FCC CFR47 PART 15 SUBPART C
CERTIFICATION
TEST REPORT

FOR

PORTABLE GAME MACHINE WITH WIRELESS LAN

MODEL NUMBER: USG-001

FCC ID: BKEUSG-001

REPORT NUMBER: 06J10012-1B

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Prepared for
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Revision History

Rev.	Issue Date	Revisions	Revised By
A	01/25/06	Initial Issue	Thu
B	02/03/06	Added MPE Section	Thu

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1. ATTESTATION OF TEST RESULTS

COMPANY NAME:	NINTENDO CO., LTD. 11-1 KAMITOBA-HOKOTATE-CHO MINAMI-KU, KYOTO, JAPAN
EUT DESCRIPTION:	PORTABLE GAME MACHINE WITH WIRELESS LAN
MODEL:	USG-001
SERIAL NUMBER:	USGPPF2A123, USGPPF2A126
DATE TESTED:	JANUARY 16-18, 2006

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

Compliance Certification Services, Inc. tested the above equipment in accordance with the requirements set forth in the above standards. 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 Compliance Certification Services and all revisions are duly noted in the revisions section. Any alteration of this document not carried out by Compliance Certification Services 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:

THU CHAN
EMC SUPERVISOR
COMPLIANCE CERTIFICATION SERVICES

Tested By:

CHIN PANG
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 and FCC CFR 47 Part 15.

3. FACILITIES AND ACCREDITATION

The test sites and measurement facilities used to collect data are located at 561F Monterey Road, Morgan Hill, California, USA. The sites are constructed in conformance with the requirements of ANSI C63.4, ANSI C63.7 and CISPR Publication 22. All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

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
Radiated Emission, 30 to 200 MHz	+/- 3.3 dB
Radiated Emission, 200 to 1000 MHz	+4.5 / -2.9 dB
Radiated Emission, 1000 to 2000 MHz	+4.5 / -2.9 dB
Power Line Conducted Emission	+/- 2.9 dB

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

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

The EUT is a portable game machine with a wireless LAN transceiver operating in the 2400-2483.5MHz band with 13 channels.

5.2. MAXIMUM OUTPUT POWER

The transmitter has a maximum peak conducted output power as follows:

2400 to 2483.5 MHz Authorized Band

Frequency Range (MHz)	Mode	Output Power (dBm)	Output Power (mW)
2412 - 2472	802.11	2.82	1.91

5.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a dipole antenna, with a maximum gain of 4.45 dBi.

5.4. SOFTWARE AND FIRMWARE

The test utility software used during testing was WM Test.

5.5. WORST-CASE CONFIGURATION AND MODE

The worst-case channel is determined as the channel with the highest output power. The highest measured output power was at 2472 MHz.

The worst-case data rate for this channel is determined to be 1 Mb/s, based on previous experience with 802.11 WLAN product design architectures.

Thus all emissions tests were made in the 802.11 mode, 2412-2472MHz, 1 Mb/s.

5.6. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	**Manufacturer**	**Model**	**Serial Number**	**FCC ID**
AC Adapter	Kyushu Mitsumi Co., Ltd	USG-002	044-01	NA
Head Phone	Nintendo Co., Ltd	AGS-005	1654	NA
Game Card	Nintendo Co., Ltd	NTR-005	NA	NA

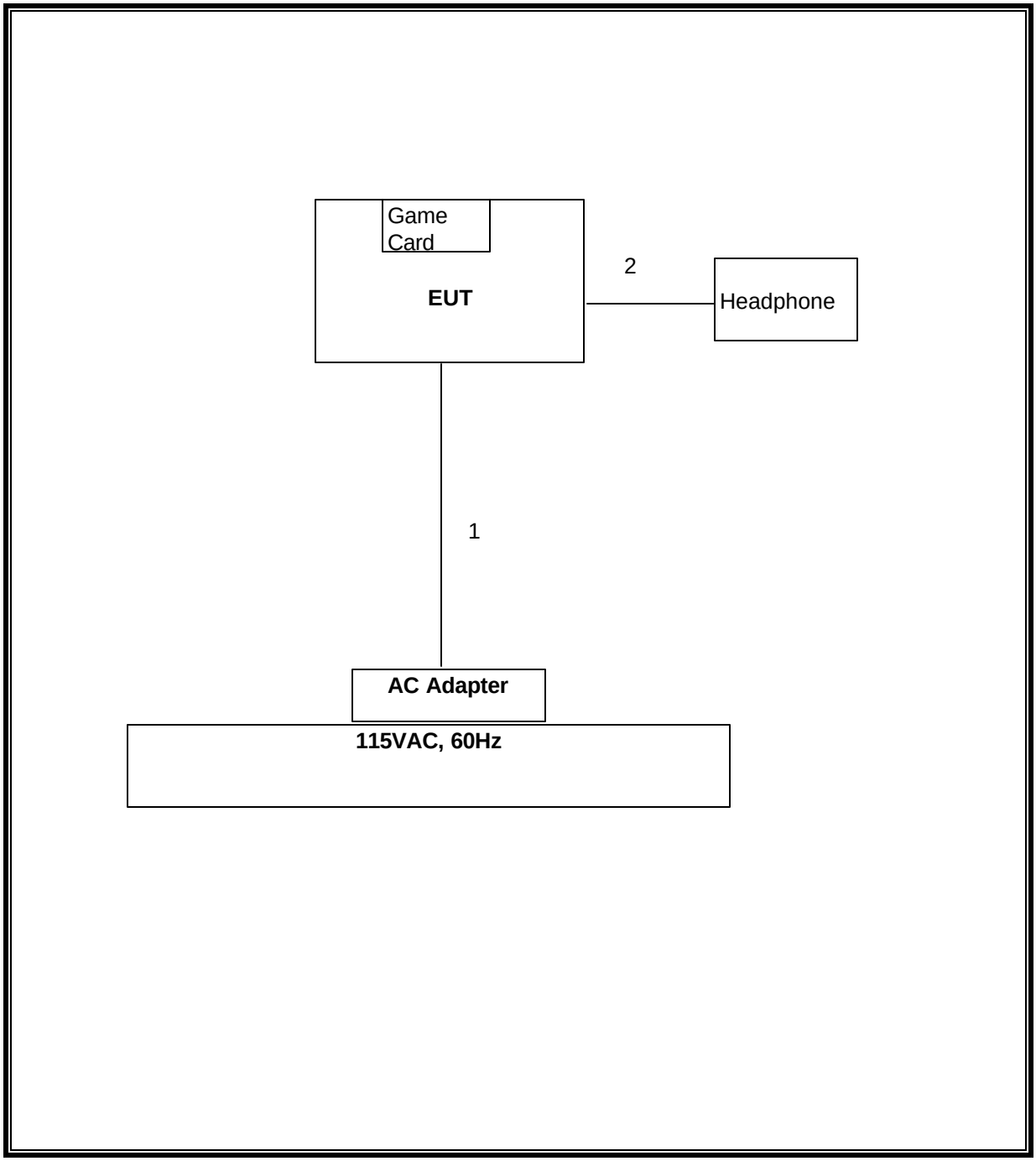
I/O CABLES

I/O CABLE LIST						
Cable No.	**Port**	**# of Identical Ports**	**Connector Type**	**Cable Type**	**Cable Length**	**Remarks**
1	DC	1	DC	Un-shielded	2m	NA
2	Headphone	1	Din	Un-shielded	1m	Ferrite on EUT's end

TEST SETUP

The EUT was set in continuous transmit mode. X, Y, and Z positions were investigated; "X" position was seemed worst case. High channel was deemed worst case due to the highest output power.

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**	**Serial Number**	**Cal Due**
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent	E4446A	US42070220	7/29/2006
Preamplifier, 1 ~ 26 GHz	HP	8449B	3008A00931	6/24/2006
Antenna, Horn 1 ~ 18 GHz	EMCO	3115	6717	4/22/2006
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	3/3/2006
Preamplifier, 1300 MHz	HP	8447D	1937A02062	1/7/2007
Spectrum Analyzer, 26.5 GHz	HP	8593EM	3710A00205	7/26/2006
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	8/30/2006
EMI Test Receiver	R & S	ESHS 20	827129/006	6/3/2006
Power Meter	R & S	NRVS	DE 12101	2/3/2007
Power Sensor, 18 GHz, 300 mW	R&S	NVR-Z51	DE 13013	2/3/2007
4.0 High Pass Filter	Micro Tronics	HPM13351	3	N/A

7. LIMITS AND RESULTS

7.1. CHANNEL TESTS FOR THE 2400 TO 2483.5 MHz BAND

7.1.1. 6 dB BANDWIDTH

LIMIT

§15.247 (a) (2) For direct sequence systems, the minimum 6 dB bandwidth shall be at least 500 kHz.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The RBW is set to 100 kHz and the VBW is set to 300 kHz. The sweep time is coupled.

RESULTS

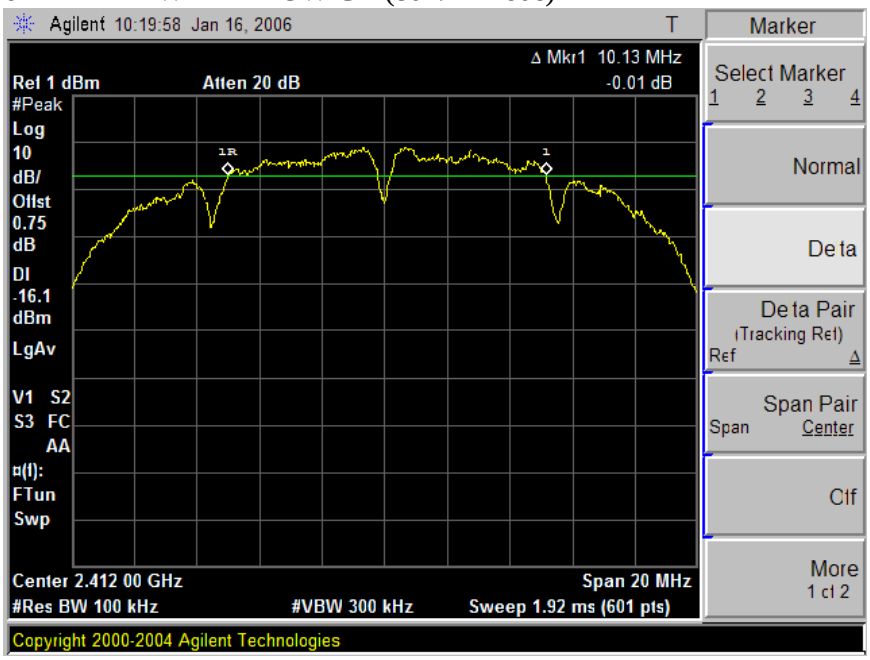
No non-compliance noted:

