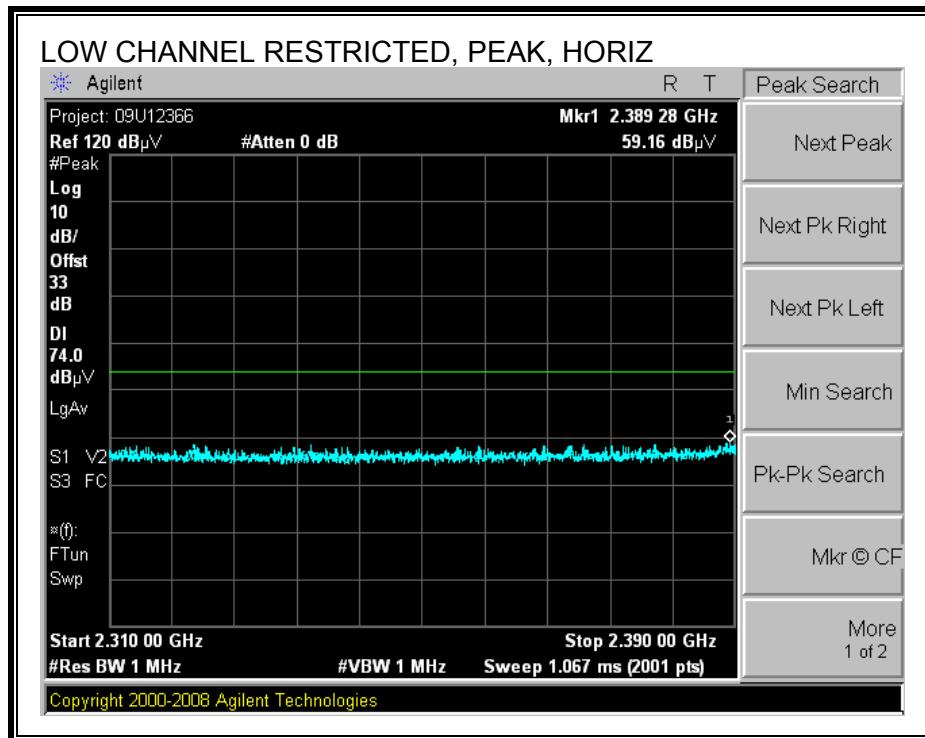
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

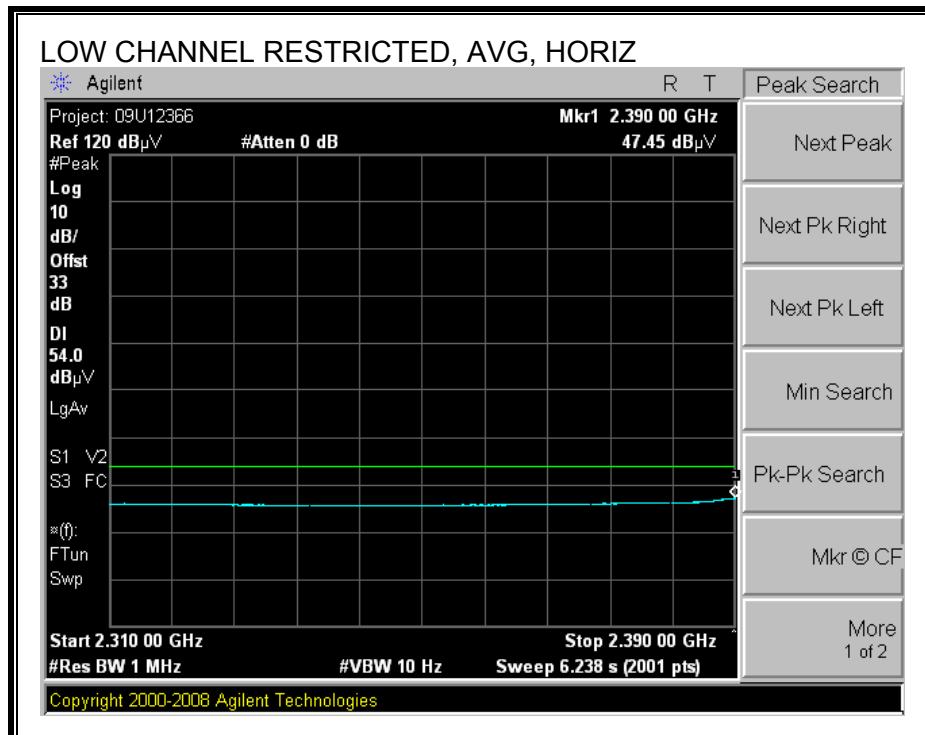




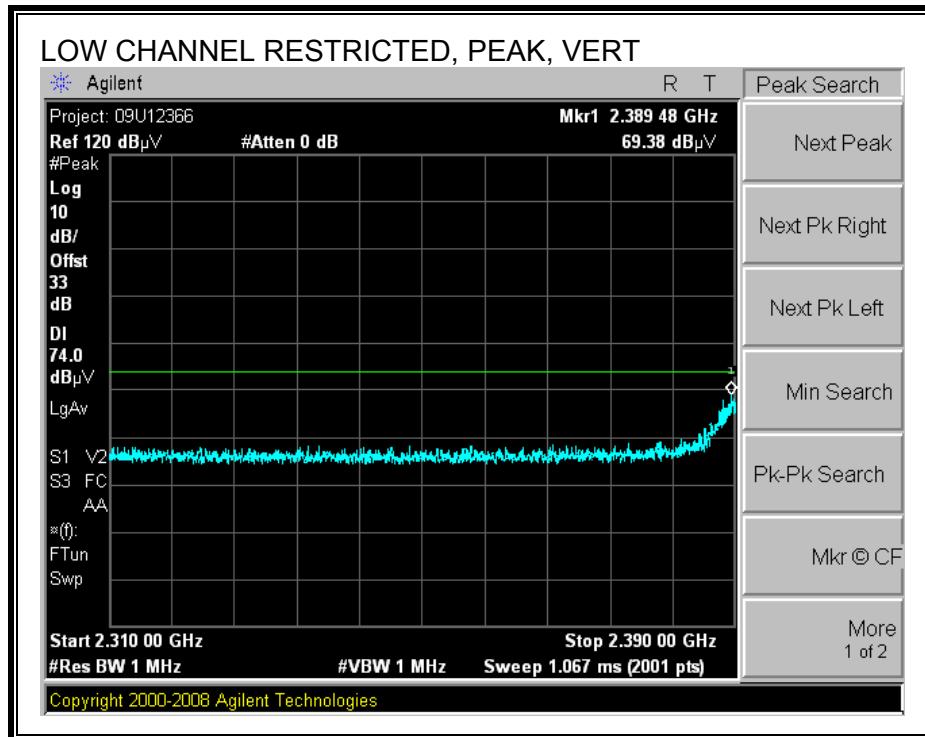
MODE 100

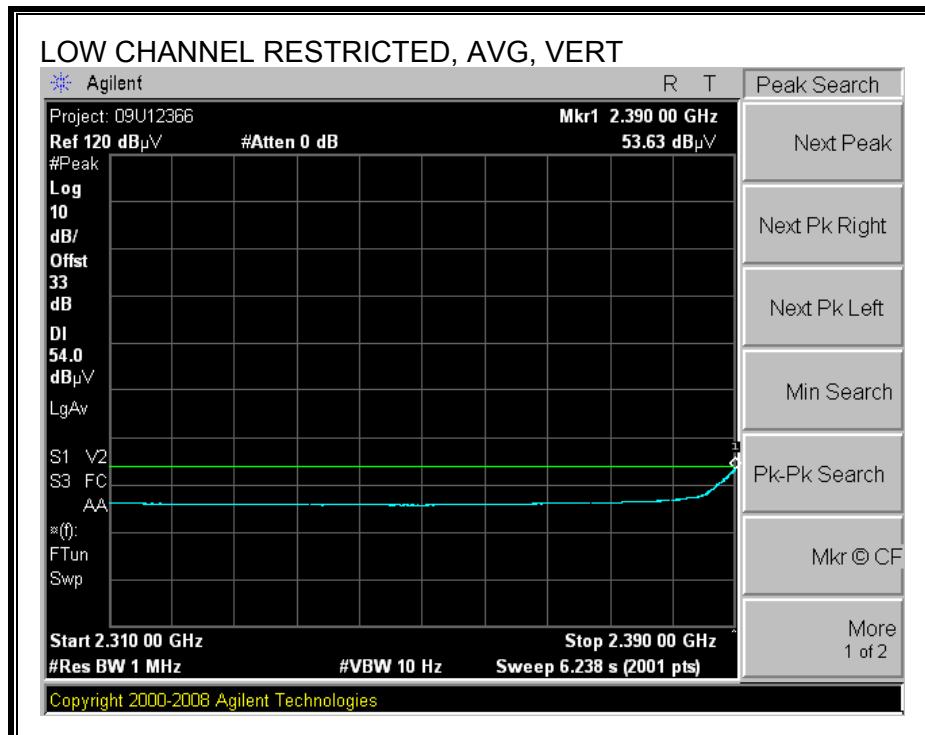
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



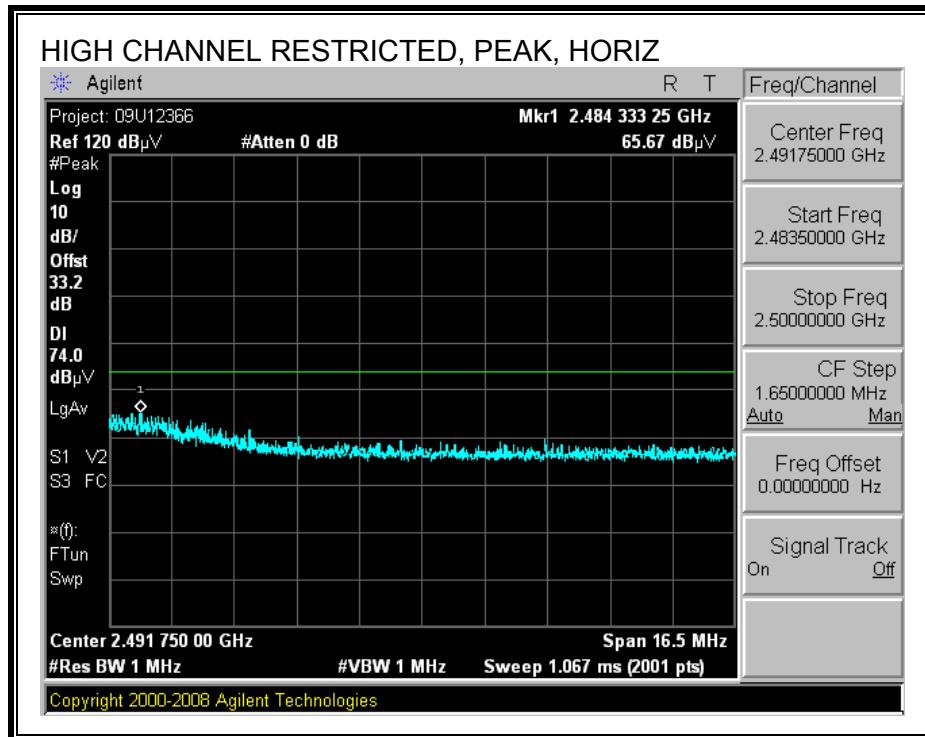


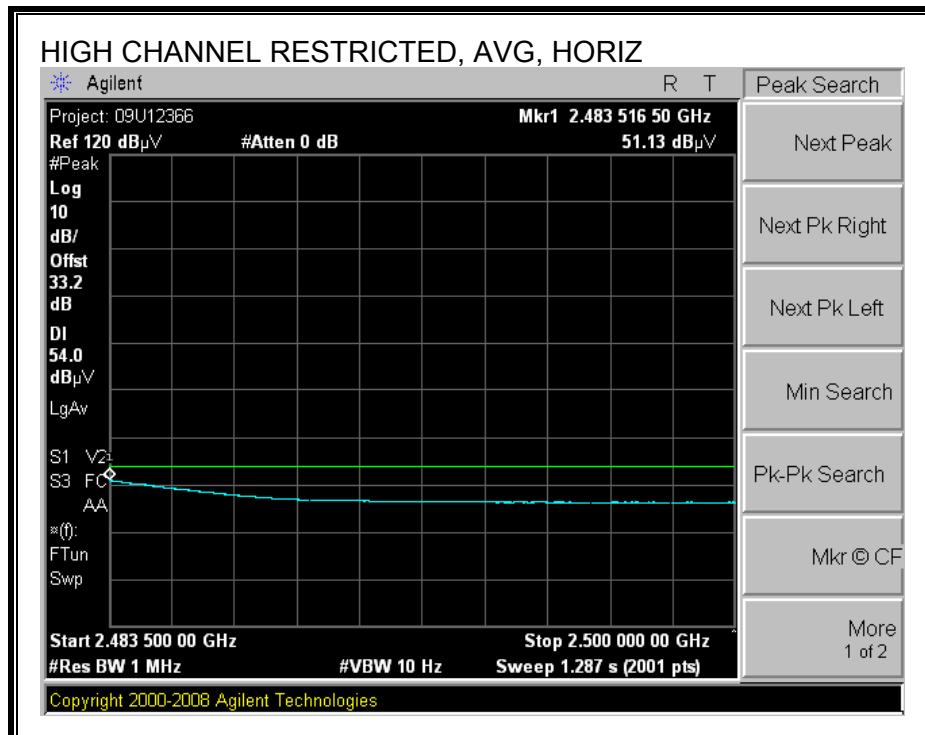
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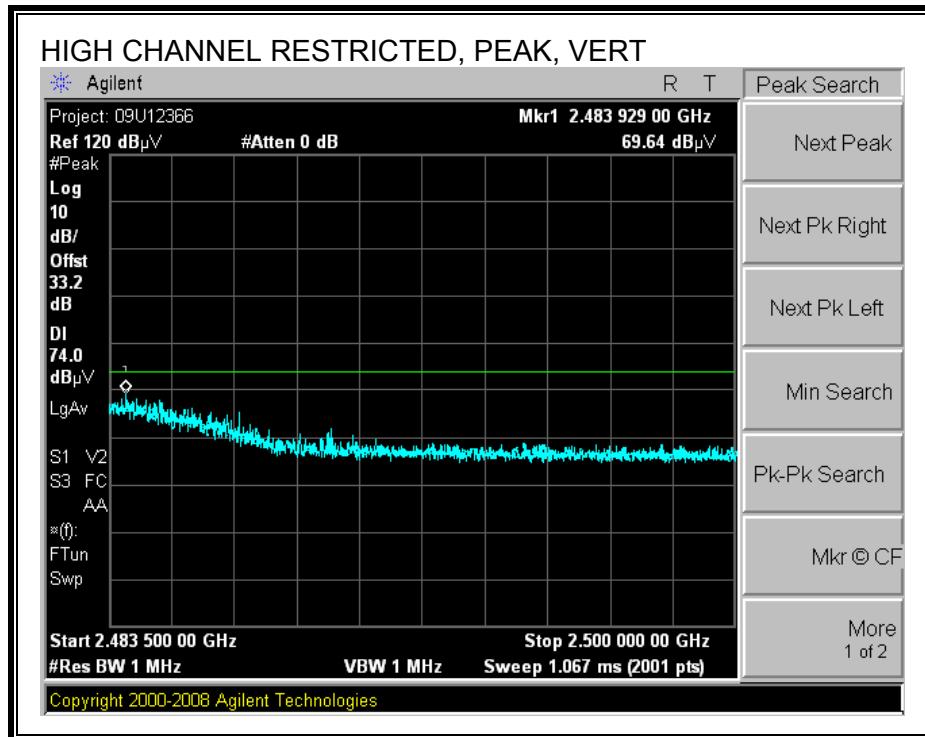


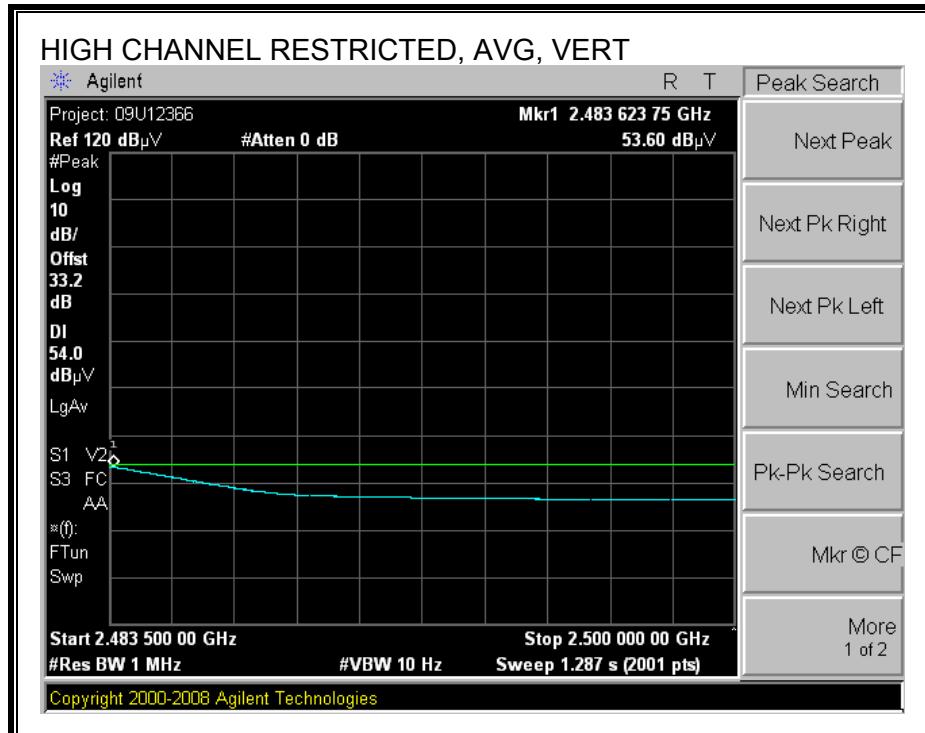
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





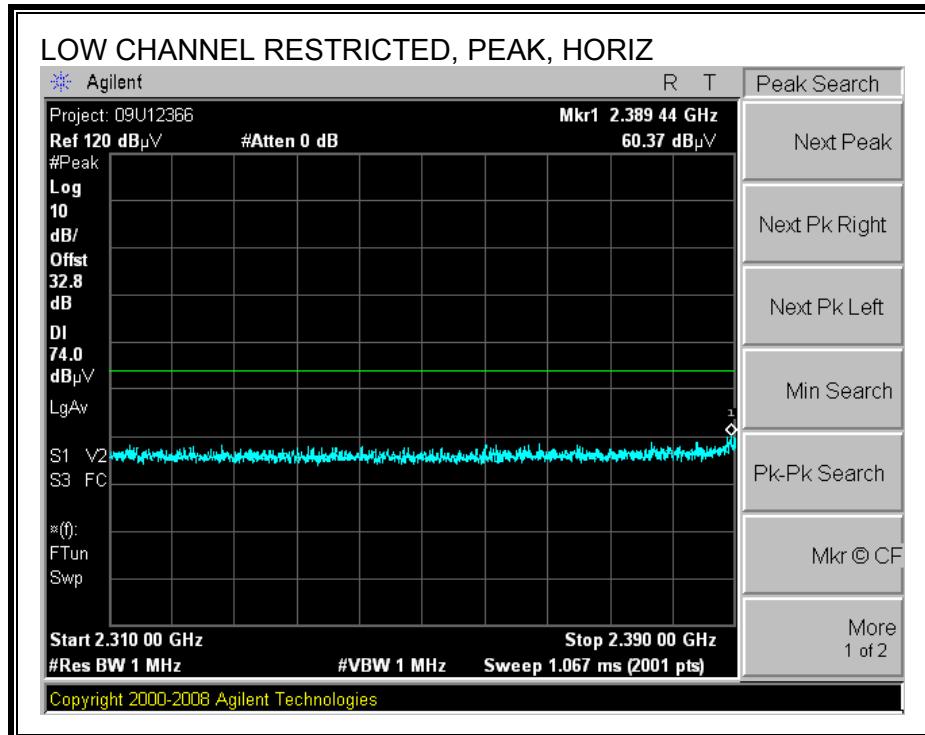
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

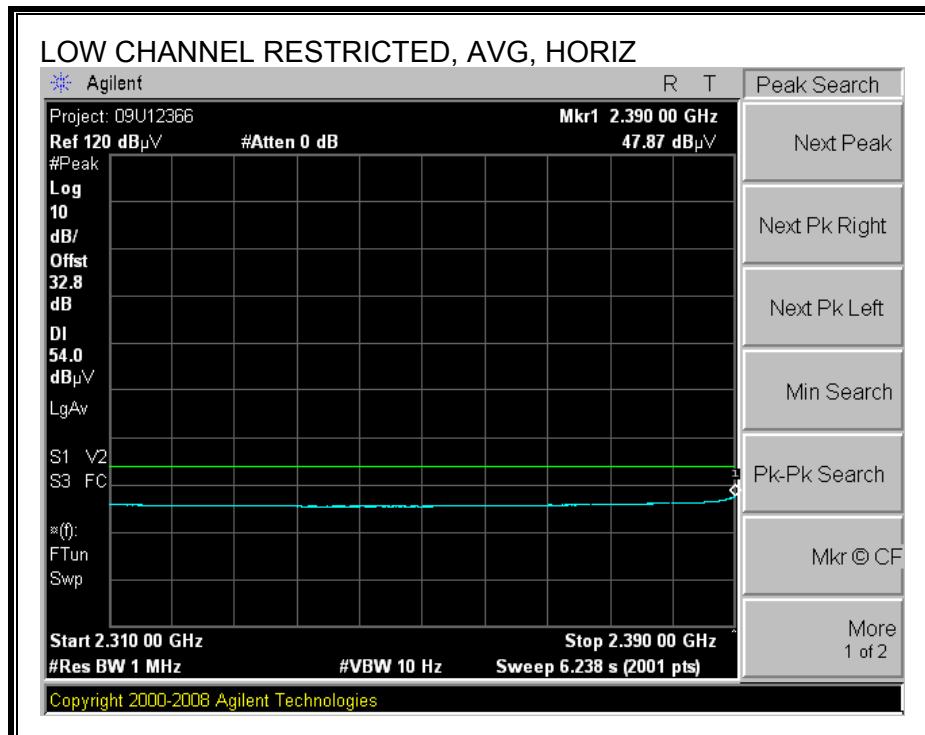




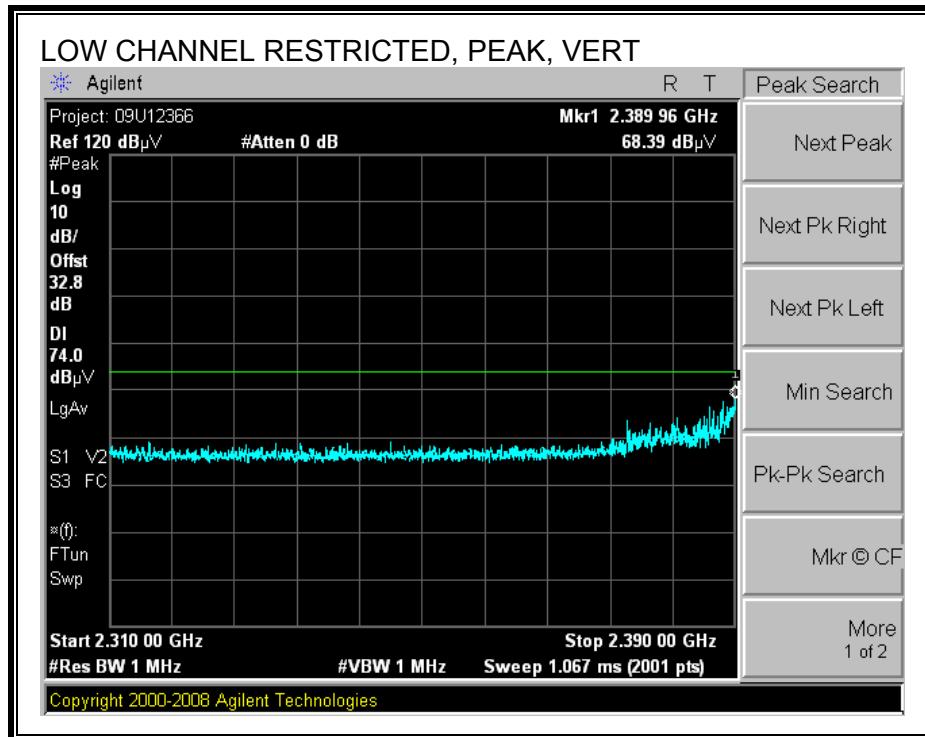
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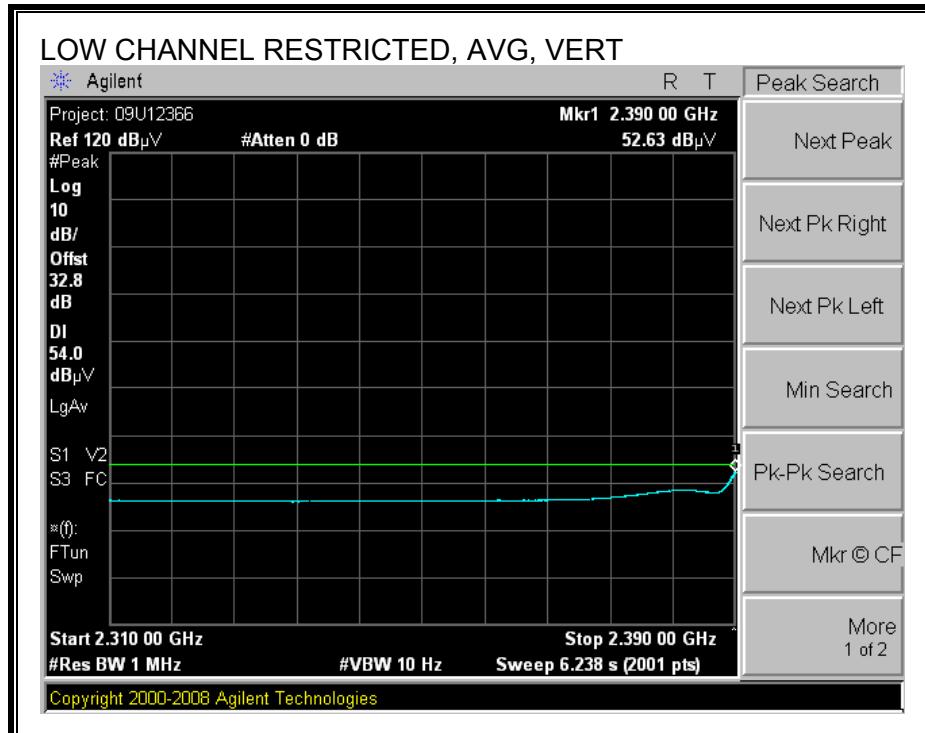
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



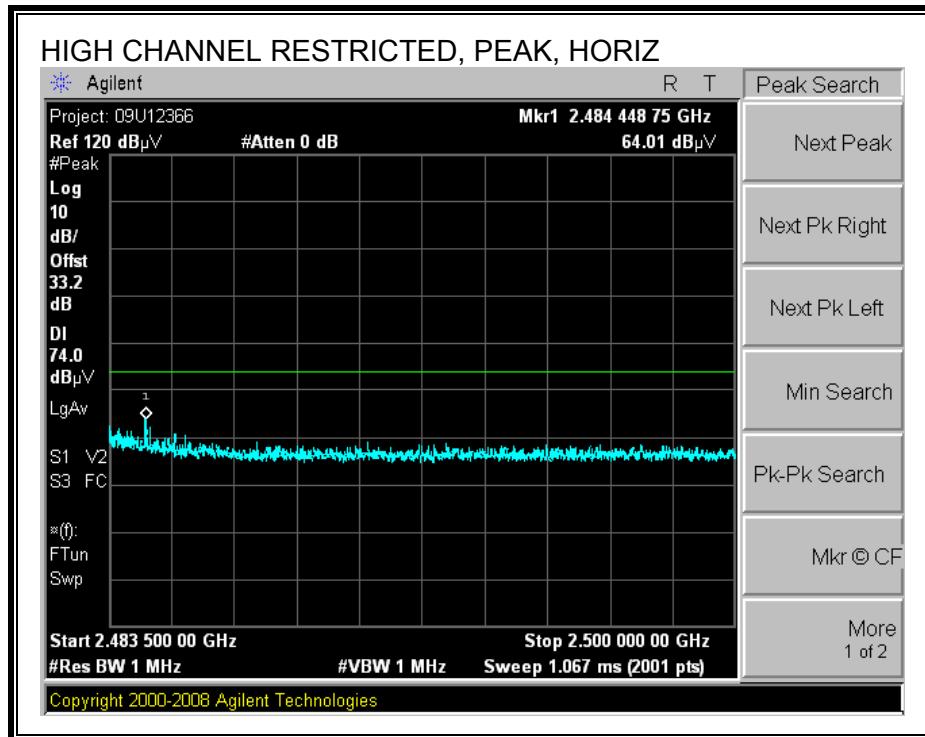


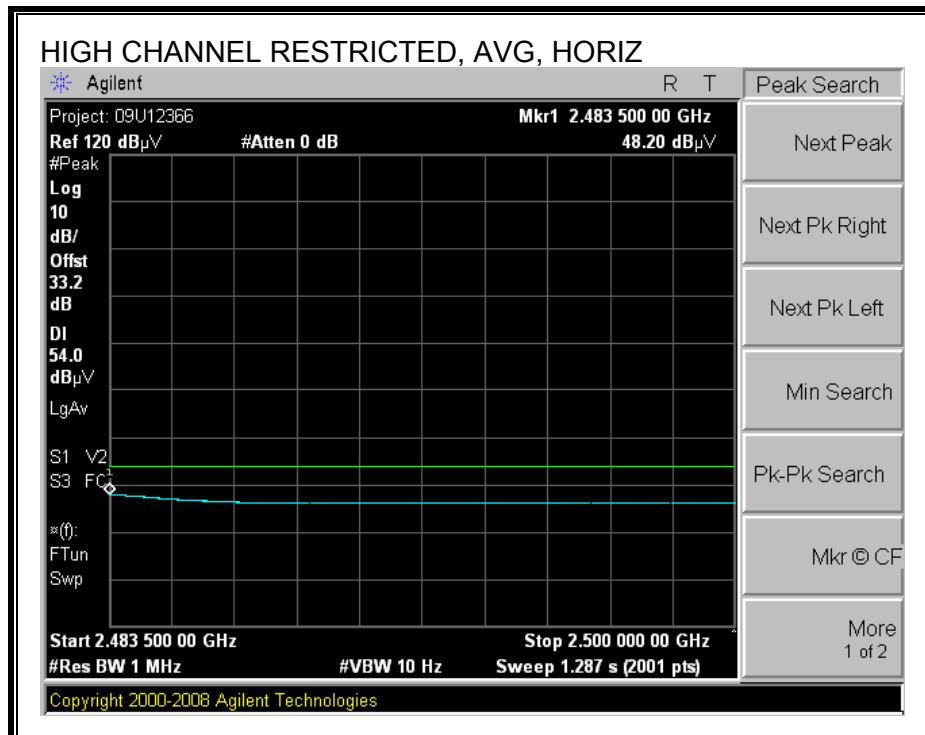
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



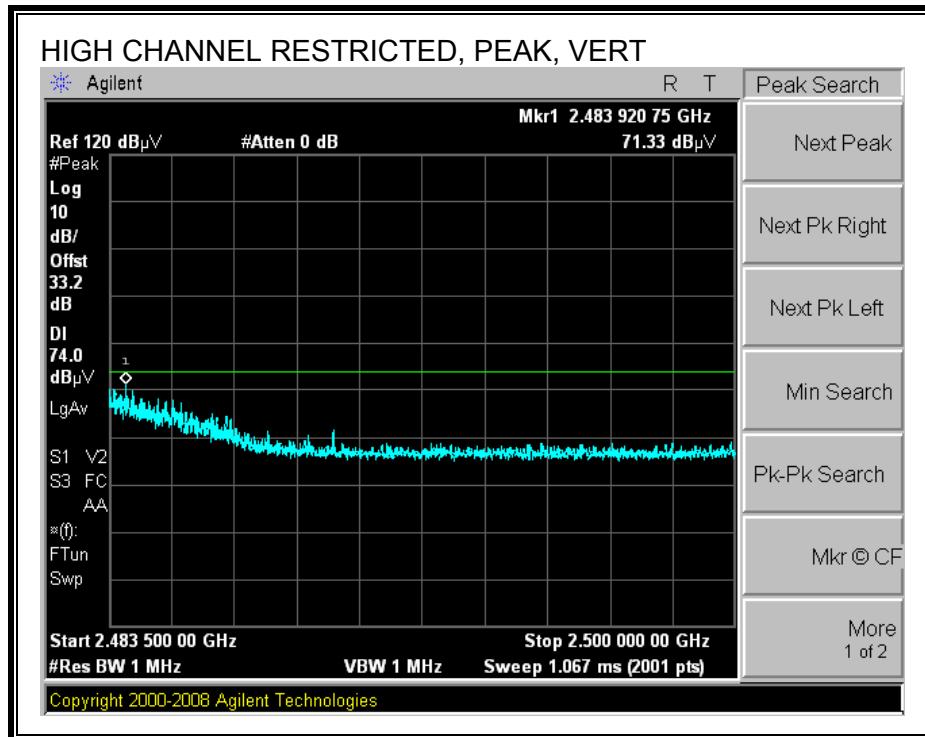


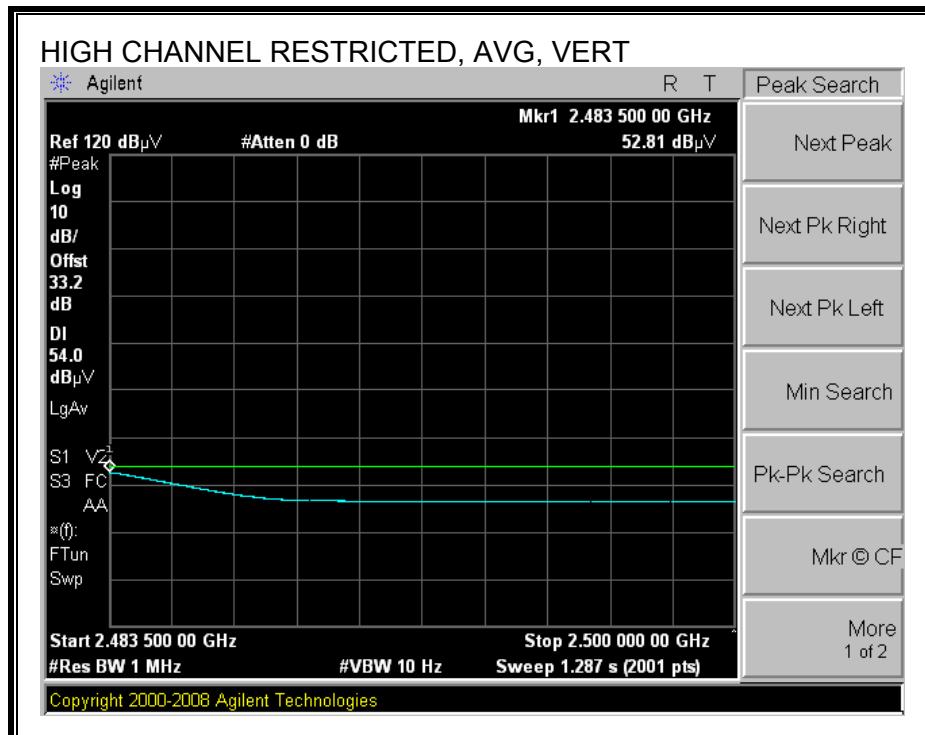
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

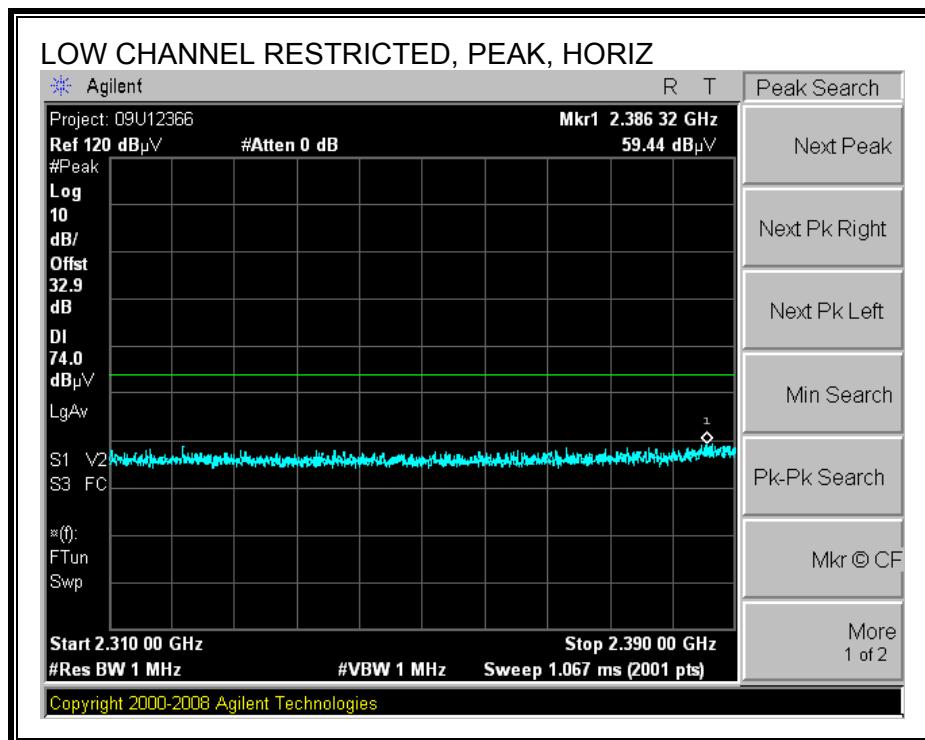


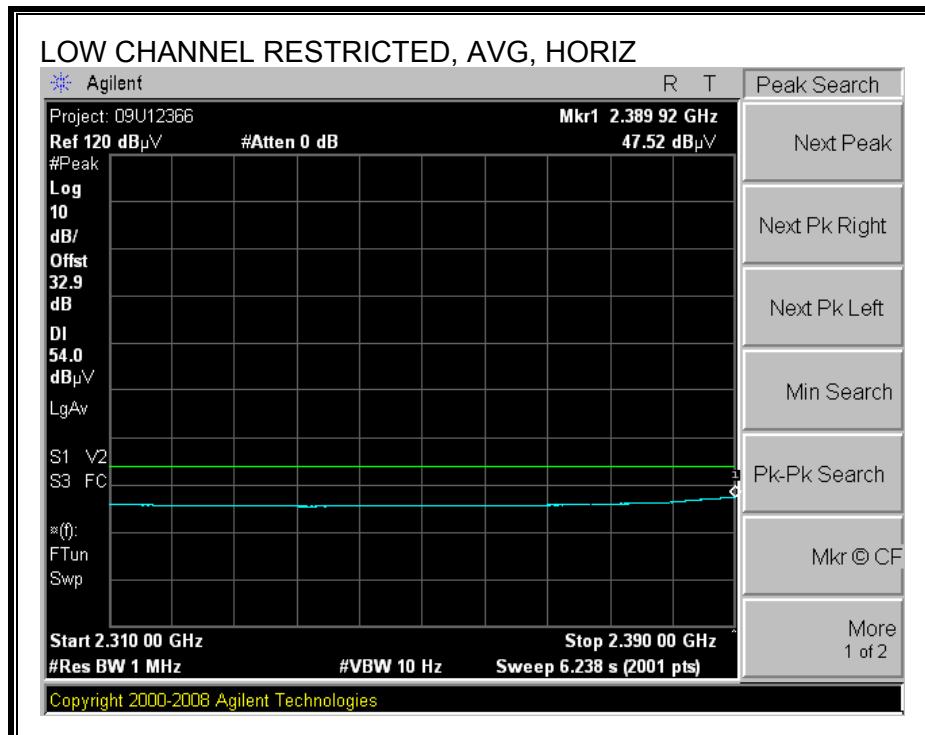


7.3.4. TX ABOVE 1 GHz FOR HT 40 DUAL CHAIN LEGACY MODE

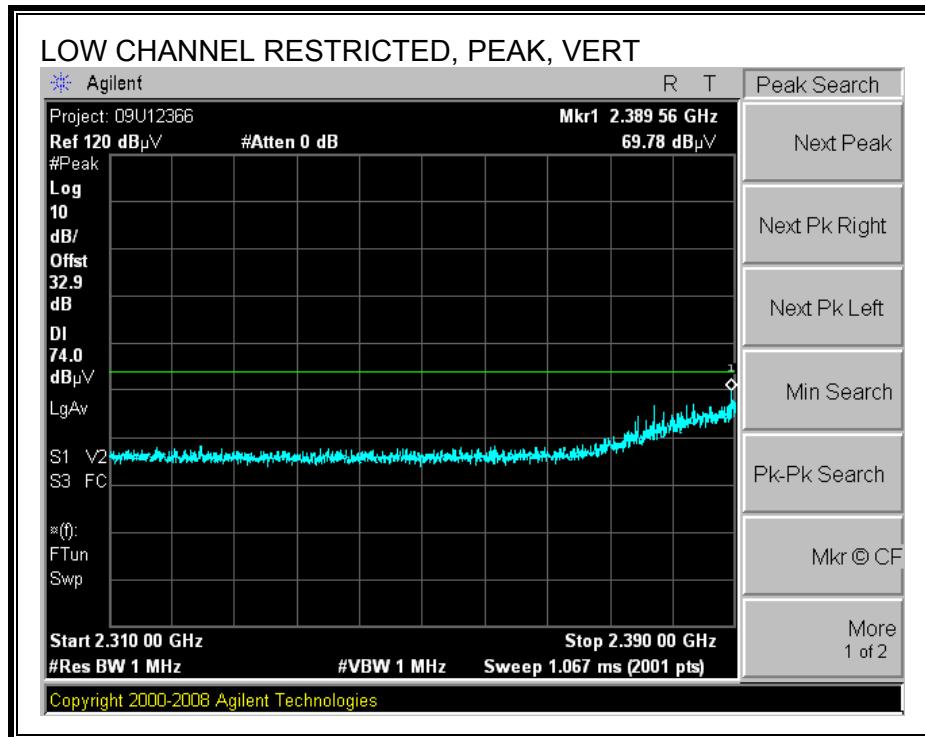
MODE 010:

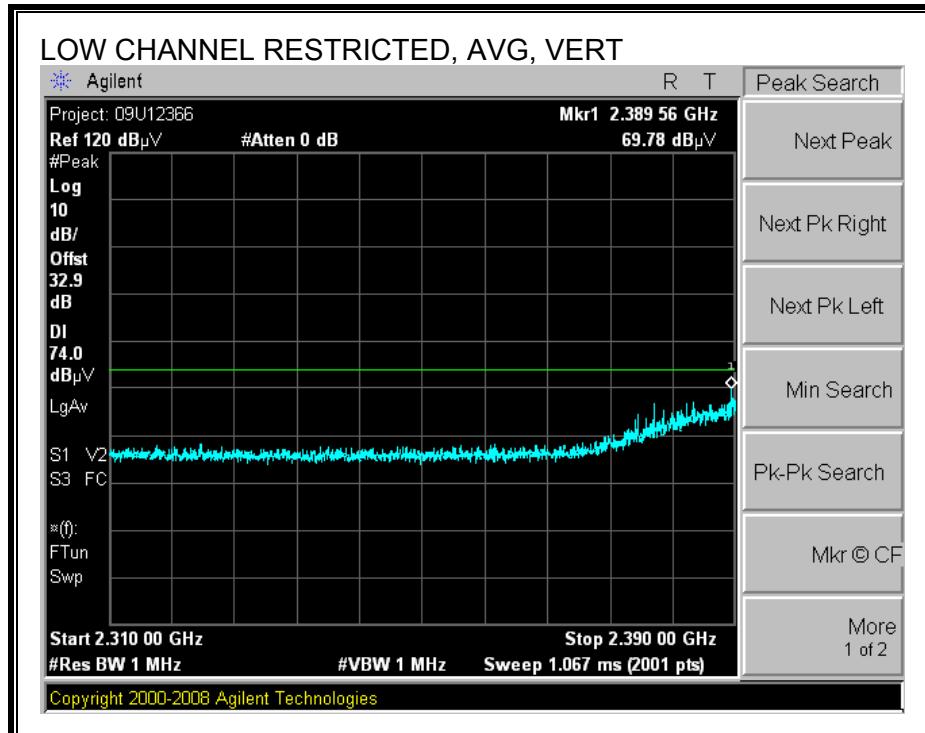
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



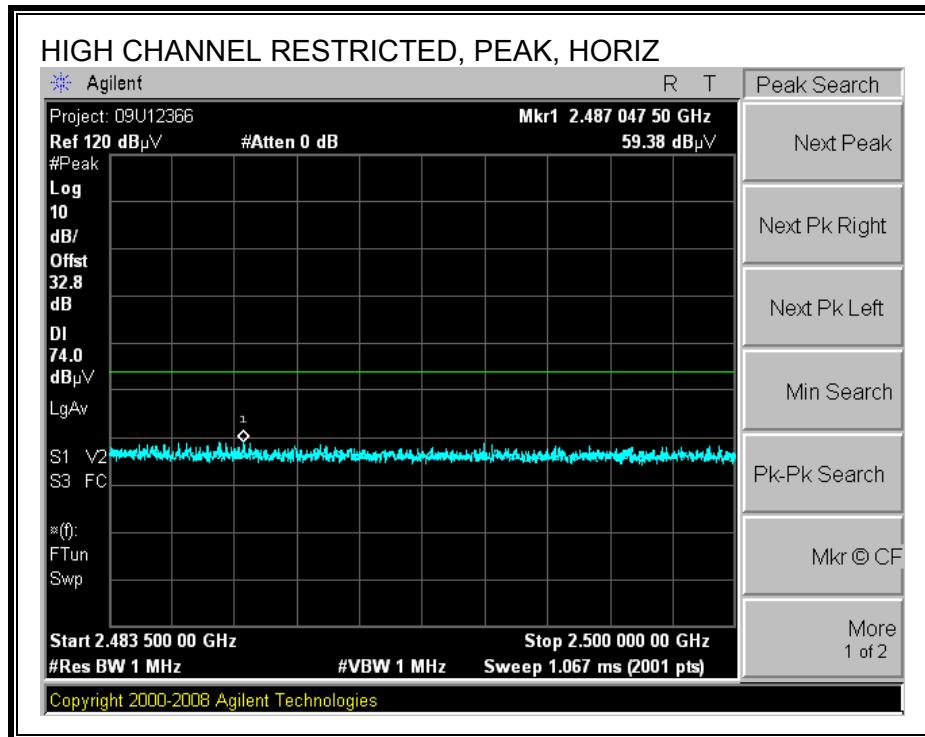


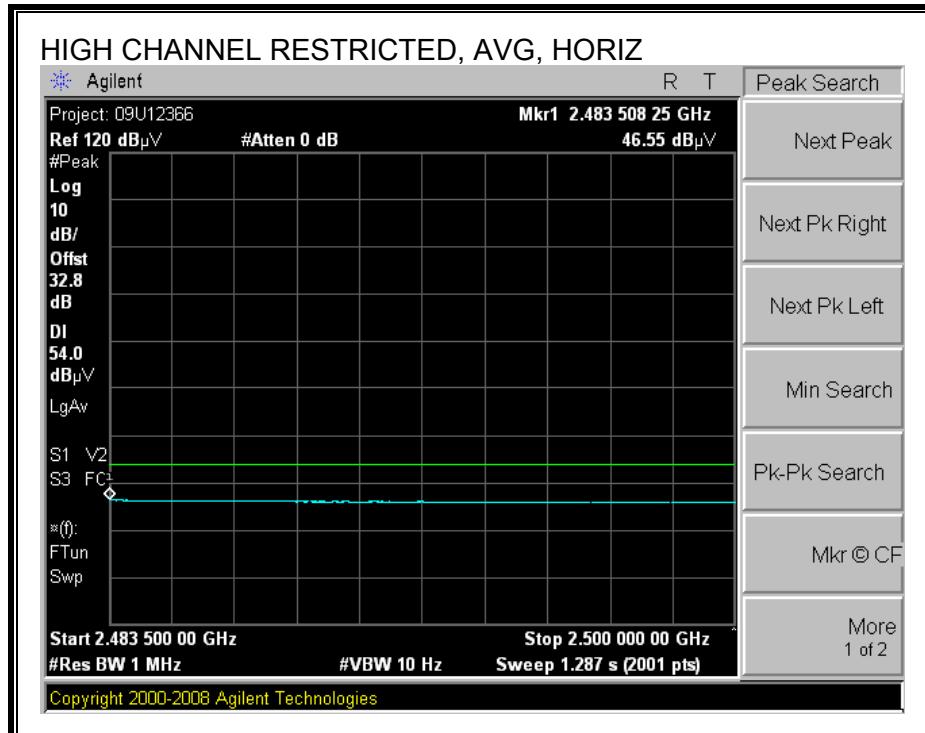
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



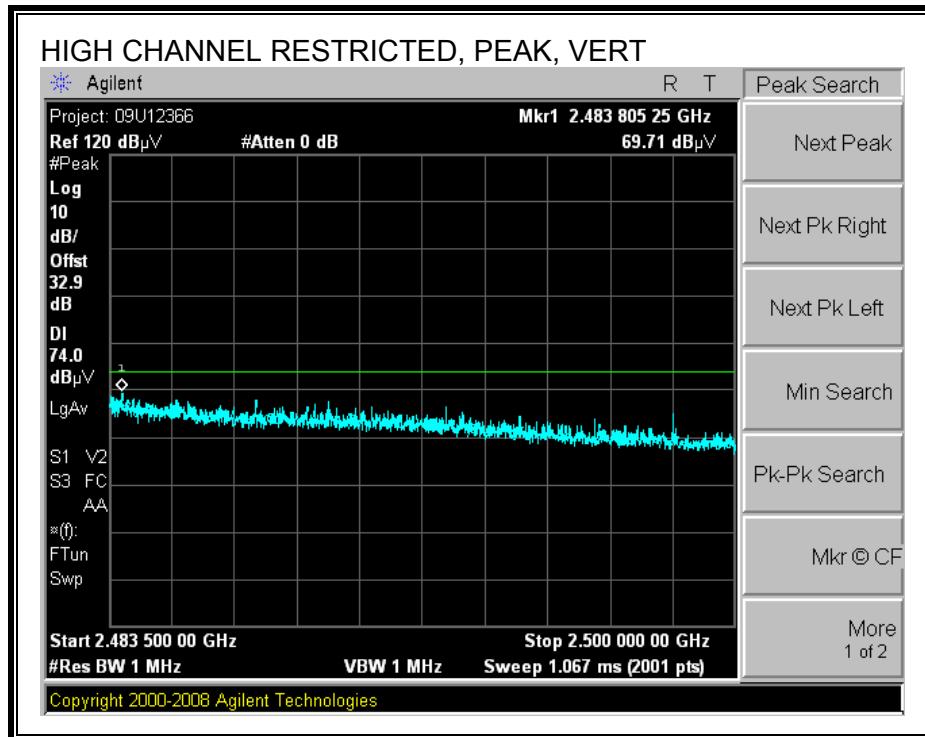


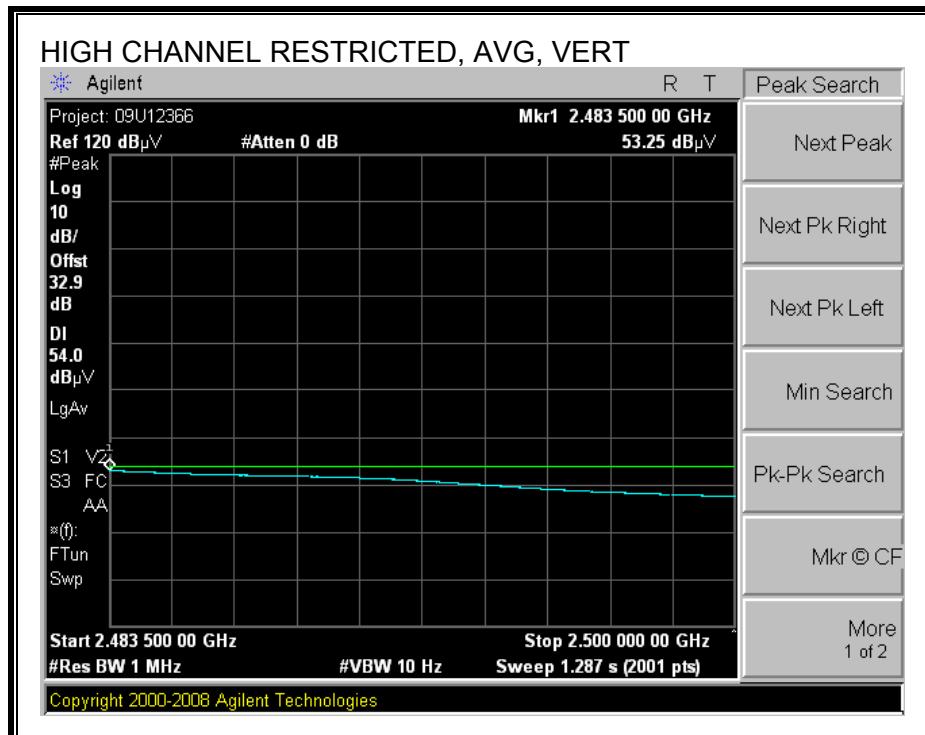
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





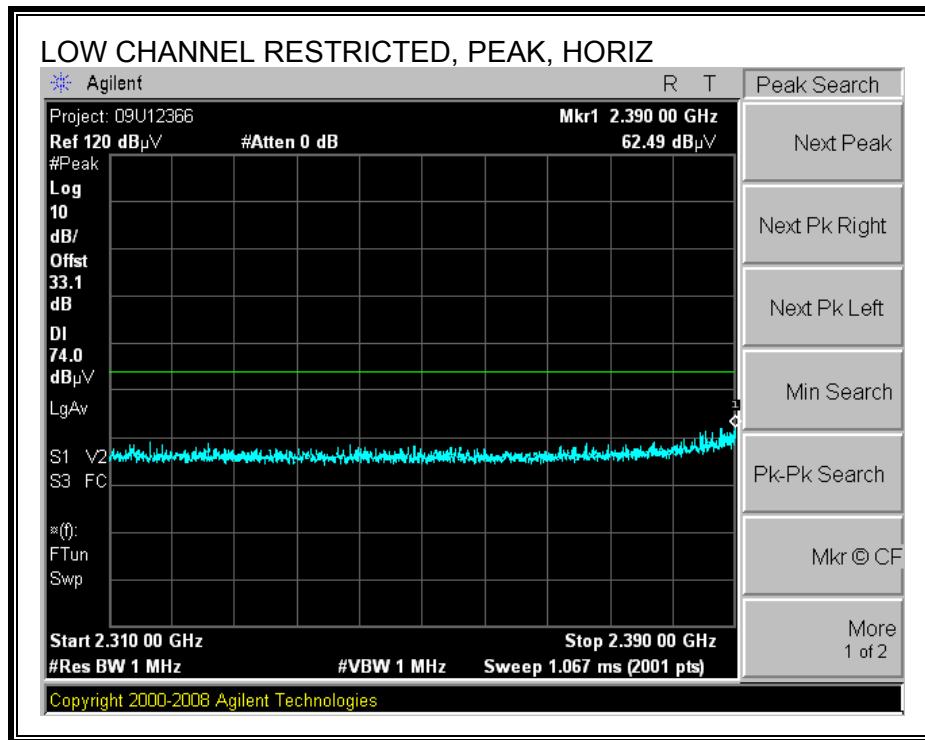
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

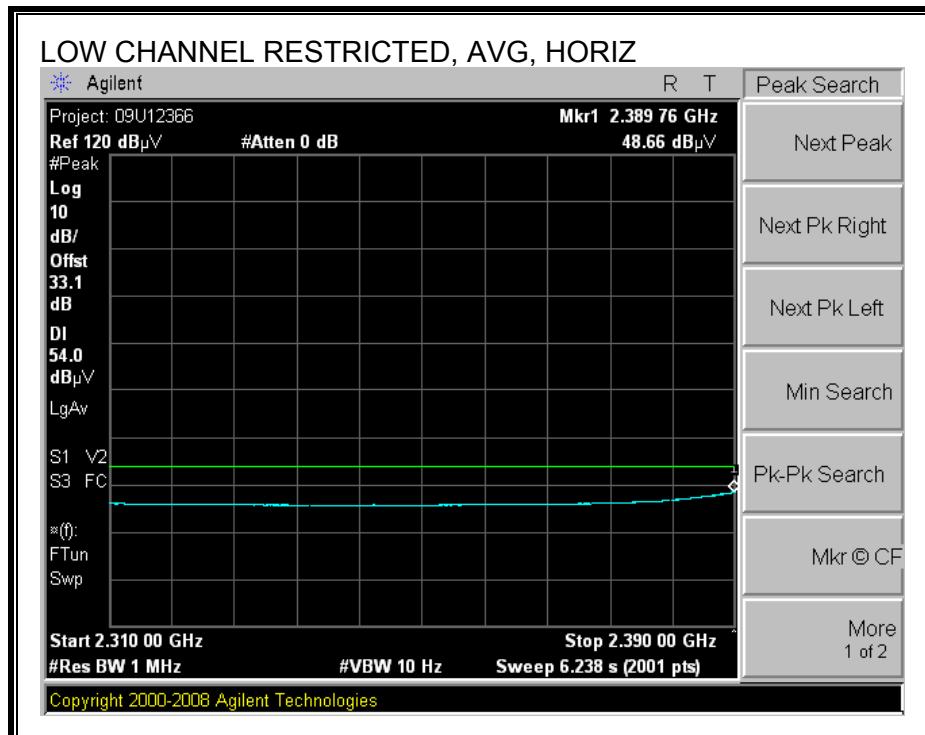




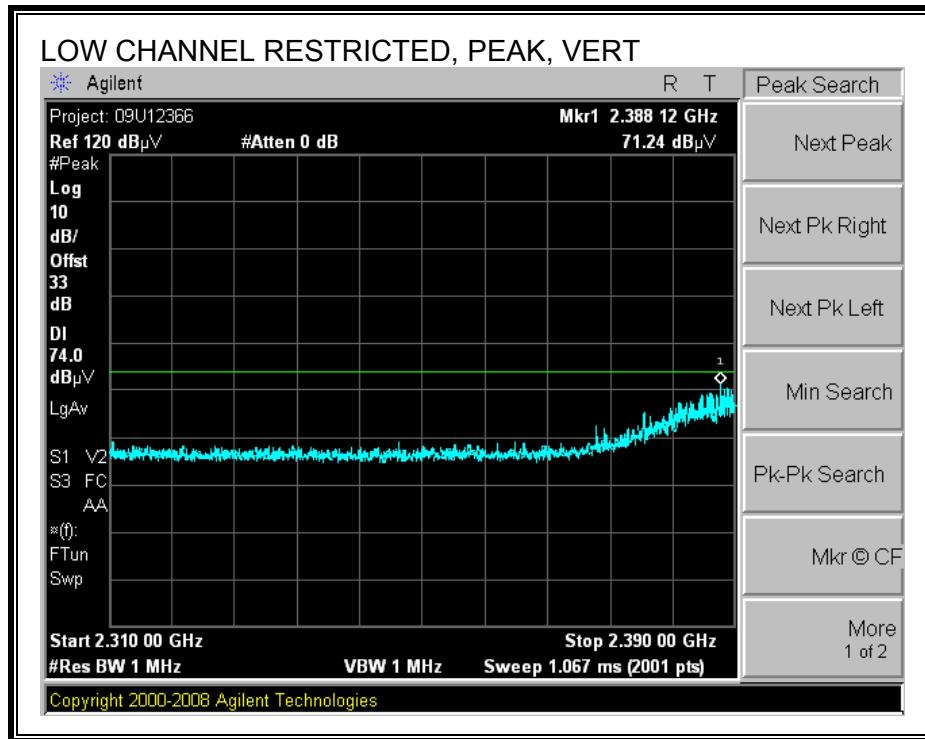
MODE 100

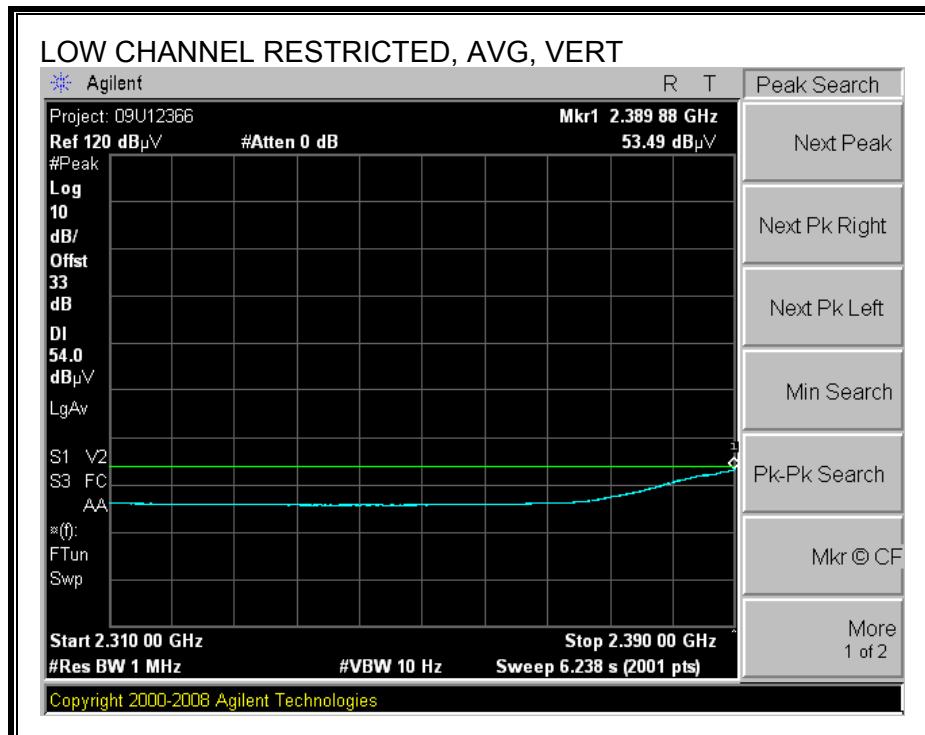
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



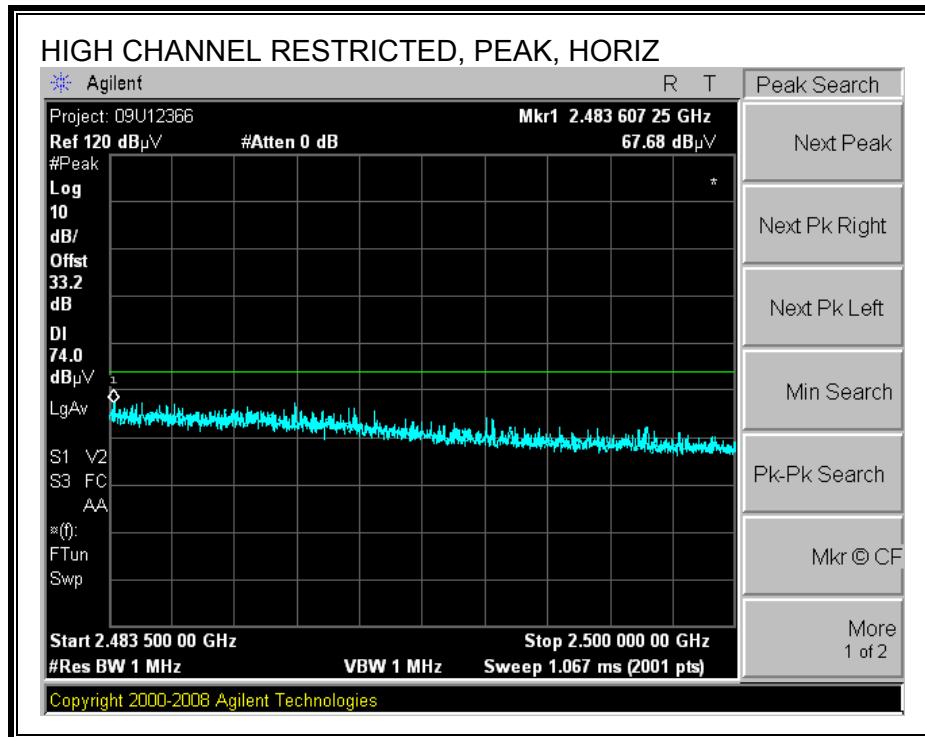


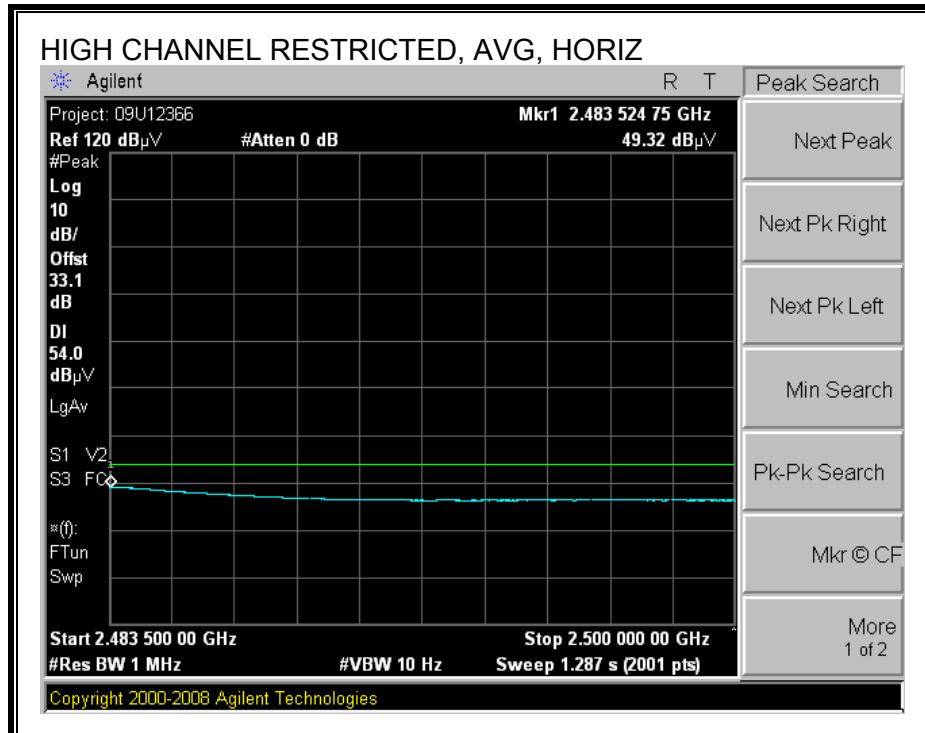
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



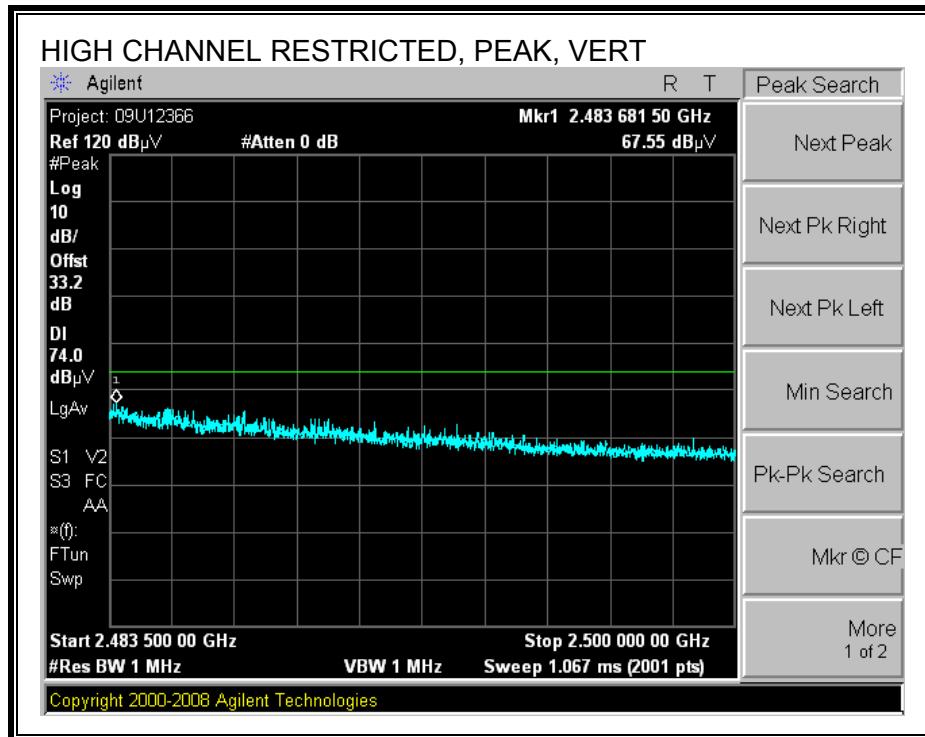


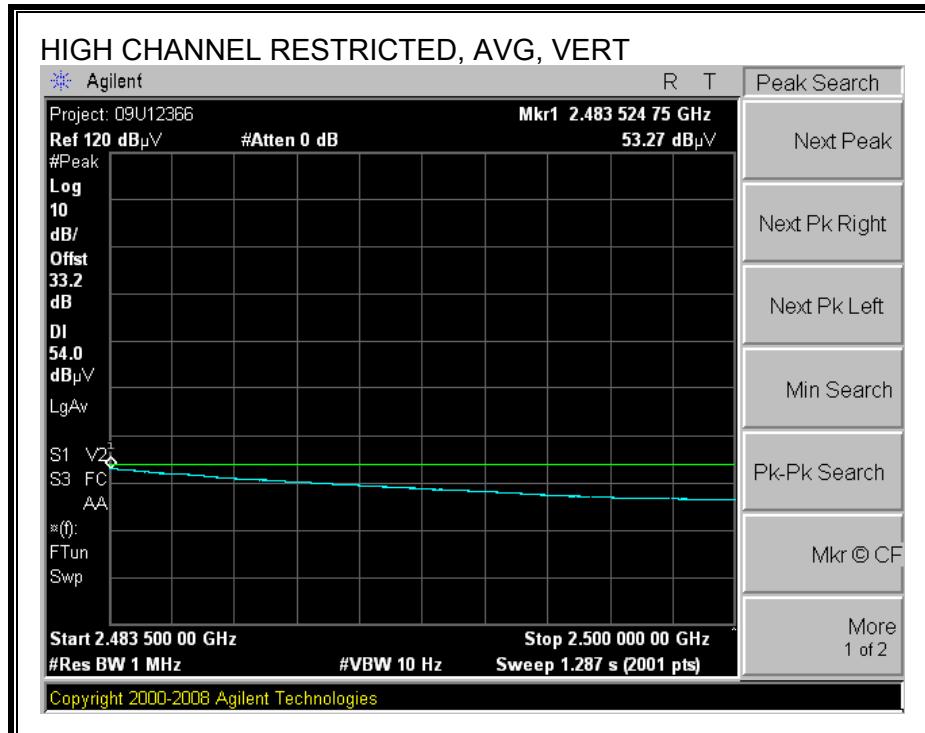
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





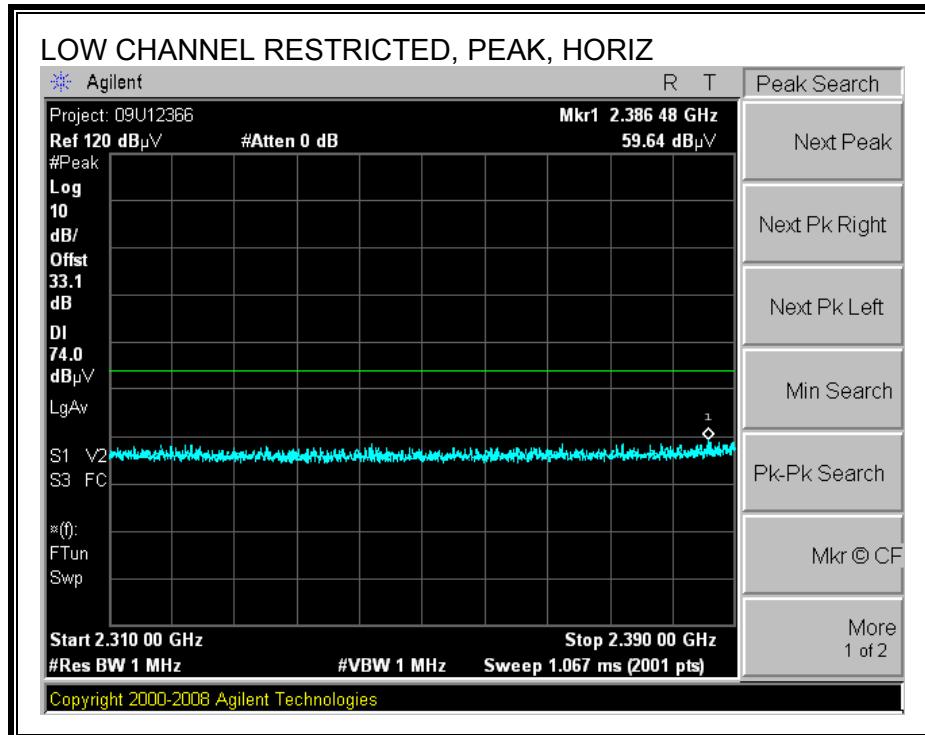
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

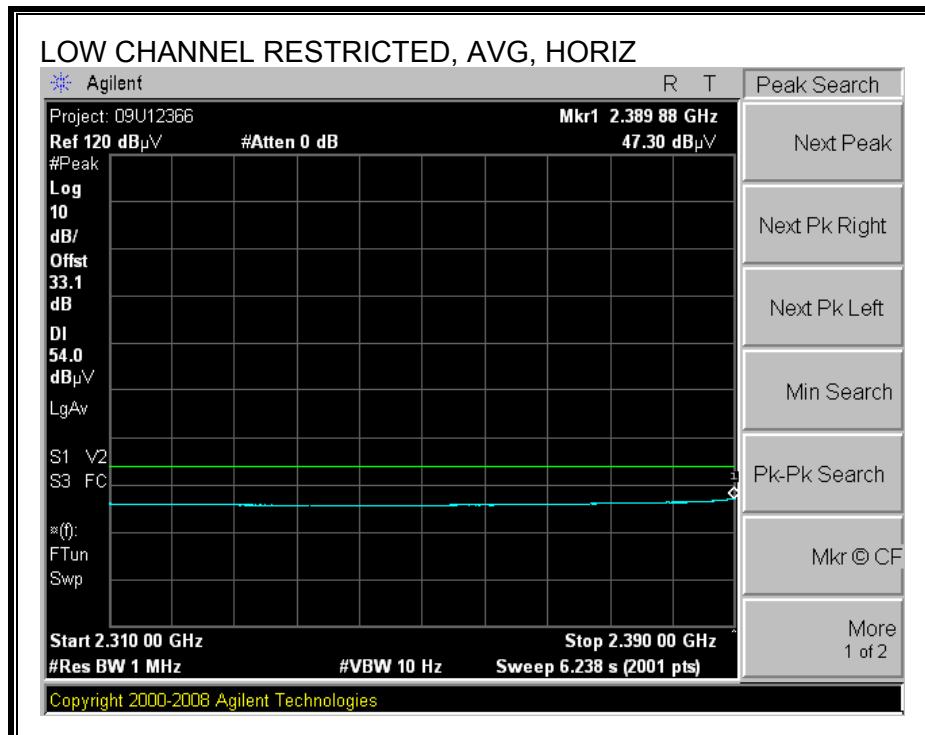




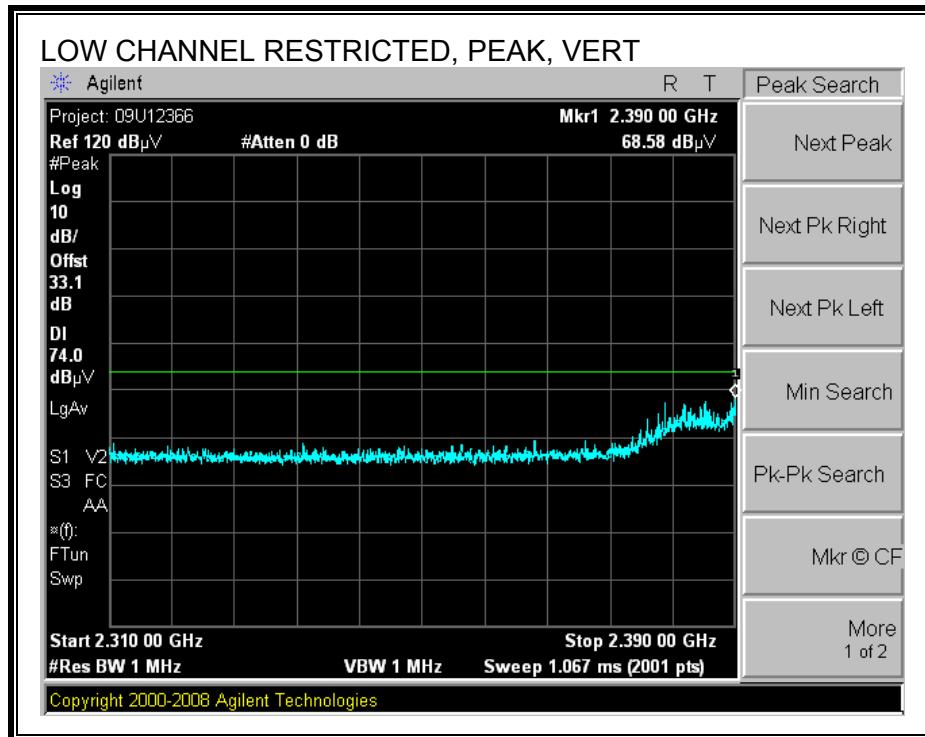
MODE 110

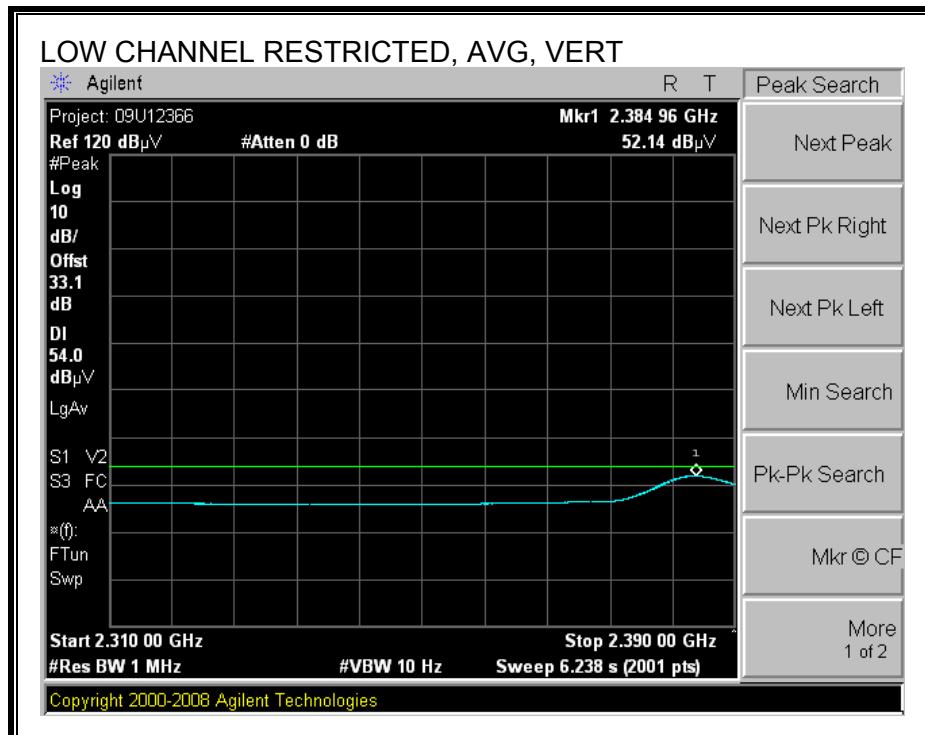
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



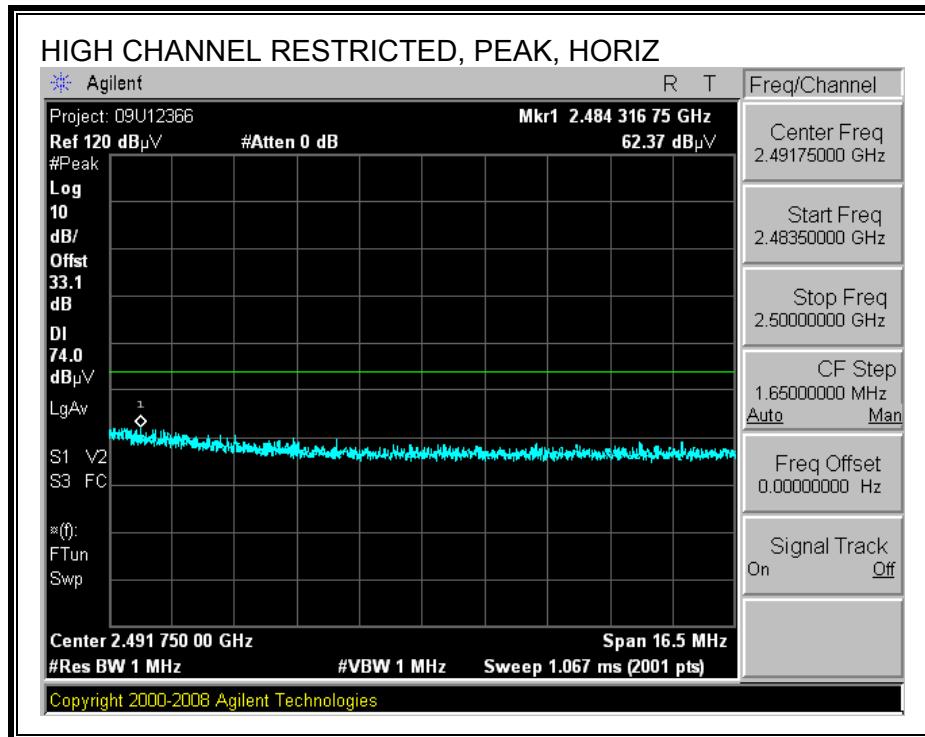


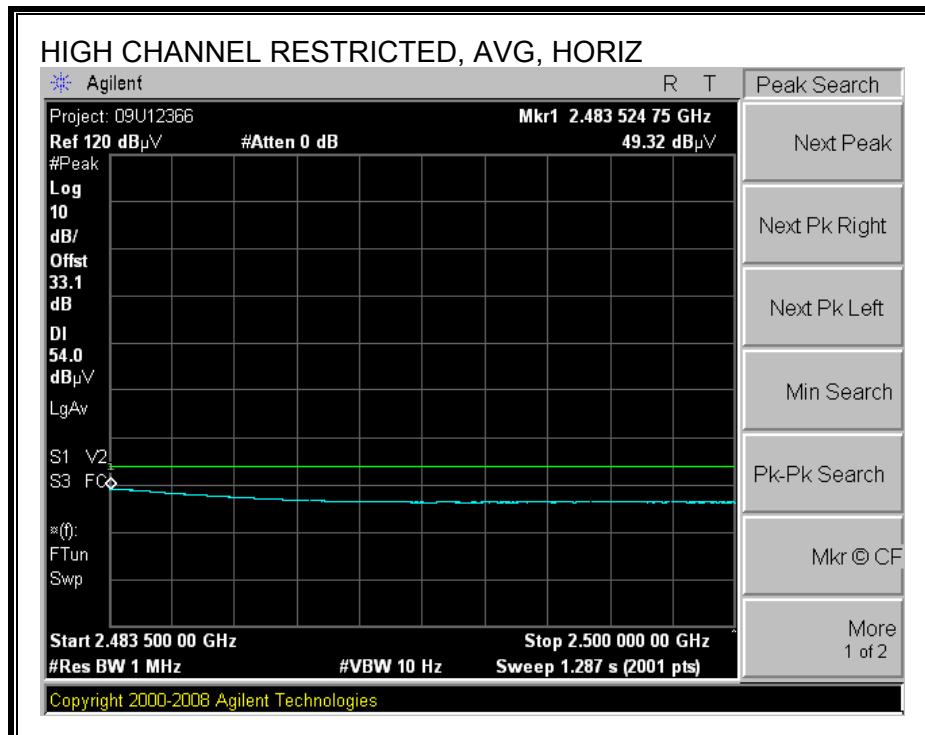
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



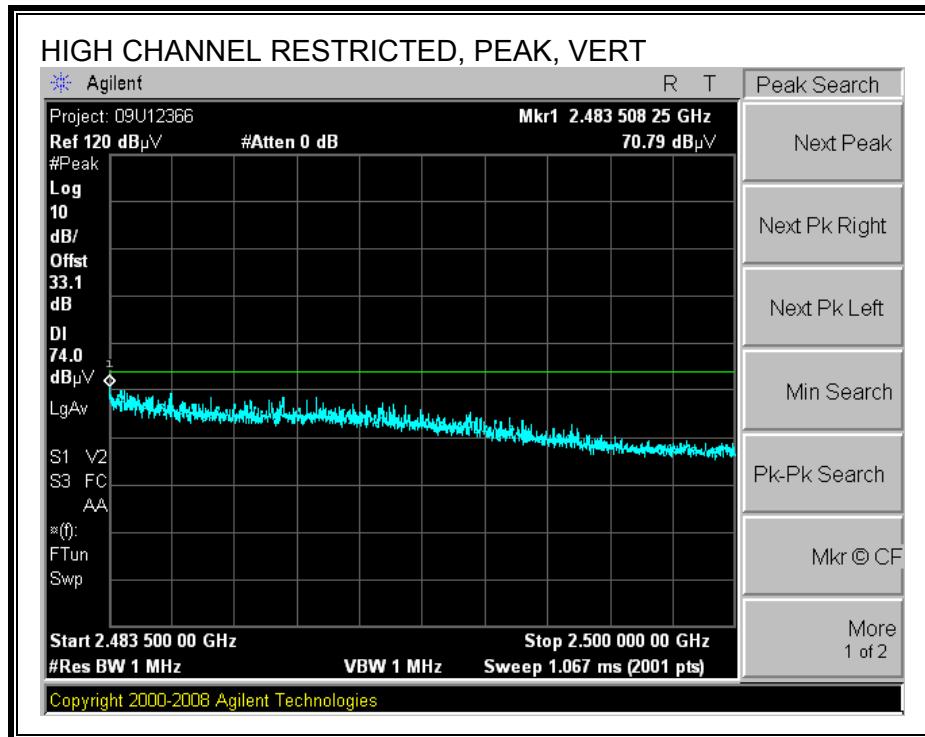


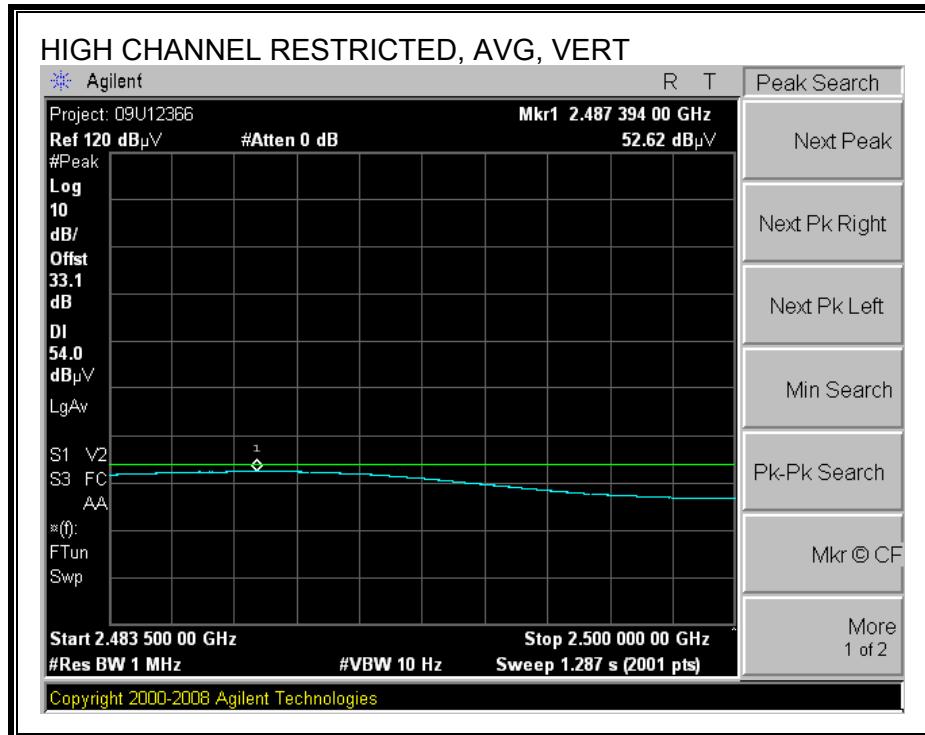
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber															
Company:	Meraki Inc.														
Project #:	09U12366														
Date:	01/29/09														
Test Engineer:	Thanh Nguyen														
Configuration:	EUT with Monopole Antenna - 3 dBi gain														
Mode:	Transmit Worst case g mode Att=15.5														
Test Equipment:															
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit			
T73; S/N: 6717 @3m			T34 HP 8449B						T125; ARA 18-26 GHz; S/N:1007			FCC 15.209			
Hi Frequency Cables															
3' cable 22807700			12' cable 22807600			20' cable 22807500			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz
3' cable 22807700			12' cable 22807600			20' cable 22807500						R_001			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)
Low channel															
4.824	3.0	41.5	28.3	33.7	5.8	-34.8	0.0	0.0	46.2	33.0	74	54	-27.8	-21.0	Noise Floor/V
4.824	3.0	40.6	28.0	33.7	5.8	-34.8	0.0	0.0	45.3	32.7	74	54	-28.7	-21.3	Noise Floor/H
Mid channel															
4.874	3.0	41.2	28.0	33.8	5.8	-34.8	0.0	0.0	46.1	32.8	74	54	-27.9	-21.2	Noise Floor/V
4.874	3.0	39.7	28.0	33.8	5.8	-34.8	0.0	0.0	44.5	32.8	74	54	-29.5	-21.2	Noise Floor/H
High channel															
4.924	3.0	40.6	28.6	33.9	5.9	-34.8	0.0	0.0	45.5	33.5	74	54	-28.5	-20.5	Noise Floor/V
4.924	3.0	40.3	28.0	33.9	5.9	-34.8	0.0	0.0	45.2	33.0	74	54	-28.8	-21.0	Noise Floor/H
No other emissions were detected above noise floor.															
Rev. 10.15.08															
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										

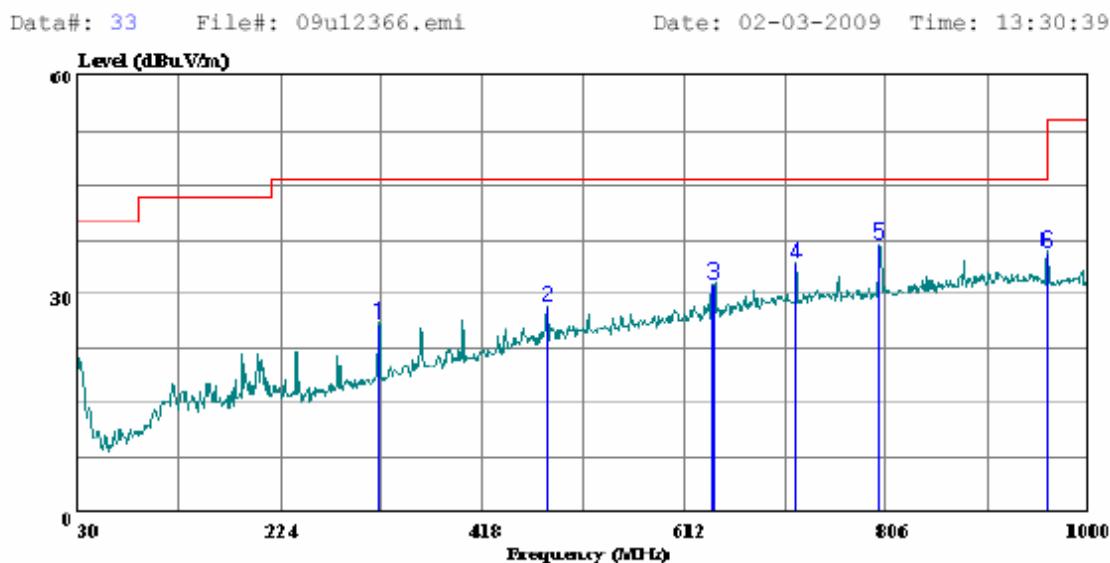
7.3.5. TX BELOW 1 GHz (WORST-CASE CONFIGURATION)

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

HORIZONTAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888



Trace: 32

Ref Trace:

Condition: FCC CLASS-B 3m HORIZONTAL
Test Operator::: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration::: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/Flat Panel Antenna
: DC Power on

Page: 1

	Read		Limit	Over	
Freq	Level	Factor	Level	Line	Limit
MHz	dBuV		dB	dBuV/m	dBuV/m
1	320.030	36.58	-10.50	26.09	46.00
2	481.050	33.67	-5.37	28.29	46.00
3	640.130	33.33	-1.87	31.46	46.00
4	719.670	34.50	-0.23	34.27	46.00
5	799.210	36.00	0.77	36.77	46.00
6	960.230	32.50	3.40	35.90	54.00

