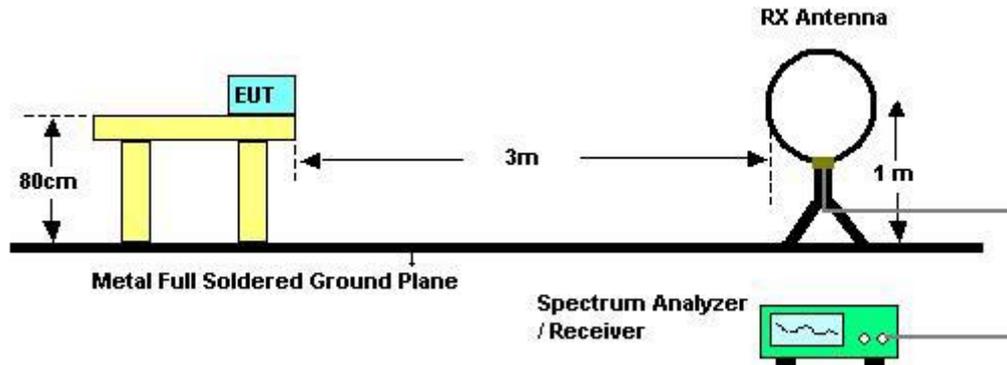


#### 4.5.3. Test Procedures

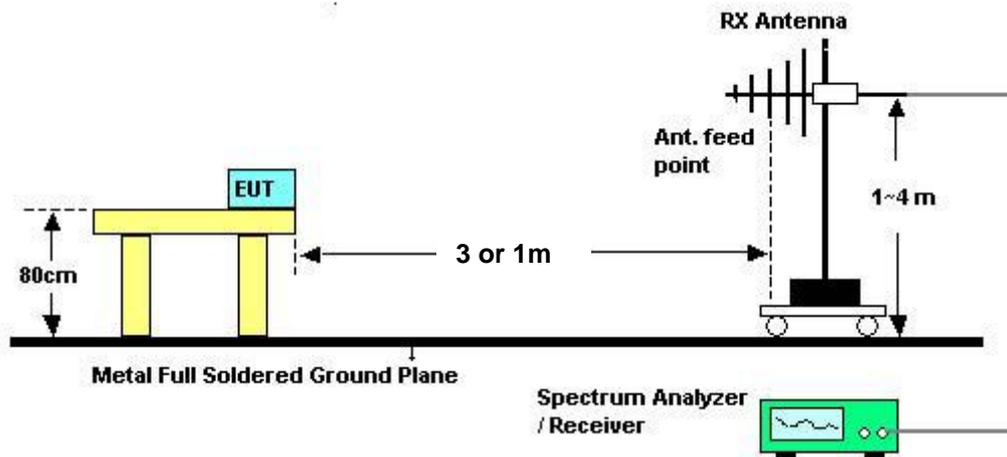
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 1m.

Distance extrapolation factor =  $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$  (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

#### 4.5.5. Test Deviation

There are no deviations 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	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6

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

Note:

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

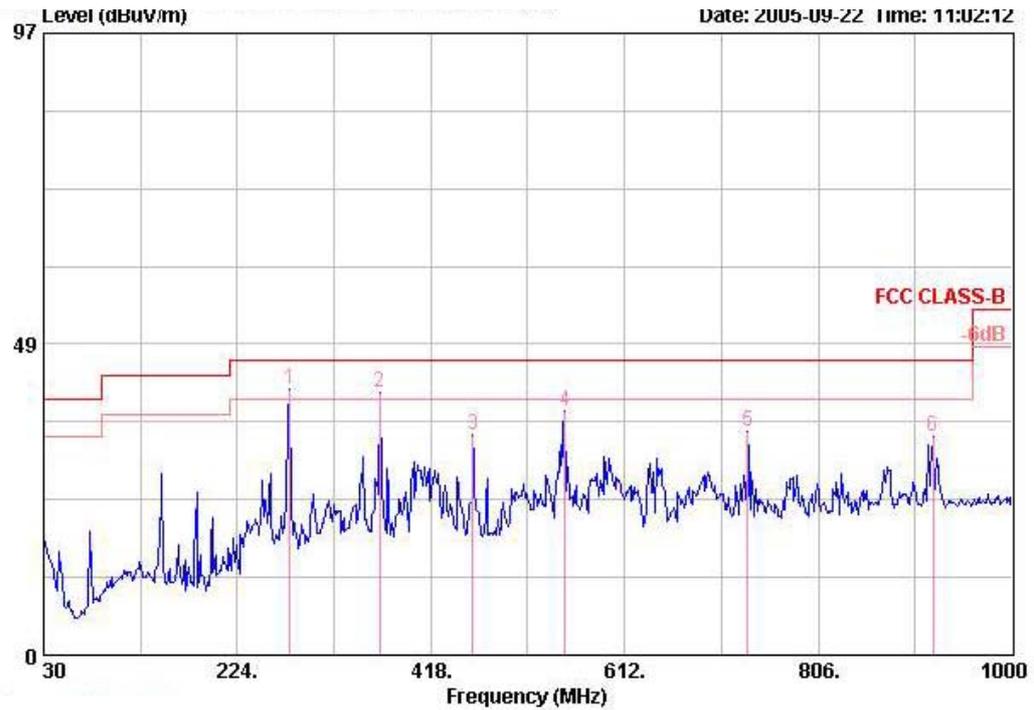
Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB);

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

4.5.8. Results of Radiated Emissions (30MHz~1GHz) for ANTENNA 6

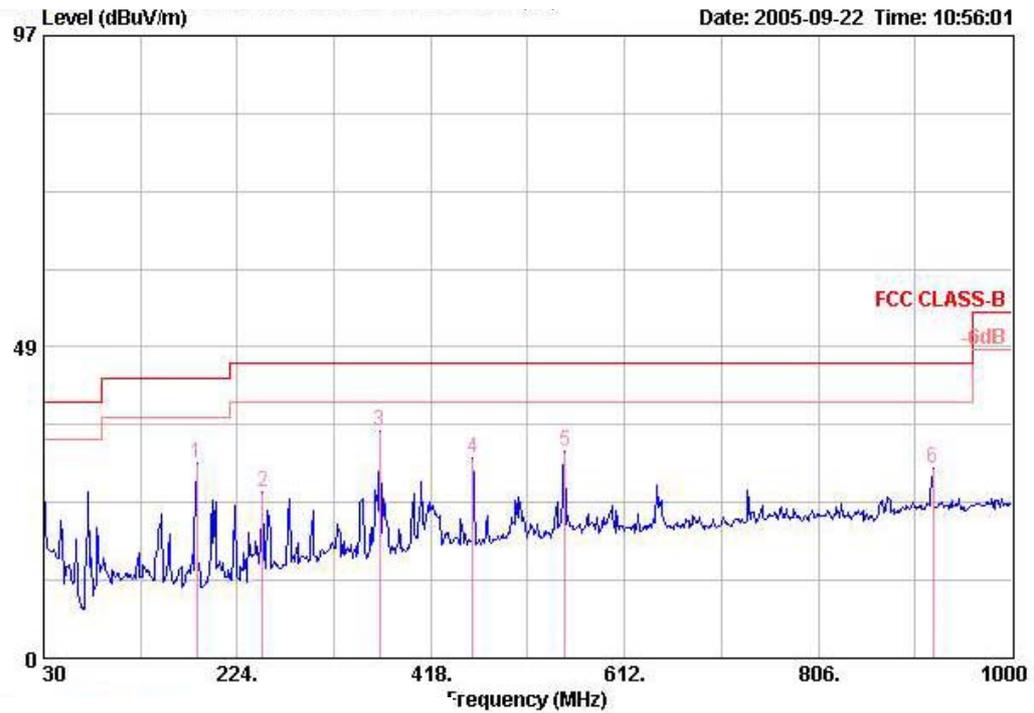
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6 / adapter 1

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 !	276.380	41.42	-4.58	46.00	12.50	1.17	30.04	57.78	HORIZONTAL	Peak
2 !	366.590	40.94	-5.06	46.00	14.83	1.25	30.55	55.40	HORIZONTAL	Peak
3	459.710	34.30	-11.70	46.00	16.60	1.42	30.47	46.75	HORIZONTAL	Peak
4	551.860	38.03	-7.97	46.00	18.39	1.84	30.64	48.44	HORIZONTAL	Peak
5	735.190	34.85	-11.15	46.00	19.86	1.86	30.17	43.30	HORIZONTAL	Peak
6	920.460	34.17	-11.83	46.00	20.60	2.07	28.88	40.38	HORIZONTAL	Peak

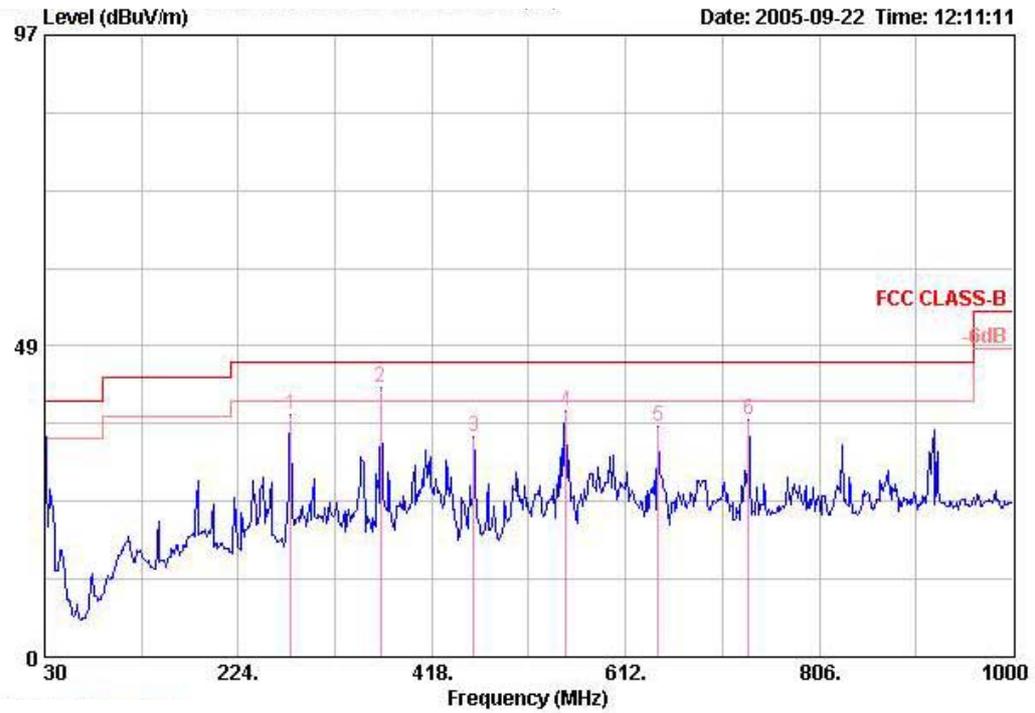
Vertical



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	183.260	30.40	-13.10	43.50	8.30	0.92	30.02	51.21	VERTICAL	Peak
2	249.220	25.78	-20.22	46.00	11.99	1.07	30.13	42.85	VERTICAL	Peak
3	366.590	35.35	-10.65	46.00	14.83	1.25	30.55	49.82	VERTICAL	Peak
4	459.710	31.20	-14.80	46.00	16.60	1.42	30.47	43.65	VERTICAL	Peak
5	551.860	32.18	-13.82	46.00	18.39	1.84	30.64	42.60	VERTICAL	Peak
6	920.460	29.52	-16.48	46.00	20.60	2.07	28.88	35.73	VERTICAL	Peak

