



**FCC CFR47 PART 15 SUBPART C  
CERTIFICATION  
TEST REPORT**

**FOR**

**SMARTPHONE**

**MODEL NUMBER: EXCA100**

**FCC ID: NM8EXCA**

**REPORT NUMBER: 06I10345-2, REVISION B**

**ISSUE DATE: JULY 21, 2006**

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**LAB CODE:200065-0**

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--	6/22/06	Initial Issue	Thu C.
B	7/21/06	Add test data for EUT with Jog Bar under sections 8.2.3 and 8.3	Thu C.

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# 1. ATTESTATION OF TEST RESULTS

**COMPANY NAME:** High Tech Computer Corp.  
23 Hisn Hua Road  
Taoyuan 330, Taiwan

**EUT DESCRIPTION:** Smartphone

**MODEL:** EXCA100 (without Jog Bar); EXCA100 (with Jog Bar)

**SERIAL NUMBER:** TY619FJ0056

**DATE TESTED:** June 12 – 15 & July 08, 2006

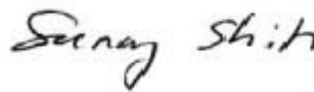
APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC PART 15 SUBPART C	NO NON-COMPLIANCE NOTED

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:

Tested By:



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THU CHAN  
EMC SUPERVISOR  
COMPLIANCE CERTIFICATION SERVICES

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EMC ENGINEER  
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## 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. CROSS REFERENCE TO OTHER REPORTS ON THIS PRODUCT

Other FCC report applicable to this product includes CCS 06U10345-1.

## 4. 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>.

## 5. CALIBRATION AND UNCERTAINTY

### 5.1. 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.

### 5.2. 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%.

## 6. EQUIPMENT UNDER TEST

### 6.1. DESCRIPTION OF EUT

The EUT is a SMARTPHONE with all auxiliary equipment as described below.

Auxiliary Equipment	Brand	Model No.
Li-Ion Rechargeable Battery	Celxpert	EXCA160
AC adaptor	Delta Electronic	ADP-5FH B
Earphone	NewTech	HTC-296

EUT has two models, one is with Jog Bar and the other without. Pre-scan was conducted on both models to investigate RF performance, the result shows that the existence of the Jog Bar has no impact on the RF performance of the device. Therefore, only for radiated emissions below 1 GHz and line conducted emissions tests, data were collected on both EUT models and documented in this report.

### 6.2. 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 - 2462	802.11b	16.44	44.06
2412 - 2462	802.11g	18.12	64.86
2402 - 2480	Bluetooth	3.32	2.15

### 6.3. DESCRIPTION OF AVAILABLE ANTENNAS

The radio utilizes a monopole antenna for WLAN with a maximum gain of 1.48dBi, and a PIFA antenna for BT with a maximum gain of 1.51dBi

### 6.4. SOFTWARE AND FIRMWARE

The EUT driver software installed in the host support equipment during testing was ActiveSync, rev.V4.1.4841.0

The WLAN test utility software used during testing was WLAN Utility, rev. V2.0.0.0.

The Bluetooth test driver software was “Bluetooth Test “.

## **6.5. 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 2412 MHz for b/g mode, and 2402 MHz for Bluetooth.

Thus all emissions tests were made in the 802.11b mode @ 1 Mb/s, and g mode @ 6 Mb/s at 2412MHz.

Preliminary test was done on EUT with both headphone and AC/DC adaptor at three orthogonal positions, and EUT with AC/DC adaptor on X-position was determined as the worst-case mode.

## 6.6. DESCRIPTION OF TEST SETUP

### SETUP FOR WIRELESS TESTS

#### SUPPORT EQUIPMENT

PERIPHERAL SUPPORT EQUIPMENT LIST				
Description	Manufacturer	Model	Serial Number	FCC ID
AC Adapter	Delta Electronic	ADO-5FH B	5RW0619325915	DoC

#### I/O CABLES

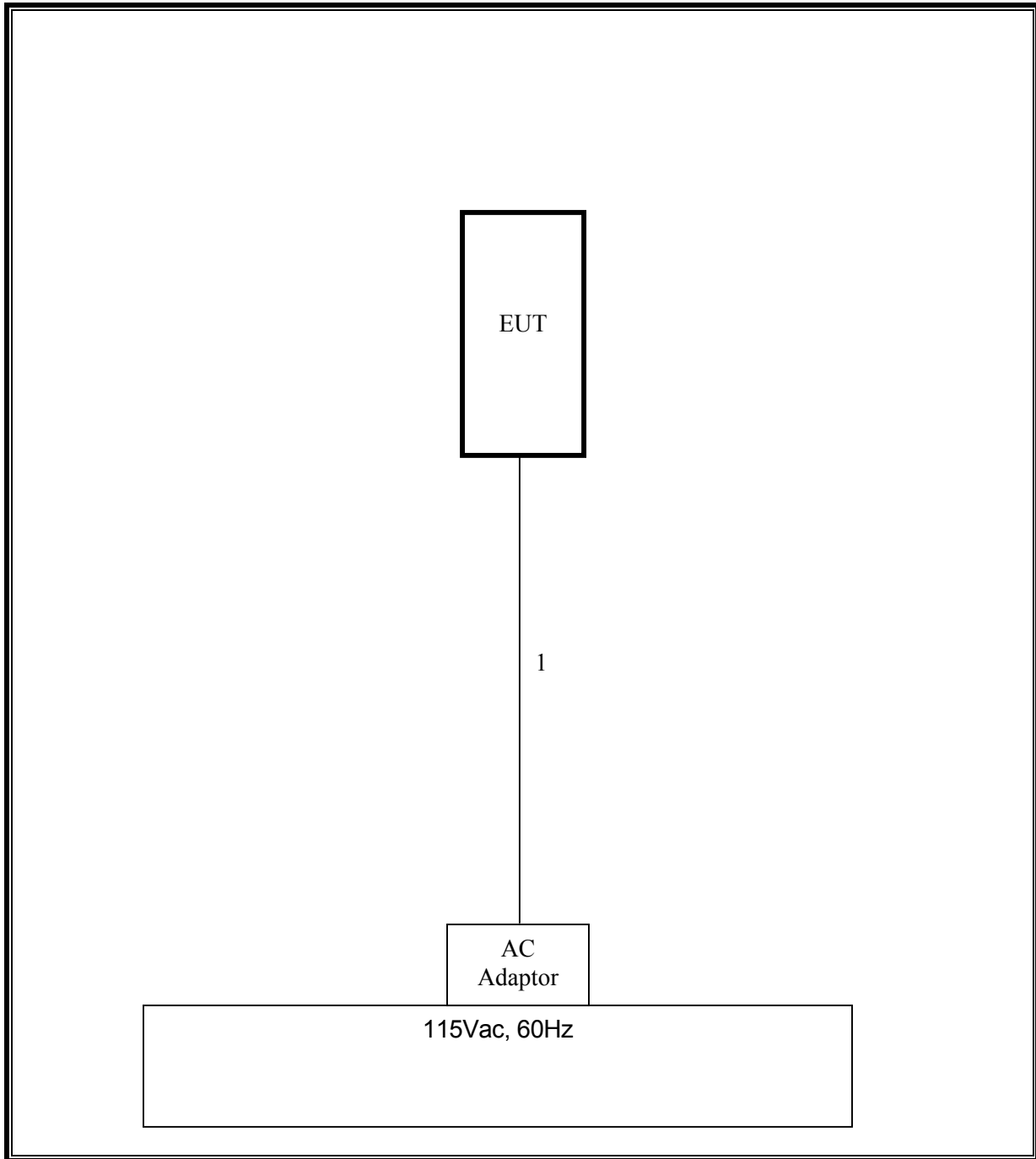
I/O CABLE LIST						
Cable No.	Port	# of Identical Ports	Connector Type	Cable Type	Cable Length	Remarks
1	DC	1	DC	Unshielded	2m	N/A
2	DC or Headphone	1	Din	Un-shielded	2m	N/A

#### TEST SETUP

The EUT is installed as a stand-alone with AC/DC adapter or headphone during the tests. Test software exercised and linked with the EUT.



**SETUP DIAGRAM FOR WIRELESS TESTS**



**SETUP FOR DIGITAL DEVICE TESTS**

**SUPPORT EQUIPMENT**

<b>PERIPHERAL SUPPORT EQUIPMENT LIST</b>				
<b>Description</b>	<b>Manufacturer</b>	<b>Model</b>	<b>Serial Number</b>	<b>FCC ID</b>
Printer	HP	2225C	2930S52614	DSI6XU2225
Modem	ACEEX	1414	NA	IFAXDM1415
USB Mouse	Logitech	90.00026.7730	HCA55002148	DoC
Laptop	Toshiba	Satellite	91617937PU	DoC
AC Adapter	Toshiba	PA3083U-1ACA	0109A004323G	DoC

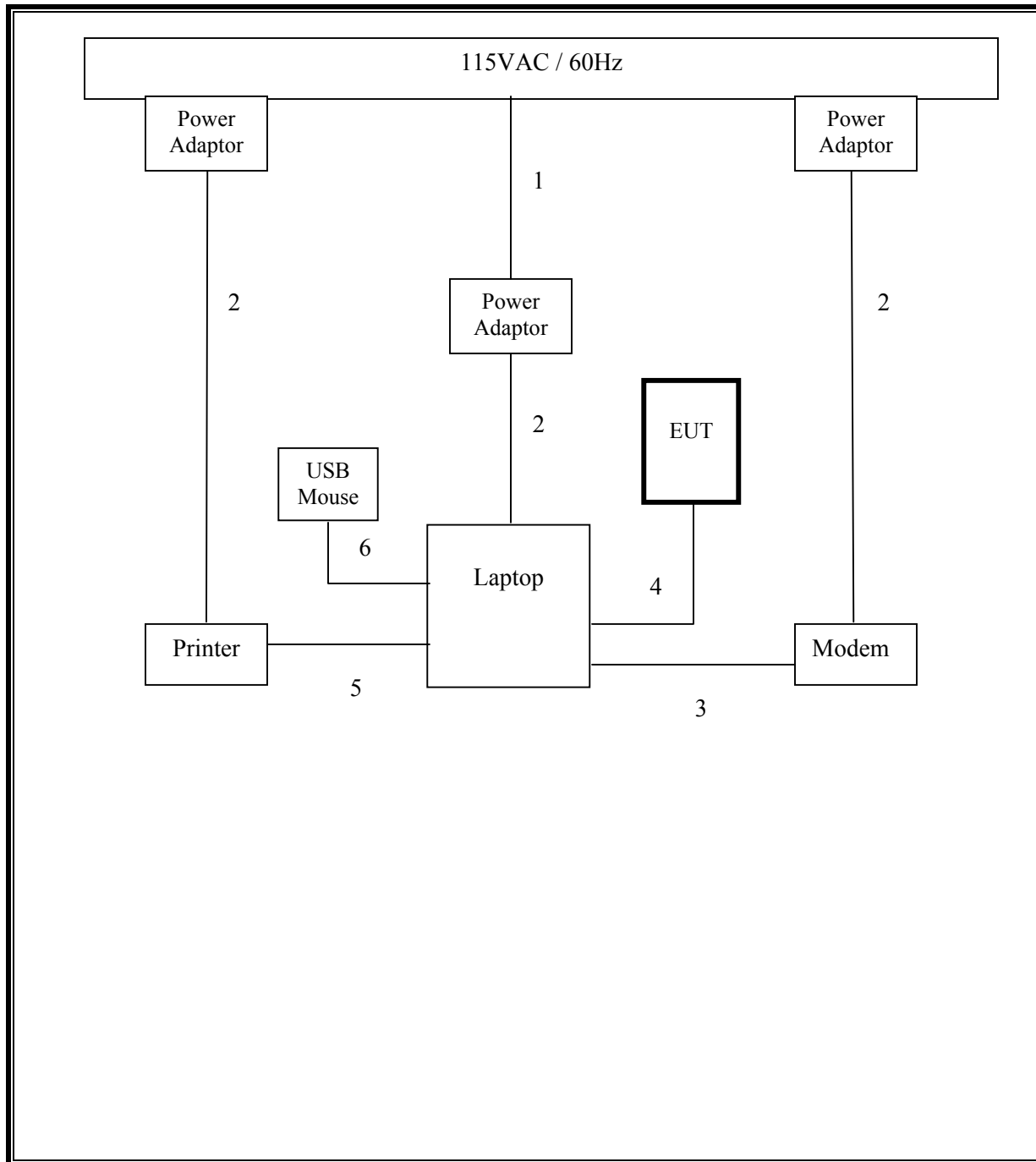
**I/O CABLES**

<b>I/O CABLE LIST</b>						
<b>Cable No.</b>	<b>Port</b>	<b># of Ports</b>	<b>Connector Type</b>	<b>Cable Type</b>	<b>Cable Length</b>	<b>Remarks</b>
1	AC	1	US 115V	Un-shielded	2m	Bundled Power Cable for LC test
2	DC	3	DC	Un-shielded	1m	N/A
3	Serial	1	DB9	Shielded	1m	N/A
4	USB	1	USB	Shielded	2m	N/A
5	Parallel	1	DB25	Shielded	2m	N/A
6	Mouse	1	USB	Un-shielded	2m	N/A

**TEST SETUP**

The EUT is connected to a laptop computer system via USB cable with minimum configuration during the tests. Test software exercised and ActiveSync with the EUT.

**SETUP DIAGRAM FOR DIGITAL DEVICE TESTS**



## 7. 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
EMI Receiver, 9 kHz ~ 2.9 GHz	Agilent / HP	8542E	3942A00286	02/04/07
RF Filter Section	Agilent / HP	85420E	3705A00256	02/04/07
Antenna, Bilog 30 MHz ~ 2 Ghz	Sunol Sciences	JB1	A121003	09/03/06
Preamplifier, 1300 MHz	Agilent / HP	8447D	1937A02062	01/23/07
Antenna, Horn 1 ~ 18 GHz	ETS	3117	29301	04/22/07
Preamplifier, 1 ~ 26.5 GHz	Agilent / HP	8449B	3008A00369	08/17/06
Spectrum Analyzer 3 Hz ~ 44 GHz	Agilent / HP	E4446A	US42510266	10/19/06
LISN, 10 kHz ~ 30 MHz	FCC	LISN-50/250-25-2	2023	08/30/06
LISN, 10 kHz ~ 30 MHz	Solar	8012-50-R-24-BNC	8379443	08/30/06
EMI Test Receiver	R & S	ESHS 20	827129/006	11/03/06
AC Power Source, 10 kVA	ACS	AFC-10K-AFC-2	J1568	N.C.R.

## 8. LIMITS AND RESULTS

### 8.1. CHANNEL TESTS FOR THE 2400 TO 2483.5 MHz BAND

#### 8.1.1. 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:

BLUETOOTH

Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (kHz)	Margin (kHz)
Low	2402	507	500	7
Middle	2441	507	500	7
High	2480	507	500	7

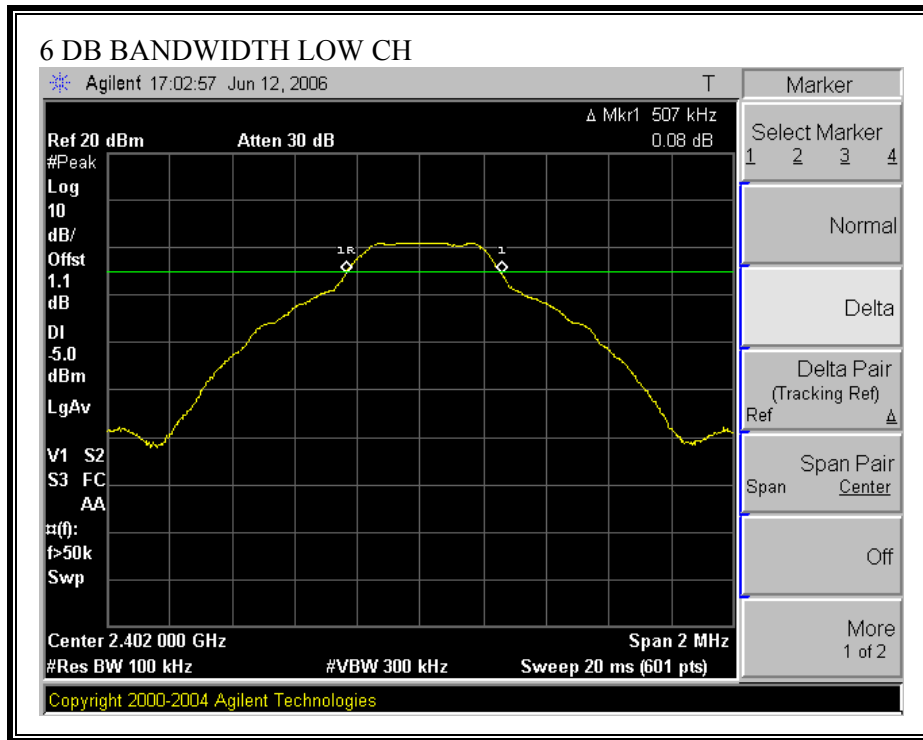
802.11b Mode

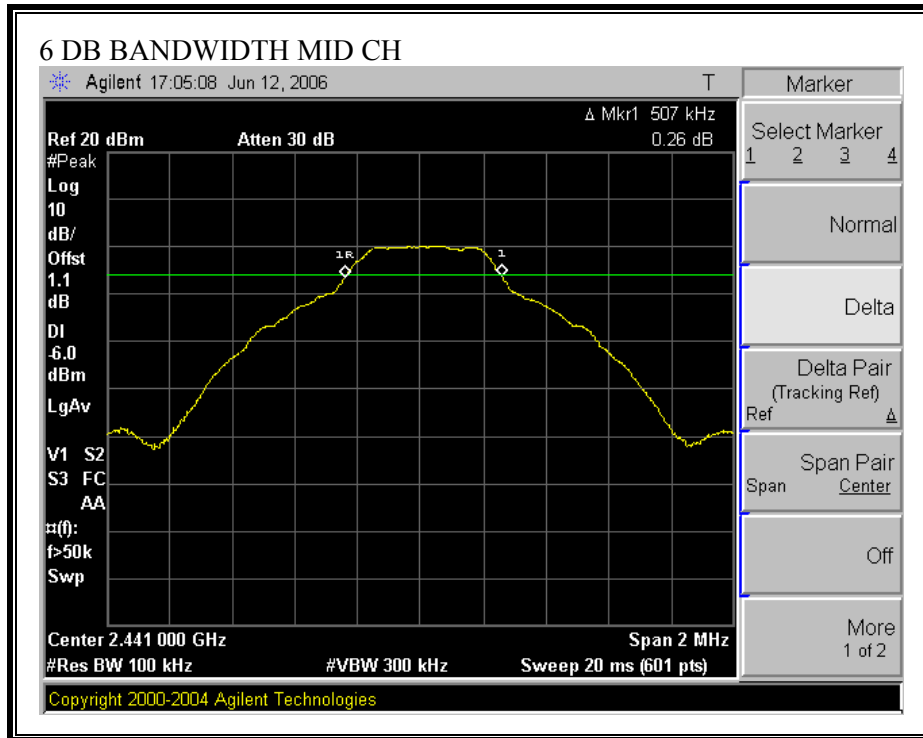
Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (kHz)	Margin (kHz)
Low	2412	12580	500	12080
Middle	2437	12580	500	12080
High	2462	13000	500	12500

802.11g Mode

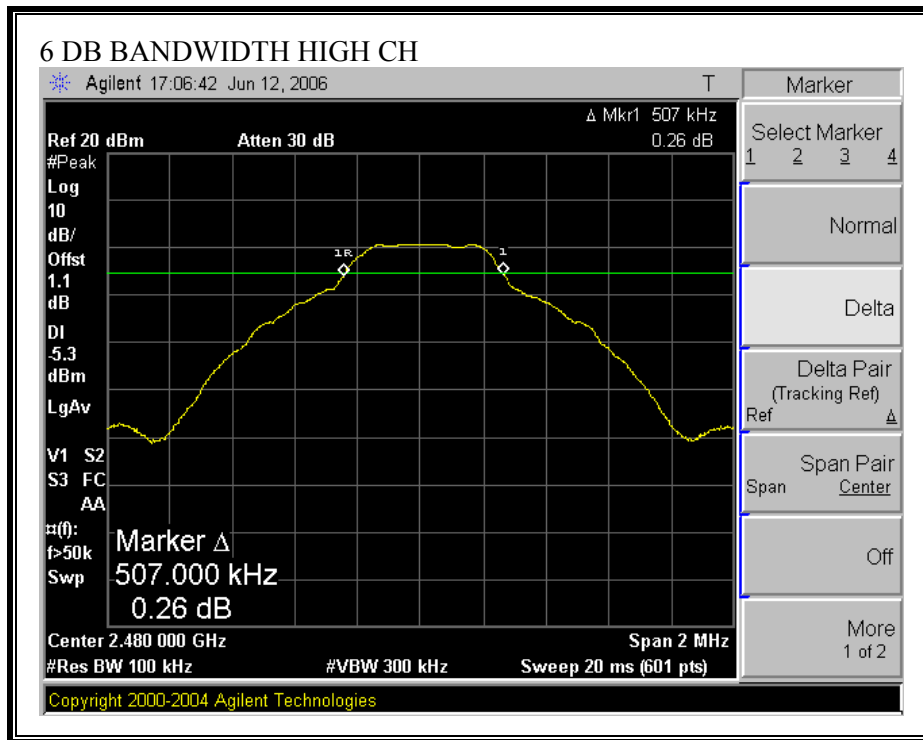
Channel	Frequency (MHz)	6 dB Bandwidth (kHz)	Minimum Limit (kHz)	Margin (kHz)
Low	2412	16500	500	16000
Middle	2437	16500	500	16000
High	2462	16500	500	16000

**6 DB BANDWIDTH (BLUETOOTH)**

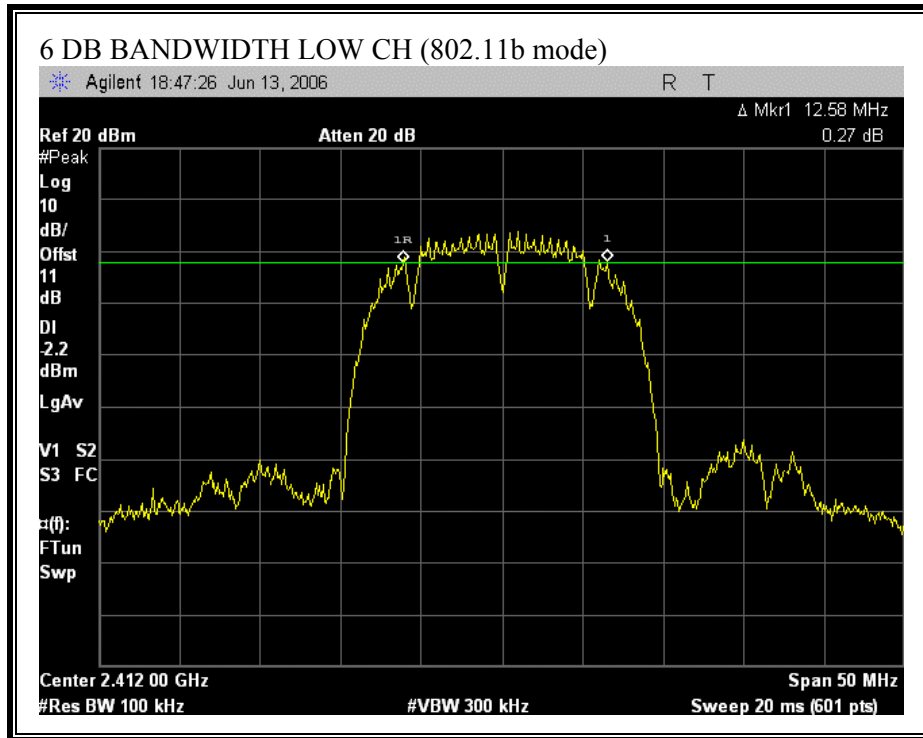


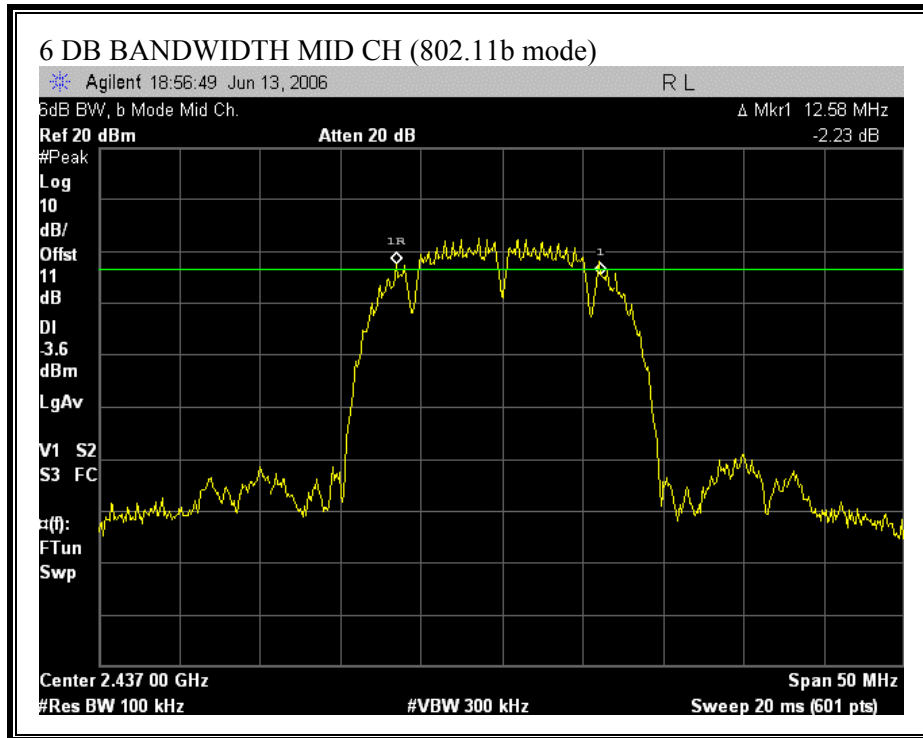


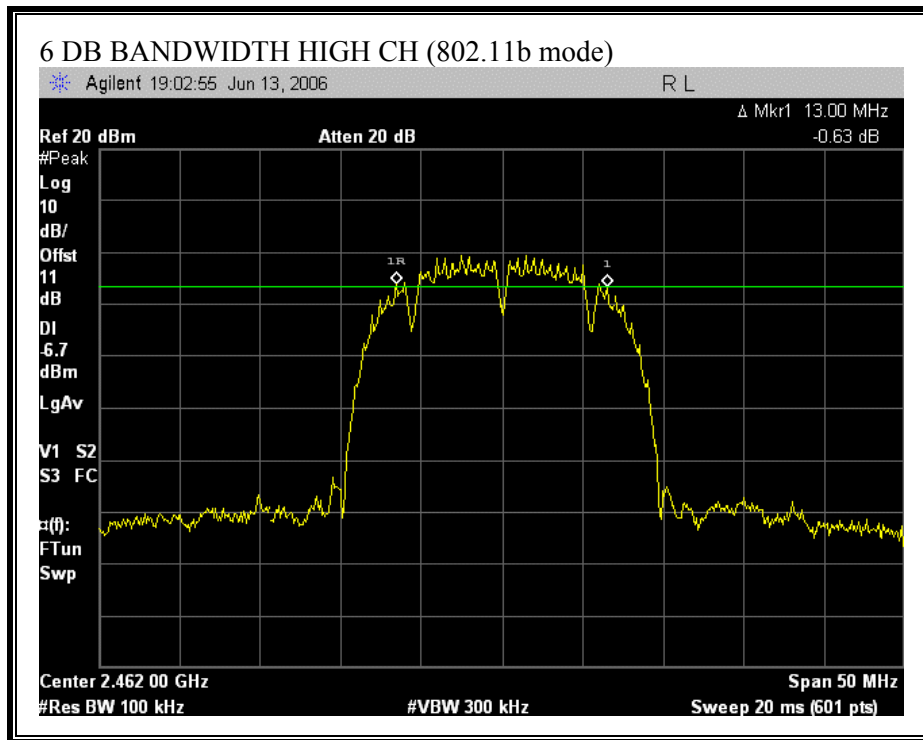




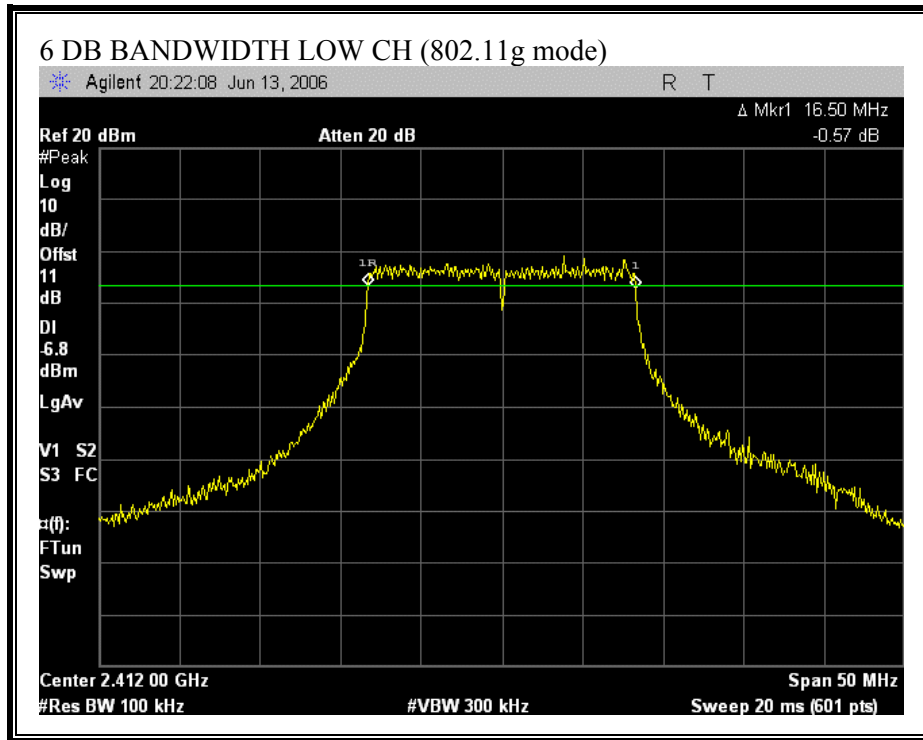
**6 DB BANDWIDTH (802.11b MODE)**

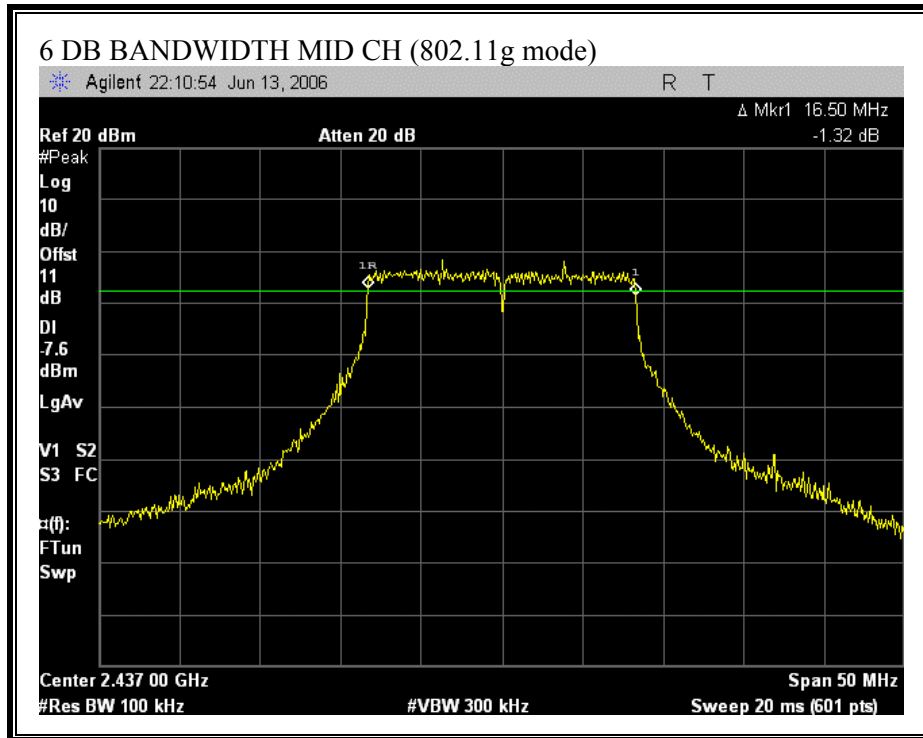


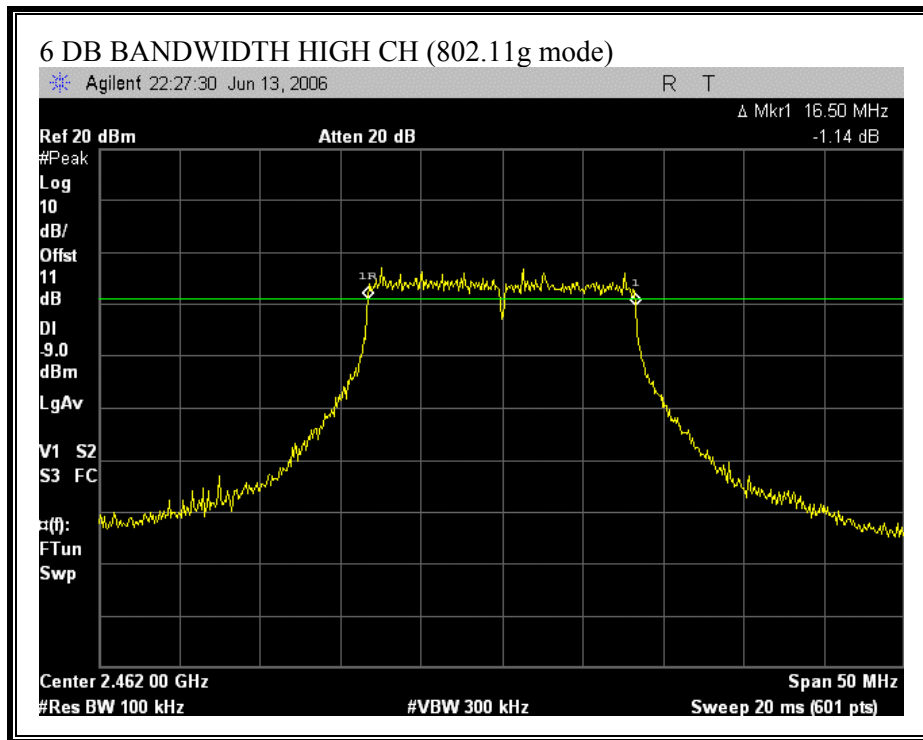




**6 DB BANDWIDTH (802.11g MODE)**







### 8.1.2. 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:

#### BLUETOOTH

Channel	Frequency (MHz)	99% Bandwidth (kHz)
Low	2402	858.148
Middle	2441	872.890
High	2480	879.448