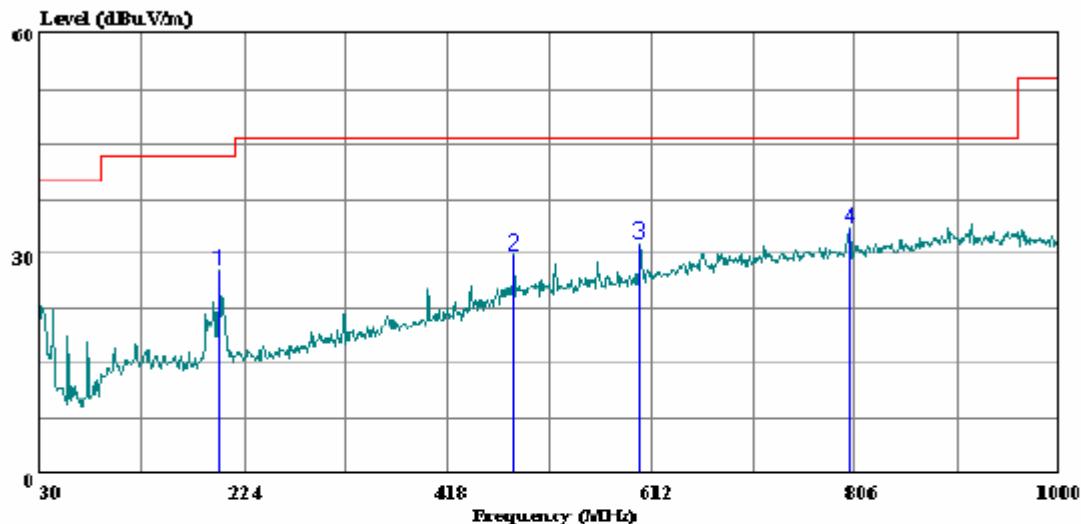
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT & DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 35 File#: 09u12366.emi Date: 02-03-2009 Time: 13:38:01



Trace: 34

Ref Trace:

Condition: FCC CLASS-B 3m VERTICAL
Test Operator:: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration:: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/Flat Panel Antenna
: DC Power on

Page: 1

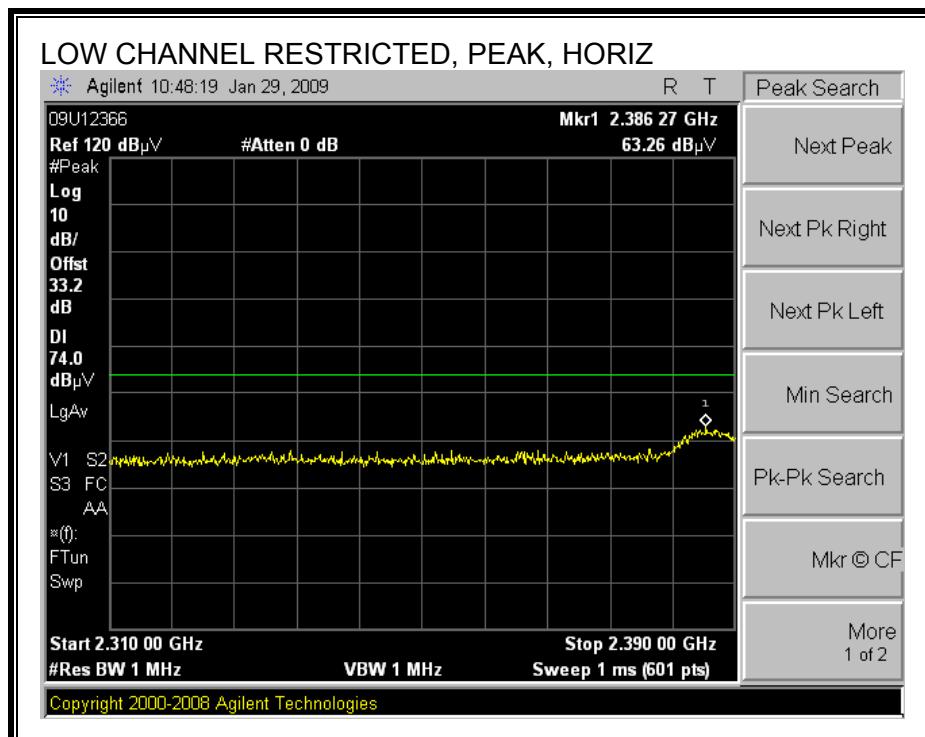
Freq	Read		Limit		Over		Remark
	Level	Factor	Level	Line	Limit	dB	
MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1	199.750	40.50	-12.77	27.73	43.50	-15.77	Peak
2	481.050	35.33	-5.37	29.96	46.00	-16.04	Peak
3	600.360	34.33	-2.83	31.50	46.00	-14.50	Peak
4	801.150	32.67	0.73	33.40	46.00	-12.60	Peak

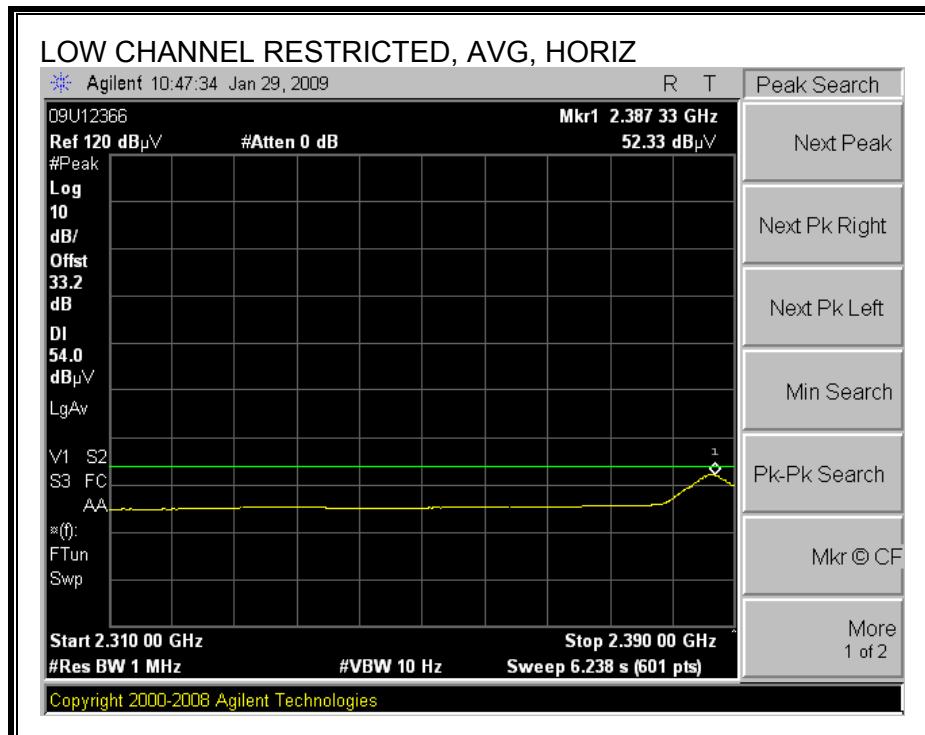
7.4. DIRECTIONAL ANTENNA FOR 2.4GHz 11.5dBi

7.4.1. TX ABOVE 1 GHz FOR 802.11b

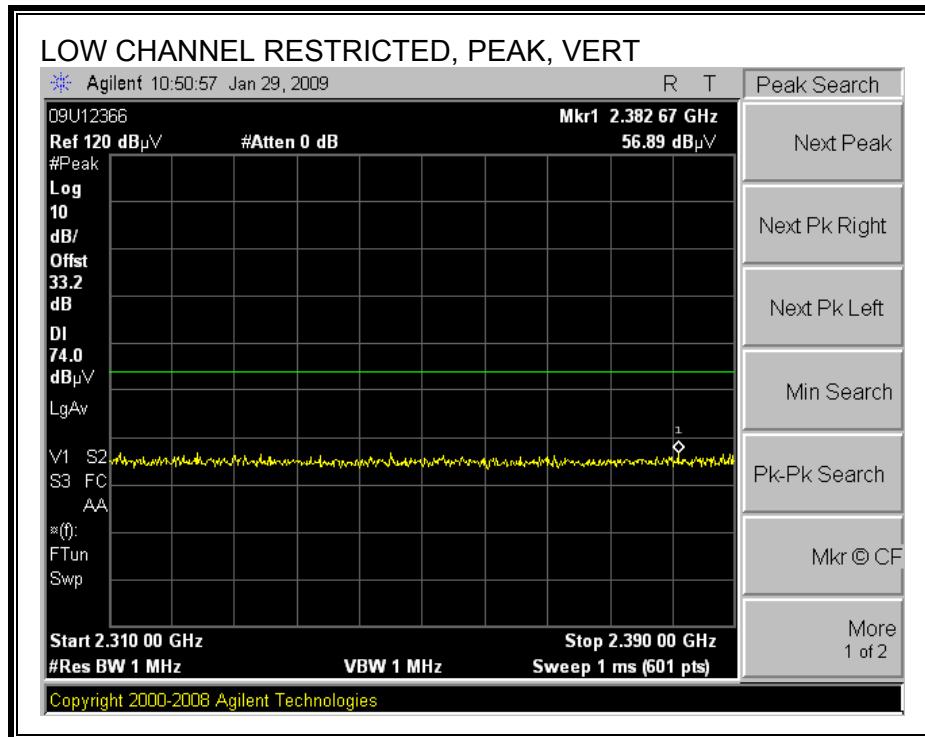
MODE 100:

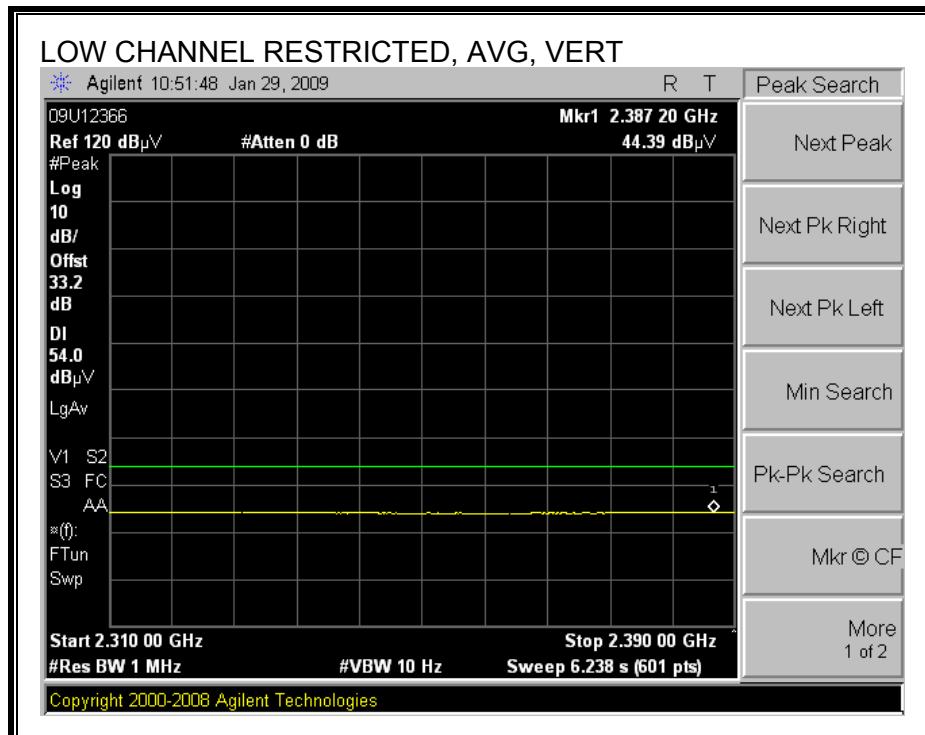
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



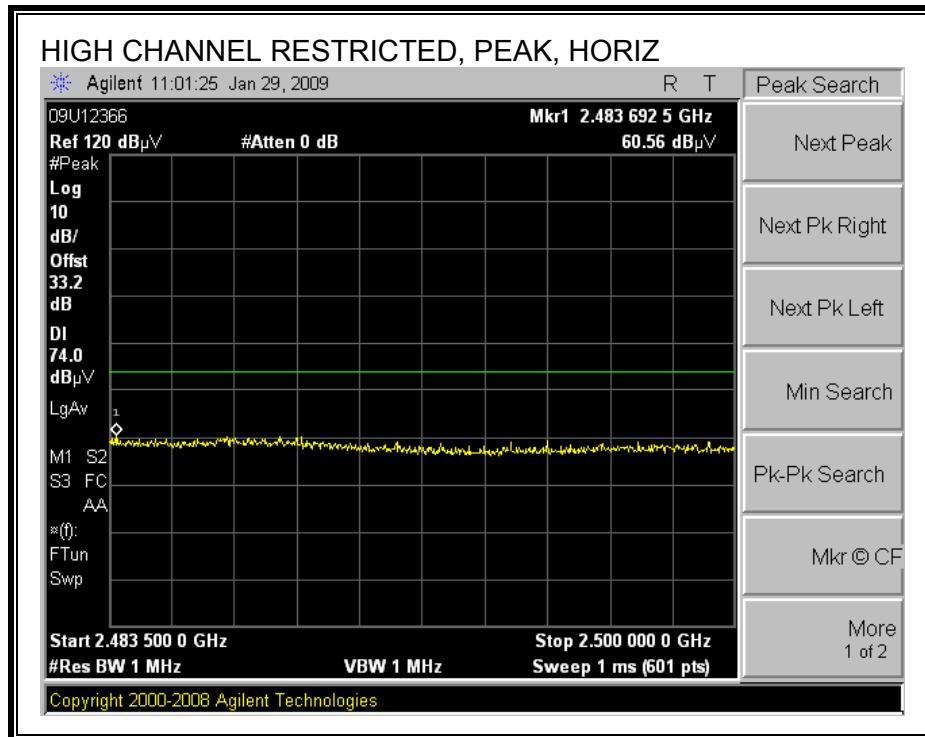


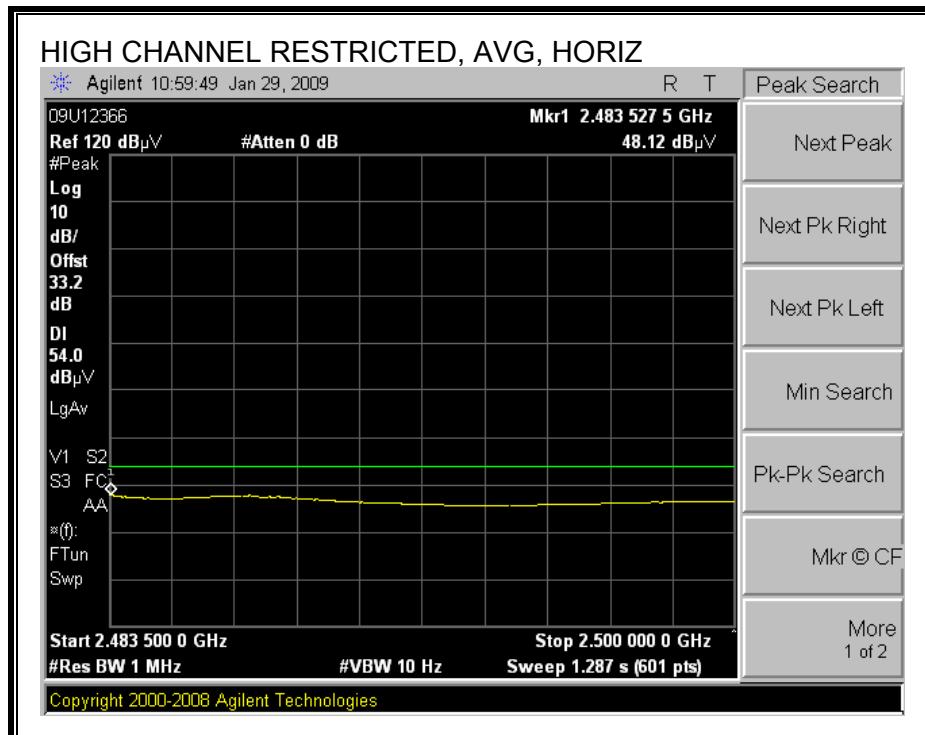
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



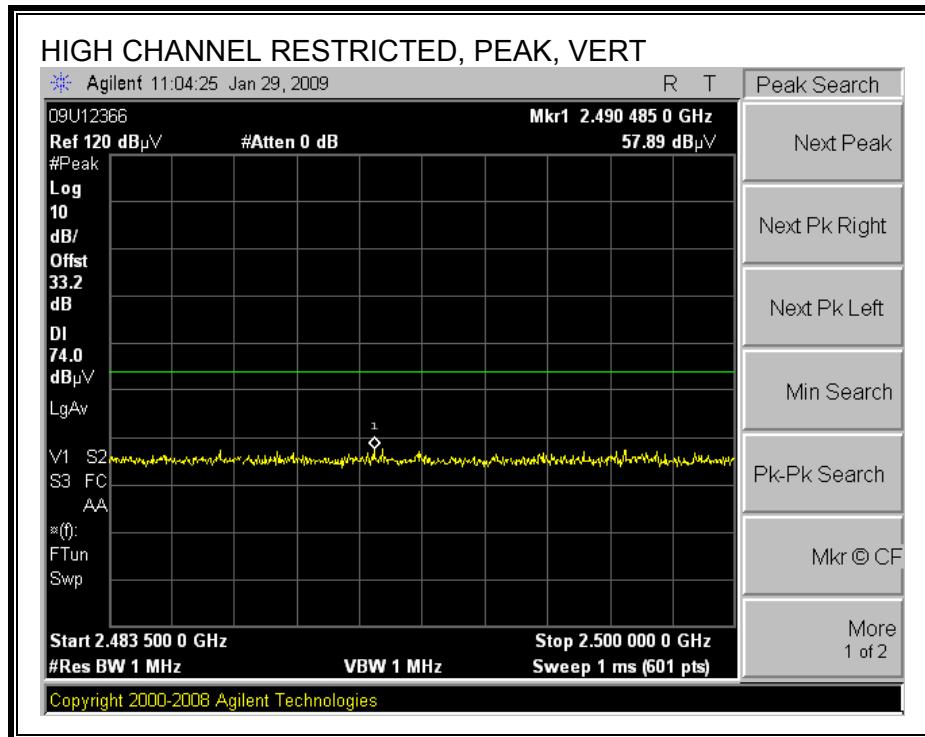


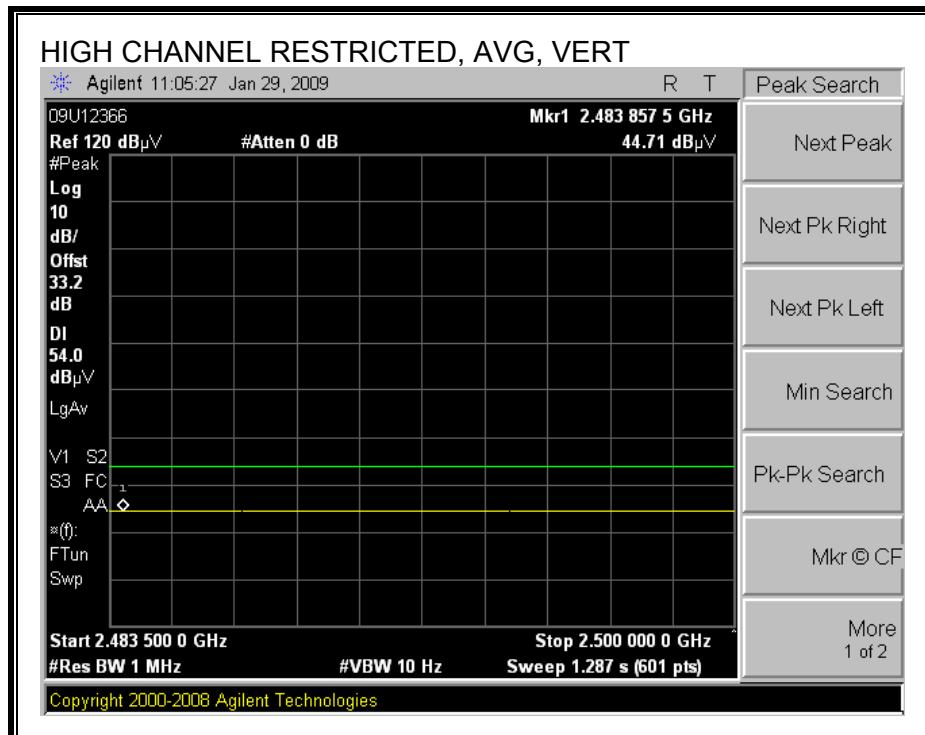
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





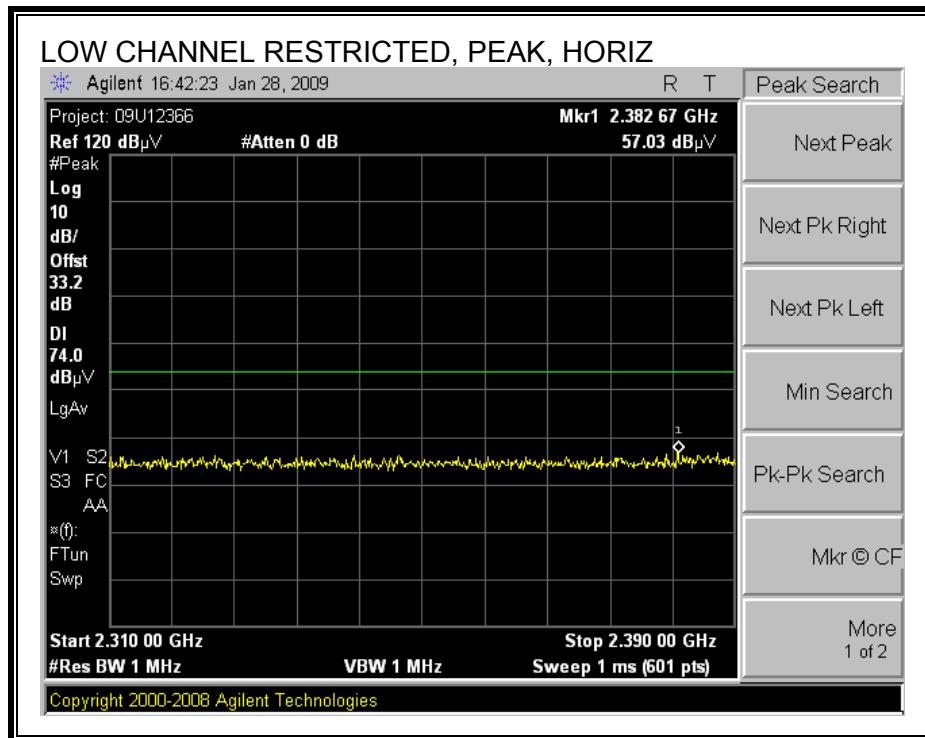
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

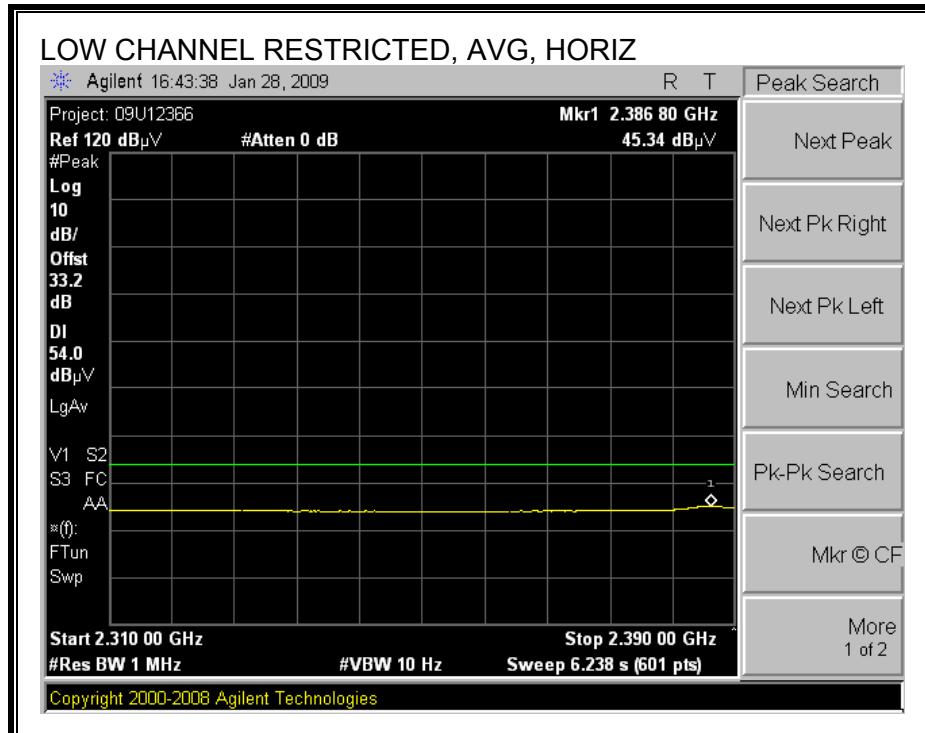




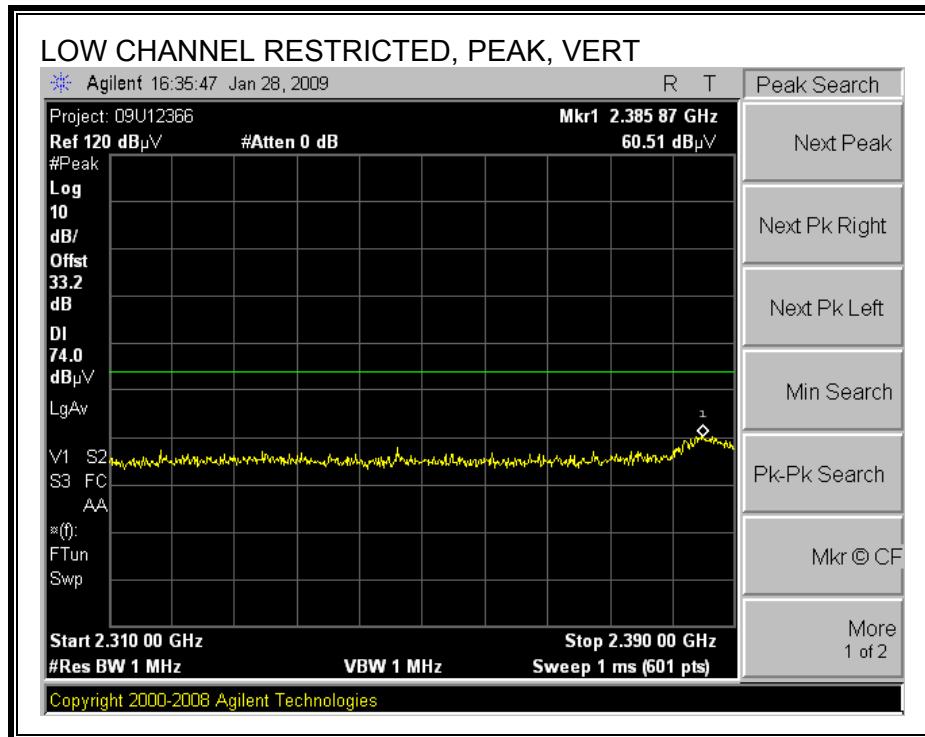
MODE 010:

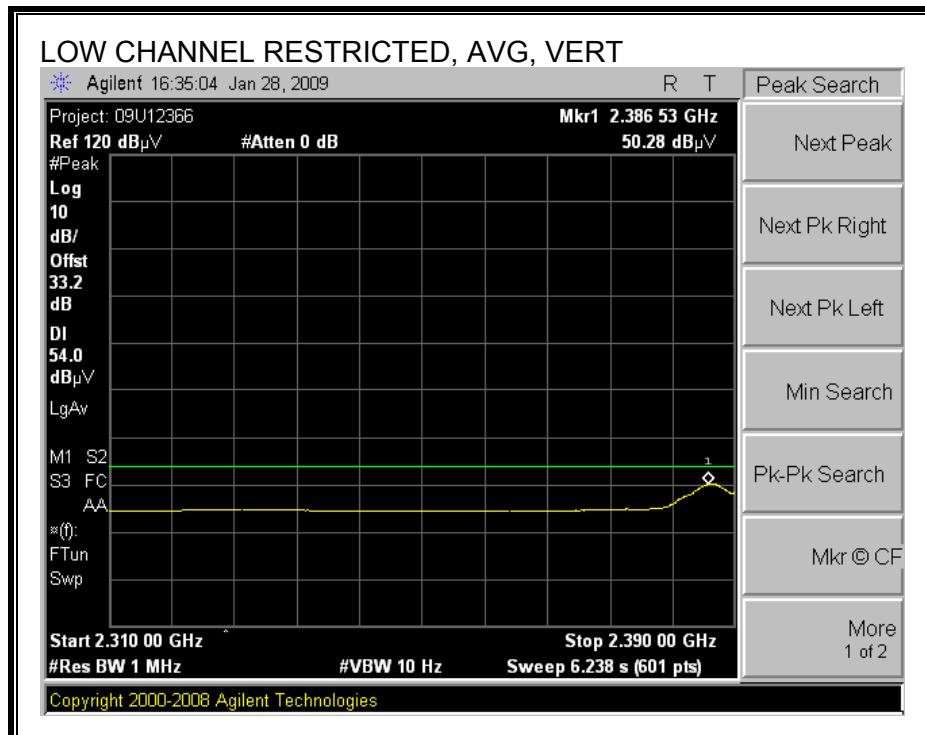
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



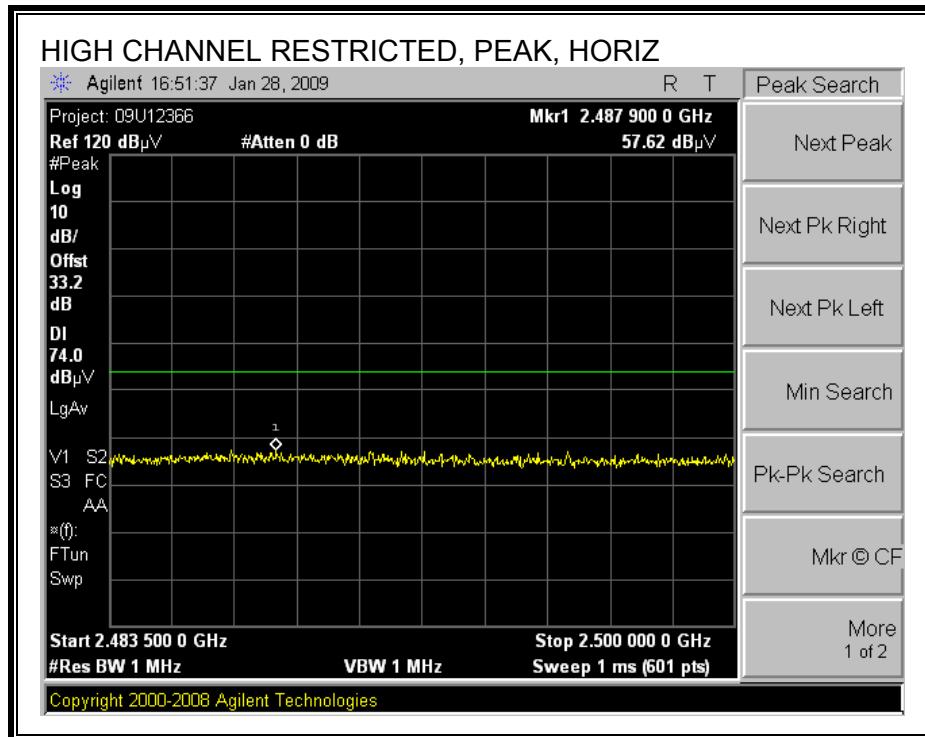


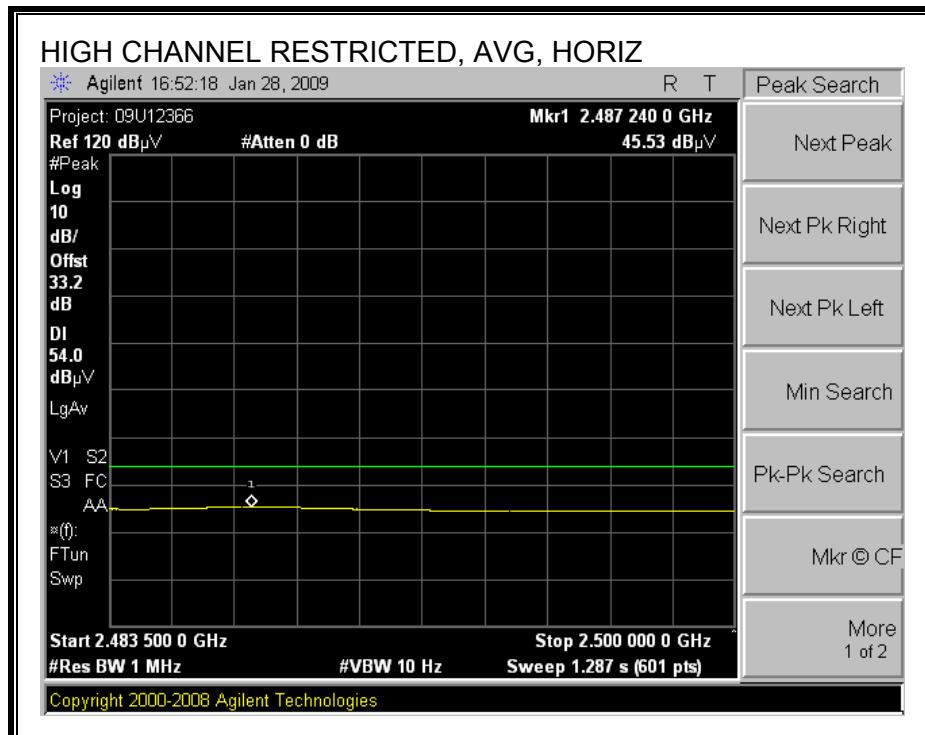
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



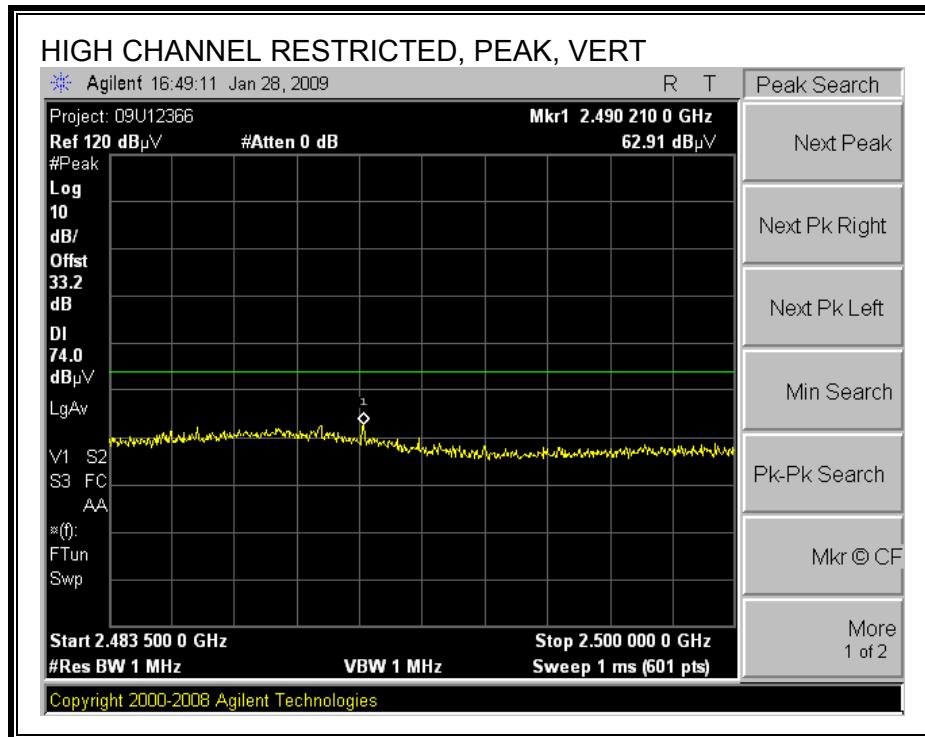


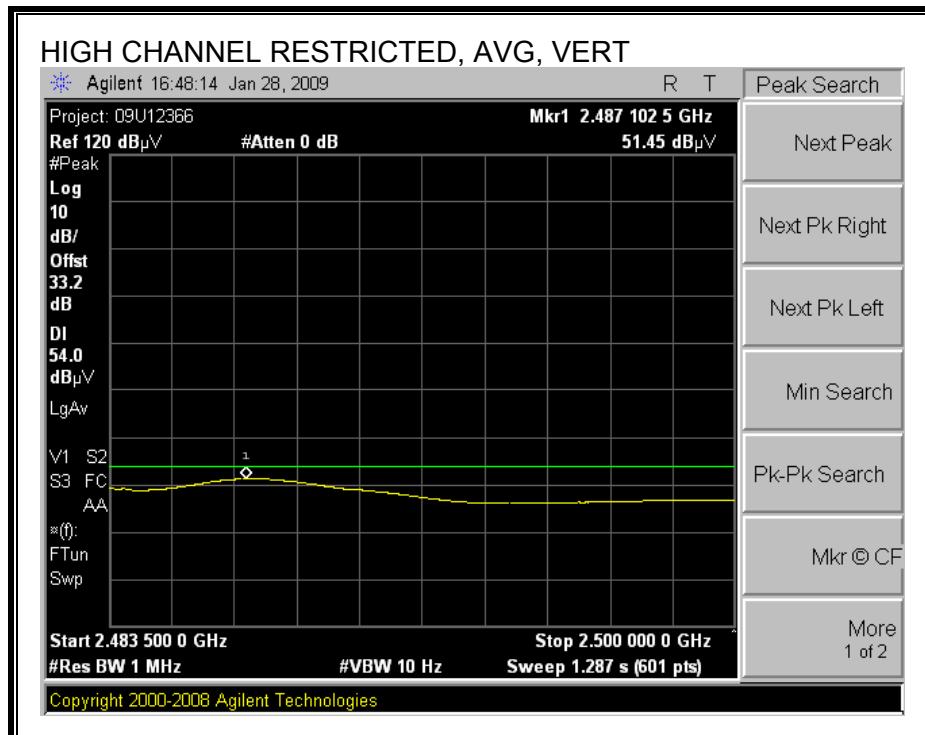
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





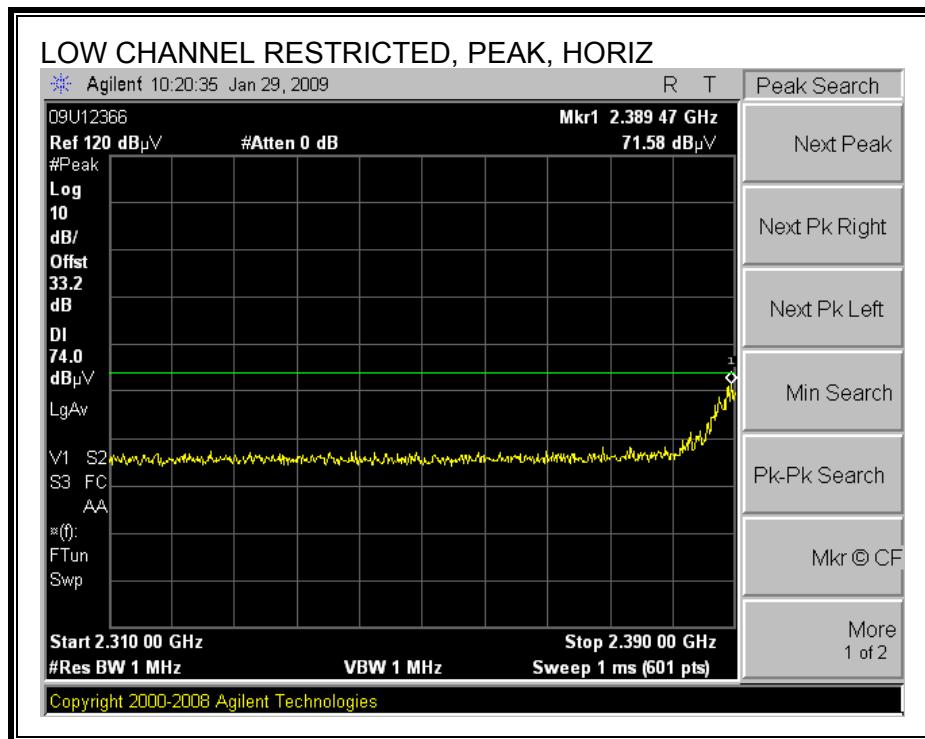
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

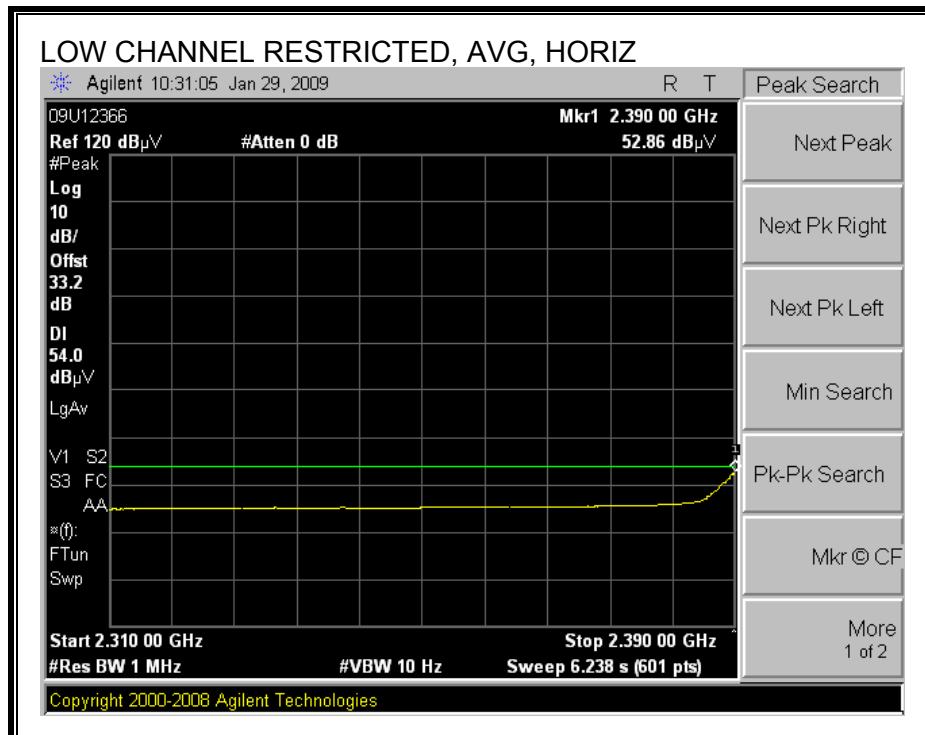




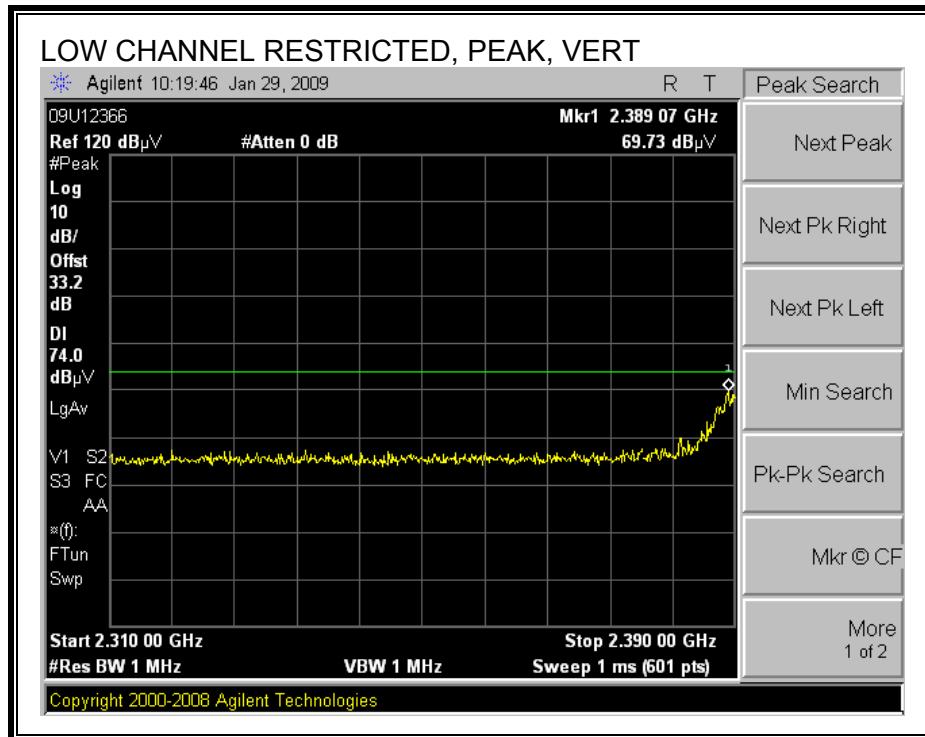
MODE 110 (HT20):

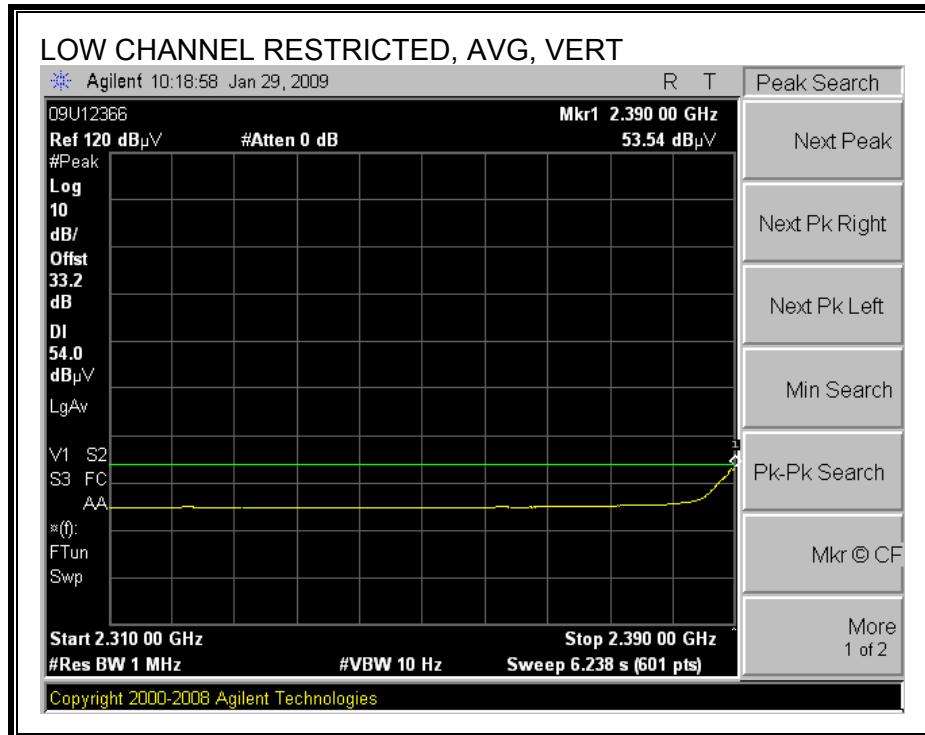
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



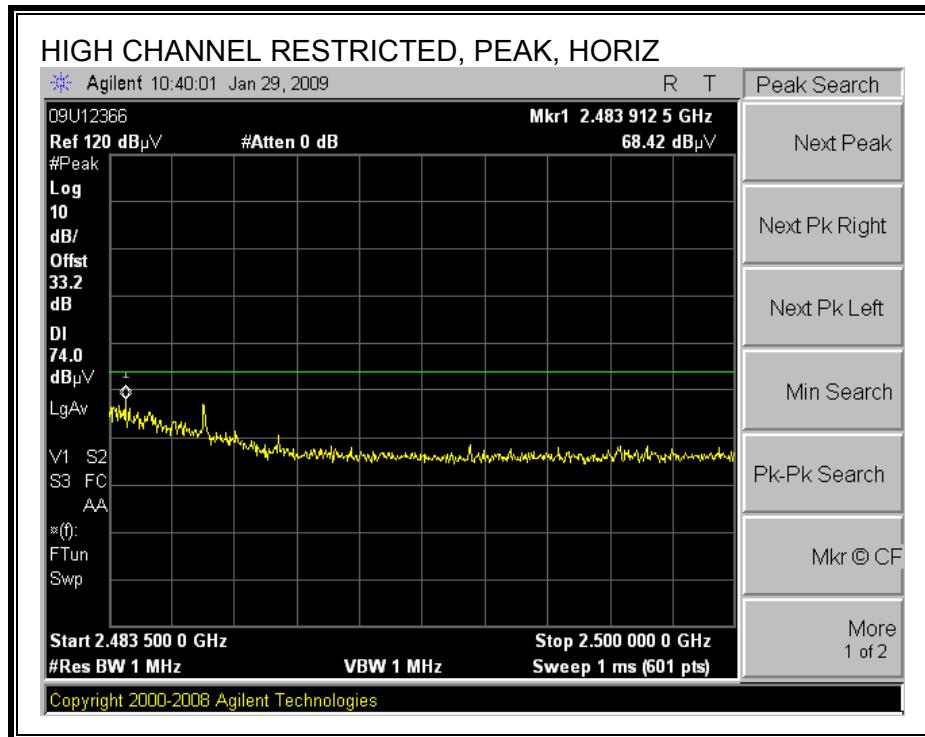


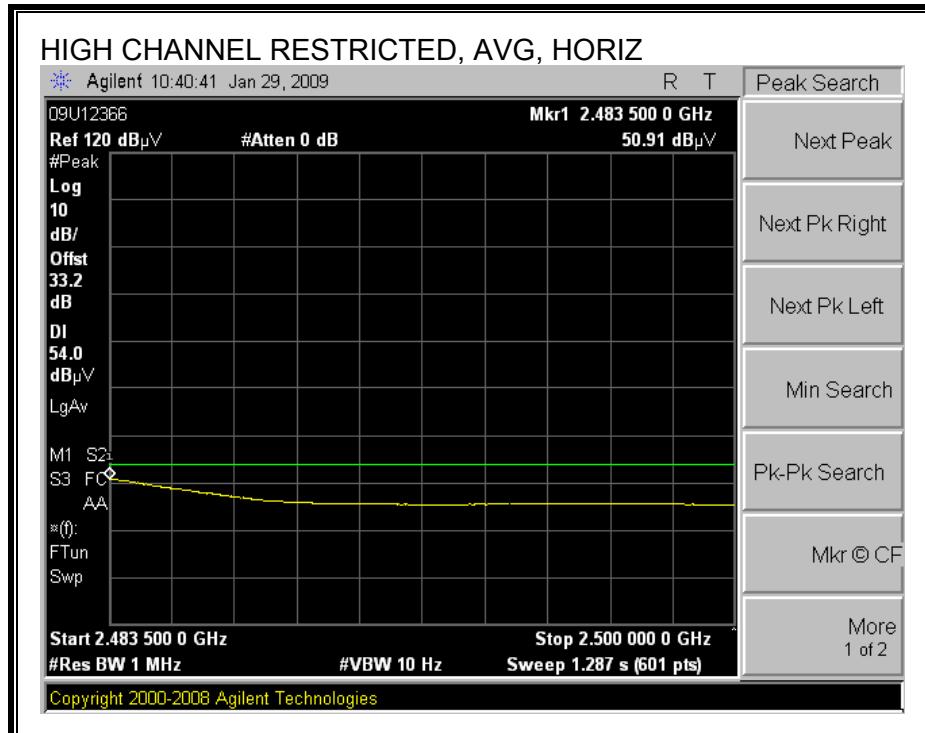
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



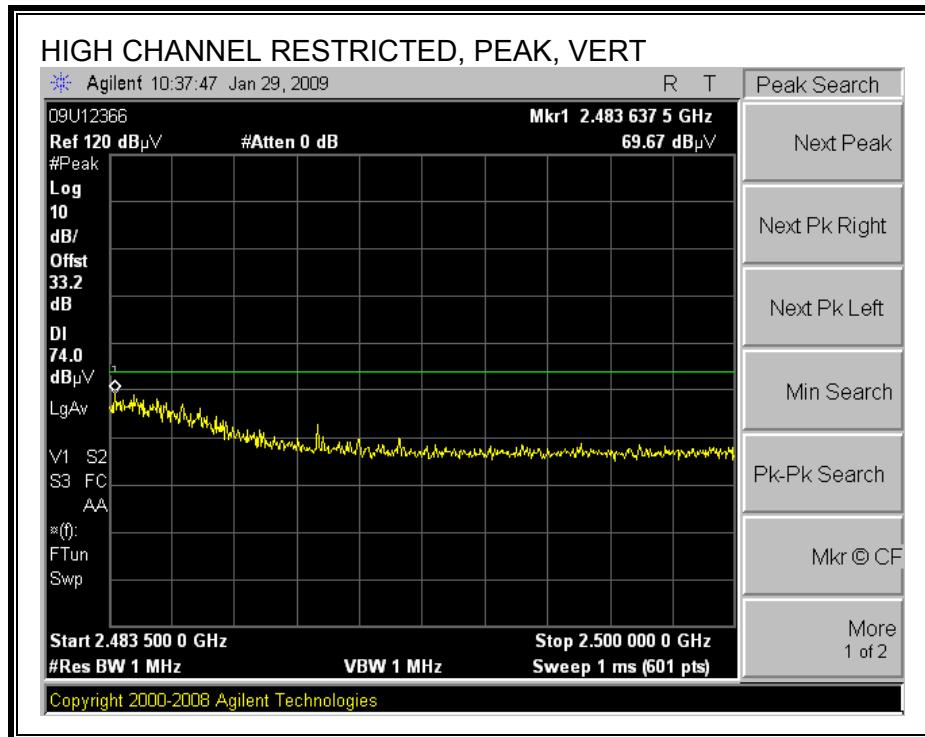


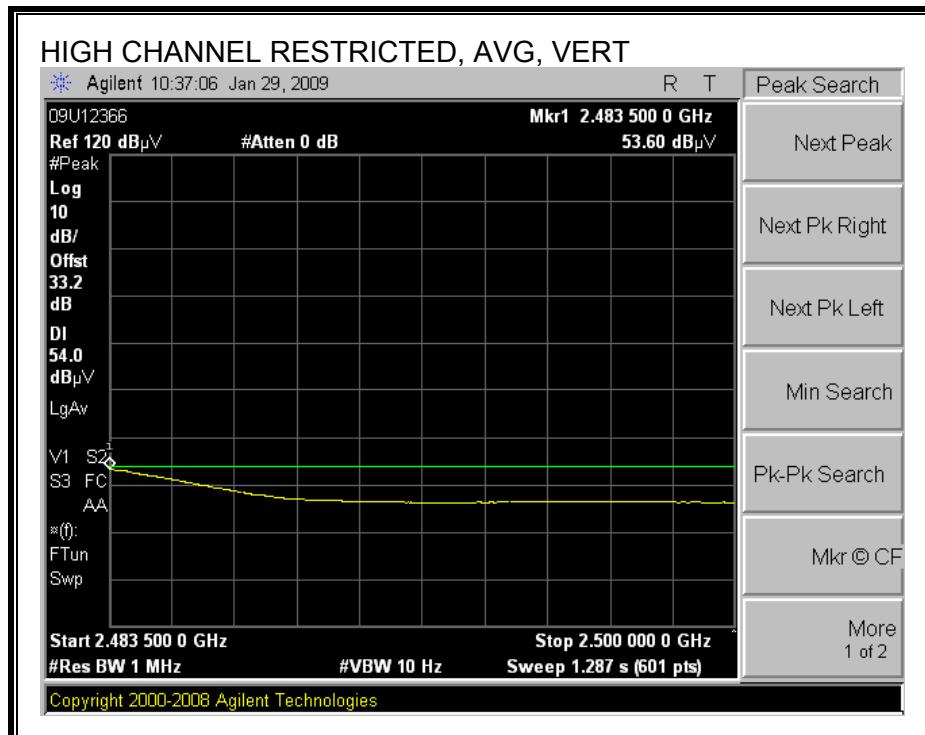
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





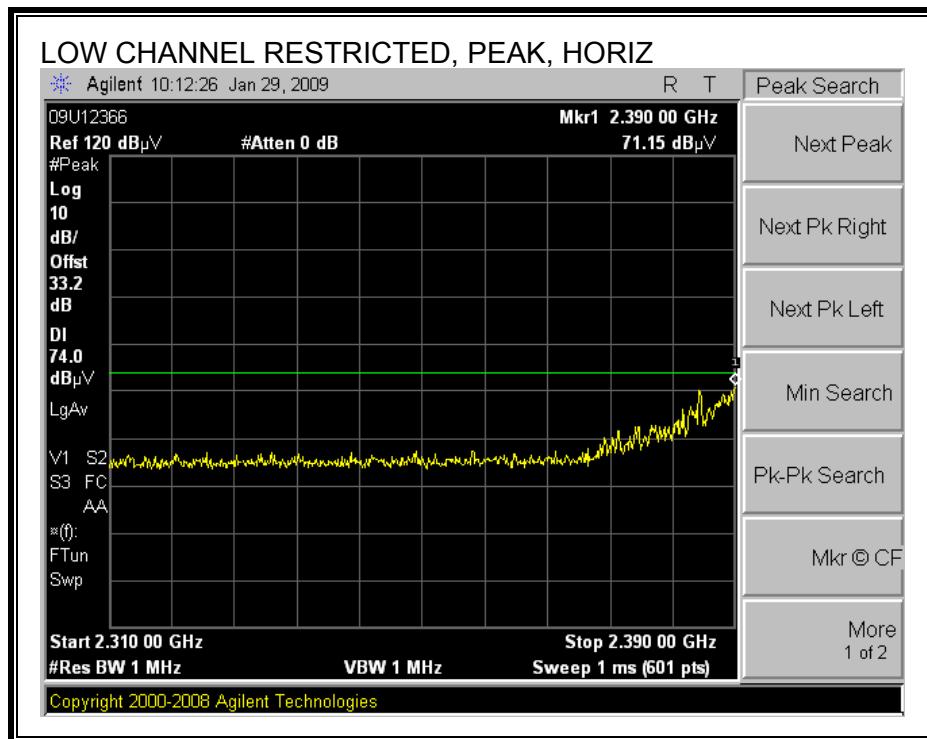
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

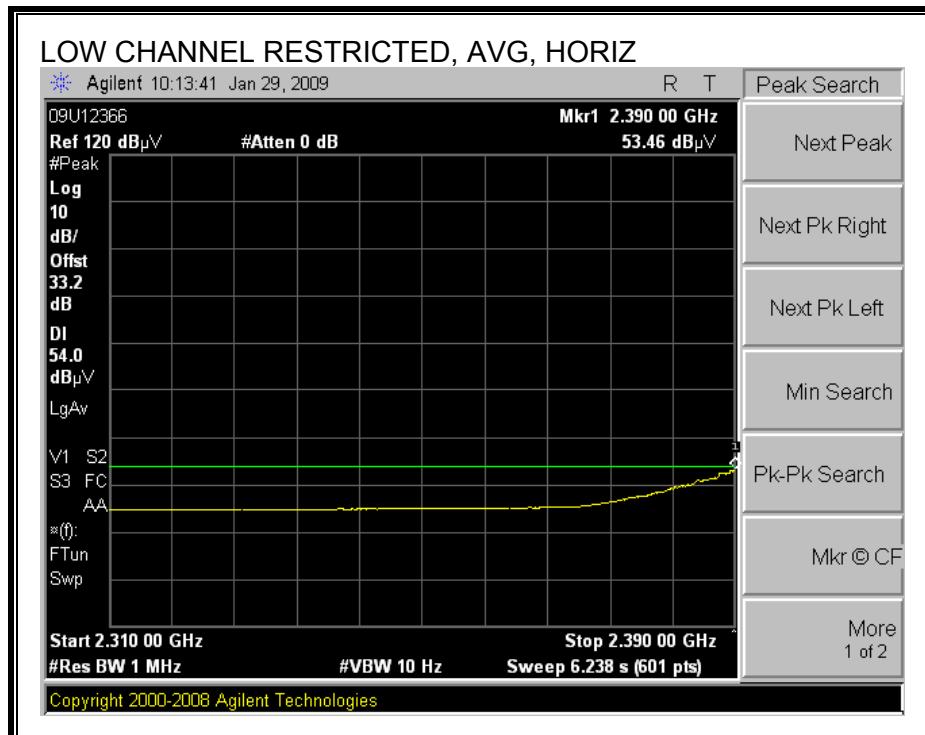




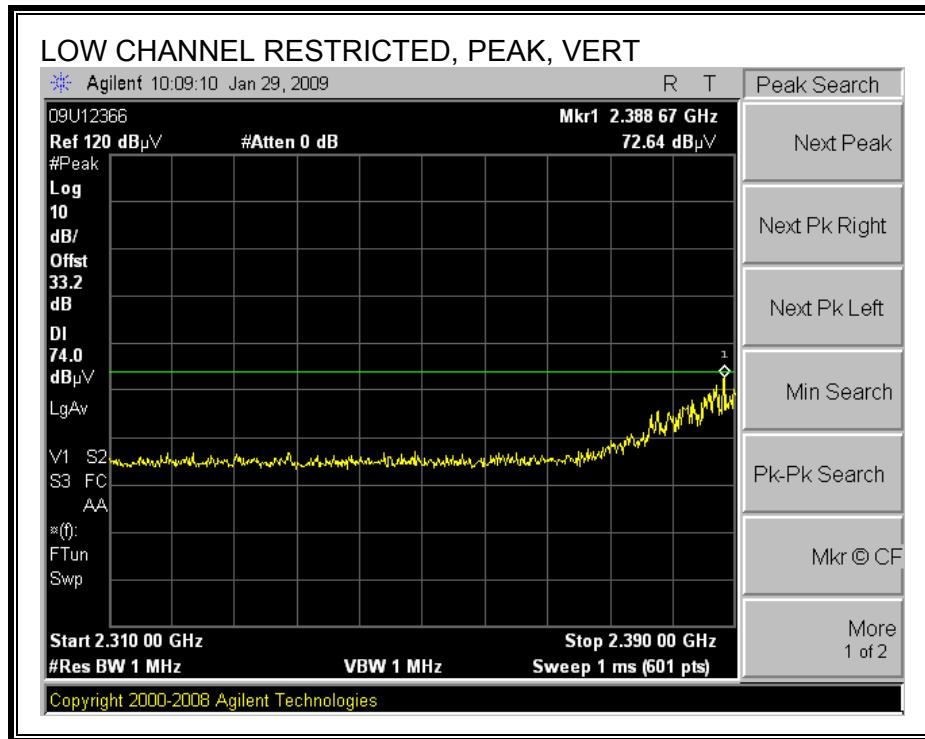
MODE 110 (HT 40):

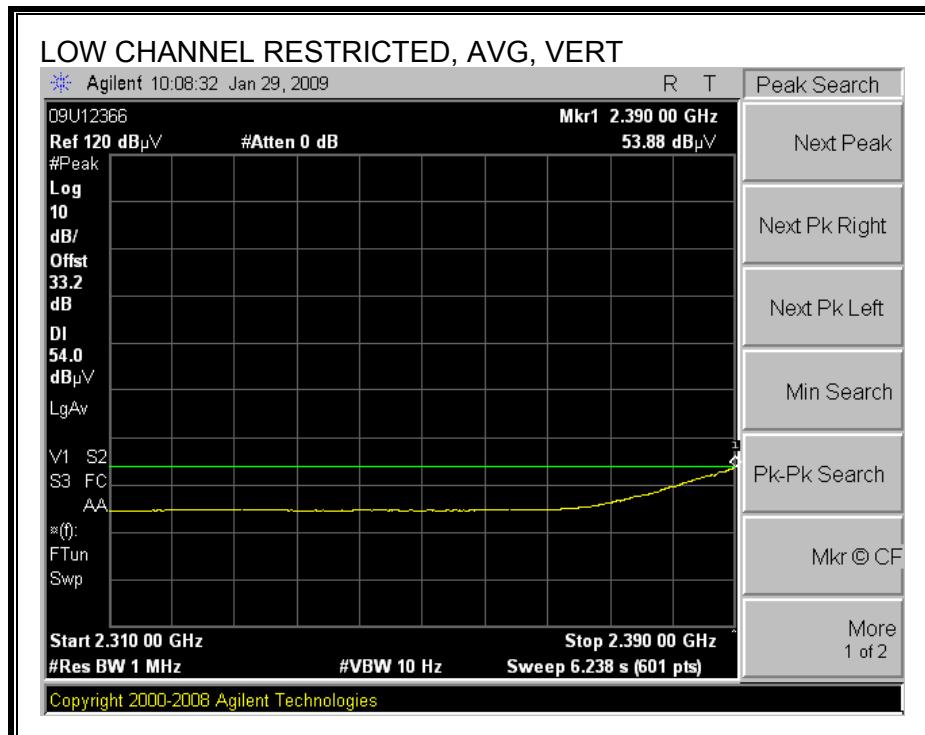
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



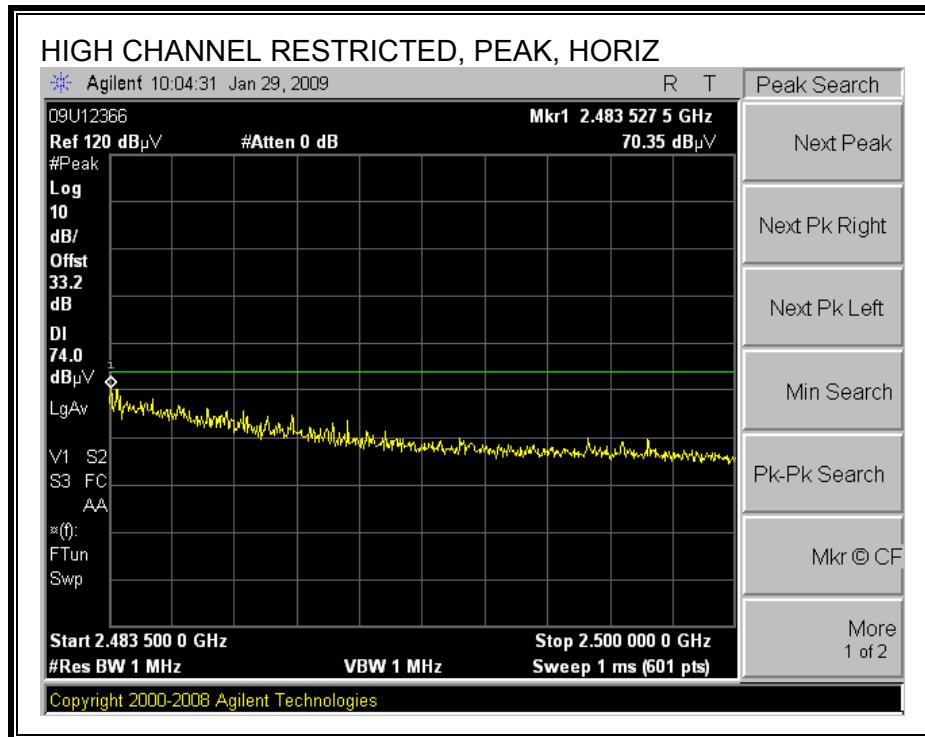


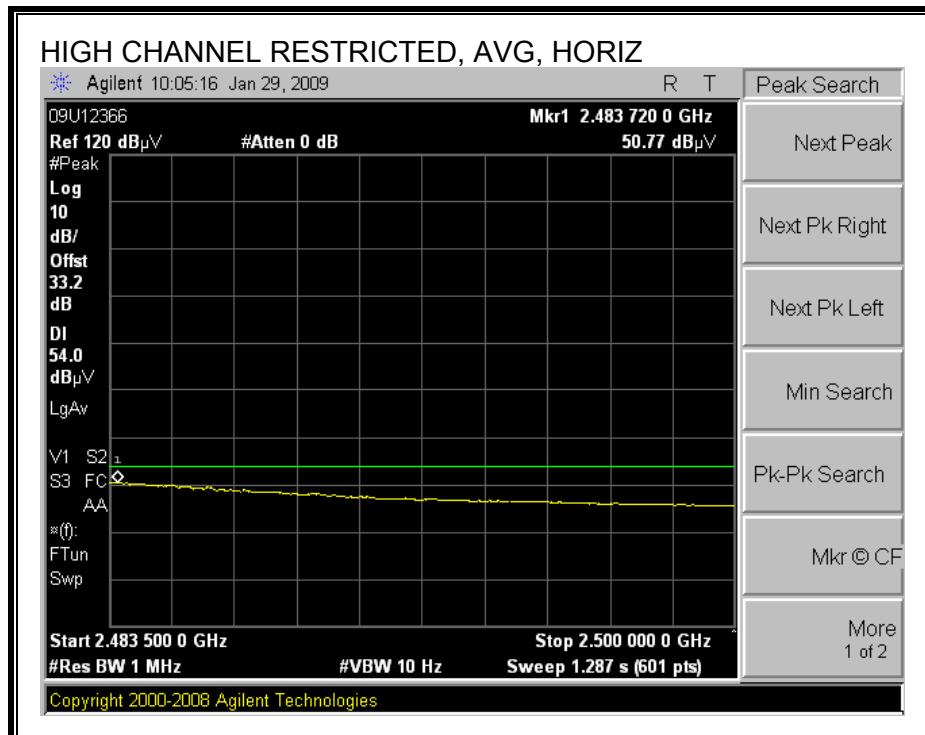
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



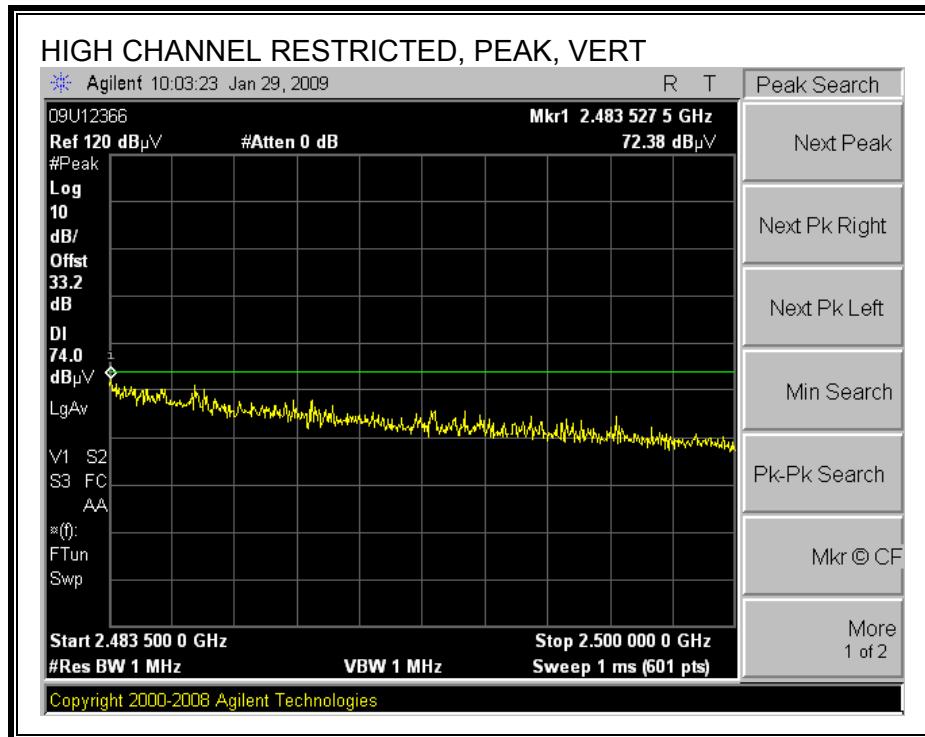


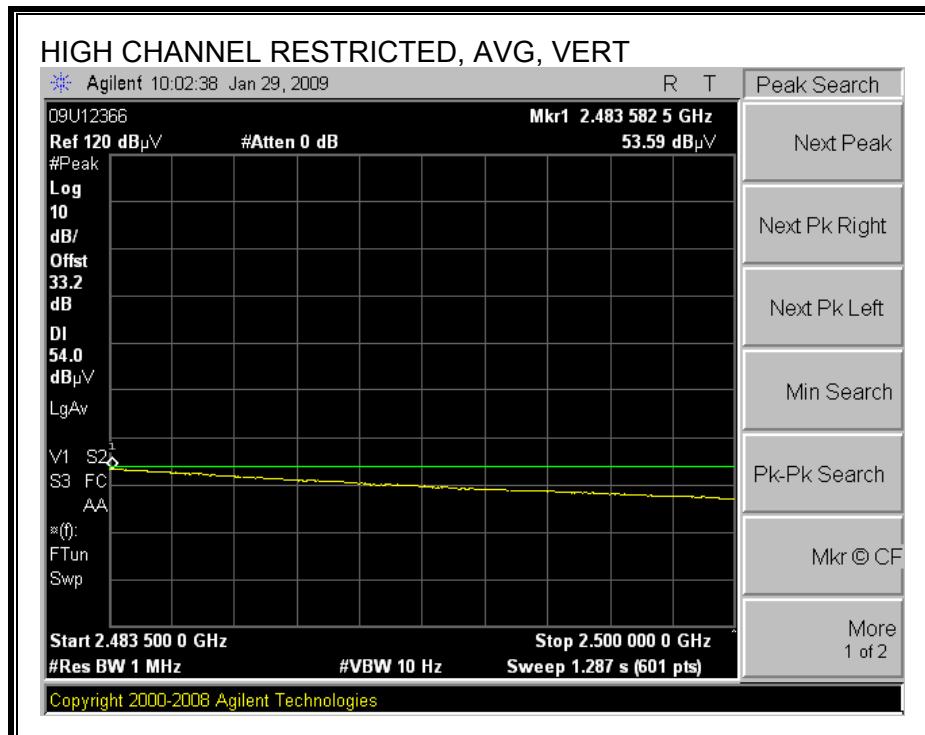
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

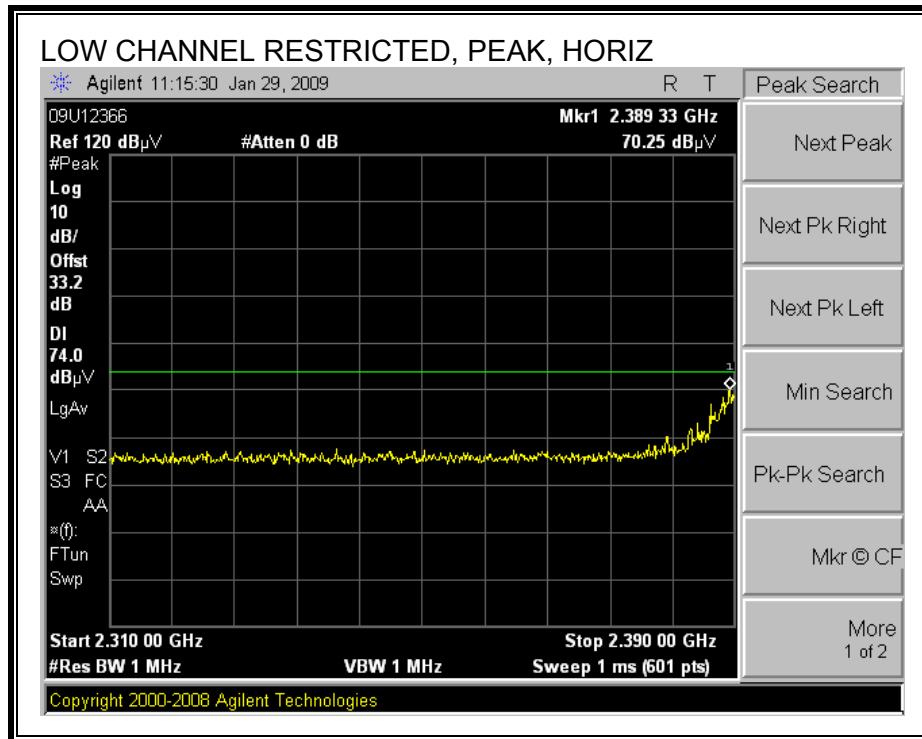


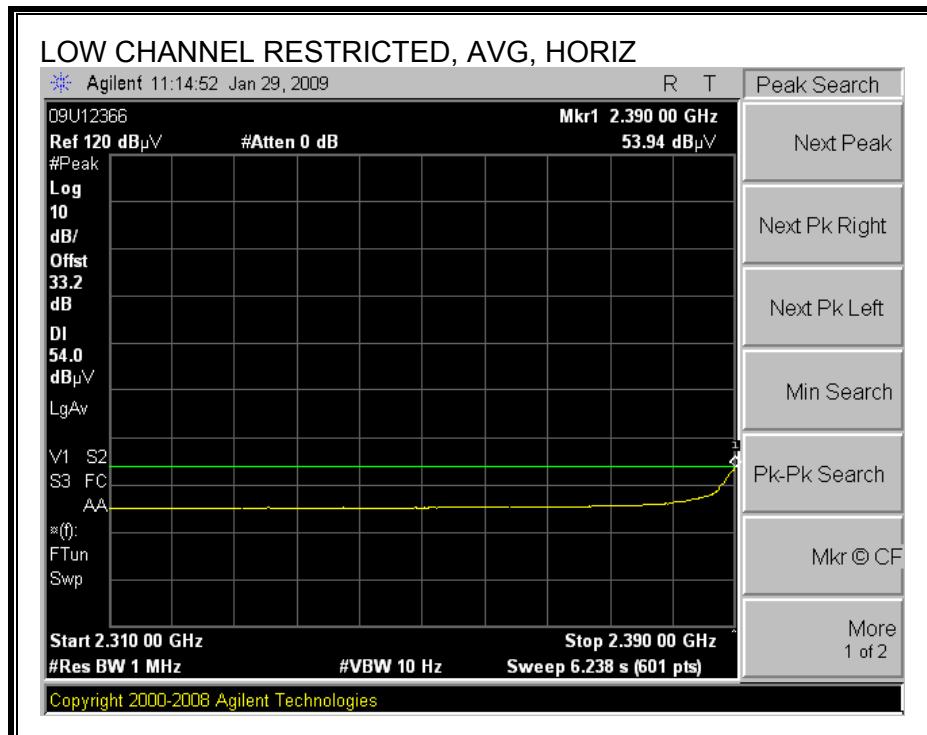


7.4.2. TX ABOVE 1 GHz FOR 802.11g

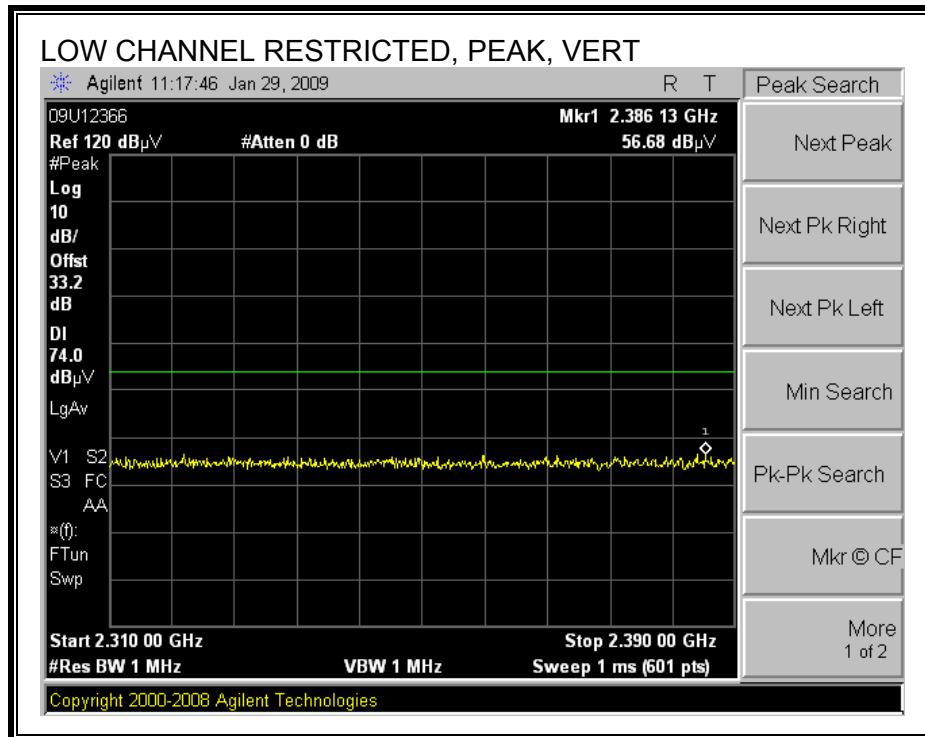
MODE 100:

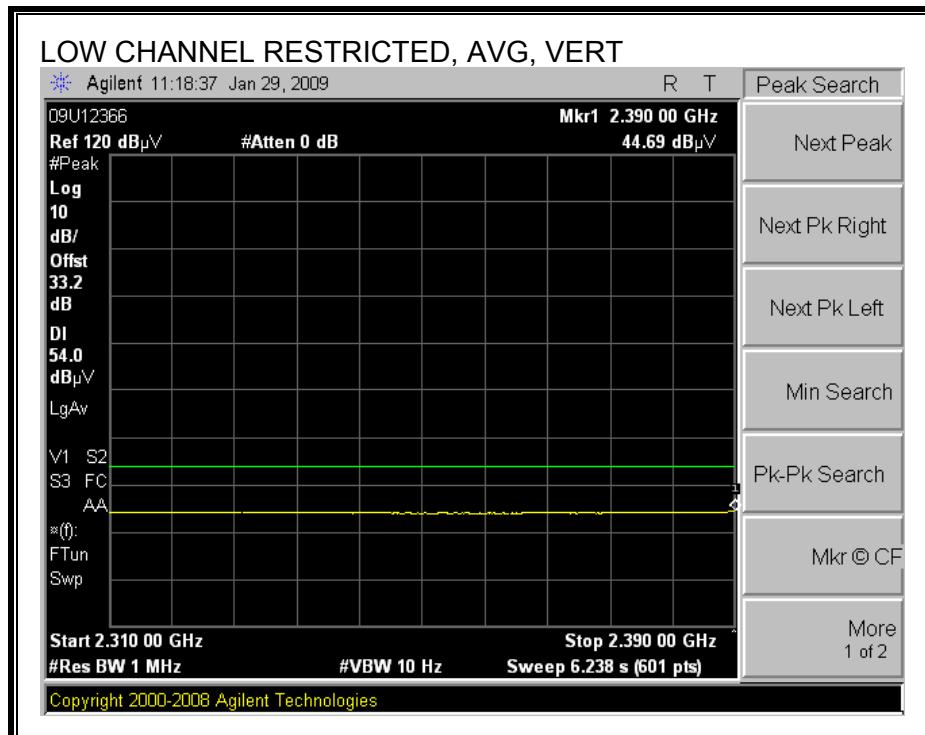
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



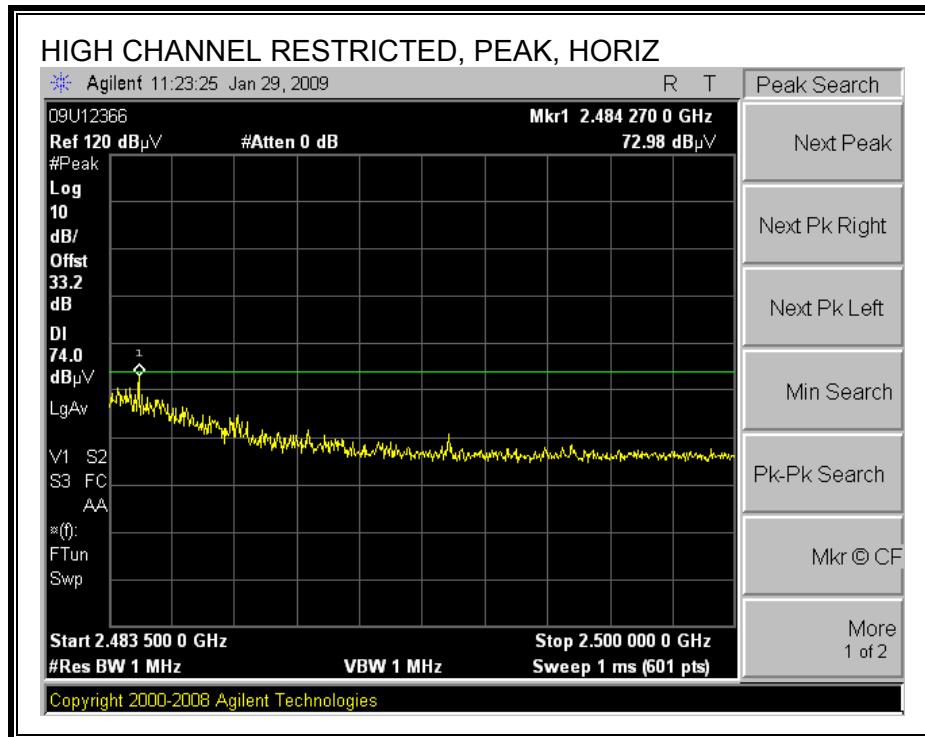


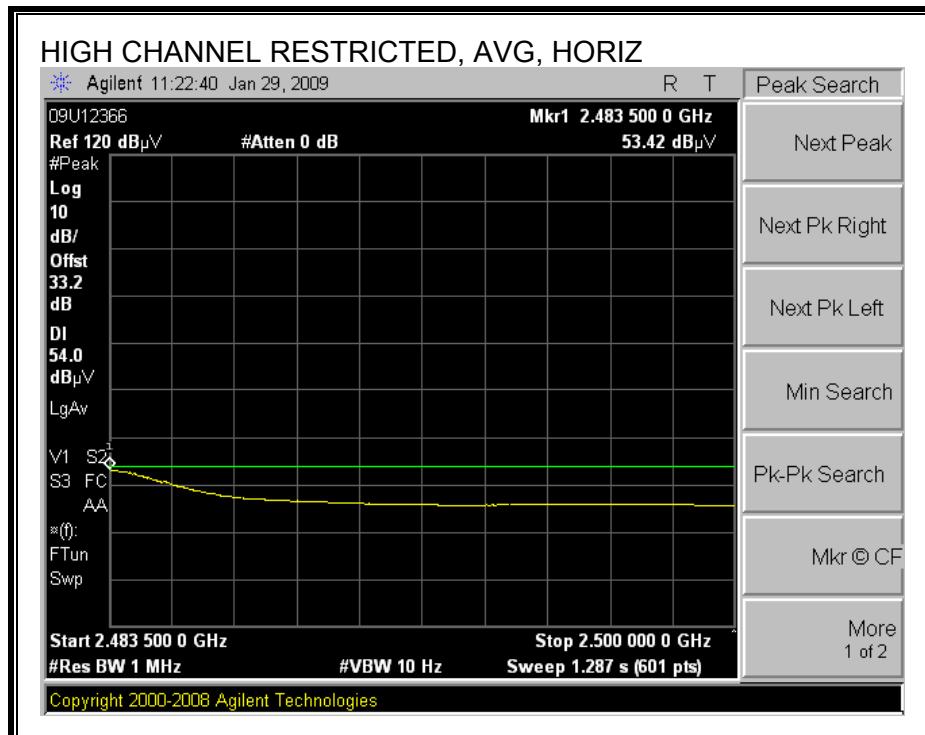
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



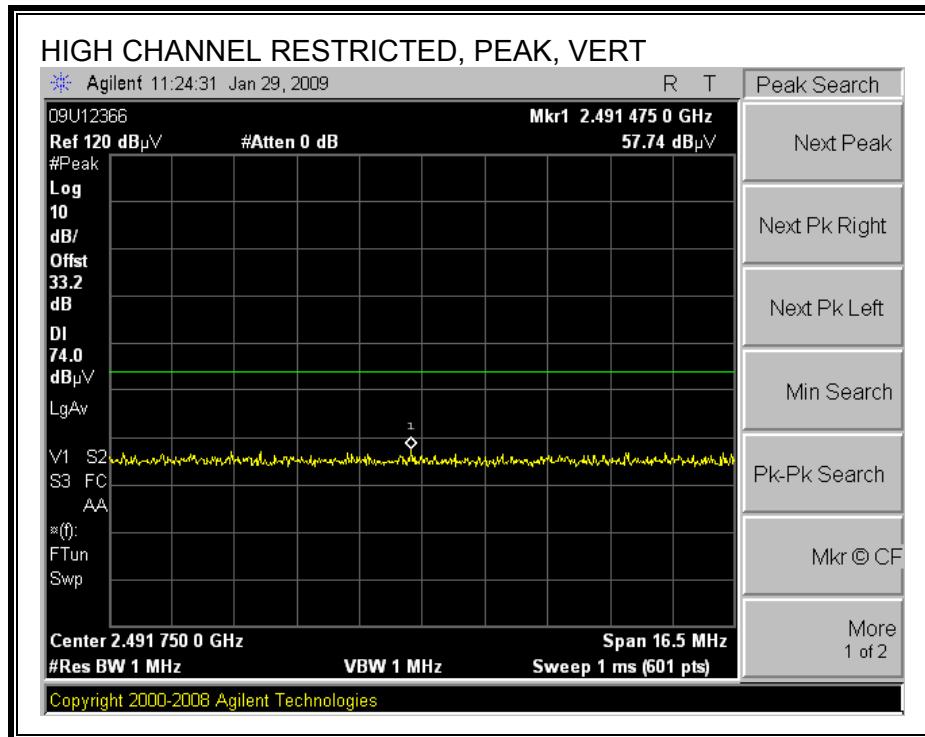


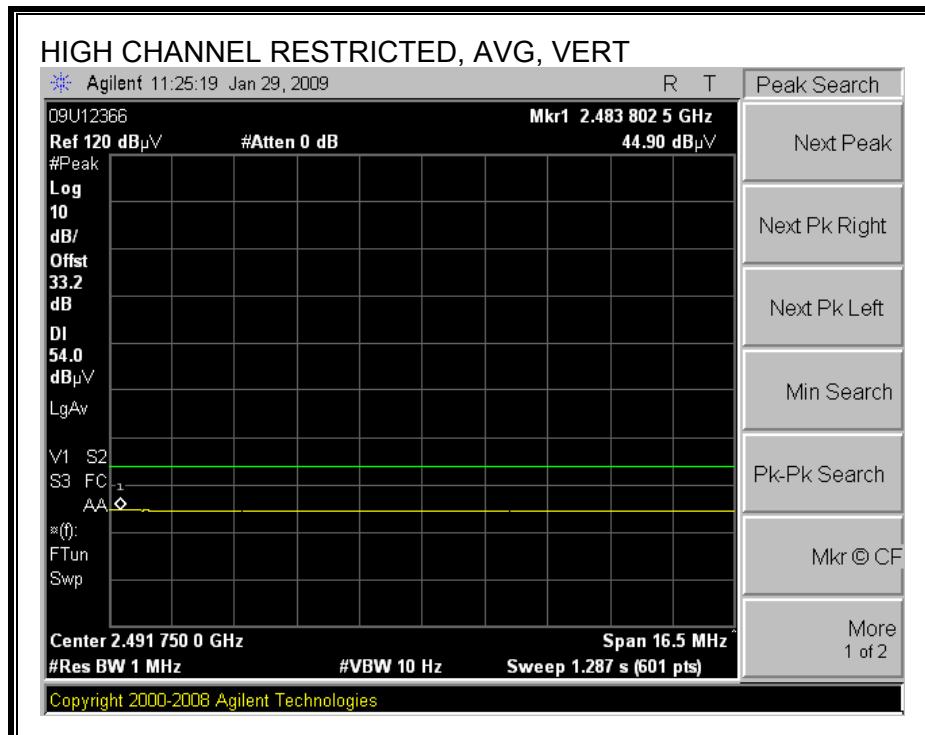
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





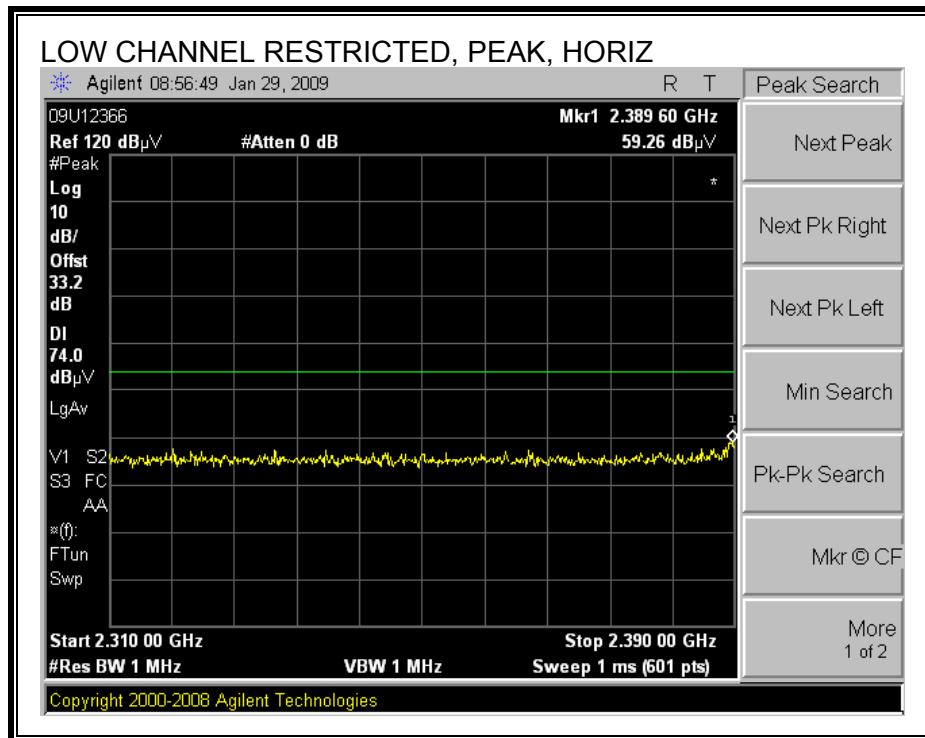
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