802.11 Mode

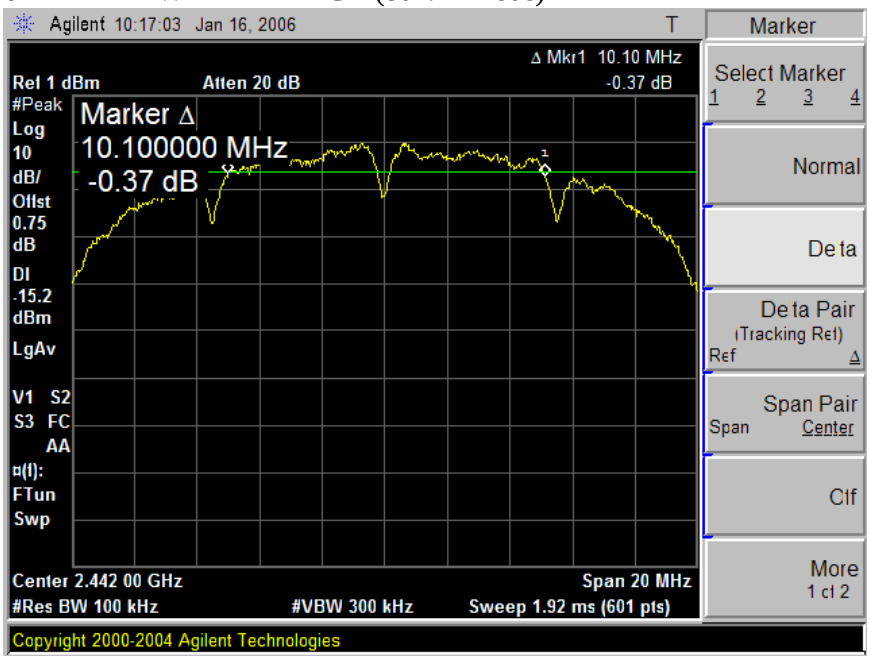
Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (kHz)	Margin (kHz)
Low	2412	10130	500	9630
Middle	2442	10100	500	9600
High	2472	10130	500	9630

6 DB BANDWIDTH (802.11 MODE)

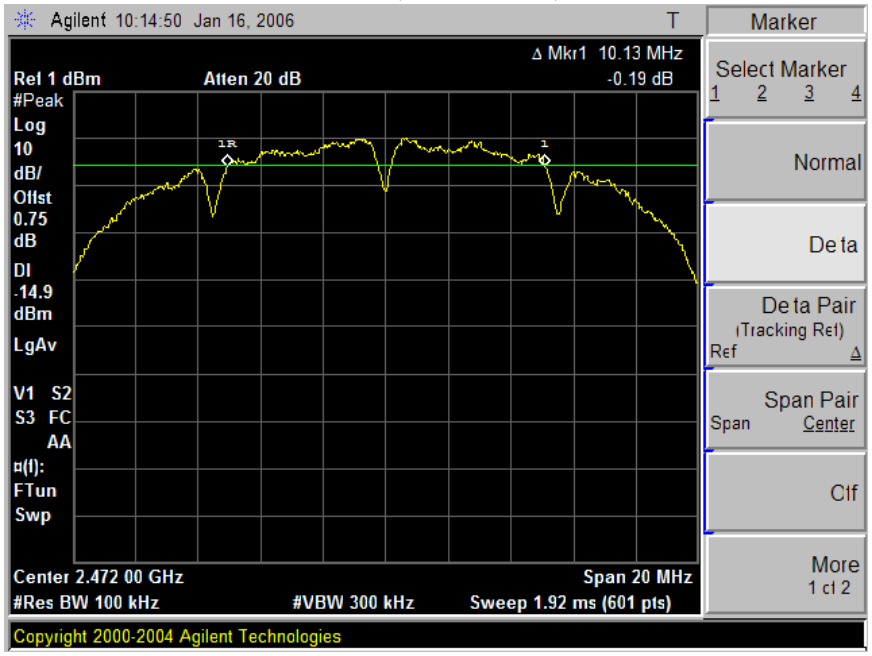
6 DB BANDWIDTH LOW CH (802.11 mode)



6 DB BANDWIDTH MID CH (802.11 mode)



6 DB BANDWIDTH HIGH CH (802.11 mode)



7.1.2. 99% BANDWIDTH

LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to the spectrum analyzer. The RBW is set to 1% to 3% of the 99 % bandwidth. The VBW is set to 3 times the RBW. The sweep time is coupled. The spectrum analyzer internal 99% bandwidth function is utilized.

RESULTS

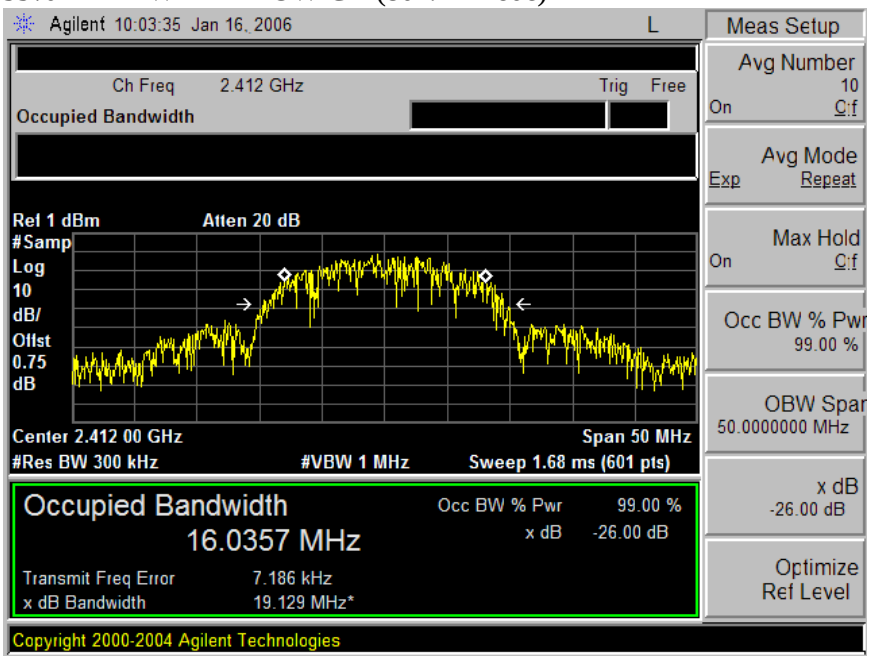
No non-compliance noted:

802.11 Mode

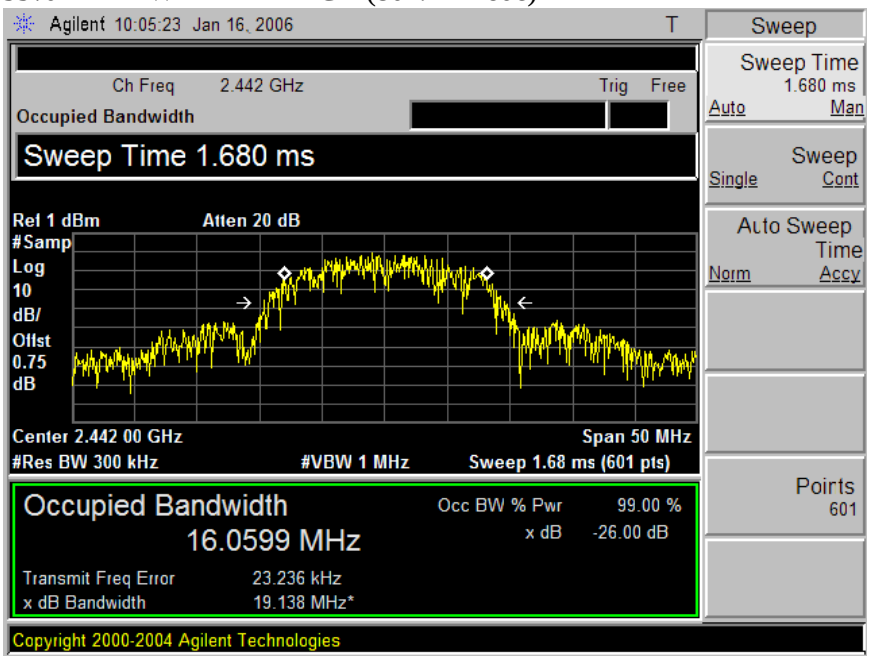
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.0357
Middle	2442	16.0599
High	2472	16.1139

99% BANDWIDTH (802.11 MODE)

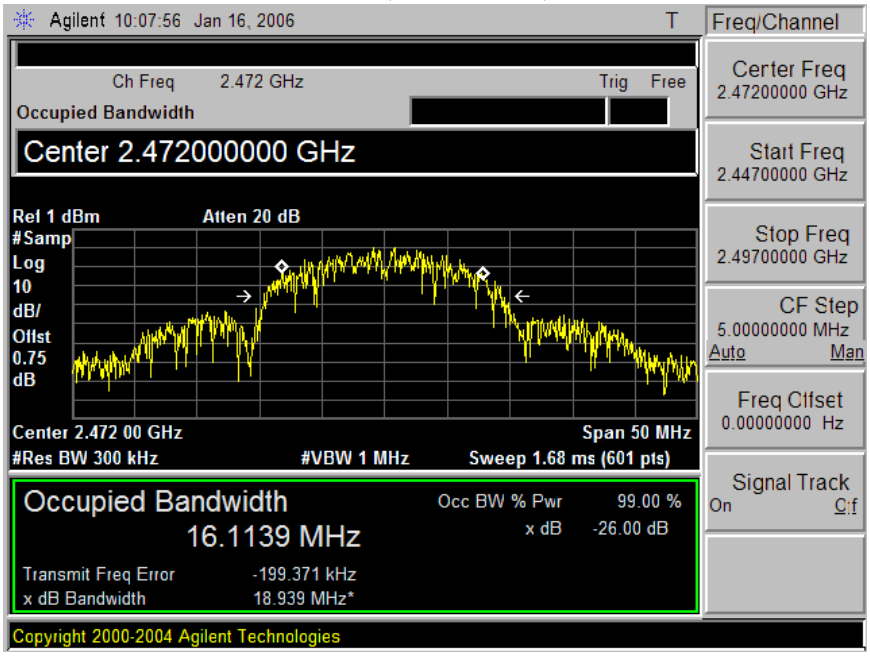
99% BANDWIDTH LOW CH (802.11 mode)



99% BANDWIDTH MID CH (802.11 mode)



99% BANDWIDTH HIGH CH (802.11 mode)



7.1.3. PEAK OUTPUT POWER

PEAK POWER LIMIT

§15.247 (b) The maximum peak output power of the intentional radiator shall not exceed the following:

§15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz , and 5725-5850 MHz bands: 1 watt.

§15.247 (b) (3) For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz , and 5725-5850 MHz bands: 1 watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

§15.247 (b) (4) (i) Systems operating in the 2400–2483.5 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power of the intentional radiator is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer and the analyzer's internal channel power integration function is used to integrate the power over a bandwidth greater than or equal to the 99% bandwidth.

RESULTS

The maximum antenna gain is 4.45 dBi for other than fixed, point-to-point operations, therefore the limit is 30 dBm.