#### 802.11b Mode

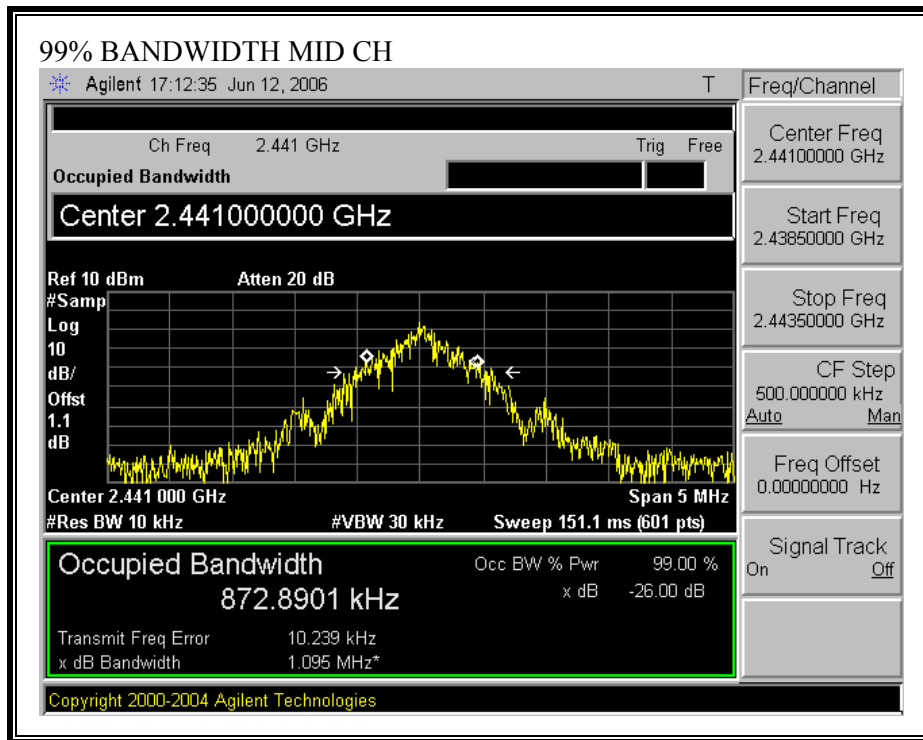
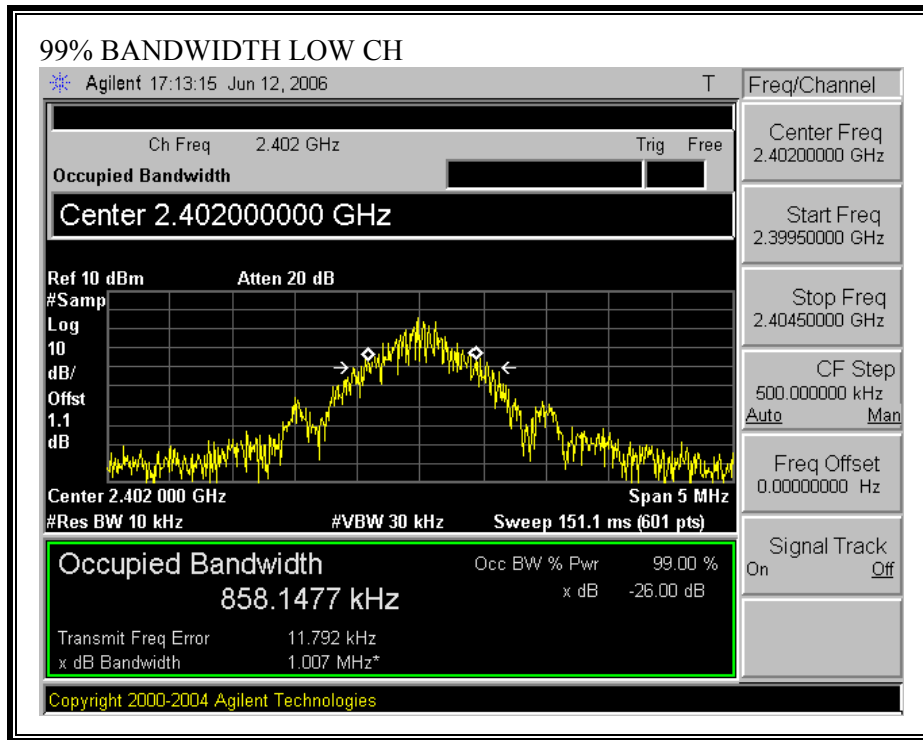
Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	15.358
Middle	2437	15.307
High	2462	15.340

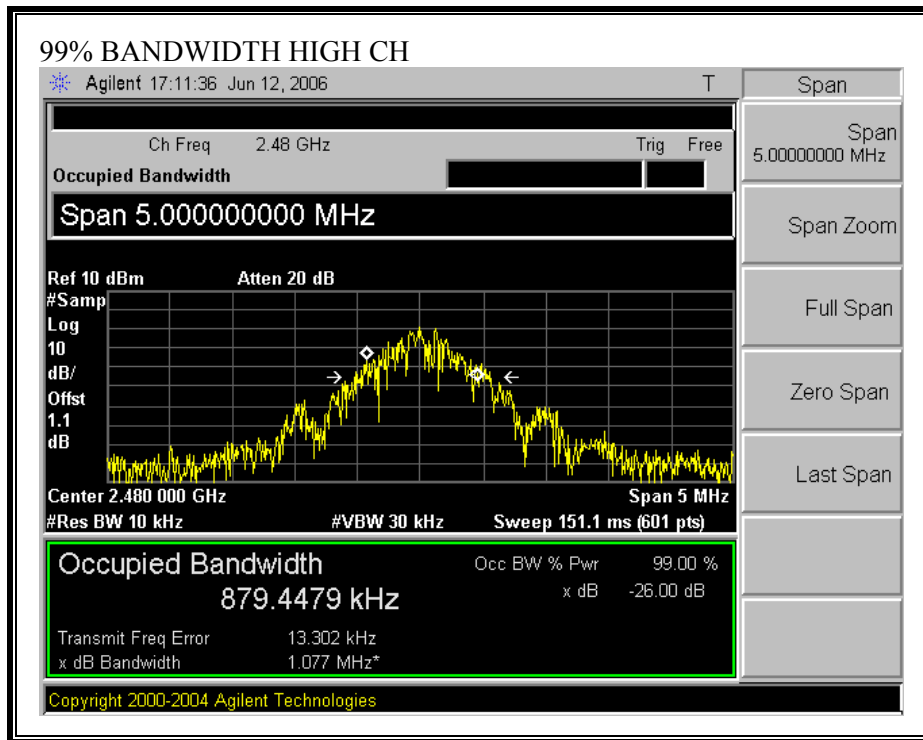
#### 802.11g Mode

Channel	Frequency (MHz)	99% Bandwidth (MHz)
Low	2412	16.621
Middle	2437	16.636
High	2462	16.609

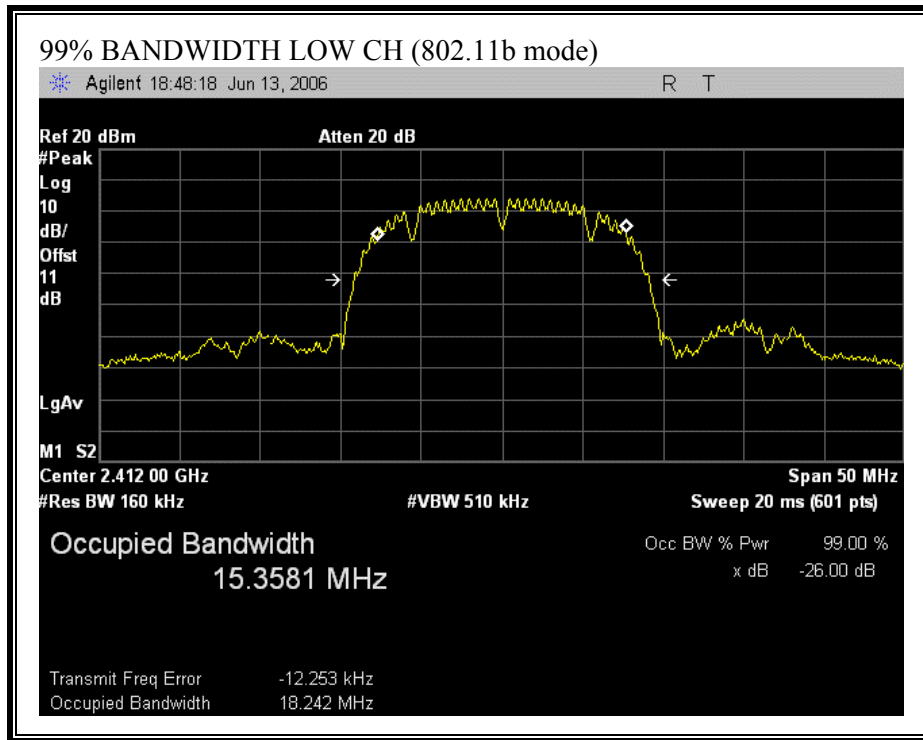


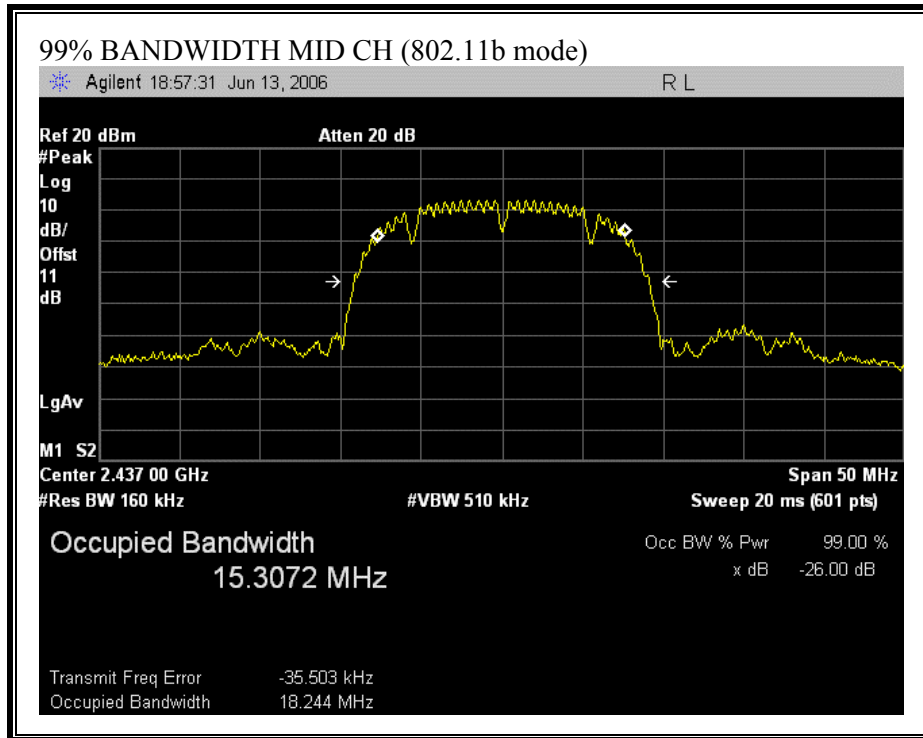
**99% BANDWIDTH (BLUETOOTH MODE)**

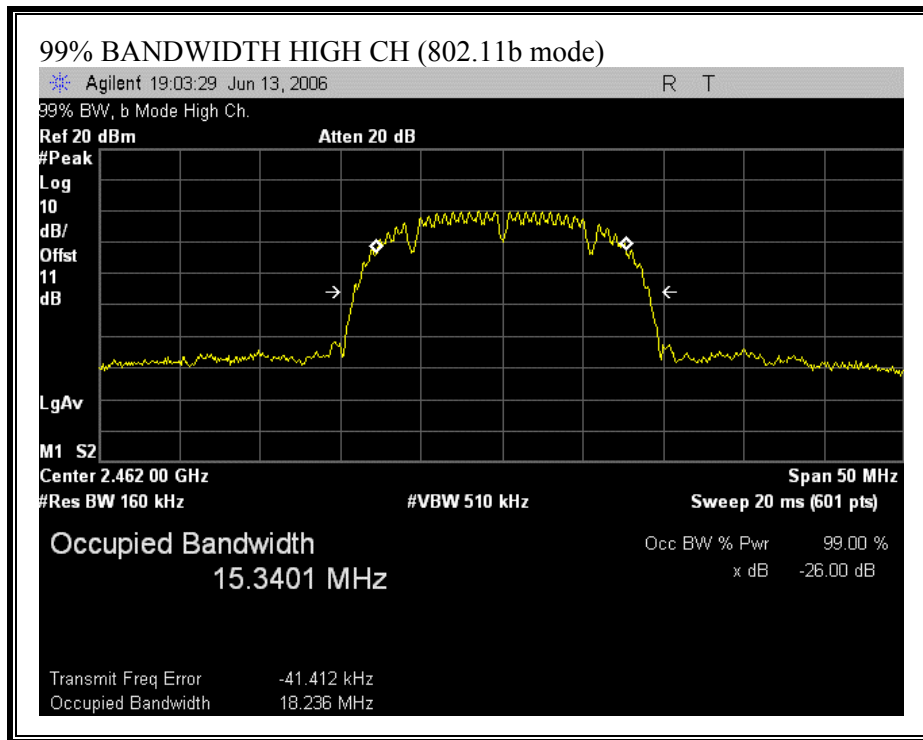




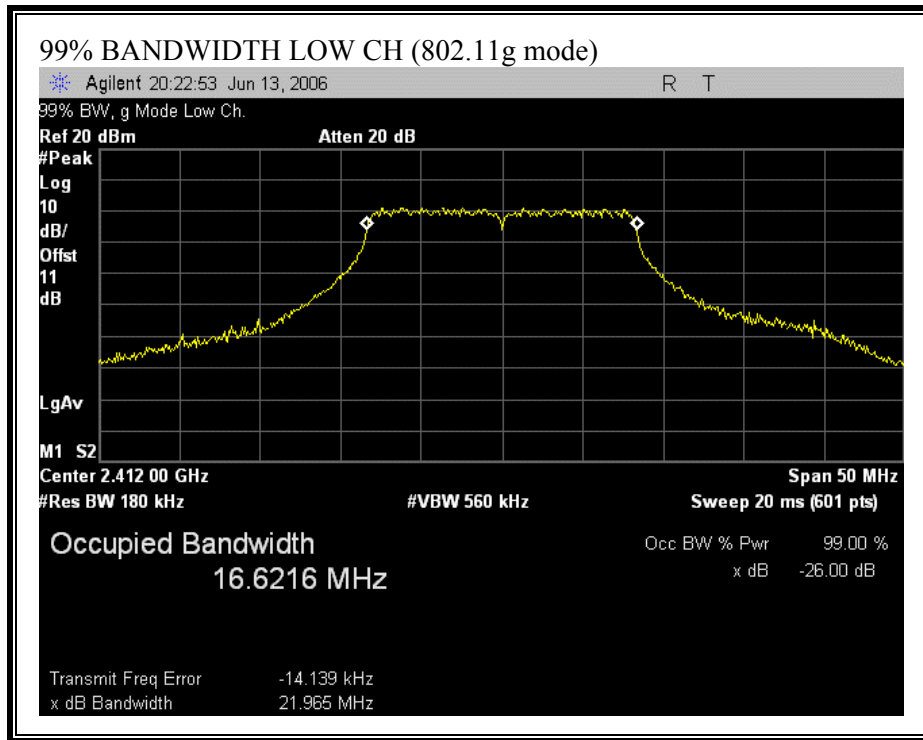
**99% BANDWIDTH (802.11b MODE)**

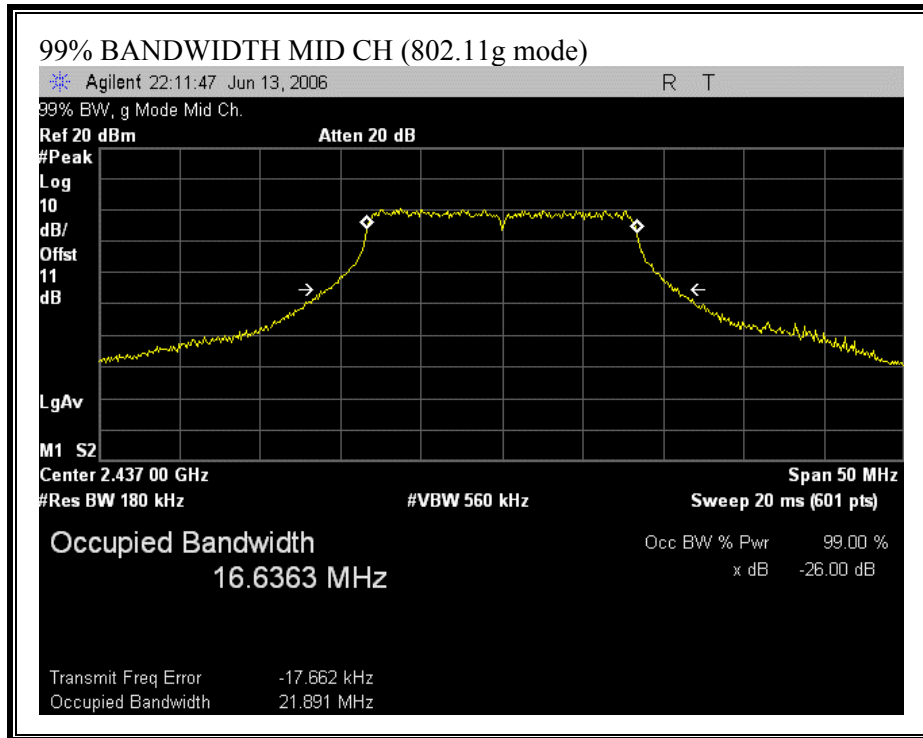


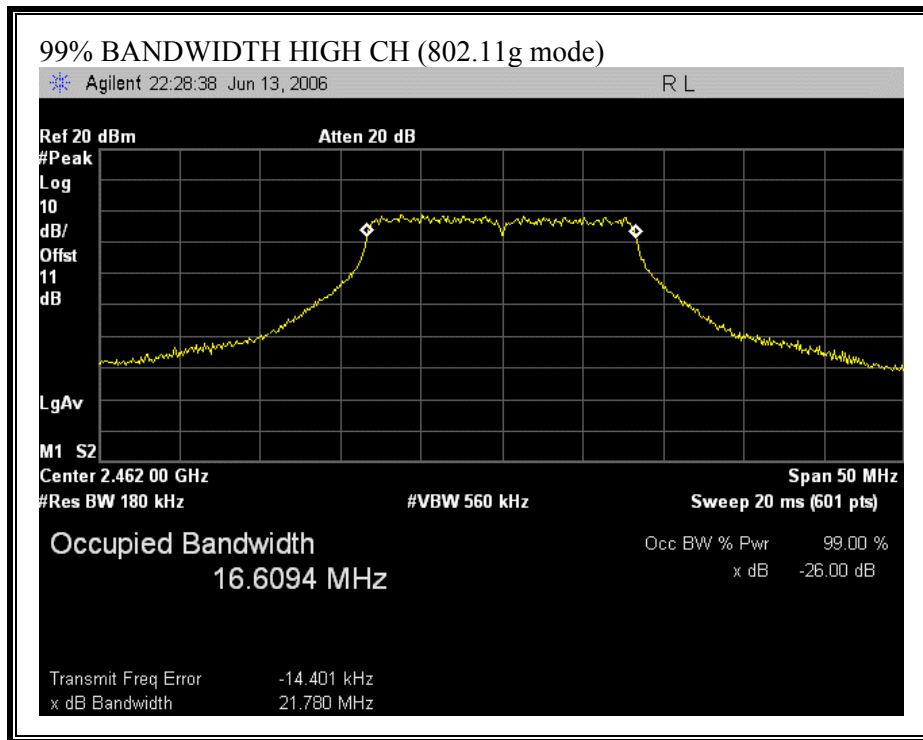




**99% BANDWIDTH (802.11g MODE)**









### 8.1.3. 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.

The test is performed in accordance with FCC document "Measurement of Digital Transmission Systems Operating under Section 15.247", March 23, 2005. The transmitter operates continuously therefore Power Output Option 2, Method # 1 is used.

**RESULTS**

The maximum antenna gain is 1.51dBi for other than fixed, point-to-point operations, therefore the limit is 30 dBm.

No non-compliance noted:

**BLUETOOTH**

<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Peak Power (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>
Low	2402	3.32	30	-26.68
Middle	2441	2.48	30	-27.52
High	2480	1.70	30	-28.30

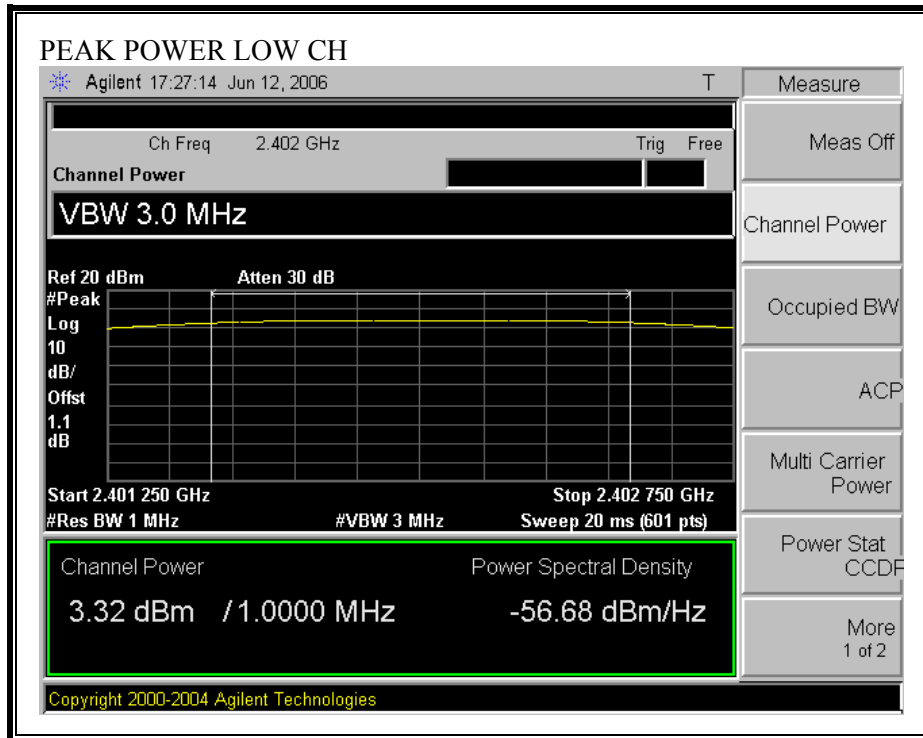
**802.11b Mode**

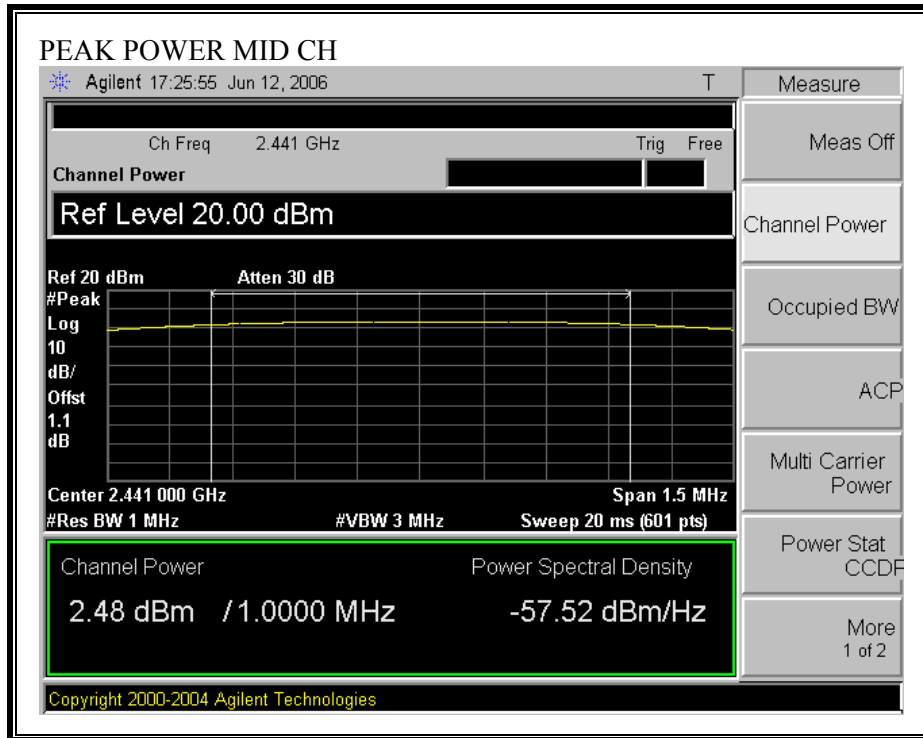
<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Peak Power (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>
Low	2412	16.44	30	-13.56
Middle	2437	15.54	30	-14.46
High	2462	12.39	30	-17.61

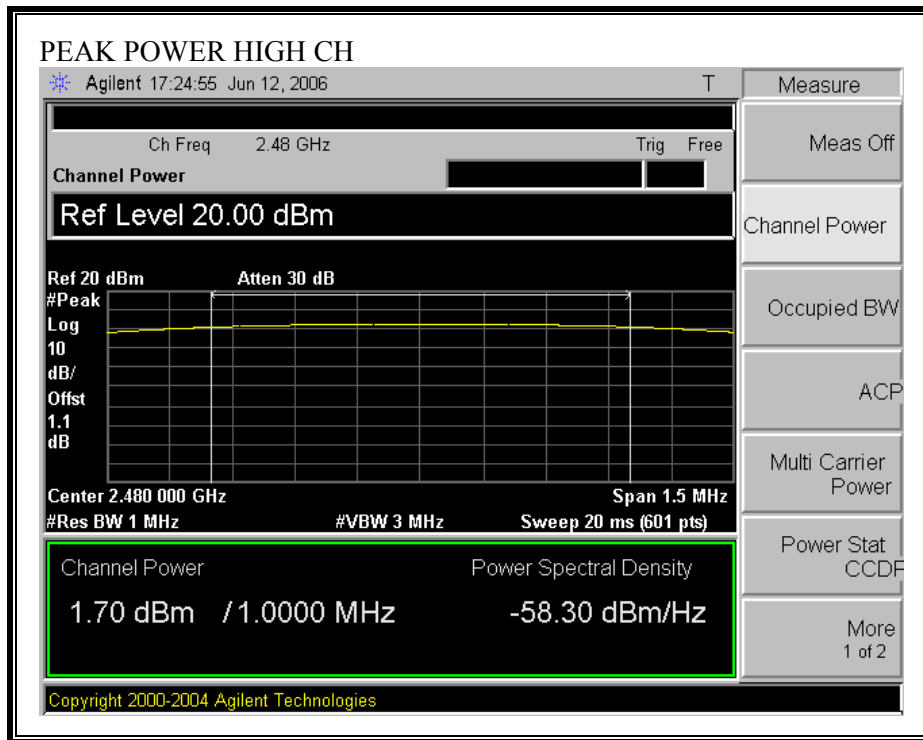
**802.11g Mode**

<b>Channel</b>	<b>Frequency (MHz)</b>	<b>Peak Power (dBm)</b>	<b>Limit (dBm)</b>	<b>Margin (dB)</b>
Low	2412	18.12	30	-11.88
Middle	2437	17.26	30	-12.74
High	2462	15.58	30	-14.42