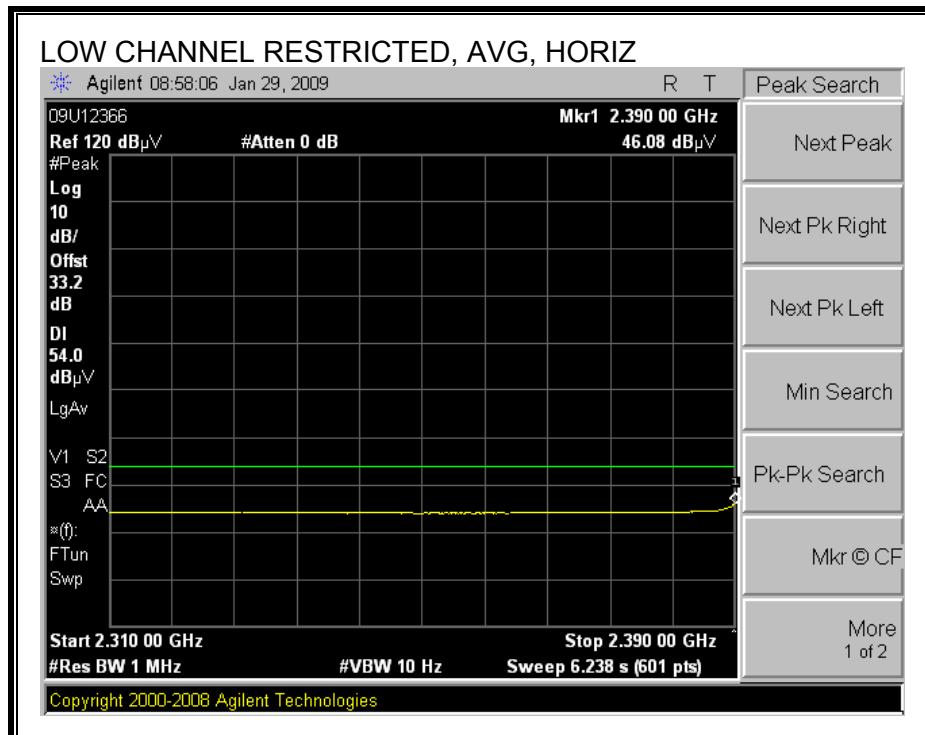




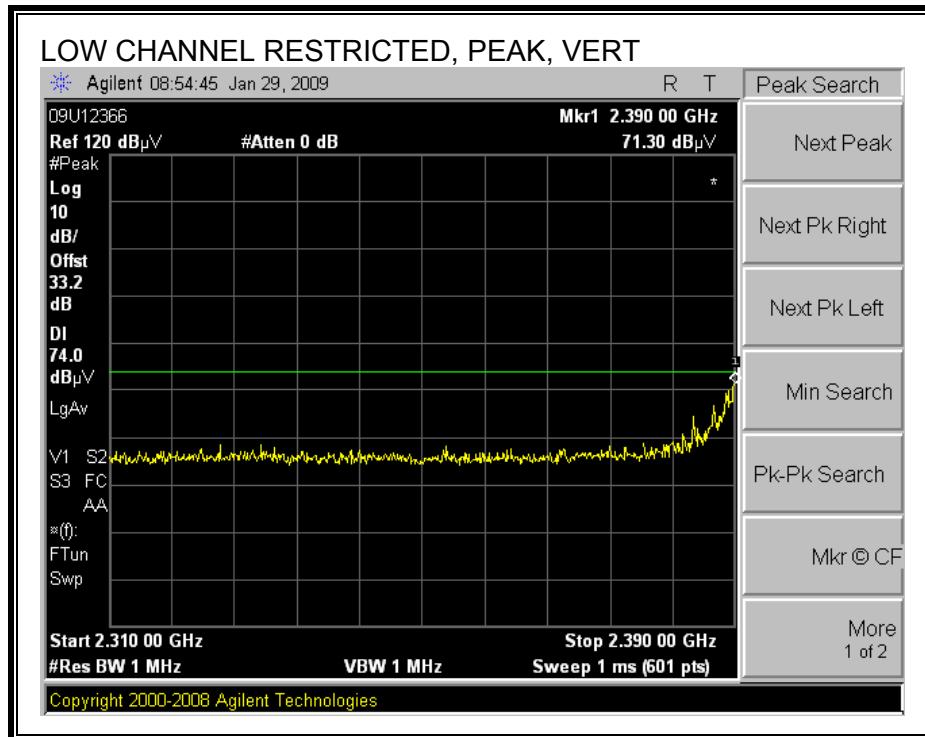
MODE 010:

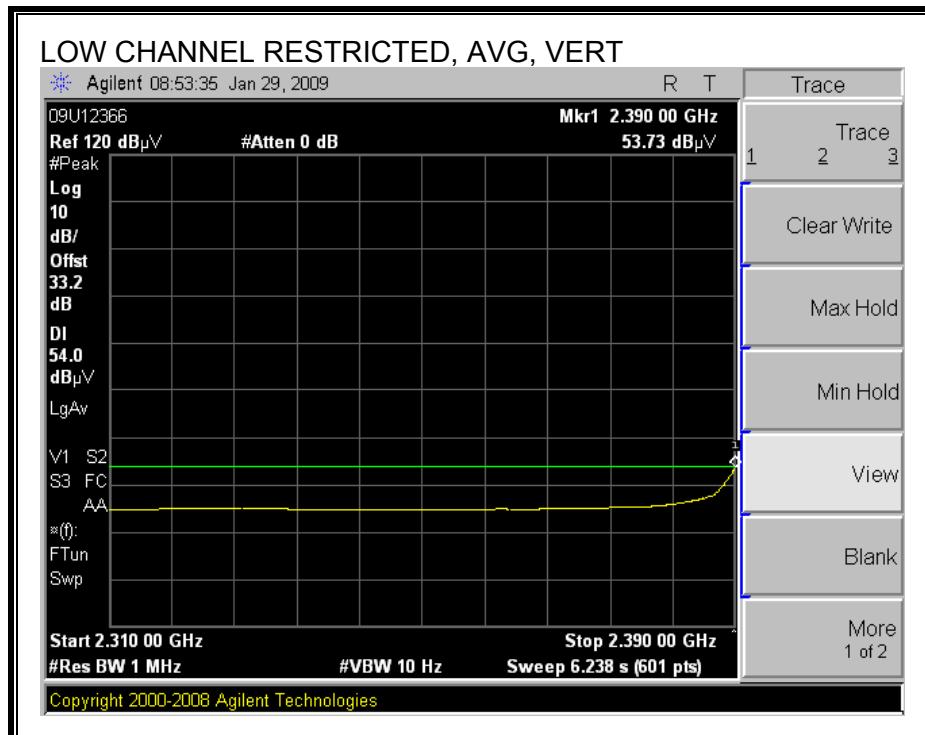
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



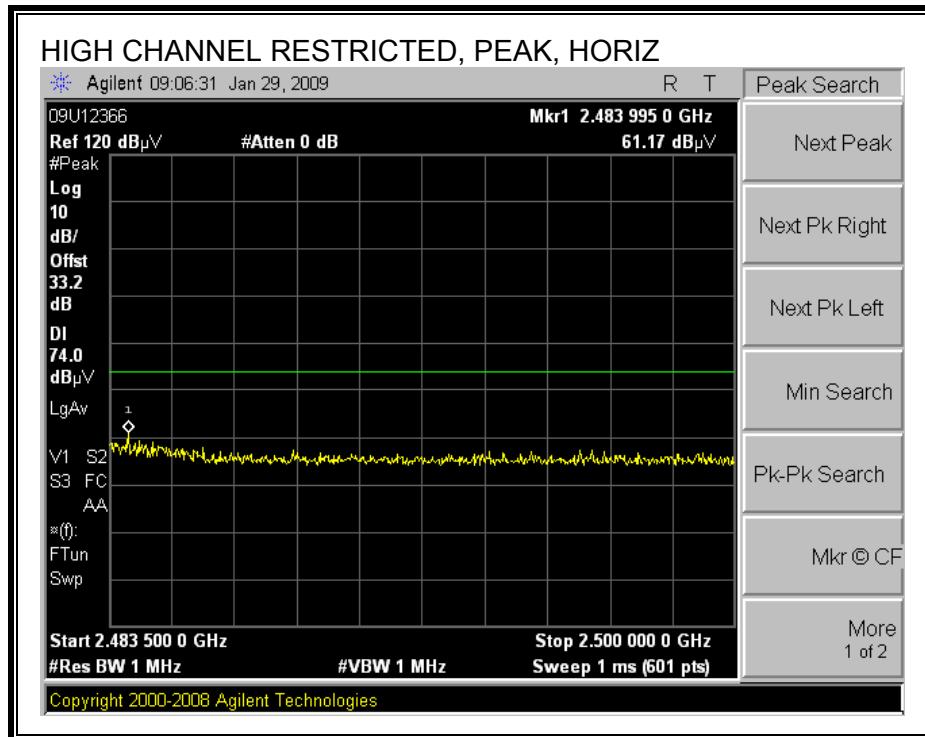


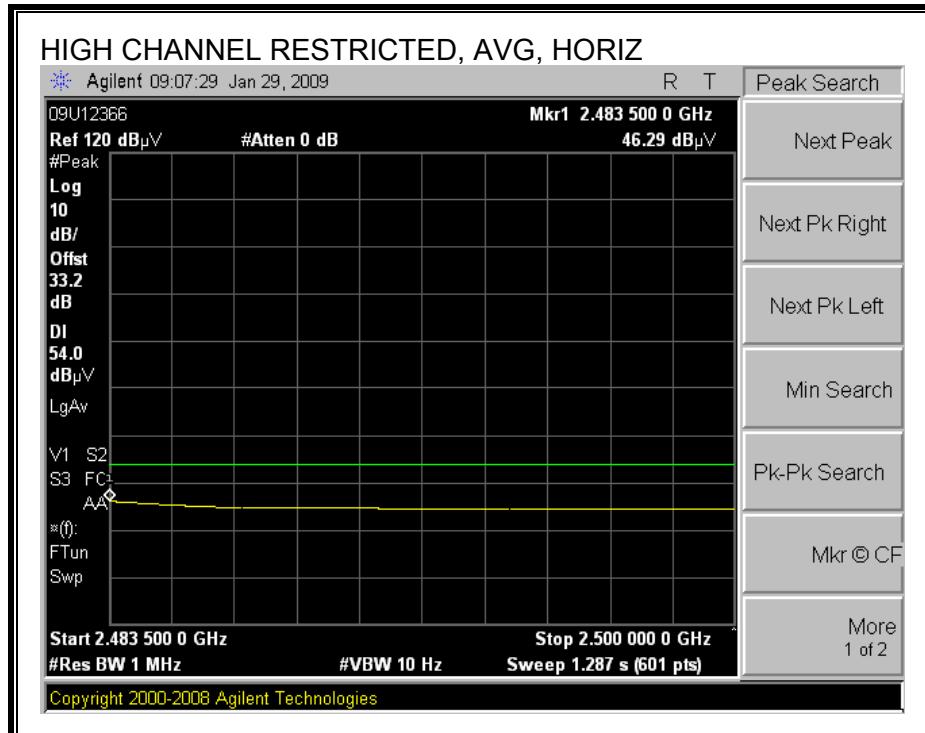
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



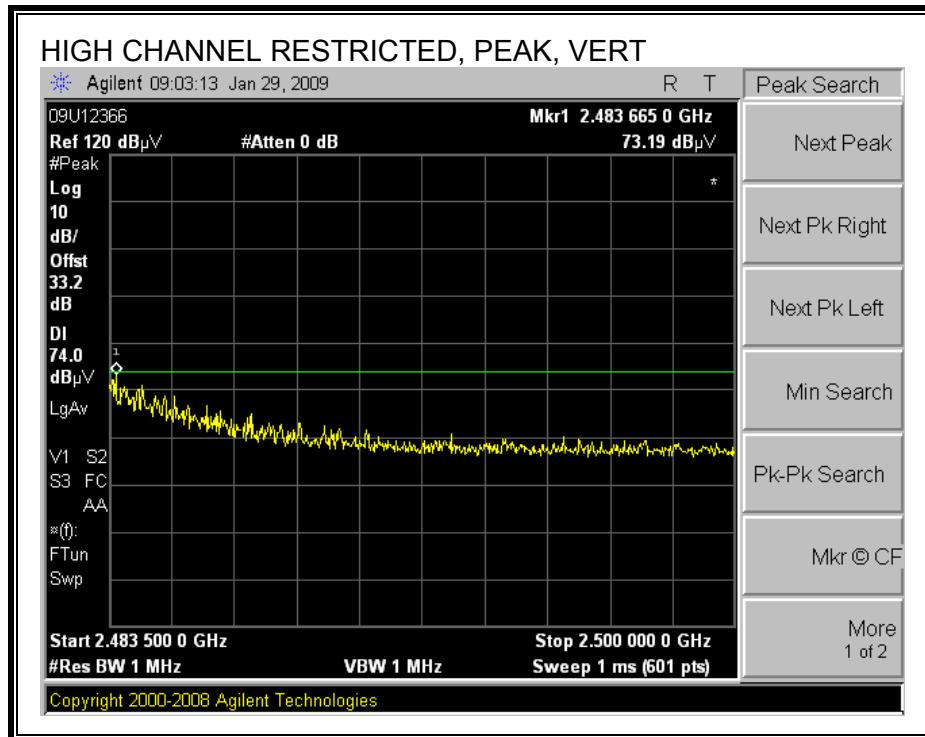


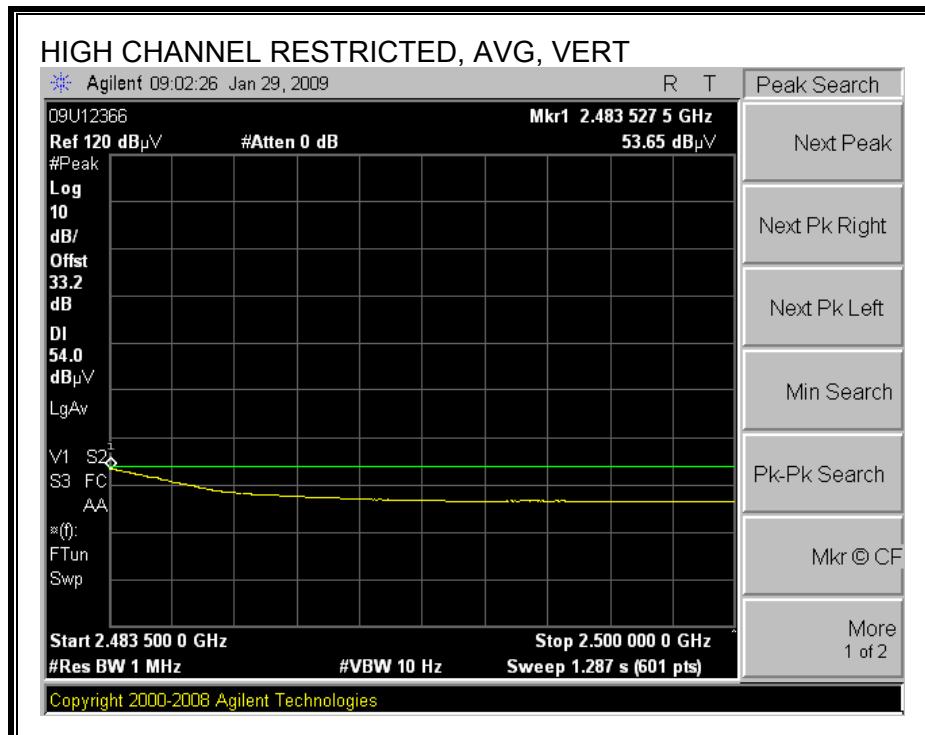
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





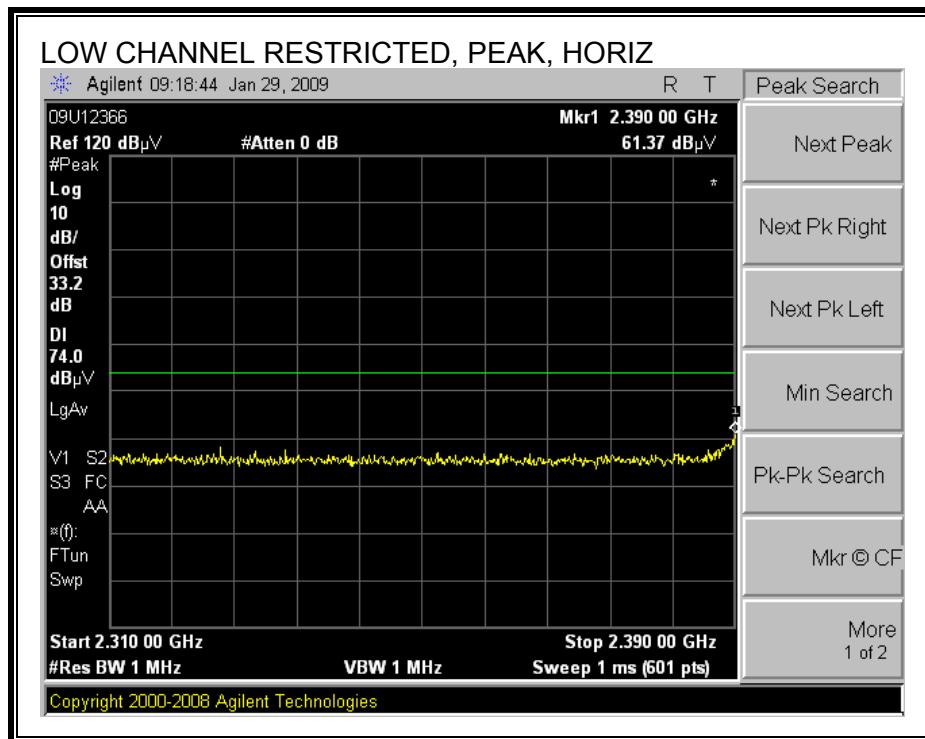
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

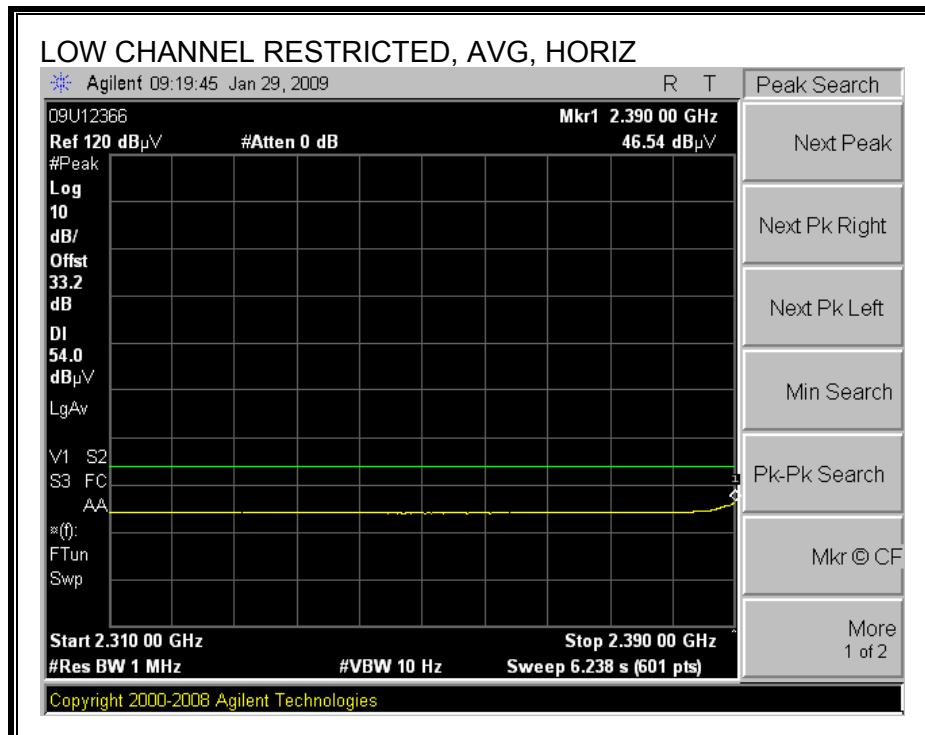




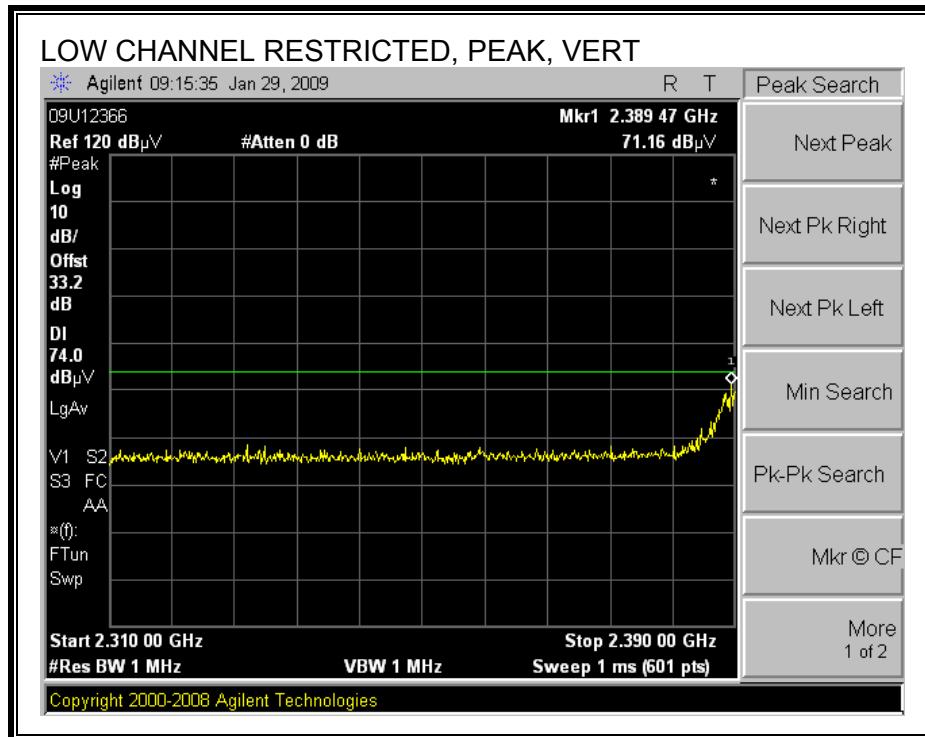
MODE 110 (HT20):

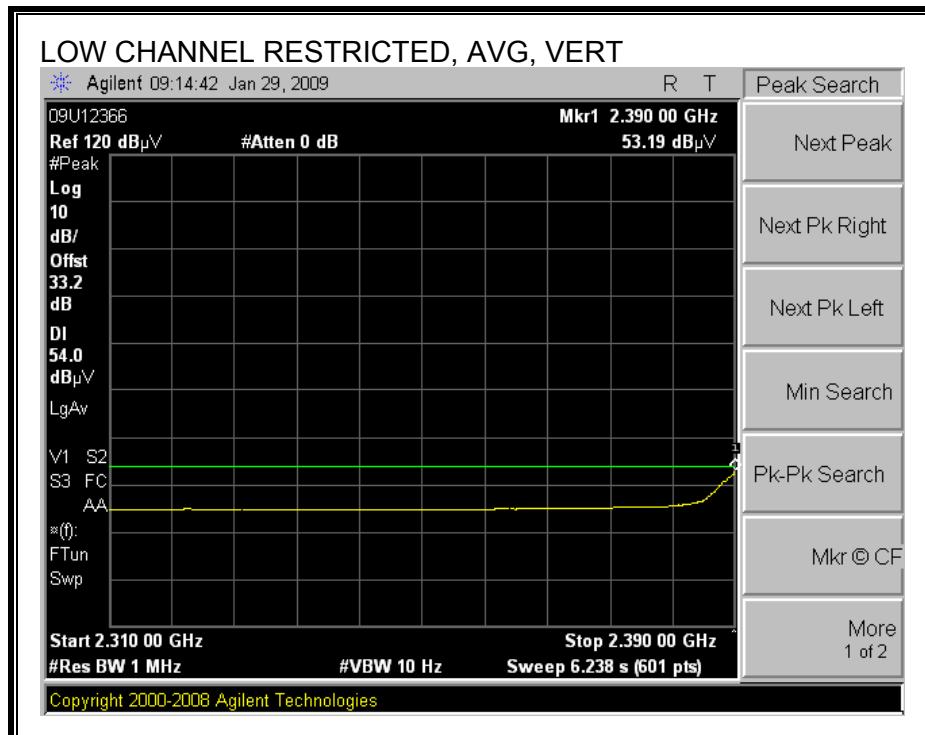
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



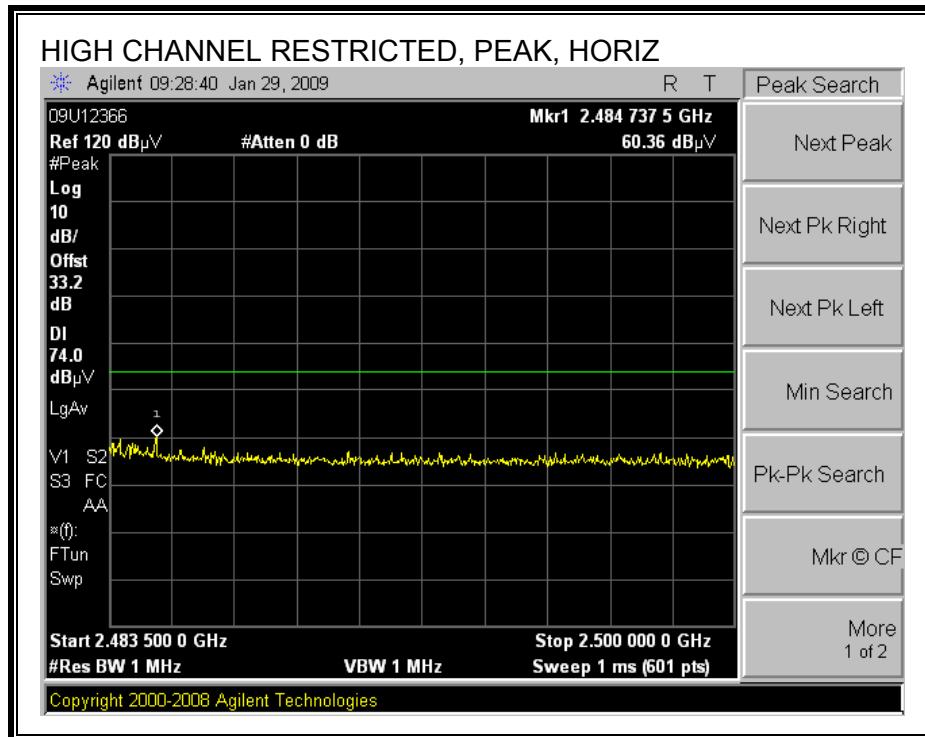


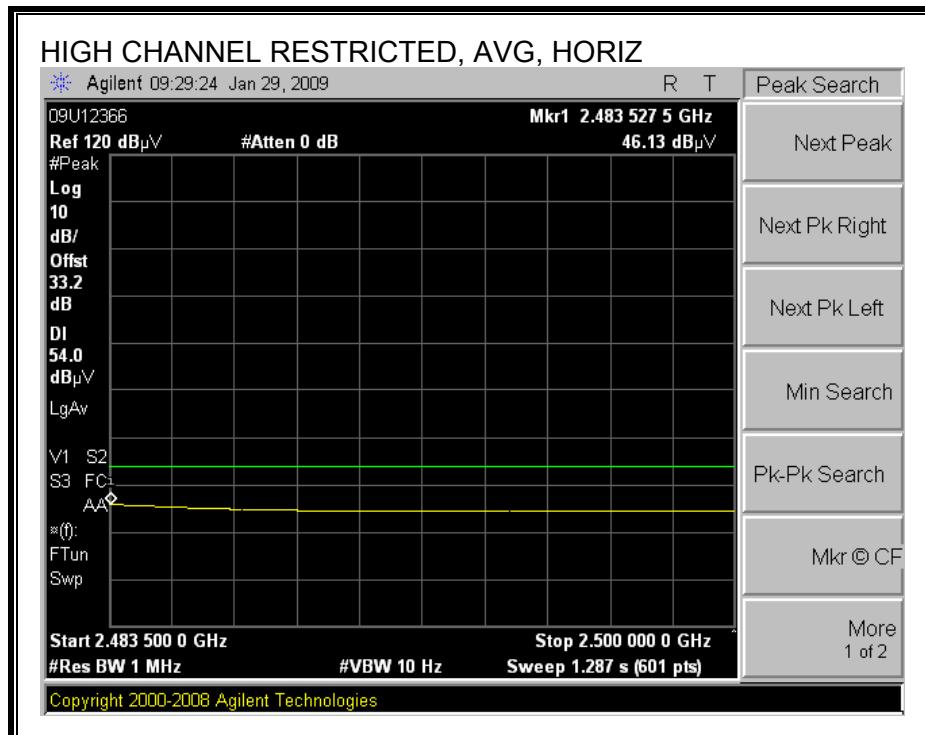
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



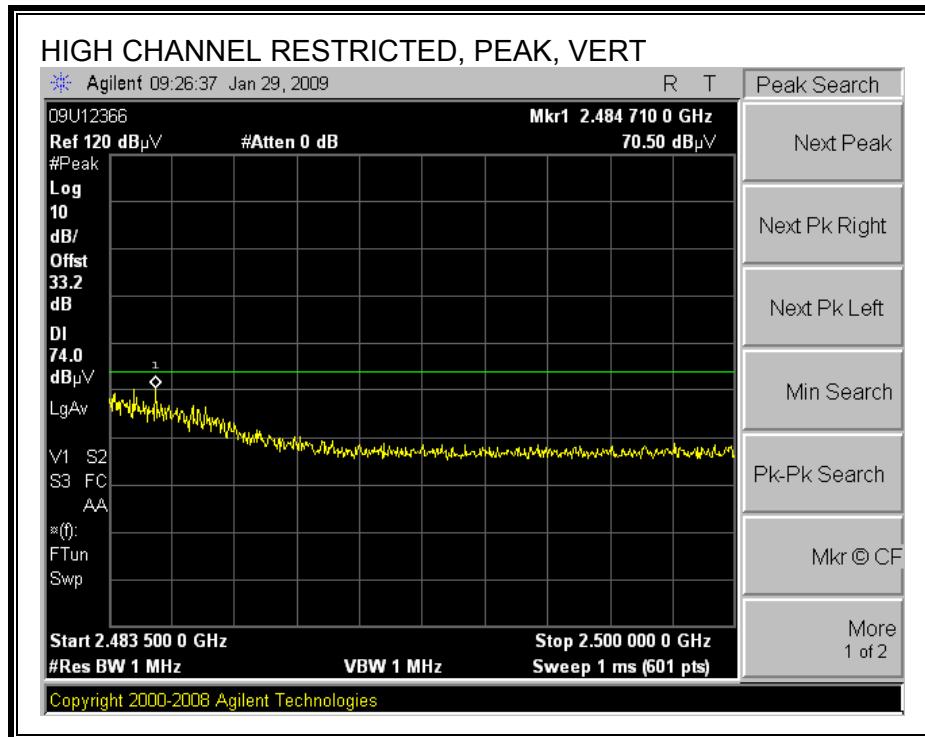


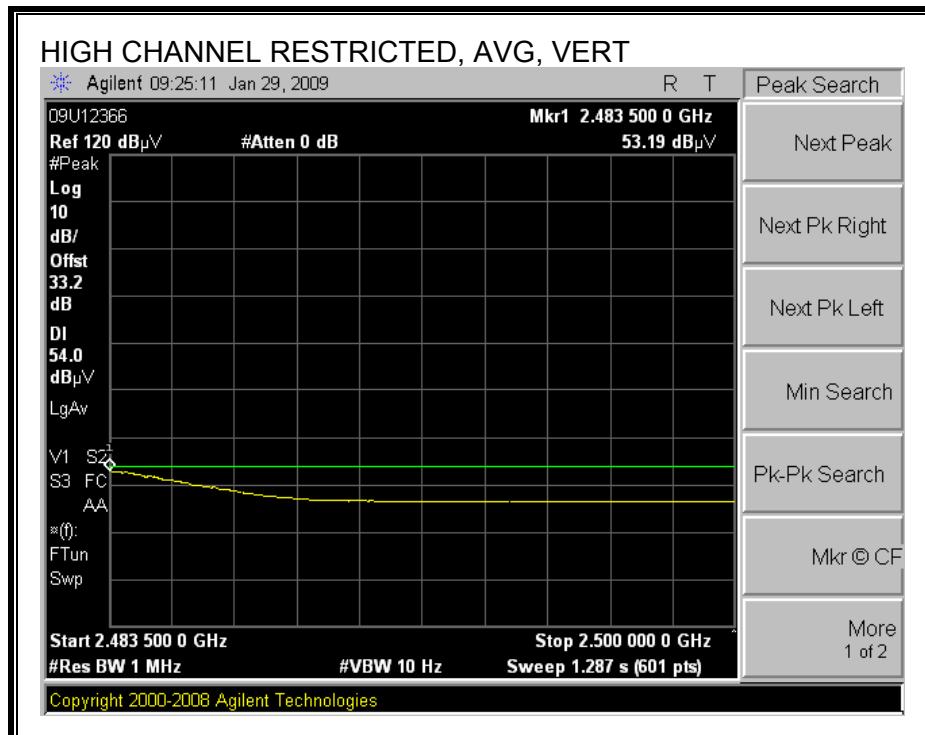
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





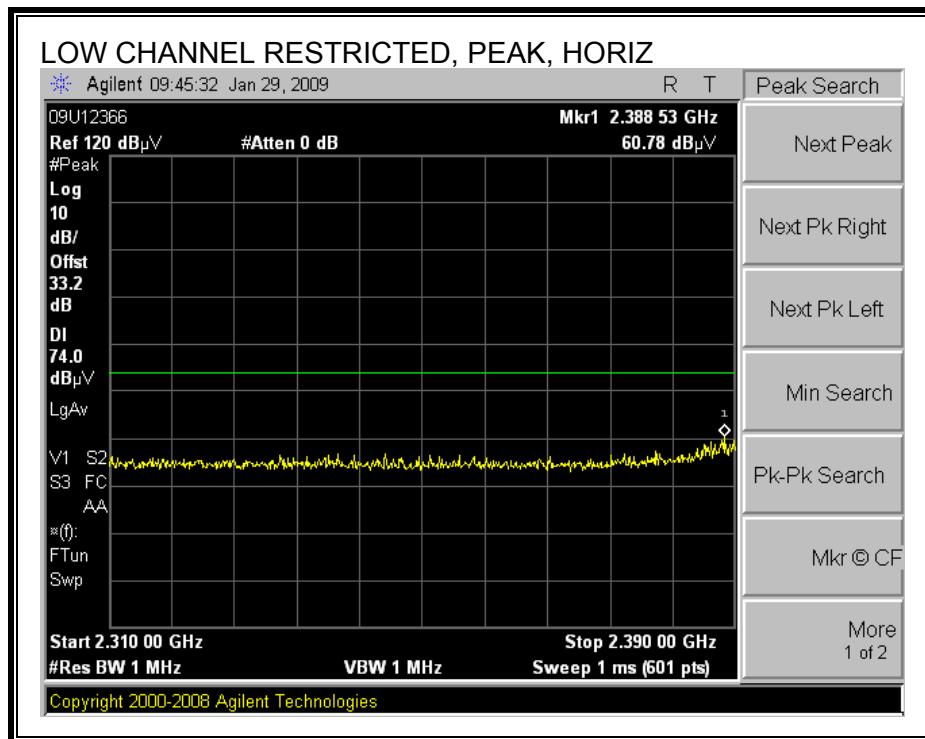
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

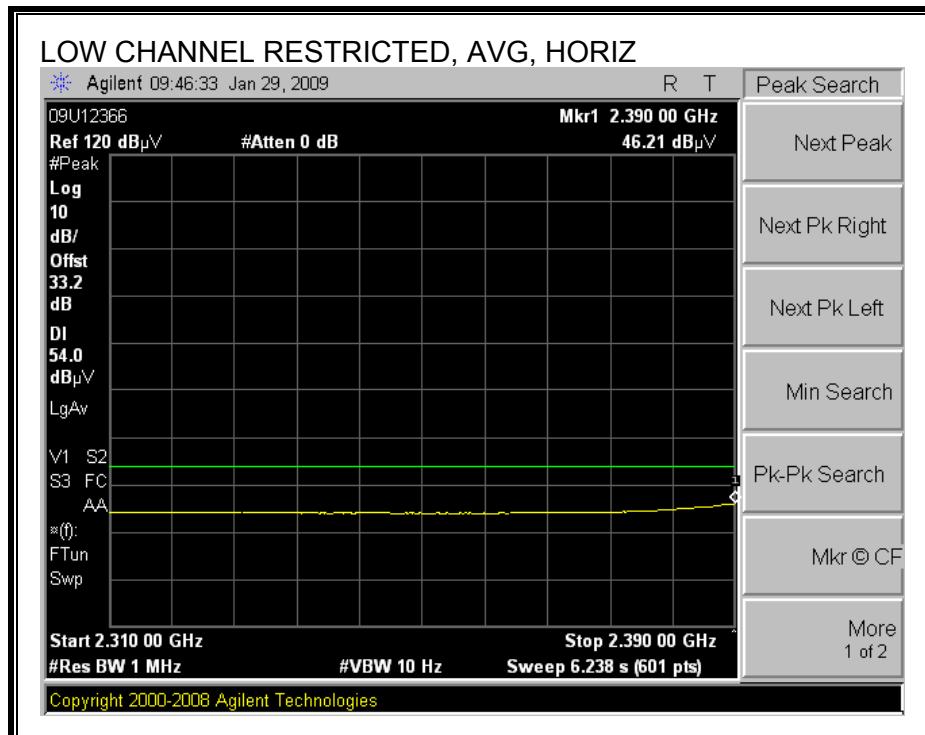




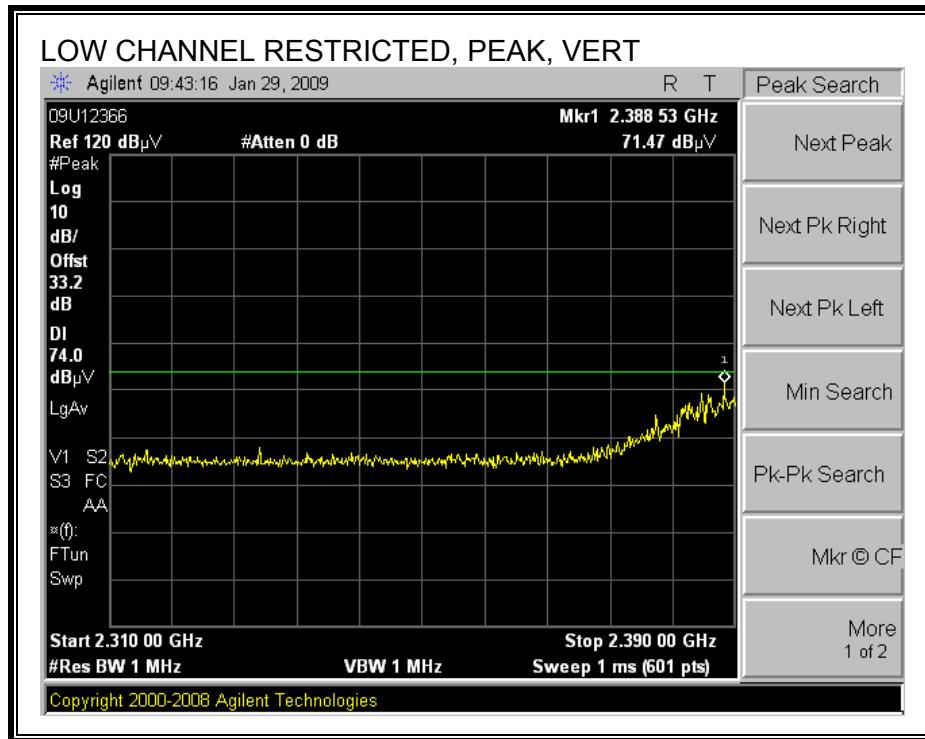
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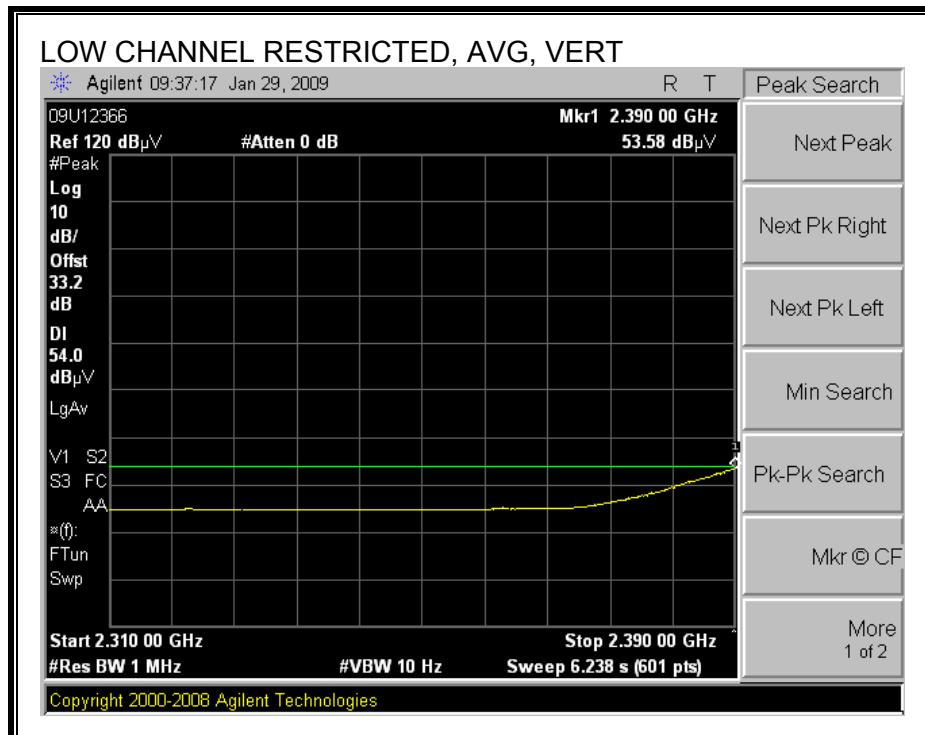
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



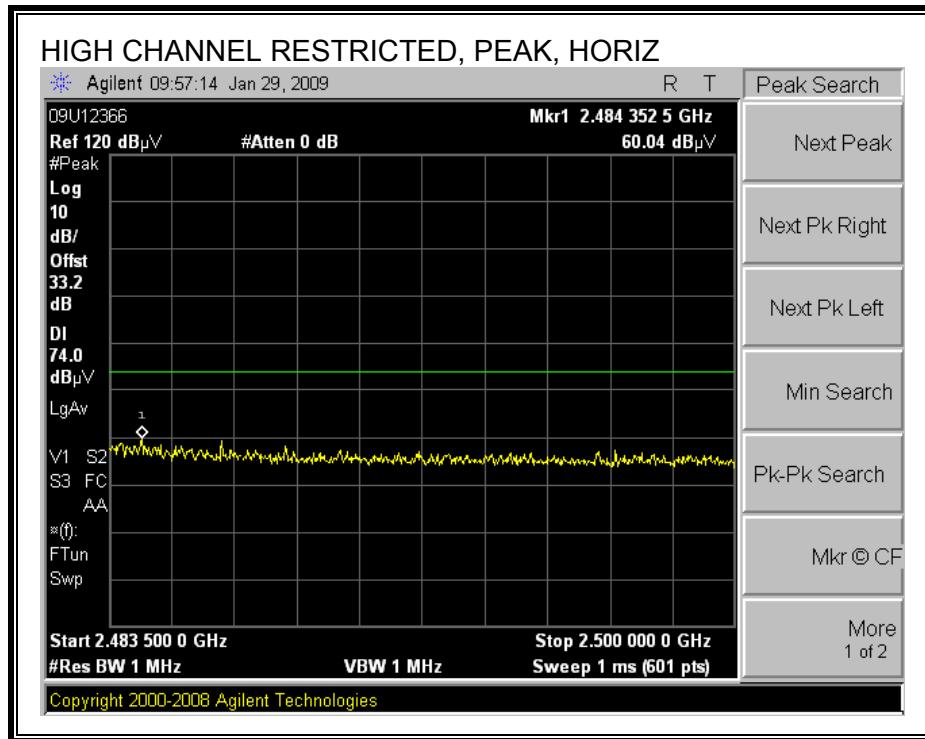


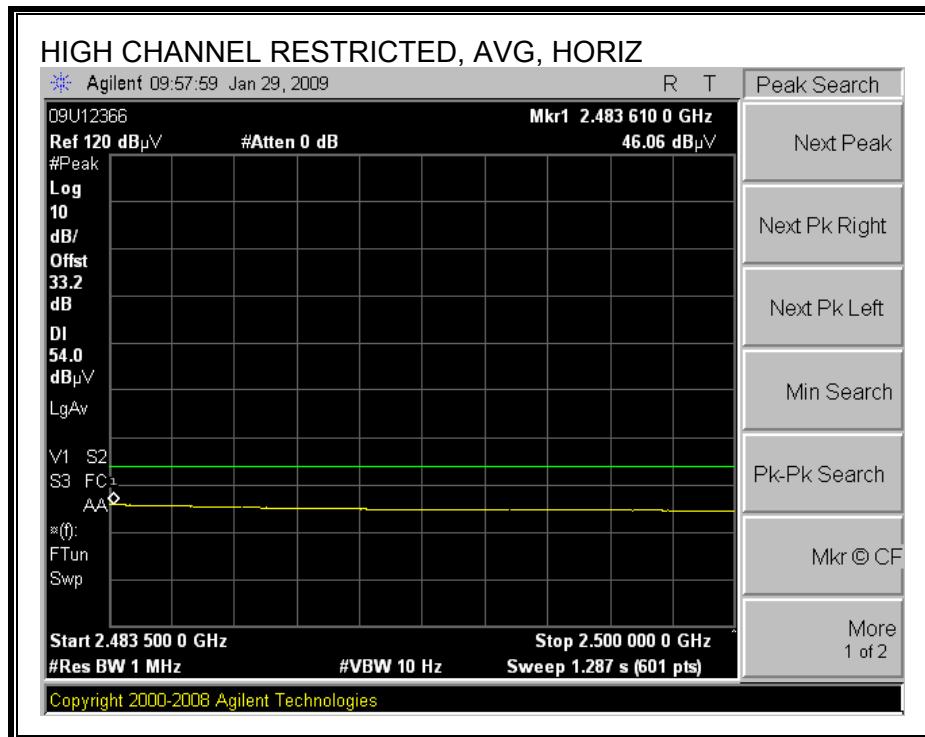
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



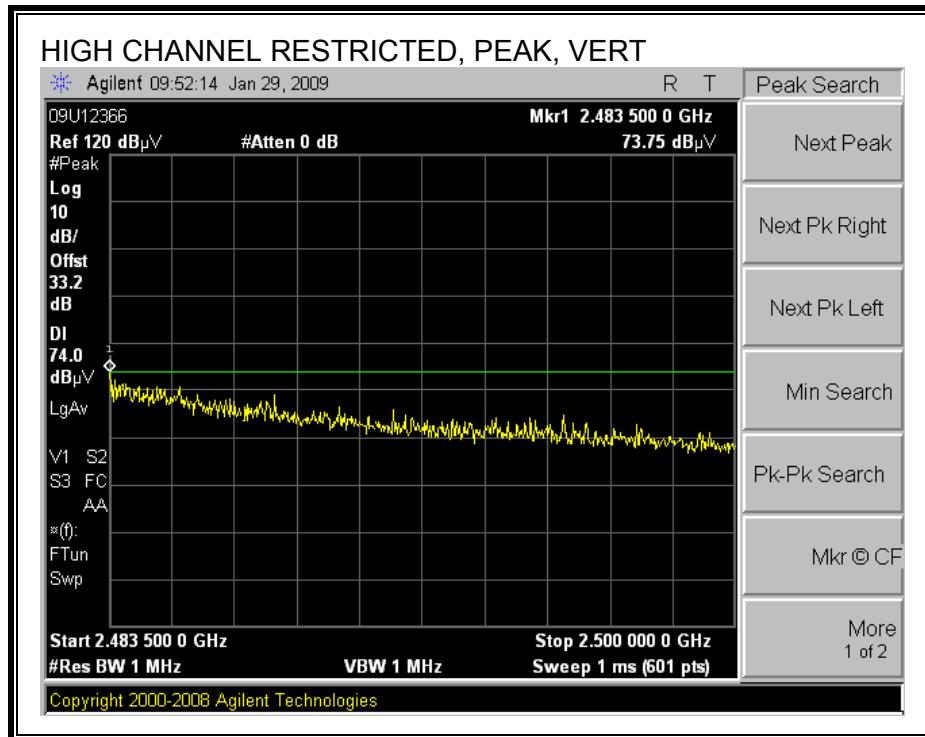


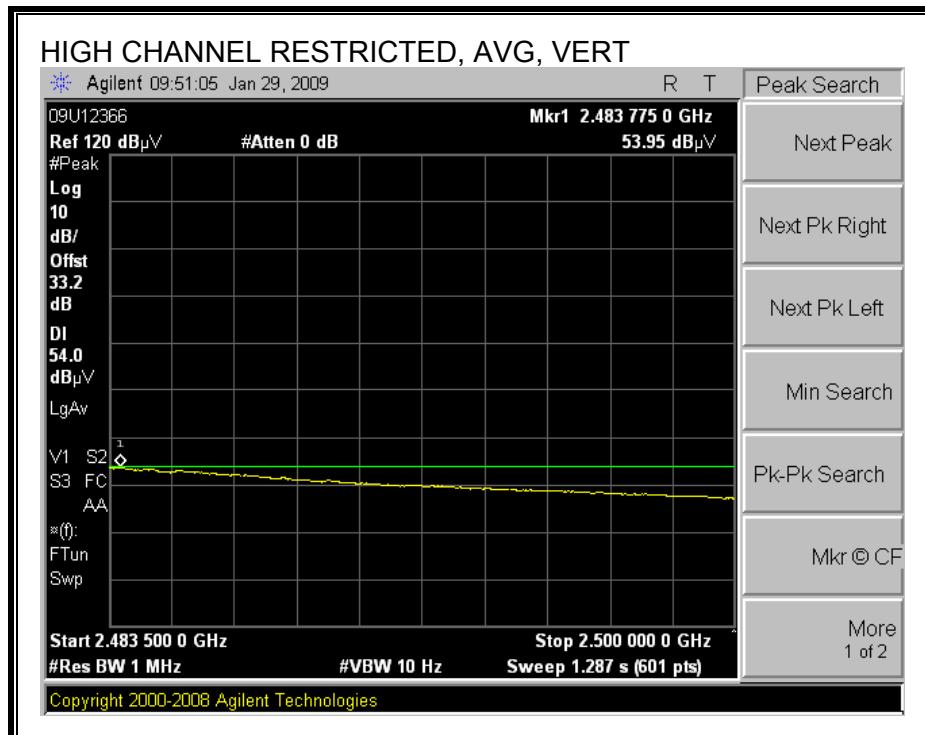
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS (11g Worst-case)

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber															
Company:	Meraki Inc.														
Project #:	09U12366														
Date:	01/29/09														
Test Engineer:	Thanh Nguyen														
Configuration:	EUT with Directional Antenna - 11.5dBi														
Mode:	Transmit Worst case g mode Art=13.5														
Test Equipment:															
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit			
T73; S/N: 6717 @3m			T34 HP 8449B						T125; ARA 18-26 GHz; S/N:1007			FCC 15.209			
Hi Frequency Cables															
3' cable 22807700			12' cable 22807600			20' cable 22807500			HPF			Reject Filter			Peak Measurements RBW=VBW=1MHz
3' cable 22807700			12' cable 22807600			20' cable 22807500						R_001			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)
Low channel															
4.824	3.0	40.4	27.9	33.7	5.8	-34.8	0.0	0.0	45.1	32.6	74	54	-28.9	-21.4	V
7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor
4.824	3.0	41.4	28.0	33.7	5.8	-34.8	0.0	0.0	46.1	32.7	74	54	-27.9	-21.3	H
7.236	3.0	40.3	28.6	36.2	7.2	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor
Mid channel															
4.874	3.0	40.9	27.9	33.8	5.8	-34.8	0.0	0.0	45.8	32.7	74	54	-28.2	-21.3	V
7.311	3.0	41.2	28.4	36.2	7.3	-34.1	0.0	0.0	50.6	37.8	74	54	-23.4	-16.2	Noise floor
4.874	3.0	41.3	28.0	33.8	5.8	-34.8	0.0	0.0	46.1	32.8	74	54	-27.9	-21.2	H
7.311	3.0	41.3	28.4	36.2	7.3	-34.1	0.0	0.0	50.7	37.8	74	54	-23.3	-16.2	Noise floor
High channel															
4.924	3.0	40.6	28.1	33.9	5.9	-34.8	0.0	0.0	45.5	33.1	74	54	-28.5	-20.9	V
7.386	3.0	42.2	28.9	36.3	7.3	-34.1	0.0	0.0	51.7	38.4	74	54	-22.3	-15.6	Noise floor
4.924	3.0	40.2	27.9	33.9	5.9	-34.8	0.0	0.0	45.1	32.9	74	54	-28.9	-21.1	H
7.386	3.0	41.9	28.9	36.3	7.3	-34.1	0.0	0.0	51.4	38.4	74	54	-22.6	-15.6	Noise floor
No other emissions were detected above noise floor.															
Rev. 10.15.08															
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										

7.4.3. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND MODE 100: (DIRECTIONAL ANTENNA – 14.5 dBi)

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																																																																									
<p>Company: Meraki Inc. Project #: 09U12366 Date: 01/30/09 Test Engineer: Thanh Nguyen Configuration: EUT with Directional Antenna - 14.5dBi Mode: Transmit Worst case a mode.</p>																																																																									
<p><u>Test Equipment:</u></p> <table border="1"><tr><td>Horn 1-18GHz</td><td>Pre-amplifier 1-26GHz</td><td>Pre-amplifier 26-40GHz</td><td colspan="4">Horn > 18GHz</td><td colspan="4">Limit</td></tr><tr><td>T73; S/N: 6717 @3m</td><td>T34 HP 8449B</td><td></td><td colspan="4">T125; ARA 18-26GHz; S/N:1007</td><td colspan="4">FCC 15.209</td></tr><tr><td colspan="16"><p>Hi Frequency Cables</p><table border="1"><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2">HPF</td><td>Reject Filter</td><td colspan="4">Peak Measurements RBW=VBW=1MHz</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2"></td><td></td><td colspan="4">Average Measurements RBW=1MHz ; VBW=10Hz</td></tr></table></td></tr></table>																Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit				T73; S/N: 6717 @3m	T34 HP 8449B		T125; ARA 18-26GHz; S/N:1007				FCC 15.209				<p>Hi Frequency Cables</p> <table border="1"><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2">HPF</td><td>Reject Filter</td><td colspan="4">Peak Measurements RBW=VBW=1MHz</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2"></td><td></td><td colspan="4">Average Measurements RBW=1MHz ; VBW=10Hz</td></tr></table>																3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF		Reject Filter	Peak Measurements RBW=VBW=1MHz				3' cable 22807700	12' cable 22807600	20' cable 22807500				Average Measurements RBW=1MHz ; VBW=10Hz			
Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit																																																																		
T73; S/N: 6717 @3m	T34 HP 8449B		T125; ARA 18-26GHz; S/N:1007				FCC 15.209																																																																		
<p>Hi Frequency Cables</p> <table border="1"><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2">HPF</td><td>Reject Filter</td><td colspan="4">Peak Measurements RBW=VBW=1MHz</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="2"></td><td></td><td colspan="4">Average Measurements RBW=1MHz ; VBW=10Hz</td></tr></table>																3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF		Reject Filter	Peak Measurements RBW=VBW=1MHz				3' cable 22807700	12' cable 22807600	20' cable 22807500				Average Measurements RBW=1MHz ; VBW=10Hz																																									
3' cable 22807700	12' cable 22807600	20' cable 22807500	HPF		Reject Filter	Peak Measurements RBW=VBW=1MHz																																																																			
3' cable 22807700	12' cable 22807600	20' cable 22807500				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)																																																										
<p>LOW CHANNEL, 5745 MHz</p> <table border="1"><tr><td>11.490</td><td>3.0</td><td>40.8</td><td>27.5</td><td>38.6</td><td>9.5</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>56.3</td><td>43.1</td><td>74</td><td>54</td><td>-17.7</td><td>-10.9</td><td>V, Noise Floor</td></tr><tr><td>11.490</td><td>3.0</td><td>40.4</td><td>28.8</td><td>38.6</td><td>9.5</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>55.9</td><td>44.3</td><td>74</td><td>54</td><td>-18.1</td><td>-9.7</td><td>H, Noise floor</td></tr></table>																11.490	3.0	40.8	27.5	38.6	9.5	-32.5	0.0	0.0	56.3	43.1	74	54	-17.7	-10.9	V, Noise Floor	11.490	3.0	40.4	28.8	38.6	9.5	-32.5	0.0	0.0	55.9	44.3	74	54	-18.1	-9.7	H, Noise floor																										
11.490	3.0	40.8	27.5	38.6	9.5	-32.5	0.0	0.0	56.3	43.1	74	54	-17.7	-10.9	V, Noise Floor																																																										
11.490	3.0	40.4	28.8	38.6	9.5	-32.5	0.0	0.0	55.9	44.3	74	54	-18.1	-9.7	H, Noise floor																																																										
<p>MID CHANNEL, 5785 MHz</p> <table border="1"><tr><td>11.570</td><td>3.0</td><td>40.2</td><td>27.9</td><td>38.7</td><td>9.5</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>55.9</td><td>43.6</td><td>74</td><td>54</td><td>-18.1</td><td>-10.4</td><td>V, Noise Floor</td></tr><tr><td>11.570</td><td>3.0</td><td>40.1</td><td>27.9</td><td>38.7</td><td>9.5</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>55.8</td><td>43.6</td><td>74</td><td>54</td><td>-18.2</td><td>-10.4</td><td>H, Noise floor</td></tr></table>																11.570	3.0	40.2	27.9	38.7	9.5	-32.5	0.0	0.0	55.9	43.6	74	54	-18.1	-10.4	V, Noise Floor	11.570	3.0	40.1	27.9	38.7	9.5	-32.5	0.0	0.0	55.8	43.6	74	54	-18.2	-10.4	H, Noise floor																										
11.570	3.0	40.2	27.9	38.7	9.5	-32.5	0.0	0.0	55.9	43.6	74	54	-18.1	-10.4	V, Noise Floor																																																										
11.570	3.0	40.1	27.9	38.7	9.5	-32.5	0.0	0.0	55.8	43.6	74	54	-18.2	-10.4	H, Noise floor																																																										
<p>HIGH CHANNEL, 5825 MHz</p> <table border="1"><tr><td>11.650</td><td>3.0</td><td>41.4</td><td>28.3</td><td>38.7</td><td>9.6</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>57.1</td><td>44.0</td><td>74</td><td>54</td><td>-16.9</td><td>-10.0</td><td>V, Noise Floor</td></tr><tr><td>11.650</td><td>3.0</td><td>41.0</td><td>28.3</td><td>38.7</td><td>9.6</td><td>-32.5</td><td>0.0</td><td>0.0</td><td>56.8</td><td>44.1</td><td>74</td><td>54</td><td>-17.2</td><td>-9.9</td><td>H, Noise floor</td></tr></table>																11.650	3.0	41.4	28.3	38.7	9.6	-32.5	0.0	0.0	57.1	44.0	74	54	-16.9	-10.0	V, Noise Floor	11.650	3.0	41.0	28.3	38.7	9.6	-32.5	0.0	0.0	56.8	44.1	74	54	-17.2	-9.9	H, Noise floor																										
11.650	3.0	41.4	28.3	38.7	9.6	-32.5	0.0	0.0	57.1	44.0	74	54	-16.9	-10.0	V, Noise Floor																																																										
11.650	3.0	41.0	28.3	38.7	9.6	-32.5	0.0	0.0	56.8	44.1	74	54	-17.2	-9.9	H, Noise floor																																																										
<p>No other emissions were detected above noise floor.</p>																																																																									
<p>Rev. 10.15.08</p>																																																																									
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																																																																					

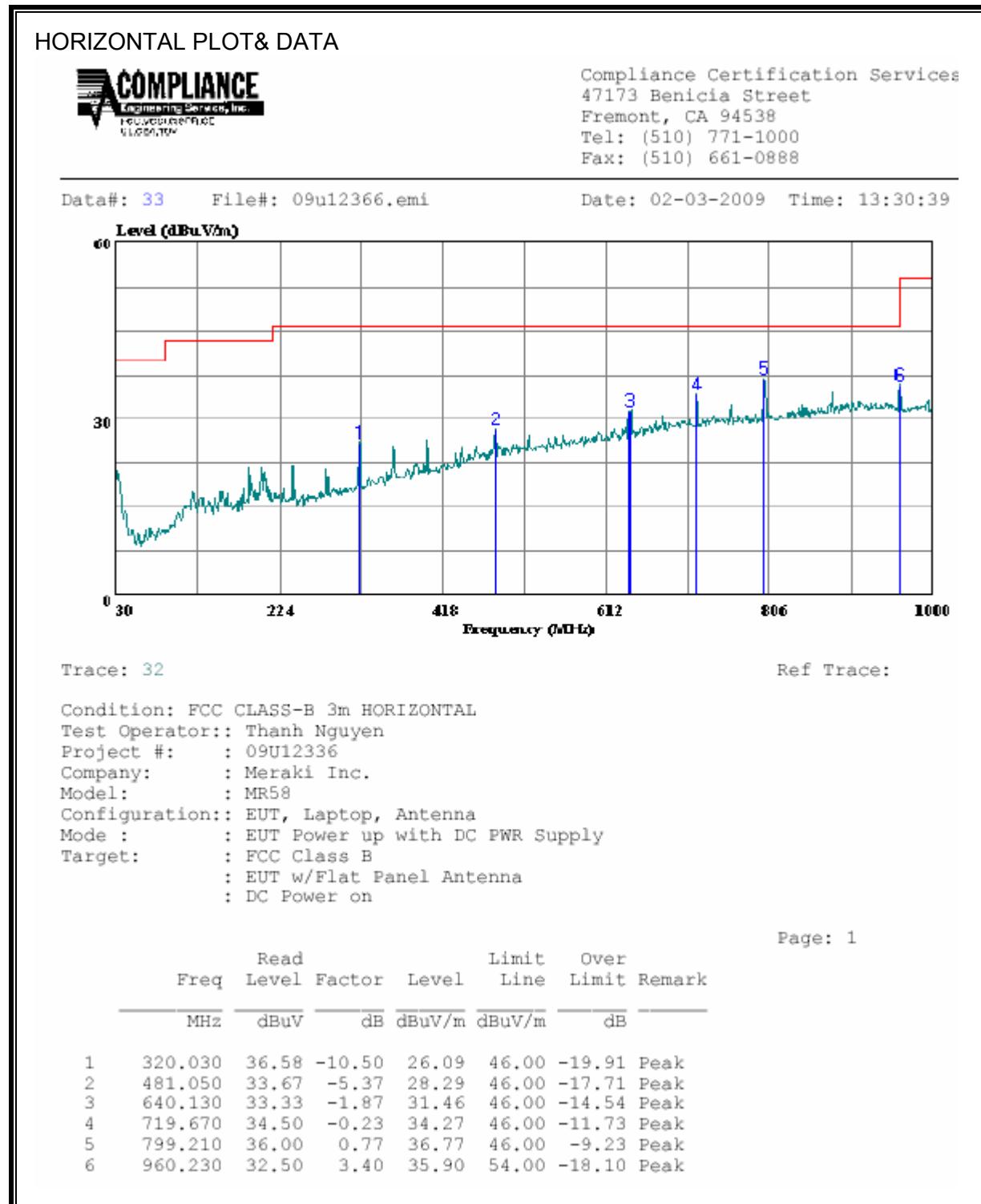
**7.4.4. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND
MODE 100 (Worst-case):**

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																																																																																																																																																																																																																																																																																																																																																							
<p>Company: Meraki Inc. Project #: 09U12366 Date: 01/30/09 Test Engineer: Thanh Nguyen Configuration: EUT with 4dBi gain Omni-Directional Antenna. 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11.570	3.0	40.8	28.0	38.7	9.5	-32.5	0.0	0.0	56.5	43.6	74	54	-17.5	-10.4	V, Noise Floor																																																																																																																																																																																																																																																																																																																																								
11.570	3.0	39.8	28.0	38.7	9.5	-32.5	0.0	0.0	55.4	43.6	74	54	-18.6	10.4	H, Noise floor																																																																																																																																																																																																																																																																																																																																								
HI CHANNEL, 5825 MHz																																																																																																																																																																																																																																																																																																																																																							
11.650	3.0	40.7	28.3	38.7	9.6	-32.5	0.0	0.0	56.5	44.0	74	54	-17.5	-10.0	V, Noise Floor																																																																																																																																																																																																																																																																																																																																								
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No other emissions were detected above noise floor.																																																																																																																																																																																																																																																																																																																																																							
Rev. 10.15.08																																																																																																																																																																																																																																																																																																																																																							
<table> <tr> <td>f</td> <td>Measurement Frequency</td> <td>Amp</td> <td>Preamp Gain</td> <td colspan="4"></td> <td colspan="4">Avg Lim Average Field Strength Limit</td> </tr> <tr> <td>Dist</td> <td>Distance to Antenna</td> <td>D Corr</td> <td>Distance Correct to 3 meters</td> <td colspan="4"></td> <td colspan="4">Pk Lim Peak Field Strength Limit</td> </tr> <tr> <td>Read</td> <td>Analyzer Reading</td> <td>Avg</td> <td>Average Field Strength @ 3 m</td> <td colspan="4"></td> <td colspan="4">Avg Mar Margin vs. Average Limit</td> </tr> <tr> <td>AF</td> <td>Antenna Factor</td> <td>Peak</td> <td>Calculated Peak Field Strength</td> <td colspan="4"></td> <td colspan="4">Pk Mar Margin vs. Peak Limit</td> </tr> <tr> <td>CL</td> <td>Cable Loss</td> <td>HPF</td> <td>High Pass Filter</td> <td colspan="4"></td> <td colspan="4"></td> </tr> </table>						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																																																																																																																																																																																																																																																																																														
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AF	Antenna Factor	Peak	Calculated Peak Field Strength					Pk Mar Margin vs. Peak Limit																																																																																																																																																																																																																																																																																																																																															
CL	Cable Loss	HPF	High Pass Filter																																																																																																																																																																																																																																																																																																																																																				

7.4.5. TX BELOW 1 GHz (WORST-CASE CONFIGURATION)

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



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

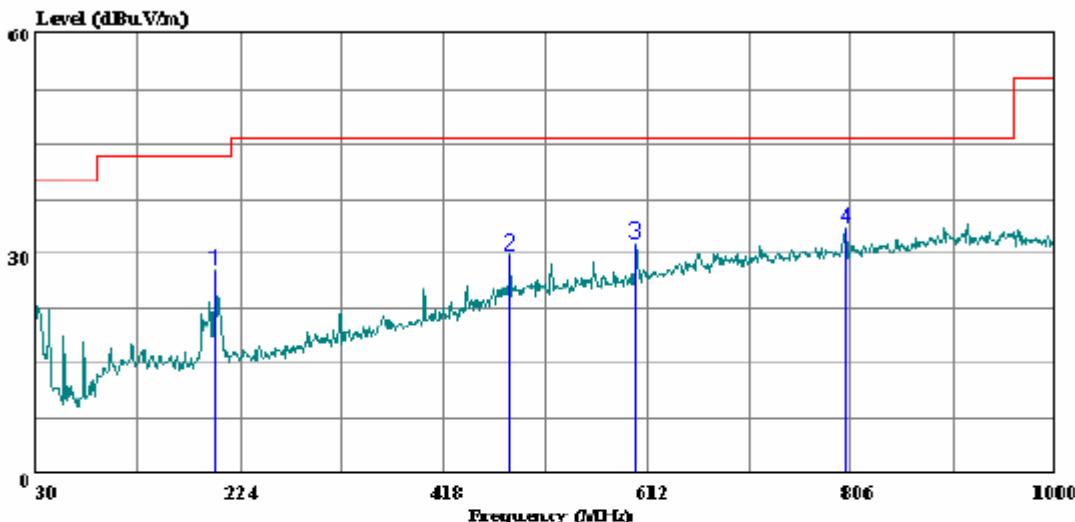
VERTICAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 35 File#: 09u12366.emi

Date: 02-03-2009 Time: 13:38:01



Trace: 34

Ref Trace:

Condition: FCC CLASS-B 3m VERTICAL
Test Operator::: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration::: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/Flat Panel Antenna
: DC Power on

Page: 1

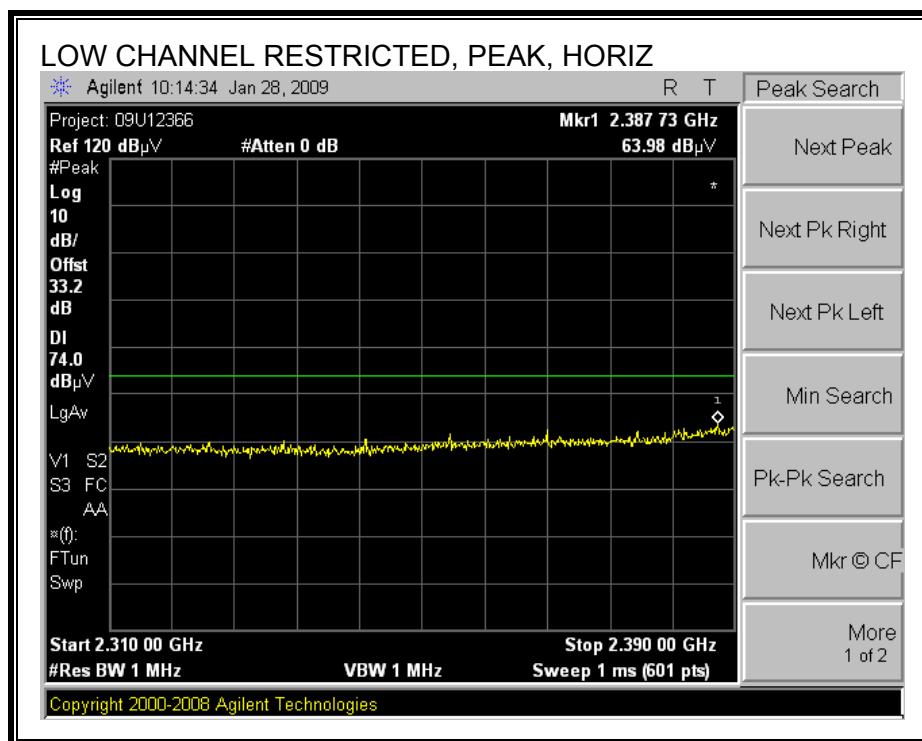
Freq	Read		Limit	Over	Remark
	Level	Factor			
MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	199.750	40.50	-12.77	27.73	43.50 -15.77 Peak
2	481.050	35.33	-5.37	29.96	46.00 -16.04 Peak
3	600.360	34.33	-2.83	31.50	46.00 -14.50 Peak
4	801.150	32.67	0.73	33.40	46.00 -12.60 Peak

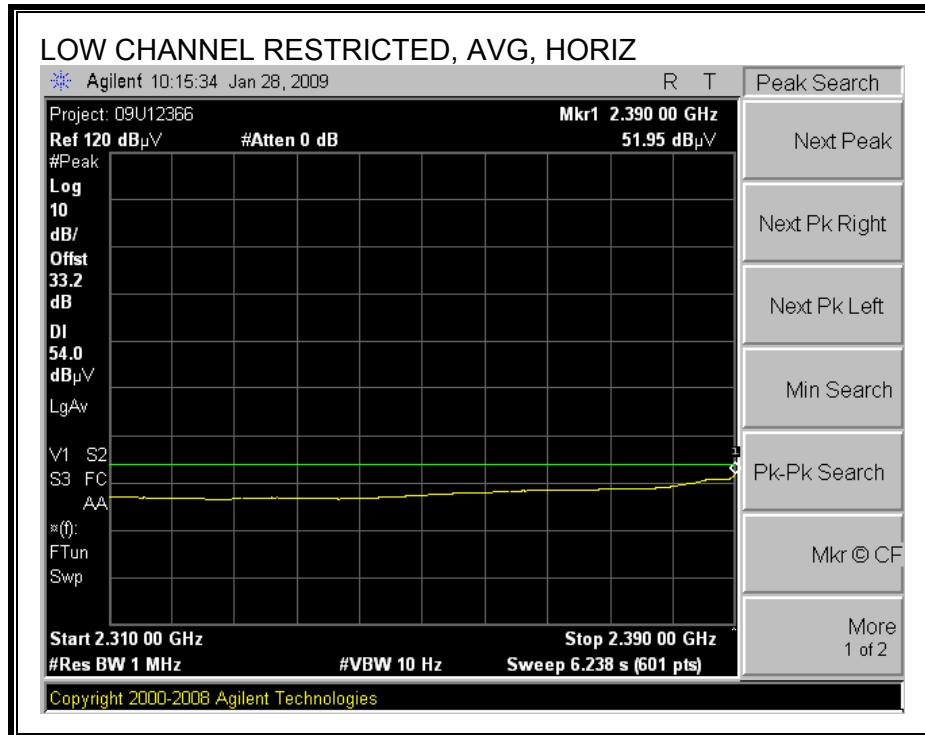
7.5. FLAT PANEL ANTENNA 2.4GHz, 19 dBi GAIN

7.5.1. TX ABOVE 1 GHz FOR 802.11b

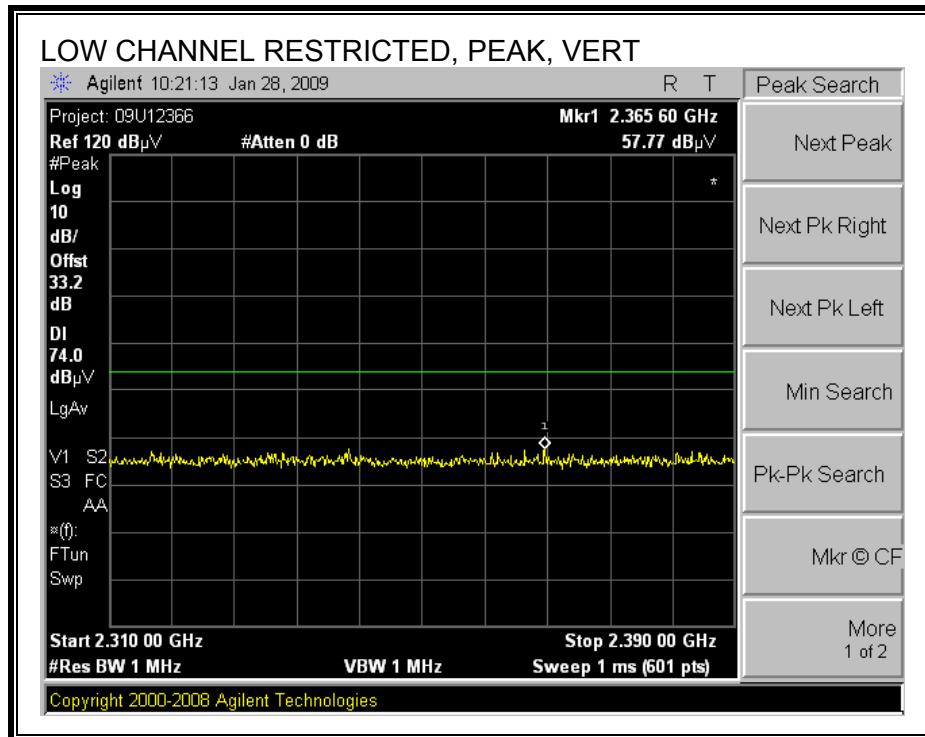
MODE 100:

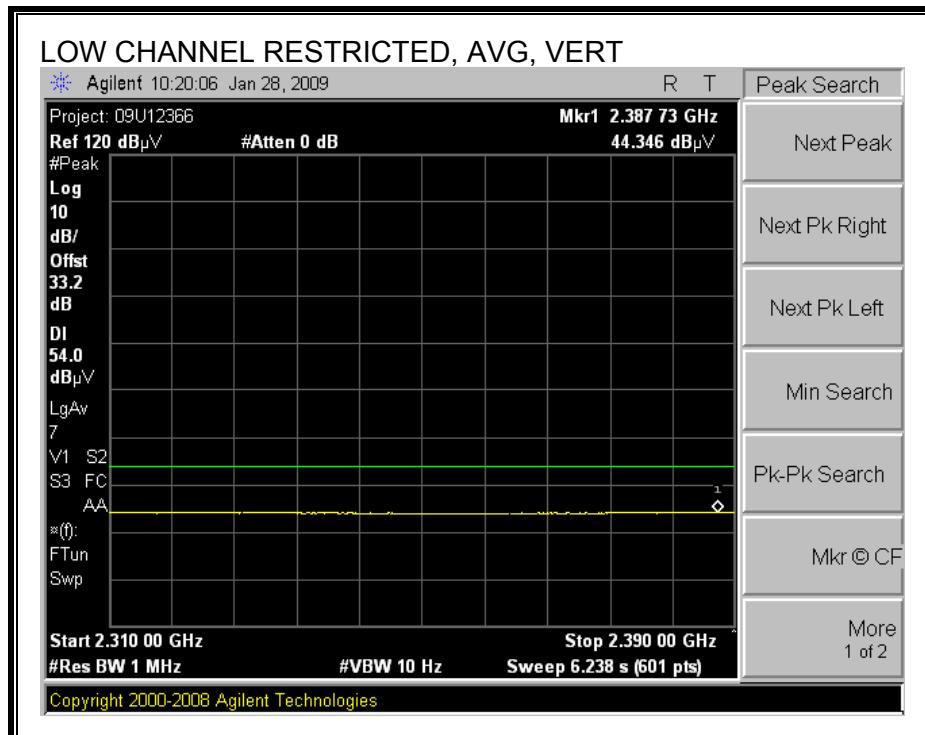
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



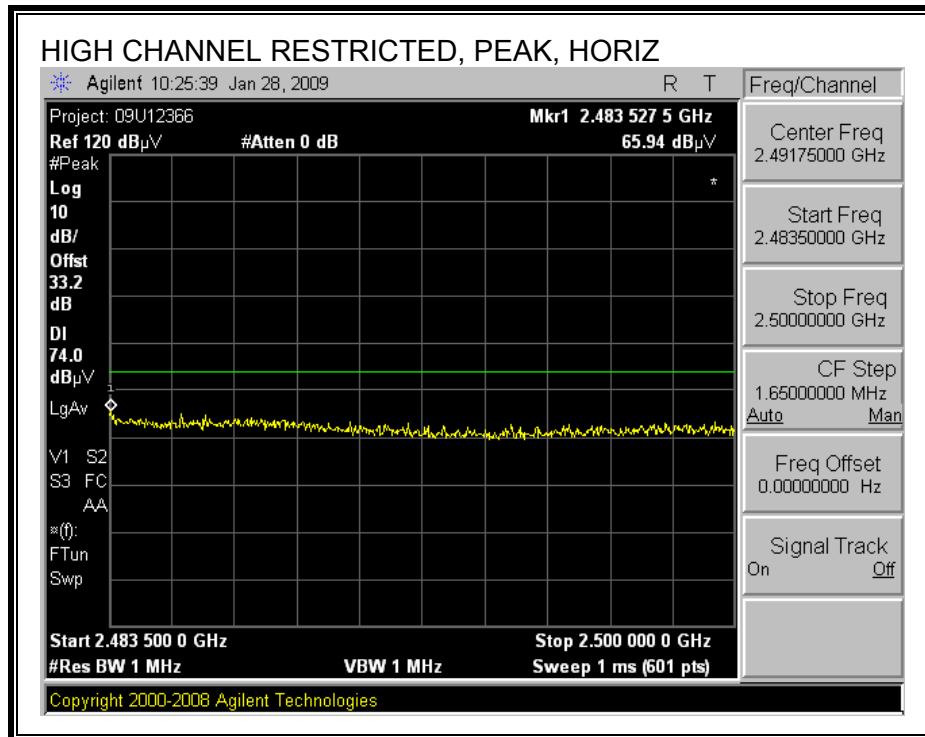


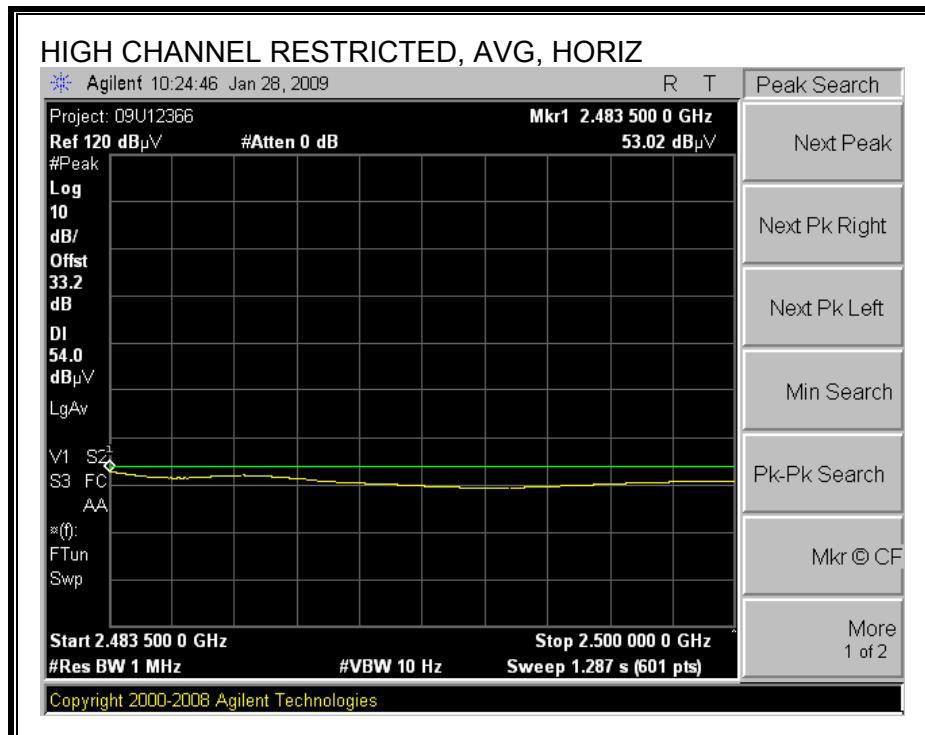
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



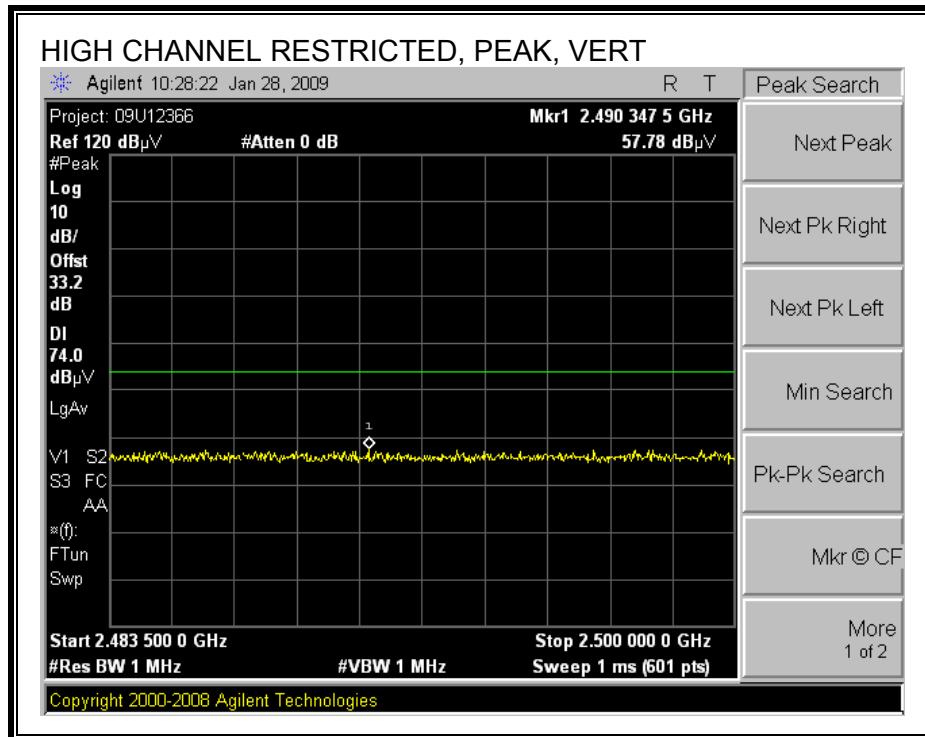


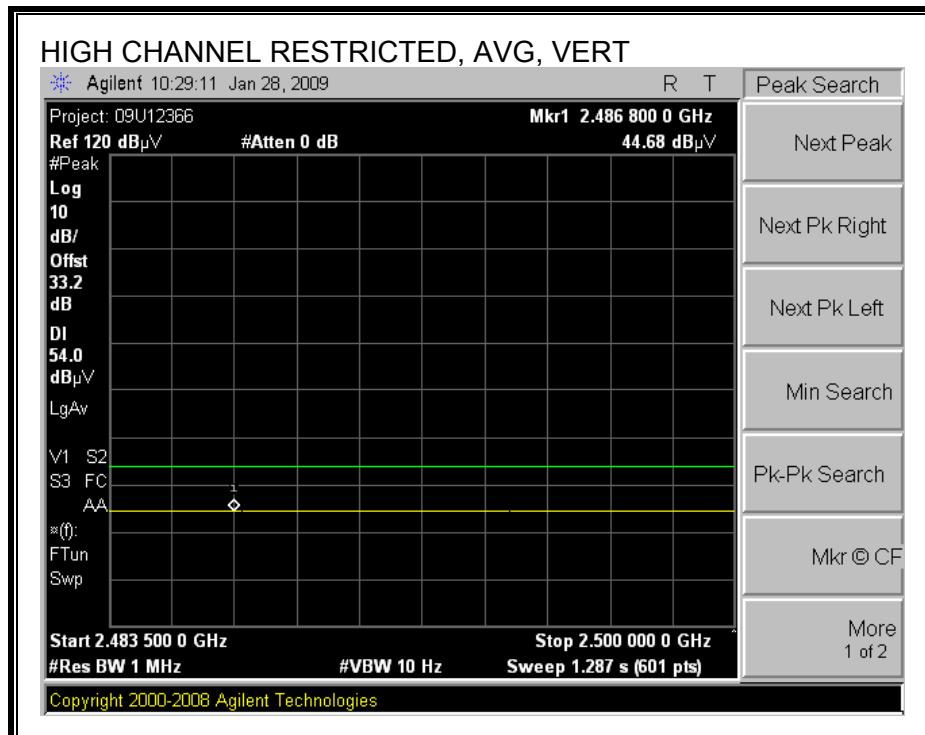
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





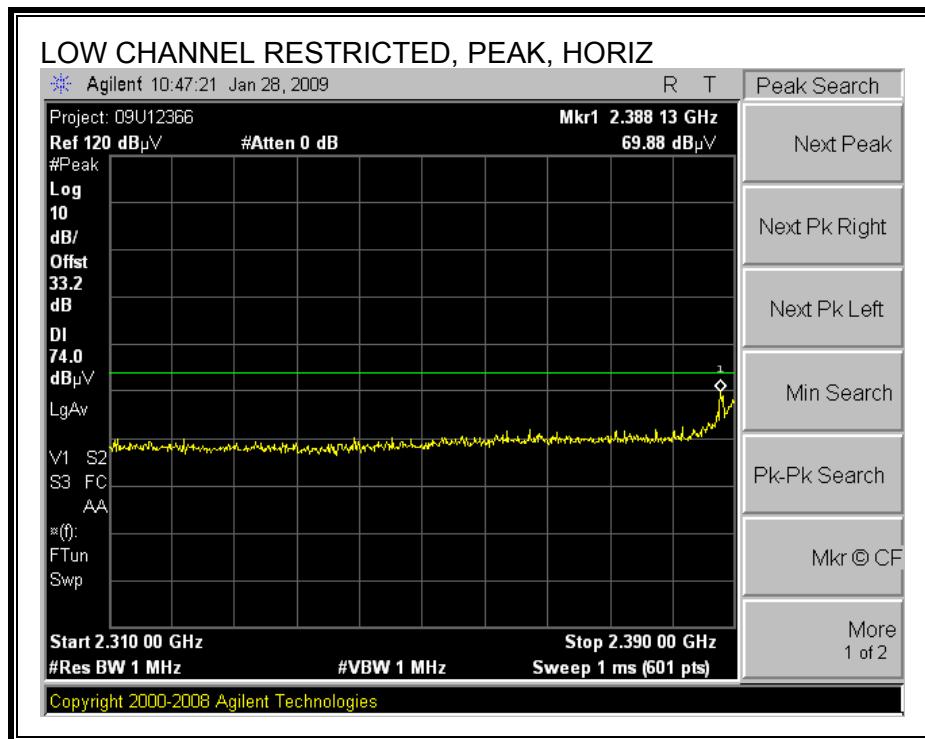
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

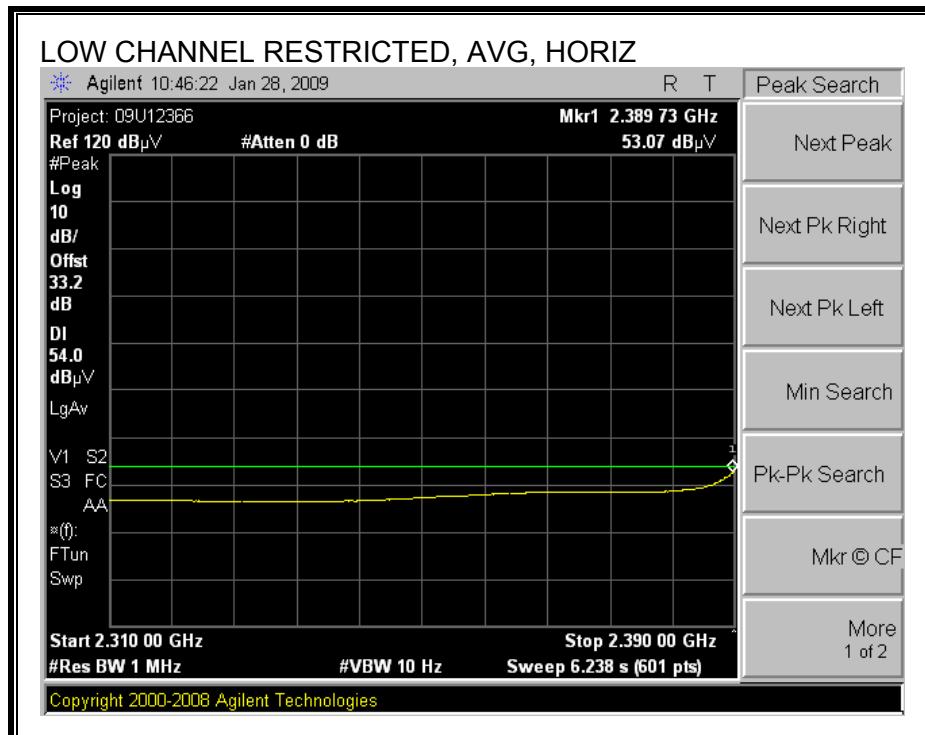




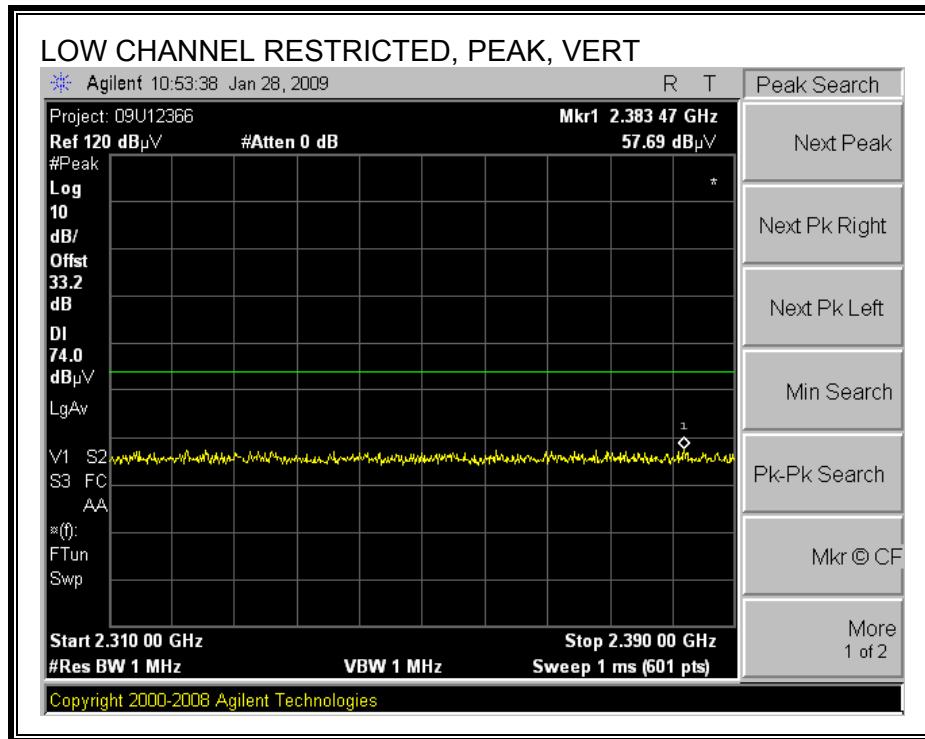
HT 20MHz

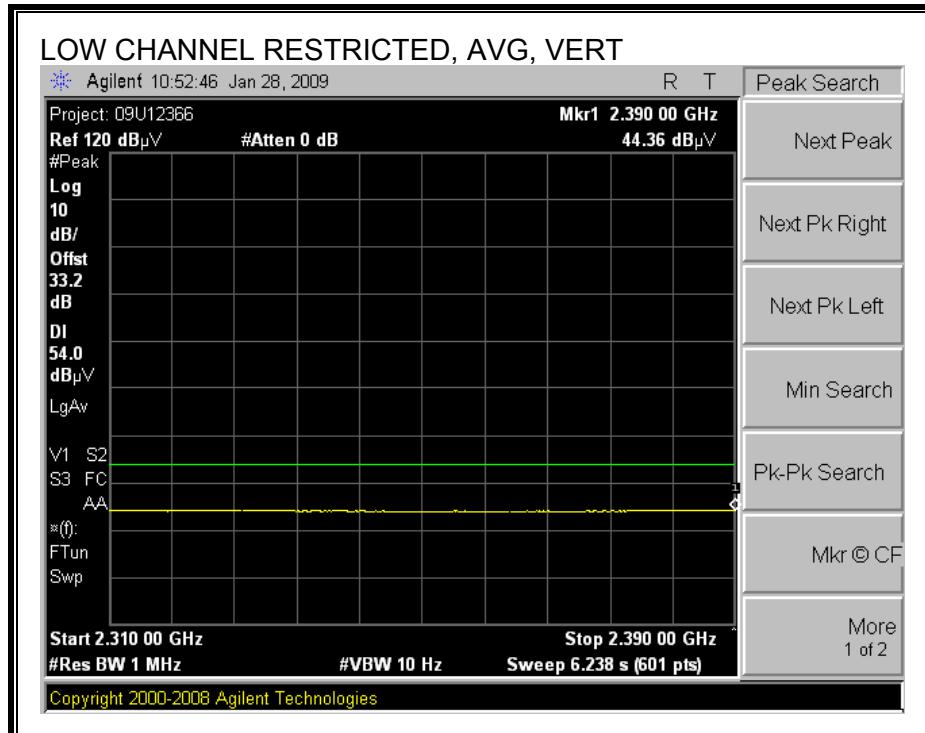
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