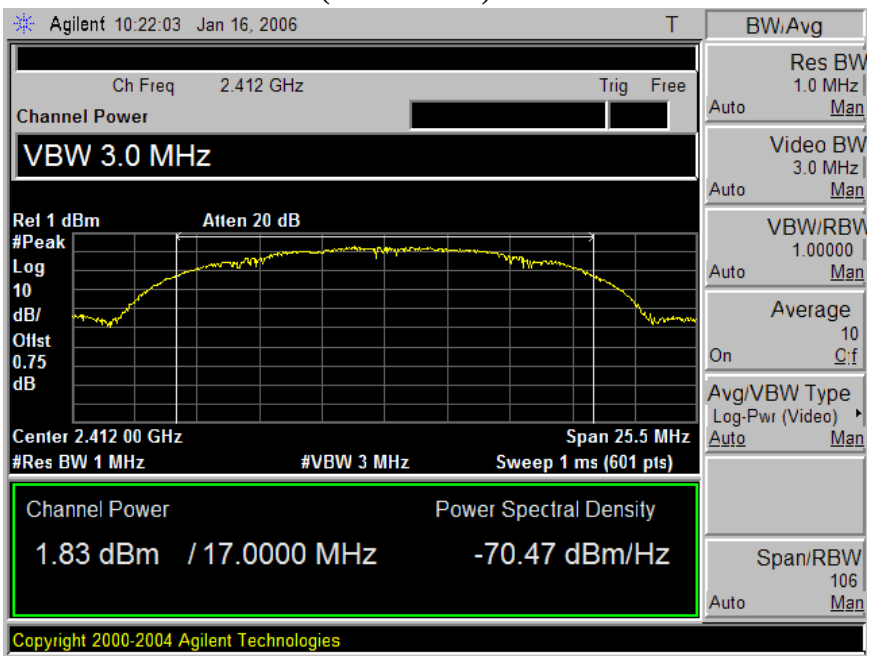
No non-compliance noted:

802.11 Mode

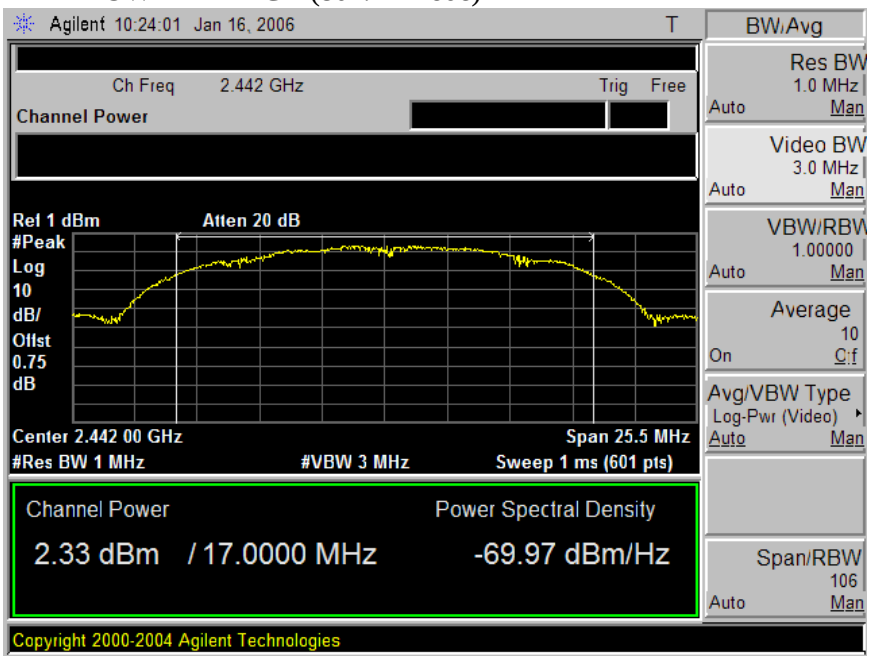
Channel	Frequency (MHz)	Peak Power (dBm)	Limit (dBm)	Margin (dB)
Low	2412	1.83	30	-28.17
Middle	2442	2.33	30	-27.67
High	2472	2.82	30	-27.18

OUTPUT POWER (802.11 MODE)

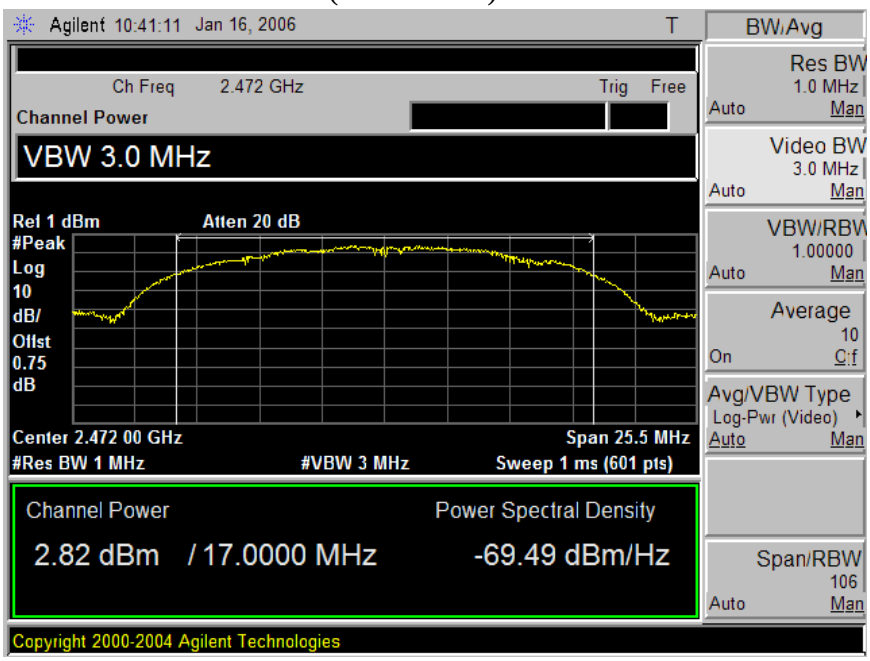
PEAK POWER LOW CH (802.11 mode)



PEAK POWER MID CH (802.11 mode)



PEAK POWER HIGH CH (802.11 mode)



7.1.4. MAXIMUM PERMISSIBLE EXPOSURE

LIMITS

§1.1310 The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radio-frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3–3.0	614	1.63	*(100)	6
3.0–30	1842/f	4.89/f	*($900/f^2$)	6
30–300	61.4	0.163	1.0	6
300–1500			f/300	6
1500–100,000			5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*($180/f^2$)	30

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)—Continued

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
30–300	27.5	0.073	0.2	30
300–1500			f/1500	30
1500–100,000			1.0	30

f = frequency in MHz
* = Plane-wave equivalent power density
NOTE 1 TO TABLE 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.
NOTE 2 TO TABLE 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

CALCULATIONS

Given

$E = \sqrt{(30 * P * G)} / d$

and

$S = E \wedge 2 / 3770$

where

E = Field Strength in Volts/meter
P = Power in Watts
G = Numeric antenna gain
d = Distance in meters
S = Power Density in milliwatts/square centimeter

Combining equations and rearranging the terms to express the distance as a function of the remaining variables yields:

$d = \sqrt{((30 * P * G) / (3770 * S))}$

Changing to units of Power to mW and Distance to cm, using:

P (mW) = P (W) / 1000 and
d (cm) =100 * d (m)

yields

$d = 100 * \sqrt{((30 * (P / 1000) * G) / (3770 * S))}$
$d = 0.282 * \sqrt{(P * G / S)}$

where

d = distance in cm
P = Power in mW
G = Numeric antenna gain
S = Power Density in mW/cm^2

Substituting the logarithmic form of power and gain using:

P (mW) = 10 ^ (P (dBm) / 10) and
G (numeric) = 10 ^ (G (dBi) / 10)

yields

$d = 0.282 * 10 \wedge ((P + G) / 20) / \sqrt{S}$

where

d = MPE distance in cm
P = Power in dBm
G = Antenna Gain in dBi
S = Power Density Limit in mW/cm^2

Rearranging terms to calculate the power density at a specific distance yields

$S = 0.0795 * 10 \wedge ((P + G) / 10) / (d\wedge 2)$

LIMITS

From §1.1310 Table 1 (B), the maximum value of S = 1.0 mW/cm^2

RESULTS

No non-compliance noted: (MPE distance equals 20 cm)

Mode	MPE Distance (cm)	Output Power (dBm)	Antenna Gain (dBi)	Power Density (mW/cm^2)
802.11	20.0	2.82	4.45	0.0011

NOTE: For mobile or fixed location transmitters, the minimum separation distance is 20 cm, even if calculations indicate that the MPE distance would be less.

7.1.5. AVERAGE POWER

AVERAGE POWER LIMIT

None; for reporting purposes only.

TEST PROCEDURE

The transmitter output is connected to a power meter.

RESULTS

No non-compliance noted:

The cable assembly insertion loss of 0.75dB was entered as an offset in the power meter to allow for direct reading of power.

802.11 Mode

Channel	Frequency (MHz)	Power (dBm)
Low	2412	-0.56
Middle	2437	0.14
High	2472	0.51

7.1.6. PEAK POWER SPECTRAL DENSITY

LIMIT

§15.247 (d) For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer, the maximum level in a 3 kHz bandwidth is measured with the spectrum analyzer using RBW = 3 kHz and VBW > 3 kHz, sweep time = span / 3 kHz, and video averaging is turned off. The PPSD is the highest level found across the emission in any 3 kHz band.

RESULTS

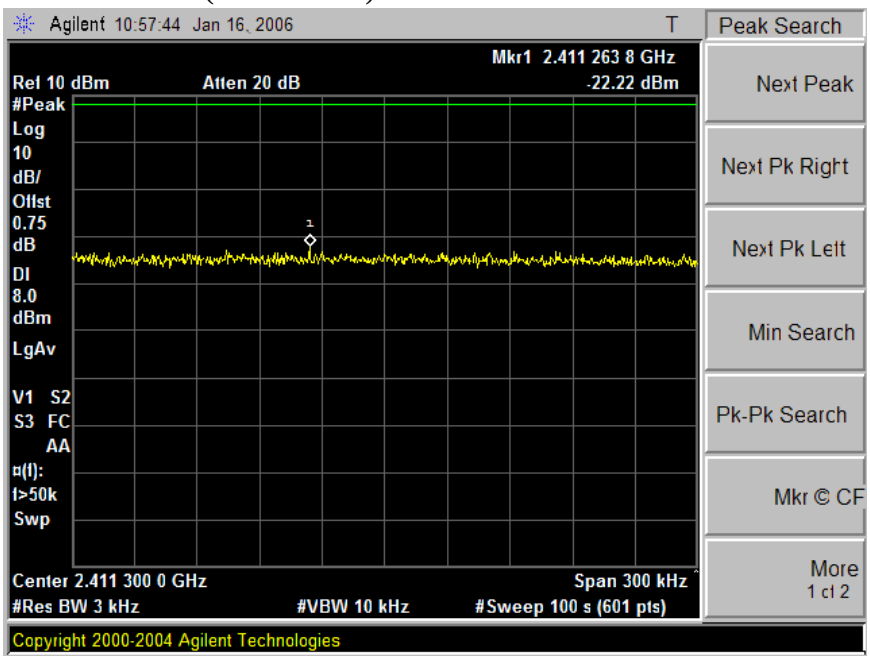
No non-compliance noted:

