

## **6.7. TRANSMISSION IN THE ABSENCE OF DATA**

### **RESULTS**

No non-compliance noted:

See theory of operation

## **6.8. TYPE OF ANTENNA**

### **RESULTS**

No non-compliance noted:

Antenna is integral.

## **6.9. FREQUENCY STABILITY**

### **RESULTS**

No non-compliance noted:

Referring to the theory of operation, the crystal used to set the frequency has a temperature coefficient of +/- 20 ppm over the specified rated temperature range. For a transmitter fundamental frequency of 5.35 GHz, this corresponds to +/- 107 kHz.

## 6.10. CONDUCTED UNDESIRABLE EMISSIONS

### LIMITS

§15.407 (b) (1 & 2) For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27dBm / MHz.

### TEST PROCEDURE

Conducted RF measurements of the transmitter output are made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to 1 MHz. The video bandwidth is set to 1 MHz. Peak detection measurements are compared to the average EIRP limit, adjusted for the maximum antenna gain. If necessary, additional average detection measurements are made.

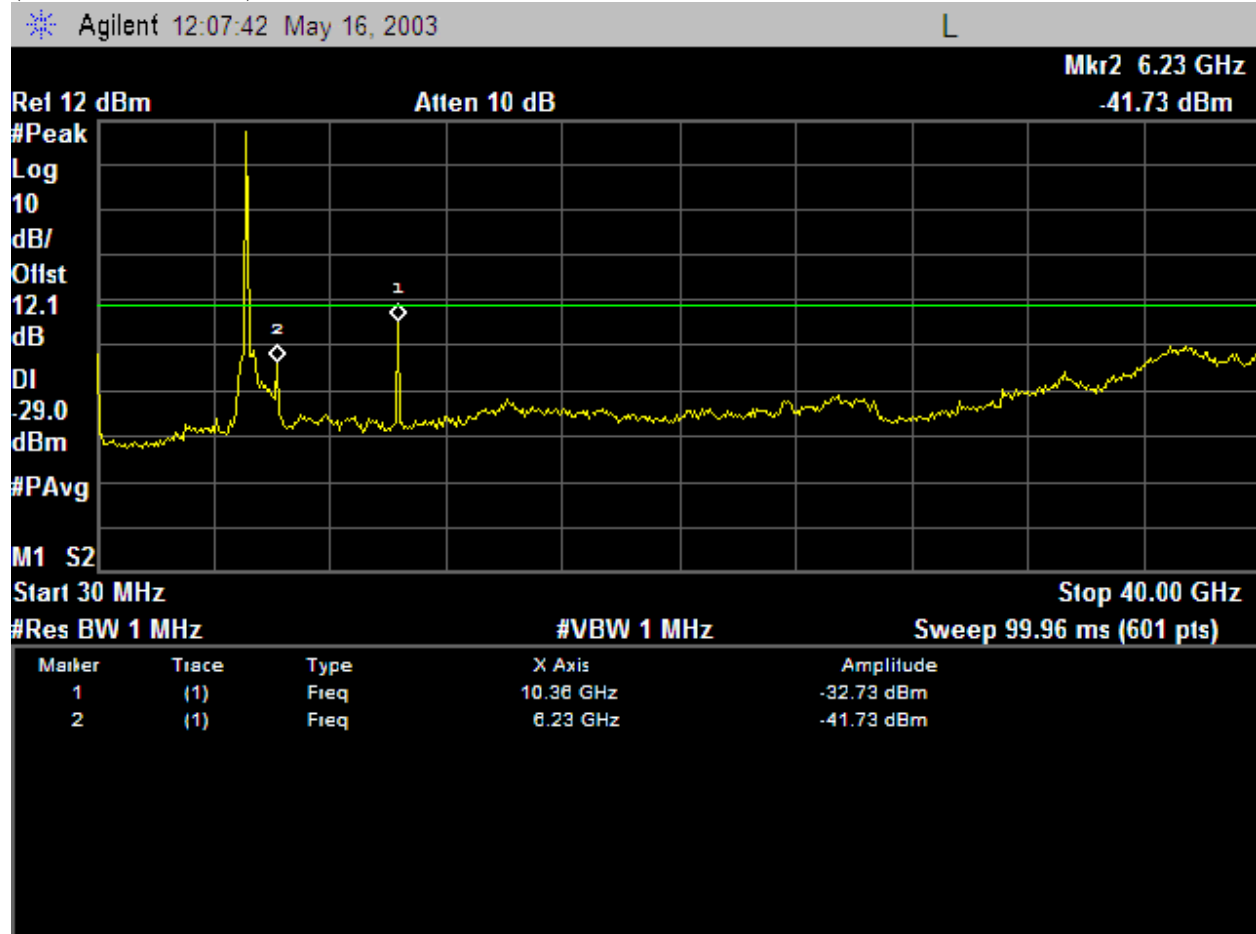
Measurements are made over the 30 MHz to 40 GHz range with the transmitter set to the lowest, middle, and highest channels.

### RESULTS

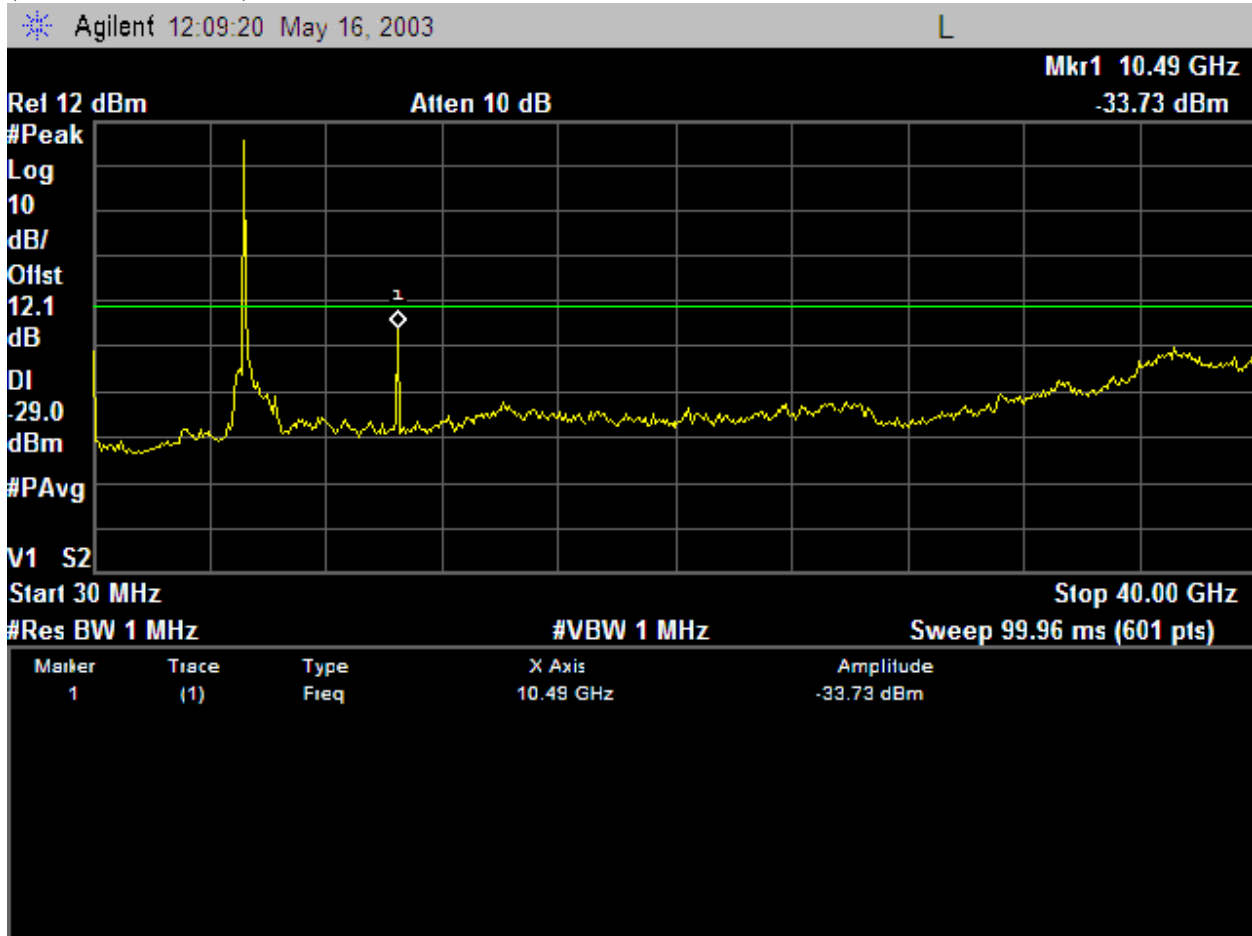
No non-compliance noted:

**CONDUCTED SPURIOUS EMISSIONS (BASE MODE)**

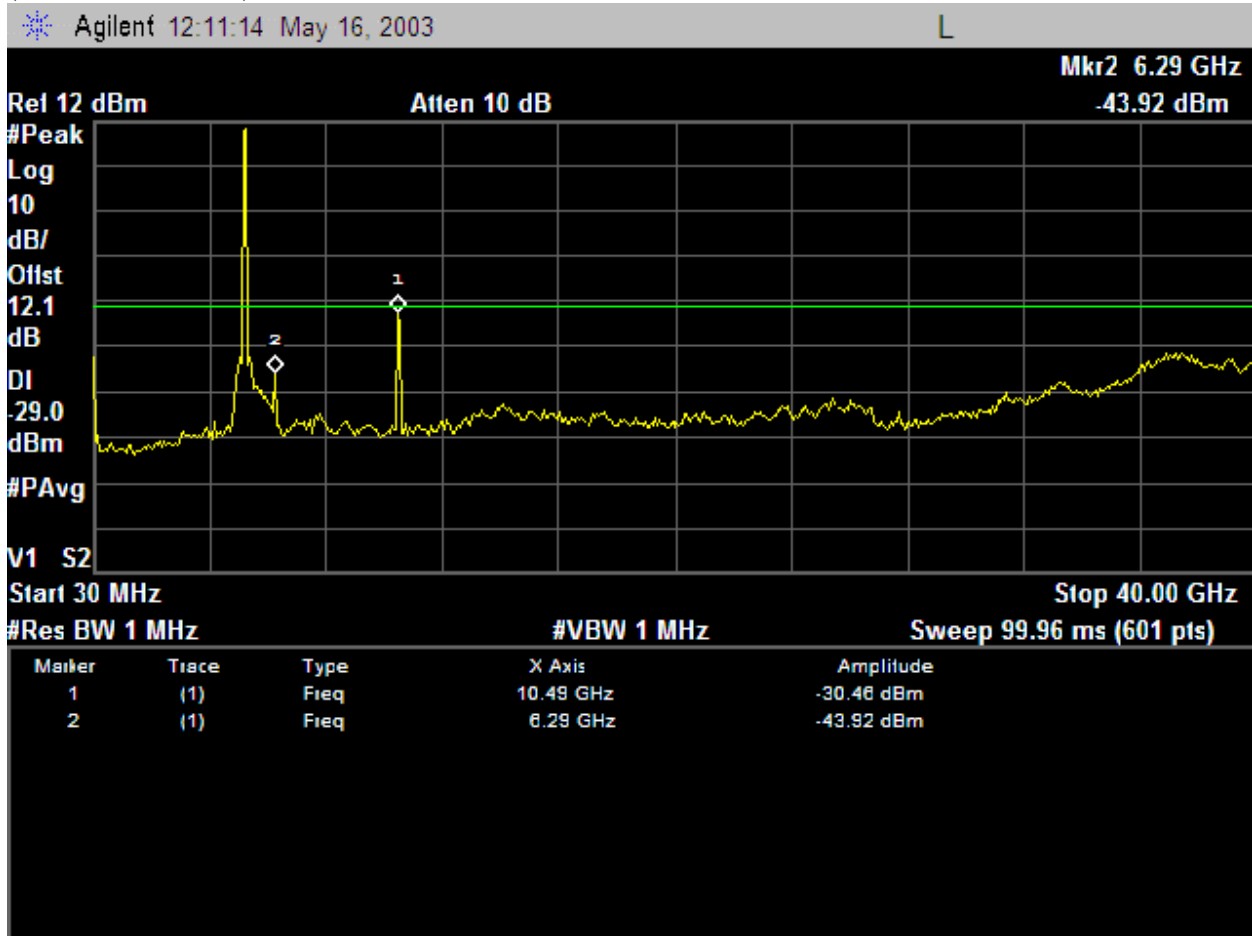
(channel 5180 MHz)