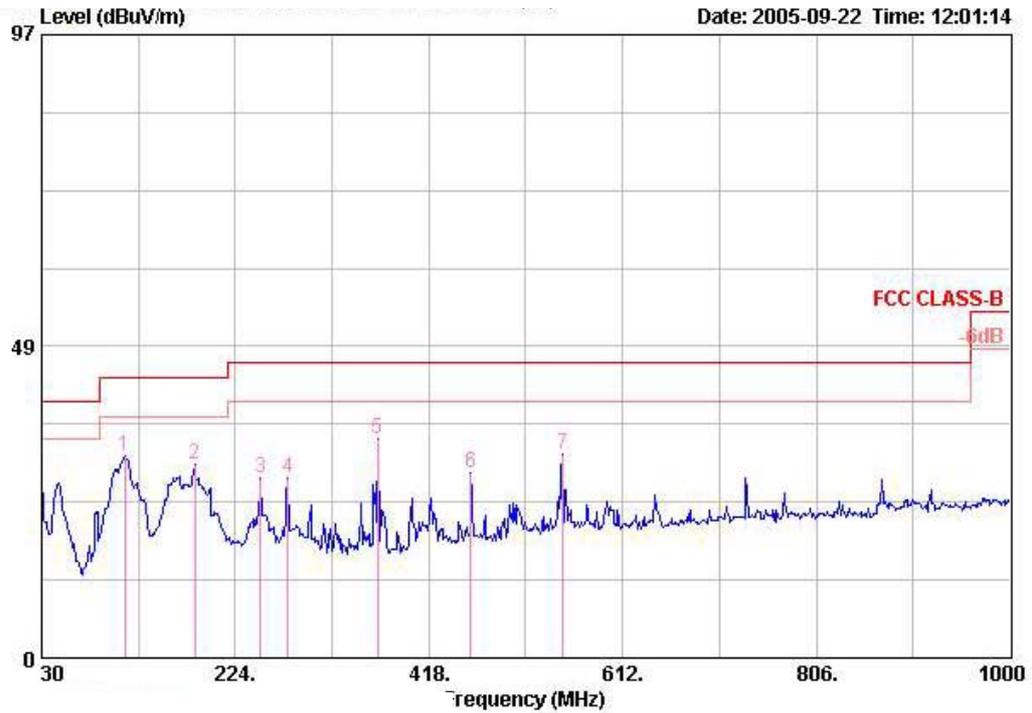
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6 / adapter 2

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBUV		
1	276.380	37.75	-8.25	46.00	12.50	1.17	30.04	54.12	HORIZONTAL	Peak
2 @	366.590	42.01	-3.99	46.00	14.83	1.25	30.55	56.48	HORIZONTAL	Peak
3	459.710	34.46	-11.54	46.00	16.60	1.42	30.47	46.91	HORIZONTAL	Peak
4	551.860	38.33	-7.67	46.00	18.39	1.84	30.64	48.75	HORIZONTAL	Peak
5	644.980	36.02	-9.98	46.00	18.90	1.72	30.37	45.79	HORIZONTAL	Peak
6	735.190	37.10	-8.90	46.00	19.86	1.86	30.17	45.55	HORIZONTAL	Peak

Vertical



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBUV		
1	113.420	31.49	-12.01	43.50	11.50	0.69	30.06	49.36	VERTICAL	Peak
2	183.260	30.02	-13.48	43.50	8.30	0.92	30.02	50.83	VERTICAL	Peak
3	249.220	28.02	-17.98	46.00	11.99	1.07	30.13	45.09	VERTICAL	Peak
4	276.380	28.11	-17.89	46.00	12.50	1.17	30.04	44.47	VERTICAL	Peak
5	366.590	34.11	-11.89	46.00	14.83	1.25	30.55	48.58	VERTICAL	Peak
6	459.710	28.76	-17.24	46.00	16.60	1.42	30.47	41.21	VERTICAL	Peak
7	551.860	31.82	-14.18	46.00	18.39	1.84	30.64	42.23	VERTICAL	Peak

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB 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.

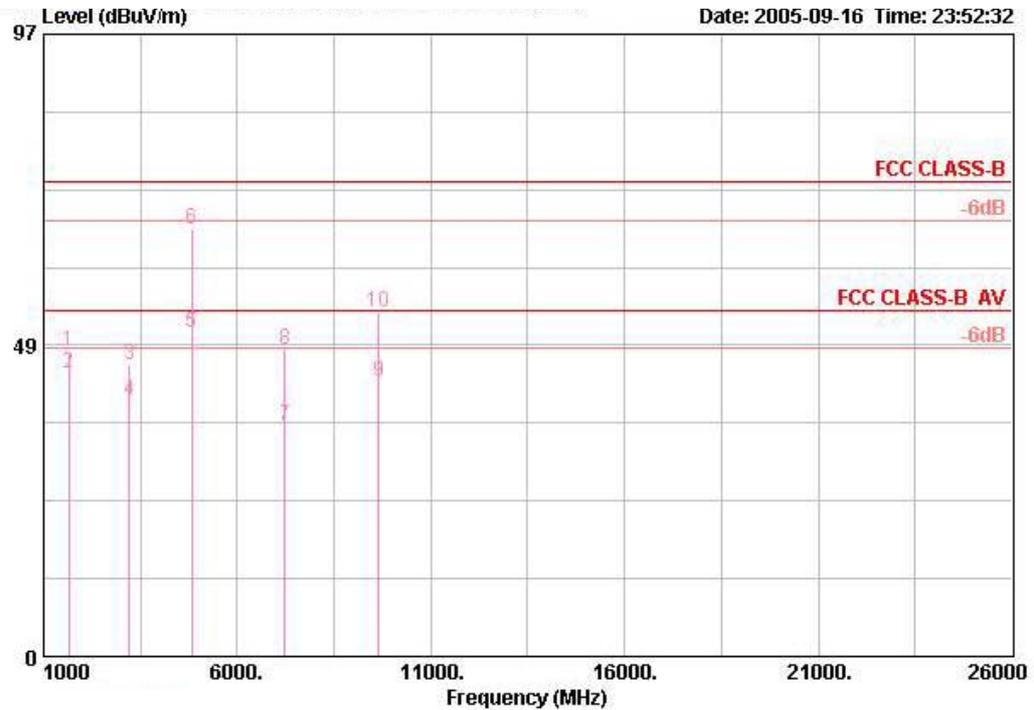
Pol. : V is Vertical Polarization ; H is Horizontal Polarization.



4.5.9. Results for Radiated Emissions (1GHz~10<sup>th</sup> Harmonic) for ANTENNA 6

Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 1

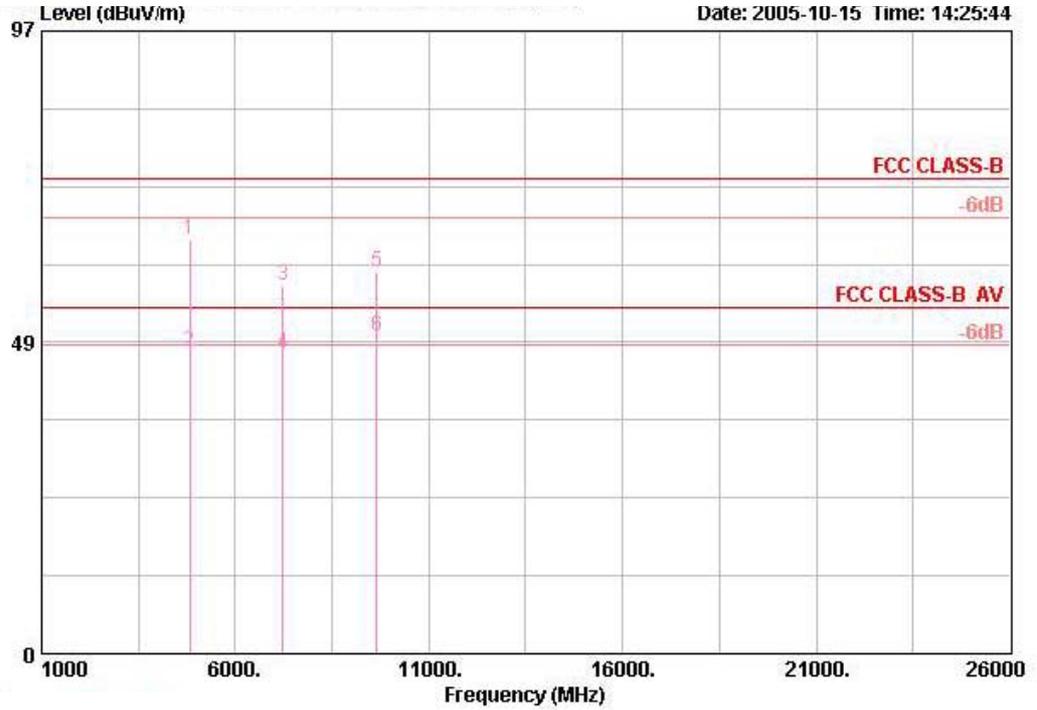
Horizontal



	Freq	Level	Over	Limit	Antenna	Cable	Preamp	Read	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	1656.860	47.46	-26.54	74.00	26.87	1.50	35.75	54.84	HORIZONTAL	PEAK
2 @	1656.860	44.04	-9.96	54.00	26.87	1.50	35.75	51.42	HORIZONTAL	AVERAGE
3	3215.920	45.51	-28.49	74.00	30.91	1.97	36.60	49.23	HORIZONTAL	PEAK
4	3216.000	39.92	-14.08	54.00	30.91	1.97	36.60	43.64	HORIZONTAL	AVERAGE
5 @	4823.160	50.57	-3.43	54.00	32.92	3.20	37.61	52.06	HORIZONTAL	AVERAGE
6 @	4824.040	66.68	-7.32	74.00	32.92	3.20	37.61	68.17	HORIZONTAL	PEAK
7	7235.060	36.00	-18.00	54.00	35.80	4.41	39.19	34.98	HORIZONTAL	AVERAGE
8	7236.260	47.73	-26.27	74.00	35.80	4.41	39.19	46.71	HORIZONTAL	PEAK
9	9647.990	42.80	-11.20	54.00	39.36	5.16	36.04	34.33	HORIZONTAL	AVERAGE
10	9648.290	53.70	-20.30	74.00	39.36	5.16	36.04	45.22	HORIZONTAL	PEAK



