



# SPORTON International Inc.

No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, TaoYuan Hsien, Taiwan, R.O.C.  
Ph: 886-3-327-3456 / FAX: 886-3-327-0973 / www.sporton.com.tw

## FCC RADIO TEST REPORT

Applicant's company	<b>Trapeze Networks, Inc.</b>
Applicant Address	5753 W. Las Positas Blvd, Pleasanton, CA 94588 U.S.A.
FCC ID	<b>QZE302</b>
Manufacturer's company	<b>Accton Technology Corporation</b>
Manufacturer Address	No. 1 Creation Rd., III, Science-based Industrial Park, Hsinchu 300, Taiwan, R.O.C.

Product Name	Mobility Point
Brand Name	Trapeze
Model Name	MP-622
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	Feb. 8, 2006
Final Test Date	Jan. 06, 2009
Submission Type	Original Equipment



### Statement

**Test result included is only for the 802.11b/g part and 802.11a (5725 ~ 5850MHz) of the product.**

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.



## Table of Contents

<b>1. CERTIFICATE OF COMPLIANCE</b> .....	<b>1</b>
<b>2. SUMMARY OF THE TEST RESULT</b> .....	<b>2</b>
<b>3. GENERAL INFORMATION</b> .....	<b>3</b>
3.1. Product Details .....	3
3.2. Accessories .....	3
3.3. Table for Filed Antenna .....	4
3.4. Table for Carrier Frequencies .....	5
3.5. Table for Test Modes .....	6
3.6. Table for Testing Locations.....	6
3.7. Table for Supporting Units .....	6
3.8. Table for Parameters of Test Software Setting .....	7
3.9. Test Configurations.....	8
<b>4. TEST RESULT</b> .....	<b>15</b>
4.1. AC Power Line Conducted Emissions Measurement .....	15
4.2. Maximum Conducted Output Power Measurement.....	19
4.3. Power Spectral Density Measurement.....	22
4.4. 6dB Spectrum Bandwidth Measurement .....	36
4.5. Radiated Emissions Measurement.....	51
4.6. Band Edge Emissions Measurement.....	99
4.7. Antenna Requirements .....	108
<b>5. LIST OF MEASURING EQUIPMENTS</b> .....	<b>109</b>
<b>6. TEST LOCATION</b> .....	<b>111</b>
<b>7. TAF CERTIFICATE OF ACCREDITATION</b> .....	<b>112</b>
<b>APPENDIX A. PHOTOGRAPHS OF EUT</b> .....	<b>A1 ~ A23</b>
<b>APPENDIX B. TEST PHOTOS</b> .....	<b>B1 ~ B13</b>
<b>APPENDIX C. MAXIMUM PERMISSIBLE EXPOSURE</b> .....	<b>C1 ~C3</b>



## History of This Test Report

Original Issue Date: Jan. 14, 2009

Report No.: FR630910-02

- No additional attachment.
- Additional attachment were issued as following record:

Attachment No.	Issue Date	Description



## 1. CERTIFICATE OF COMPLIANCE

**Product Name** : Mobility Point  
**Brand Name** : Trapeze  
**Model Name** : MP-622  
**Applicant** : Trapeze Networks, Inc.  
**Test Rule Part(s)** : 47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Feb. 8, 2006 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

*Leo Huang 2008.1.14*

Leo Huang / Manager

SPORTON INTERNATIONAL INC.

## 2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	Rule Section	Description of Test	Result	Under Limit
4.1	15.207	AC Power Line Conducted Emissions	Complies	16.03 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	0.14 dB
4.3	15.247(e)	Power Spectral Density	Complies	7.80 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	0.30 dB
4.6	15.247(d)	Band Edge Emissions	Complies	0.16 dB
4.7	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Conducted Output Power	±0.8dB	Confidence levels of 95%
Power Spectral Density	±0.5dB	Confidence levels of 95%
6dB Spectrum Bandwidth	±8.5×10 <sup>-8</sup>	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7°C	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

### 3. GENERAL INFORMATION

#### 3.1. Product Details

Items	Description
Product Type	WLAN(outdoor)
Power Type	POE
Interface Type	POE / Console / Antenna
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54/108)
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	11b/g: 11 ; 11a: 5
Channel Band Width (99%)	11b: 15.68 MHz ; 11g: 16.56 MHz ; 11a: 16.56MHz
Conducted Output Power	11b: 20.23 dBm ; 11g: 18.33 dBm ; 11a: 18.99 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

#### 3.2. Accessories

N/A

### 3.3. Table for Filed Antenna

#### For 2.4GHz Band

Ant.	Model Name	Frequency Band	Antenna Type	Connector	Gain (dBi)
1	ACC04-05427A	2.4~2.5GHz	Omni-Directional Ant.	N Plug	8.0
2	ACC04-053830	2.4~2.5GHz	0 Degree Sector Ant.	N Jack	10.0

#### For 5GHz Band

Ant.	Model Name	Frequency Band	Antenna Type	Connector	Gain (dBi)
3	ACC04-090380	5.5~5.825GHz	High-Gain Omni Directional Ant.	N Plug	8.0
4	ACC04-200010	5.15~5.875GHz	Directional Sector Ant.	N Jack	13.5
5	ACC04-090250	4.9~5.875GHz	Directional Panel Ant.	N Jack	18.0

#### Collocate antenna cable length list for 2.4GHz antenna

Ant.	length	Attenuation at 2.4GHz
1	60m	14dB
2	84m	18dB

#### Collocate antenna cable length list for 5GHz antenna

Ant.	length	Attenuation at 5GHz
3	30m	12dB
4	1m	2dB
5	3m	3dB

### 3.4. Table for Carrier Frequencies

#### Frequency Allocation for 802.11b/g

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz		

#### Frequency Allocation for 802.11a

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz	149	5745 MHz	161	5805 MHz
	153	5765 MHz	165	5825 MHz
	157	5785 MHz		



### 3.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	Normal Link	Auto	-	-
Max. Peak Conducted Output Power	11b/CCK	1 Mbps	1/6/11	NA
Power Spectral Density	11g/BPSK	6 Mbps	1/6/11	NA
6dB Spectrum Bandwidth	11a/BPSK	6 Mbps	149/157/165	NA
Radiated Emissions Below 1GHz	Normal Link	Auto	-	-
Radiated Emissions Above 1GHz	11b/CCK	1 Mbps	1/6/11	1/2
	11g/BPSK	6 Mbps	1/6/11	1/2
	11a/BPSK	6 Mbps	149/157/165	3/4/5
Band Edge Emissions	11b/CCK	1 Mbps	1/11	1/2
	11g/BPSK	6 Mbps	1/11	1/2
	11a/BPSK	6 Mbps	149/165	3/4/5

Test Mode:

For Conducted Emission test:

Due to Ant. 5 generated the worst test result, so it was recorded in this report.

For Radiated Emission test (30MHz~1GHz):

Due to Ant. 5 generated the worst test result, so it was recorded in this report.

### 3.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	101377	IC 4088	-
CO04-HY	Conduction	Hwa Ya	-	-	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

### 3.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1330	E2KWM3945ABG
Notebook	DELL	D505	E2K24GBRL
Mobility Exchange	TRAPEZE	MXR-2	DoC
POE	CINCON	TR60A-POE-L	DoC

### 3.8. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

#### Power Parameters of IEEE 802.11b/g Ant. 1

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	21	21.5	21
IEEE 802.11g	19.5	19	19

#### Power Parameters of IEEE 802.11b/g Ant. 2

Test Software Version	ART		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	21	21.5	21
IEEE 802.11g	19.5	19	19

#### Power Parameters of IEEE 802.11a Ant. 3

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	22	22	22

#### Power Parameters of IEEE 802.11a Ant. 4

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	16	16	16

#### Power Parameters of IEEE 802.11a Ant. 5

Test Software Version	ART		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	14.5	14	13.5

During the test, the following programs under WIN XP were executed:

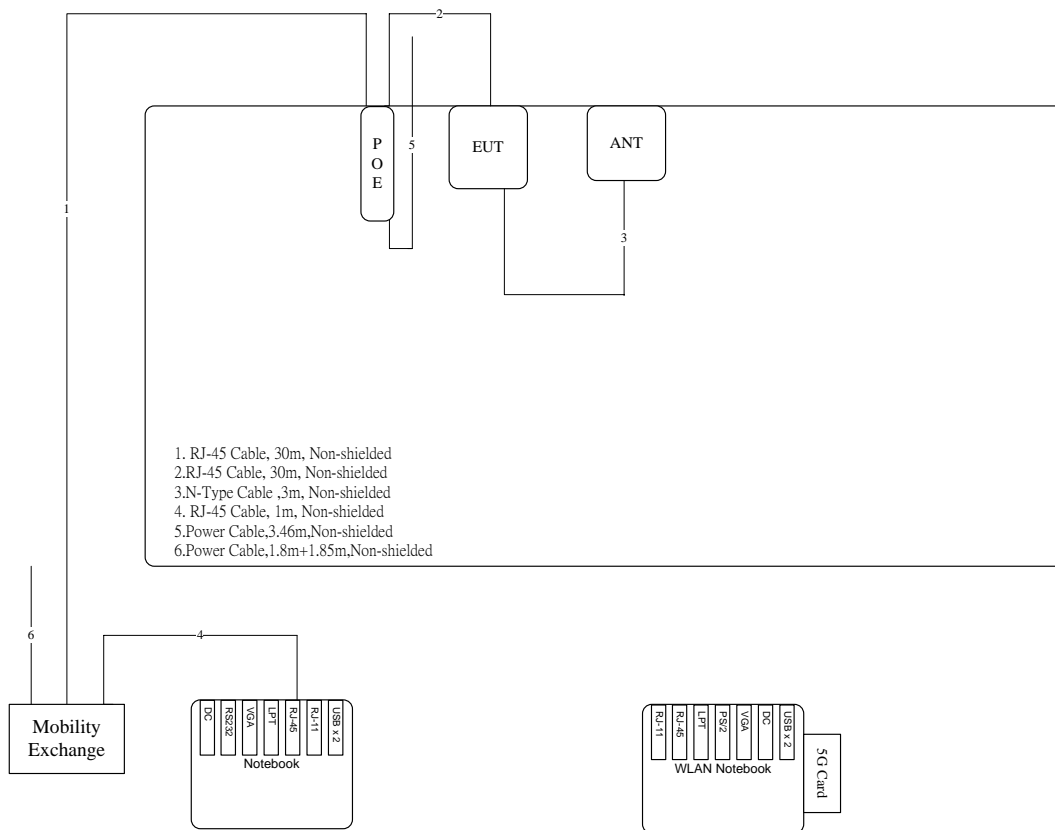
At the same time, " ART " was executed to control the EUT continuously transmit RF signal.

