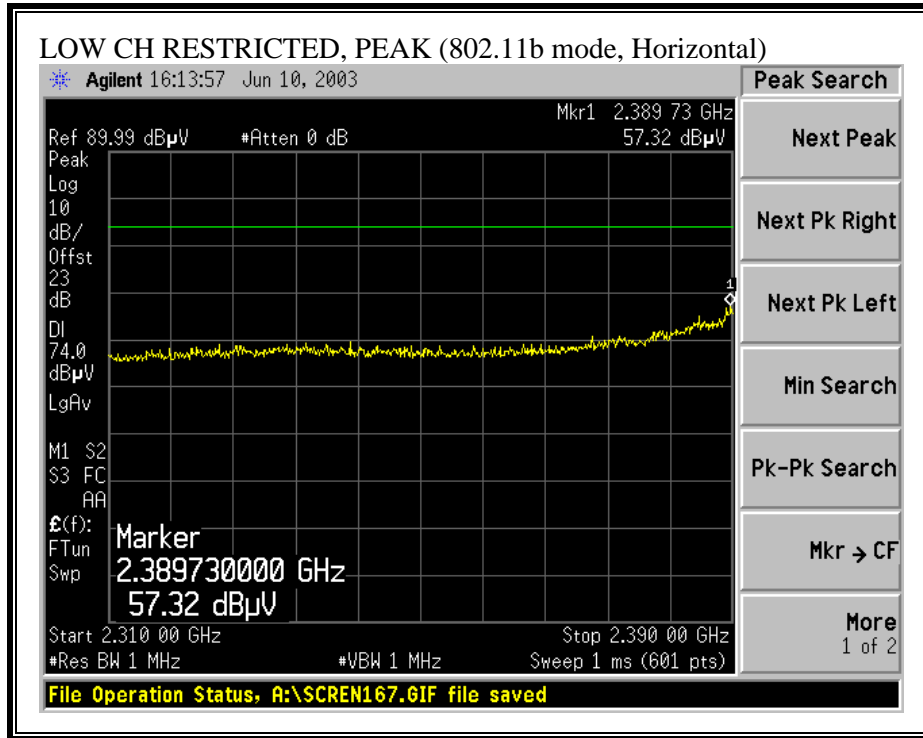
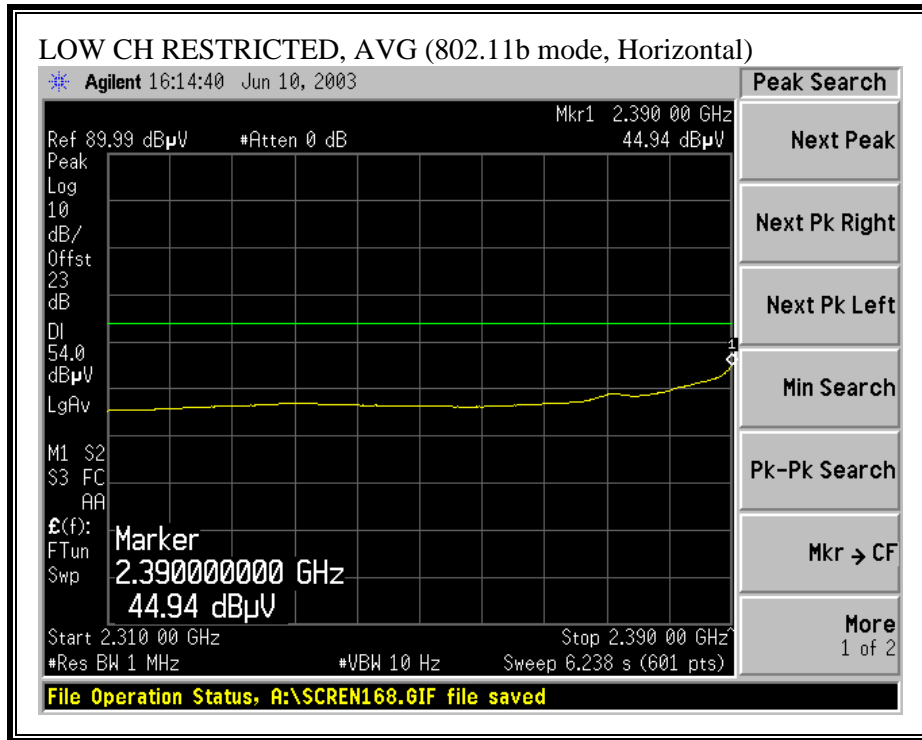
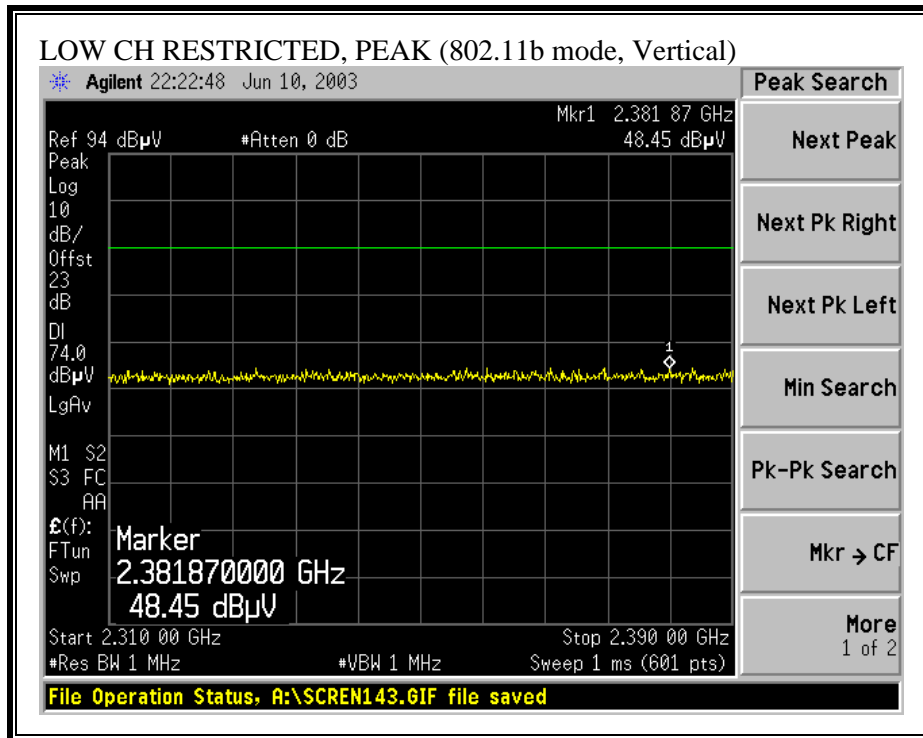


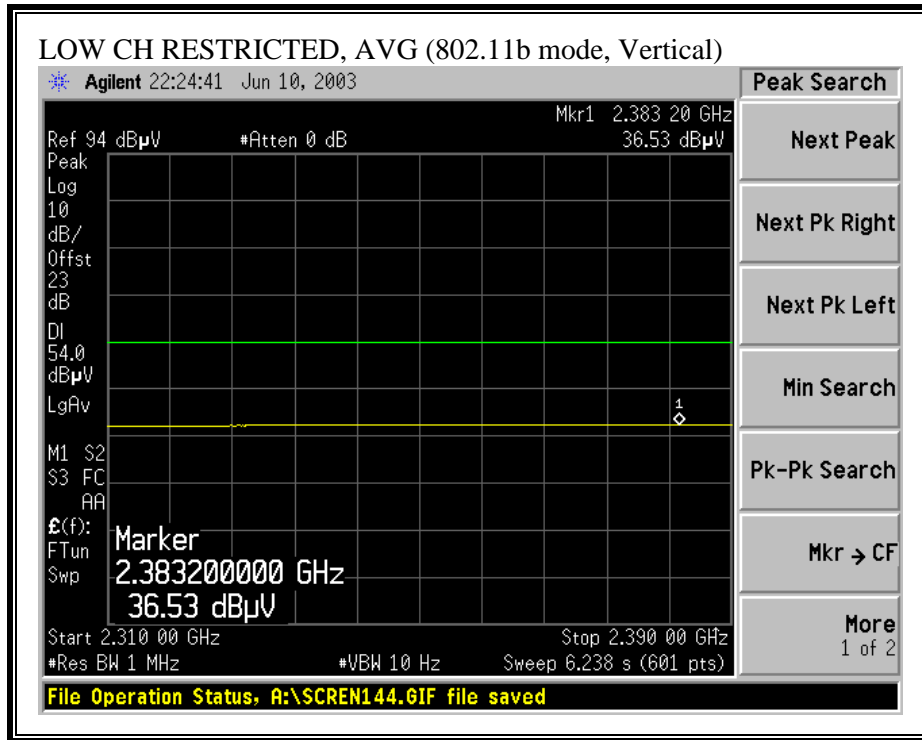
**RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, HORIZONTAL)**



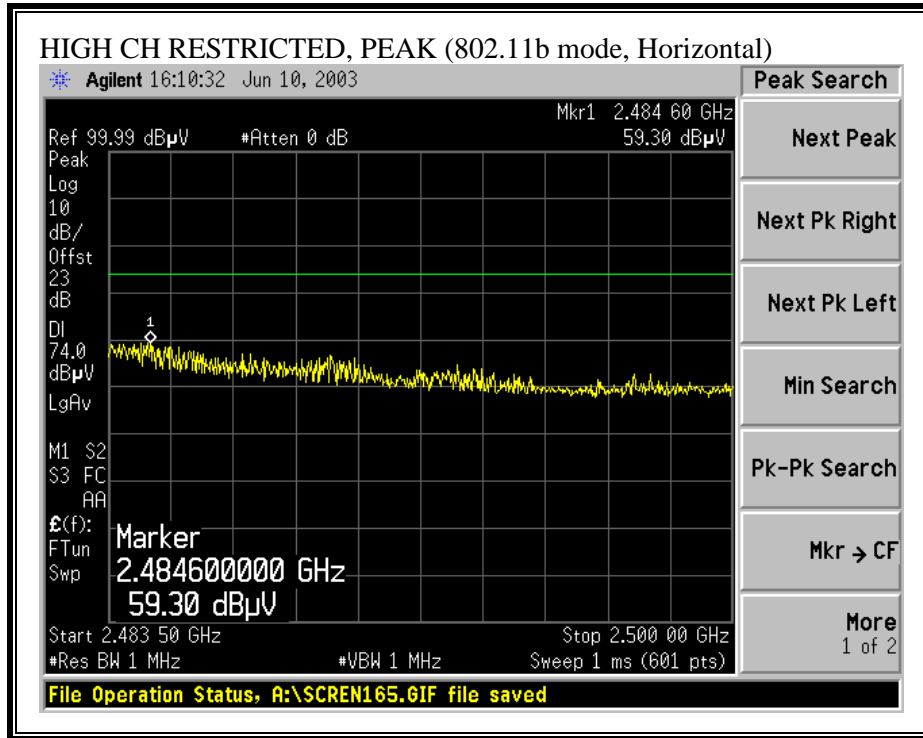


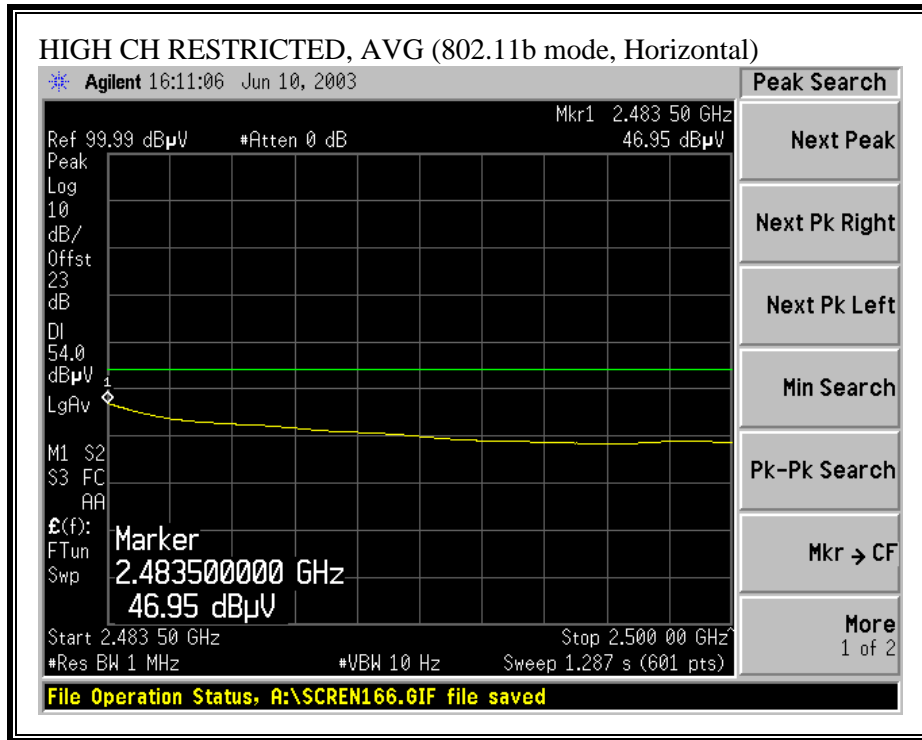
**RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)**



