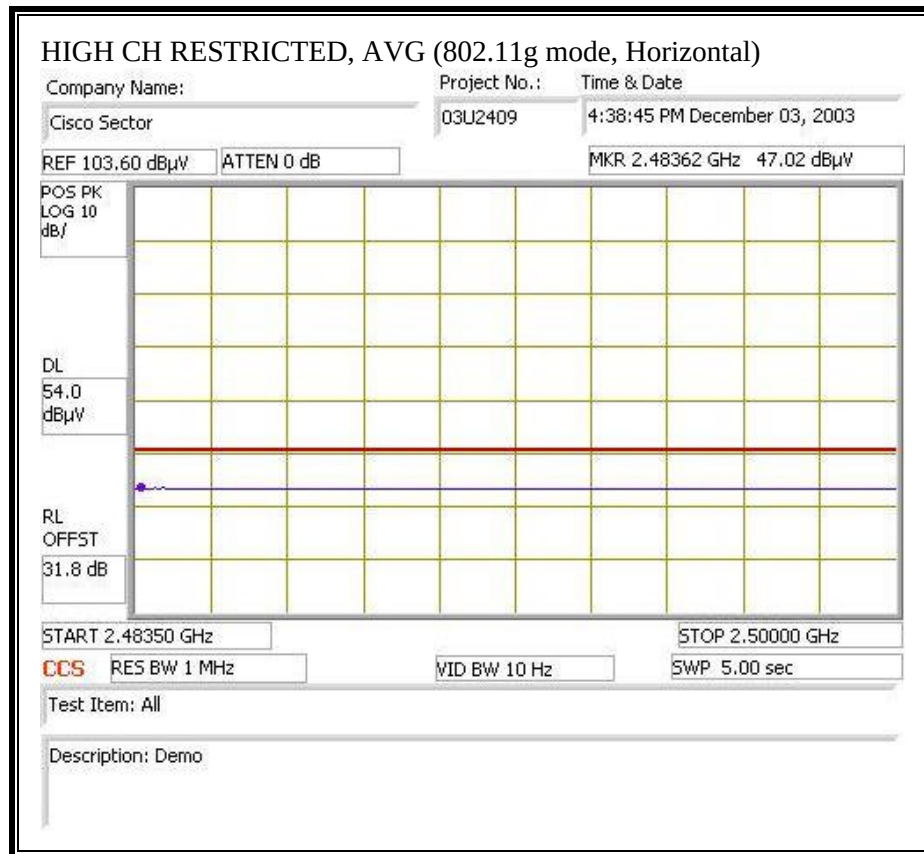
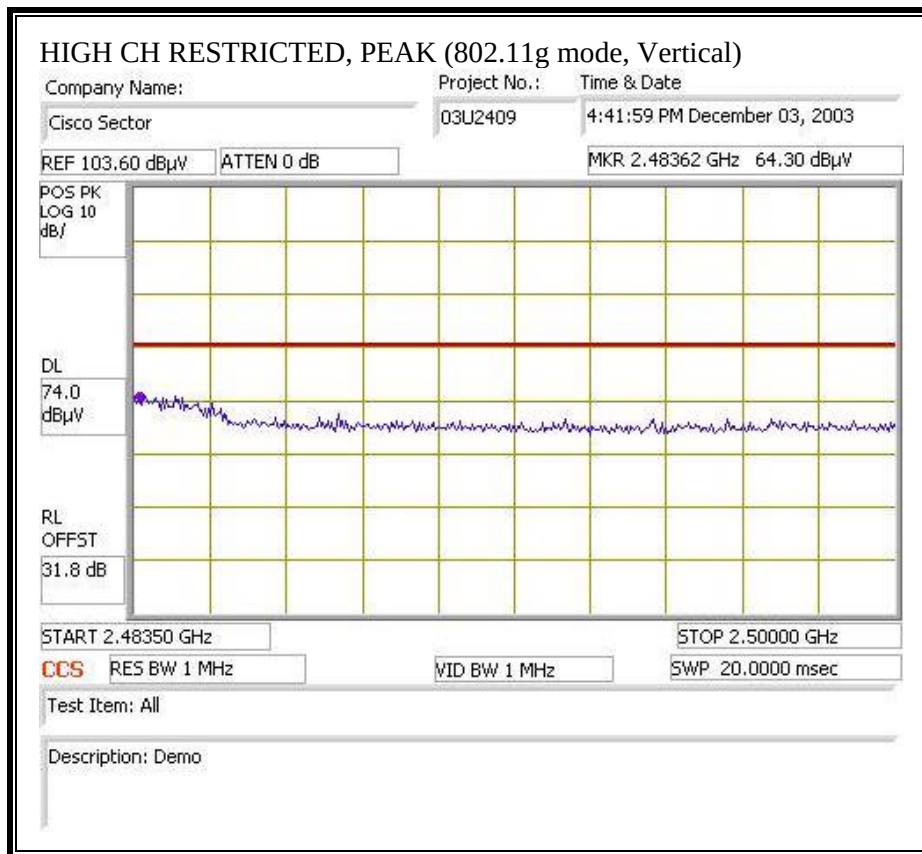
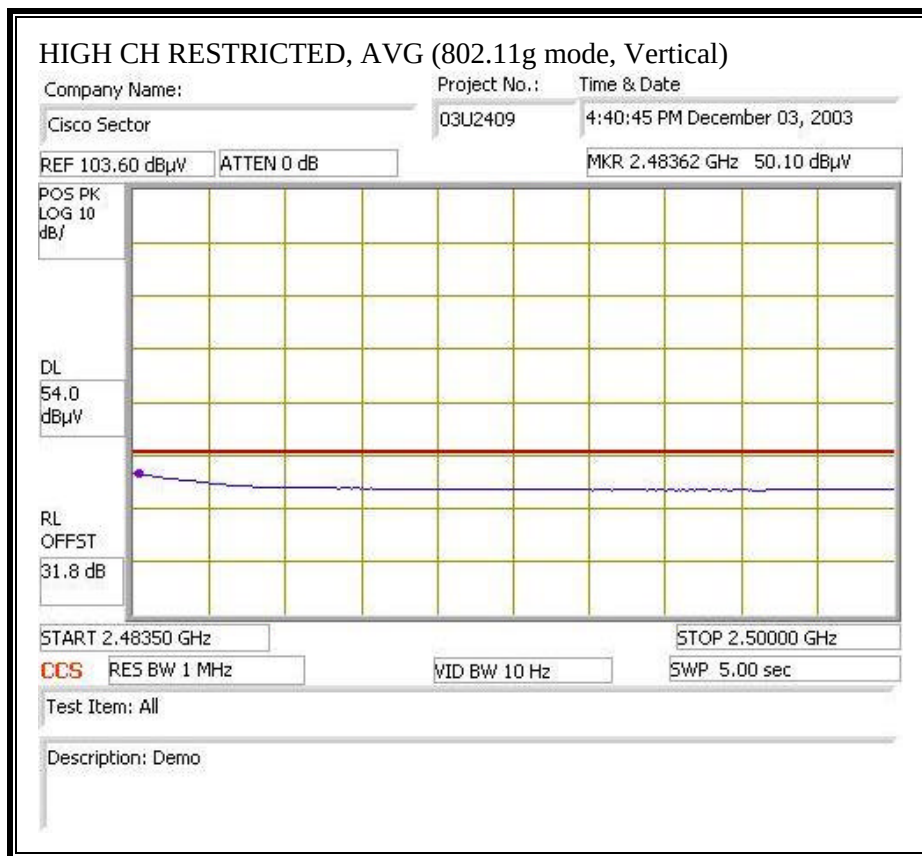




RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, VERTICAL)





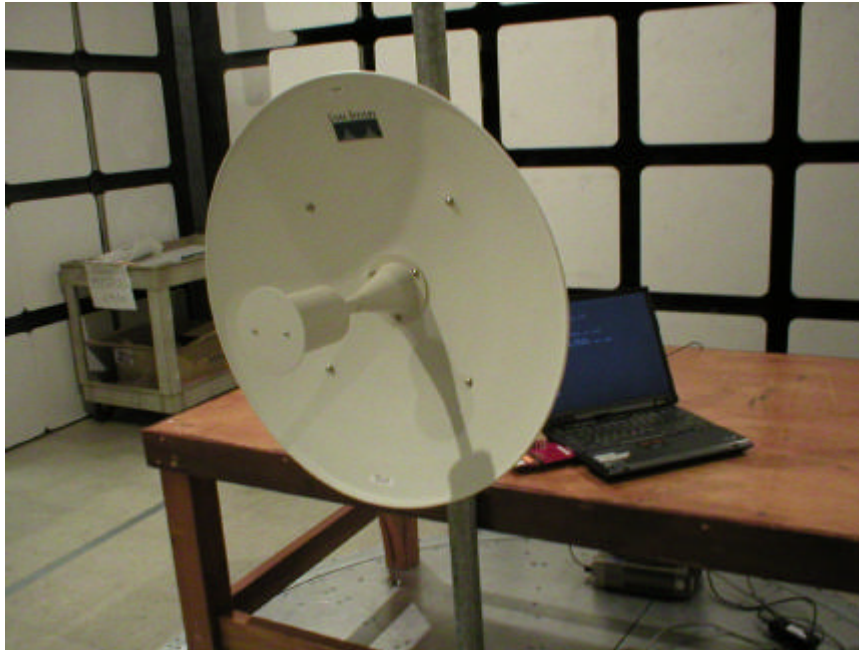
HARMONICS AND SPURIOUS EMISSIONS (g MODE)