### 3.9. Test Configurations

#### 3.9.1. Radiation Emissions Test Configuration

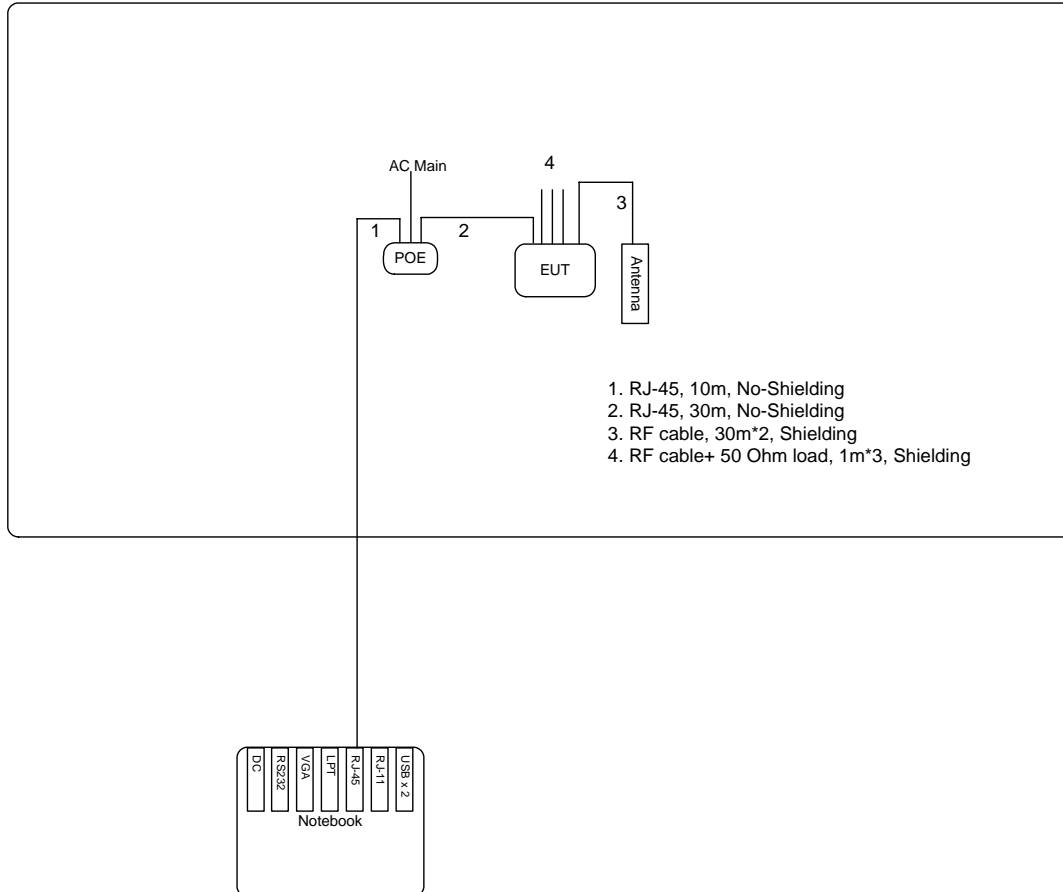
Test Configuration: 9KHz~1GHz

Ant. 5

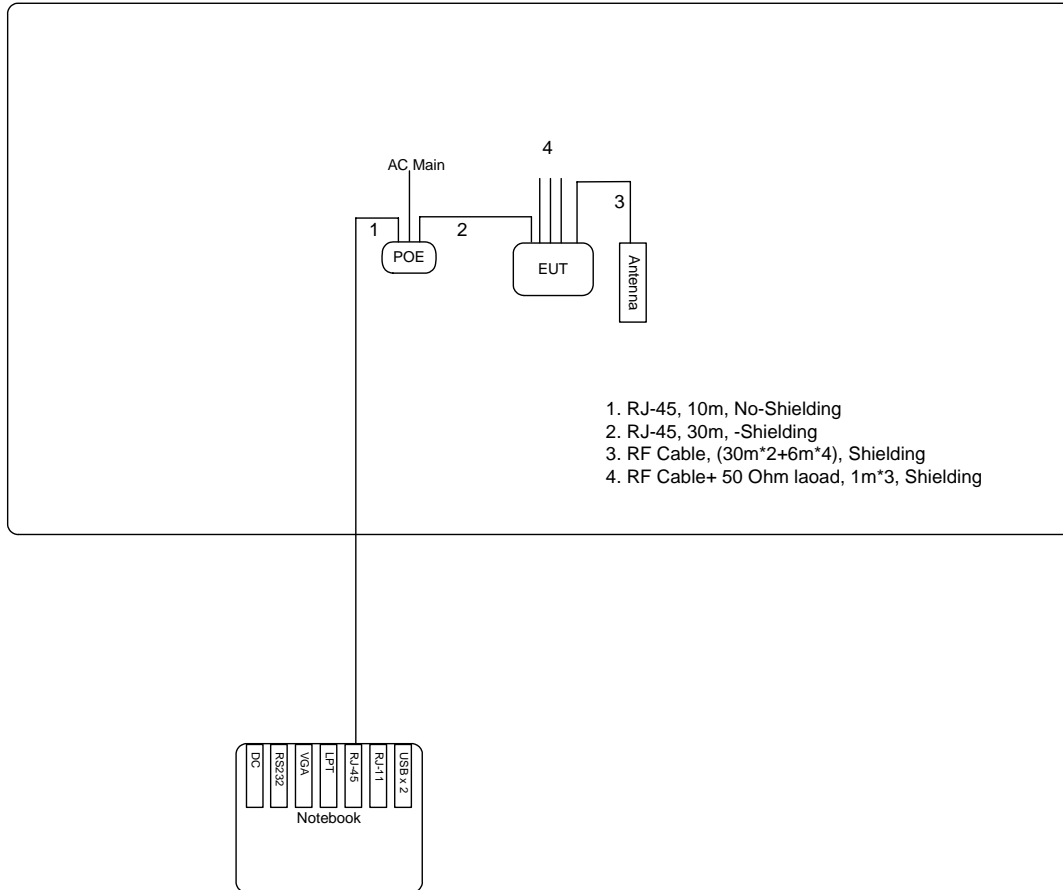


Test Configuration: above 1GHz

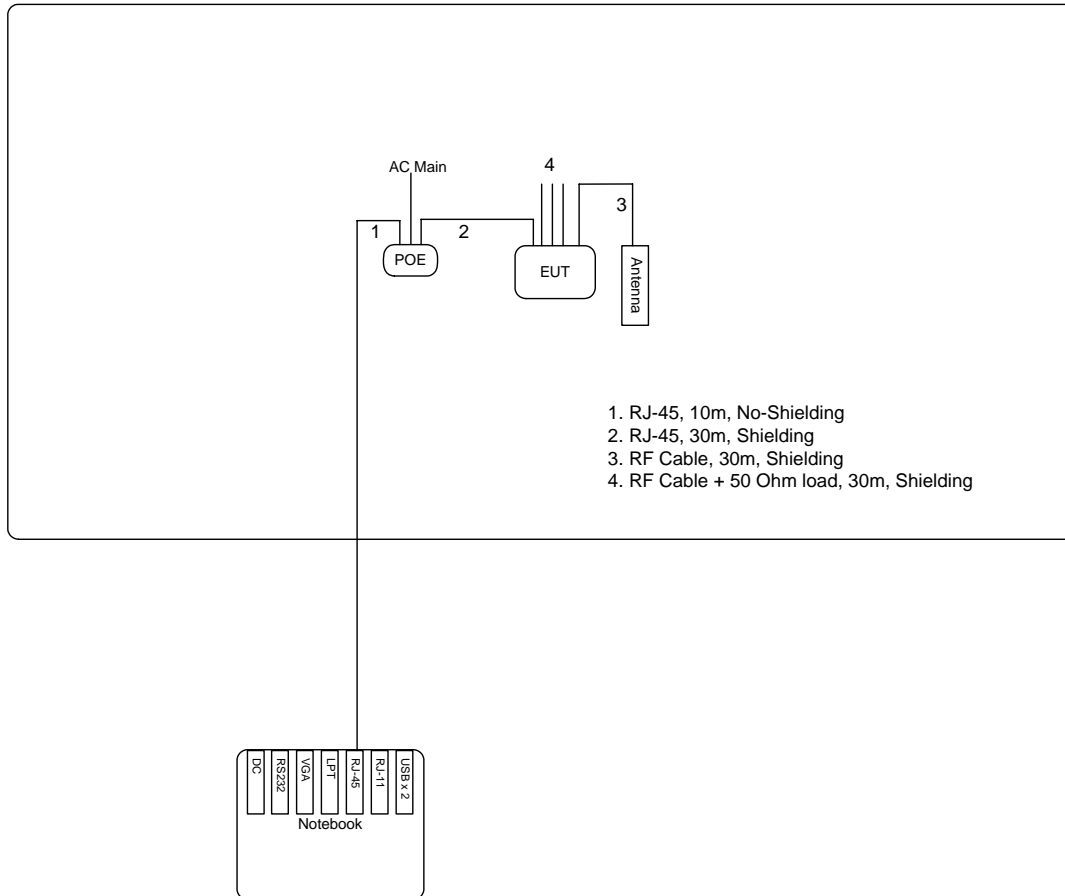
Ant. 1



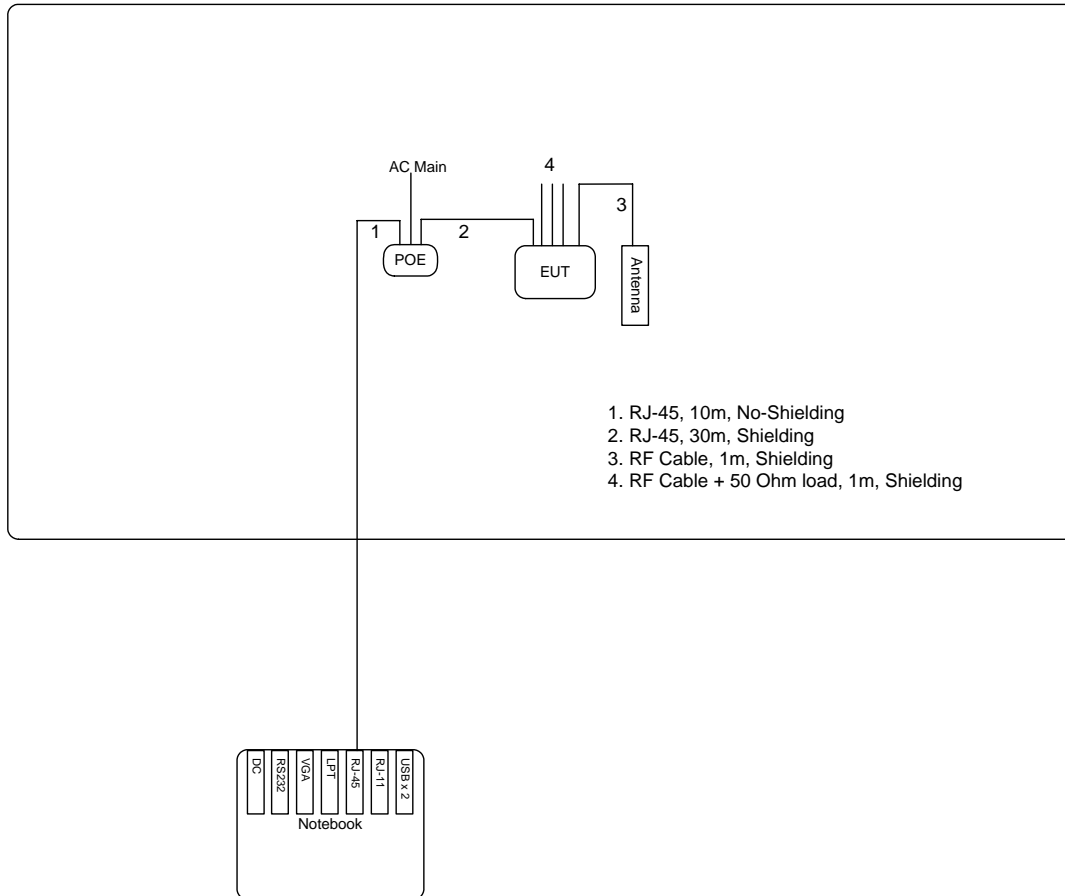
Ant. 2



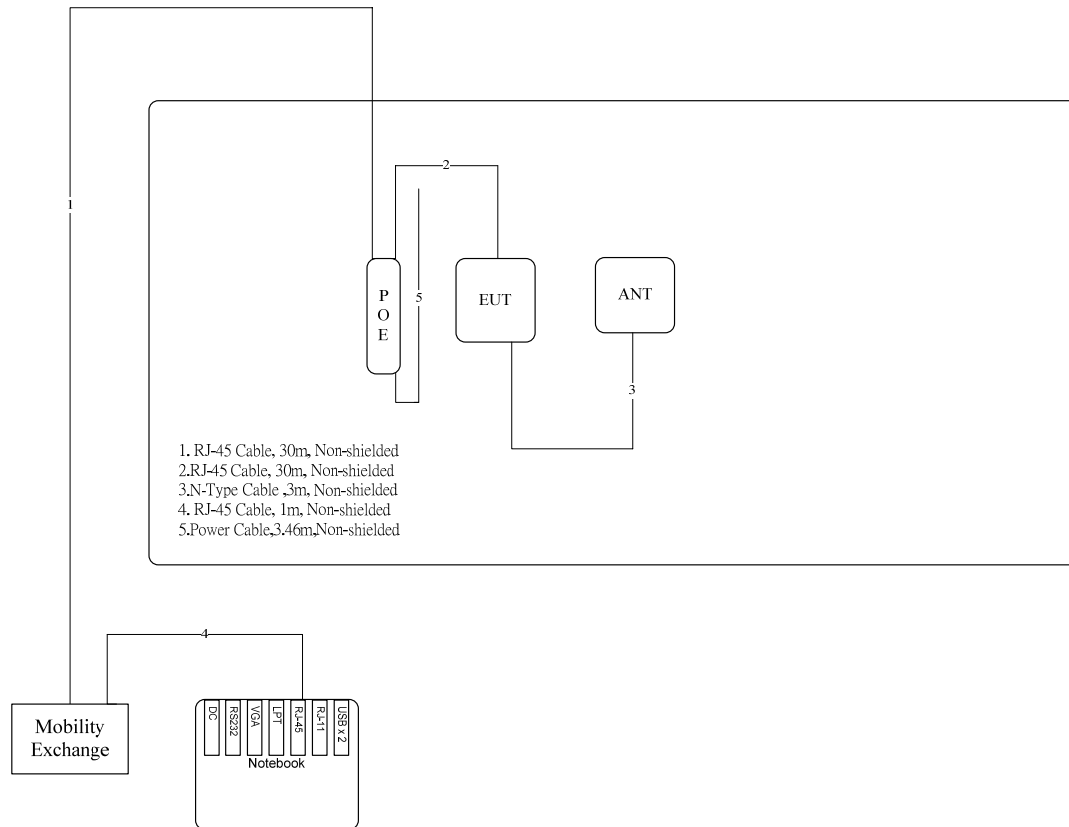
Ant. 3



Ant. 4



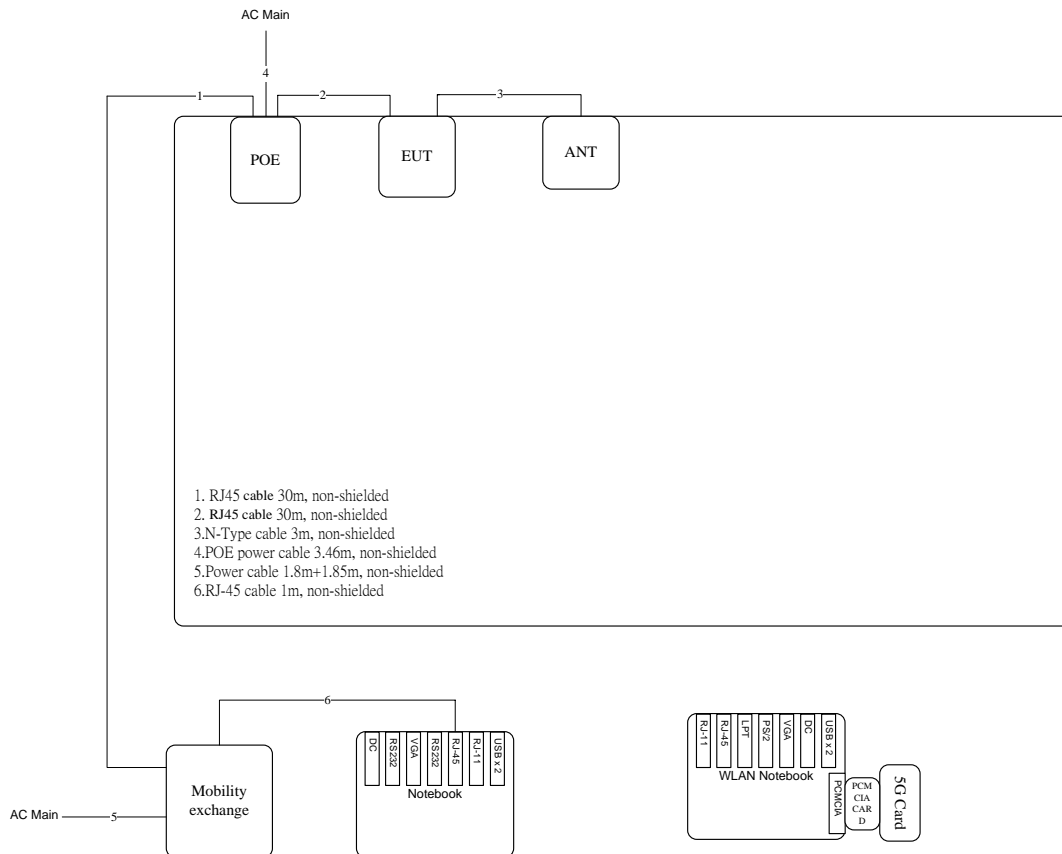
Ant. 5





### 3.9.2. AC Power Line Conduction Emissions Test Configuration

Ant. 5



## 4. TEST RESULT

### 4.1. AC Power Line Conducted Emissions Measurement

#### 4.1.1. Limit

For this product which is designed to be connected to the 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 below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

#### 4.1.2. Measuring Instruments and Setting

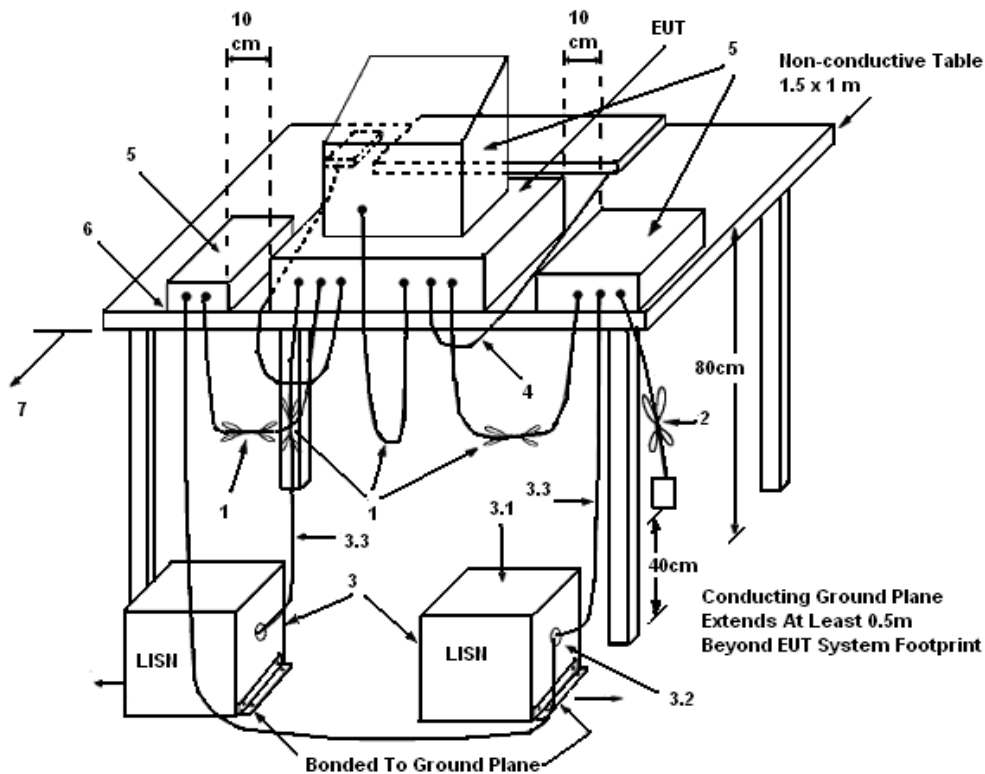
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

#### 4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

#### 4.1.4. Test Setup Layout



#### LEGEND:

- (1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- (2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- (3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50  $\Omega$ . LISN can be placed on top of, or immediately beneath, reference ground plane.
  - (3.1) All other equipment powered from additional LISN(s).
  - (3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.
  - (3.3) LISN at least 80 cm from nearest part of EUT chassis.
- (4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.
- (5) Non-EUT components of EUT system being tested.
- (6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.
- (7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

#### 4.1.5. Test Deviation

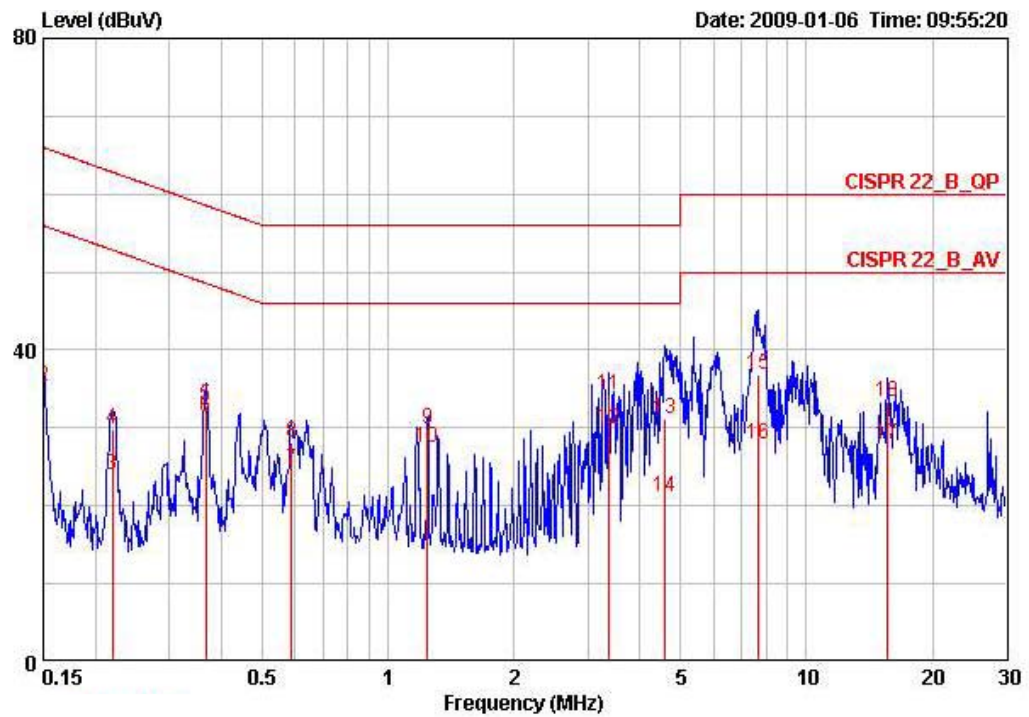
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

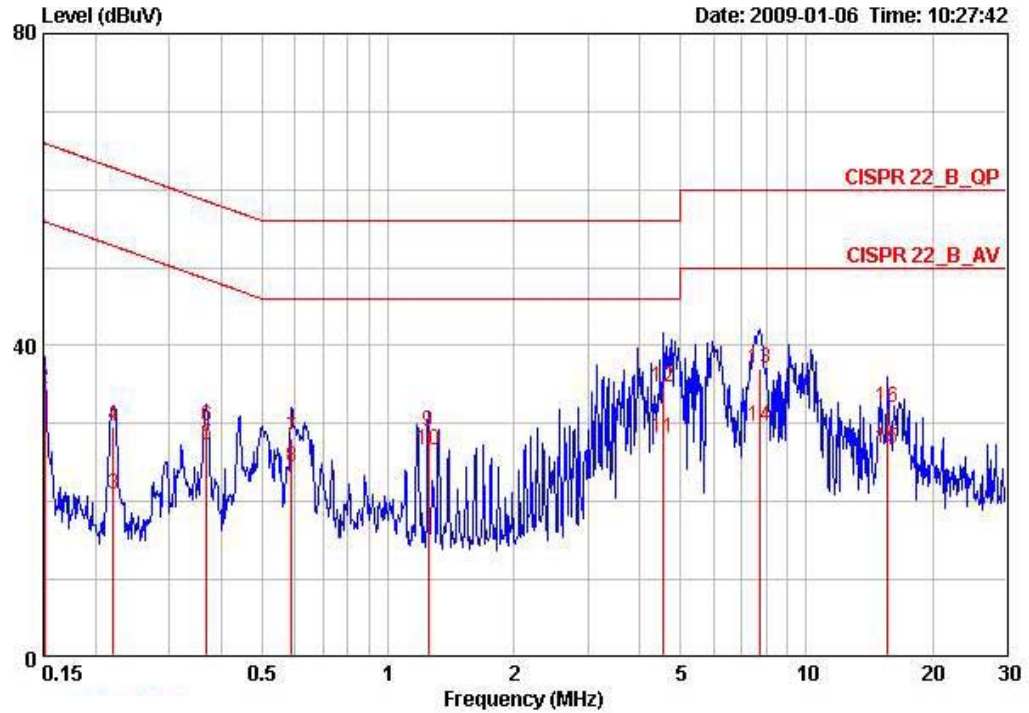
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	22°C	Humidity	64%
Test Engineer	Peter Wu	Phase	Line
Configuration	Ant. 5		



	WIFI)							
	Over	Limit	Limit	Read	LISN	Cable		
Freq	Level	Limit	Line	Level	Factor	Loss	Remark	
MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15000	27.33	-28.67	56.00	27.05	0.08	0.20	AVERAGE
2	0.15000	35.31	-30.69	66.00	35.03	0.08	0.20	QP
3	0.21967	23.90	-28.93	52.83	23.65	0.05	0.20	AVERAGE
4	0.21967	29.78	-33.05	62.83	29.53	0.05	0.20	QP
5	0.36725	32.88	-25.68	58.56	32.65	0.03	0.20	QP
6	0.36725	31.35	-17.21	48.56	31.12	0.03	0.20	AVERAGE
7	0.58851	24.61	-21.39	46.00	24.38	0.03	0.20	AVERAGE
8	0.58851	28.02	-27.98	56.00	27.79	0.03	0.20	QP
9	1.244	29.95	-26.05	56.00	29.77	0.04	0.15	QP
10	1.244	27.57	-18.43	46.00	27.39	0.04	0.15	AVERAGE
11	3.364	34.17	-21.83	56.00	33.81	0.09	0.27	QP
12	3.364	29.97	-16.03	46.00	29.61	0.09	0.27	AVERAGE
13	4.574	31.17	-24.83	56.00	30.73	0.14	0.30	QP
14	4.574	21.14	-24.86	46.00	20.70	0.14	0.30	AVERAGE
15	7.646	36.76	-23.24	60.00	36.08	0.28	0.40	QP
16	7.646	27.87	-22.13	50.00	27.19	0.28	0.40	AVERAGE
17	15.635	27.95	-22.06	50.00	26.95	0.60	0.40	AVERAGE
18	15.635	33.29	-26.72	60.00	32.29	0.60	0.40	QP

Temperature	22°C	Humidity	64%
Test Engineer	Peter Wu	Phase	Neutral
Configuration	Ant. 5		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.15080	25.11	-30.84	55.96	24.81	0.10	0.20	AVERAGE
2	0.15080	34.52	-31.43	65.96	34.22	0.10	0.20	QP
3	0.22083	20.95	-31.84	52.79	20.67	0.08	0.20	AVERAGE
4	0.22083	29.66	-33.13	62.79	29.38	0.08	0.20	QP
5	0.36920	27.30	-21.22	48.52	27.03	0.07	0.20	AVERAGE
6	0.36920	29.54	-28.98	58.52	29.27	0.07	0.20	QP
7	0.58851	28.22	-27.78	56.00	27.95	0.07	0.20	QP
8	0.58851	24.36	-21.64	46.00	24.09	0.07	0.20	AVERAGE
9	1.249	29.06	-26.94	56.00	28.84	0.08	0.15	QP
10	1.249	26.63	-19.37	46.00	26.41	0.08	0.15	AVERAGE
11	4.549	28.08	-17.92	46.00	27.61	0.17	0.30	AVERAGE
12	4.549	34.62	-21.38	56.00	34.15	0.17	0.30	QP
13	7.769	37.12	-22.88	60.00	36.40	0.32	0.40	QP
14	7.769	29.65	-20.35	50.00	28.93	0.32	0.40	AVERAGE
15	15.635	26.86	-23.14	50.00	25.85	0.61	0.40	AVERAGE
16	15.635	32.02	-27.98	60.00	31.01	0.61	0.40	QP

Note:

Level = Read Level + LISN Factor + Cable Loss.

## 4.2. Maximum Conducted Output Power Measurement

### 4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter conducted output power.

### 4.2.2. Measuring Instruments and Setting

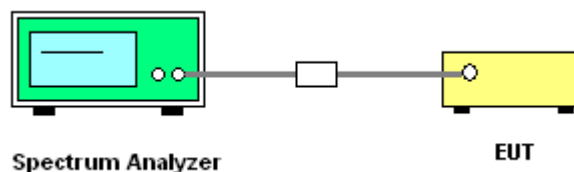
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RB	1000 kHz
VB	3000 kHz
Detector	RMS
Trace	Max Hold
Sweep Time	500ms

### 4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. Test was performed in accordance with Measurement of Digital Transmission Systems Operating under Section 15.247 March 23, 2005.

### 4.2.4. Test Setup Layout



### 4.2.5. Test Deviation

There is no deviation with the original standard.

### 4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.2.7. Test Result of Maximum Conducted Output Power

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b/g / Ant. 1

##### Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	20.11	30.00	Complies
6	2437 MHz	20.23	30.00	Complies
11	2462 MHz	20.15	30.00	Complies

##### Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.32	30.00	Complies
6	2437 MHz	18.33	30.00	Complies
11	2462 MHz	18.25	30.00	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b/g / Ant. 2

##### Configuration IEEE 802.11b

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	20.11	30.00	Complies
6	2437 MHz	20.23	30.00	Complies
11	2462 MHz	20.15	30.00	Complies

##### Configuration IEEE 802.11g

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	18.32	30.00	Complies
6	2437 MHz	18.33	30.00	Complies
11	2462 MHz	18.25	30.00	Complies

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 3

**Configuration IEEE 802.11a**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	21.11	30.00	<b>Complies</b>
157	5785 MHz	21.03	30.00	<b>Complies</b>
165	5825 MHz	21.15	30.00	<b>Complies</b>

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 4

**Configuration IEEE 802.11a**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	20.20	24.50	<b>Complies</b>
157	5785 MHz	20.12	24.50	<b>Complies</b>
165	5825 MHz	20.23	24.50	<b>Complies</b>

<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sam Chen	<b>Configurations</b>	802.11a / Ant. 5

**Configuration IEEE 802.11a**

Channel	Frequency	Conducted Power (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	18.95	21.00	<b>Complies</b>
157	5785 MHz	18.60	21.00	<b>Complies</b>
165	5825 MHz	18.99	21.00	<b>Complies</b>



### 4.3. Power Spectral Density Measurement

#### 4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

#### 4.3.2. Measuring Instruments and Setting

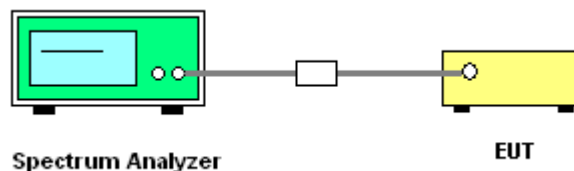
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	1.5MHz
RB	3 kHz
VB	30 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	500s

#### 4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. Set RBW of spectrum analyzer to 3kHz and VBW to 30kHz. Set Detector to Peak, Trace to Max Hold.
3. Mark the frequency with maximum peak power as the center of the display of the spectrum.
4. Set the span to 1.5MHz and the sweep time to 500s and record the maximum peak value.

#### 4.3.4. Test Setup Layout



#### 4.3.5. Test Deviation

There is no deviation with the original standard.