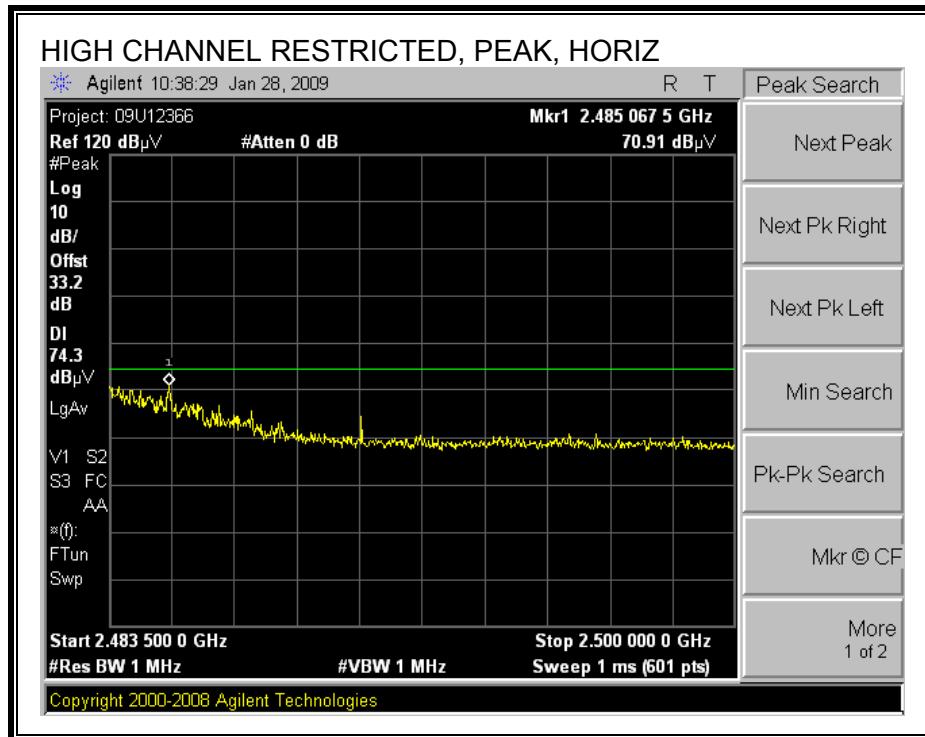


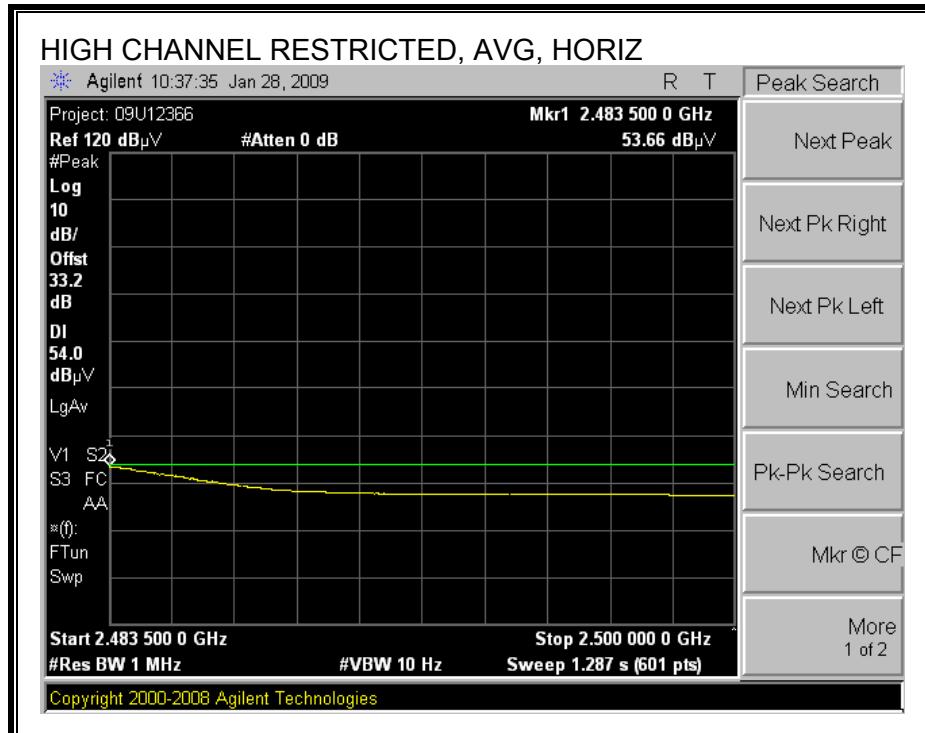
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



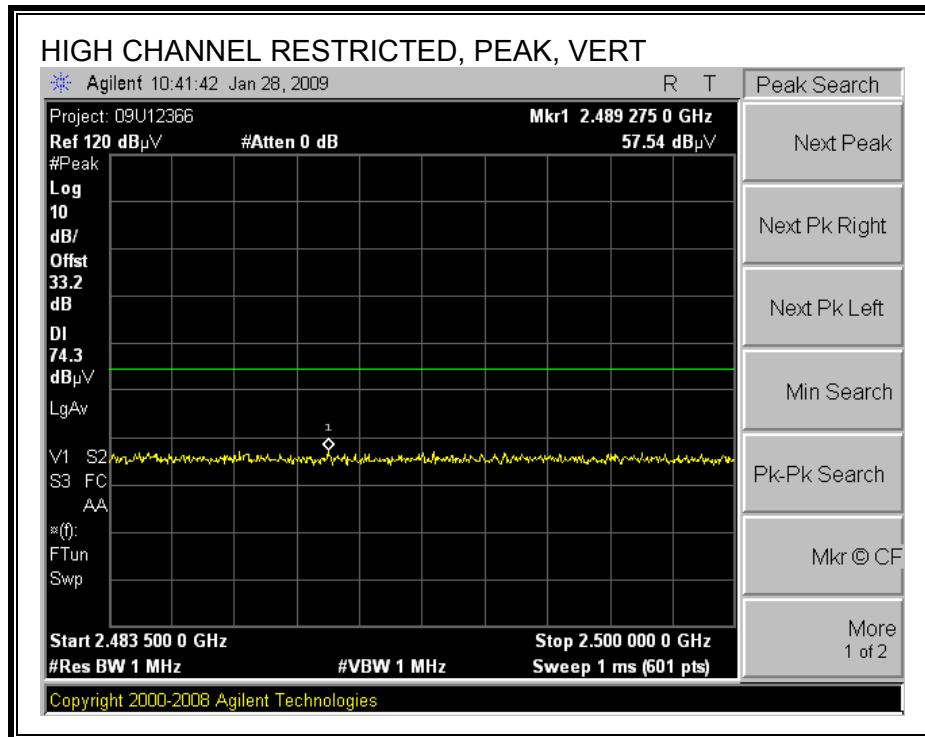


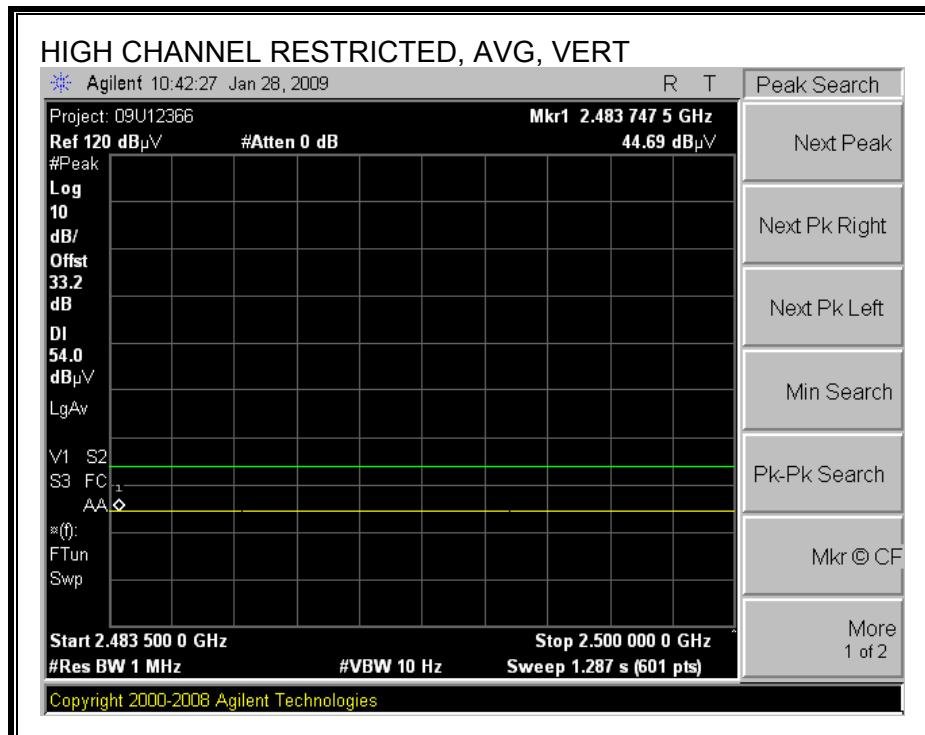
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





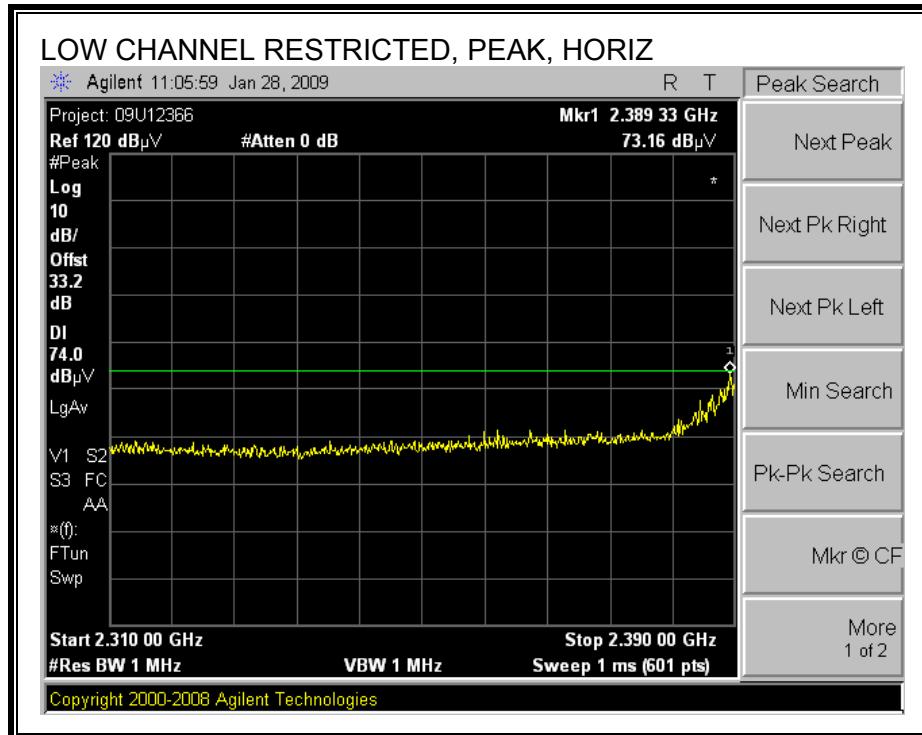
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

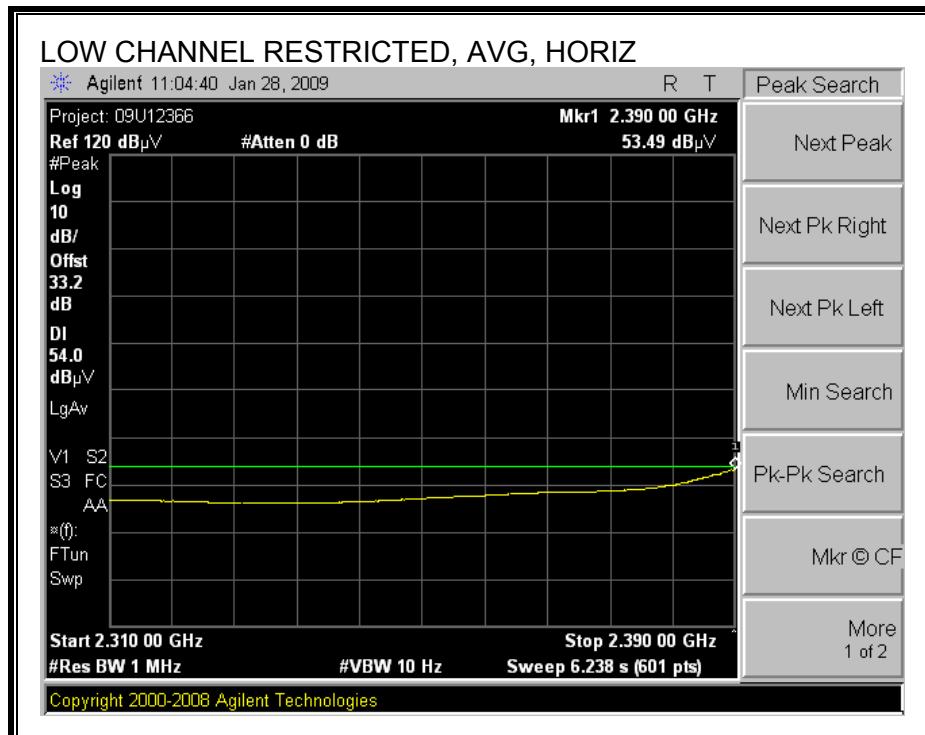




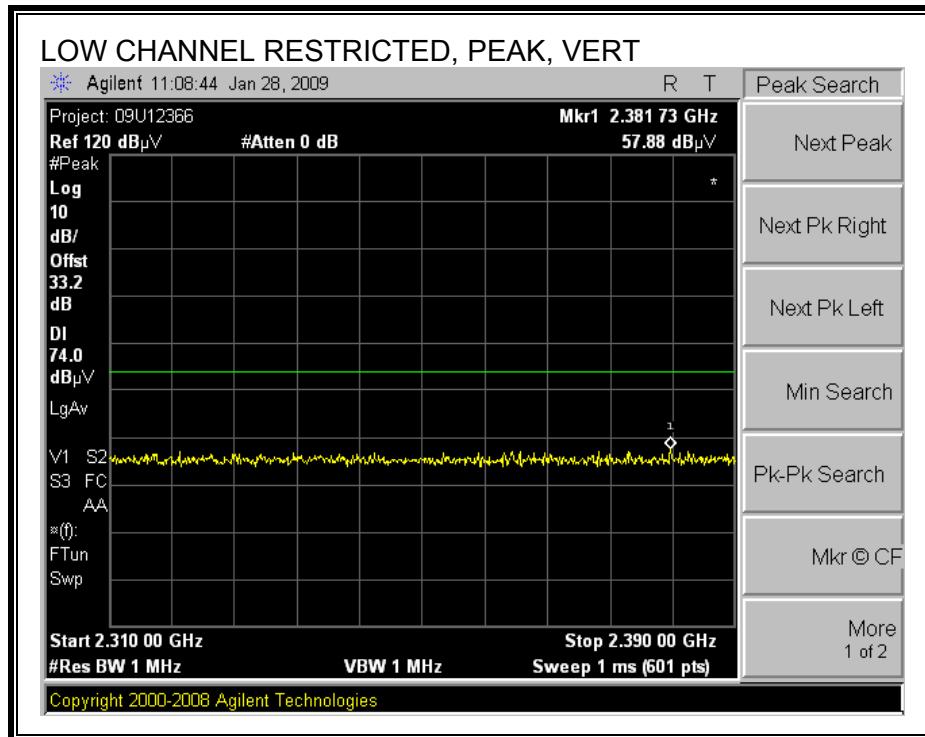
HT 40 MHz

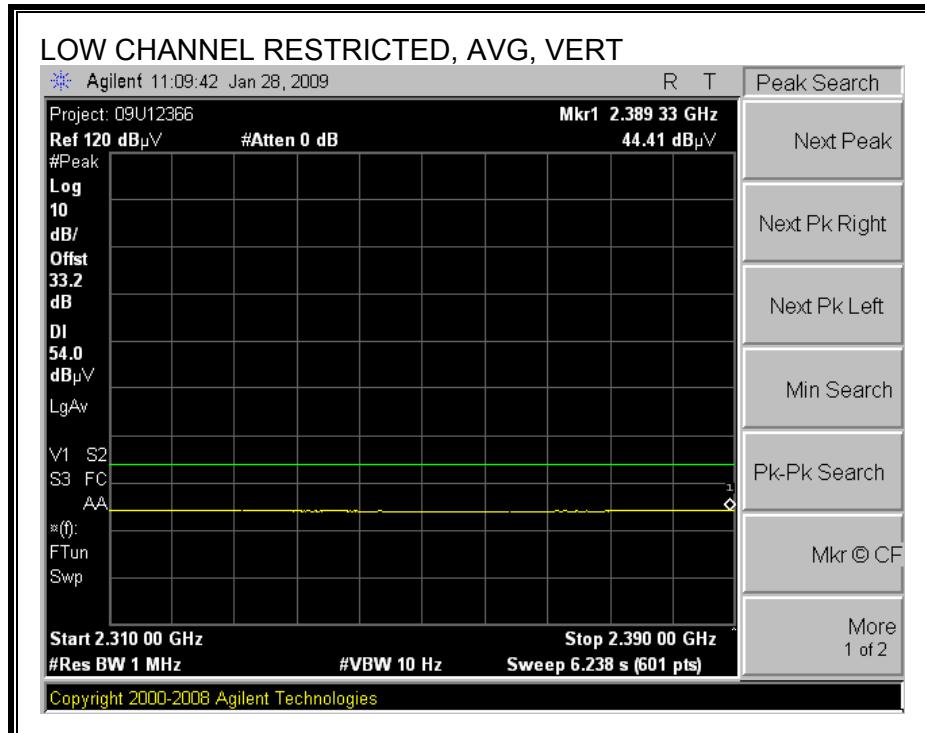
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



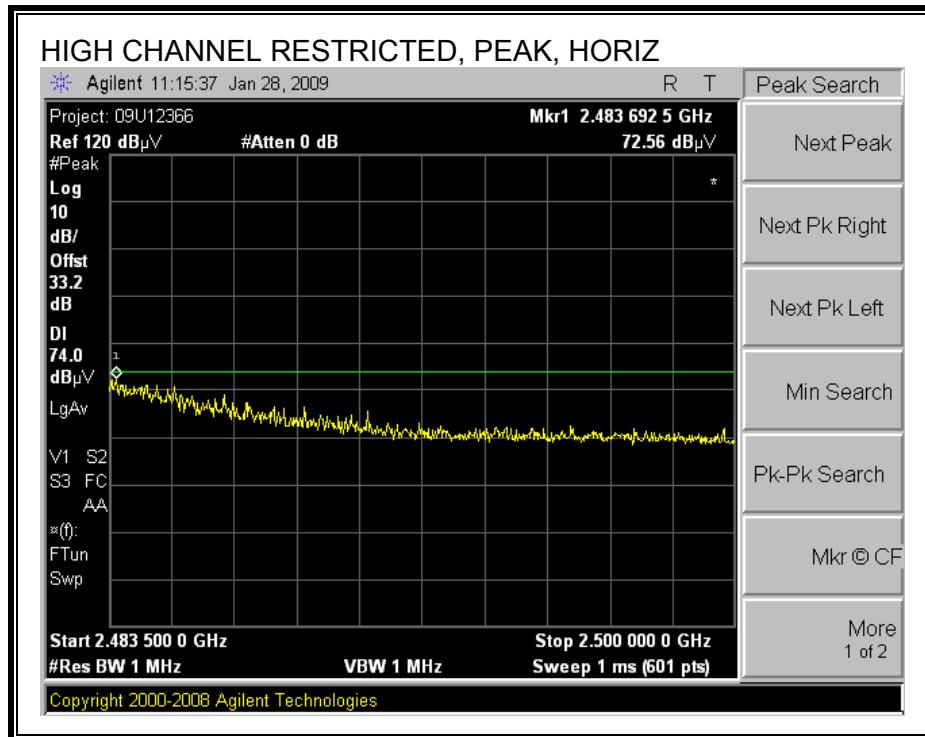


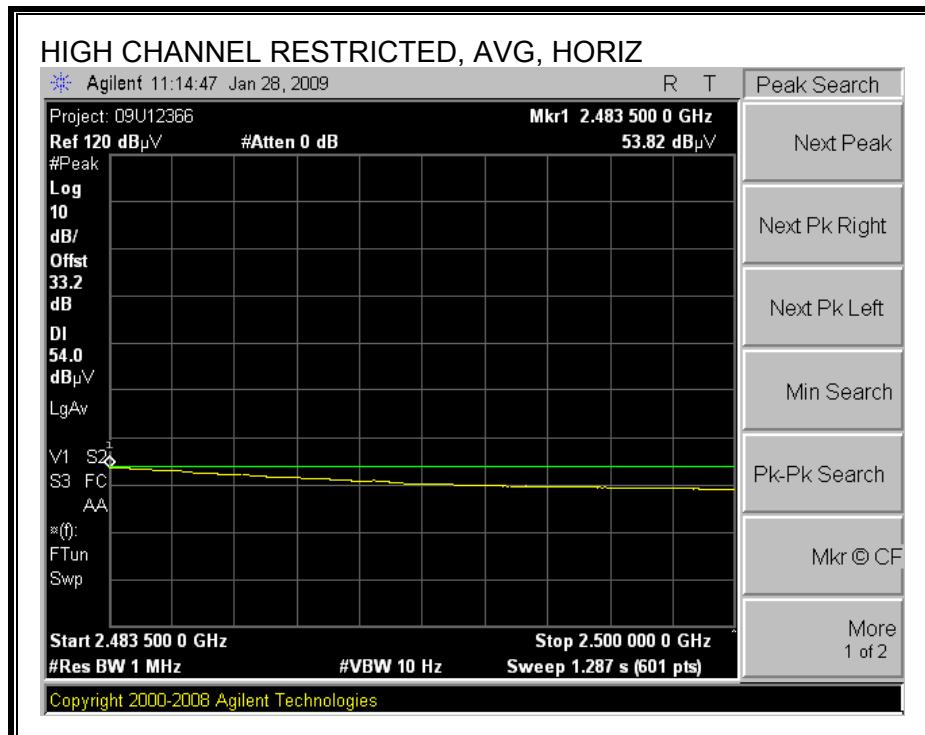
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



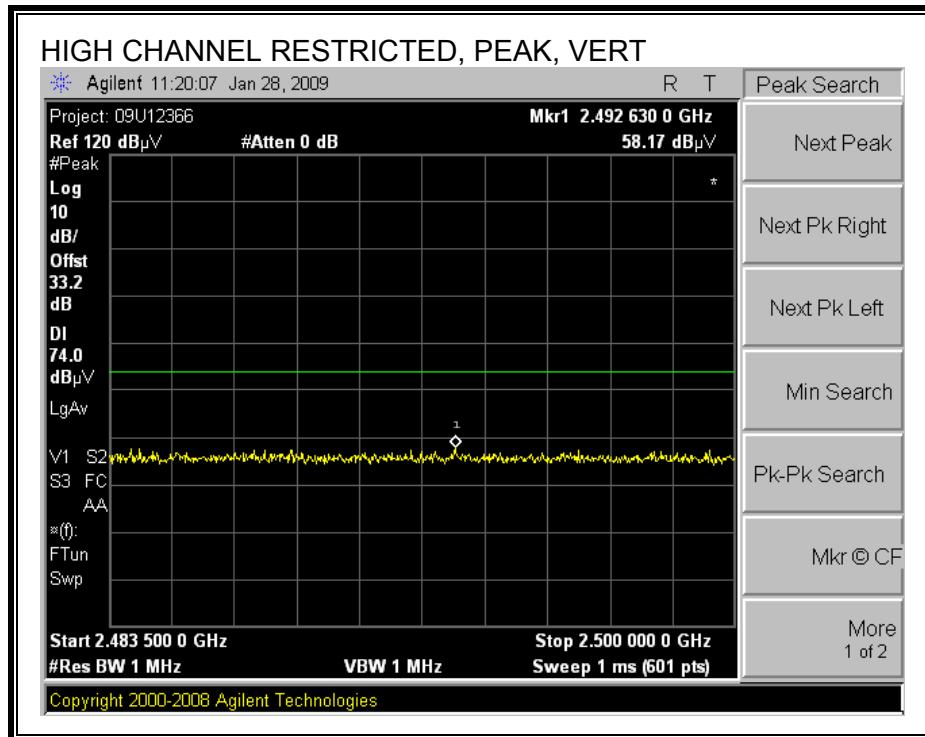


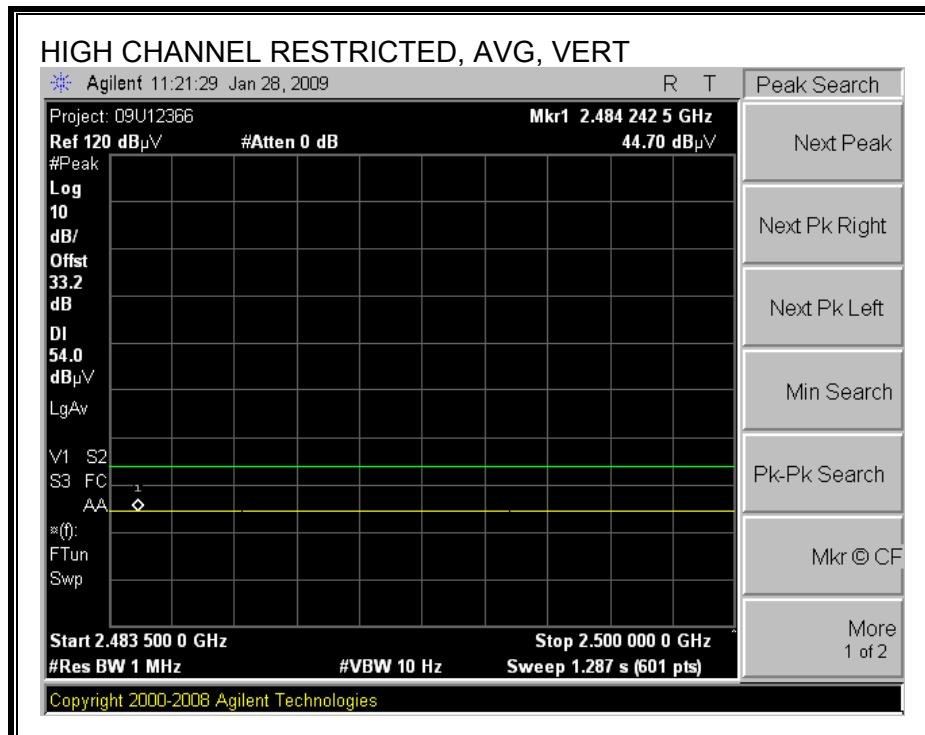
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



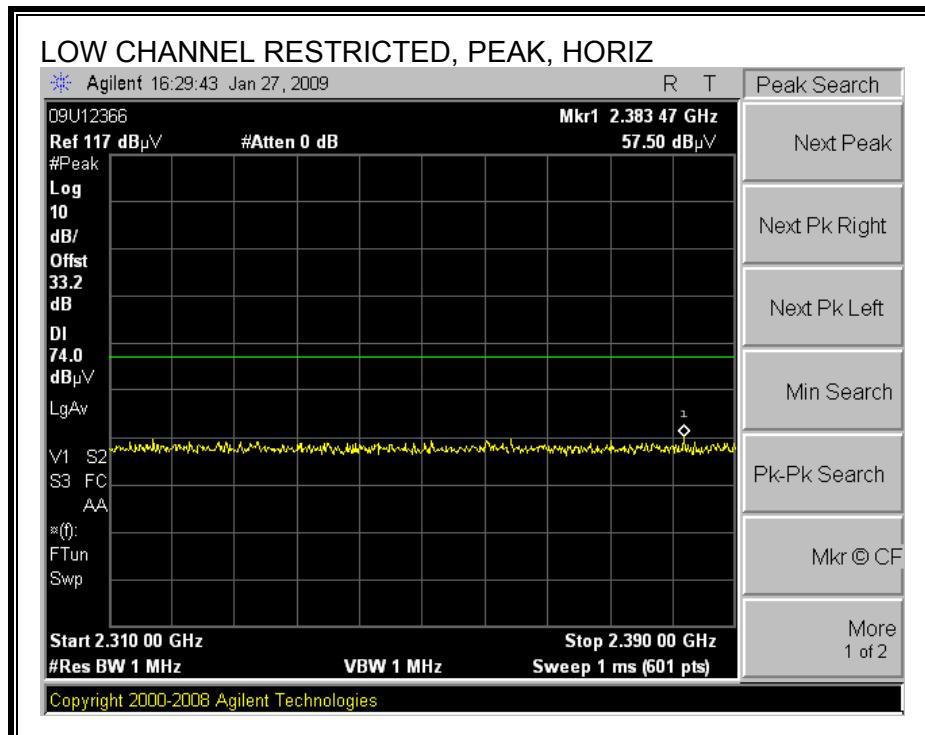


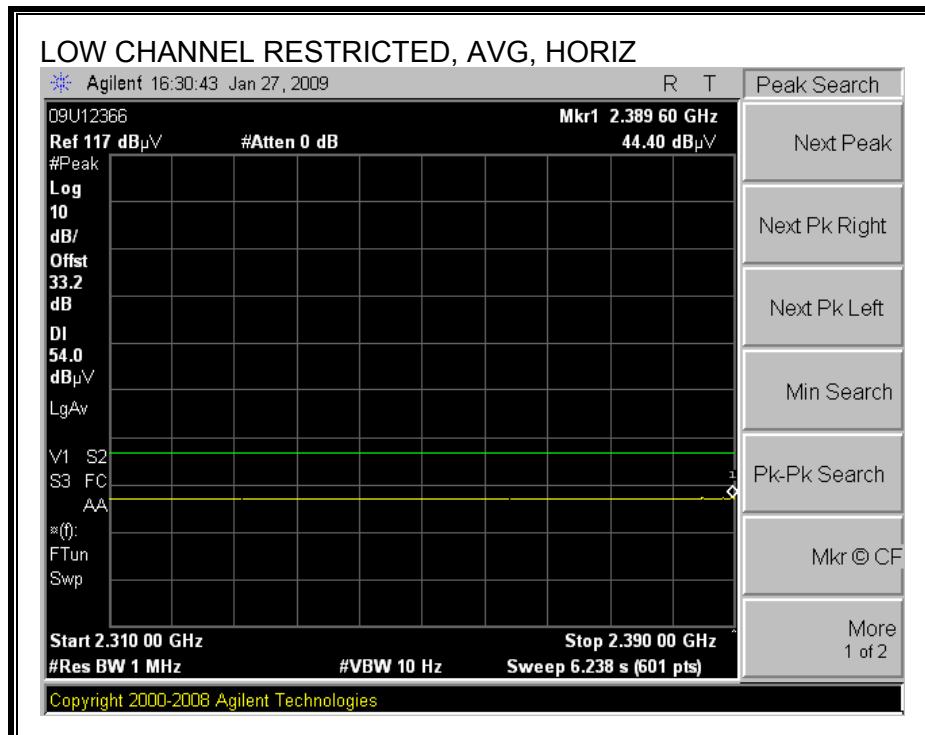
HARMONICS AND SPURIOUS EMISSIONS (see worst case)

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																	
Company:	Meraki Inc.																
Project #:	09U12366																
Date:	01/30/09																
Test Engineer:	Thanh Nguyen																
Configuration:	EUT with flat pannel antenna 19dBi Gain																
Mode:	Transmit Worst case a mode Att=14.5																
Test Equipment:																	
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit					
T73; S/N: 6717 @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			Peak Measurements RBW=VBW=1MHz		
3' cable 22807700			12' cable 22807600			20' cable 22807500						R_002			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)		
LOW CHANNEL, 5745 MHz																	
11.490	3.0	41.0	27.5	38.6	9.5	-32.5	0.0	0.0	56.6	43.1	74	54	-17.4	-10.9	V, Noise Floor		
11.490	3.0	39.7	27.5	38.6	9.5	-32.5	0.0	0.0	55.3	43.0	74	54	-18.7	-11.0	H, Noise floor		
MID CHANNEL, 5785 MHz																	
11.570	3.0	41.1	27.9	38.7	9.5	-32.5	0.0	0.0	56.8	43.5	74	54	-17.2	-10.5	V, Noise Floor		
11.570	3.0	40.7	27.9	38.7	9.5	-32.5	0.0	0.0	56.4	43.5	74	54	-17.6	-10.5	H, Noise floor		
HIGH CHANNEL, 5825 MHz																	
11.650	3.0	41.7	29.5	38.7	9.6	-32.5	0.0	0.0	57.5	45.2	74	54	-16.5	8.8	V, Noise Floor		
11.650	3.0	41.1	28.3	38.7	9.6	-32.5	0.0	0.0	56.9	44.1	74	54	-17.1	9.9	H, Noise floor		
No other emissions were detected above noise floor.																	
Rev. 10.15.08																	
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												

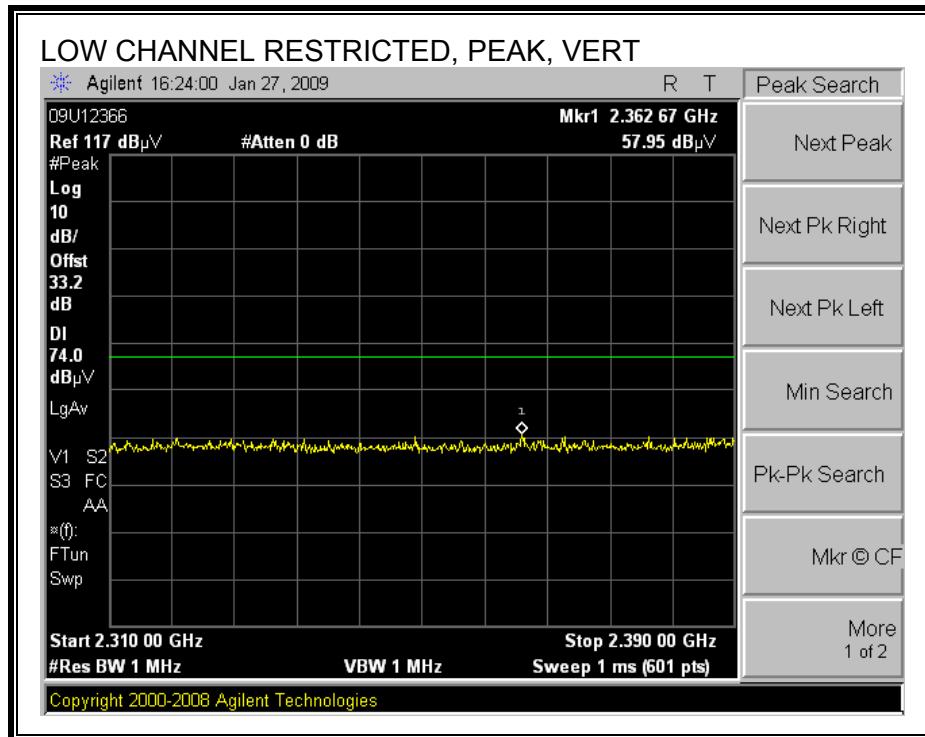
MODE 010

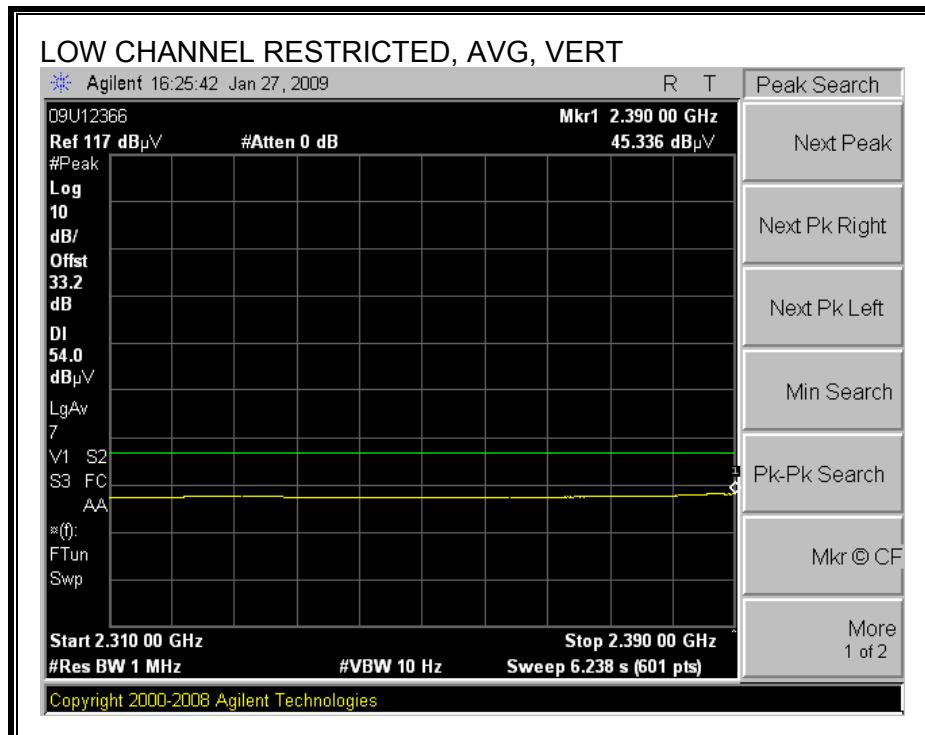
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



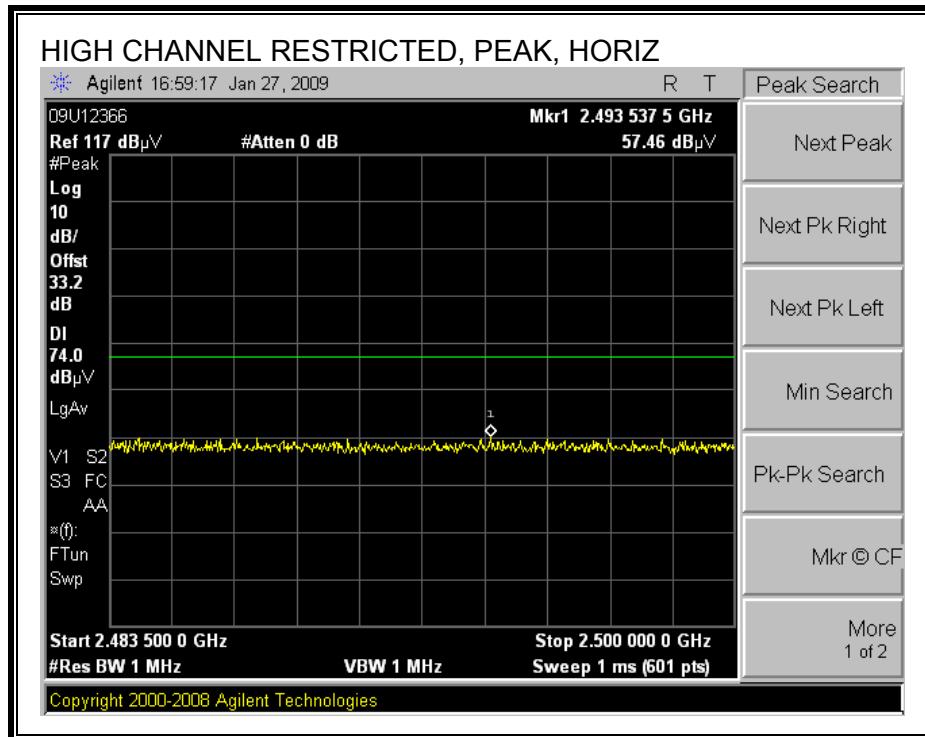


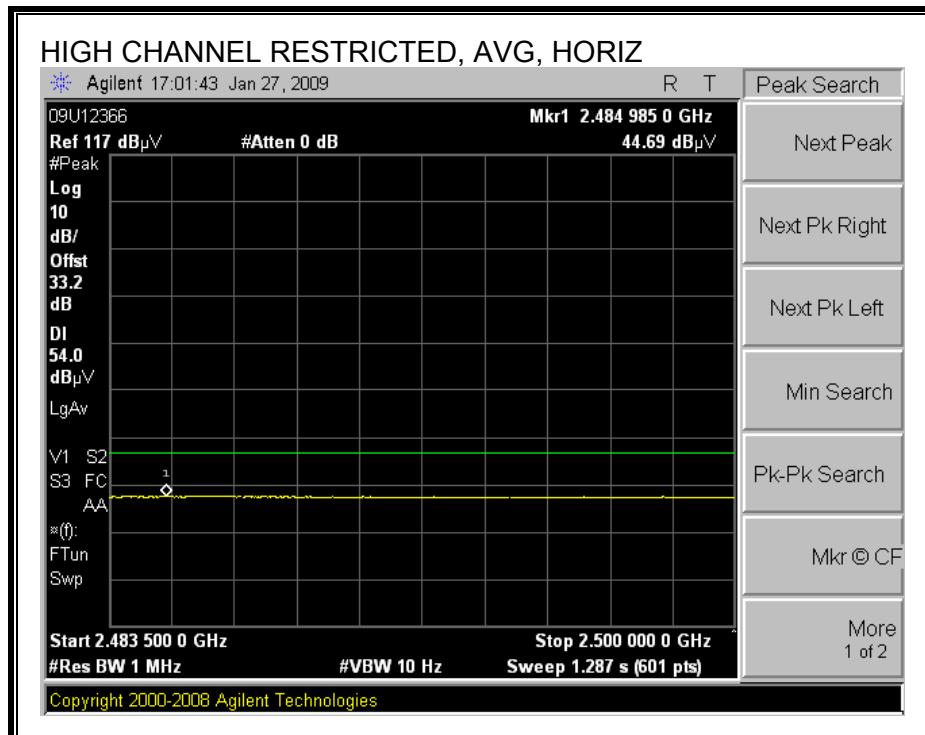
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



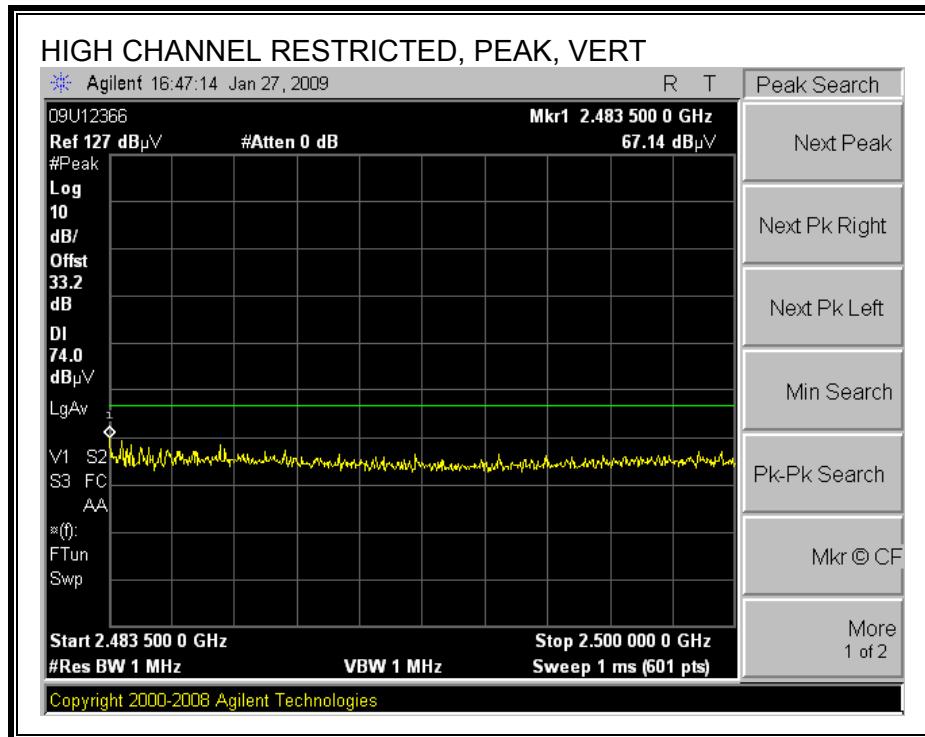


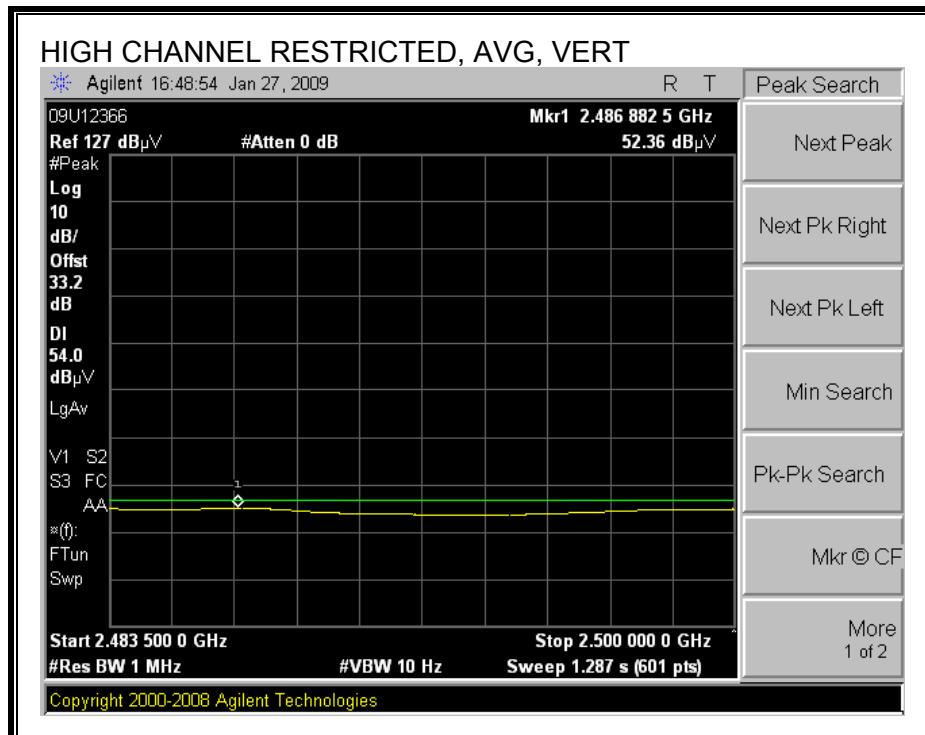
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





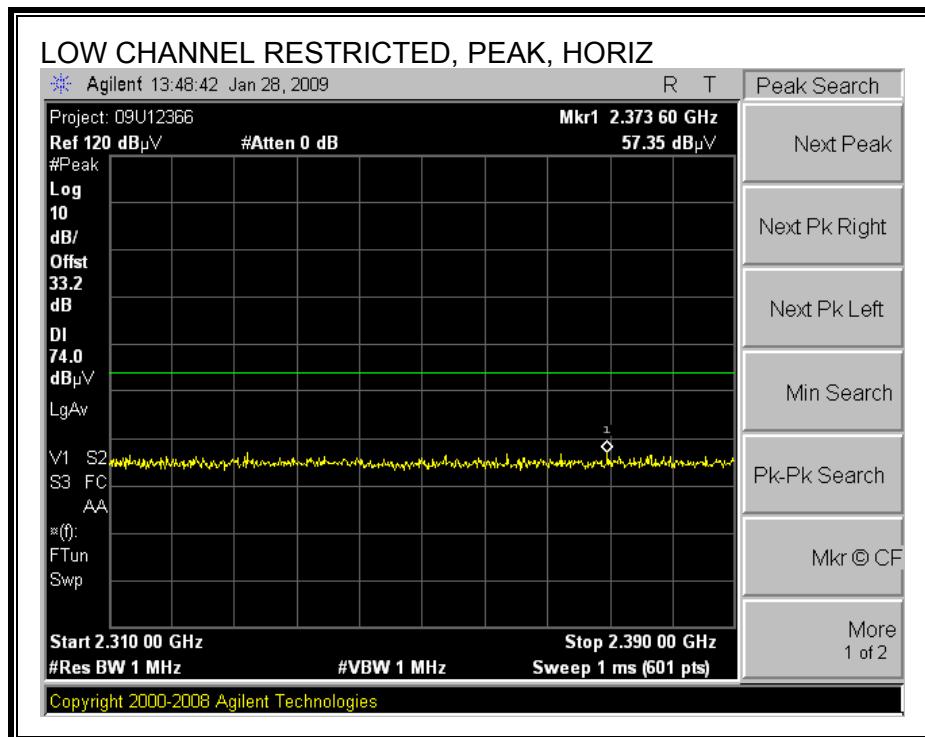
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

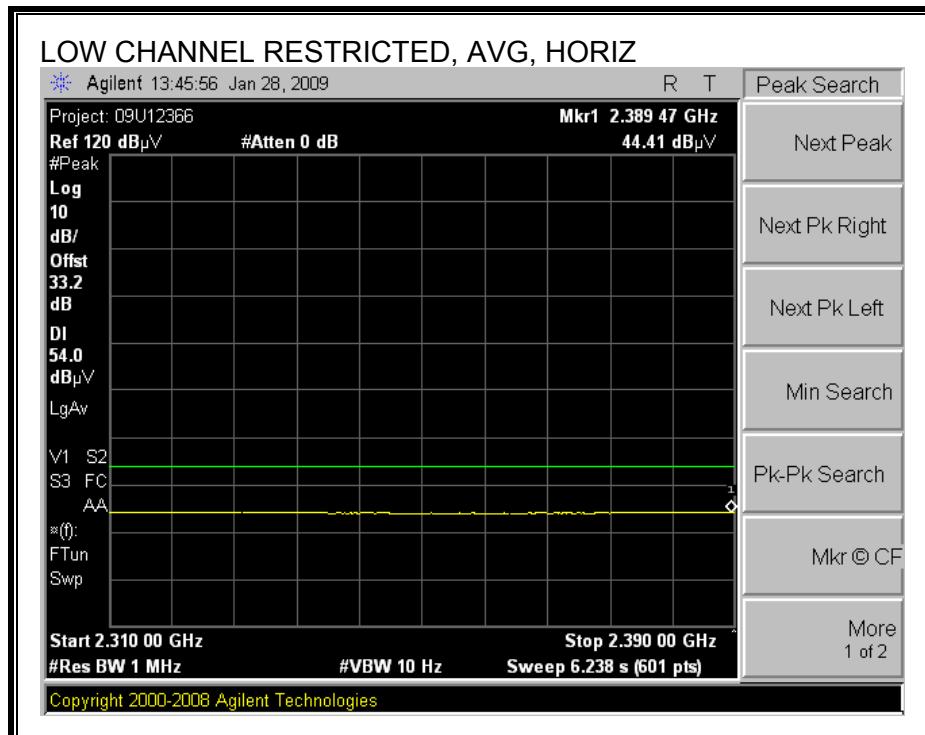




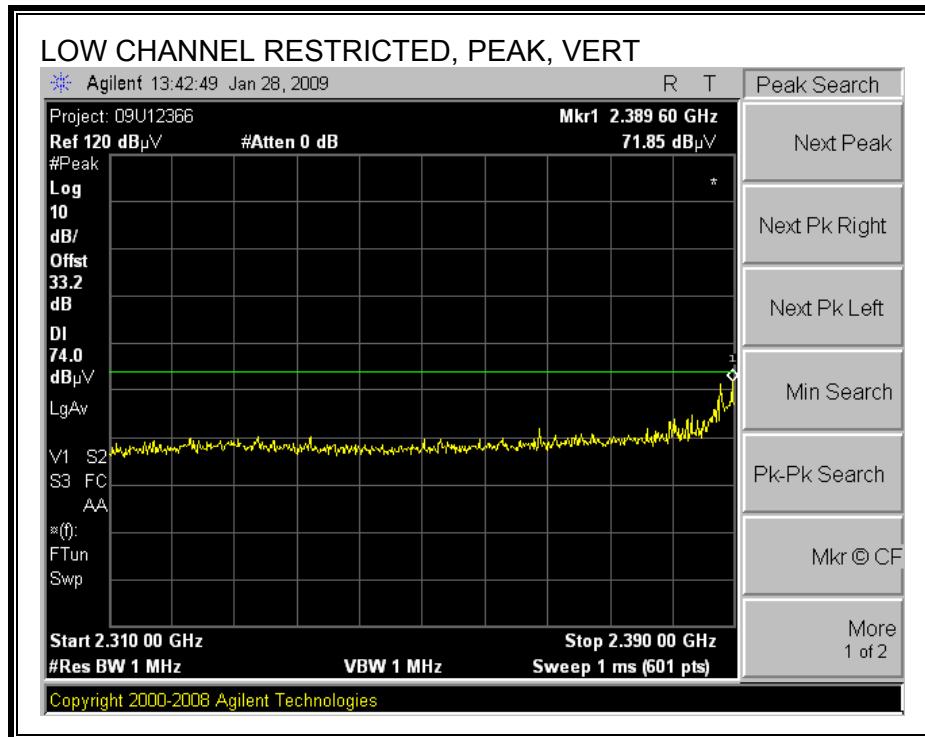
HT 20MHz

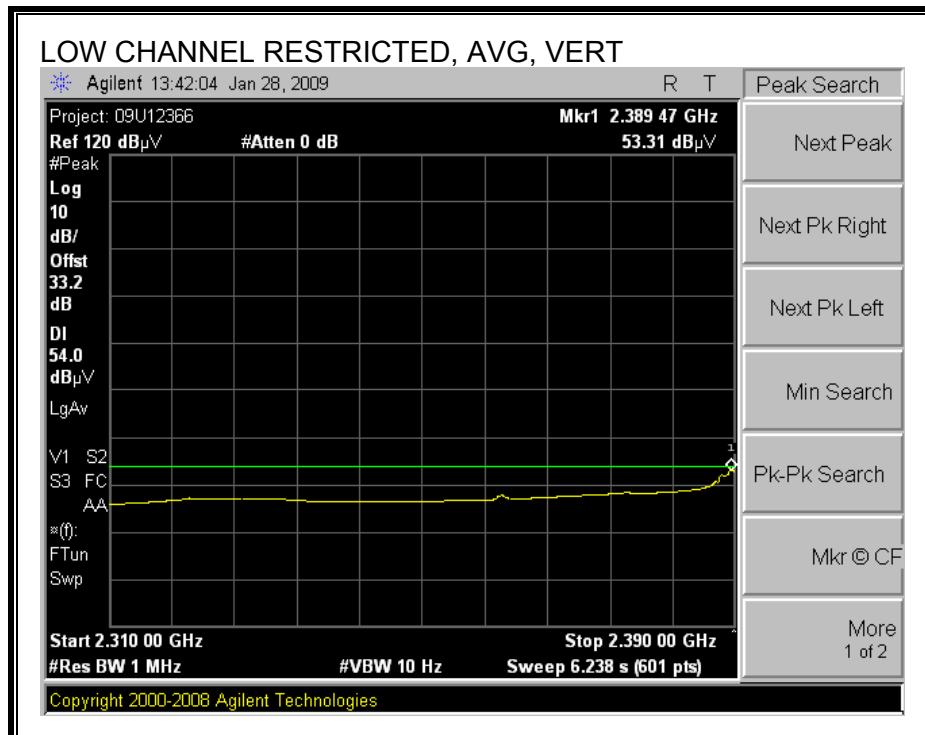
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



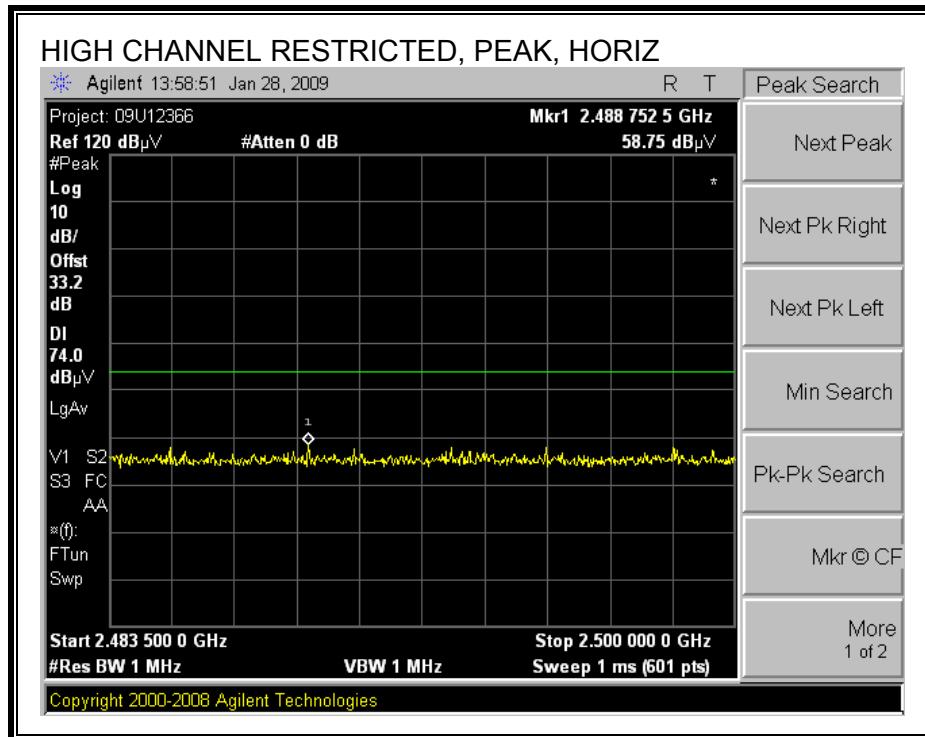


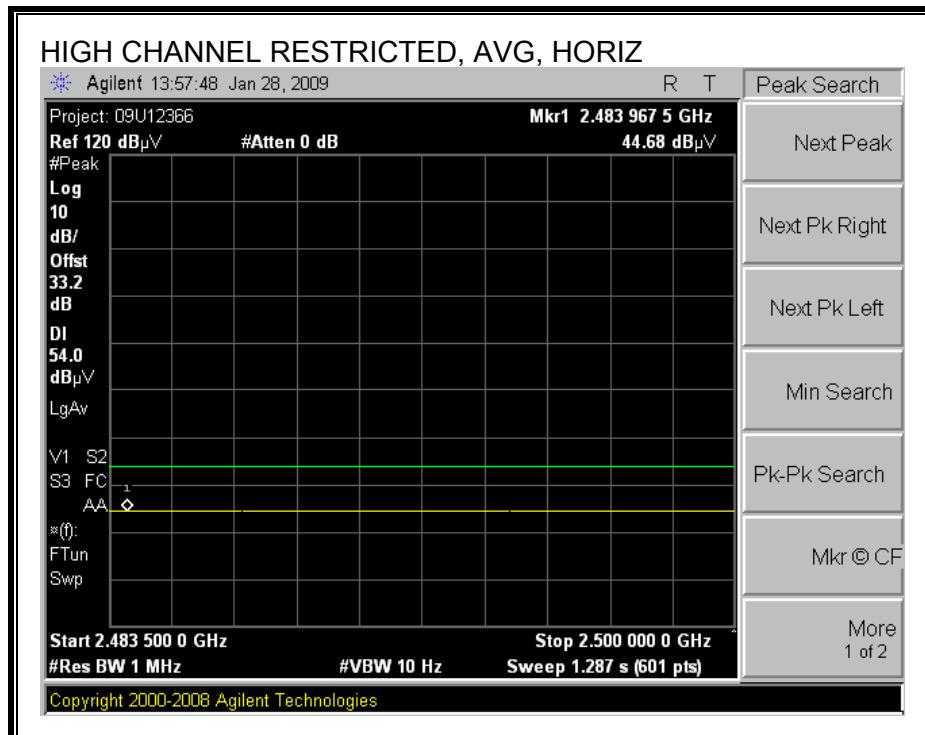
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



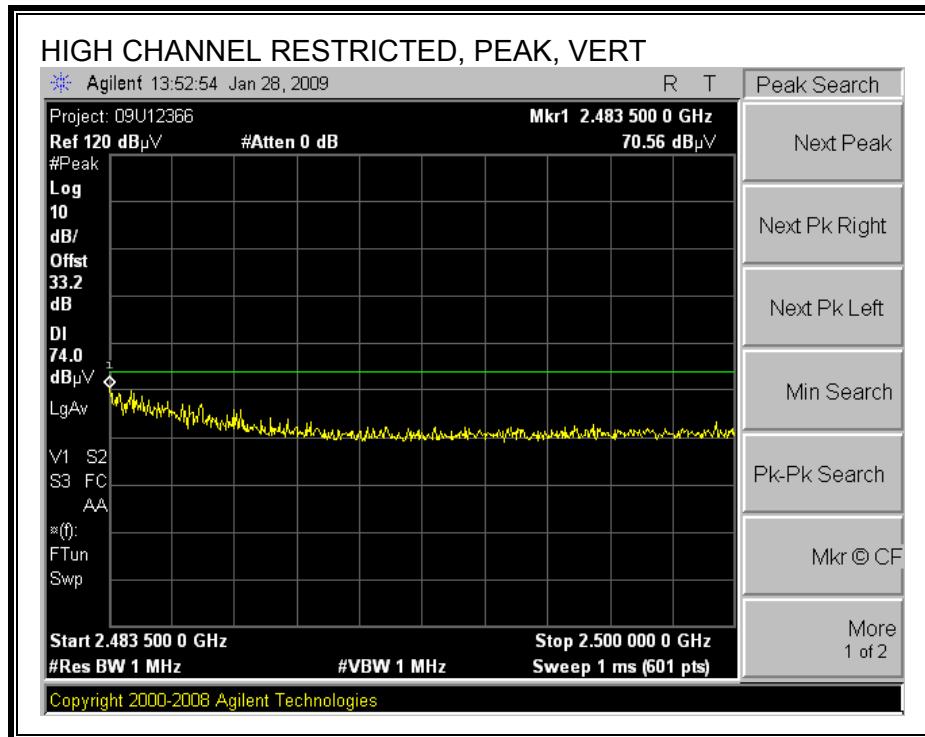


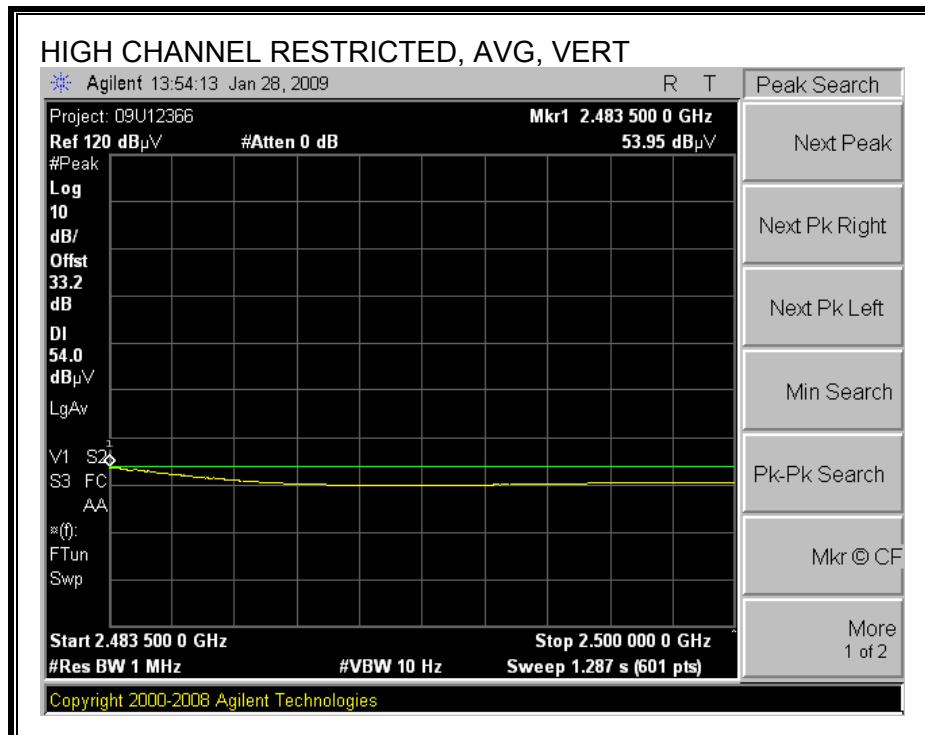
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





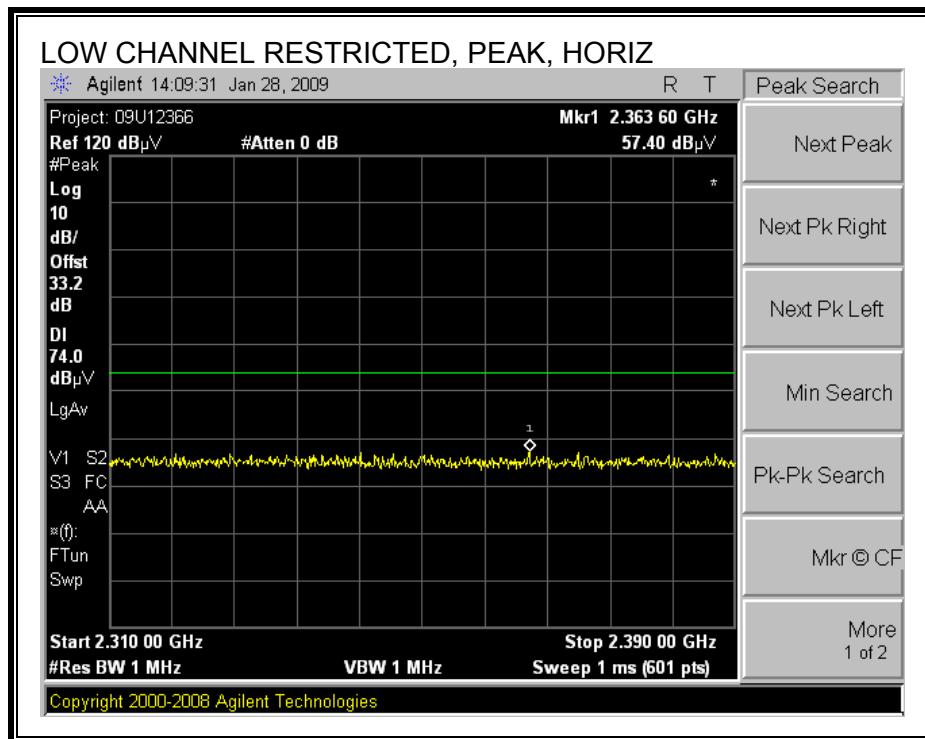
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

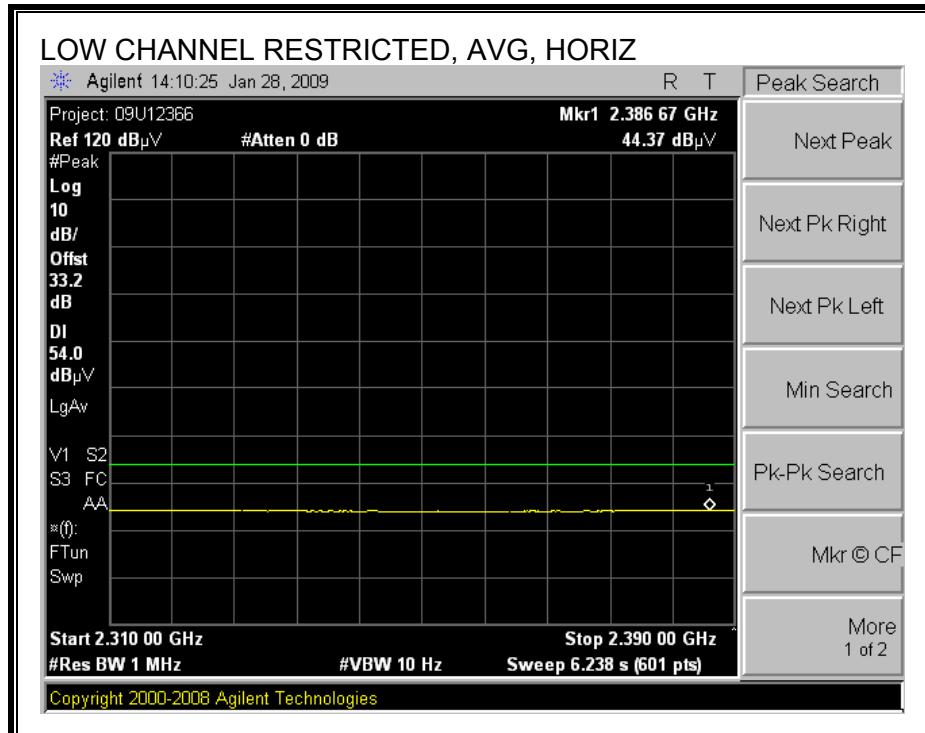




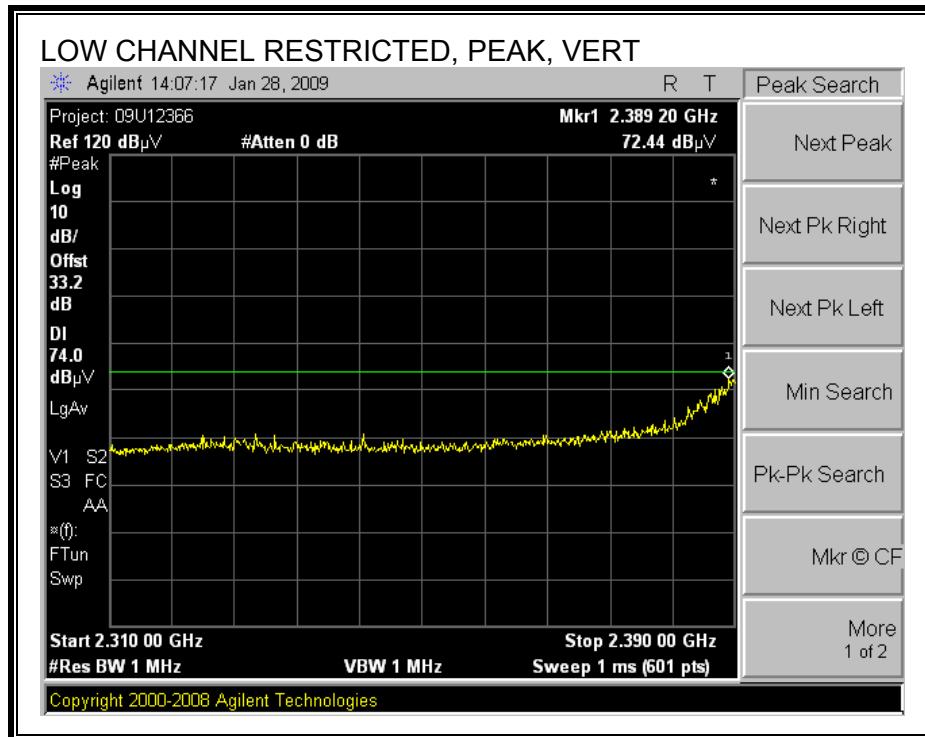
HT 40MHz

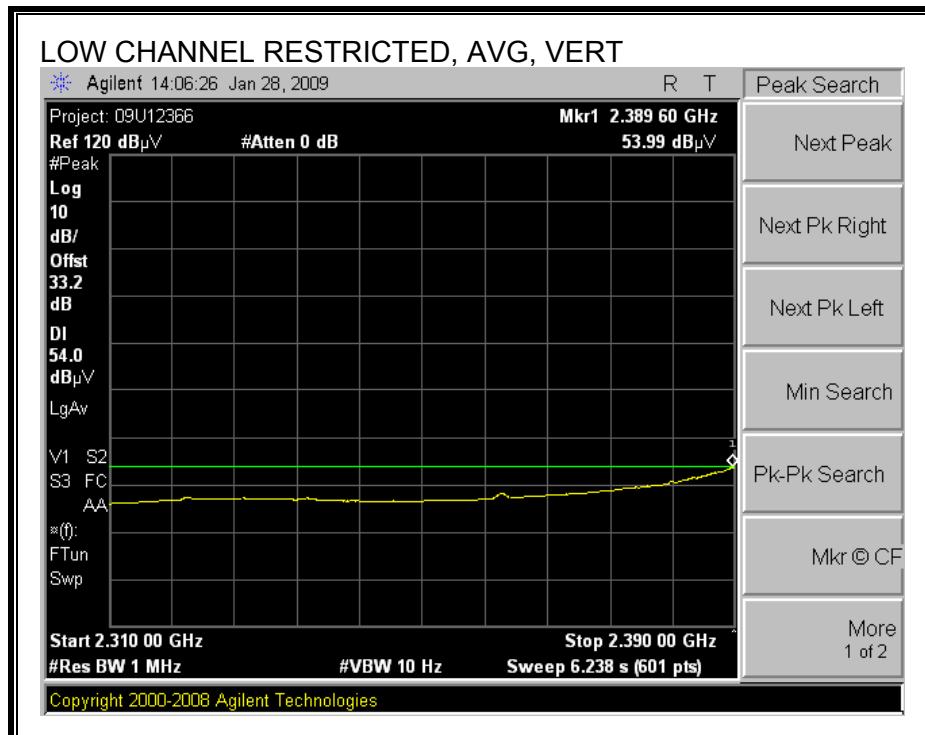
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



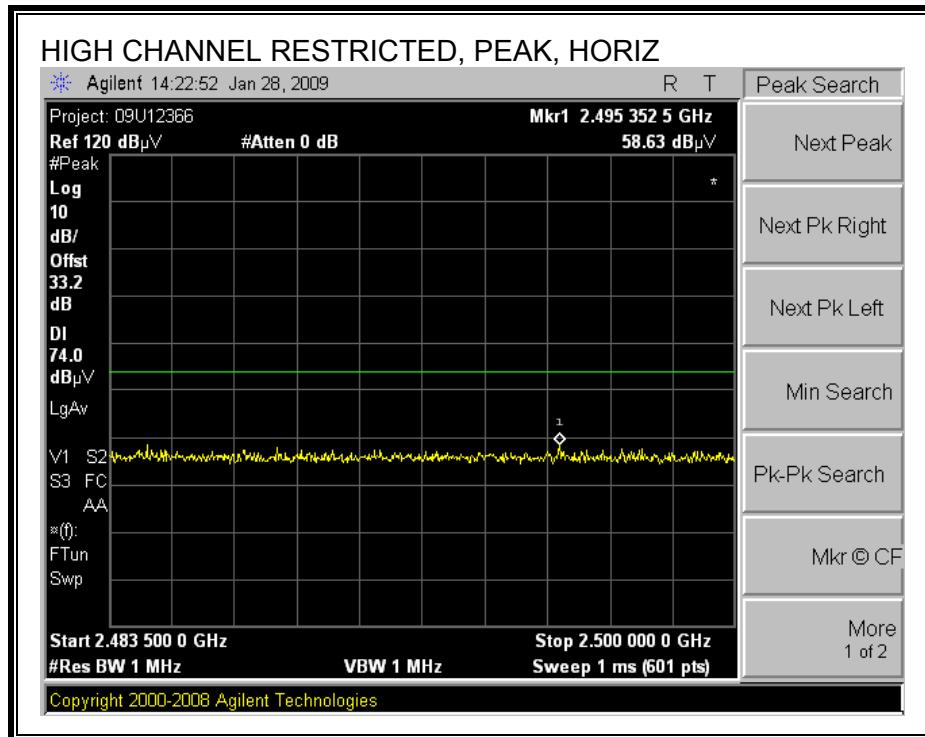


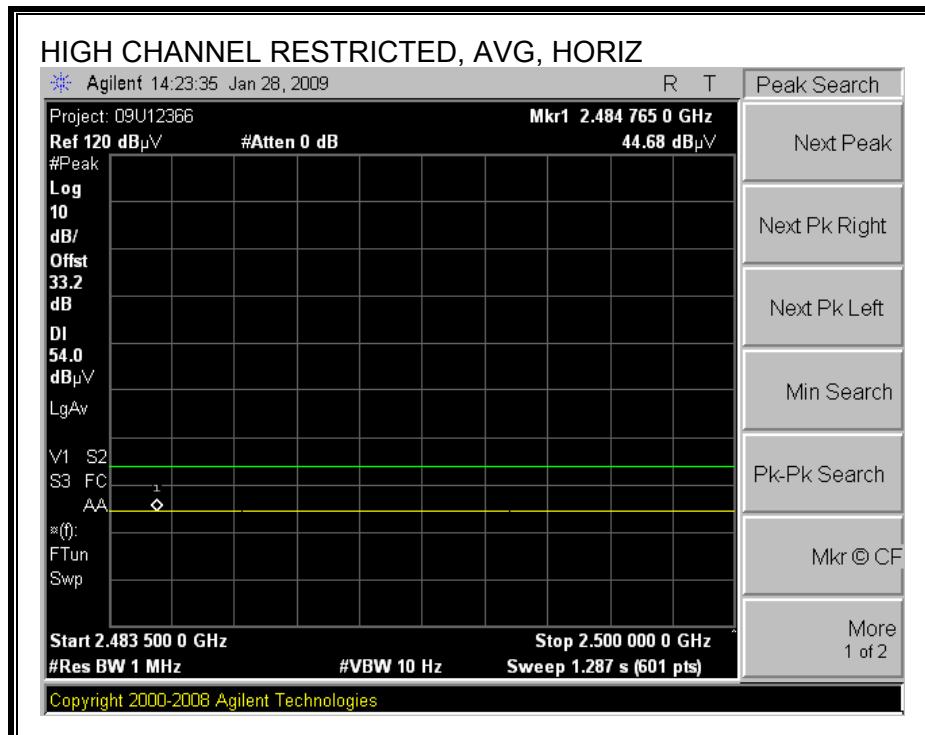
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





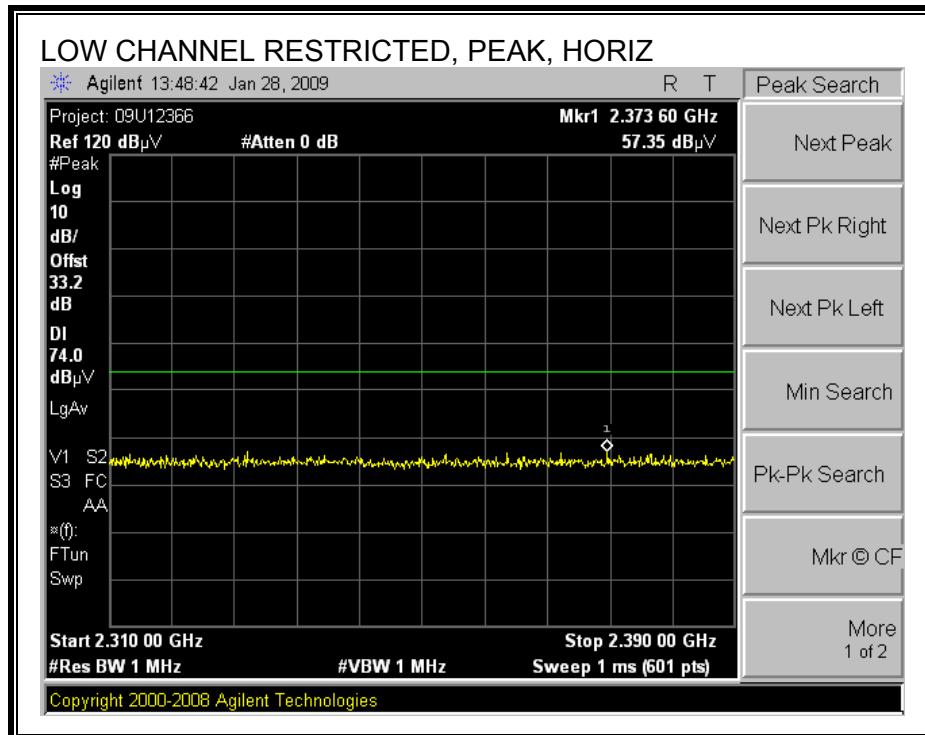
HARMONICS AND SPURIOUS EMISSIONS

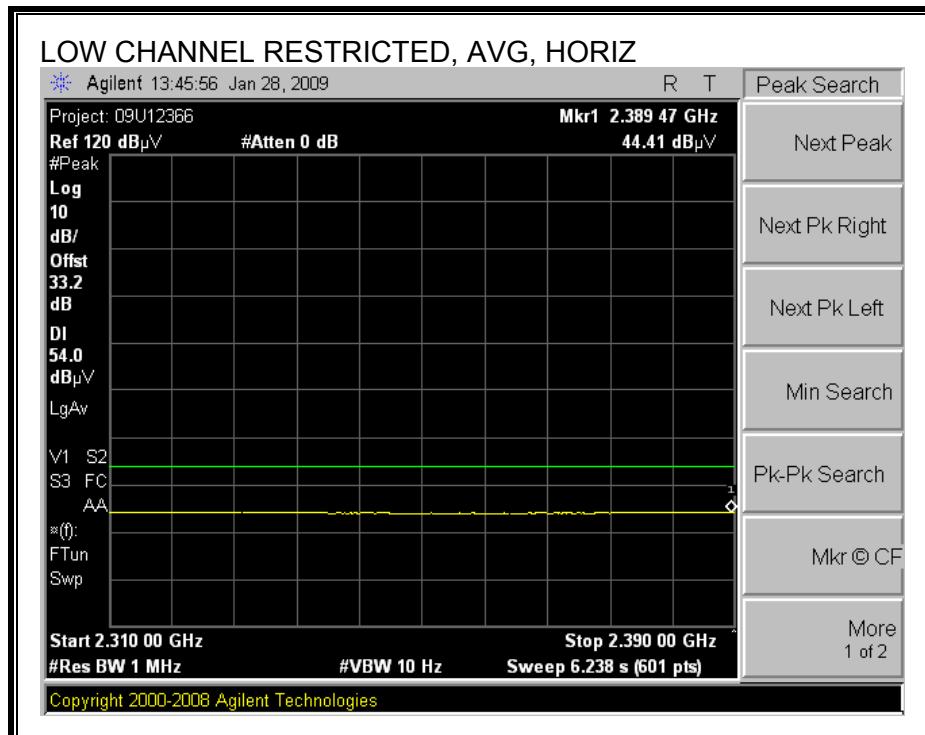
High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber															
Company:	Meraki Inc.														
Project #:	09U12366														
Date:	01/29/09														
Test Engineer:	Thanh Nguyen														
Configuration:	EUT with Flat Panel Antenna 19dBi														
Mode:	Transmit Worst case g mode Art=13.5														
Test Equipment:															
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit			
T73; S/N: 6717 @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)
Low channel															
4.824	3.0	48.4	36.5	33.7	5.8	-34.8	0.0	0.0	53.2	41.2	74	54	-20.8	-12.8	V
7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor
4.824	3.0	46.8	32.3	33.7	5.8	-34.8	0.0	0.0	51.5	37.0	74	54	-22.5	-17.0	H
7.236	3.0	40.3	28.6	36.2	7.2	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor
Mid channel															
4.874	3.0	49.5	37.5	33.8	5.8	-34.8	0.0	0.0	54.4	42.3	74	54	-19.6	-11.7	V
7.311	3.0	41.2	28.4	36.2	7.3	-34.1	0.0	0.0	50.6	37.8	74	54	-23.4	-16.2	Noise floor
4.874	3.0	47.6	34.7	33.8	5.8	-34.8	0.0	0.0	52.4	39.5	74	54	-21.6	-14.5	H
7.311	3.0	41.3	28.4	36.2	7.3	-34.1	0.0	0.0	50.7	37.8	74	54	-23.3	-16.2	Noise floor
High channel															
4.924	3.0	48.7	37.3	33.9	5.9	-34.8	0.0	0.0	53.6	42.2	74	54	-20.4	-11.8	V
7.386	3.0	42.2	28.9	36.3	7.3	-34.1	0.0	0.0	51.7	38.4	74	54	-22.3	-15.6	Noise floor
4.924	3.0	47.4	35.4	33.9	5.9	-34.8	0.0	0.0	52.4	40.4	74	54	-21.6	-13.6	H
7.386	3.0	41.9	28.9	36.3	7.3	-34.1	0.0	0.0	51.4	38.4	74	54	-22.6	-15.6	Noise floor
No other emissions were detected above noise floor.															
Rev. 10.15.08															
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										

MODE 110

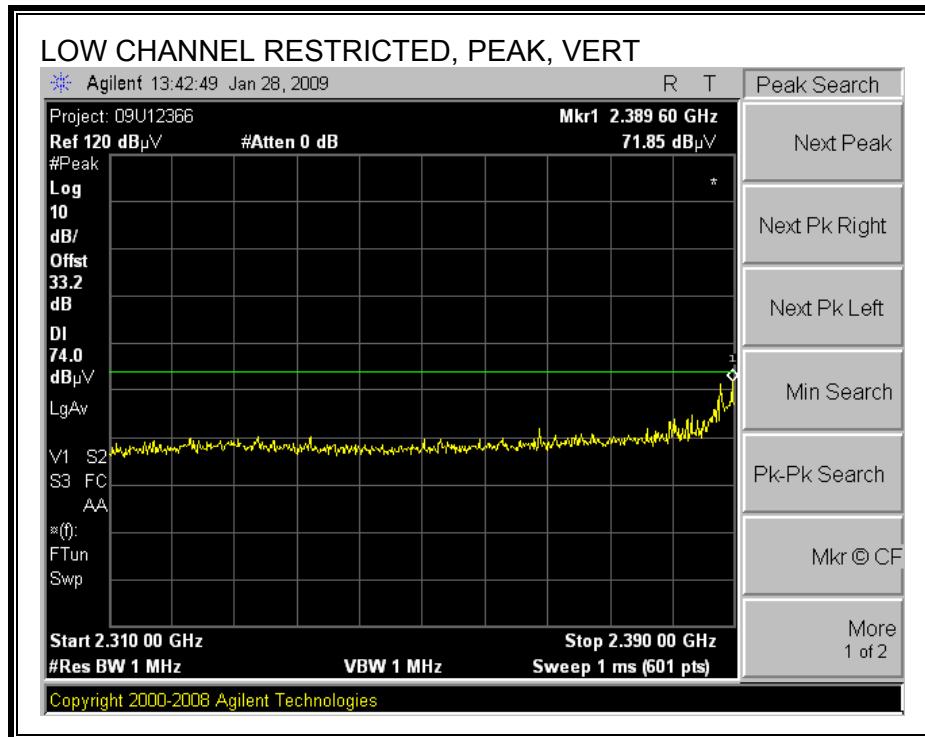
HT 20MHz

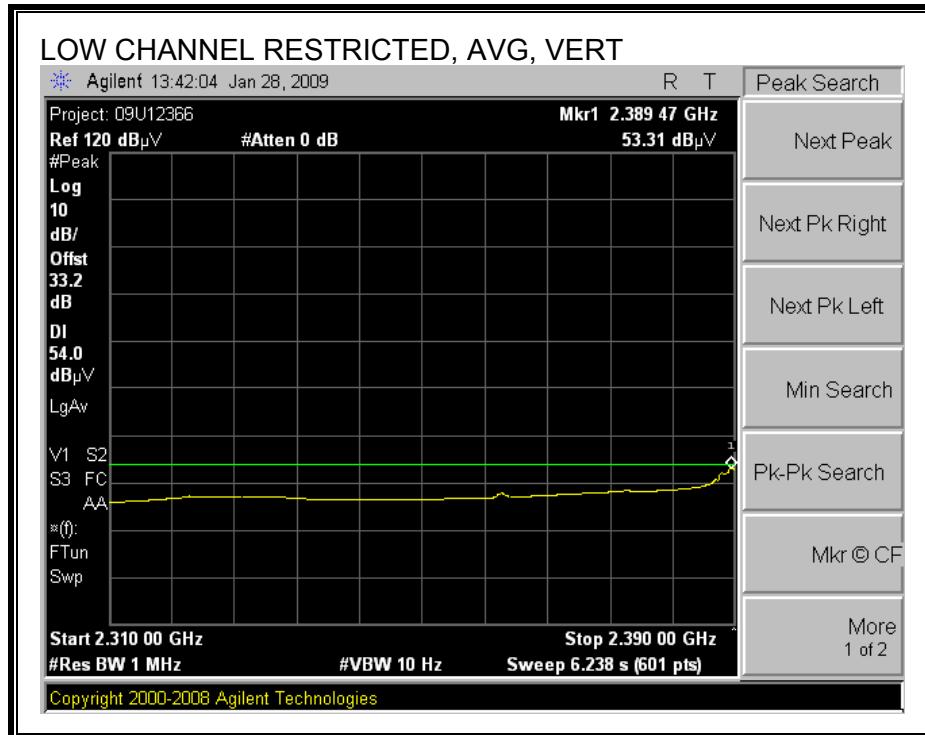
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



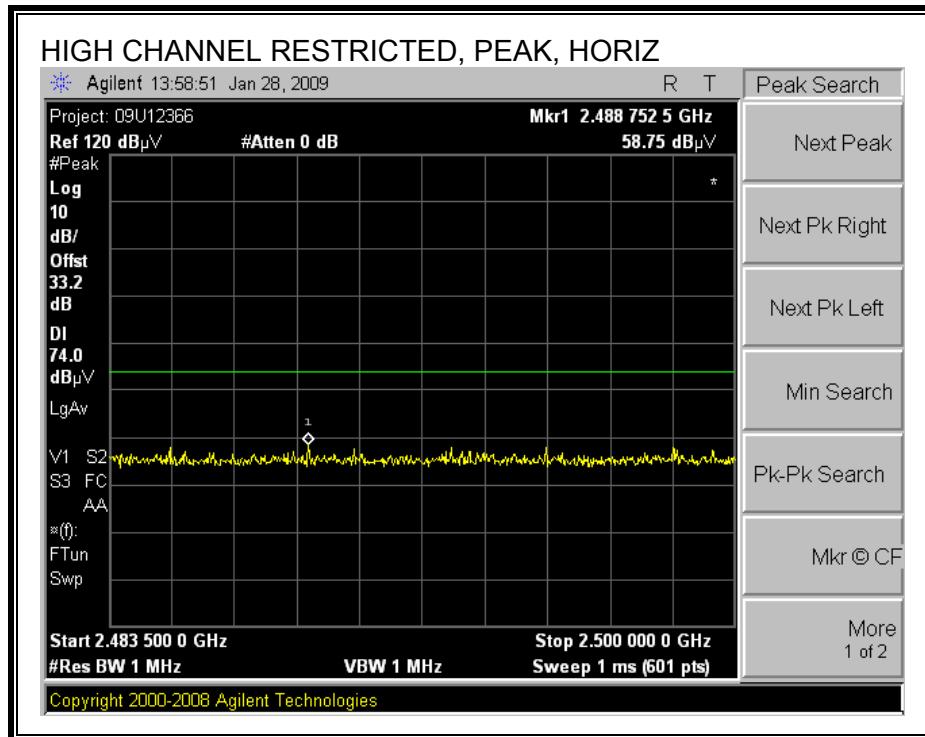


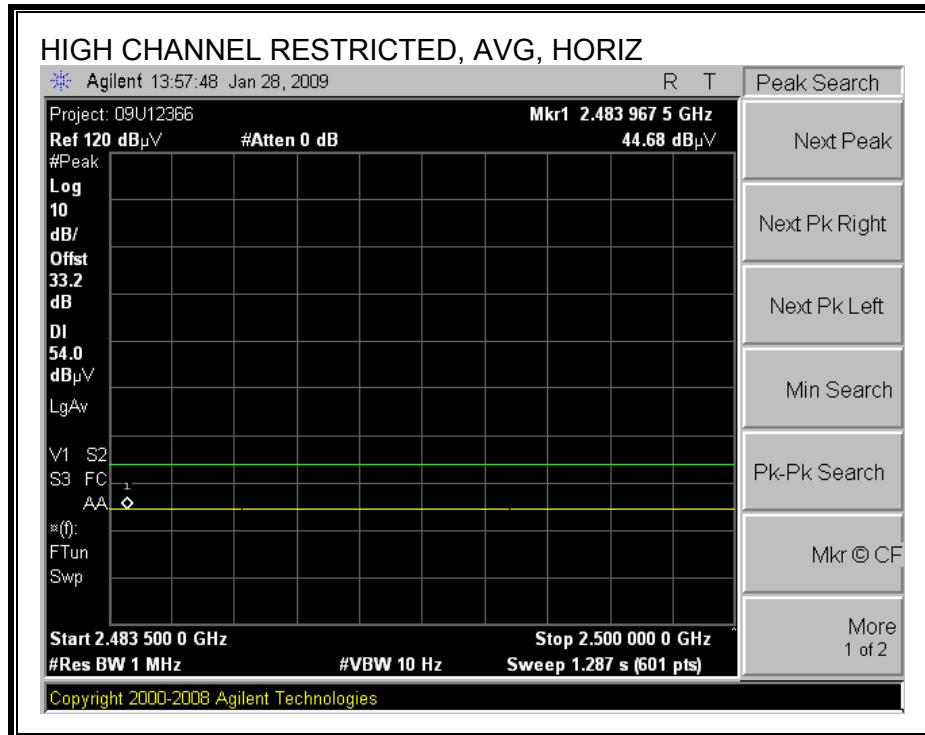
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