12/03/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site															
Test Engr: Ben Du Project #: 03U2409 Company: CISCO EUT Descr.: WLAN Card EUT M/N: Test Target: FCC 15 B Mode Oper: Tx, g mode, with 15 dBi Sector Antenna															
Test Equipment:															
DMCO Horn 1-18GHz T69; S/N: 3245 @3m		Pre-amplifier 1-26GHz T86 Mitoq 924341		Spectrum Analyzer Agilent E4446A Analyzer		Horn > 18GHz		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
Tx at 2.412GHz															
4.824	9.8	50.9	41.2	33.1	3.1	-45.6	0.0	1.0	42.5	32.8	74.0	54.0	-31.5	-21.2	V
4.824	9.8	47.5	38.5	33.1	3.1	-45.6	0.0	1.0	39.1	30.1	74.0	54.0	-34.9	-23.9	H
Tx at 2.437GHz															
4.874	9.8	49.6	39.7	33.1	3.2	-45.6	0.0	1.0	41.2	31.3	74.0	54.0	-32.8	-22.7	V
7.311	9.8	42.0	32.8	36.0	4.1	-46.6	0.0	1.0	36.5	27.3	74.0	54.0	-37.5	-26.7	V
4.874	9.8	45.8	38.2	33.1	3.2	-45.6	0.0	1.0	37.4	29.8	74.0	54.0	-36.6	-24.2	H
7.311	9.8	39.9	31.6	36.0	4.1	-46.6	0.0	1.0	34.4	26.1	74.0	54.0	-39.6	-27.9	H
Tx at 2.62GHz															
4.924	9.8	51.1	42.3	33.1	3.2	-45.7	0.0	1.0	42.7	33.9	74.0	54.0	-31.3	-20.1	V
7.386	9.8	46.5	31.9	36.1	4.1	-46.5	0.0	1.0	35.1	26.6	74.0	54.0	-38.9	-27.4	V
4.924	9.8	48.1	40.0	33.1	3.2	-45.7	0.0	1.0	39.7	31.6	74.0	54.0	-34.3	-22.4	H
7.386	9.8	38.6	31.5	36.1	4.1	-46.5	0.0	1.0	33.2	26.1	74.0	54.0	-40.8	-27.9	H
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										