802.11 Mode

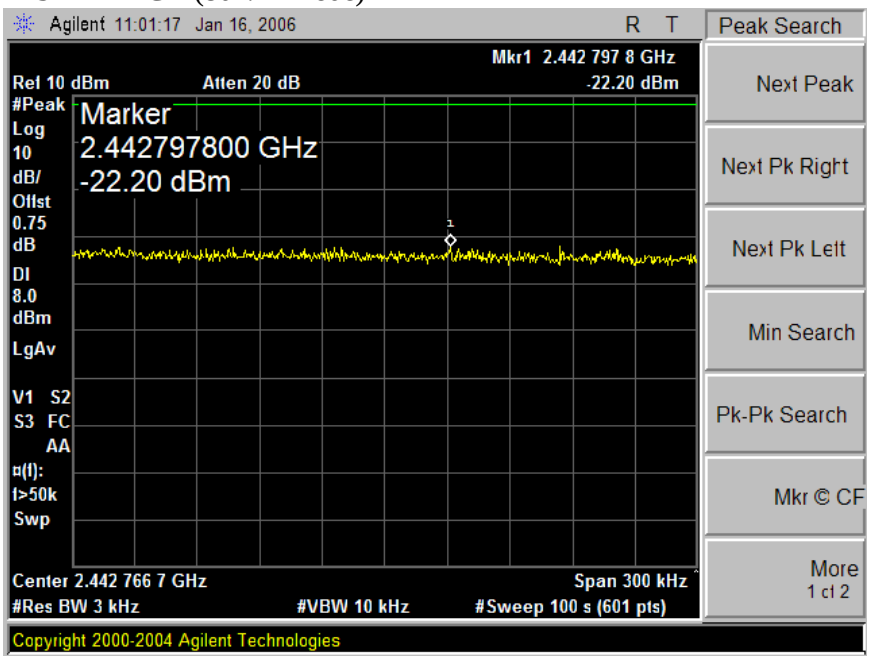
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-22.22	8	-30.22
Middle	2442	-22.20	8	-30.20
High	2472	-20.94	8	-28.94

PEAK POWER SPECTRAL DENSITY (802.11 MODE)

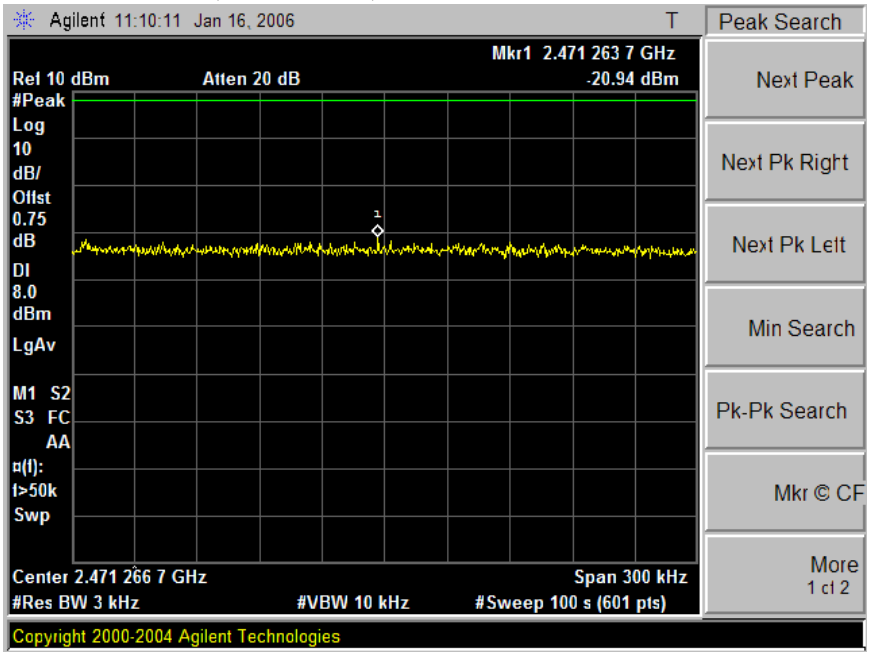
PPSD LOW CH (802.11 mode)



PPSD MID CH (802.11 mode)



PPSD HIGH CH (802.11 mode)



7.1.7. CONDUCTED SPURIOUS EMISSIONS

LIMITS

§15.247 (c) In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in§15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Conducted power was measured based on the use of a peak measurement, therefore the required attenuation is 20 dB.

TEST PROCEDURE

The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

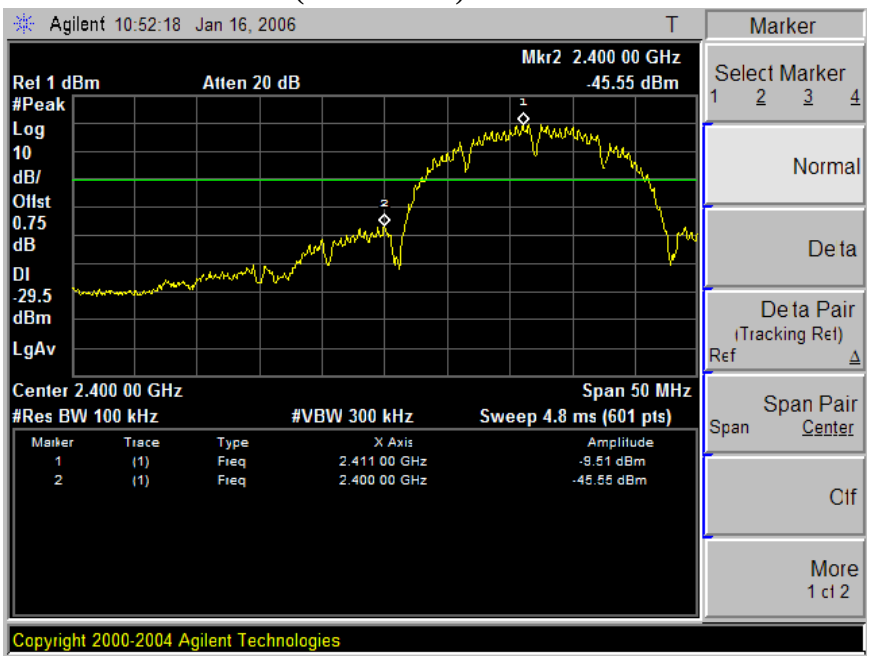
The spectrum from 30 MHz to 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels.

RESULTS

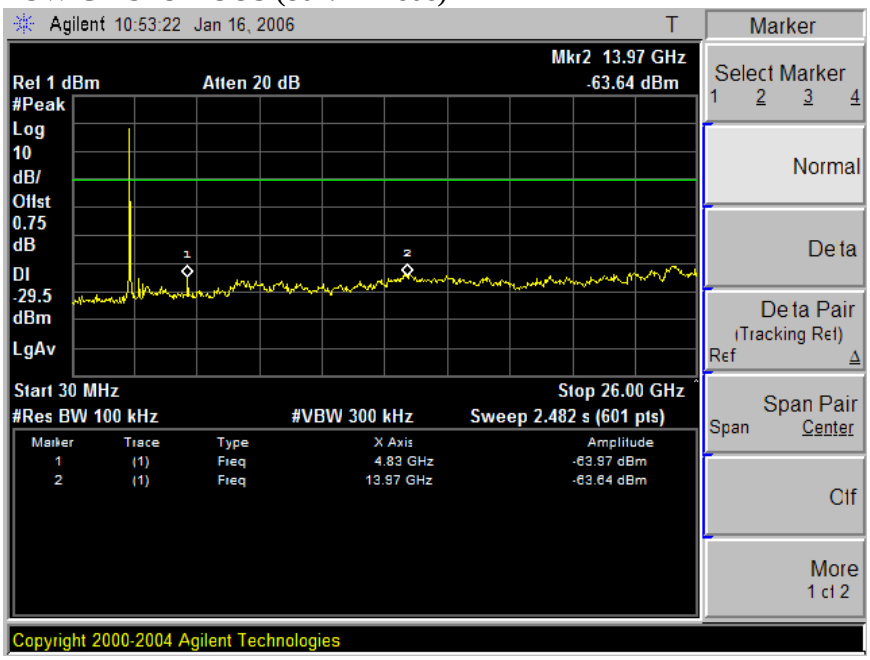
No non-compliance noted:

SPURIOUS EMISSIONS, LOW CHANNEL (802.11 MODE)

LOW CH BANDEDGE (802.11 mode)



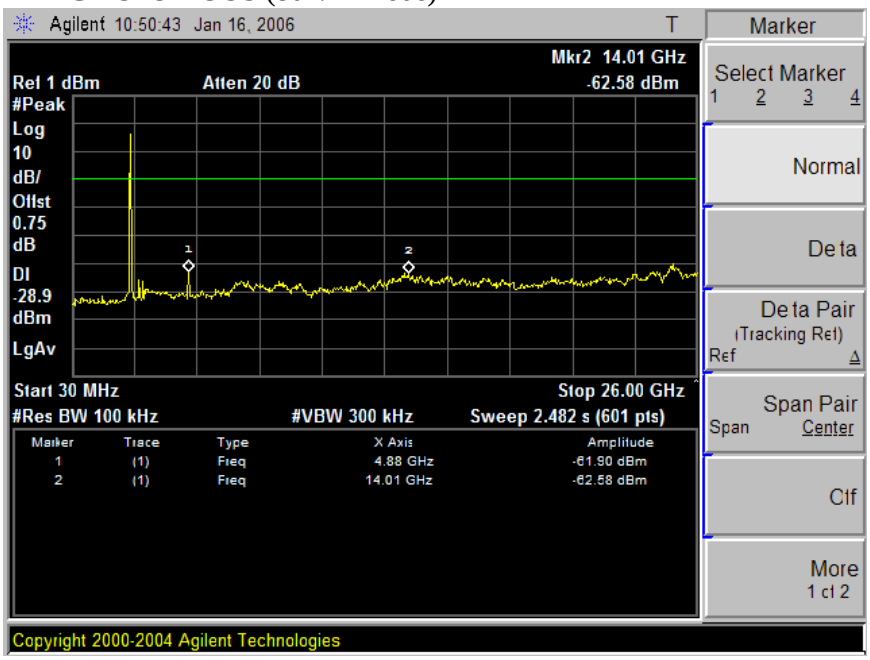
LOW CH SPURIOUS (802.11 mode)



SPURIOUS EMISSIONS, MID CHANNEL (802.11 MODE)

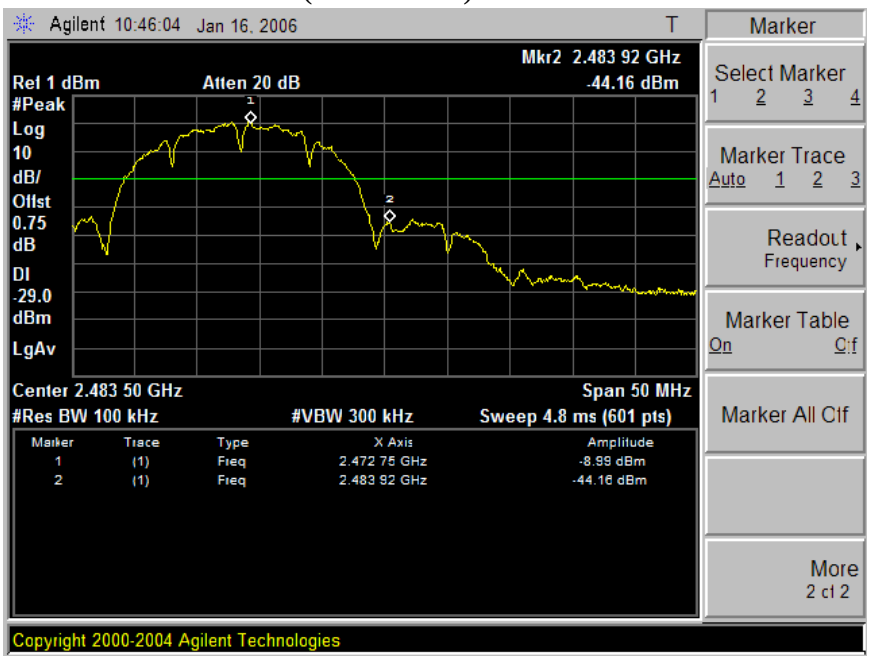
MID CH REFERENCE (802.11 mode)