Vertical

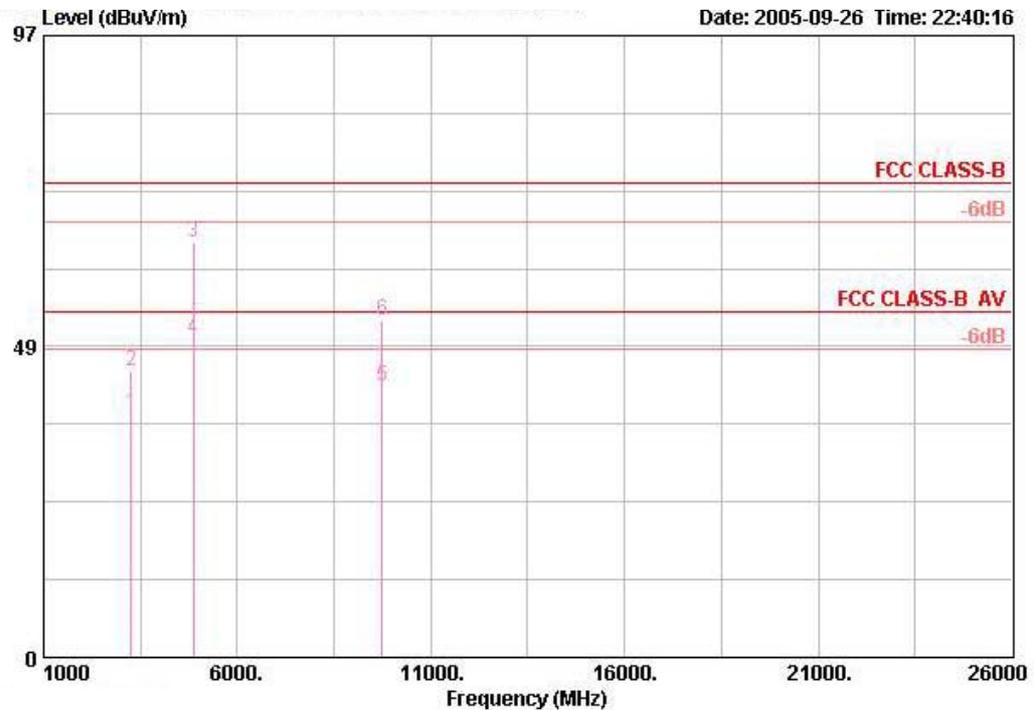


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBuV		
1 @	4824.080	64.50	-9.50	74.00	33.22	3.20	35.10	63.18	VERTICAL	PEAK
2 @	4824.080	47.16	-6.84	54.00	33.22	3.20	35.10	45.83	VERTICAL	AVERAGE
3	7234.200	57.24	-16.76	74.00	36.08	4.41	35.29	52.05	VERTICAL	PEAK
4 @	7235.000	46.87	-7.13	54.00	36.08	4.41	35.30	41.68	VERTICAL	AVERAGE
5	9647.980	59.35	-14.65	74.00	38.42	5.16	35.83	51.61	VERTICAL	PEAK
6 @	9647.980	49.51	-4.49	54.00	38.42	5.16	35.83	41.76	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 6

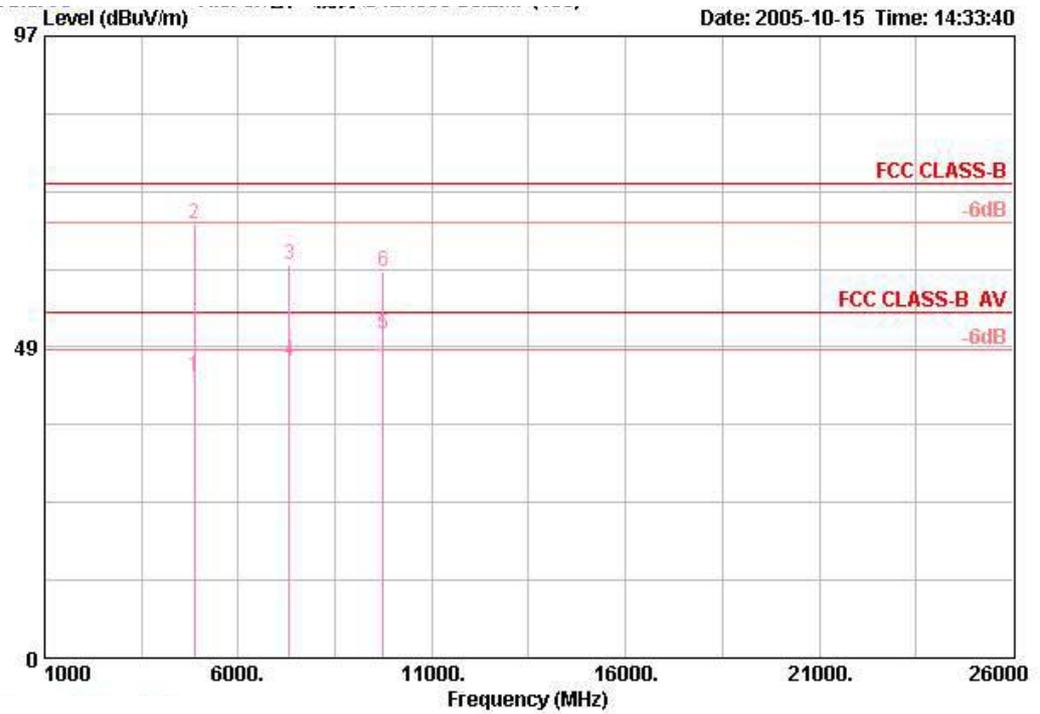
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBuV		
1	3249.310	38.15	-15.85	54.00	30.98	2.03	36.60	41.73	HORIZONTAL	AVERAGE
2	3249.310	44.59	-29.41	74.00	30.98	2.03	36.60	48.17	HORIZONTAL	PEAK
3 @	4873.840	64.64	-9.36	74.00	32.94	3.22	37.65	66.13	HORIZONTAL	PEAK
4 @	4875.280	49.63	-4.37	54.00	32.94	3.22	37.65	51.12	HORIZONTAL	AVERAGE
5	9747.910	42.34	-11.66	54.00	39.46	5.07	36.16	33.97	HORIZONTAL	AVERAGE
6	9748.170	52.62	-21.38	74.00	39.46	5.07	36.16	44.26	HORIZONTAL	PEAK



Vertical

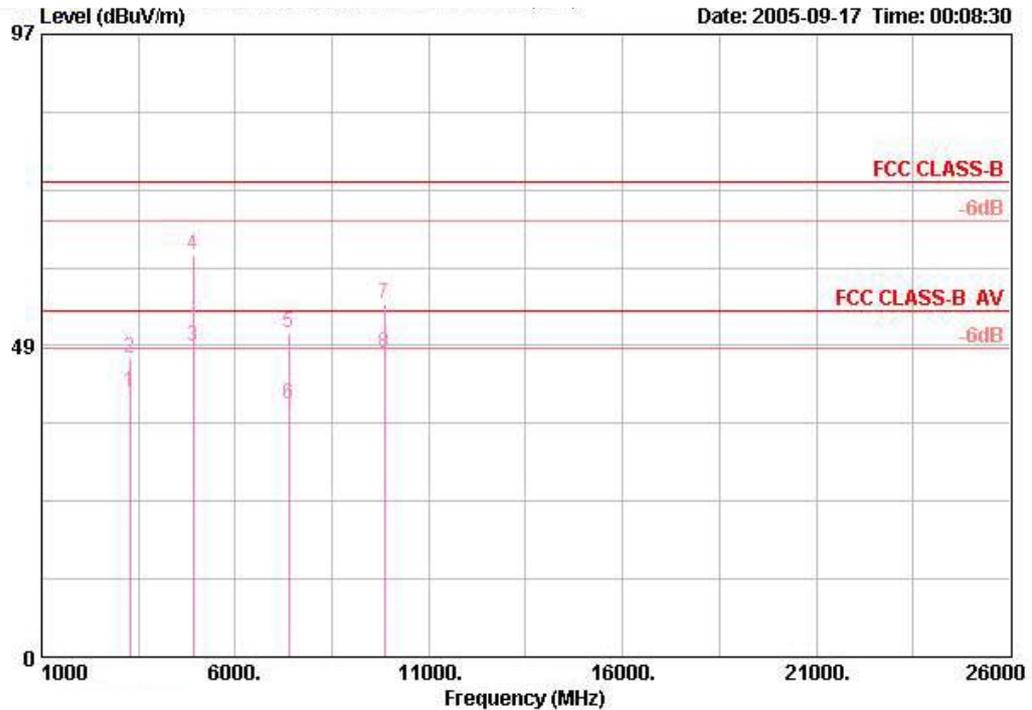


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4876.500	43.95	-10.05	54.00	33.33	3.22	35.10	42.50	VERTICAL	AVERAGE
2 @	4876.500	67.53	-6.47	74.00	33.33	3.22	35.10	66.08	VERTICAL	PEAK
3	7308.500	61.20	-12.80	74.00	36.24	4.44	35.32	55.83	VERTICAL	PEAK
4 @	7309.900	46.25	-7.75	54.00	36.24	4.44	35.32	40.88	VERTICAL	AVERAGE
5 @	9747.980	50.55	-3.45	54.00	38.56	5.07	35.85	42.77	VERTICAL	AVERAGE
6	9747.980	60.14	-13.86	74.00	38.56	5.07	35.85	52.36	VERTICAL	PEAK



