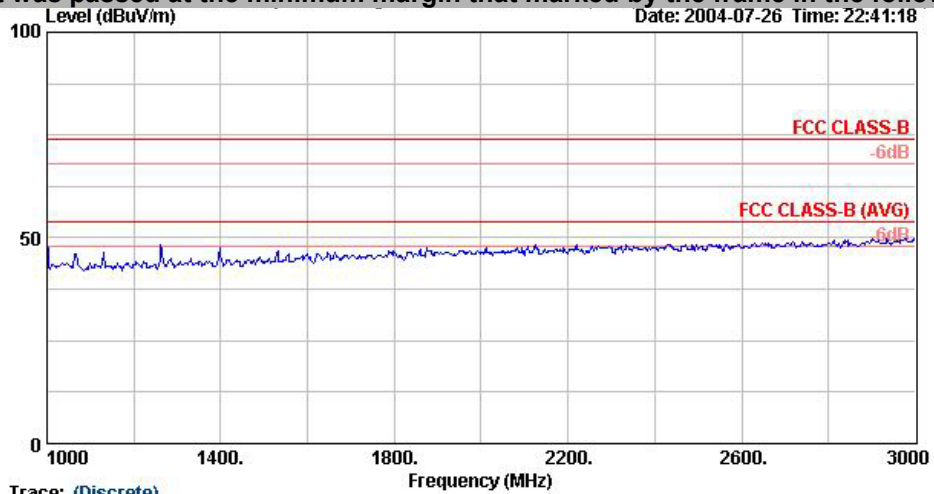


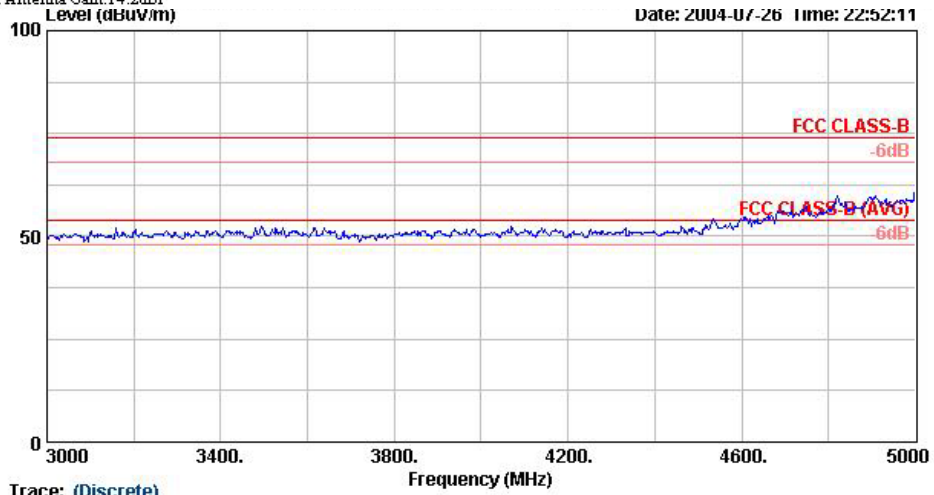
5.6.4.4 Antenna 8

- Test Mode: 802.11a TX Frequency = 5260 MHz
- Test Distance : 3 M
- Temperature : 25.3°C
- Relative Humidity :53.5 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test was passed at the minimum margin that marked by the frame in the following table



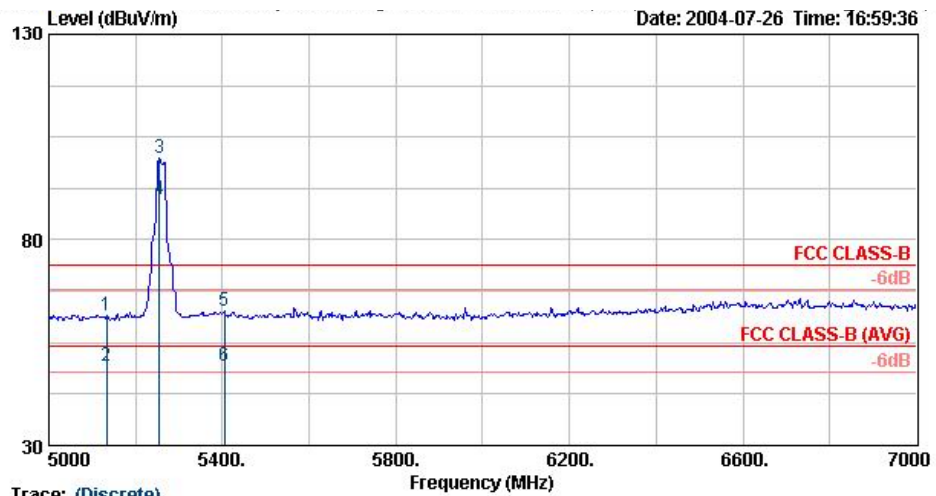
Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5260MHz
 : Panel Antenna Gain:14.2dBi