#### 4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.3.7. Test Result of Power Spectral Density

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b/g / Ant. 1

##### Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-4.00	8.00	Complies
6	2437 MHz	0.20	8.00	Complies
11	2462 MHz	-0.90	8.00	Complies

##### Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-2.04	8.00	Complies
6	2437 MHz	-4.64	8.00	Complies
11	2462 MHz	-4.77	8.00	Complies

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b/g / Ant. 2

##### Configuration IEEE 802.11b

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-4.00	8.00	Complies
6	2437 MHz	0.20	8.00	Complies
11	2462 MHz	-0.90	8.00	Complies

##### Configuration IEEE 802.11g

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
1	2412 MHz	-2.04	8.00	Complies
6	2437 MHz	-4.64	8.00	Complies
11	2462 MHz	-4.77	8.00	Complies

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 3

**Configuration IEEE 802.11a**

Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	-6.14	8.00	<b>Complies</b>
157	5785 MHz	-7.05	8.00	<b>Complies</b>
165	5825 MHz	-7.07	8.00	<b>Complies</b>

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 4

**Configuration IEEE 802.11a**

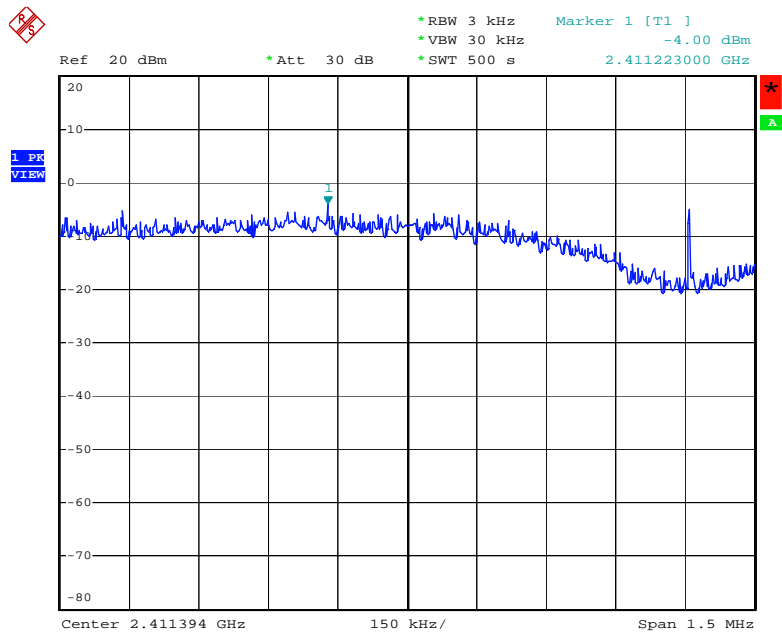
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	-7.61	8.00	<b>Complies</b>
157	5785 MHz	-8.42	8.00	<b>Complies</b>
165	5825 MHz	-8.90	8.00	<b>Complies</b>

<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sam Chen	<b>Configurations</b>	802.11a / Ant. 5

**Configuration IEEE 802.11a**

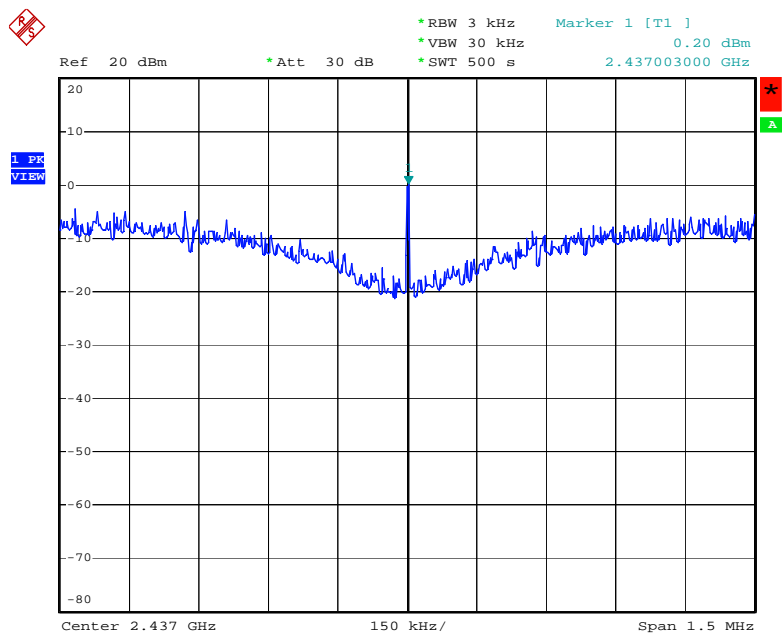
Channel	Frequency	Power Density (dBm)	Max. Limit (dBm)	Result
149	5745 MHz	-21.84	8.00	<b>Complies</b>
157	5785 MHz	-21.58	8.00	<b>Complies</b>
165	5825 MHz	-22.19	8.00	<b>Complies</b>

## Power Density Plot on Configuration IEEE 802.11b Ant. 1 / 2412 MHz



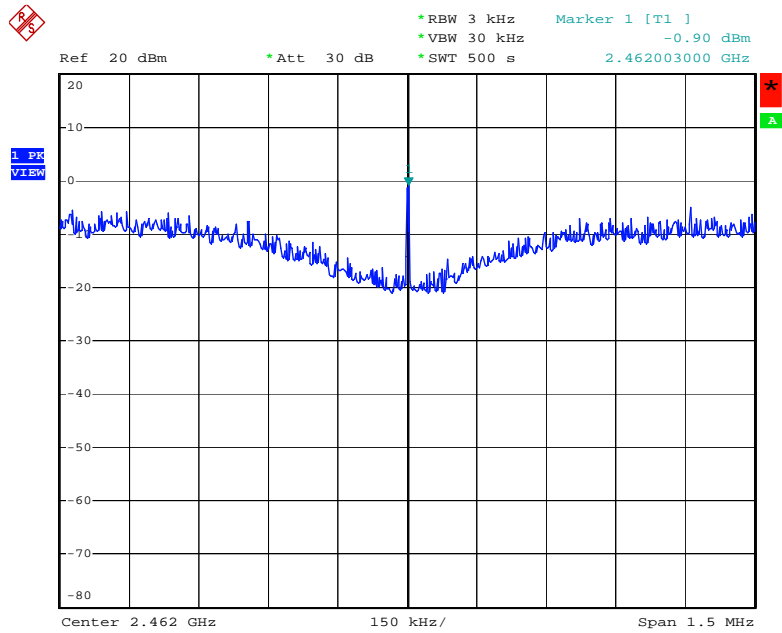
Date: 14.MAR.2006 10:47:18

## Power Density Plot on Configuration IEEE 802.11b Ant. 1 / 2437 MHz



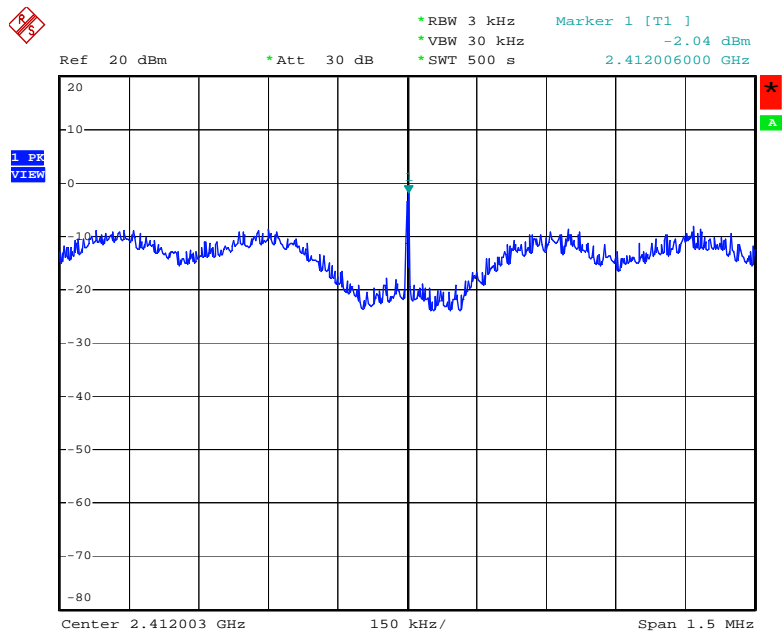
Date: 14.MAR.2006 10:48:52

## Power Density Plot on Configuration IEEE 802.11b Ant. 1 / 2462 MHz



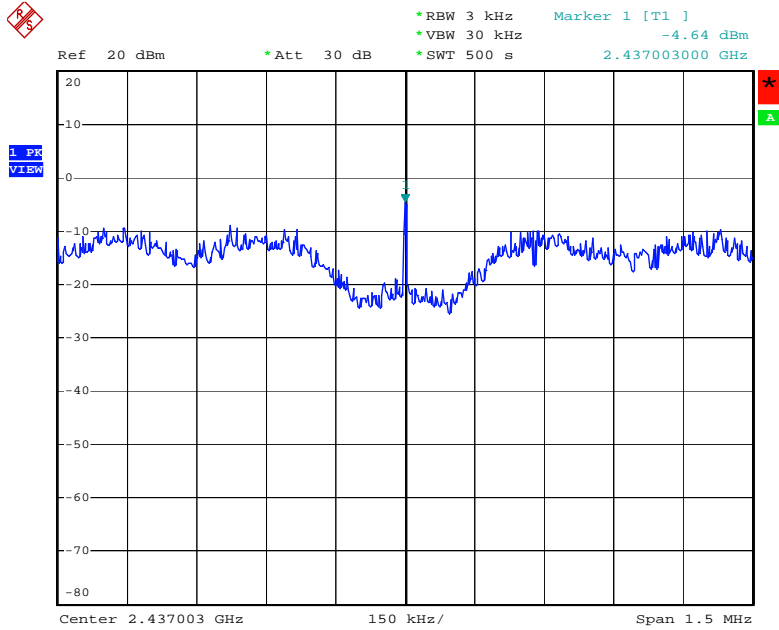
Date: 14.MAR.2006 10:50:21

## Power Density Plot on Configuration IEEE 802.11g Ant. 1 / 2412 MHz



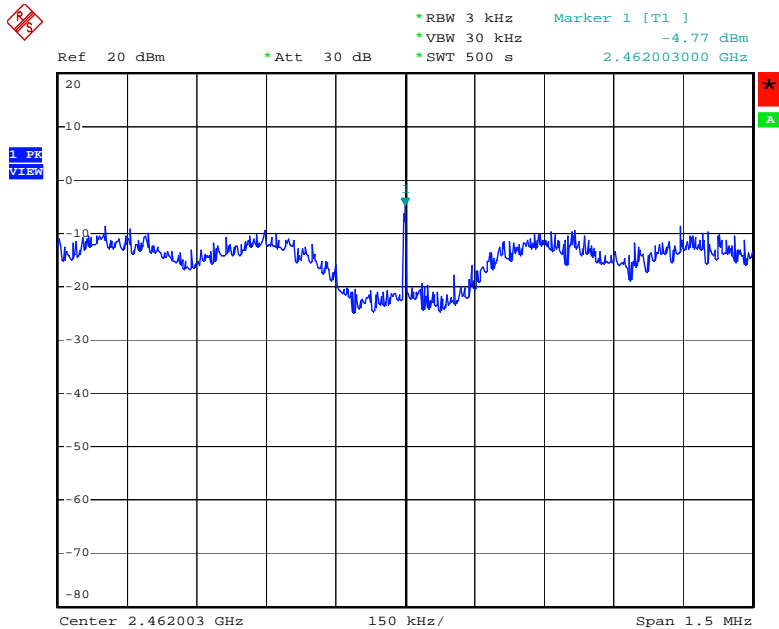
Date: 14.MAR.2006 10:31:51

### Power Density Plot on Configuration IEEE 802.11g Ant. 1 / 2437 MHz



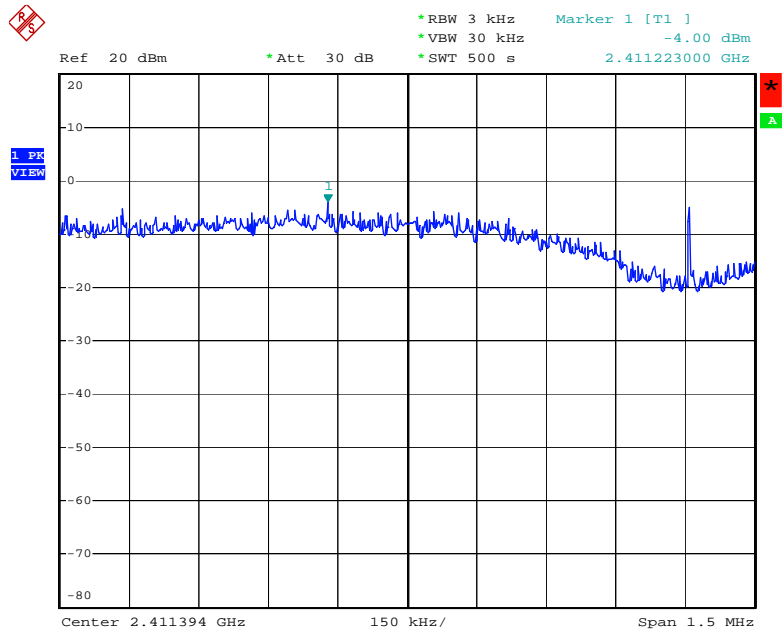
Date: 14.MAR.2006 10:32:58

### Power Density Plot on Configuration IEEE 802.11g Ant. 1 / 2462 MHz



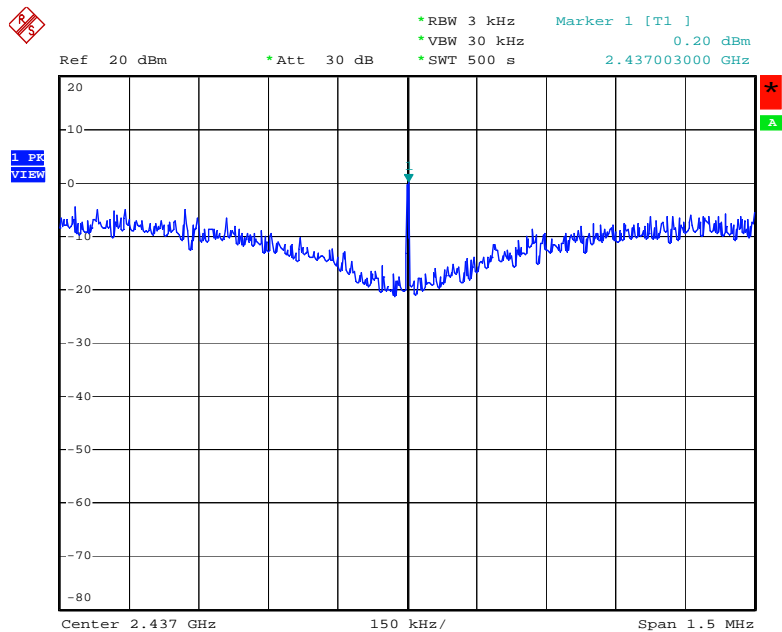
Date: 14.MAR.2006 10:35:41

## Power Density Plot on Configuration IEEE 802.11b Ant. 2 / 2412 MHz



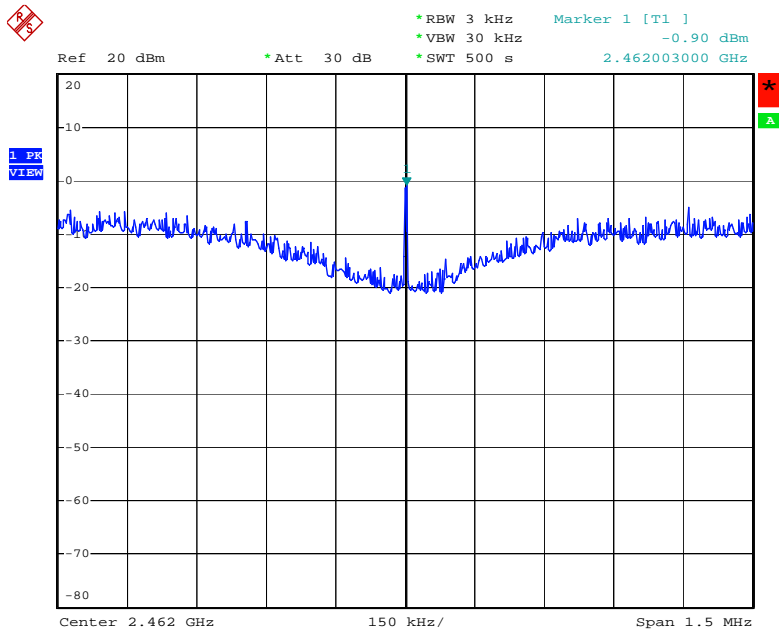
Date: 14.MAR.2006 10:47:18

## Power Density Plot on Configuration IEEE 802.11b Ant. 2 / 2437 MHz



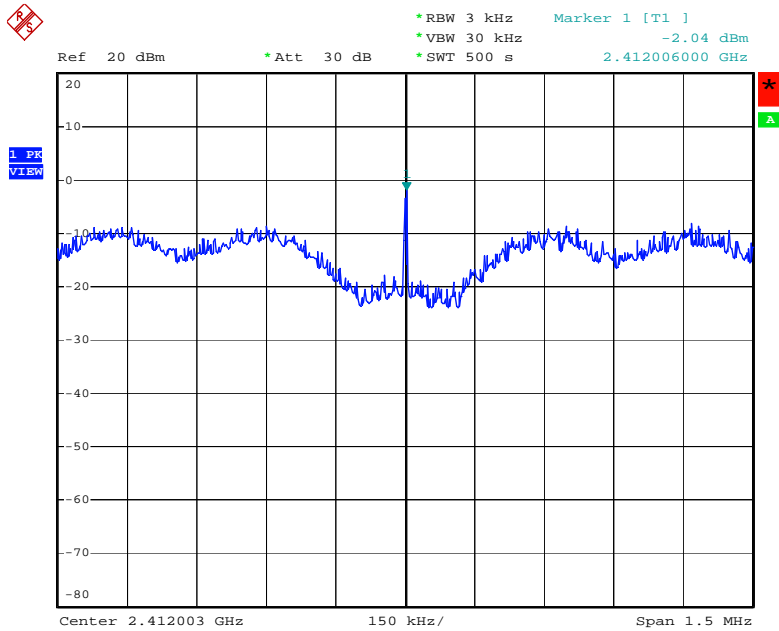
Date: 14.MAR.2006 10:48:52

Power Density Plot on Configuration IEEE 802.11b Ant. 2 / 2462 MHz



Date: 14.MAR.2006 10:50:21

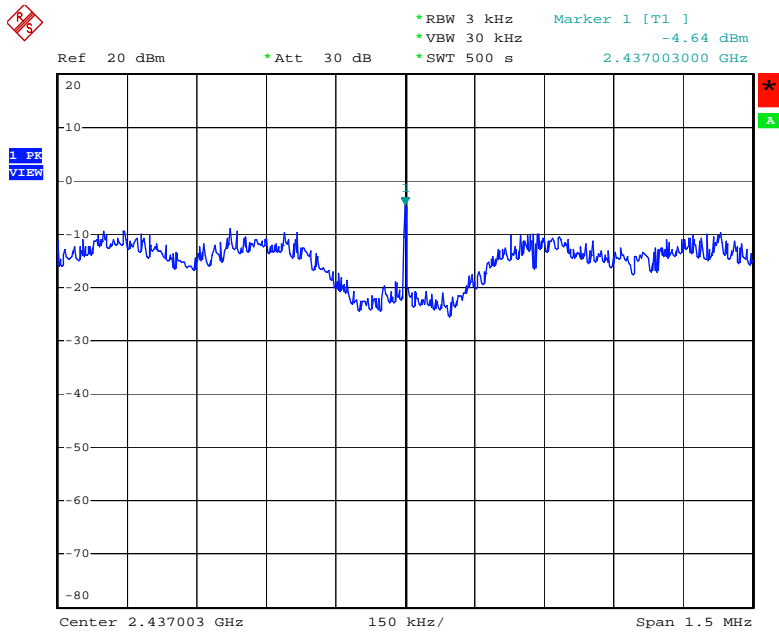
Power Density Plot on Configuration IEEE 802.11g Ant. 2 / 2412 MHz