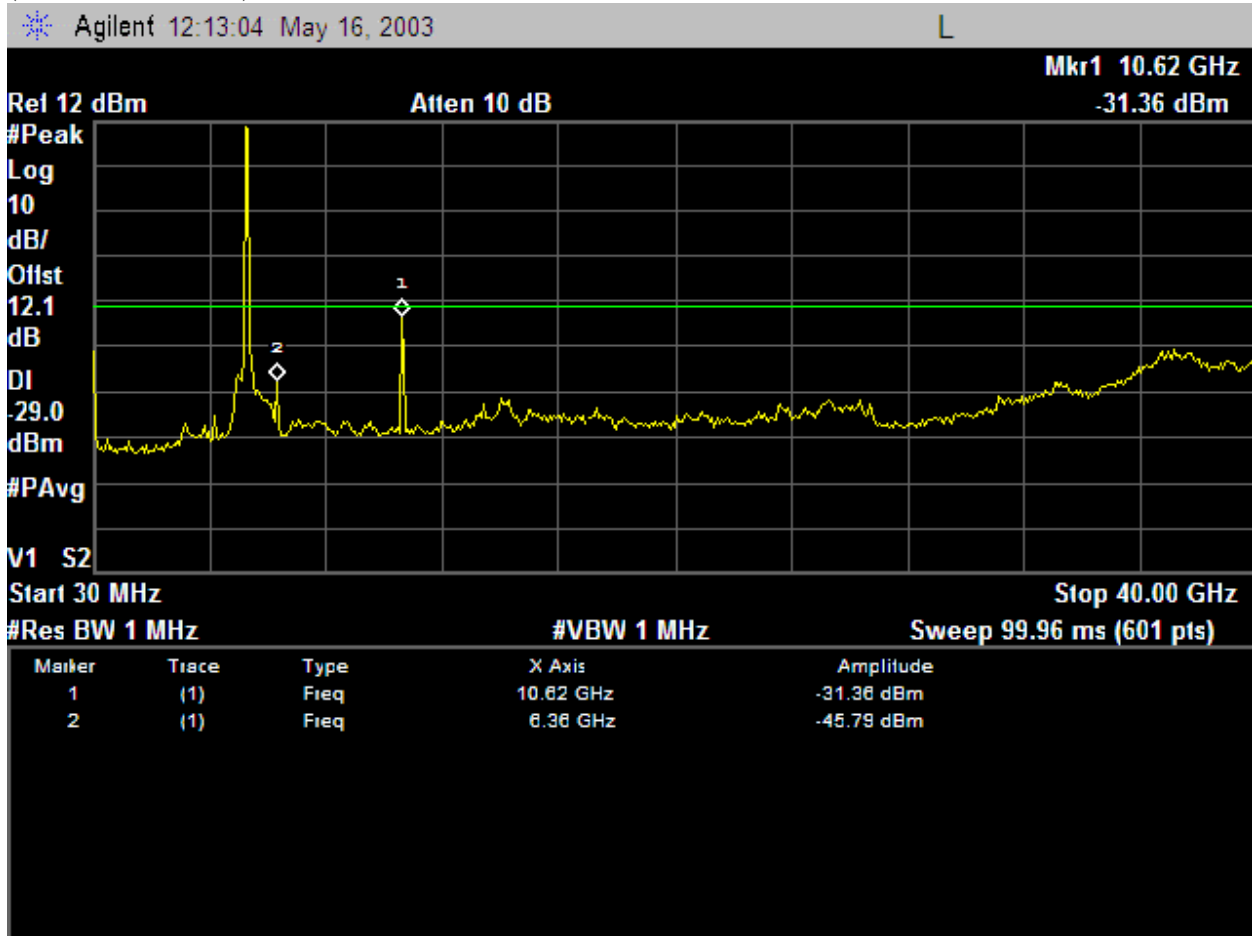
(channel 5240 MHz)



(channel 5260 MHz)



(channel 5230 MHz)





## 6.11. RADIATED EMISSIONS

### LIMITS

§15.205 (a) Except as shown in paragraph (d) of this section, only spurious emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2655 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41			

<sup>1</sup> Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.

<sup>2</sup> Above 38.6

§15.205 (b) Except as provided in paragraphs (d) and (e), the field strength of emissions appearing within these frequency bands shall not exceed the limits shown in Section 15.209. At frequencies equal to or less than 1000 MHz, compliance with the limits in Section 15.209 shall be demonstrated using measurement instrumentation employing a CISPR quasi-peak detector. Above 1000 MHz, compliance with the emission limits in Section 15.209 shall be demonstrated based on the average value of the measured emissions. The provisions in Section 15.35 apply to these measurements.

§15.209 (a) Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
30 - 88	100 **	3
88 - 216	150 **	3
216 - 960	200 **	3
Above 960	500	3

\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

§15.209 (b) In the emission table above, the tighter limit applies at the band edges.

### **TEST PROCEDURE**

The EUT is placed on the wooden table. 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.

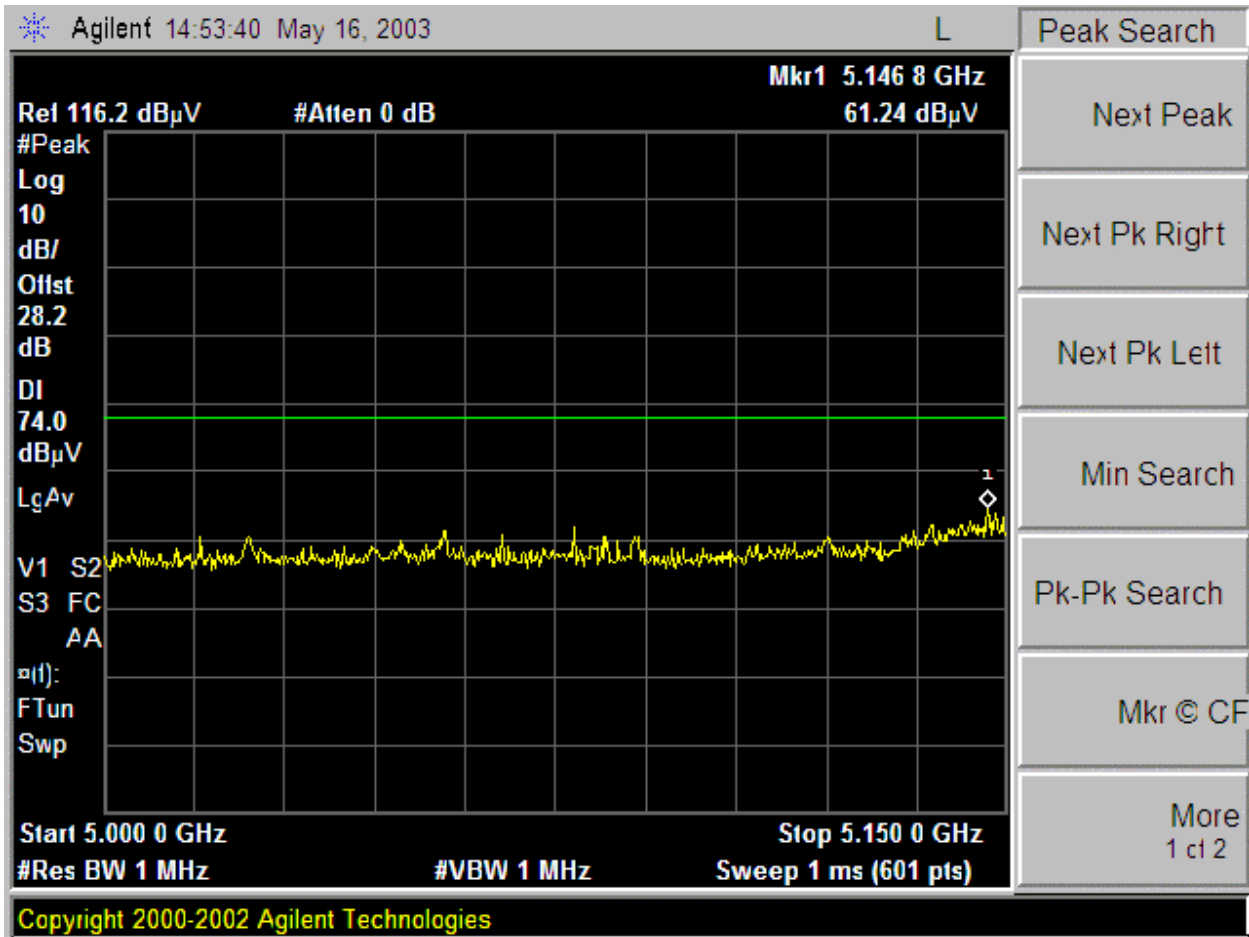
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

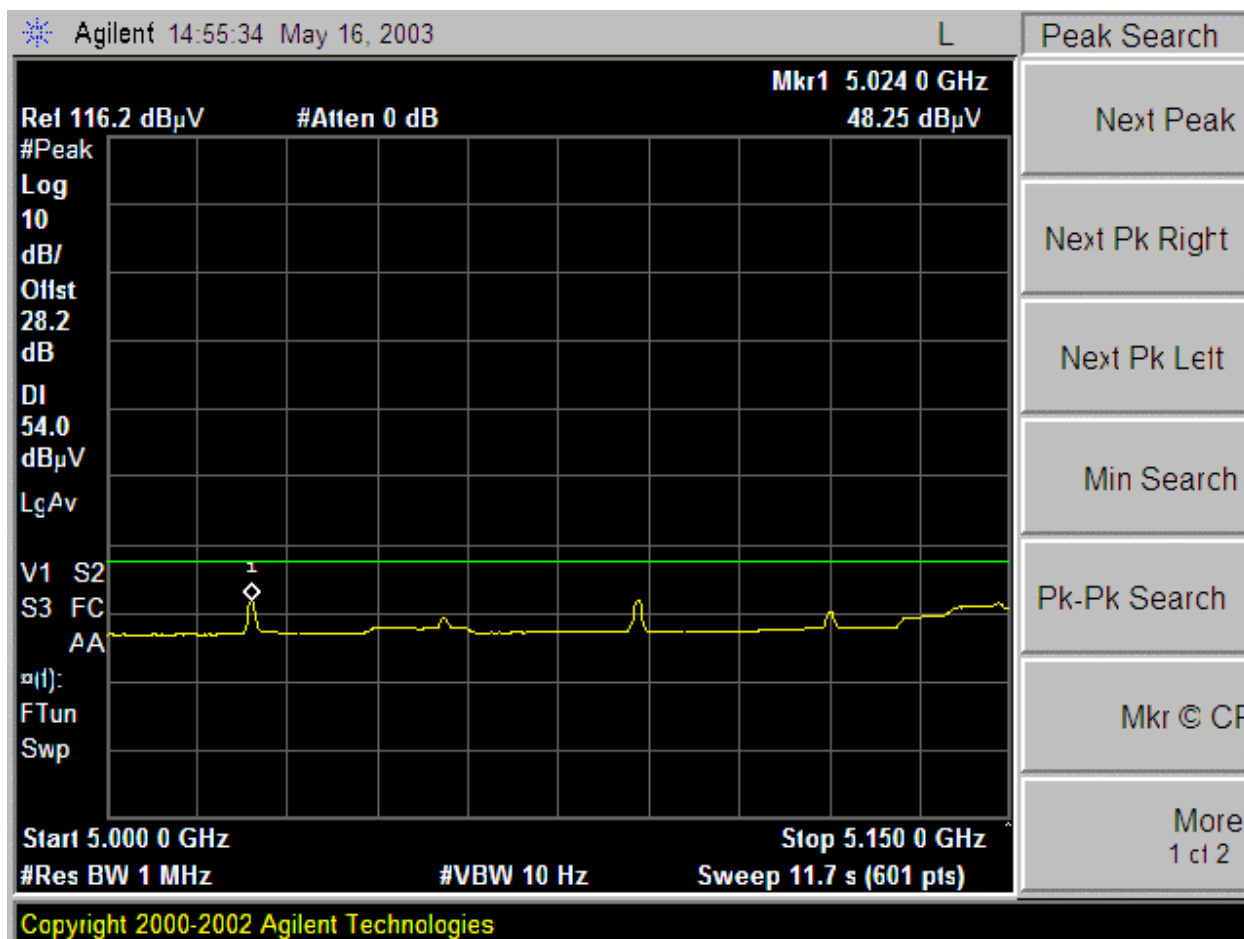
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The frequency span is set small enough to easily differentiate between broadcast stations, intermittent ambient signals and EUT emissions. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the suspected signal. Measurements were made with the antenna polarized in both the vertical and the horizontal positions.