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5260MHz
 : Panel Antenna Gain:14.2dBi

FCC TEST REPORT

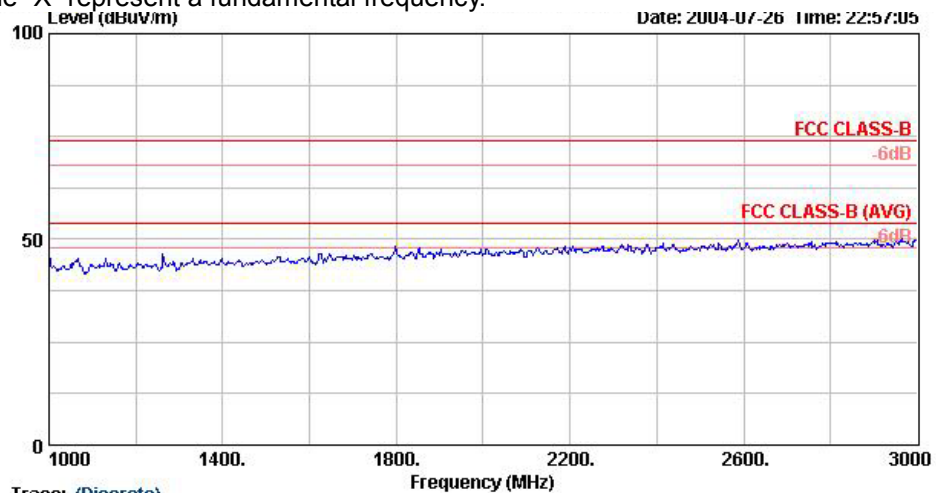
Report No. : F471907



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5260MHz
 Panel Antenna Gain:14.2dBi

	Freq	Level	Over	Limit	Antenna	Preamp	Cable	Remark	Ant	Table
	MHz	dBuV/m	Limit	dB	Line	Factor	Loss		Pos	Pos
									cm	deg
1 @	5134.00	61.76	-12.24	74.00	33.69	45.89	4.99	Peak	---	---
2 @	5134.00	49.15	-4.85	54.00	33.69	45.89	4.99	Average	---	---
3 @	5254.00	100.03			33.85	46.05	5.07	Peak	---	---
4 @	5254.00	89.88			33.85	46.05	5.07	Average	---	---
5 @	5404.00	62.54	-11.46	74.00	34.06	46.26	5.17	Peak	---	---
6 @	5404.00	49.42	-4.58	54.00	34.06	46.26	5.17	Average	---	---

Remark: The "X" represent a fundamental frequency.



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5260MHz
 Panel Antenna Gain:14.2dBi

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FAX : 886-2-2696-2255

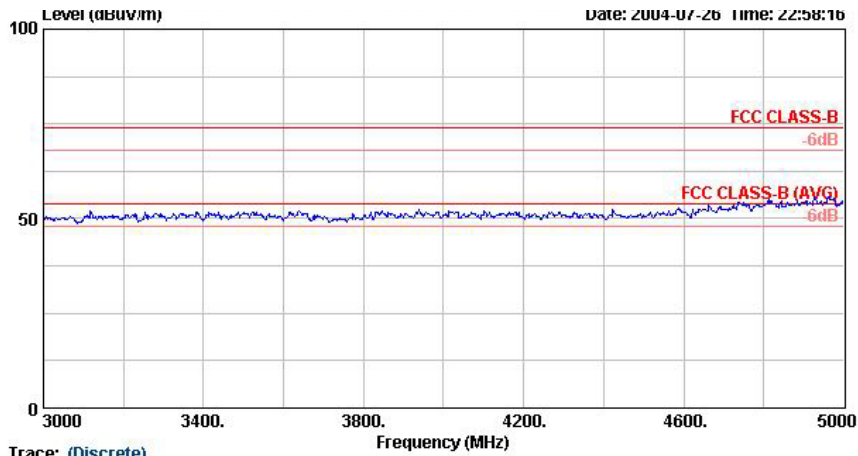
FCC ID : H9PWSAP5100

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Issued Date : Aug. 10, 2004

FCC TEST REPORT

Report No. : F471907



Trace: (Discrete)