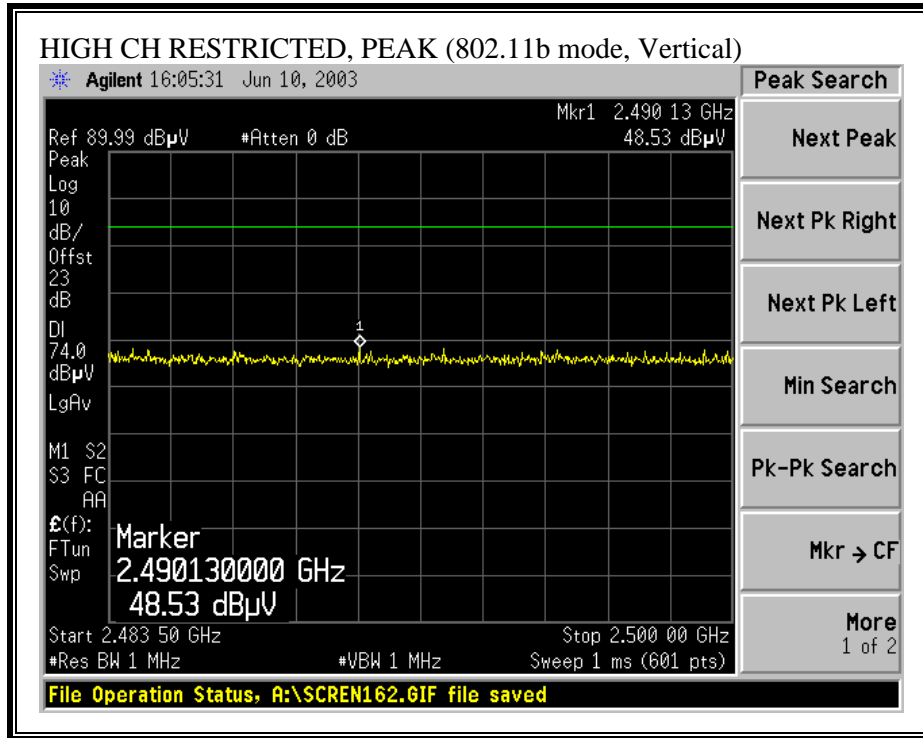


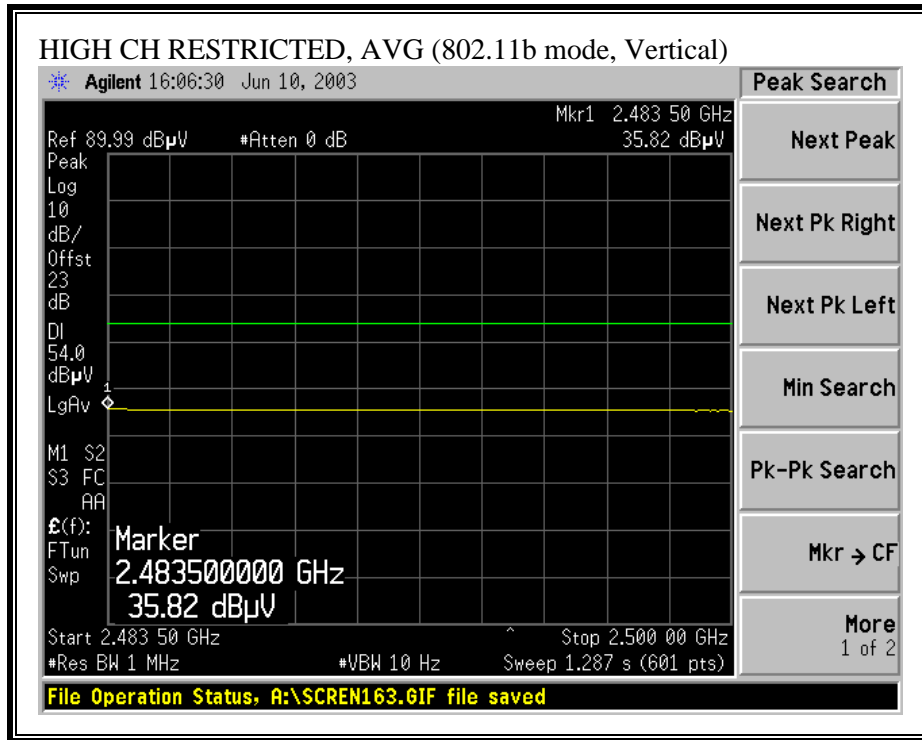
**RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)**





**RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, VERTICAL)**







**HARMONICS AND SPURIOUS EMISSIONS (b MODE)**

05/10/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Yan Zheng  
 Project #:   
 Company: Cisco  
 EUT Descrip.: AIR-MP31G-A-K9  
 EUT M/N: SMT07210013  
 Test Target:   
 Mode Oper: Transmit, b Mode, with 13.5dBi Patch Anzy Antenna

Test Equipment:

EMCO Horn 1.18GHz T60; S/N: 2238 @3m	Pre-amplifier 1.26GHz T86 Miteq 924341	Spectrum Analyzer Agilent E4446A Analyzer	Horn > 18GHz T117; ARA 18-26GHz; S/N:1013	Limit FCC 15.205
-----------------------------------------	-------------------------------------------	----------------------------------------------	----------------------------------------------	---------------------

H Frequency Cables:  
 (2 ft)  (2 ~ 3 ft)  (4 ~ 6 ft)  (12 ft)

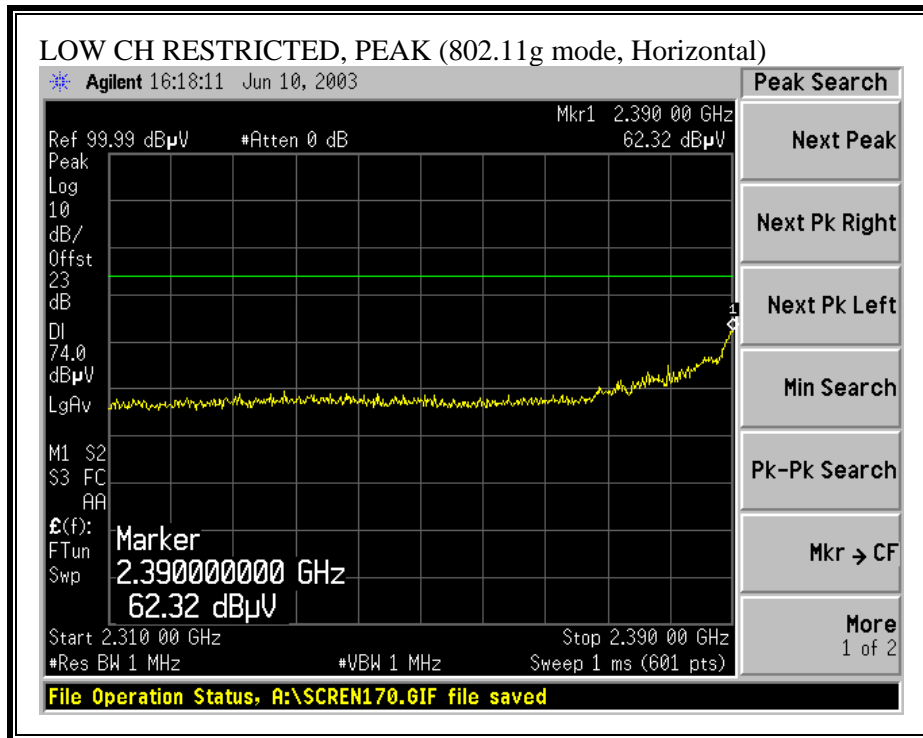
Peak Measurements: 1 MHz Resolution Bandwidth, 1 MHz Video Bandwidth  
 Average Measurements: 1 MHz Resolution Bandwidth, 10Hz Video Bandwidth

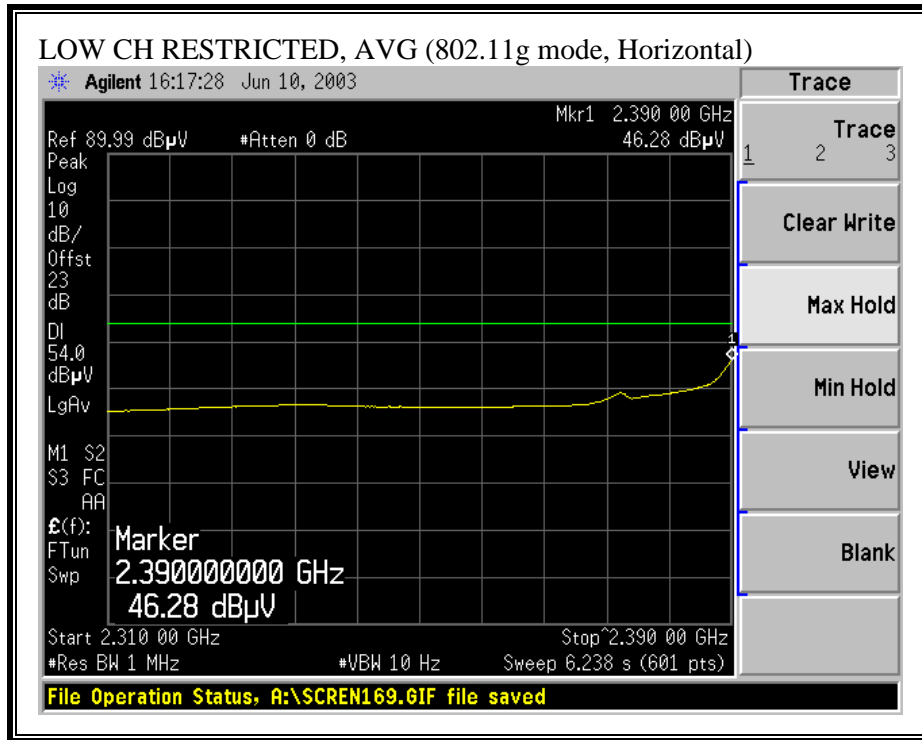
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
<b>Spurious:</b>															
<b>Harmonics:</b>															
<b>Channel 1 (2412MHz)</b>															
4.824	9.8	53.6	47.2	33.1	4.4	-45.6	0.0	1.0	46.5	40.1	74.0	54.0	-27.5	-13.9	H
4.824	9.8	61.8	60.8	33.1	4.4	-45.6	0.0	1.0	54.7	53.7	74.0	54.0	-19.3	-0.3	V
<b>Channel 6 (2437MHz)</b>															
4.874	9.8	60.9	59.4	33.1	4.4	-45.6	0.0	1.0	53.8	52.3	74.0	54.0	-20.2	-1.7	V
7.311	9.8	48.5	36.6	36.2	5.7	-46.6	0.0	1.0	44.8	32.9	74.0	54.0	-29.2	-21.1	V
7.311	9.8	48.0	36.6	36.2	5.7	-46.6	0.0	1.0	44.3	32.9	74.0	54.0	-29.7	-21.1	H
4.874	9.8	48.9	43.5	33.1	4.4	-45.6	0.0	1.0	41.8	36.4	74.0	54.0	-32.2	-17.6	H
<b>Channel 11 (2462MHz)</b>															
4.924	9.8	61.7	60.2	33.2	4.5	-45.7	0.0	1.0	54.6	53.1	74.0	54.0	-19.4	-0.9	V
7.386	9.8	48.5	36.6	36.3	5.7	-46.5	0.0	1.0	45.0	33.1	74.0	54.0	-29.0	-20.9	V
7.386	9.8	48.0	36.6	36.3	5.7	-46.5	0.0	1.0	44.5	33.1	74.0	54.0	-29.5	-20.9	H
4.924	9.8	51.8	47.2	33.2	4.5	-45.7	0.0	1.0	44.7	40.1	74.0	54.0	-29.3	-13.9	H

36.5

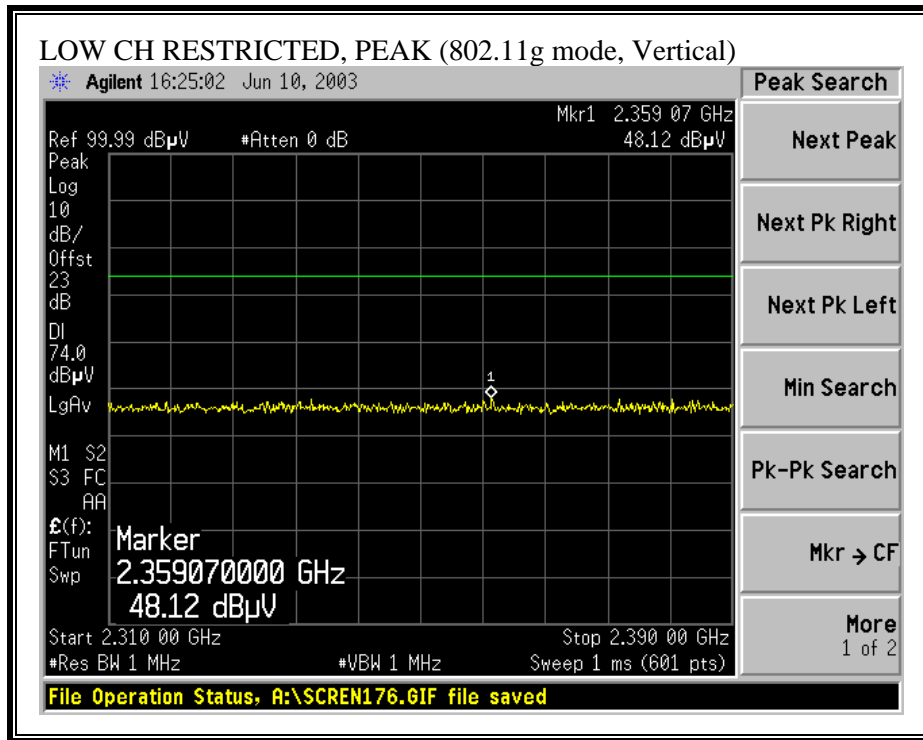
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