**RESULTS**

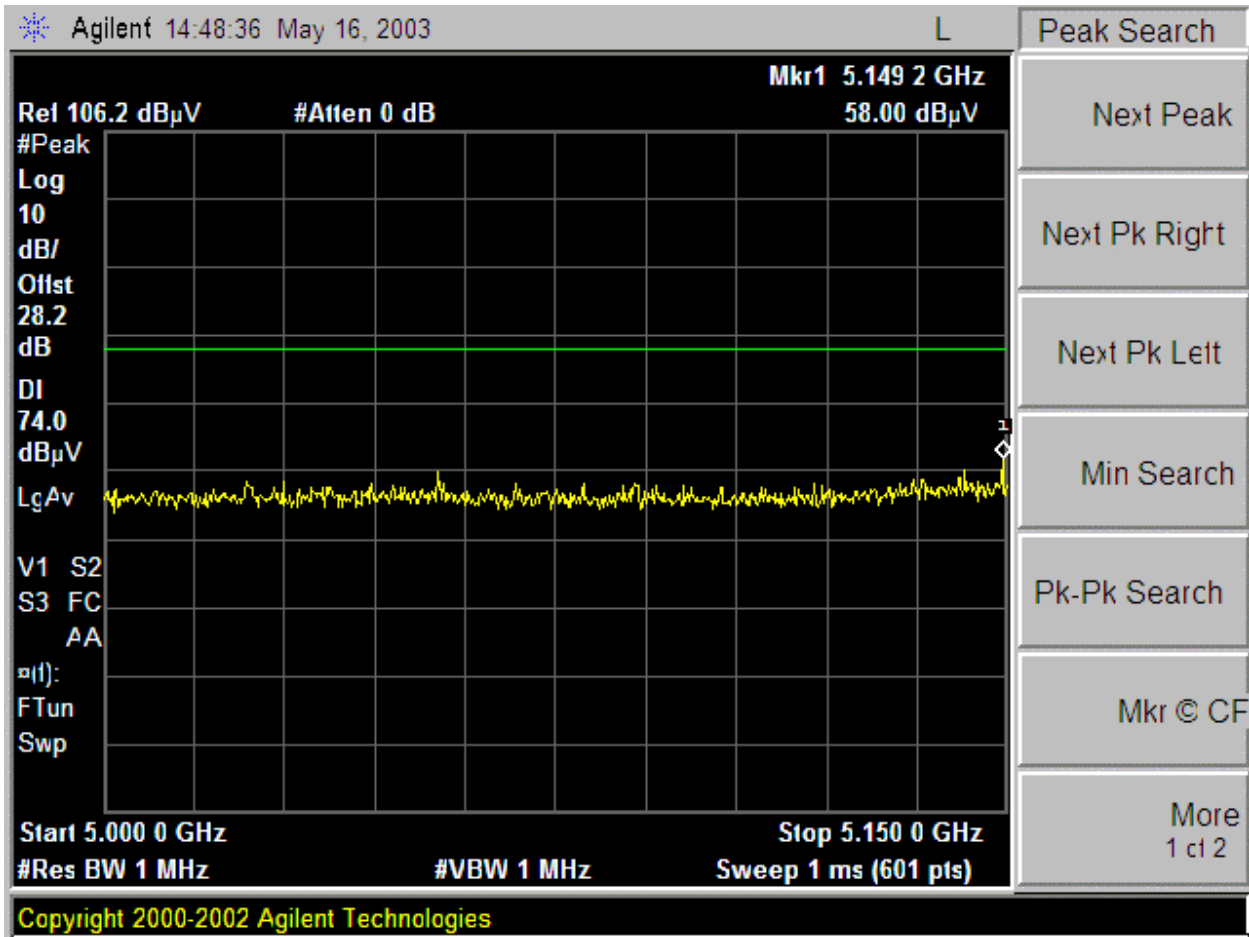
No non-compliance noted:

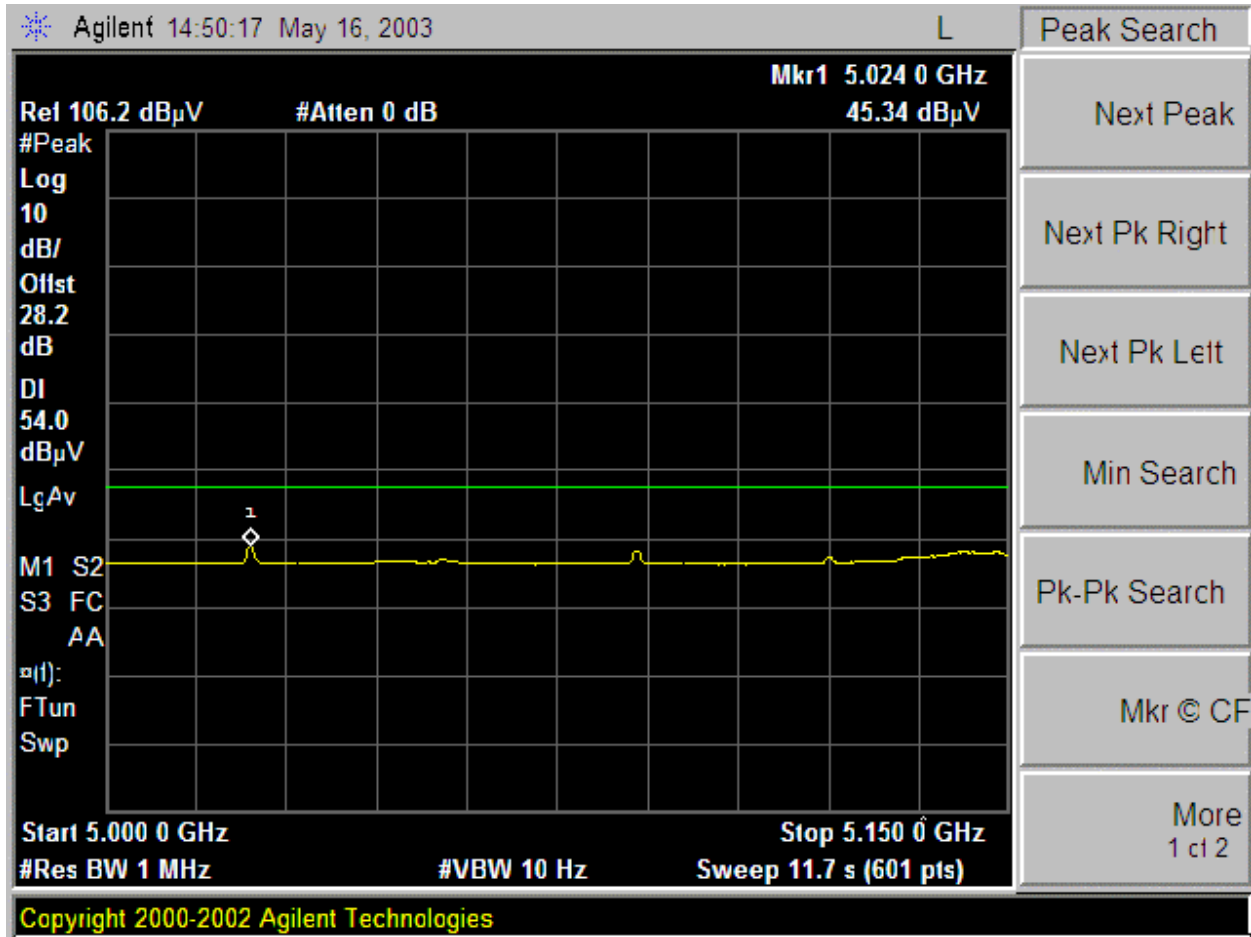
**ADJACENT RESTRICTED BAND (BASE MODE, LOW CHANNEL, HORIZONTAL)**



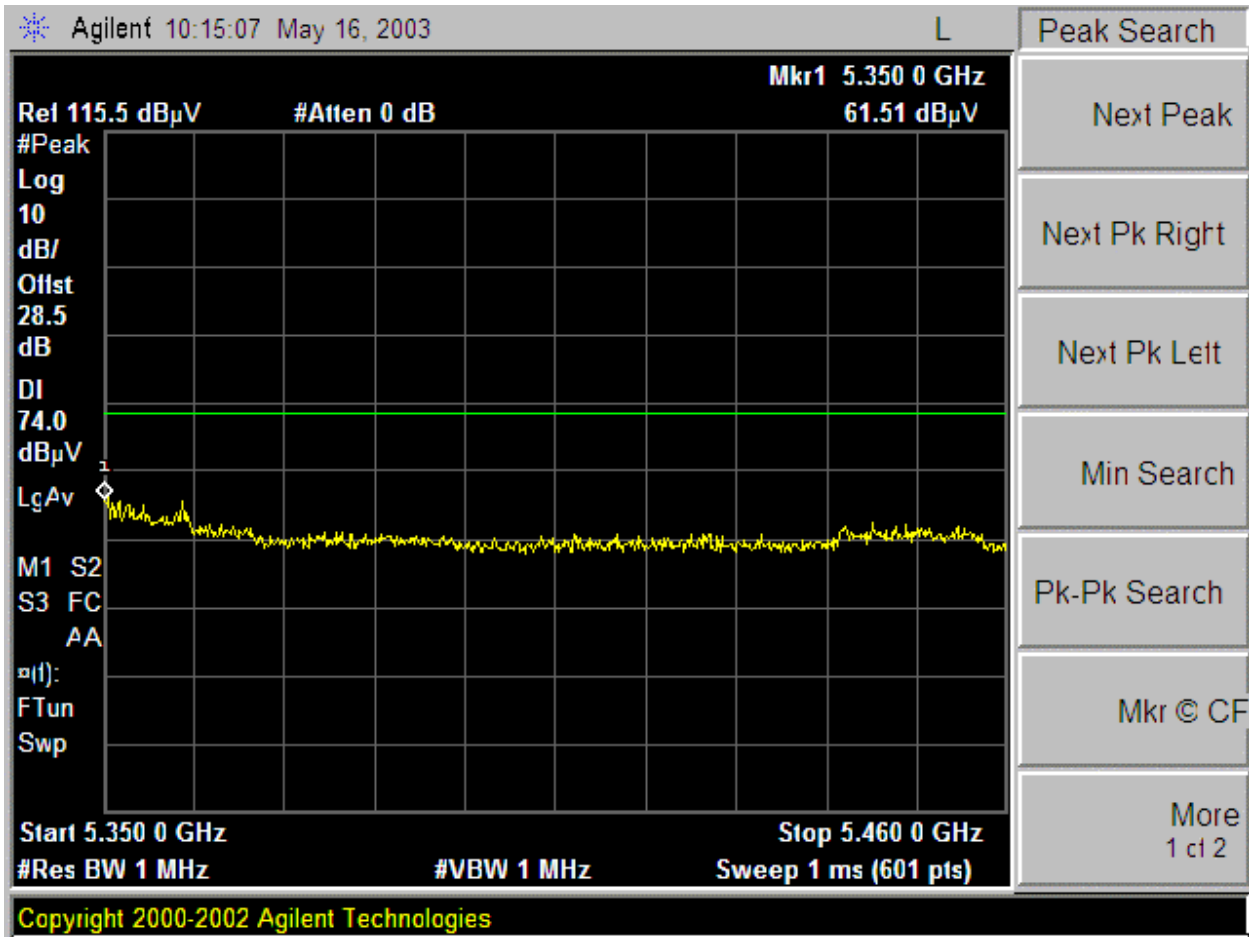


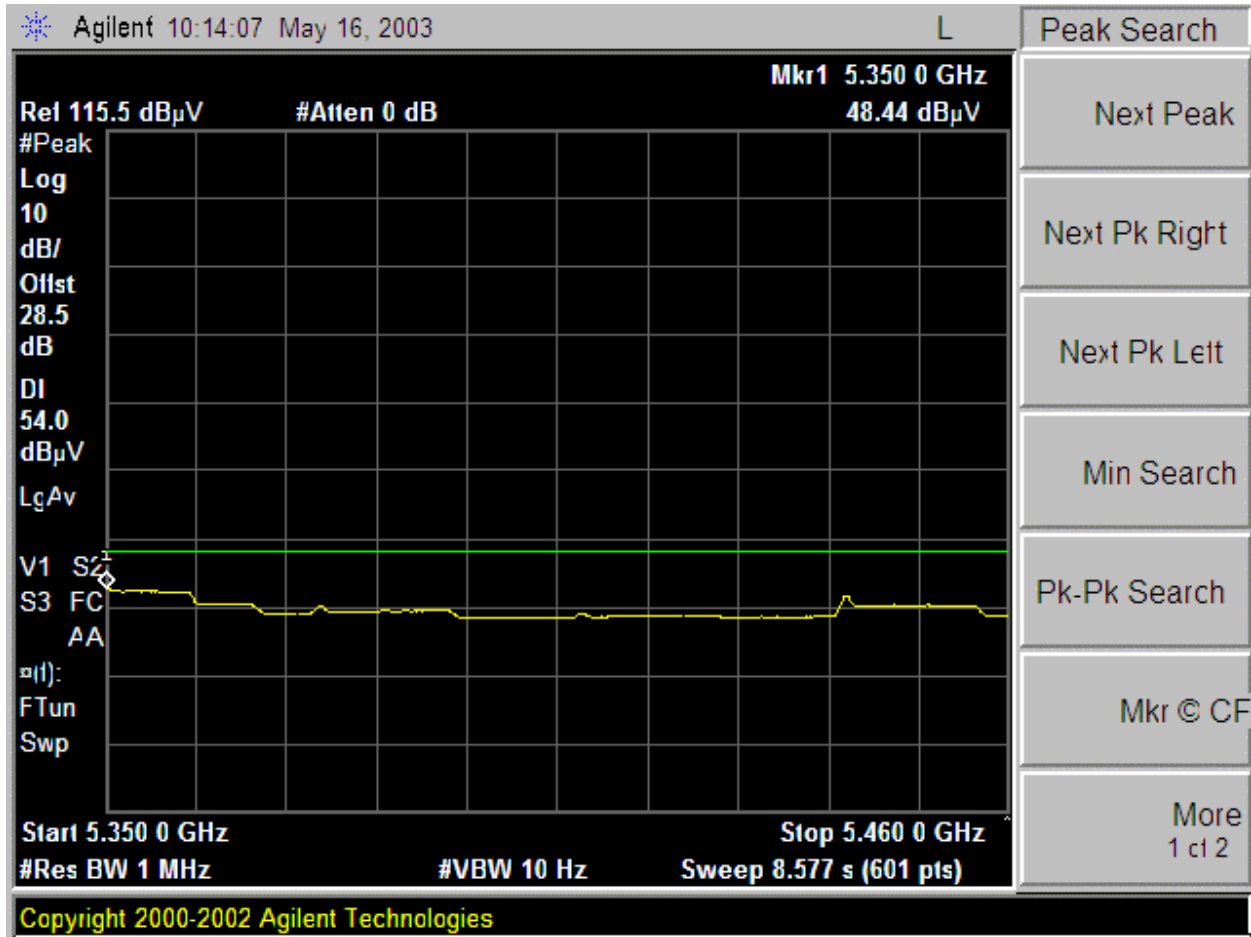
**ADJACENT RESTRICTED BAND (BASE MODE, LOW CHANNEL, VERTICAL)**





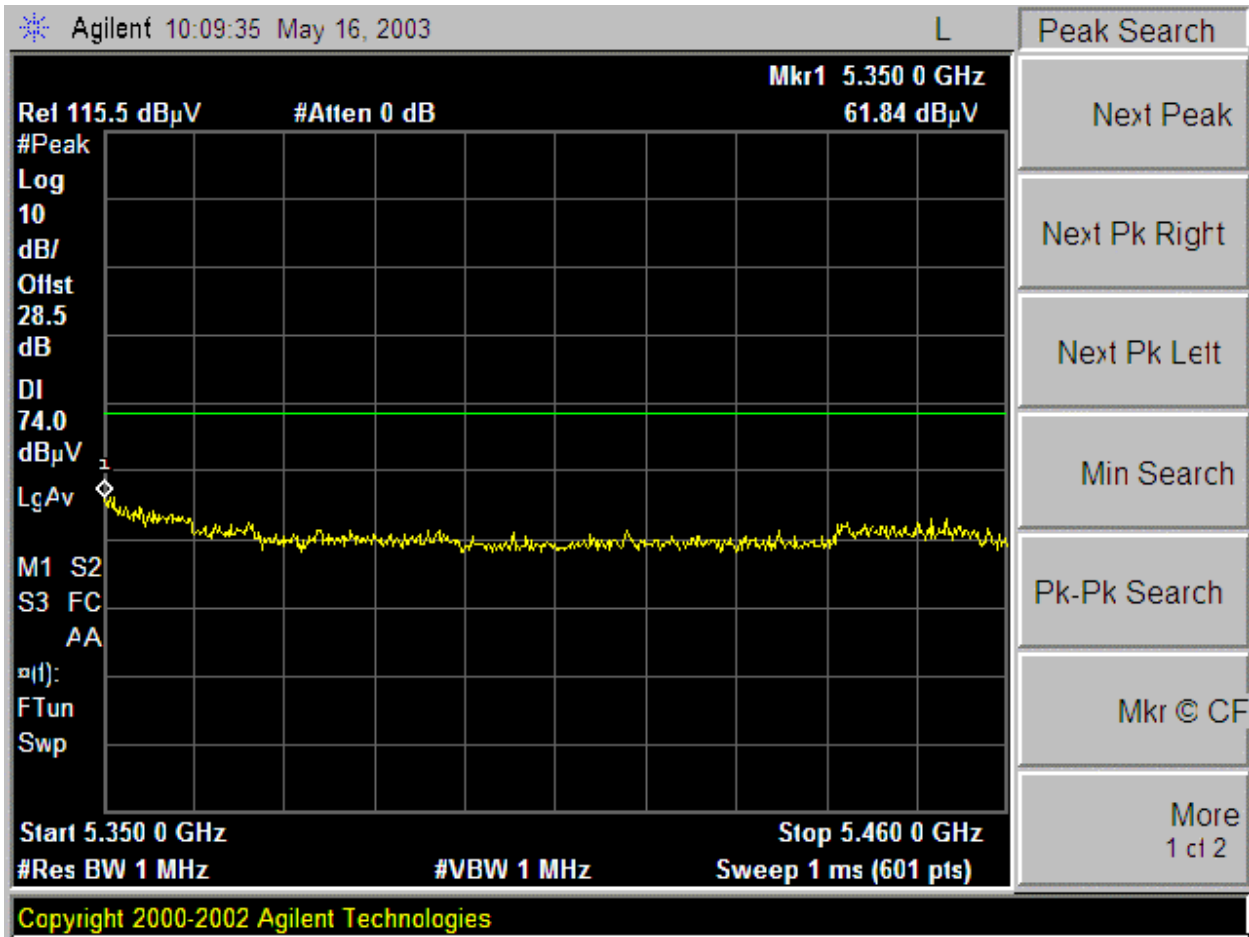
**ADJACENT RESTRICTED BAND (BASE MODE, HIGH CHANNEL, HORIZONTAL)**

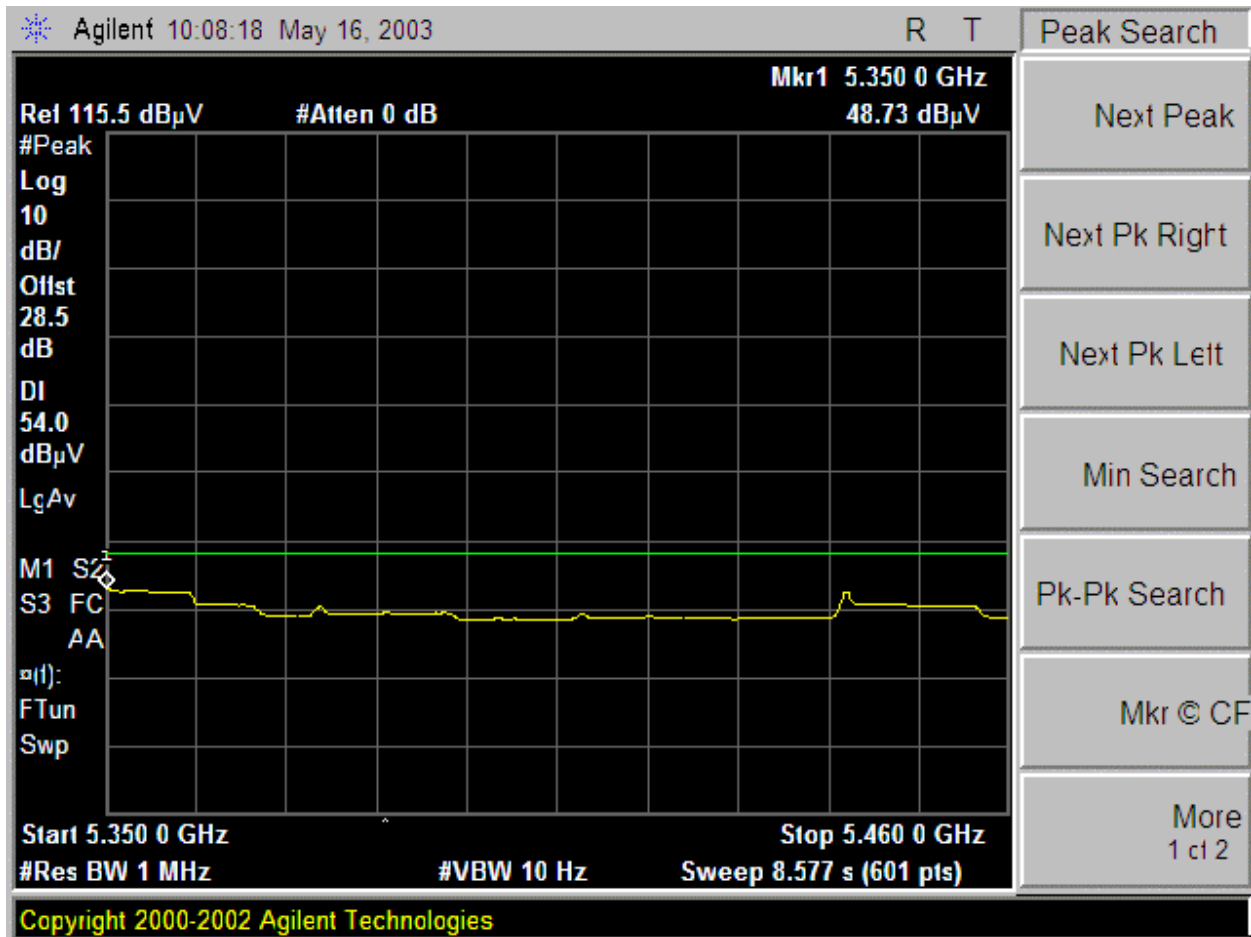






**ADJACENT RESTRICTED BAND (BASE MODE, HIGH CHANNEL, VERTICAL)**





**HARMONIC AND SPURIOUS RADIATED EMISSIONS (NORMAL MODE)**

05/16/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: NEELESH RAJ  
 Project #: 03U1984  
 Company: TRAPEZE NETWORKS  
 EUT Descrip.: ACCESS POINT DUAL MODE 2.4GHz/5GHz  
 EUT M/N: MOBILITY POINT 100/101/122  
 Test Target: FCC  
 Mode Oper: TX