Site : 03CH06

Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL

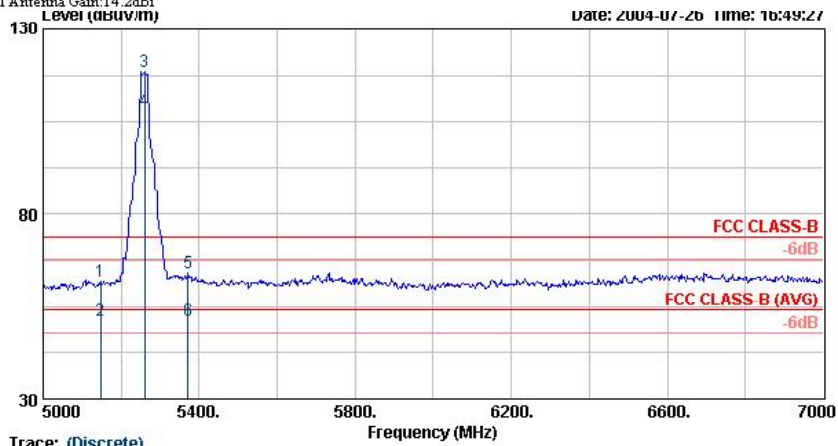
EUT : 802.11a/b/g Access Point

Power : AC 120v / 60Hz

Model : WASP5100

Memo : 802.11a TX 5260MHz

Panel Antenna Gain:14.2dBi



Trace: (Discrete)

Site : 03CH06

Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL

EUT : 802.11a/b/g Access Point

Power : AC 120v / 60Hz

Model : WASP5100

Memo : 802.11a TX 5260MHz

Panel Antenna Gain:14.2dBi

	Freq	Over	Limit	Antenna	Preamp	Cable		Ant	Table
	MHz	Limit	Level	Line	Factor	Loss	Remark	Pos	Pos
		dB	dBuV/m	Factor	dB/m	dB		cm	deg
1	5148.00	-12.08	61.92	74.00	33.71	45.91	5.00 Peak	---	---
2	5148.00	-2.96	51.04	54.00	33.71	45.91	5.00 Average	---	---
3	5260.00	44.46			33.87	46.07	5.08 Peak	---	---
4	5260.00	53.97			33.87	46.05	0.00 Average	---	---
5	5372.00	-9.96	64.04	74.00	34.01	46.21	5.15 Peak	---	---
6	5372.00	-2.90	51.10	54.00	34.01	46.21	5.15 Average	---	---

Remark: The "X" represent a fundamental frequency.

Frequency from 7GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

Test Engineer :