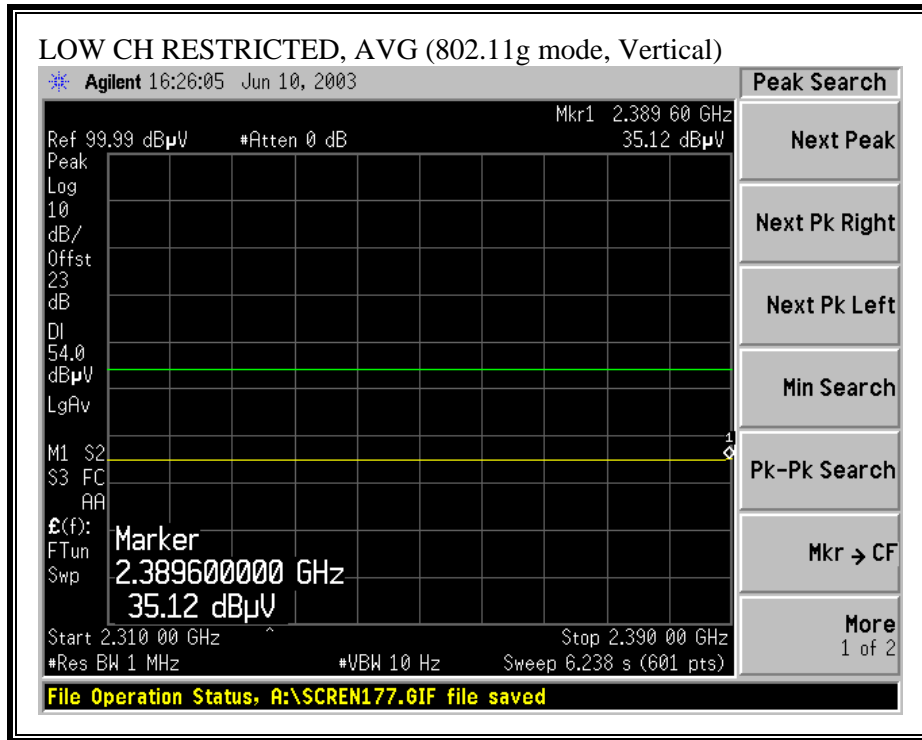
**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, HORIZONTAL)**



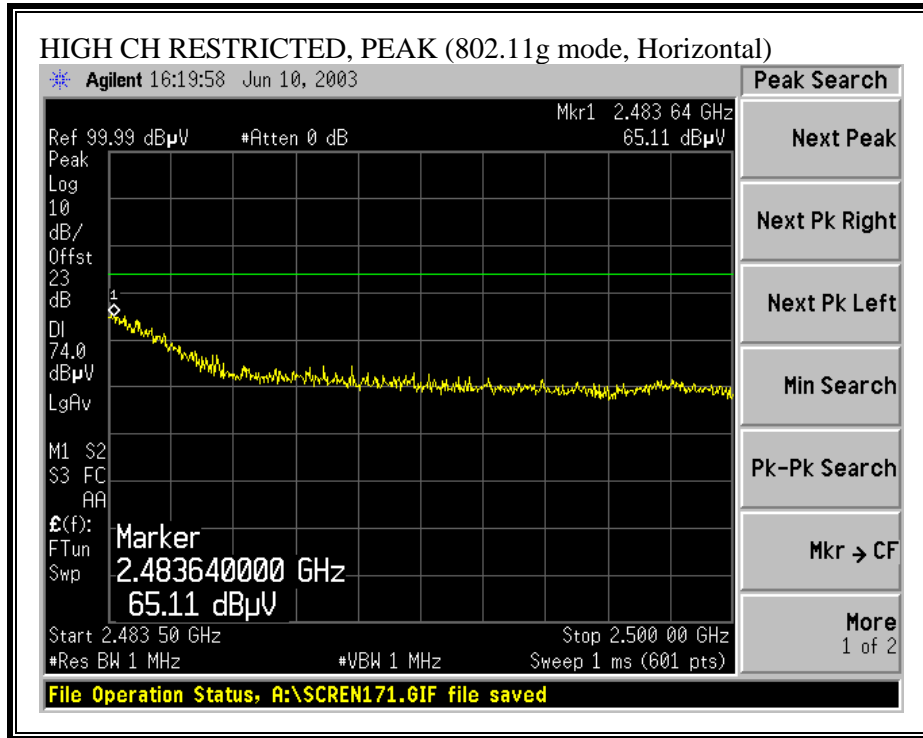


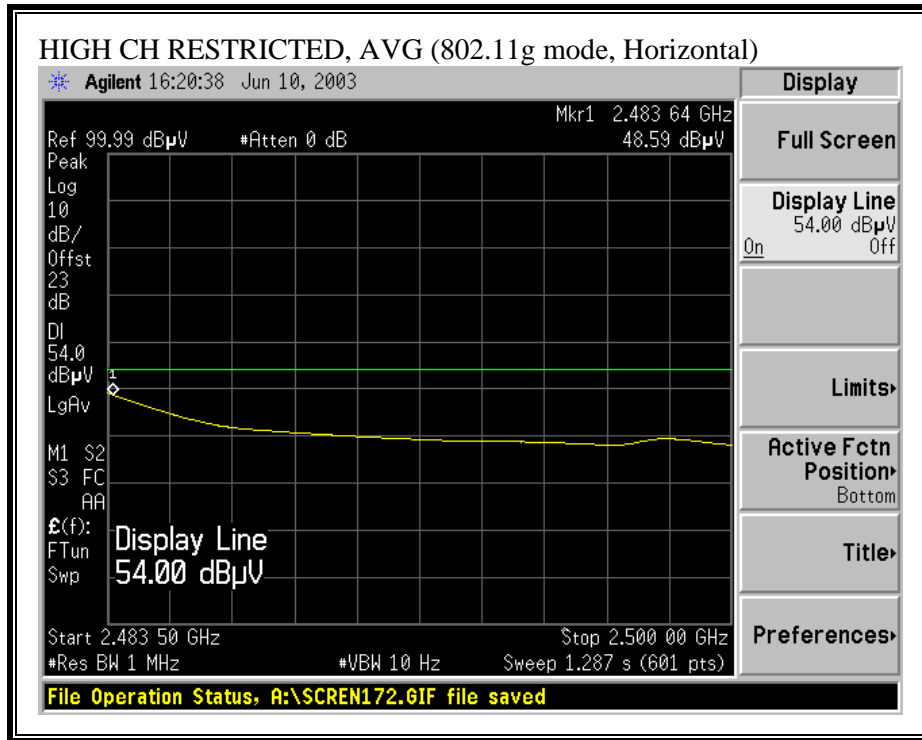
**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, VERTICAL)**



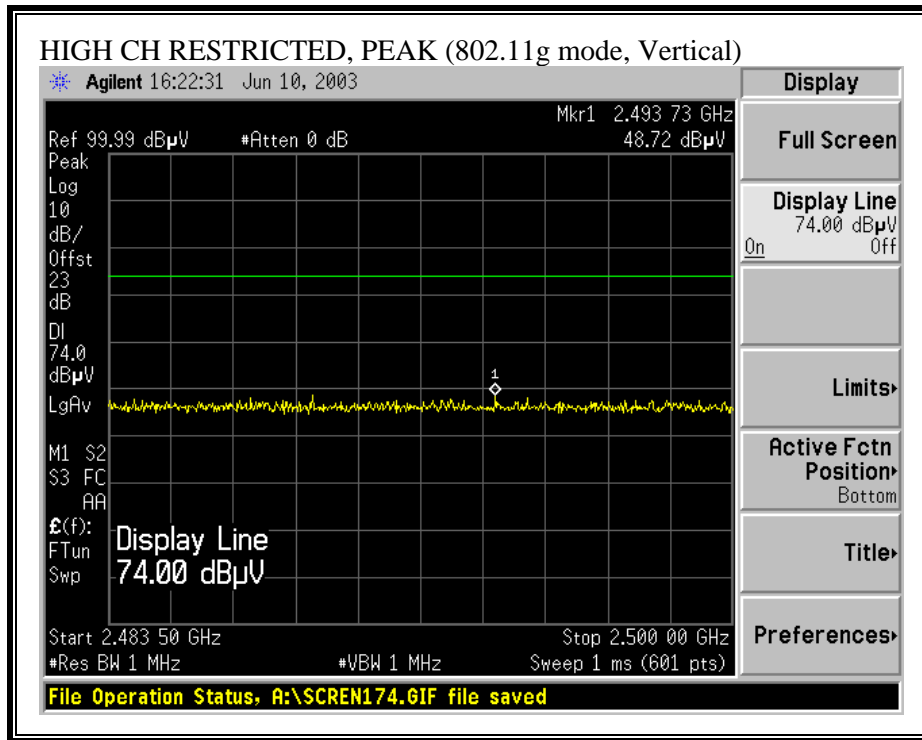


**RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, HORIZONTAL)**

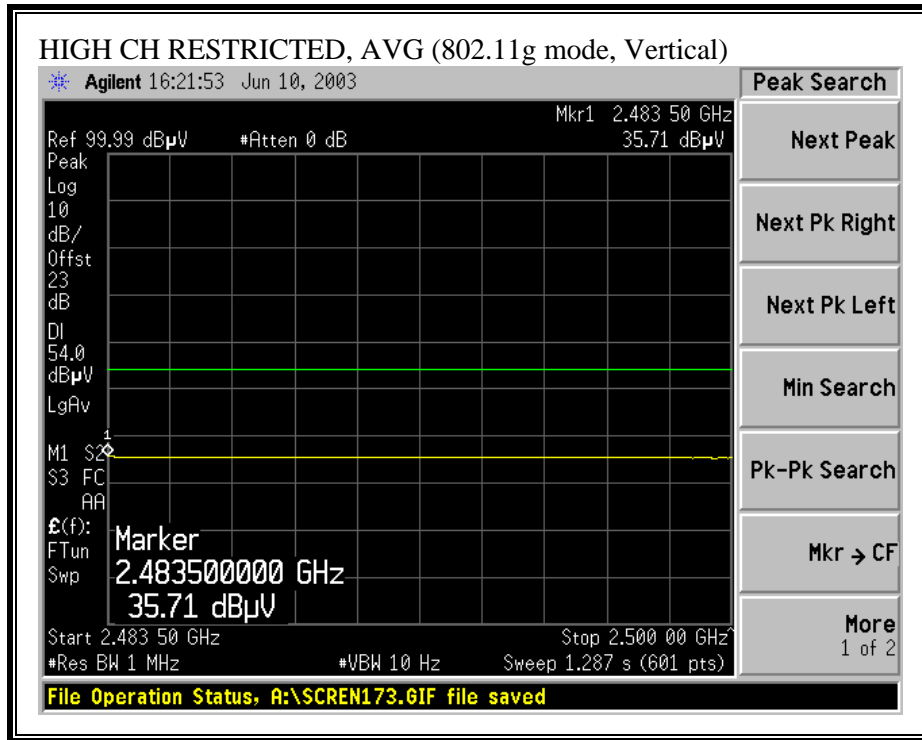




**RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, VERTICAL)**







**HARMONICS AND SPURIOUS EMISSIONS (g MODE)**

05/10/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Yan Zheng  
 Project #:   
 Company: Cisco  
 EUT Descrip.: AIR-MP31G-A-K9  
 EUT M/N: SMT07210013  
 Test Target:   
 Mode Oper: Transmit, g Mode, with 13.5dBi Patch Anzy Antenna

Test Equipment:

EMCO Horn 1.18GHz T60; S/N: 2238 @3m	Pre-amplifier 1.26GHz T86 Miteq 924341	Spectrum Analyzer Agilent E4446A Analyzer	Horn > 18GHz T117; ARA 18-26GHz; S/N:1013	Limit FCC 15.205
-----------------------------------------	-------------------------------------------	----------------------------------------------	----------------------------------------------	---------------------

H Frequency Cables:  
 (2 ft)  (2 ~ 3 ft)  (4 ~ 6 ft)  (12 ft)

Peak Measurements: 1 MHz Resolution Bandwidth  
 1 MHz Video Bandwidth  
 Average Measurements: 1 MHz Resolution Bandwidth  
 10Hz Video Bandwidth

