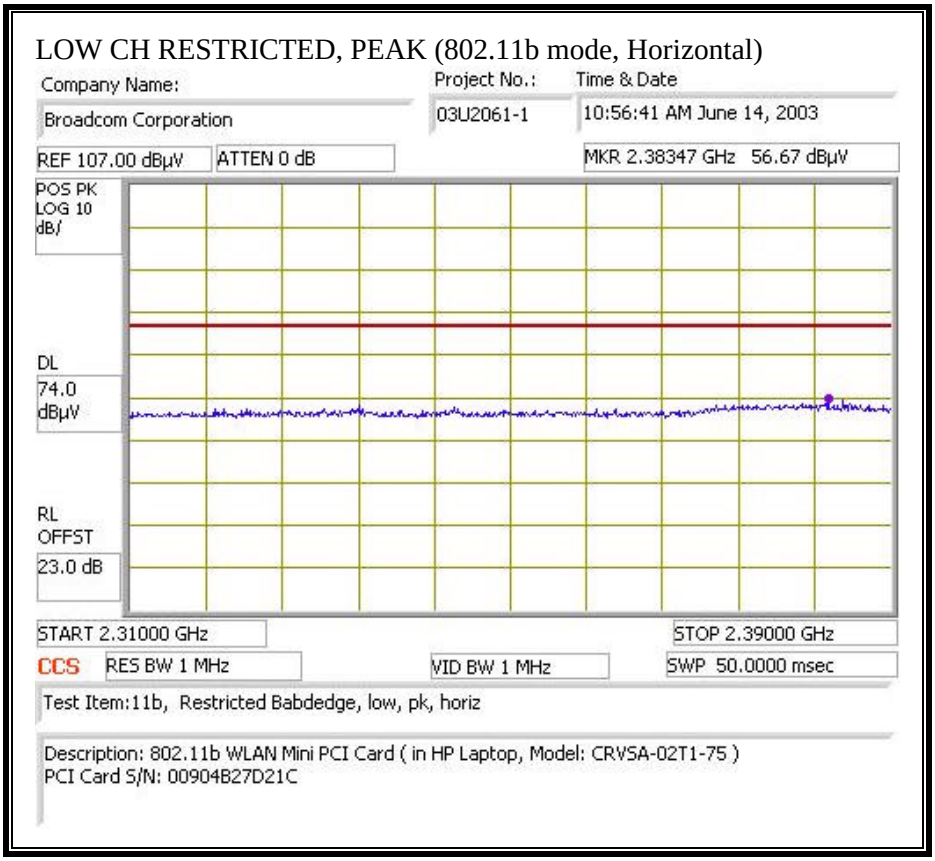
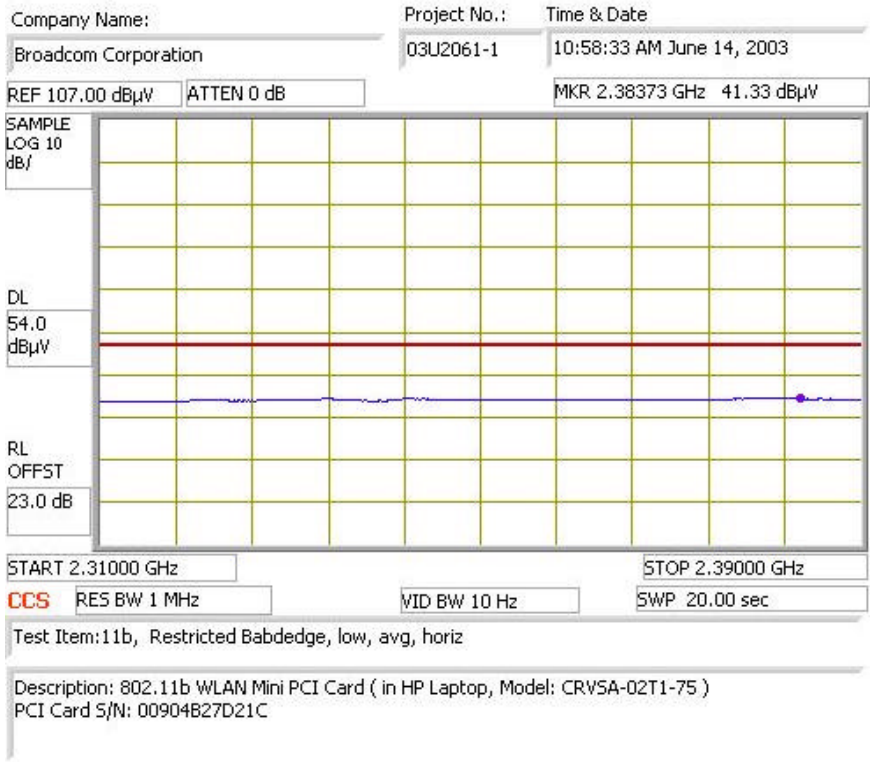
7.6.2. RADIATED EMISSIONS WITH CRVSA-02T-75 HOST COMPUTER:

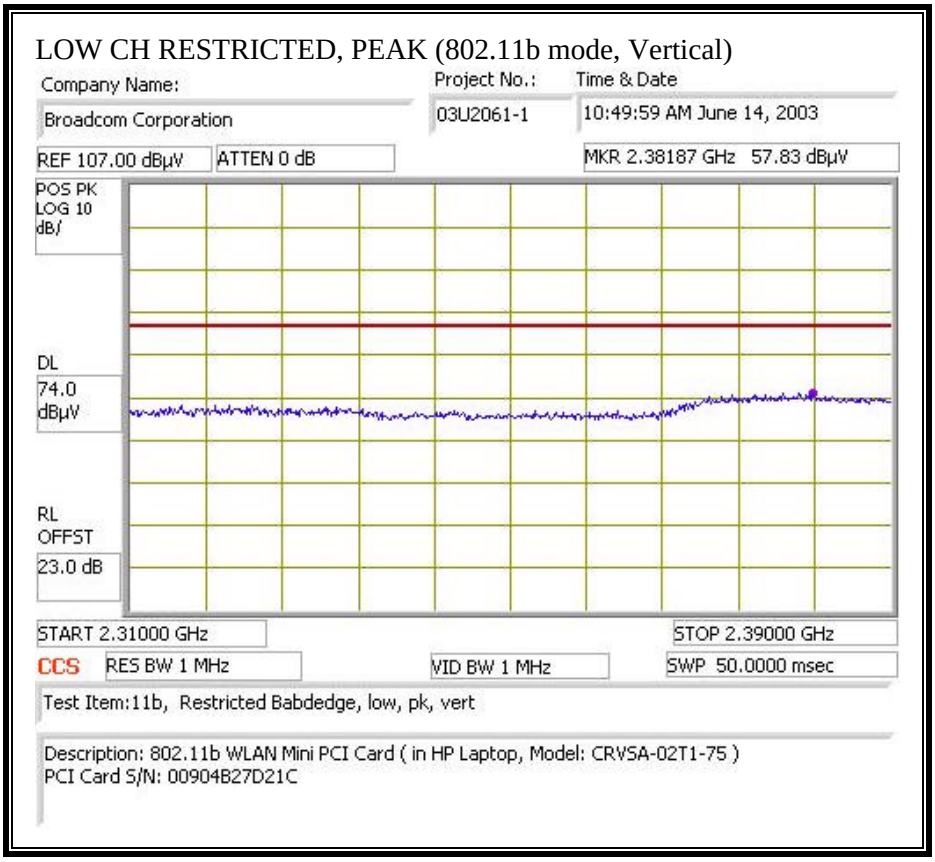
RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, HORIZONTAL)



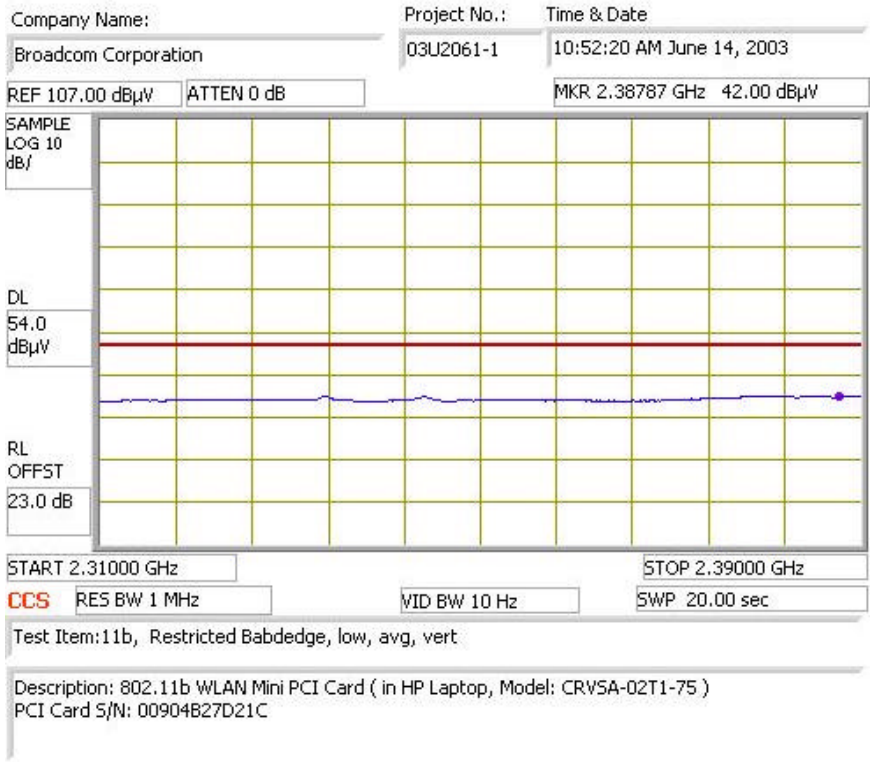
LOW CH RESTRICTED, AVG (802.11b mode, Horizontal)