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 11

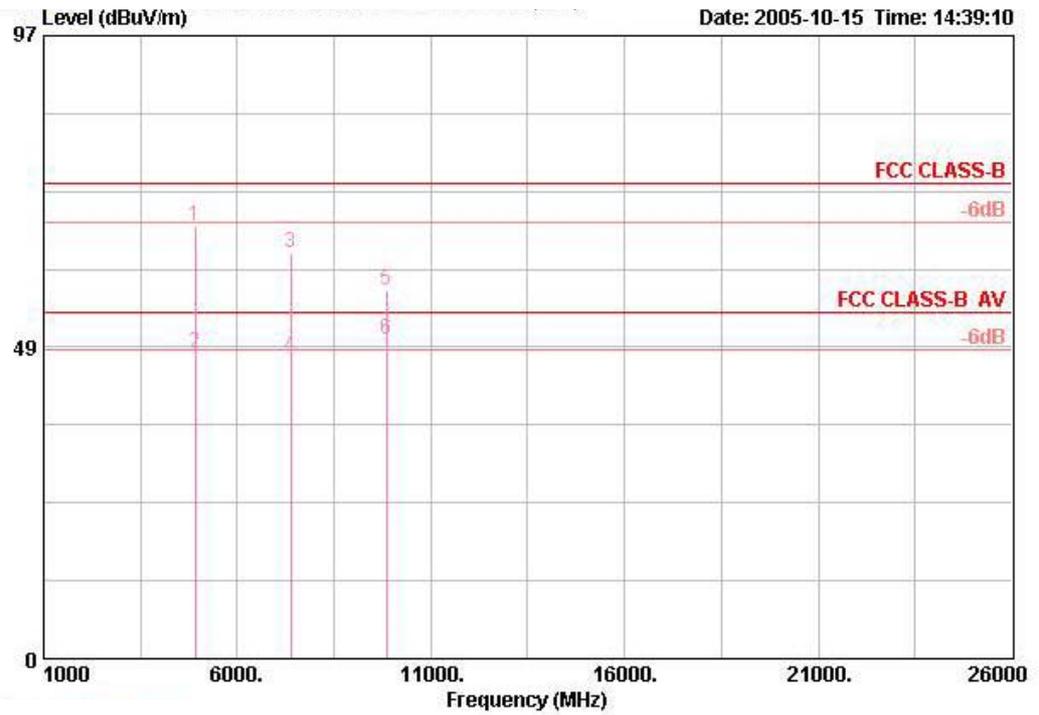
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	3282.670	41.17	-12.83	54.00	31.05	2.10	36.60	44.62	HORIZONTAL	AVERAGE
2	3282.820	46.51	-27.49	74.00	31.05	2.10	36.60	49.95	HORIZONTAL	PEAK
3 @	4923.060	48.30	-5.70	54.00	32.97	3.25	37.69	49.78	HORIZONTAL	AVERAGE
4	4923.980	62.71	-11.29	74.00	32.97	3.25	37.69	64.19	HORIZONTAL	PEAK
5	7385.180	50.57	-23.43	74.00	36.12	4.48	39.35	49.31	HORIZONTAL	PEAK
6	7386.780	39.38	-14.62	54.00	36.12	4.48	39.35	38.13	HORIZONTAL	AVERAGE
7	9847.660	54.93	-19.07	74.00	39.54	4.93	36.28	46.74	HORIZONTAL	PEAK
8 @	9847.980	47.35	-6.65	54.00	39.54	4.93	36.28	39.15	HORIZONTAL	AVERAGE



Vertical

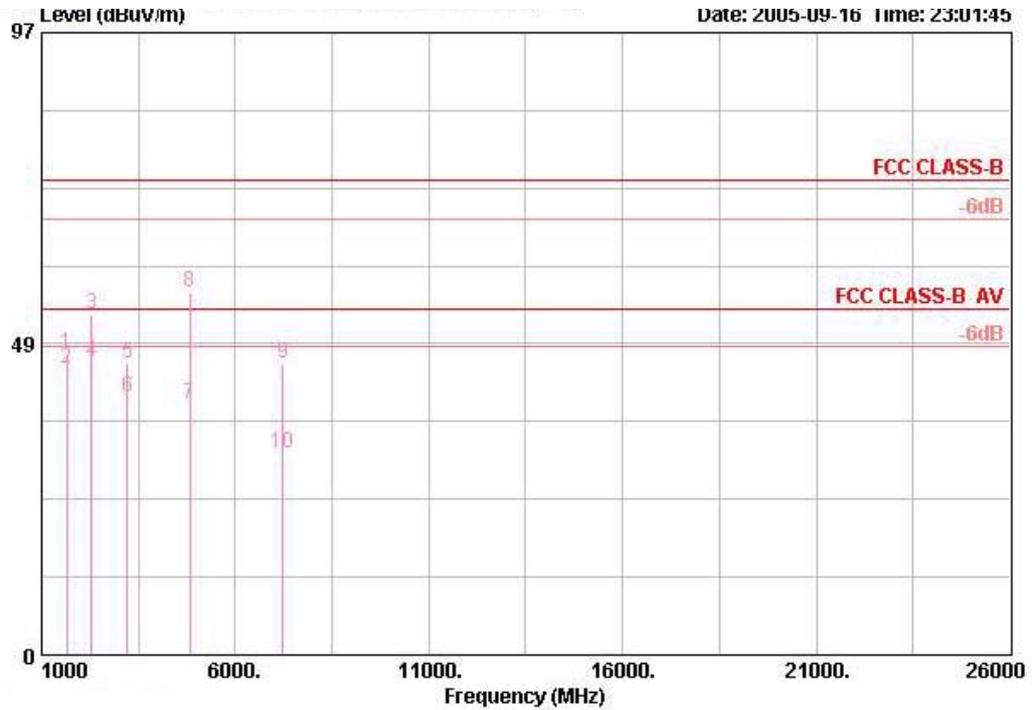


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4923.920	67.46	-6.54	74.00	33.45	3.25	35.10	65.86	VERTICAL	PEAK
2 @	4923.930	47.48	-6.52	54.00	33.45	3.25	35.10	45.88	VERTICAL	AVERAGE
3	7383.550	63.19	-10.81	74.00	36.45	4.48	35.35	57.61	VERTICAL	PEAK
4 @	7383.600	47.07	-6.93	54.00	36.45	4.48	35.35	41.48	VERTICAL	AVERAGE
5	9847.880	57.37	-16.63	74.00	38.68	4.93	35.87	49.62	VERTICAL	PEAK
6 @	9847.990	49.74	-4.26	54.00	38.68	4.93	35.87	42.00	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 1

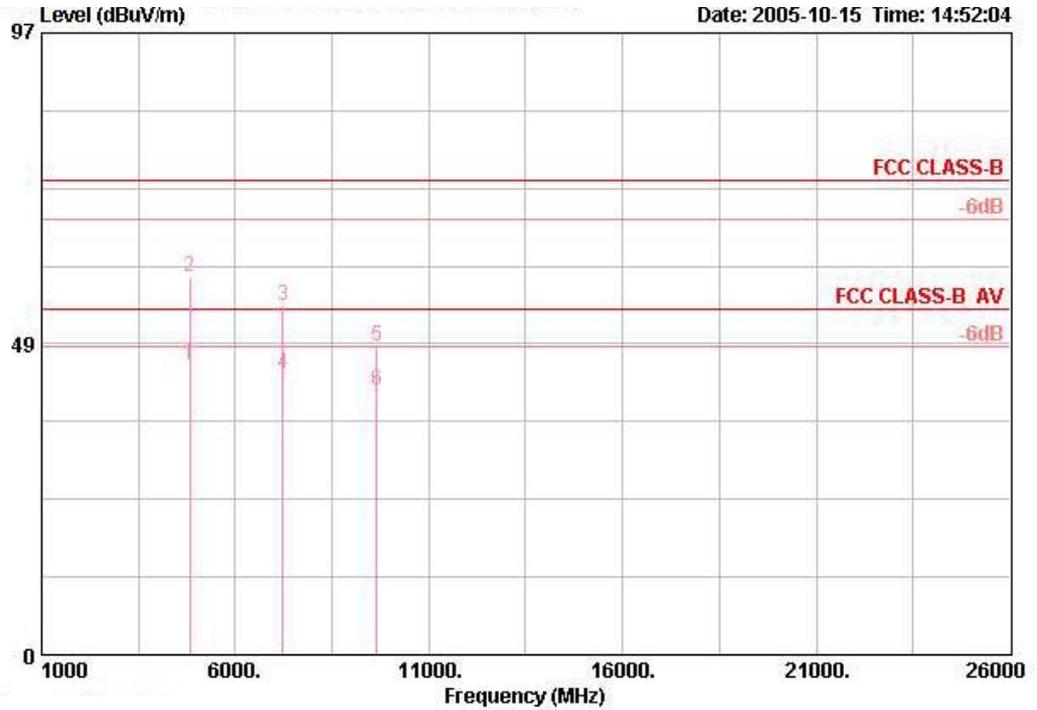
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	1656.560	47.06	-26.94	74.00	26.87	1.50	35.75	54.44	HORIZONTAL	PEAK
2 @	1656.860	44.73	-9.27	54.00	26.87	1.50	35.75	52.11	HORIZONTAL	AVERAGE
3	2279.780	53.14	-20.86	74.00	28.97	1.94	35.94	58.17	HORIZONTAL	PEAK
4 @	2280.000	45.74	-8.26	54.00	28.97	1.94	35.94	50.77	HORIZONTAL	AVERAGE
5	3215.980	45.44	-28.56	74.00	30.91	1.97	36.60	49.16	HORIZONTAL	PEAK
6	3216.010	40.23	-13.77	54.00	30.91	1.97	36.60	43.95	HORIZONTAL	AVERAGE
7	4824.240	39.10	-14.90	54.00	32.92	3.20	37.61	40.59	HORIZONTAL	AVERAGE
8	4825.160	56.65	-17.35	74.00	32.92	3.20	37.61	58.13	HORIZONTAL	PEAK
9	7229.080	45.46	-28.54	74.00	35.76	4.41	39.15	44.45	HORIZONTAL	PEAK
10	7235.280	31.32	-22.68	54.00	35.80	4.41	39.19	30.31	HORIZONTAL	AVERAGE



Vertical

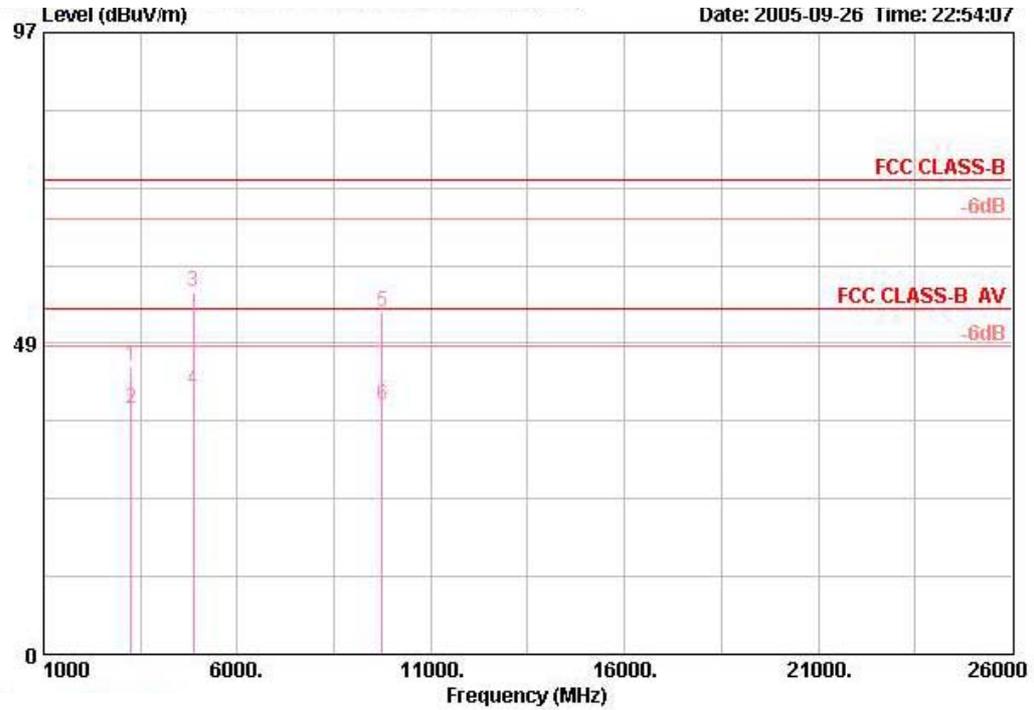


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4825.730	45.31	-8.69	54.00	33.22	3.20	35.10	43.98	VERTICAL	AVERAGE
2	4826.500	59.07	-14.93	74.00	33.22	3.20	35.10	57.75	VERTICAL	PEAK
3	7233.500	54.57	-19.43	74.00	36.08	4.41	35.29	49.38	VERTICAL	PEAK
4 @	7236.040	43.92	-10.08	54.00	36.08	4.41	35.30	38.73	VERTICAL	AVERAGE
5	9645.500	47.98	-26.02	74.00	38.42	5.16	35.83	40.23	VERTICAL	PEAK
6	9647.830	41.24	-12.76	54.00	38.42	5.16	35.83	33.49	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6