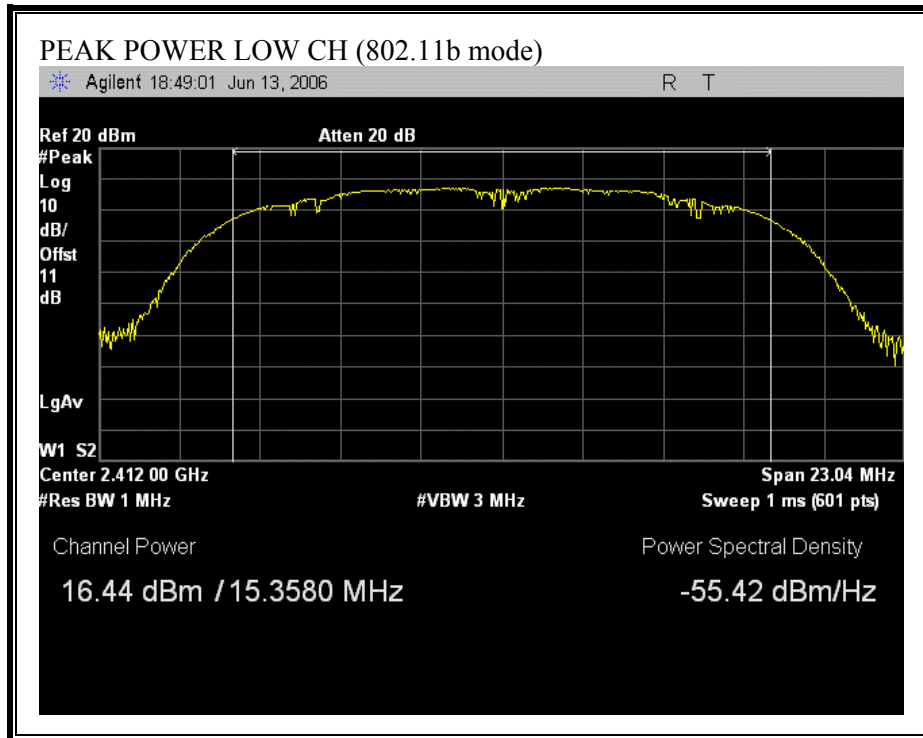
**OUTPUT POWER (BLUETOOTH MODE)**

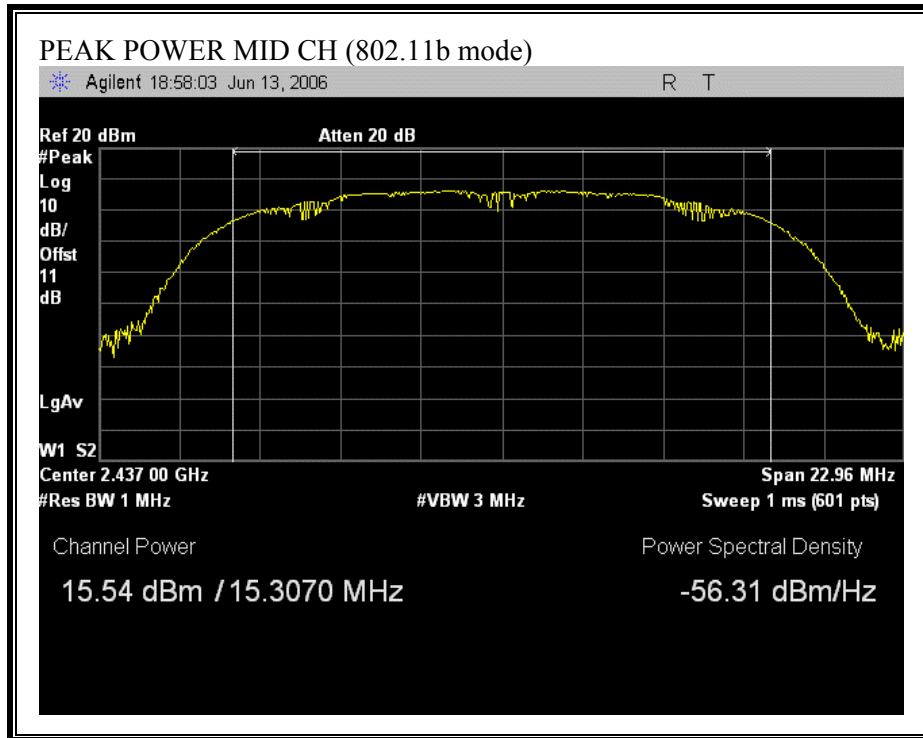


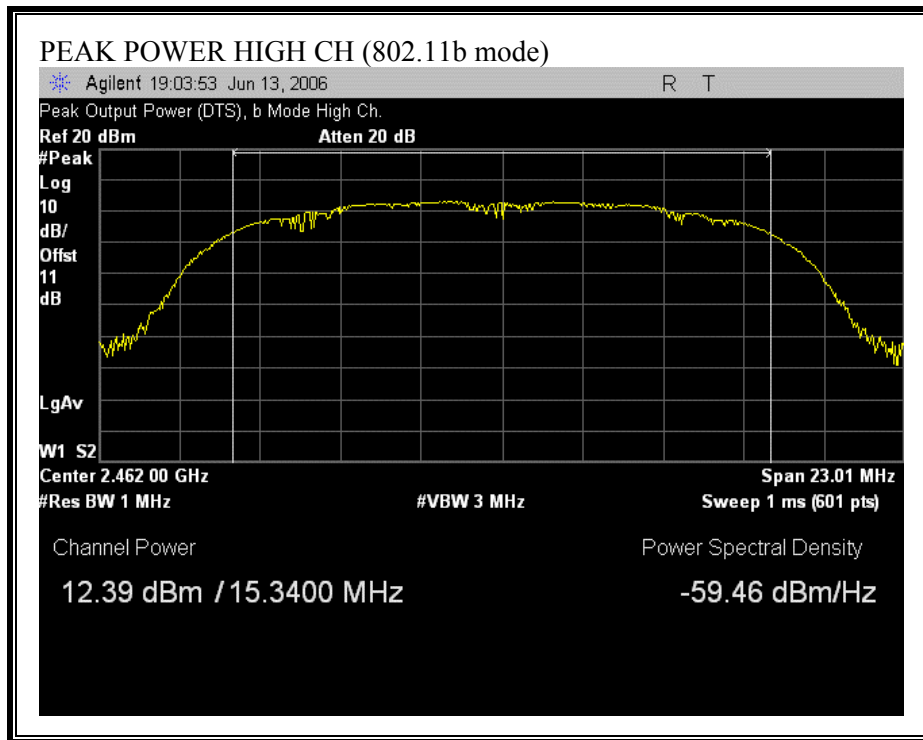




**OUTPUT POWER (802.11b MODE)**

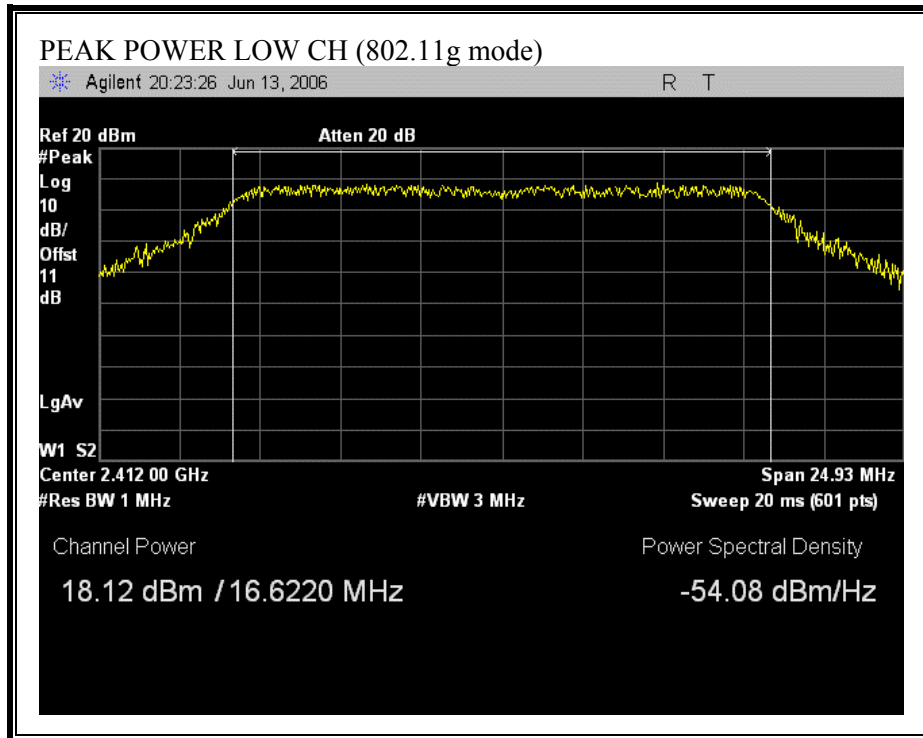


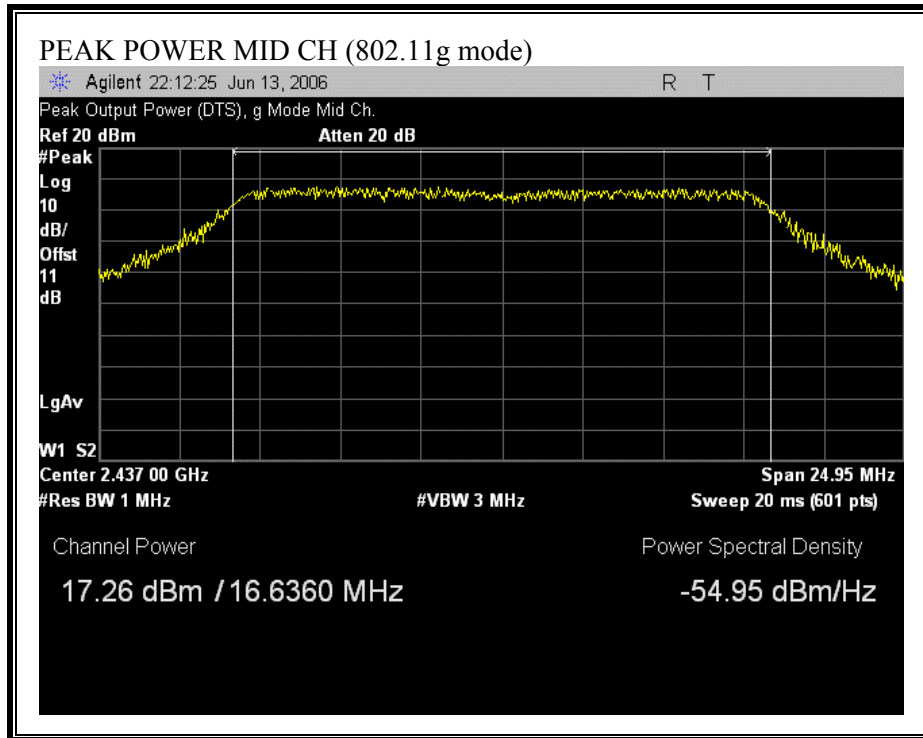


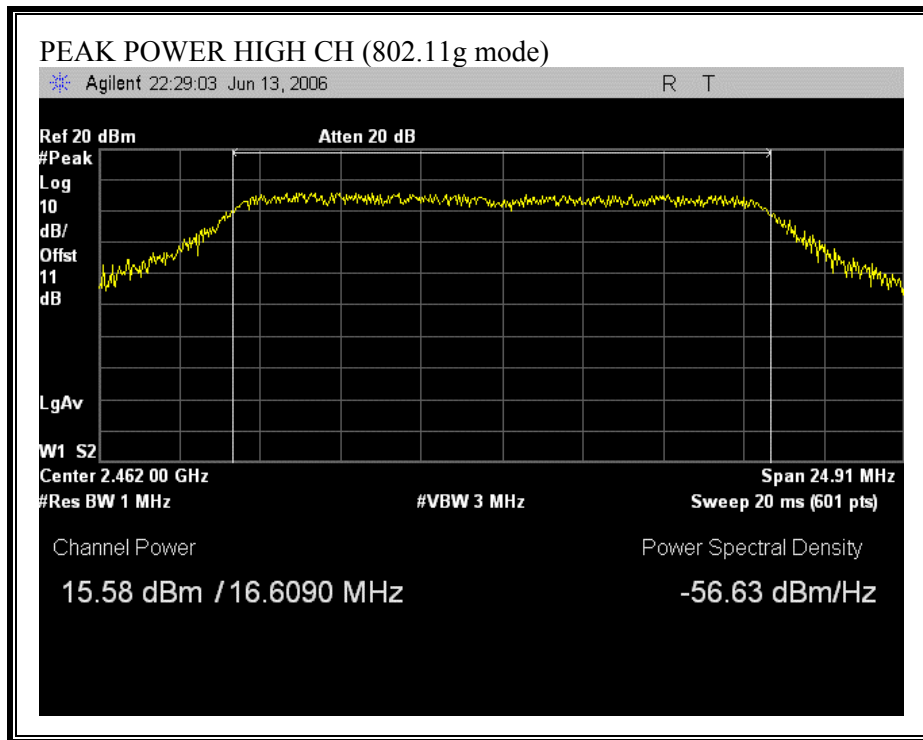




**OUTPUT POWER (802.11g MODE)**







### 8.1.4. 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 11 dB (including 10 dB pad and 1 dB cable) was entered as an offset in the power meter to allow for direct reading of power.

#### BLUETOOTH

Channel	Frequency (MHz)	Power (dBm)
Low	2402	2.70
Middle	2441	2.00
High	2480	1.50

#### 802.11b Mode

Channel	Frequency (MHz)	Power (dBm)
Low	2412	13.50
Middle	2437	12.55
High	2462	11.30

#### 802.11g Mode

Channel	Frequency (MHz)	Power (dBm)
Low	2412	12.25
Middle	2437	11.29
High	2462	11.15

### 8.1.5. 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:

#### BLUETOOTH

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2402	-9.25	8	-17.25
Middle	2441	-9.88	8	-17.88
High	2480	-9.35	8	-17.35

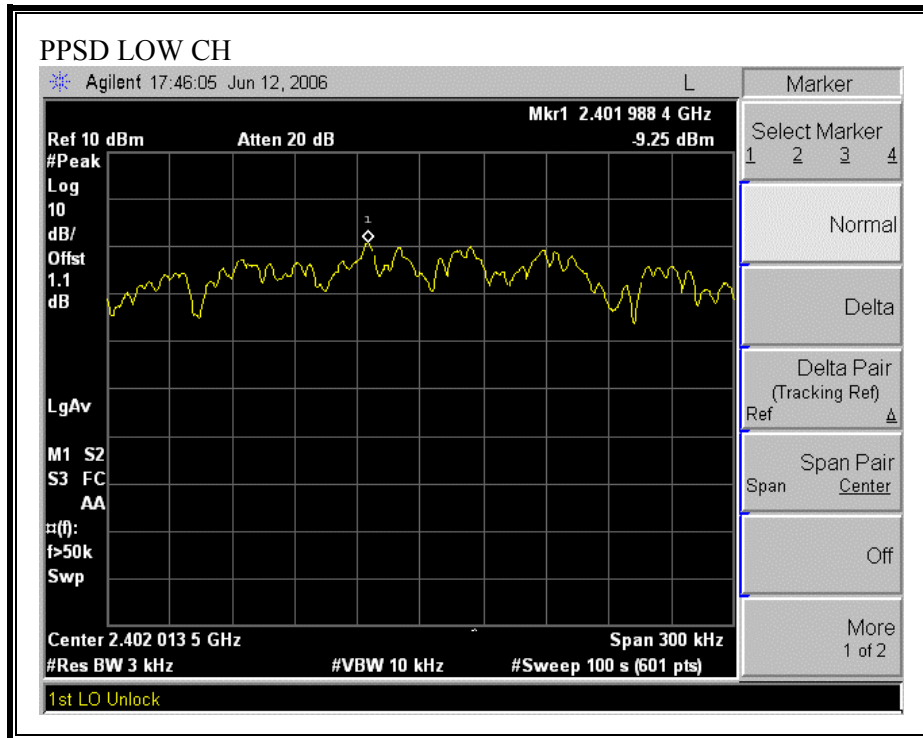
#### 802.11b Mode

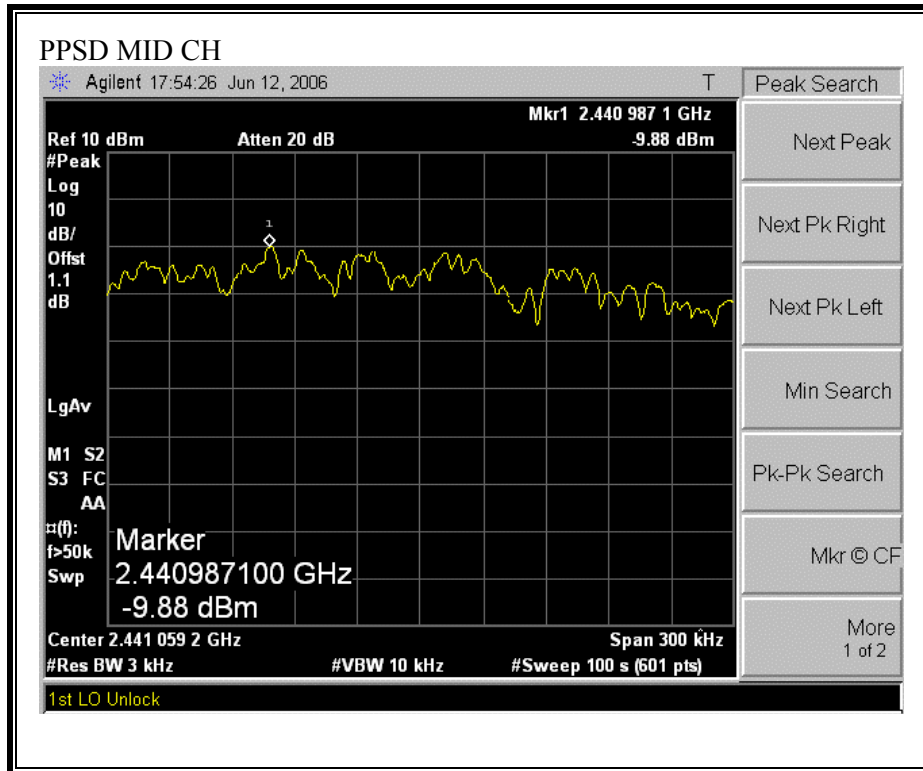
Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-10.59	8	-18.59
Middle	2437	-10.62	8	-18.62
High	2462	-14.26	8	-22.26

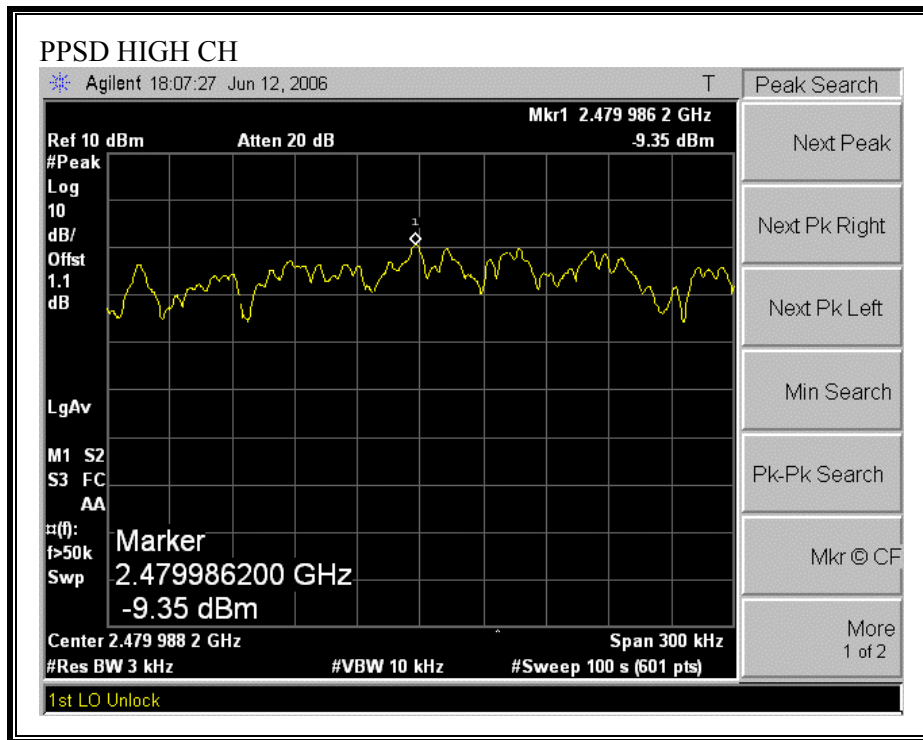
#### 802.11g Mode

Channel	Frequency (MHz)	PPSD (dBm)	Limit (dBm)	Margin (dB)
Low	2412	-13.20	8	-21.20
Middle	2437	-14.52	8	-22.52
High	2462	-16.09	8	-24.09

**PEAK POWER SPECTRAL DENSITY (BLUETOOTH MODE)**

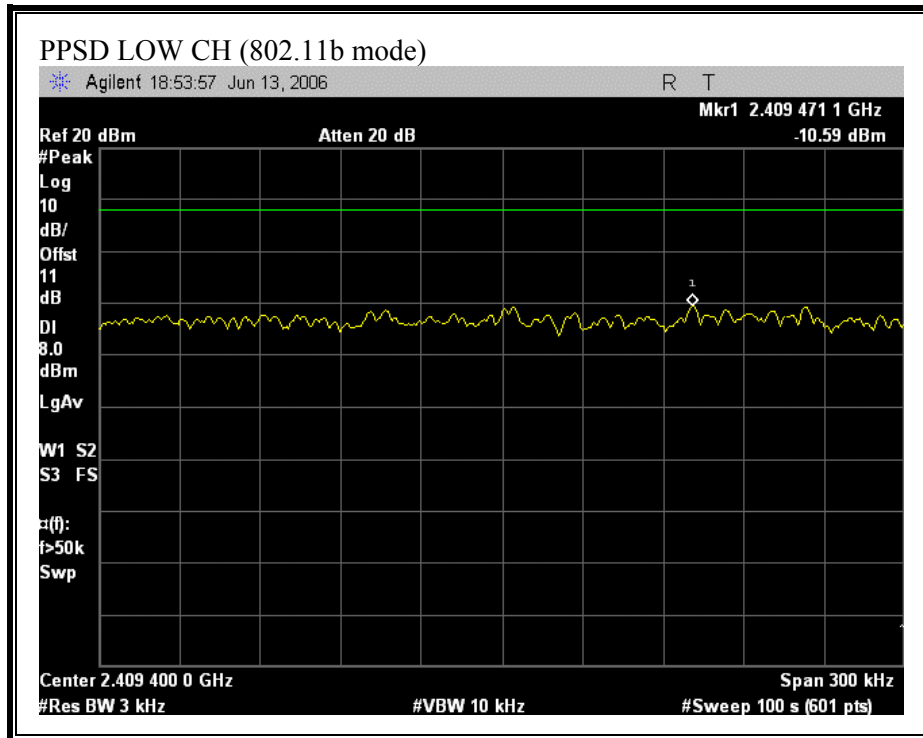


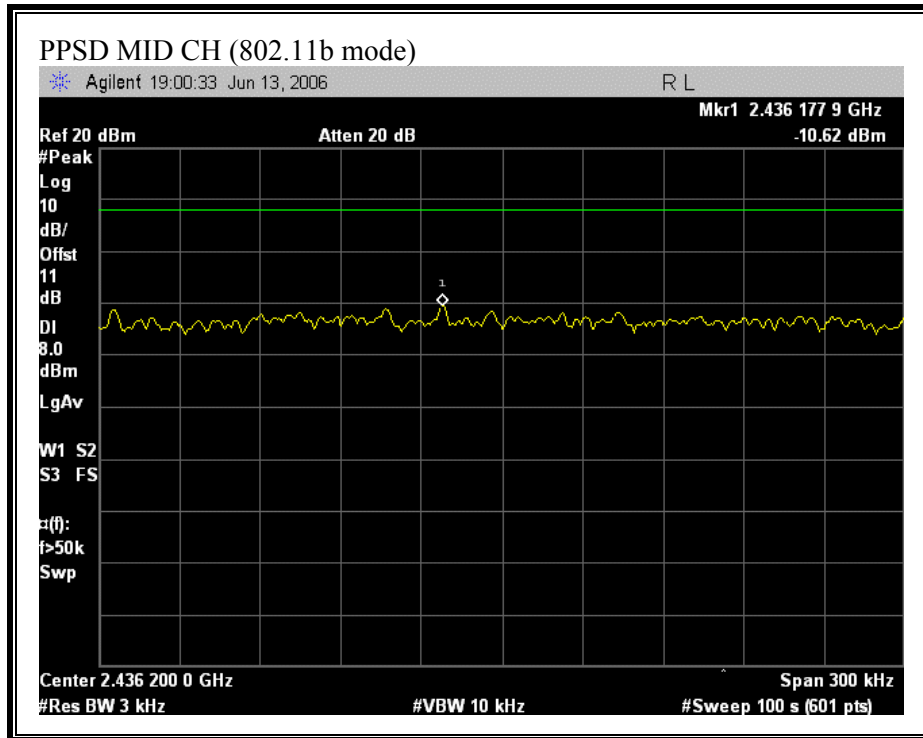


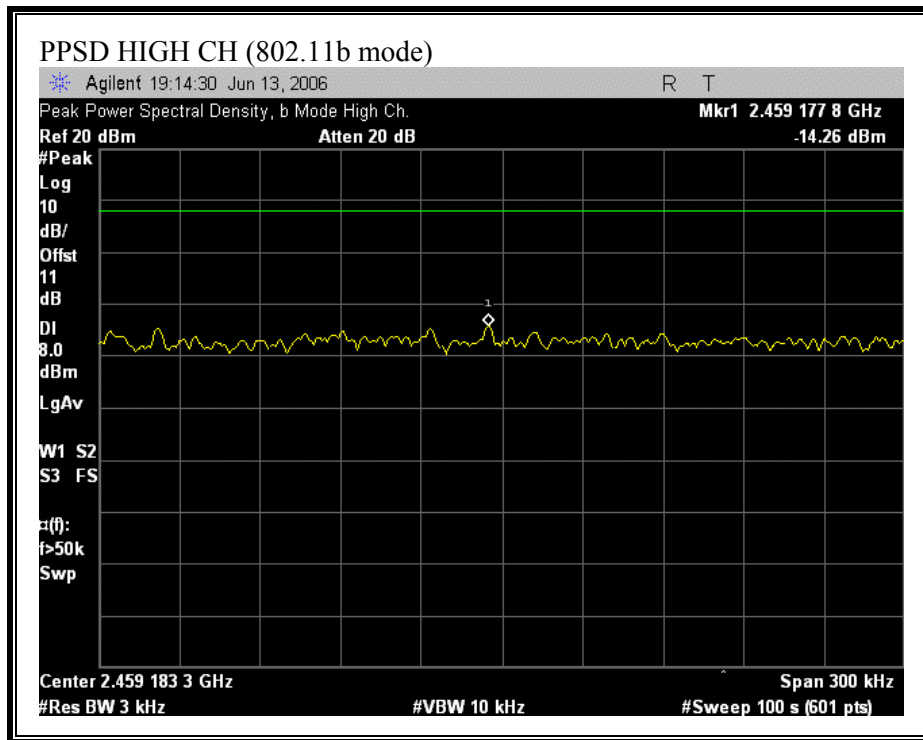




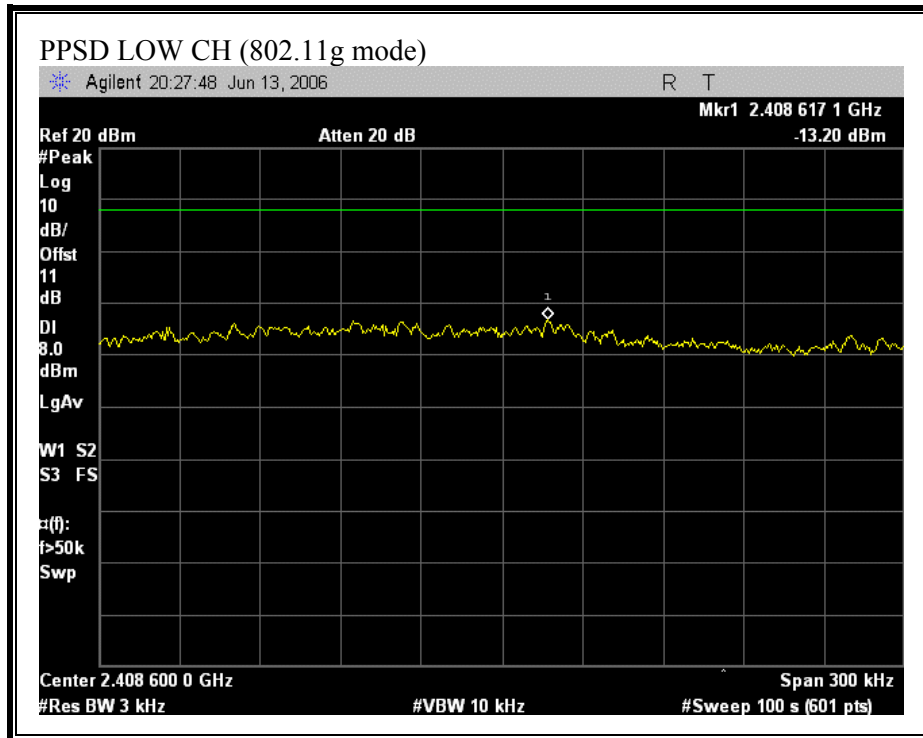
**PEAK POWER SPECTRAL DENSITY (802.11b MODE)**

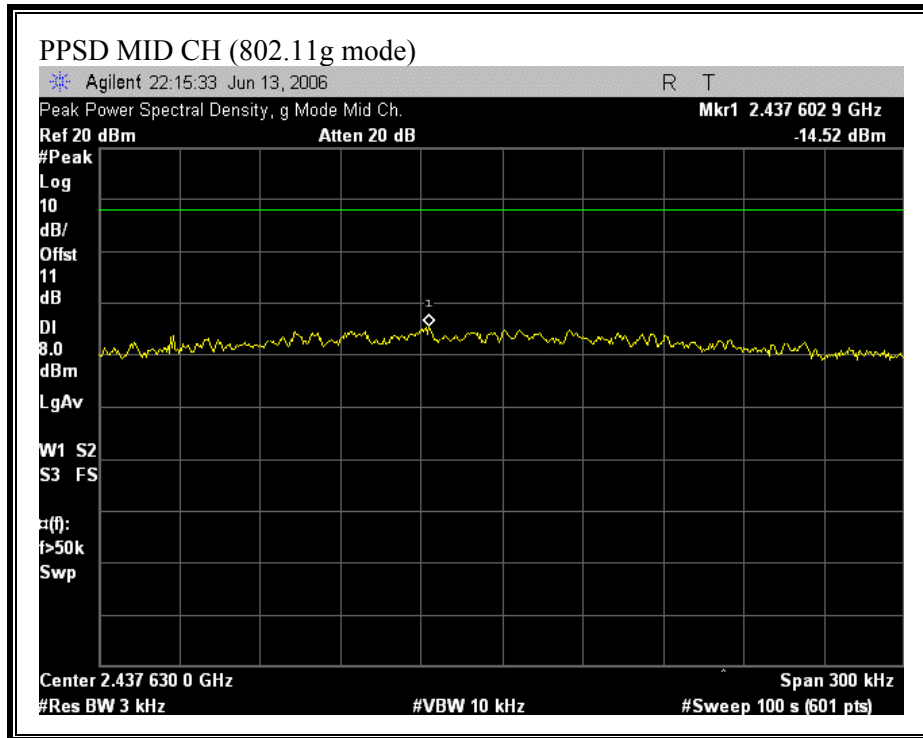


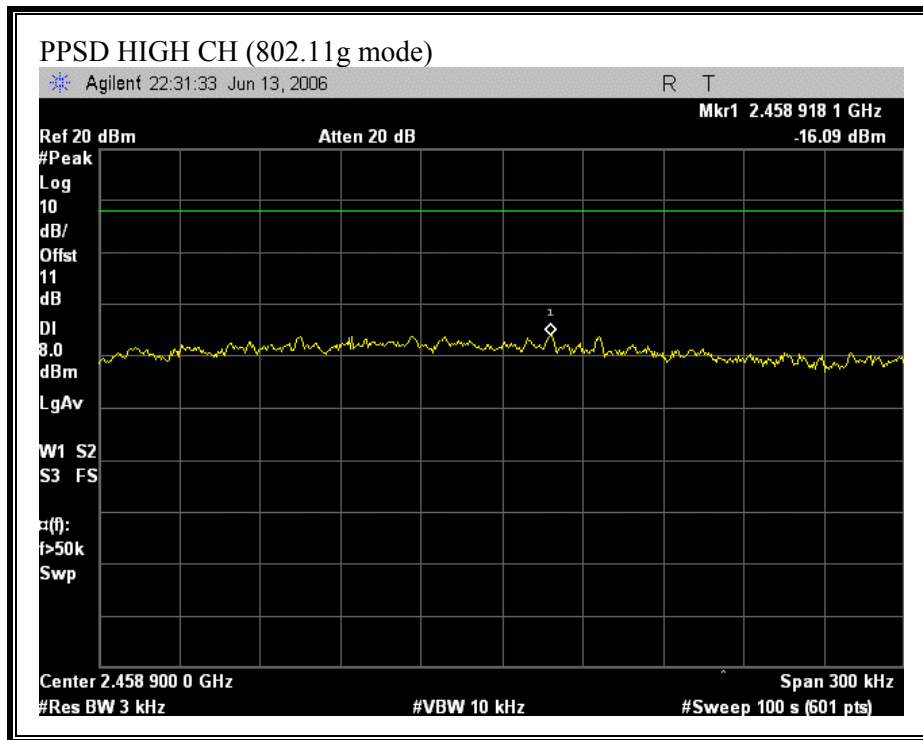




**PEAK POWER SPECTRAL DENSITY (802.11g MODE)**







## **8.1.6. 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)).

### **TEST PROCEDURE**

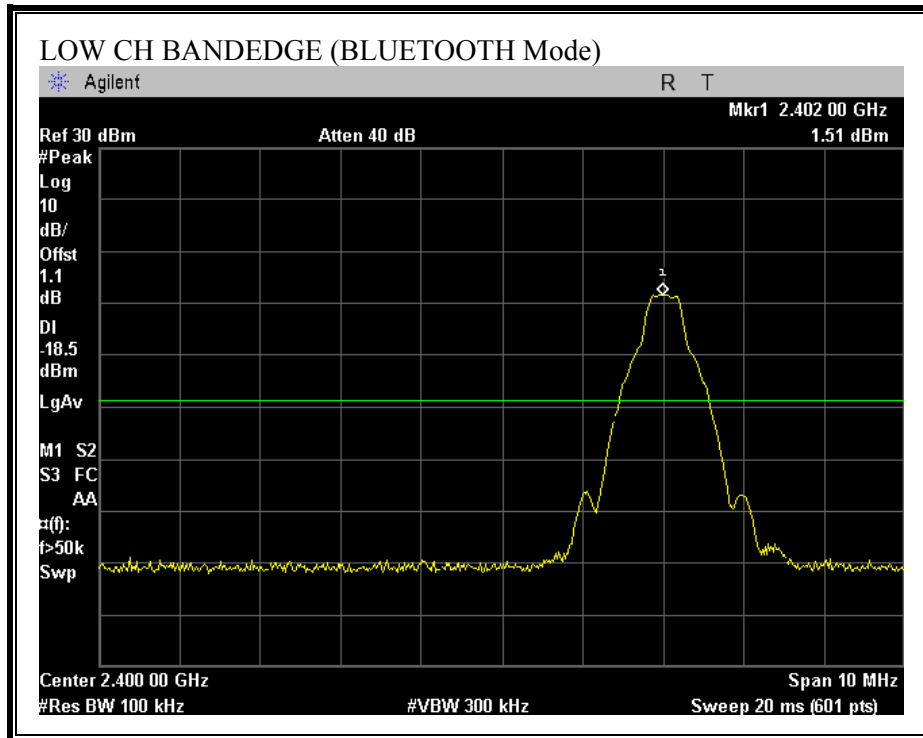
The transmitter output is connected to a spectrum analyzer. The resolution bandwidth is set to 100 kHz. The video bandwidth is set to 300 kHz.