Test Equipment:

EMCO Horn 1-18GHz T60; S/N: 2238 @3m	Pre-amplifier 1-26GHz T86 Miteq 924341	Spectrum Analyzer psa	Horn > 18GHz T87; ARA 18-26GHz; S/N:1049	Limit FCC 15.205
---	---	--------------------------	---	---------------------

Hi Frequency Cables  
 (2 ft)  (2 ~ 3 ft)  (4 ~ 6 ft)  (12 ft)

Peak Measurements: 1 MHz Resolution Bandwidth  
 1MHz 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>high channel</b>												
10.640	9.8	70.5	53.3	38.2	4.8	-44.2	0.0	1.0	70.2	53.0	74.0	54.0	-3.8	-1.0	Y
10.640	9.8	68.0	52.4	38.2	4.8	-44.2	0.0	1.0	67.7	52.1	74.0	54.0	-6.3	-1.9	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		

Note: For low and middle channels no spurious emissions within restricted bands were detected above the system noise floor.

## **CO-LOCATION**

### **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.

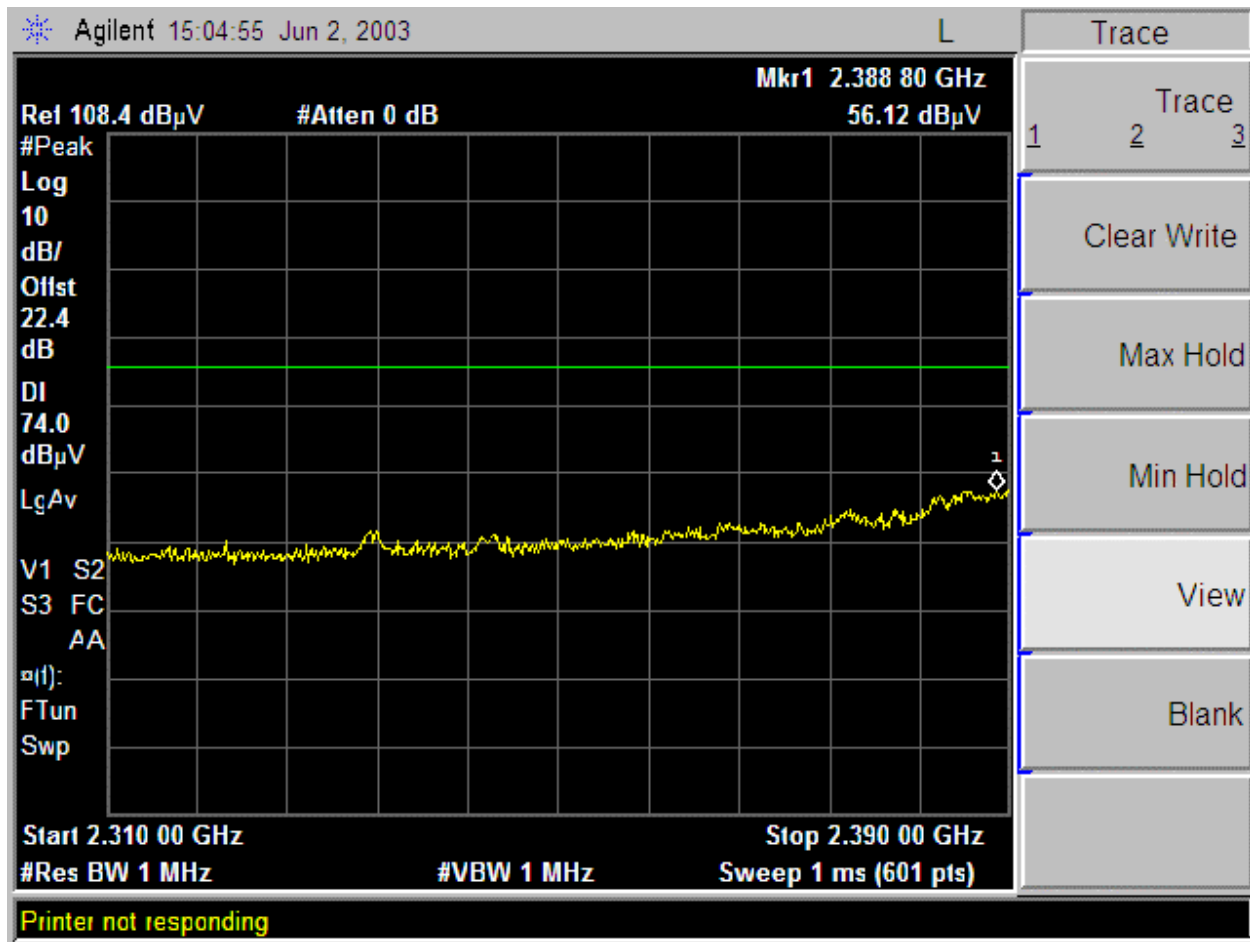
For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

The dominant transmitter (2.4 GHz band) is set to the channel with the highest peak output power. The non-dominant transmitter (5.2 GHz and 5.8 GHz) is set to the channel with the highest peak output power in each non-dominant band.

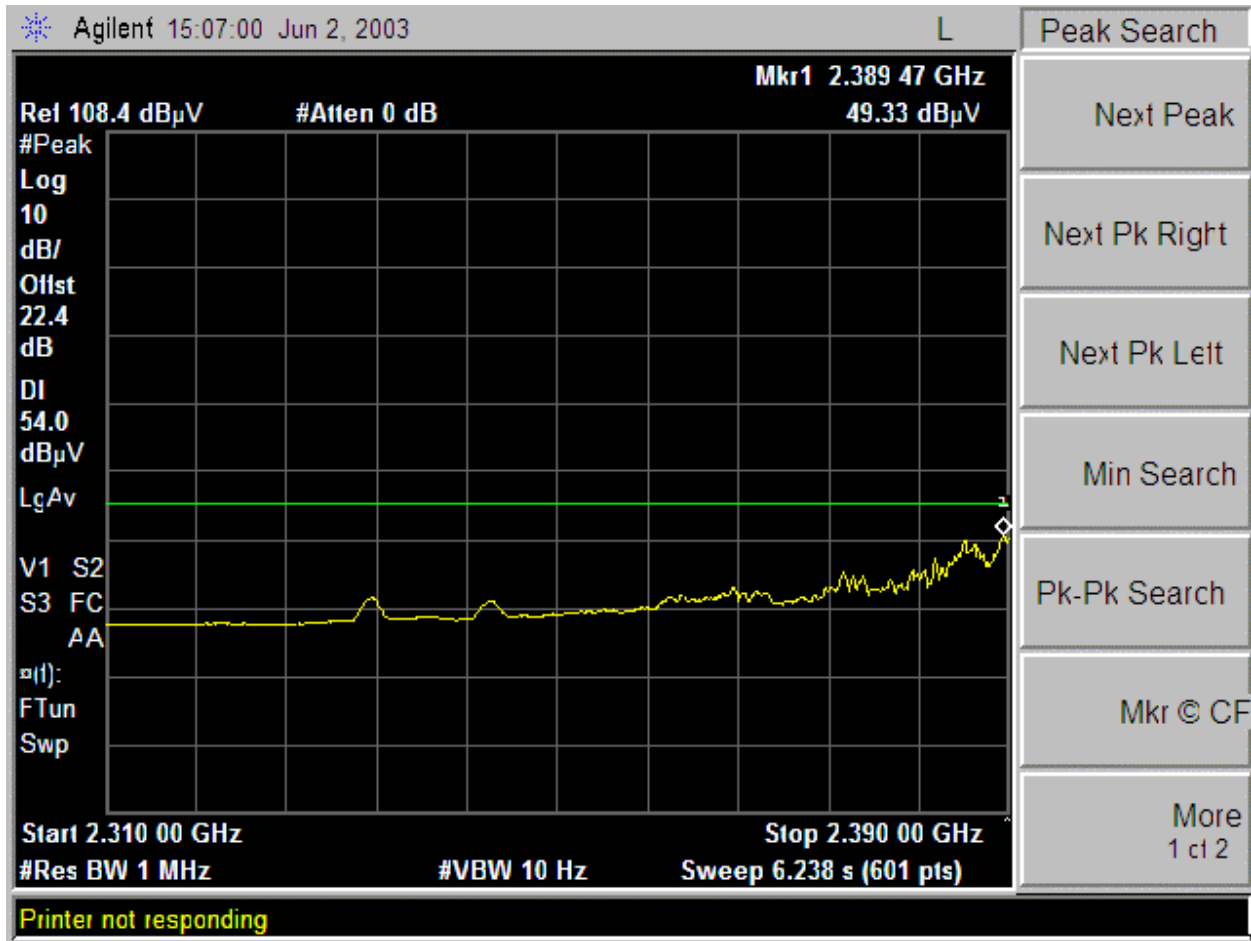
The spurious performance of the dominant transmitter is investigated and measured.

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.