Jones Tsai

Jones Tsai

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

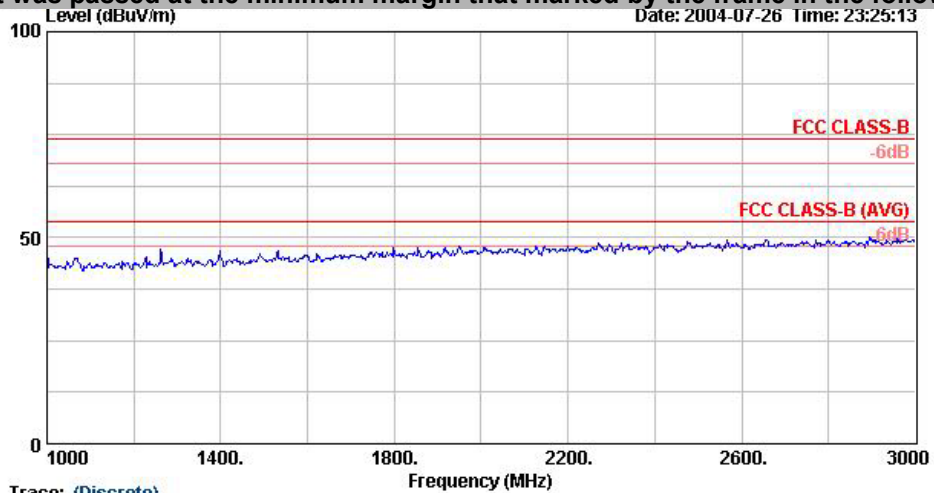
FCC ID : H9PWSAP5100

Page No. : 90 of 114

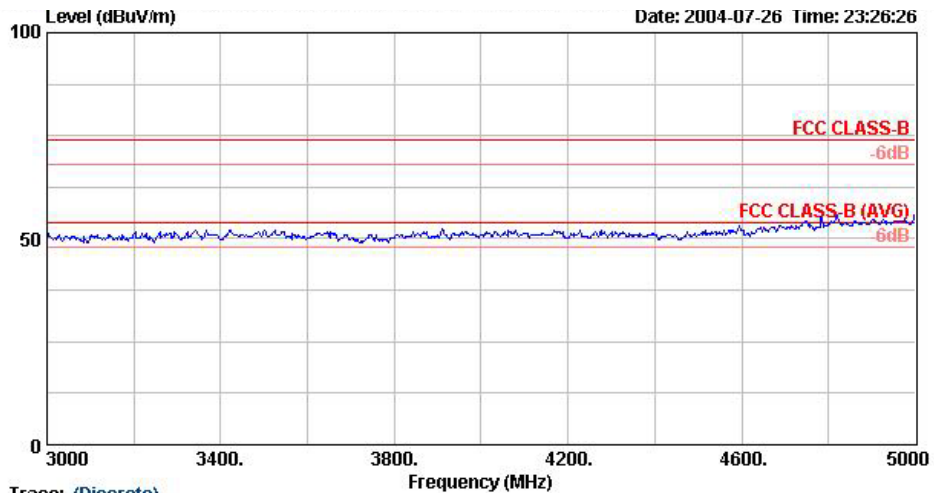
Issued Date : Aug. 10, 2004

- Test Mode: 802.11a TX Frequency = 5320 MHz
- Test Distance : 3 M
- Temperature : 25.3°C
- Relative Humidity :53.5 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading : Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test was passed at the minimum margin that marked by the frame in the following table



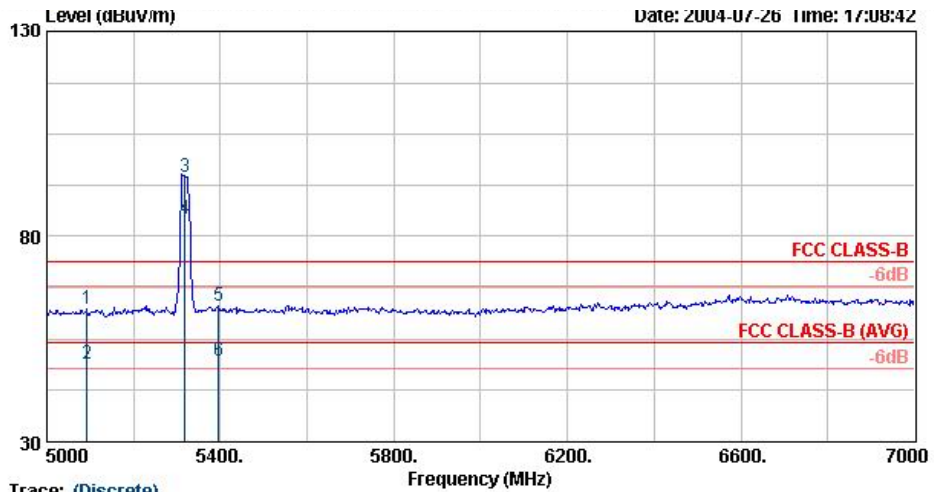
Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 : Panel Antenna Gain:14.2dBi



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 : Panel Antenna Gain:14.2dBi

FCC TEST REPORT

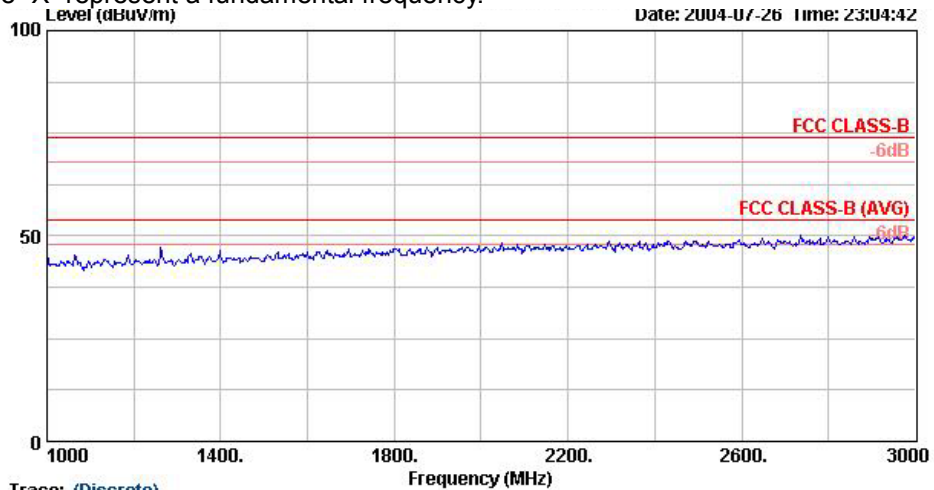
Report No. : F471907



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 : Panel Antenna Gain:14.2dBi