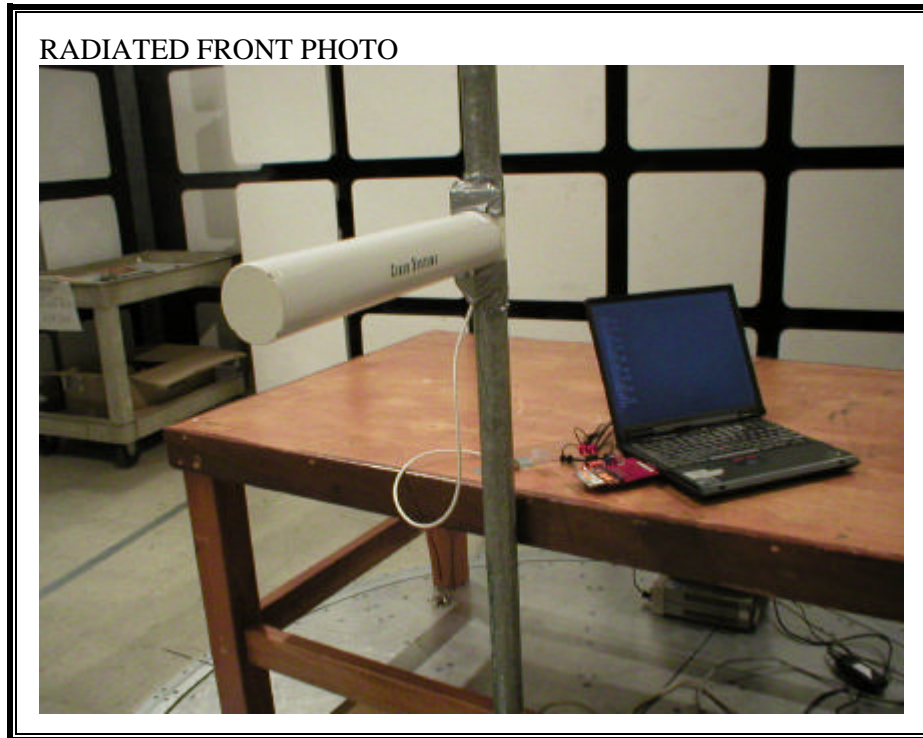
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
<b>Spurious:</b>															
<b>Harmonics:</b>															
<b>Channel 1 (2412MHz)</b>															
4.824	9.8	61.4	47.2	33.1	4.4	-45.6	0.0	1.0	44.3	40.1	74.0	54.0	-29.7	-13.9	H
4.824	9.8	61.7	60.7	33.1	4.4	-45.6	0.0	1.0	54.6	53.6	74.0	54.0	-19.4	-0.4	V
<b>Channel 6 (2437MHz)</b>															
4.874	9.8	60.2	58.9	33.1	4.4	-45.6	0.0	1.0	53.1	51.8	74.0	54.0	-20.9	-2.2	V
7.311	9.8	48.5	36.6	36.2	5.7	-46.6	0.0	1.0	44.8	32.9	74.0	54.0	-29.2	-21.1	V
7.311	9.8	48.0	36.6	36.2	5.7	-46.6	0.0	1.0	44.3	32.9	74.0	54.0	-29.7	-21.1	H
4.874	9.8	50.0	43.6	33.1	4.4	-45.6	0.0	1.0	42.9	36.5	74.0	54.0	-31.1	-17.5	H
<b>Channel 11 (2462MHz)</b>															
4.924	9.8	61.6	60.1	33.8	3.8	-45.7	0.0	1.0	54.5	53.0	74.0	54.0	-19.5	-1.0	V
7.386	9.8	48.5	36.6	37.4	4.9	-46.5	0.0	1.0	45.1	33.2	74.0	54.0	-28.9	-20.8	V
7.386	9.8	48.0	36.6	37.4	4.9	-46.5	0.0	1.0	44.6	33.2	74.0	54.0	-29.4	-20.8	H
4.924	9.8	52.5	47.4	33.8	3.8	-45.7	0.0	1.0	45.4	40.3	74.0	54.0	-28.6	-13.7	H

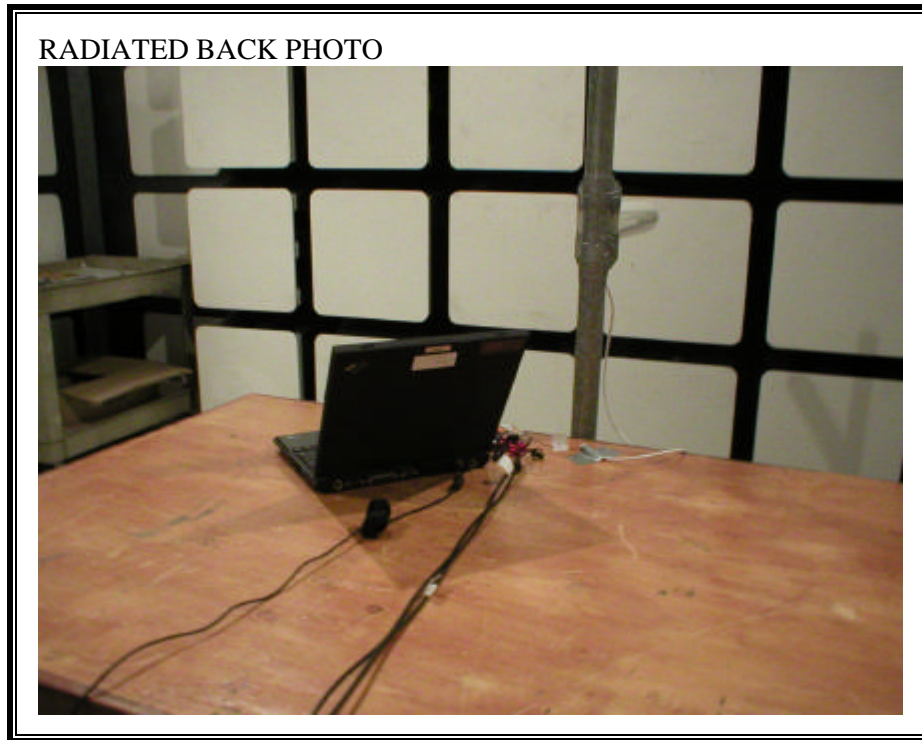
36.3

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		

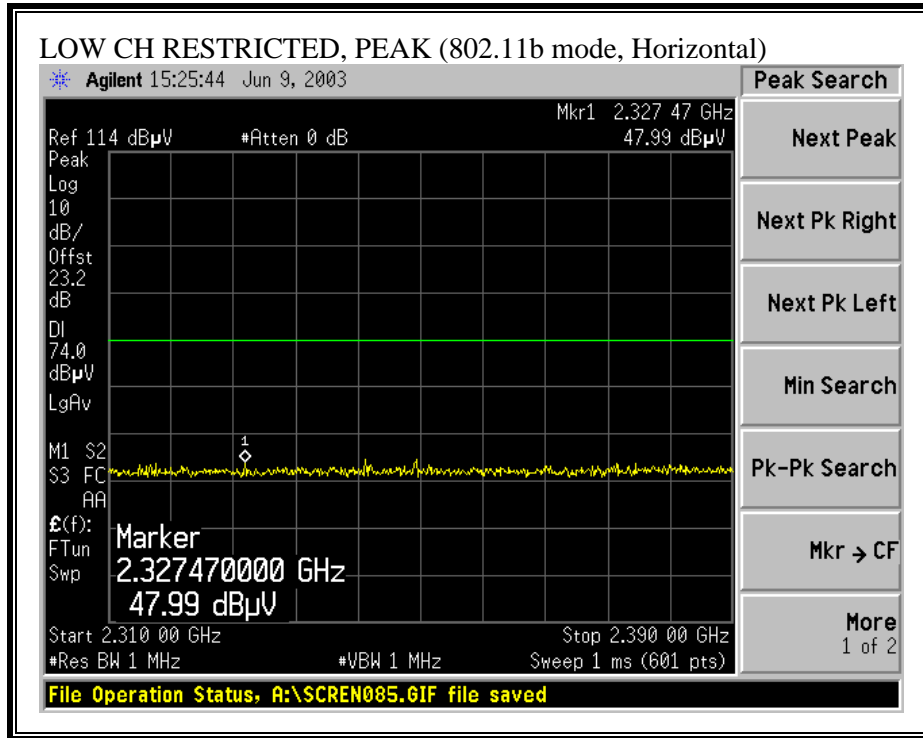
## 7.8.5. RADIATED EMISSIONS WITH 13.5 dBi YAGI ANTENNA