7.9.7. RADIATED EMISSIONS WITH 21 dBi DISH ANTENNA

RADIATED RF MEASUREMENT SETUP

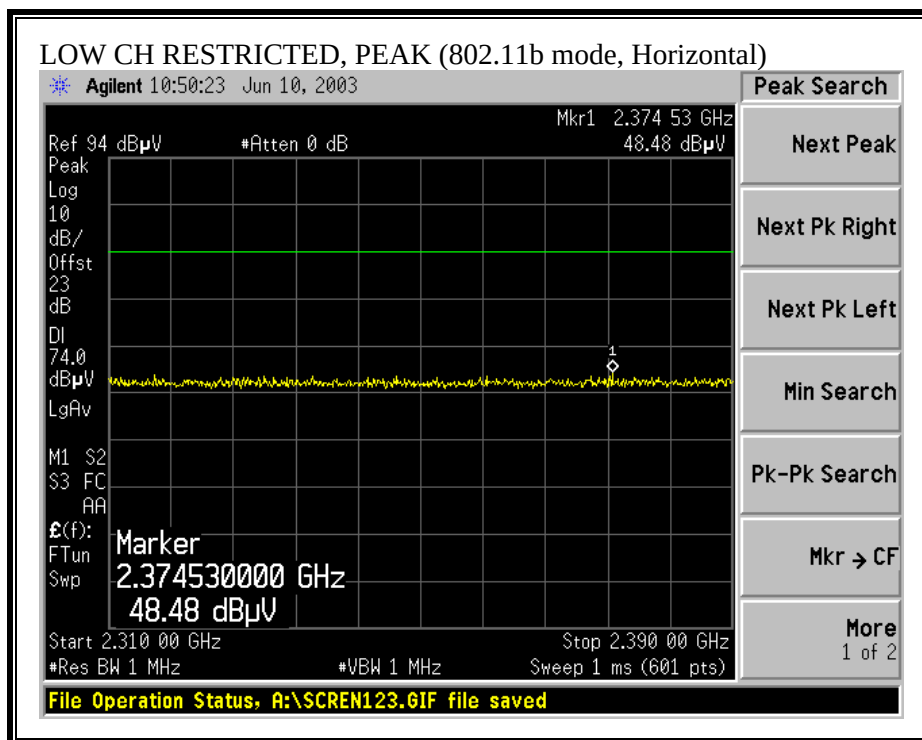
RADIATED FRONT PHOTO

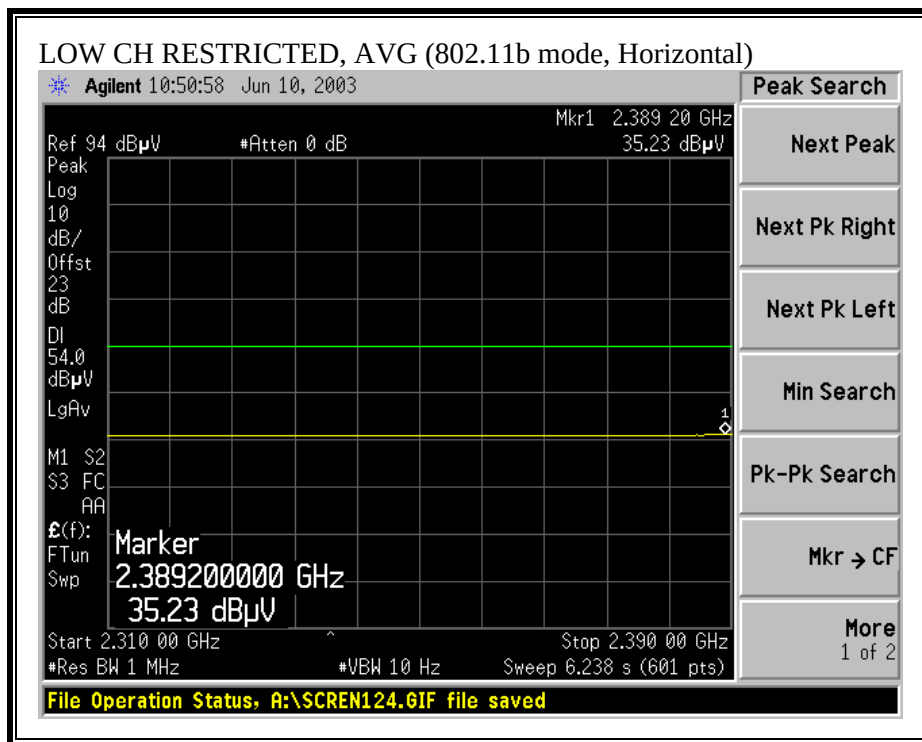


RADIATED BACK PHOTO

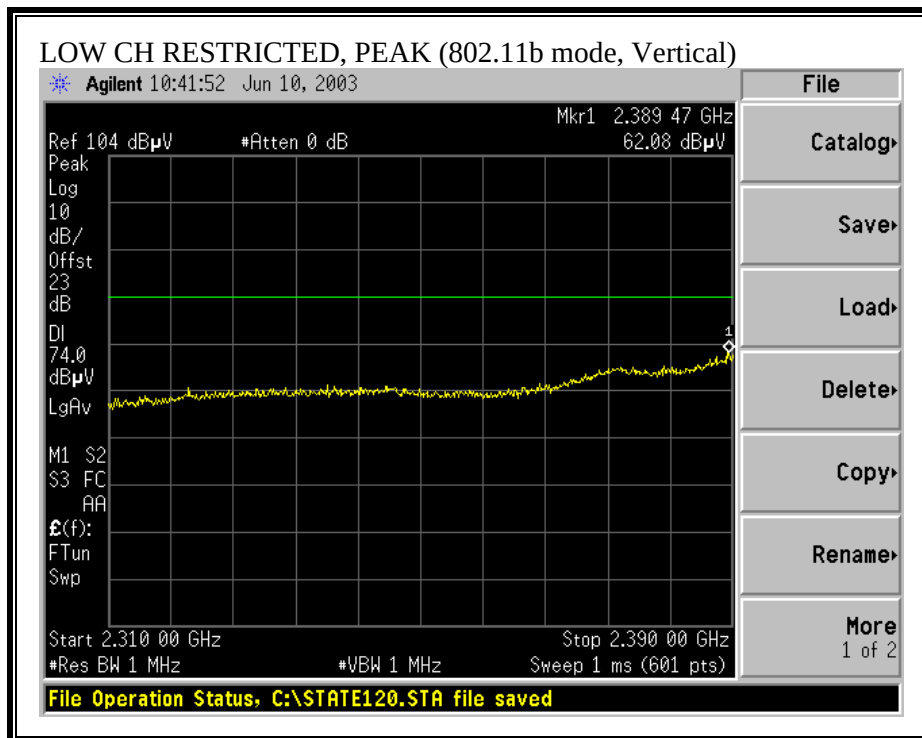


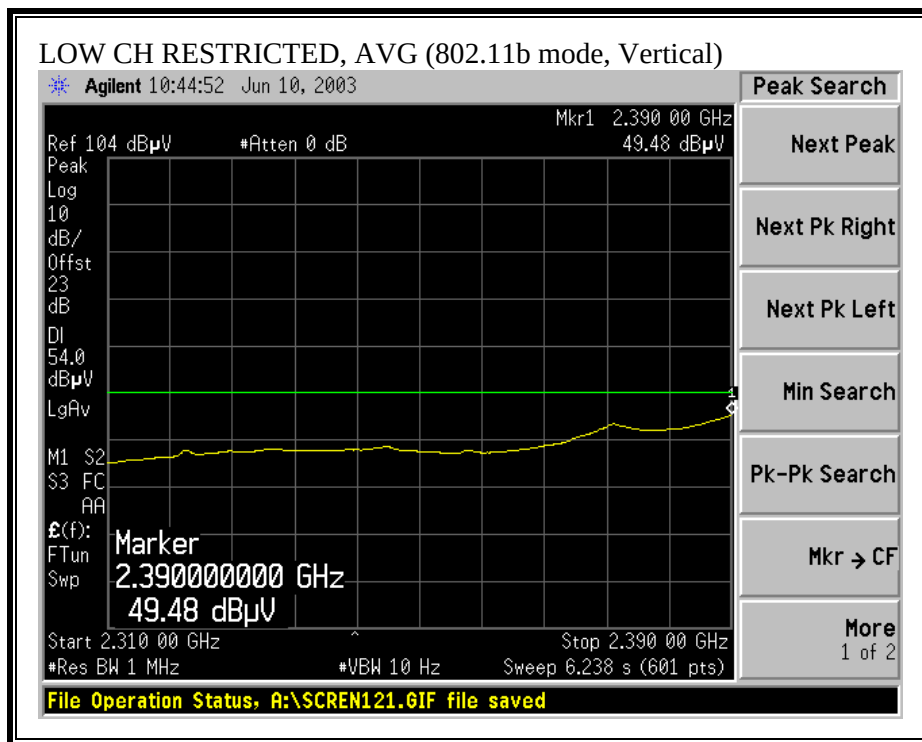
RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, HORIZONTAL)



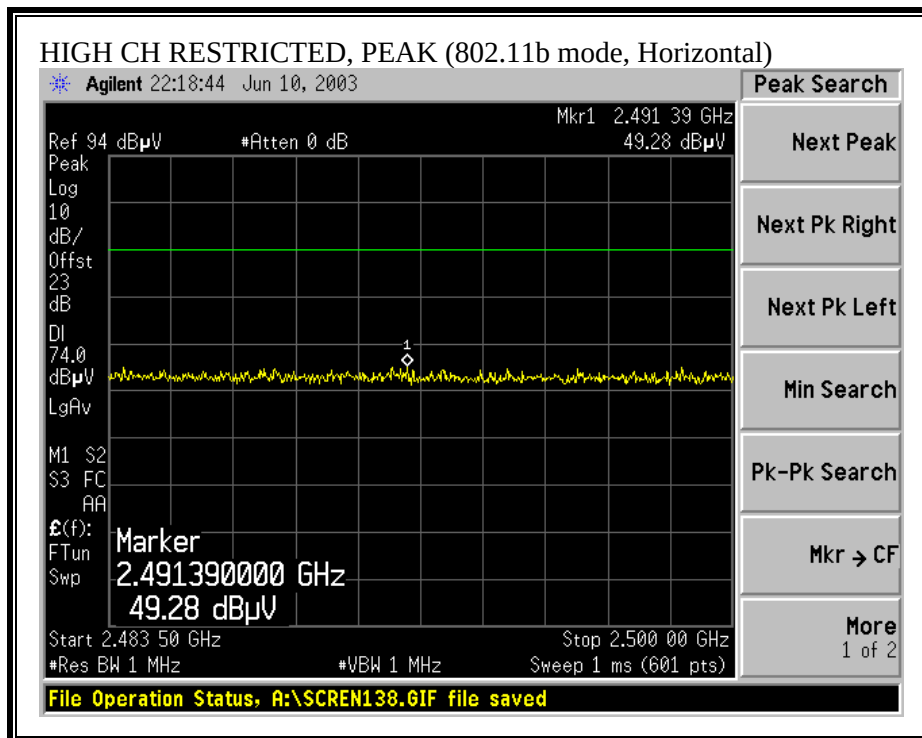


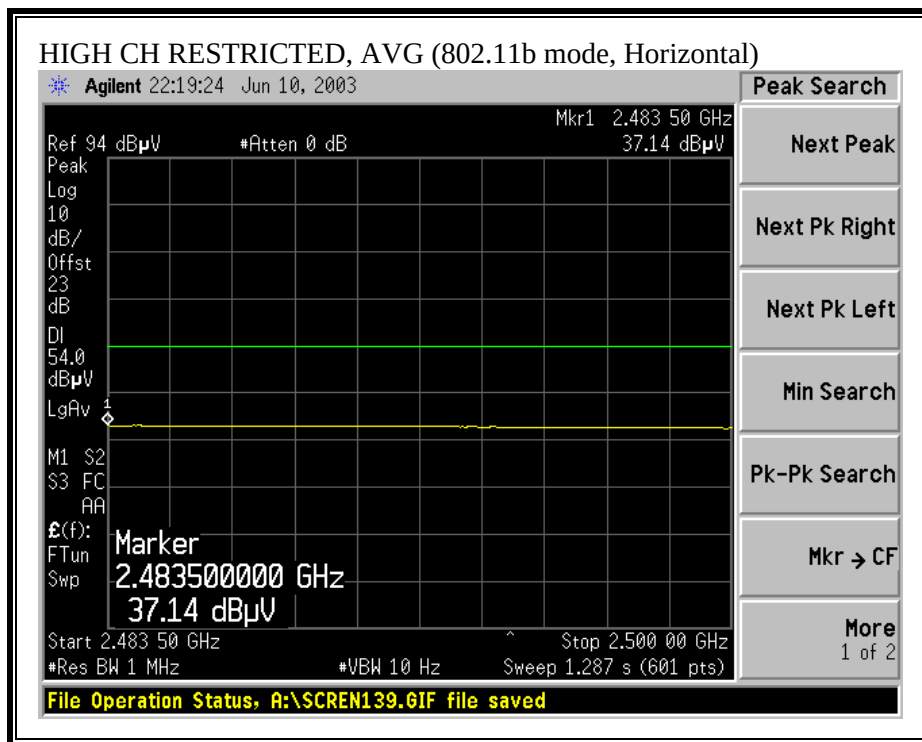
RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)