Date: 14.MAR.2006 10:31:51

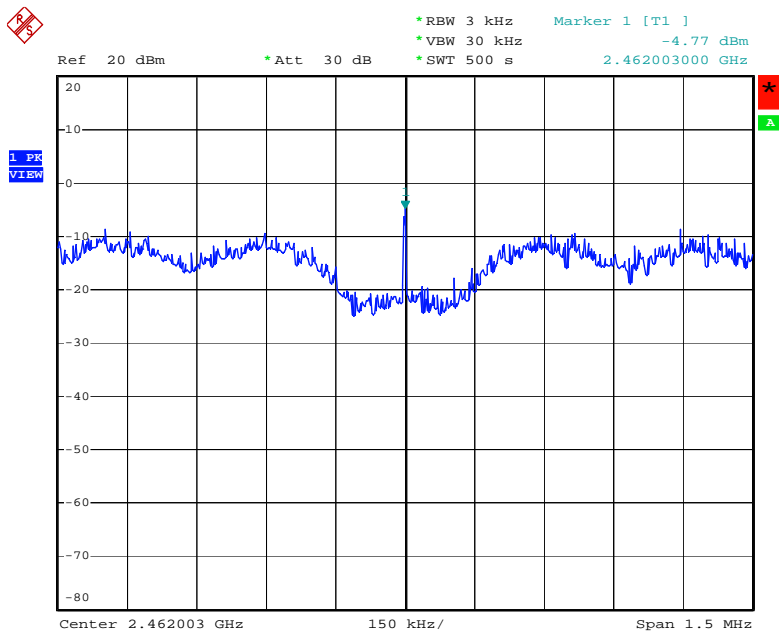


Power Density Plot on Configuration IEEE 802.11g Ant. 2 / 2437 MHz



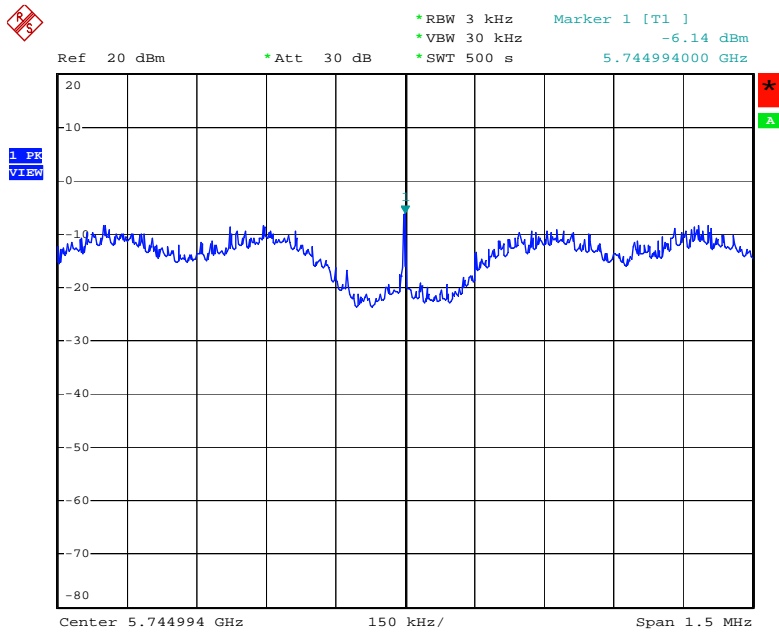
Date: 14.MAR.2006 10:32:58

Power Density Plot on Configuration IEEE 802.11g Ant. 2 / 2462 MHz



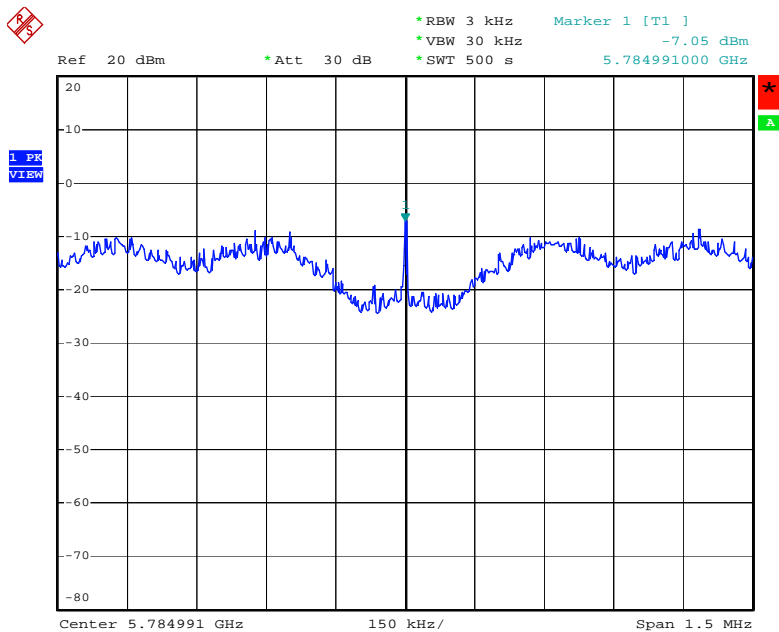
Date: 14.MAR.2006 10:35:41

Power Density Plot on Configuration IEEE 802.11a Ant. 3 / 5745 MHz



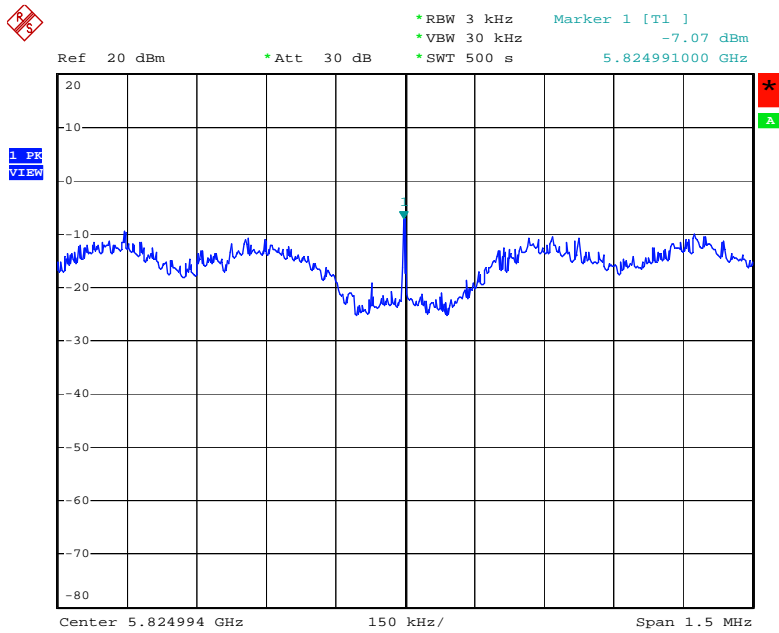
Date: 25.MAR.2006 19:38:17

Power Density Plot on Configuration IEEE 802.11a Ant. 3 / 5785 MHz



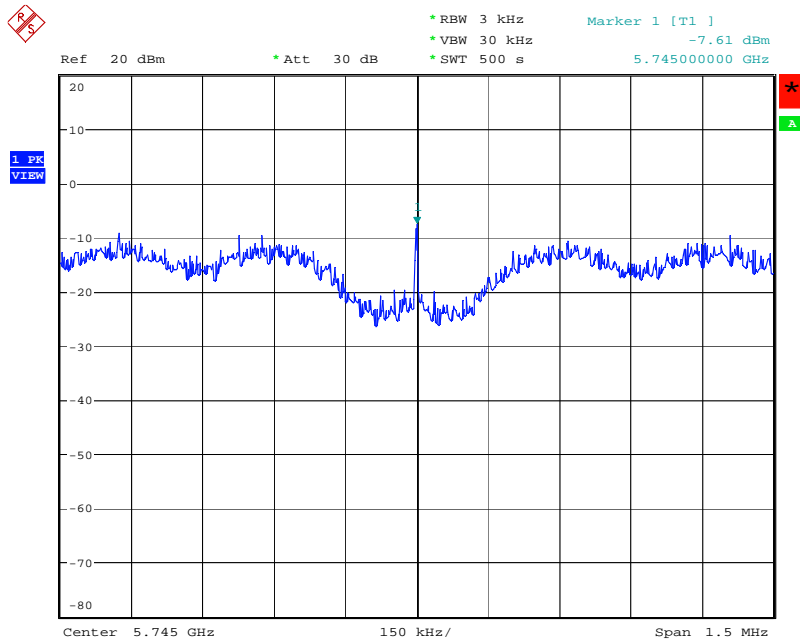
Date: 25.MAR.2006 19:42:03

### Power Density Plot on Configuration IEEE 802.11a Ant. 3 / 5825 MHz



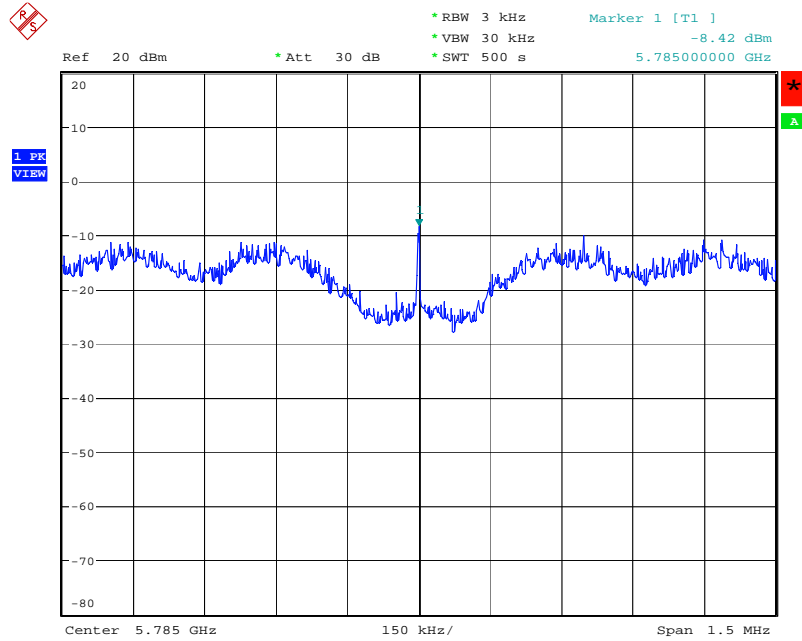
Date: 25.MAR.2006 19:42:42

### Power Density Plot on Configuration IEEE 802.11a Ant. 4 / 5745 MHz



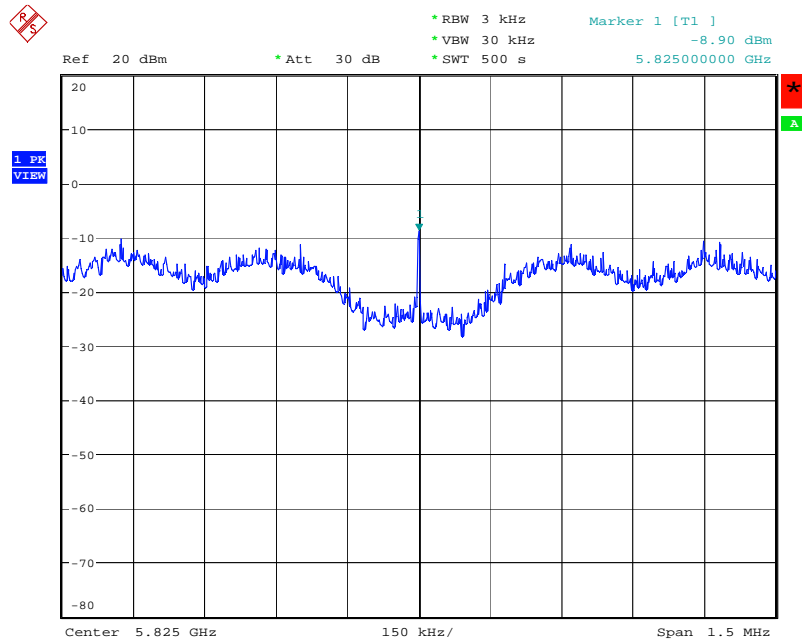
Date: 9.MAY.2006 19:22:11

### Power Density Plot on Configuration IEEE 802.11a Ant. 4 / 5785 MHz



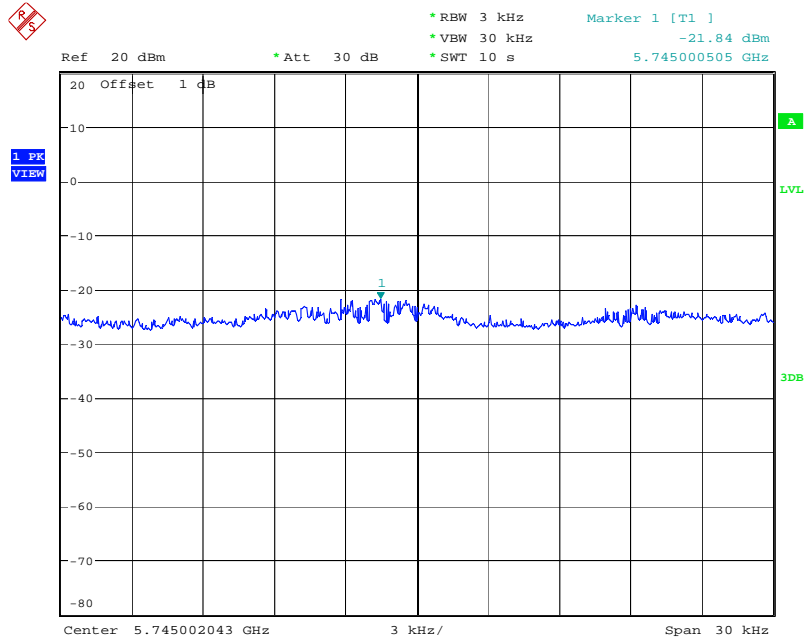
Date: 9.MAY.2006 19:21:14

### Power Density Plot on Configuration IEEE 802.11a Ant. 4 / 5825 MHz



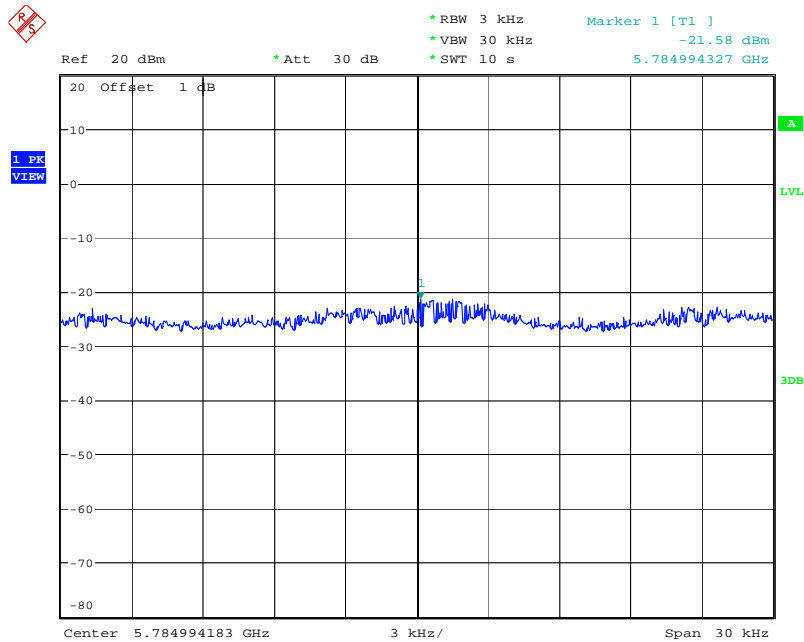
Date: 9.MAY.2006 19:20:07

Power Density Plot on Configuration IEEE 802.11a Ant. 5 / 5745 MHz



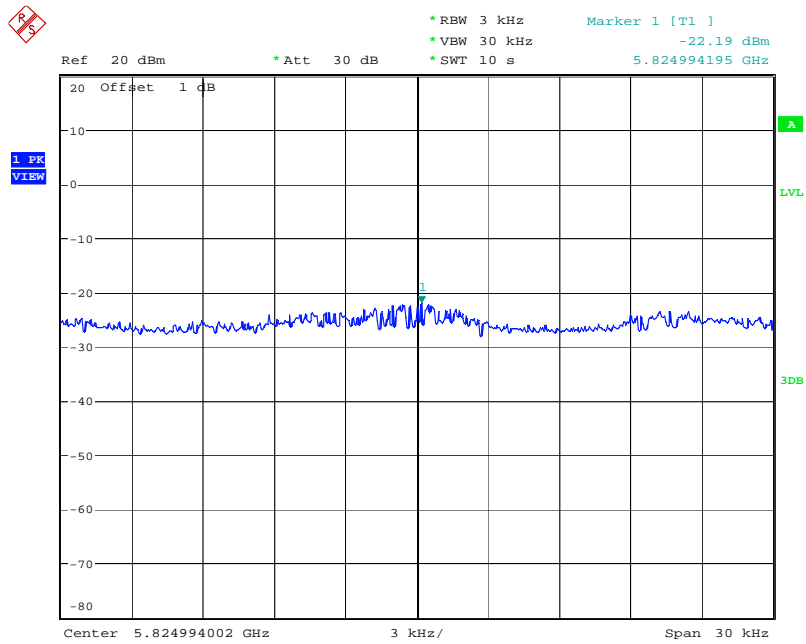
Date: 22.DEC.2008 13:33:30

Power Density Plot on Configuration IEEE 802.11a Ant. 5 / 5785 MHz



Date: 22.DEC.2008 13:36:46

### Power Density Plot on Configuration IEEE 802.11a Ant. 5 / 5825 MHz



Date: 22.DEC.2008 13:39:53

## 4.4. 6dB Spectrum Bandwidth Measurement

### 4.4.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

### 4.4.2. Measuring Instruments and Setting

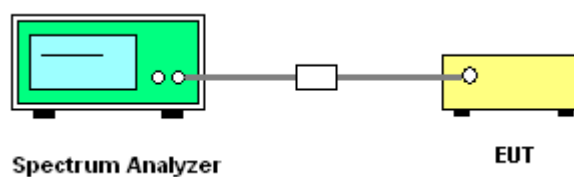
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

### 4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were used.
3. Measured the spectrum width with power higher than 6dB below carrier.

### 4.4.4. Test Setup Layout



### 4.4.5. Test Deviation

There is no deviation with the original standard.

### 4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

## 4.4.7. Test Result of 6dB Spectrum Bandwidth

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b/g / Ant. 1

## Configuration IEEE 802.11b

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	11.56	15.68	500	Complies
6	2437 MHz	11.08	15.60	500	Complies
11	2462 MHz	11.08	15.64	500	Complies

## Configuration IEEE 802.11g

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.40	16.56	500	Complies
6	2437 MHz	16.44	16.52	500	Complies
11	2462 MHz	16.44	16.56	500	Complies



<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11b/g / Ant. 2

**Configuration IEEE 802.11b**

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	11.56	15.68	500	<b>Complies</b>
6	2437 MHz	11.08	15.60	500	<b>Complies</b>
11	2462 MHz	11.08	15.64	500	<b>Complies</b>

**Configuration IEEE 802.11g**

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.40	16.56	500	<b>Complies</b>
6	2437 MHz	16.40	16.52	500	<b>Complies</b>
11	2462 MHz	16.36	16.52	500	<b>Complies</b>

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 3

**Configuration IEEE 802.11a**

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.40	16.56	500	<b>Complies</b>
157	5785 MHz	16.44	16.52	500	<b>Complies</b>
165	5825 MHz	16.44	16.56	500	<b>Complies</b>

<b>Temperature</b>	24°C	<b>Humidity</b>	64%
<b>Test Engineer</b>	Rush Kao	<b>Configurations</b>	802.11a / Ant. 4

**Configuration IEEE 802.11a**

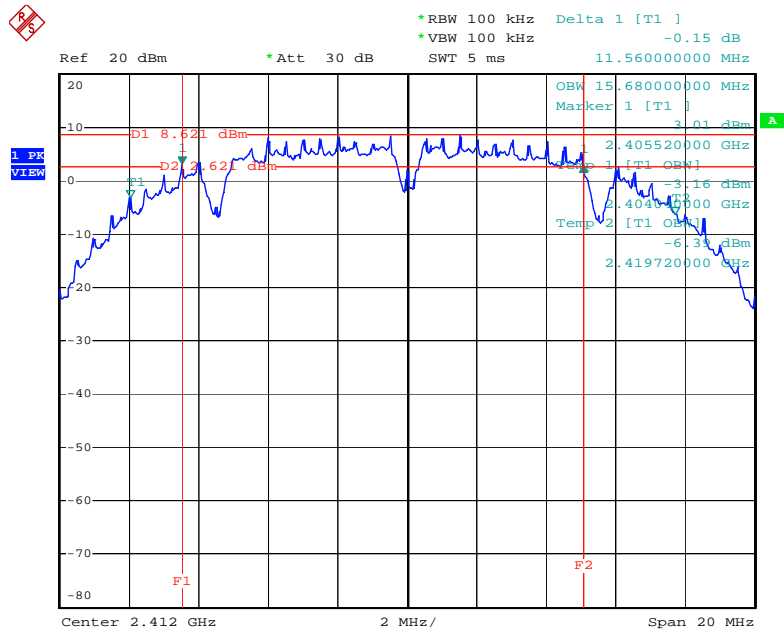
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.41	16.53	500	<b>Complies</b>
157	5785 MHz	16.41	16.50	500	<b>Complies</b>
165	5825 MHz	16.47	16.53	500	<b>Complies</b>

<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Sam Chen	<b>Configurations</b>	802.11a / Ant. 5

**Configuration IEEE 802.11a**

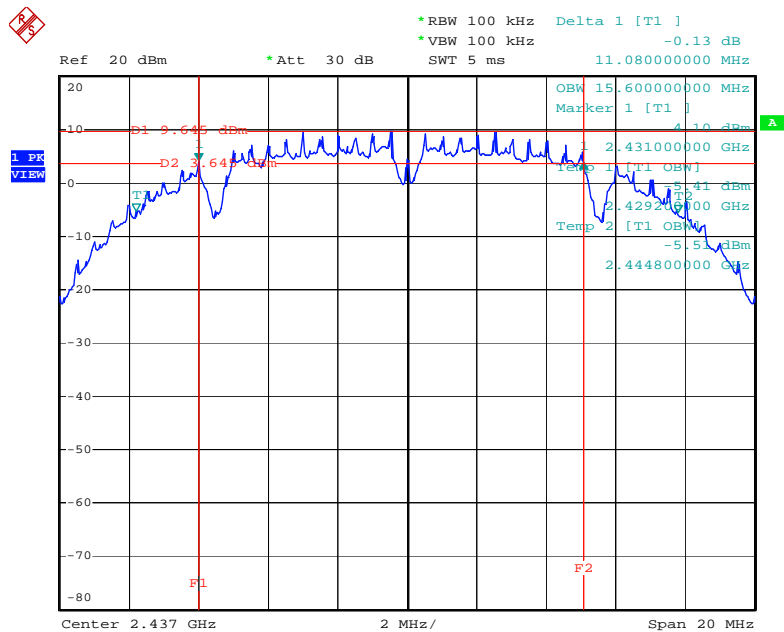
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.53	16.53	500	<b>Complies</b>
157	5785 MHz	16.47	16.50	500	<b>Complies</b>
165	5825 MHz	16.50	16.53	500	<b>Complies</b>