**CO-LOCATION ADJACENT RESTRICTED BAND (LOW CHANNEL, HORIZONTAL)**  
**(HIGHEST POWER CHANNEL OF DOMINANT TRANSMITTER)**

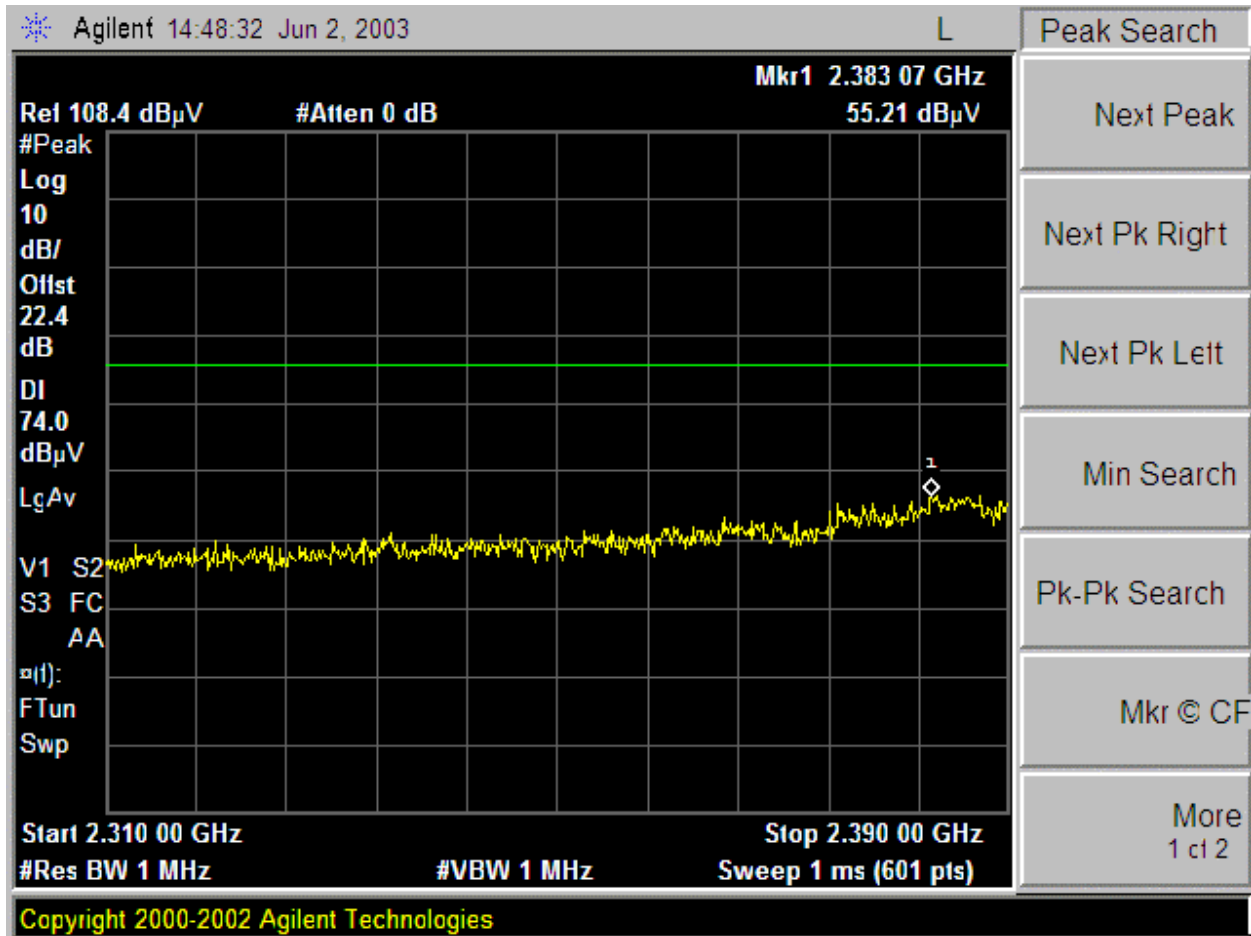


Note: frequency of non-dominant transmitter has no effect on bandedge emissions of dominant transmitter.

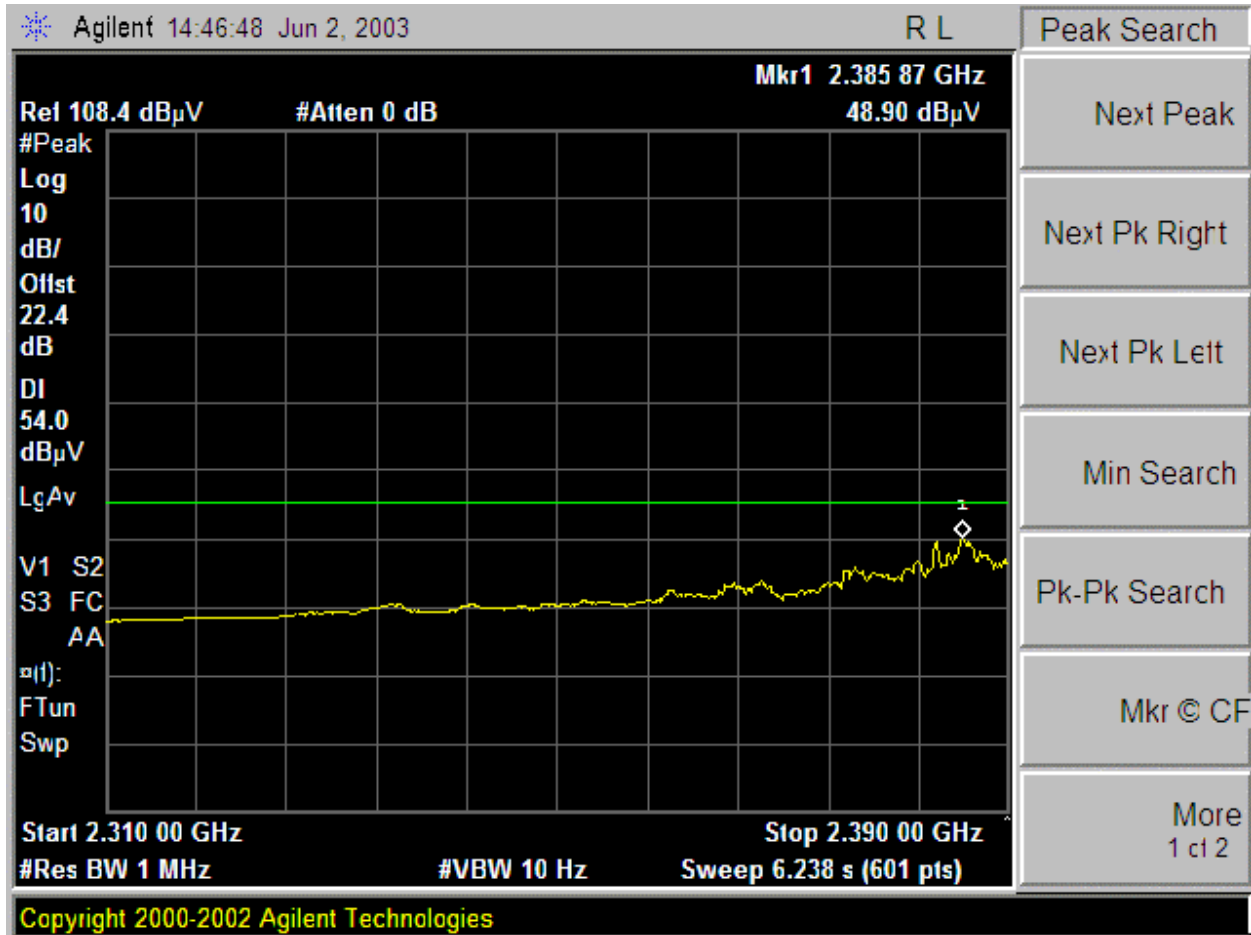


Note: frequency of non-dominant transmitter has no effect on bandedge emissions of dominant transmitter.

**CO-LOCATION ADJACENT RESTRICTED BAND (LOW CHANNEL, VERTICAL)  
 (HIGHEST POWER CHANNEL OF DOMINANT TRANSMITTER)**



Note: frequency of non-dominant transmitter has no effect on bandedge emissions of dominant transmitter.



Note: frequency of non-dominant transmitter has no effect on bandedge emissions of dominant transmitter.



**HARMONIC AND SPURIOUS RADIATED EMISSIONS (CO LOCATION)**

06/02/03 High Frequency Measurement  
 Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: VIEN TRAN  
 Project #: 03U1984  
 Company: TRAPEZE NETWORKS  
 EUT Descrip.: ACCESS POINT, DUAL MODE 2.4GHz / 5GHz  
 EUT M/N: MOBILITY POINT 100/101/102  
 Test Target: FCC  
 Mode Oper: CO-LOCATION w/ ch 52(5260MHz) and ch157(5785MHz)

**Test Equipment:**

<b>EMCO Horn 1-18GHz</b>	<b>Pre-amplifier 1-26GHz</b>	<b>Spectrum Analyzer</b>	<b>Horn &gt; 18GHz</b>	<b>Limit</b>
T59; S/N: 3245 @3m	T34 HP 8449B	PSA		FCC 15.205

Hi Frequency Cables  
 (2 ft)    (2~3 ft)    (4~6 ft)    (12 ft)

**Peak Measurements:**   **Average Measurements:**  
 1 MHz Resolution Bandwidth   1 MHz Resolution Bandwidth  
 1MHz Video 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>TRANSMIT ON 2412MHZ</b>															
4.824	9.8	54.5	51.3	33.1	0.9	-34.6	0.0	1.0	54.9	51.7	74.0	54.0	-19.1	-2.3	V
4.824	9.8	52.9	50.1	33.1	0.9	-34.6	0.0	1.0	53.3	50.5	74.0	54.0	-20.7	-3.5	H
<b>TRANSMIT ON 2412MHZ AND 5260MHZ</b>															
4.824	9.8	53.6	51.2	33.1	0.9	-34.6	0.0	1.0	54.0	51.6	74.0	54.0	-20.0	-2.4	H
4.824	9.8	53.3	50.6	33.1	0.9	-34.6	0.0	1.0	53.7	51.0	74.0	54.0	-20.3	-3.0	V
<b>TRANSMIT ON 2412MHZ AND 5785MHZ</b>															
4.824	9.8	53.1	50.5	33.1	0.9	-34.6	0.0	1.0	53.5	50.9	74.0	54.0	-20.5	-3.1	H
4.824	9.8	53.0	49.1	33.1	0.9	-34.6	0.0	1.0	53.4	49.5	74.0	54.0	-20.6	-4.5	V

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		

**SPURIOUS RADIATED EMISSIONS BELOW 1 GHZ WITH WORST-CASE CONFIGURATION**

No spurious emissions detected above the noise floor below 1GHz

**DIGITAL DEVICE RADIATED EMISSIONS**

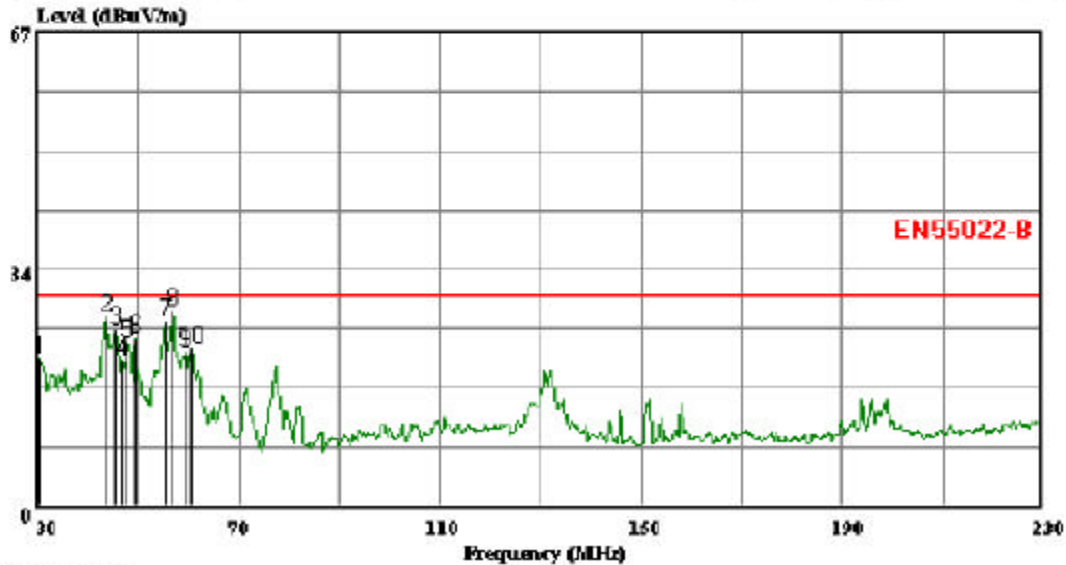
(vertical)



561F Monterey Road  
 Morgan Hill, CA 95037, U.S.A.  
 Tel: (408) 463-0885  
 Fax: (408) 463-0888

Data#: 29 File#: Run1.eni

Date: 05-19-2003 Time: 12:28:58



(Auxiliary ATC)

Trace: 28

Ref Trace:

Condition: EN55022-B 3m CHAMBER 030306 1185 VERTICAL  
 Company : TRAPEZE NETWORKS  
 EUT Description : ACCESS POINT, DUAL MODE 2.4/5 GHz  
 Model Number : MOBILITY POINT 122  
 Test Configuration: RUF  
 Test Target : EN55022-B  
 Mode of Operation: TX  
 Project No : 03U1984-2