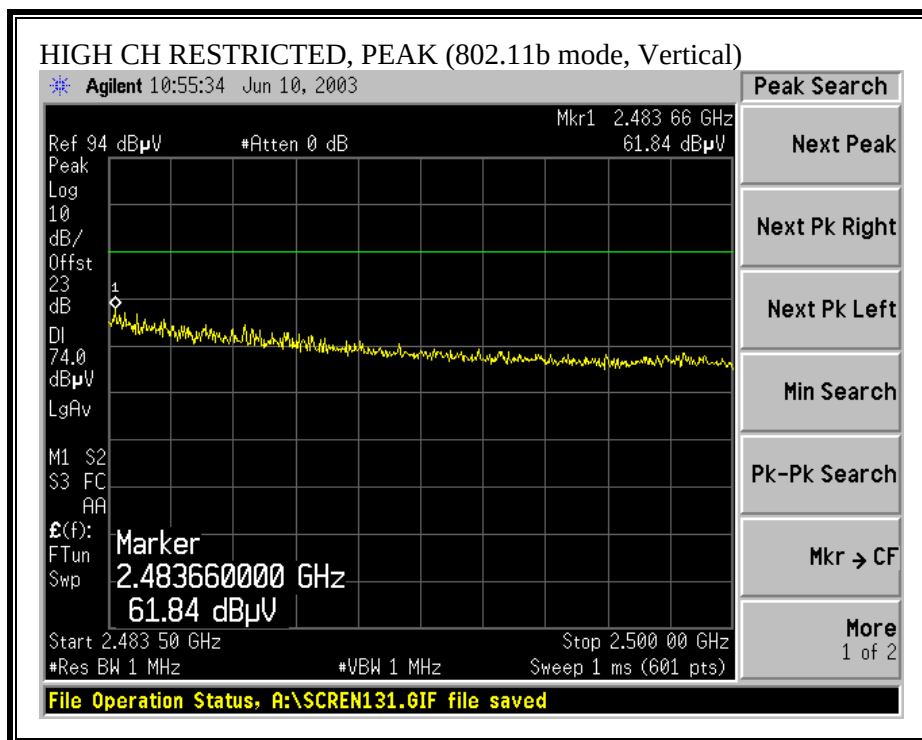


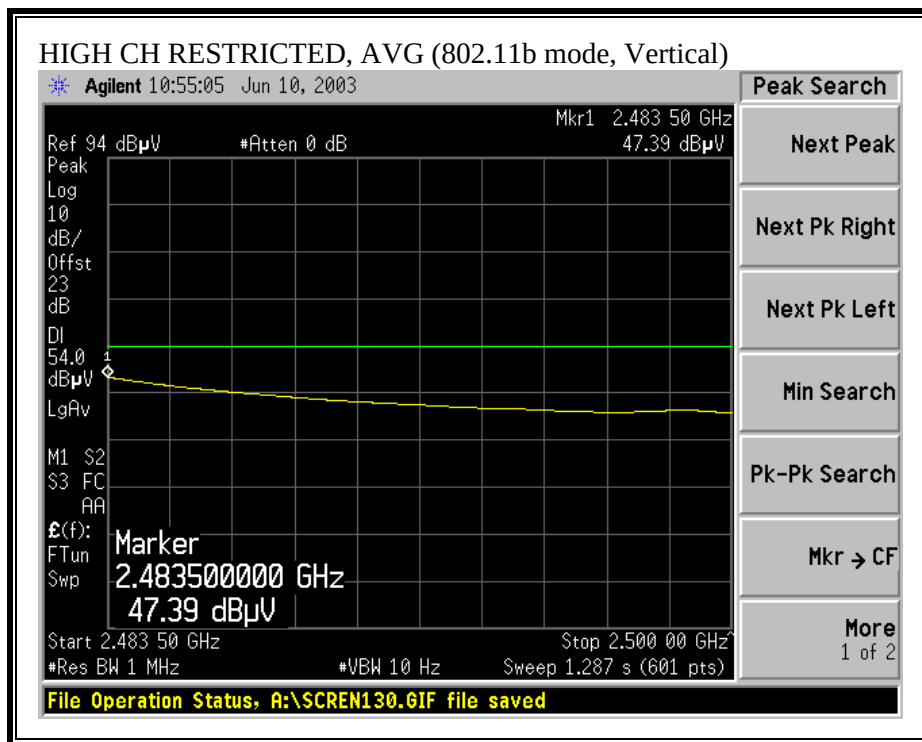
RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, VERTICAL)

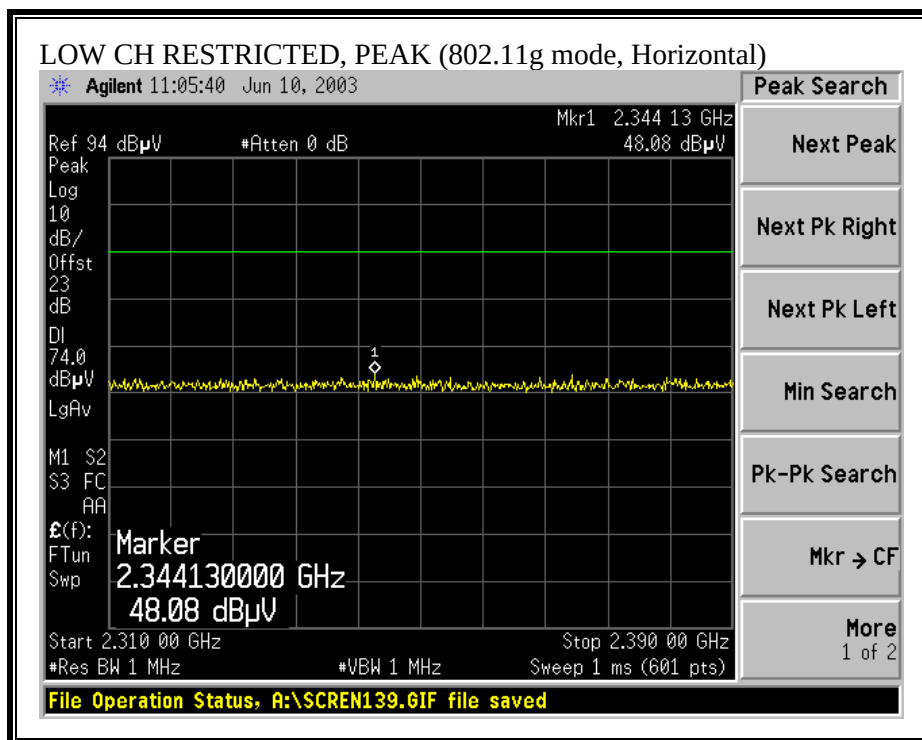


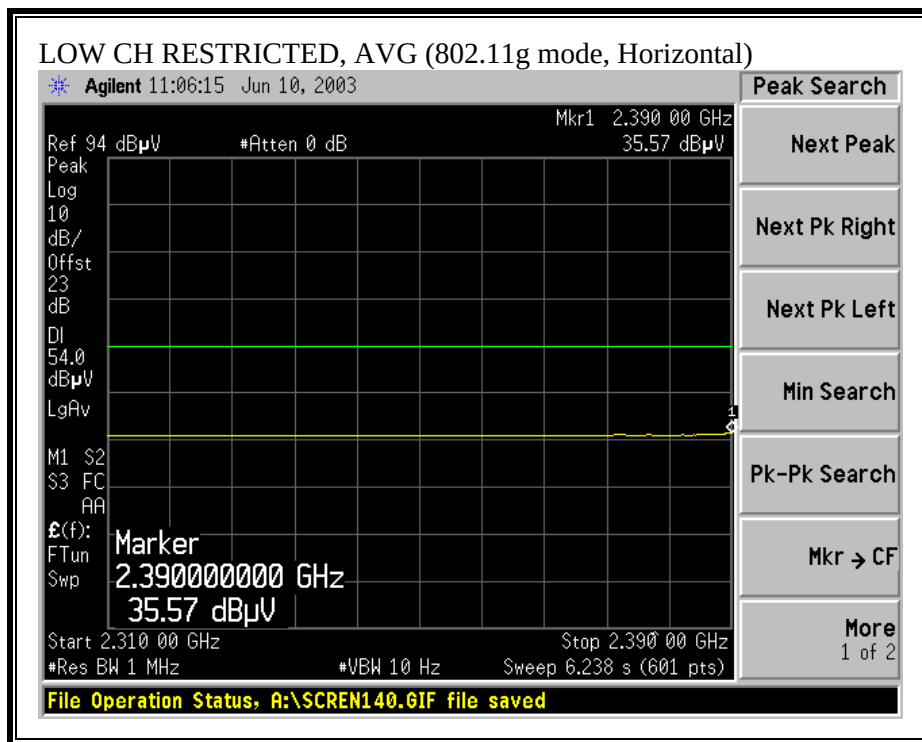


HARMONICS AND SPURIOUS EMISSIONS (b MODE)