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1 / 2412 MHz



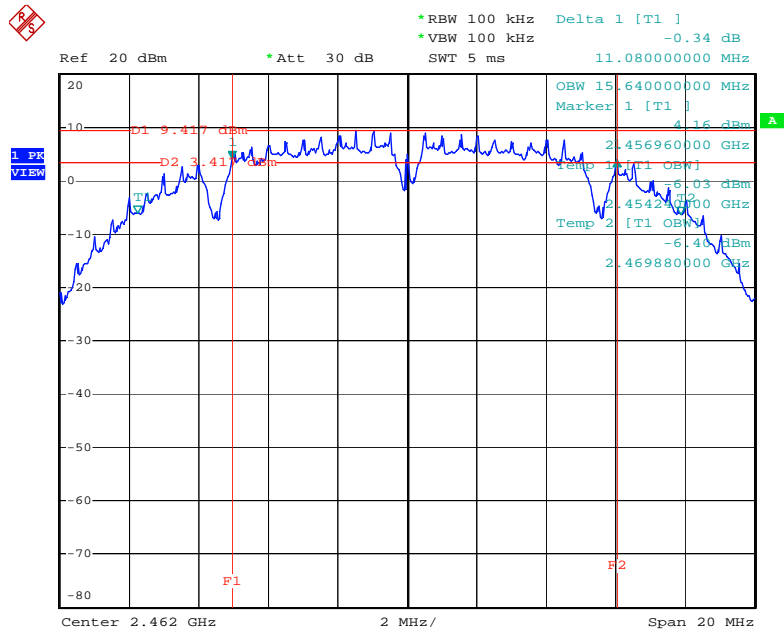
Date: 14.MAR.2006 10:46:53

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1 / 2437 MHz



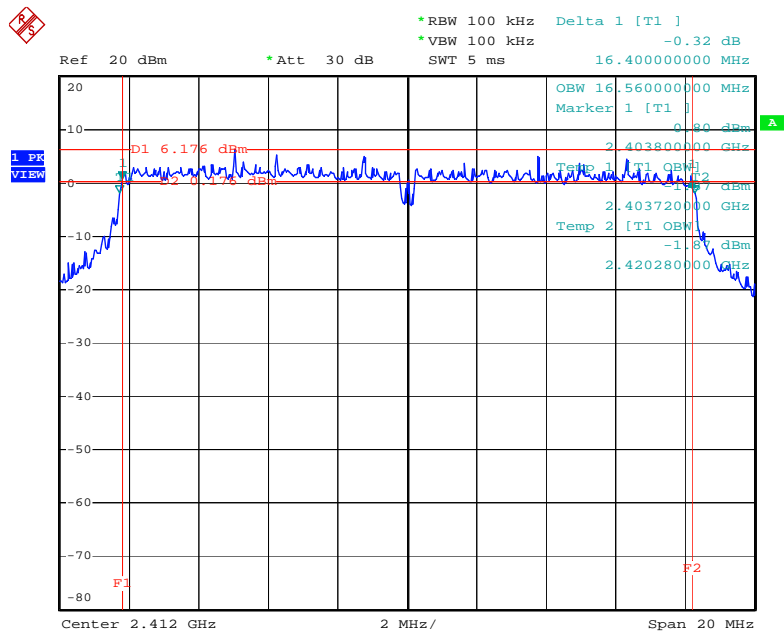
Date: 14.MAR.2006 10:48:36

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 1 / 2462 MHz



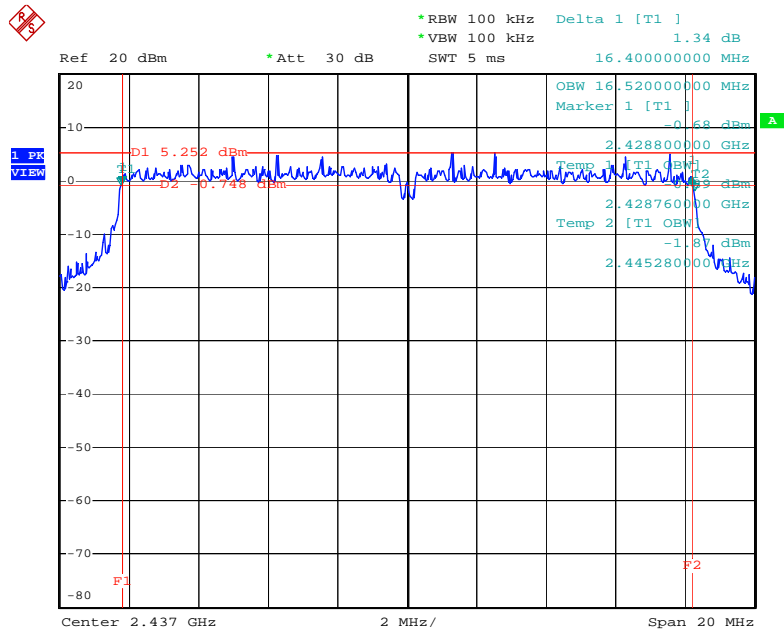
Date: 14.MAR.2006 10:50:06

### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1 / 2412 MHz



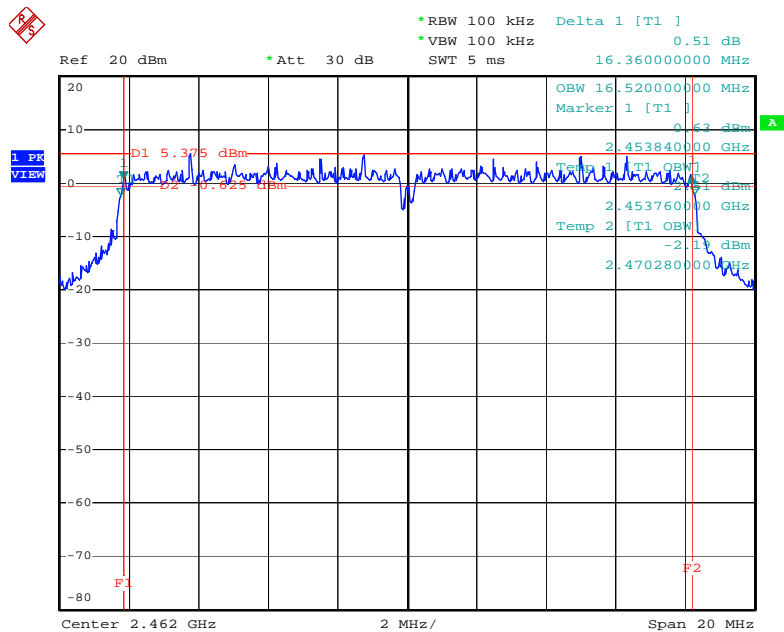
Date: 14.MAR.2006 10:31:27

### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1 / 2437 MHz



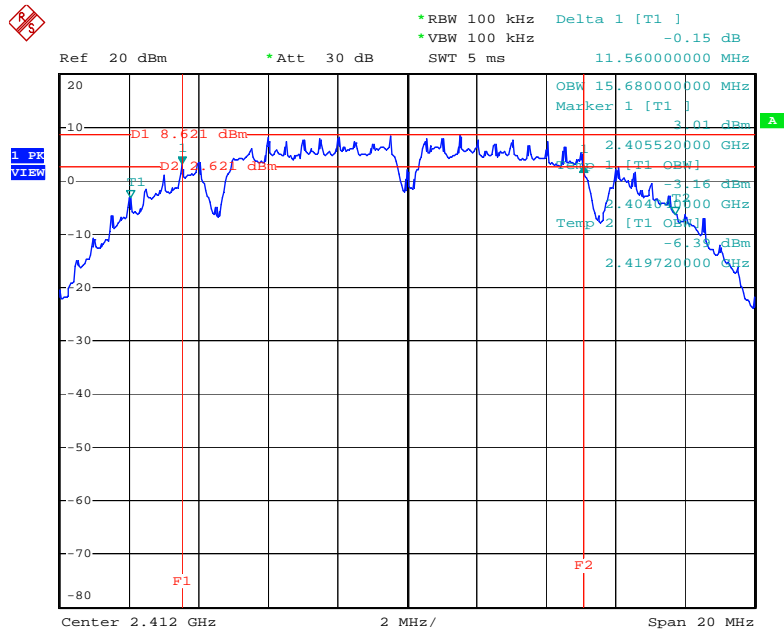
Date: 14.MAR.2006 10:32:42

### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 1 / 2462 MHz



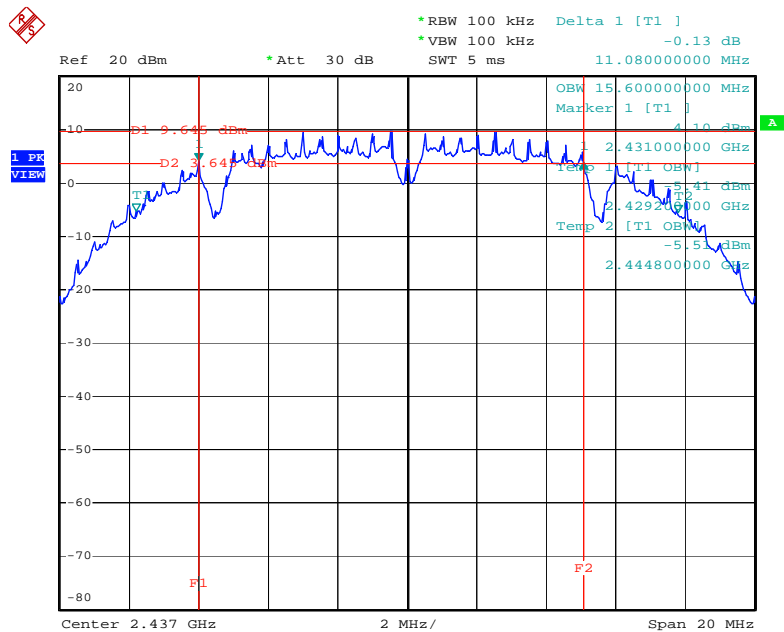
Date: 14.MAR.2006 10:35:26

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2 / 2412 MHz



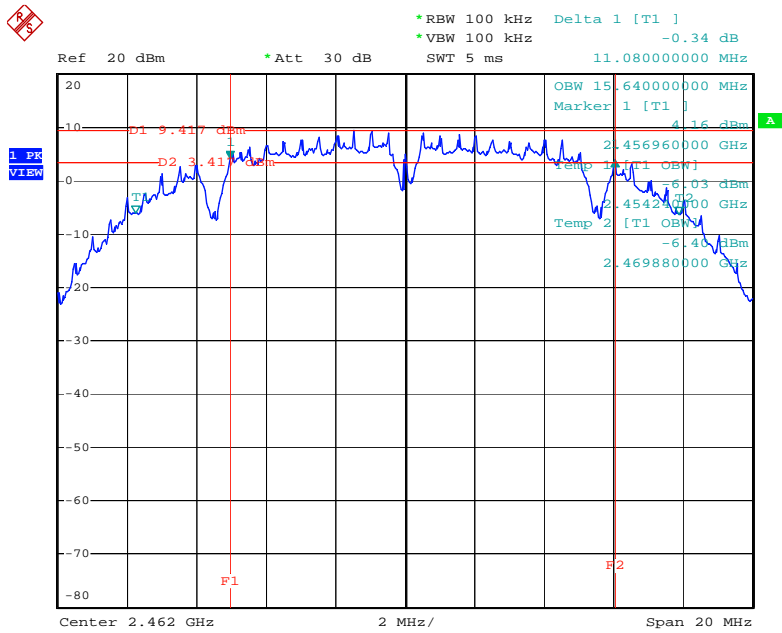
Date: 14.MAR.2006 10:46:53

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2 / 2437 MHz



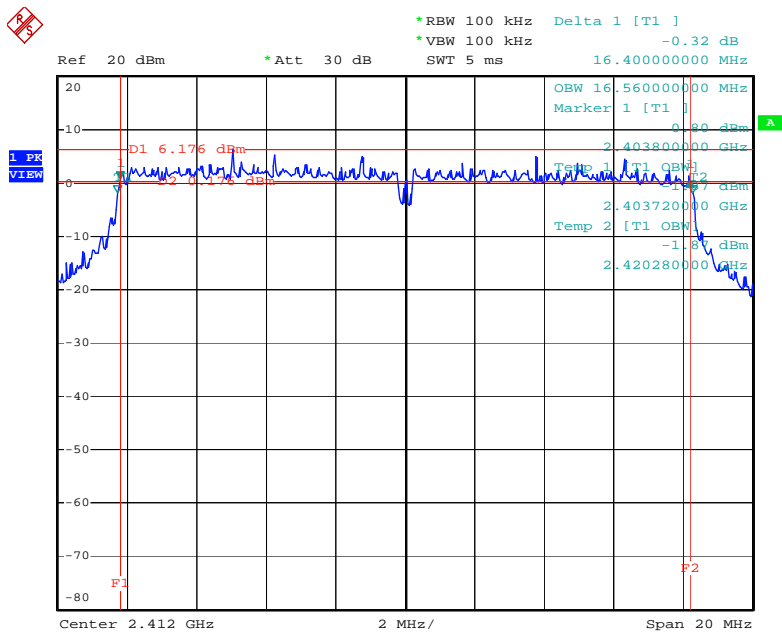
Date: 14.MAR.2006 10:48:36

### 6 dB Bandwidth Plot on Configuration IEEE 802.11b Ant. 2 / 2462 MHz



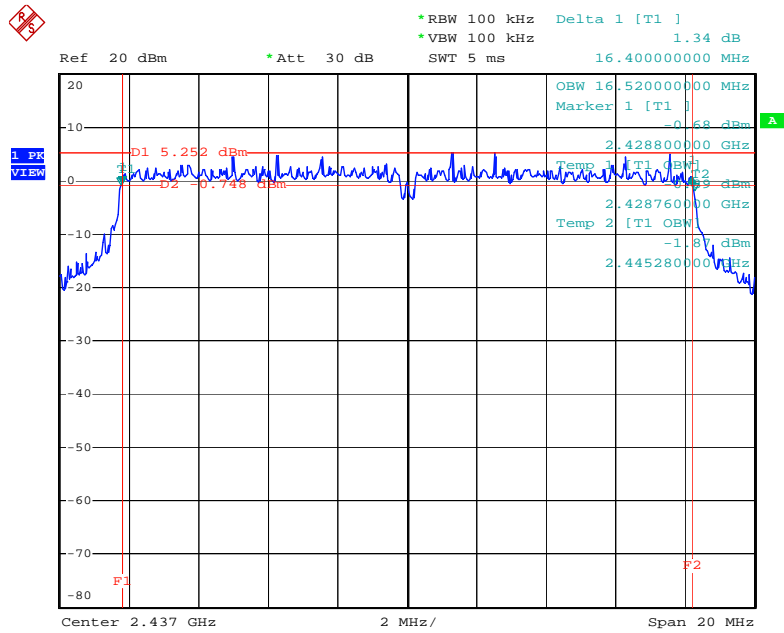
Date: 14.MAR.2006 10:50:06

### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2 / 2412 MHz



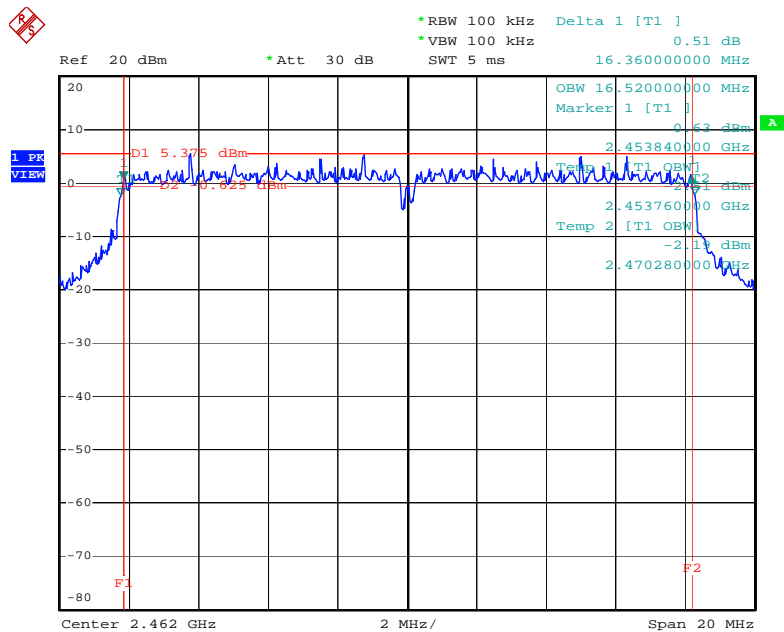
Date: 14.MAR.2006 10:31:27

### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2 / 2437 MHz



Date: 14.MAR.2006 10:32:42

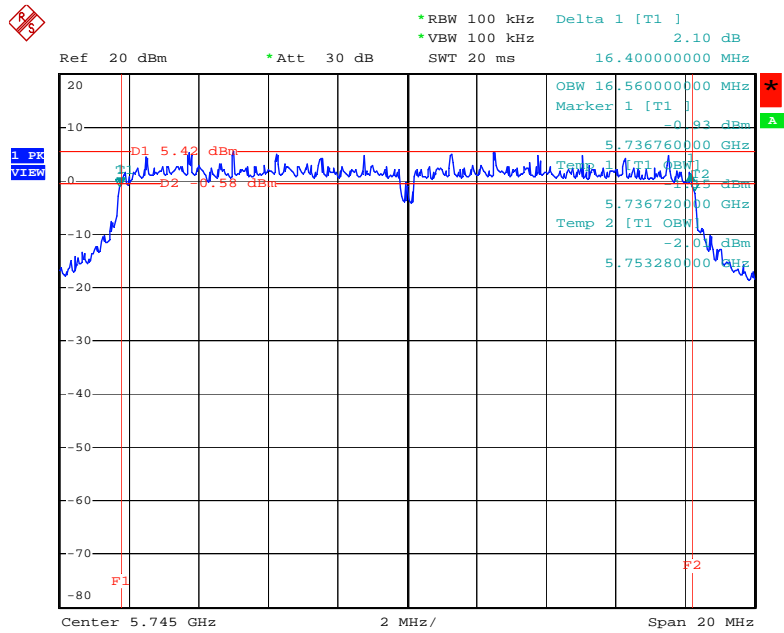
### 6 dB Bandwidth Plot on Configuration IEEE 802.11g Ant. 2 / 2462 MHz