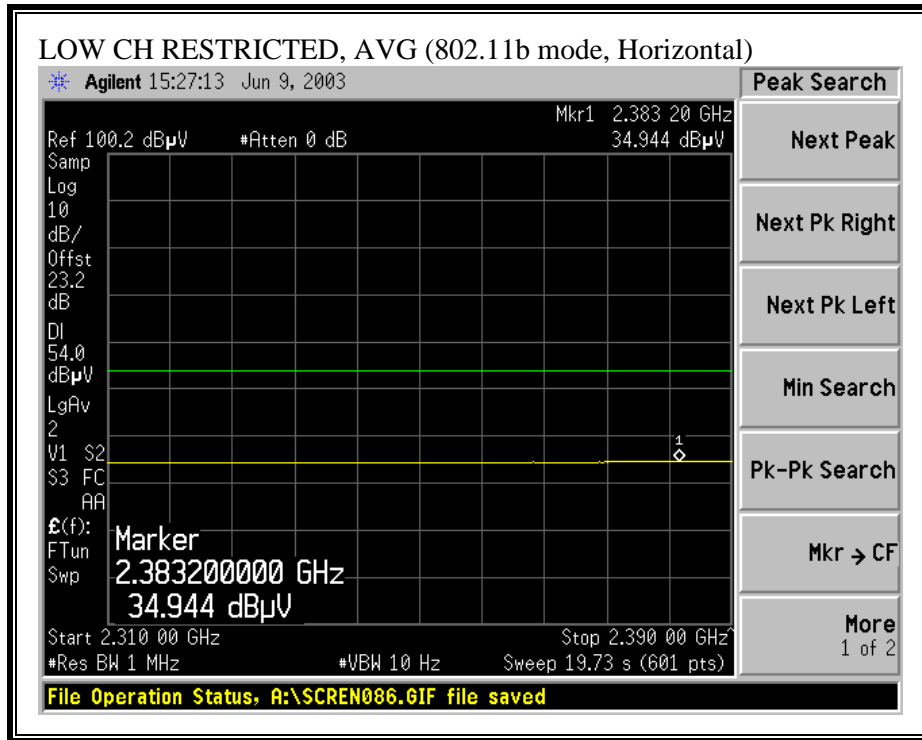
### RADIATED RF MEASUREMENT SETUP



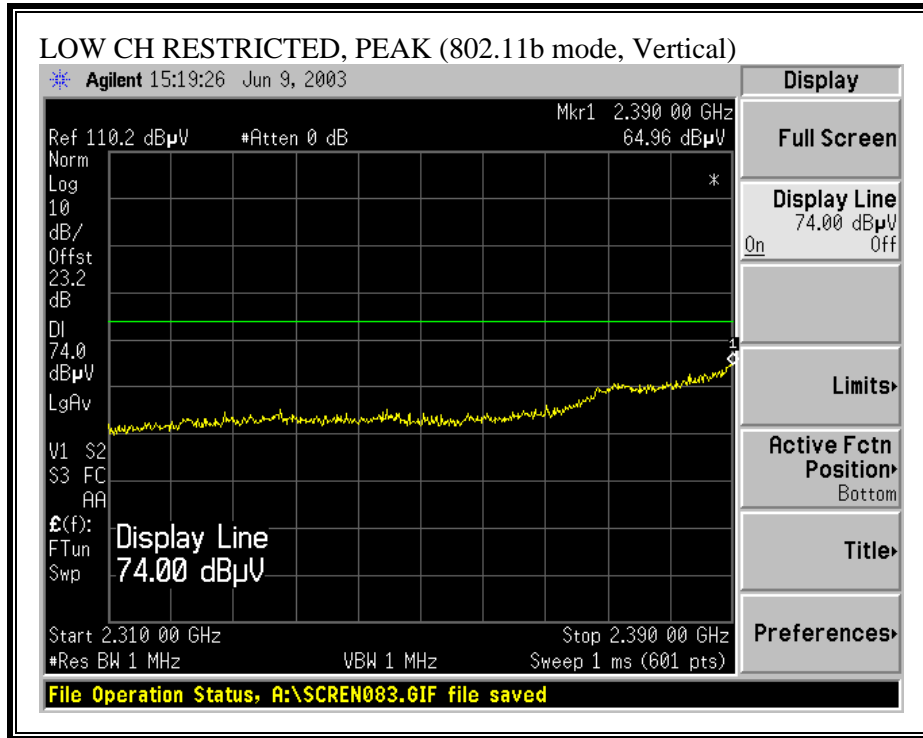


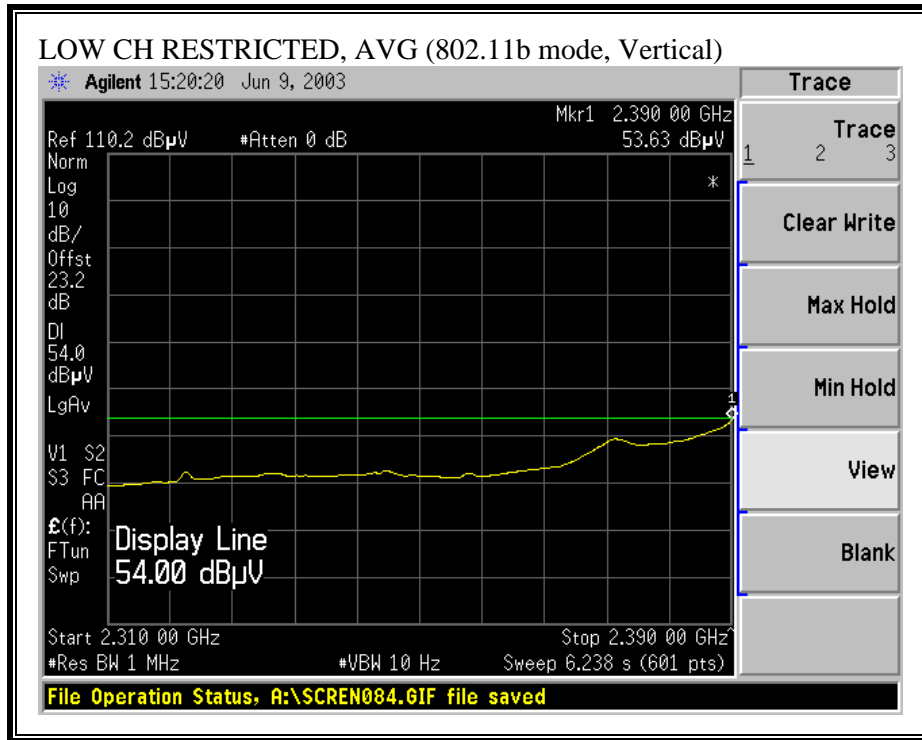
**RESTRICTED BANDEGE (b MODE, LOW CHANNEL, HORIZONTAL)**





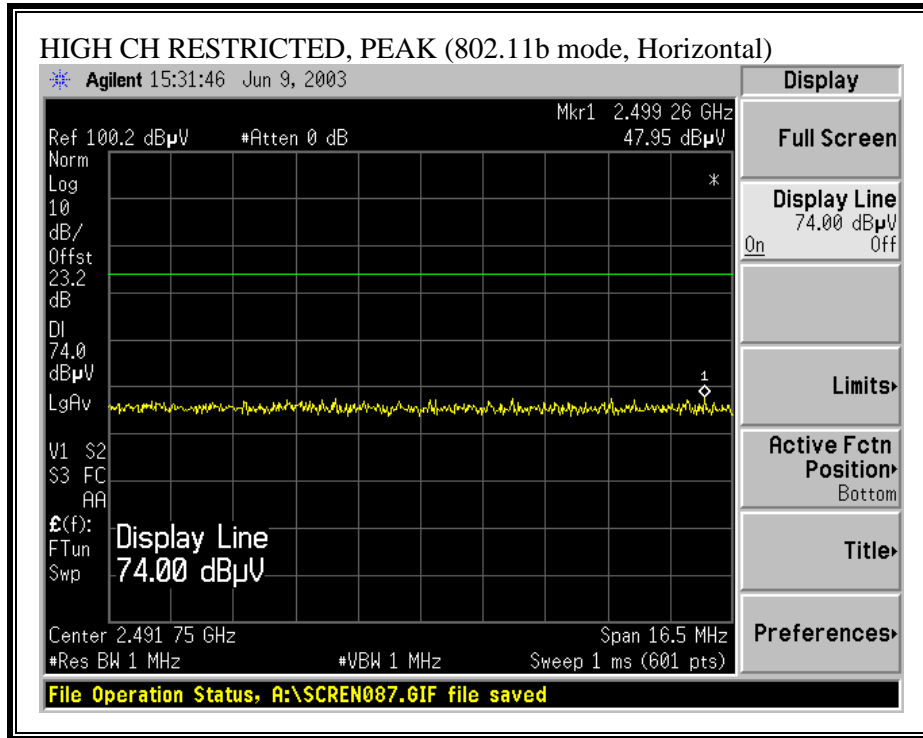
**RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)**

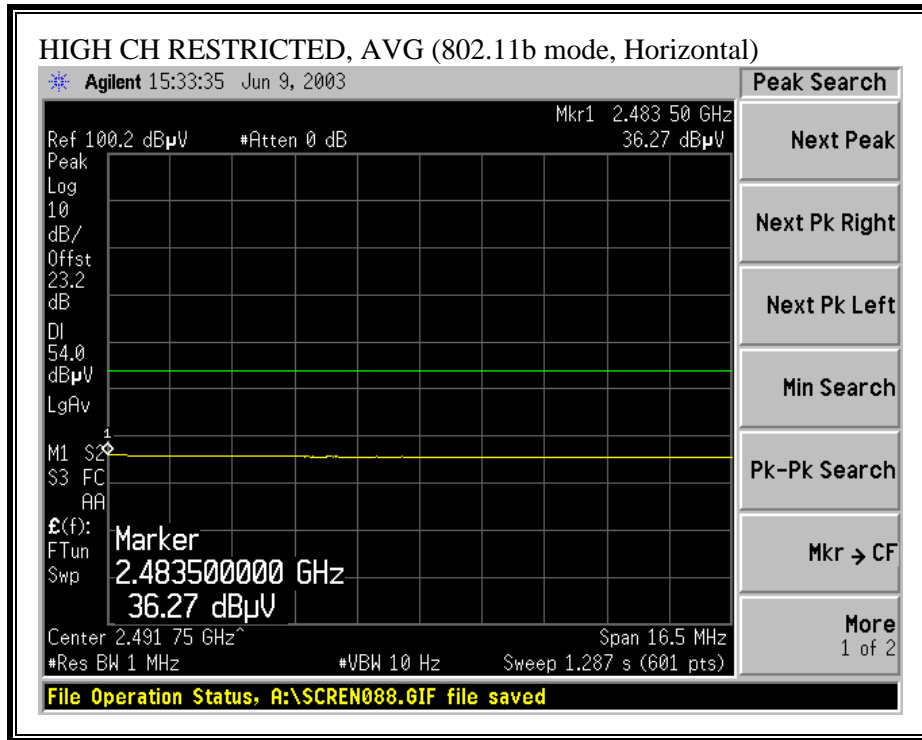




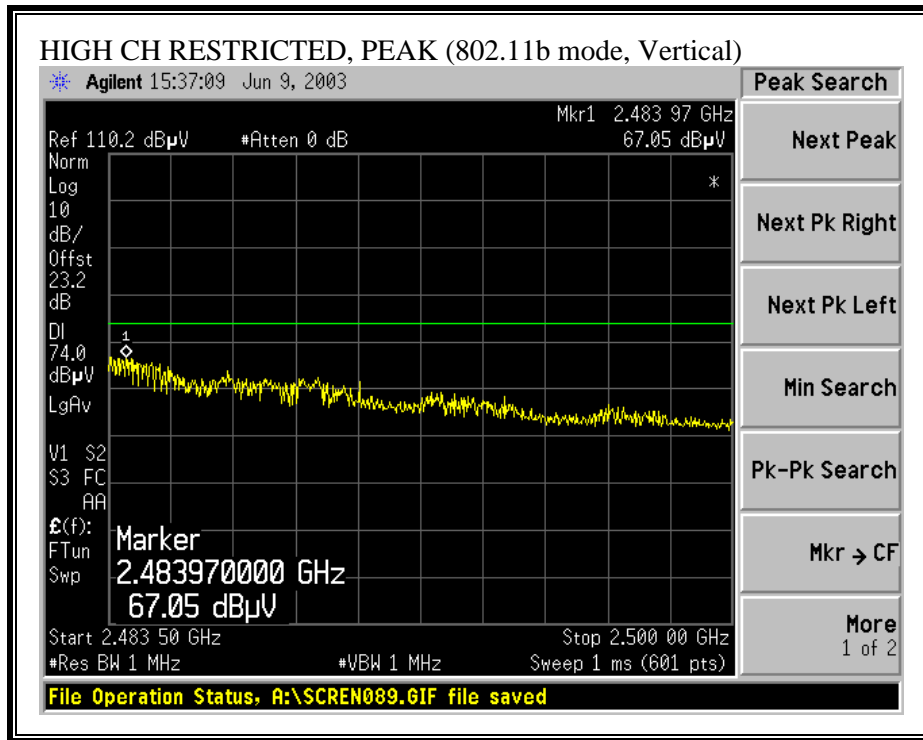


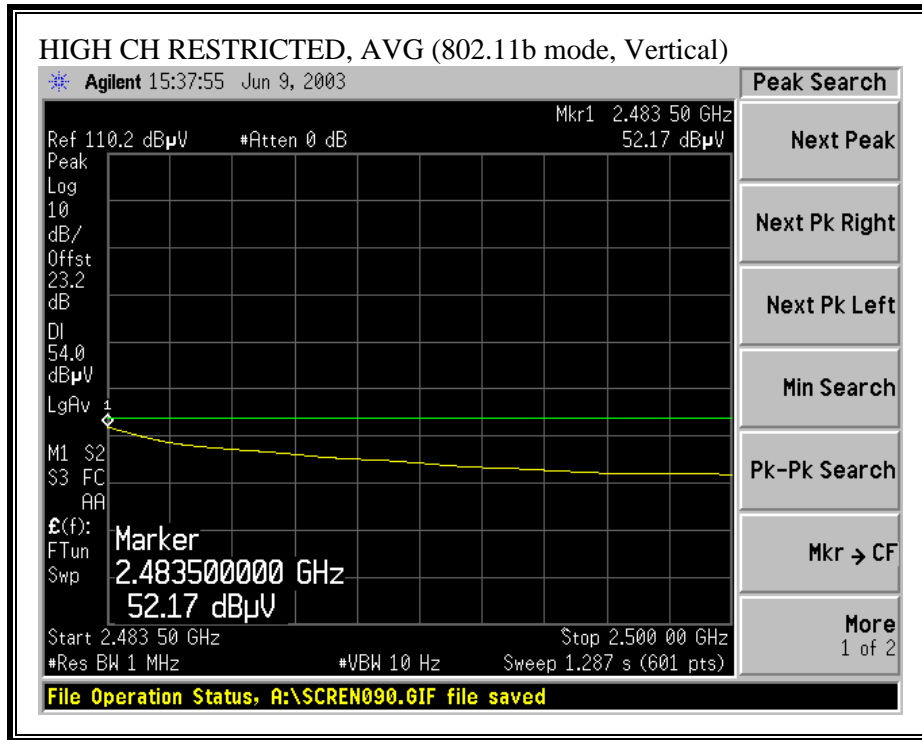
**RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)**





**RESTRICTED BANEDGE (b MODE, HIGH CHANNEL, VERTICAL)**





**HARMONICS AND SPURIOUS EMISSIONS (b MODE)**

05/10/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Yan Zheng  
 Project #:   
 Company: Cisco  
 EUT Descrip.: AIR-MP310-A-K9  
 EUT M/N: SMT07210913  
 Test Target:   
 Mode Oper: Transmit, b Mode, with 13.5dBi Yagi Antenna

Test Equipment:

EMCO Horn 1-18GHz T60; S/N: 1238 @3m	Pre-amplifier 1-26GHz T86 M10q 924341	Spectrum Analyzer Agilent E4446A Analyzer	Horn > 18GHz T117; ARA 18-26GHz; S/N:1013	Limit FCC 15.205
-----------------------------------------	------------------------------------------	----------------------------------------------	----------------------------------------------	---------------------

H Frequency Cables  
 (2 ft)  (2-3 ft)  (4-6 ft)  (12 ft)

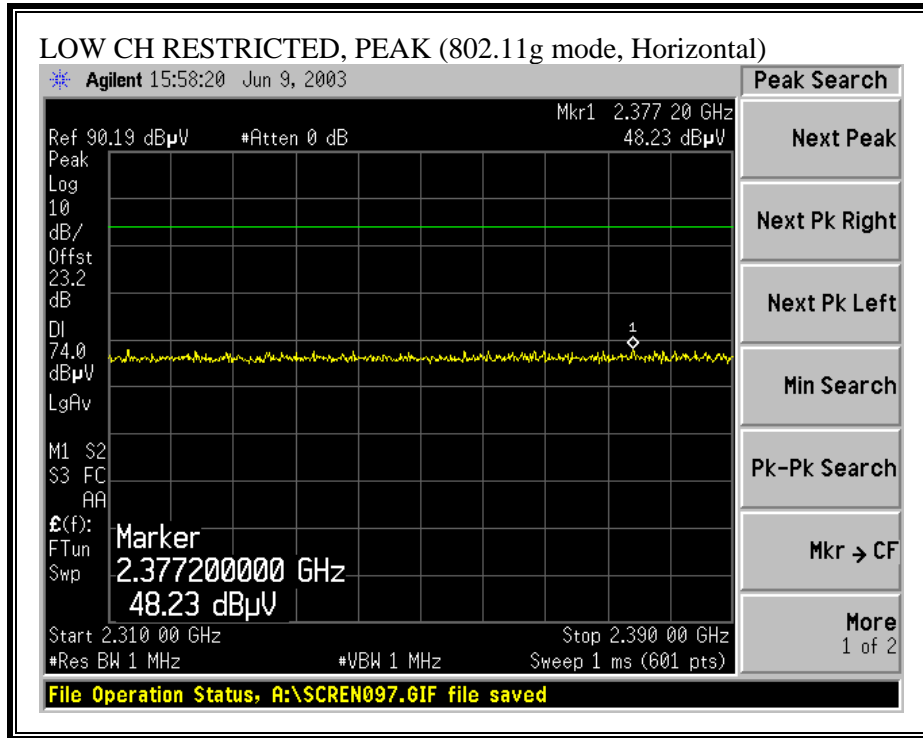
Peak Measurements: 1 MHz Resolution Bandwidth 1 MHz Video Bandwidth  
 Average Measurements: 1 MHz Resolution Bandwidth 10 Hz Video Bandwidth