	Freq	Level	Over	Limit	Antenna	Preamp	Cable	Remark	Ant	Table
	MHz	dBuV/m	Limit	dB	Line	Factor	Loss		Pos	Pos
									cm	deg
1 @	5092.00	62.44	-11.56	74.00	33.64	45.84	4.97	Peak	---	---
2 @	5092.00	49.02	-4.98	54.00	33.64	45.84	4.97	Average	---	---
3 @	5318.00	94.84			33.94	46.14	5.12	Peak	---	---
4 @	5318.00	84.15			33.94	46.14	5.12	Average	---	---
5 @	5396.00	63.15	-10.85	74.00	34.06	46.26	5.17	Peak	---	---
6 @	5396.00	49.66	-4.34	54.00	34.06	46.26	5.17	Average	---	---

Remark: The "X" represent a fundamental frequency.



Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 : Panel Antenna Gain:14.2dBi

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TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

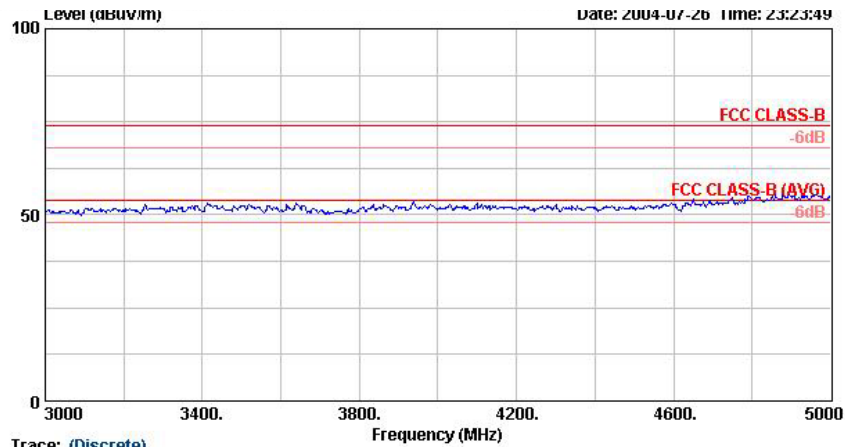
FCC ID : H9PWSAP5100

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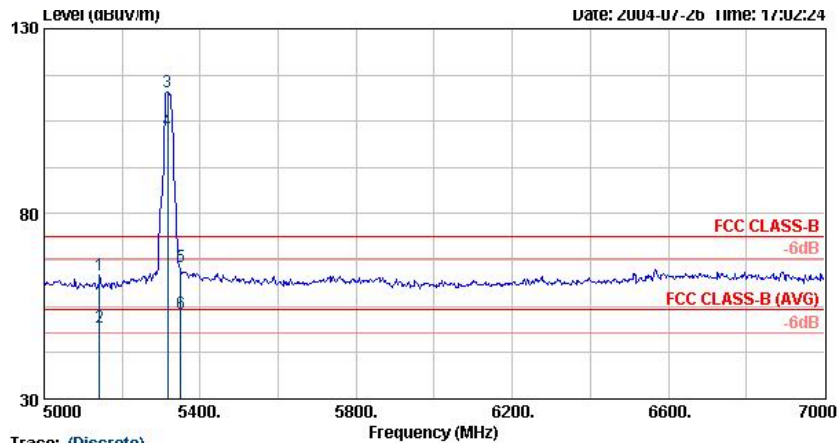
Issued Date : Aug. 10, 2004

FCC TEST REPORT

Report No. : F471907



Trace: (Discrete)
 Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 Panel Antenna Gain:14.2dBi



Trace: (Discrete)
 Site : 03CH06
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL
 EUT : 802.11a/b/g Access Point
 Power : AC 120v / 60Hz
 Model : WASP5100
 Memo : 802.11a TX 5320MHz
 Panel Antenna Gain:14.2dBi

	Freq	Level	Over	Limit	Antenna	Preamp	Cable	Remark	Ant	Table
	MHz	dBuV/m	Limit	dBuV/m	Factor	Factor	Loss		Pos	Pos
			dB		dB/m	dB	dB		cm	deg
1 @	5142.00	63.38	-10.62	74.00	33.71	45.91	5.00	Peak	---	---
2 @	5142.00	49.46	-4.54	54.00	33.71	45.91	5.00	Average	0	0
3 @	5316.00	112.93			33.94	46.14	5.12	Peak	---	---
4 @	5316.00	102.54			33.94	46.14	5.12	Average	---	---
5 @	5350.00	65.87	-8.13	74.00	33.99	46.19	5.14	Peak	0	0
6 @	5350.00	52.94	-1.06	54.00	33.99	46.19	5.14	Average	0	0

Remark: The "X" represent a fundamental frequency.