Date: 14.MAR.2006 10:35:26

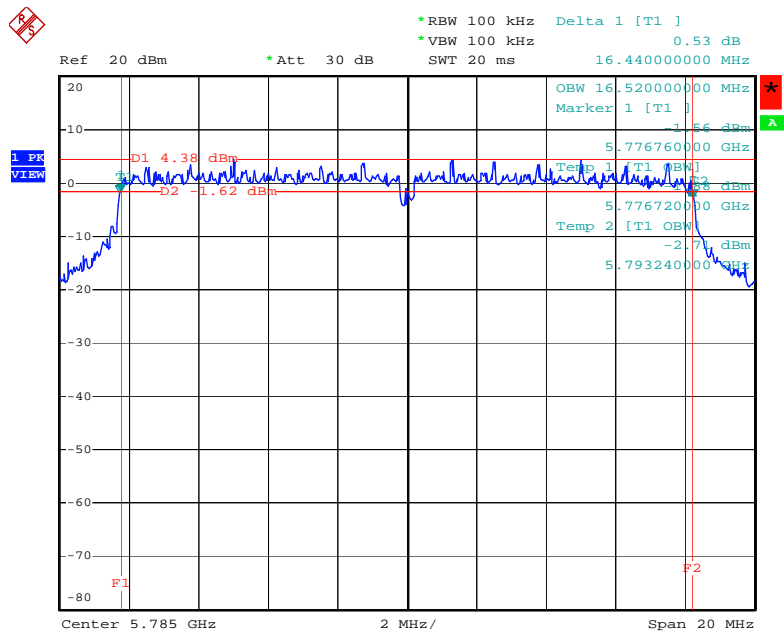


### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 3 / 5745 MHz



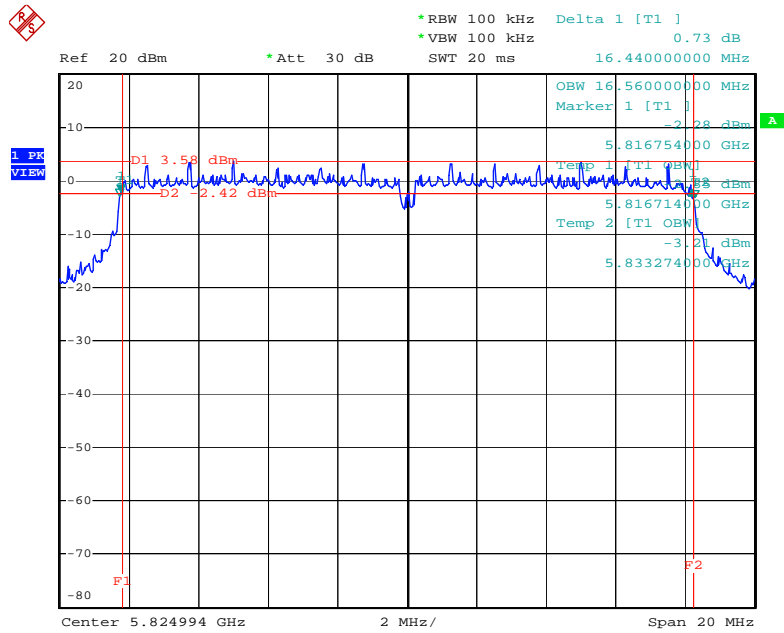
Date: 25.MAR.2006 19:40:15

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 3 / 5785 MHz



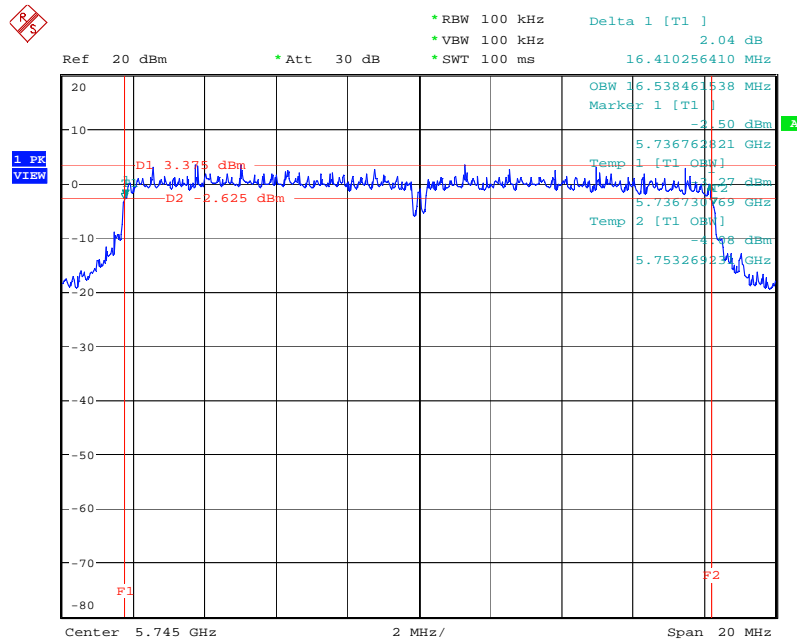
Date: 25.MAR.2006 19:41:18

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 3 / 5825 MHz



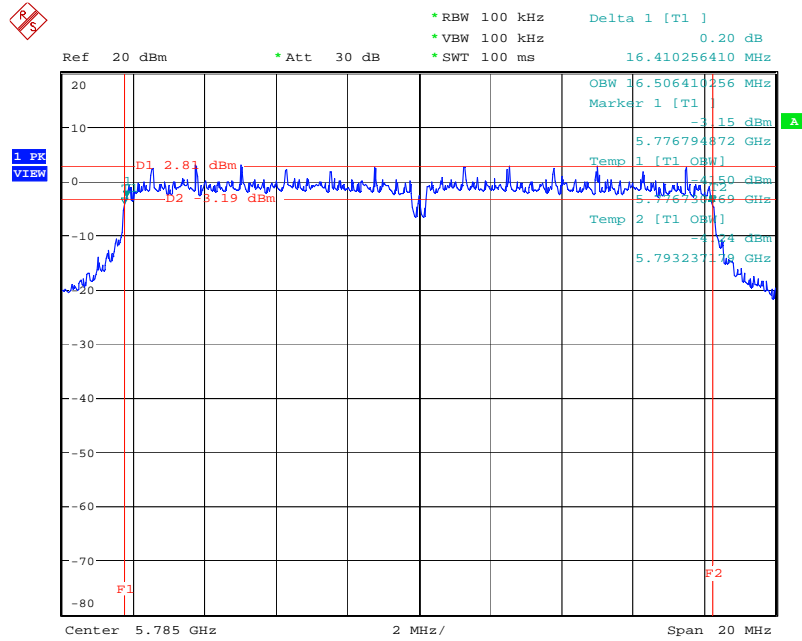
Date: 25.MAR.2006 19:43:46

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 4 / 5745 MHz



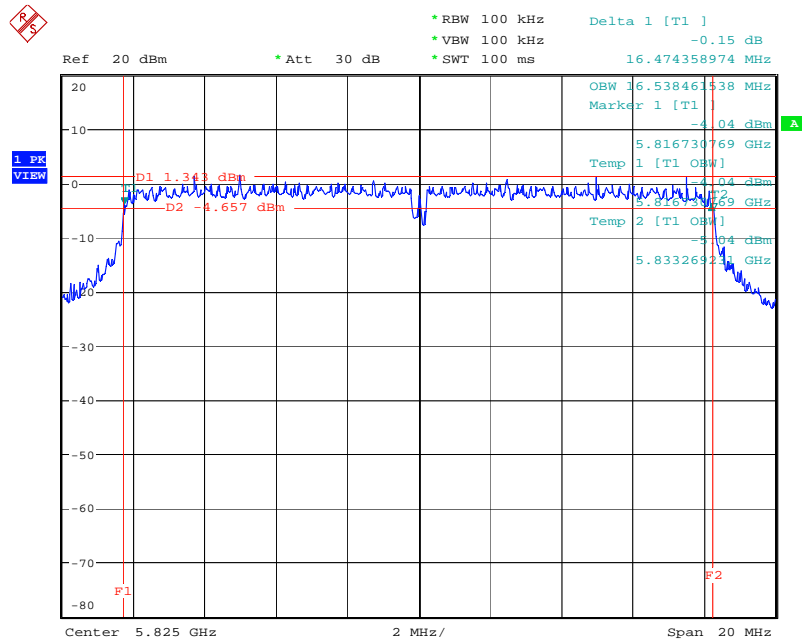
Date: 9.MAY.2006 19:21:46

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 4 / 5785 MHz



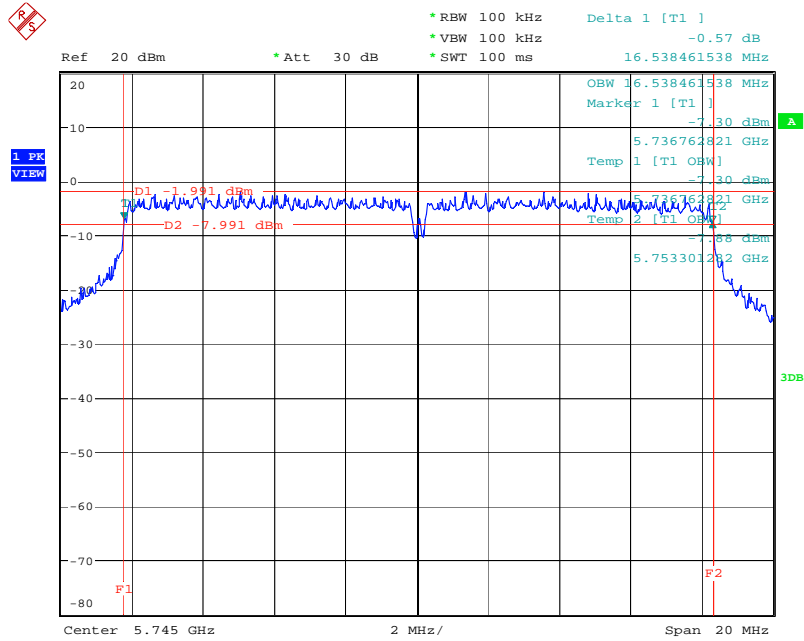
Date: 9.MAY.2006 19:20:49

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 4 / 5825 MHz



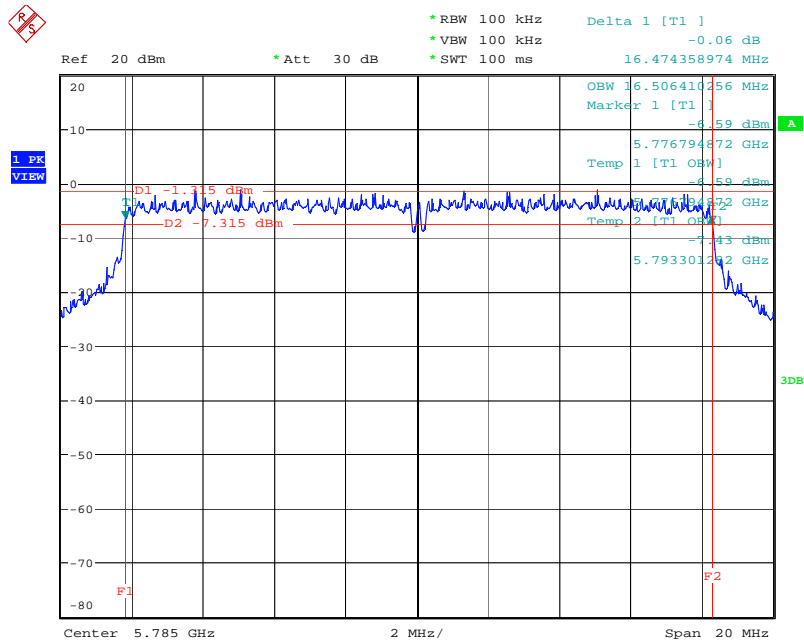
Date: 9.MAY.2006 19:19:42

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5 / 5745 MHz



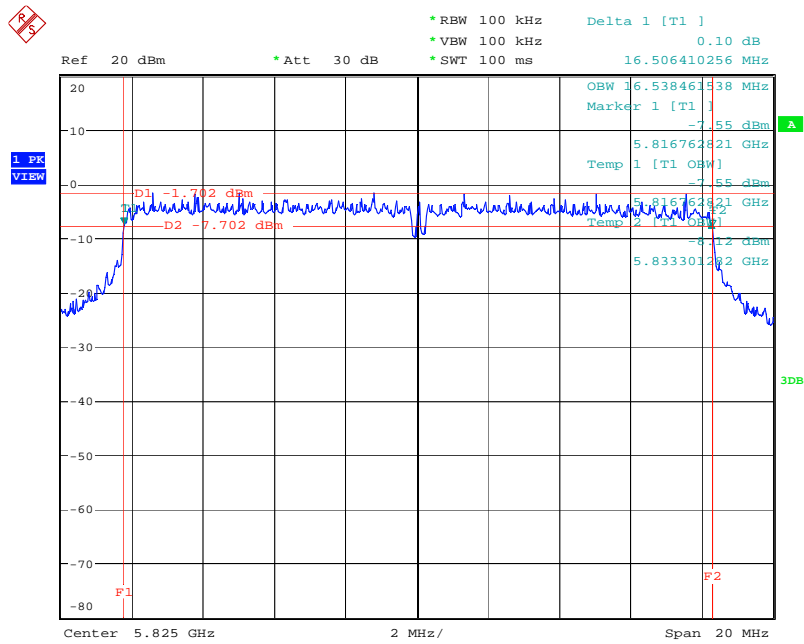
Date: 22.DEC.2008 13:32:02

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5 / 5785 MHz



Date: 22.DEC.2008 13:35:19

### 6 dB Bandwidth Plot on Configuration IEEE 802.11a Ant. 5 / 5825 MHz



Date: 22.DEC.2008 13:38:25

## 4.5. Radiated Emissions Measurement

### 4.5.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

### 4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100KHz / 100KHz for peak

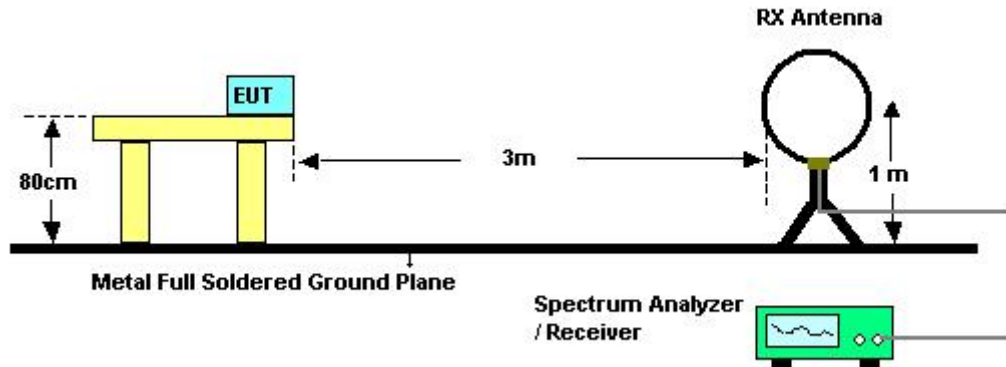
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

#### 4.5.3. Test Procedures

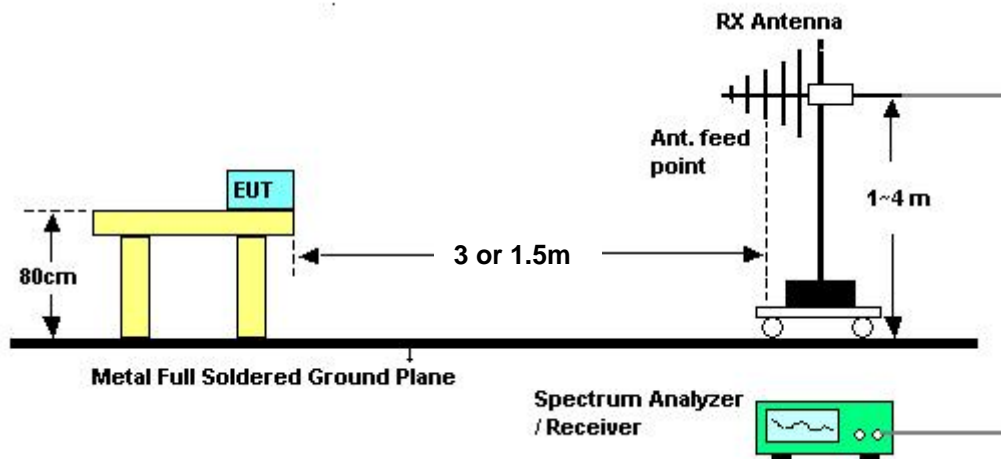
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

#### 4.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade from 3m to 1.5m.

Distance extrapolation factor =  $20 \log (\text{specific distance [3m]} / \text{test distance [1.5m]})$  (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [6 dB].

#### 4.5.5. Test Deviation

There is no deviation with the original standard.

#### 4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



## 4.5.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	24.3°C	Humidity	56%
Test Engineer	Sam Chen		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

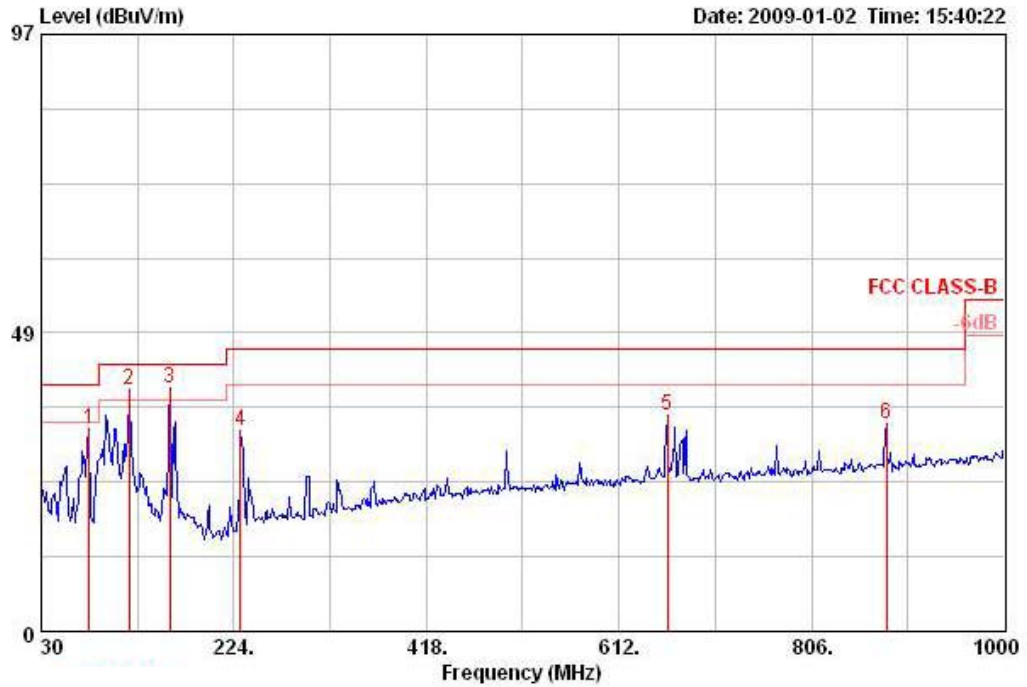
Distance extrapolation factor =  $40 \log (\text{specific distance} / \text{test distance})$  (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.5.8. Results of Radiated Emissions (30MHz~1GHz)

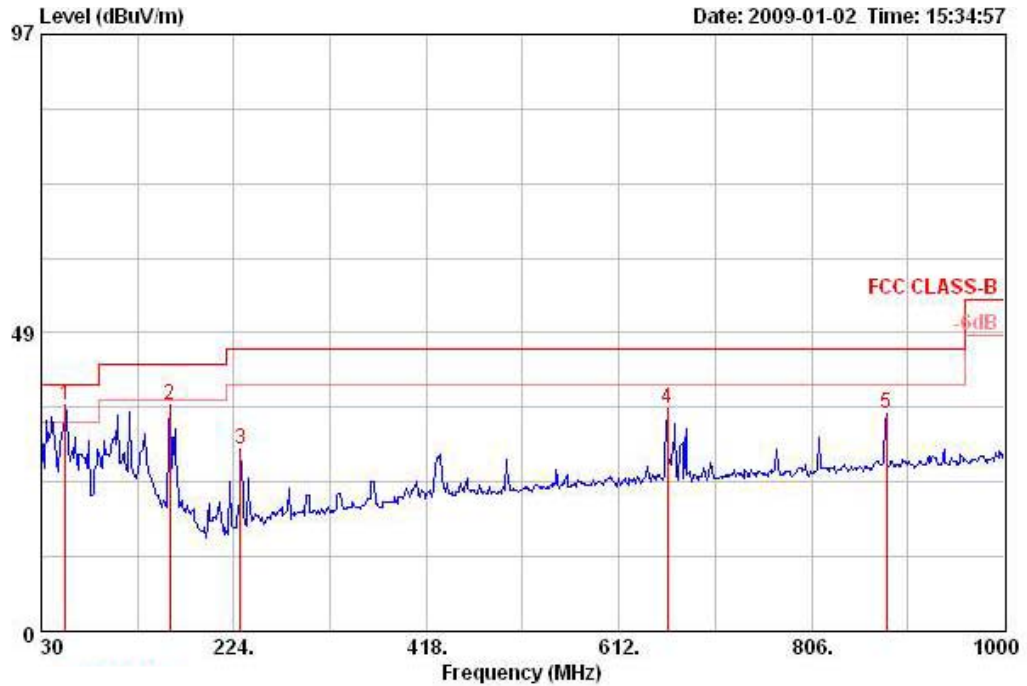
Temperature	24.3°C	Humidity	56%
Test Engineer	Sam Chen	Configurations	Channel 6 / Ant. 5

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	78.500	32.84	-7.16	40.00	52.42	7.07	27.69	1.03	Peak	HORIZONTAL	0	100
2 !	118.270	39.17	-4.33	43.50	53.10	12.38	27.51	1.20	Peak	HORIZONTAL	0	100
3 !	159.980	39.56	-3.94	43.50	53.33	12.03	27.30	1.50	Peak	HORIZONTAL	265	100
4	230.790	32.67	-13.33	46.00	46.55	11.34	27.04	1.82	Peak	HORIZONTAL	0	100
5	660.500	35.01	-10.99	46.00	40.63	18.96	28.04	3.46	Peak	HORIZONTAL	0	100
6	881.660	33.64	-12.36	46.00	37.16	20.39	27.44	3.53	Peak	HORIZONTAL	0	100

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	54.250	36.69	-3.31	40.00	55.87	7.83	27.78	0.78	Peak	VERTICAL	339	100
2	159.980	36.66	-6.84	43.50	50.43	12.03	27.30	1.50	Peak	VERTICAL	0	400
3	230.790	29.66	-16.34	46.00	43.53	11.34	27.04	1.82	Peak	VERTICAL	0	400
4	660.500	36.30	-9.70	46.00	41.91	18.96	28.04	3.46	Peak	VERTICAL	0	400
5	881.660	35.36	-10.64	46.00	38.88	20.39	27.44	3.53	Peak	VERTICAL	0	400

Note:

The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

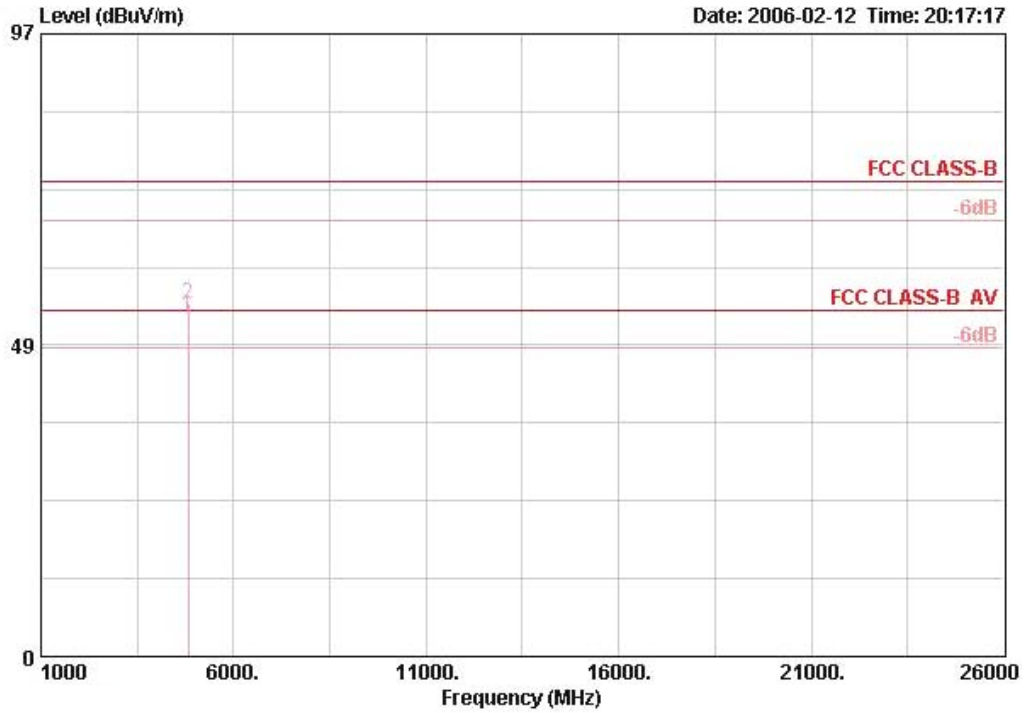
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.5.9. Results for Radiated Emissions (1GHz~10<sup>th</sup> Harmonic)

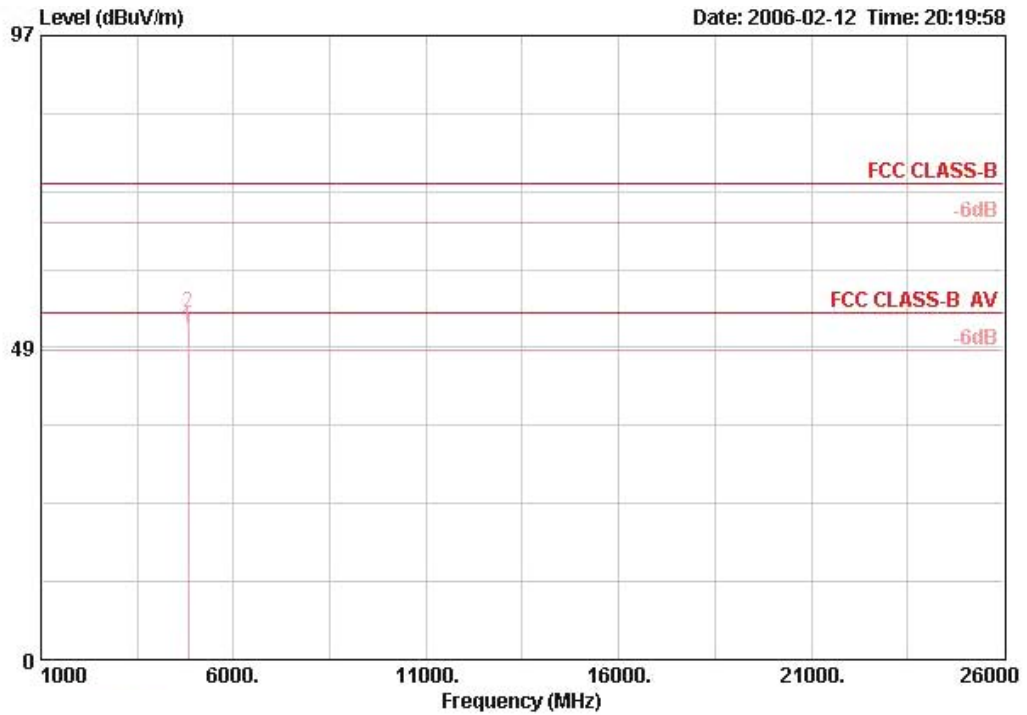
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 1 / Ant. 1

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV			cm	deg
1 @	4823.950	53.03	-0.97	54.00	33.22	4.68	35.10	50.24	AVERAGE		136	276
2 @	4823.950	55.08	-18.92	74.00	33.22	4.68	35.10	52.28	PEAK		136	276

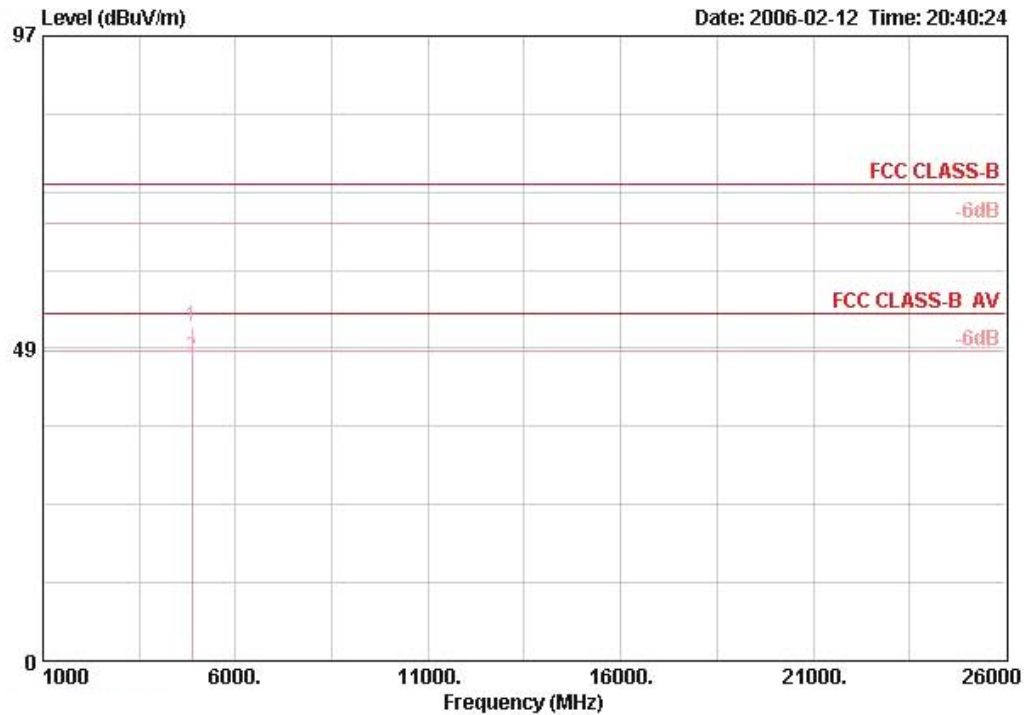
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m		dB	dB	dBuV		cm	deg
1 @	4824.010	51.50	-2.50	54.00	33.22		4.68	35.10	48.70	AVERAGE	138	290
2 @	4824.010	53.96	-20.04	74.00	33.22		4.68	35.10	51.16	PEAK	138	290

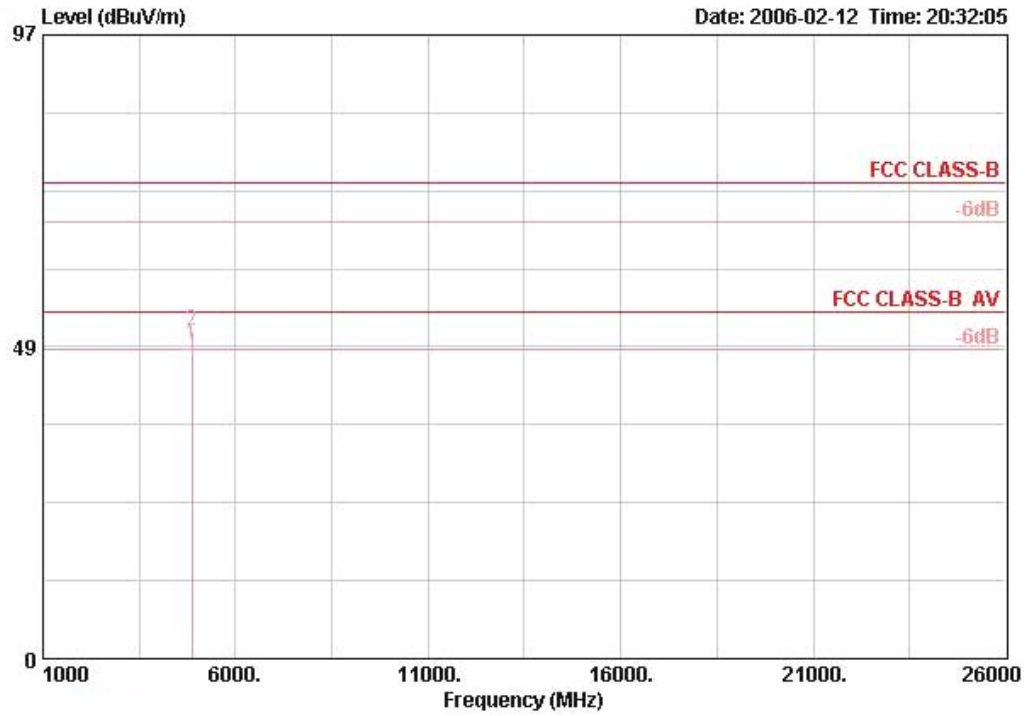
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 6 / Ant. 1

## Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line	Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m		dB	dB	dBuV		cm	deg
1 @	4873.980	51.72	-22.28	74.00	33.45		4.73	35.10	48.65	PERK	125	355
2 @	4873.990	47.16	-6.84	54.00	33.45		4.73	35.10	44.09	AVERAGE	125	355