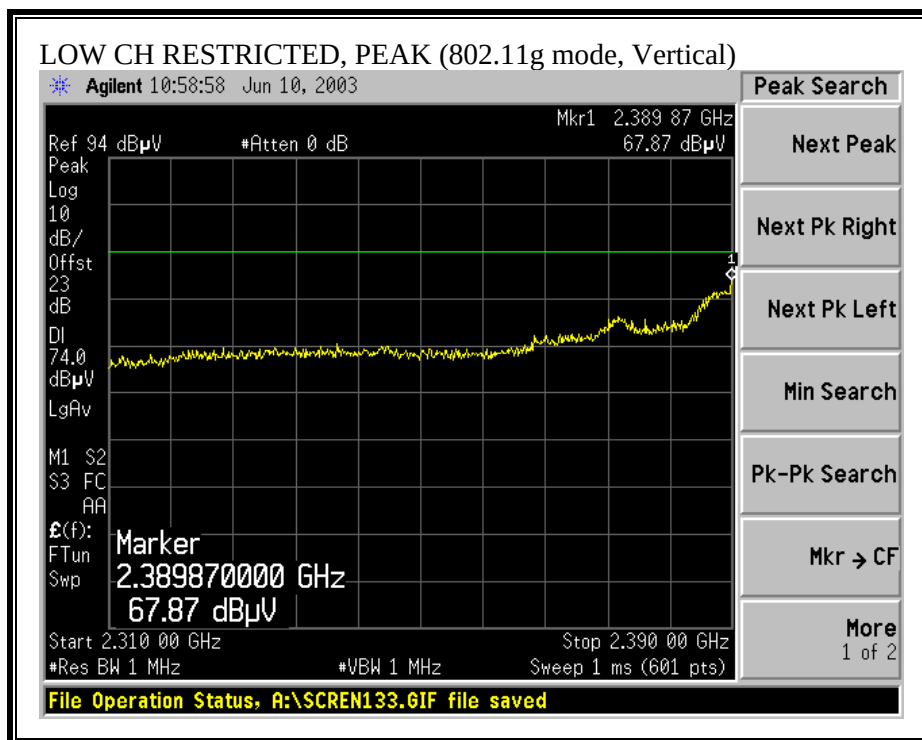
05/10/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site															
Test Engr: Yan Zheng															
Project #:															
Company: Cisco															
EUT Descrip.: AIR-CT516-A-K9															
EUT M/N: SMT07210013															
Test Target:															
Mode Oper: Transmit, b mode, with 21dBi Dish Antenna															
Test Equipment:															
EMCO Horn 1-18GHz T60; S/N: 1138 @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 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	83.9	81.1	33.1	4.4	-45.6	0.0	1.0	46.8	44.0	74.0	84.0	-27.2	-10.0	H
4.824	9.8	88.4	86.6	33.1	4.4	-45.6	0.0	1.0	51.3	49.5	74.0	84.0	-22.7	-4.5	V
Channel 6 (2437MHz)															
4.874	9.8	84.3	81.8	33.8	3.8	-45.6	0.0	1.0	47.2	44.7	74.0	84.0	-26.8	-9.3	V
7.311	9.8	48.5	36.6	37.3	4.8	-46.6	0.0	1.0	45.0	33.1	74.0	84.0	-29.0	-20.9	V
7.311	9.8	48.0	36.6	37.3	4.8	-46.6	0.0	1.0	44.5	33.1	74.0	84.0	-29.5	-20.9	H
4.874	9.8	82.2	47.2	33.8	3.8	-45.6	0.0	1.0	45.1	40.1	74.0	84.0	-28.9	-13.9	H
Channel 11 (2462MHz)															
4.924	9.8	89.4	87.7	33.8	3.8	-45.7	0.0	1.0	52.3	50.6	74.0	84.0	-21.7	-3.4	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	84.0	-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	84.0	-29.4	-20.8	H
4.924	9.8	49.8	42.3	33.8	3.8	-45.7	0.0	1.0	42.7	35.2	74.0	84.0	-31.3	-18.8	H
38.5															
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								

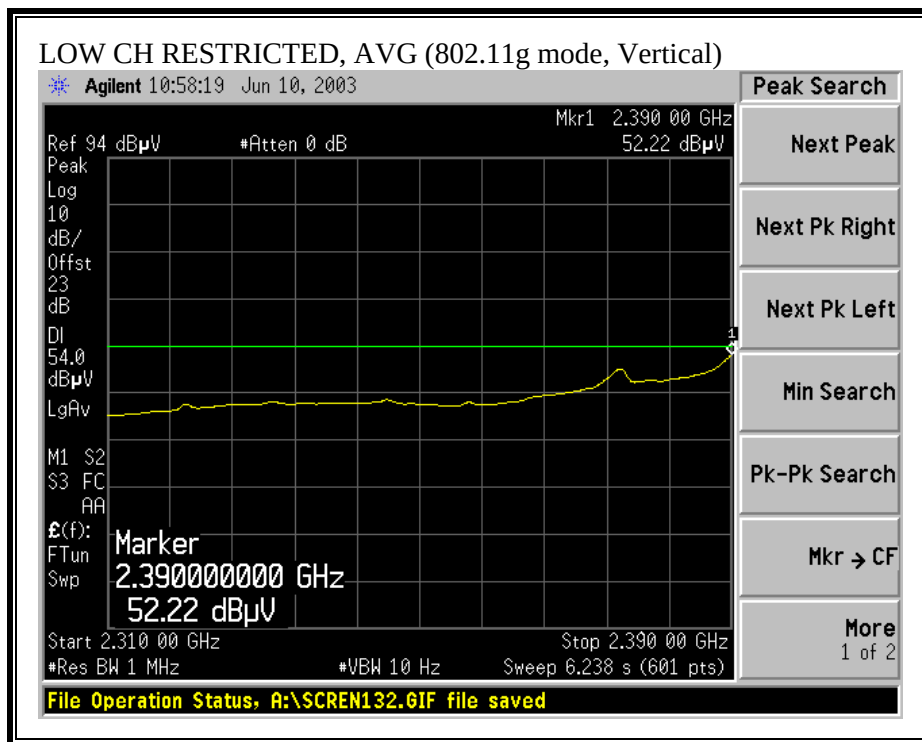
RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, HORIZONTAL)



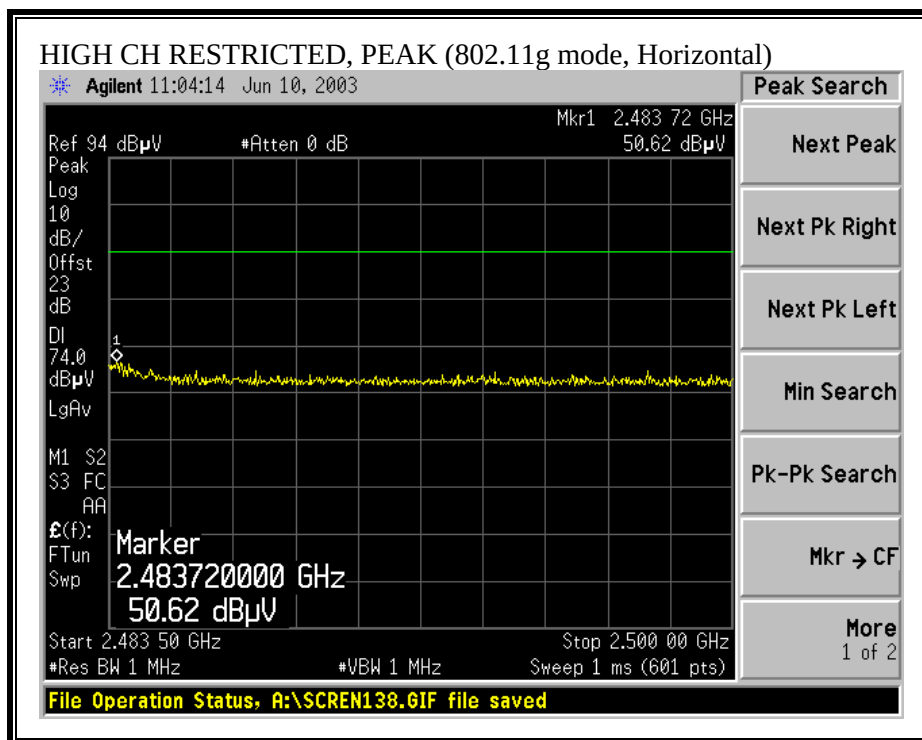


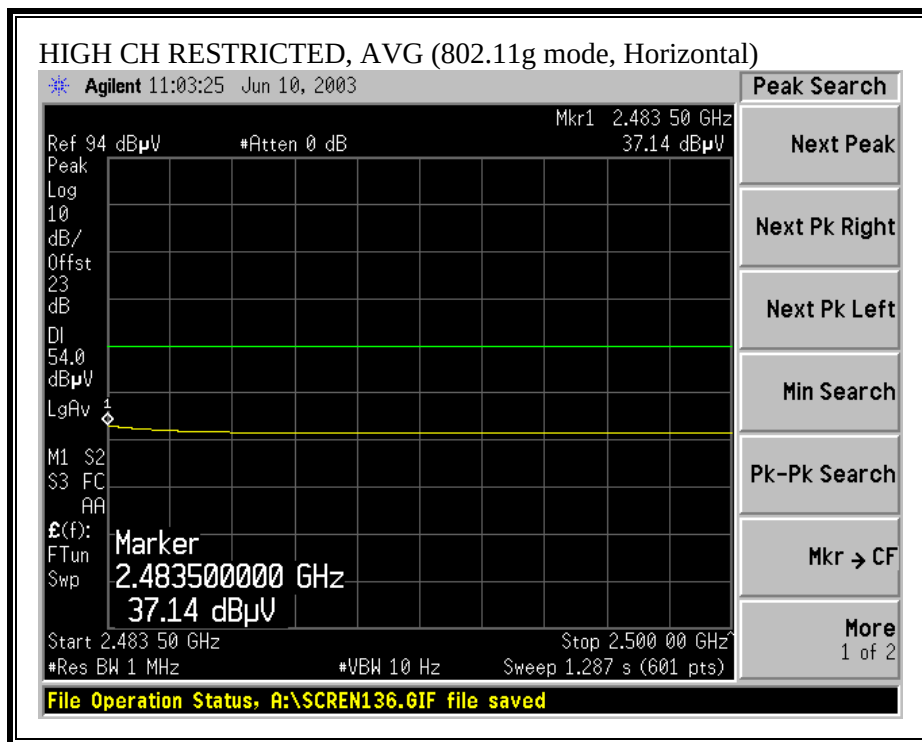
RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, VERTICAL)