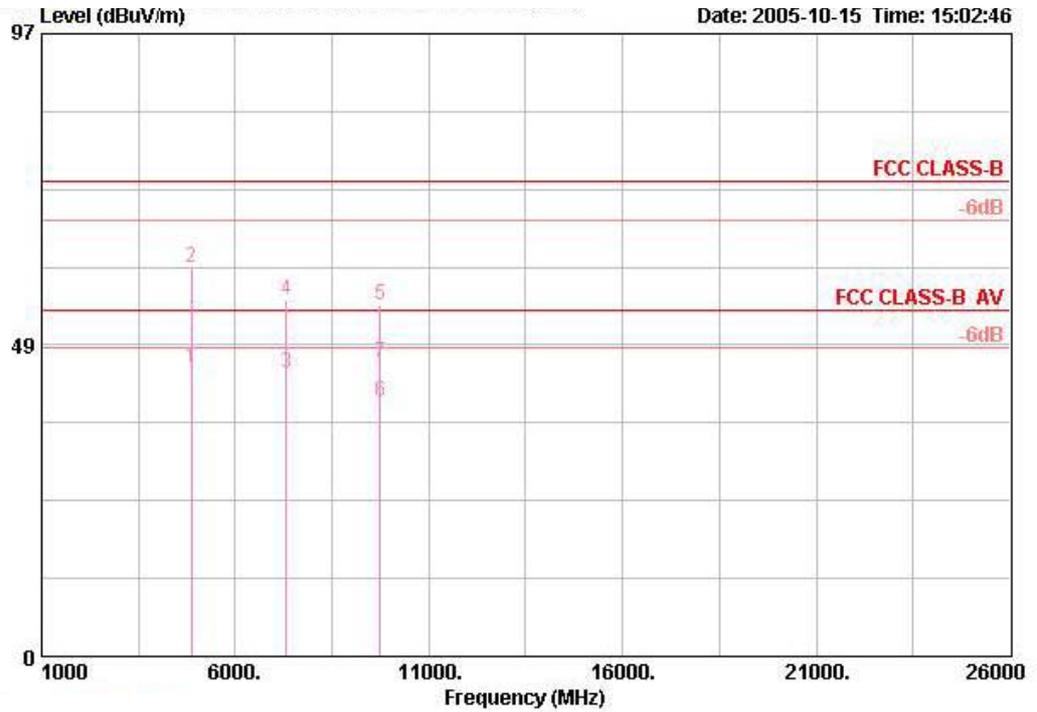
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	3249.070	44.86	-29.14	74.00	30.98	2.03	36.60	48.45	HORIZONTAL	PEAK
2	3249.370	38.32	-15.68	54.00	30.98	2.03	36.60	41.91	HORIZONTAL	AVERAGE
3	4872.400	56.48	-17.52	74.00	32.94	3.22	37.65	57.97	HORIZONTAL	PEAK
4	4873.240	41.26	-12.74	54.00	32.94	3.22	37.65	42.74	HORIZONTAL	AVERAGE
5	9749.490	53.43	-20.57	74.00	39.46	5.07	36.16	45.06	HORIZONTAL	PEAK
6	9750.110	38.74	-15.26	54.00	39.46	5.07	36.16	30.38	HORIZONTAL	AVERAGE



Vertical

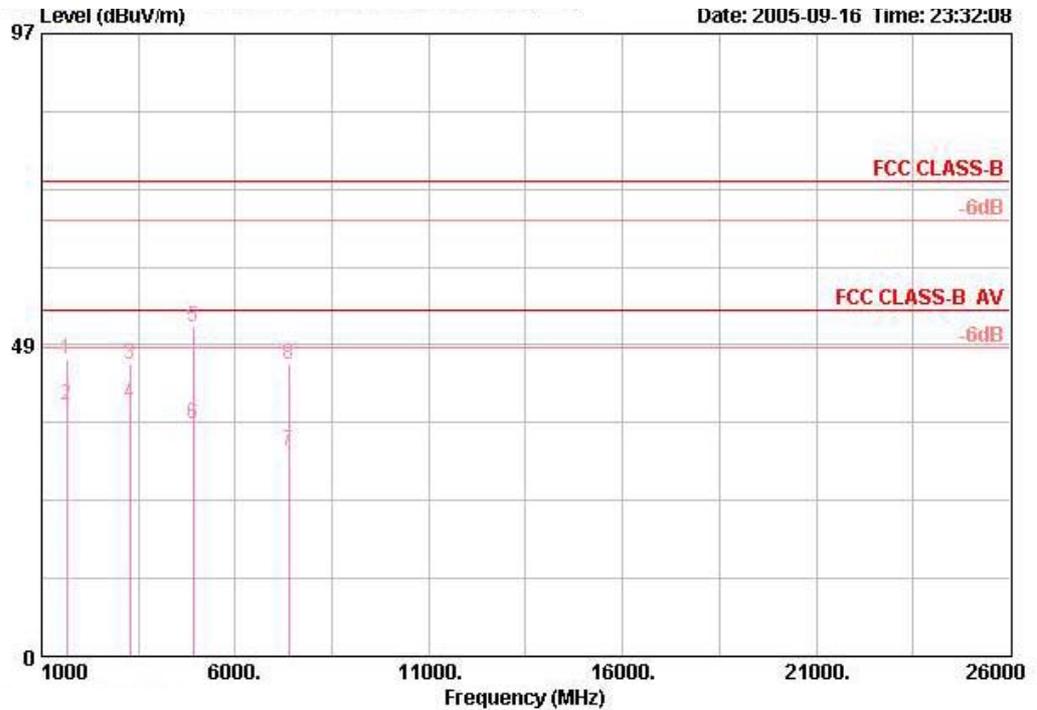


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4871.500	44.89	-9.11	54.00	33.33	3.22	35.10	43.44	VERTICAL	AVERAGE
2	4872.840	60.43	-13.57	74.00	33.33	3.22	35.10	58.98	VERTICAL	PEAK
3 @	7310.360	44.25	-9.75	54.00	36.24	4.44	35.32	38.88	VERTICAL	AVERAGE
4	7321.000	55.51	-18.49	74.00	36.29	4.44	35.33	50.11	VERTICAL	PEAK
5	9748.000	54.61	-19.39	74.00	38.56	5.07	35.85	46.83	VERTICAL	PEAK
6	9748.000	39.61	-14.39	54.00	38.56	5.07	35.85	31.83	VERTICAL	AVERAGE
7 @	9748.000	45.61	-8.39	54.00	38.56	5.07	35.85	37.83	VERTICAL	AVERAGE



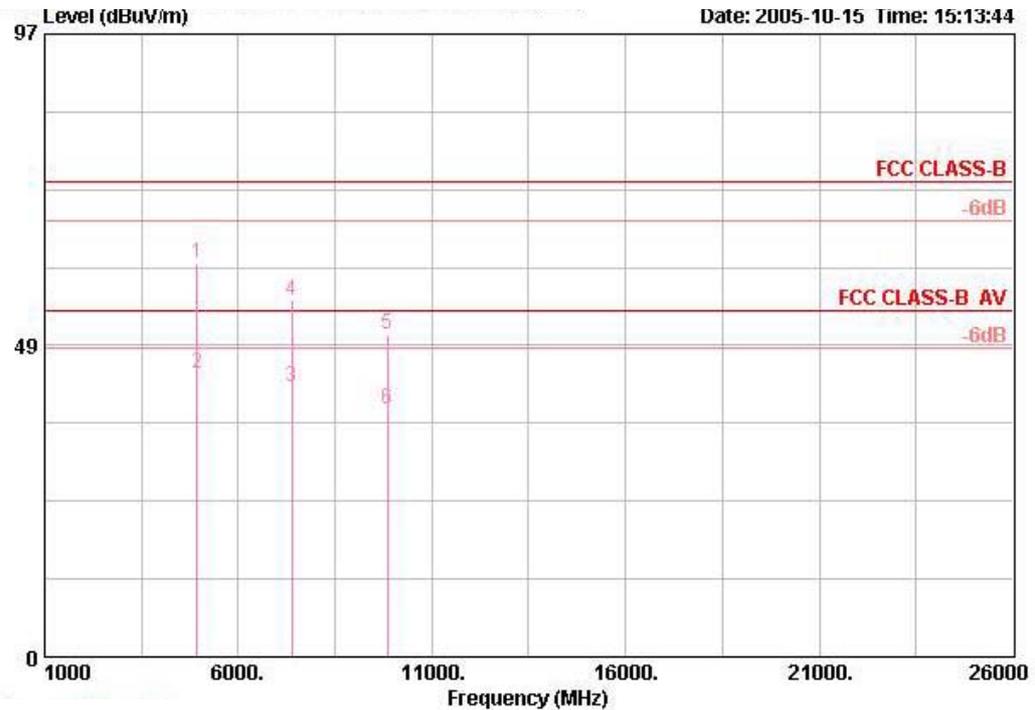
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 11

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	1656.760	46.22	-27.78	74.00	26.87	1.50	35.75	53.60	HORIZONTAL	PEAK
2	1656.820	39.19	-14.81	54.00	26.87	1.50	35.75	46.57	HORIZONTAL	AVERAGE
3	3282.760	45.59	-28.41	74.00	31.05	2.10	36.60	49.04	HORIZONTAL	PEAK
4	3282.760	39.30	-14.70	54.00	31.05	2.10	36.60	42.75	HORIZONTAL	AVERAGE
5	4921.840	51.41	-22.59	74.00	32.97	3.25	37.69	52.88	HORIZONTAL	PEAK
6	4922.880	36.34	-17.66	54.00	32.97	3.25	37.69	37.81	HORIZONTAL	AVERAGE
7	7384.960	31.97	-22.03	54.00	36.12	4.48	39.35	30.72	HORIZONTAL	AVERAGE
8	7389.560	45.54	-28.46	74.00	36.12	4.48	39.38	44.32	HORIZONTAL	PEAK

Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	4925.160	61.31	-12.69	74.00	33.45	3.25	35.10	59.71	VERTICAL	PEAK
2 @	4926.040	44.06	-9.94	54.00	33.45	3.25	35.10	42.46	VERTICAL	AVERAGE
3	7384.600	42.03	-11.97	54.00	36.45	4.48	35.35	36.44	VERTICAL	AVERAGE
4	7392.920	55.59	-18.41	74.00	36.45	4.48	35.36	50.02	VERTICAL	PEAK
5	9847.880	50.13	-23.87	74.00	38.68	4.93	35.87	42.38	VERTICAL	PEAK
6	9848.040	38.47	-15.53	54.00	38.68	4.93	35.87	30.73	VERTICAL	AVERAGE

Note:

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

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

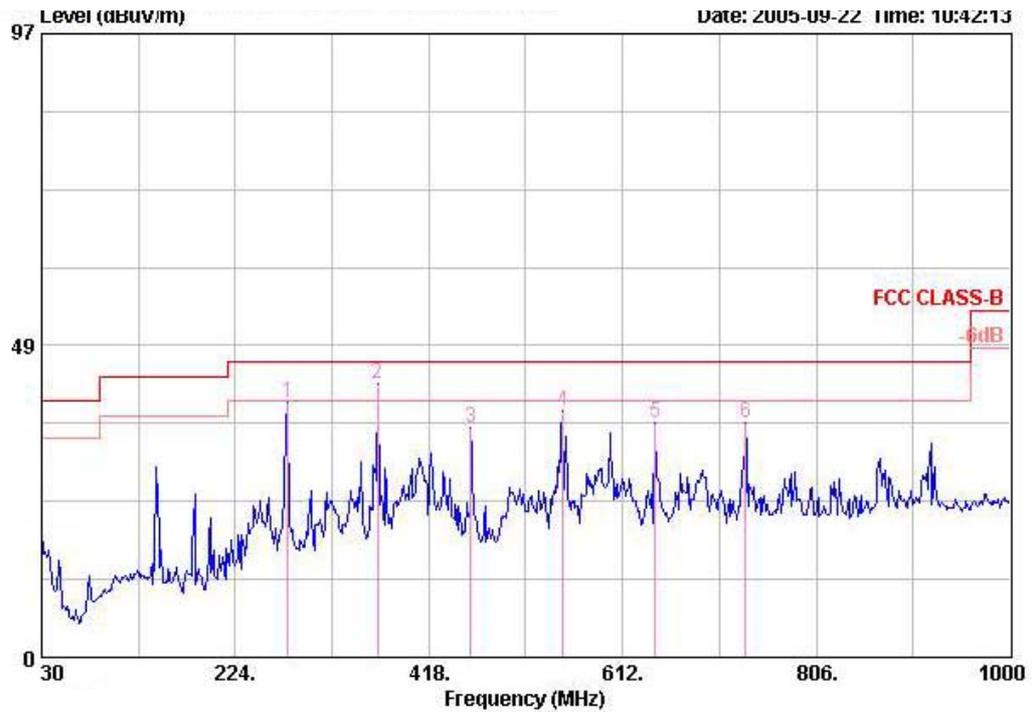
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Pol. : V is Vertical Polarization ; H is Horizontal Polarization.

4.5.10. Results of Radiated Emissions (30MHz~1GHz) for all ANTENNA

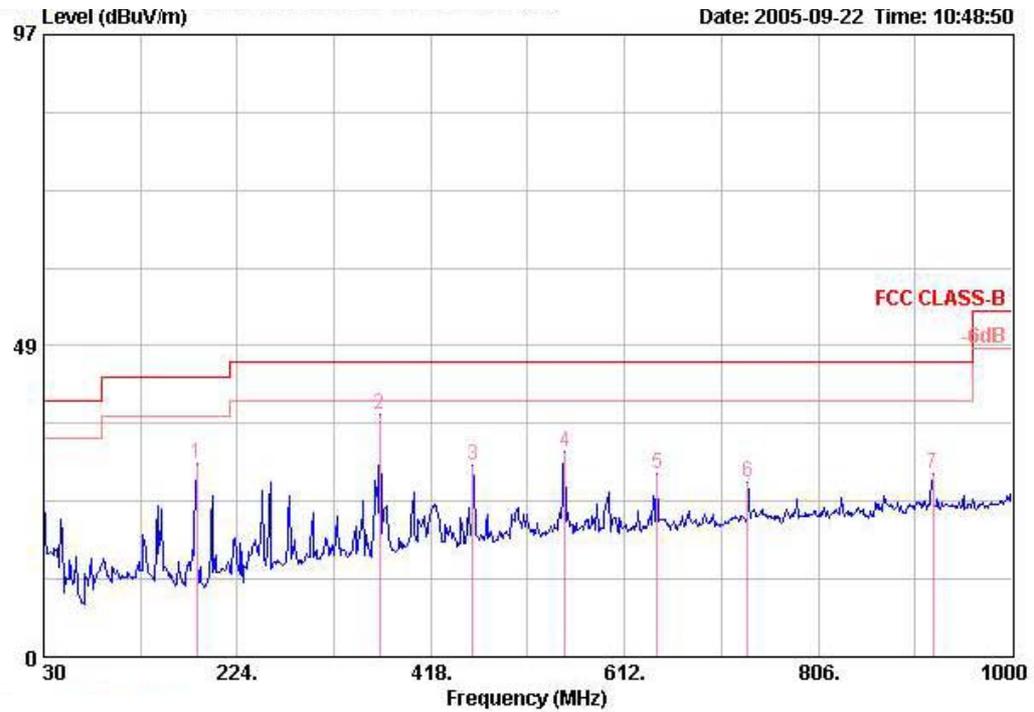
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6 / adapter 1

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	276.380	39.62	-6.38	46.00	12.50	1.17	30.04	55.98	HORIZONTAL	Peak
2 @	366.590	42.60	-3.40	46.00	14.83	1.25	30.55	57.07	HORIZONTAL	Peak
3	459.710	35.61	-10.39	46.00	16.60	1.42	30.47	48.06	HORIZONTAL	Peak
4	551.860	38.21	-7.79	46.00	18.39	1.84	30.64	48.63	HORIZONTAL	Peak
5	644.980	36.46	-9.54	46.00	18.90	1.72	30.37	46.22	HORIZONTAL	Peak
6	735.190	36.44	-9.56	46.00	19.86	1.86	30.17	44.89	HORIZONTAL	Peak

Vertical

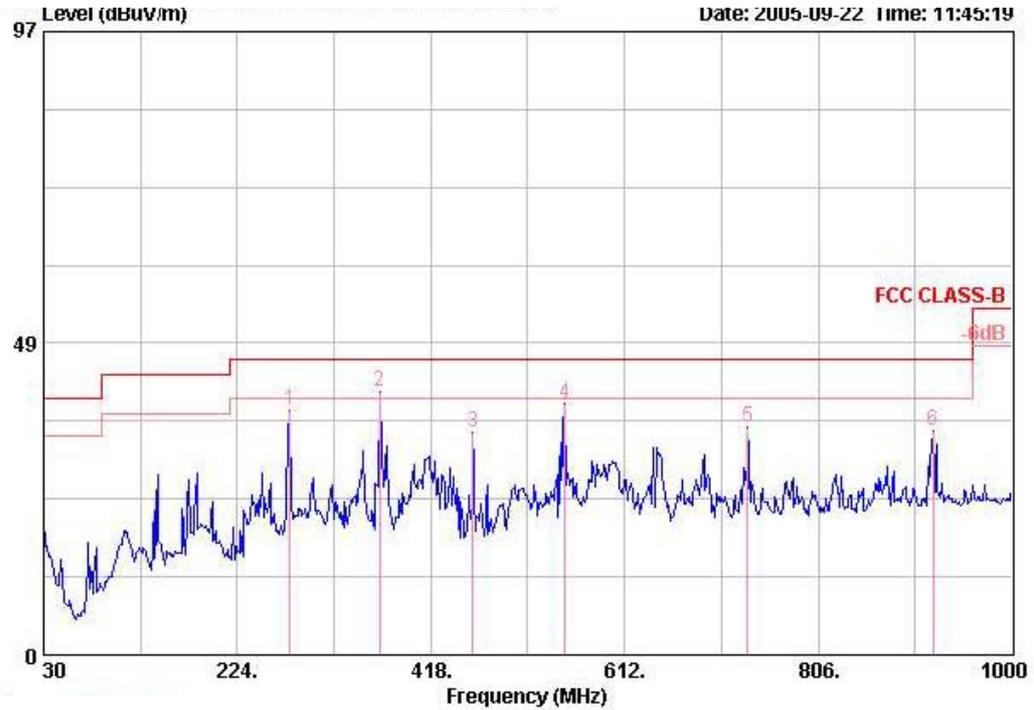


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBuV		
1	183.260	30.21	-13.29	43.50	8.30	0.92	30.02	51.02	VERTICAL	Peak
2	366.590	37.81	-8.19	46.00	14.83	1.25	30.55	52.27	VERTICAL	Peak
3	459.710	29.96	-16.04	46.00	16.60	1.42	30.47	42.41	VERTICAL	Peak
4	551.860	31.85	-14.15	46.00	18.39	1.84	30.64	42.27	VERTICAL	Peak
5	644.980	28.47	-17.53	46.00	18.90	1.72	30.37	38.24	VERTICAL	Peak
6	735.190	27.21	-18.79	46.00	19.86	1.86	30.17	35.65	VERTICAL	Peak
7	920.460	28.45	-17.55	46.00	20.60	2.07	28.88	34.66	VERTICAL	Peak