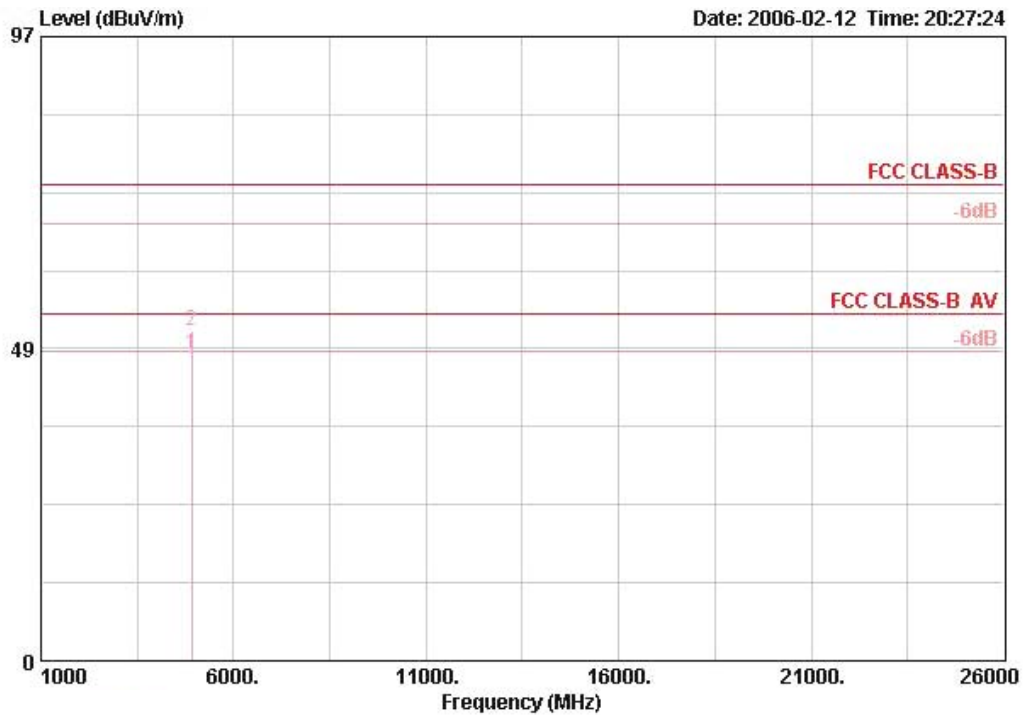
Vertical



	Freq	Level	Over Limit	Antenna Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	4874.030	48.83	-5.17	54.00	33.45	4.73	35.10	45.76	AVERAGE	126	300
2 @	4874.030	51.10	-22.90	74.00	33.45	4.73	35.10	48.03	PEAK	126	300

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 11 / Ant. 1

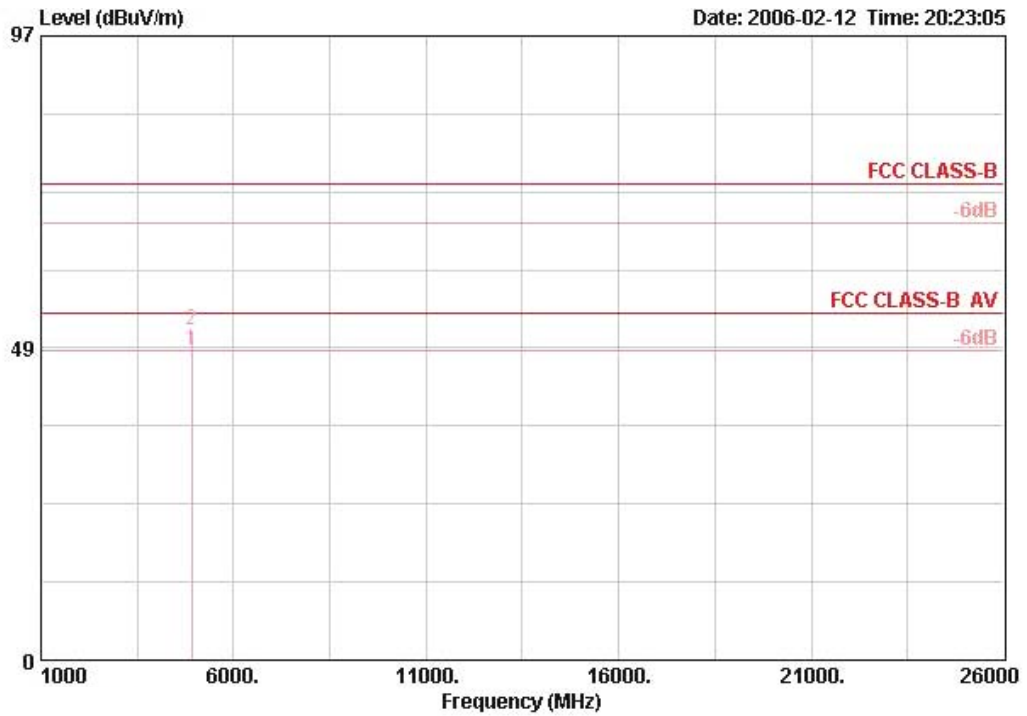
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line	Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m		dB	dB	dBuV		cm	deg
1 @	4923.980	47.70	-6.30	54.00	33.45		4.73	35.10	44.63	AVERAGE	125	360
2 @	4923.980	51.22	-22.78	74.00	33.45		4.73	35.10	48.14	PEAK	125	360



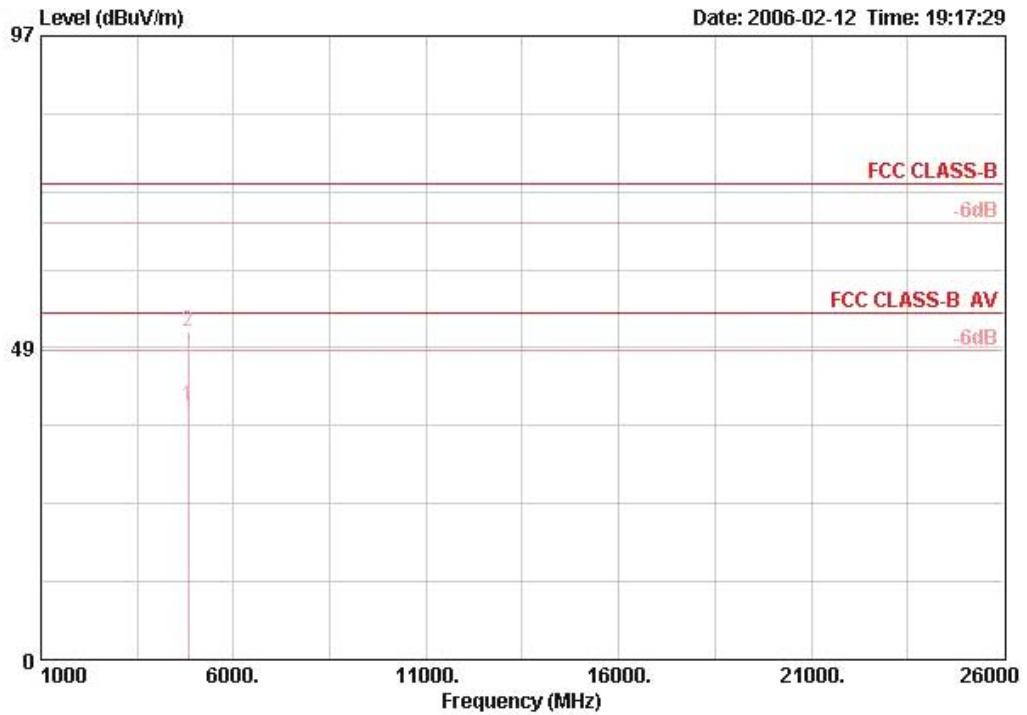
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m		dB	dB	dBuV		cm	deg
1 @	4924.010	48.14	-5.86	54.00	33.45		4.73	35.10	45.06	AVERAGE	126	307
2 @	4924.010	51.33	-22.67	74.00	33.45		4.73	35.10	48.26	PEAK	126	307

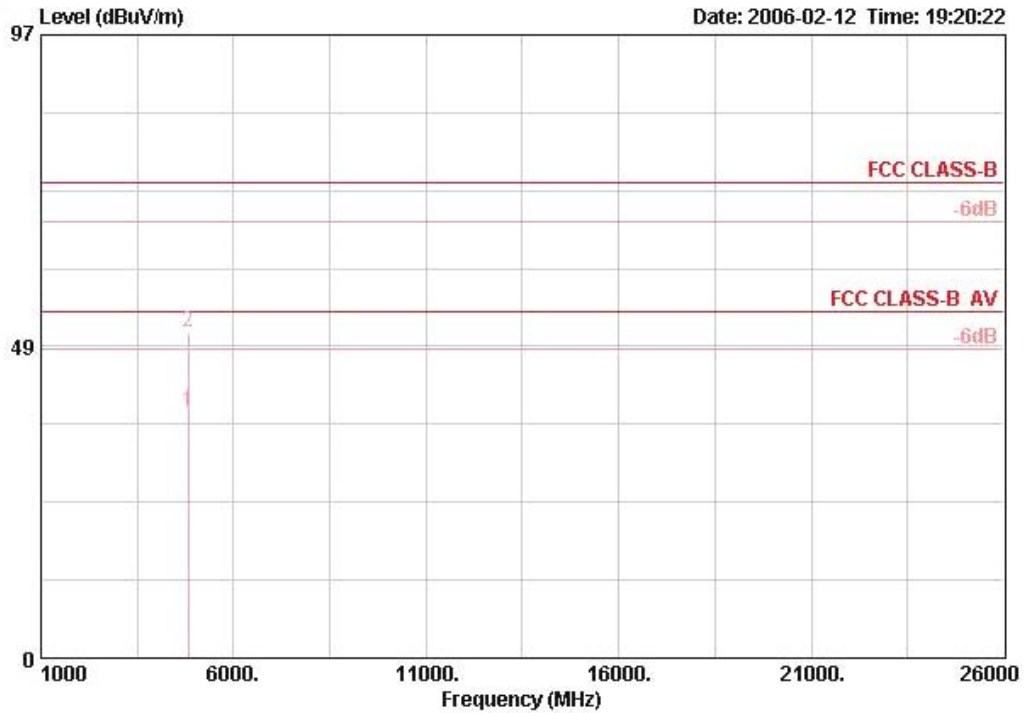
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11g Channel 1 / Ant. 1

Horizontal



	Over	Limit	Antenna	Cable	Preamp	Read	Ant	Table			
Freq	Level	Limit	Line	Factor	Loss	Factor	Level	Remark	Pos	Pos	
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg	
1 @	4823.580	39.51	-14.49	54.00	33.22	4.68	35.10	36.72	AVERAGE	126	287
2 @	4823.580	50.99	-23.01	74.00	33.22	4.68	35.10	48.19	PEAK	126	287

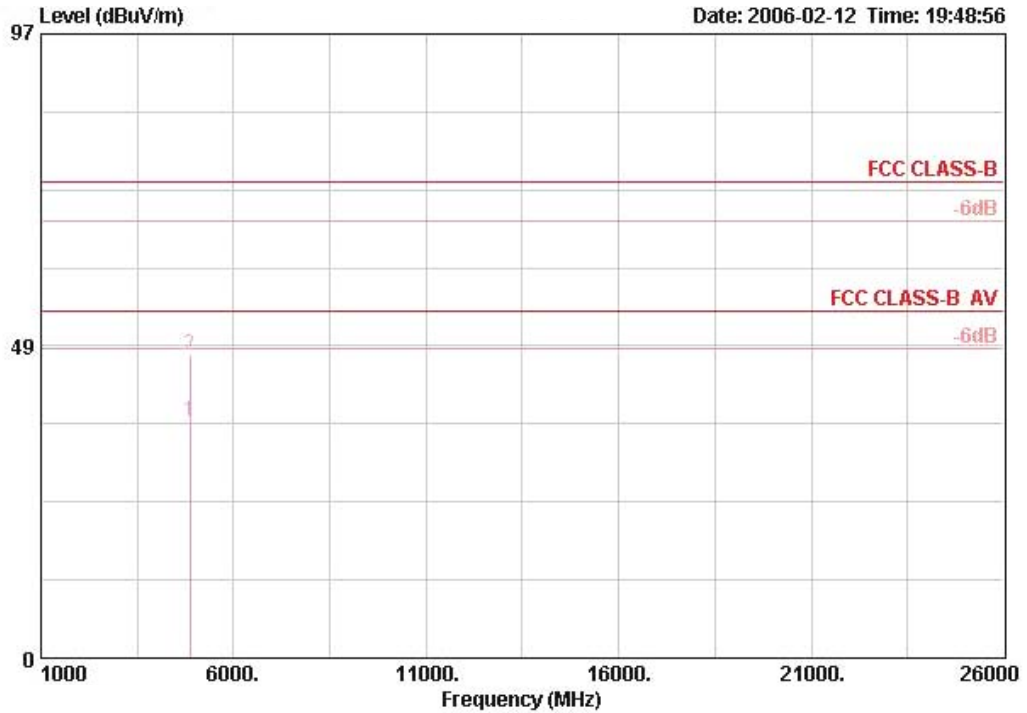
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV			cm	deg
1 @	4823.850	38.37	-15.63	54.00	33.22	4.68	35.10	35.57	AVERAGE		126	290
2 @	4823.850	50.85	-23.15	74.00	33.22	4.68	35.10	48.06	PEAK		126	290

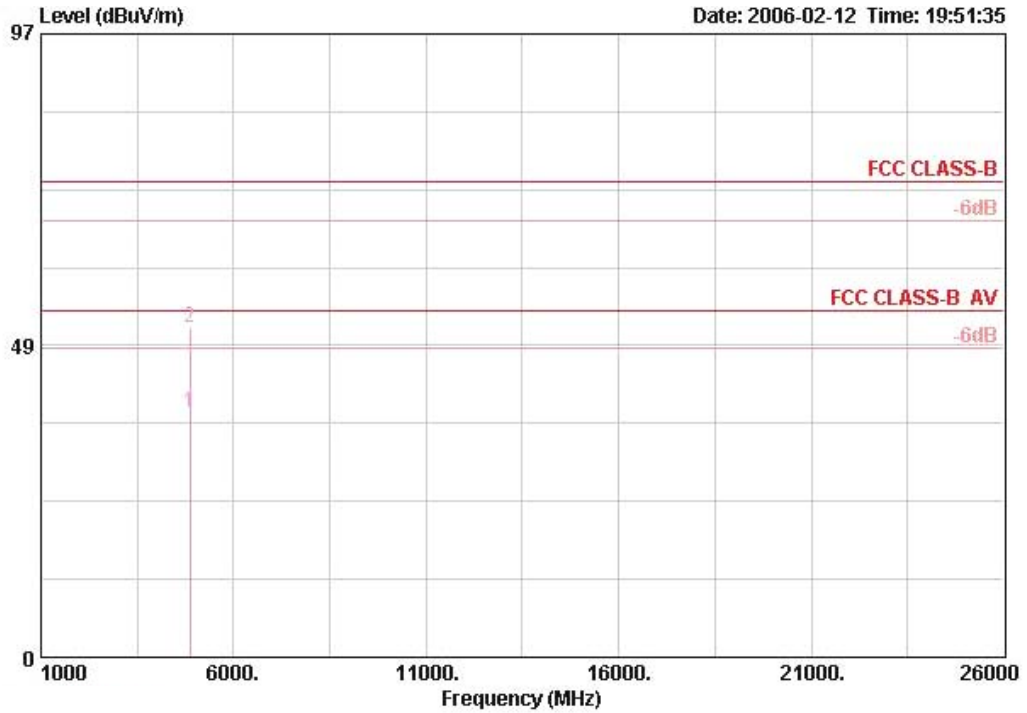
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11g Channel 6 / Ant. 1

## Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line	Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m		dB	dB	dBuV		cm	deg
1 @	4874.660	36.82	-17.18	54.00	33.33		4.69	35.10	33.89	AVERAGE	145	276
2 @	4874.660	47.00	-27.00	74.00	33.33		4.69	35.10	44.07	PEAK	145	276

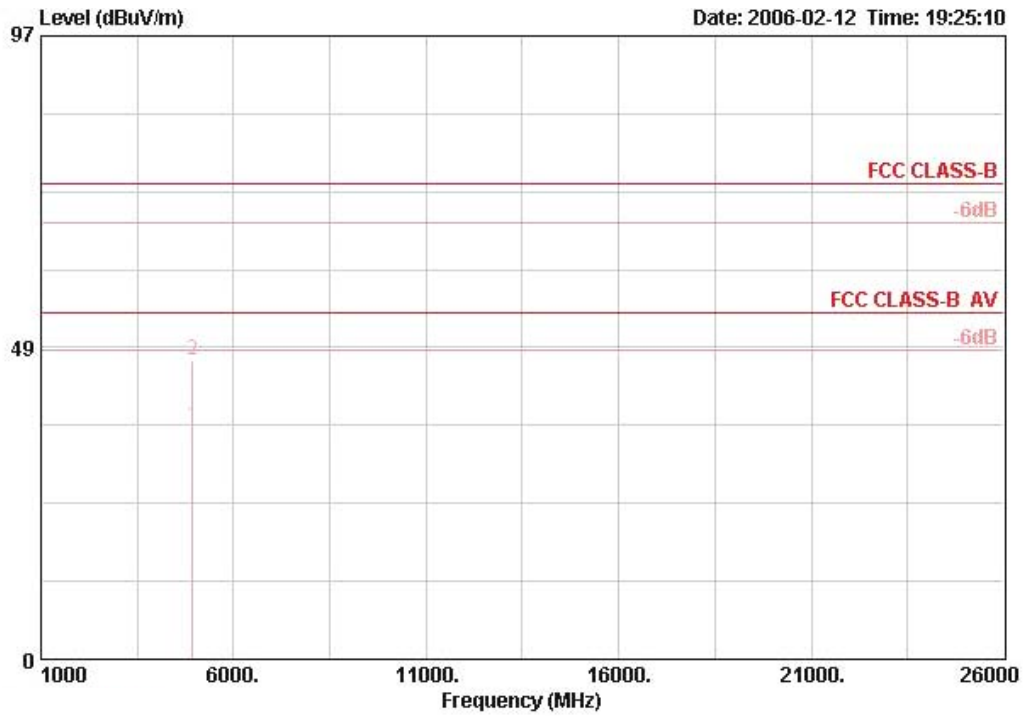
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dB	dBuV		cm	deg
1	4875.140	38.14	-15.86	54.00	33.33	4.69	35.10	35.21	AVERAGE		142	307
2	4875.140	51.21	-22.79	74.00	33.33	4.69	35.10	48.29	PEAK		142	307

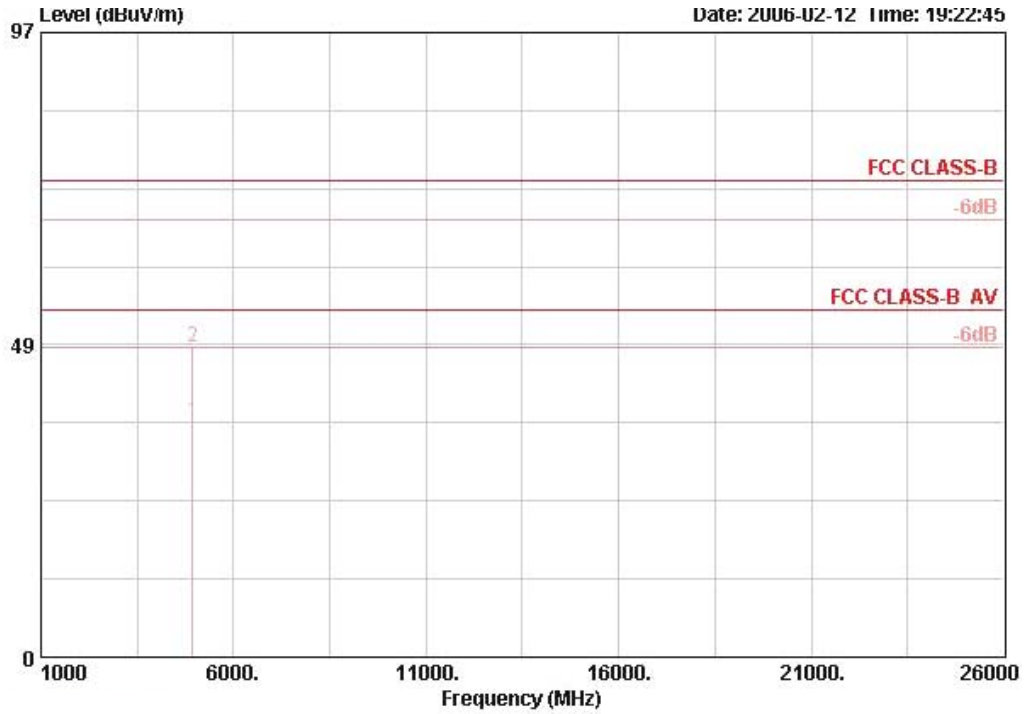
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11g Channel 11 / Ant. 1

Horizontal



	Over	Limit	Antenna	Cable	Preamp	Read		Ant	Table		
Freq	Level	Limit	Line	Loss	Factor	Level	Remark	Pos	Pos		
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV	cm	deg		
1 @	4925.300	36.25	-17.75	54.00	33.45	4.73	35.10	33.17	AVERAGE	127	1
2 @	4925.300	46.51	-27.49	74.00	33.45	4.73	35.10	43.44	PEAK	127	1

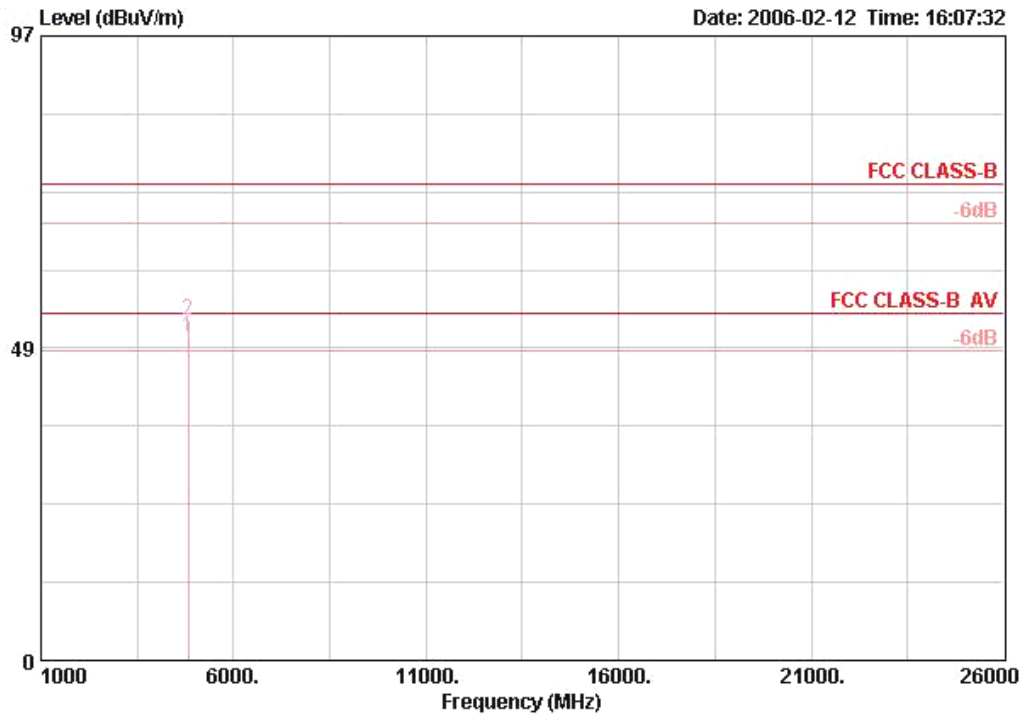
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dB	dBuV		cm	deg
1 @	4925.240	36.48	-17.52	54.00	33.45	4.73	35.10	33.40	AVERAGE		124	-58
2 @	4925.240	48.10	-25.90	74.00	33.45	4.73	35.10	45.02	PEAK		124	-58