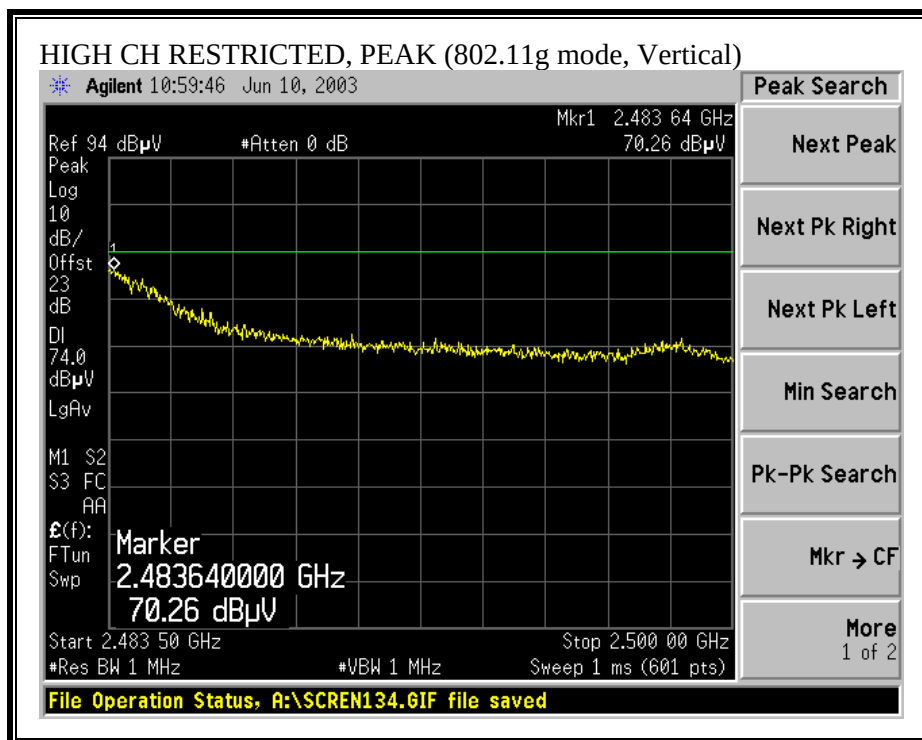


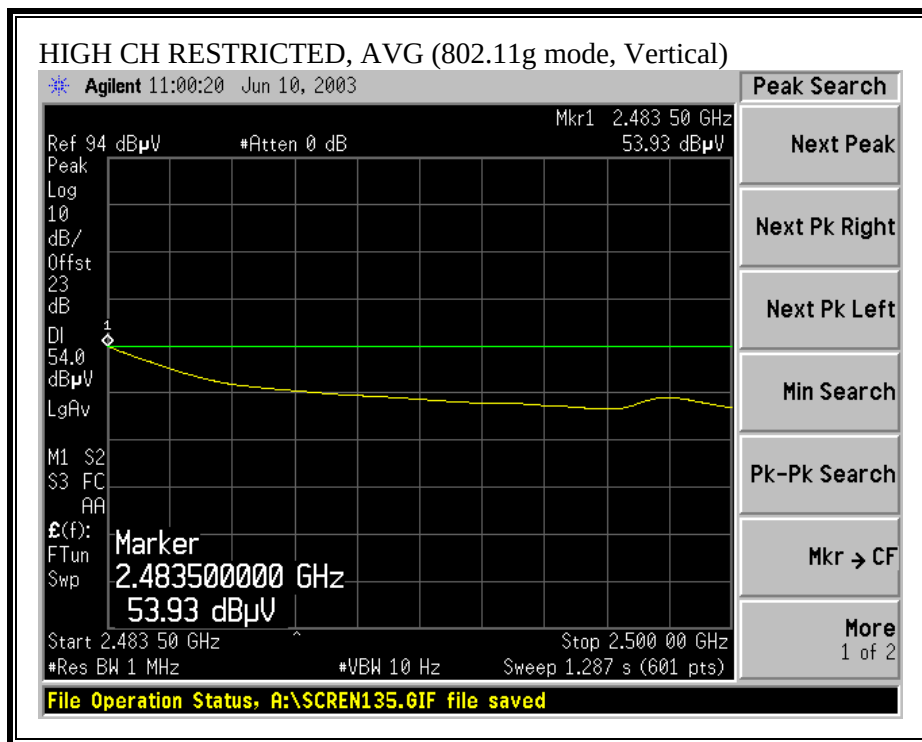
RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, HORIZONTAL)





RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, VERTICAL)



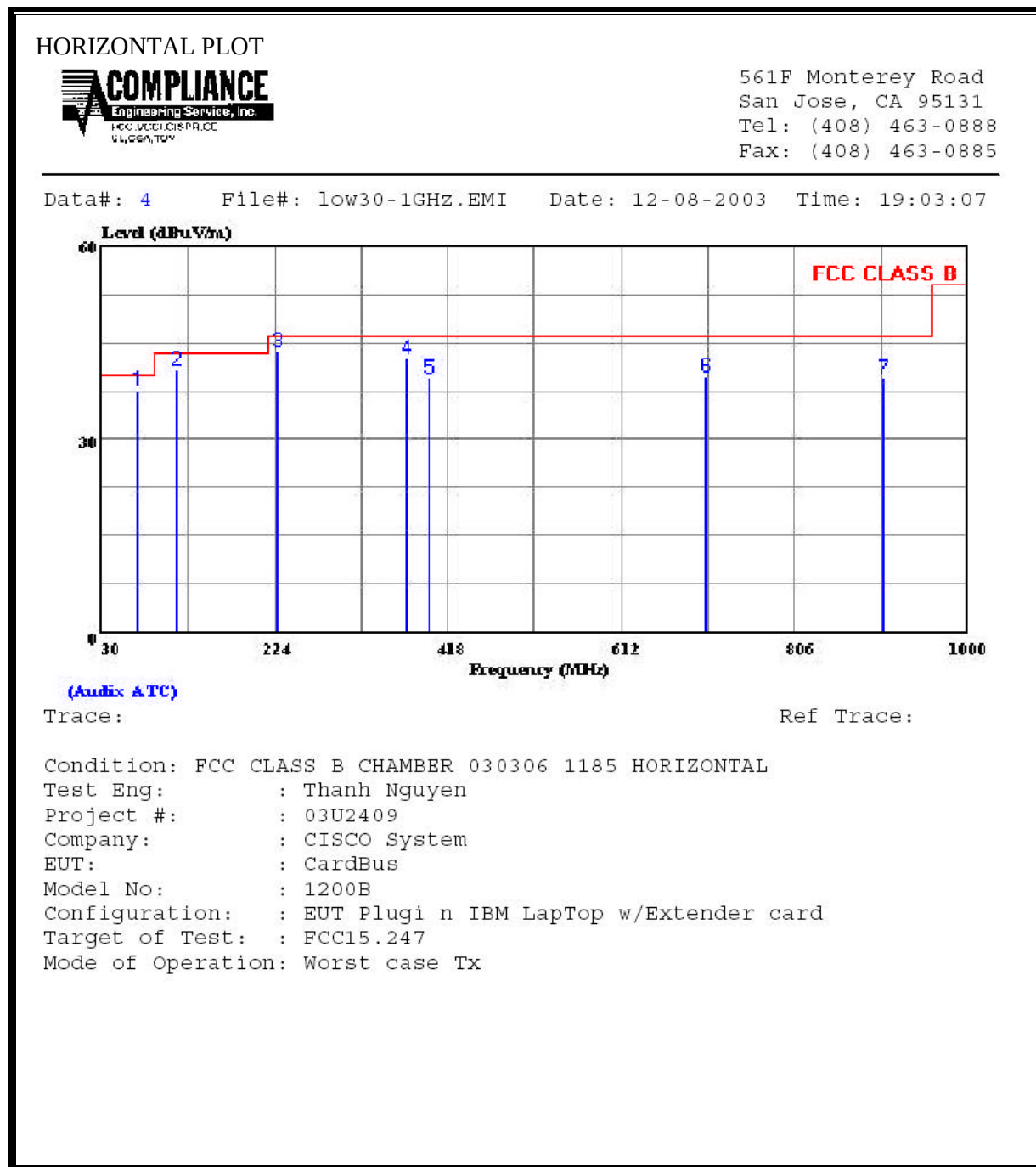


HARMONICS AND SPURIOUS EMISSIONS (g MODE)