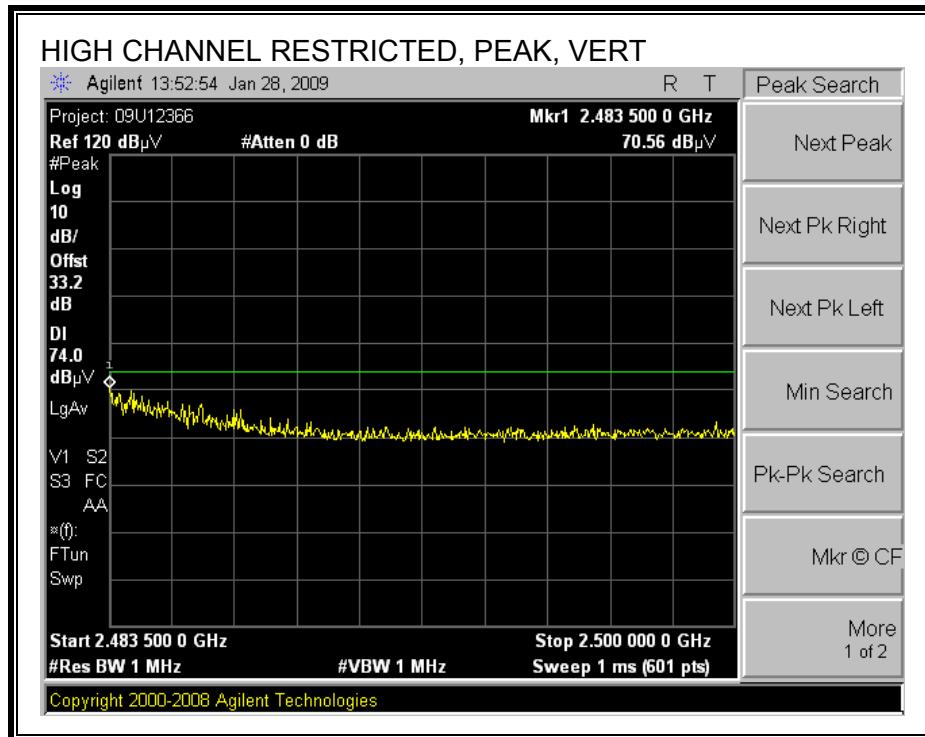


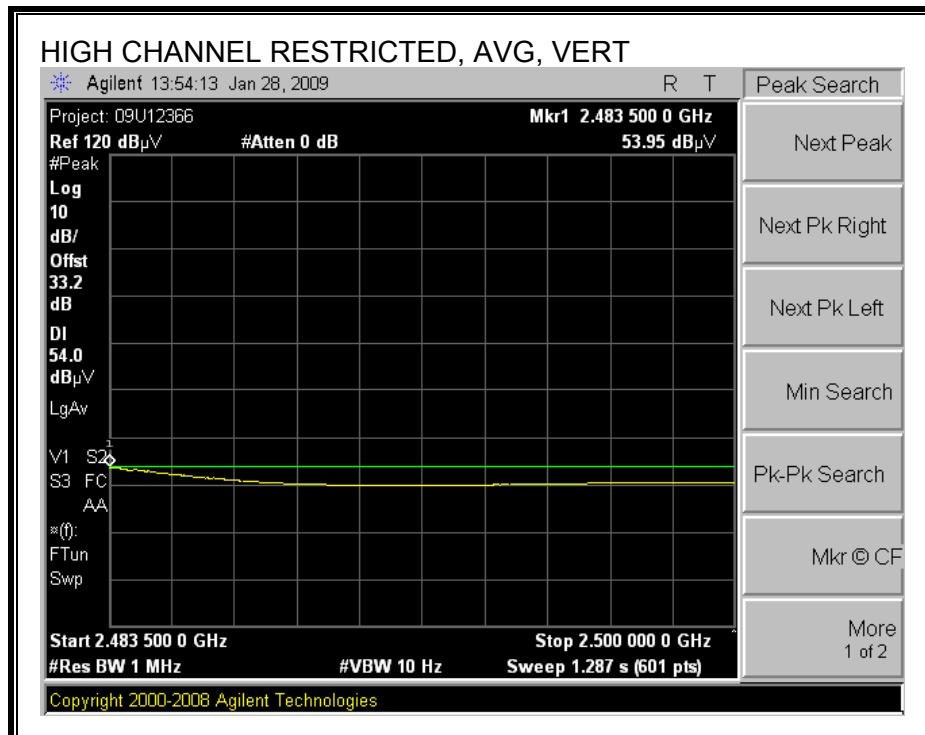
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



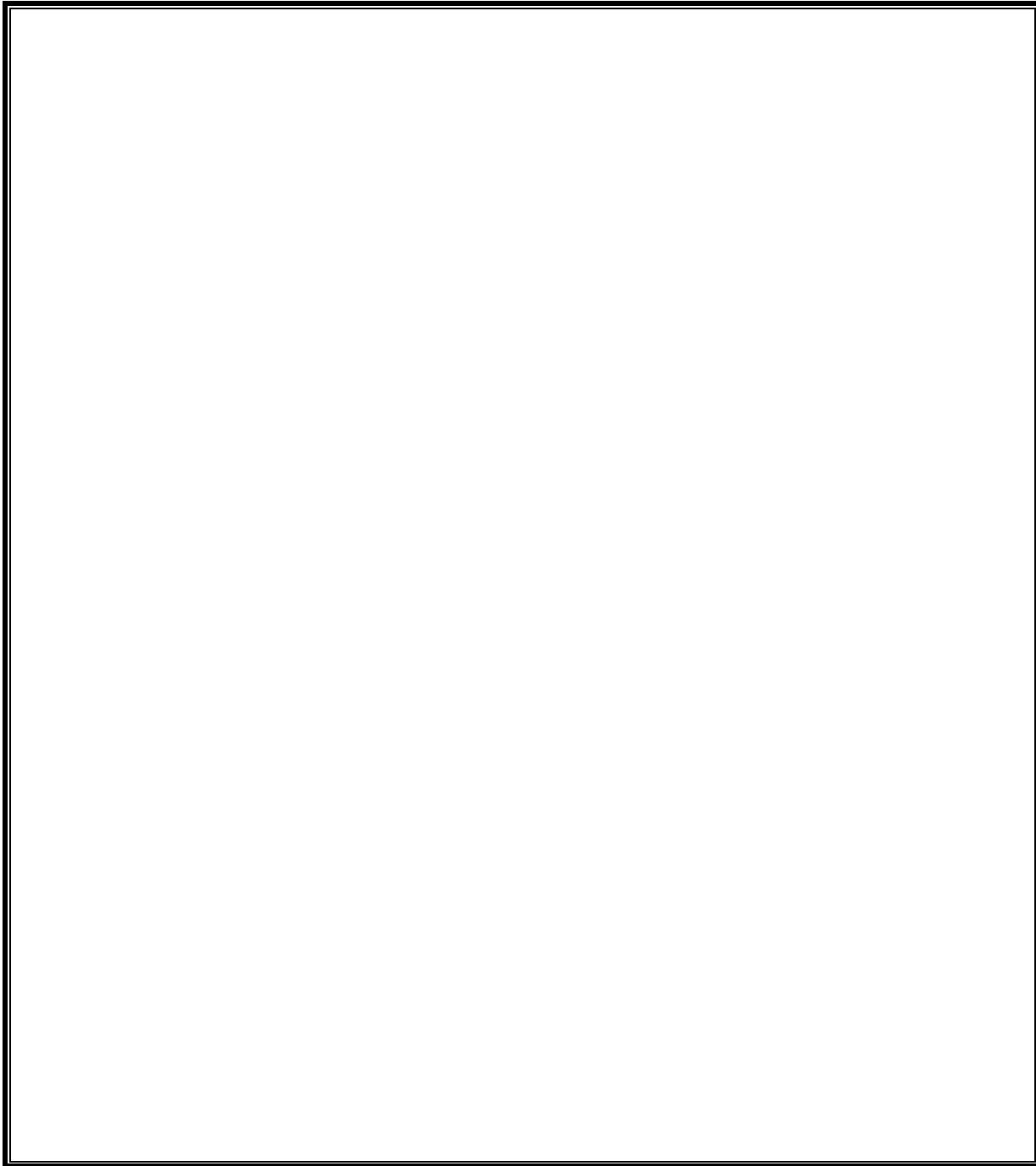


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



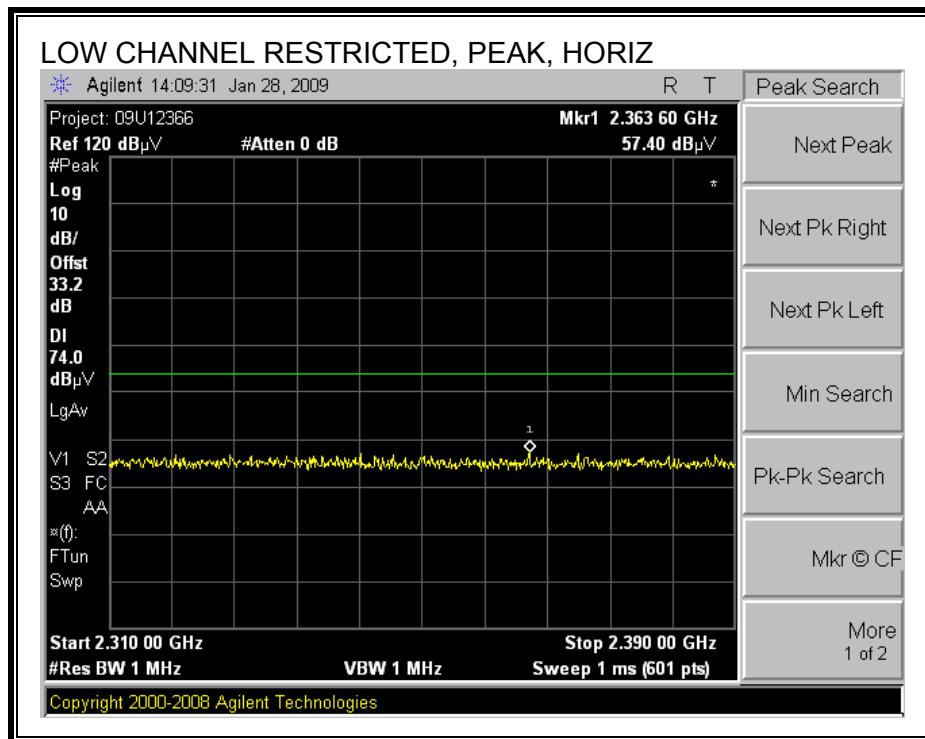


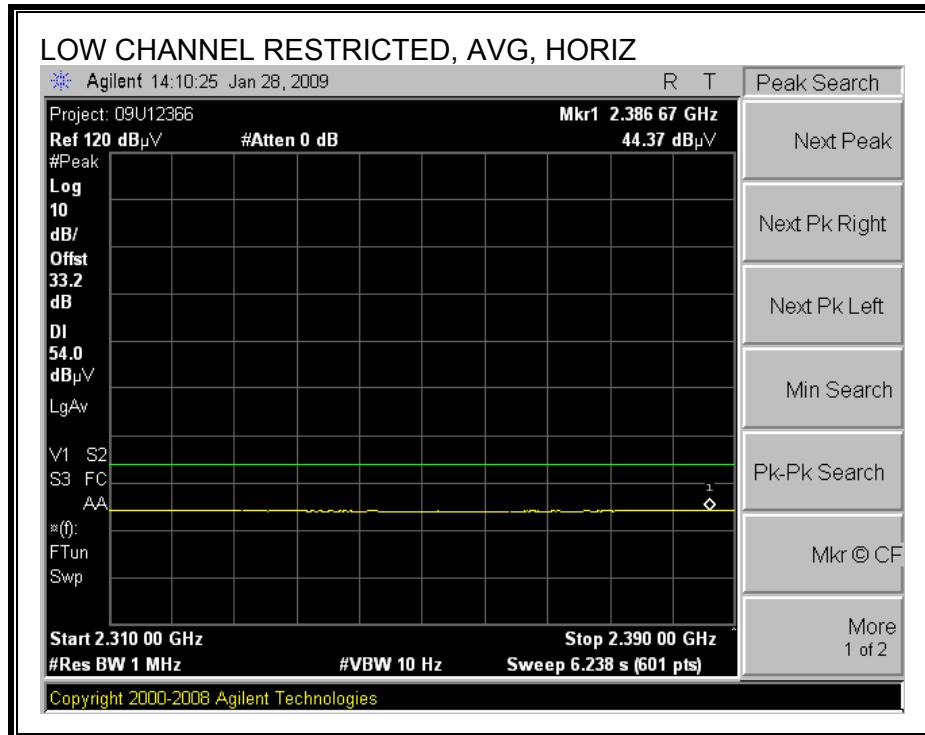
HARMONICS AND SPURIOUS EMISSIONS



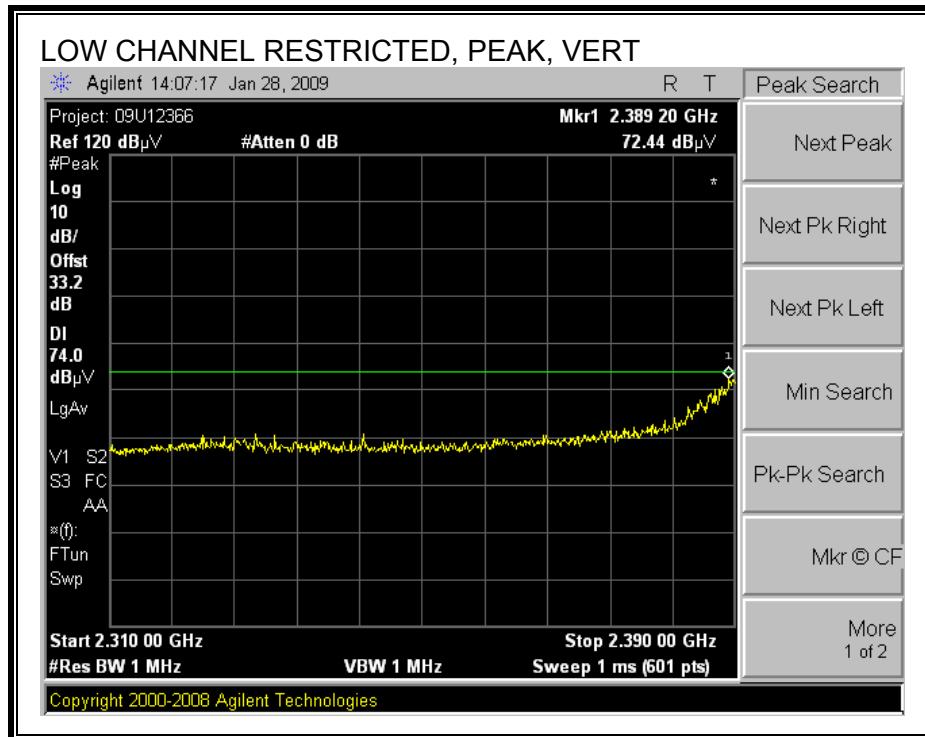
HT 40 MHz

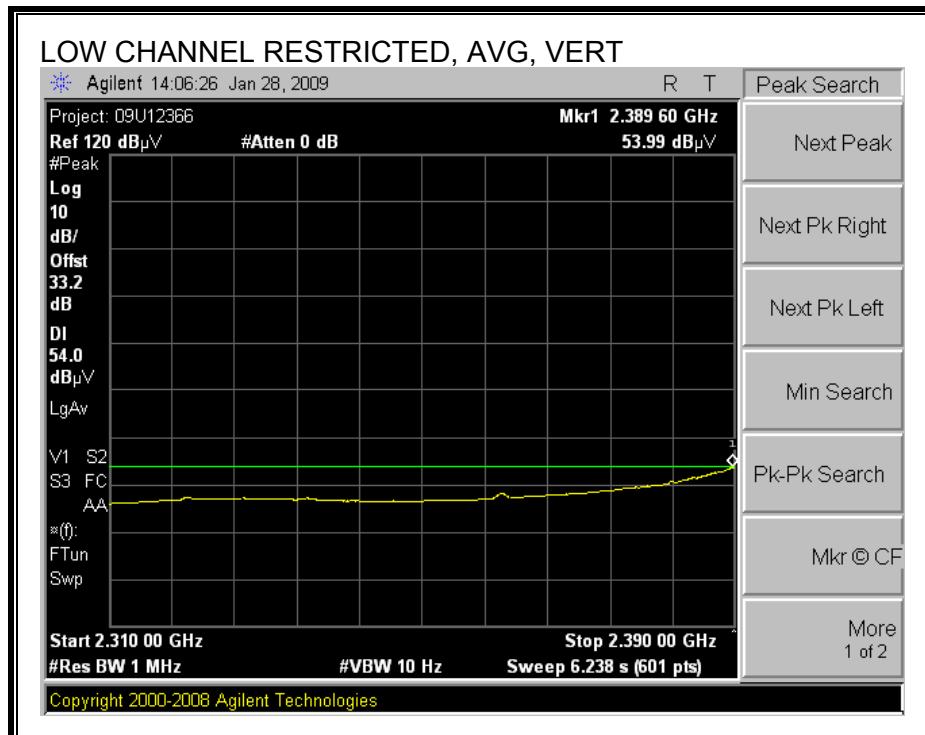
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



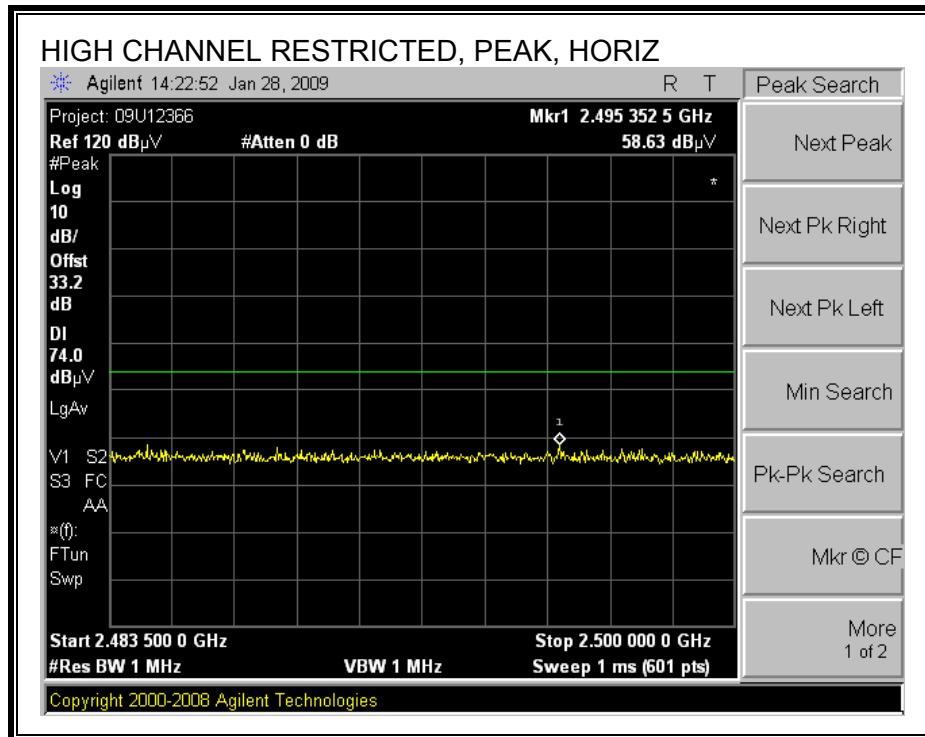


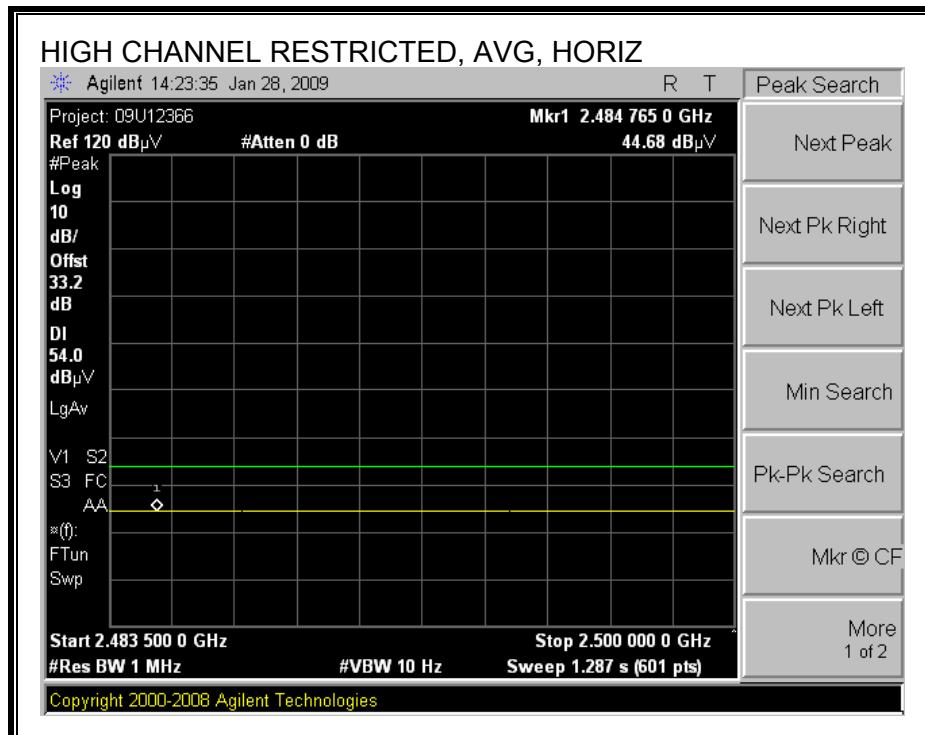
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



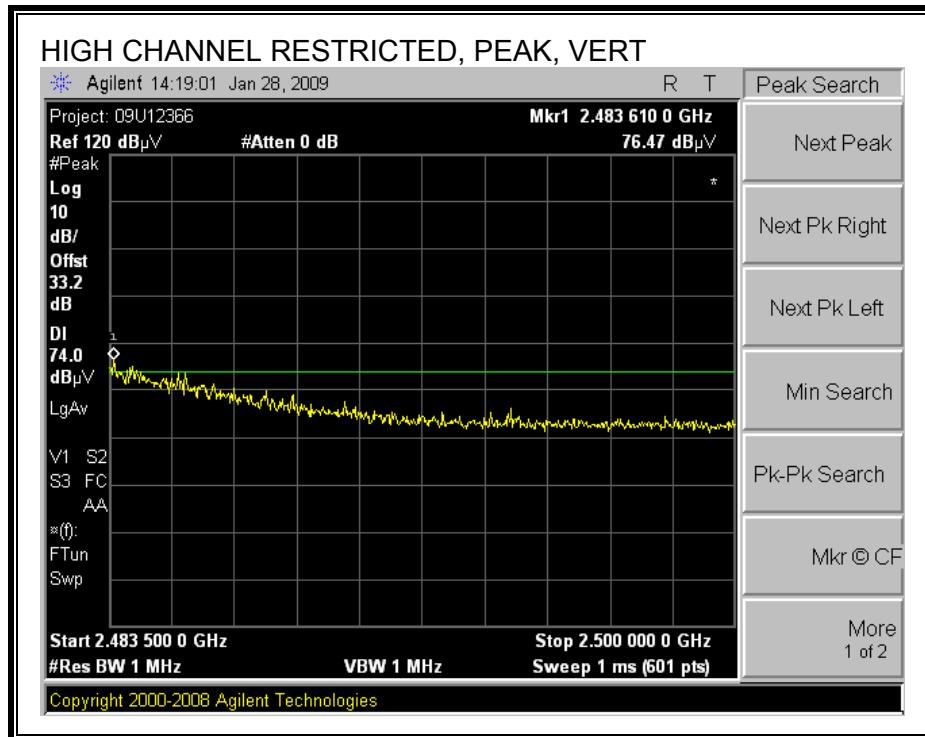


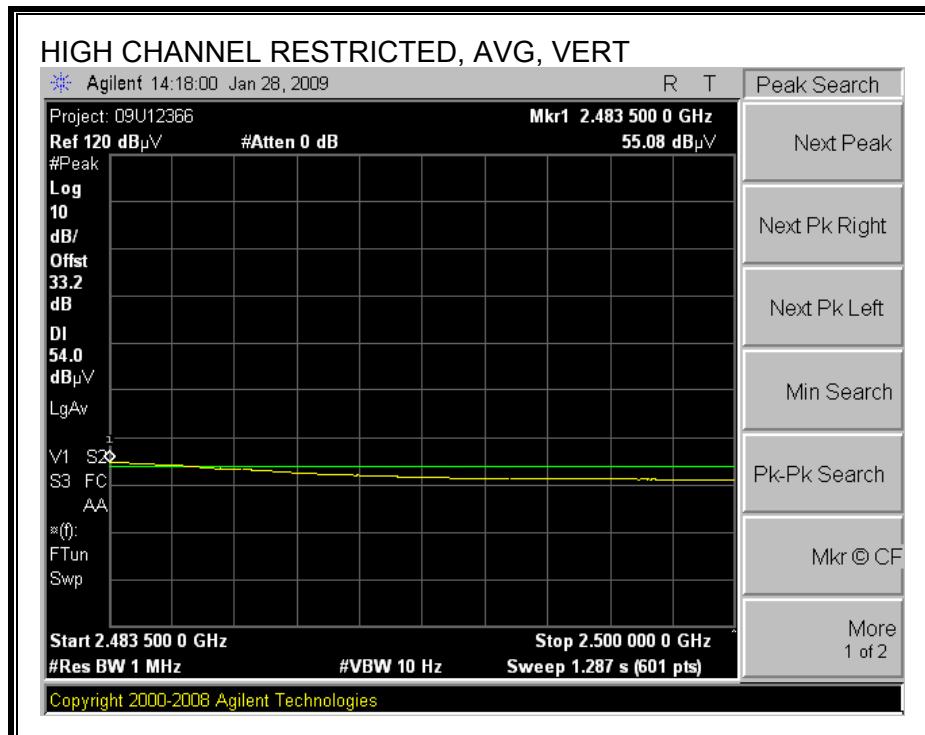
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





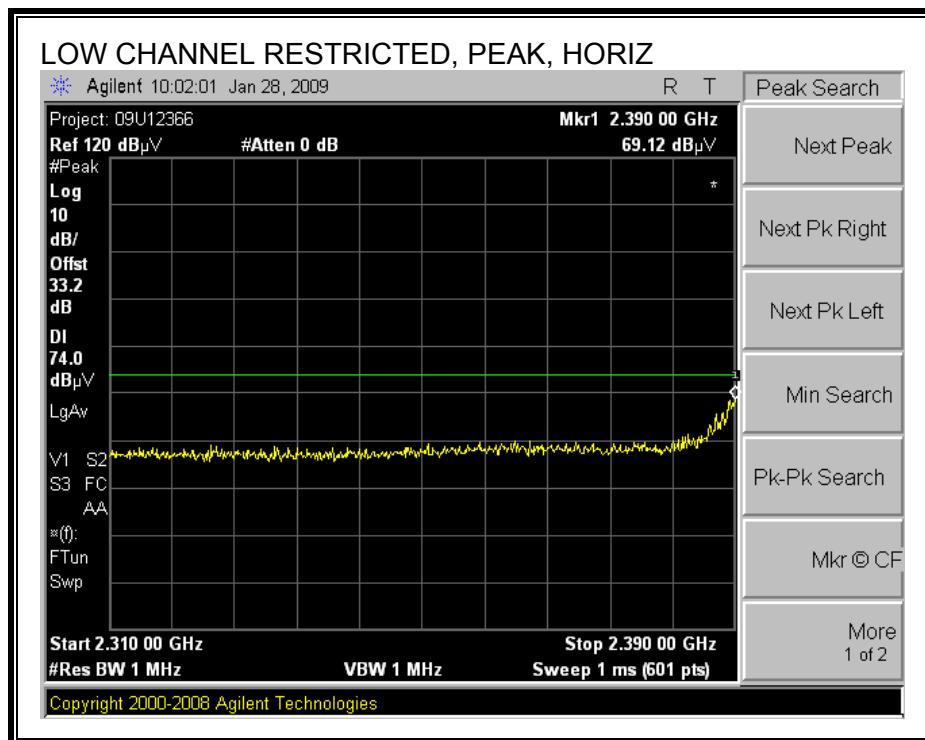
HARMONICS AND SPURIOUS EMISSIONS

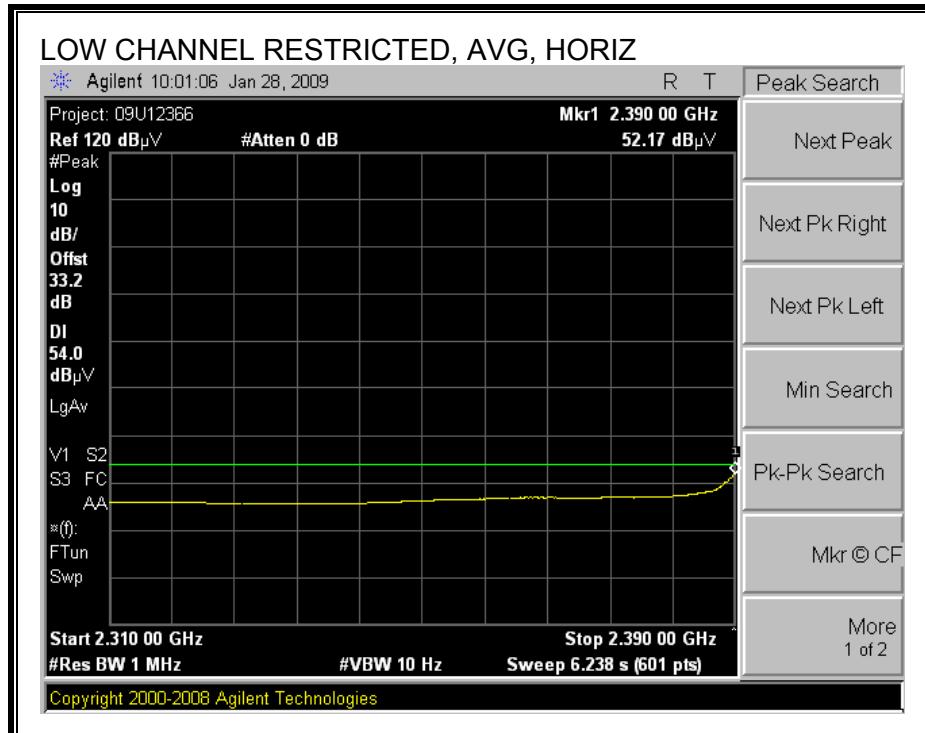
High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber															
Company:	Meraki Inc.														
Project #:	09U12366														
Date:	01/29/09														
Test Engineer:	Thanh Nguyen														
Configuration:	EUT with Flat Panel Antenna 19dBi														
Mode:	Transmit Worst case g mode Art=13.5														
Test Equipment:															
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit			
T73; S/N: 6717 @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)
Low channel															
4.824	3.0	48.4	36.5	33.7	5.8	-34.8	0.0	0.0	53.2	41.2	74	54	-20.8	-12.8	V
7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor
4.824	3.0	46.8	32.3	33.7	5.8	-34.8	0.0	0.0	51.5	37.0	74	54	-22.5	-17.0	H
7.236	3.0	40.3	28.6	36.2	7.2	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor
Mid channel															
4.874	3.0	49.5	37.5	33.8	5.8	-34.8	0.0	0.0	54.4	42.3	74	54	-19.6	-11.7	V
7.311	3.0	41.2	28.4	36.2	7.3	-34.1	0.0	0.0	50.6	37.8	74	54	-23.4	-16.2	Noise floor
4.874	3.0	47.6	34.7	33.8	5.8	-34.8	0.0	0.0	52.4	39.5	74	54	-21.6	-14.5	H
7.311	3.0	41.3	28.4	36.2	7.3	-34.1	0.0	0.0	50.7	37.8	74	54	-23.3	-16.2	Noise floor
High channel															
4.924	3.0	48.7	37.3	33.9	5.9	-34.8	0.0	0.0	53.6	42.2	74	54	-20.4	-11.8	V
7.386	3.0	42.2	28.9	36.3	7.3	-34.1	0.0	0.0	51.7	38.4	74	54	-22.3	-15.6	Noise floor
4.924	3.0	47.4	35.4	33.9	5.9	-34.8	0.0	0.0	52.4	40.4	74	54	-21.6	-13.6	H
7.386	3.0	41.9	28.9	36.3	7.3	-34.1	0.0	0.0	51.4	38.4	74	54	-22.6	-15.6	Noise floor
No other emissions were detected above noise floor.															
Rev. 10.15.08															
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										

7.5.2. TX ABOVE 1 GHz FOR 802.11g DUAL CHAIN LEGACY MODE

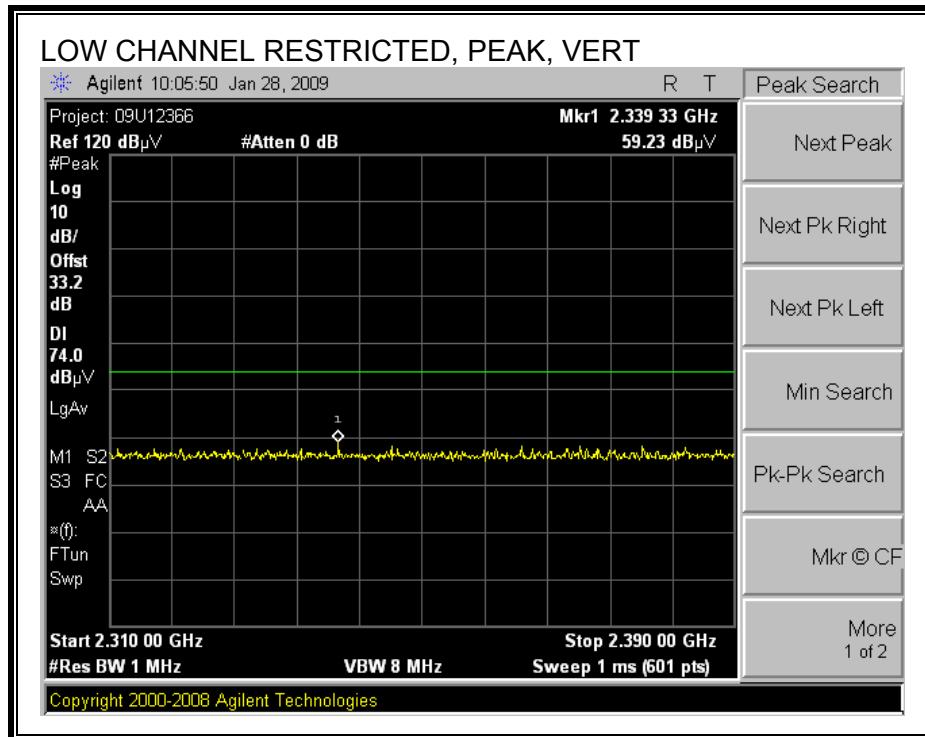
MODE 100:

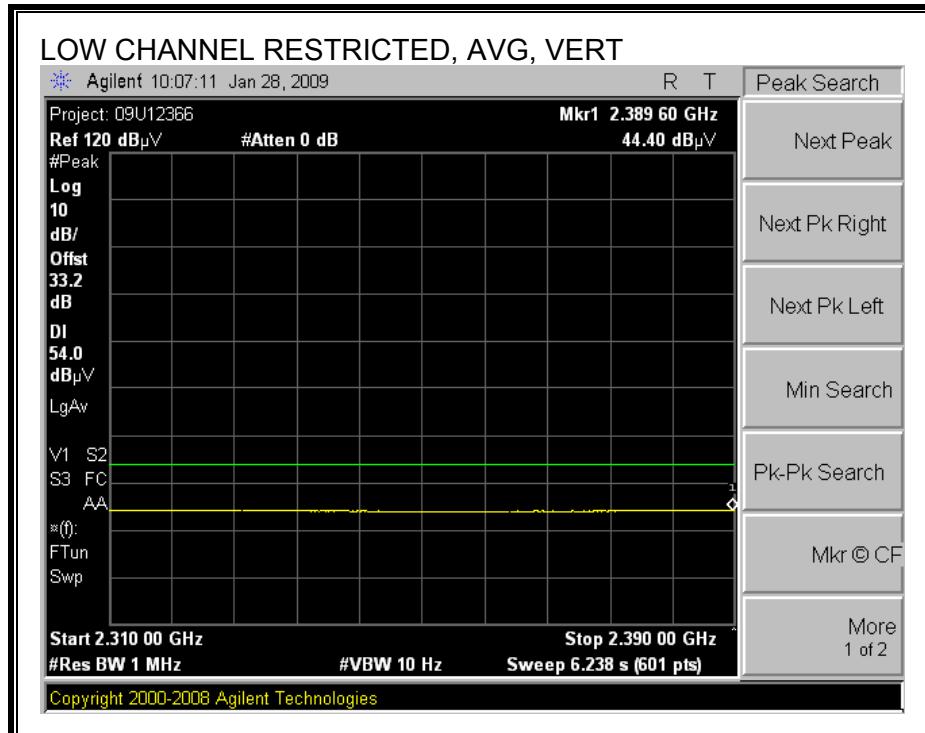
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



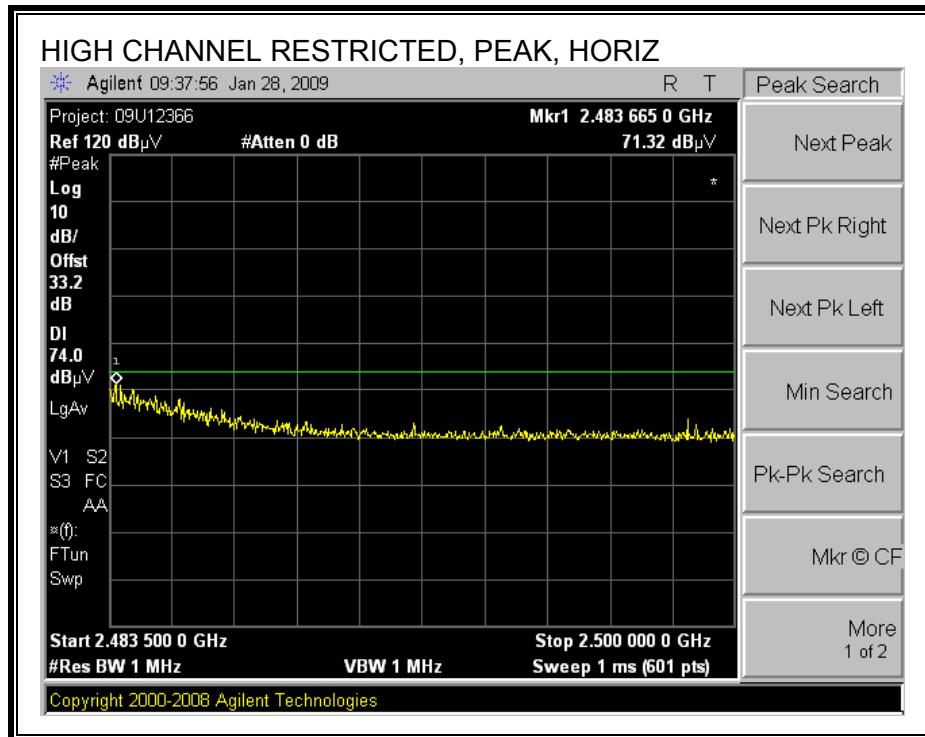


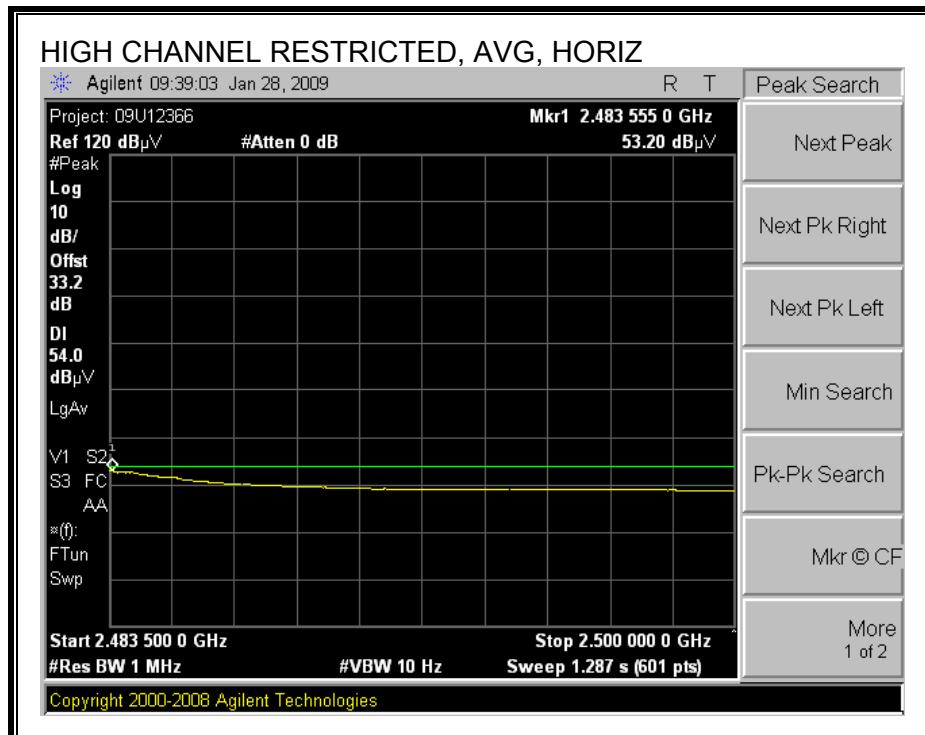
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



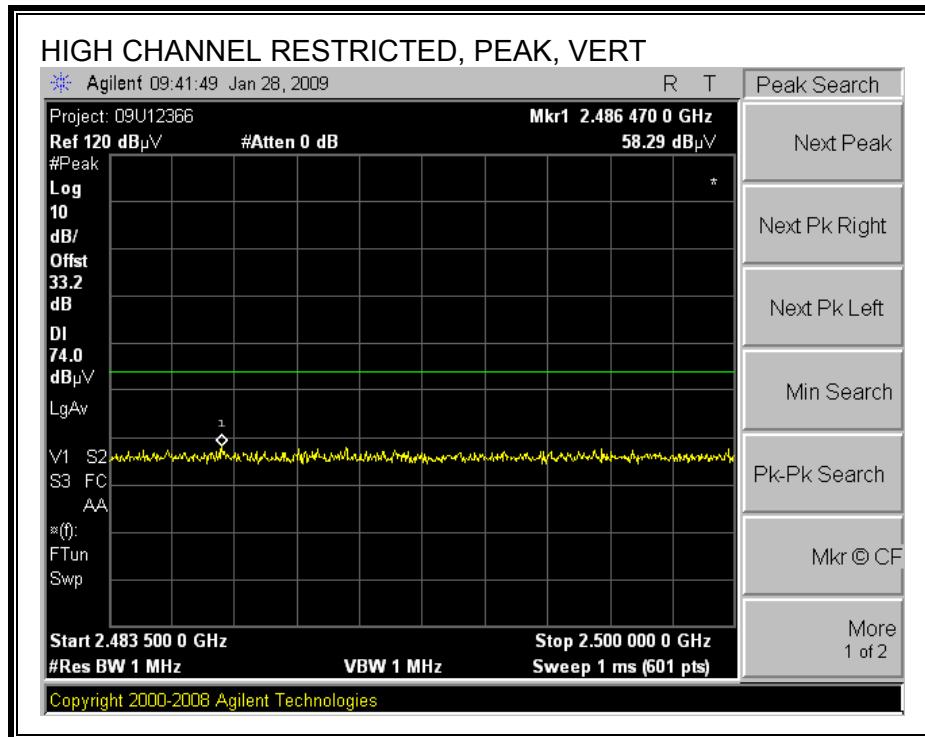


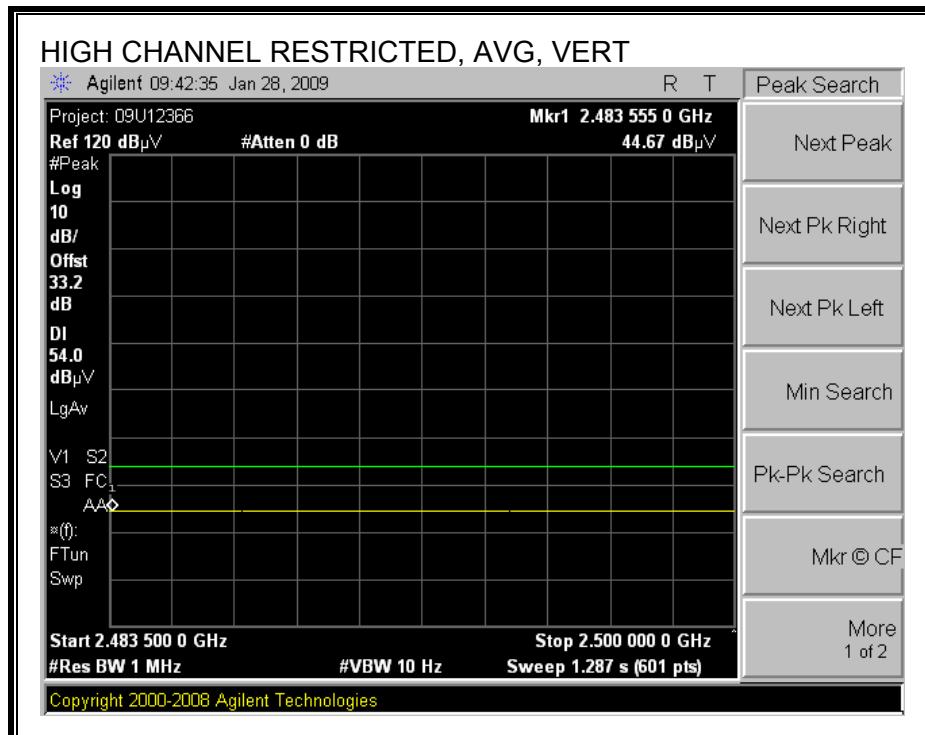
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





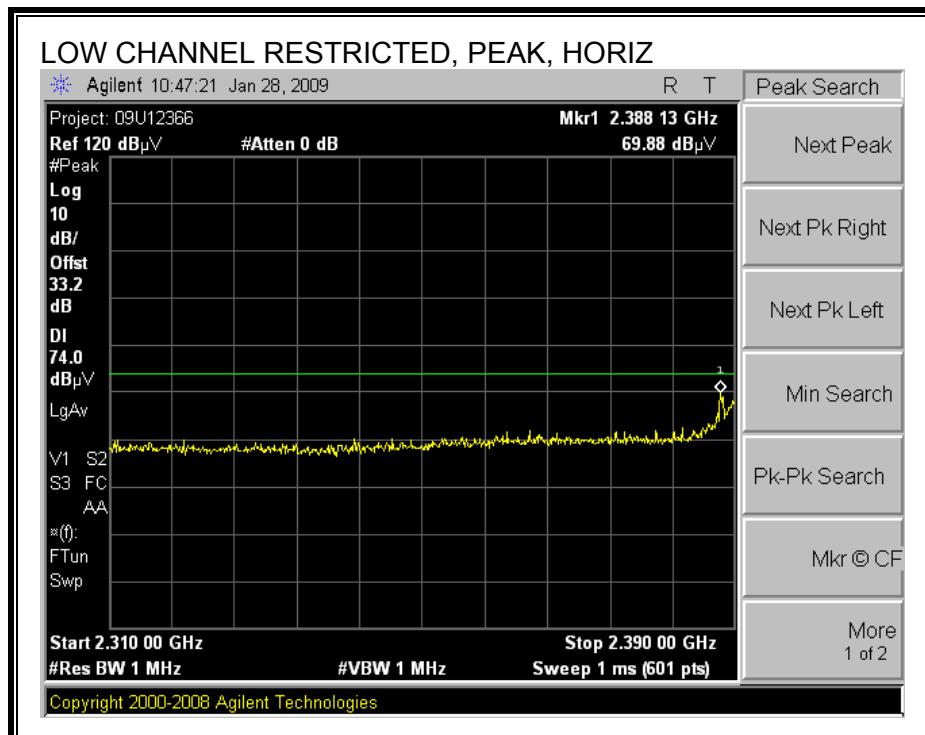
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

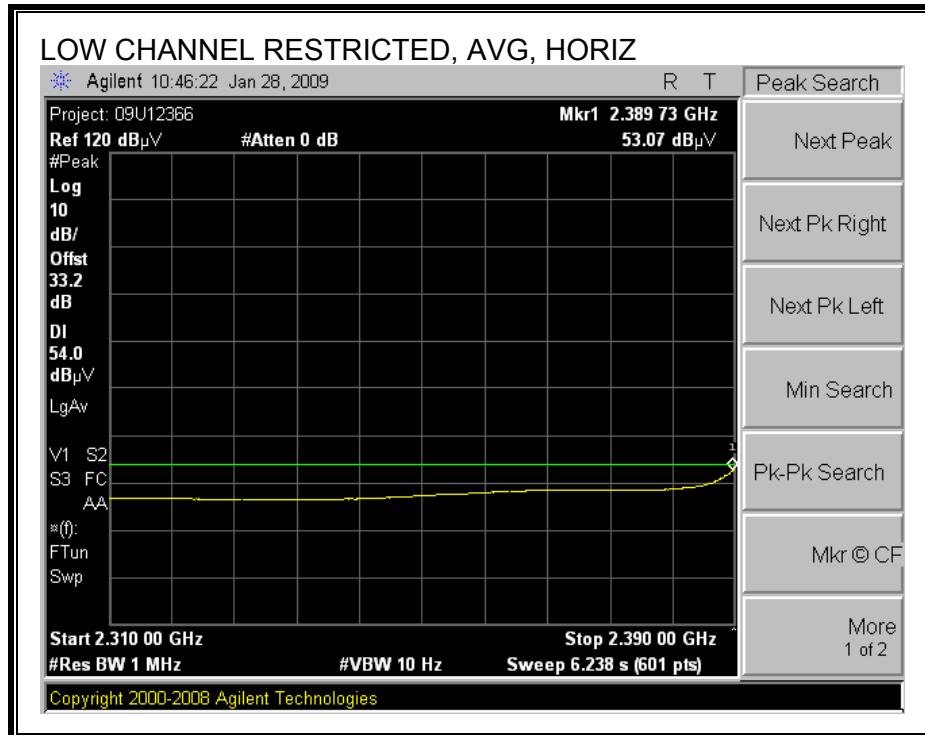




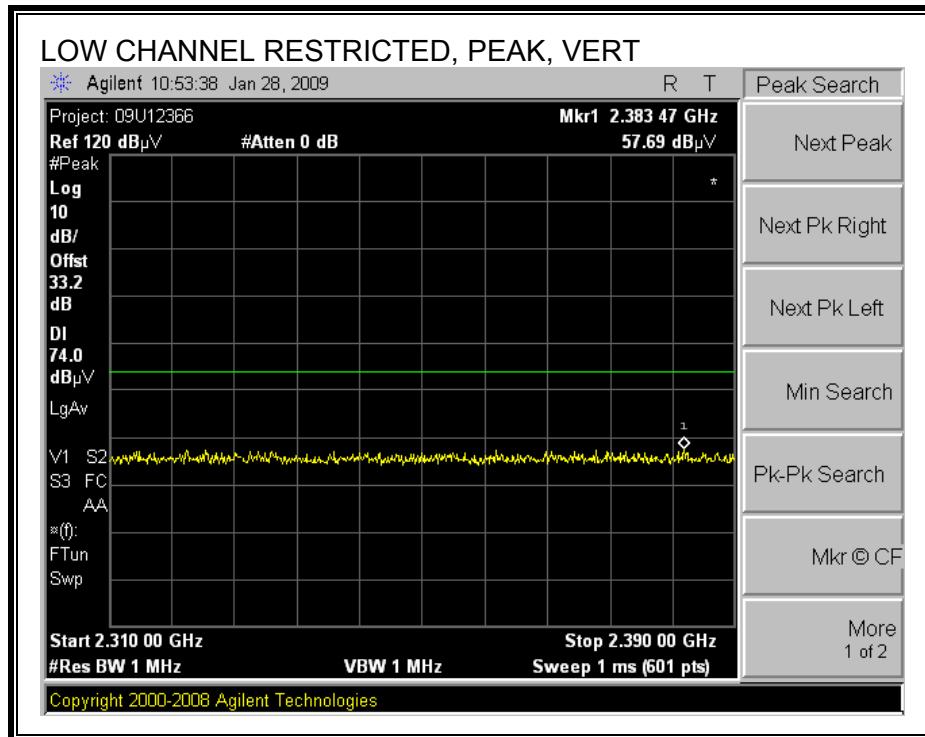
HT 20MHz

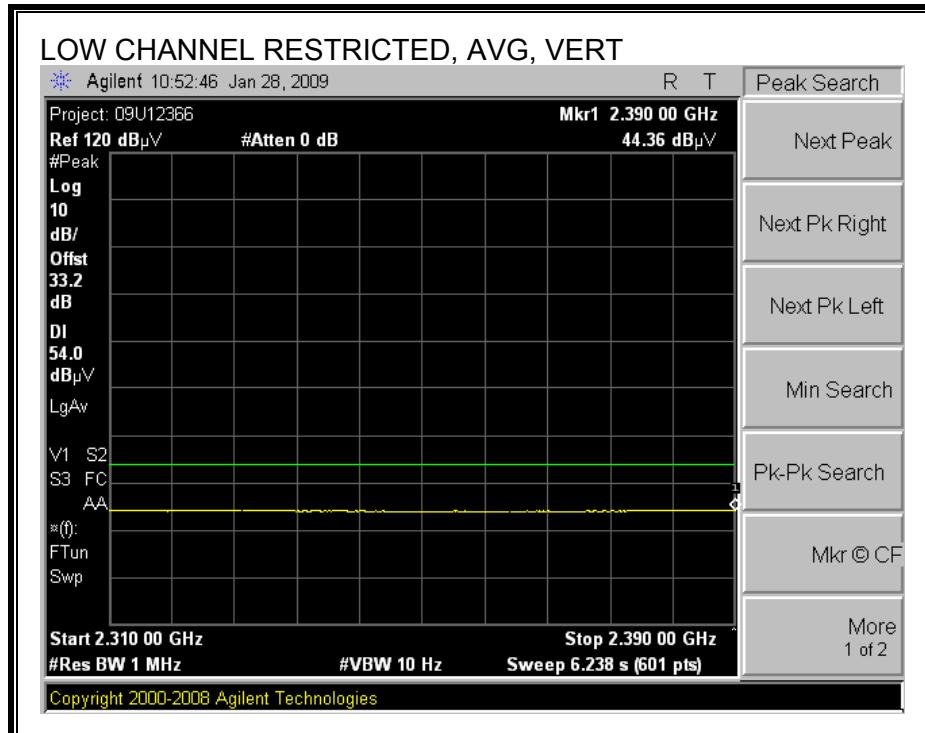
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



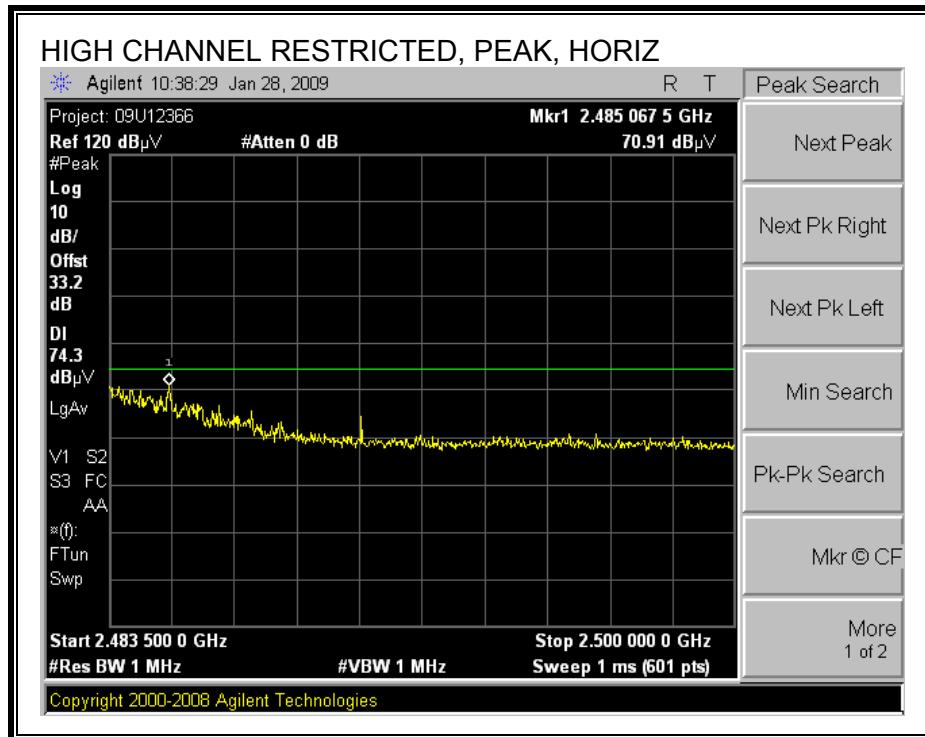


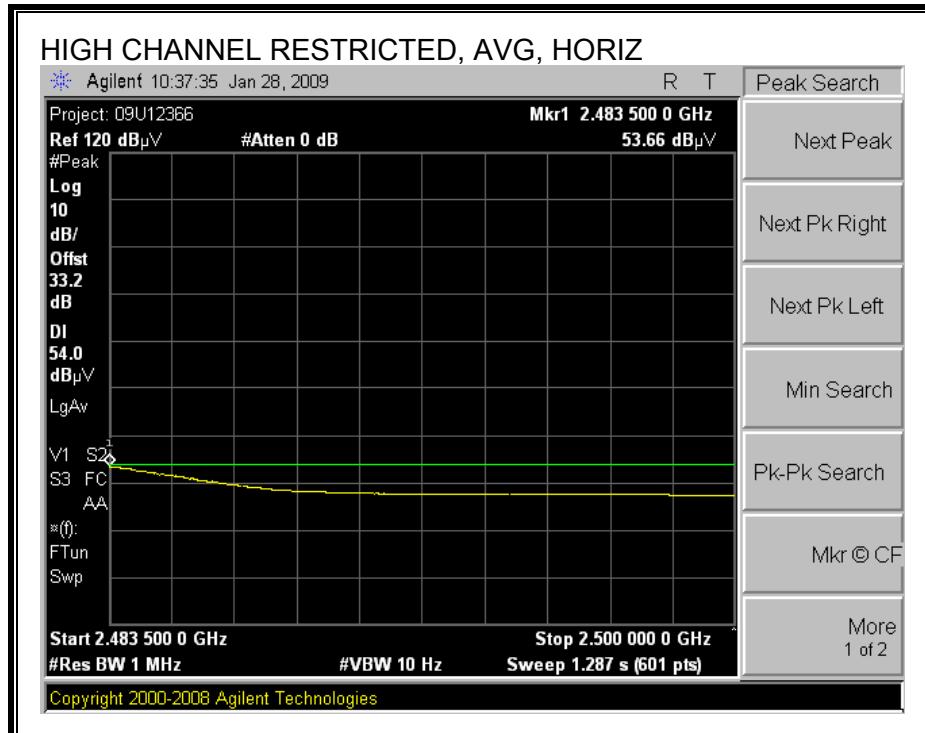
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



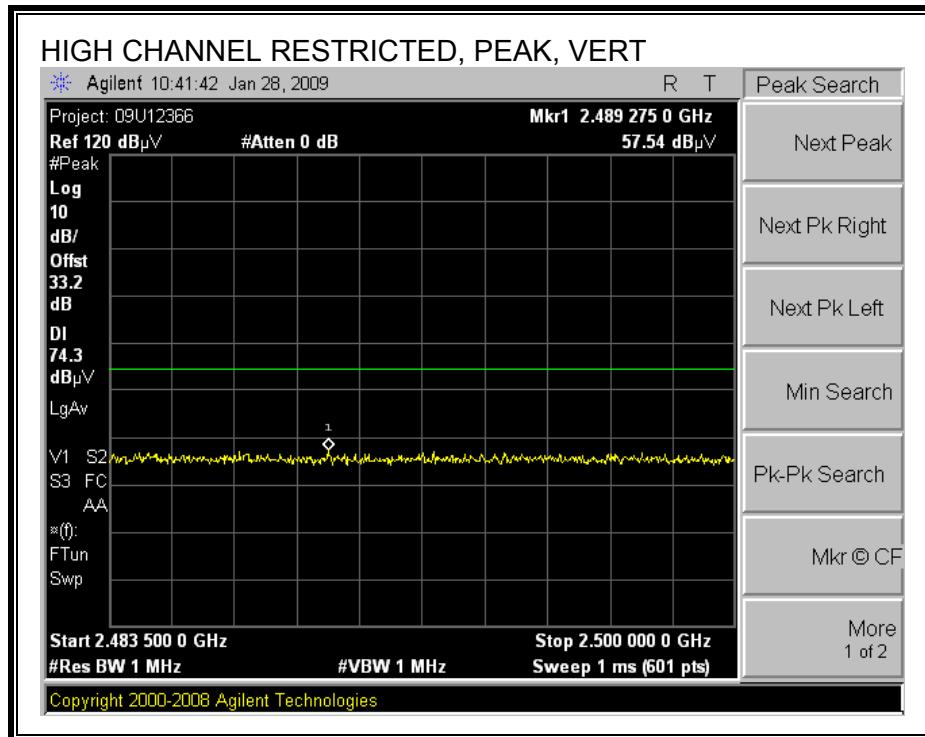


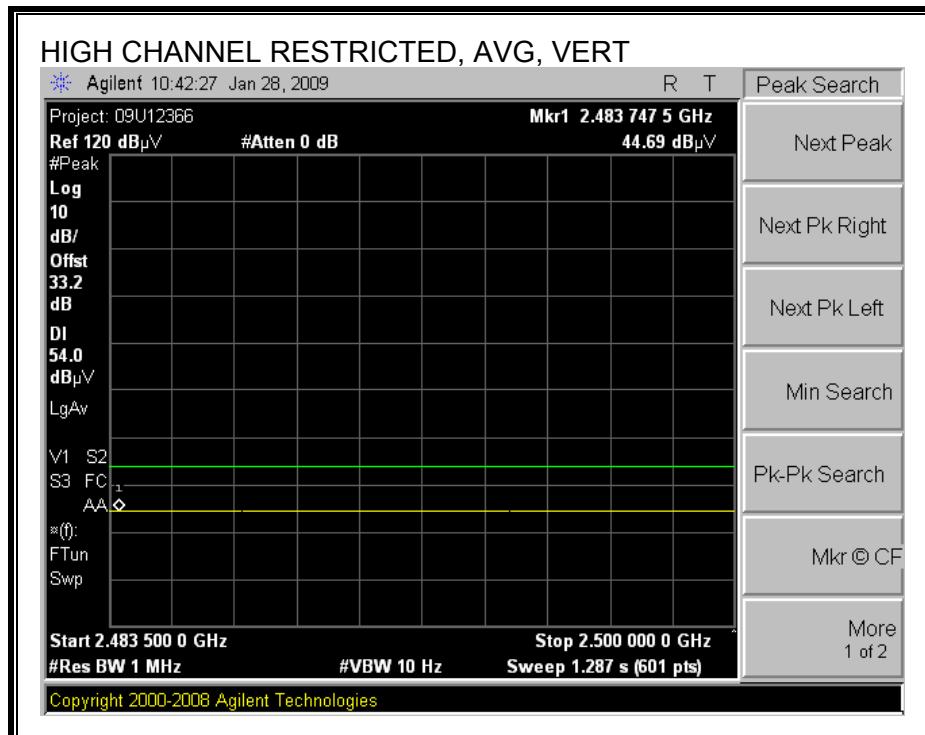
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





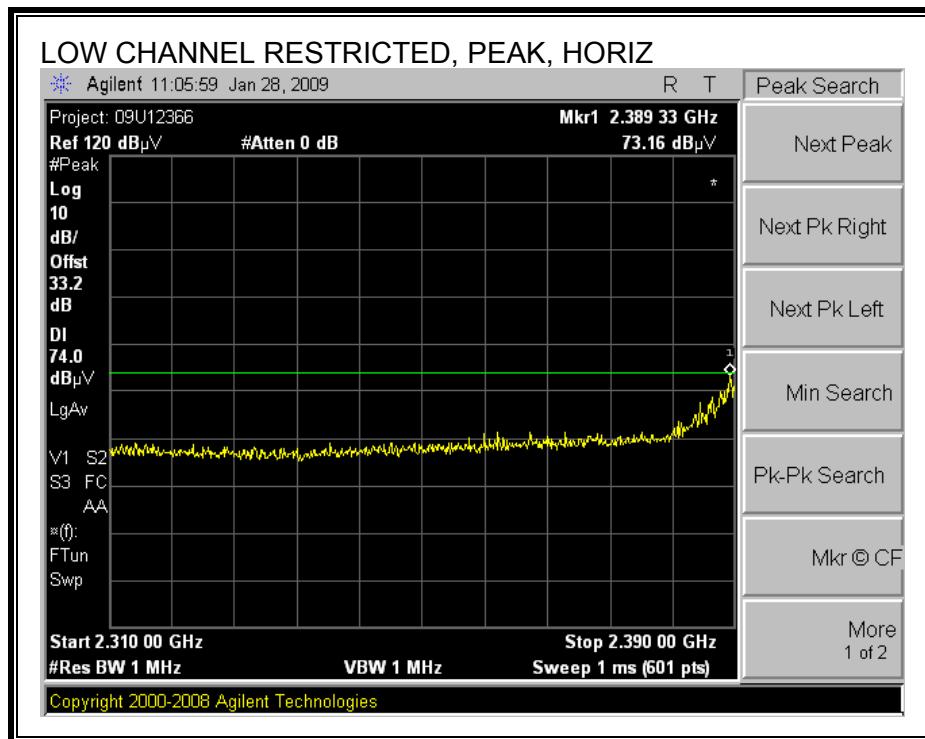
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

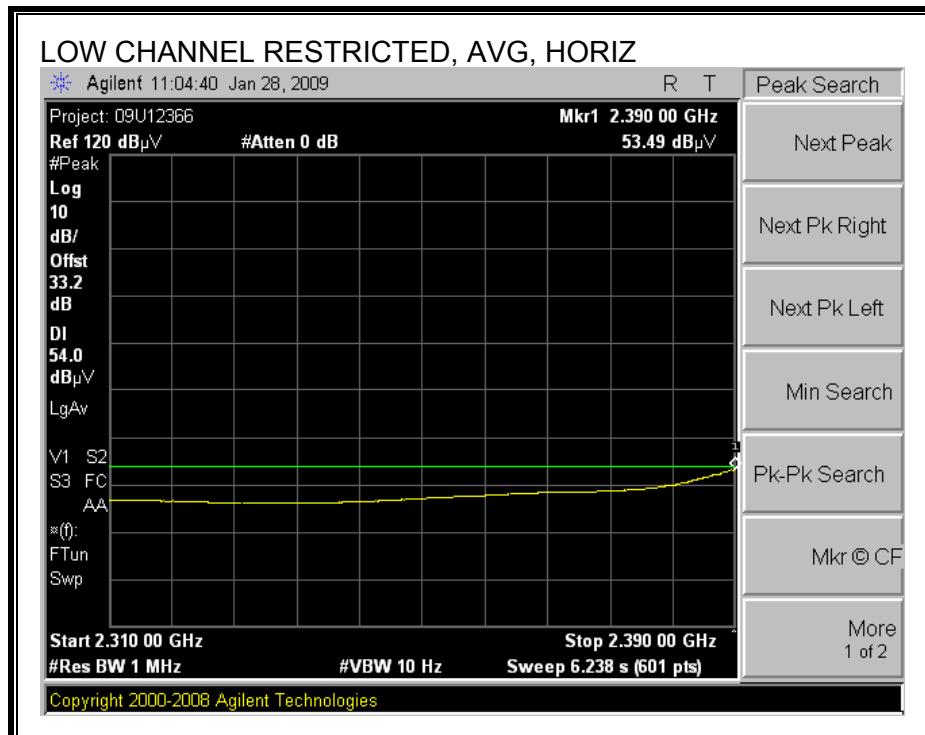




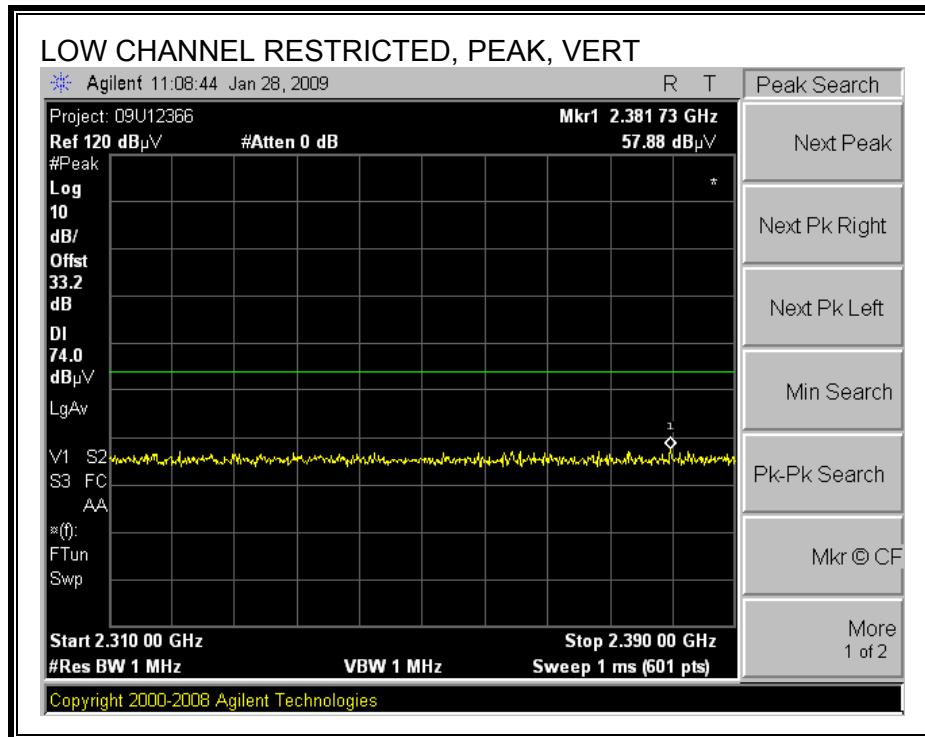
HT 40MHz

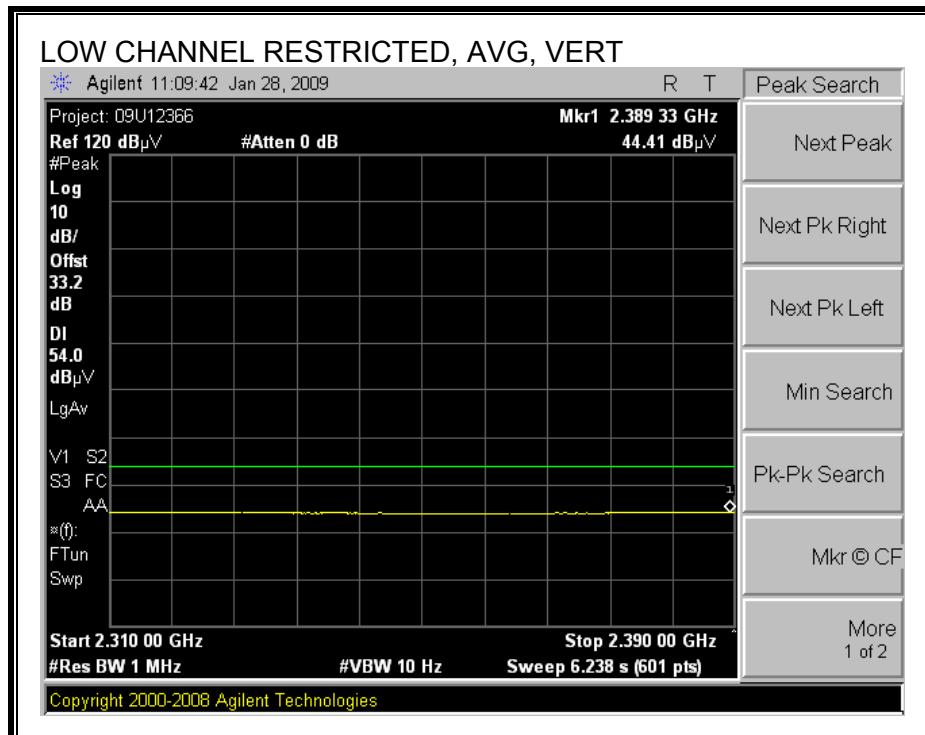
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



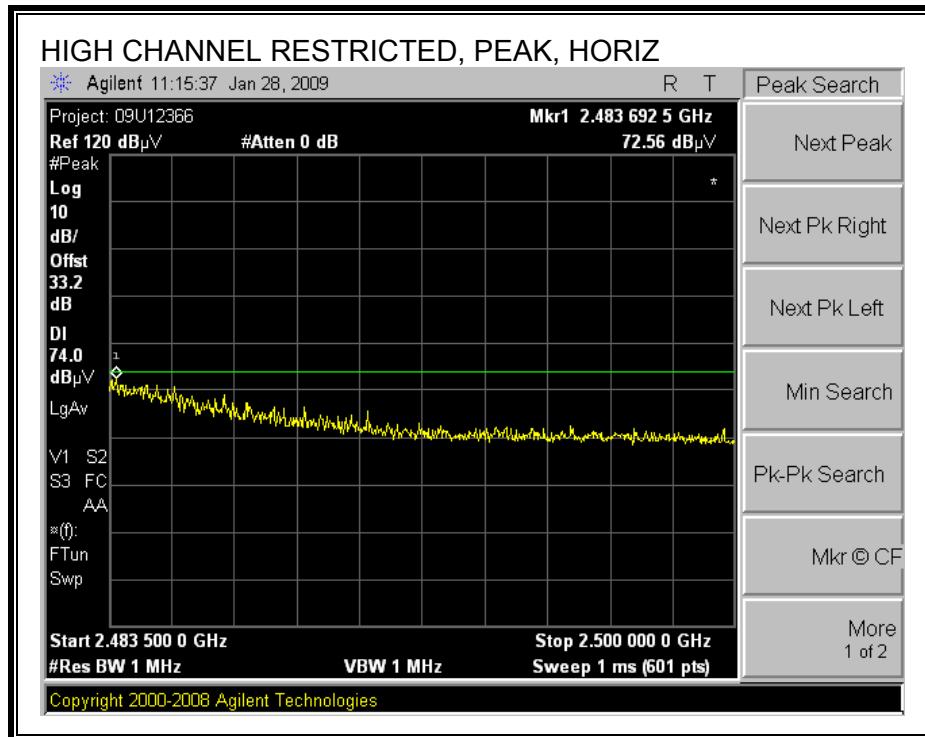


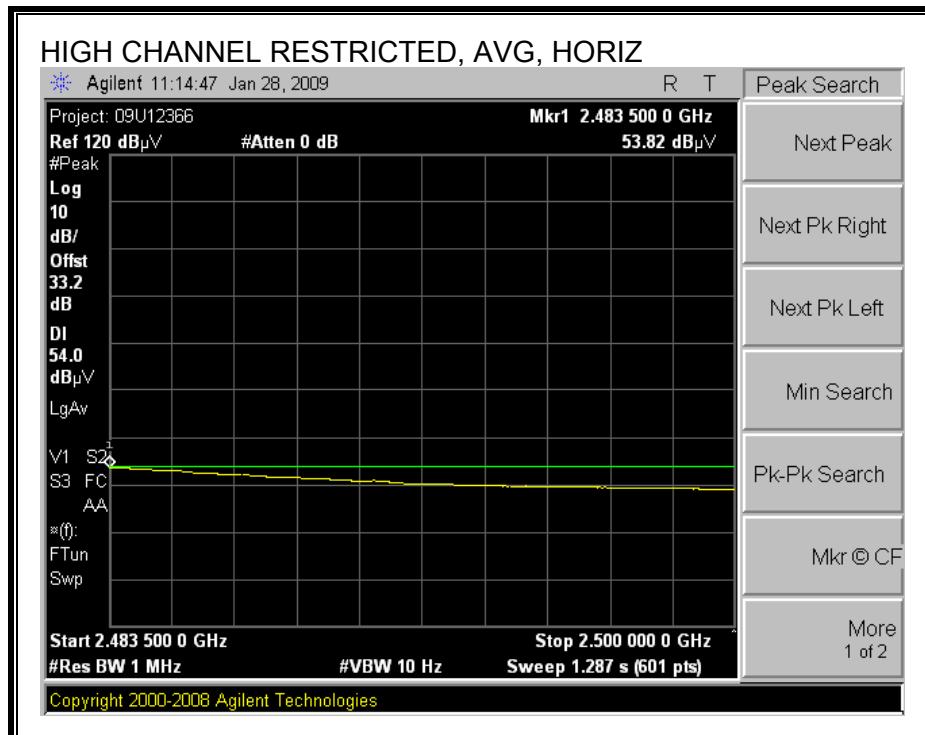
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



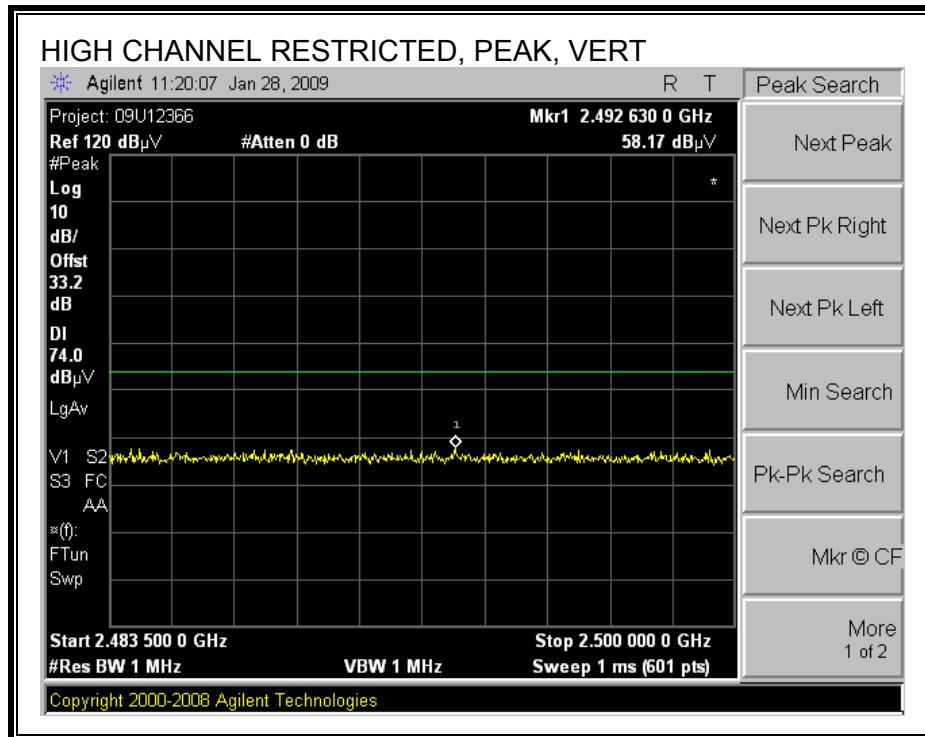


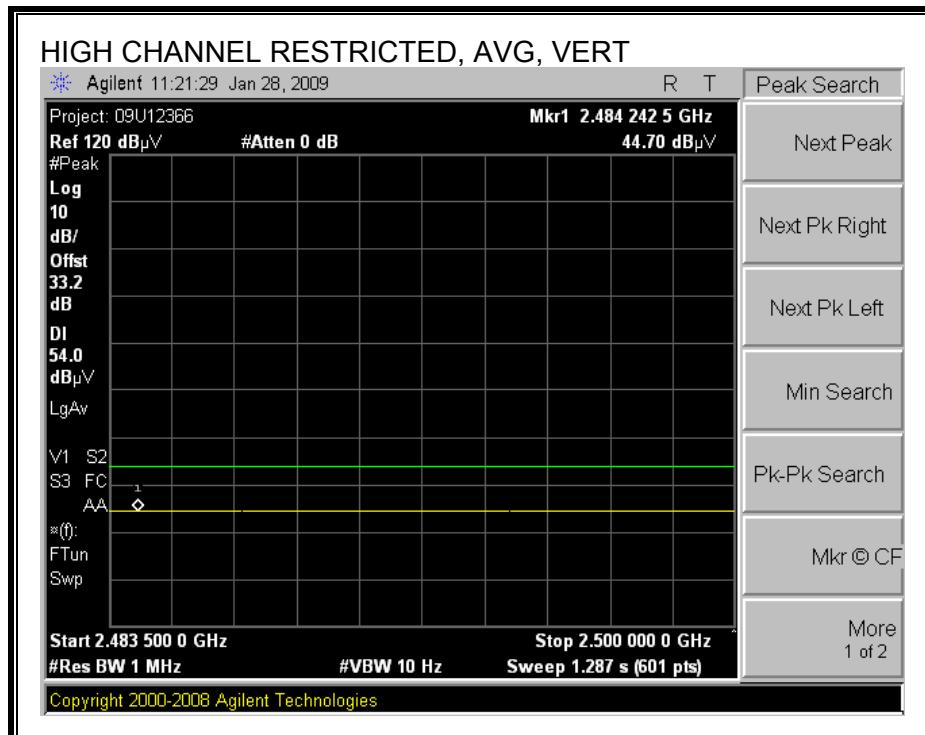
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



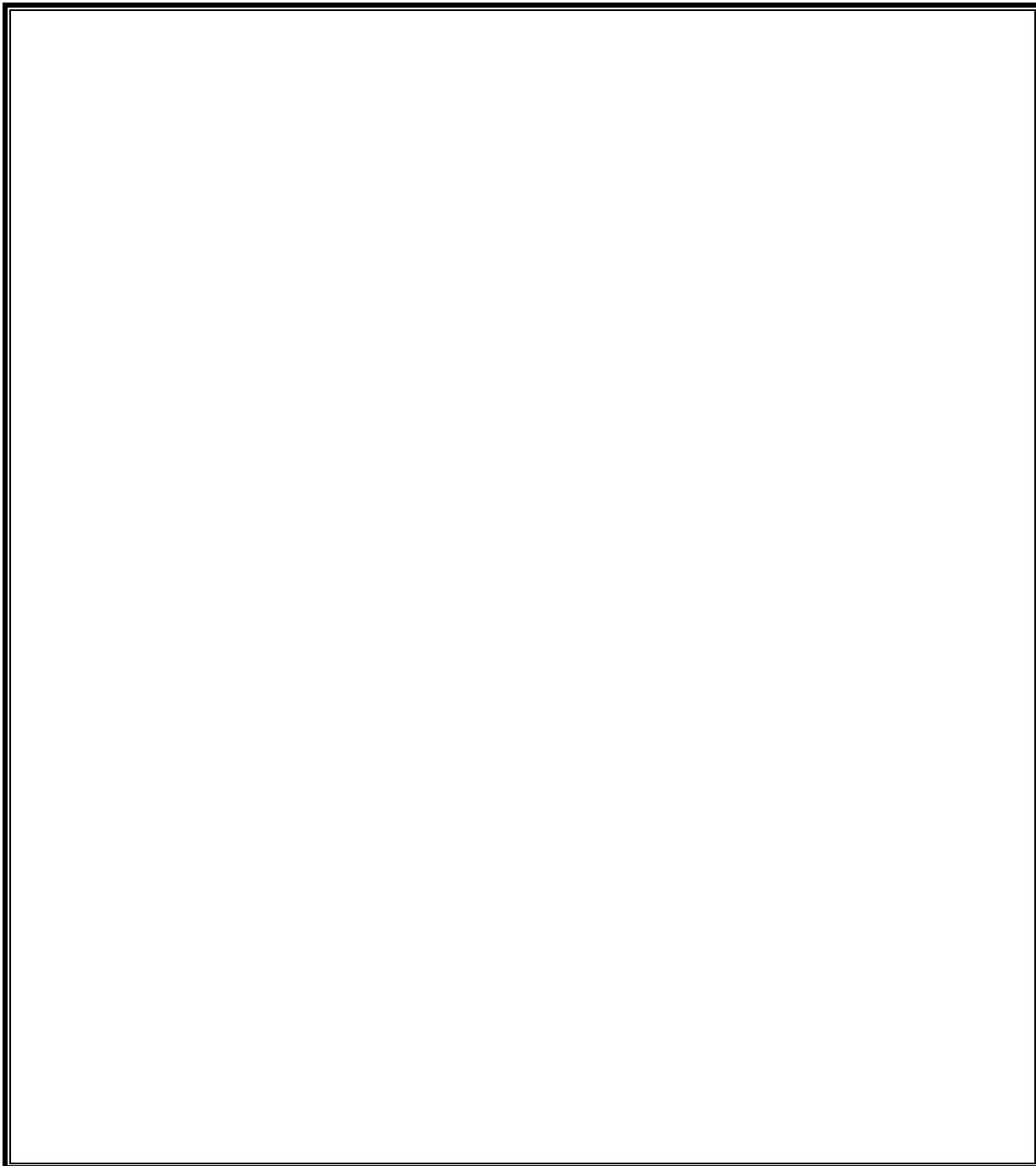


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



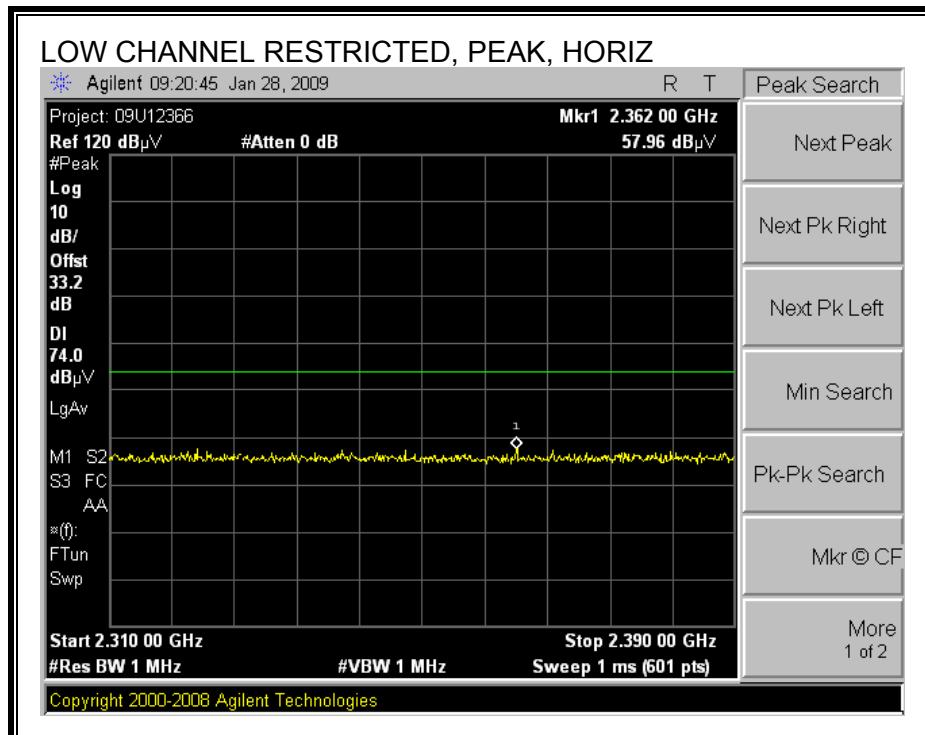


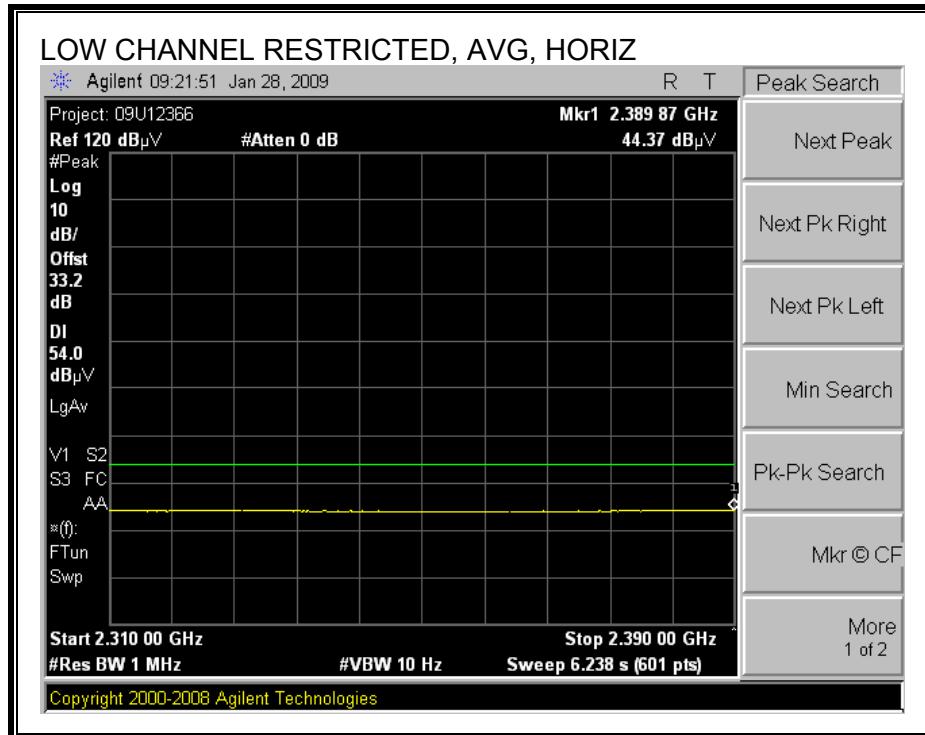
HARMONICS AND SPURIOUS EMISSIONS (see worst case)



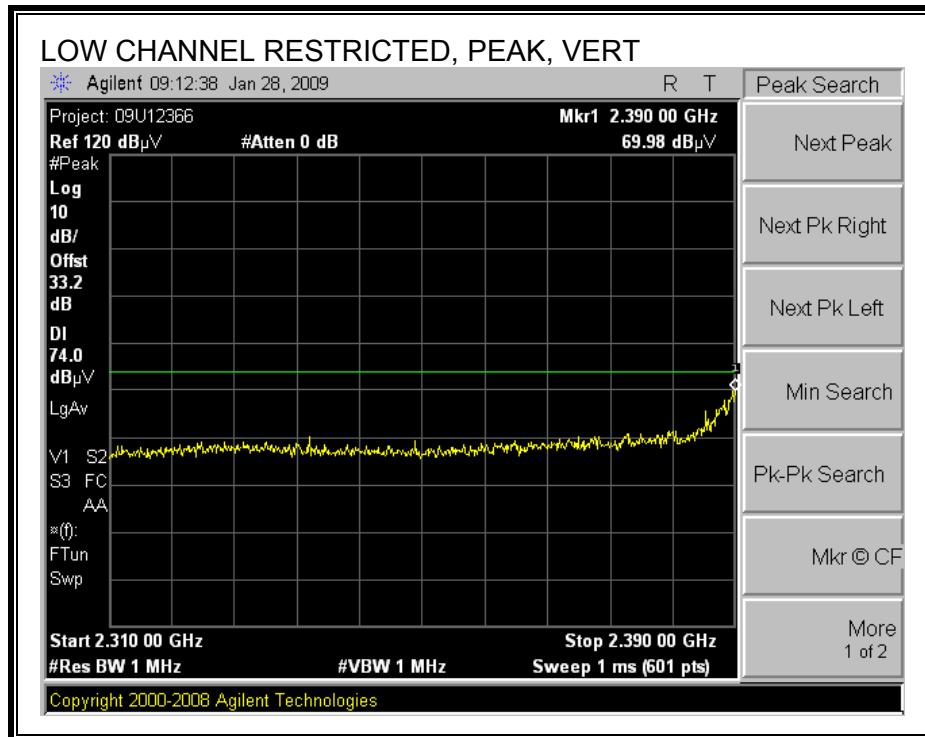
MODE 010

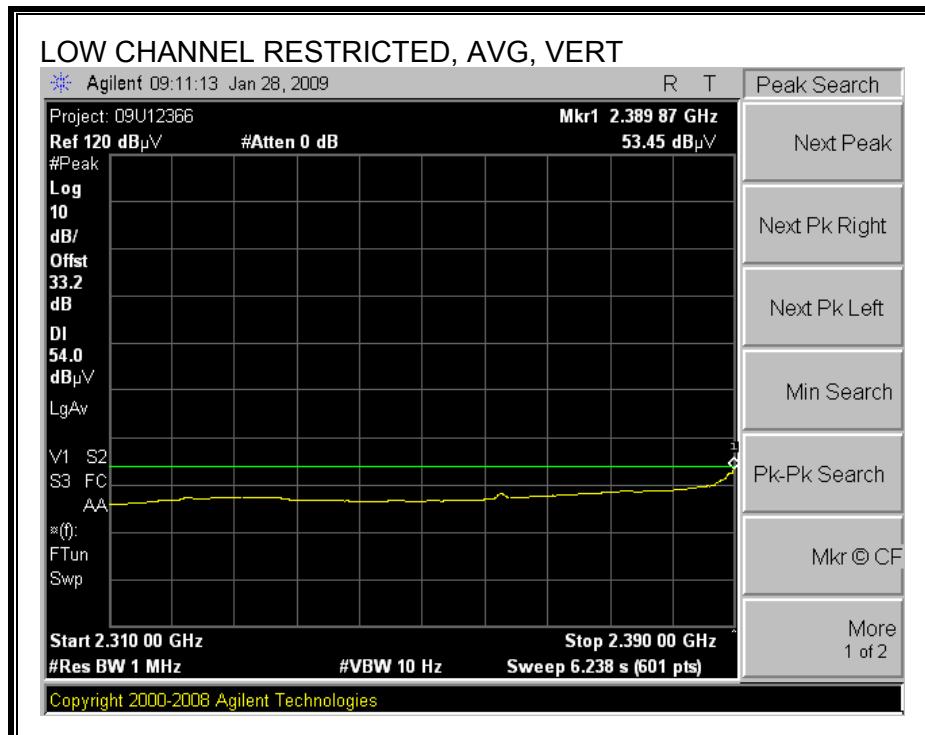
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