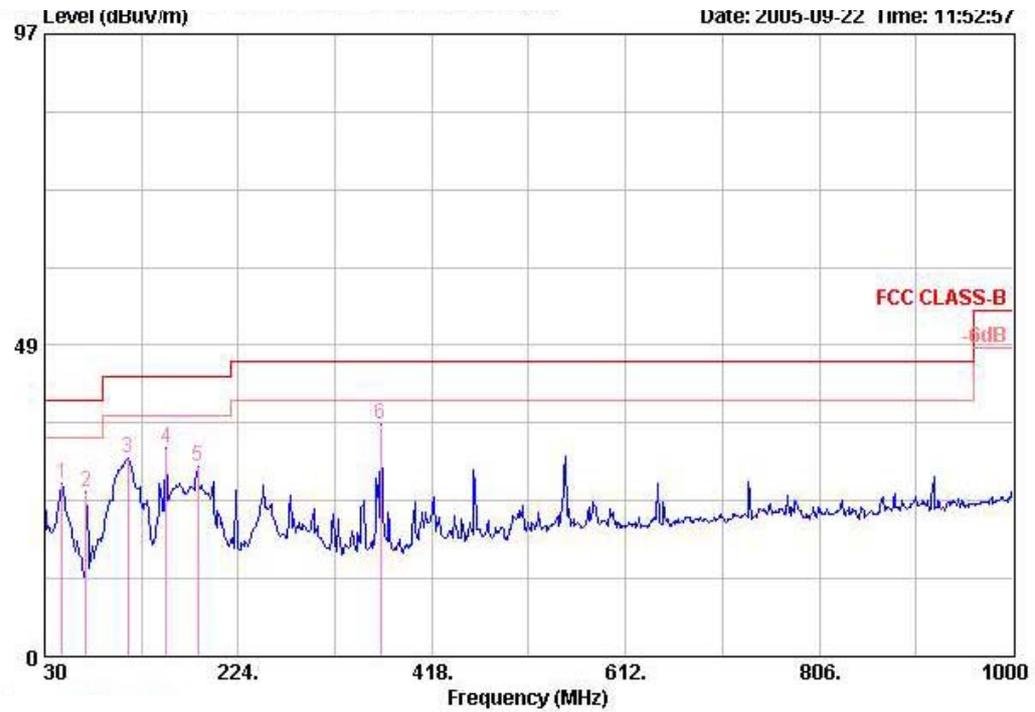
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6 / adapter 2

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	276.380	37.94	-8.06	46.00	12.50	1.17	30.04	54.30	HORIZONTAL	Peak
2	366.590	40.90	-5.10	46.00	14.83	1.25	30.55	55.36	HORIZONTAL	Peak
3	459.710	34.72	-11.28	46.00	16.60	1.42	30.47	47.17	HORIZONTAL	Peak
4	551.860	39.23	-6.77	46.00	18.39	1.84	30.64	49.64	HORIZONTAL	Peak
5	735.190	35.43	-10.57	46.00	19.86	1.86	30.17	43.87	HORIZONTAL	Peak
6	920.460	34.89	-11.11	46.00	20.60	2.07	28.88	41.10	HORIZONTAL	Peak

Vertical



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	47.460	26.96	-13.04	40.00	8.77	0.45	29.83	47.58	VERTICAL	Peak
2	71.710	25.58	-14.42	40.00	5.60	0.60	29.94	49.32	VERTICAL	Peak
3	113.420	30.94	-12.56	43.50	11.50	0.69	30.06	48.81	VERTICAL	Peak
4	152.220	32.48	-11.02	43.50	9.94	0.94	30.11	51.71	VERTICAL	Peak
5	183.260	29.72	-13.78	43.50	8.30	0.92	30.02	50.53	VERTICAL	Peak
6	366.590	36.26	-9.74	46.00	14.83	1.25	30.55	50.72	VERTICAL	Peak

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB 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.

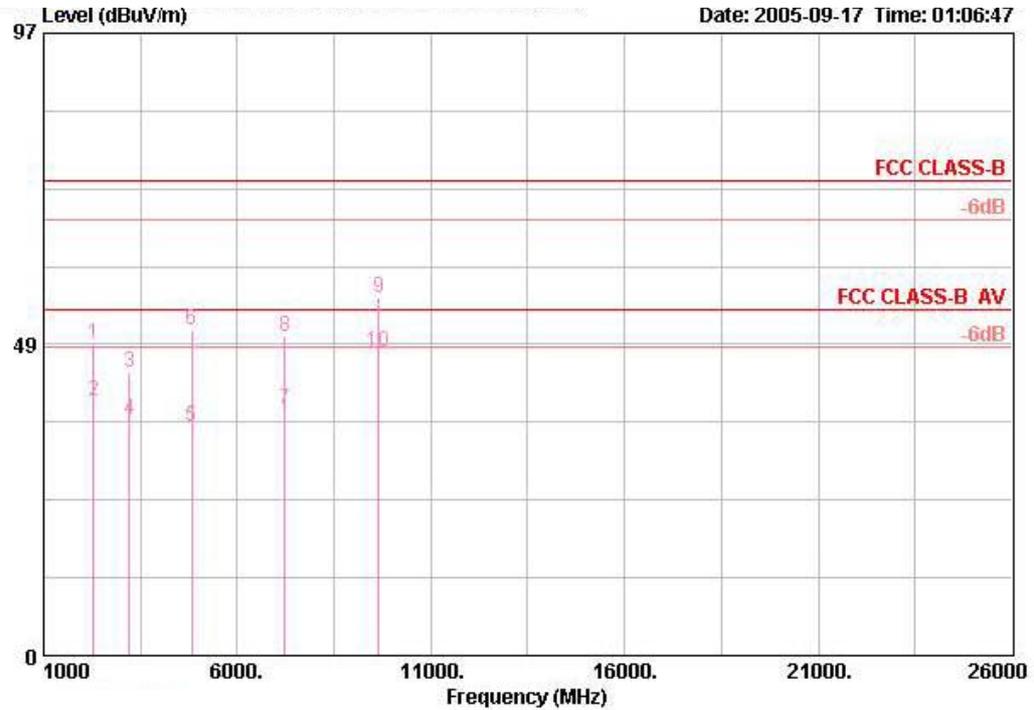
Pol. : V is Vertical Polarization ; H is Horizontal Polarization.



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

Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 1

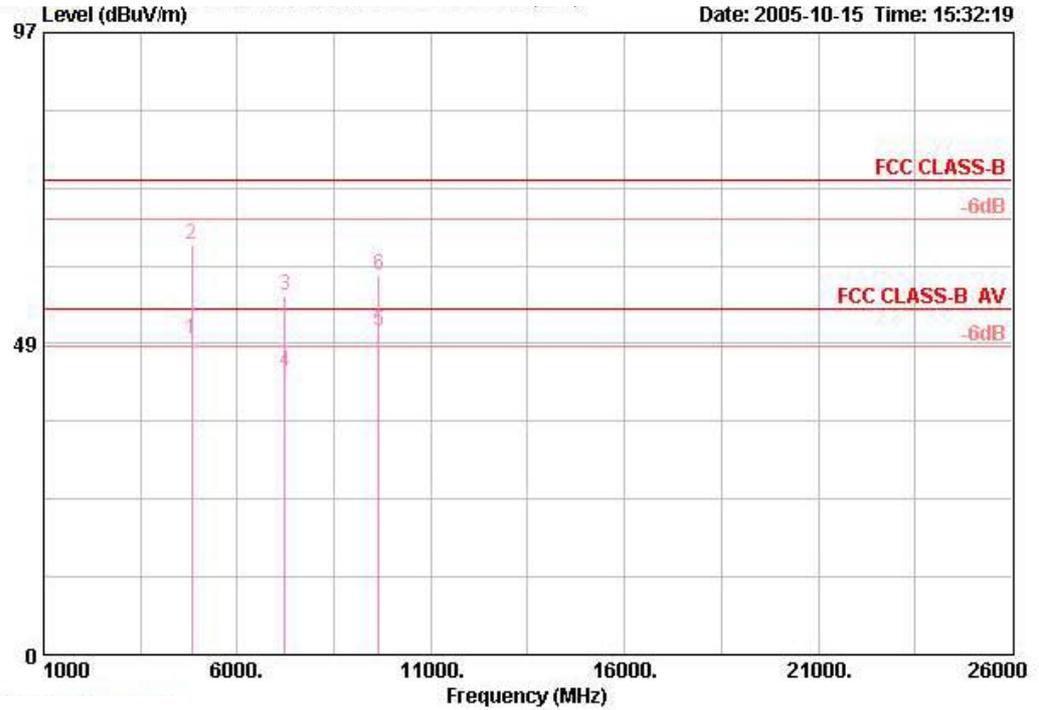
Horizontal



	Freq	Level	Over Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB	dB	dBuV		
1	2279.900	48.69	-25.31	74.00	28.97	1.94	35.94		HORIZONTAL PEAK
2	2280.020	39.67	-14.33	54.00	28.97	1.94	35.94		HORIZONTAL AVERAGE
3	3215.860	44.23	-29.77	74.00	30.91	1.97	36.60		HORIZONTAL PEAK
4	3216.020	36.63	-17.37	54.00	30.91	1.97	36.60		HORIZONTAL AVERAGE
5	4823.210	35.72	-18.28	54.00	32.92	3.20	37.61		HORIZONTAL AVERAGE
6	4823.960	50.82	-23.18	74.00	32.92	3.20	37.61		HORIZONTAL PEAK
7	7236.850	38.38	-15.62	54.00	35.80	4.41	39.19		HORIZONTAL AVERAGE
8	7237.030	49.82	-24.18	74.00	35.80	4.41	39.19		HORIZONTAL PEAK
9	9648.030	55.66	-18.34	74.00	39.36	5.16	36.04		HORIZONTAL PEAK
10 @	9648.050	47.22	-6.78	54.00	39.36	5.16	36.04		HORIZONTAL AVERAGE



Vertical

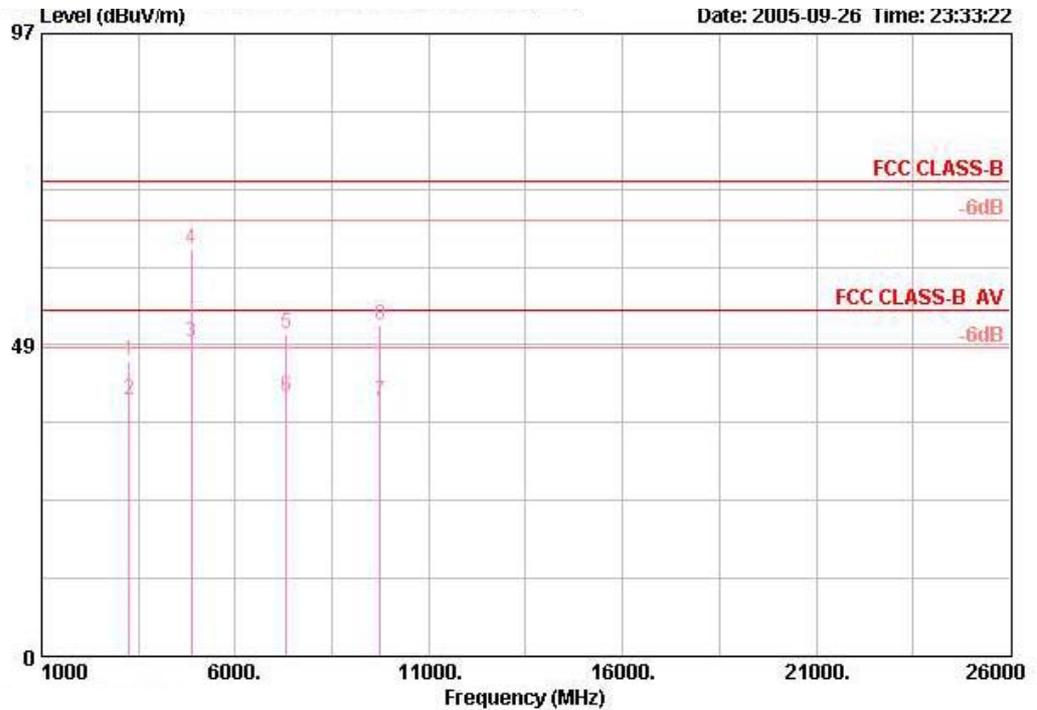


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4823.800	49.26	-4.74	54.00	33.22	3.20	35.10	47.93	VERTICAL	AVERAGE
2 @	4823.920	64.08	-9.92	74.00	33.22	3.20	35.10	62.76	VERTICAL	PEAK
3	7235.120	56.15	-17.85	74.00	36.08	4.41	35.30	50.97	VERTICAL	PEAK
4 @	7236.800	44.17	-9.83	54.00	36.08	4.41	35.30	38.98	VERTICAL	AVERAGE
5 @	9647.920	50.44	-3.56	54.00	38.42	5.16	35.83	42.70	VERTICAL	AVERAGE
6	9647.920	59.22	-14.78	74.00	38.42	5.16	35.83	51.48	VERTICAL	PEAK