05/10/03 High Frequency Measurement Compliance Certification Services, Morgan Hill Open Field Site																
Test Engr: Yan Zheng																
Project #:																
Company: Cisco																
EUT Descrip.: AIR-CT510G-A-K9																
EUT M/N: SMT07210013																
Test Target:																
Mode Oper: Transmit, g mode, with 21dBi Dish Antenna																
Test Equipment:																
EMCO Horn 1-18GHz		Pre-amplifier 1-26GHz		Spectrum Analyzer		Horn > 18GHz		Link								
T60; S/N: 2238 @3m		T86 M10q 924341		Agilent E4446A Analyzer		T117; ARA 18-26GHz; S/N:1013		FCC 15.205								
High 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	54.6	51.1	33.1	4.4	-45.6	0.0	1.0	47.5	44.0	74.0	54.0	-26.5	-10.0	H	
4.824	9.8	58.2	56.8	33.1	4.4	-45.6	0.0	1.0	51.1	49.7	74.0	54.0	-22.9	-4.3	V	
Channel 6 (2437MHz)																
4.874	9.8	57.2	54.8	33.1	4.4	-45.6	0.0	1.0	50.1	47.7	74.0	54.0	-23.9	-6.3	H	
7.311	9.8	51.0	36.6	36.2	5.7	-46.6	0.0	1.0	47.3	32.9	74.0	54.0	-26.7	-21.1	H	
7.311	9.8	49.9	36.5	36.2	5.7	-46.6	0.0	1.0	46.2	32.8	74.0	54.0	-27.8	-21.2	V	
4.874	9.8	56.8	56.9	33.1	4.4	-45.6	0.0	1.0	49.7	49.8	74.0	54.0	-24.3	-4.2	V	
Channel 11 (2462MHz)																
4.924	9.8	59.8	58.2	33.2	4.5	-45.7	0.0	1.0	52.7	51.1	74.0	54.0	-21.5	-2.9	V	
7.286	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	
7.286	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	55.7	52.2	33.2	4.5	-45.7	0.0	1.0	48.6	45.1	74.0	54.0	-25.4	-3.9	H	
36.1																
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									

7.9.8. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

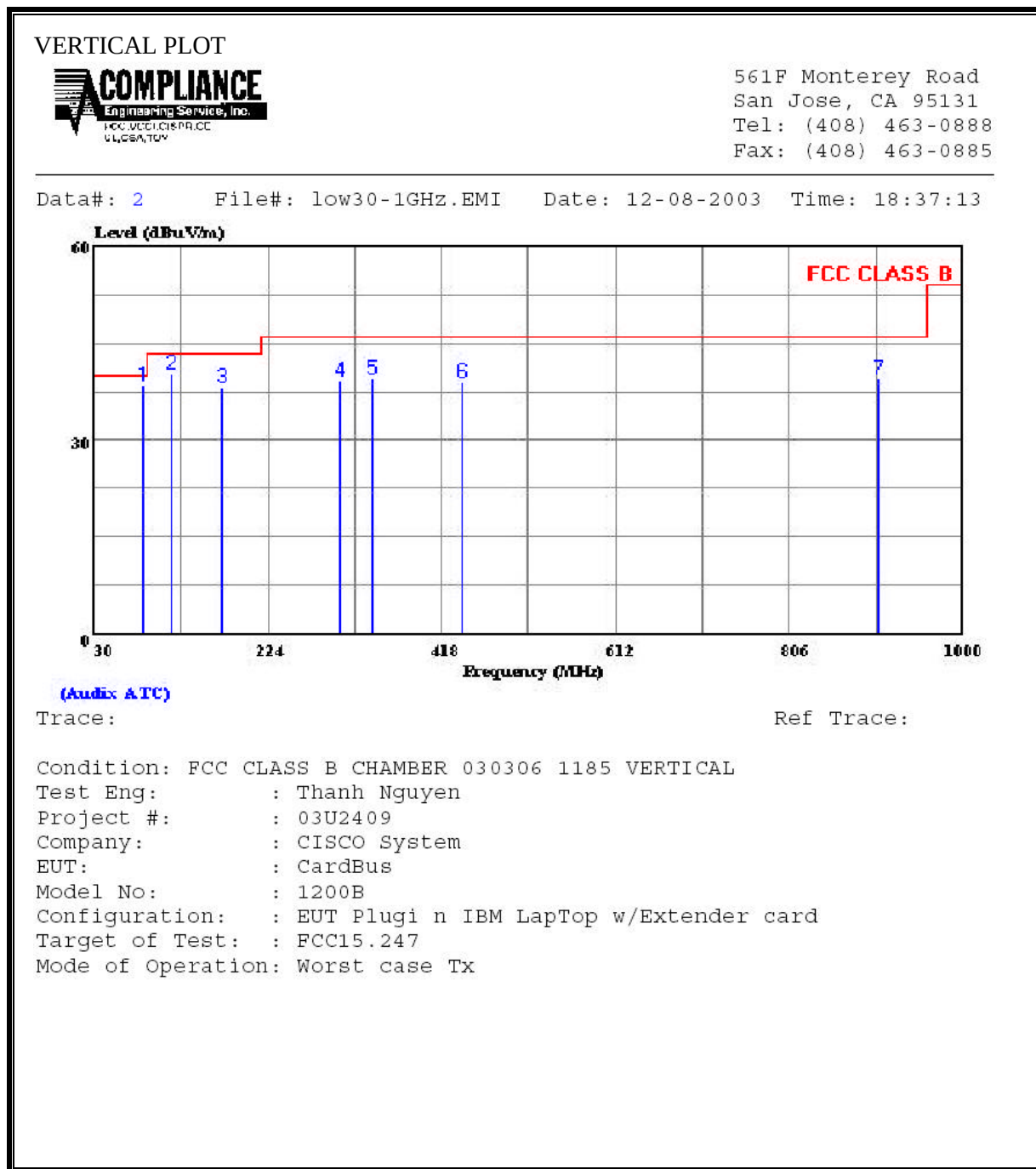
SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



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

7.10. 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 μ 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.