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 1 / Ant. 2

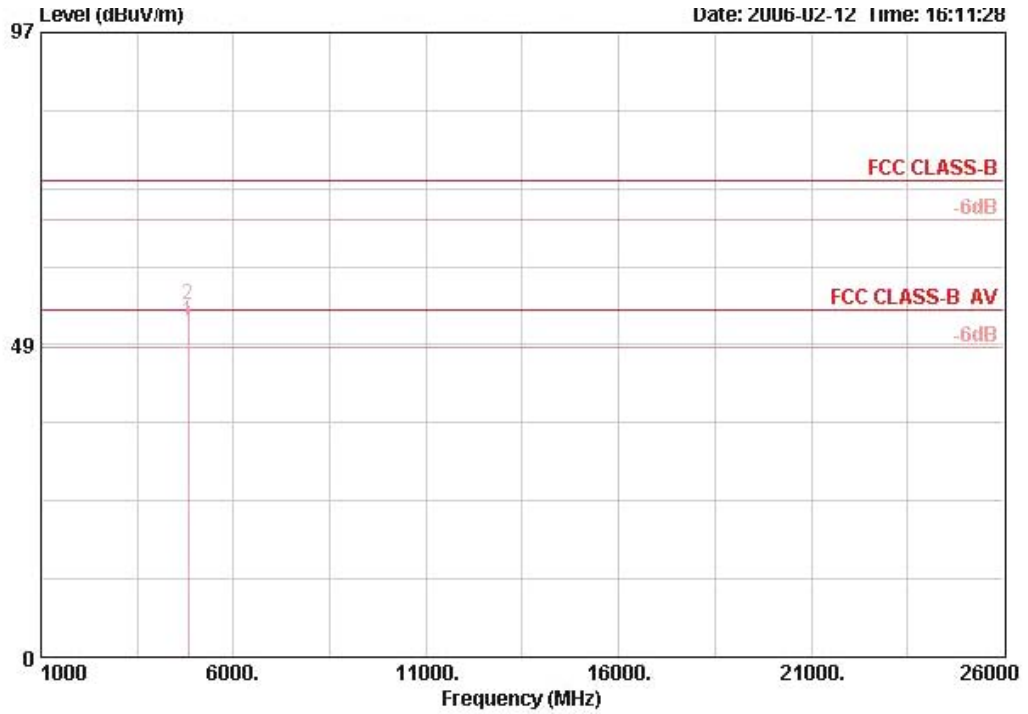
## Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	4824.070	50.19	-3.81	54.00	33.22	4.68	35.10	47.39	AVERAGE	189	297
2 @	4824.070	52.98	-21.02	74.00	33.22	4.68	35.10	50.18	PEAK	189	297



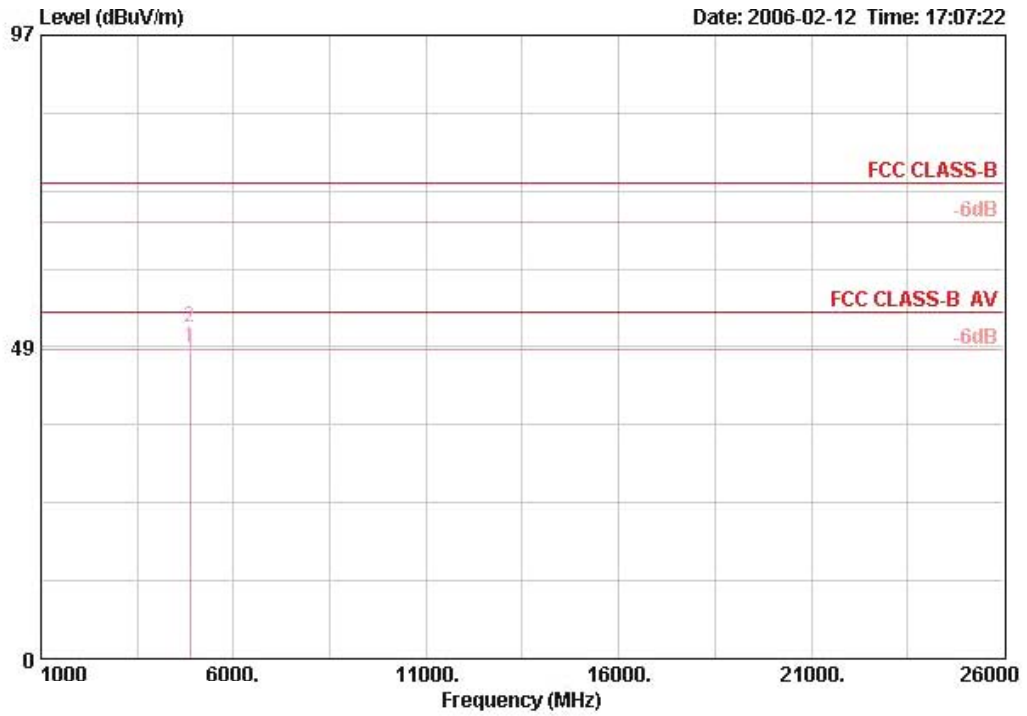
Vertical



	Over	Limit	Antenna	Cable	Preamp	Read	Ant	Table			
Freq	Level	Limit	Line	Loss	Factor	Level	Pos	Pos			
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	cm	deg			
1 @	4824.000	52.11	-1.89	54.00	33.22	4.68	35.10	49.31	AVERAGE	129	303
2 @	4824.000	54.65	-19.35	74.00	33.22	4.68	35.10	51.86	PEAK	129	303

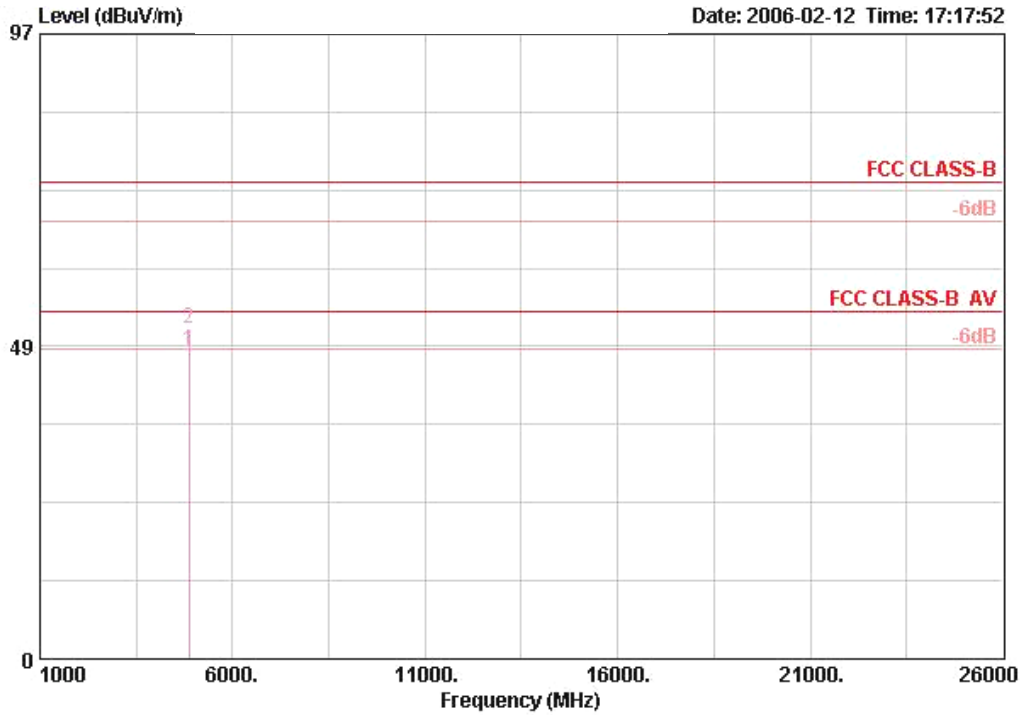
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 6 / Ant. 2

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	4874.008	48.29	-5.71	54.00	33.33	4.69	35.10	45.36	AVERAGE	157	-1
2 @	4874.008	51.51	-22.49	74.00	33.33	4.69	35.10	48.58	PEAK	157	-1

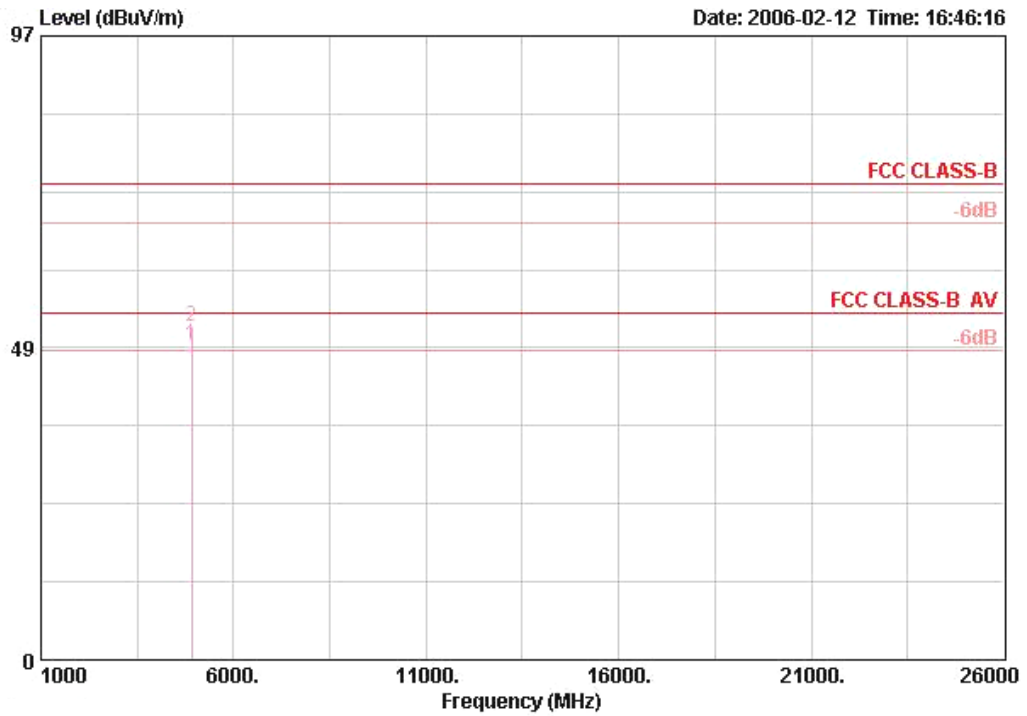
Vertical



	Over	Limit	Antenna	Cable	Preamp	Read	Ant	Table			
Freq	Level	Limit	Line	Loss	Factor	Level	Pos	Pos			
MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	cm	deg			
1 @	4874.008	47.96	-6.04	54.00	33.33	4.69	35.10	45.03	AVERAGE	163	-6
2 @	4874.008	51.16	-22.84	74.00	33.33	4.69	35.10	48.23	PEAK	163	-6

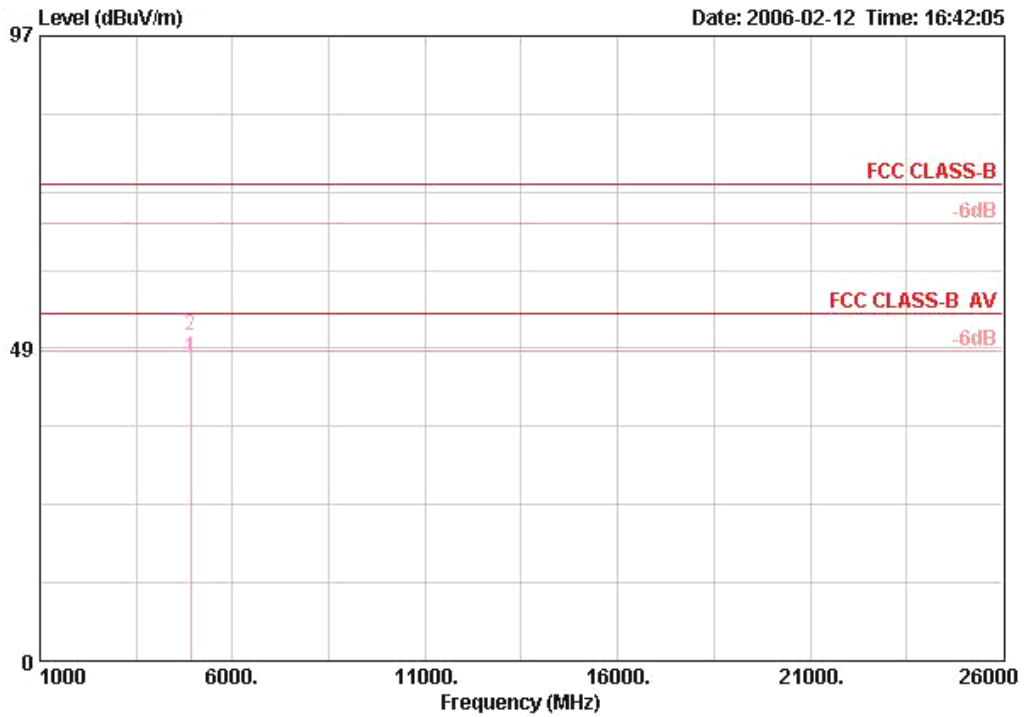
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11b Channel 11 / Ant. 2

Horizontal



	Over	Limit	Antenna	Cable	Preamp	Read	Ant	Table			
Freq	Level	Limit	Line	Loss	Factor	Level	Pos	Pos			
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	cm	deg			
1 @	4924.010	48.91	-5.09	54.00	33.45	4.73	35.10	45.84	AVERAGE	171	360
2 @	4924.010	51.71	-22.29	74.00	33.45	4.73	35.10	48.63	PEAK	171	360

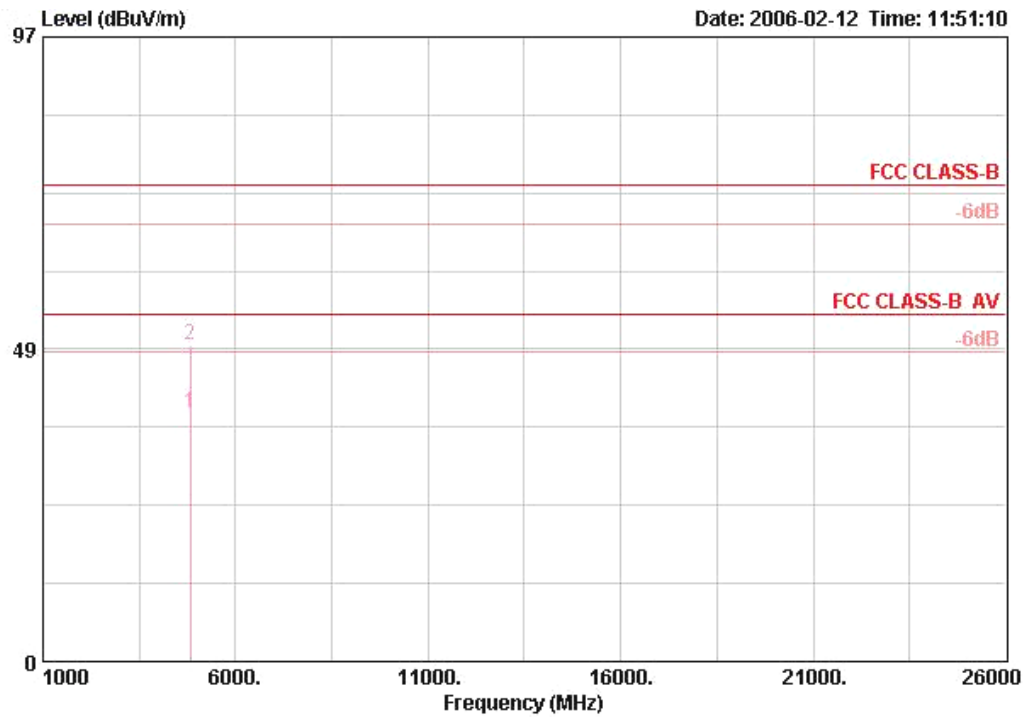
Vertical



	Freq	Level	Limit	Limit	Antenna	Cable	Preamp	Read	Ant	Table
	MHz	dBUV/m	dB	dBUV/m	Line Factor	Loss	Factor	Level	Pos	Pos
					dB/m	dB	dB	dBuV	cm	deg
1 @	4924.010	47.04	-6.96	54.00	33.45	4.73	35.10	43.96	114	305
2 @	4924.010	50.40	-23.60	74.00	33.45	4.73	35.10	47.33	114	305

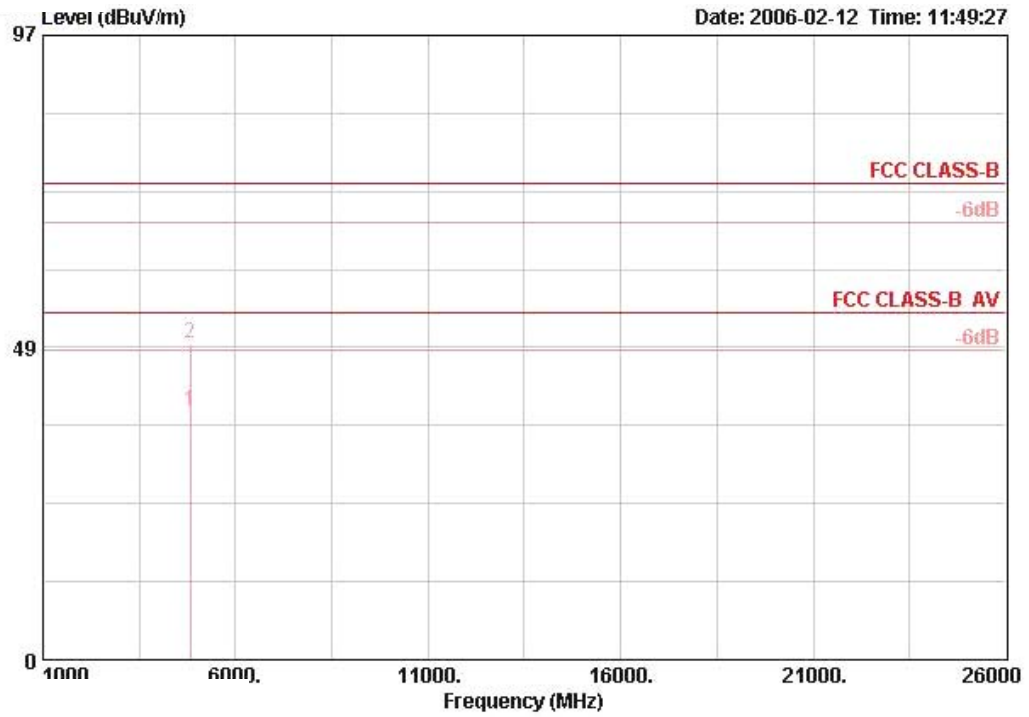
Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11g Channel 1 / Ant. 2

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBUV		cm	deg
1 @	4825.240	38.60	-15.40	54.00	33.22	4.68	35.10	35.81	AVERAGE	161	-46
2 @	4825.240	49.21	-24.79	74.00	33.22	4.68	35.10	46.42	PEAK	161	-46

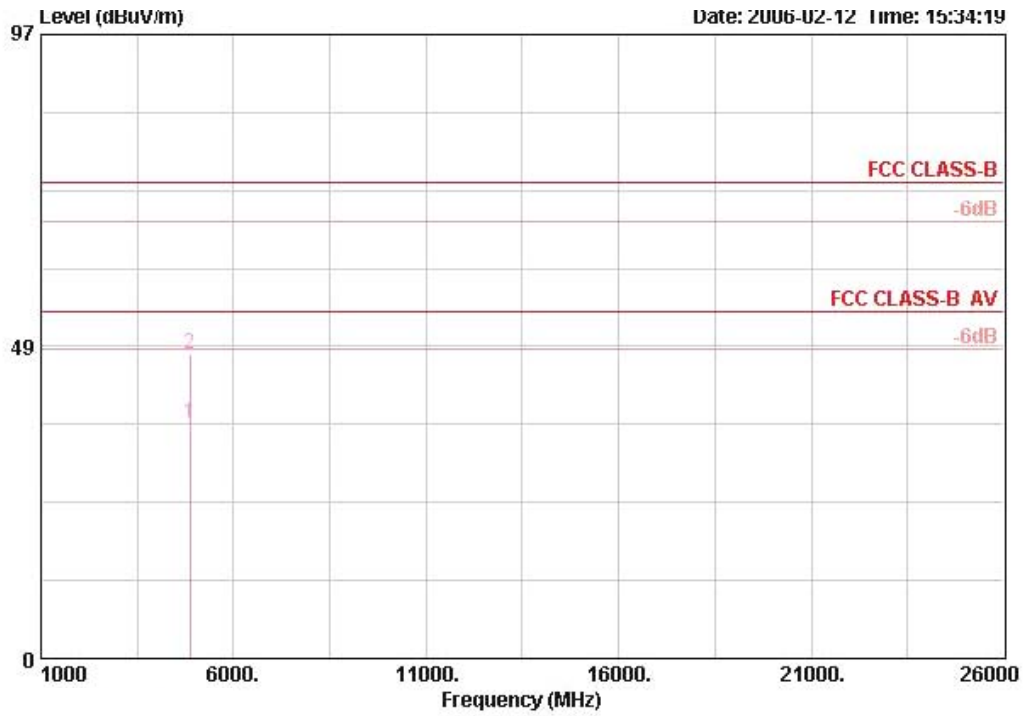
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBUV		cm	deg
1 @	4821.920	38.53	-15.47	54.00	33.22	4.68	35.10	35.73	AVERAGE	149	61
2 @	4821.920	49.15	-24.85	74.00	33.22	4.68	35.10	46.35	PEAK	149	0

Temperature	24°C	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11g Channel 6 / Ant. 2

Horizontal



	Over	Limit	Antenna	Cable	Preamp	Read	Ant	Table			
Freq	Level	Limit	Line Factor	Loss Factor	Level	Remark	Pos	Pos			
MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dBuV	cm	deg			
1 @	4875.040	36.43	-17.57	54.00	33.33	4.69	35.10	33.51	AVERAGE	157	-1
2 @	4875.040	47.26	-26.74	74.00	33.33	4.69	35.10	44.33	PEAK	157	-1