Frequency from 7GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

Test Engineer :

Jones Tsai

Jones Tsai

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

FCC ID : H9PWSAP5100

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Issued Date : Aug. 10, 2004

5.7 Band Edges Measurement

5.7.1 Measuring Instruments :

As described in chapter 7 of this test report.

5.7.2 Test Procedure :

1. Set both RBW and VBW of spectrum analyzer to 1MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

5.7.3 Test Result :

Test Result in lower band (5180MHz) :	PASS
Test Result in higher band(5240MHz) :	PASS
Test Result in lower band (5260MHz) :	PASS
Test Result in higher band(5320MHz) :	PASS

5.7.4 Note on Band edge Radiation Emission

Only the vertical polovization data are shown in the report because they are worse than the horizonetal data.

5.7.4.1 Antenna 1**11a 5180MHz (Vertical Polarization)**

	Over	Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss	Remark
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)
									(deg)
1	5150	-0.18	53.82	54	61.02	33.71	45.91	5	Average
2	5150	-0.56	67.74	68.3	74.94	33.71	45.91	5	Peak
3	5350	-9.69	58.61	68.3	65.67	33.99	46.19	5.14	Peak
4	5350	-6.59	47.41	54	54.47	33.99	46.19	5.14	Average

11a 5320MHz (Vertical Polarization)

	Over	Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss	Remark
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	(cm)
									(deg)
1	5142	-8.71	59.59	68.3	66.79	33.71	45.91	5	Peak
2	5142	-5.2	48.8	54	56	33.71	45.91	5	Average
3	5350	-1.72	52.28	54	59.34	33.99	46.19	5.14	Average
4	5350	-0.71	67.59	68.3	74.65	33.99	46.19	5.14	Peak

5.7.4.2 Antenna 6**11a 5260MHz (Vertical Polarization)**

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5078	-10.73	57.57	68.3	64.81	33.62	45.82	4.96	Peak		
2	5078	-6.85	47.15	54	54.39	33.62	45.82	4.96	Average		
3	5358	-8.7	59.6	68.3	66.66	33.99	46.19	5.14	Peak		
4	5358	-4.52	49.48	54	56.54	33.99	46.19	5.14	Average		

11a 5320MHz (Vertical Polarization)

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5116	-11.34	56.96	68.3	64.18	33.66	45.86	4.98	Peak		
2	5116	-8.46	45.54	54	52.76	33.66	45.86	4.98	Average		
3	5350	-1.58	52.42	54	59.48	33.99	46.19	5.14	Average		
4	5350	-0.93	67.37	68.3	74.43	33.99	46.19	5.14	Peak		

5.7.4.3 Antenna 7

11a 5260MHz (Vertical Polarization)

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5086	-9.52	58.78	68.3	66.01	33.62	45.81	4.96	Peak		
2	5086	-8.46	45.54	54	52.77	33.62	45.81	4.96	Average		
3	5356	-14.52	59.48	74	66.52	33.99	46.19	5.16	Peak		
4	5356	-21.96	46.34	68.3	53.38	33.99	46.19	5.16	Average		

11a 5320MHz (Vertical Polarization)

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5054	-8.14	60.16	68.3	67.43	33.57	45.77	4.93	Peak		
2	5054	-7.6	46.4	54	53.67	33.57	45.77	4.93	Average		
3	5350	-1.42	52.58	54	59.64	33.99	46.19	5.14	Average		
4	5350	-0.7	67.6	68.3	74.66	33.99	46.19	5.14	Peak		

5.7.4.4 Antenna 8

11a 5260MHz (Vertical Polarization)

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5148	-6.38	61.92	68.3	69.12	33.71	45.91	5	Peak		
2	5148	-2.96	51.04	54	58.24	33.71	45.91	5	Average		
3	5372	-4.26	64.04	68.3	71.09	34.01	46.21	5.15	Peak		
4	5372	-2.9	51.1	54	58.15	34.01	46.21	5.15	Average		

11a 5320MHz (Vertical Polarization)