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

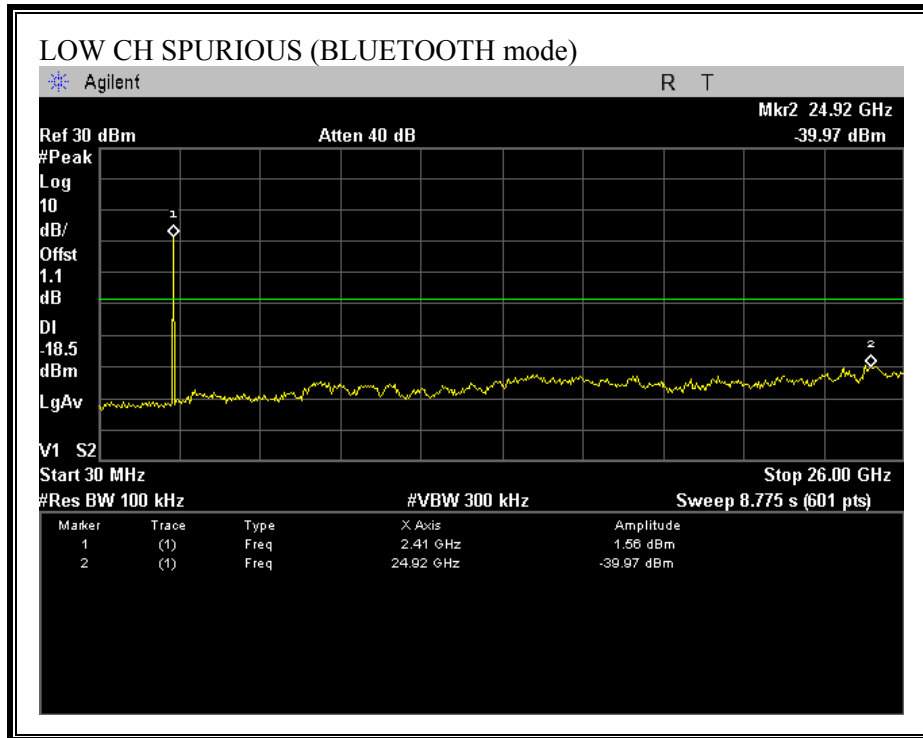
### **RESULTS**

No non-compliance noted:

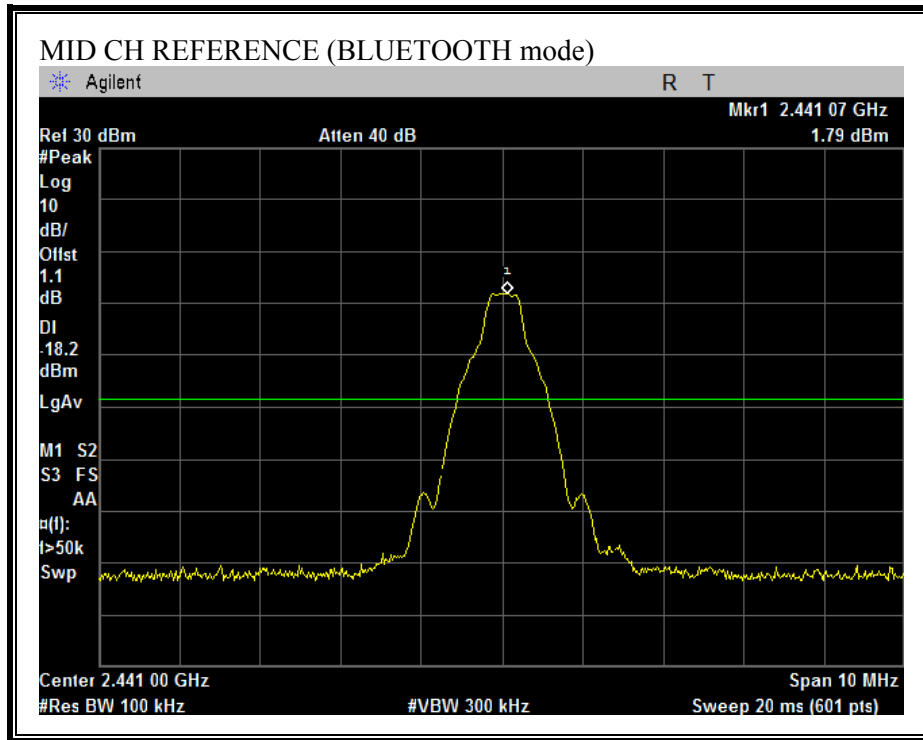
**SPURIOUS EMISSIONS, LOW CHANNEL (BLUETOOTH MODE)**

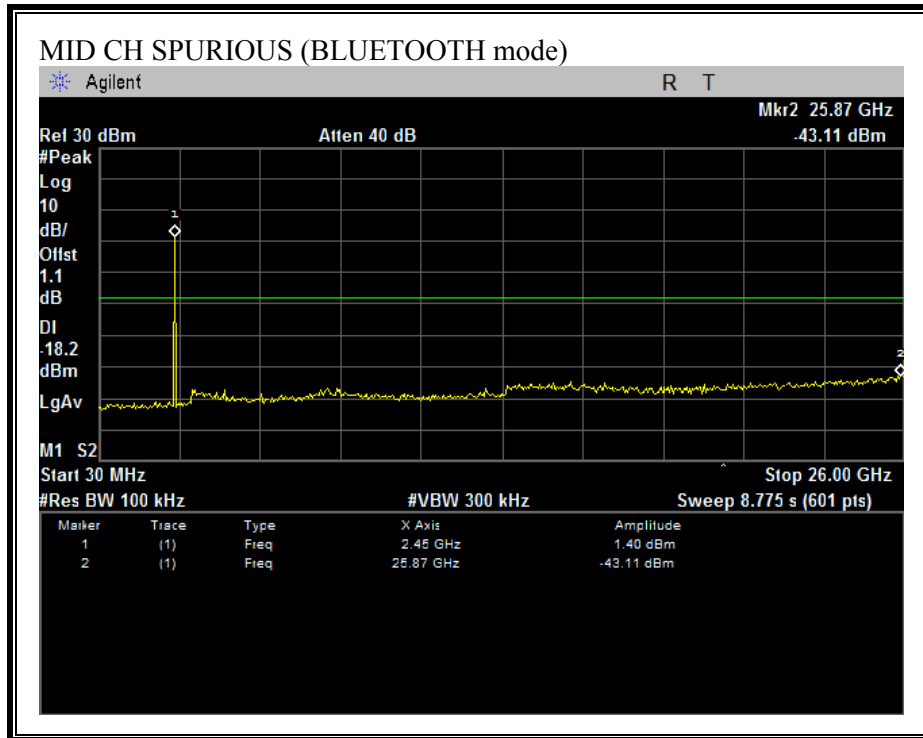




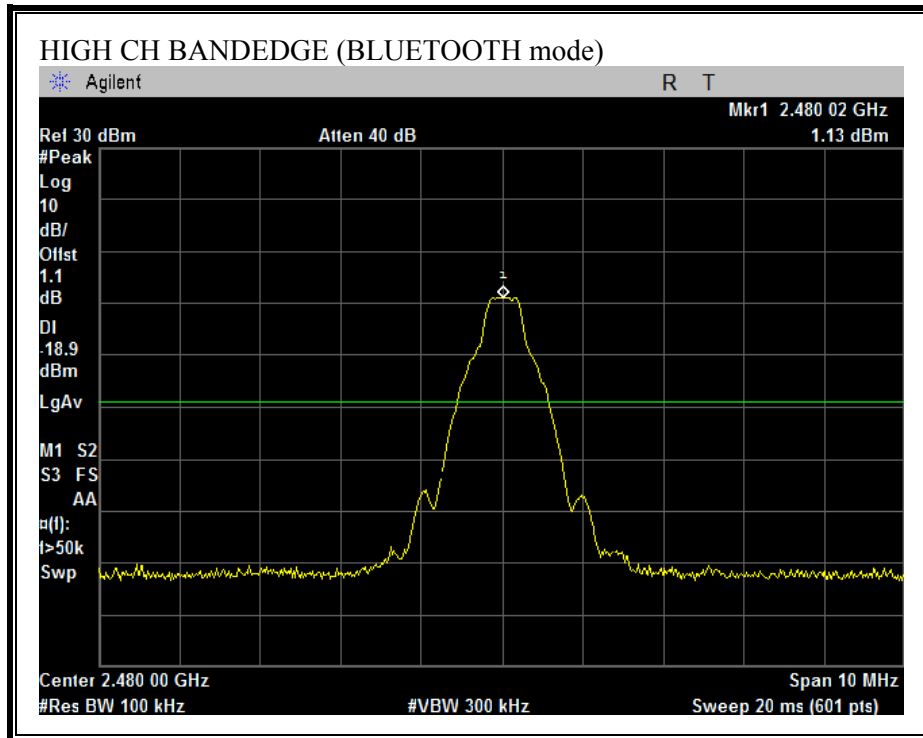


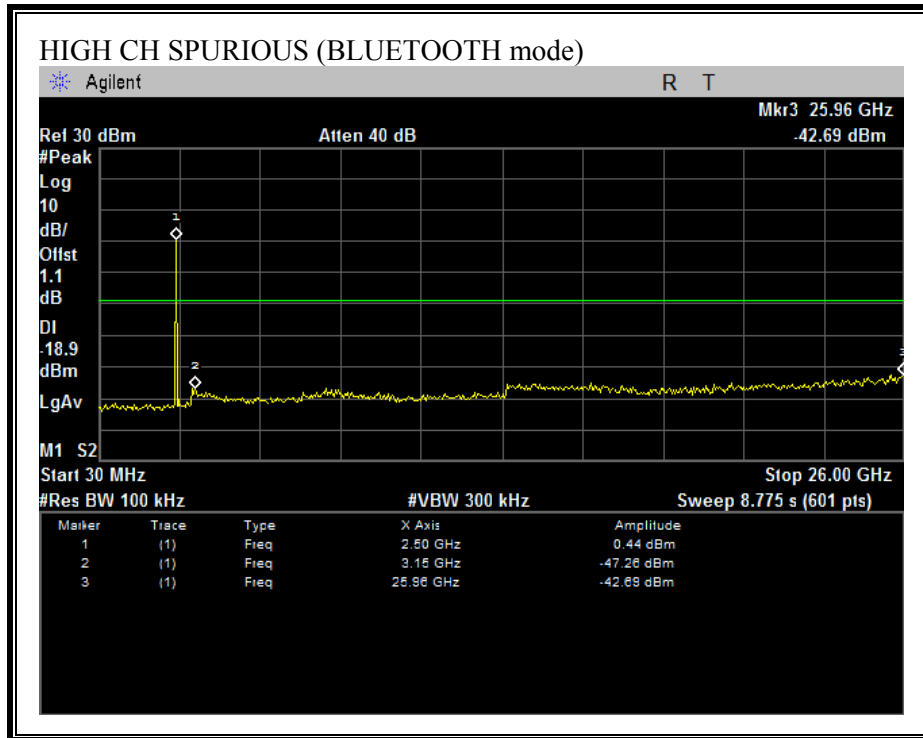
**SPURIOUS EMISSIONS, MID CHANNEL (BLUETOOTH MODE)**



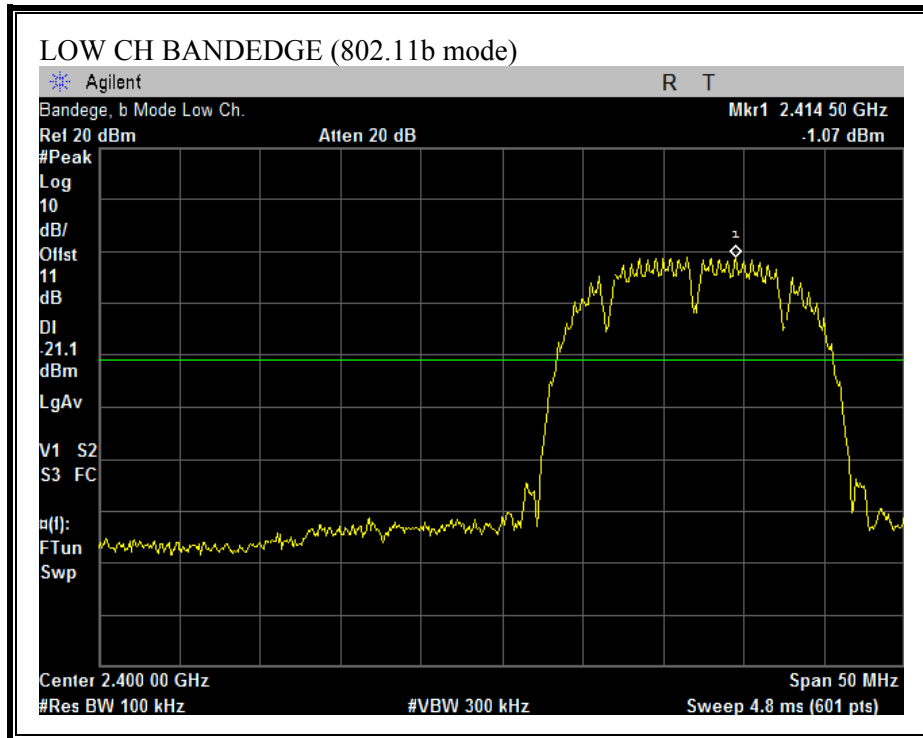


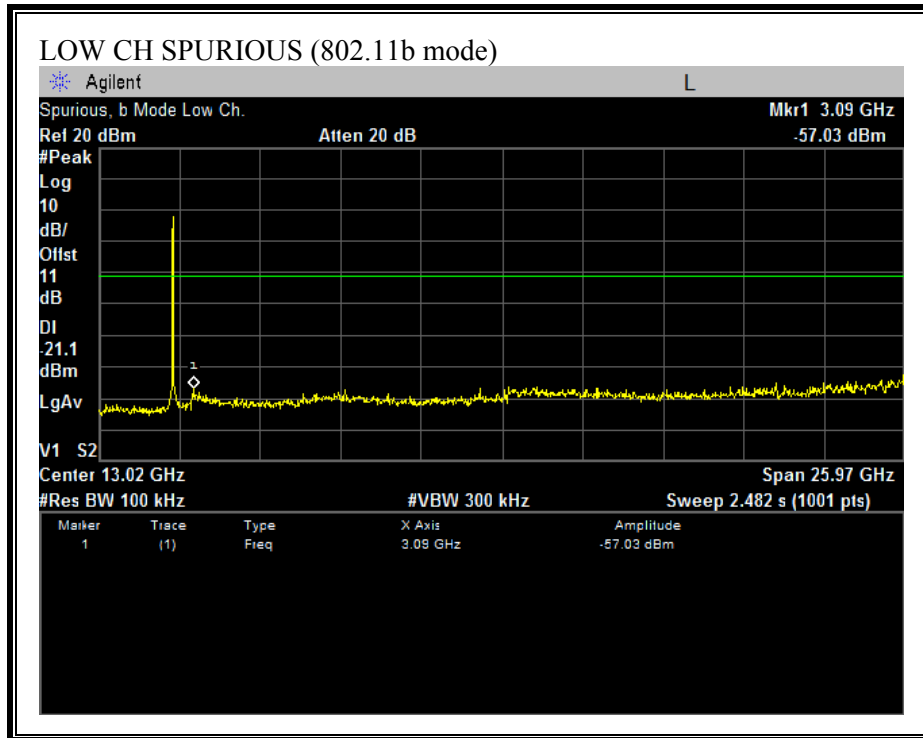
**SPURIOUS EMISSIONS, HIGH CHANNEL (BLUETOOTH MODE)**



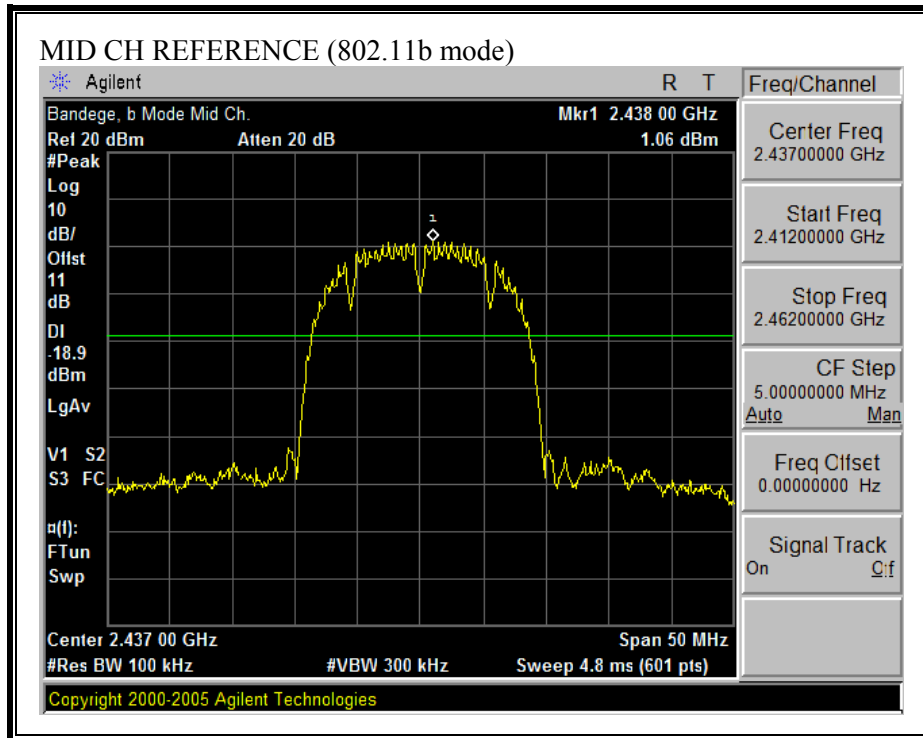


**SPURIOUS EMISSIONS, LOW CHANNEL (802.11b MODE)**

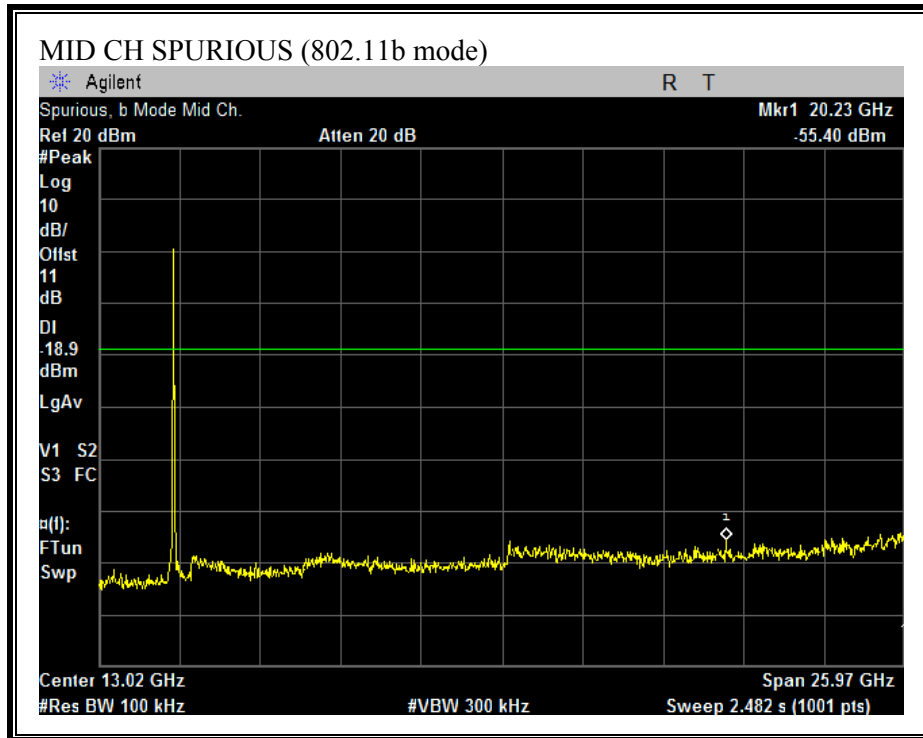




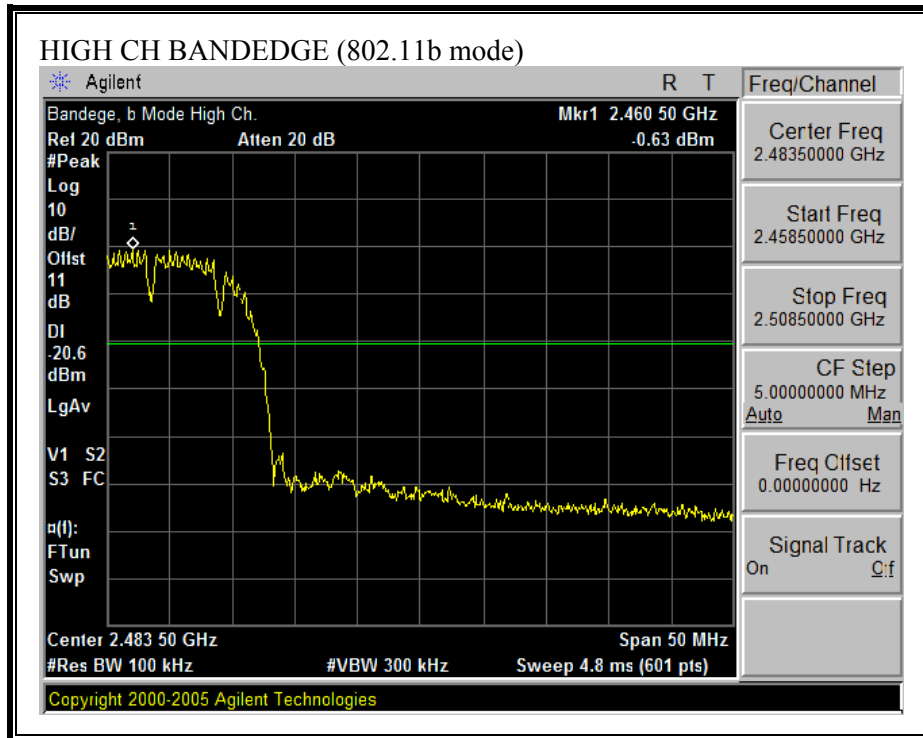
**SPURIOUS EMISSIONS, MID CHANNEL (802.11b MODE)**

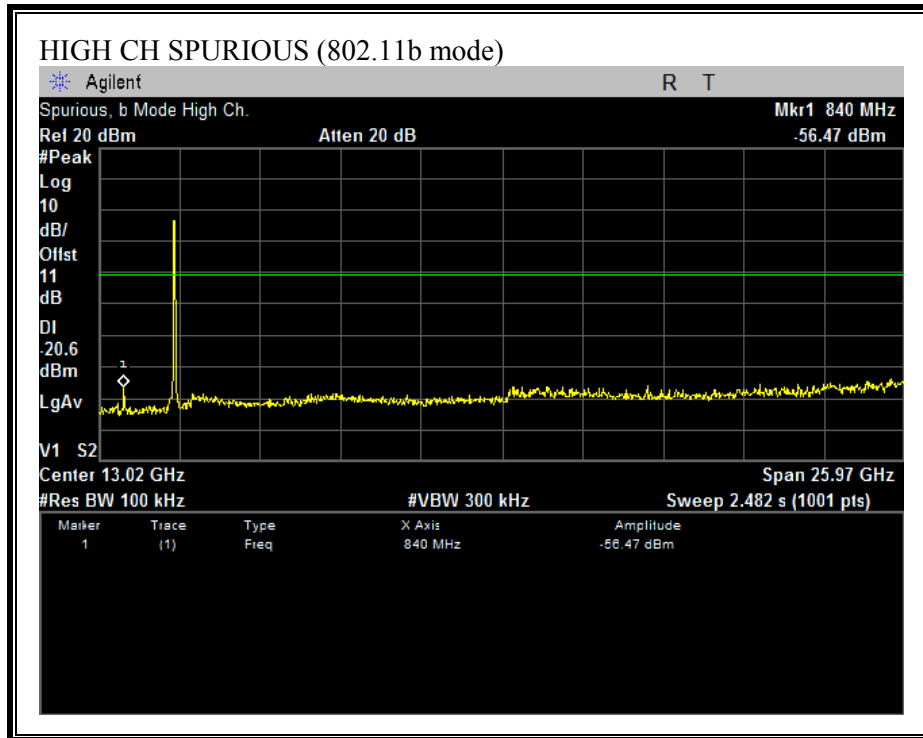




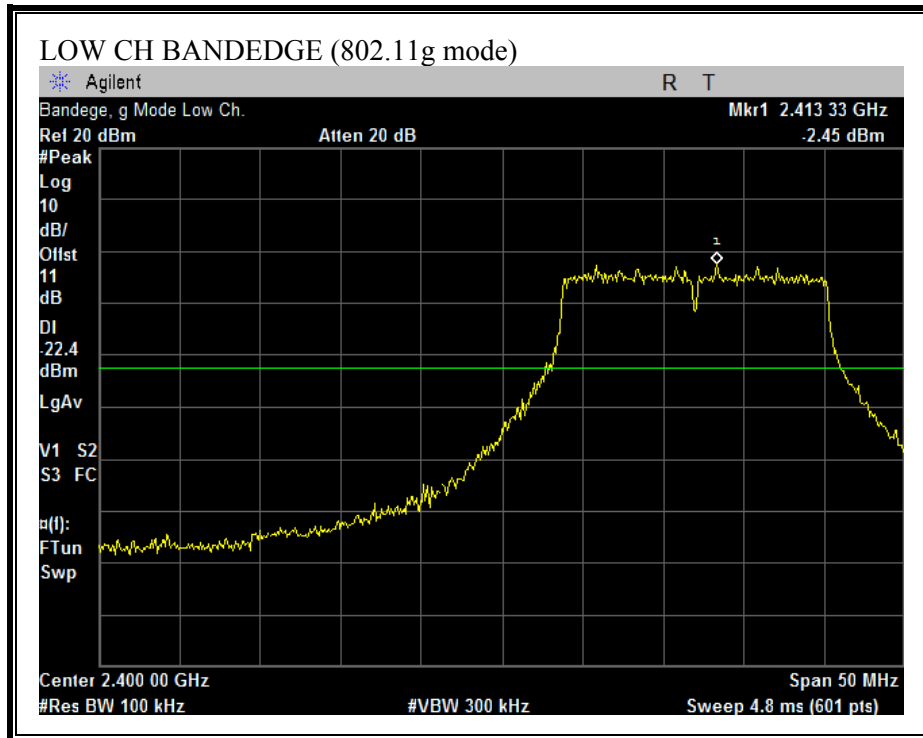


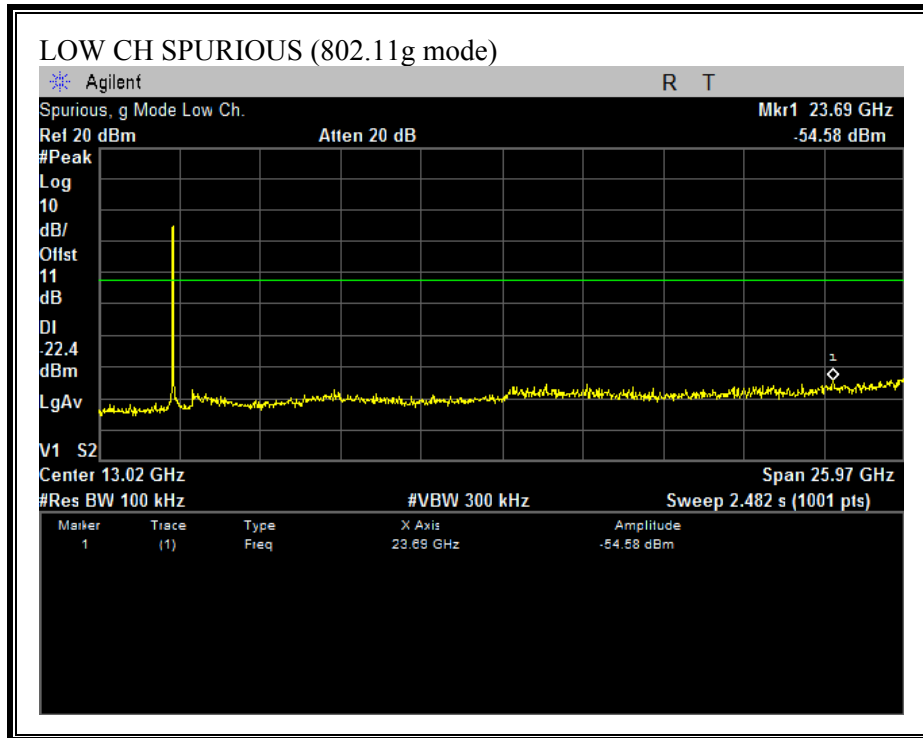
**SPURIOUS EMISSIONS, HIGH CHANNEL (802.11b MODE)**



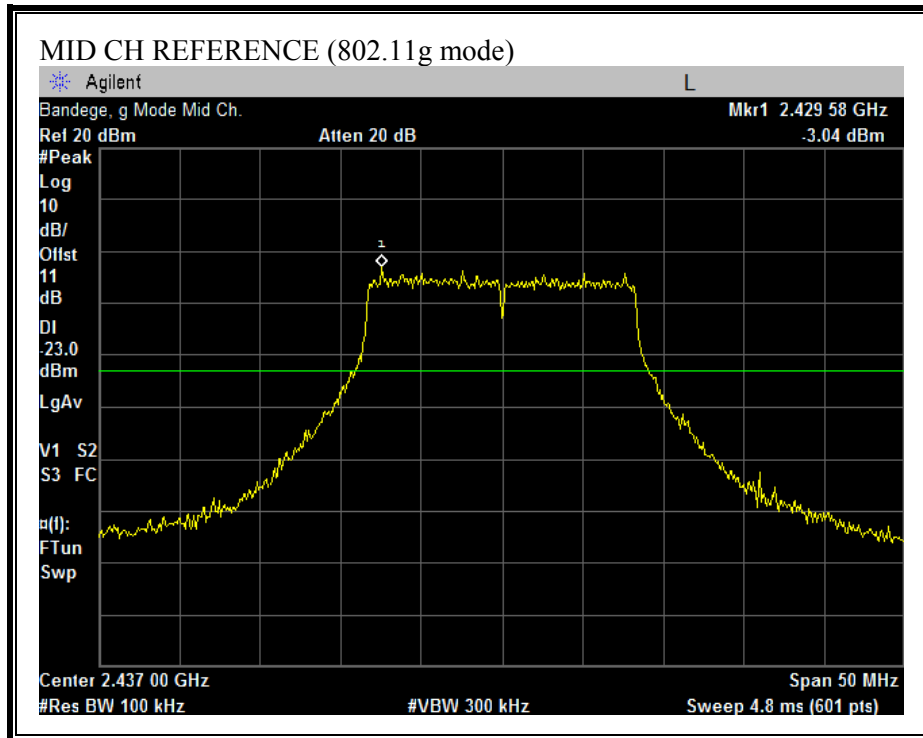


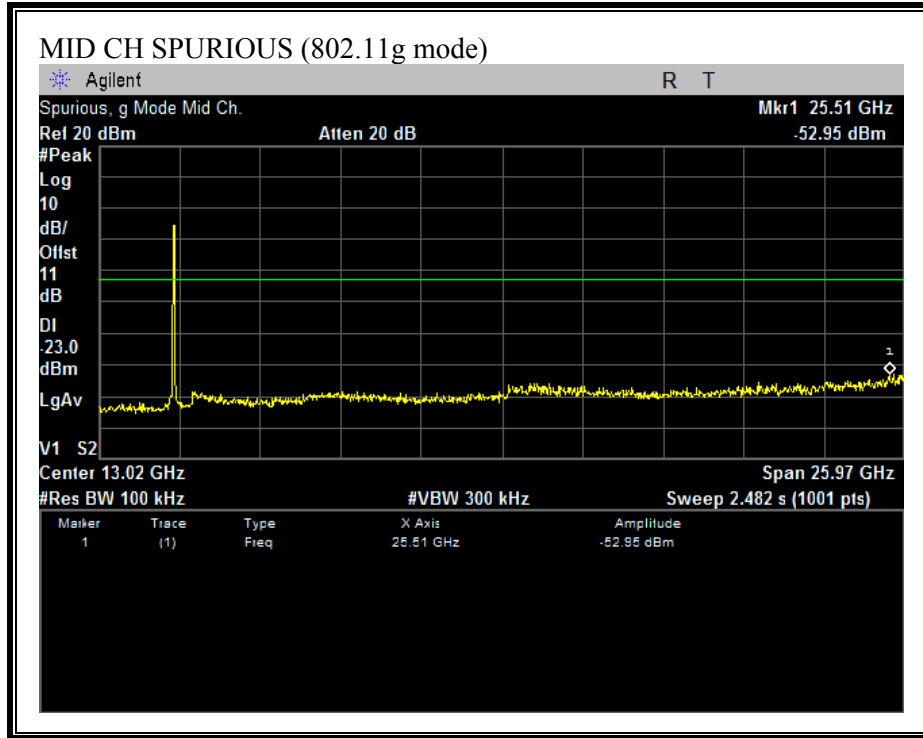
**SPURIOUS EMISSIONS, LOW CHANNEL (802.11g MODE)**



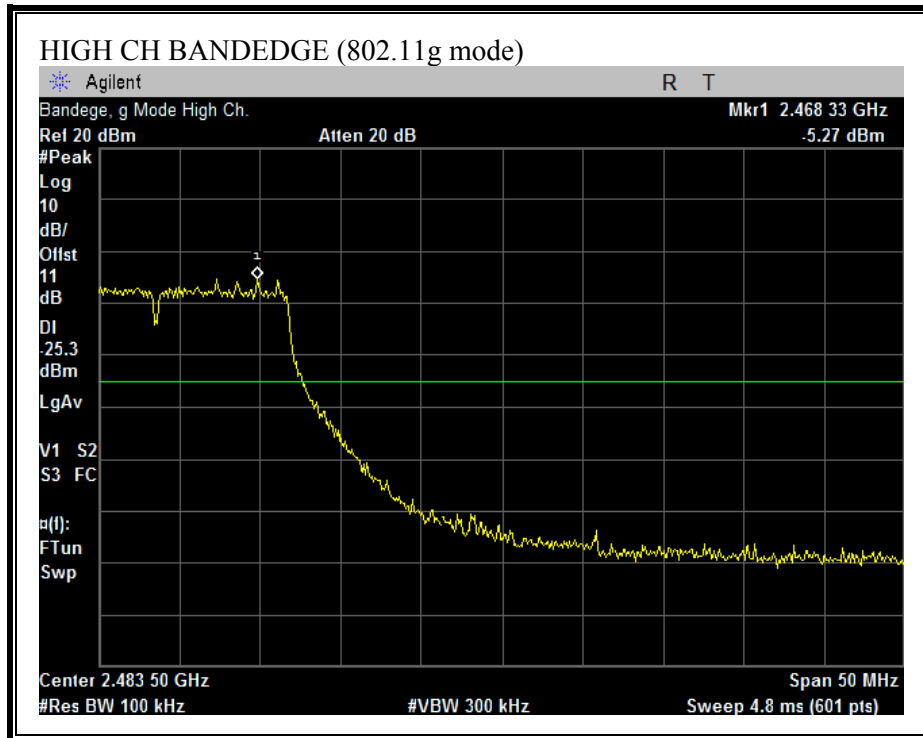


**SPURIOUS EMISSIONS, MID CHANNEL (802.11g MODE)**

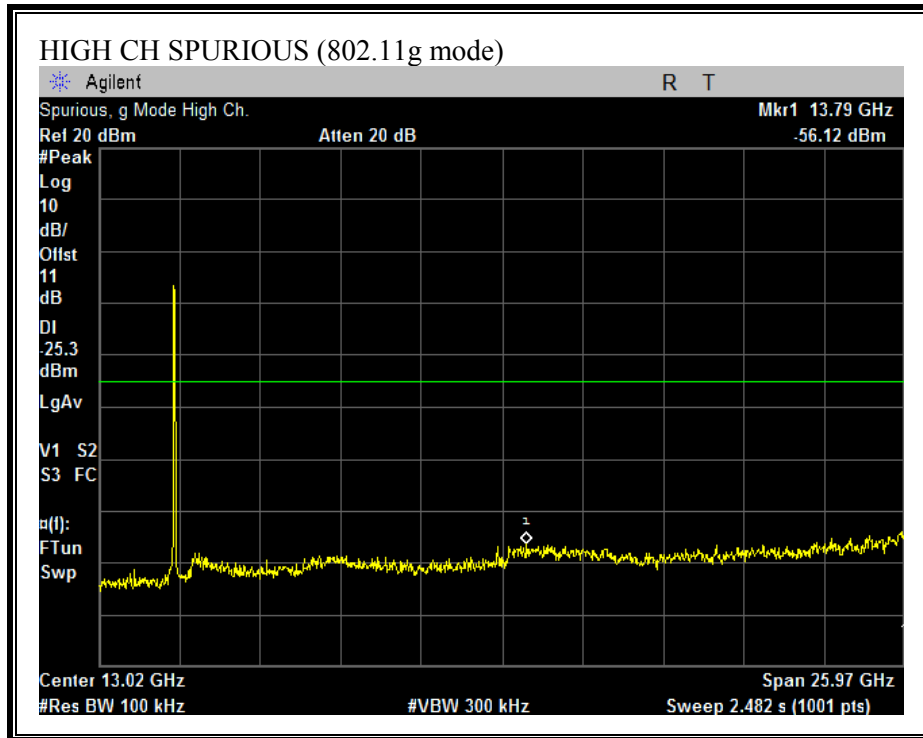




**SPURIOUS EMISSIONS, HIGH CHANNEL (802.11g MODE)**







## 8.2. RADIATED EMISSIONS

### 8.2.1. 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
<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 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.