Page: 1

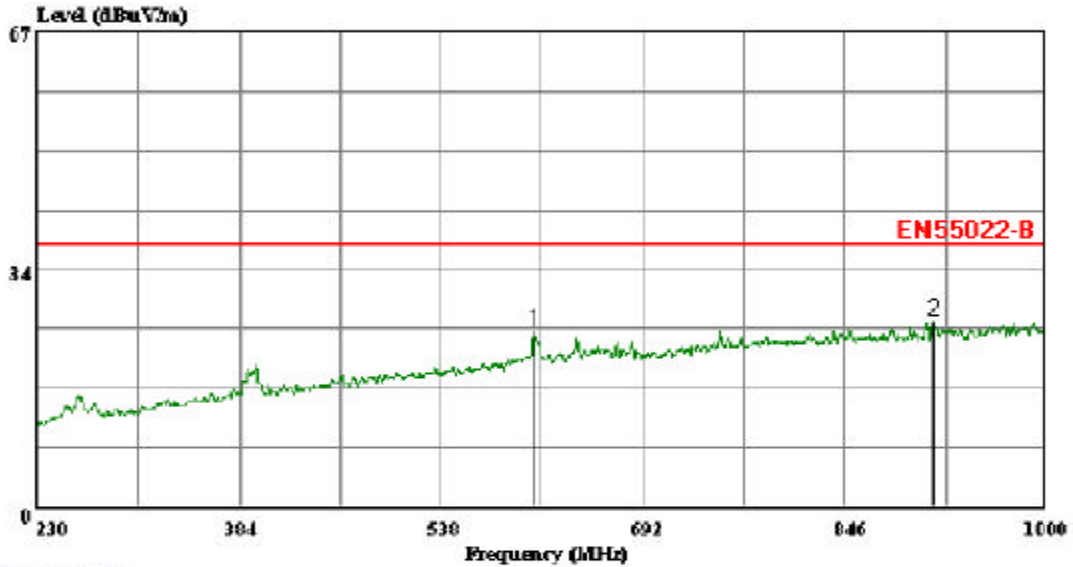
	Read	Probe	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Line	Limit	Remark
MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB
1	30.400	3.37	16.99	0.55	0.00	20.91	30.00 -9.09 Peak
2	43.800	10.01	16.02	0.64	0.00	26.67	30.00 -3.33 Peak
3	45.400	8.40	15.80	0.65	0.00	24.86	30.00 -5.14 Peak
4	46.800	4.54	15.45	0.66	0.00	20.65	30.00 -9.35 Peak
5	47.800	7.38	15.22	0.66	0.00	23.26	30.00 -6.74 Peak
6	49.400	8.15	14.87	0.67	0.00	23.69	30.00 -6.31 Peak
7	55.400	12.64	12.75	0.71	0.00	26.10	30.00 -3.90 Peak
8	56.800	14.55	12.27	0.74	0.00	27.55	30.00 -2.45 Peak
9	59.400	9.52	11.38	0.74	0.00	21.64	30.00 -8.36 Peak
10	60.800	10.77	10.91	0.72	0.00	22.40	30.00 -7.60 Peak



561F Monterey Road  
 Morgan Hill, CA 95037, U.S.A.  
 Tel: (408) 463-0885  
 Fax: (408) 463-0888

Data#: 27 File#: Run1.emi

Date: 05-19-2003 Time: 12:22:50



(Auxiliary ATC)

Trace: 26

Ref Trace:

Condition: EN55022-B 3m CHAMBER 030306 1185 VERTICAL  
 Company : TRAPEZE NETWORKS  
 EUT Description : ACCESS POINT, DUAL MODE 2.4/5 GHz  
 Model Number : MOBILITY POINT 122  
 Test Configuration: EUT  
 Test Target : EN55022-B  
 Mode of Operation: TX  
 Project No : 03U1984-2

Page: 1

Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit	Over Limit	Remark
MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	608.840	4.39	17.76	2.54	0.00	24.70	37.00	-12.30 Peak
2	912.990	2.06	20.67	3.25	0.00	25.97	37.00	-11.03 Peak

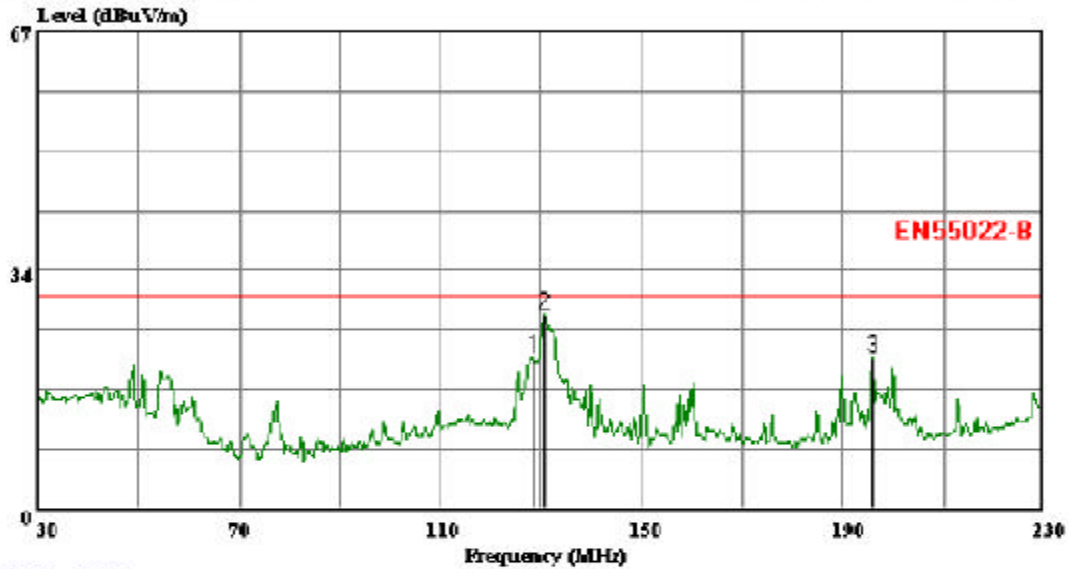
(horizontal)



561F Monterey Road  
 Morgan Hill, CA 95037, U.S.A.  
 Tel: (408) 463-0885  
 Fax: (408) 463-0888

Data#: 23 File#: Run1.emi

Date: 05-19-2003 Time: 12:06:57



(Auxiliary ATC)

Trace: 22

Ref Trace:

Condition: EN55022-B 3m CHAMBER 010306 1185 HORIZONTAL  
 Company : TRAPEZE NETWORKS  
 EUT Description : ACCESS POINT, DUAL MODE 2.4/5 GHz  
 Model Number : MOBILITY POINT 122  
 Test Configuration: EUT  
 Test Target : EN55022-B  
 Mode of Operation: TX  
 Project No : 03U1984-2

Page: 1

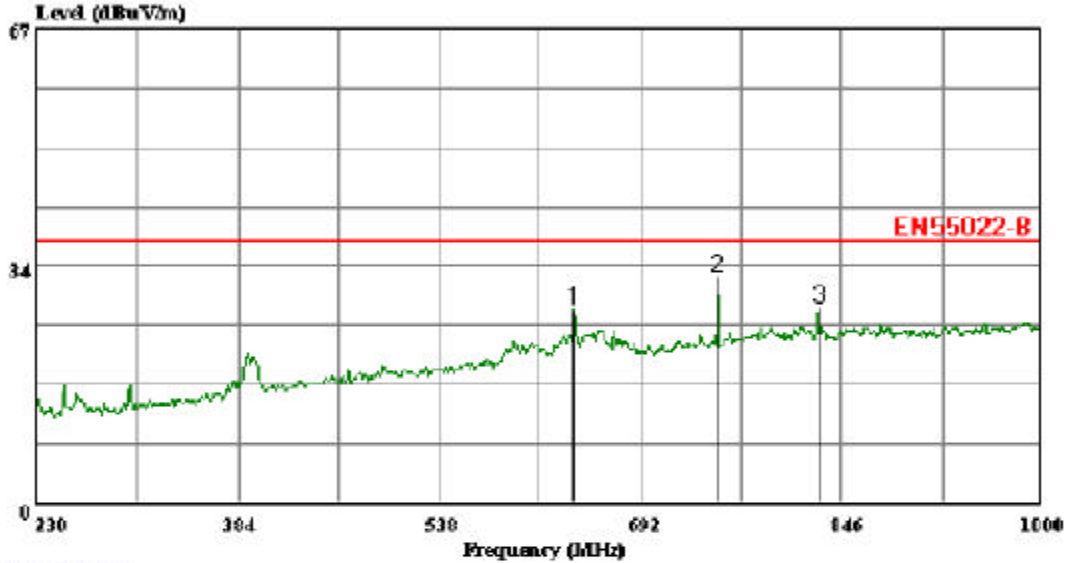
	Read	Probe	Cable	Preamp	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit Remark
MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB
1	128.400	10.46	9.80	1.05	0.00	21.32	30.00 -8.68 Peak
2	138.800	16.56	9.59	1.08	0.00	27.23	30.00 -2.77 Peak
3	195.800	10.81	9.12	1.36	0.00	21.29	30.00 -8.71 Peak



561F Monterey Road  
 Morgan Hill, CA 95037, U.S.A.  
 Tel: (408) 463-0885  
 Fax: (408) 463-0888

Data#: 25 File#: Run1.emi

Date: 05-19-2003 Time: 12:13:35



(Auxiliary ATC)

Trace: 24

Ref Trace:

Condition: EN55022-B 3m CHAMBER 030306 1185 HORIZONTAL  
 Company : TRAPEZE NETWORKS  
 EUT Description : ACCESS POINT, DUAL MODE 2.4/5 GHz  
 Model Number : MOBILITY POINT 122  
 Test Configuration: EUT  
 Test Target : EN55022-B  
 Mode of Operation: TX  
 Project No : 03U1984-2

Page: 1

	Read Freq	Probe Level	Probe Factor	Cable Loss	Preamp Factor	Limit Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	641.180	6.49	18.06	2.71	0.00	27.26	37.00	-9.74	Peak
2	751.290	9.76	19.22	2.91	0.00	31.89	37.00	-5.11	Peak
3	828.290	4.37	20.02	3.03	0.00	27.42	37.00	-9.58	Peak

## 6.12. 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 μH/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

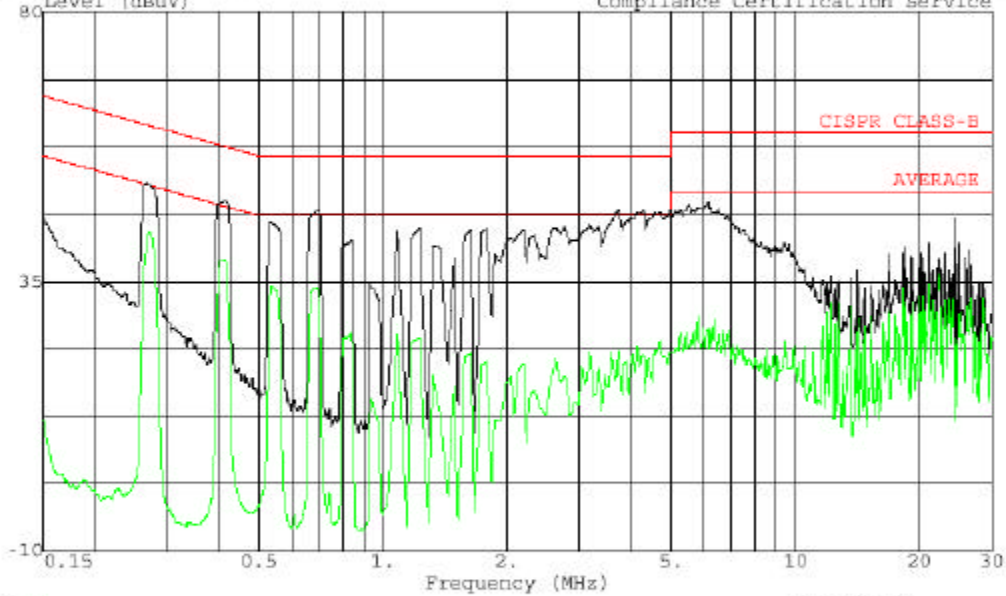
No non-compliance noted:

CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.42	48.45	--	38.72	0.00	58.37	48.37	-9.92	-9.65	L1
3.74	47.00	--	23.47	0.00	56.00	46.00	-9.00	-22.53	L1
0.69	46.72	--	33.92	0.00	56.00	46.00	-9.28	-12.08	L1
0.69	45.40	--	32.31	0.00	56.00	46.00	-10.60	-13.69	L2
4.92	45.86	--	21.37	0.00	56.00	46.00	-10.14	-24.63	L2
0.42	47.22	--	38.55	0.00	58.31	48.31	-11.09	-9.76	L2
6 Worst Data									



561F Monterey Road,  
San Jose, CA 95037 USA  
Tel: (408) 463-0885  
Fax: (408) 463-0888

Data#: 7 File#: TRAP3.EMI Date: 05-22-2003 Time: 14:26:33  
Level [dBuV] Compliance Certification Service



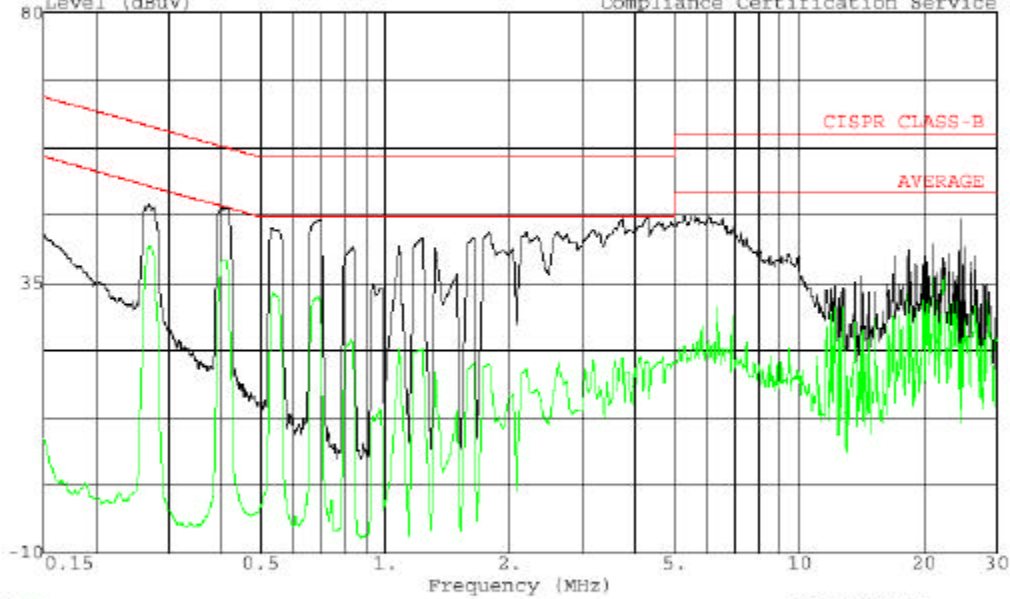
Trace: 5  
Project # : 03u1984-4  
Test Engineer : NEBLESH RAJ  
Company : TRAPEZE NETWORKS  
EUT : ACCESS POINT, DUAL MODE  
Model : MOBILITY POINT 122  
Configuration : EUT / AC ADAPTER  
Target of Test: CISPR-B  
: 115VAC/60Hz  
: LINE 1 (PEAK;BLACK AVG;GRBEN)





561F Monterey Road,  
San Jose, CA 95037 USA  
Tel: (408) 463-0885  
Fax: (408) 463-0888

Data#: 7 File#: TRAP4.EMI Date: 05-22-2003 Time: 14:37:05  
Level (dBuV) Compliance Certification Service



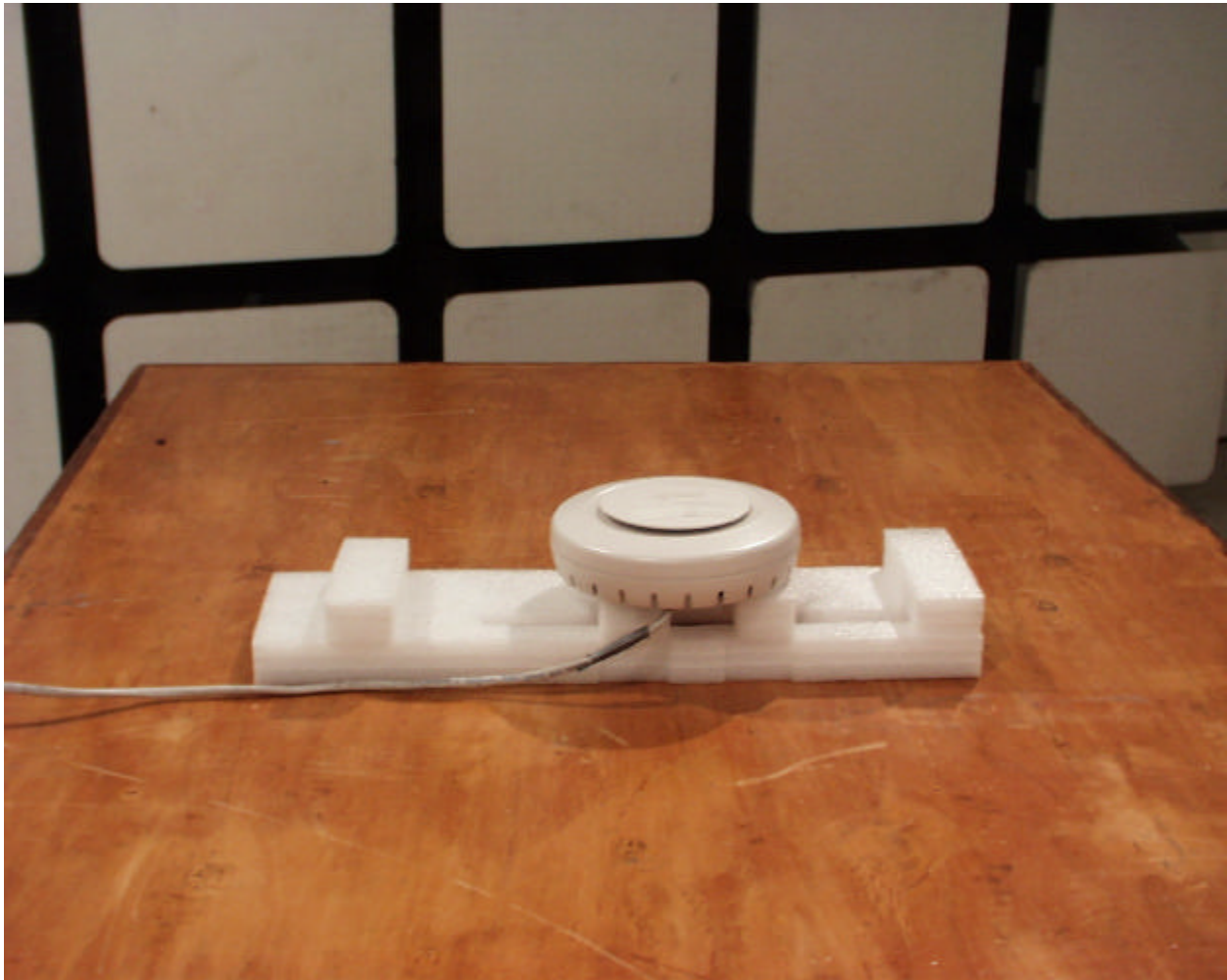
Trace: 5 Ref Trace:  
Project # : 03u1984-4  
Test Engineer : NEELESH RAJ  
Company : TRAPEZE NETWORKS  
EUT : ACCESS POINT, DUAL MODE  
Model : MOBILITY POINT 122  
Configuration : EUT / AC ADAPTER  
Target of Test: CISPR-B  
: 115VAC/60Hz  
: LINE 2 (PEAK;BLACK AVG;GREEN)

## 6.13. SETUP PHOTOS

### ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

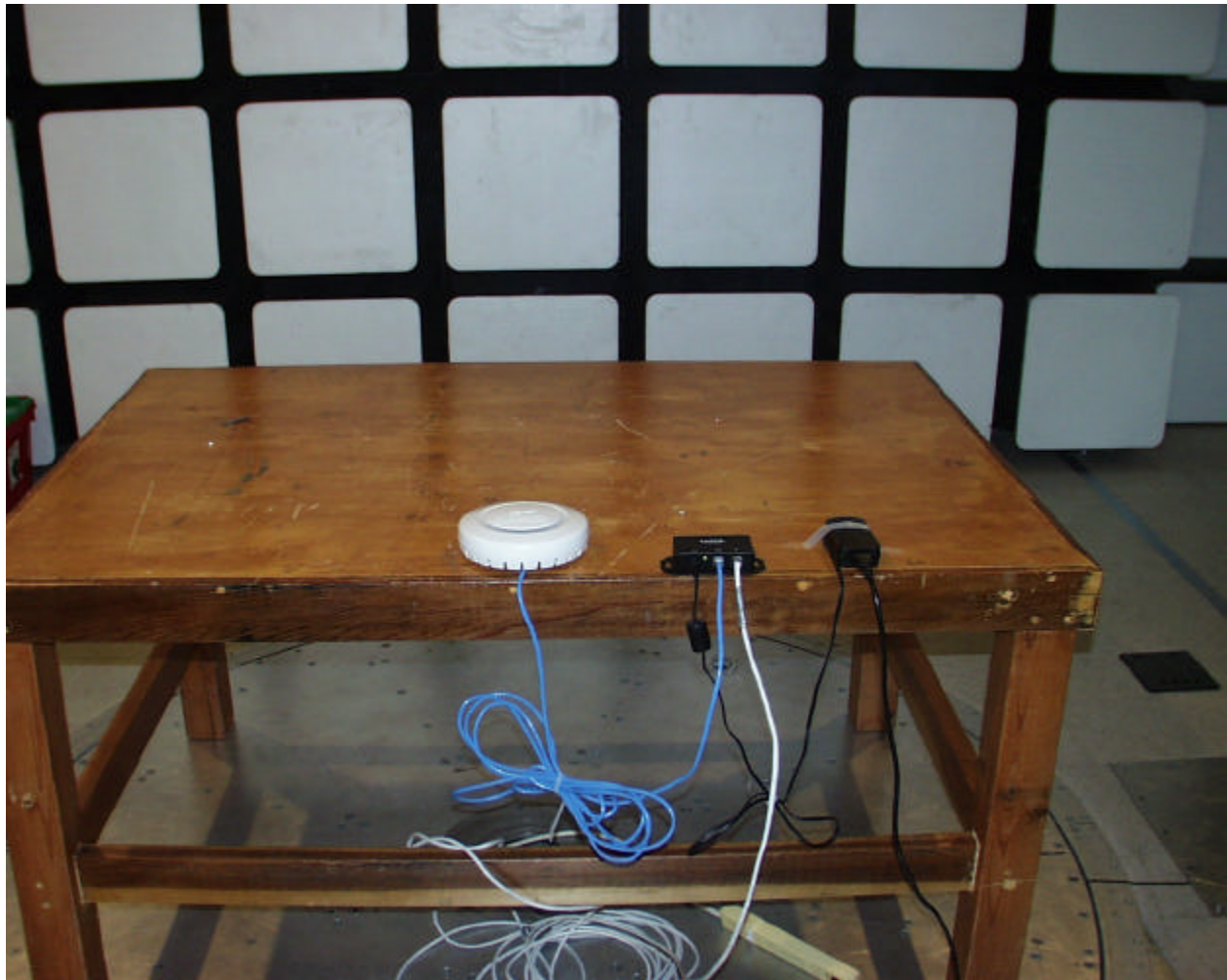


**RADIATED RF MEASUREMENT SETUP**



**DIGITAL DEVICE RADIATED EMISSIONS MEASUREMENT SETUP**





**POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP**





**END OF REPORT**