MID CH SPURIOUS (802.11 mode)

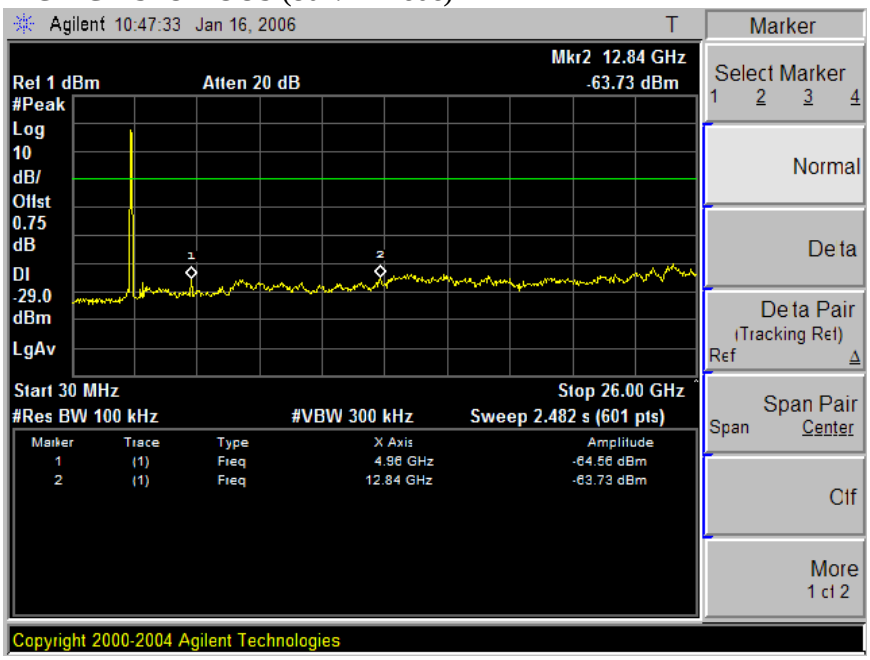


SPURIOUS EMISSIONS, HIGH CHANNEL (802.11 MODE)

HIGH CH BANDEDGE (802.11 mode)



HIGH CH SPURIOUS (802.11 mode)



7.2. RADIATED EMISSIONS

7.2.1. TRANSMITTER RADIATED SPURIOUS 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
[1]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	([2])
13.36 - 13.41			

[1] Until February 1, 1999, this restricted band shall be 0.490-0.510 MHz.
[2] 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 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 26 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in the 2.4 GHz band.

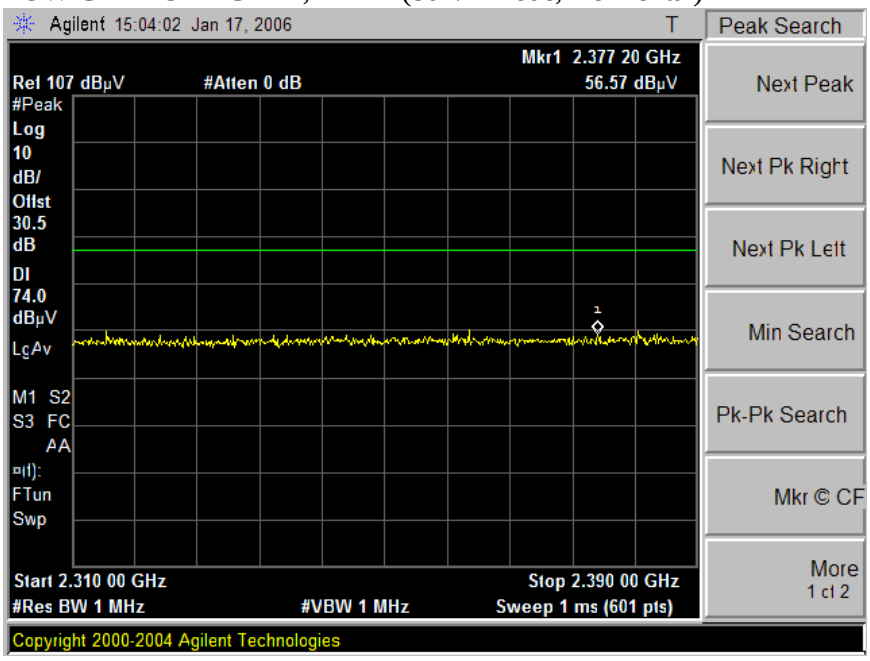
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

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.

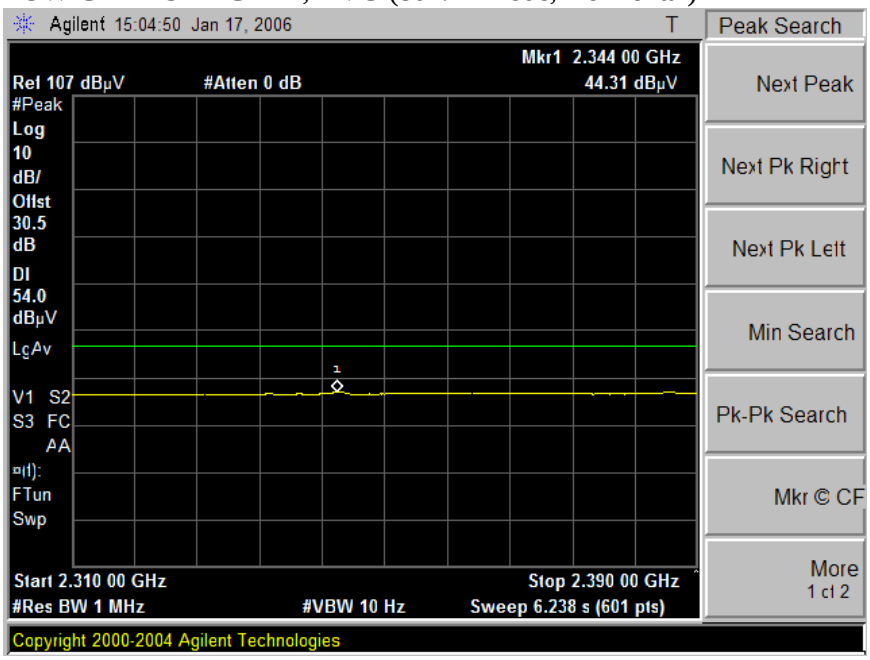
7.2.2. TRANSMITTER ABOVE 1 GHz FOR 2400 TO 2483.5 MHz BAND

RESTRICTED BANDEDGE (801.11 MODE, LOW CHANNEL, HORIZONTAL)

LOW CH RESTRICTED, PEAK (802.11mode, Horizontal)

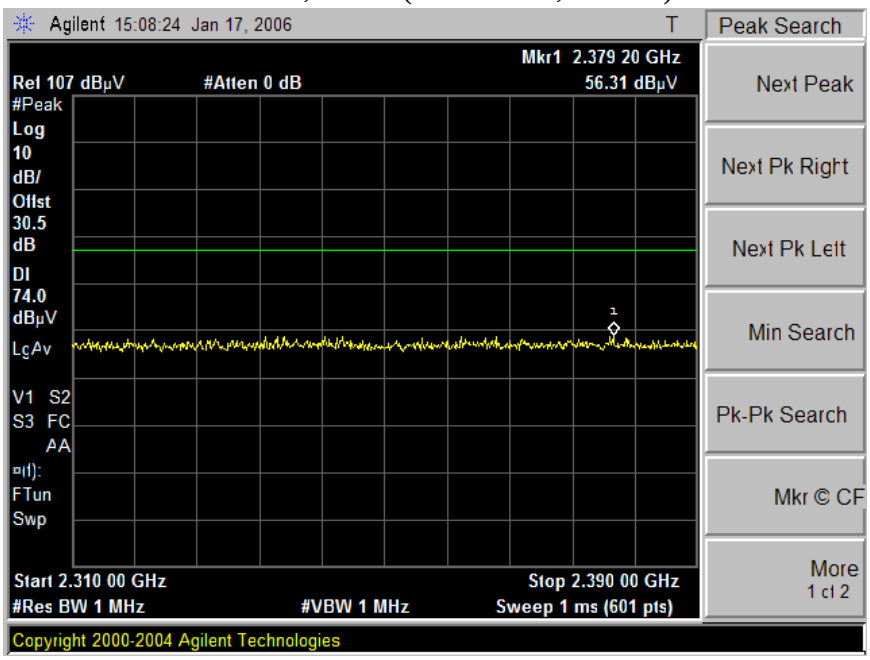


LOW CH RESTRICTED, AVG (802.11 mode, Horizontal)

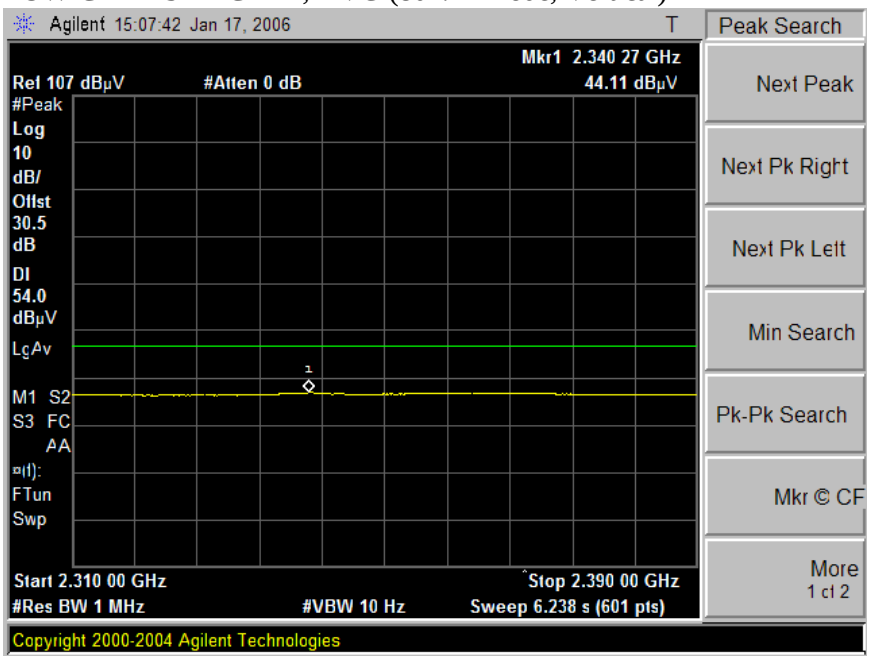


RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)

LOW CH RESTRICTED, PEAK (802.11mode, Vertical)