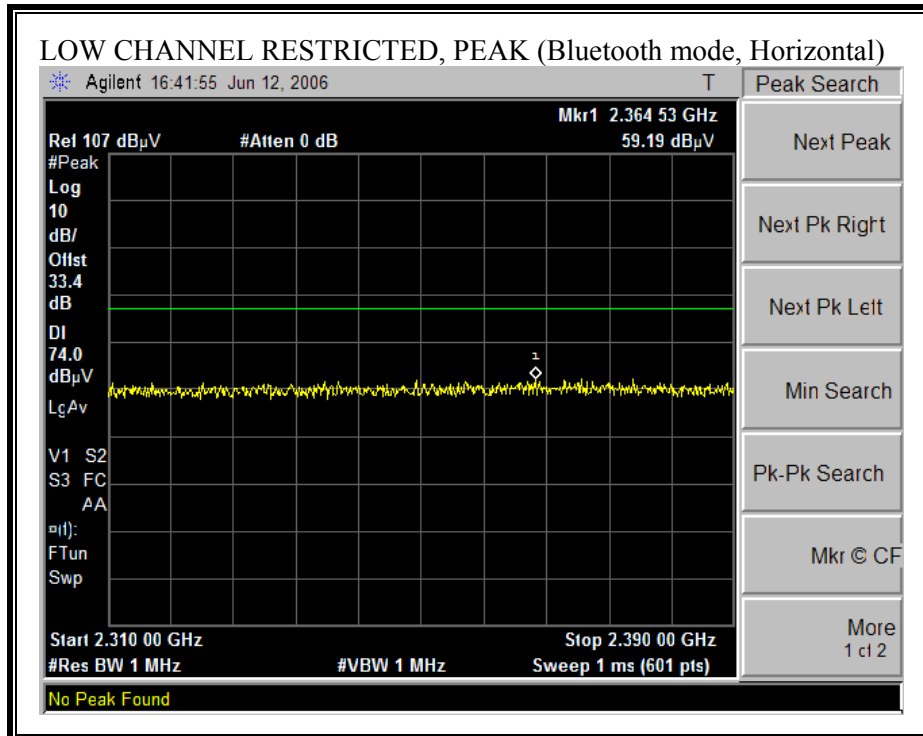
The spectrum from 30 MHz to 40 GHz is investigated with the transmitter set to the lowest, middle, and highest channels in each 5 GHz band.

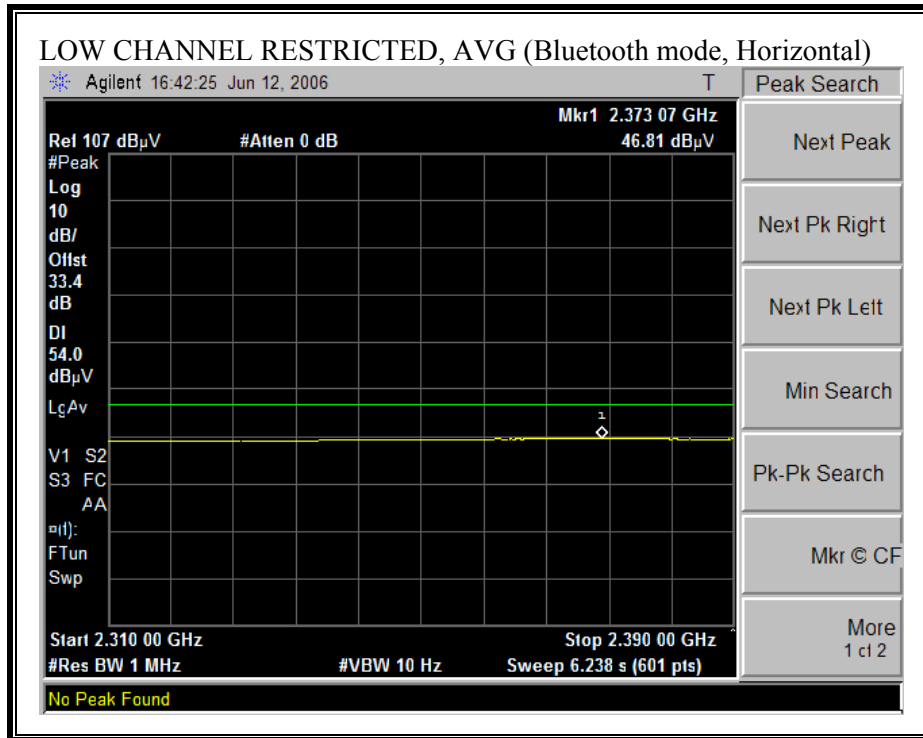
The frequency range of interest is monitored at a fixed antenna height and EUT azimuth. The EUT is rotated through 360 degrees to maximize emissions received. The antenna is scanned from 1 to 4 meters above the ground plane to further maximize the emission. Measurements are made with the antenna polarized in both the vertical and the horizontal positions.

### 8.2.2. TRANSMITTER ABOVE 1 GHz FOR 2400 TO 2483.5 MHz BAND

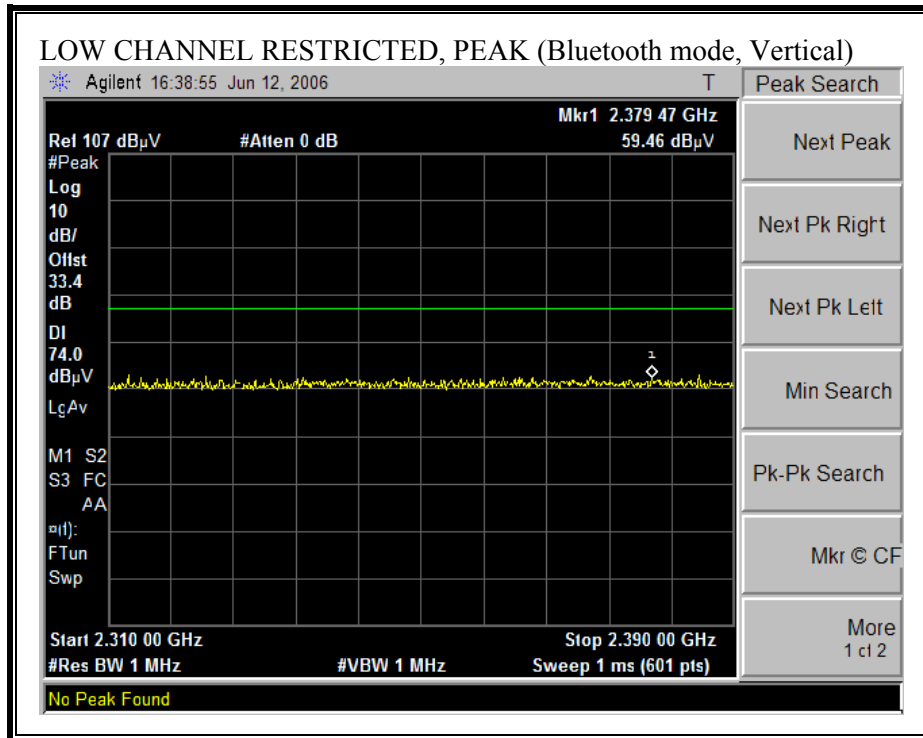
#### EUT WITHOUT JOG BAR

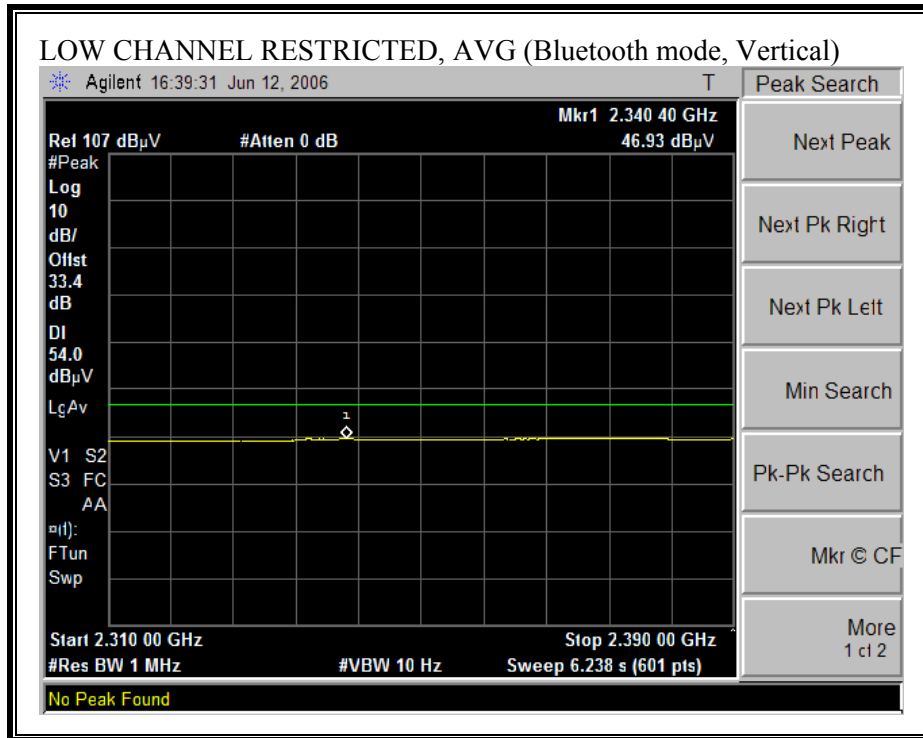
#### RESTRICTED BANDEDGE (BLUETOOTH MODE, LOW CHANNEL, HORIZONTAL)





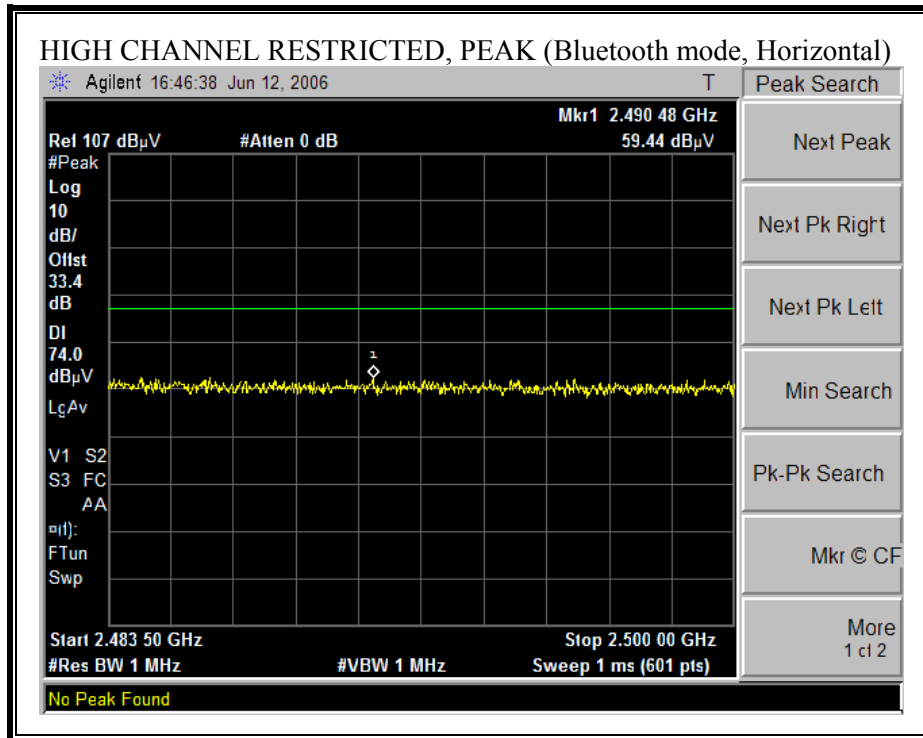
**RESTRICTED BANDEDGE (BLUETOOTH LOW CHANNEL, VERTICAL)**

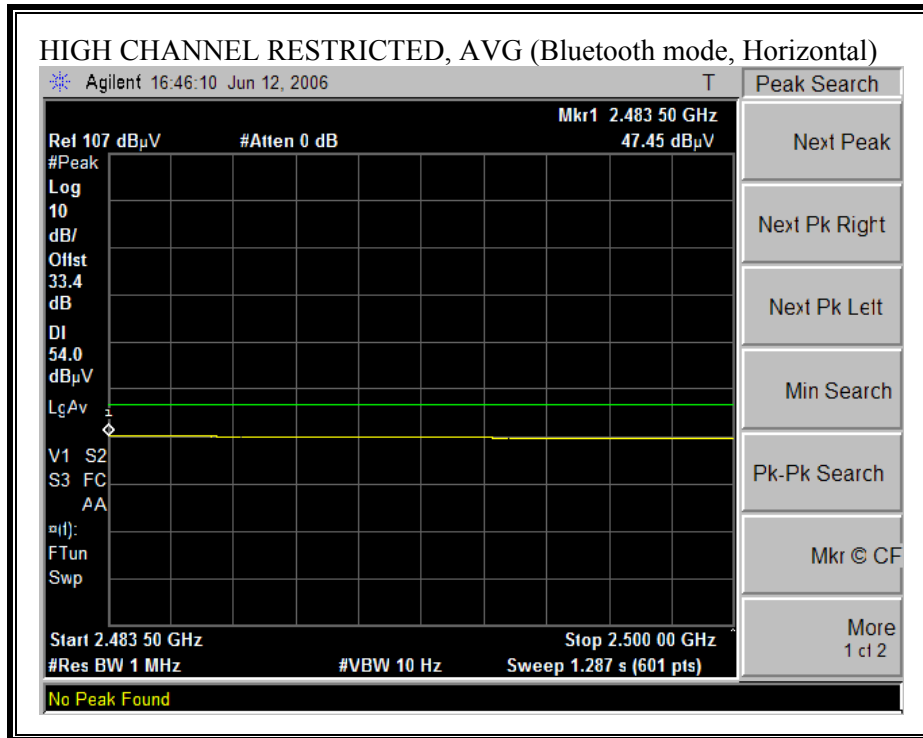




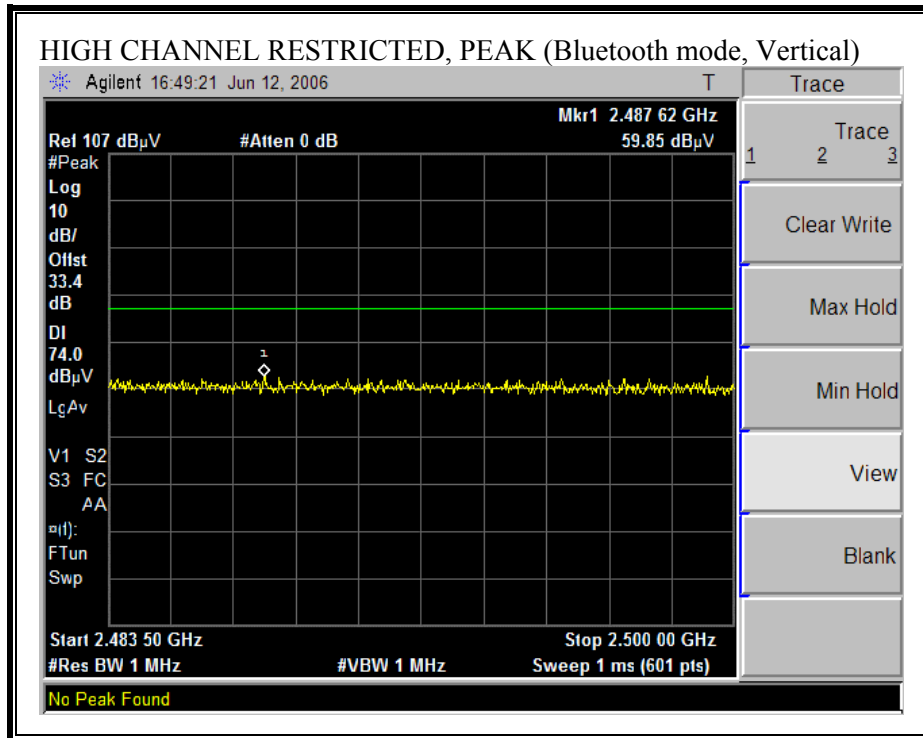


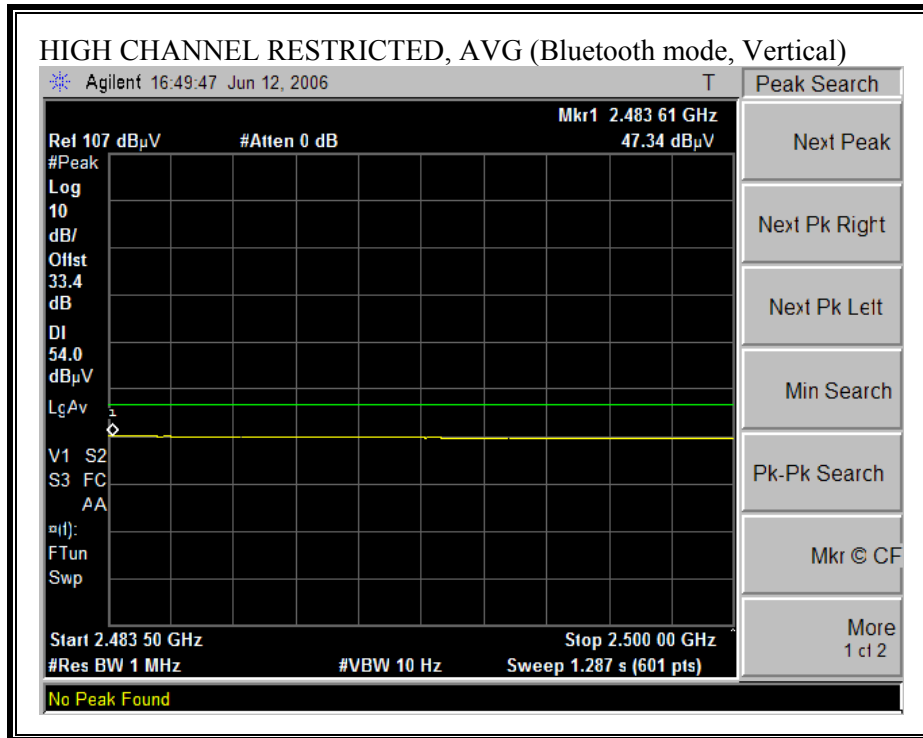
**RESTRICTED BANDEDGE (BLUETOOTH HIGH CHANNEL, HORIZONTAL)**





**RESTRICTED BANDEDGE (BLUETOOTH HIGH CHANNEL, VERTICAL)**

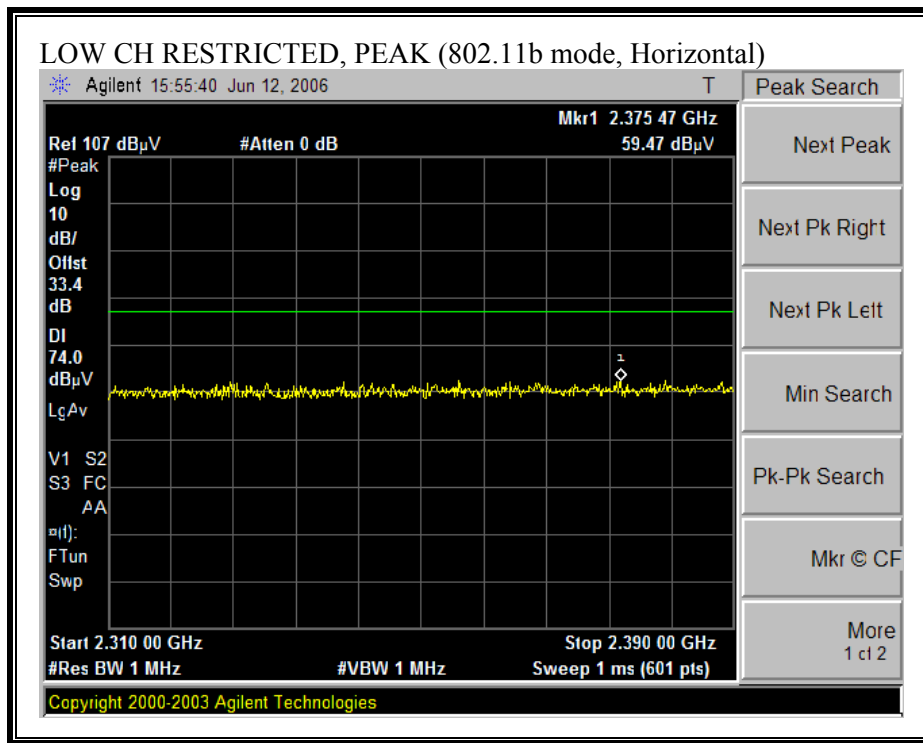


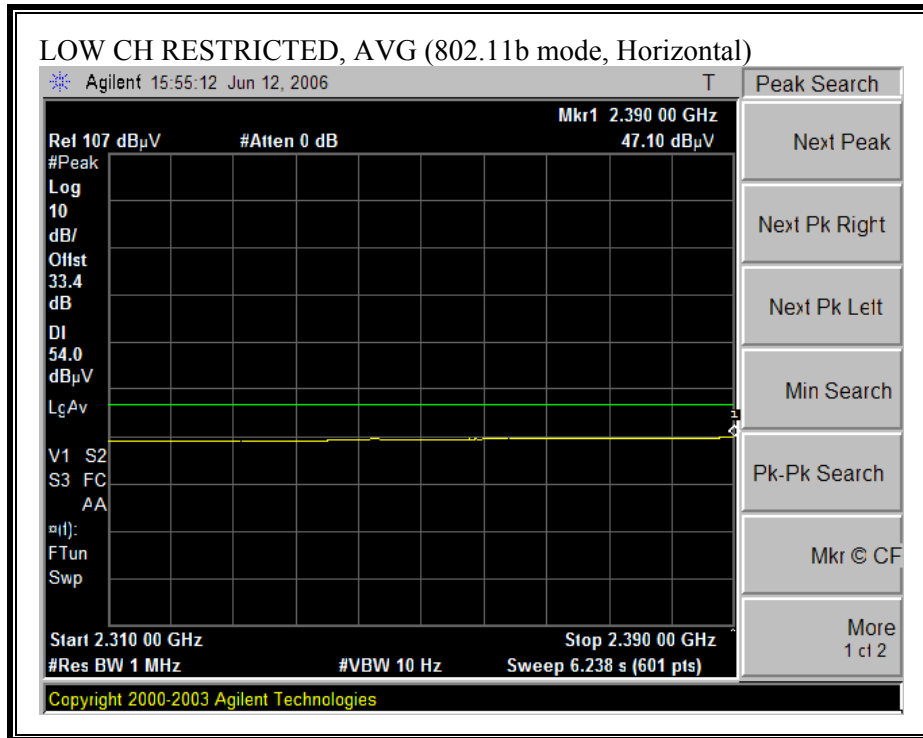


**HARMONICS AND SPURIOUS EMISSIONS(BLUETOOTH MODE)**

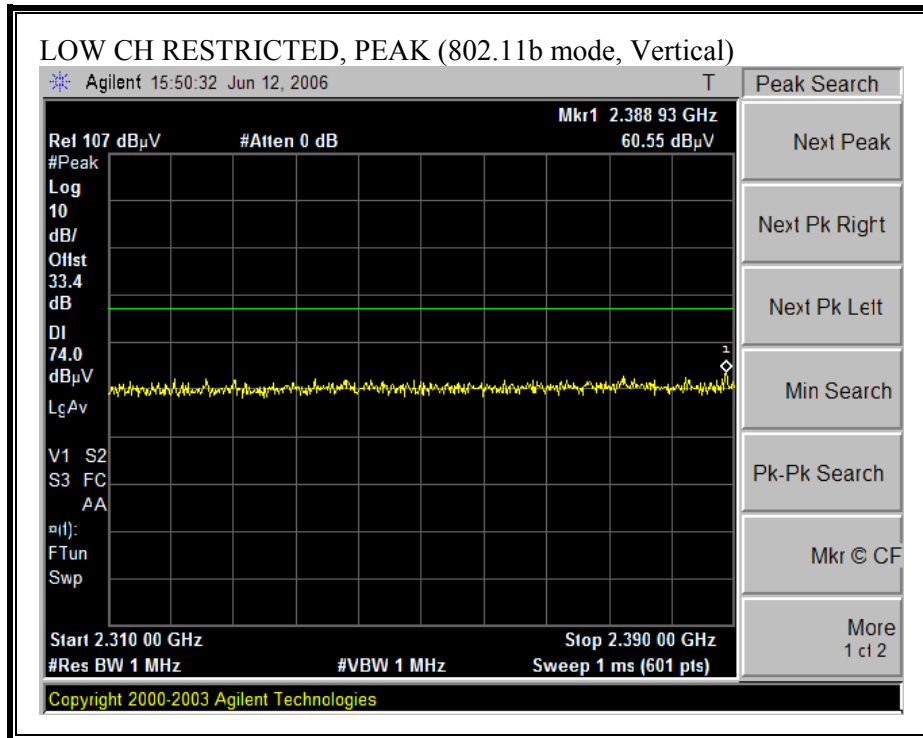
<b>High Frequency Measurement</b>																			
Compliance Certification Services, Morgan Hill Open Field Site																			
Company: High Tech Computer																			
Project #: 06I10345-2																			
Date: June 12, 2006																			
Test Engineer: Chin Pang																			
Configuration: EUT/ ACAdapter																			
Mode: TX, BT																			
<b>Test Equipment:</b>																			
Horn 1-18GHz				Pre-amplifier 1-26GHz				Pre-amplifier 26-40GHz				Horn > 18GHz				Limit			
T119; S/N: 29301 @3m				T34 HP 8449B												FCC 15.205			
Hi Frequency Cables																			
2 foot cable				3 foot cable				12 foot cable				HPF				Reject Filter			
Chin 177079003								Gordon 203134001								R_001			
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	Filtr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)				
<b>Low Ch. 2402MHz</b>																			
4.804	3.0	42.3	35.1	33.7	3.2	-34.8	0.0	0.0	44.3	37.1	74	54	-29.7	-16.9	V				
4.804	3.0	45.4	39.0	33.7	3.2	-34.8	0.0	0.0	47.4	41.0	74	54	-26.6	-13.0	H				
<b>Mid Ch. 2442MHz</b>																			
4.874	3.0	41.8	34.1	33.7	3.2	-34.8	0.0	0.0	43.9	36.2	74	54	-30.1	-17.8	V				
7.311	3.0	40.2	29.3	35.2	3.5	-34.1	0.0	0.0	44.8	33.9	74	54	-29.2	-20.1	V				
4.882	3.0	44.2	34.6	33.7	3.2	-34.8	0.0	0.0	46.3	36.7	74	54	-27.7	-17.3	H				
7.323	3.0	41.0	30.0	35.2	3.5	-34.1	0.0	0.0	45.6	34.6	74	54	-28.4	-19.4	H				
<b>High Ch. 2480MHz</b>																			
4.924	3.0	42.0	34.4	33.8	3.2	-34.8	0.0	0.0	44.2	36.6	74	54	-29.8	-17.4	V				
7.386	3.0	40.7	29.7	35.2	3.5	-34.1	0.0	0.0	45.3	34.3	74	54	-28.7	-19.7	V				
4.924	3.0	45.2	37.3	33.8	3.2	-34.8	0.0	0.0	47.4	39.5	74	54	-26.6	-14.5	H				
7.440	3.0	41.5	30.3	35.2	3.5	-34.1	0.0	0.0	46.2	35.0	74	54	-27.8	-19.0	H				
Rev. 5.1.6																			
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												

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

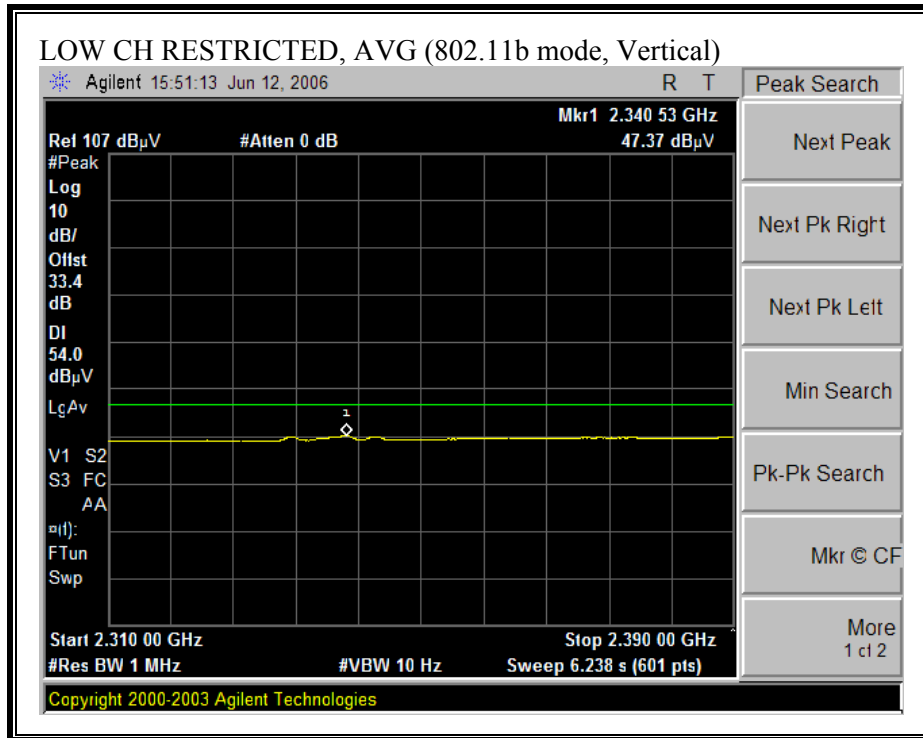




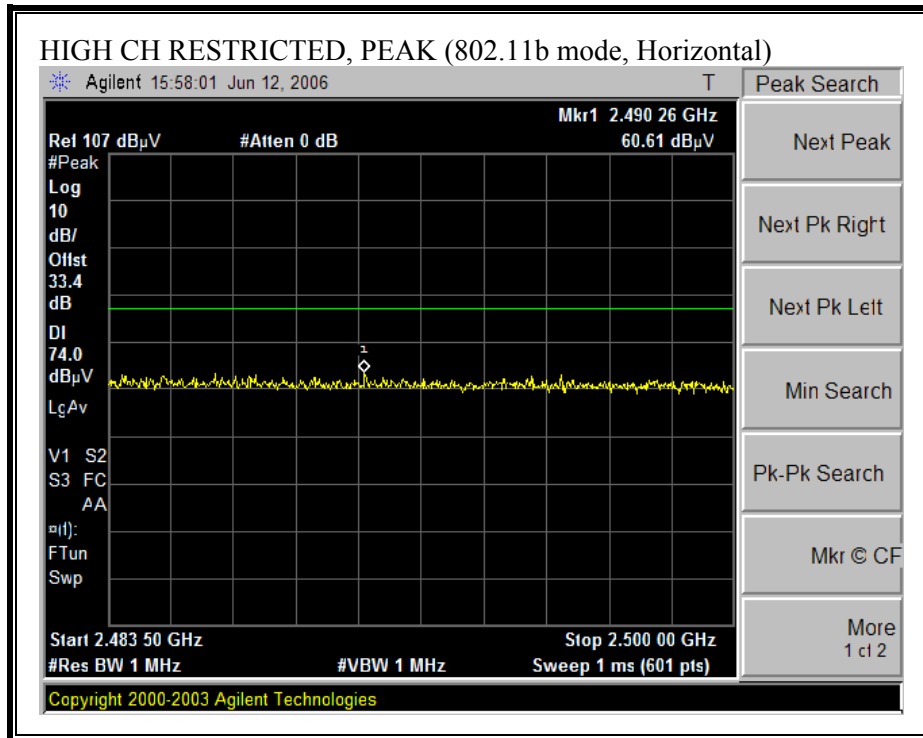
**RESTRICTED BANDEDGE (b MODE, LOW CHANNEL, VERTICAL)**

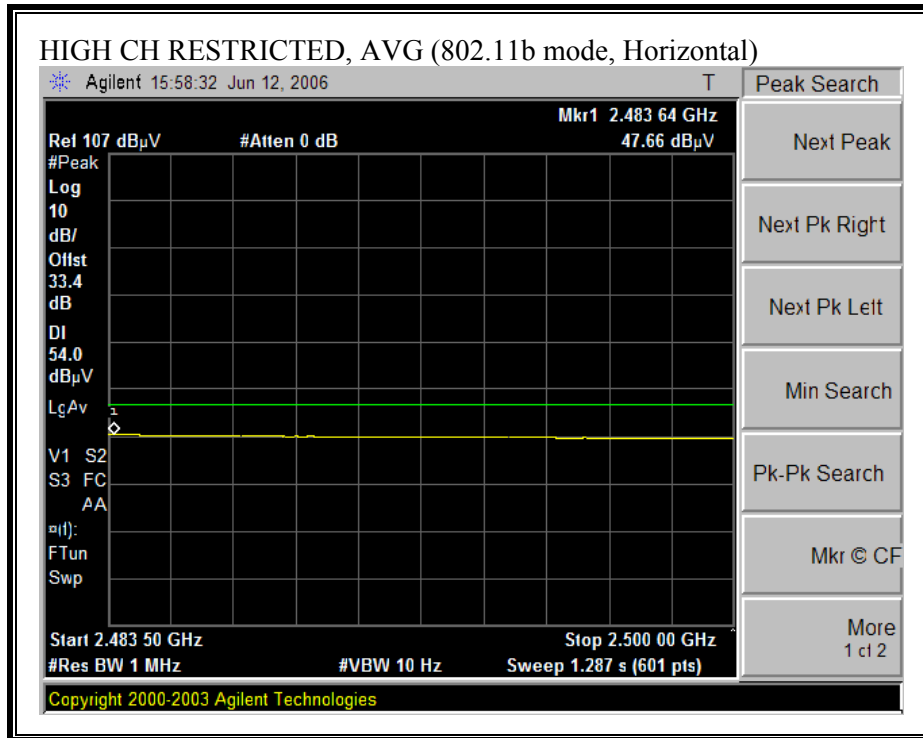




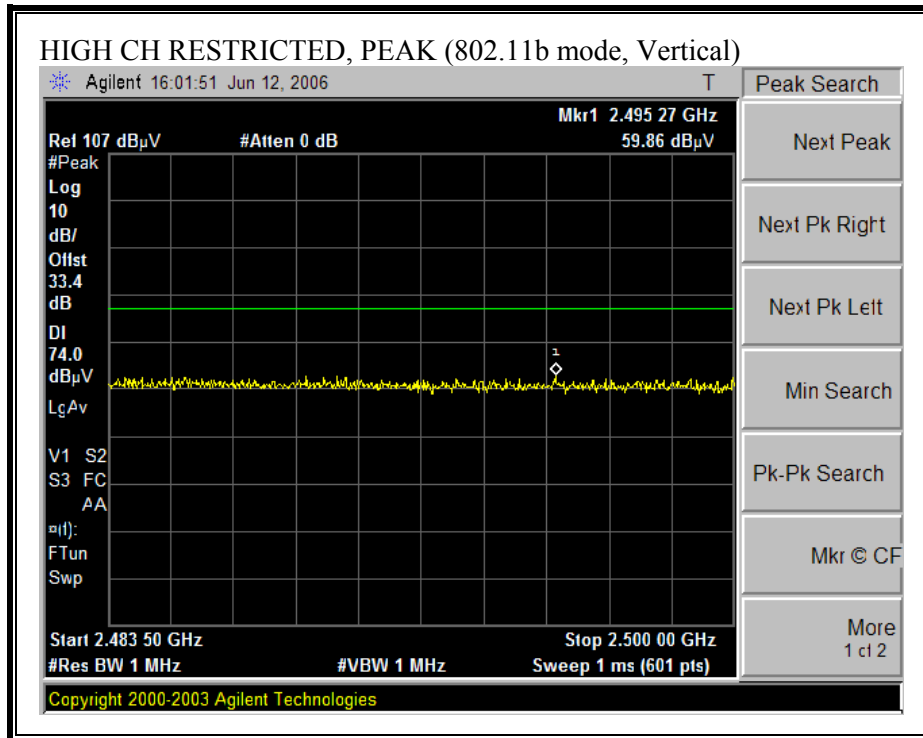


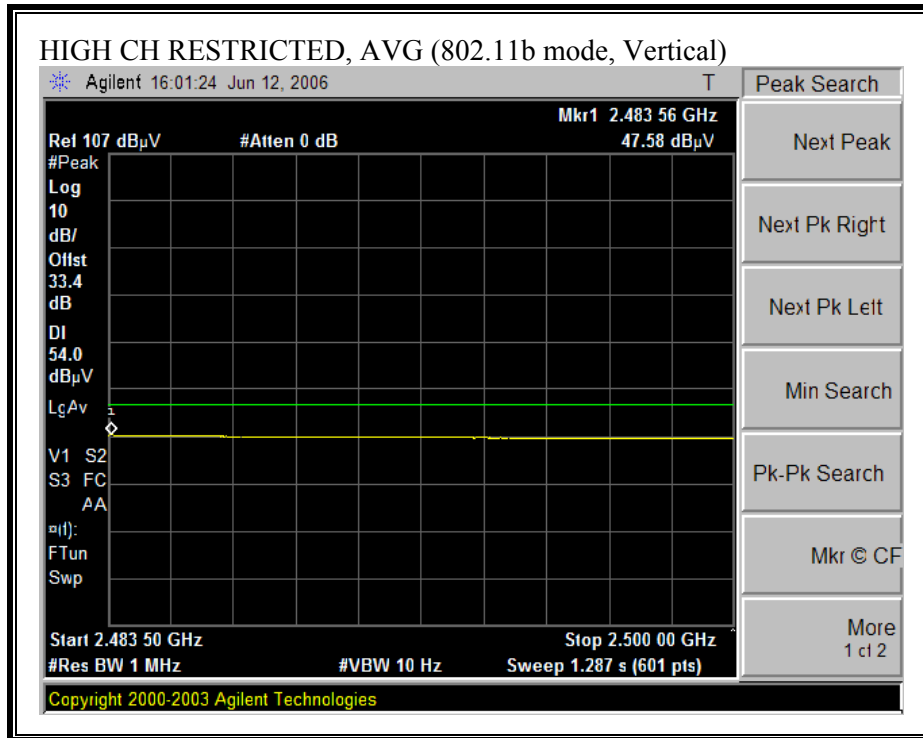
**RESTRICTED BANDEDGE (b MODE, HIGH CHANNEL, HORIZONTAL)**





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





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

**High Frequency Measurement**  
 Compliance Certification Services, Morgan Hill Open Field Site

Company: High Tech Computer  
 Project #: 06I10345-2  
 Date: June 12, 2006  
 Test Engineer: Chin Pang  
 Configuration: EUT/ ACAdapter  
 Mode: TX, WLAN, b mode