		Over		Limit	Read	Antenna	Preamp	Cable		Ant	Table
	Frequency	Limit	Level	Line	Level	Factor	Factor	Loss		Pos	Pos
	(MHz)	(dB)	(dBuV/m)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	Remark	(cm)	(deg)
1	5142	-4.92	63.38	68.3	70.58	33.71	45.91	5	Peak		
2	5142	-4.54	49.46	54	56.66	33.71	45.91	5	Average		
3	5350	-2.43	65.87	68.3	72.93	33.99	46.19	5.14	Peak		
4	5350	-1.06	52.94	54	60	33.99	46.19	5.14	Average		

Remark:

1. All emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.
(68.3 dBuV/m/ MHz)
2. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E \text{ (V/m)} = \frac{\sqrt{30 \times P \times G}}{d}$$

E = Field Strength (Volts/meter)

P XG = Effective Isotropic Radiated Power (W)

d = distance in meters

5.8 Peak Excursion

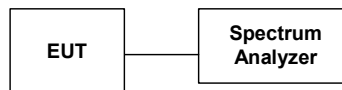
5.8.1 Measuring Instruments : As described in chapter 7 of this test report.

5.8.2 Test Procedure :

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to and maintained at 1 MHz. First the video bandwidth is set to 1 MHz, Trace A is set to Max Hold, then to View. Then the video bandwidth is readjusted to 300 KHz, and the signal under this measurement condition is captured in Trace B.

The difference between the traces is investigated. The marker is placed at the frequency which shows the largest difference. The amplitude delta between the traces at this frequency is the peak excursion.

5.8.3 Test Setup Layout :



5.8.4 Test Result : See spectrum analyzer plots below

5.8.4.1 Antenna 1:

- Temperature : 25.3 °C
- Relative Humidity : 53.5%

Frequency (MHz)	Peak Excursion (dB)	Limits (dB)	Plot Ref. No.
5180	5.33	13	Antenna 1-1
5240	4.91	13	Antenna 1-2
5260	4.04	13	Antenna 1-3
5320	4.99	13	Antenna 1-4

5.8.4.2 Antenna 6:

- Temperature : 25.3 °C
- Relative Humidity : 53.5%

Frequency (MHz)	Peak Excursion (dB)	Limits (dB)	Plot Ref. No.
5260	4.73	13	Antenna 6-1
5320	5.27	13	Antenna 6-2

5.8.4.3 Antenna 7:

- Temperature : 25.3 °C
- Relative Humidity : 53.5%

Frequency (MHz)	Peak Excursion (dB)	Limits (dB)	Plot Ref. No.
5260	3.84	13	Antenna 7-1
5320	5.55	13	Antenna 7-2

5.8.4.4 Antenna 8:

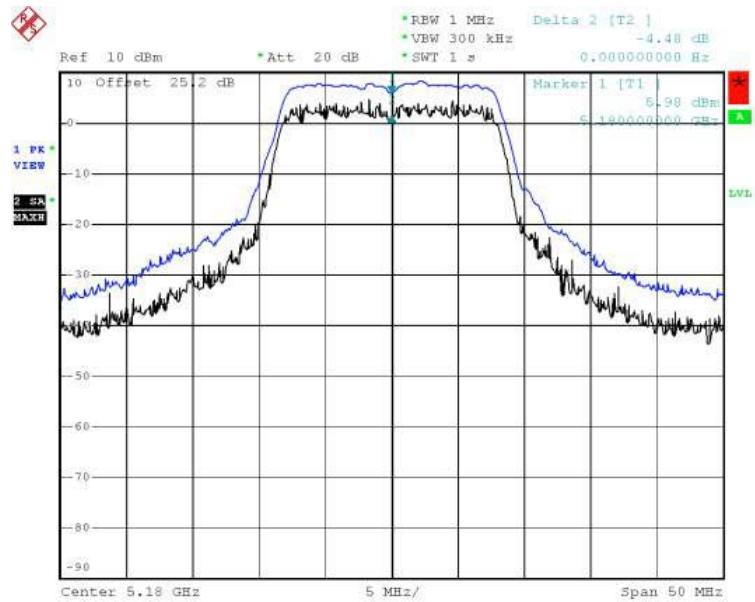
- Temperature : 25.3 °C
- Relative Humidity : 53.5%

Frequency (MHz)	Peak Excursion (dB)	Limits (dB)	Plot Ref. No.
5260	4.23	13	Antenna 8-1
5320	4.71	13	Antenna 8-2