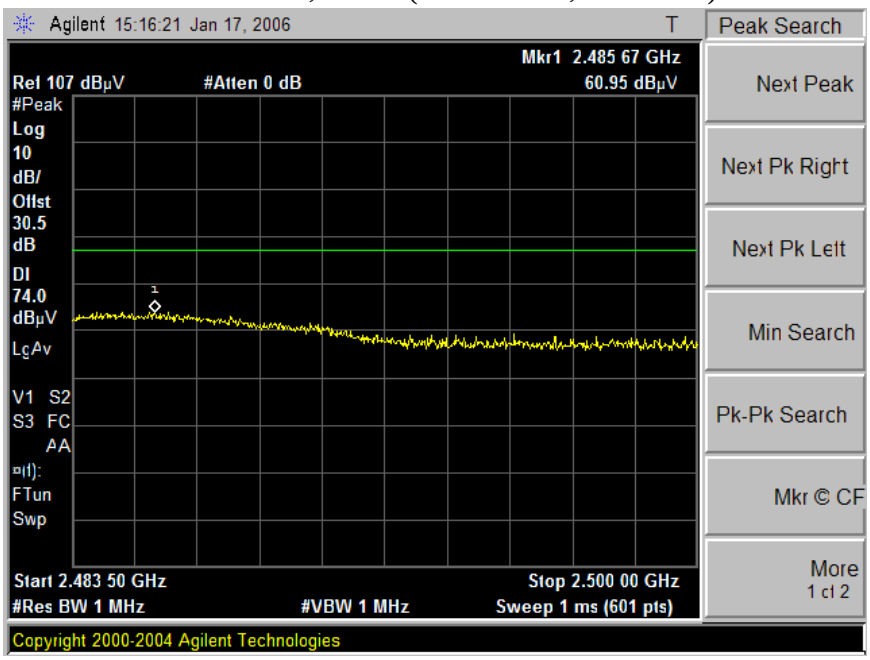


LOW CH RESTRICTED, AVG (802.11 mode, Vertical)

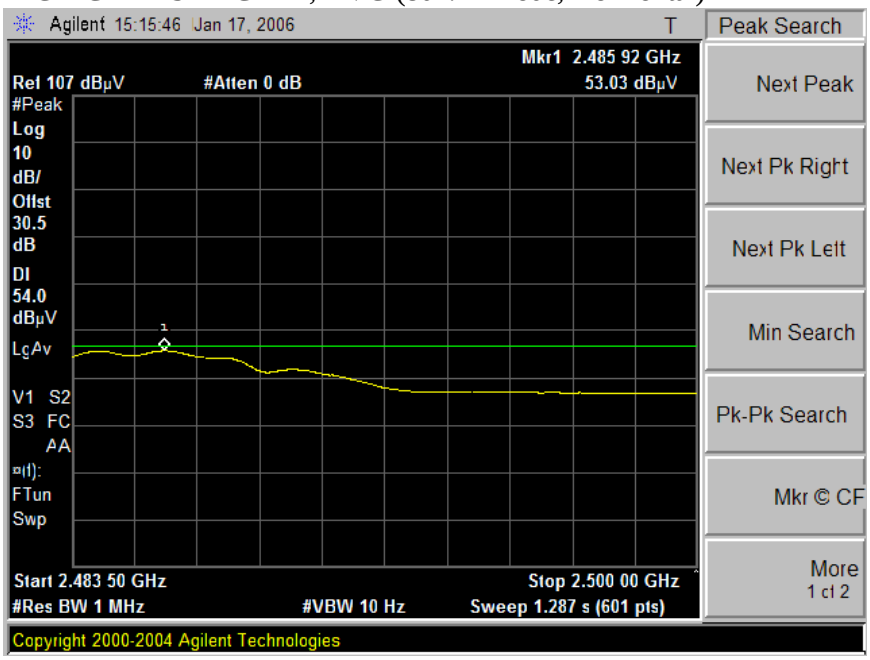


RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)

HIGH CH RESTRICTED, PEAK (802.11 mode, Horizontal)

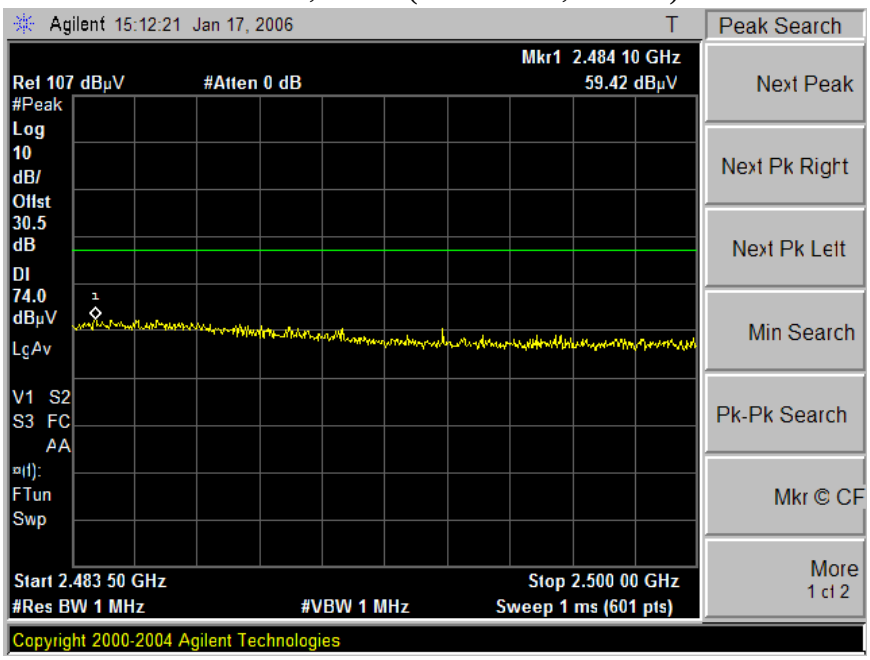


HIGH CH RESTRICTED, AVG (802.11 mode, Horizontal)

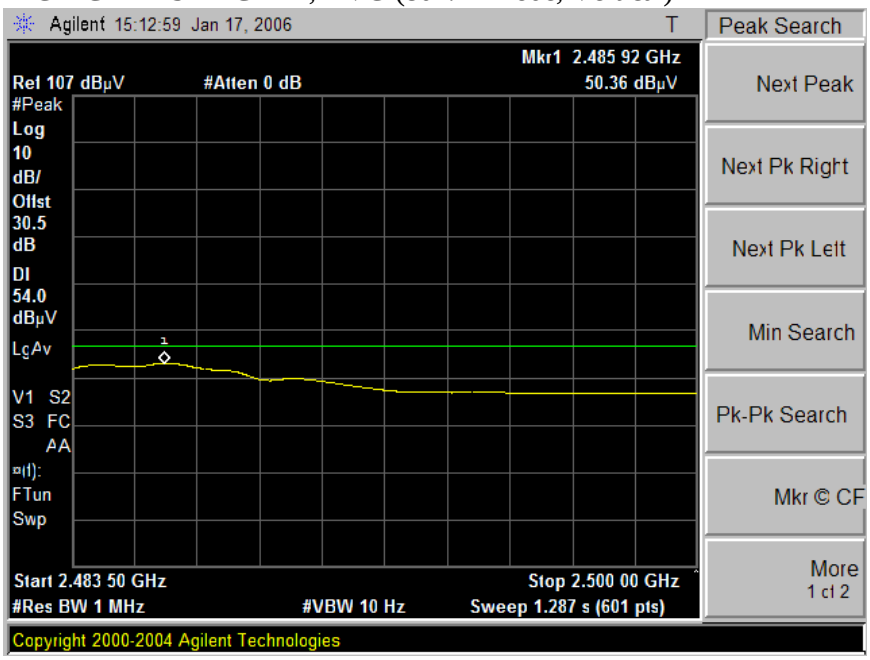


RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

HIGH CH RESTRICTED, PEAK (802.11mode, Vertical)



HIGH CH RESTRICTED, AVG (802.11 mode, Vertical)



HARMONICS AND SPURIOUS EMISSIONS)

01/17/06 **High Frequency Measurement**
Compliance Certification Services, Morgan Hill Open Field Site

Test Engr:Chin Pang
Project #:06J10012
Company:Nintendo Co., Ltd
EUT Descrip.:Portable Game Machine with Wireless Lan
EUT M/N:USG-001
Test Target:FCC 15.247
Mode Oper:TX
SN: USGPPF2A126
Test Equipment:

Horn 1-18GHz	Pre-amplifer 1-26GHz	Pre-amplifer 26-40GHz	Horn > 18GHz	Limit
T73; S/N: 6717 @3m	T144 Miteq 3008A00931			FCC 15.205

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter
Chin 177079003		Chin 200354001	HPF_4.0GHz	

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 Ch, 2412MHz															
4.824	3.0	44.2	32.0	33.7	3.3	-36.5	0.0	0.6	45.4	33.2	74	54	-28.6	-20.8	H
4.824	3.0	45.0	33.0	33.7	3.3	-36.5	0.0	0.6	46.2	34.2	74	54	-27.8	-19.8	V
Mid Ch, 2442MHz															
4.884	3.0	46.0	34.0	33.8	3.4	-36.5	0.0	0.6	47.3	35.3	74	54	-26.7	-18.7	H
4.884	3.0	44.6	32.0	33.8	3.4	-36.5	0.0	0.6	45.9	33.3	74	54	-28.1	-20.7	V
High Ch, 2472MHz															
4.944	3.0	45.6	33.7	33.8	3.4	-36.5	0.0	0.6	47.0	35.1	74	54	-27.0	-18.9	H
4.944	3.0	45.0	32.0	33.8	3.4	-36.5	0.0	0.6	46.4	33.4	74	54	-27.6	-20.6	V

Note: 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		

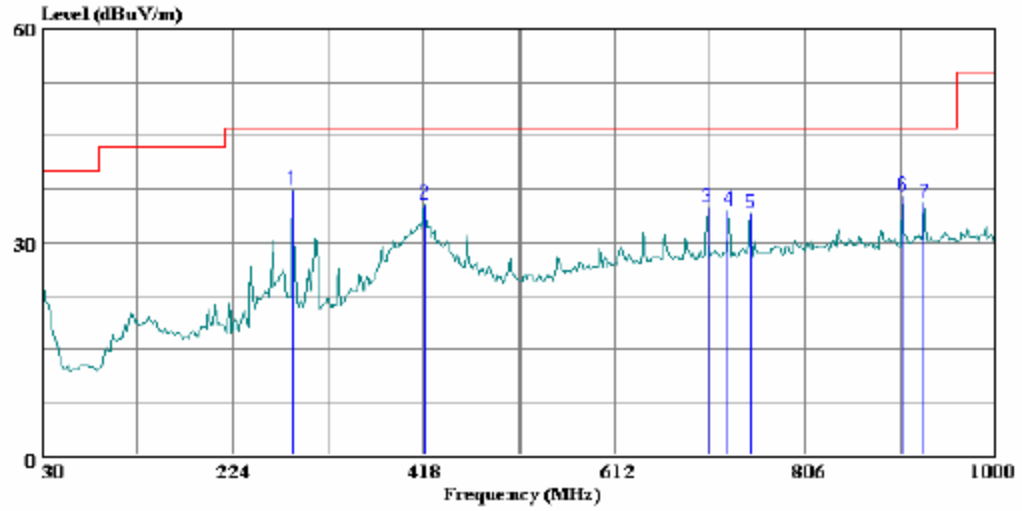
7.2.3. WORST-CASE RADIATED EMISSIONS BELOW 1 GHz