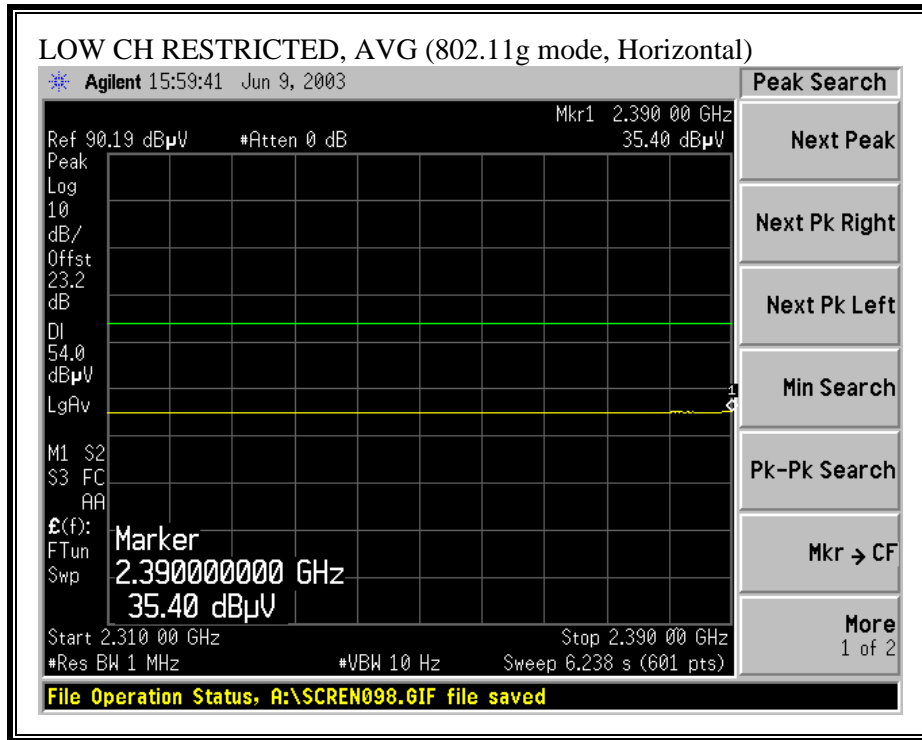
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Spurious:															
Harmonics:															
Channel 1 (2412MHz)															
4.824	9.8	53.2	48.8	33.1	4.4	-45.6	0.0	1.0	46.1	41.7	74.0	54.0	-27.9	-12.3	H
4.824	9.8	58.6	57.5	33.1	4.4	-45.6	0.0	1.0	51.5	50.4	74.0	54.0	-22.5	-3.6	V
Channel 6 (2437MHz)															
4.874	9.8	53.8	49.3	33.1	4.4	-45.6	0.0	1.0	46.7	42.2	74.0	54.0	-27.3	-11.8	H
7.311	9.8	52.7	45.0	36.2	5.7	-46.6	0.0	1.0	49.0	41.3	74.0	54.0	-25.0	-12.7	H
7.311	9.8	57.2	40.6	36.2	5.7	-46.6	0.0	1.0	53.5	36.9	74.0	54.0	-20.5	-17.1	V
4.874	9.8	55.7	54.1	33.1	4.4	-45.6	0.0	1.0	48.6	47.0	74.0	54.0	-25.4	-7.0	V
Channel 11 (2462MHz)															
4.924	9.8	59.1	57.3	33.2	4.5	-45.7	0.0	1.0	52.0	50.2	74.0	54.0	-22.0	-3.8	V
7.386	9.8	48.5	36.6	36.3	5.7	-46.5	0.0	1.0	45.0	33.1	74.0	54.0	-29.0	-20.9	V
7.386	9.8	48.0	36.6	36.3	5.7	-46.5	0.0	1.0	44.5	33.1	74.0	54.0	-29.5	-20.9	H
4.924	9.8	57.1	54.8	33.2	4.5	-45.7	0.0	1.0	50.1	47.7	74.0	54.0	-23.9	-6.3	H

36.5

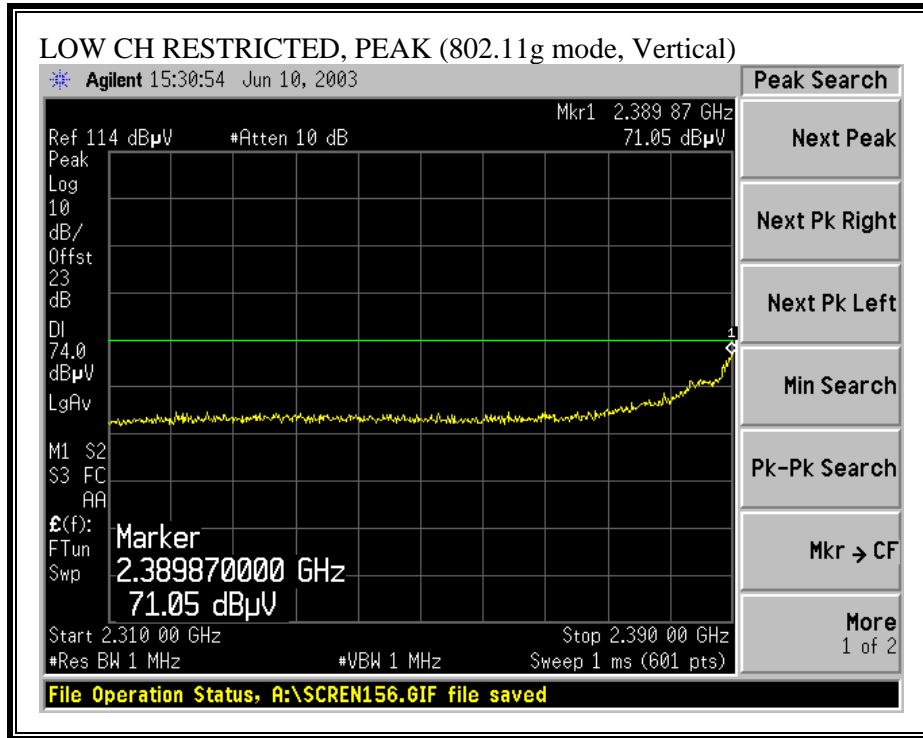
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, HORIZONTAL)**

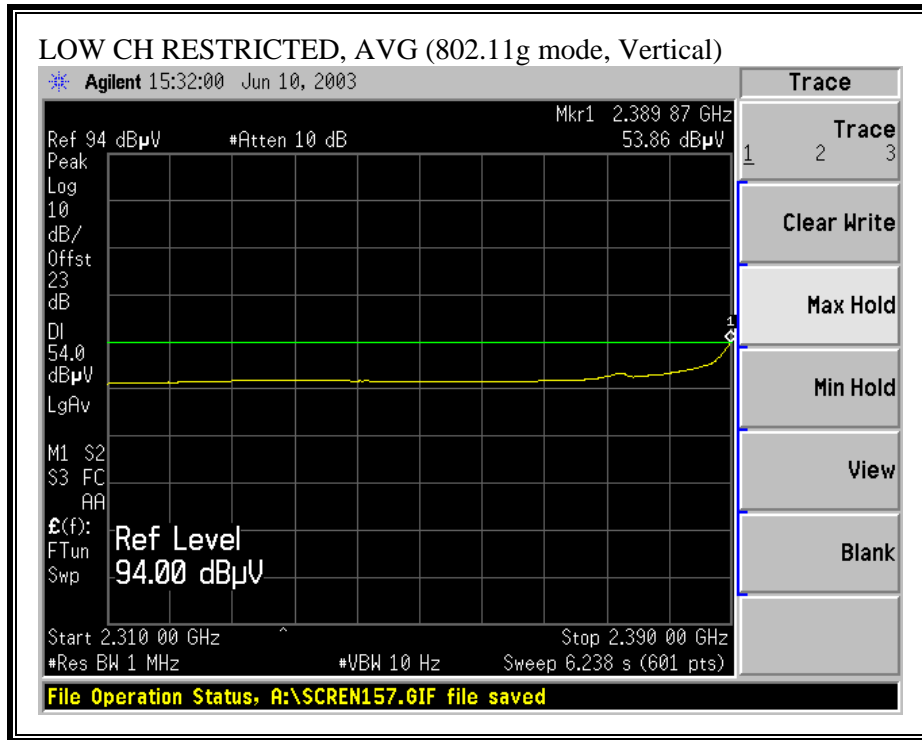




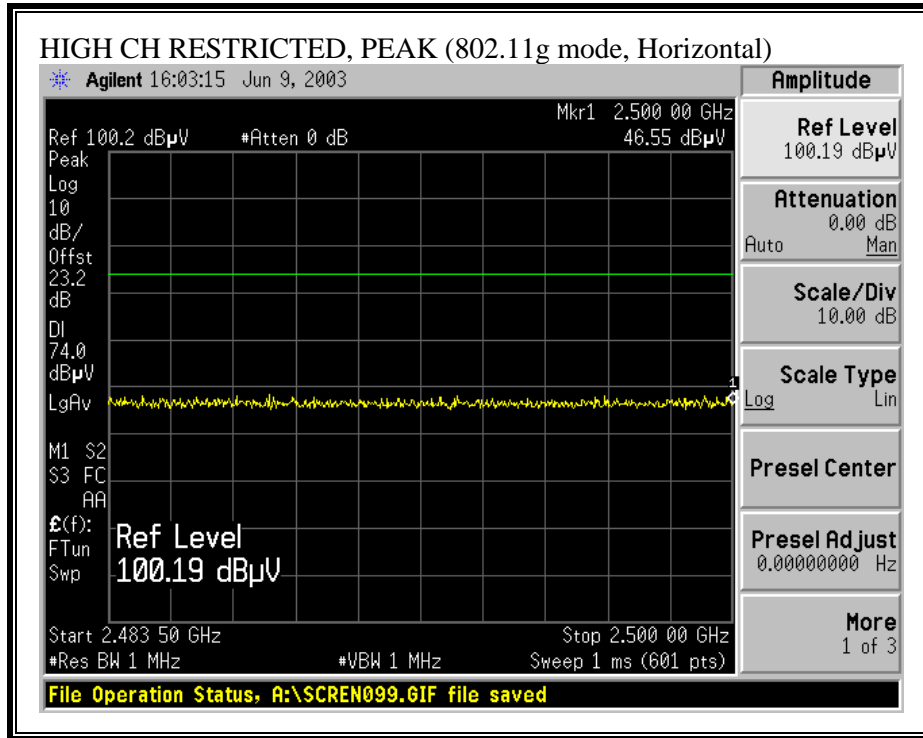
**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, VERTICAL)**