**Test Equipment:**

Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz	Limit
T119; S/N: 29301 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

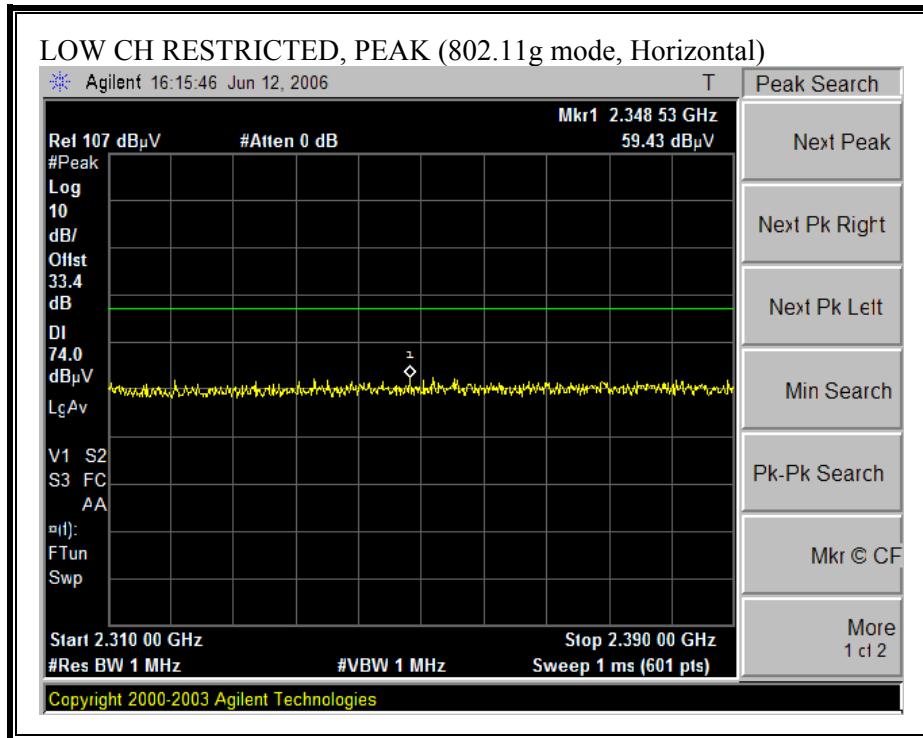
2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter	Peak Measurements RBW=VBW=1MHz Average Measurements RBW=1MHz ; VBW=10Hz
Chin 177079003		Gordon 203134001		R_001	

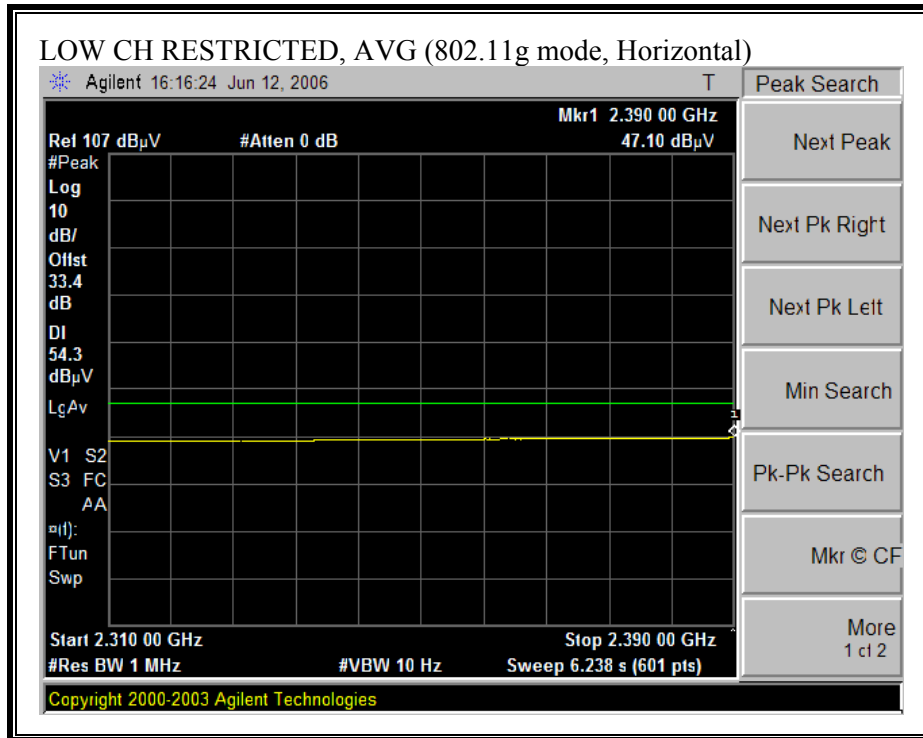
f GHz	Dist (m)	Read Pk dBuV	Read Avg. dBuV	AF dB/m	CL dB	Amp dB	D Corr dB	Fltr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
<b>Low Ch. 2412MHz</b>															
4.824	3.0	48.0	43.3	33.7	3.2	-34.8	0.0	0.0	50.0	45.3	74	54	-24.0	-8.7	V
4.824	3.0	48.6	45.0	33.7	3.2	-34.8	0.0	0.0	50.6	47.0	74	54	-23.4	-7.0	H
<b>Mid Ch. 2437MHz</b>															
4.874	3.0	47.8	42.0	33.7	3.2	-34.8	0.0	0.0	49.9	44.1	74	54	-24.1	-9.9	V
7.311	3.0	42.0	30.0	35.2	3.5	-34.1	0.0	0.0	46.6	34.6	74	54	-27.4	-19.4	V
4.874	3.0	48.3	44.5	33.7	3.2	-34.8	0.0	0.0	50.4	46.6	74	54	-23.6	-7.4	H
7.311	3.0	43.2	30.4	35.2	3.5	-34.1	0.0	0.0	47.8	35.0	74	54	-26.2	-19.0	H
<b>High Ch. 2462MHz</b>															
4.924	3.0	47.6	43.1	33.8	3.2	-34.8	0.0	0.0	49.8	45.3	74	54	-24.2	-8.7	V
7.386	3.0	44.0	30.4	35.2	3.5	-34.1	0.0	0.0	48.6	35.0	74	54	-25.4	-19.0	V
4.924	3.0	49.4	46.2	33.8	3.2	-34.8	0.0	0.0	51.6	48.4	74	54	-22.4	-5.6	H
7.386	3.0	45.2	30.8	35.2	3.5	-34.1	0.0	0.0	49.8	35.4	74	54	-24.2	-18.6	H

Rev. 5.1.6  
 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		

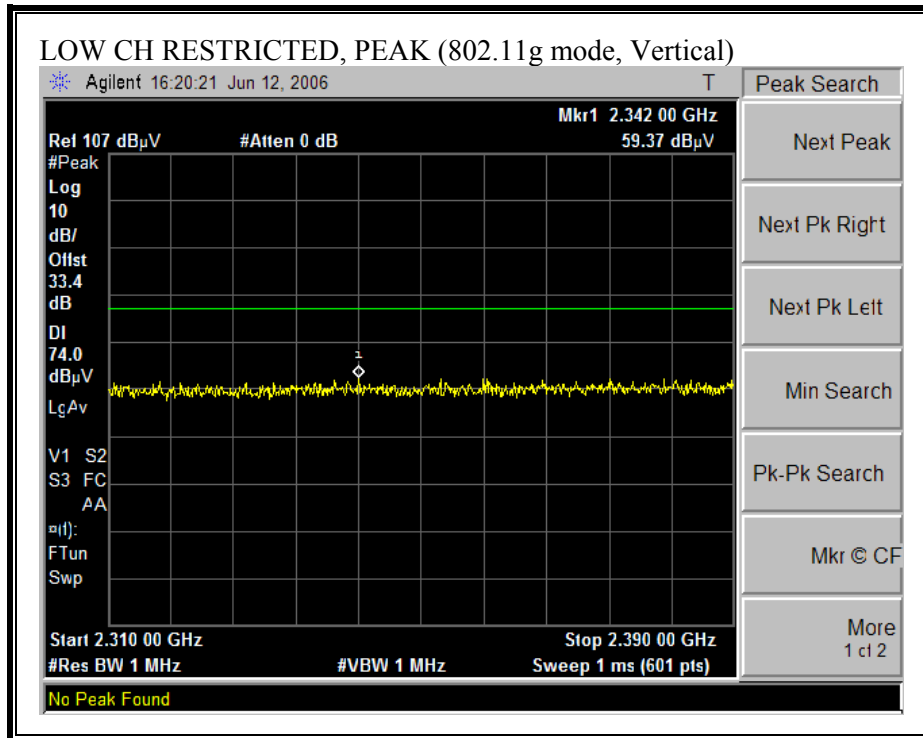
**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, HORIZONTAL)**

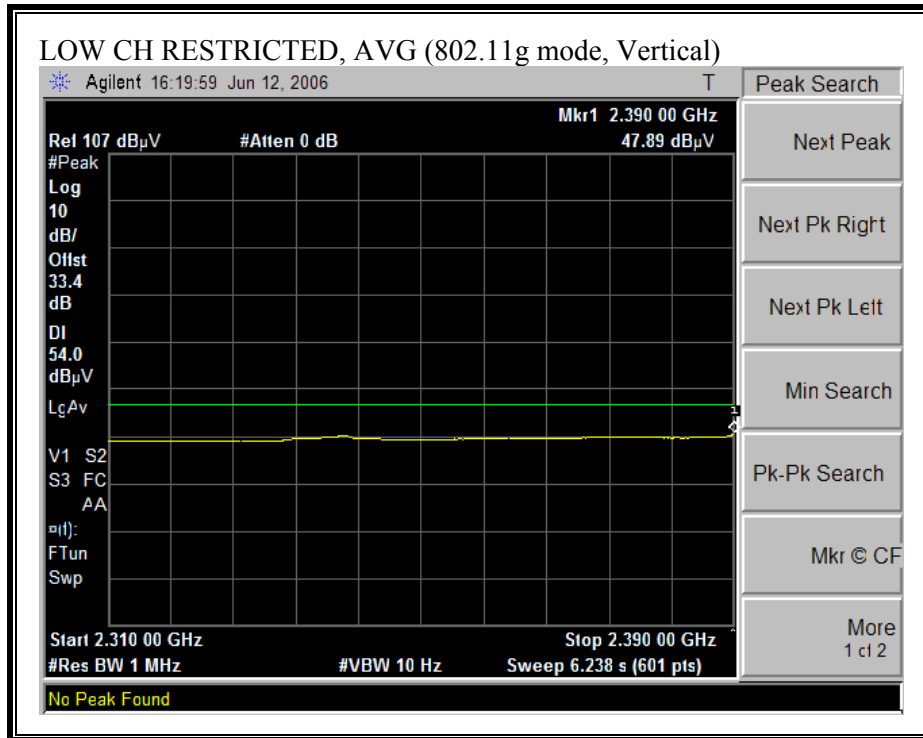




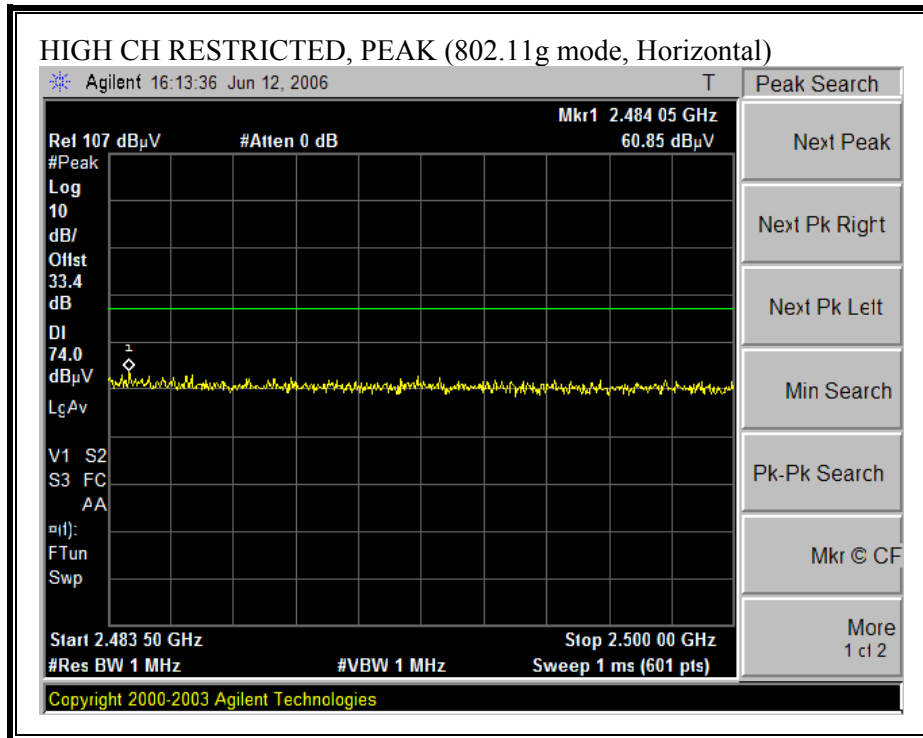


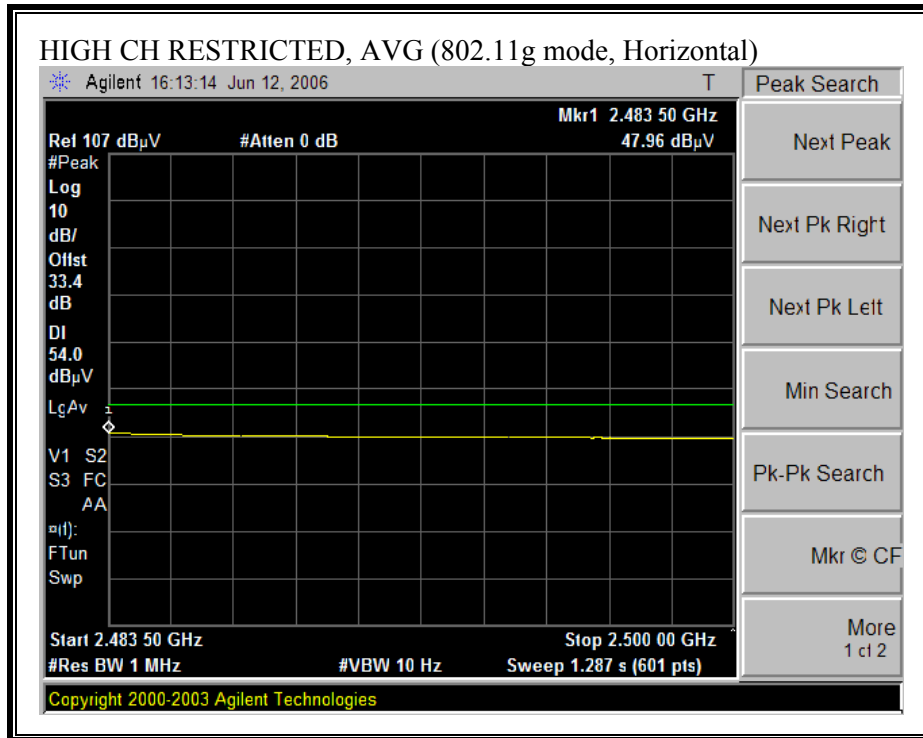
**RESTRICTED BANDEDGE (g MODE, LOW CHANNEL, VERTICAL)**



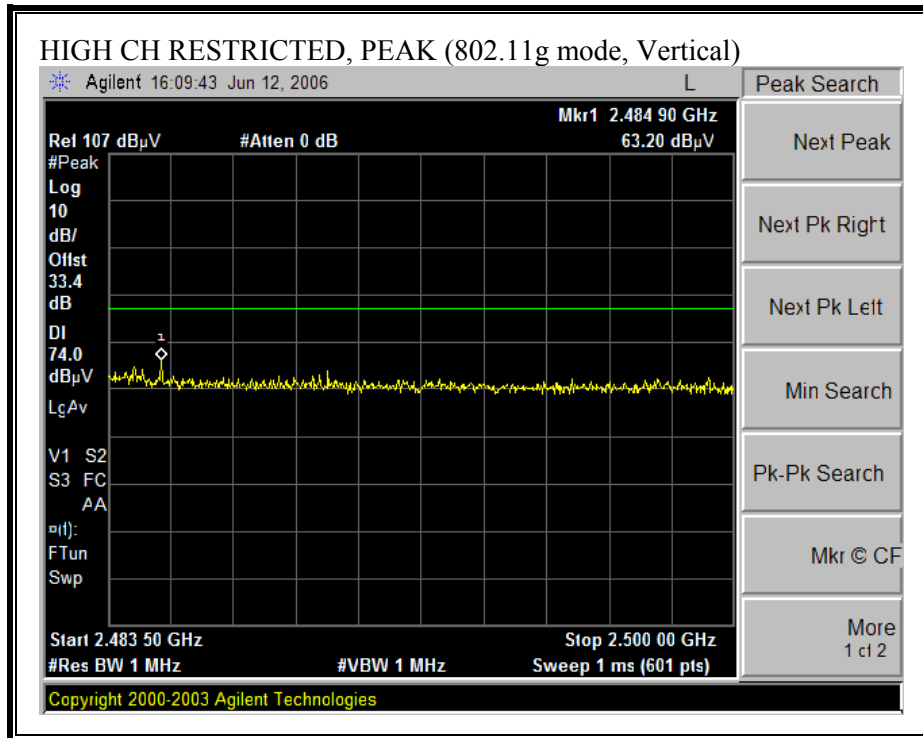


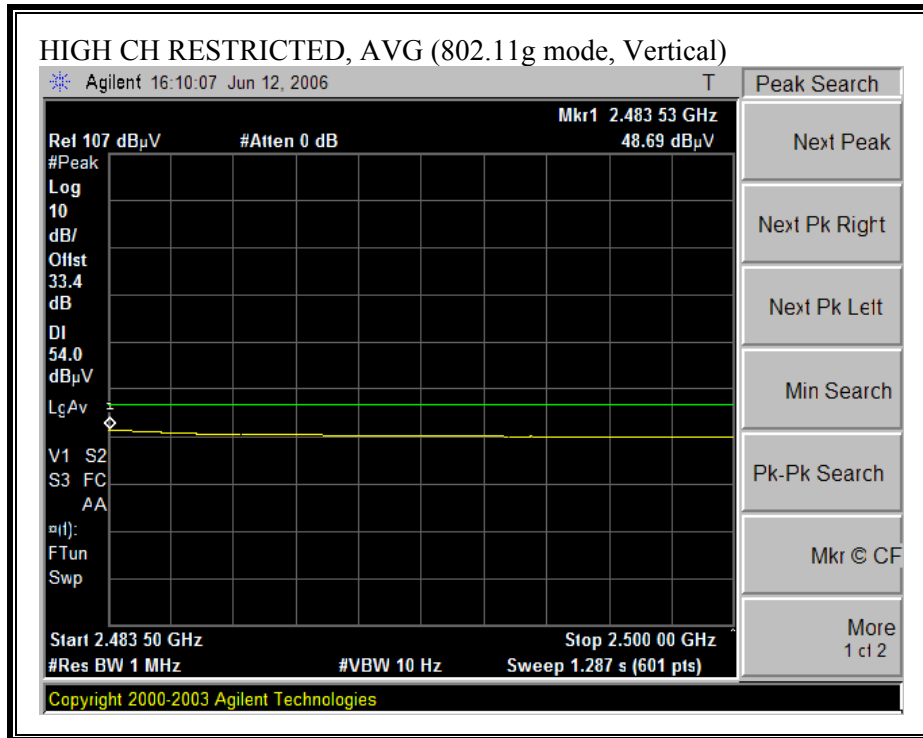
**RESTRICTED BANDEDGE (g MODE, HIGH CHANNEL, HORIZONTAL)**





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





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

**High Frequency Measurement**  
 Compliance Certification Services, Morgan Hill Open Field Site

Company: High Tech Computer  
 Project #: 06I10345-2  
 Date: June 12, 2006  
 Test Engineer: Chin Pang  
 Configuration: EUT/ ACAdapter  
 Mode: TX, WLAN, g mode

**Test Equipment:**

Horn 1-18GHz	Pre-amplifier 1-26GHz	Pre-amplifier 26-40GHz	Horn > 18GHz	Limit
T119; S/N: 29301 @3m	T34 HP 8449B			FCC 15.205

Hi Frequency Cables

2 foot cable	3 foot cable	12 foot cable	HPF	Reject Filter	Peak Measurements RBW=VBW=1MHz
Chin 177079003		Gordon 203134001		R_001	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	Filtr dB	Peak dBuV/m	Avg dBuV/m	Pk Lim dBuV/m	Avg Lim dBuV/m	Pk Mar dB	Avg Mar dB	Notes (V/H)
<b>Low Ch, 2412MHz</b>															
4.824	3.0	45.6	38.0	33.7	3.2	-34.8	0.0	0.0	47.6	40.0	74	54	-26.4	-14.0	V
4.824	3.0	47.6	43.0	33.7	3.2	-34.8	0.0	0.0	49.6	45.0	74	54	-24.4	-9.0	H
<b>Mid Ch, 2437MHz</b>															
4.874	3.0	45.0	37.6	33.7	3.2	-34.8	0.0	0.0	47.1	39.7	74	54	-26.9	-14.3	V
7.311	3.0	42.0	30.0	35.2	3.5	-34.1	0.0	0.0	46.6	34.6	74	54	-27.4	-19.4	V
4.874	3.0	48.4	43.2	33.7	3.2	-34.8	0.0	0.0	50.5	45.3	74	54	-23.5	-8.7	H
7.311	3.0	42.0	30.0	35.2	3.5	-34.1	0.0	0.0	46.6	34.6	74	54	-27.4	-19.4	H
<b>High Ch, 2462MHz</b>															
4.924	3.0	45.4	38.3	33.8	3.2	-34.8	0.0	0.0	47.6	40.5	74	54	-26.4	-13.5	V
7.386	3.0	40.0	29.2	35.2	3.5	-34.1	0.0	0.0	44.6	33.8	74	54	-29.4	-20.2	V
4.924	3.0	47.3	42.4	33.8	3.2	-34.8	0.0	0.0	49.5	44.6	74	54	-24.5	-9.4	H
7.386	3.0	41.5	29.6	35.2	3.5	-34.1	0.0	0.0	46.1	34.2	74	54	-27.9	-19.8	H

Rev. 5.1.6  
 Note: No other emissions were detected above the system noise floor.

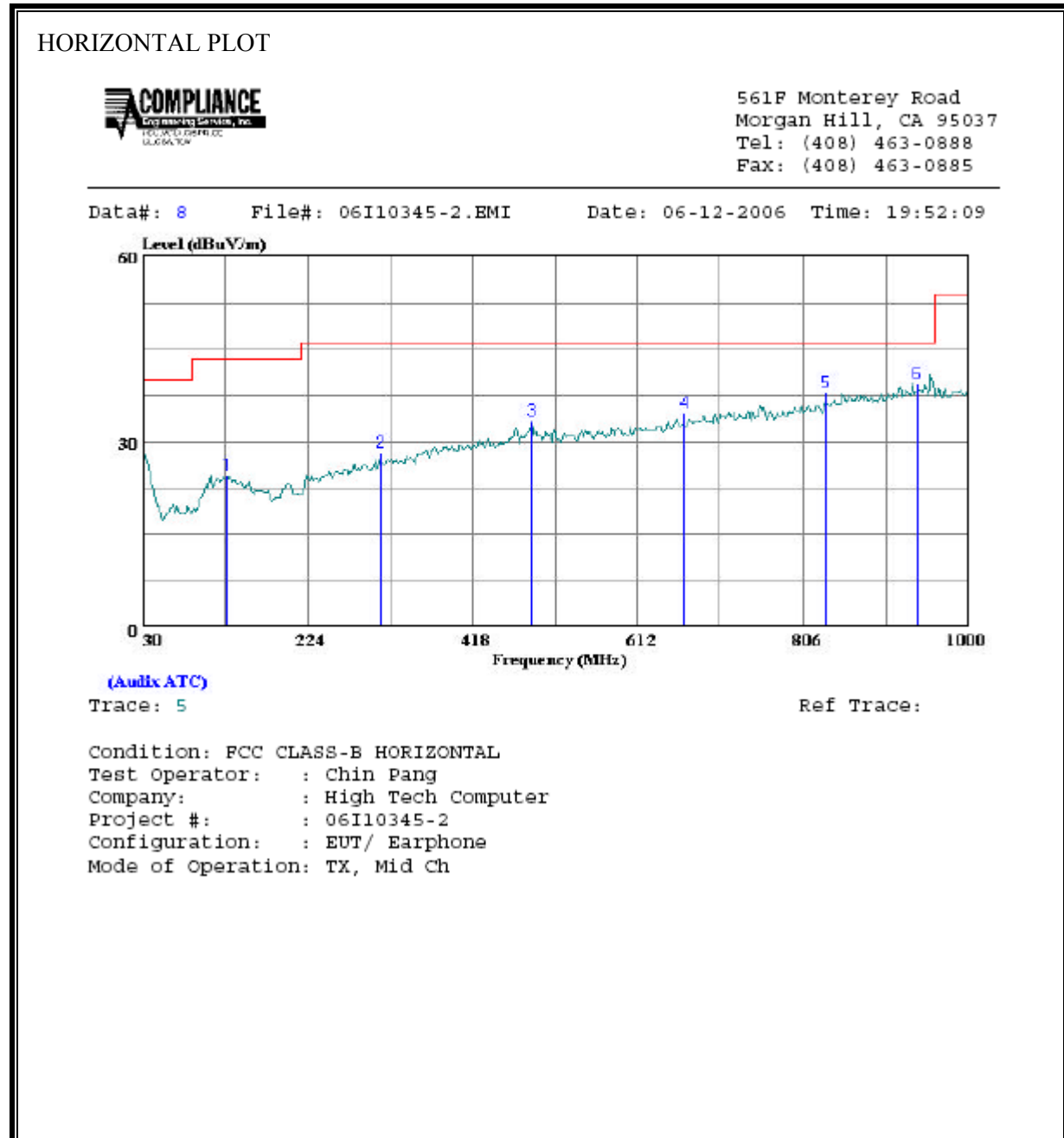
f	Measurement Frequency	Amp	Preamp Gain	Avg Lim	Average Field Strength Limit
Dist	Distance to Antenna	D Corr	Distance Correct to 3 meters	Pk Lim	Peak Field Strength Limit
Read	Analyzer Reading	Avg	Average Field Strength @ 3 m	Avg Mar	Margin vs. Average Limit
AF	Antenna Factor	Peak	Calculated Peak Field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

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

#### 8.2.3.1 EUT WITHOUT JOG BAR

#### TX MODE AT WORST CASE WITH EAR PHONE

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

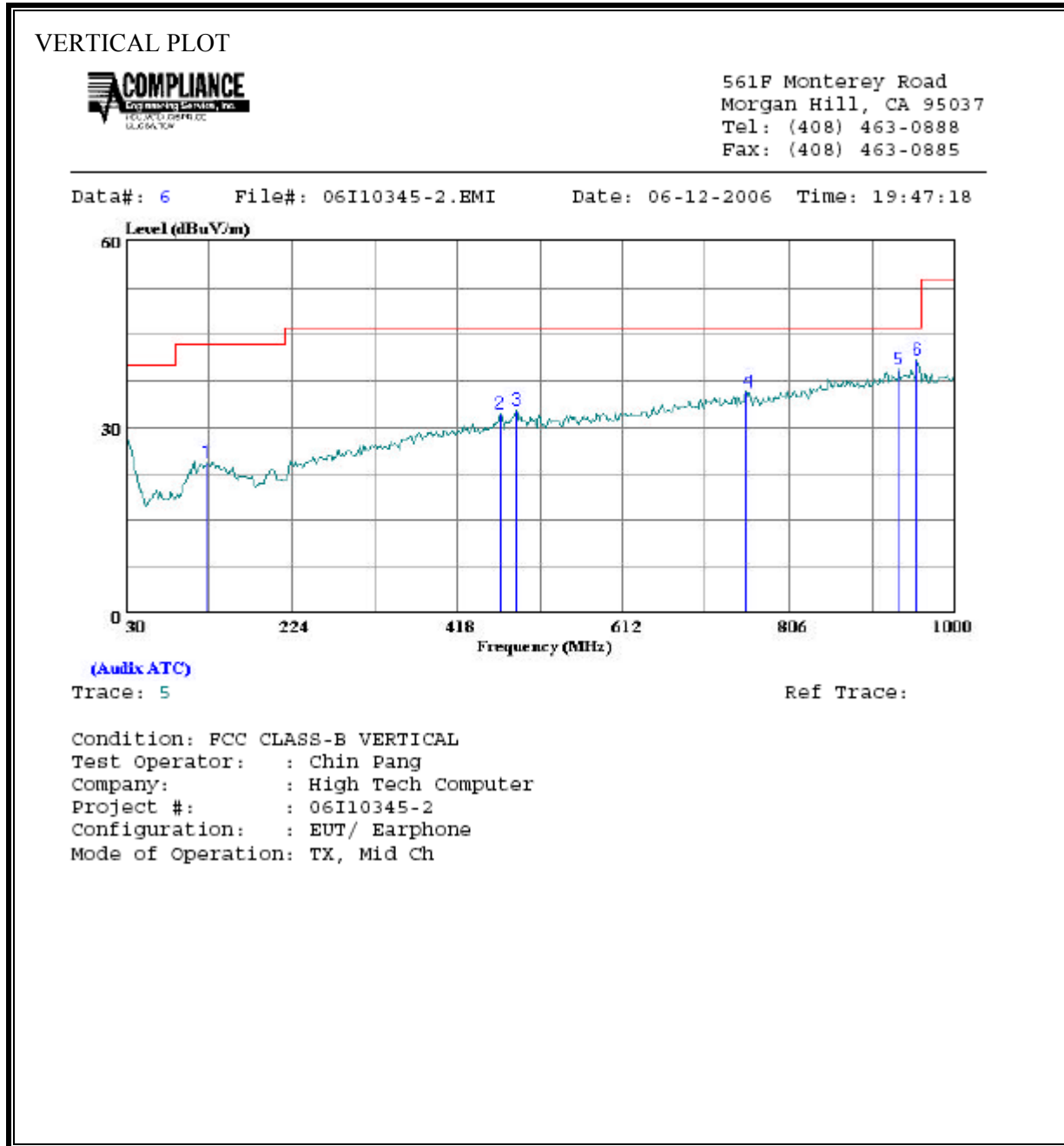




HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	128.940	9.32	15.15	24.47	43.50	-19.03	Peak
2	310.330	12.16	16.00	28.16	46.00	-17.84	Peak
3	487.840	13.45	20.00	33.45	46.00	-12.55	Peak
4	667.290	11.92	22.66	34.58	46.00	-11.42	Peak
5	832.190	13.05	24.95	38.00	46.00	-8.00	Peak
6	938.890	13.04	26.43	39.47	46.00	-6.53	Peak