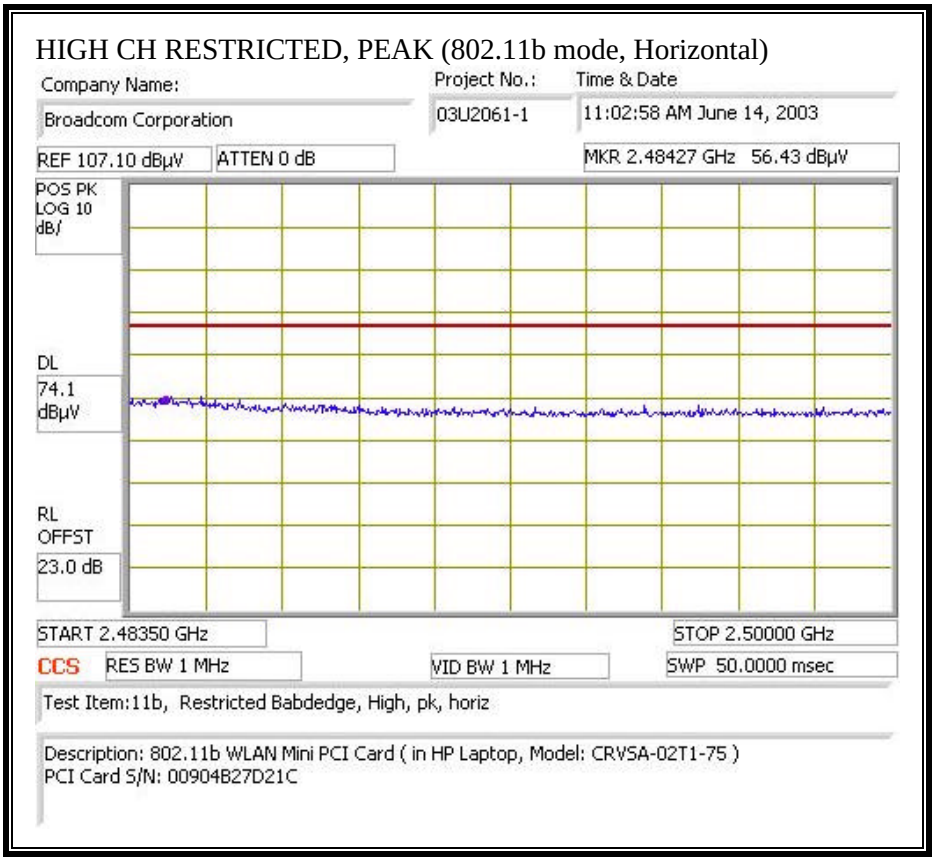
RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)



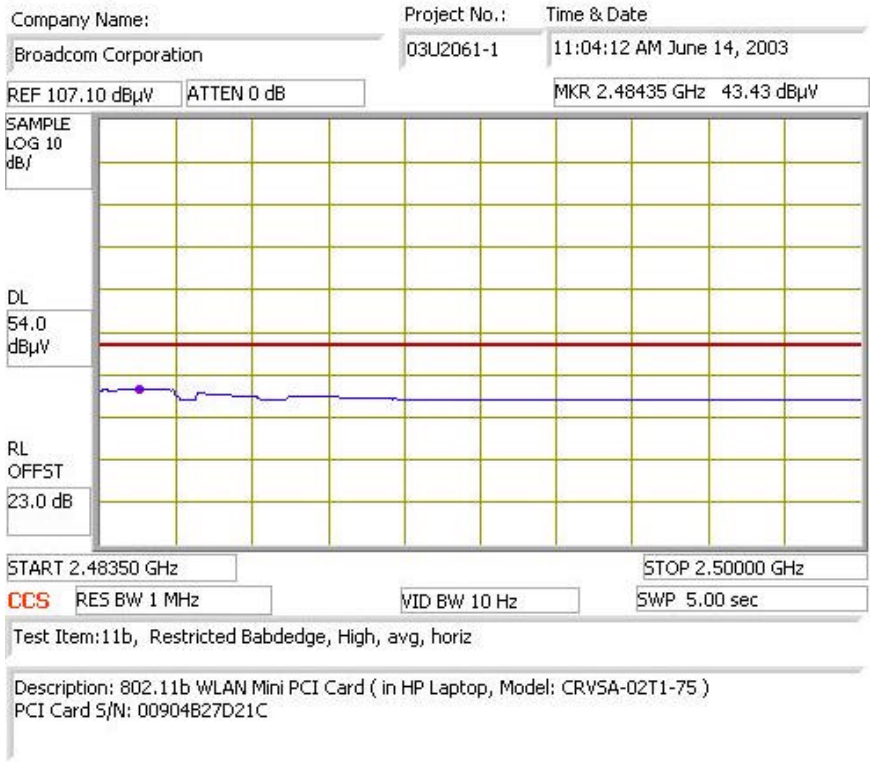
LOW CH RESTRICTED, AVG (802.11b mode, Vertical)



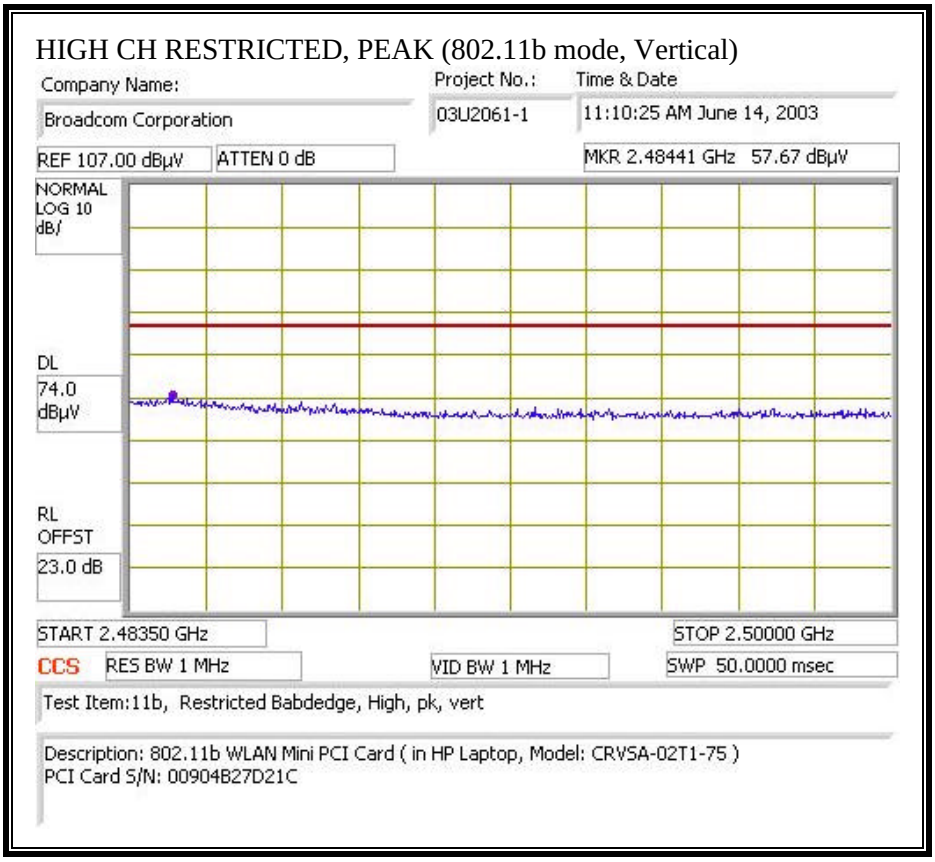
RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)