5.8.5 Test Data

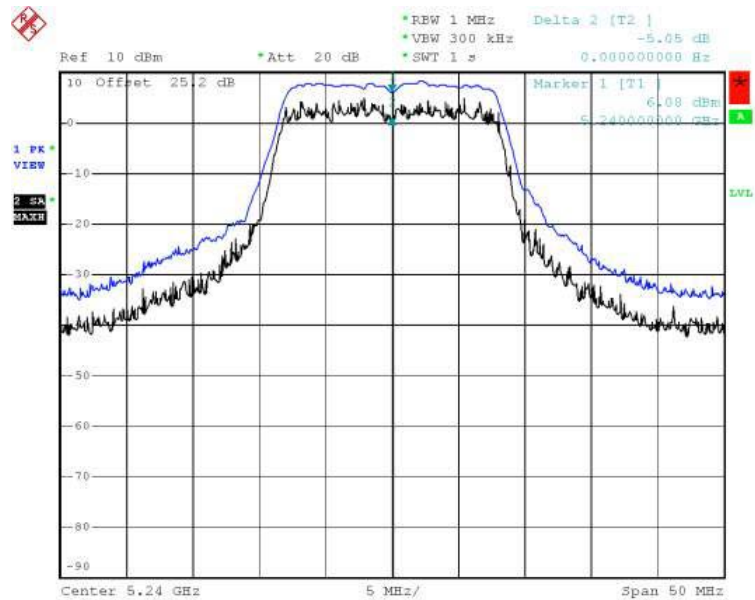
5.8.5.1 Antenna 1

1-1



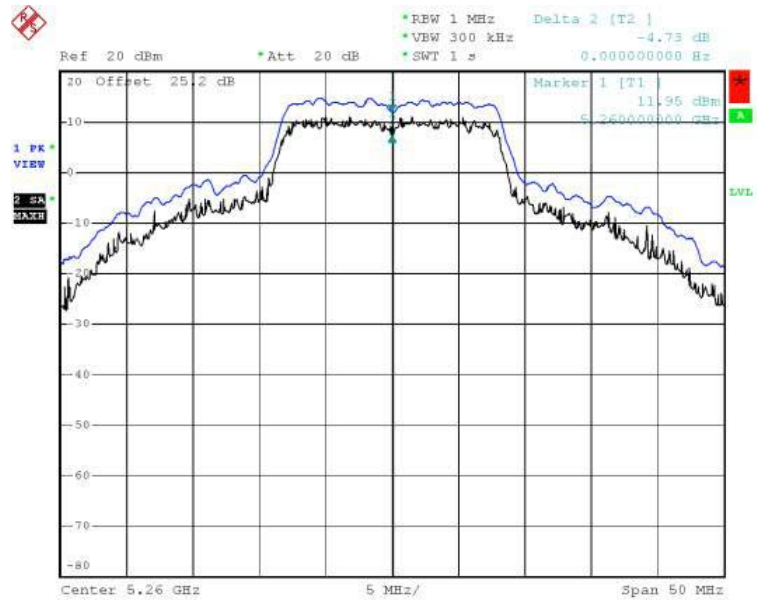
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1-2



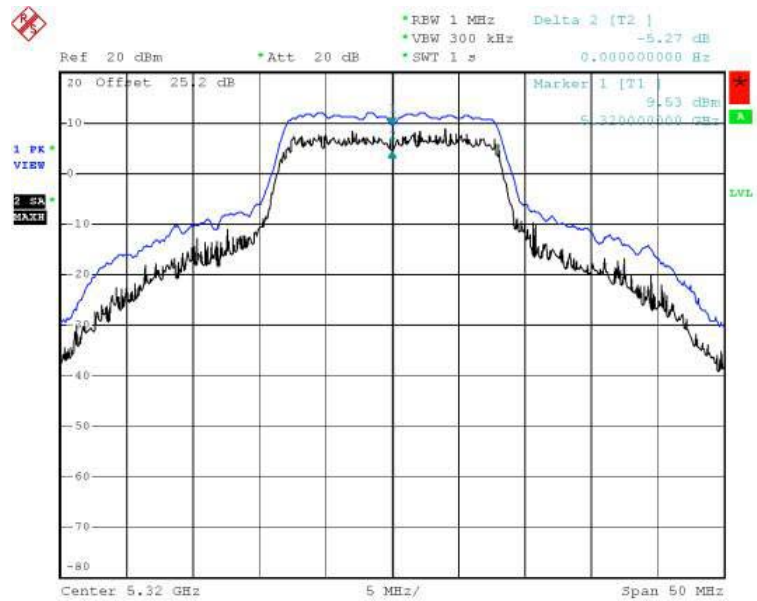
Date: 27.JUL.2004 15:16:26

1-3



Date: 27.JUL.2004 15:15:05

1-4



Date: 27.JUL.2004 15:26:03