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

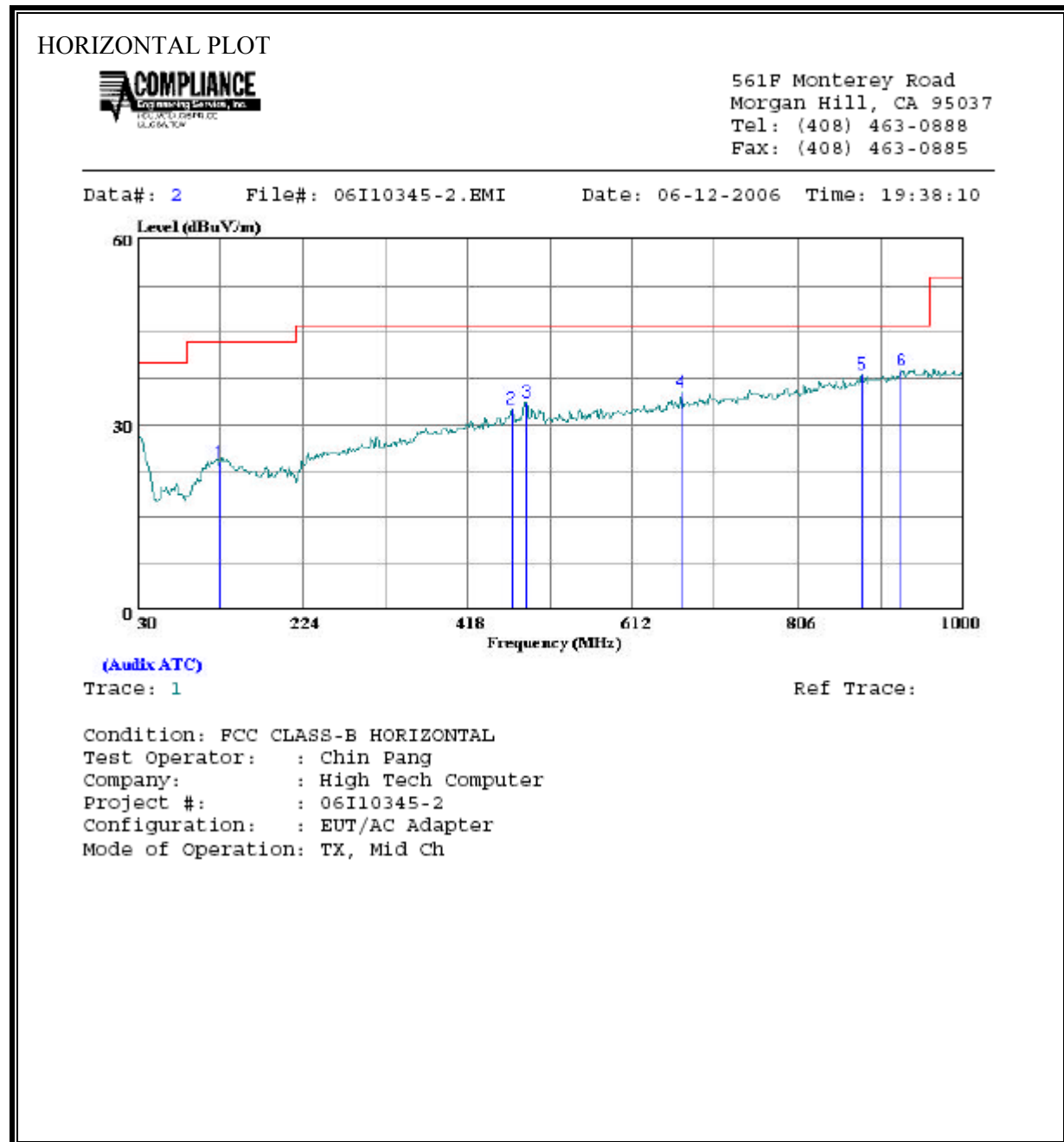


VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	124.090	8.97	15.23	24.20	43.50	-19.30	Peak
2	468.440	12.54	19.61	32.15	46.00	-13.85	Peak
3	487.840	12.76	20.00	32.76	46.00	-13.24	Peak
4	757.500	11.77	23.94	35.71	46.00	-10.29	Peak
5	934.040	13.21	26.33	39.54	46.00	-6.46	Peak
6	955.380	14.38	26.48	40.86	46.00	-5.14	Peak

**TX MODE AT WORST CASE WITH AC ADAPTER**

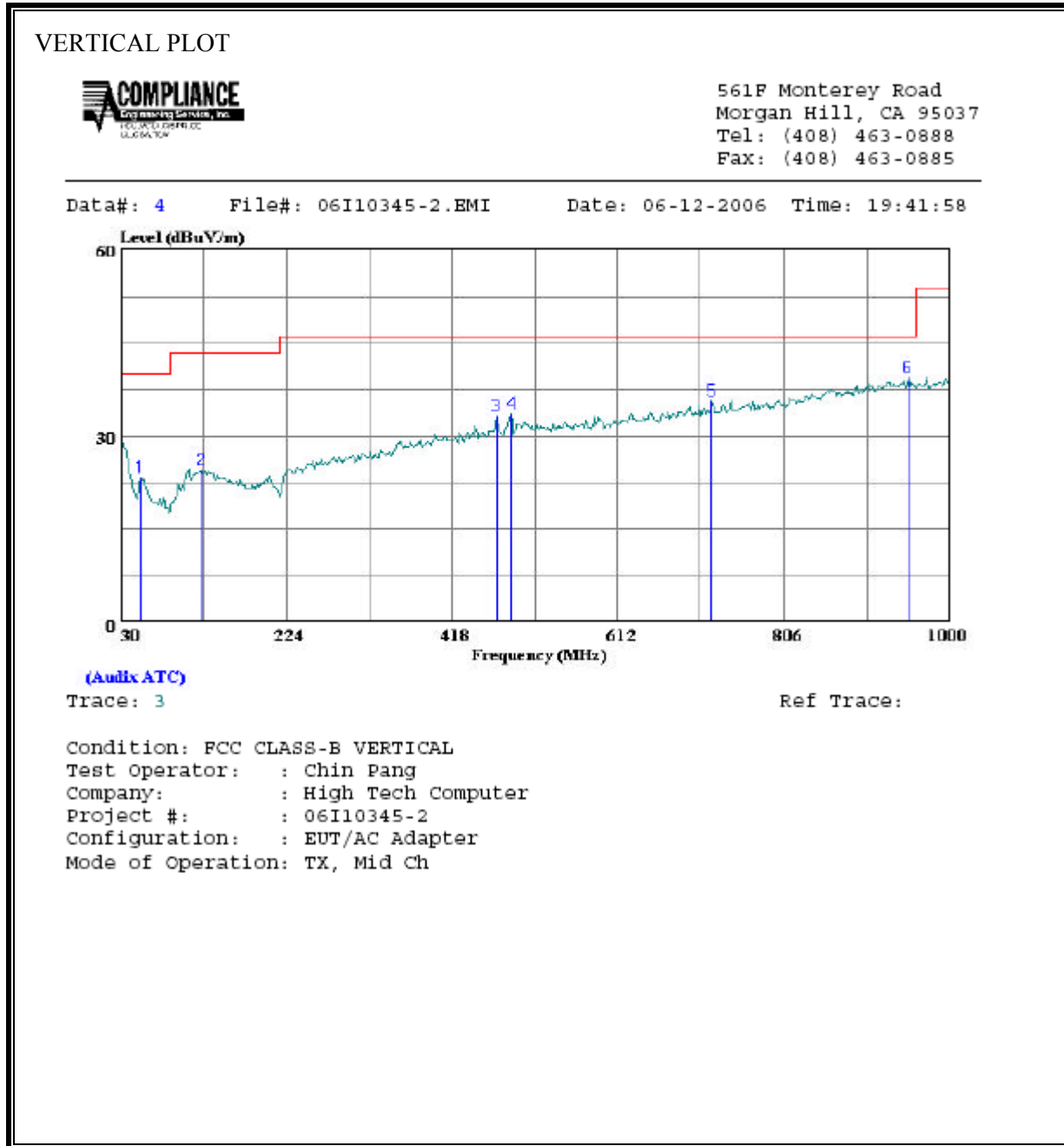
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	127.000	8.70	15.22	23.93	43.50	-19.57	Peak
2	470.380	13.05	19.65	32.70	46.00	-13.30	Peak
3	487.840	13.59	20.00	33.59	46.00	-12.41	Peak
4	669.230	12.64	22.65	35.29	46.00	-10.71	Peak
5	880.690	12.49	25.71	38.20	46.00	-7.80	Peak
6	926.280	12.56	26.23	38.79	46.00	-7.21	Peak

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



VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	53.280	14.32	8.94	23.26	40.00	-16.74	Peak
2	124.090	9.34	15.23	24.57	43.50	-18.93	Peak
3	470.380	13.54	19.65	33.19	46.00	-12.81	Peak
4	487.840	13.63	20.00	33.63	46.00	-12.37	Peak
5	722.580	12.13	23.50	35.63	46.00	-10.37	Peak
6	950.530	13.03	26.48	39.51	46.00	-6.49	Peak

**LINKING MODE VIA USB CABLE WITH LAPTOP AT MINIMUM CONFIGURATION**

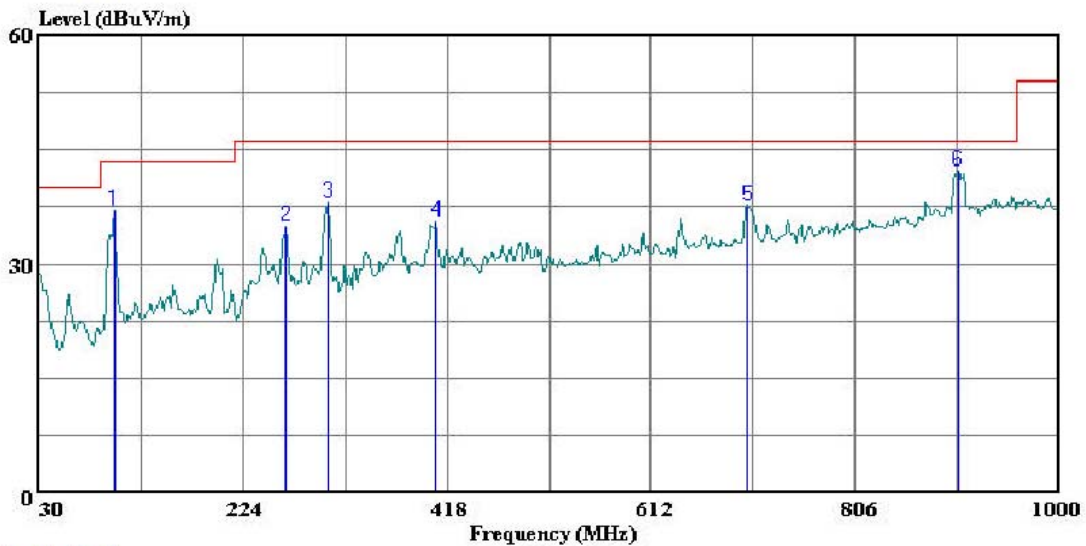
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**

HORIZONTAL PLOT



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

Data#: 20 File#: 06I10345-2.EMI Date: 06-16-2006 Time: 09:18:10



(Auxiliary)

Trace: 19

Ref Trace:

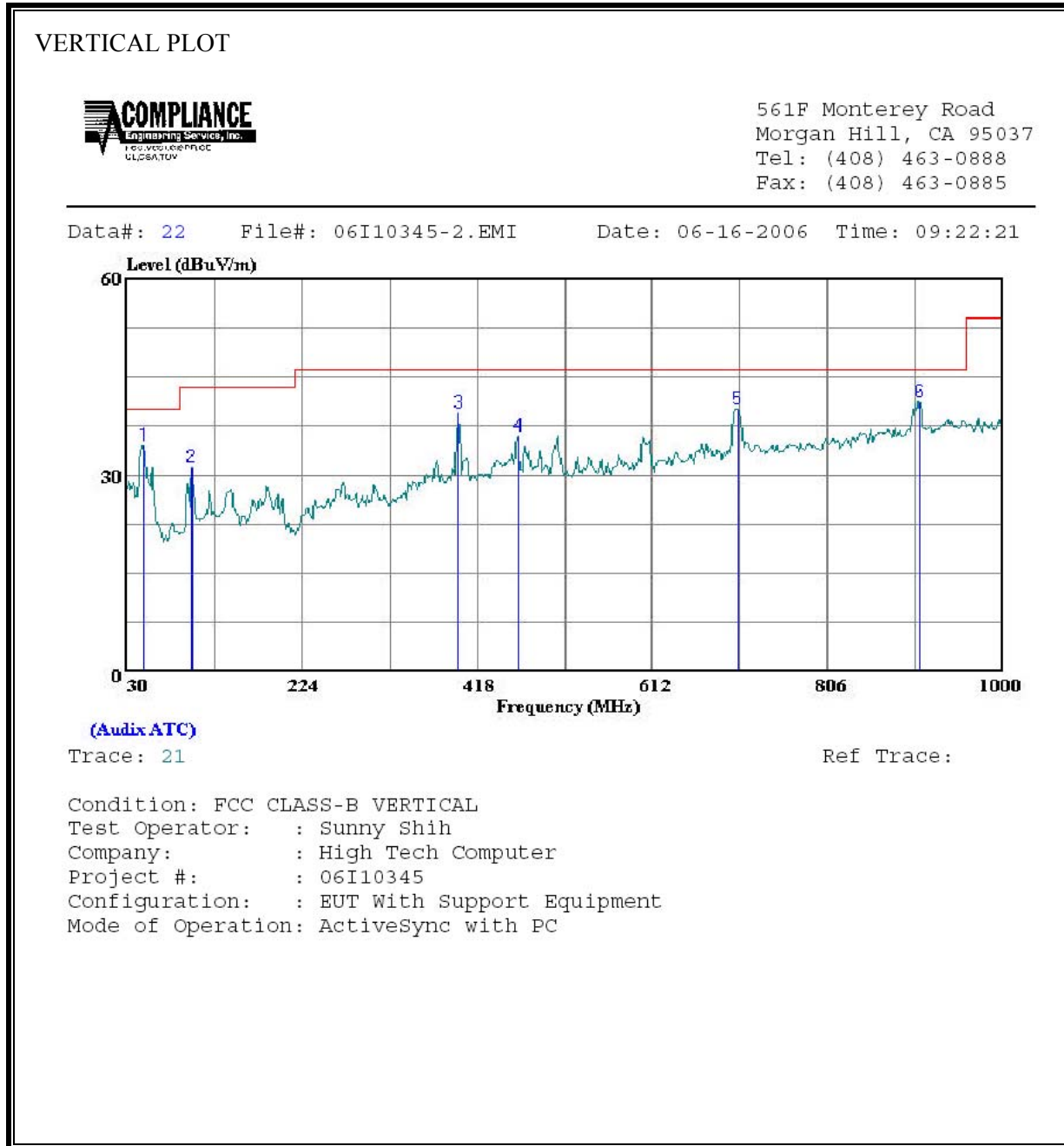
Condition: FCC CLASS-B HORIZONTAL  
Test Operator: : Sunny Shih  
Company: : High Tech Computer  
Project #: : 06I10345  
Configuration: : EUT With Support Equipment  
Mode of Operation: ActiveSync with PC



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	101.780	25.15	11.77	36.92	43.50	-6.58	Peak
2	264.740	20.45	14.39	34.84	46.00	-11.16	Peak
3	305.480	22.20	15.80	38.00	46.00	-8.00	Peak
4	407.330	17.39	18.21	35.60	46.00	-10.40	Peak
5	704.150	14.40	23.14	37.54	46.00	-8.46	Peak
6	903.970	16.17	25.97	42.14	46.00	-3.86	Peak

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



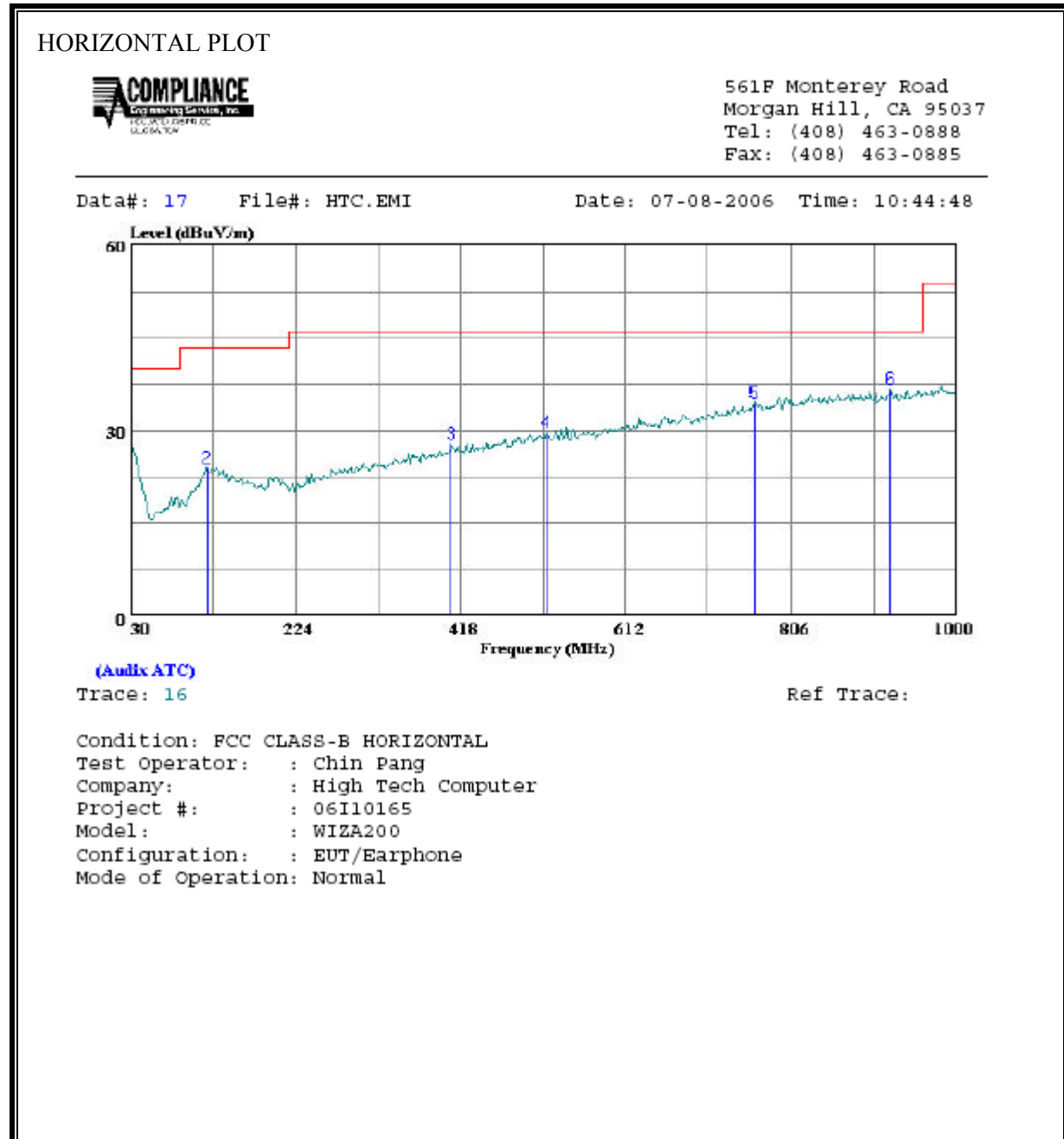
VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	48.430	24.18	10.29	34.47	40.00	-5.53	Peak
2	101.780	19.33	11.77	31.10	43.50	-12.40	Peak
3	397.630	21.39	17.99	39.38	46.00	-6.62	Peak
4	463.590	16.50	19.50	36.00	46.00	-10.00	Peak
5	706.090	16.84	23.17	40.01	46.00	-5.99	Peak
6	907.850	15.20	26.00	41.20	46.00	-4.80	Peak

### 8.2.3.2 EUT WITH JOG BAR

#### TX MODE AT WORST CASE WITH EAR PHONE

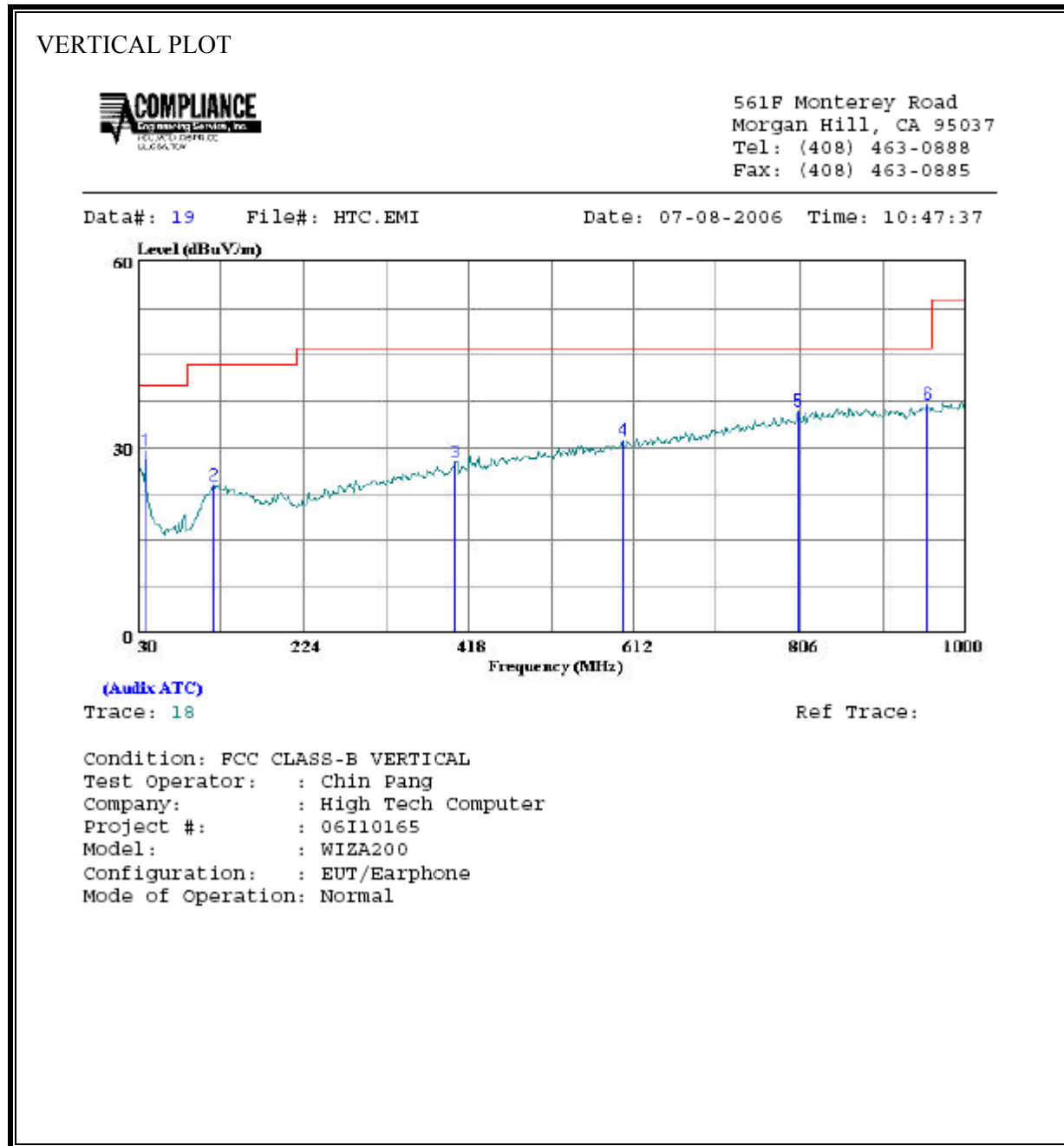
#### SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	31.940	7.56	19.94	27.50	40.00	-12.50	Peak
2	120.210	8.69	15.13	23.81	43.50	-19.69	Peak
3	407.330	9.52	18.21	27.73	46.00	-18.27	Peak
4	518.880	9.07	20.54	29.61	46.00	-16.39	Peak
5	762.350	10.53	24.04	34.57	46.00	-11.43	Peak
6	921.430	10.59	26.12	36.71	46.00	-9.29	Peak

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



VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	38.730	13.47	16.12	29.59	40.00	-10.41	Peak
2	119.240	8.76	15.05	23.81	43.50	-19.69	Peak
3	402.480	9.51	18.11	27.62	46.00	-18.38	Peak
4	599.390	9.67	21.48	31.15	46.00	-14.85	Peak
5	803.090	11.31	24.59	35.90	46.00	-10.10	Peak
6	955.380	10.39	26.48	36.87	46.00	-9.13	Peak

**TX MODE AT WORST CASE WITH AC ADAPTER**

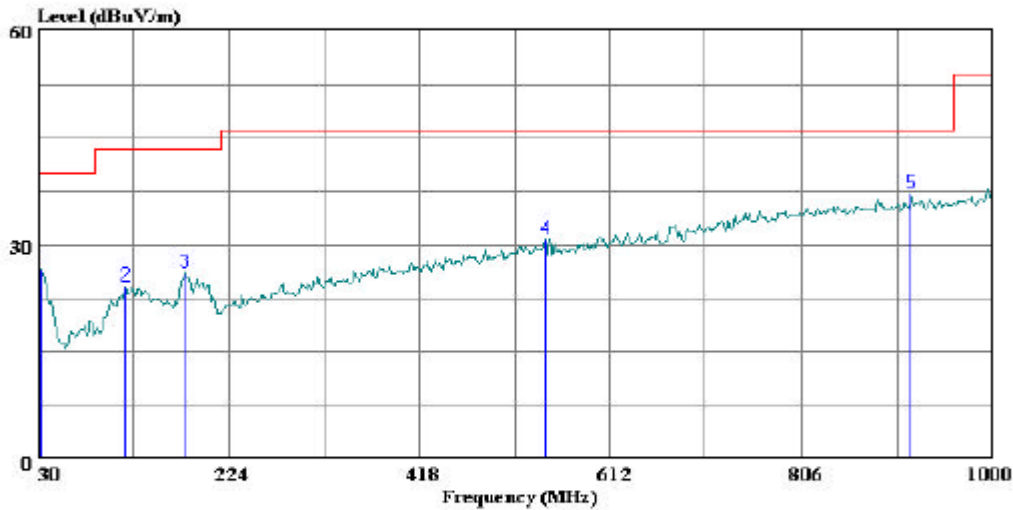
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**

HORIZONTAL PLOT



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

Data#: 15 File#: HTC.EMI Date: 07-08-2006 Time: 10:38:28



(Auxiliary ATC)

Trace: 14

Ref Trace:

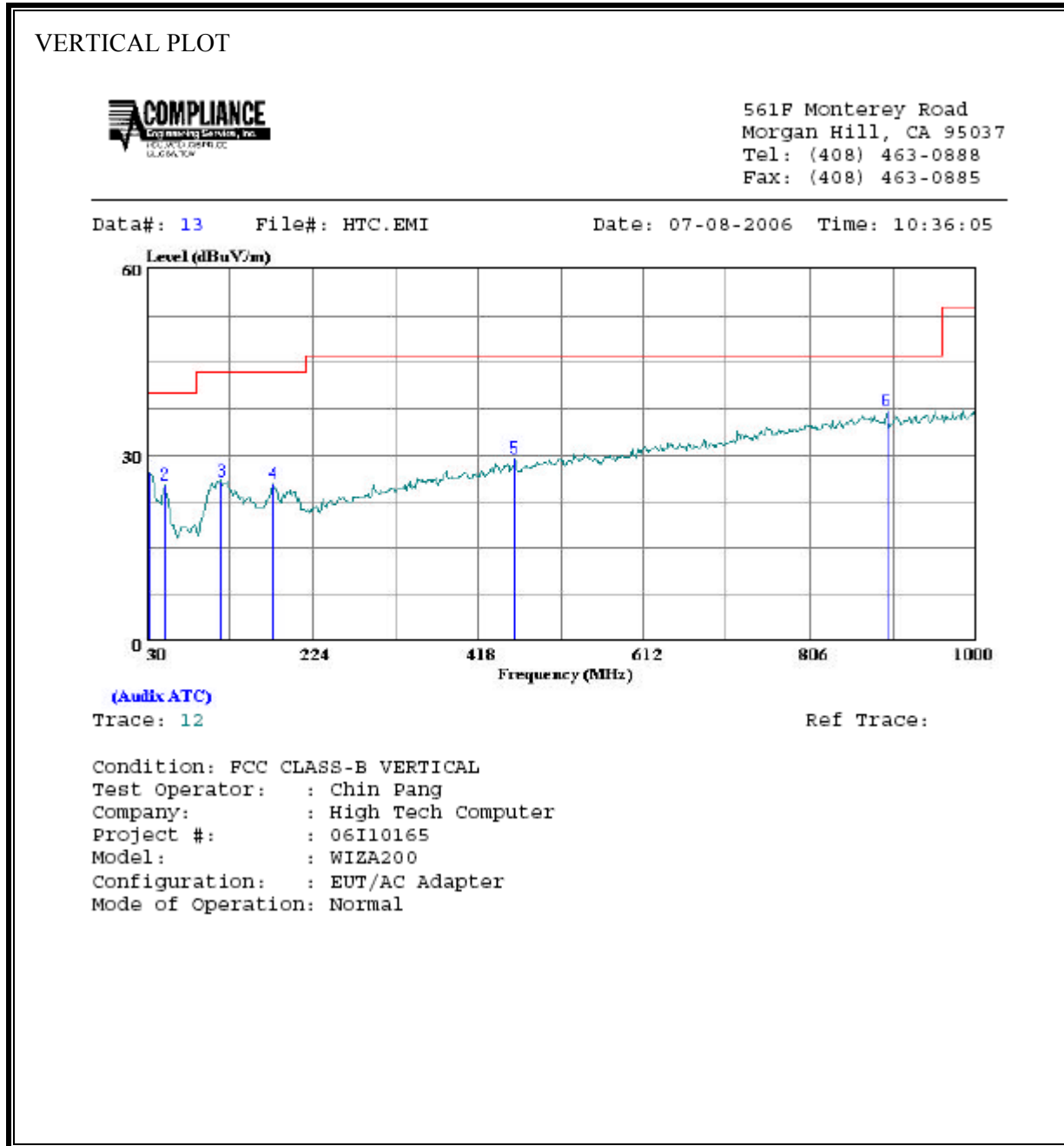
Condition: FCC CLASS-B HORIZONTAL  
Test Operator: : Chin Pang  
Company: : High Tech Computer  
Project #: : 06I10165  
Model: : WIZA200  
Configuration: : EUT/AC Adapter  
Mode of Operation: Normal



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	32.910	6.66	19.94	26.60	40.00	-13.40	Peak
2	119.240	8.99	15.05	24.04	43.50	-19.46	Peak
3	180.350	12.89	13.00	25.89	43.50	-17.61	Peak
4	546.040	10.03	20.80	30.83	46.00	-15.17	Peak
5	916.580	11.18	26.04	37.22	46.00	-8.78	Peak

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

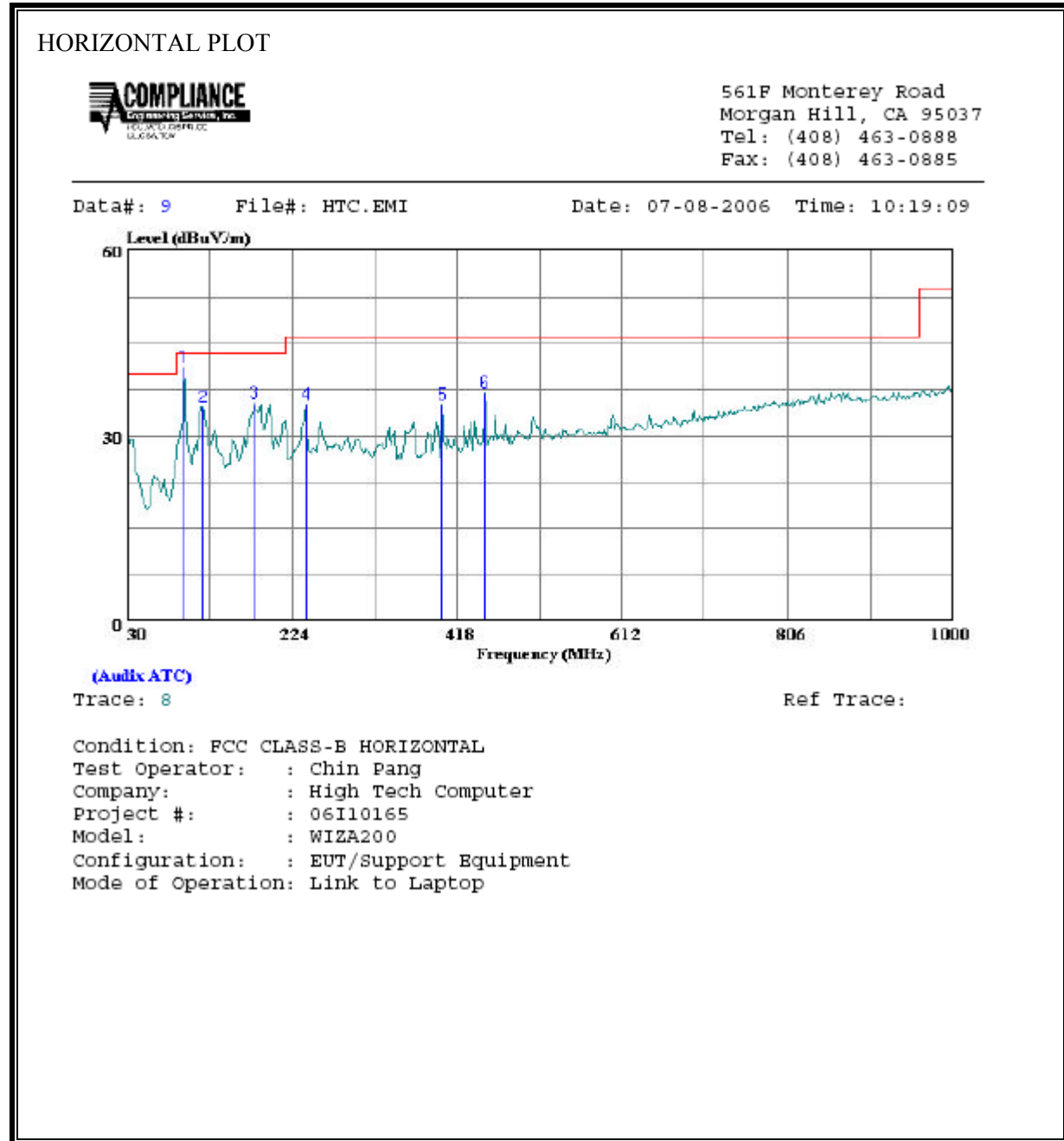


VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	32.910	7.32	19.94	27.25	40.00	-12.75	Peak
2	51.340	16.15	9.05	25.20	40.00	-14.80	Peak
3	117.300	10.82	14.84	25.66	43.50	-17.84	Peak
4	177.440	12.15	13.11	25.26	43.50	-18.24	Peak
5	460.680	10.06	19.44	29.50	46.00	-16.50	Peak
6	895.240	11.32	25.86	37.18	46.00	-8.82	Peak