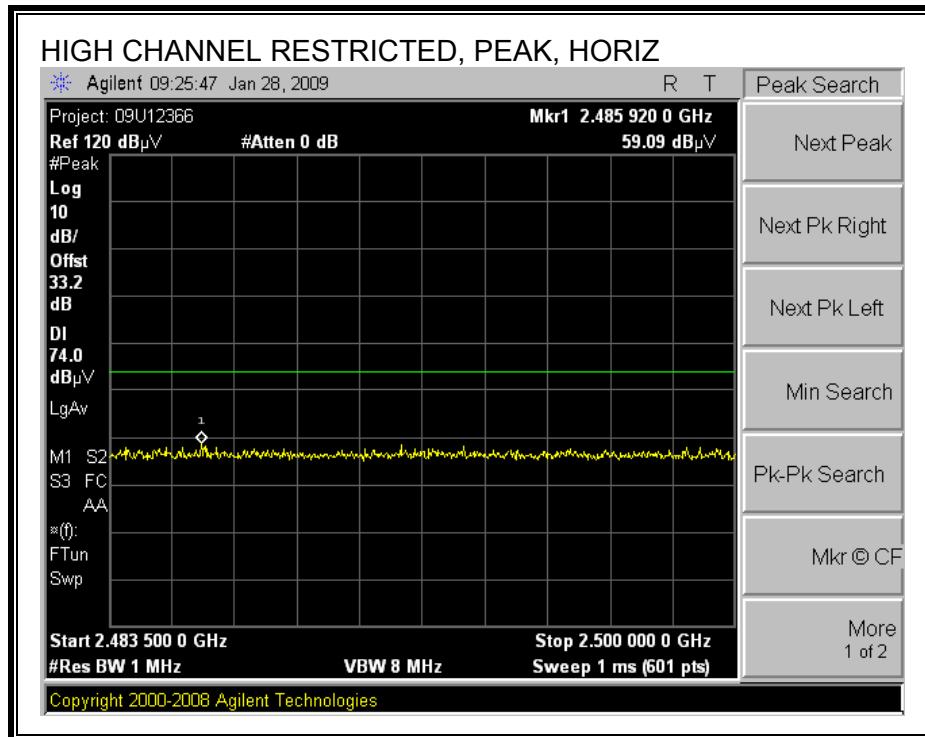


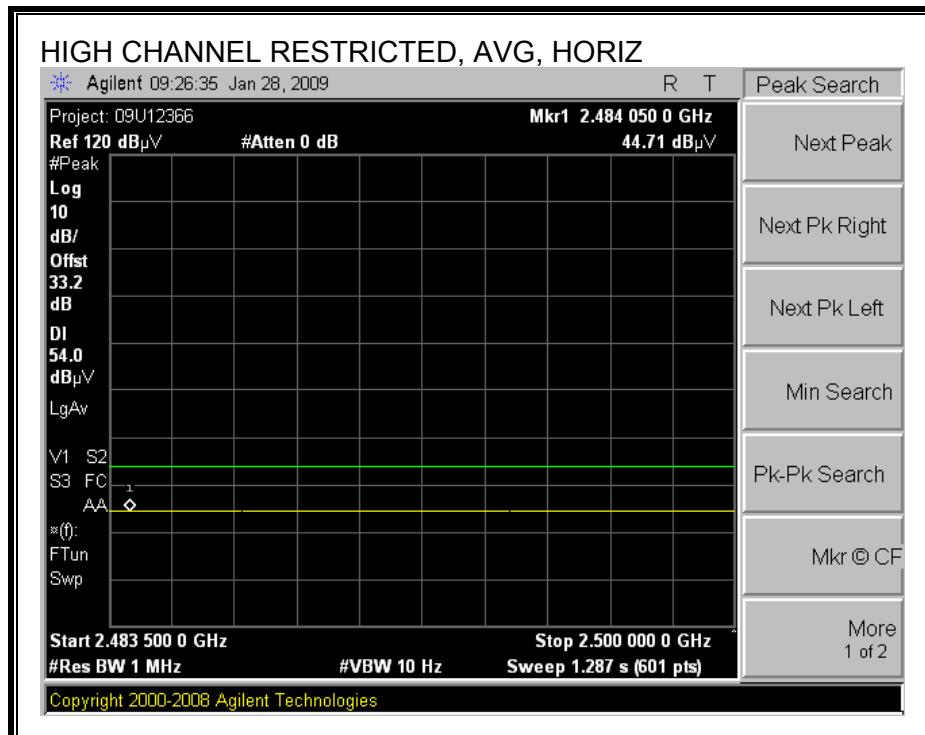
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



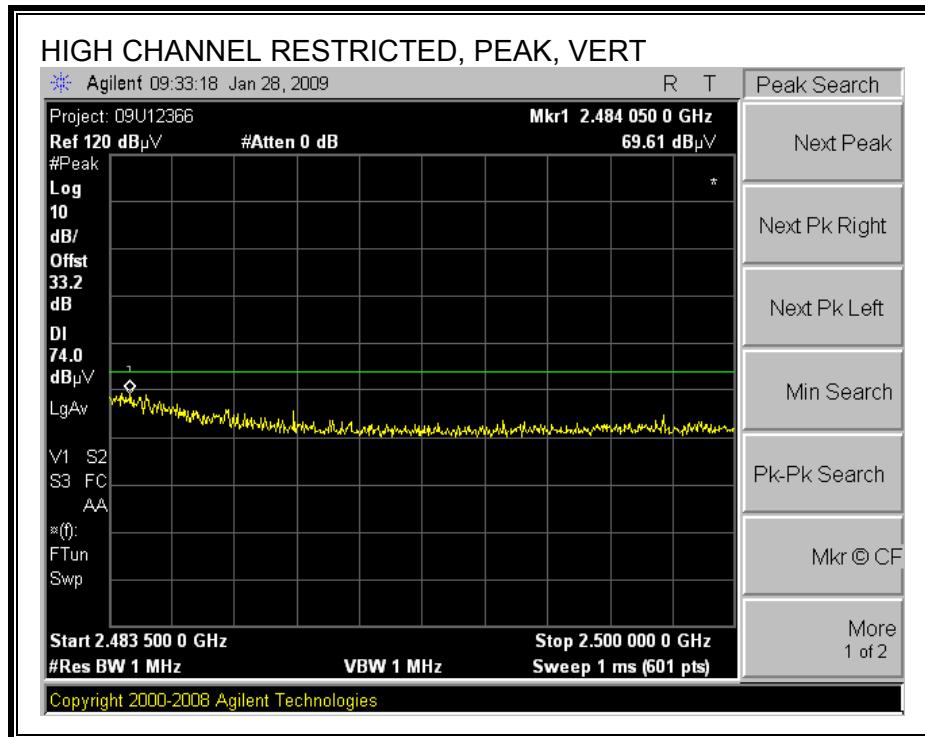


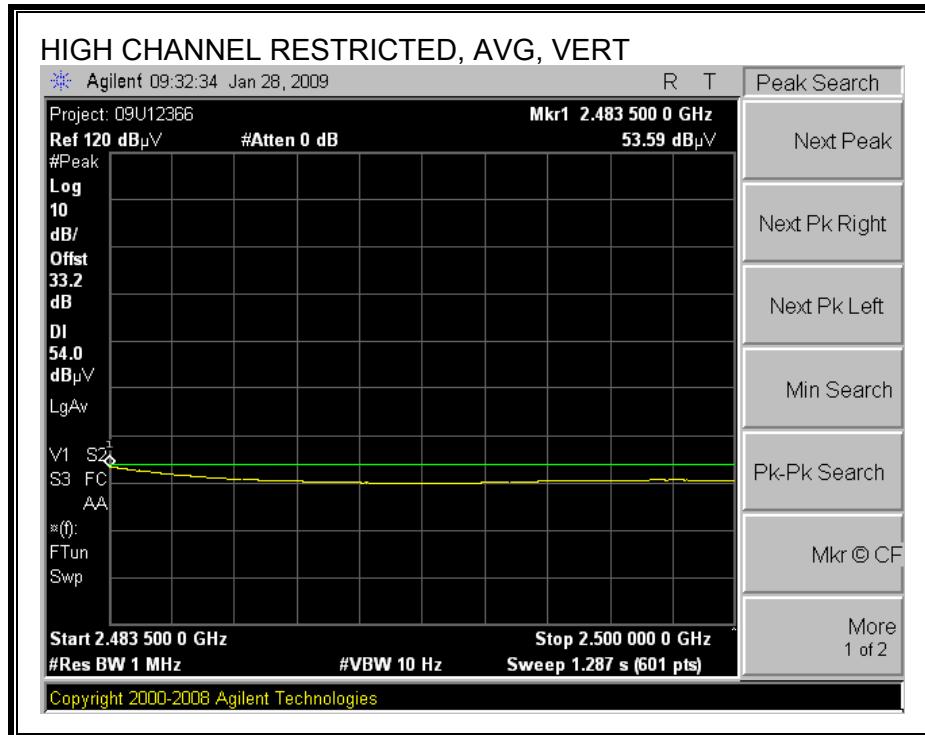
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





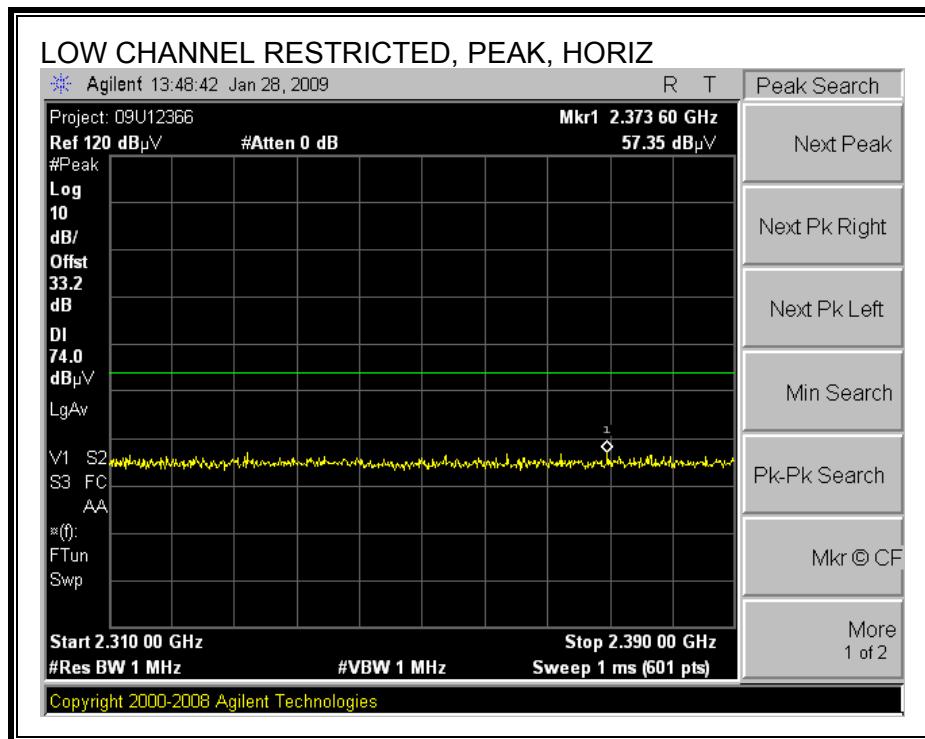
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

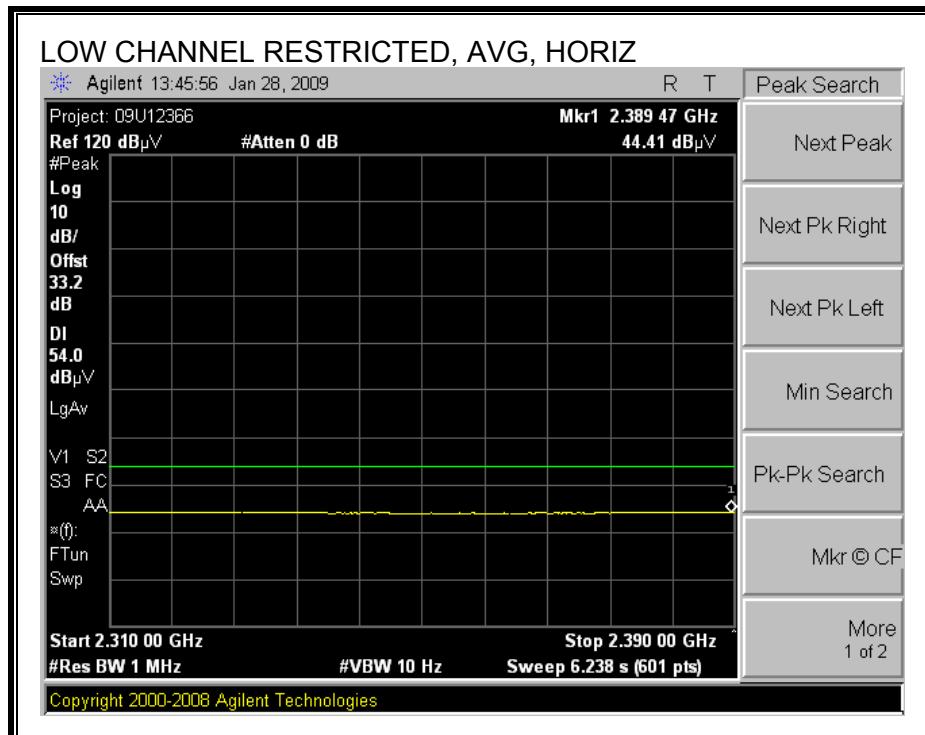




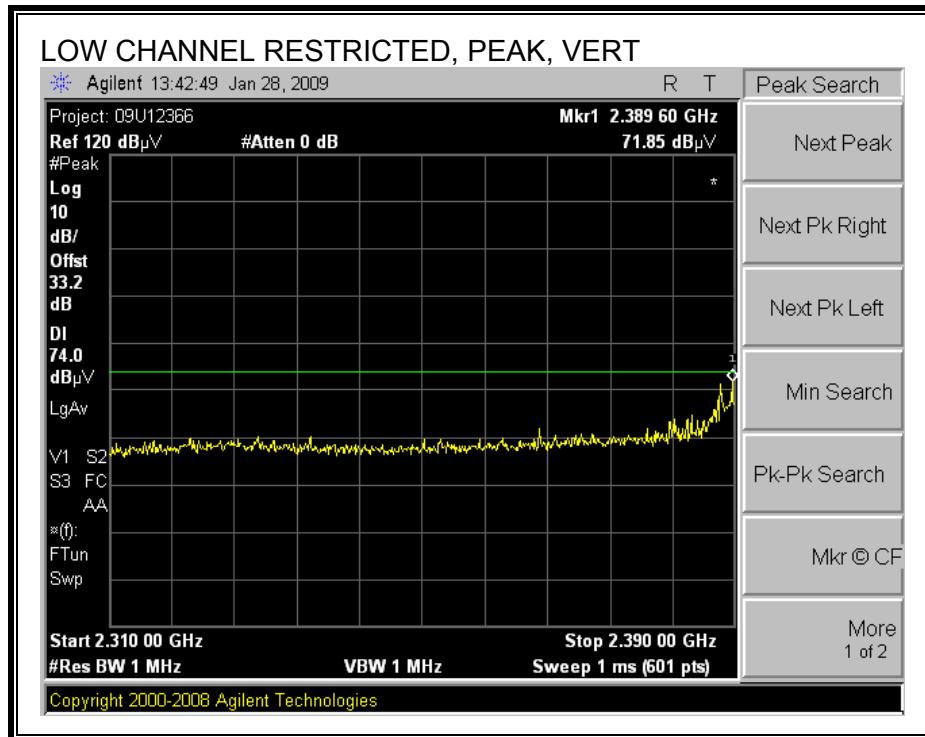
HT 20MHz

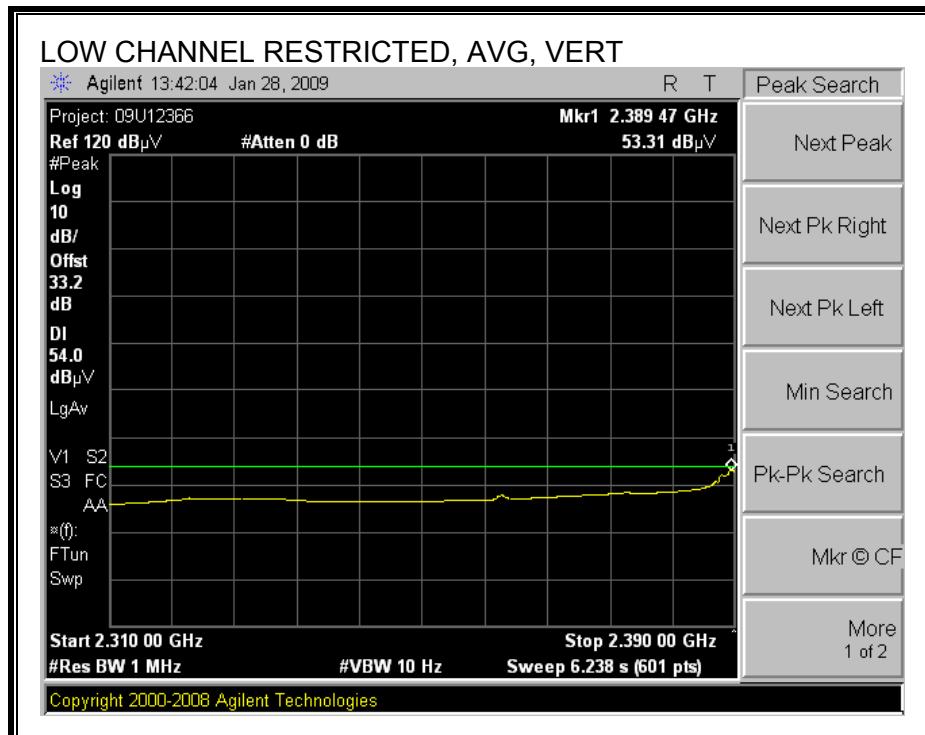
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



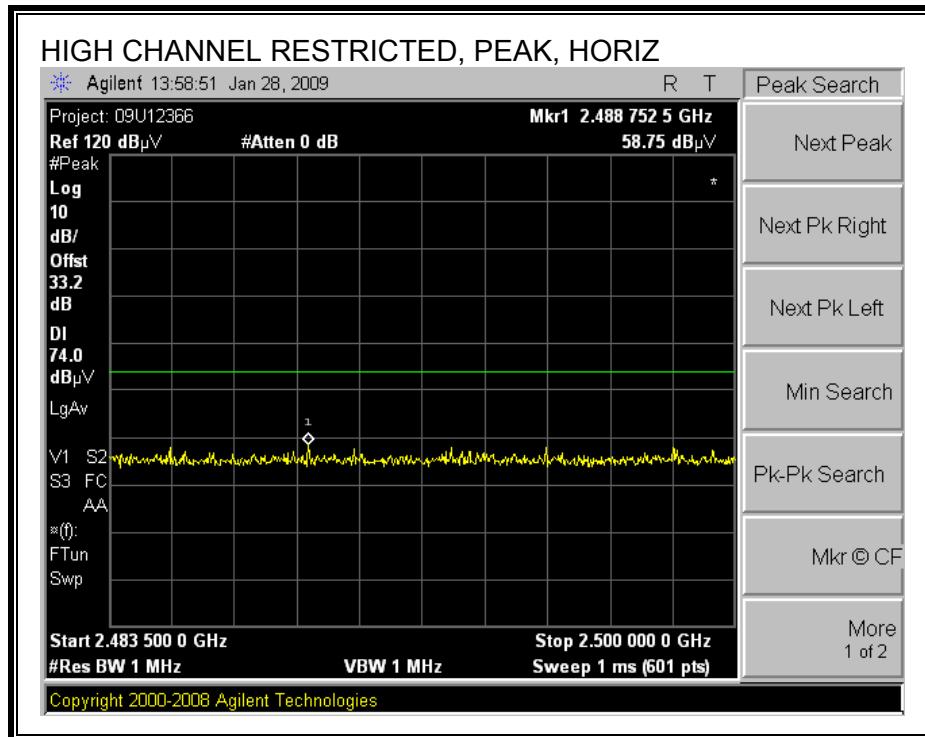


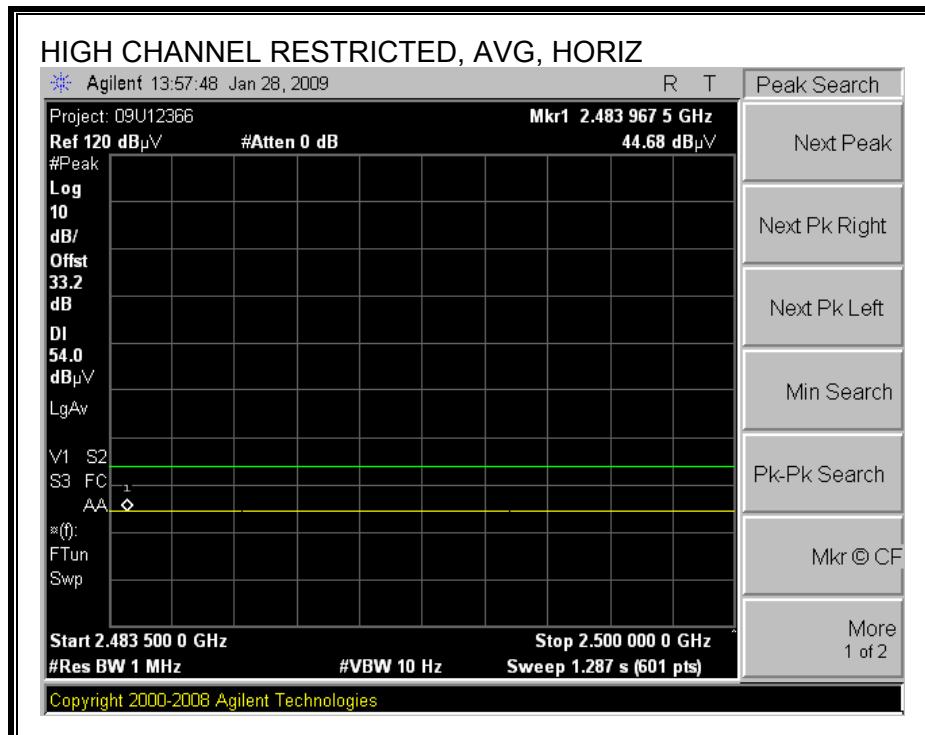
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



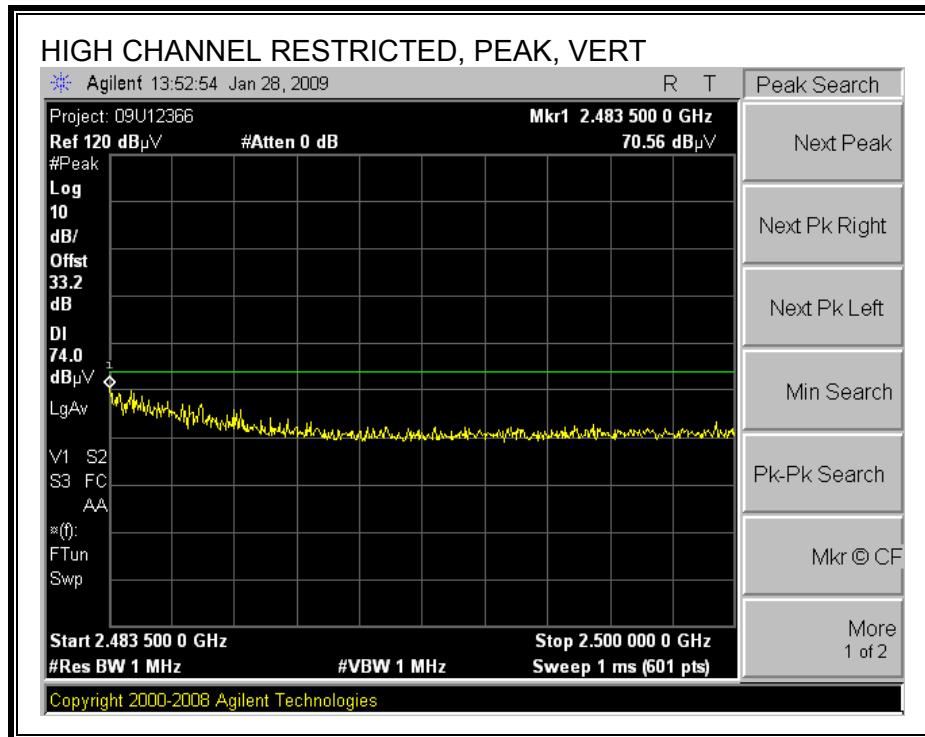


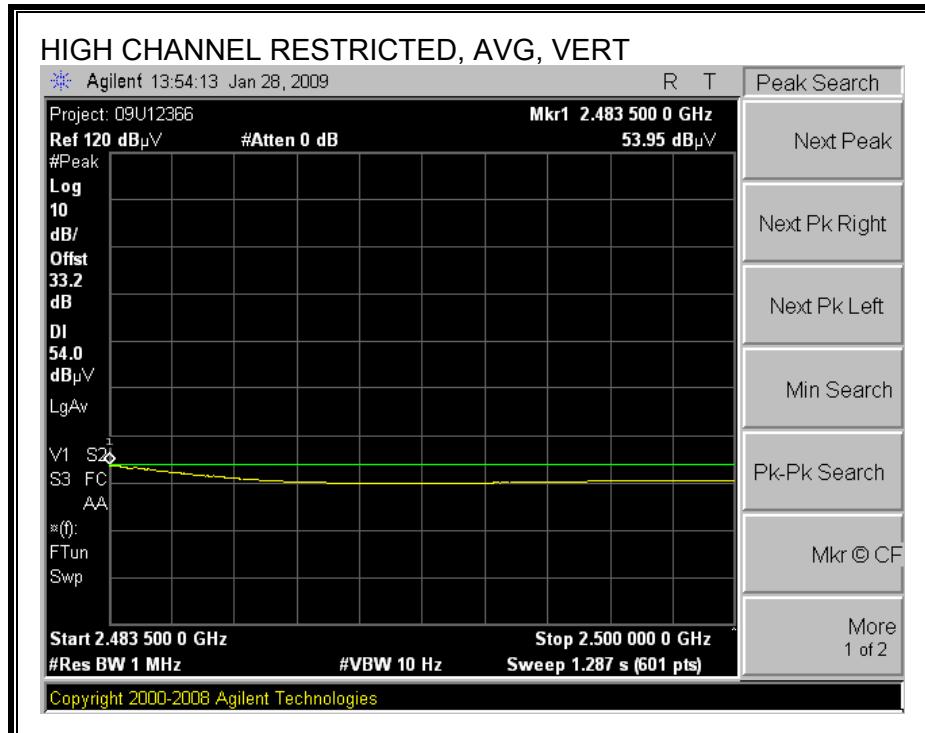
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





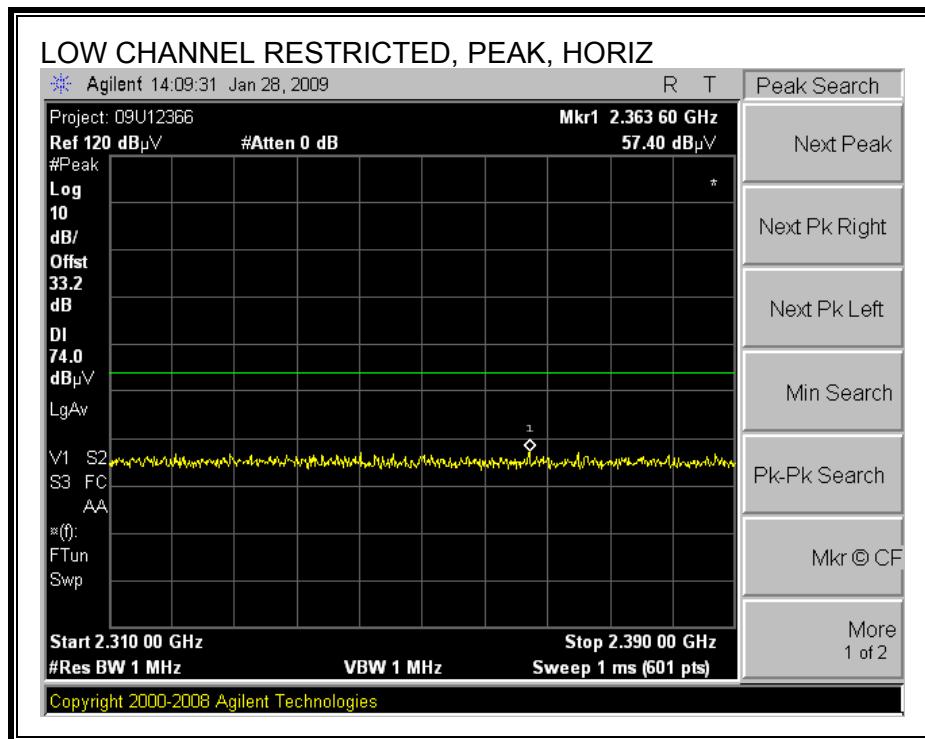
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

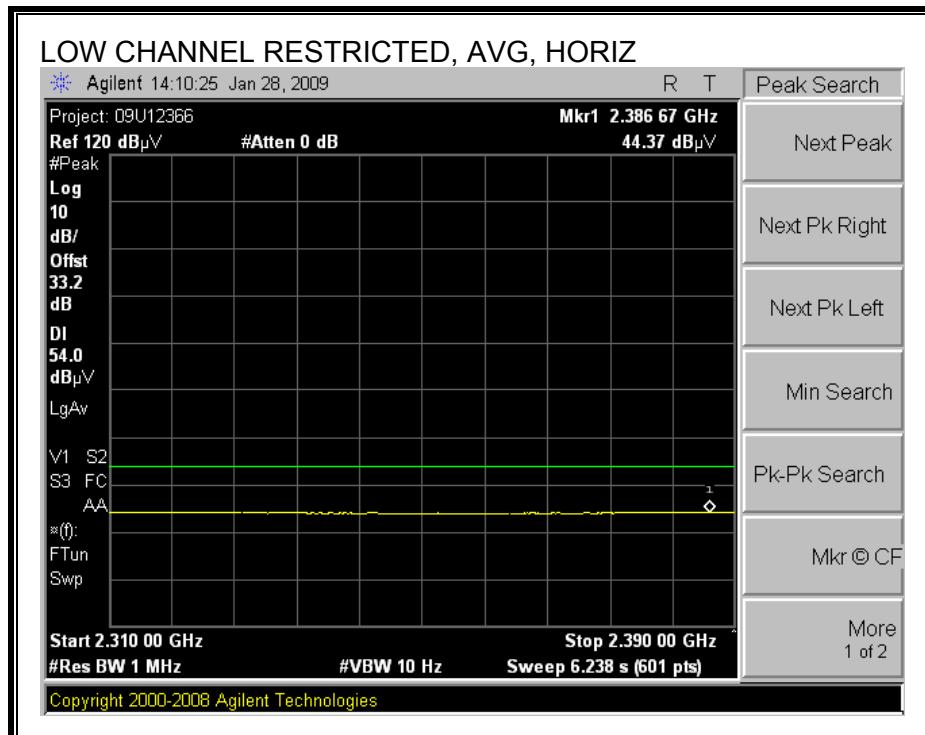




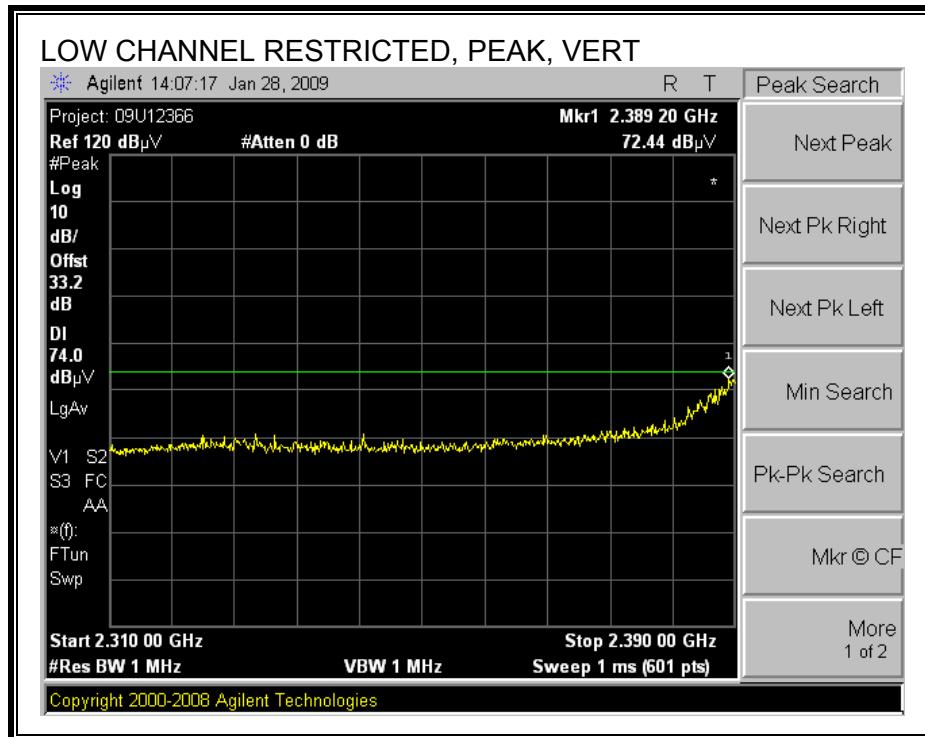
HT 40MHz

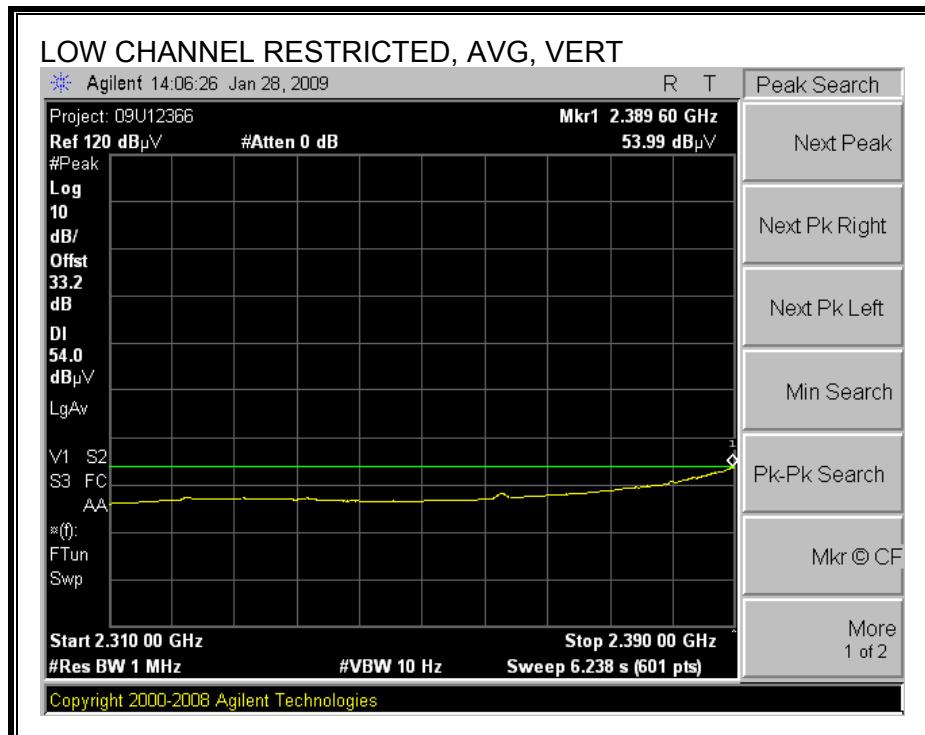
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



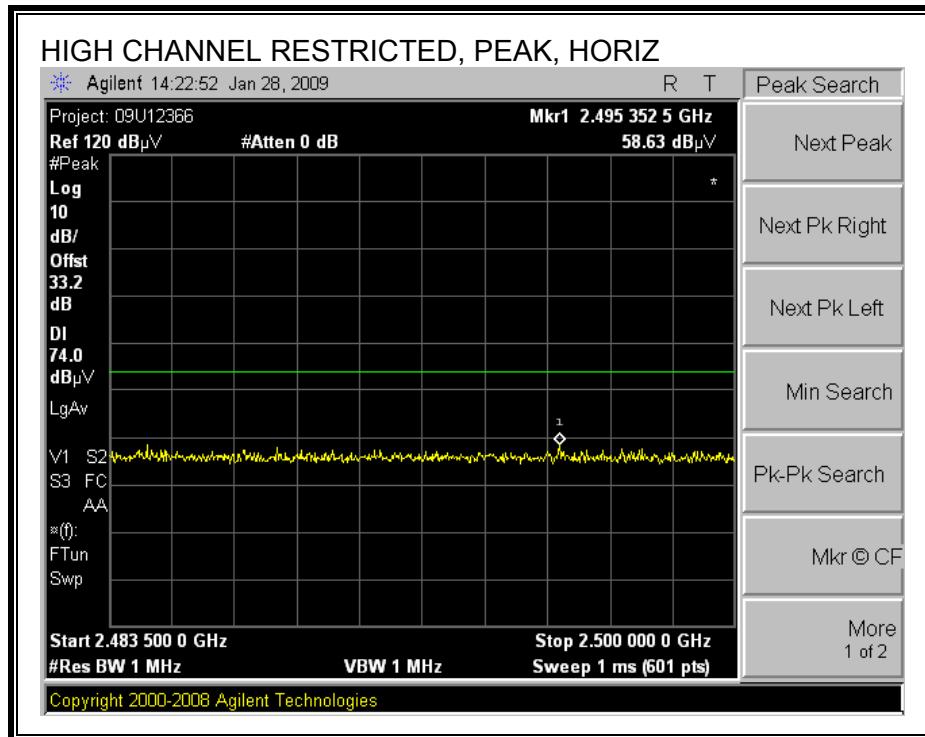


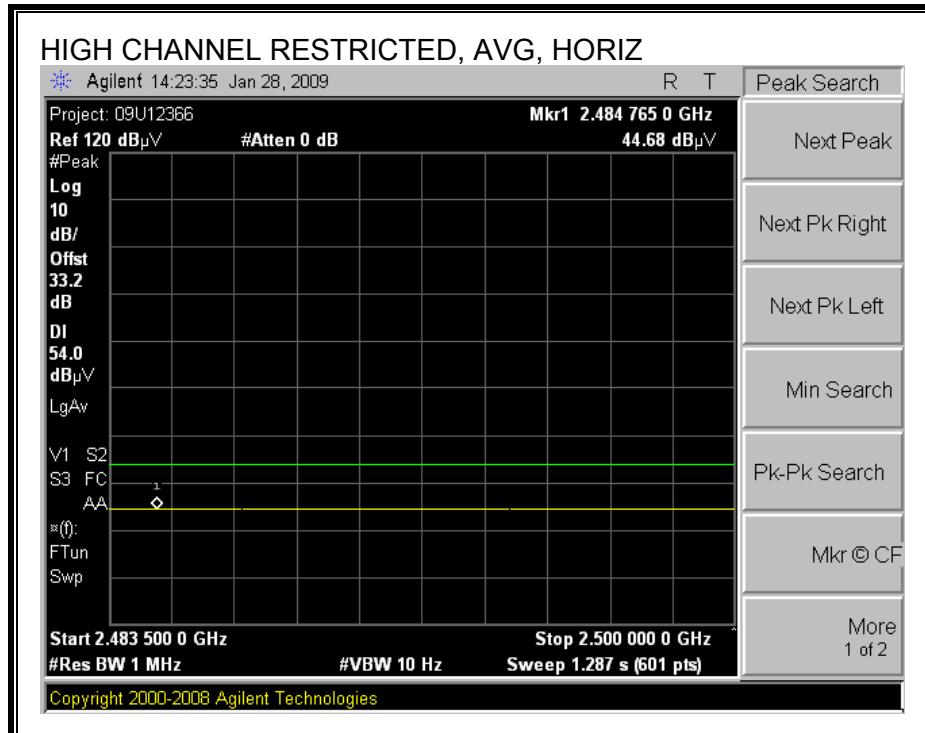
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



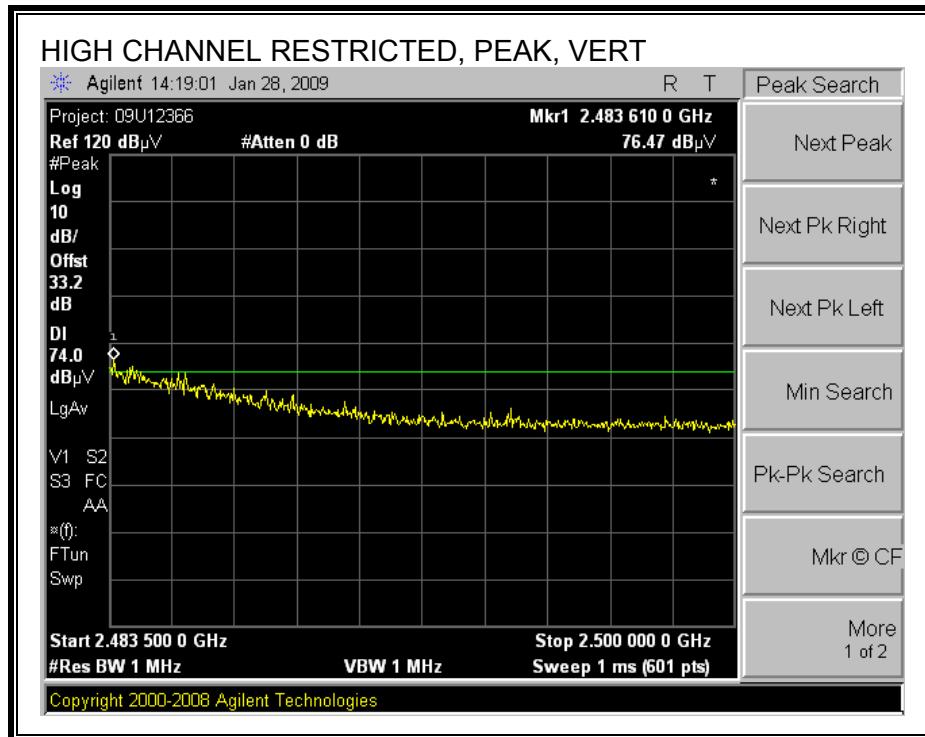


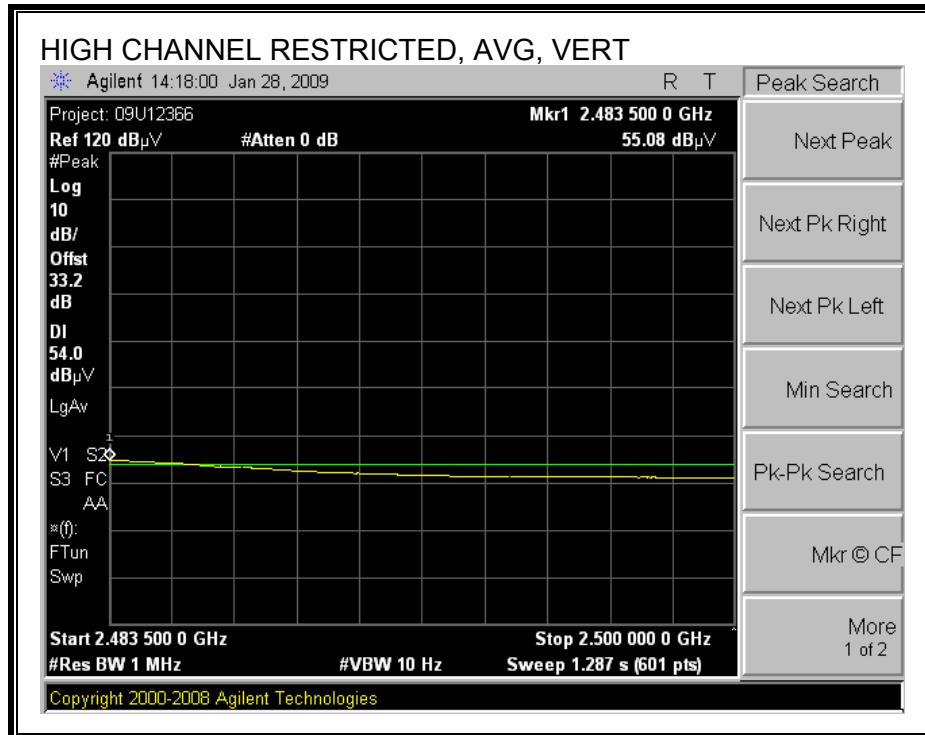
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





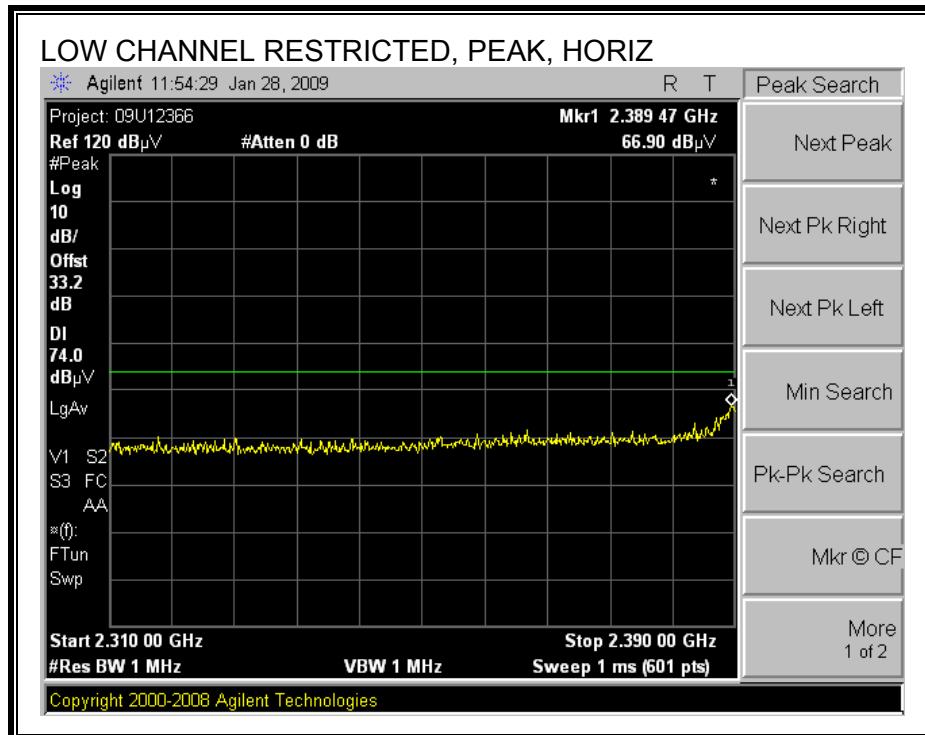
HARMONICS AND SPURIOUS EMISSIONS (Worst Case)

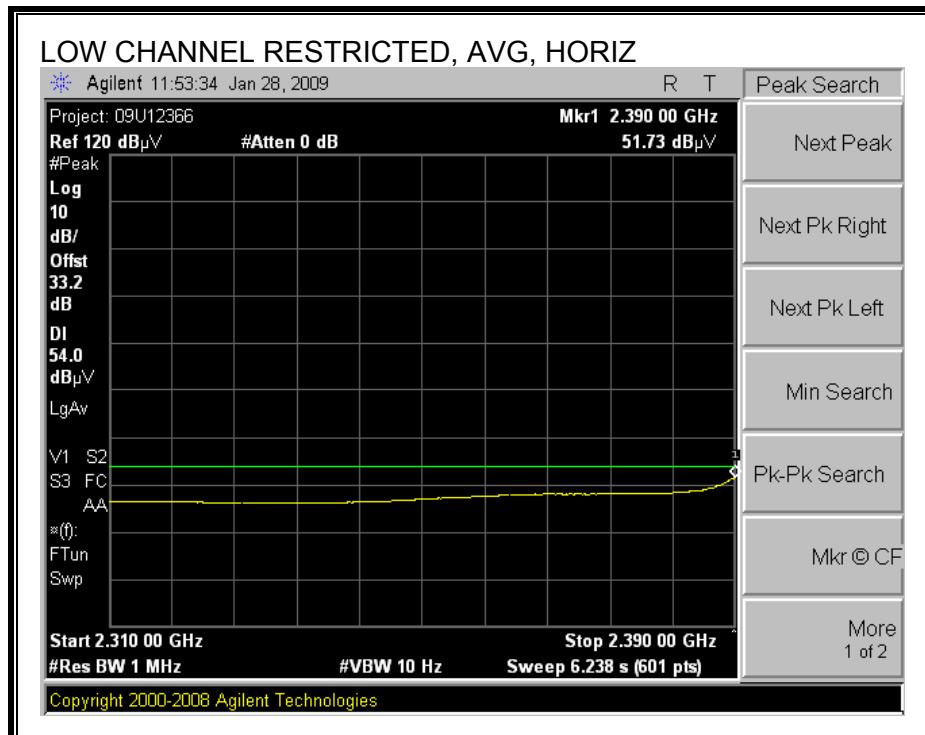
High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber															
Company:	Meraki Inc.														
Project #:	09U12366														
Date:	01/29/09														
Test Engineer:	Thanh Nguyen														
Configuration:	EUT with Flat Panel Antenna 19dBi														
Mode:	Transmit Worst case g mode Art=13.5														
Test Equipment:															
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit			
T73; S/N: 6717 @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)
Low channel															
4.824	3.0	48.4	36.5	33.7	5.8	-34.8	0.0	0.0	53.2	41.2	74	54	-20.8	-12.8	V
7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor
4.824	3.0	46.8	32.3	33.7	5.8	-34.8	0.0	0.0	51.5	37.0	74	54	-22.5	-17.0	H
7.236	3.0	40.3	28.6	36.2	7.2	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor
Mid channel															
4.874	3.0	49.5	37.5	33.8	5.8	-34.8	0.0	0.0	54.4	42.3	74	54	-19.6	-11.7	V
7.311	3.0	41.2	28.4	36.2	7.3	-34.1	0.0	0.0	50.6	37.8	74	54	-23.4	-16.2	Noise floor
4.874	3.0	47.6	34.7	33.8	5.8	-34.8	0.0	0.0	52.4	39.5	74	54	-21.6	-14.5	H
7.311	3.0	41.3	28.4	36.2	7.3	-34.1	0.0	0.0	50.7	37.8	74	54	-23.3	-16.2	Noise floor
High channel															
4.924	3.0	48.7	37.3	33.9	5.9	-34.8	0.0	0.0	53.6	42.2	74	54	-20.4	-11.8	V
7.386	3.0	42.2	28.9	36.3	7.3	-34.1	0.0	0.0	51.7	38.4	74	54	-22.3	-15.6	Noise floor
4.924	3.0	47.4	35.4	33.9	5.9	-34.8	0.0	0.0	52.4	40.4	74	54	-21.6	-13.6	H
7.386	3.0	41.9	28.9	36.3	7.3	-34.1	0.0	0.0	51.4	38.4	74	54	-22.6	-15.6	Noise floor
No other emissions were detected above noise floor.															
Rev. 10.15.08															
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										

MODE 110

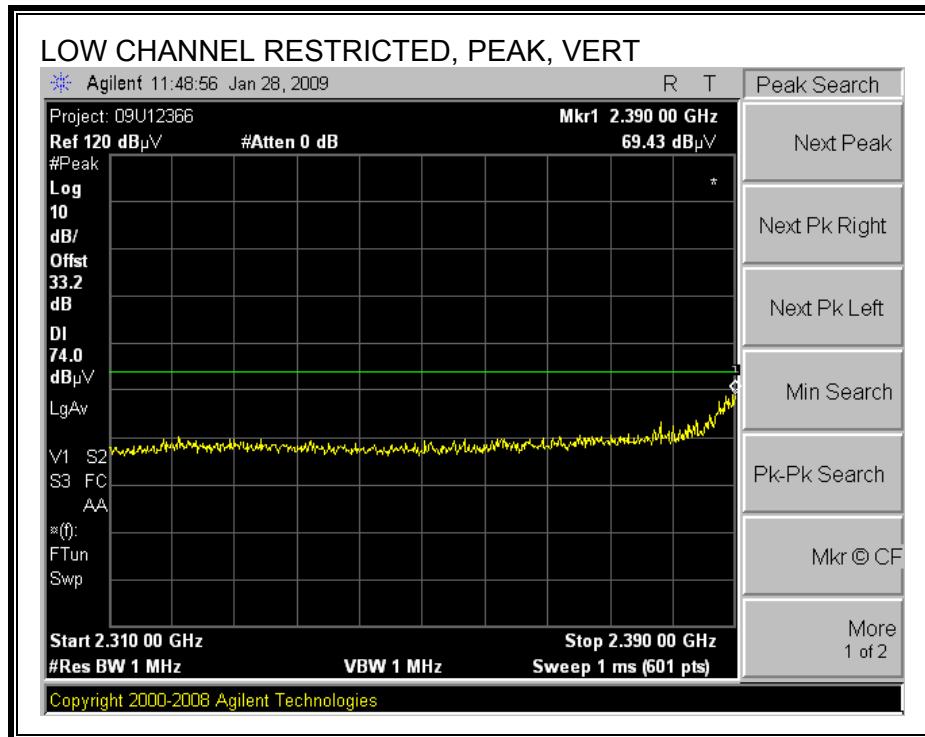
HT 20MHz

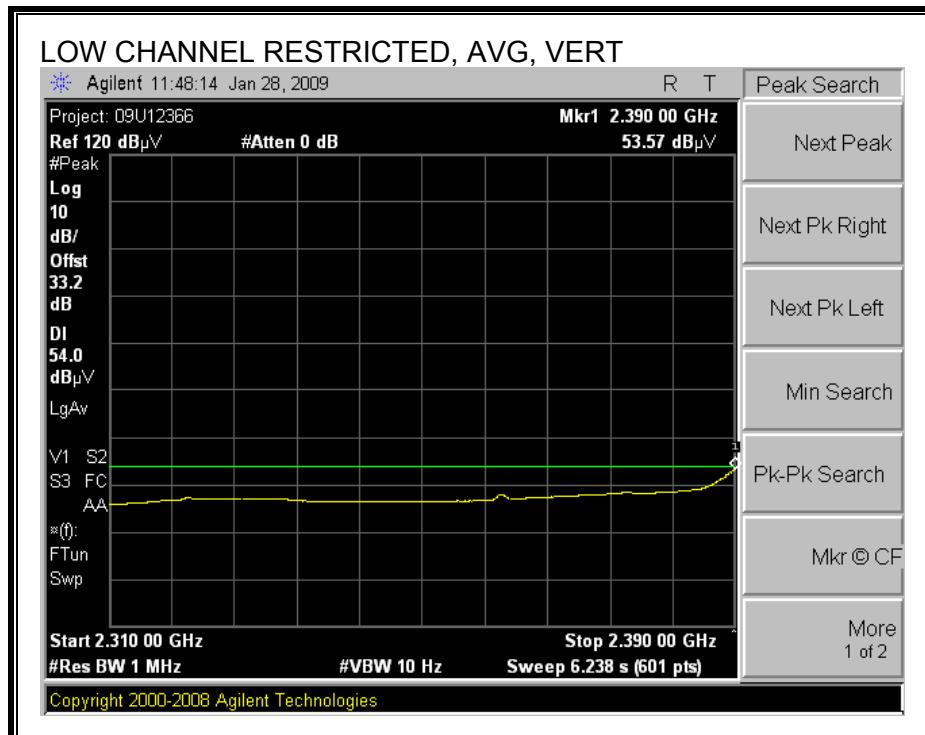
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



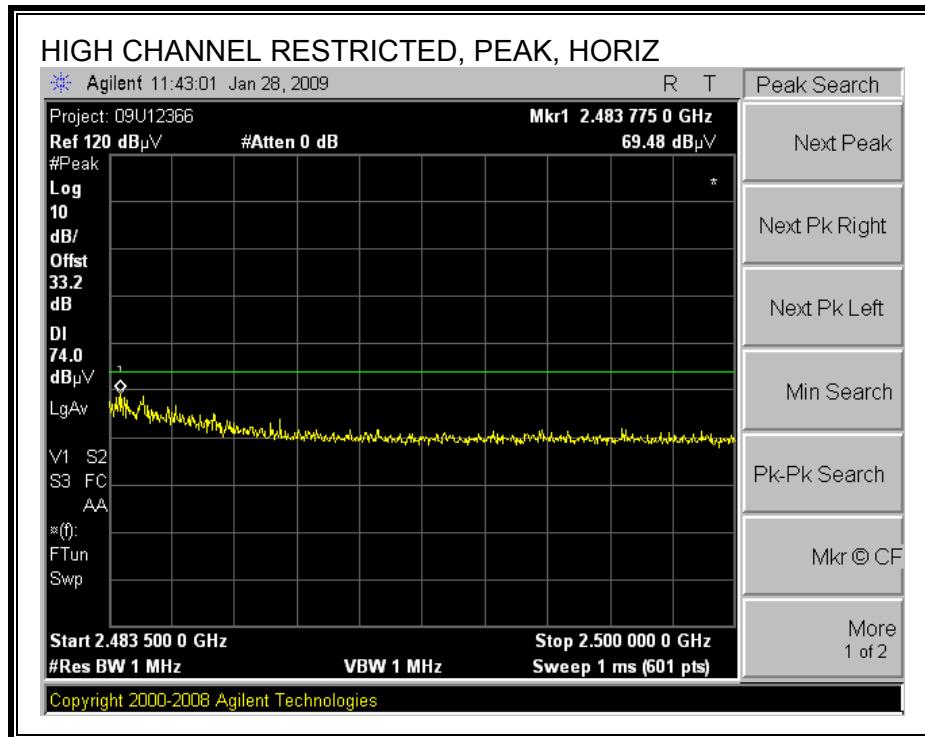


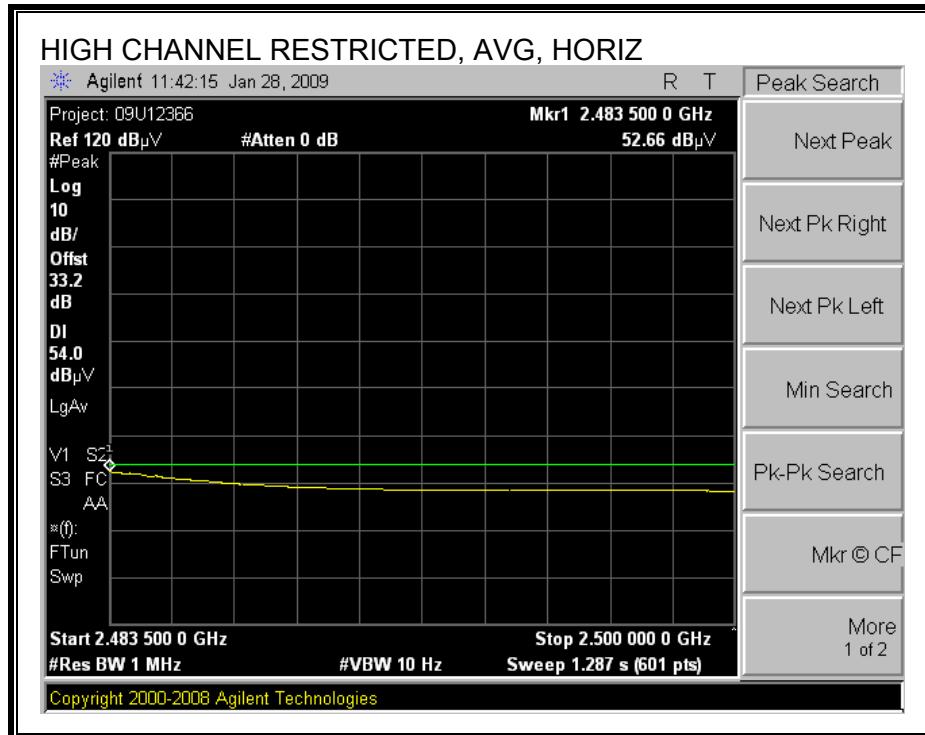
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



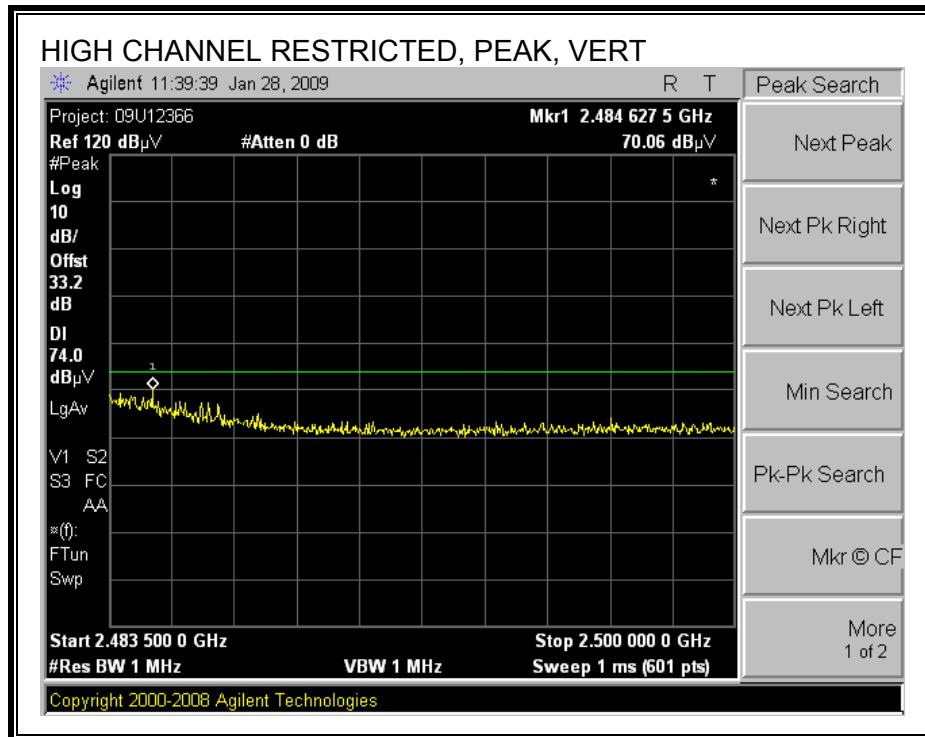


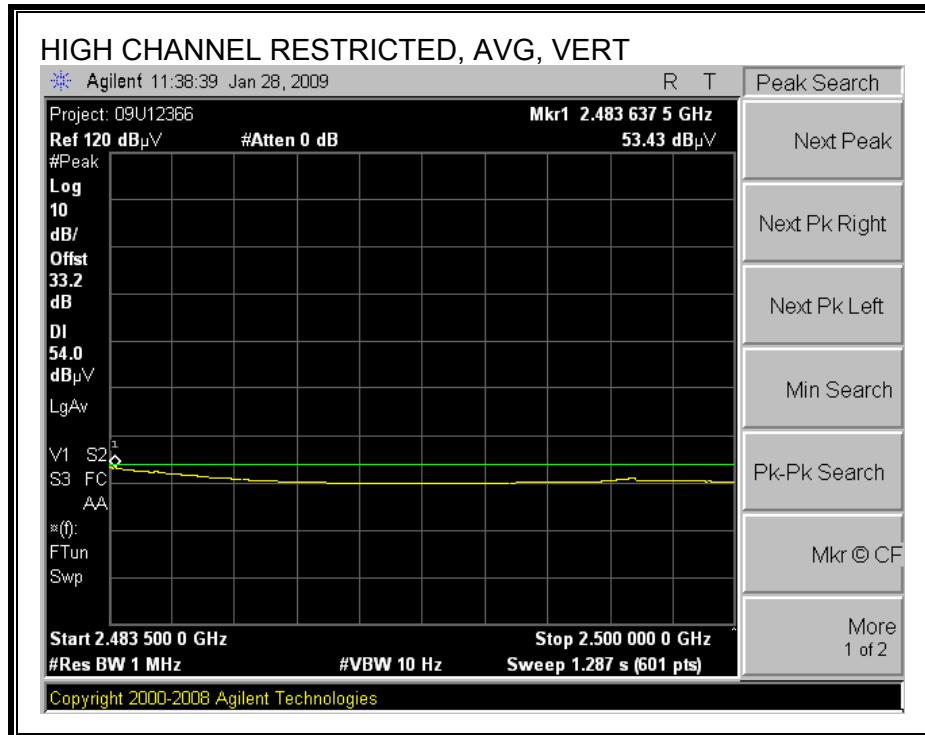
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



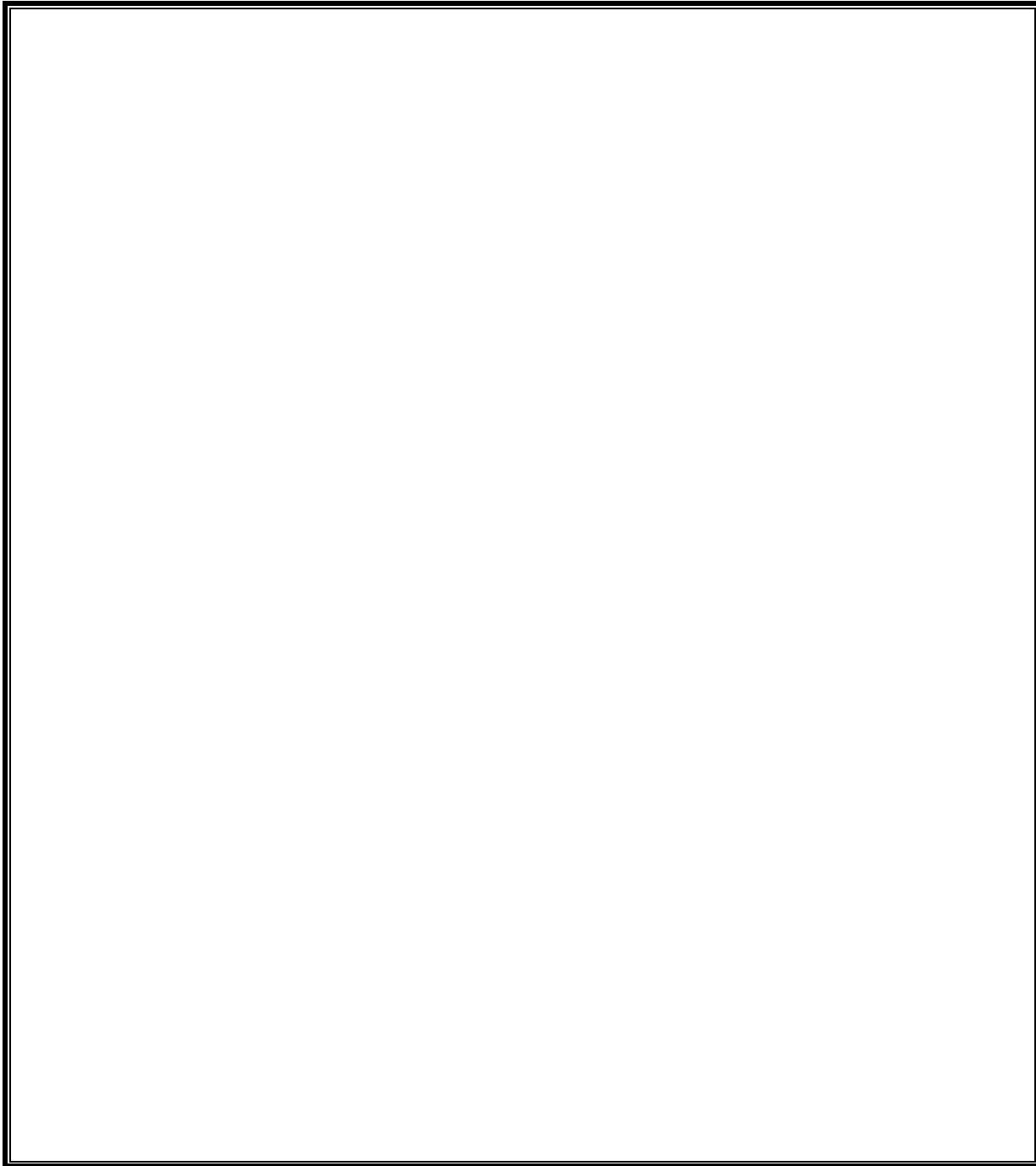


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)



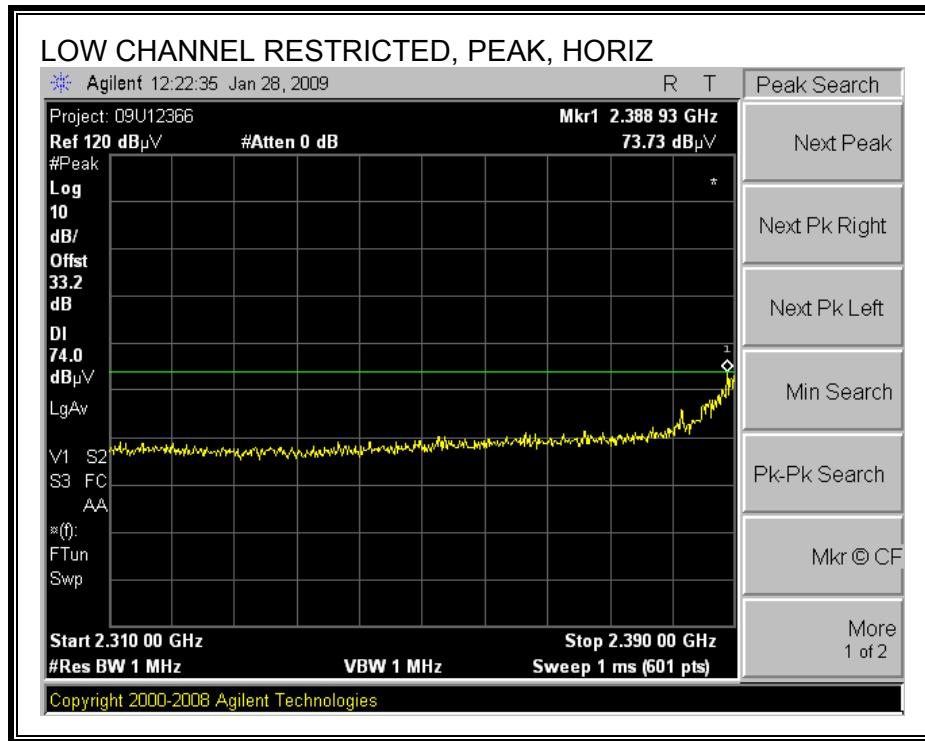


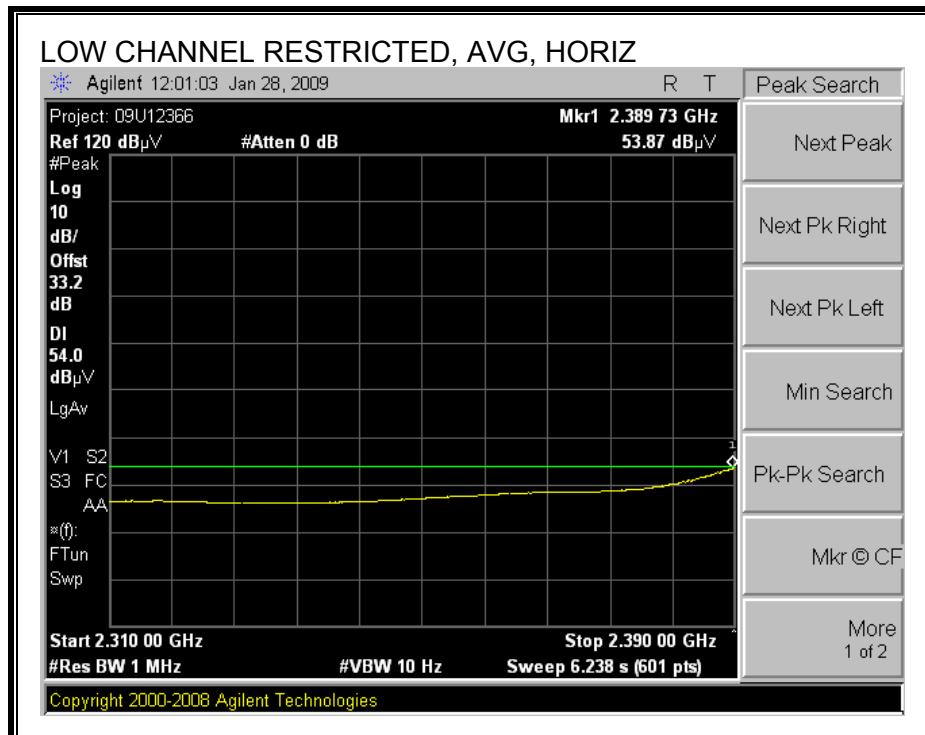
HARMONICS AND SPURIOUS EMISSIONS (See Worst Case)



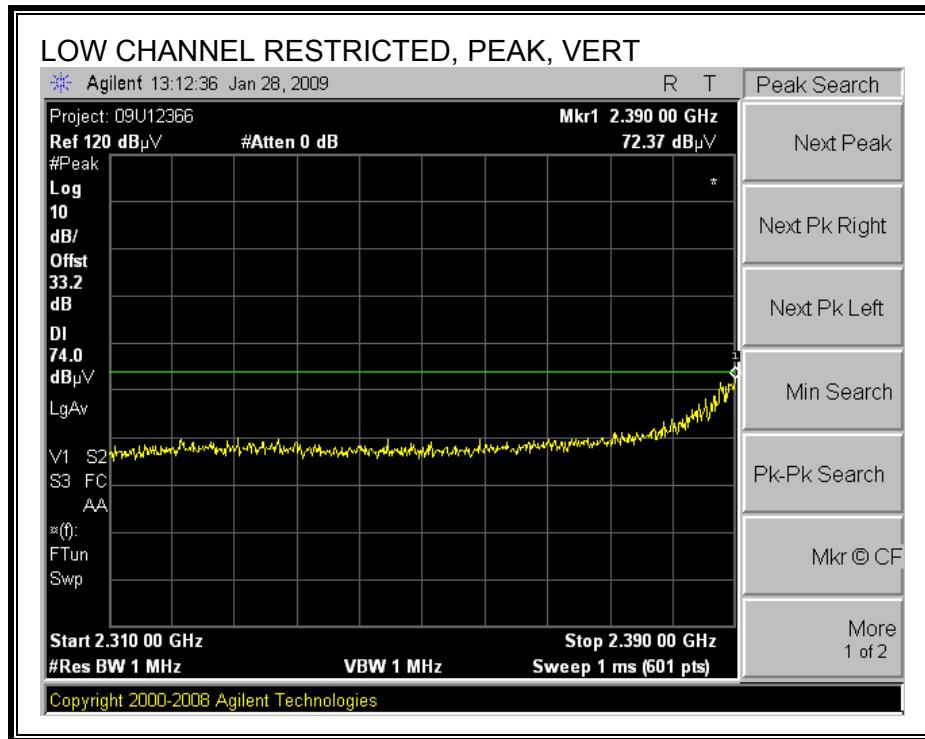
HT 40 MHz

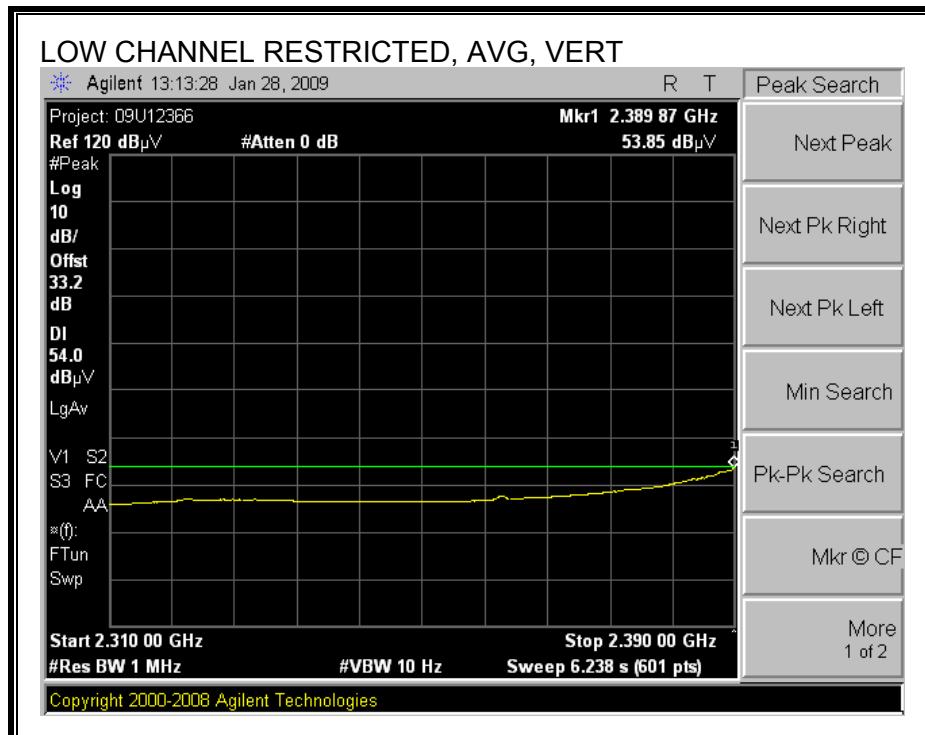
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



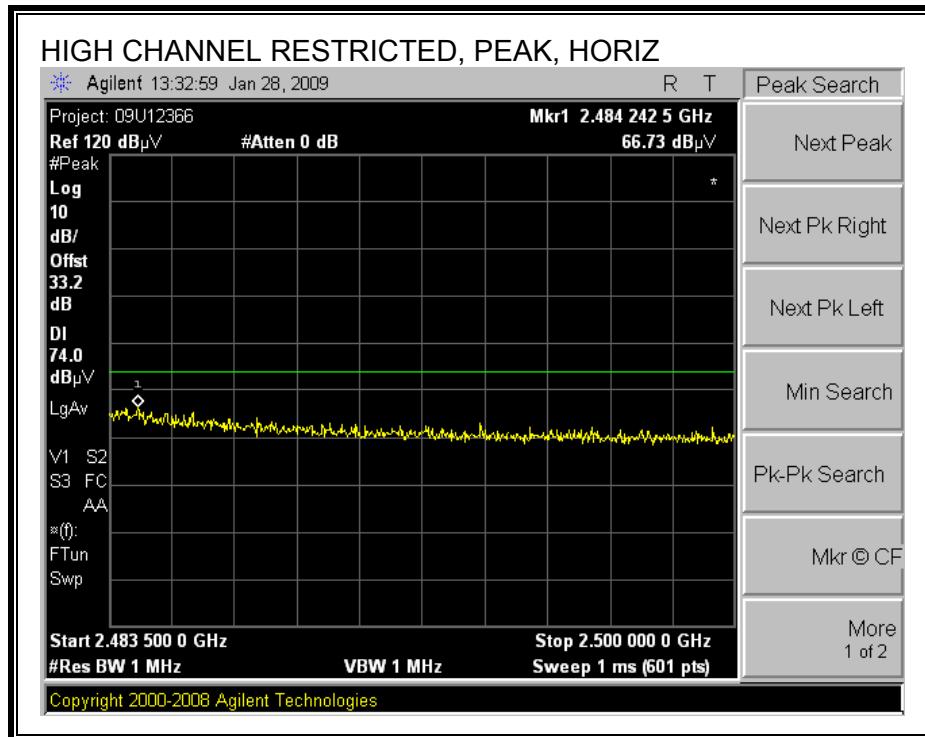


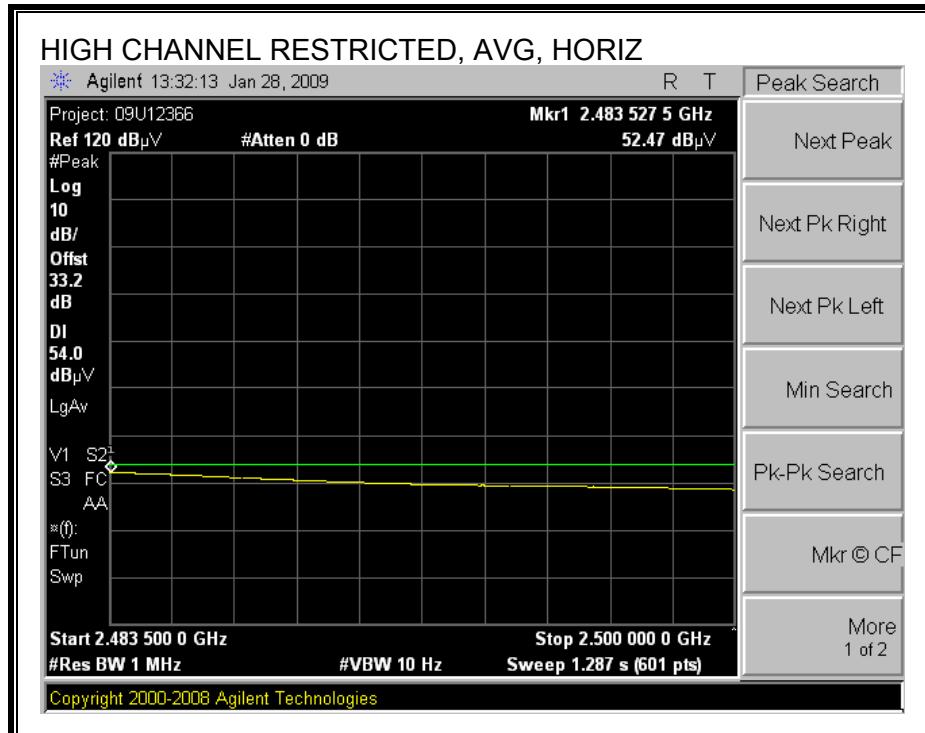
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



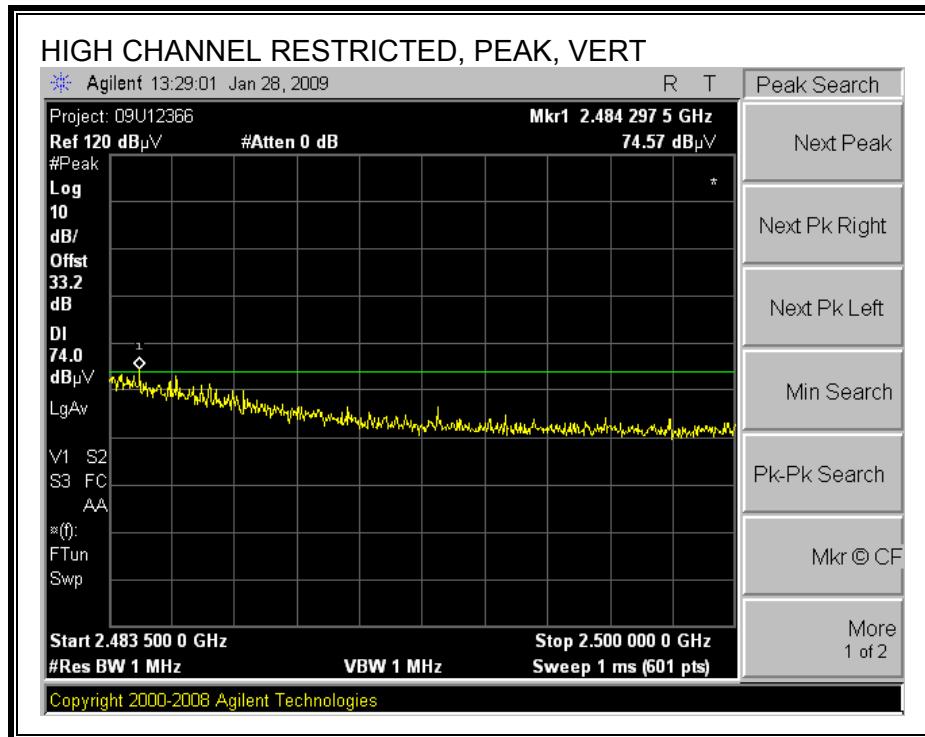


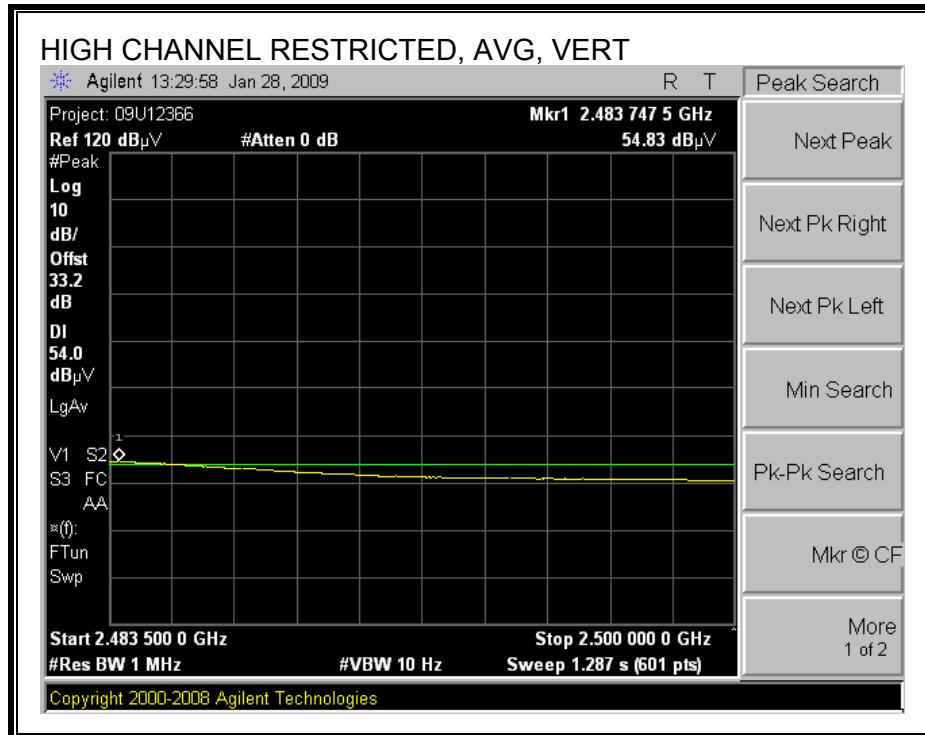
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



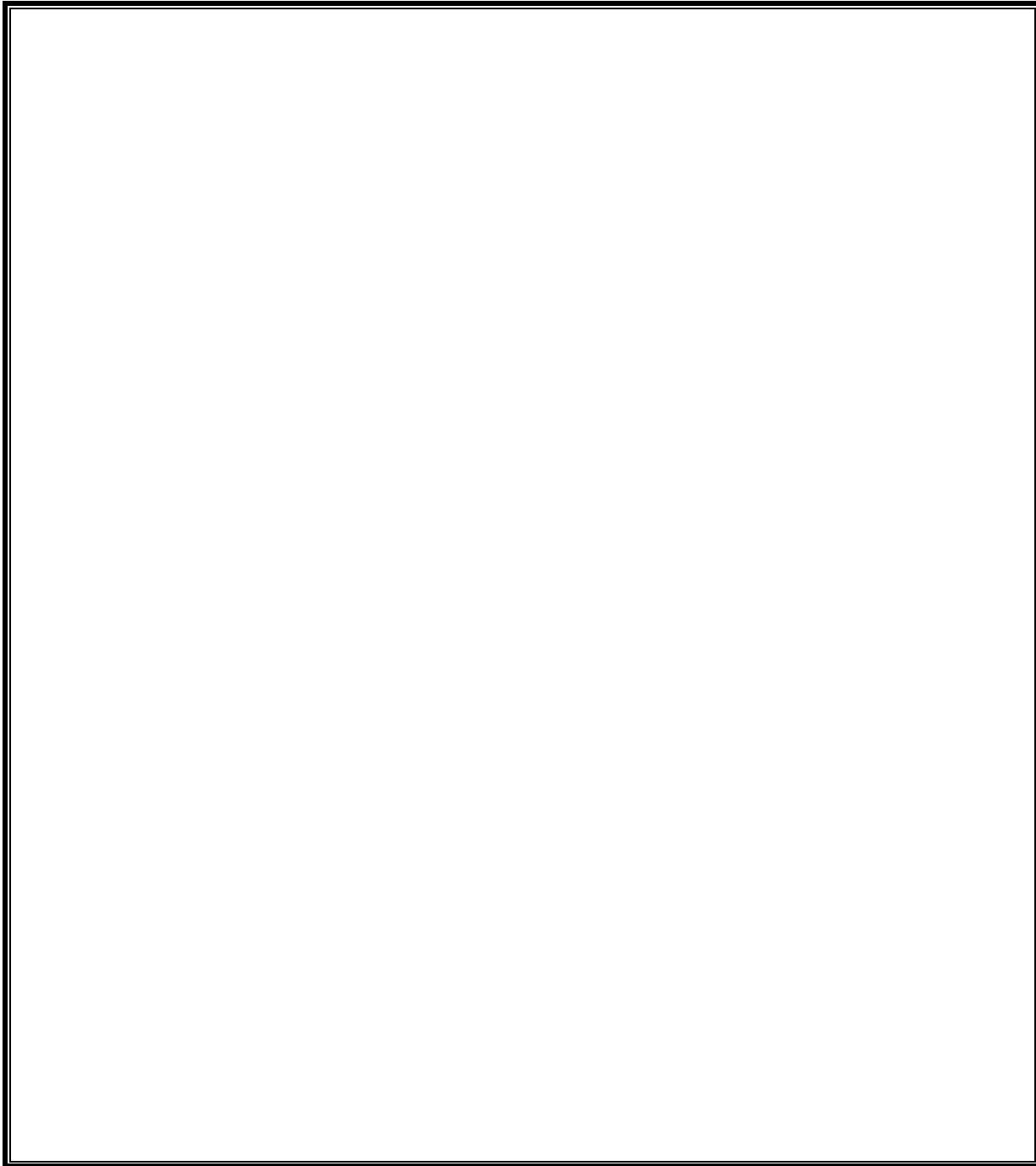


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS (See Worst Case)



7.6. HIGH GAIN PATCH ANTENNA

7.6.1. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND

HARMONICS AND SPURIOUS EMISSIONS

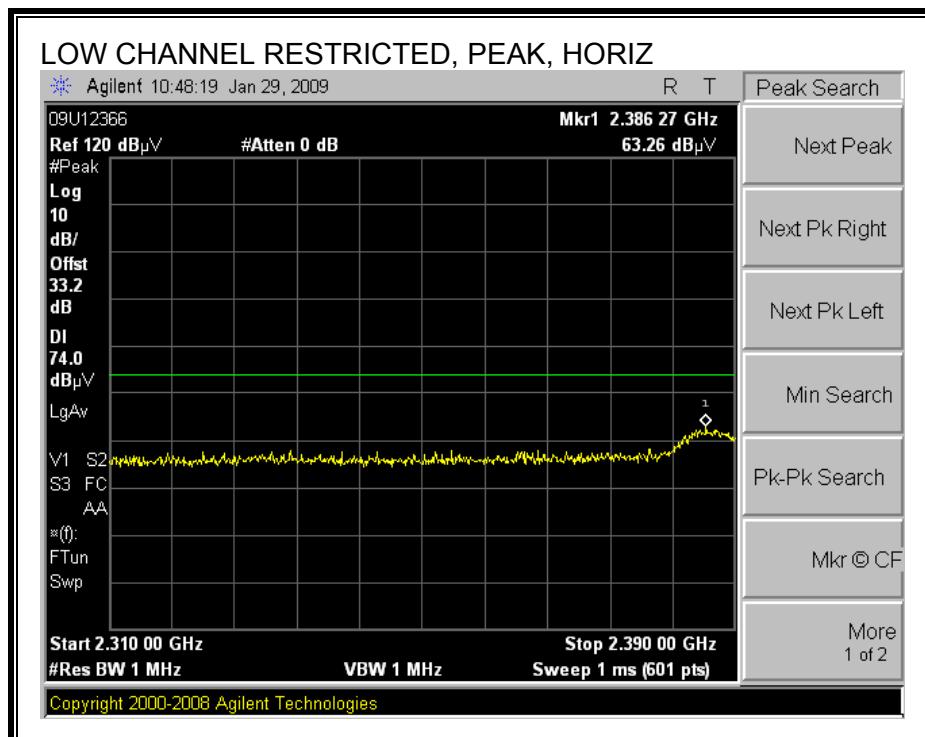
High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																																																																											
<p>Company: Meraki Inc. Project #: 09U12366 Date: 01/30/09 Test Engineer: Thanh Nguyen Configuration: EUT with High Gain Patch Antenna - 23dBi Gain Mode: Transmit Worst case a mode Art=14.5</p>																																																																											
<p>Test Equipment:</p> <table border="1"><tr><td>Horn 1-18GHz</td><td>Pre-amplifier 1-26GHz</td><td>Pre-amplifier 26-40GHz</td><td colspan="4">Horn > 18GHz</td><td>Limit</td></tr><tr><td>T73; S/N: 6717 @3m</td><td>T34 HP 8449B</td><td></td><td colspan="4">T125; ARA 18-26GHz; S/N:1007</td><td>FCC 15.209</td></tr><tr><td colspan="15">Hi Frequency Cables</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="4">HPF</td><td>Reject Filter</td><td colspan="7">Peak Measurements RBW=VBW=1MHz</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td colspan="4"></td><td>R_002</td><td colspan="7">Average Measurements RBW=1MHz ; VBW=10Hz</td></tr></table>															Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit	T73; S/N: 6717 @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	Peak Measurements RBW=VBW=1MHz							3' cable 22807700	12' cable 22807600	20' cable 22807500					R_002	Average Measurements RBW=1MHz ; VBW=10Hz						
Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit																																																																				
T73; S/N: 6717 @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	Peak Measurements RBW=VBW=1MHz																																																																			
3' cable 22807700	12' cable 22807600	20' cable 22807500					R_002	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)																																																												
LOW CHANNEL, 5745 MHz																																																																											
11.490	3.0	41.0	27.5	38.6	9.5	-32.5	0.0	0.0	56.6	43.1	74	54	-17.4	-10.9	V, Noise Floor																																																												
11.490	3.0	39.7	27.5	38.6	9.5	-32.5	0.0	0.0	55.3	43.0	74	54	-18.7	-11.0	H, Noise floor																																																												
MID CHANNEL, 5785 MHz																																																																											
11.570	3.0	41.1	27.9	38.7	9.5	-32.5	0.0	0.0	56.8	43.5	74	54	-17.2	-10.5	V, Noise Floor																																																												
11.570	3.0	40.7	27.9	38.7	9.5	-32.5	0.0	0.0	56.4	43.5	74	54	-17.6	-10.5	H, Noise floor																																																												
HI CHANNEL, 5825 MHz																																																																											
11.650	3.0	41.7	29.5	38.7	9.6	-32.5	0.0	0.0	57.5	45.2	74	54	-16.5	-8.8	V, Noise Floor																																																												
11.650	3.0	41.1	28.3	38.7	9.6	-32.5	0.0	0.0	56.9	44.1	74	54	-17.1	9.9	H, Noise floor																																																												
No other emissions were detected above noise floor.																																																																											
Rev. 10.15.08																																																																											
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																																																																						