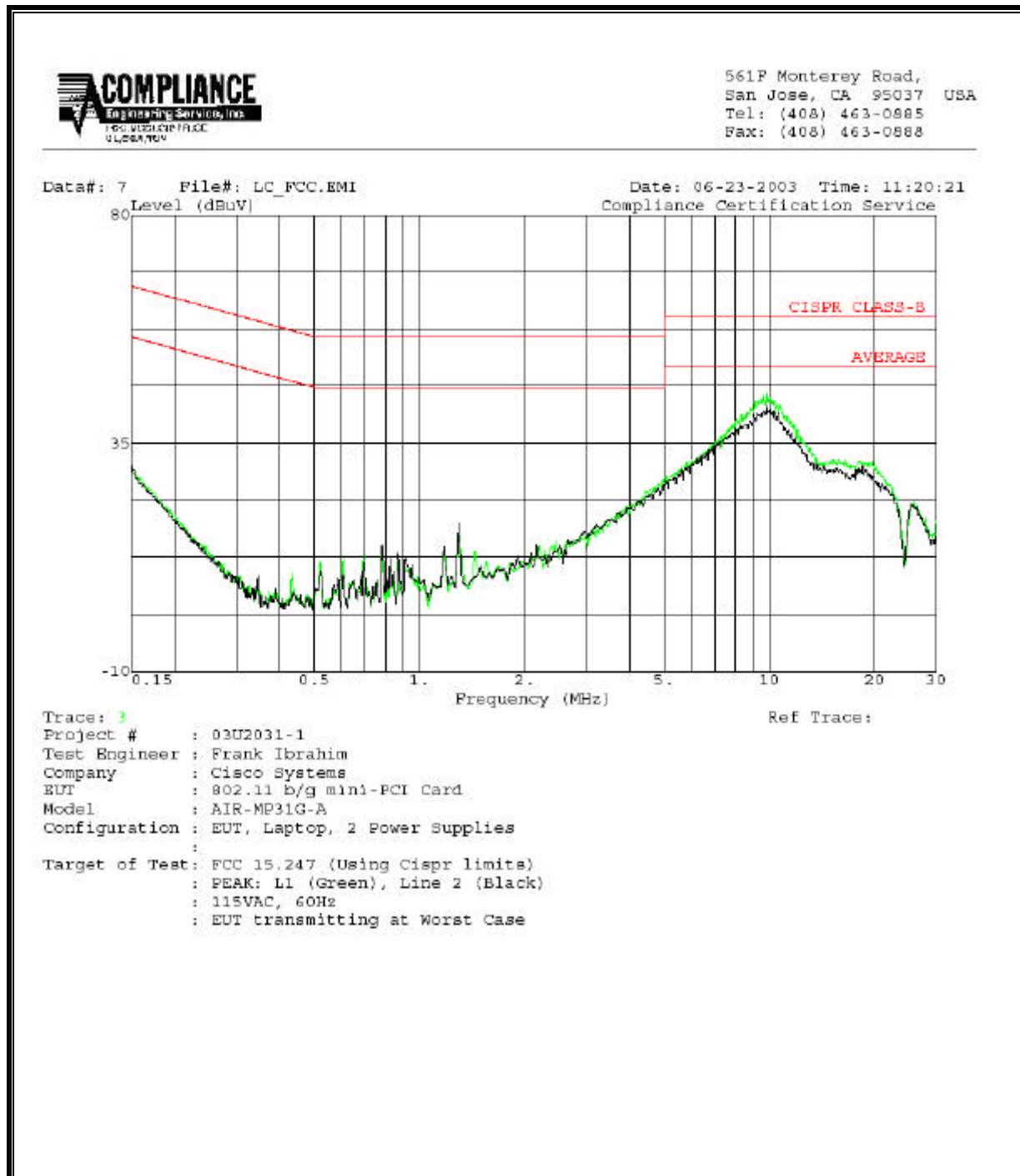
RESULTS

No non-compliance noted:

6 WORST EMISSIONS

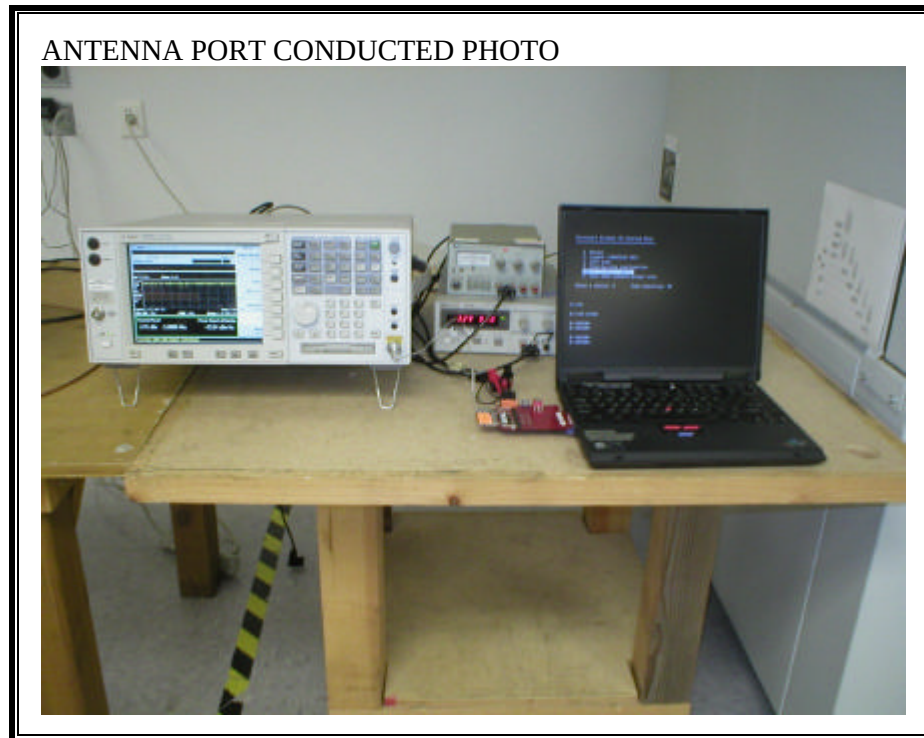
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq.	Reading			Closs	Limit	EN_B	Margin		Remark
(MHz)	PK (dBuV)	QP (dBuV)	AV (dBuV)	(dB)	QP	AV	QP (dB)	AV (dB)	L1 / L2
0.15	29.28	--	--	0.00	66.00	56.00	-36.72	-26.72	L1
9.86	45.06	--	--	0.00	60.00	50.00	-14.94	-4.94	L1
18.14	31.58	--	--	0.00	60.00	50.00	-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

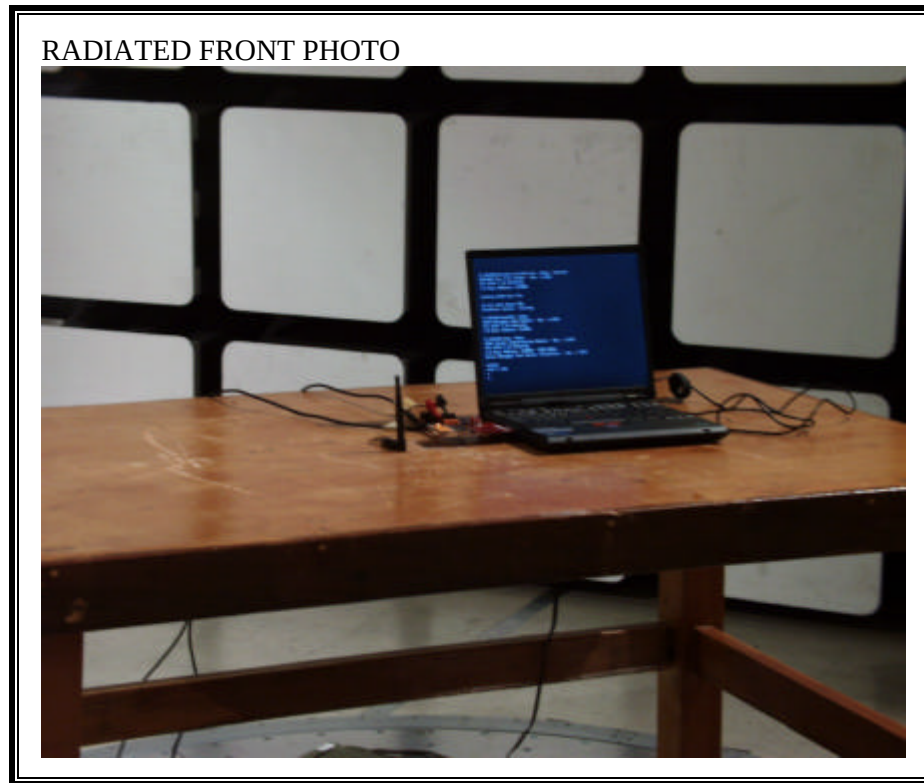


8. SETUP PHOTOS

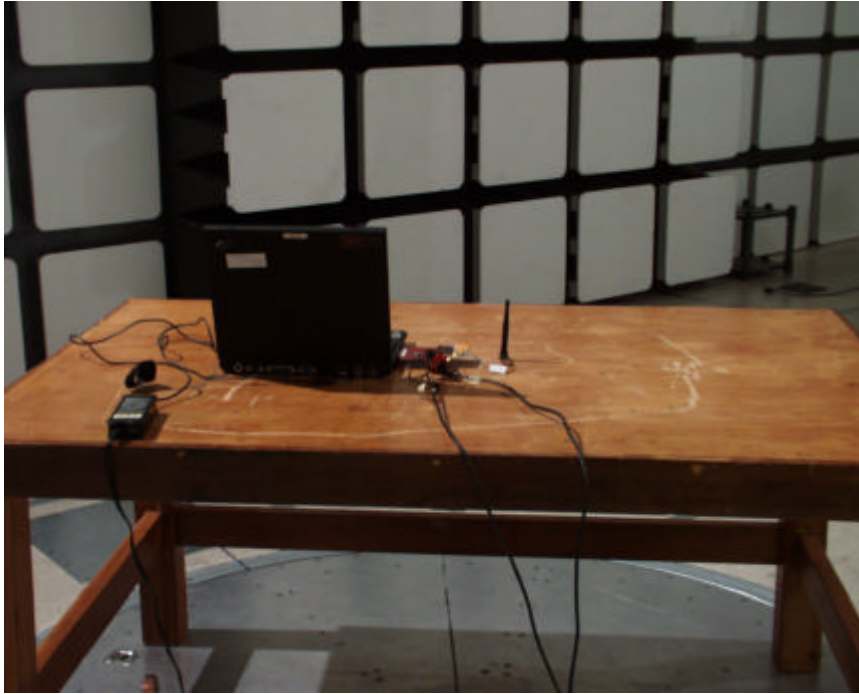
ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP



RADIATED RF MEASUREMENT SETUP



RADIATED BACK PHOTO



POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP



LINE CONDUCTED BACK PHOTO



END OF REPORT