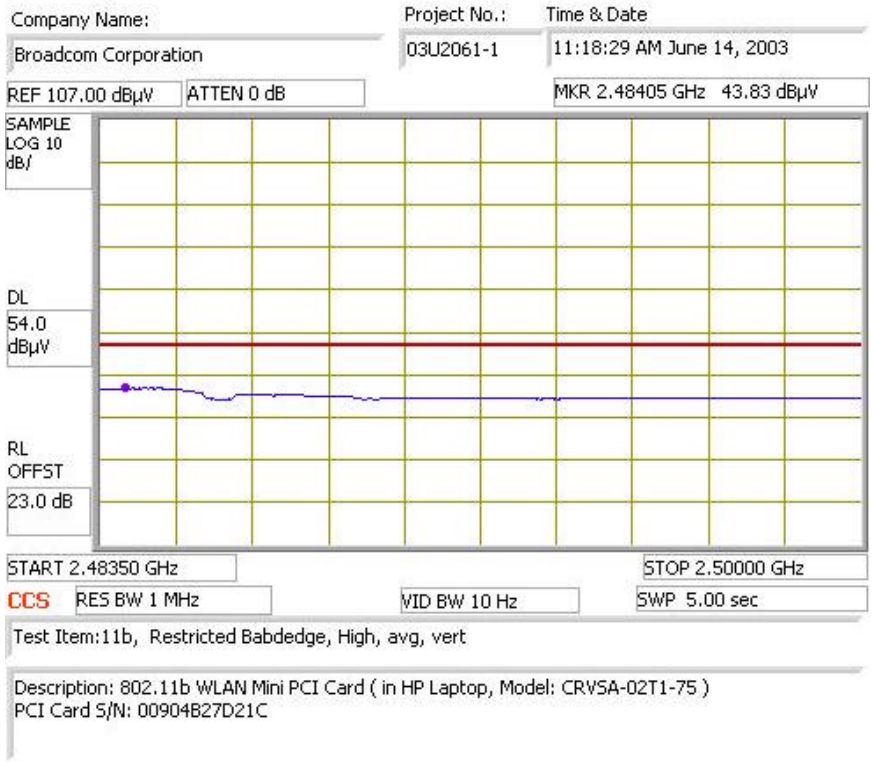
HIGH CH RESTRICTED, AVG (802.11b mode, Horizontal)



RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, VERTICAL)



HIGH CH RESTRICTED, AVG (802.11b mode, Vertical)



HARMONICS AND SPURIOUS EMISSIONS

06/14/03 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr: Chin Pang
Project #: 03U2061-1
Company: Broadcom Corporation
EUT Descrip.: 802.11b WLAN Mini PCI Card (in HP Laptop, model: CRVSA-02T1-75))
EUT M/N: BCM94301MPL
Test Target:FCC 15.247
Mode Oper:TX

Test Equipment:

EMCO Horn 1-18GHz	Pre-amplifer 1-26GHz	Spectrum Analyzer	Horn > 18GHz
T60; S/N: 2238 @3m	T86 Miteq 924341	Agilent 8564E Analyzer	

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
Transmitting at low channel															
4.824	9.8	65.0	48.0	33.1	3.9	-45.6	0.0	1.0	57.4	40.4	74.0	54.0	-16.6	-13.6	V
4.824	9.8	60.2	44.5	33.1	3.9	-45.6	0.0	1.0	52.6	36.9	74.0	54.0	-21.4	-17.1	H
7.236	9.8	52.3	40.2	36.1	5.1	-46.6	0.0	1.0	47.9	35.8	74.0	54.0	-26.1	-18.2	V
7.236	9.8	52.0	40.0	36.1	5.1	-46.6	0.0	1.0	47.6	35.6	74.0	54.0	-26.4	-18.4	H
Transmitting at mid channel															
4.874	9.8	63.2	47.7	33.1	4.0	-45.6	0.0	1.0	55.6	40.1	74.0	54.0	-18.4	-13.9	V
4.874	9.8	60.2	45.5	33.1	4.0	-45.6	0.0	1.0	52.6	37.9	74.0	54.0	-21.4	-16.1	H
7.311	9.8	52.6	40.0	36.2	5.2	-46.6	0.0	1.0	48.4	35.8	74.0	54.0	-25.6	-18.2	V
7.311	9.8	52.0	39.8	36.2	5.2	-46.6	0.0	1.0	47.8	35.6	74.0	54.0	-26.2	-18.4	H
Transmitting at high channel															
4.924	9.8	58.0	44.0	33.2	4.0	-45.7	0.0	1.0	50.5	36.5	74.0	54.0	-23.5	-17.5	V
4.924	9.8	55.0	42.8	33.2	4.0	-45.7	0.0	1.0	47.5	35.3	74.0	54.0	-26.5	-18.7	H
7.386	9.8	52.0	39.8	36.3	5.2	-46.5	0.0	1.0	47.9	35.7	74.0	54.0	-26.1	-18.3	V
7.386	9.8	51.5	39.4	36.3	5.2	-46.5	0.0	1.0	47.4	35.3	74.0	54.0	-26.6	-18.7	H

No other emissions were detected above the system noise floor.