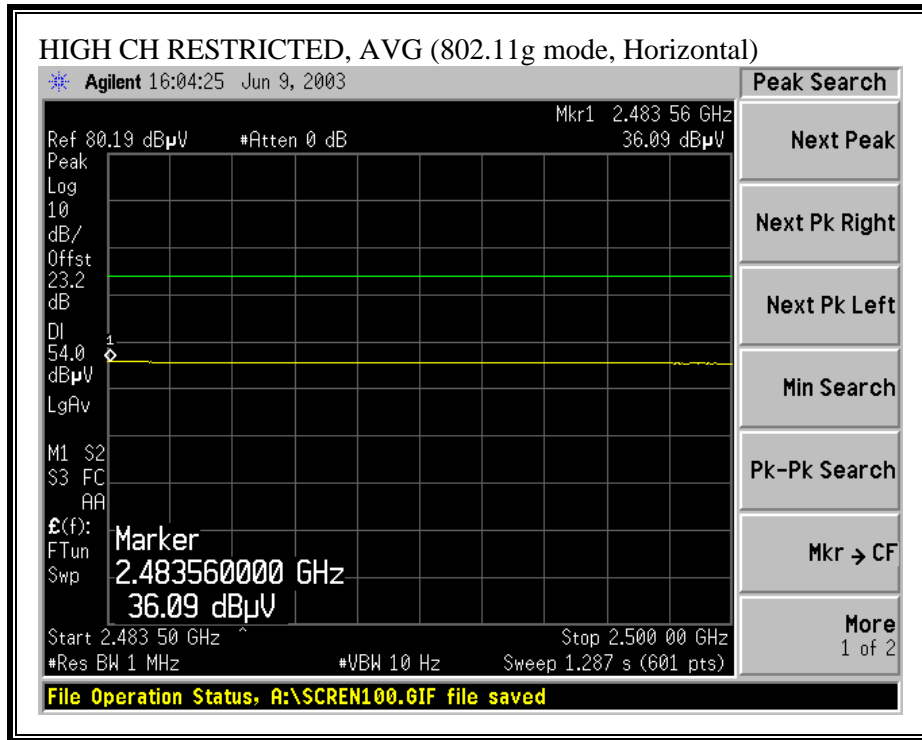




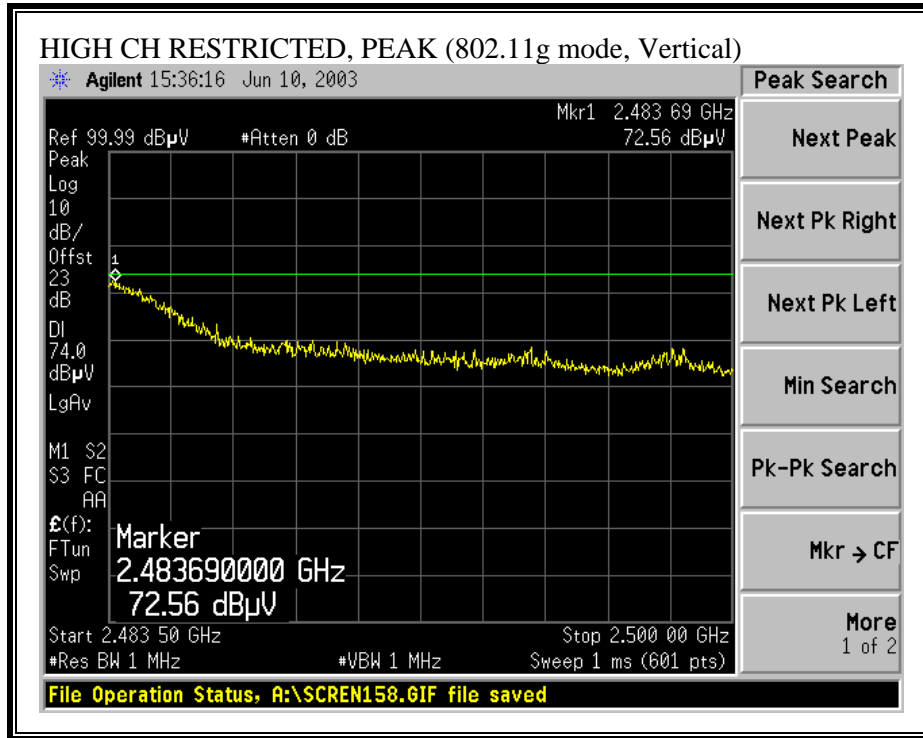


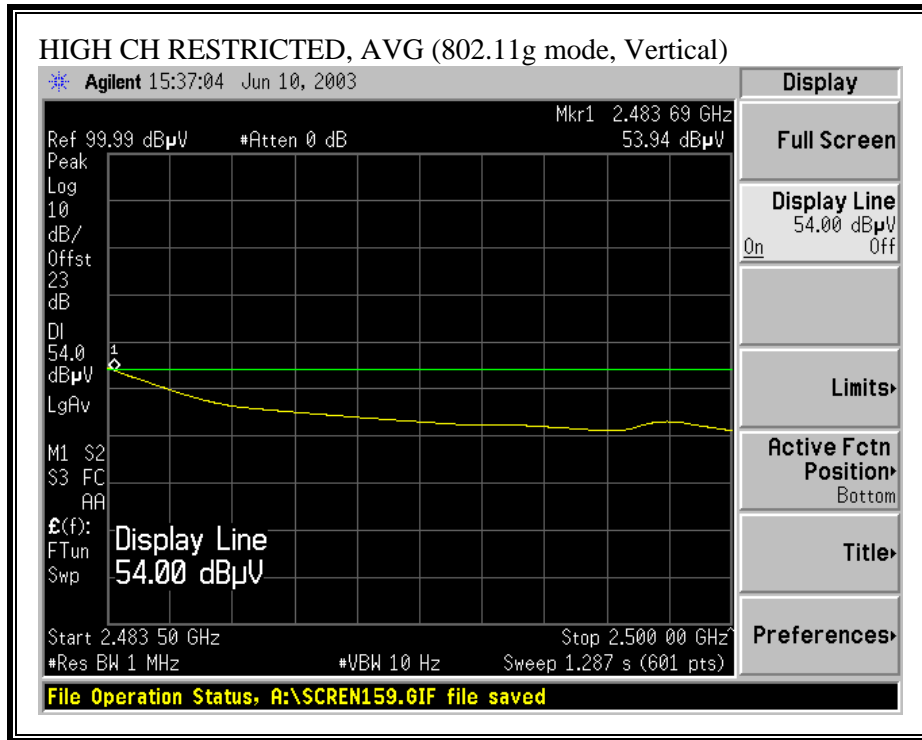
**RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, HORIZONTAL)**





**RESTRICTED BANDEGE (g MODE, HIGH CHANNEL, VERTICAL)**





**HARMONICS AND SPURIOUS EMISSIONS (g MODE)**

05/10/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Yan Zheng  
 Project #:   
 Company: Cisco  
 EUT Descrip.: AIR-MP310-A-K9  
 EUT M/N: SMT07210913  
 Test Target:   
 Mode Oper: Transmit, g Mode, with 13.5dBi Yagi Antenna

Test Equipment:

EMCO Horn 1-18GHz T60; S/N: 1238 @3m	Pre-amplifier 1-26GHz T86 M10q 924341	Spectrum Analyzer Agilent E4446A Analyzer	Horn > 18GHz T117; ARA 18-26GHz; S/N:1013	Limit FCC 15.205
-----------------------------------------	------------------------------------------	----------------------------------------------	----------------------------------------------	---------------------

H Frequency Cables  
 (2 ft)  (2-3 ft)  (4-6 ft)  (12 ft)

Peak Measurements: 1 MHz Resolution Bandwidth  
 1 MHz Video Bandwidth  
 Average Measurements: 1 MHz Resolution Bandwidth  
 10 Hz Video Bandwidth

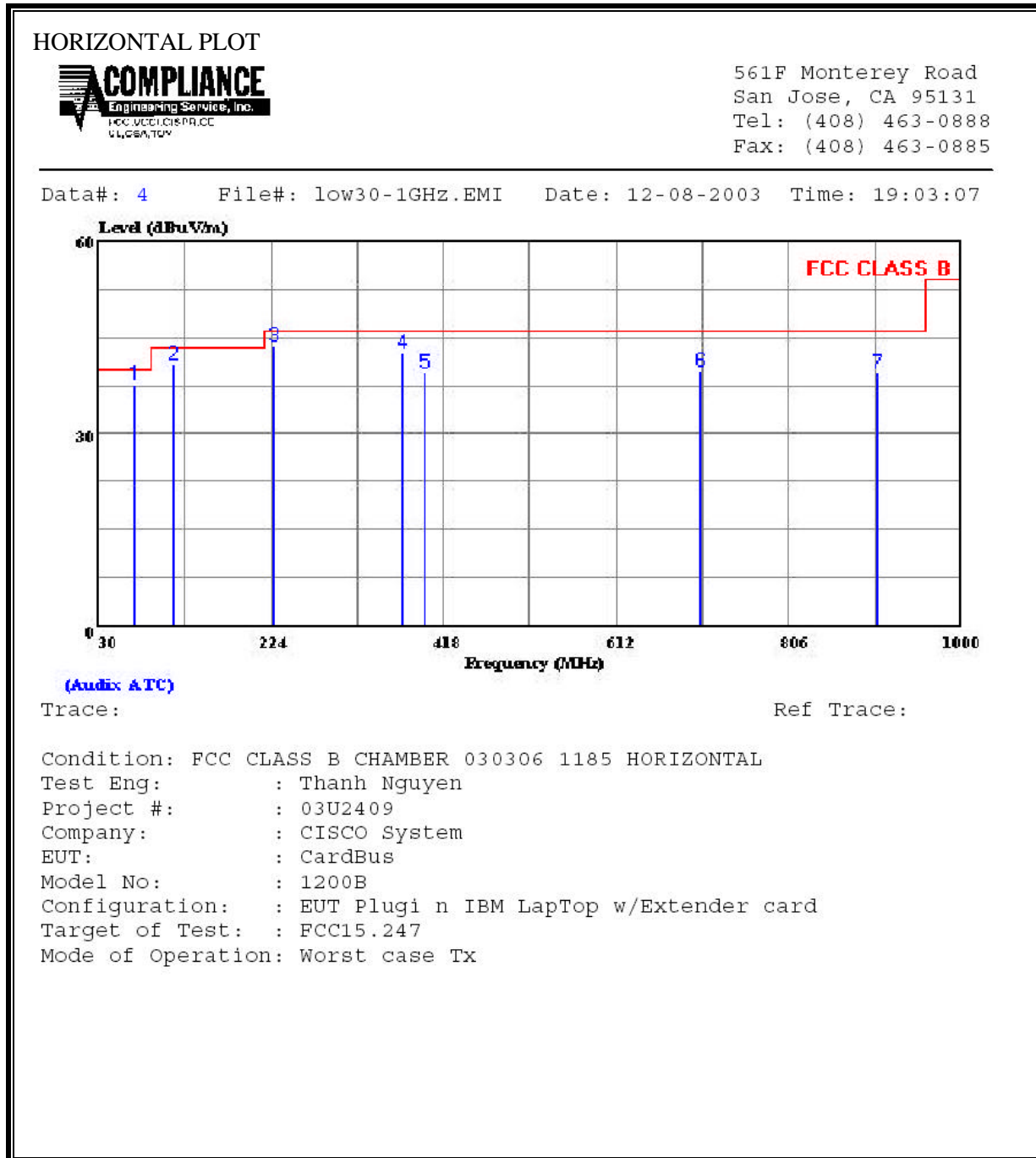
f GHz	Dist feet	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	HPF	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes
Spurious:															
Harmonics:															
Channel 1 (2412MHz)															
4.824	9.8	53.2	50.2	33.1	4.4	-45.6	0.0	1.0	46.1	43.1	74.0	54.0	-27.9	-10.9	H
4.824	9.8	58.7	57.6	33.1	4.4	-45.6	0.0	1.0	51.6	50.5	74.0	54.0	-22.4	-3.5	V
Channel 6 (2437MHz)															
4.874	9.8	53.4	49.7	33.1	4.4	-45.6	0.0	1.0	46.3	42.6	74.0	54.0	-27.7	-11.4	H
7.311	9.8	52.7	45.0	36.2	5.7	-46.6	0.0	1.0	49.0	41.3	74.0	54.0	-25.0	-12.7	H
7.311	9.8	57.2	40.6	36.2	5.7	-46.6	0.0	1.0	53.5	36.9	74.0	54.0	-20.5	-17.1	V
4.874	9.8	56.8	54.2	33.1	4.4	-45.6	0.0	1.0	49.7	47.2	74.0	54.0	-24.3	-6.8	V
Channel 11 (2462MHz)															
4.924	9.8	59.1	57.6	33.2	4.5	-45.7	0.0	1.0	52.0	50.5	74.0	54.0	-22.0	-3.5	V
7.386	9.8	48.5	36.6	36.3	5.7	-46.5	0.0	1.0	45.0	33.1	74.0	54.0	-29.0	-20.9	V
7.386	9.8	48.0	36.6	36.3	5.7	-46.5	0.0	1.0	44.5	33.1	74.0	54.0	-29.5	-20.9	H
4.924	9.8	57.8	55.2	33.2	4.5	-45.7	0.0	1.0	50.7	48.1	74.0	54.0	-23.3	-5.9	H

36.5

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		

### 7.8.6. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

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

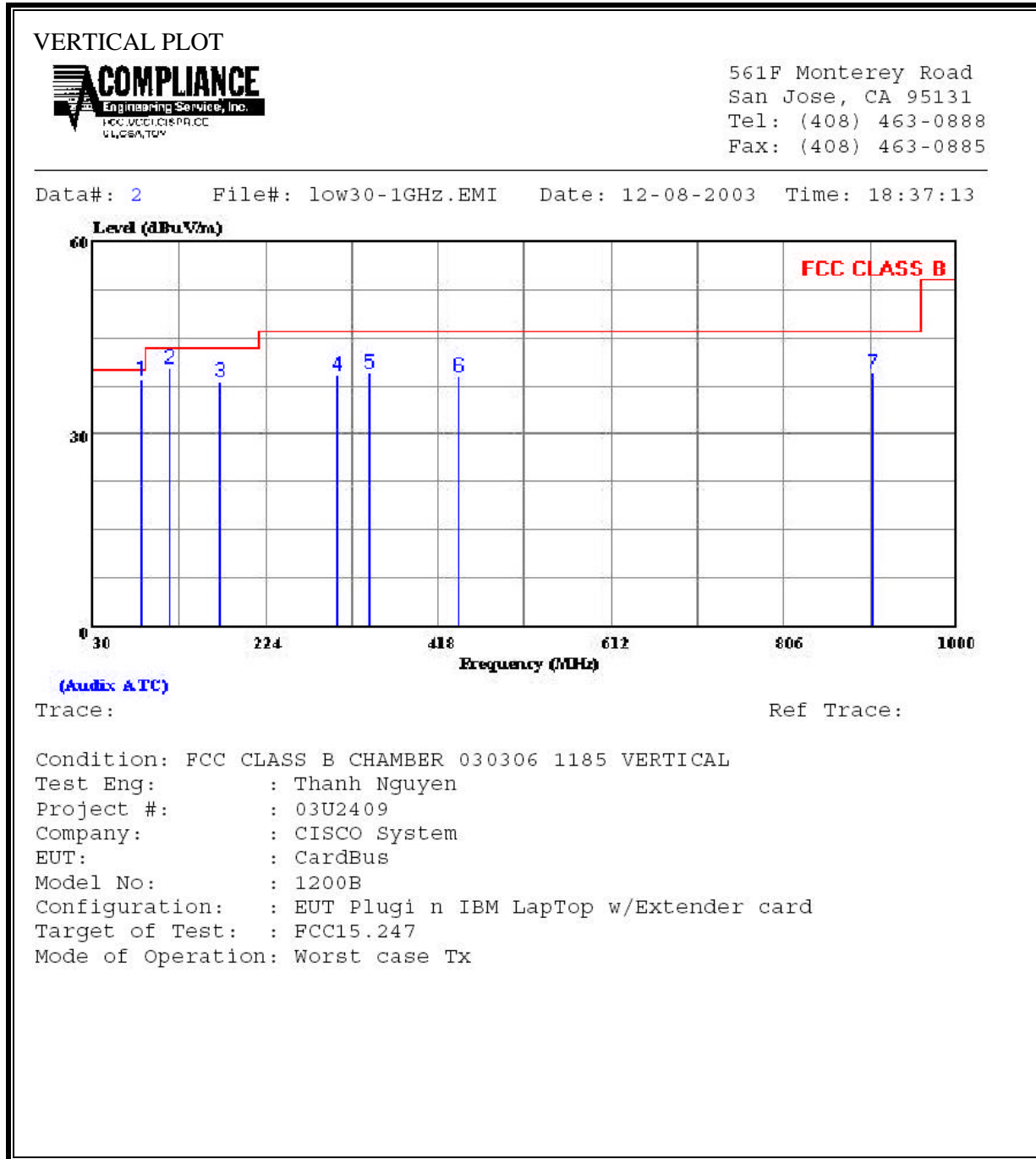


HORIZONTAL DATA

	Freq	Remark	Read Level	Factor	Level	Limit Line	Over Limit
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB
1	70.740	Peak	29.00	8.55	37.55	40.00	-2.45
2	113.420	Peak	29.65	11.06	40.71	43.50	-2.79
3	227.880	Peak	31.54	12.07	43.61	46.00	-2.39
4	371.440	Peak	26.67	15.80	42.47	46.00	-3.53
5	397.630	Peak	23.19	16.40	39.59	46.00	-6.41
6	706.090	Peak	18.37	21.39	39.76	46.00	-6.24
7	904.940	Peak	15.72	23.83	39.55	46.00	-6.45



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



VERTICAL DATA

	Freq	Remark	Read Level	Factor	Level	Limit Line	Over Limit
	MHz		dBuV	dB	dBuV/m	dBuV/m	dB
1	85.290	Peak	30.19	8.16	38.35	40.00	-1.65
2	116.330	Peak	28.99	11.31	40.30	43.50	-3.20
3	172.590	Peak	28.14	10.16	38.30	43.50	-5.20
4	303.540	Peak	25.23	13.89	39.12	46.00	-6.88
5	339.430	Peak	24.53	14.93	39.46	46.00	-6.54
6	440.310	Peak	21.38	17.49	38.87	46.00	-7.13
7	904.940	Peak	15.53	23.83	39.36	46.00	-6.64

## 7.9. POWERLINE CONDUCTED EMISSIONS

### LIMIT

§15.207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal.