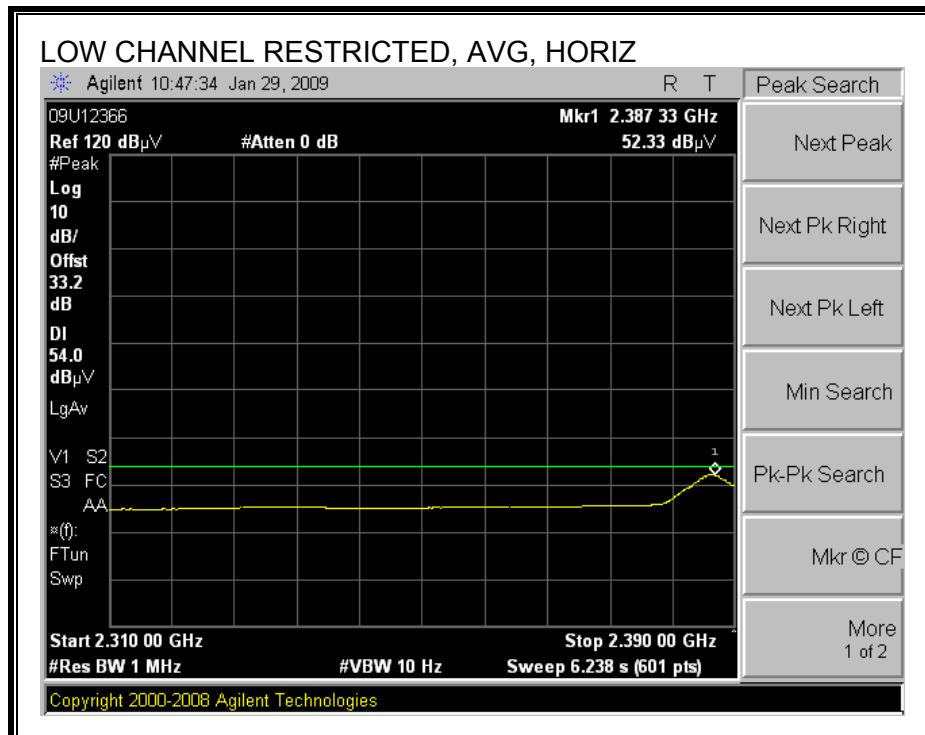
7.7. DIRECTIONAL ANTENNA (2.4GHz)

7.7.1. TX ABOVE 1 GHz FOR 802.11b

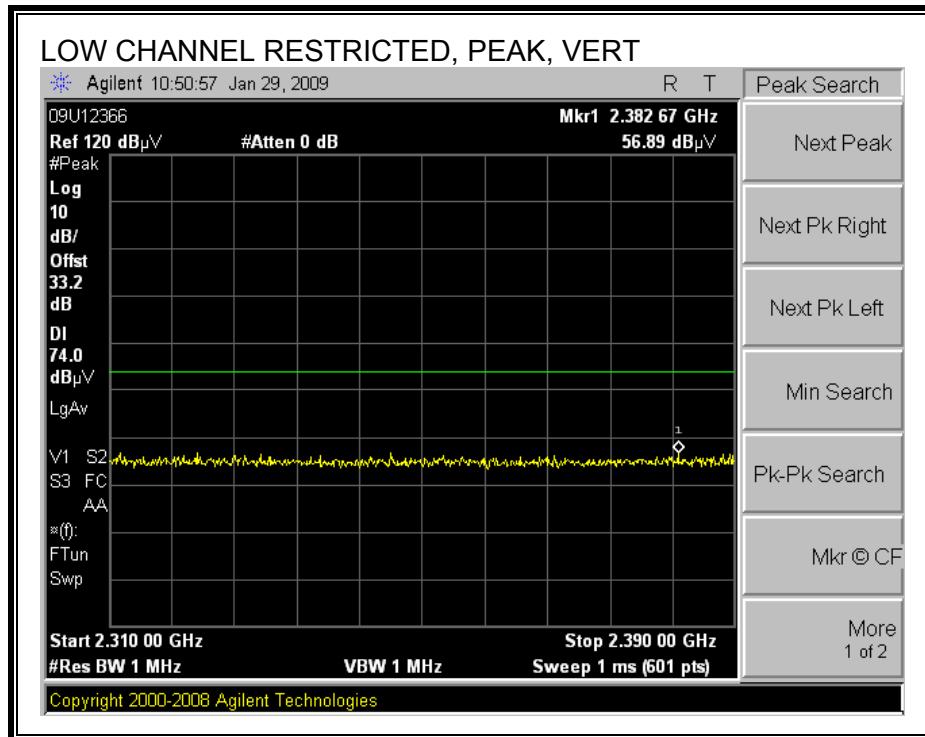
MODE 100:

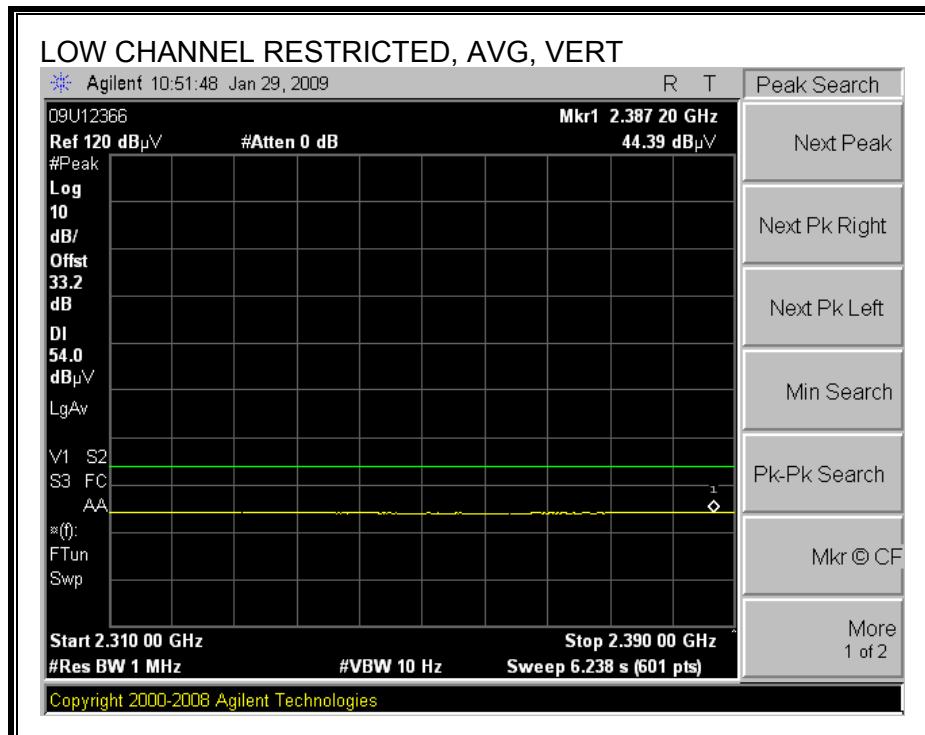
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



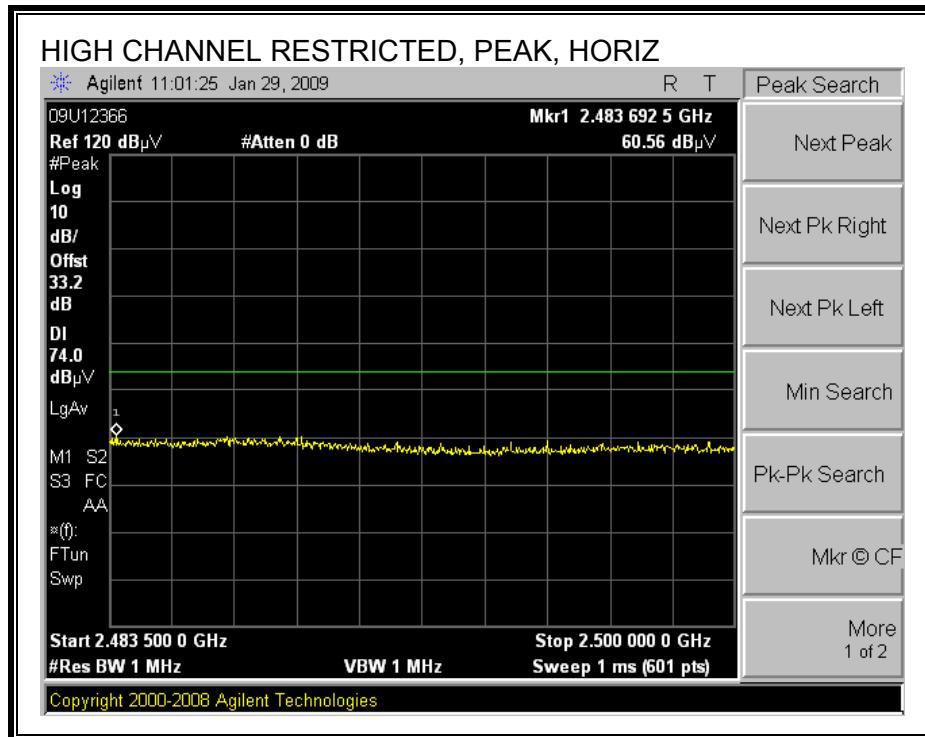


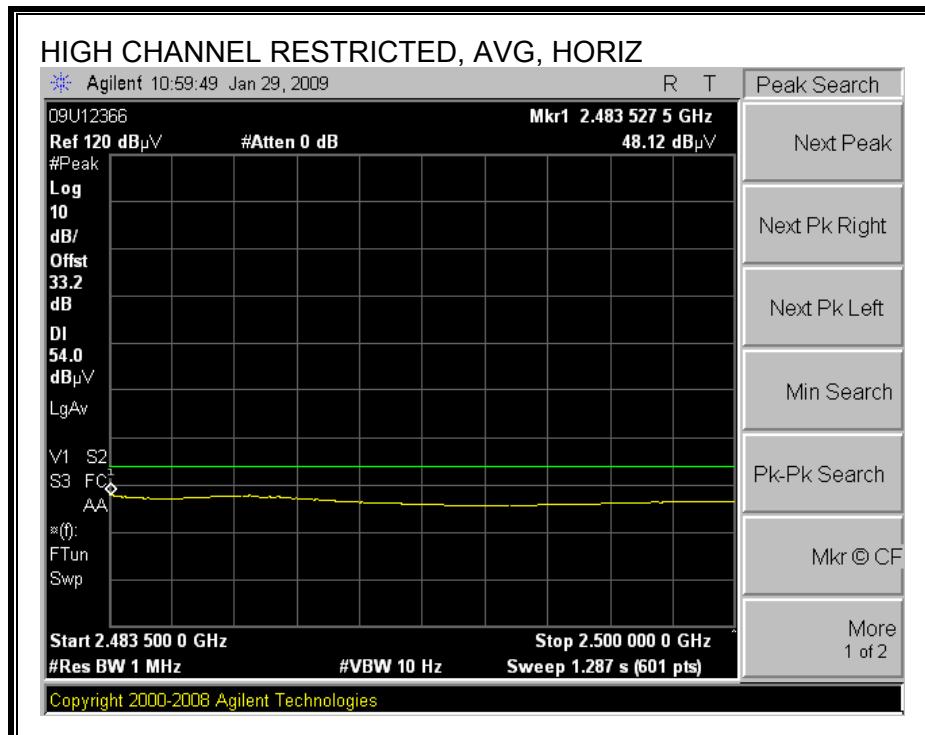
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



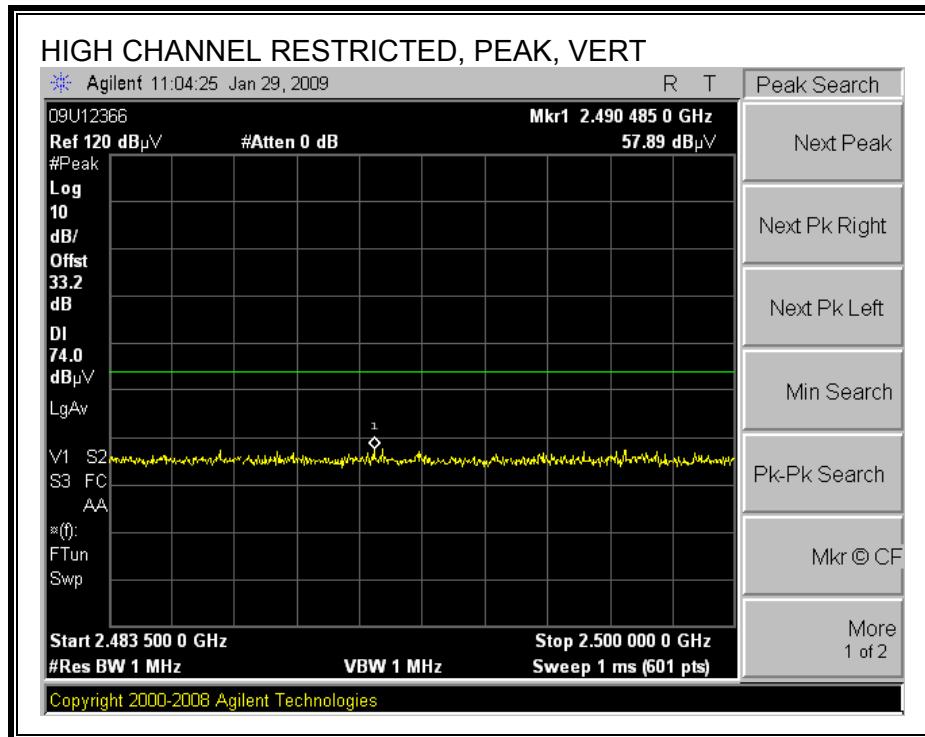


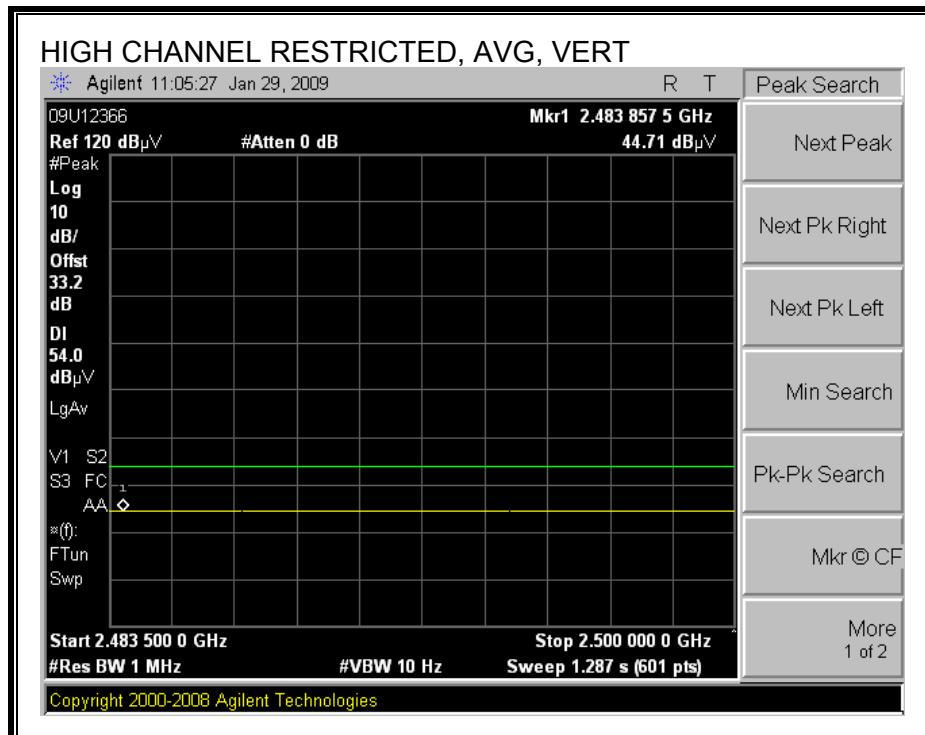
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





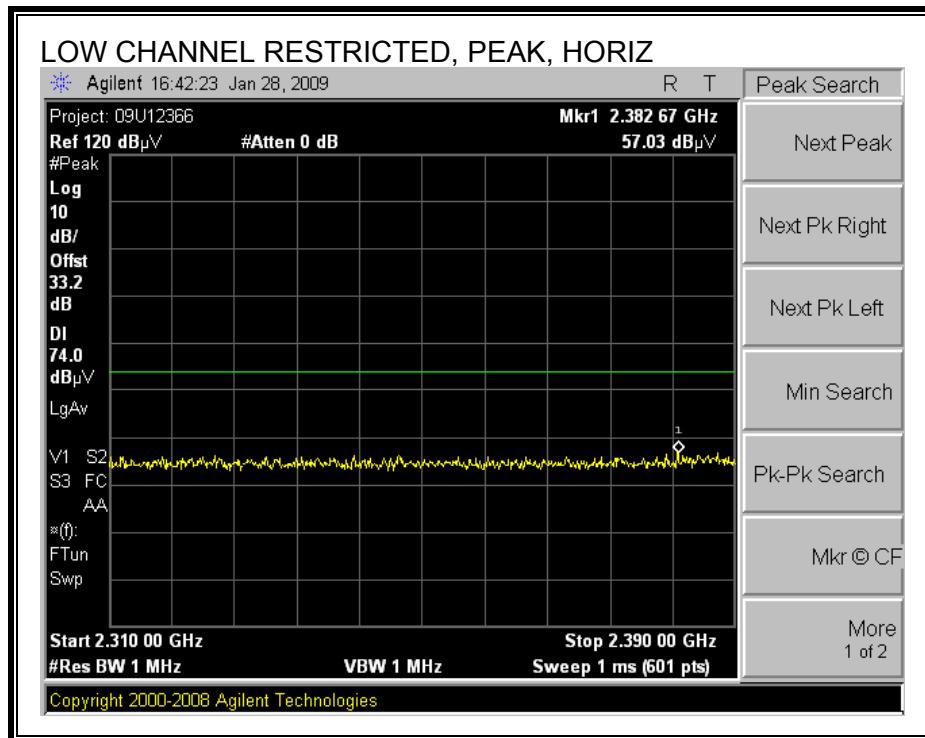
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

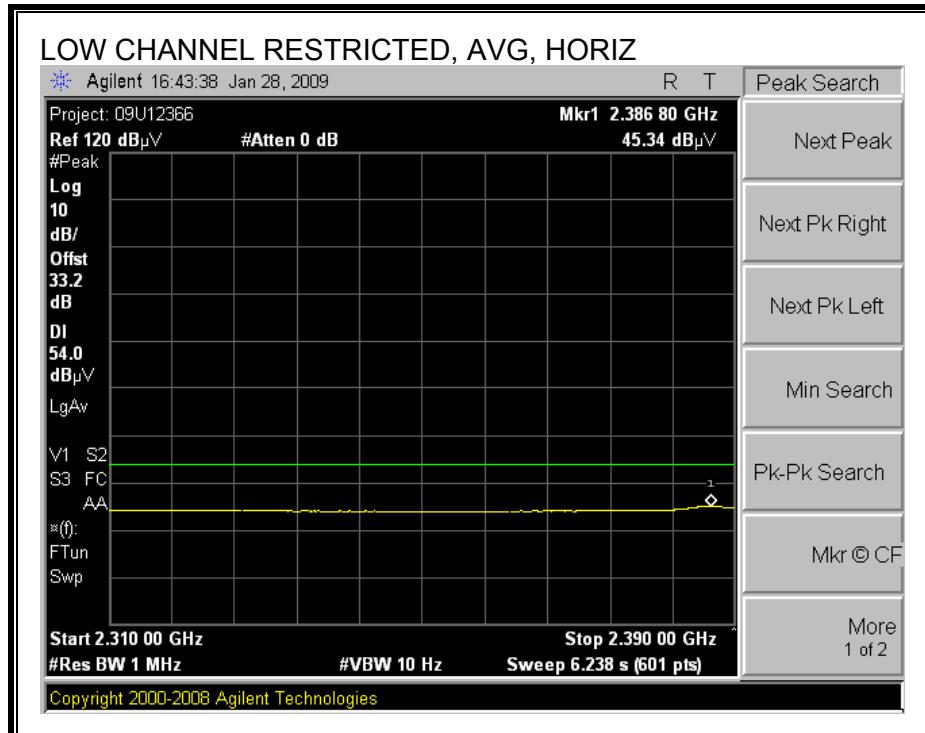




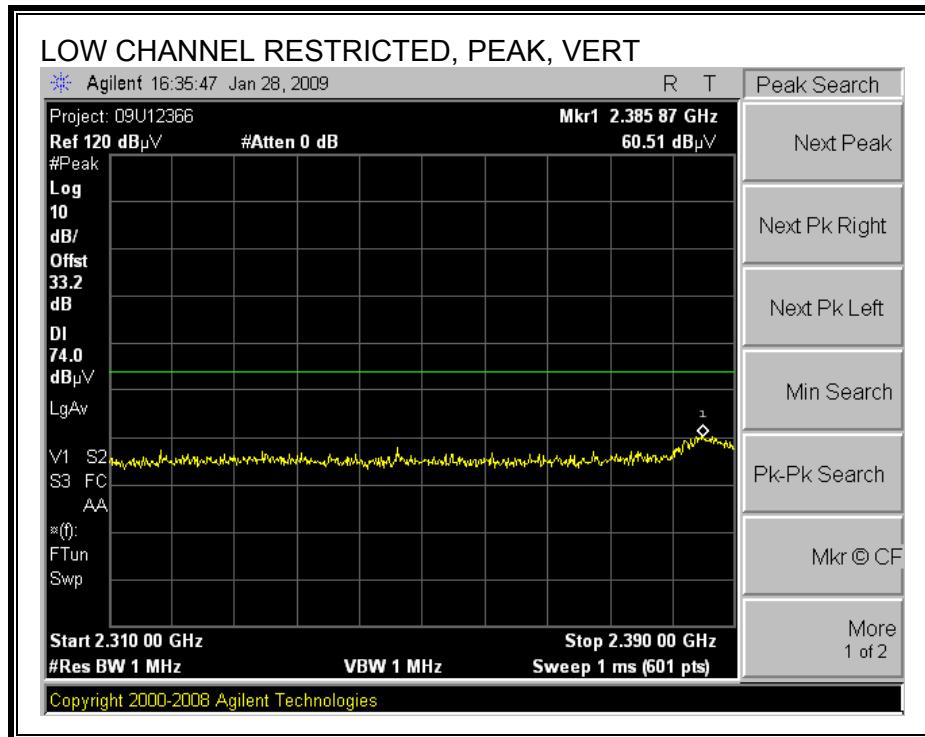
MODE 010:

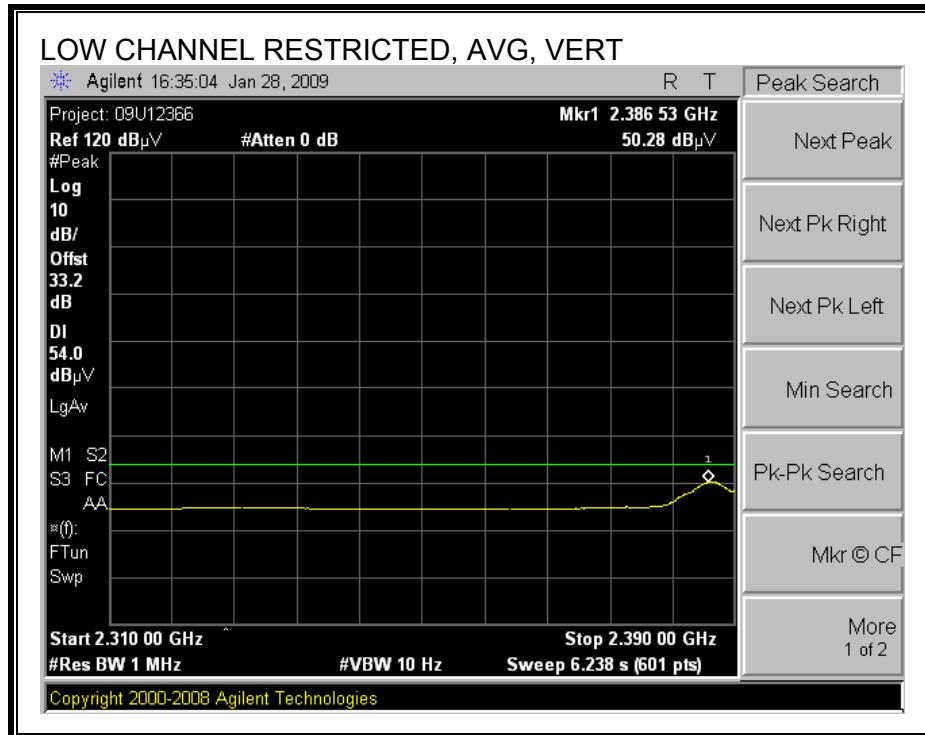
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



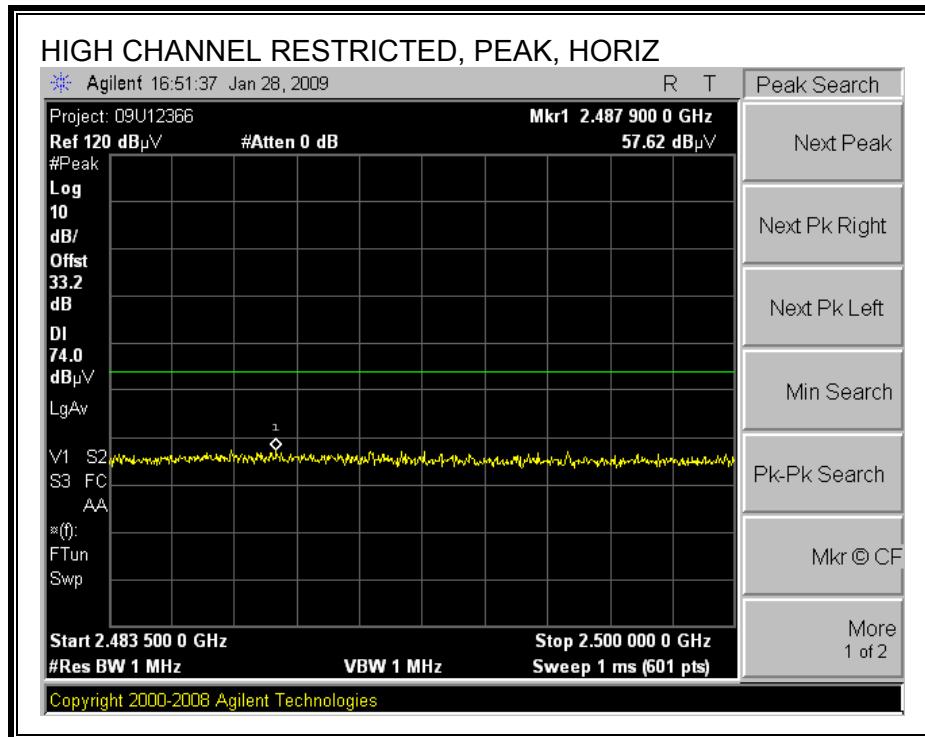


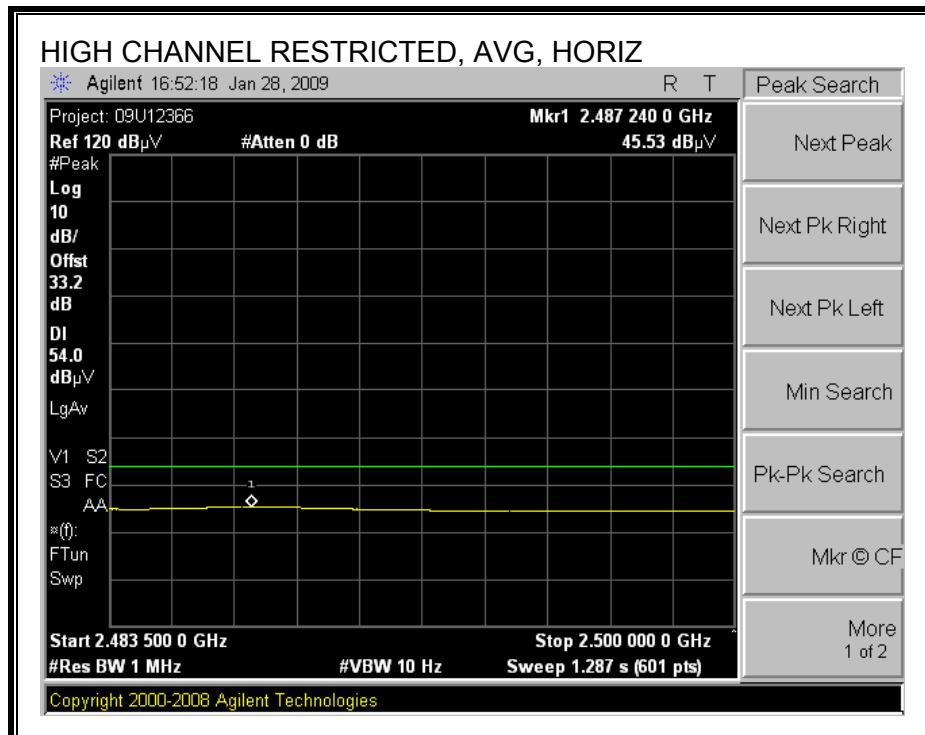
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



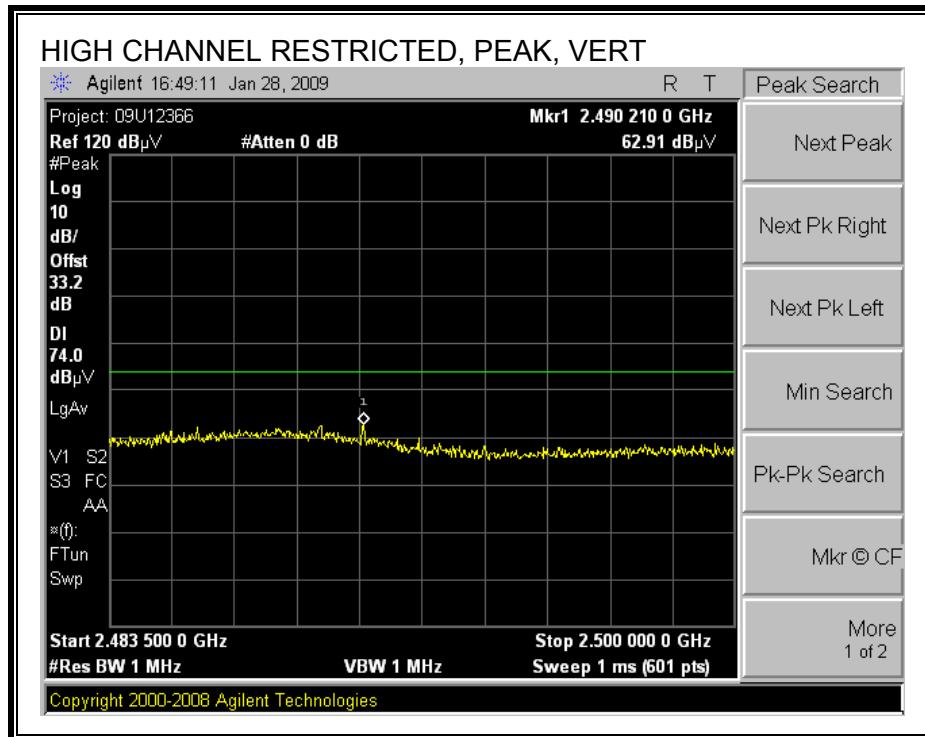


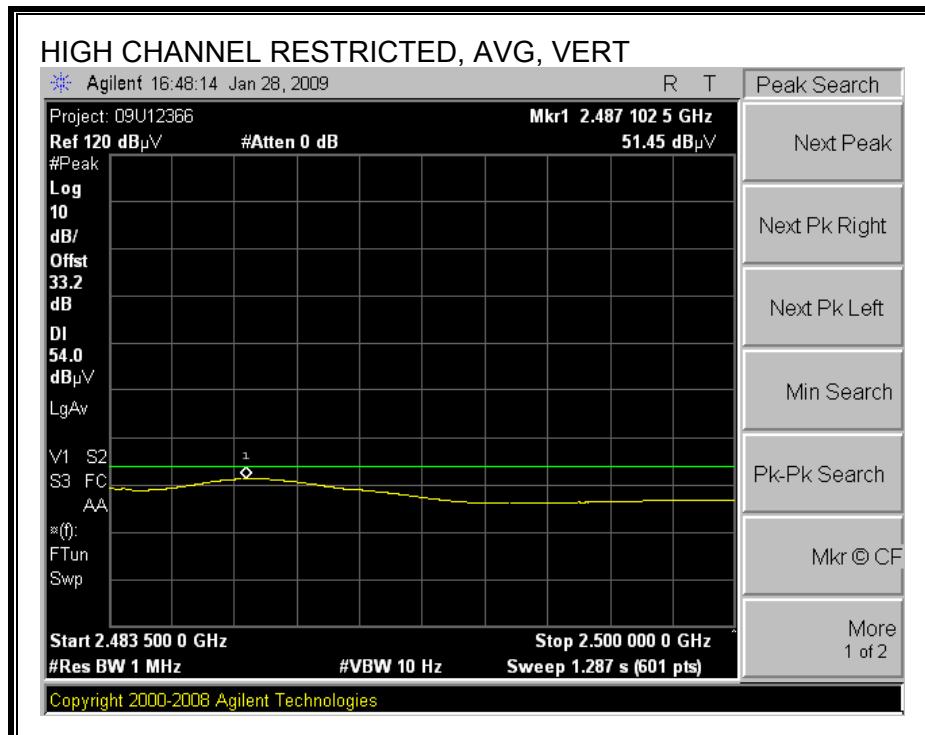
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





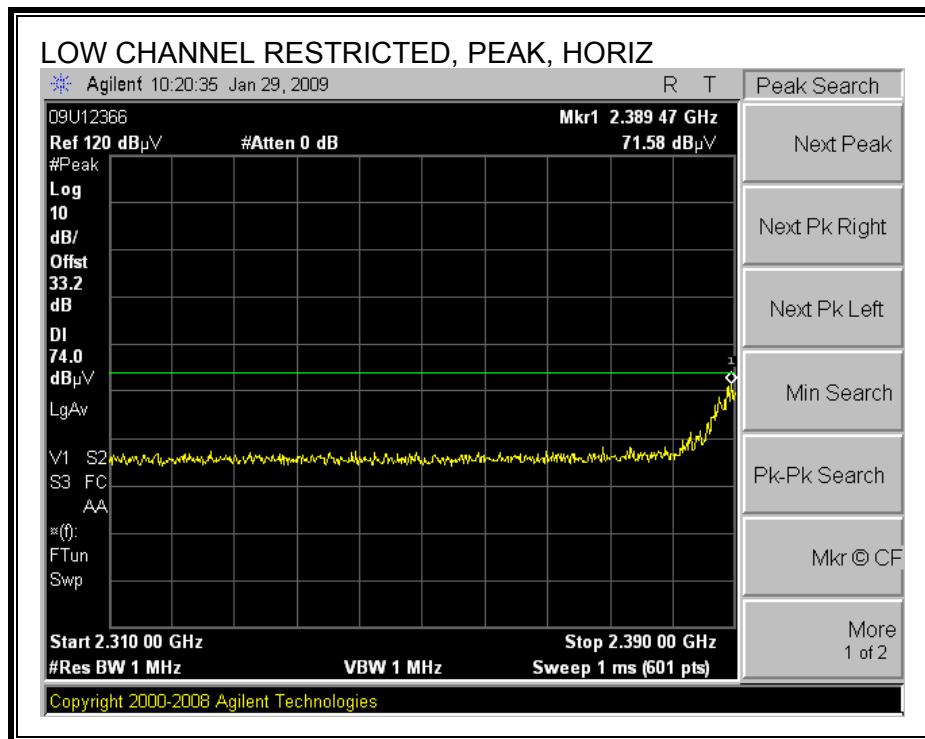
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

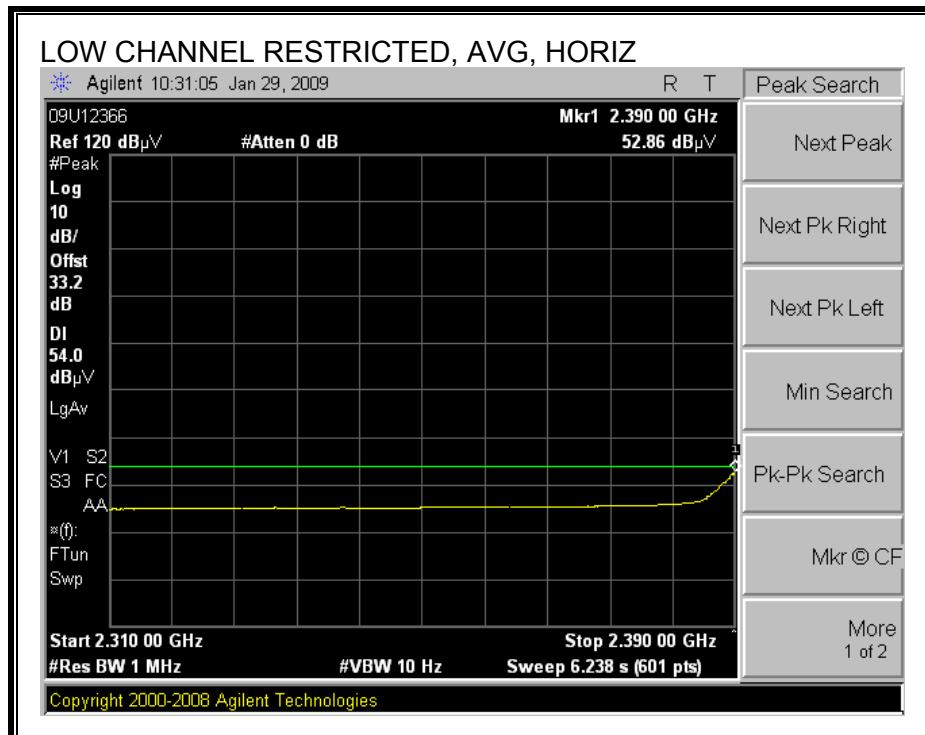




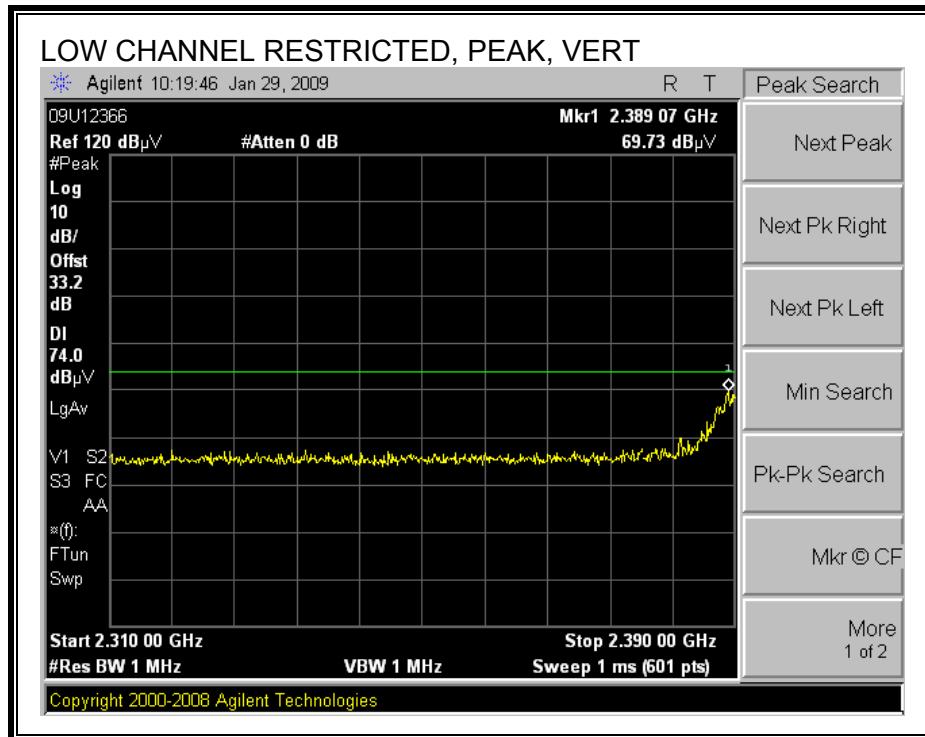
MODE 110 (HT20)

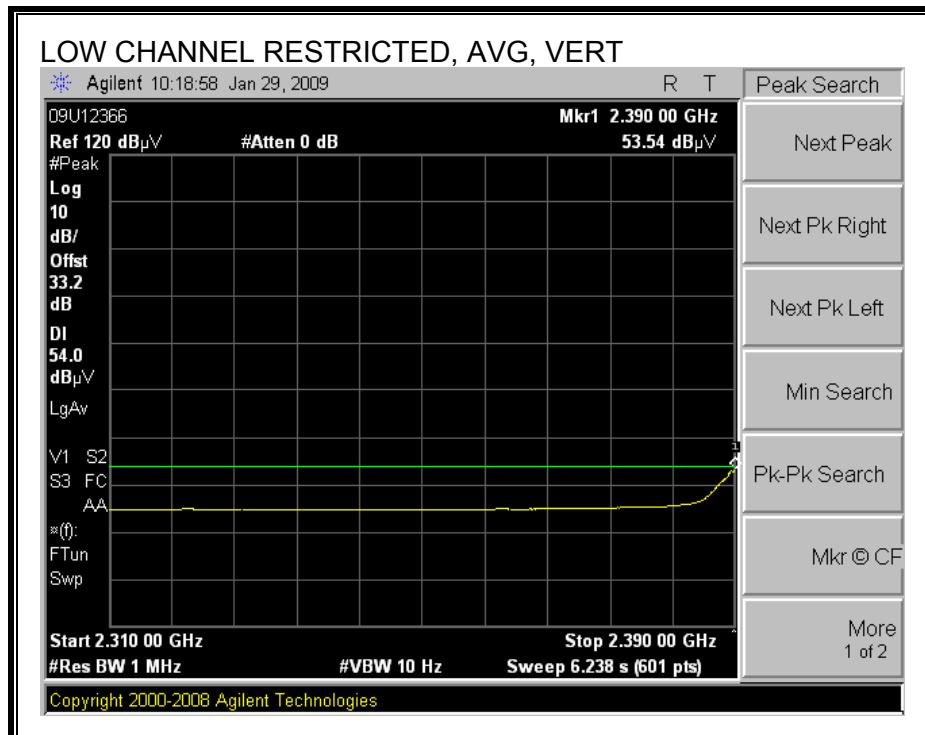
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



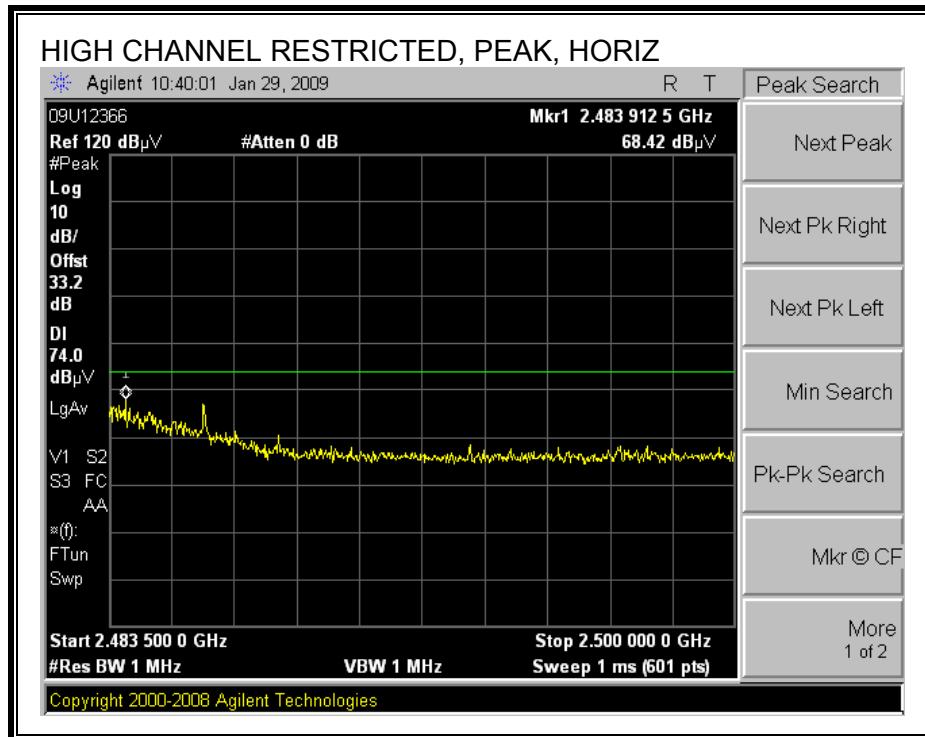


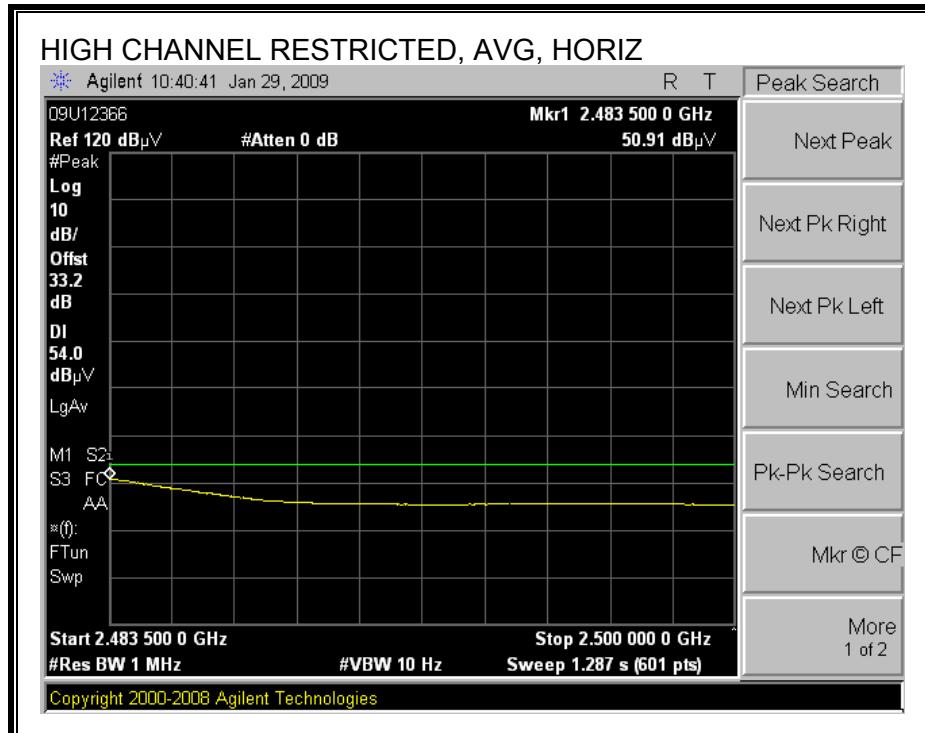
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



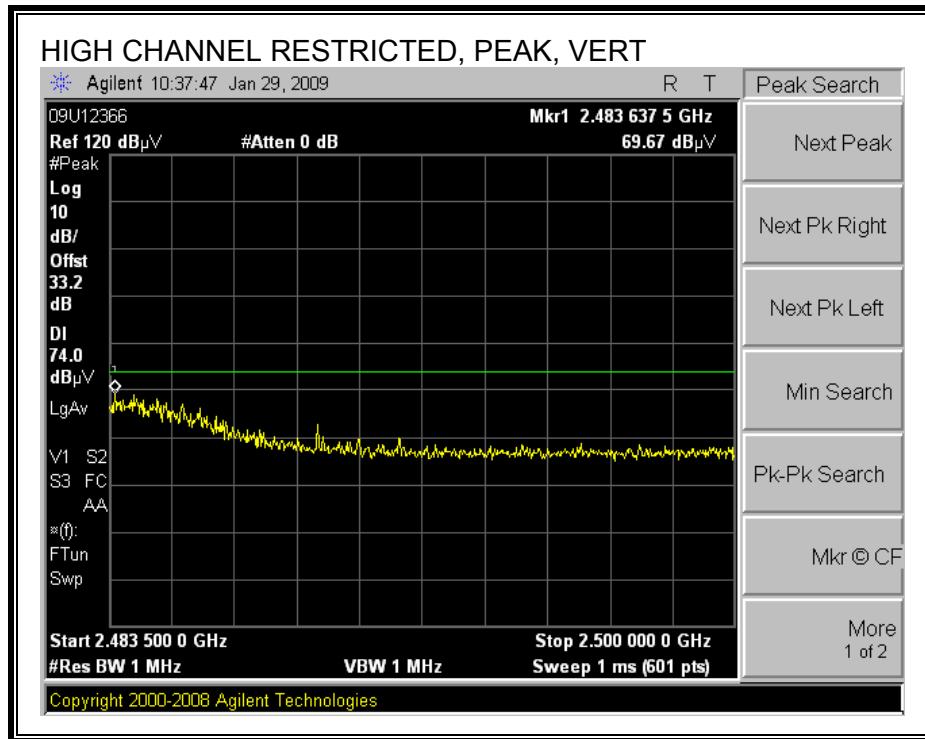


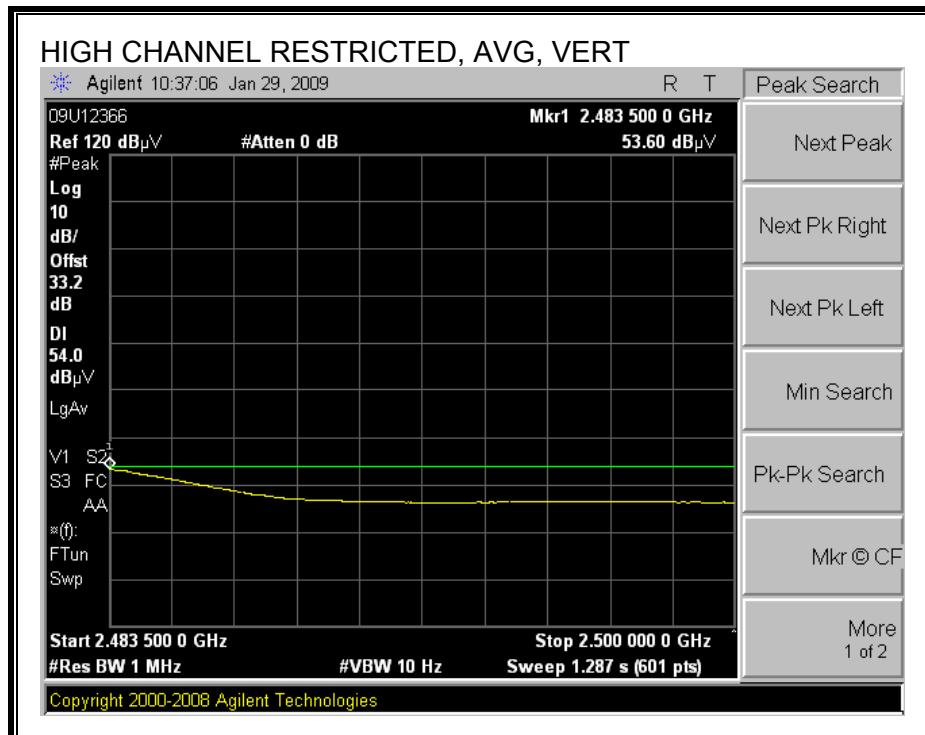
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





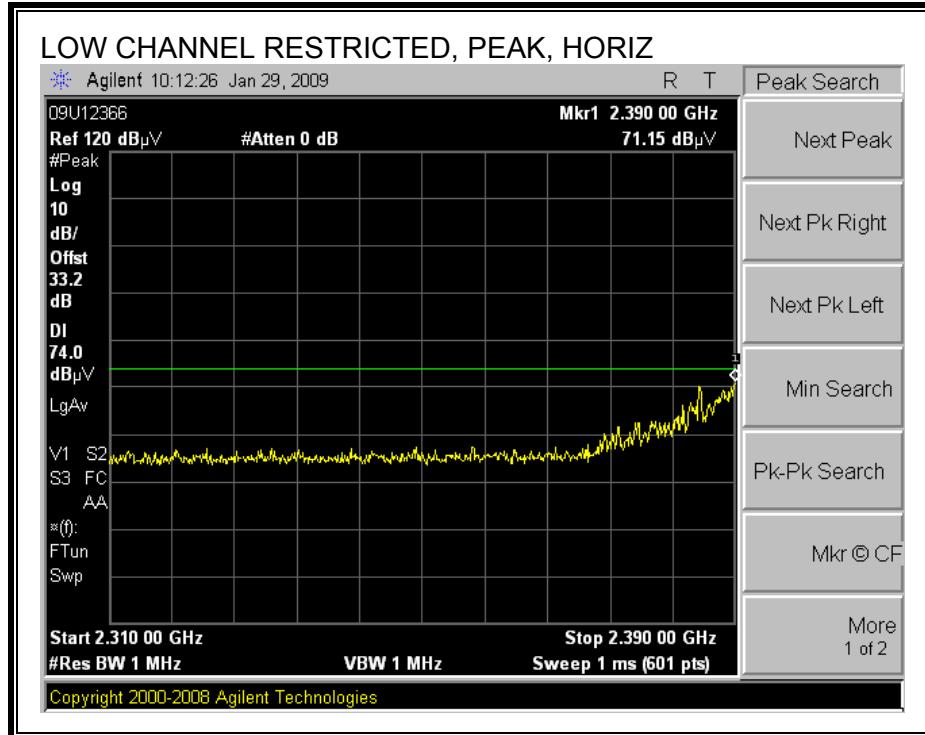
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

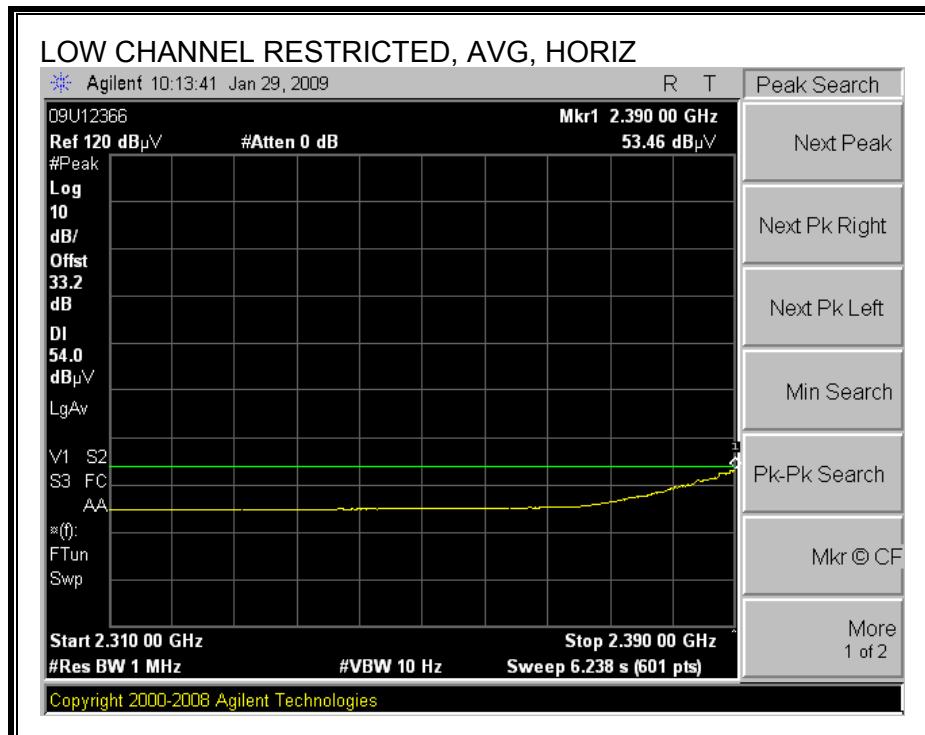




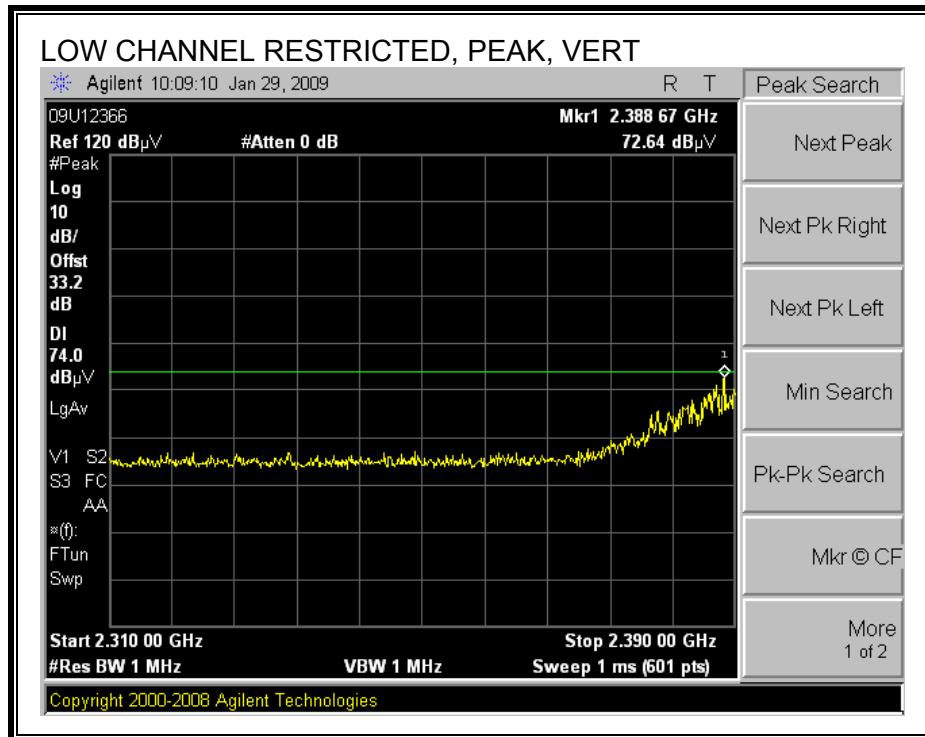
MODE 110 (HT 40):

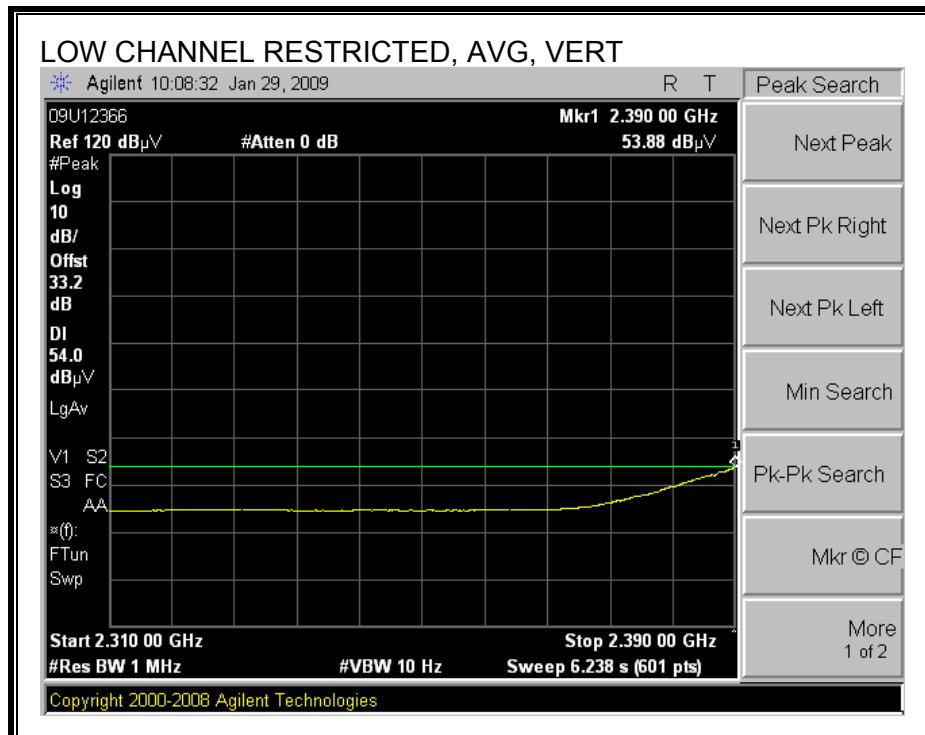
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



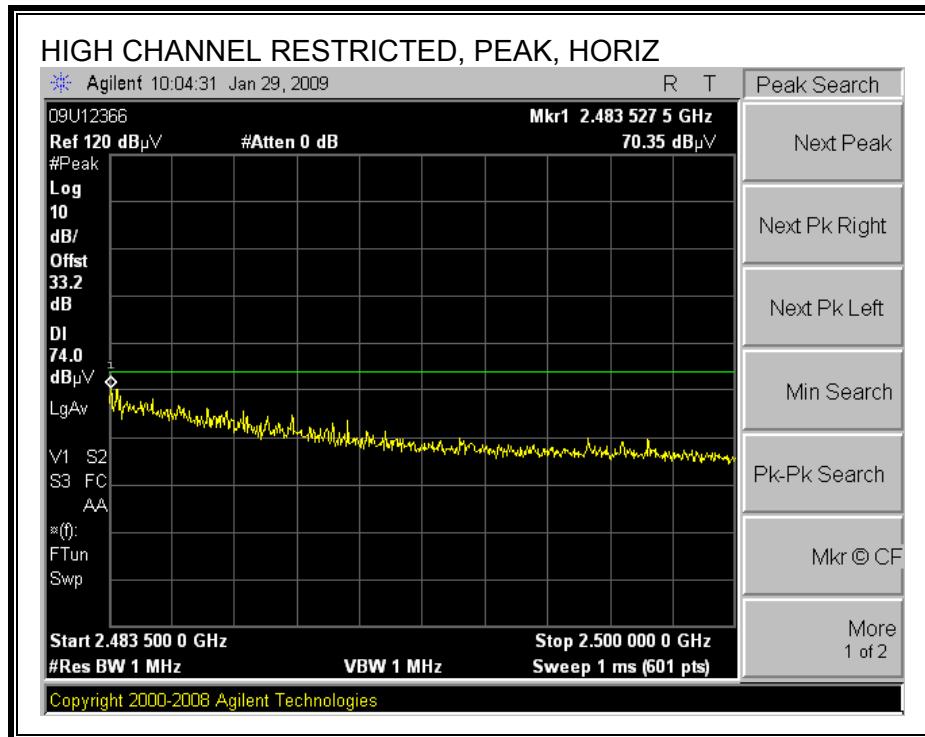


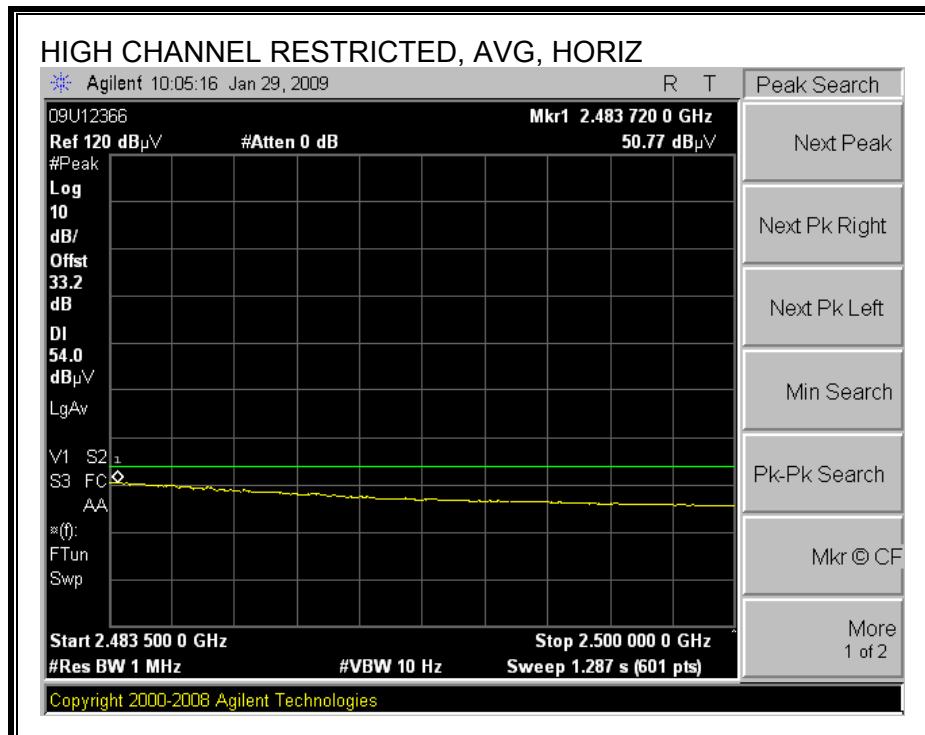
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



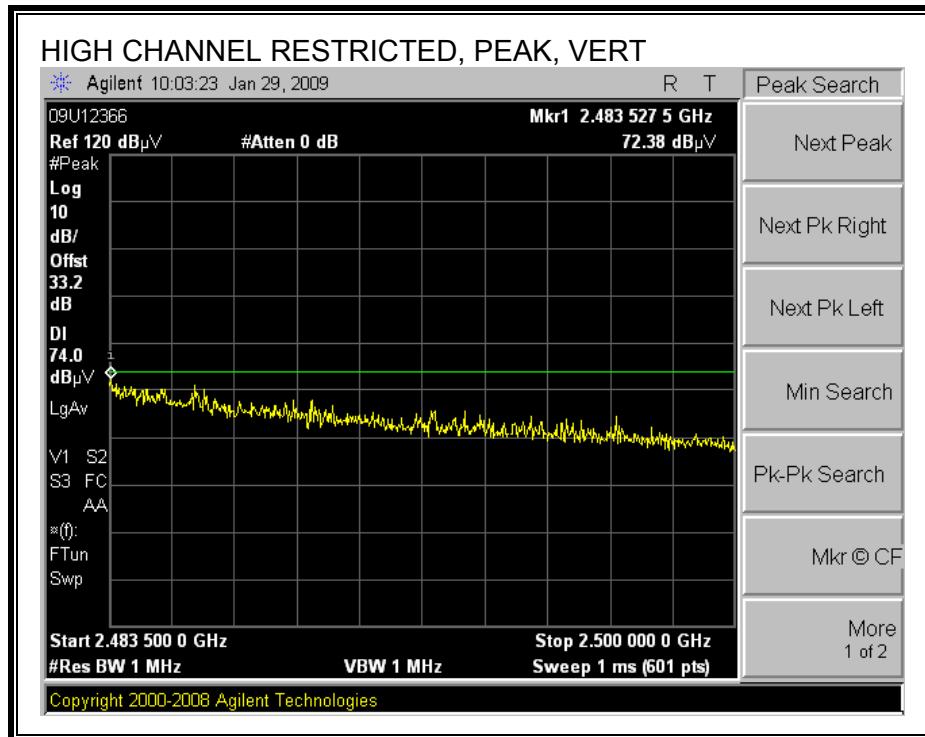


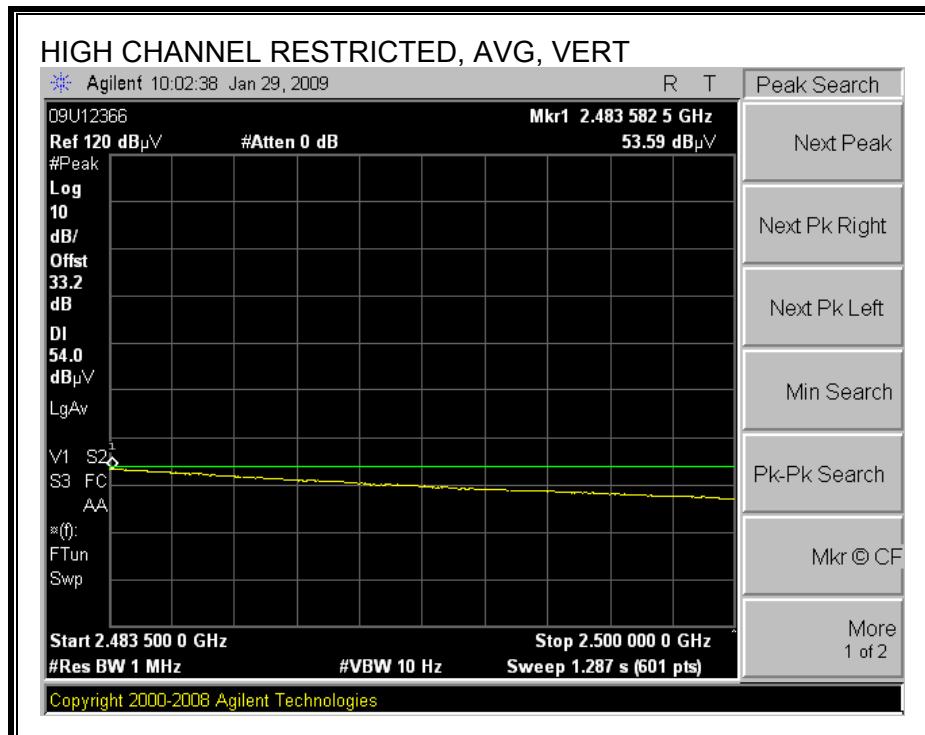
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

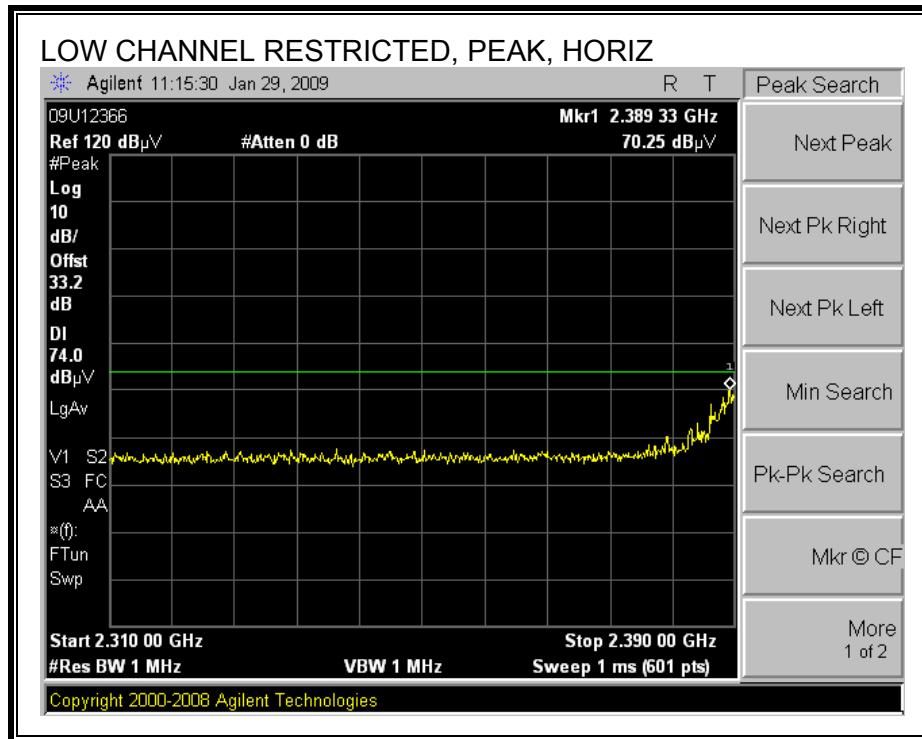


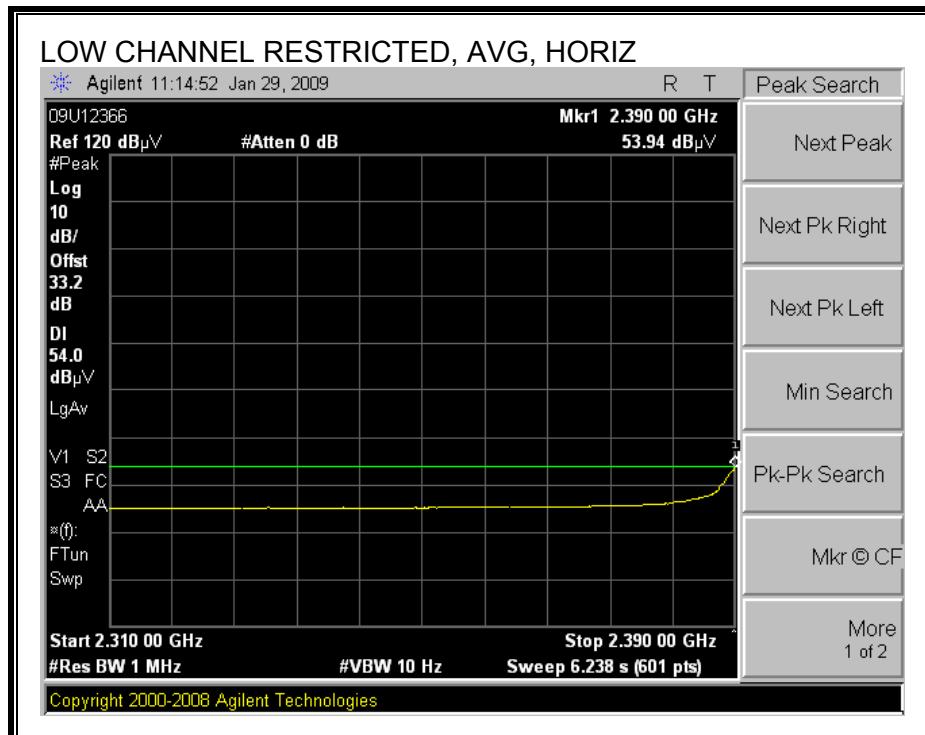


7.7.2. TX ABOVE 1 GHz FOR 802.11g

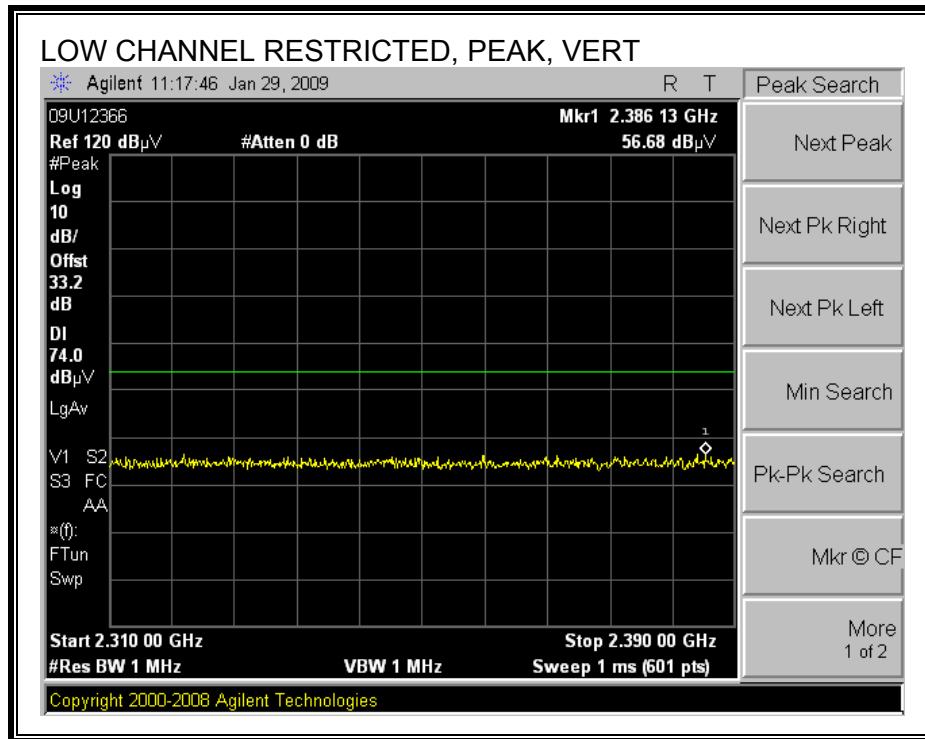
MODE 100:

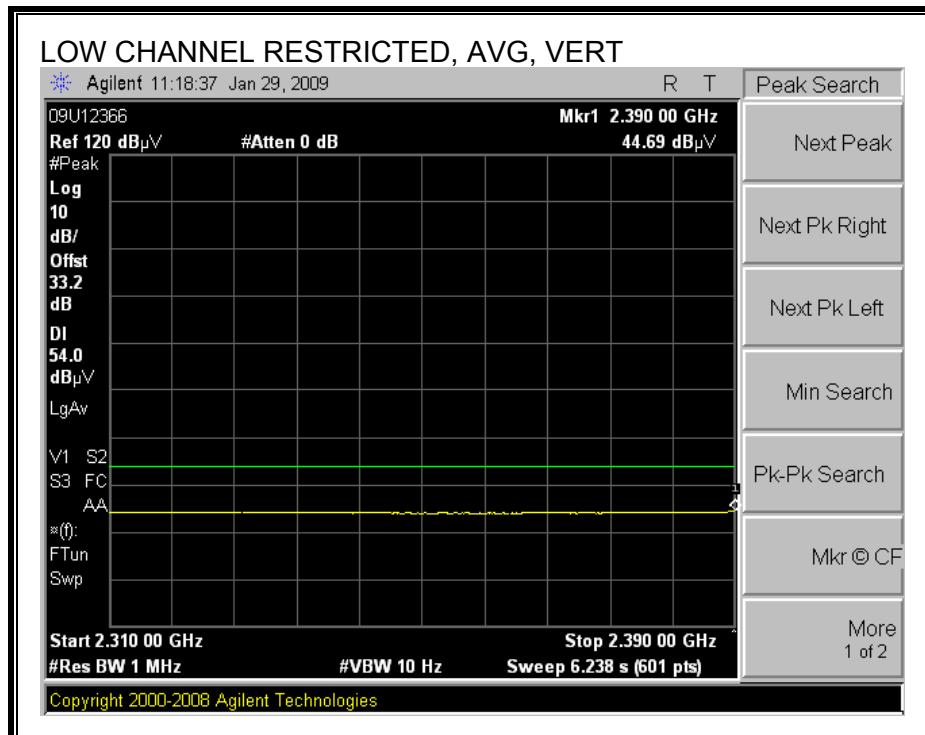
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



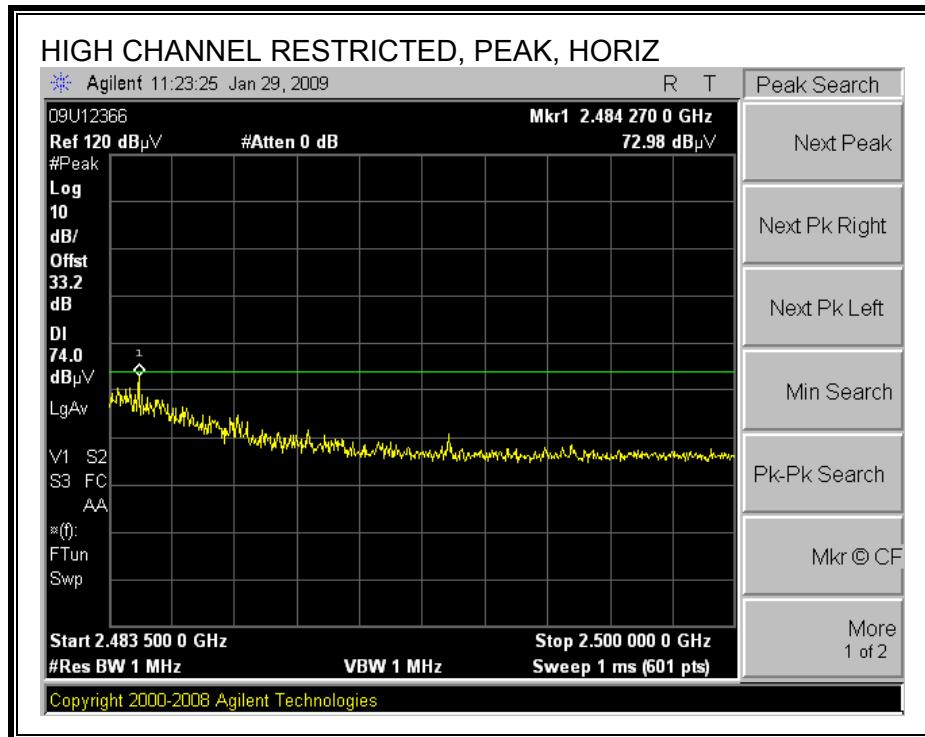


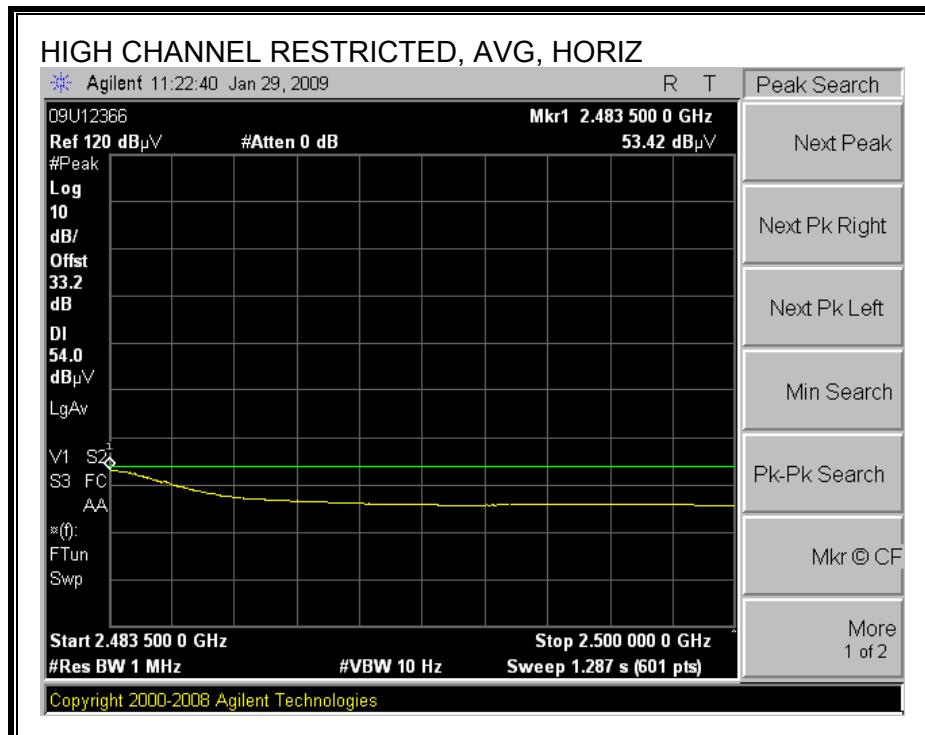
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



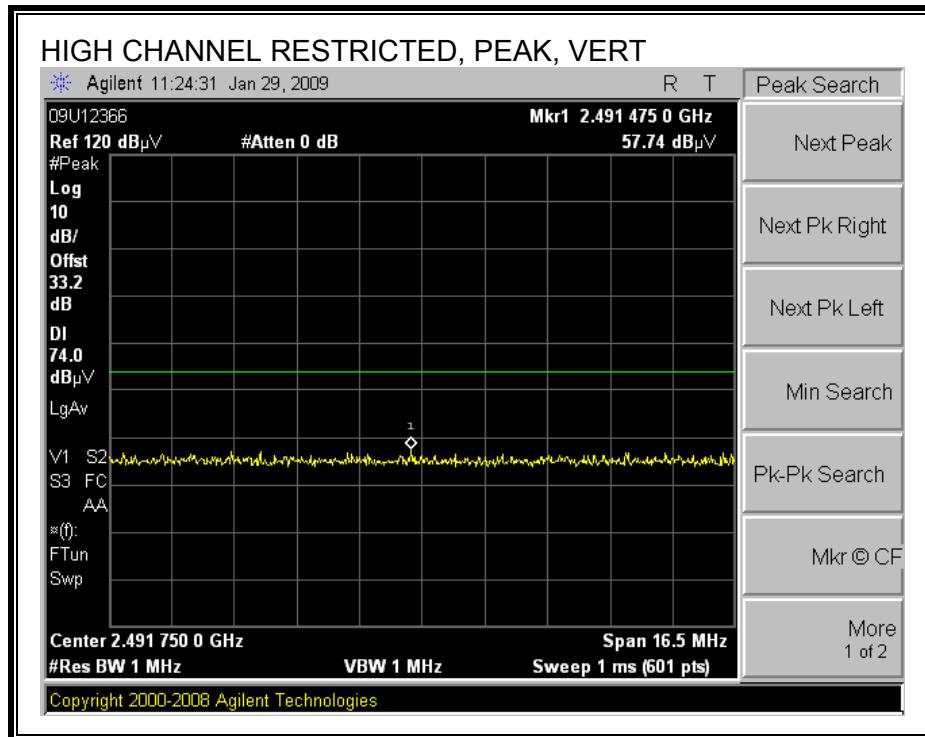


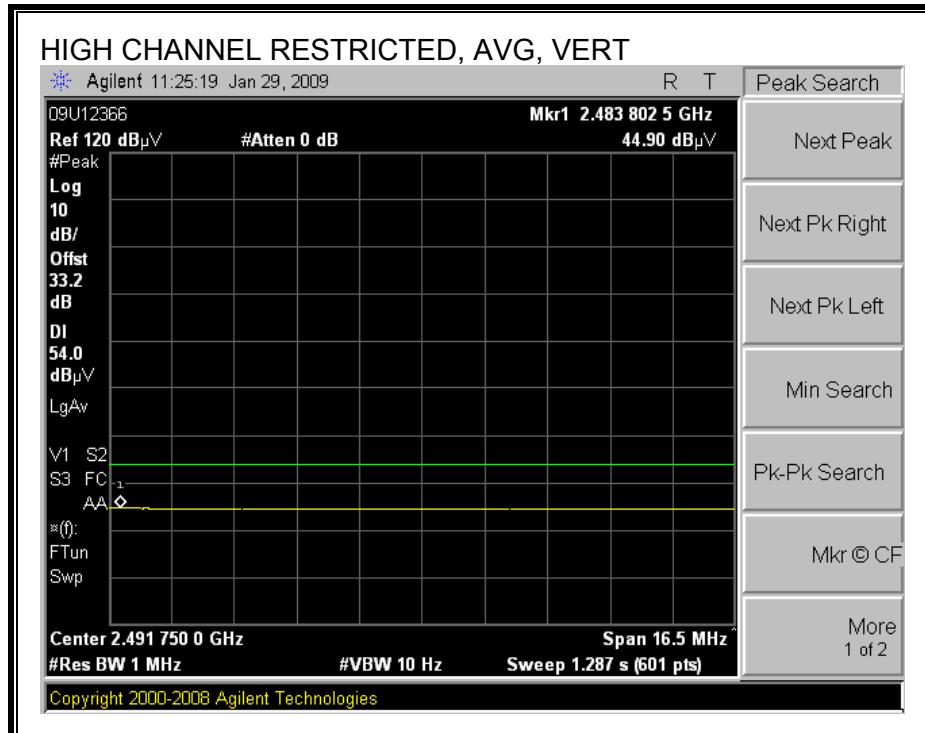
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





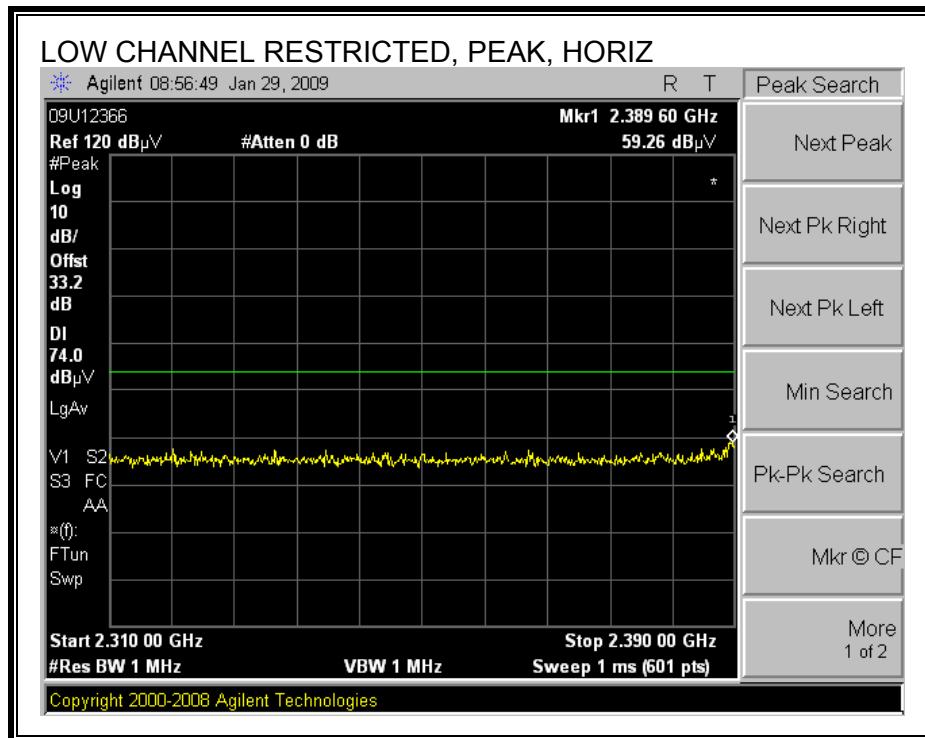
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

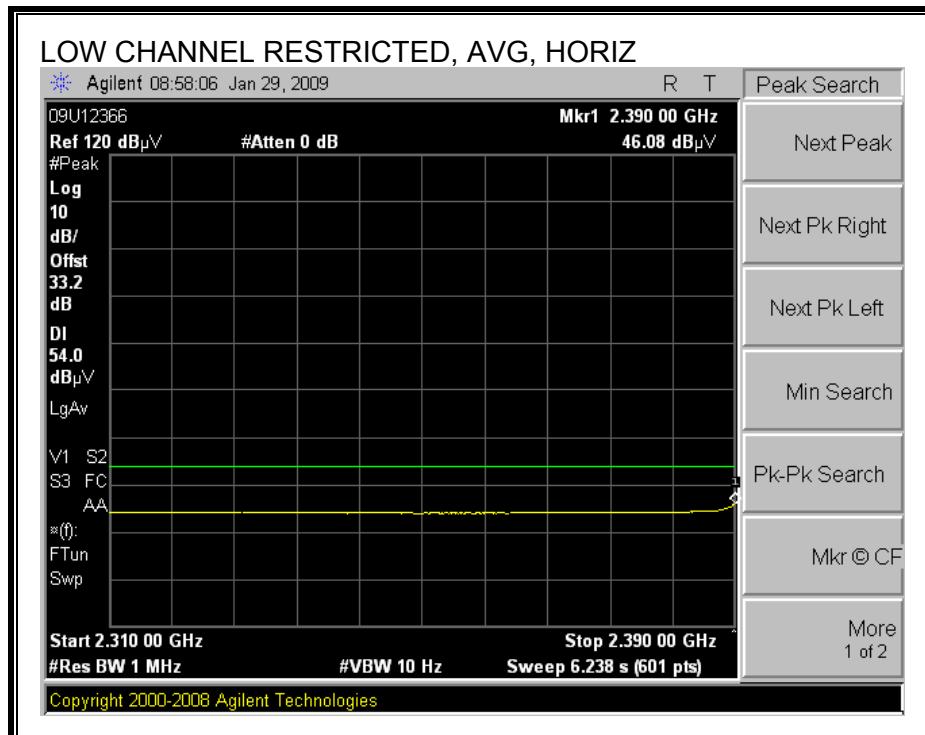




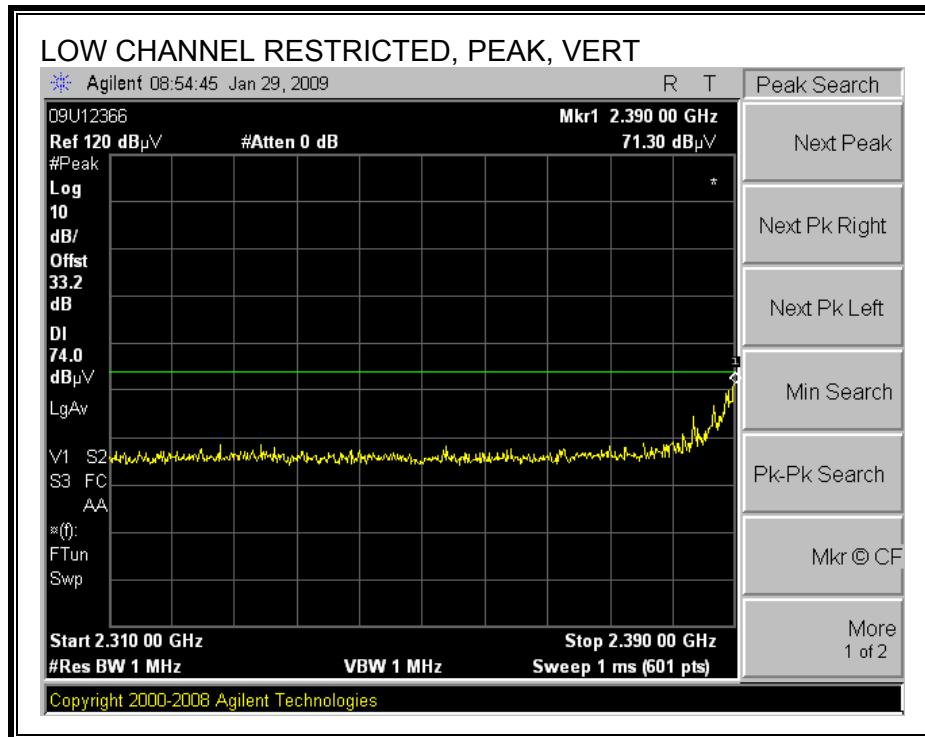
MODE 010:

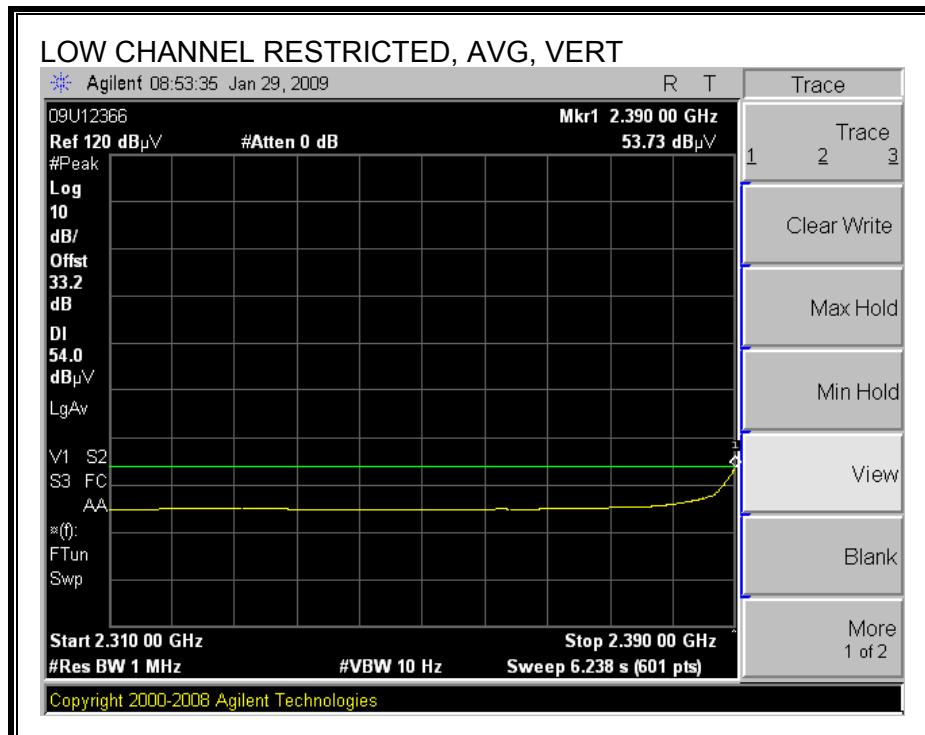
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