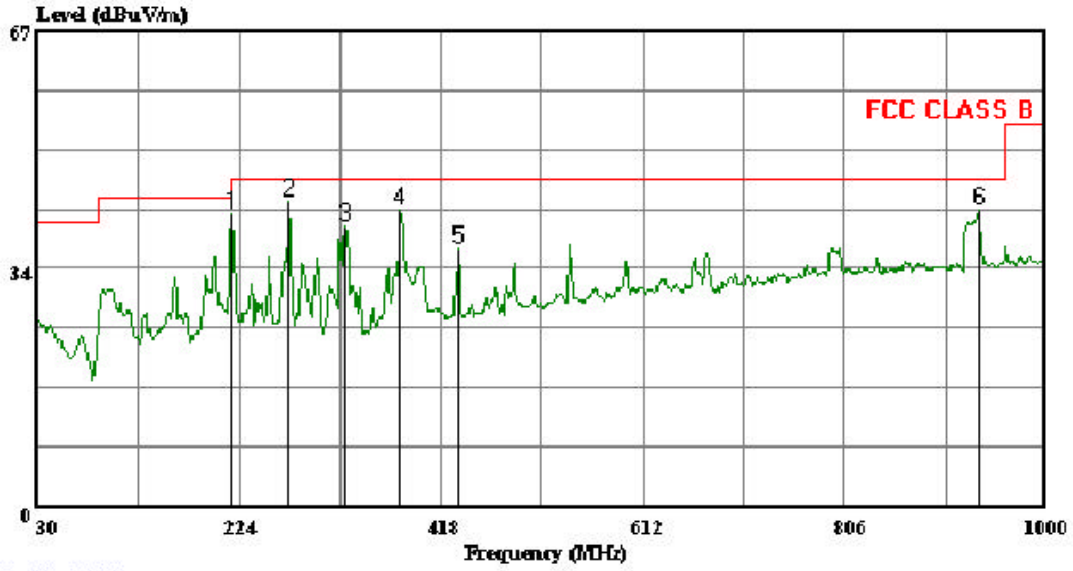
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

DIGITAL DEVICE EMISSIONS

COMPLIANCE Engineering Services, Inc.
FCC,VCCI,CISPR,CE
UL,CSA,TUV

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

Data#: 8 File#: 061603.emi Date: 06-16-2003 Time: 22:43:15



(Audix ATC)

Trace: 7 Ref Trace:

Condition: FCC CLASS B 3m CHAMBER 030306 1185 HORIZONTAL
Company : Broadcom Corporation
EUT Description : 802.11 WLAN Mini PCI in CRVSA-02T1-75 PC
Model Number : BCM94301MPL
Test Configurtion: EUT, Printer, Modem, Mouse
Test Target : FCC 15.247
Mode of Operation: Digital Portion
Project No : 03U2061
Tester : Frank Ibrahim

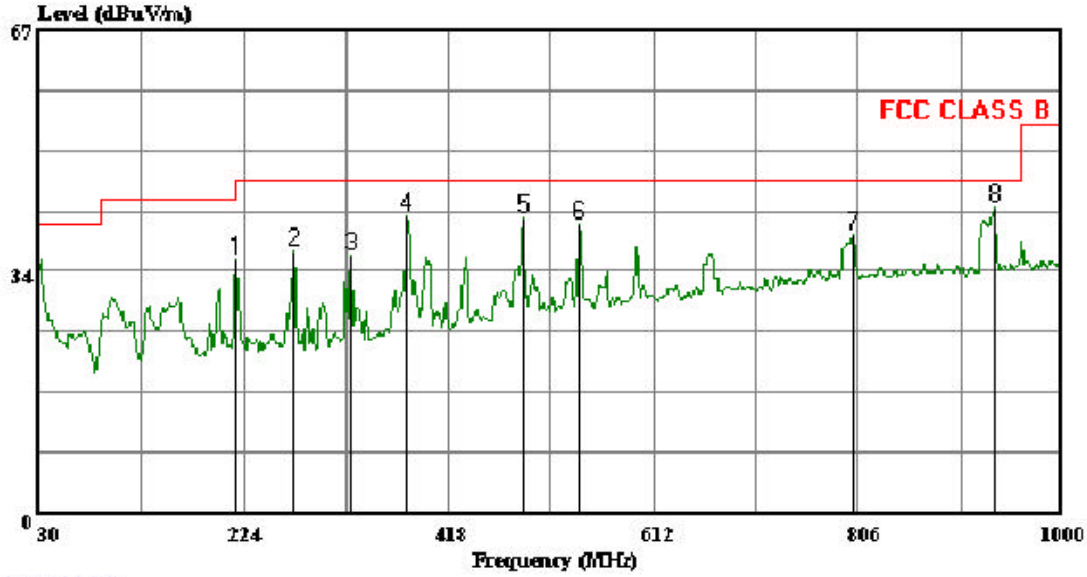
Page: 1

	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	216.240	29.93	9.94	1.43	0.00	41.30	46.00	-4.70	Peak
2	271.530	29.28	11.89	1.61	0.00	42.78	46.00	-3.22	Peak
3	324.880	24.86	12.72	1.88	0.00	39.46	46.00	-6.54	Peak
4	378.230	25.93	13.98	1.96	0.00	41.87	46.00	-4.13	Peak
5	434.490	18.85	15.23	2.12	0.00	36.20	46.00	-9.80	Peak
6	934.040	17.61	20.81	3.31	0.00	41.73	46.00	-4.27	Peak