**LINKING MODE VIA USB CABLE WITH LAPTOP AT MINIMUM CONFIGURATION**

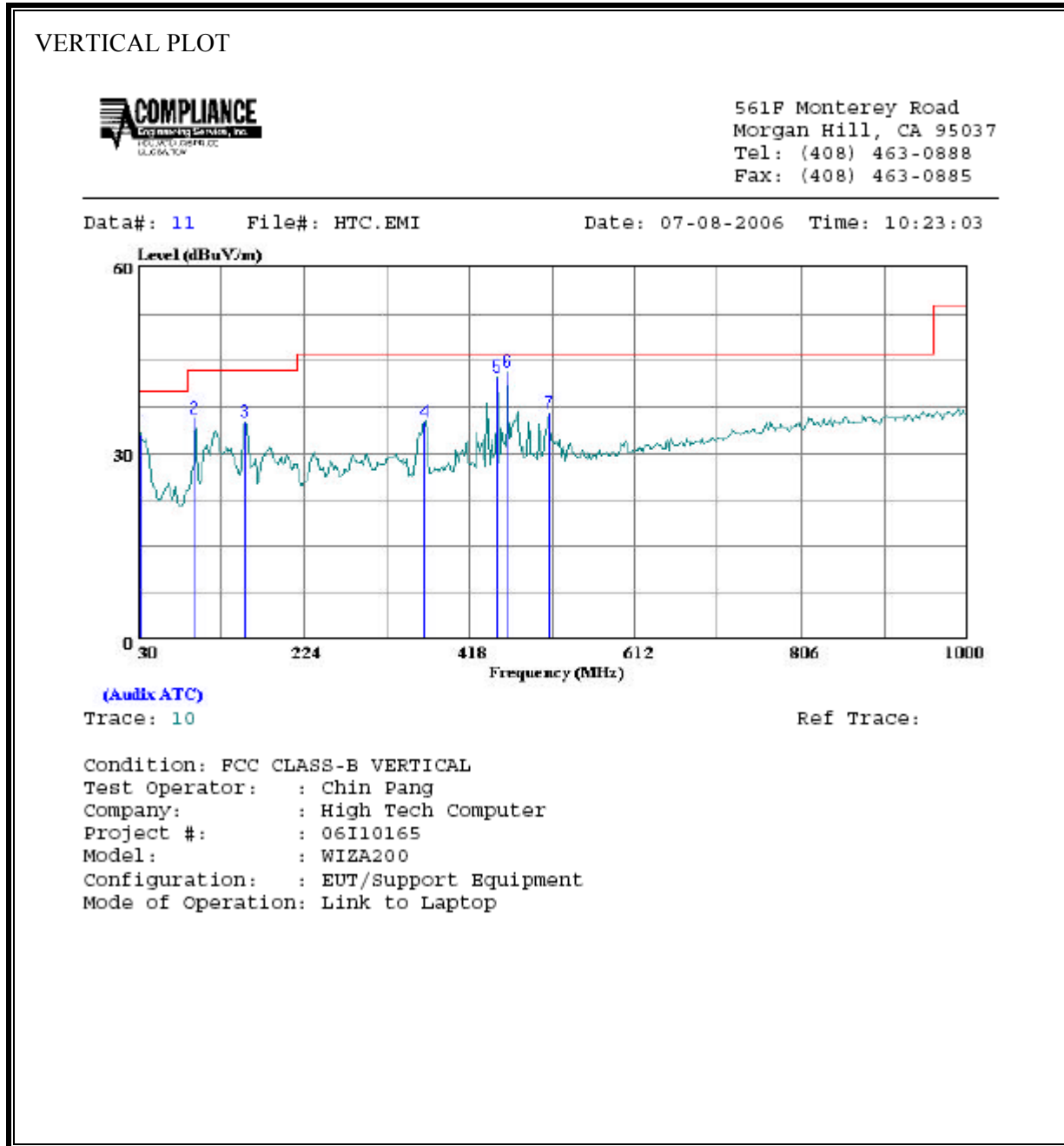
**SPURIOUS EMISSIONS 30 TO 1000 MHz (WORST-CASE CONFIGURATION, HORIZONTAL)**



HORIZONTAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	96.930	30.59	10.58	41.17	43.50	-2.33	Peak
2	119.240	19.70	15.05	34.75	43.50	-8.75	Peak
3	179.380	22.29	13.03	35.32	43.50	-8.18	Peak
4	240.490	21.50	13.54	35.04	46.00	-10.96	Peak
5	400.540	17.05	18.04	35.09	46.00	-10.91	Peak
6	450.980	17.87	19.20	37.07	46.00	-8.93	Peak

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



VERTICAL DATA

	Freq	Read Level	Factor	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dBuV/m	dBuV/m	dB	
1	32.910	13.16	19.94	33.09	40.00	-6.91	Peak
2	96.930	25.14	10.58	35.72	43.50	-7.78	Peak
3	155.130	21.19	13.95	35.14	43.50	-8.36	Peak
4	365.620	17.85	17.28	35.12	46.00	-10.88	Peak
5	450.980	23.15	19.20	42.35	46.00	-3.65	Peak
6	463.590	23.62	19.50	43.12	46.00	-2.88	Peak
7	512.090	16.11	20.42	36.53	46.00	-9.47	Peak

### 8.3. 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  $\mu$ 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 – WORST CASE DATA FOR TX MODE – EUT WITHOUT JOG BAR**

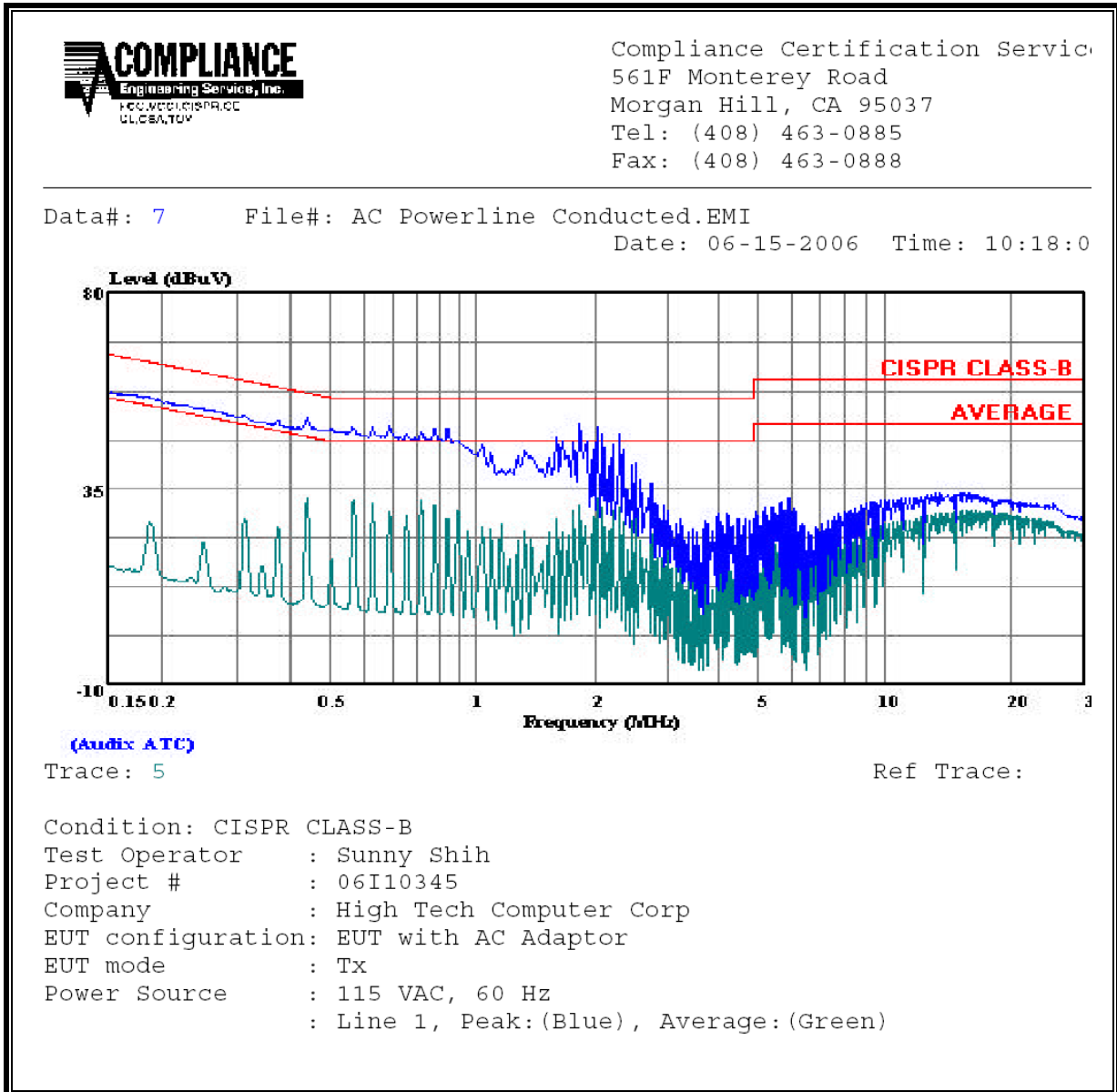
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	FCC B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.44	51.52	--	32.82	0.00	57.06	47.06	-5.54	-14.24	L1
0.69	49.46	--	32.54	0.00	56.00	46.00	-6.54	-13.46	L1
1.93	50.18	--	32.68	0.00	56.00	46.00	-5.82	-13.32	L1
0.44	49.98	--	31.20	0.00	57.16	47.16	-7.18	-15.96	L2
0.64	48.16	--	29.99	0.00	56.00	46.00	-7.84	-16.01	L2
1.93	49.16	--	29.20	0.00	56.00	46.00	-6.84	-16.80	L2
6 Worst Data									

**6 WORST EMISSIONS – WORST CASE DATA FOR TX MODE – EUT WITH JOG BAR**

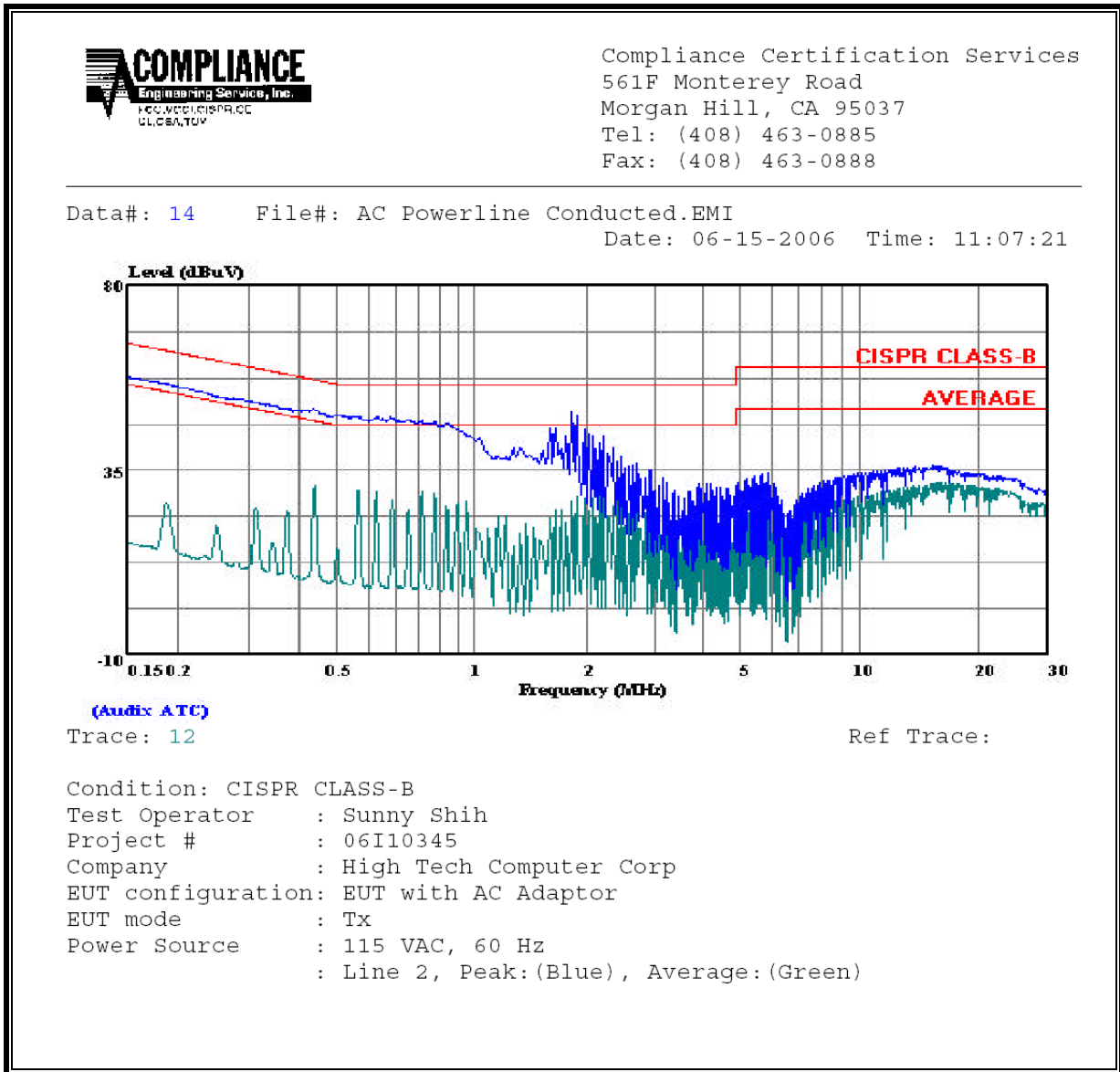
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	EN B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.17	53.70	--	35.89	0.00	65.16	55.16	-11.46	-19.27	L1
0.69	44.84	--	35.22	0.00	56.00	46.00	-11.16	-10.78	L1
2.04	42.98	--	31.83	0.00	56.00	46.00	-13.02	-14.17	L1
0.19	52.90	--	32.04	0.00	64.26	54.26	-11.36	-22.22	L2
1.84	46.94	--	27.92	0.00	56.00	46.00	-9.06	-18.08	L2
18.14	33.58	--	30.63	0.00	60.00	50.00	-26.42	-19.37	L2
6 Worst Data EUT/AC Adapter									

**EUT WITHOUT JOG BAR**

**LINE 1 RESULTS**

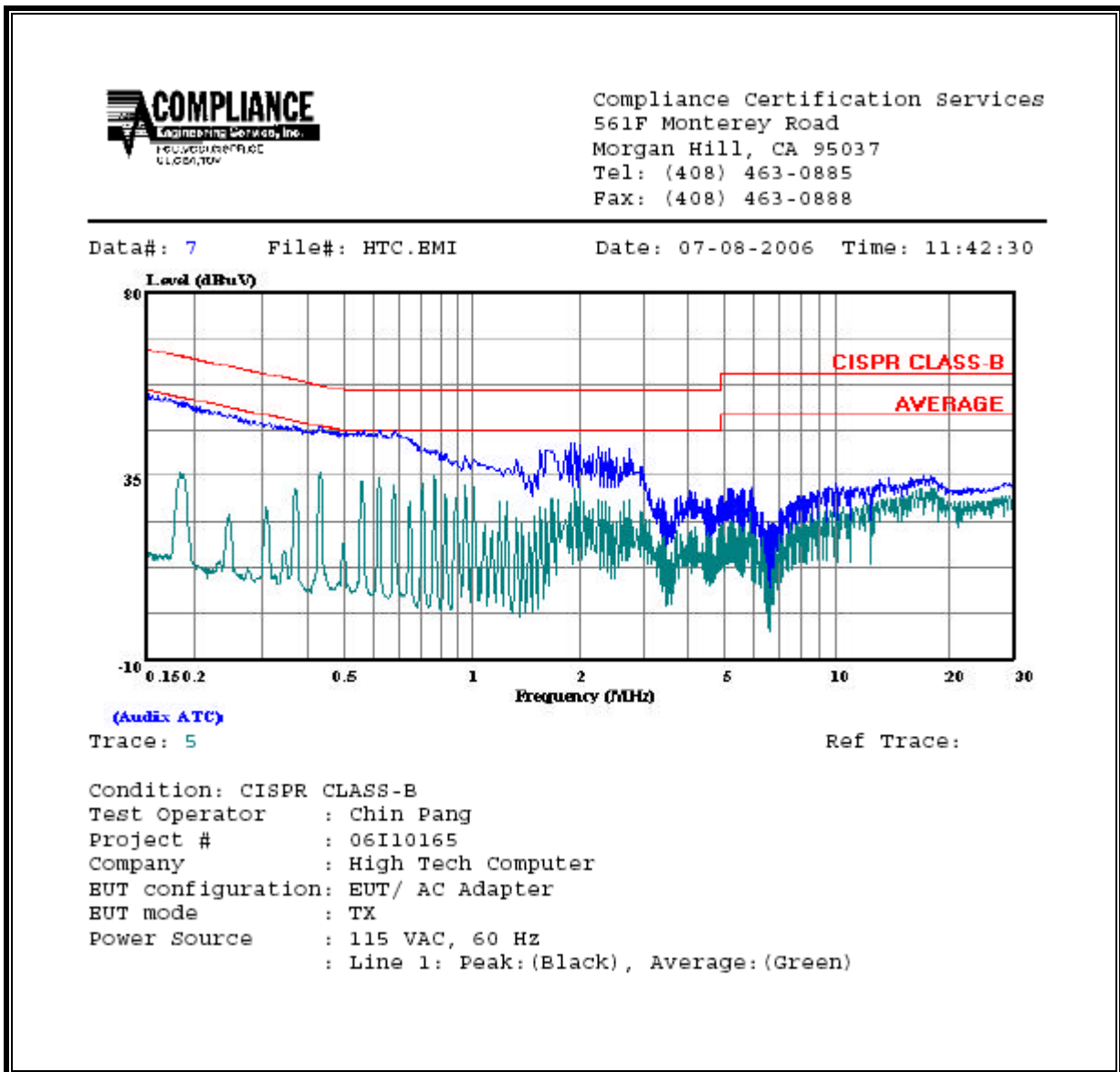


**LINE 2 RESULTS**

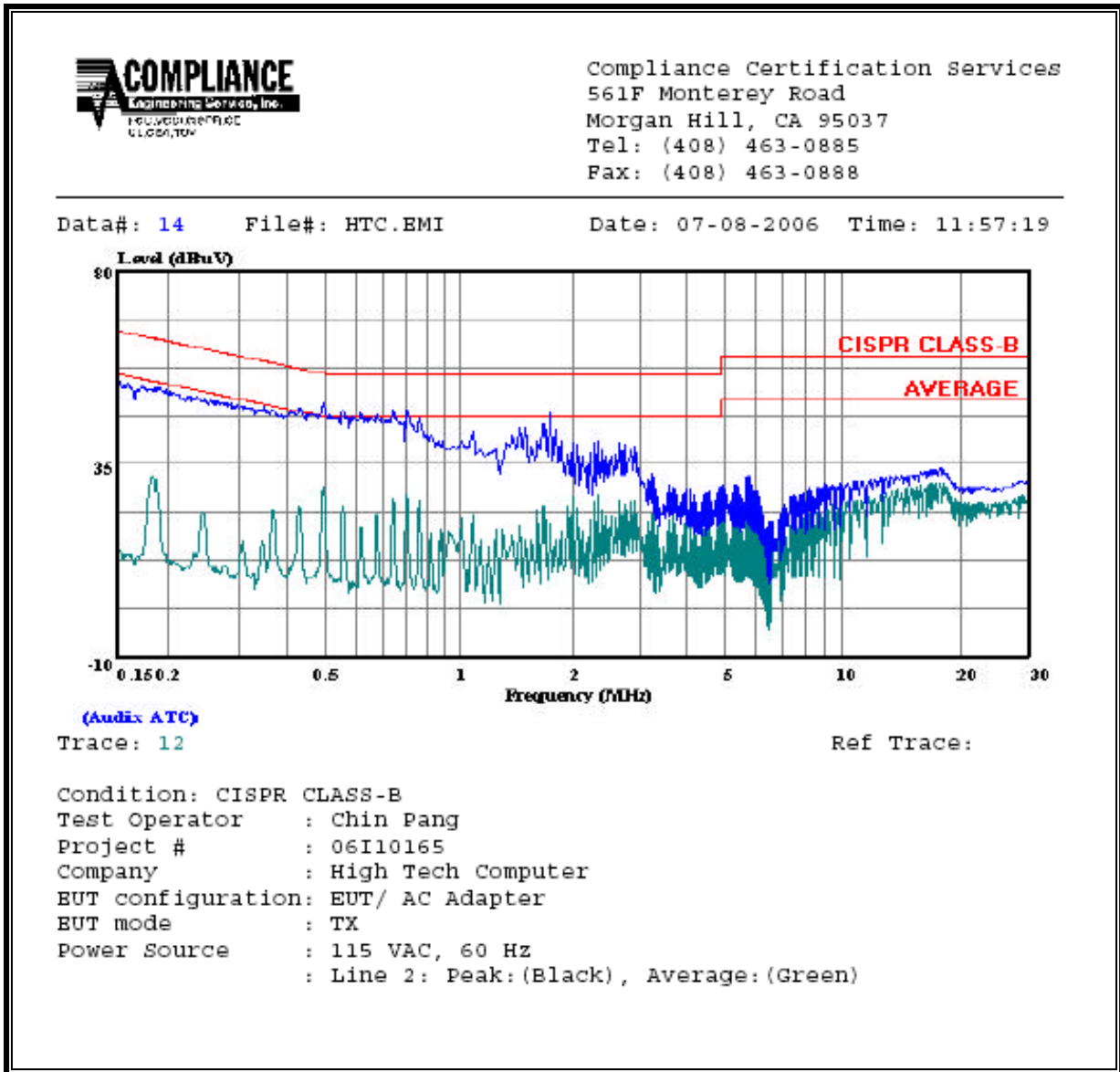


**EUT WITH JOG BAR**

**LINE 1 RESULTS**



**LINE 2 RESULTS**



**6 WORST EMISSIONS – WORST CASE DATA FOR ACTIVESYNC MODE – EUT WITHOUT JOG BAR**

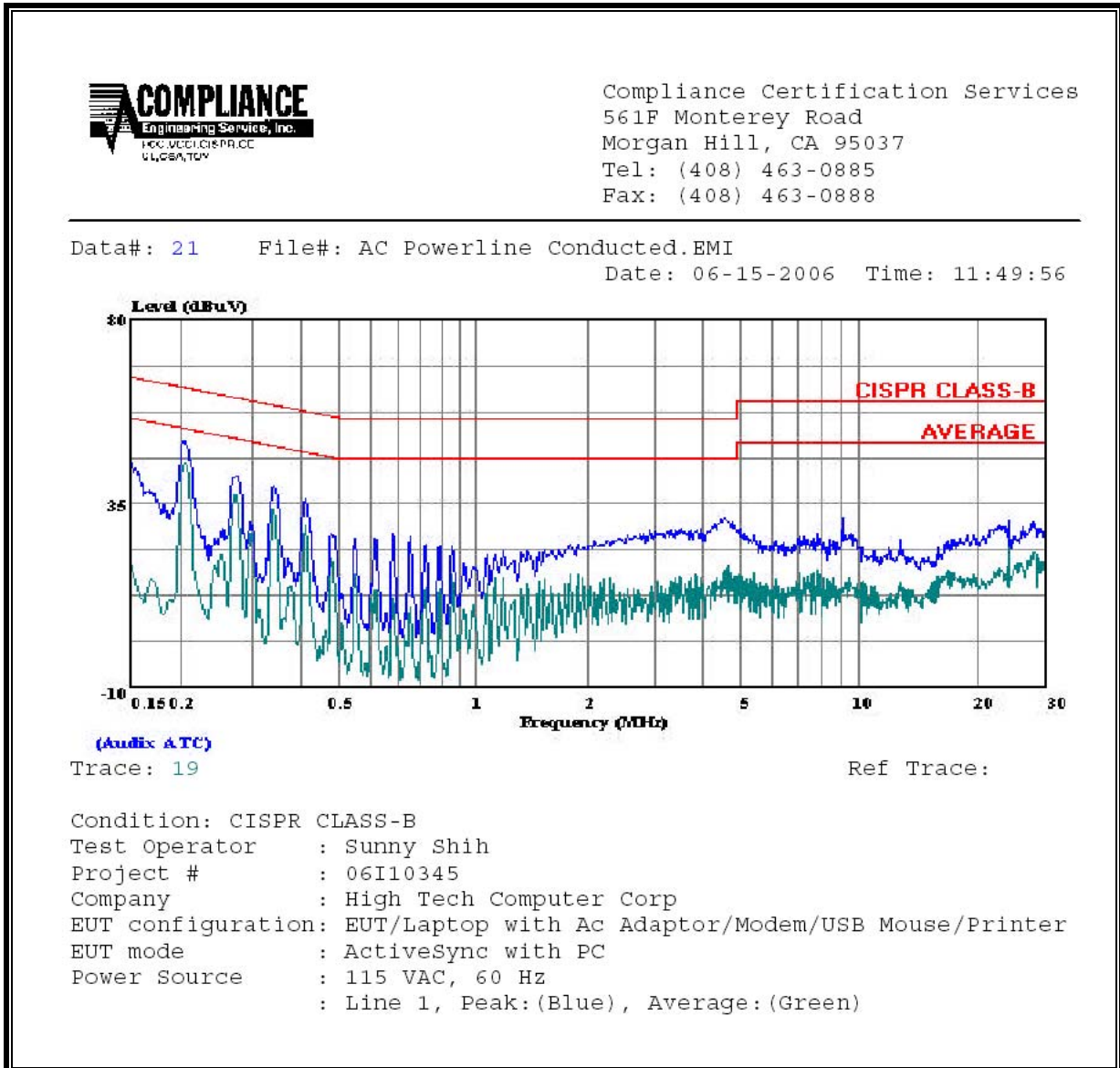
CONDUCTED EMISSIONS DATA (115VAC 60Hz)									
Freq. (MHz)	Reading			Class (dB)	Limit QP	FCC B AV	Margin		Remark L1 / L2
	PK (dBuV)	QP (dBuV)	AV (dBuV)				QP (dB)	AV (dB)	
0.20	50.40	--	45.00	0.00	63.49	53.49	-13.09	-8.49	L1
4.65	31.48	--	19.81	0.00	56.00	46.00	-24.52	-26.19	L1
9.20	31.54	--	24.72	0.00	60.00	50.00	-28.46	-25.28	L1
0.20	49.70	--	44.79	0.00	63.49	53.49	-13.79	-8.70	L2
0.41	39.56	--	30.82	0.00	57.65	47.65	-18.09	-16.83	L2
4.45	30.64	--	19.93	0.00	56.00	46.00	-25.36	-26.07	L2
6 Worst Data									

**6 WORST EMISSIONS – WORST CASE DATA FOR ACTIVESYNC MODE – EUT WITH JOG BAR**

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)	
0.23	54.47	--	45.01	0.00	62.56	52.56	-8.09	-7.55	L1
0.33	44.88	--	36.26	0.00	59.35	49.35	-14.47	-13.09	L1
24.79	41.32	--	32.44	0.00	60.00	50.00	-18.68	-17.56	L1
0.23	52.04	--	41.59	0.00	62.60	52.60	-10.56	-11.01	L2
0.34	43.32	--	34.41	0.00	59.28	49.28	-15.96	-14.87	L2
19.95	38.84	--	31.32	0.00	60.00	50.00	-21.16	-18.68	L2
6 Worst Data									
EUT with Support Equipment									

**EUT WITHOUT JOG BAR**

**LINE 1 RESULTS**

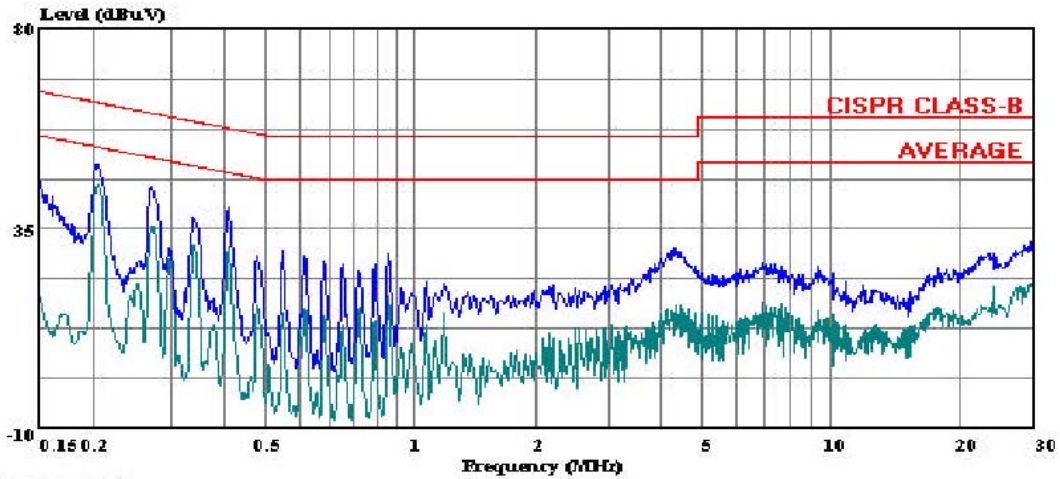


**LINE 2 RESULTS**



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

Data#: 28 File#: AC Powerline Conducted.EMI Date: 06-15-2006 Time: 12:15:02



(Auxiliary ATC)

Trace: 26

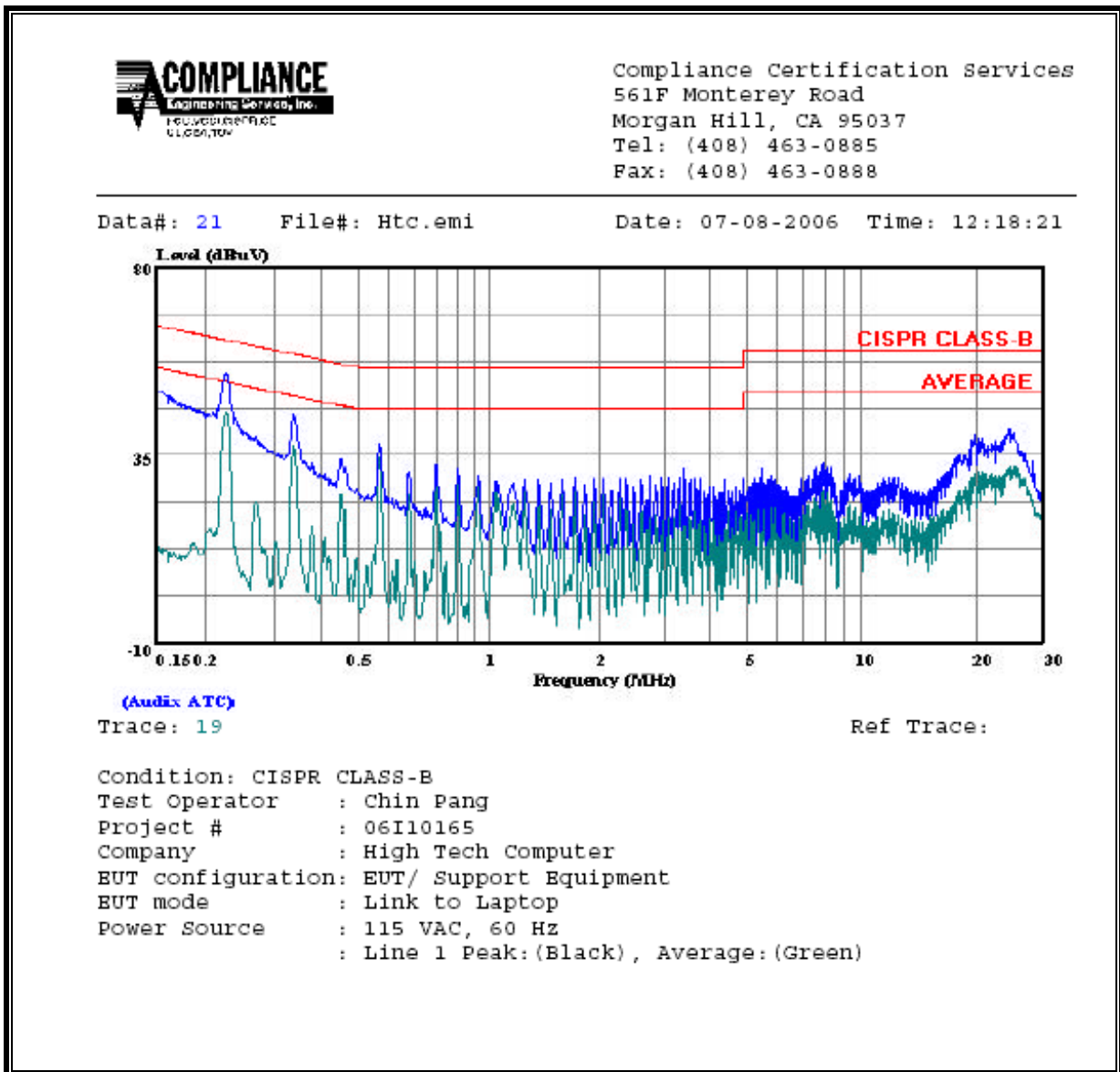
Ref Trace:

Condition: CISPR CLASS-B  
Test Operator : Sunny Shih  
Project # : 06I10345  
Company : High Tech Computer Corp  
EUT configuration: EUT/Laptop PC/Modem/USB Mouse/Printer  
EUT mode : ActiveSync with PC  
Power Source : 115 VAC, 60 Hz  
: Line 2, Peak:(Blue), Average:(Green)



**EUT WITH JOG BAR**

**LINE 1 RESULTS**



**LINE 2 RESULTS**