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

HORIZONTAL PLOT

COMPLIANCE Engineering Services, Inc.
561F Monterey Road
Morgan Hill, CA 95037
Tel: (408) 463-0888
Fax: (408) 463-0885

Data#: 2 File#: nintendo 10012.EMI Date: 01-17-2006 Time: 13:47:14



(Audix ATC)
Trace: 1 Ref Trace:

Condition: FCC CLASS-B HORIZONTAL
Test Operator: : Chin Pang
Project #: : 06J10012-1
Company: : Nintendo
EUT: : Portable Game Machine with Wireless LAN
Model No.: : USG-001
Configuration: : EUT/Headset/AC Adapter
Mode of operation: TX
Target of Test : FCC Class B

HORIZONTAL DATA

Page: 1

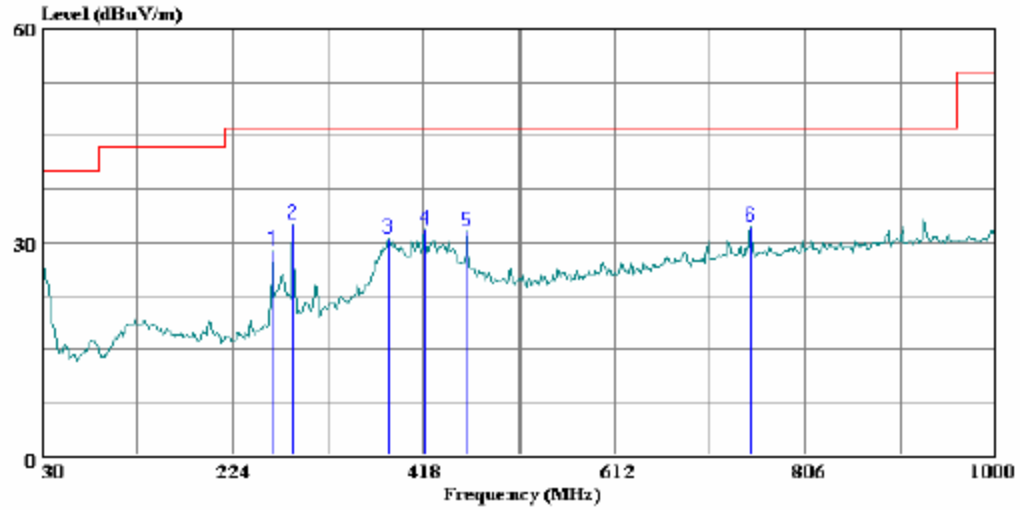
	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	286.080	49.72	-12.40	37.32	46.00	-8.68	Peak
2	419.940	44.36	-9.04	35.32	46.00	-10.68	Peak
3	706.090	38.03	-3.18	34.85	46.00	-11.15	Peak
4	727.430	37.29	-2.78	34.51	46.00	-11.49	Peak
5	749.740	36.48	-2.46	34.02	46.00	-11.98	Peak
6	904.940	37.60	-0.95	36.65	46.00	-9.35	Peak
7	926.280	36.16	-0.71	35.45	46.00	-10.55	Peak

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

VERTICAL PLOT

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

Data#: 4 File#: nintendo 10012.EMI Date: 01-17-2006 Time: 13:52:16



(Audix ATC)

Trace: 3 Ref Trace:

Condition: FCC CLASS-B VERTICAL
Test Operator: : Chin Pang
Project #: : 06J10012-1
Company: : Nintendo
EUT: : Portable Game Machine with Wireless LAN
Model No.: : USG-001
Configuration: : EUT/Headset/AC Adapter
Mode of operation: TX
Target of Test : FCC Class B

VERTICAL DATA

Page: 1

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	264.740	42.16	-13.21	28.96	46.00	-17.04	Peak
2	286.080	45.09	-12.40	32.69	46.00	-13.31	Peak
3	383.080	40.29	-9.82	30.47	46.00	-15.53	Peak
4	419.940	40.85	-9.04	31.81	46.00	-14.19	Peak
5	463.590	39.64	-7.99	31.65	46.00	-14.35	Peak
6	749.740	34.74	-2.46	32.28	46.00	-13.72	Peak

7.3. 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.

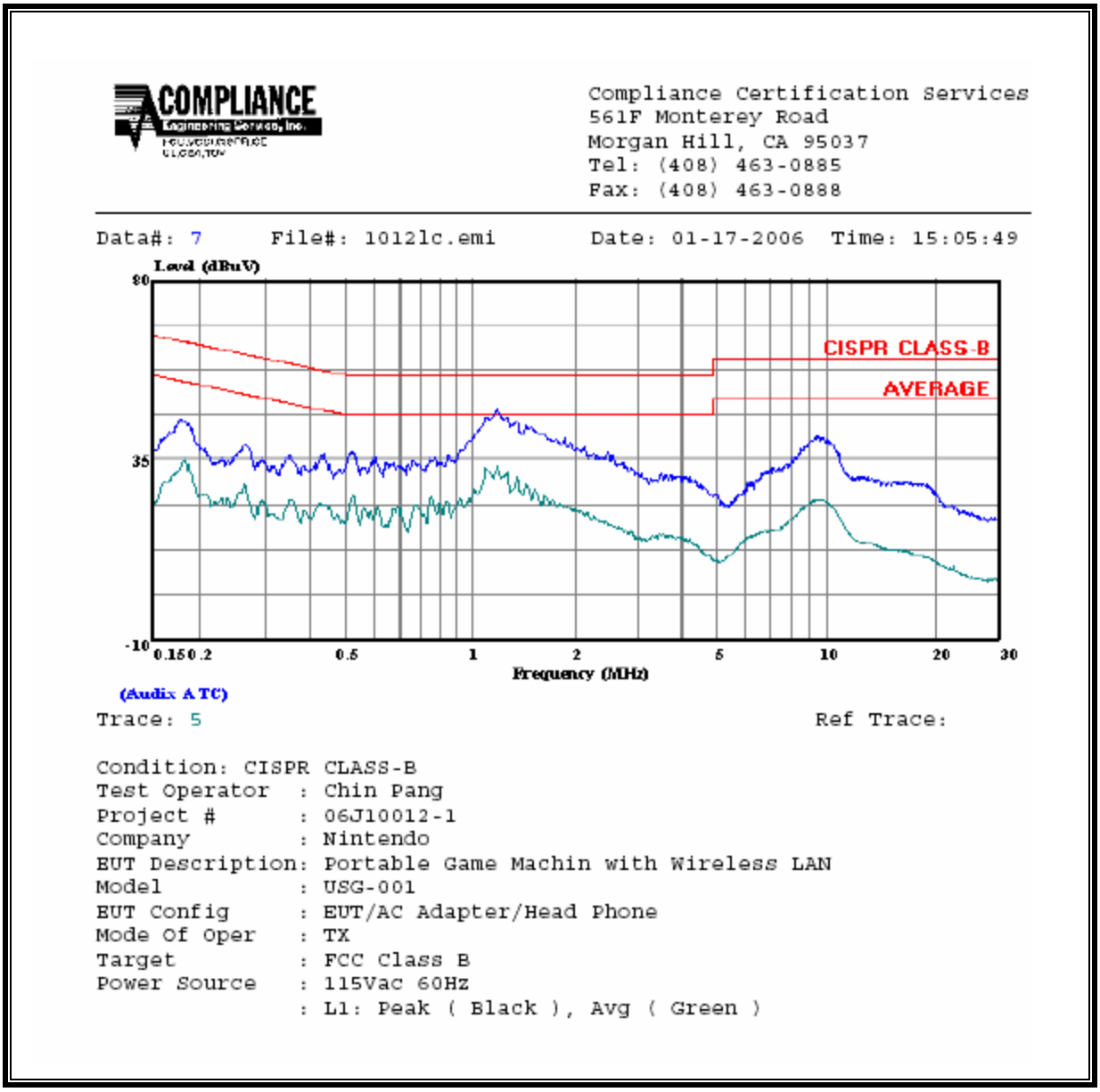
RESULTS

No non-compliance noted:

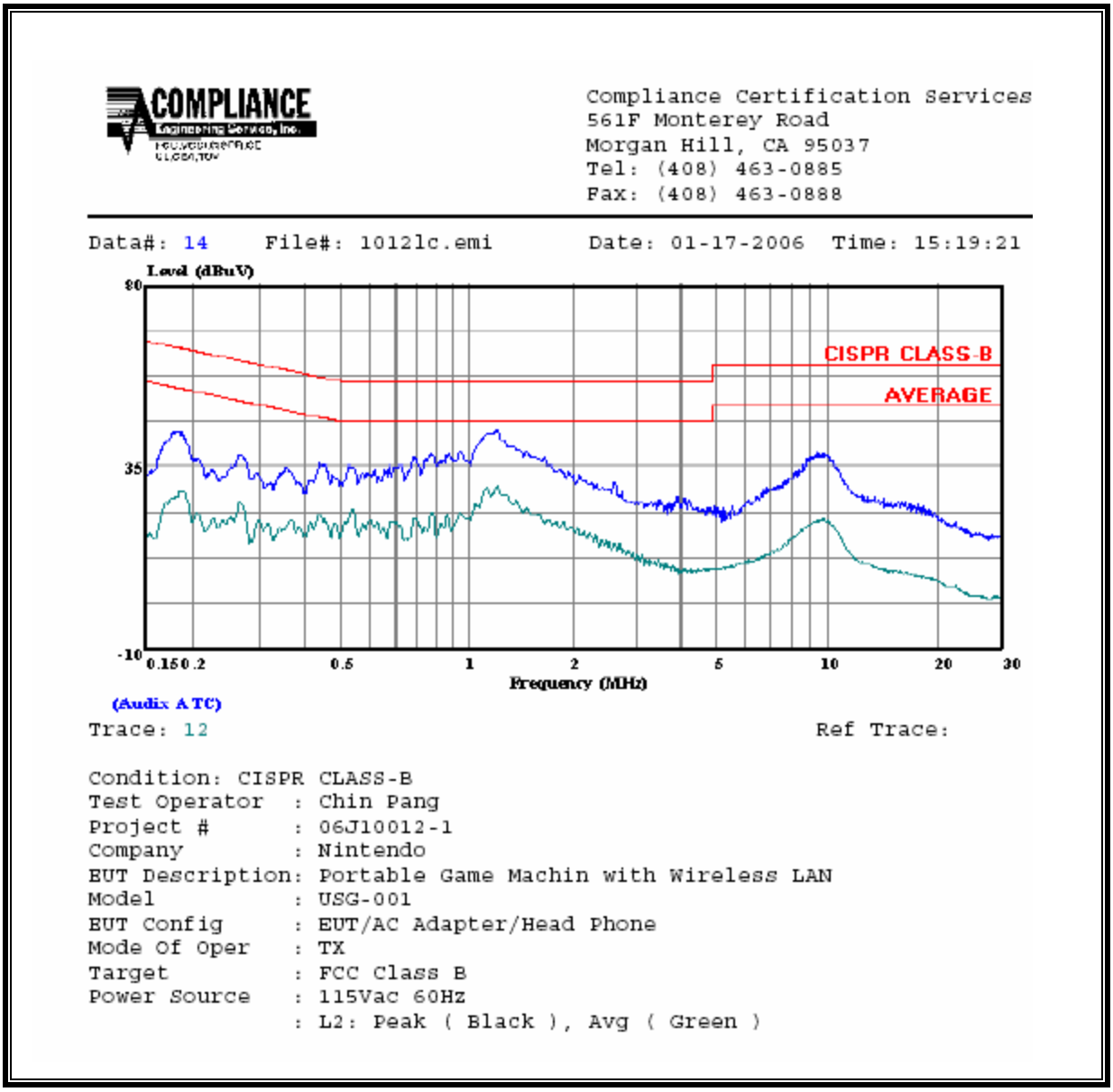
6 WORST EMISSIONS

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
0.18	44.44	--	35.08	0.00	64.39	54.39	-19.95	-19.31	L1
1.29	47.50	--	33.11	0.00	56.00	46.00	-8.50	-12.89	L1
9.65	40.68	--	25.25	0.00	60.00	50.00	-19.32	-24.75	L1
0.18	43.40	--	28.95	0.00	64.39	54.39	-20.99	-25.44	L2
1.32	43.84	--	30.39	0.00	56.00	46.00	-12.16	-15.61	L2
9.60	38.40	--	22.17	0.00	60.00	50.00	-21.60	-27.83	L2
6 Worst Data									