The lower limit applies at the boundary between the frequency ranges.

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

\*Decreases with the logarithm of the frequency.

### TEST PROCEDURE

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

The resolution bandwidth is set to 9 kHz for both peak detection and quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

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

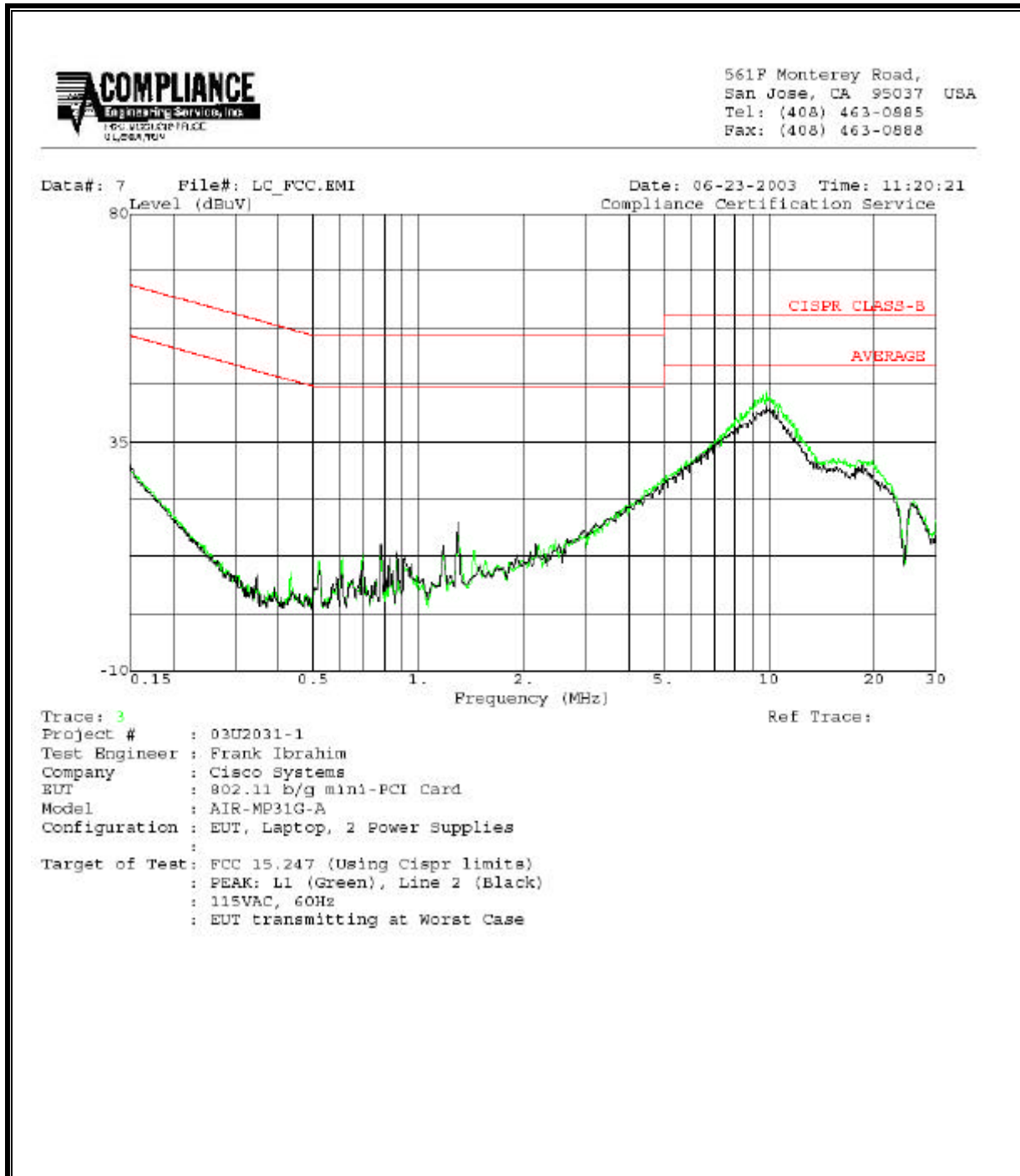
### RESULTS

No non-compliance noted:

**6 WORST EMISSIONS**

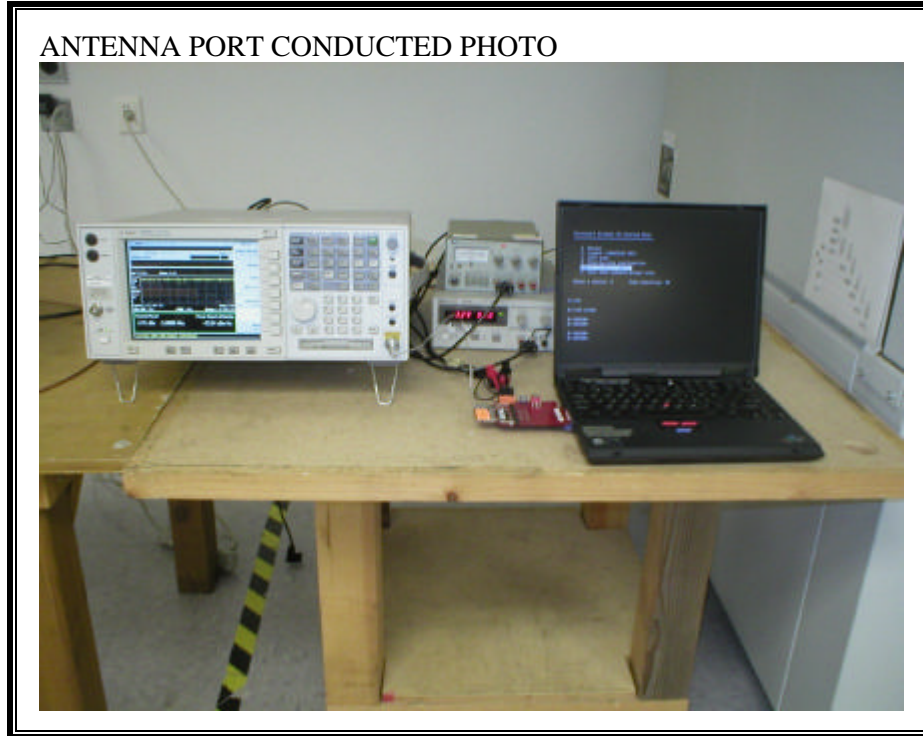
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.15	29.28	--	--	0.00	66.00	56.00	-36.72	-26.72	L1
9.86	45.06	--	--	0.00	60.00	50.00	-14.94	-4.94	L1
18.14	31.58	--	--	0.00	60.00	50.00	-28.42	-18.42	L1
0.15	30.70	--	--	0.00	65.97	55.97	-35.27	-25.27	L2
9.86	42.42	--	--	0.00	60.00	50.00	-17.58	-7.58	L2
18.52	30.54	--	--	0.00	60.00	50.00	-29.46	-19.46	L2
6 Worst Data									

**RESULTS**

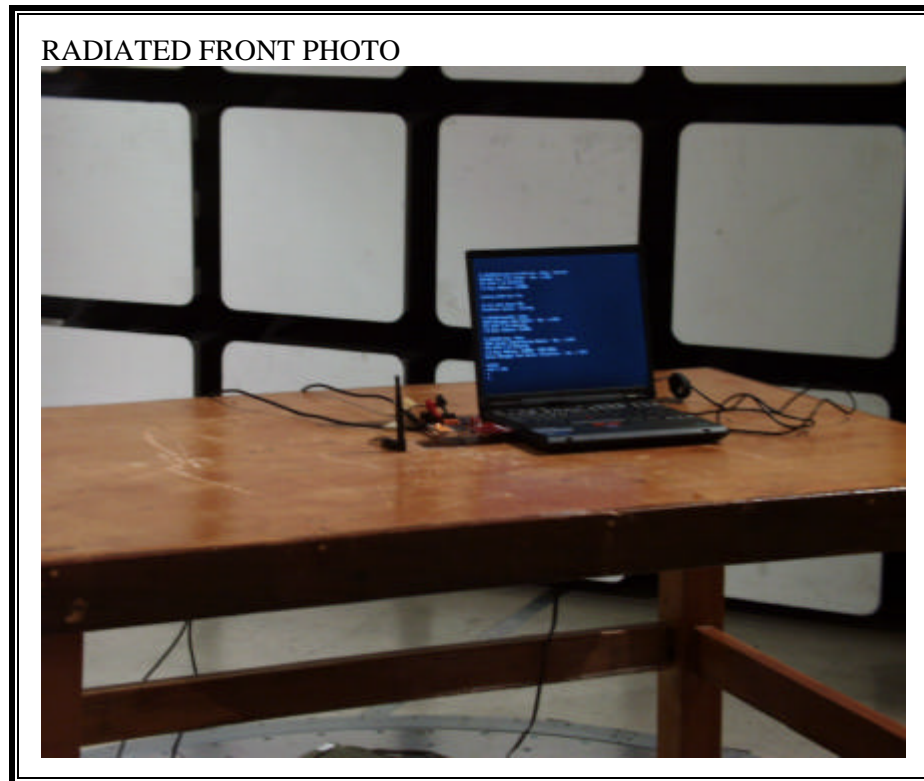


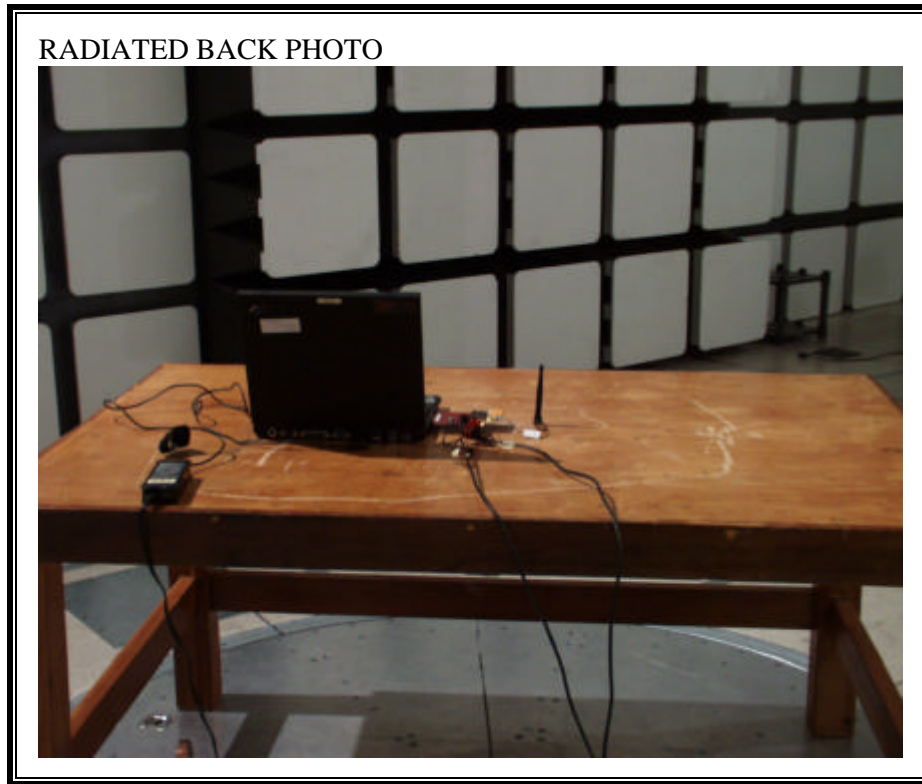
## 8. SETUP PHOTOS

### ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



**RADIATED RF MEASUREMENT SETUP**







**POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP**





**END OF REPORT**