COMPLIANCE Engineering Services, Inc.
FCC,VCCI,CISPR,CE
UL,CSA,TUV

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

Data#: 6 File#: 061603.emi Date: 06-16-2003 Time: 22:23:54



(Audix ATC)

Trace: 5 Ref Trace:

Condition: FCC CLASS B 3m CHAMBER 030306 1185 VERTICAL
Company : Broadcom Corporation
EUT Description : 802.11 WLAN Mini PCI in CRVSA-02T1-75 PC
Model Number : BCM94301MPL
Test Configurtion: EUT, Printer, Modem, Mouse
Test Target : FCC 15.247
Mode of Operation: Digital Portion
Project No : 03U2061
Tester : Frank Ibrahim

Page: 1

	Freq	Read Level	Probe Factor	Cable Loss	Preamp Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dB	dBuV/m	dBuV/m	dB	
1	216.240	23.69	9.94	1.43	0.00	35.06	46.00	-10.94	Peak
2	271.530	22.61	11.89	1.61	0.00	36.11	46.00	-9.89	Peak
3	324.880	21.16	12.72	1.88	0.00	35.76	46.00	-10.24	Peak
4	378.230	25.18	13.98	1.96	0.00	41.12	46.00	-4.88	Peak
5	487.840	22.21	16.32	2.29	0.00	40.82	46.00	-5.18	Peak
6	541.190	20.60	17.04	2.39	0.00	40.03	46.00	-5.97	Peak
7	800.180	15.83	19.80	3.01	0.00	38.64	46.00	-7.36	Peak
8	934.040	18.10	20.81	3.31	0.00	42.22	46.00	-3.78	Peak

7.7. 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

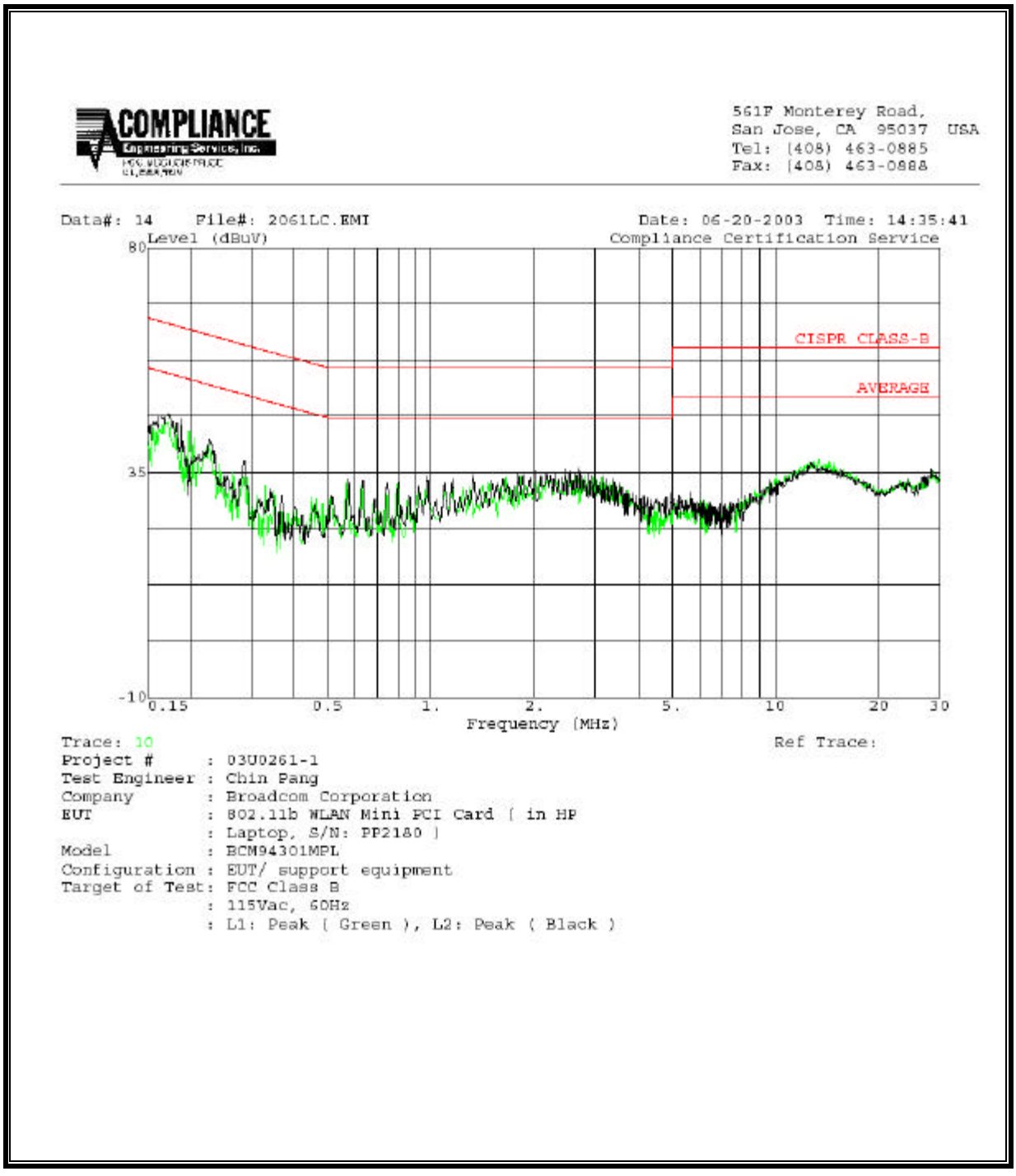
No non-compliance noted:

7.7.1. LINE CONDUCTION EMISSIONS WITH PP2180 HOST COMPUTER:

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
0.16	50.76	--	--	0.00	65.83	55.83	-15.07	-5.07	L1
0.19	49.60	--	--	0.00	64.77	54.77	-15.17	-5.17	L1
4.45	34.66	--	--	0.00	56.00	46.00	-21.34	-11.34	L1
0.15	51.33	--	--	0.00	65.91	55.91	-14.58	-4.58	L2
0.19	49.46	--	--	0.00	64.74	54.74	-15.28	-5.28	L2
4.72	35.04	--	--	0.00	56.00	46.00	-20.96	-10.96	L2
6 Worst Data									

LINE RESULTS

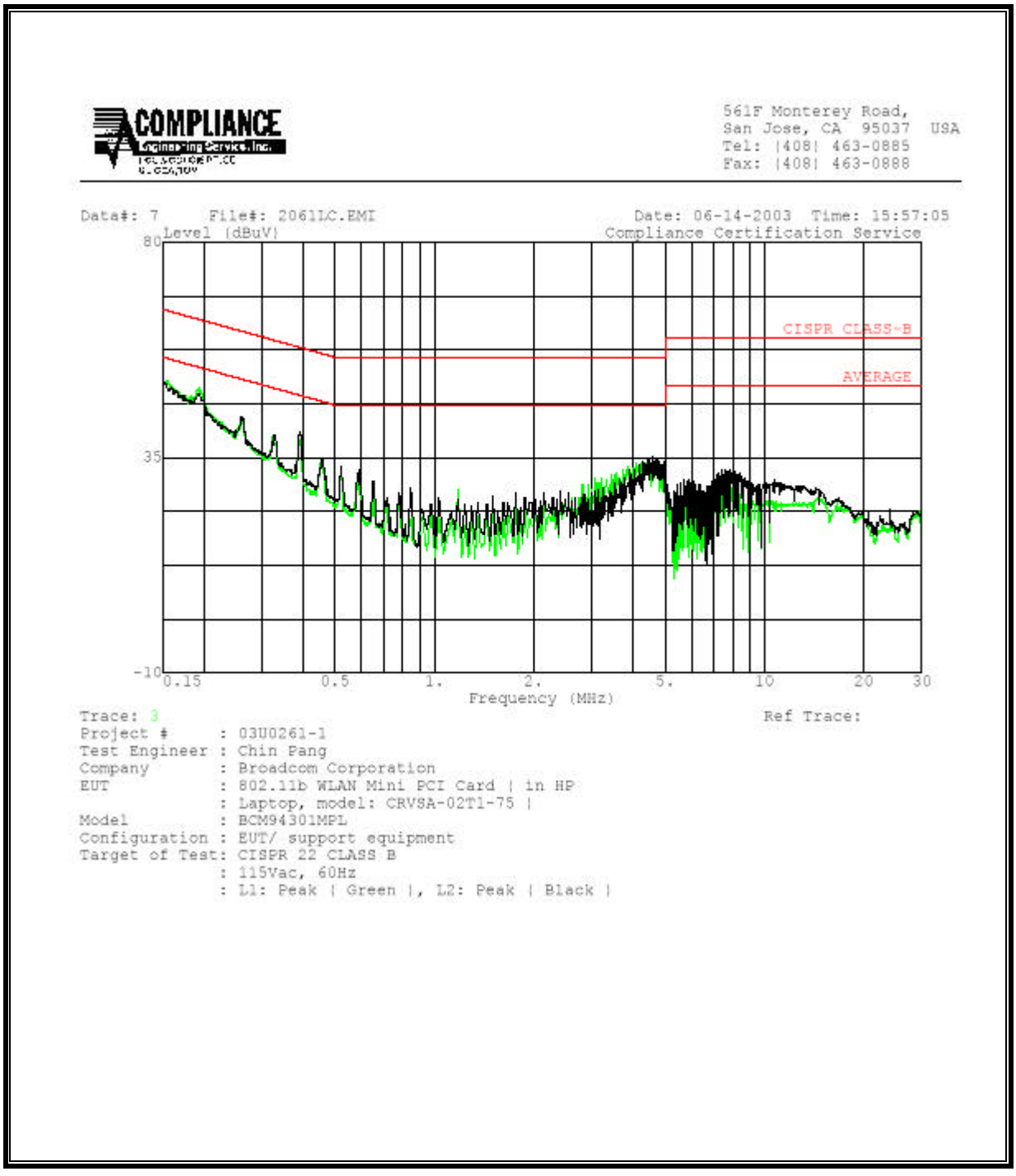


7.7.2. LINE CONDUCTION EMISSIONS WITH CRVSA-02T-75 HOST COMPUTER:

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
0.16	50.76	--	--	0.00	65.83	55.83	-15.07	-5.07	L1
0.19	49.60	--	--	0.00	64.77	54.77	-15.17	-5.17	L1
4.45	34.66	--	--	0.00	56.00	46.00	-21.34	-11.34	L1
0.15	51.33	--	--	0.00	65.91	55.91	-14.58	-4.58	L2
0.19	49.46	--	--	0.00	64.74	54.74	-15.28	-5.28	L2
4.72	35.04	--	--	0.00	56.00	46.00	-20.96	-10.96	L2
6 Worst Data									