LINE RESULTS



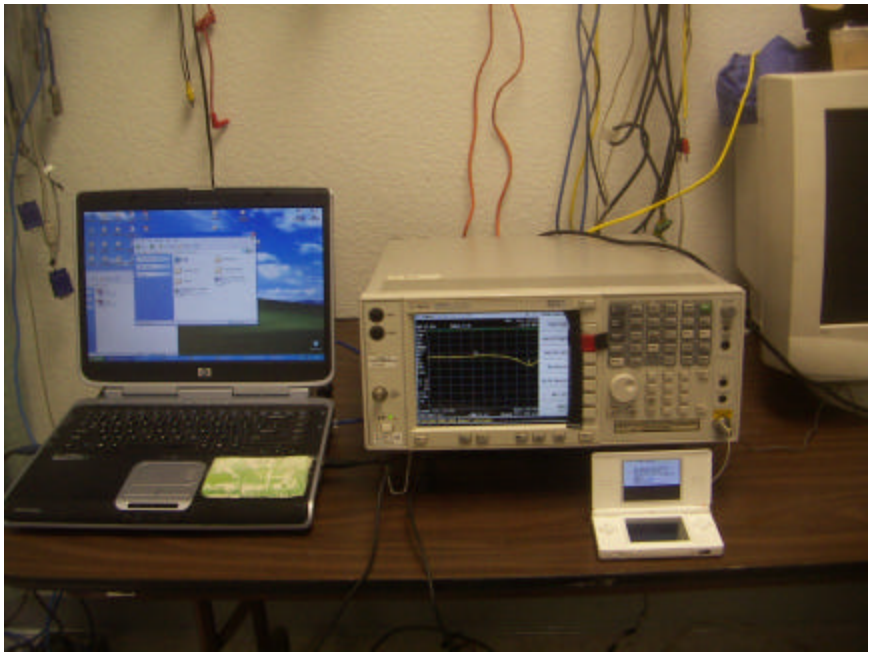
LINE 2 RESULTS



8. SETUP PHOTOS

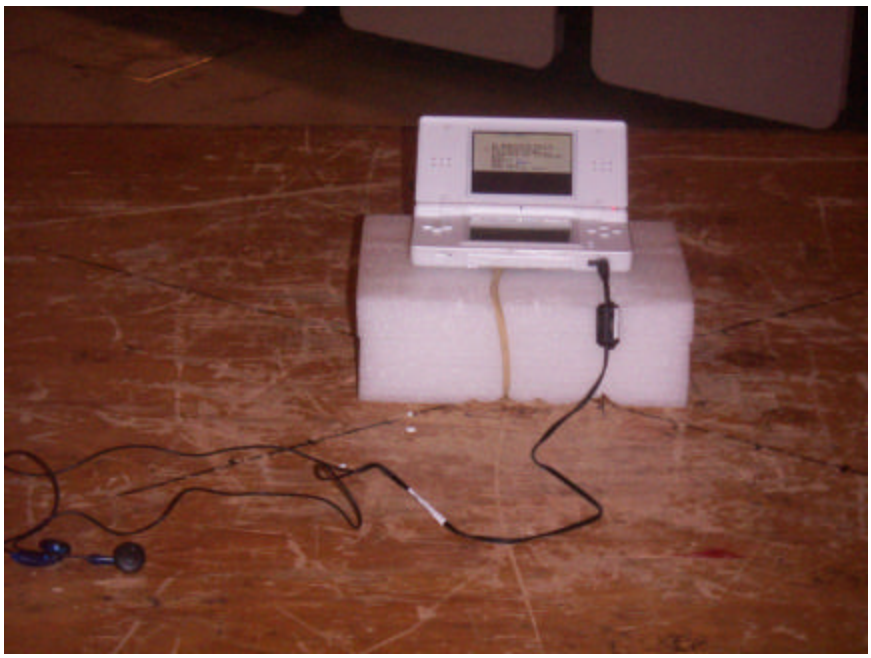
ANTENNA PORT CONDUCTED RF MEASUREMENT SETUP

ANTENNA PORT CONDUCTED PHOTO

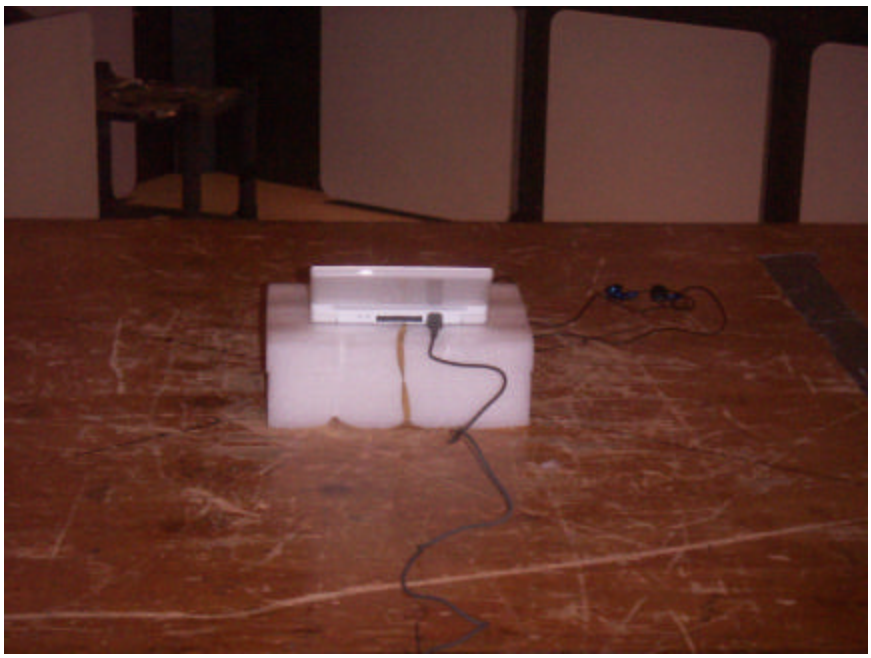


RADIATED RF MEASUREMENT SETUP FOR MOBILE CONFIGURATION

RADIATED FRONT PHOTO

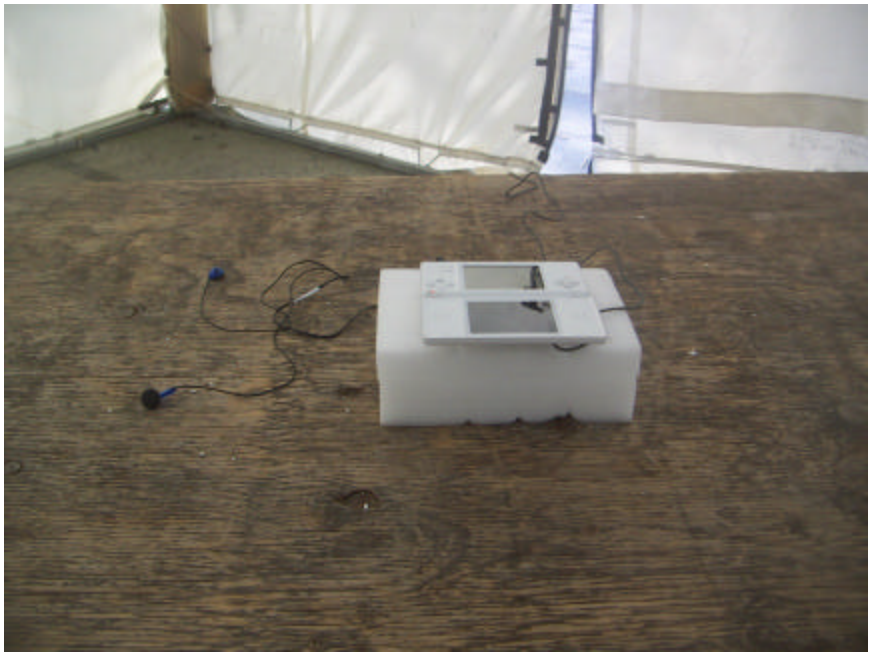


RADIATED BACK PHOTO



RADIATED RF MEASUREMENT SETUP FOR PORTABLE CONFIGURATION

X-AXIS PHOTO

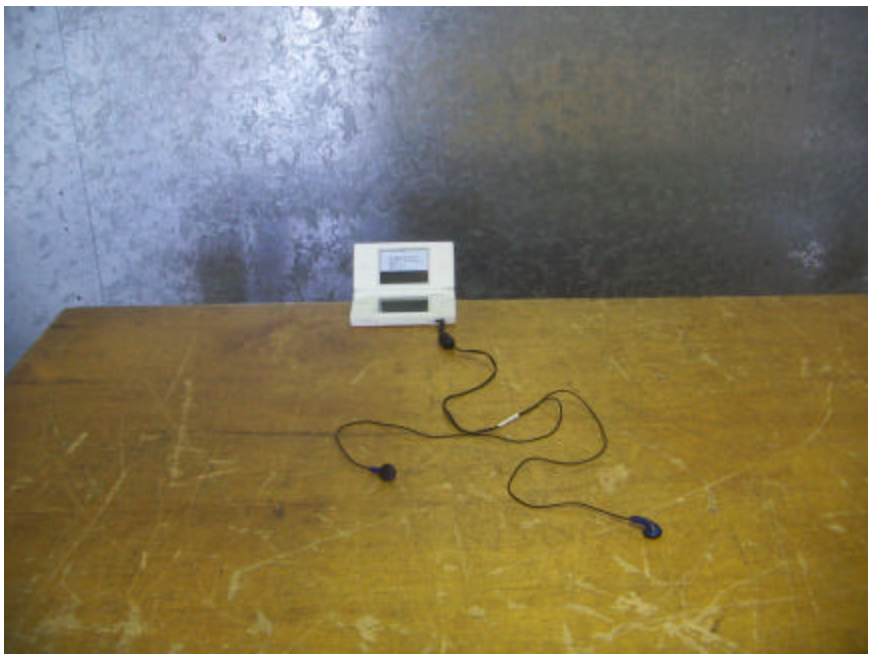


Y-AXIS PHOTO

Z-AXIS PHOTO

POWERLINE CONDUCTED EMISSIONS MEASUREMENT SETUP

LINE CONDUCTED FRONT PHOTO



LINE CONDUCTED BACK PHOTO

END OF REPORT