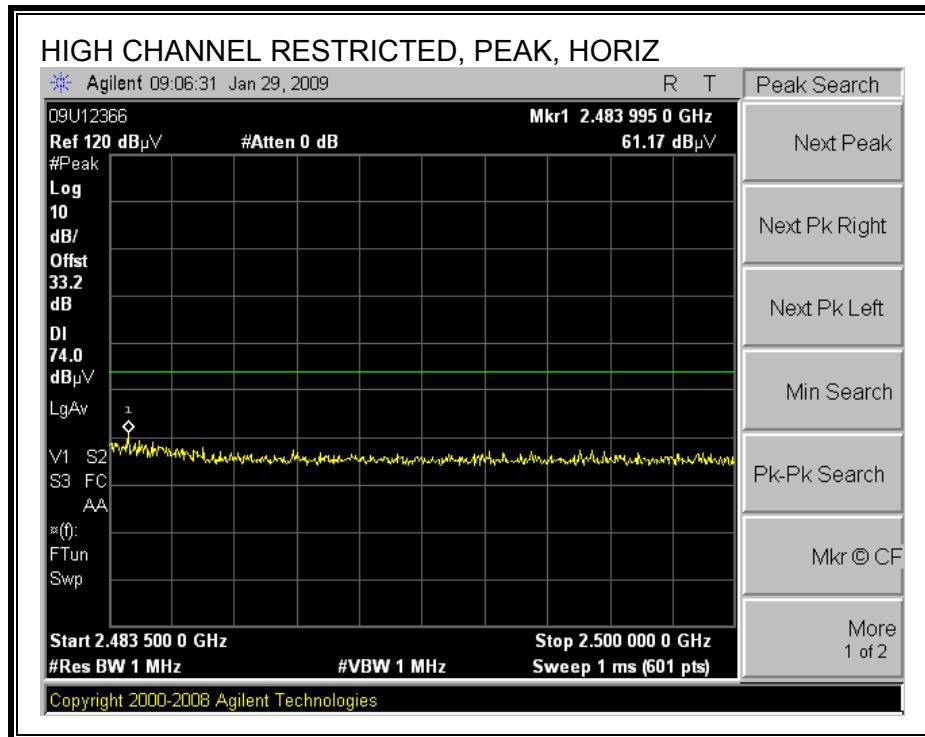


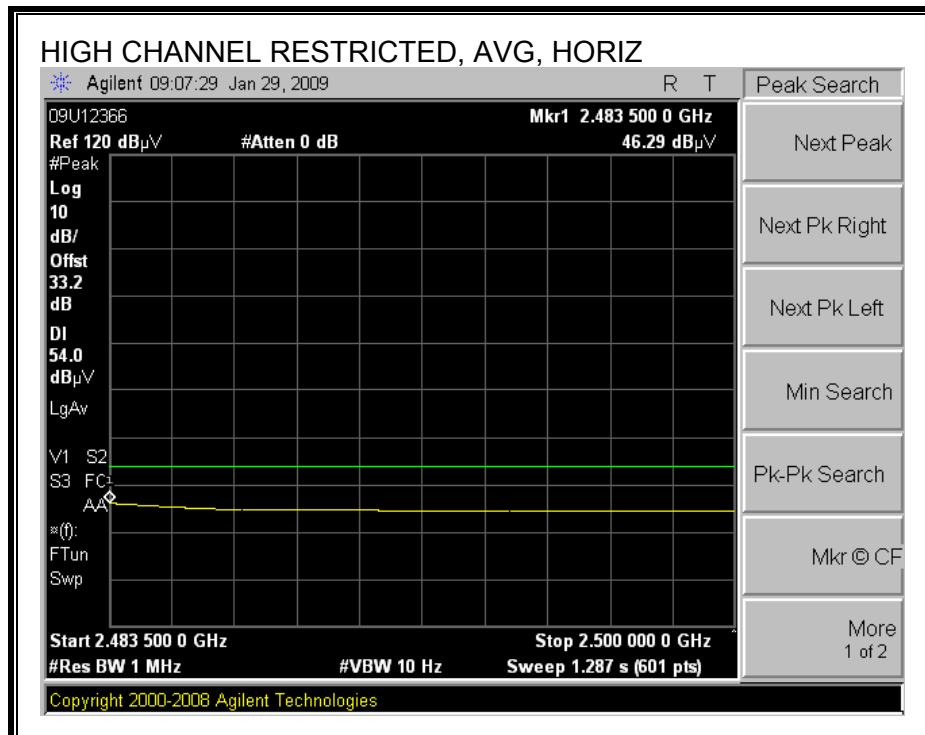
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



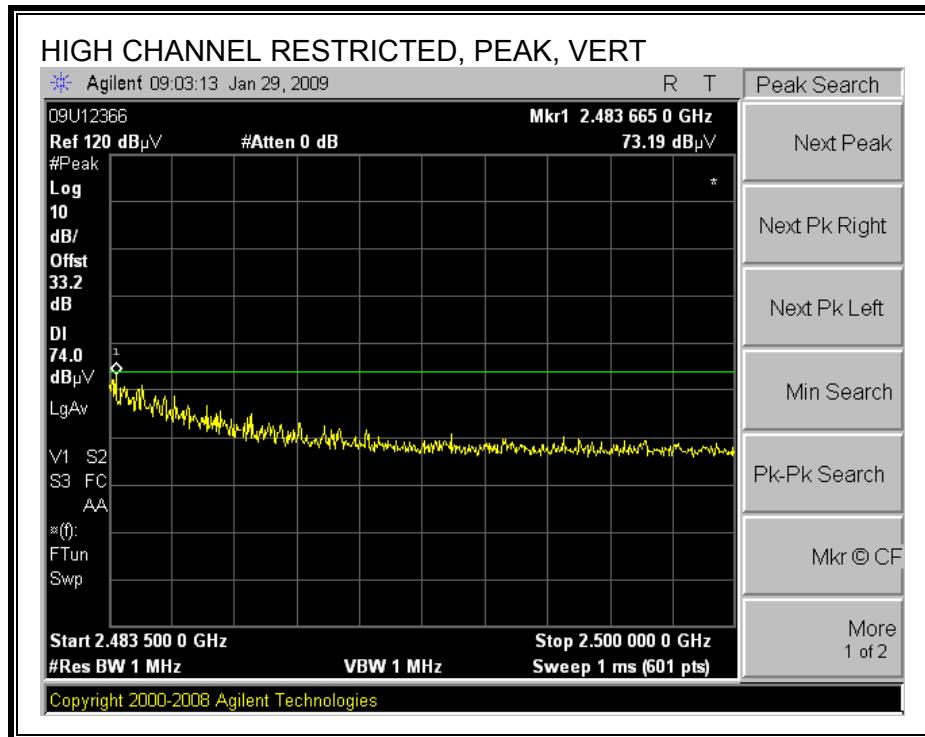


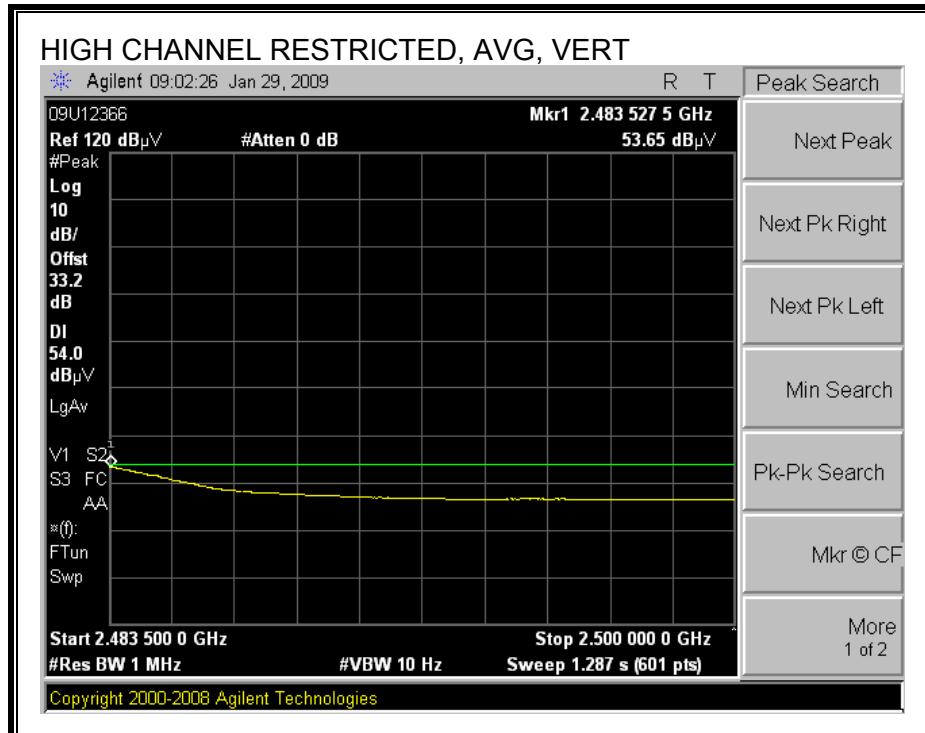
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





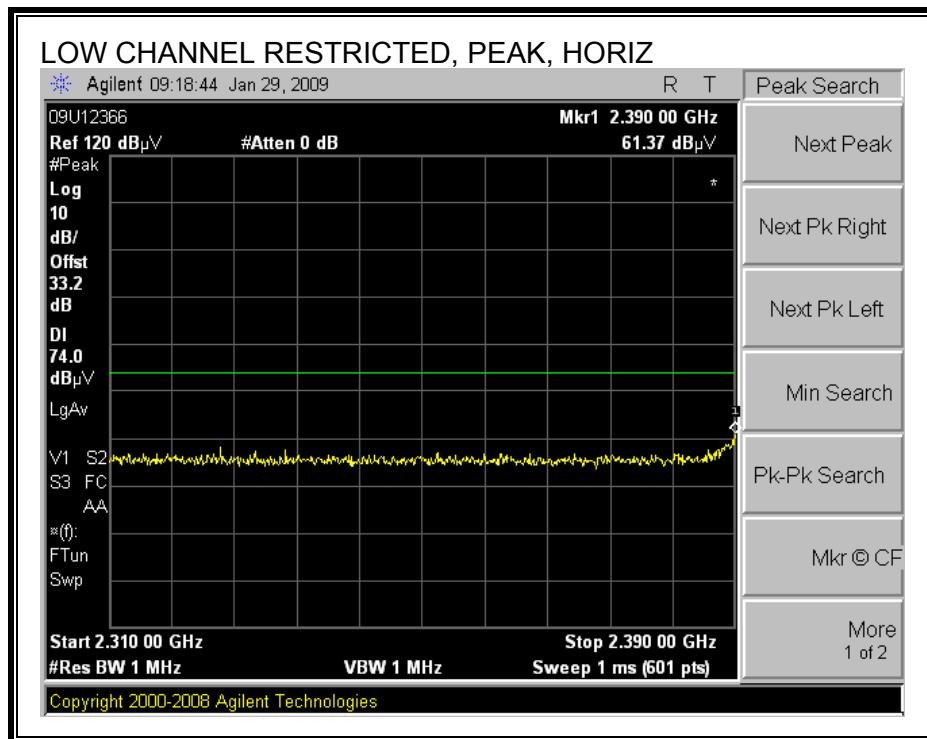
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

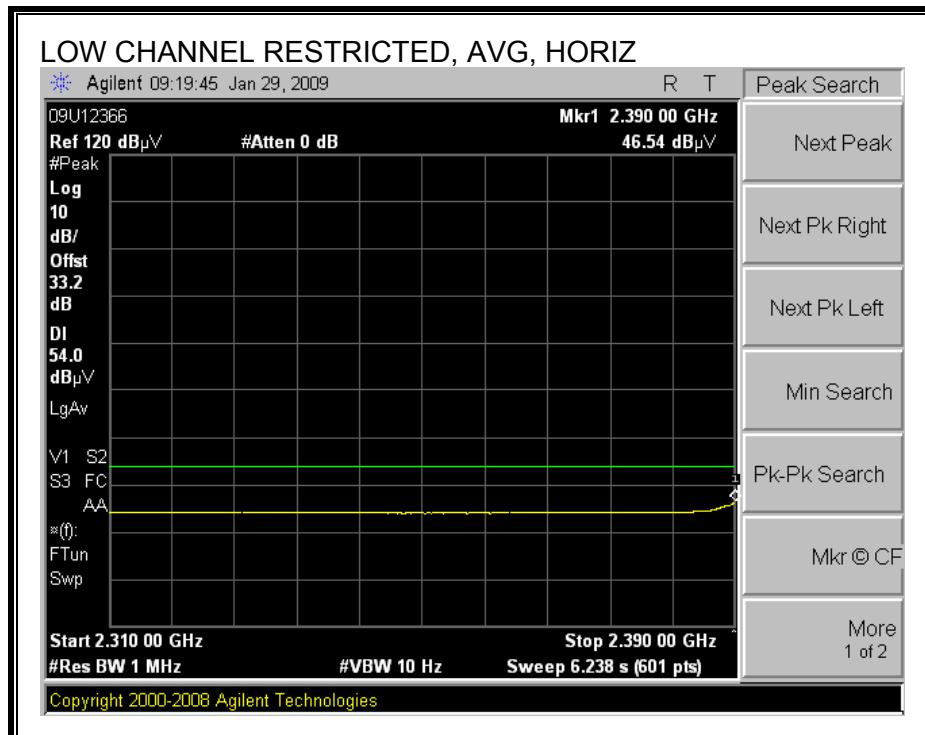




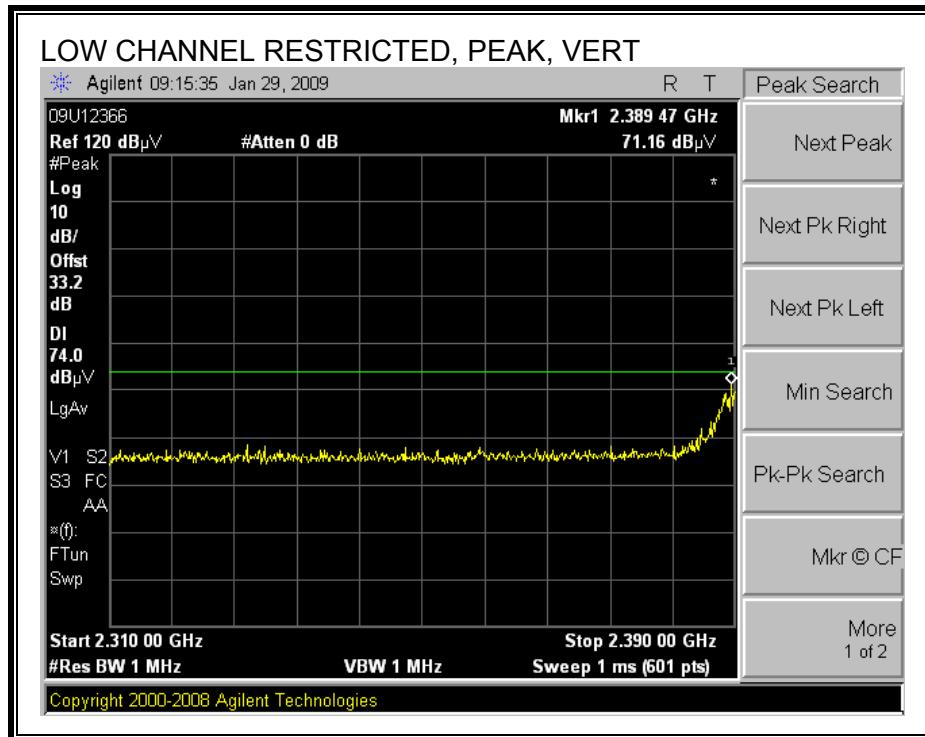
MODE 110 (HT20):

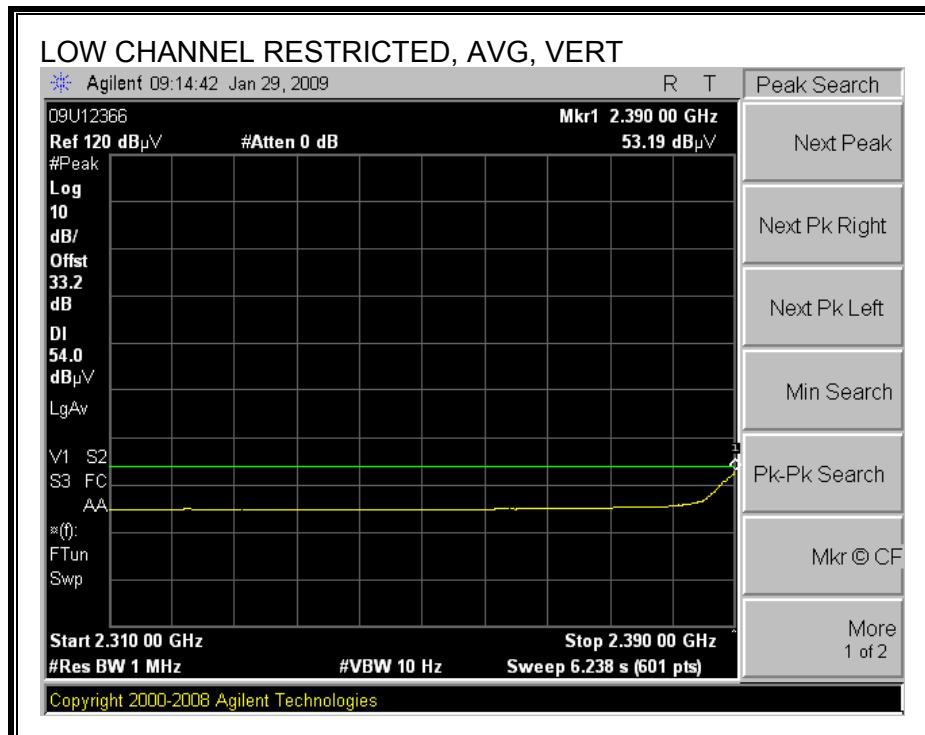
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



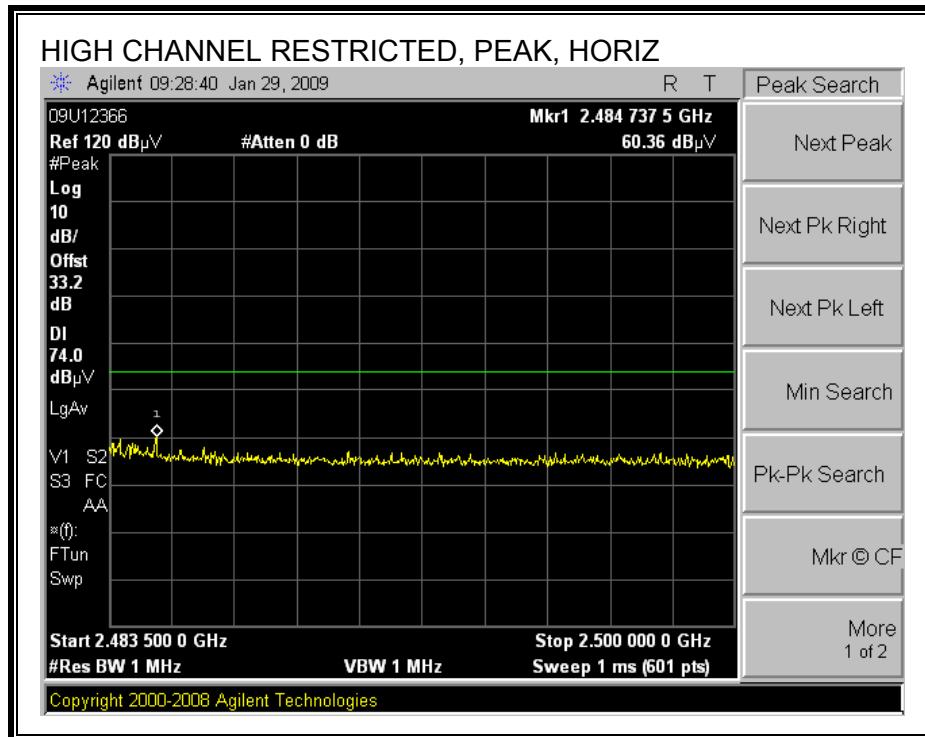


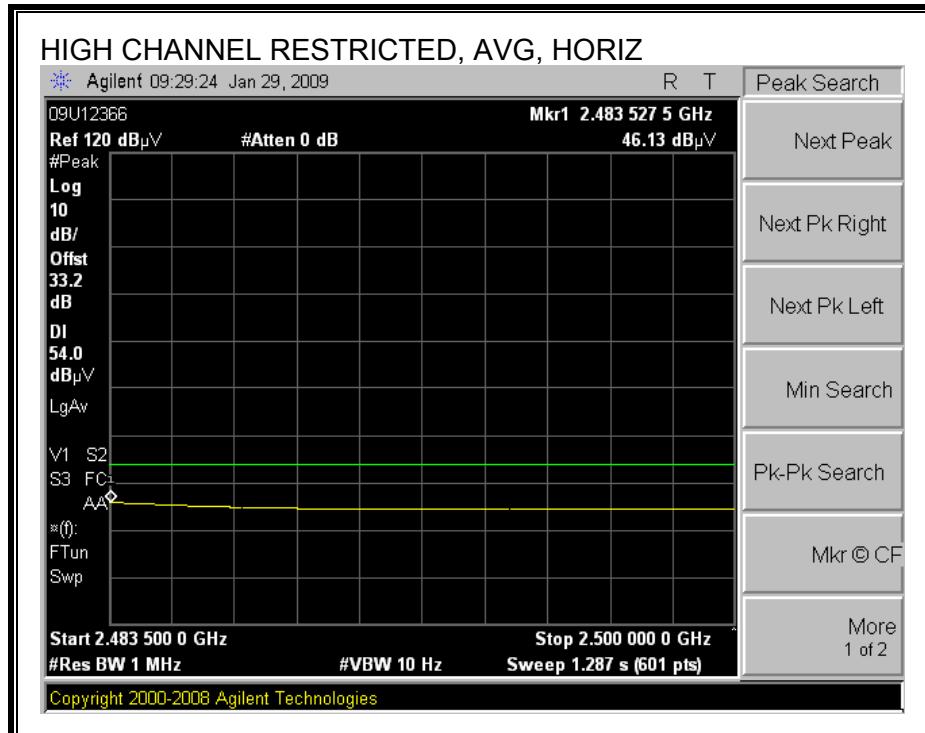
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



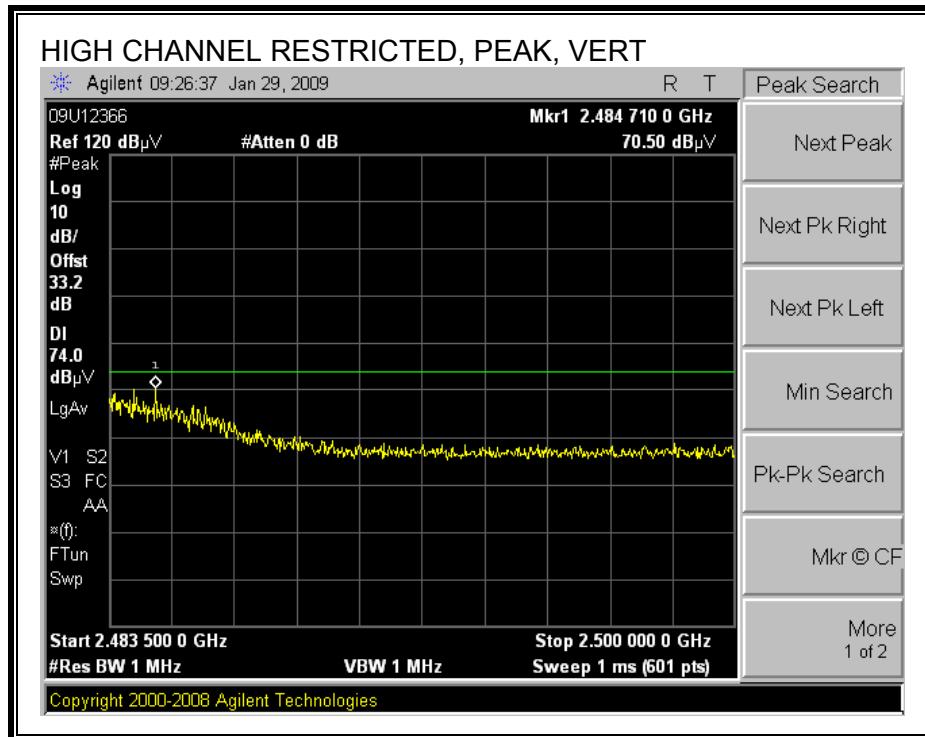


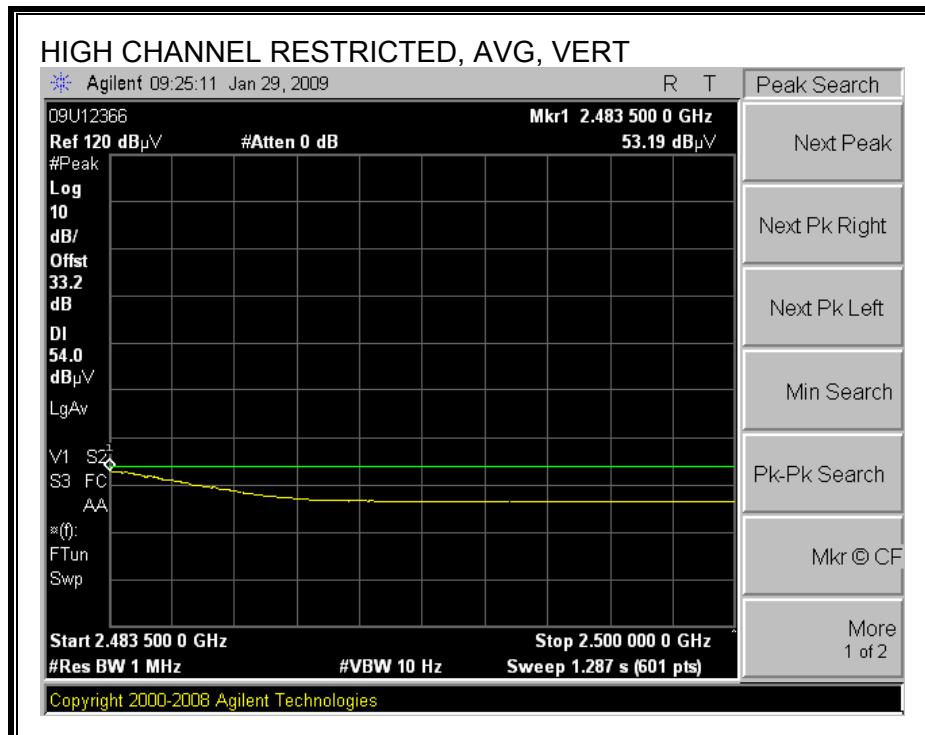
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





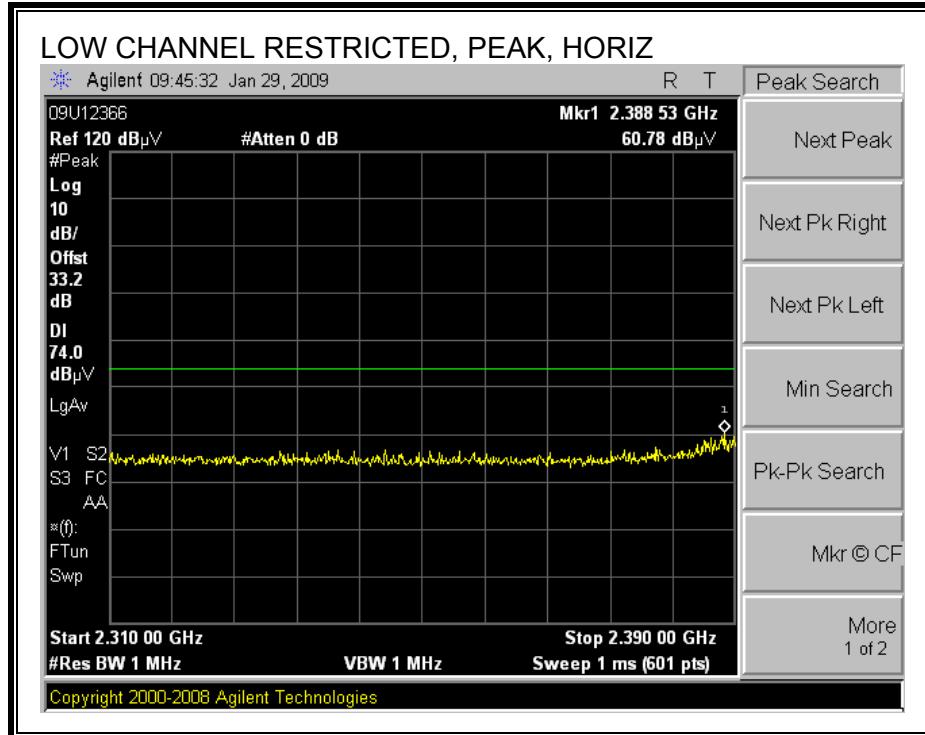
RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

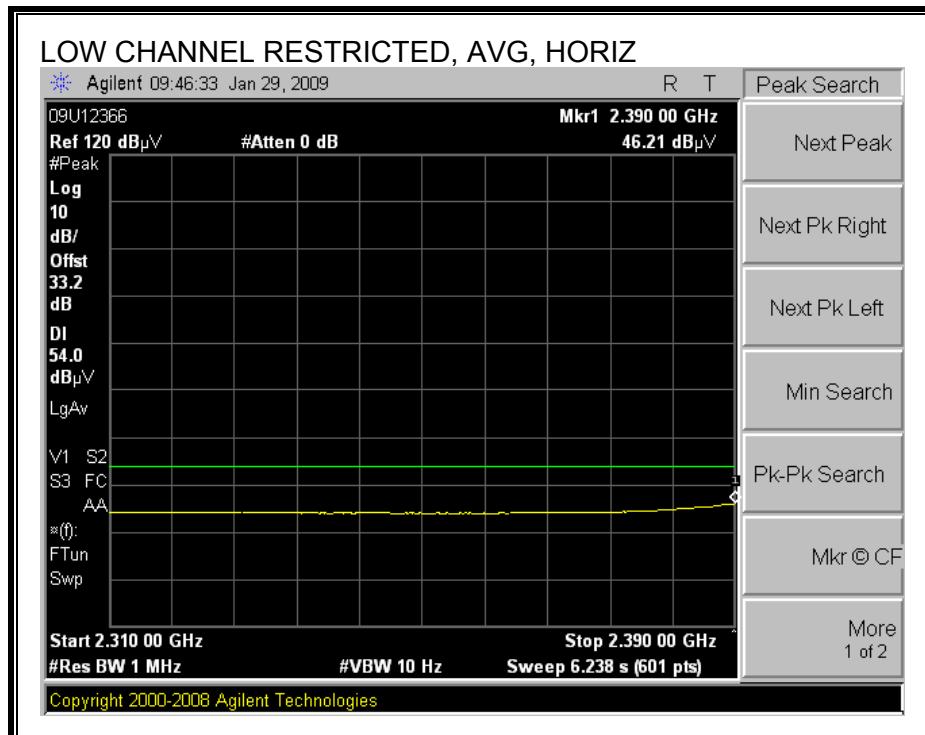




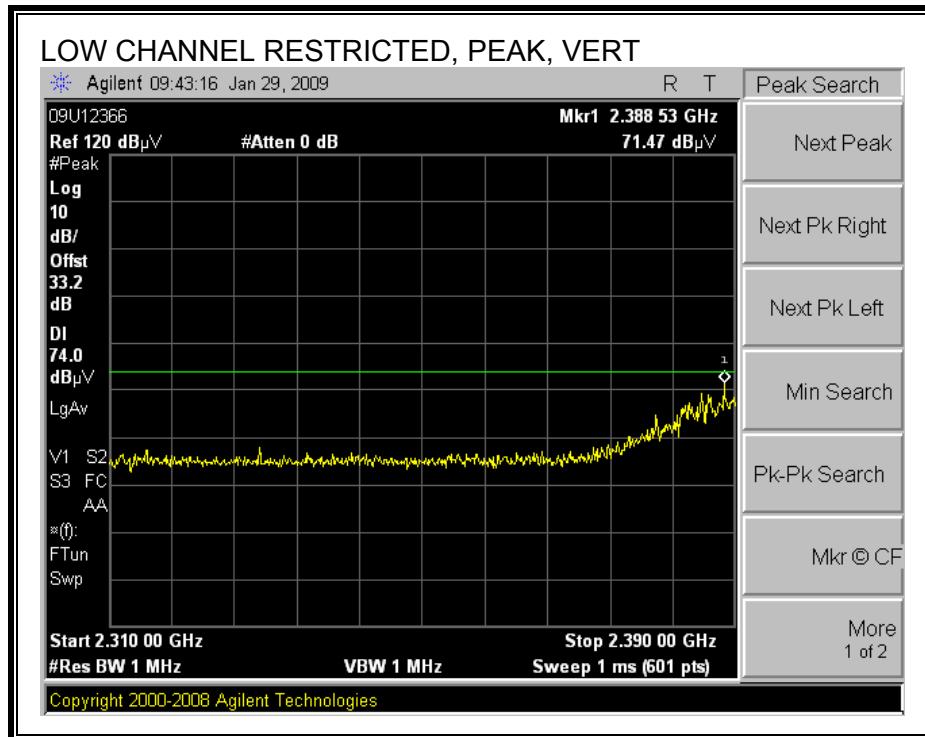
MODE 110 (HT 40):

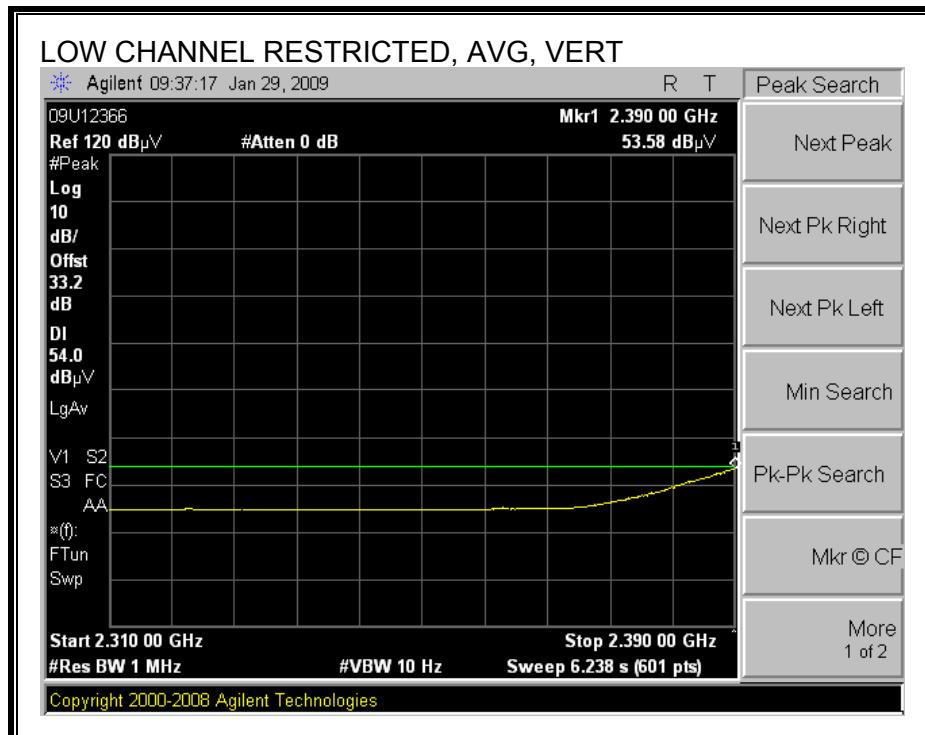
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



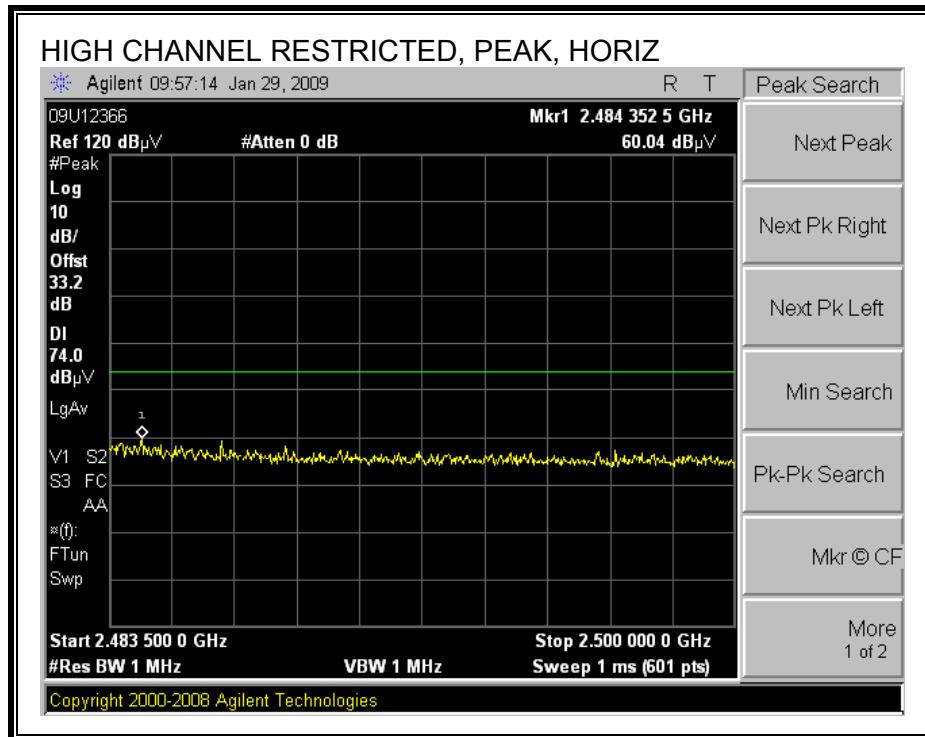


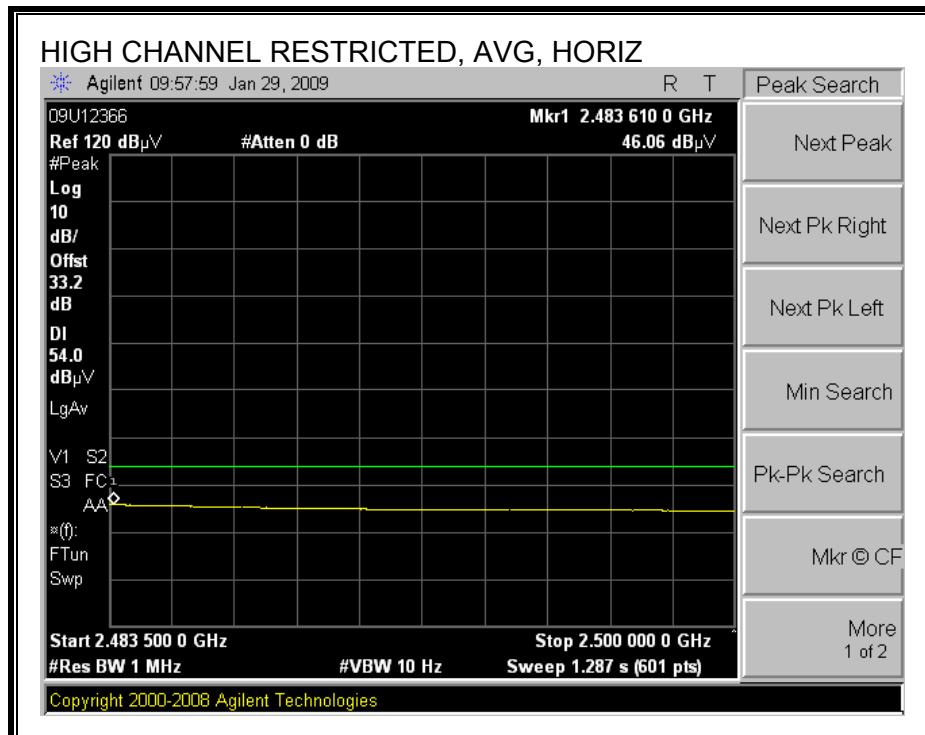
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



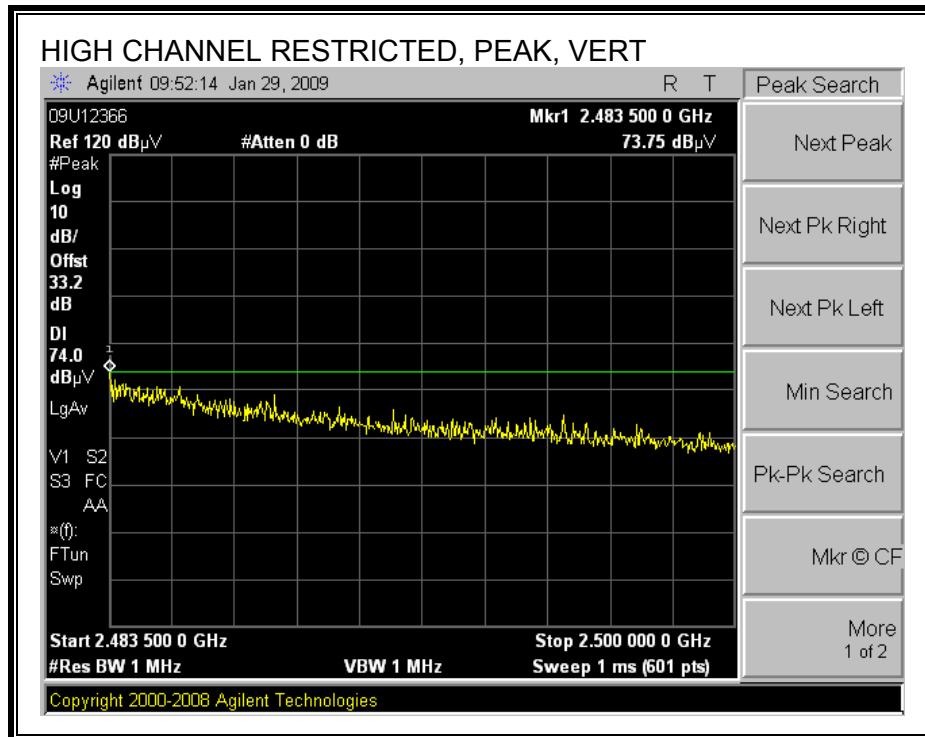


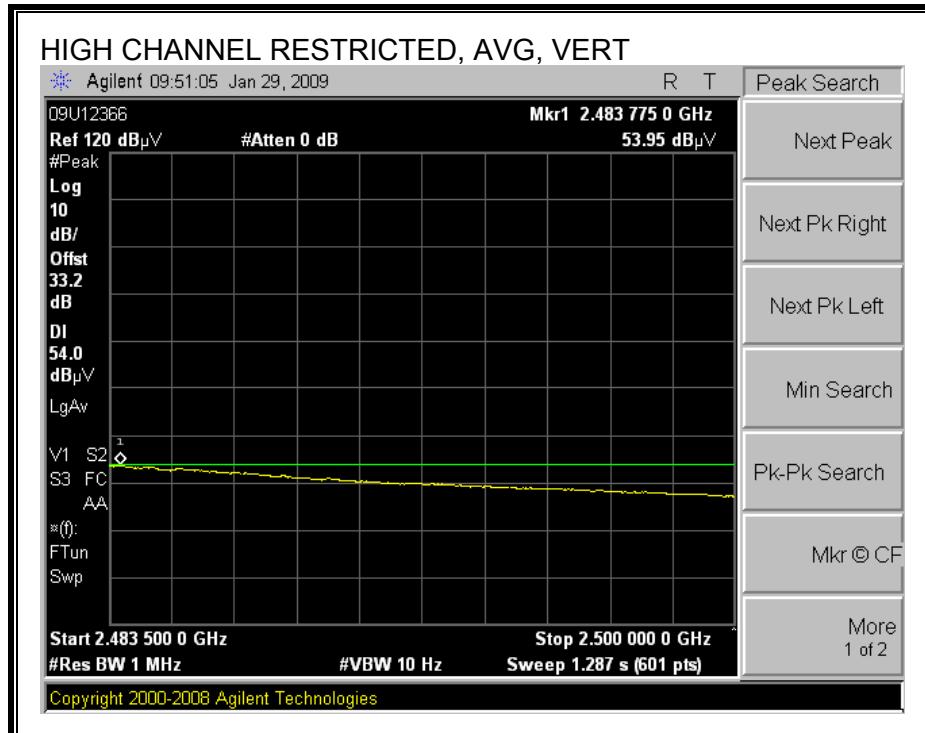
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)





HARMONICS AND SPURIOUS EMISSIONS (11g Worst-case)

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																	
Company:	Meraki Inc.																
Project #:	09U12366																
Date:	01/29/09																
Test Engineer:	Thanh Nguyen																
Configuration:	EUT with Dual V&H Patch 11dBi																
Mode:	Transmit Worst case g mode Art=13.5																
Test Equipment:																	
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit					
T73; S/N: 6717 @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			Peak Measurements RBW=VBW=1MHz		
3' cable 22807700			12' cable 22807600			20' cable 22807500						R_001			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)		
Low channel																	
4.824	3.0	40.4	27.9	33.7	5.8	-34.8	0.0	0.0	45.1	32.6	74	54	-28.9	-21.4	V		
7.236	3.0	41.2	28.7	36.2	7.2	-34.1	0.0	0.0	50.5	37.9	74	54	-23.5	-16.1	Noise floor		
4.824	3.0	41.4	28.0	33.7	5.8	-34.8	0.0	0.0	46.1	32.7	74	54	-27.9	-21.3	H		
7.236	3.0	40.3	28.6	36.2	7.2	-34.1	0.0	0.0	49.6	37.9	74	54	-24.4	-16.1	Noise floor		
Mid channel																	
4.874	3.0	40.9	27.9	33.8	5.8	-34.8	0.0	0.0	45.8	32.7	74	54	-28.2	-21.3	V		
7.311	3.0	41.2	28.4	36.2	7.3	-34.1	0.0	0.0	50.6	37.8	74	54	-23.4	-16.2	Noise floor		
4.874	3.0	41.3	28.0	33.8	5.8	-34.8	0.0	0.0	46.1	32.8	74	54	-27.9	-21.2	H		
7.311	3.0	41.3	28.4	36.2	7.3	-34.1	0.0	0.0	50.7	37.8	74	54	-23.3	-16.2	Noise floor		
High channel																	
4.924	3.0	40.6	28.1	33.9	5.9	-34.8	0.0	0.0	45.5	33.1	74	54	-28.5	-20.9	V		
7.386	3.0	42.2	28.9	36.3	7.3	-34.1	0.0	0.0	51.7	38.4	74	54	-22.3	-15.6	Noise floor		
4.924	3.0	40.2	27.9	33.9	5.9	-34.8	0.0	0.0	45.1	32.9	74	54	-28.9	-21.1	H		
7.386	3.0	41.9	28.9	36.3	7.3	-34.1	0.0	0.0	51.4	38.4	74	54	-22.6	-15.6	Noise floor		
No other emissions were detected above noise floor.																	
Rev. 10.15.08																	
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													

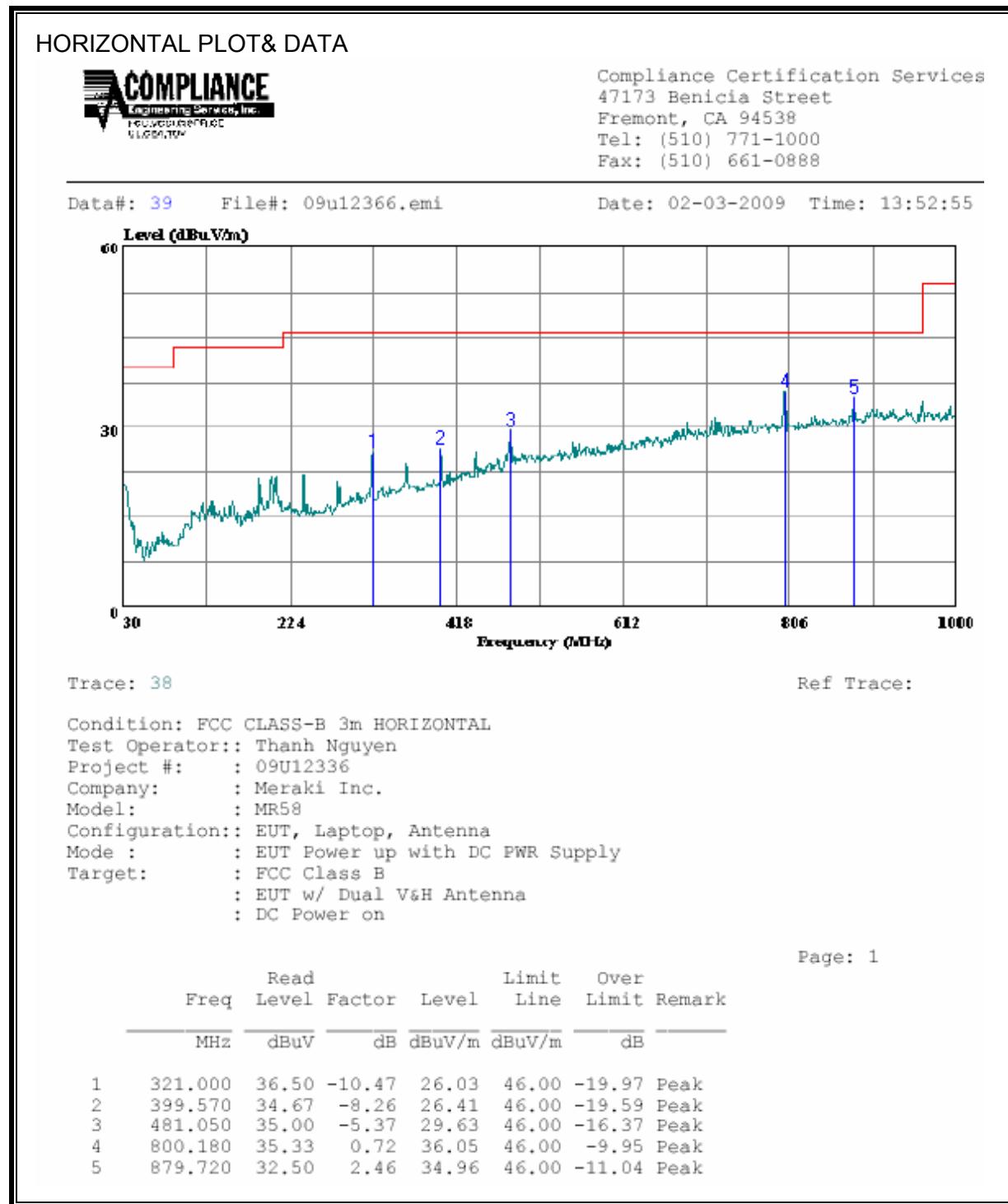
7.7.3. TX ABOVE 1 GHz FOR 802.11a MODE IN THE 5.8 GHz BAND MODE 100 (Worst-case): (Directional Antenna)

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																																																																																							
<p>Company: Meraki Inc. Project #: 09U12366 Date: 01/30/09 Test Engineer: Thanh Nguyen Configuration: EUT with dual flat panel antenna 11dBi Gain Mode: Transmit Worst case a mode.</p>																																																																																							
<p><u>Test Equipment:</u></p> <table border="1"><tr><td>Horn 1-18GHz</td><td>Pre-amplifier 1-26GHz</td><td>Pre-amplifier 26-40GHz</td><td colspan="4">Horn > 18GHz</td><td>Limit</td></tr><tr><td>T73; S/N: 6717 @3m</td><td>T34 HP 8449B</td><td></td><td colspan="4">T125; ARA 18-26GHz; S/N:1007</td><td>FCC 15.209</td></tr><tr><td colspan="18">Hi Frequency Cables</td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td>HPF</td><td>Reject Filter</td><td colspan="13"><p><u>Peak Measurements</u> RBW=VBW=1MHz</p><p><u>Average Measurements</u> RBW=1MHz, VBW=10Hz</p></td></tr><tr><td>3' cable 22807700</td><td>12' cable 22807600</td><td>20' cable 22807500</td><td></td><td>R_002</td><td colspan="13"></td></tr></table>																		Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit	T73; S/N: 6717 @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	<p><u>Peak Measurements</u> RBW=VBW=1MHz</p> <p><u>Average Measurements</u> RBW=1MHz, VBW=10Hz</p>													3' cable 22807700	12' cable 22807600	20' cable 22807500		R_002													
Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz				Limit																																																																																
T73; S/N: 6717 @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	<p><u>Peak Measurements</u> RBW=VBW=1MHz</p> <p><u>Average Measurements</u> RBW=1MHz, VBW=10Hz</p>																																																																																		
3' cable 22807700	12' cable 22807600	20' cable 22807500		R_002																																																																																			
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)																																																																								
LOW CHANNEL, 5745 MHz																																																																																							
11.490	3.0	40.8	27.5	38.6	9.5	-32.5	0.0	0.0	56.3	43.1	74	54	-17.7	-10.9	V, Noise Floor																																																																								
11.490	3.0	40.4	28.8	38.6	9.5	-32.5	0.0	0.0	55.9	44.3	74	54	-18.1	-9.7	H, Noise floor																																																																								
MID CHANNEL, 5785 MHz																																																																																							
11.570	3.0	40.2	27.9	38.7	9.5	-32.5	0.0	0.0	55.9	43.6	74	54	-18.1	-10.4	V, Noise Floor																																																																								
11.570	3.0	40.1	27.9	38.7	9.5	-32.5	0.0	0.0	55.8	43.6	74	54	-18.2	-10.4	H, Noise floor																																																																								
HI CHANNEL, 5825 MHz																																																																																							
11.650	3.0	41.4	28.3	38.7	9.6	-32.5	0.0	0.0	57.1	44.0	74	54	-16.9	-10.0	V, Noise Floor																																																																								
11.650	3.0	41.0	28.3	38.7	9.6	-32.5	0.0	0.0	56.8	44.1	74	54	-17.2	-9.9	H, Noise floor																																																																								
No other emissions were detected above noise floor.																																																																																							
Rev. 10.15.08																																																																																							
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																																																																																	

7.7.4. TX BELOW 1 GHz (WORST-CASE CONFIGURATION)

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



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

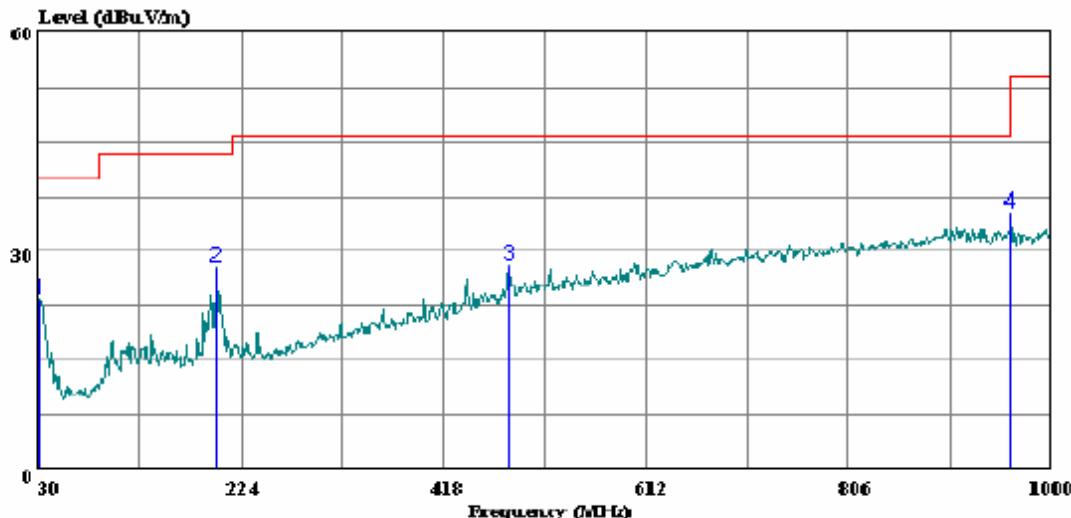
VERTICAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 37 File#: 09u12366.emi

Date: 02-03-2009 Time: 13:49:11



Condition: FCC CLASS-B 3m VERTICAL
Test Operator::: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration::: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/ Dual V&H Antenna
: DC Power on

Page: 1

	Read		Limit	Over		
Freq	Level	Factor	Level	Line	Limit	Remark
MHz	dBuV		dB	dBuV/m	dBuV/m	dB
1	30.970	30.70	-7.41	23.29	40.00	-16.71 Peak
2	199.750	40.50	-12.77	27.73	43.50	-15.77 Peak
3	481.050	33.50	-5.37	28.13	46.00	-17.87 Peak
4	961.200	31.83	3.39	35.22	54.00	-18.78 Peak

7.8. OMNI-DIRECTIONAL LOW GAIN ANTENNA

7.8.1. TX ABOVE 1 GHz FOR 802.11a IN THE 5.8GHz BAND

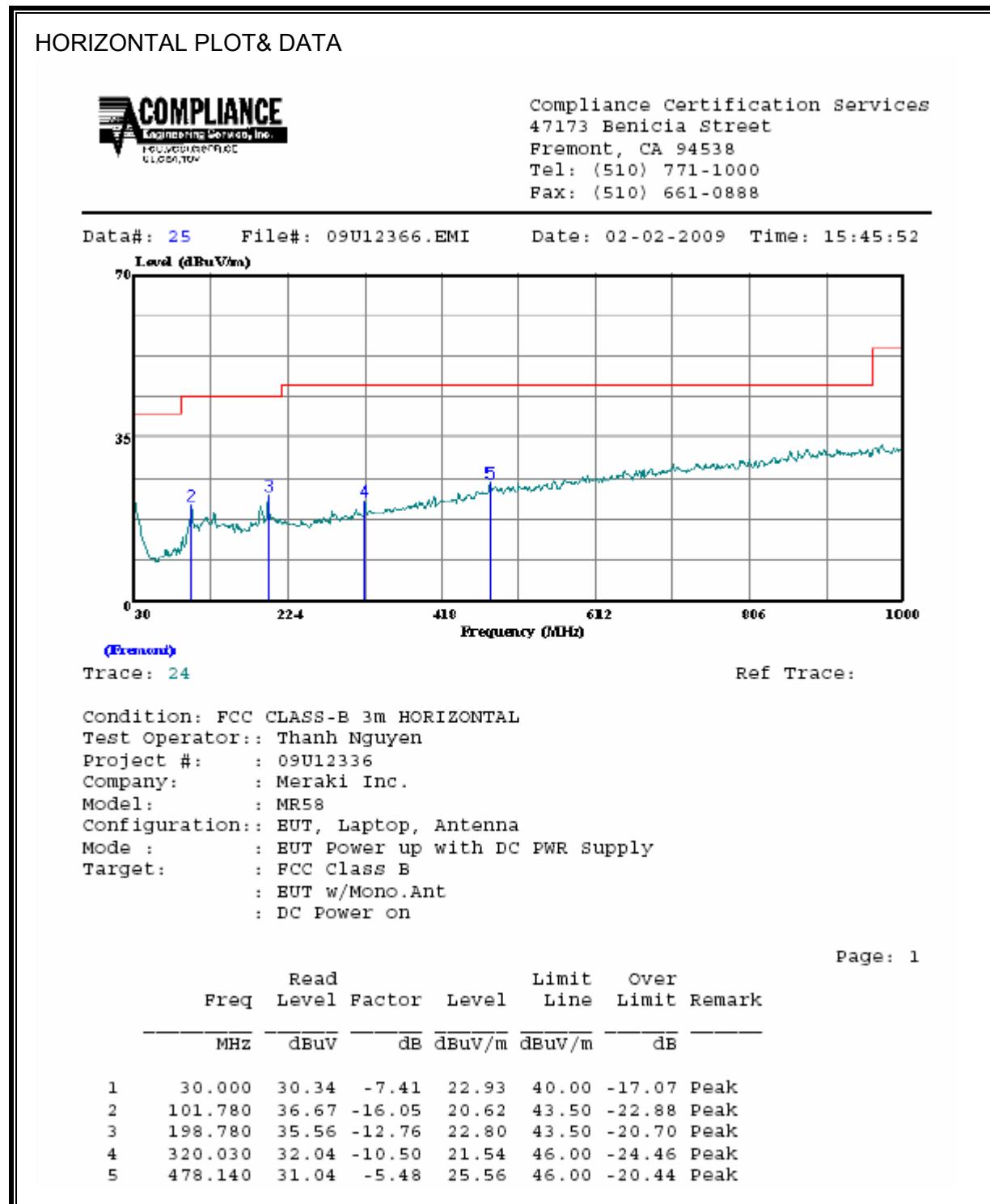
MODE 100 (Worst-case):

HARMONICS AND SPURIOUS EMISSIONS

High Frequency Measurement Compliance Certification Services, Fremont 5m Chamber																	
Company: Meraki Inc. Project #: 09U12366 Date: 01/30/09 Test Engineer: Thanh Nguyen Configuration: EUT with 4dBi gain Omni-Directional Antenna. Mode: Transmit Worst case a mode Att=14.5																	
Test Equipment:																	
Horn 1-18GHz			Pre-amplifier 1-26GHz			Pre-amplifier 26-40GHz			Horn > 18GHz			Limit					
T73; S/N: 6717 @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				Peak Measurements	RBW=VBW=1MHz		
3' cable 22807700	12' cable 22807600	20' cable 22807500								R_001				Average Measurements	RBW=1MHz; VBW=10Hz		
f	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)		
GHz																	
LOW CHANNEL, 5745 MHz																	
11.490	3.0	40.9	27.7	38.6	9.5	-32.5	0.0	0.0	56.5	43.3	74	54	-17.5	-10.7	V, Noise Floor		
11.490	3.0	40.5	29.5	38.6	9.5	-32.5	0.0	0.0	56.0	45.1	74	54	-18.0	-8.9	H, Noise floor		
MID CHANNEL, 5785 MHz																	
11.570	3.0	40.8	28.0	38.7	9.5	-32.5	0.0	0.0	56.5	43.6	74	54	-17.5	-10.4	V, Noise Floor		
11.570	3.0	39.8	28.0	38.7	9.5	-32.5	0.0	0.0	55.4	43.6	74	54	-18.6	-10.4	H, Noise floor		
HI CHANNEL, 5825 MHz																	
11.650	3.0	40.7	28.3	38.7	9.6	-32.5	0.0	0.0	56.5	44.0	74	54	-17.5	-10.0	V, Noise Floor		
11.650	3.0	41.0	28.3	38.7	9.6	-32.5	0.0	0.0	56.8	44.1	74	54	-17.2	-9.9	H, Noise floor		
No other emissions were detected above noise floor.																	
Rev. 10.15.08																	
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												

7.8.2. TX BELOW 1 GHz (WORST-CASE CONFIGURATION)

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



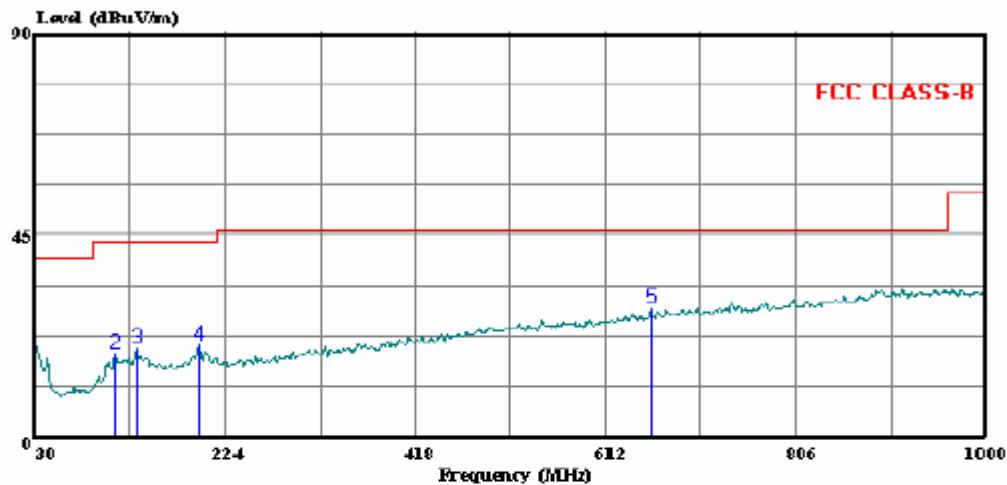
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, VERTICAL)

VERTICAL PLOT& DATA



Compliance Certification Services
47173 Benicia Street
Fremont, CA 94538
Tel: (510) 771-1000
Fax: (510) 661-0888

Data#: 27 File#: 09U12366.EMI Date: 02-02-2009 Time: 15:50:40



(Fremont)

Trace: 26

Ref Trace:

Condition: FCC CLASS-B 3m VERTICAL
Test Operator:: Thanh Nguyen
Project #: : 09U12336
Company: : Meraki Inc.
Model: : MR58
Configuration:: EUT, Laptop, Antenna
Mode : : EUT Power up with DC PWR Supply
Target: : FCC Class B
: EUT w/Mono.Ant
: DC Power on

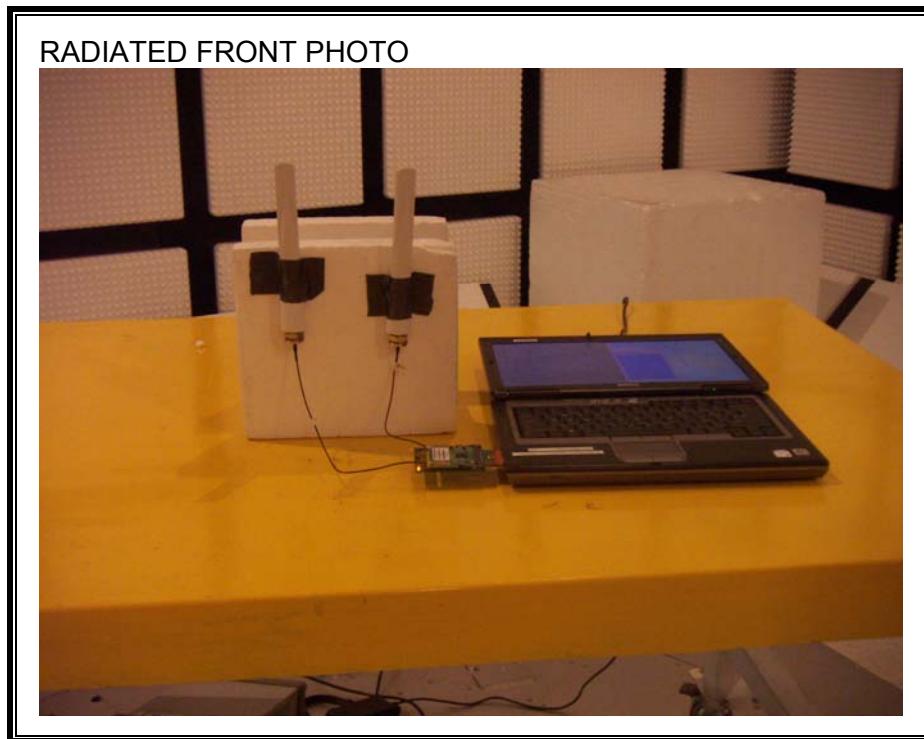
Page: 1

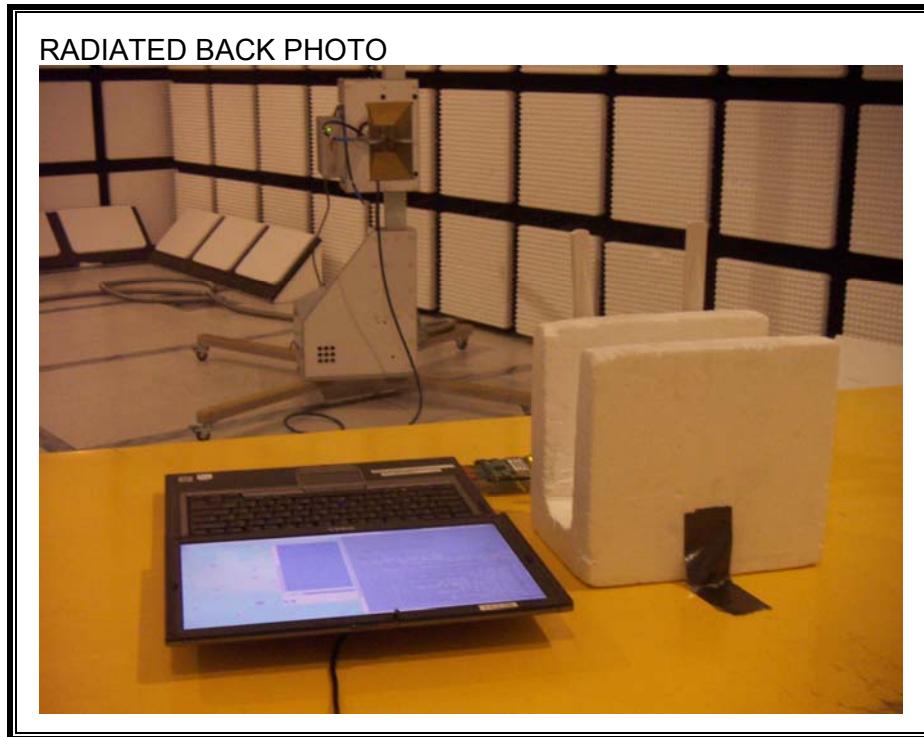
Freq	Read		Limit	Over	Remark
	Level	Factor			
MHz	dBuV	dB	dBuV/m	dBuV/m	dB
1	30.000	28.72	-7.41	21.31	40.00 -18.69 Peak
2	111.480	32.81	-14.13	18.68	43.50 -24.82 Peak
3	133.790	33.10	-13.31	19.79	43.50 -23.71 Peak
4	196.840	33.35	-12.71	20.64	43.50 -22.86 Peak
5	657.590	30.19	-1.48	28.71	46.00 -17.29 Peak

8. SETUP PHOTOS

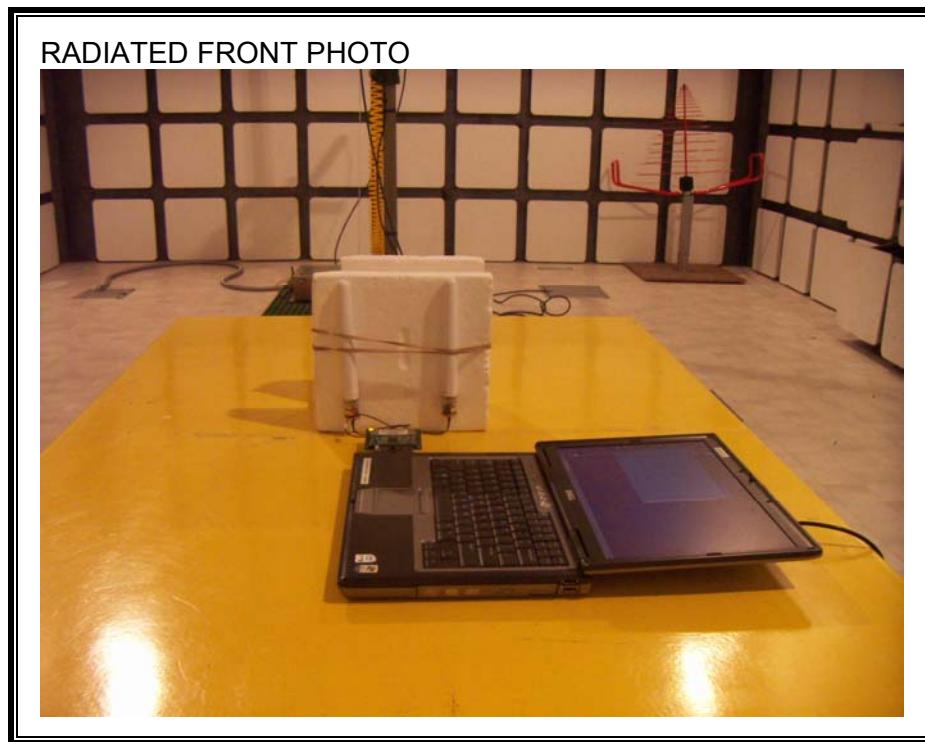
8.1. RADIATED RF MEASUREMENT SETUP

8.1.1. DUAL BAND OMNI-DIRECTIONAL ANTENNA

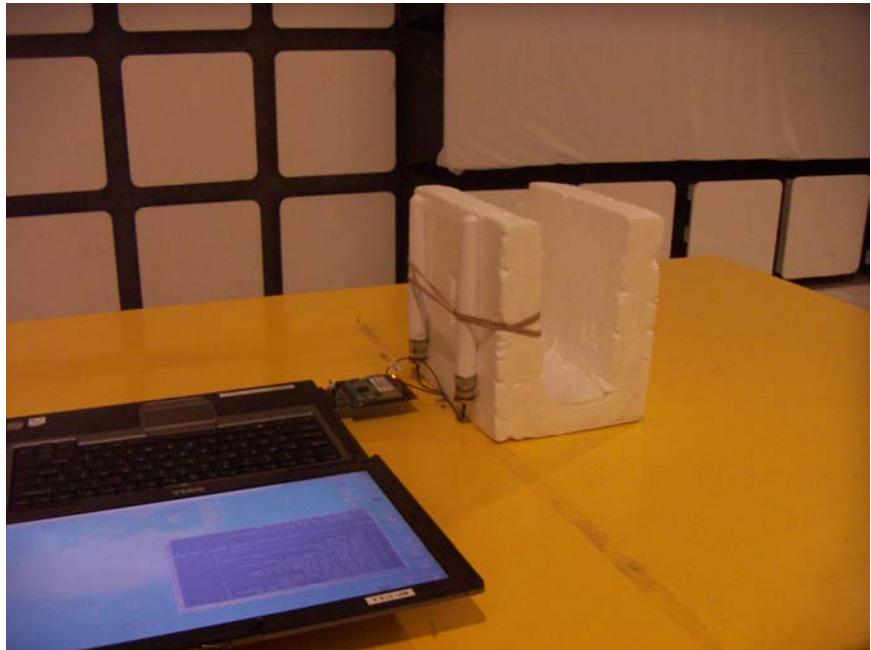




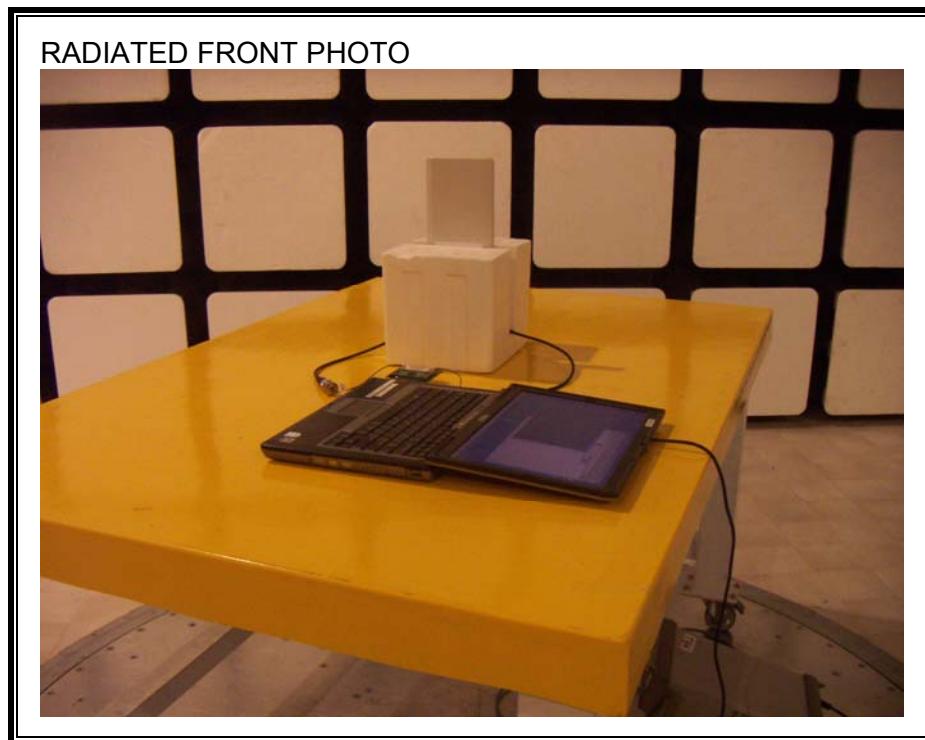
8.1.2. MONOPOLE OMNI 2.4GHz ANTENNA



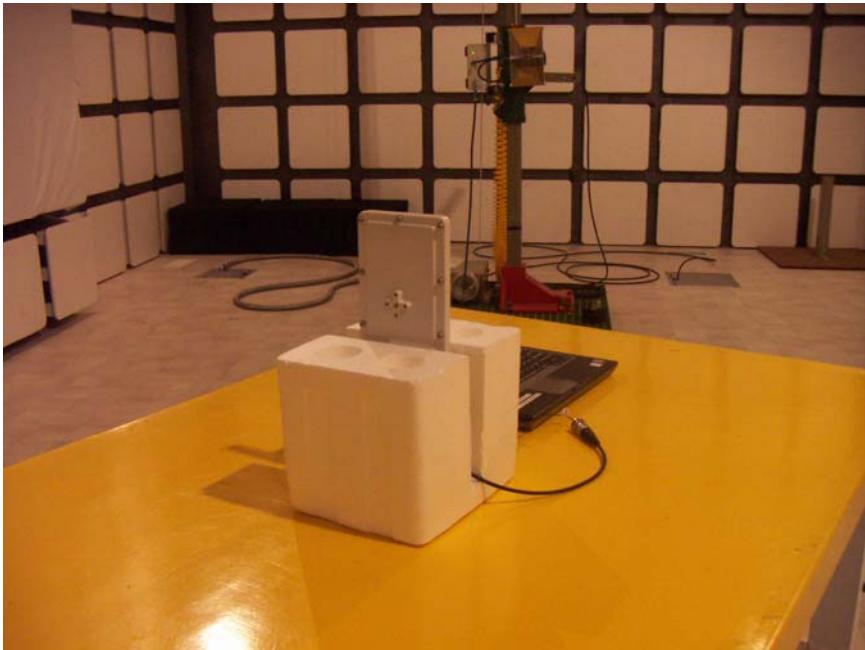
RADIATED BACK PHOTO



8.1.3. DIRECTIONAL ANTENNA (11.5dBi)

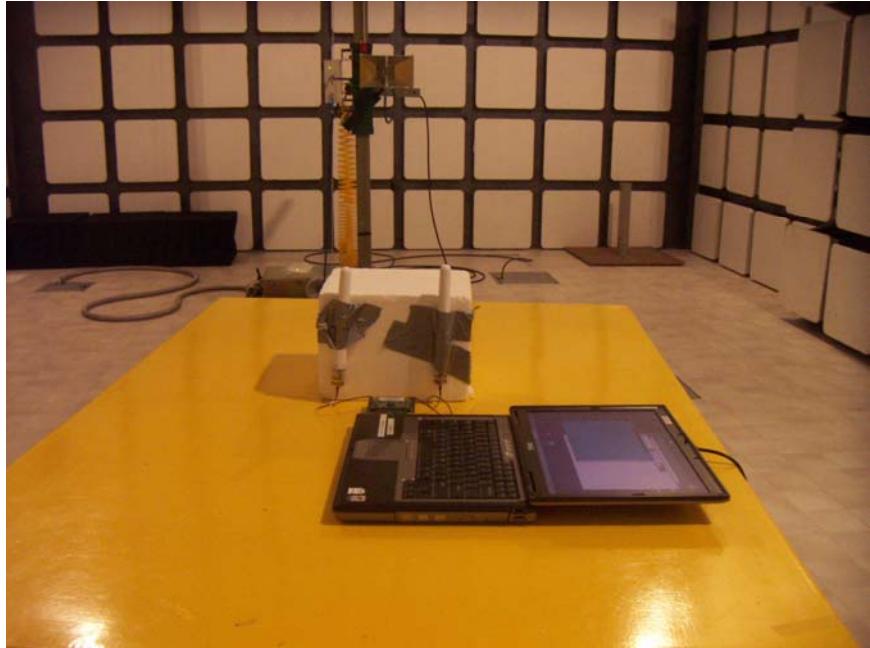


RADIATED BACK PHOTO



8.1.4. OMNI DIRECTIONAL ANTENNA (4dBi)

RADIATED FRONT PHOTO

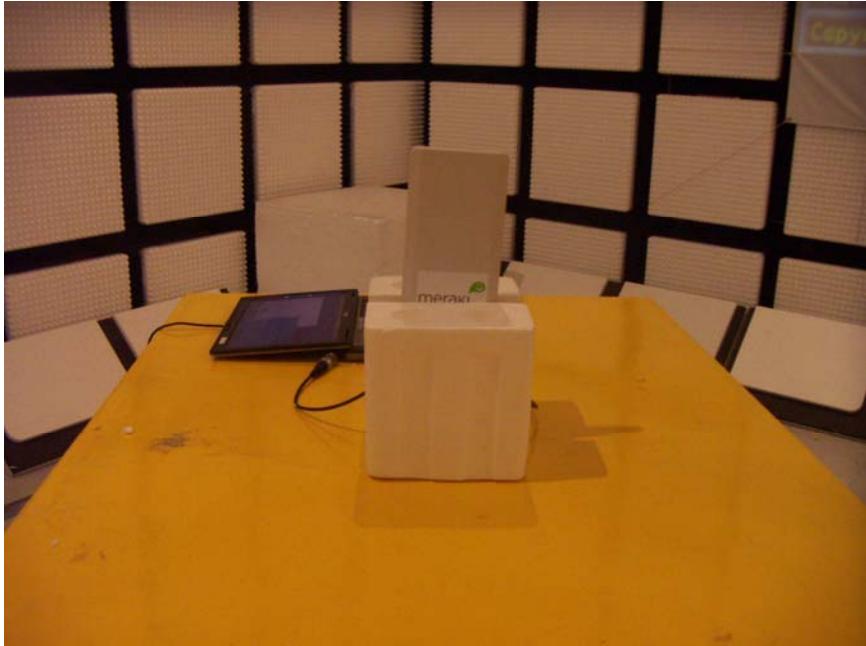


RADIATED BACK PHOTO

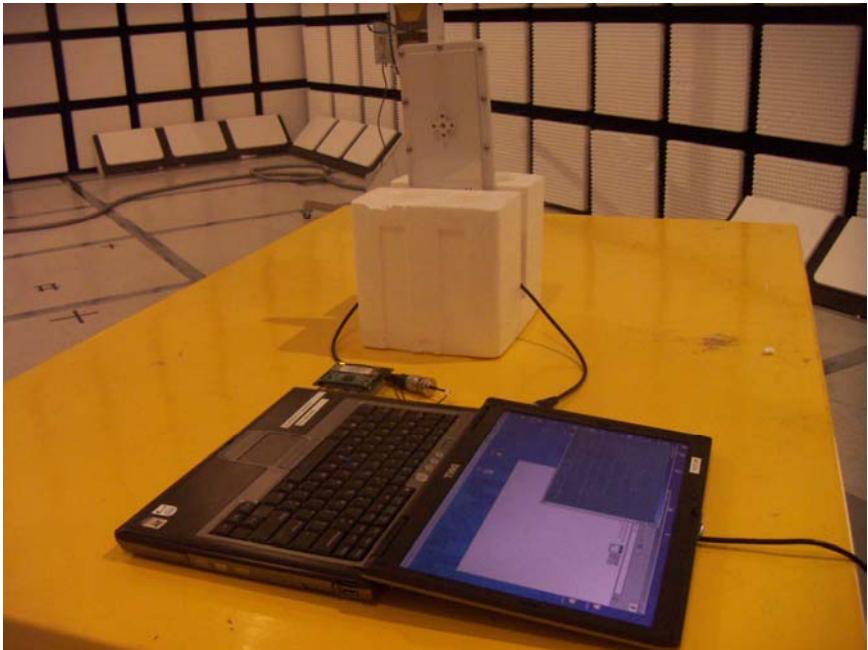


8.1.5. DIRECTIONAL ANTENNA (14.5dBi)

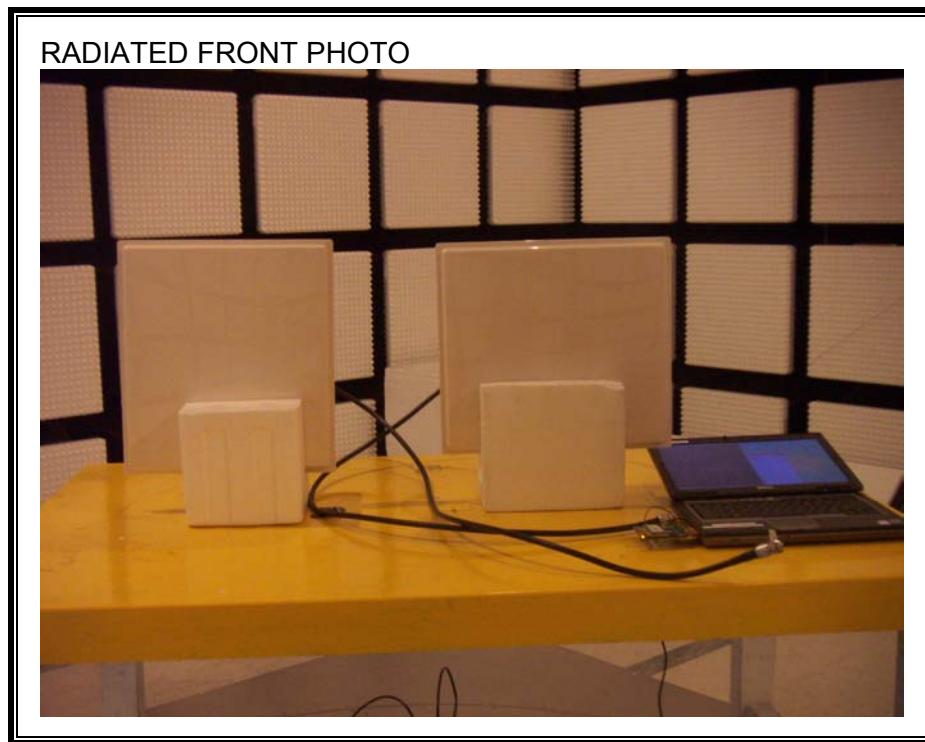
RADIATED FRONT PHOTO



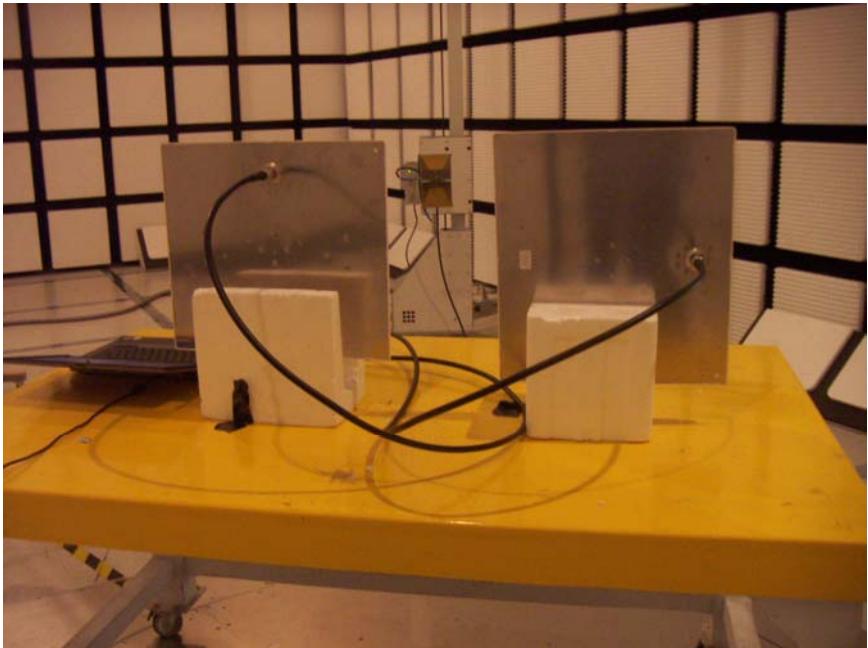
RADIATED BACK PHOTO



8.1.6. FLAT PANEL ANTENNA 19dBi

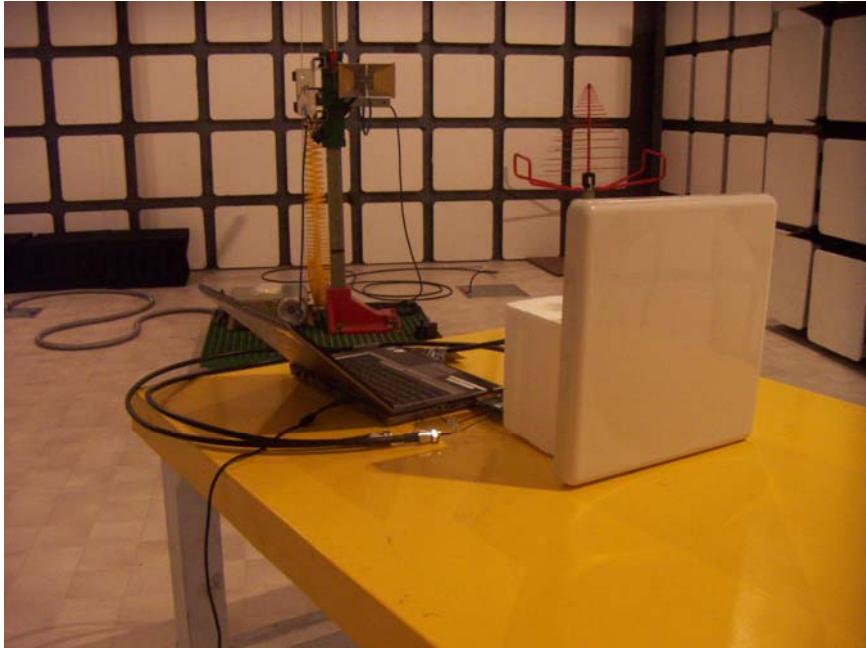


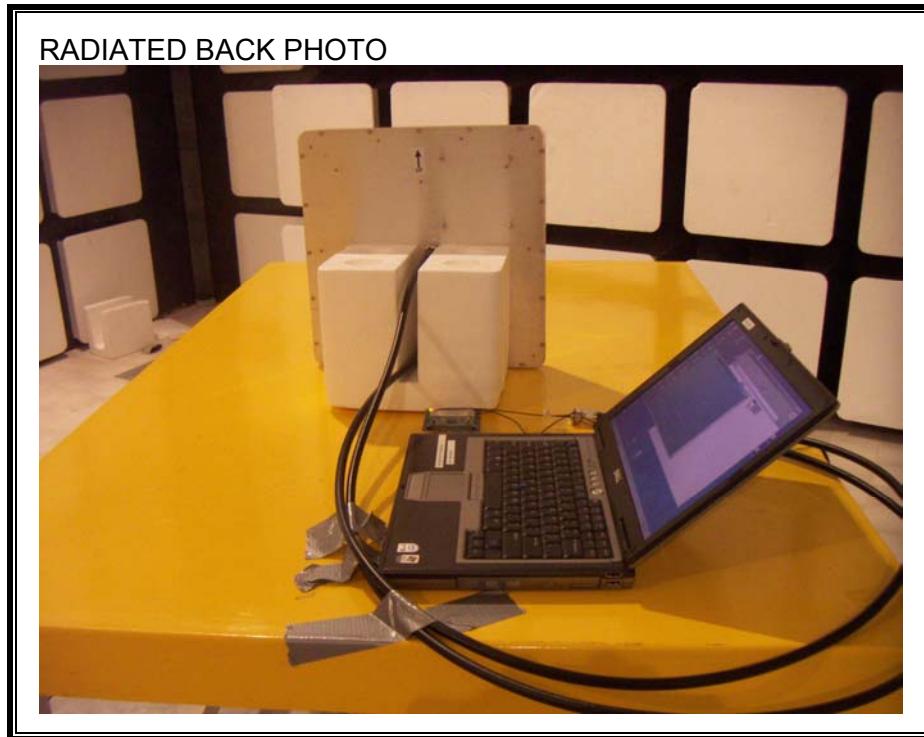
RADIATED BACK PHOTO



8.1.7. FLAT PANEL ANTENNA 23dBi

RADIATED FRONT PHOTO

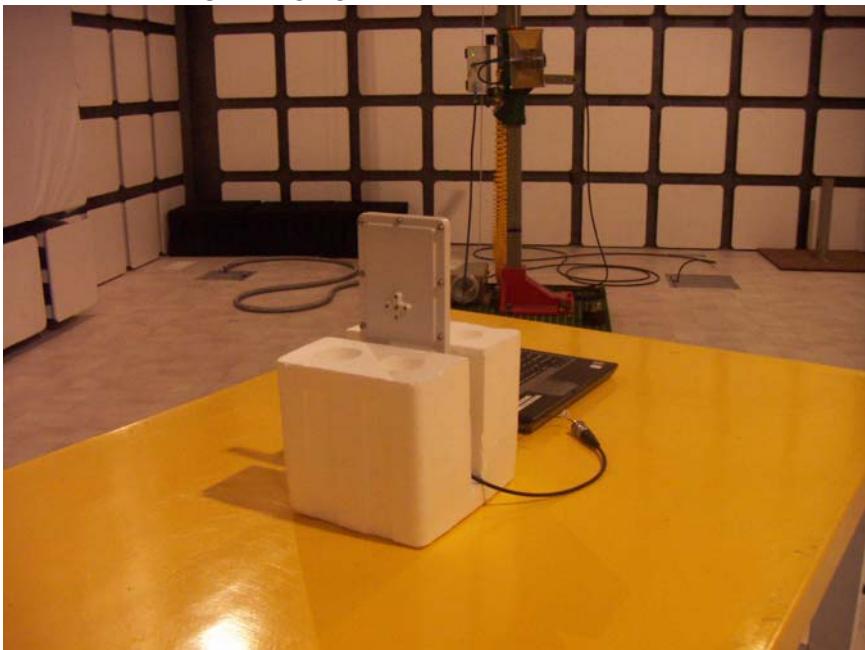




DIRECTIONAL ANTENNA FOR 5GHz



RADIATED BACK PHOTO



END OF REPORT