LINE RESULTS



8. SETUP PHOTOS

ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

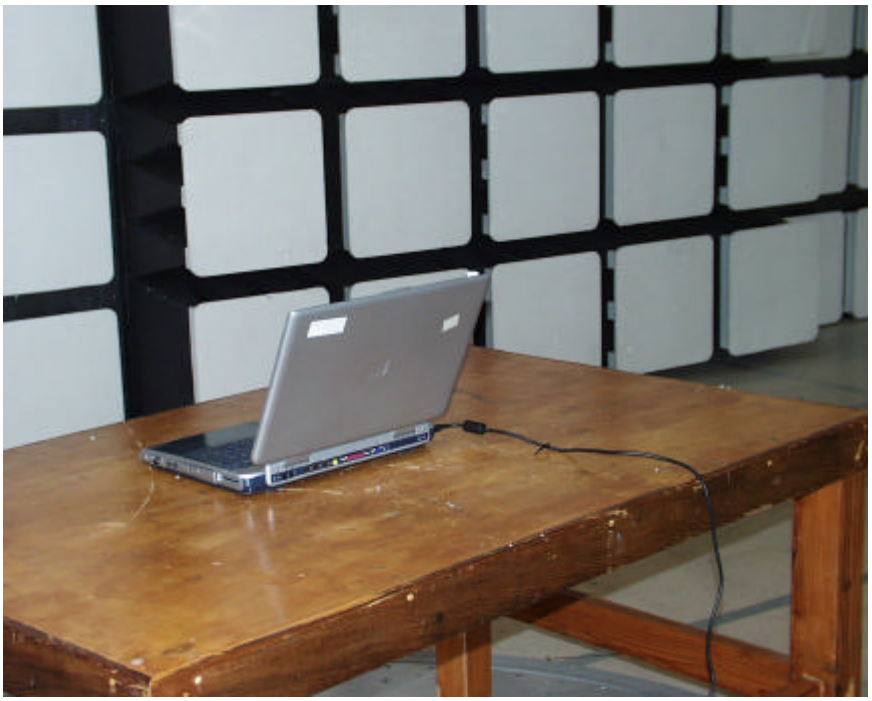
ANTENNA PORT CONDUCTED PHOTO

RADIATED RF MEASUREMENT SETUP

HP CRVSA-02T-75

RADIATED FRONT PHOTO

RADIATED BACK PHOTO



HP PP2180

RADIATED FRONT PHOTO

RADIATED BACK PHOTO

DIGITAL DEVICE RADIATED EMISSIONS SETUP

HP CRVSA-02T-75

DIGITAL DEVICE FRONT PHOTO

DIGITAL DEVICE BACK PHOTO

HP PP2180

DIGITAL DEVICE FRONT PHOTO

DIGITAL DEVICE BACK PHOTO

POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

HP CRVSA-02T-75

LINE CONDUCTED FRONT PHOTO

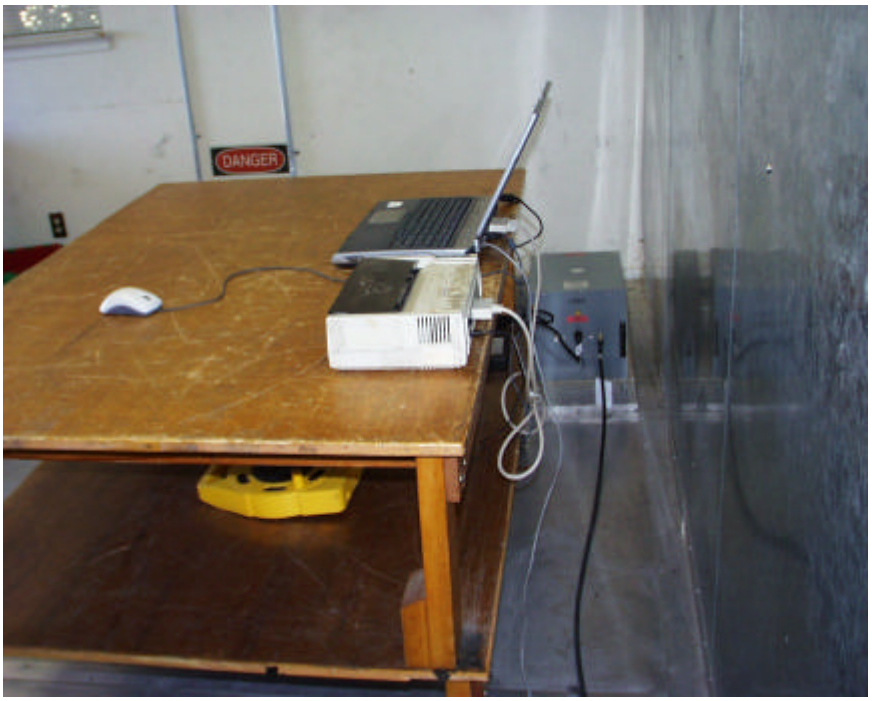
LINE CONDUCTED BACK PHOTO

POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

HP PP2180

LINE CONDUCTED FRONT PHOTO

LINE CONDUCTED BACK PHOTO



END OF REPORT