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 6

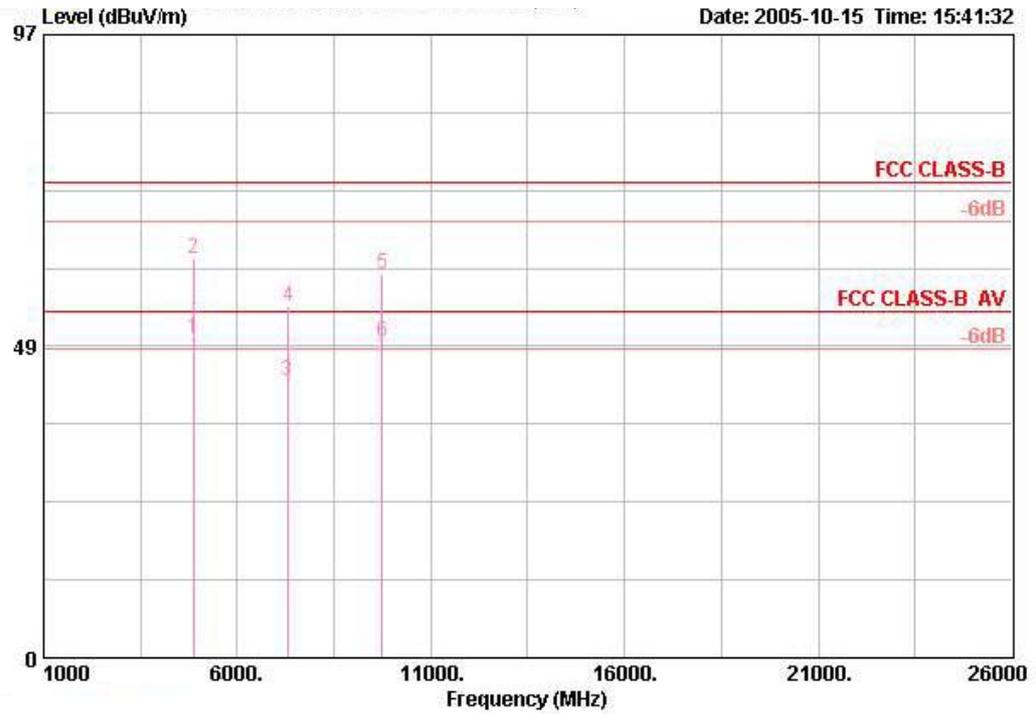
Horizontal



	Freq	Level	Over	Limit	Antenna	Cable	Preamp	Read	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	3249.270	45.87	-28.13	74.00	30.98	2.03	36.60	49.46	HORIZONTAL	PEAK
2	3249.360	39.84	-14.16	54.00	30.98	2.03	36.60	43.42	HORIZONTAL	AVERAGE
3 @	4873.260	48.79	-5.21	54.00	32.94	3.22	37.65	50.28	HORIZONTAL	AVERAGE
4	4873.920	63.42	-10.58	74.00	32.94	3.22	37.65	64.91	HORIZONTAL	PEAK
5	7312.560	50.26	-23.74	74.00	35.94	4.44	39.28	49.16	HORIZONTAL	PEAK
6	7312.680	40.38	-13.62	54.00	35.94	4.44	39.28	39.28	HORIZONTAL	AVERAGE
7	9747.840	39.73	-14.27	54.00	39.46	5.07	36.16	31.36	HORIZONTAL	AVERAGE
8	9748.380	51.66	-22.34	74.00	39.46	5.07	36.16	43.30	HORIZONTAL	PEAK



Vertical

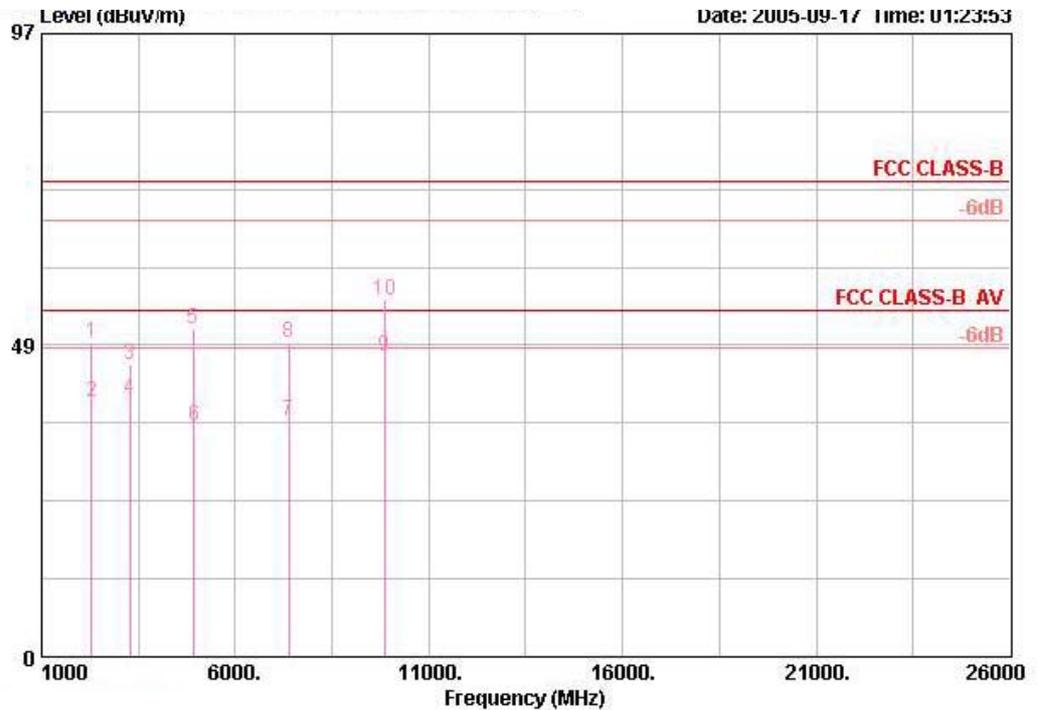


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4873.920	49.58	-4.42	54.00	33.33	3.22	35.10	48.12	VERTICAL	AVERAGE
2	4873.920	62.10	-11.90	74.00	33.33	3.22	35.10	60.64	VERTICAL	PEAK
3	7301.000	43.14	-10.86	54.00	36.24	4.44	35.32	37.77	VERTICAL	AVERAGE
4	7306.840	54.69	-19.31	74.00	36.24	4.44	35.32	49.32	VERTICAL	PEAK
5	9747.960	59.71	-14.29	74.00	38.56	5.07	35.85	51.93	VERTICAL	PEAK
6 @	9747.960	49.15	-4.85	54.00	38.56	5.07	35.85	41.37	VERTICAL	AVERAGE



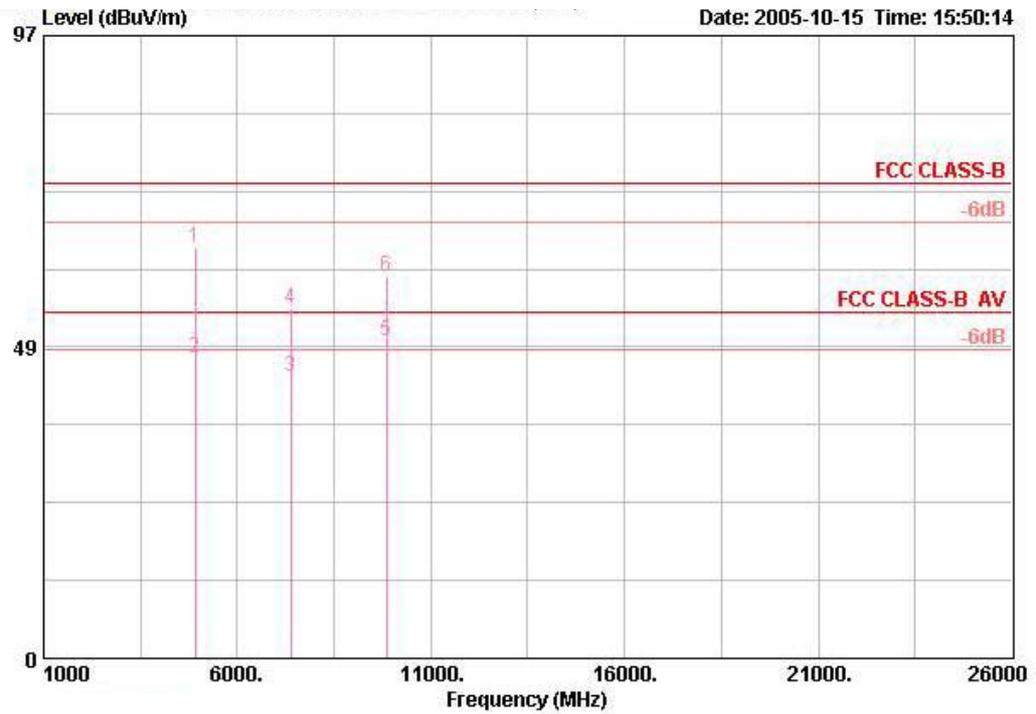
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 11

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	2279.830	48.85	-25.15	74.00	28.97	1.94	35.94	53.88	HORIZONTAL	PEAK
2	2279.990	39.66	-14.34	54.00	28.97	1.94	35.94	44.69	HORIZONTAL	AVERAGE
3	3282.550	45.41	-28.59	74.00	31.05	2.10	36.60	48.85	HORIZONTAL	PEAK
4	3282.690	40.06	-13.94	54.00	31.05	2.10	36.60	43.50	HORIZONTAL	AVERAGE
5	4923.950	51.07	-22.93	74.00	32.97	3.25	37.69	52.55	HORIZONTAL	PEAK
6	4924.690	35.89	-18.11	54.00	32.97	3.25	37.69	37.37	HORIZONTAL	AVERAGE
7	7386.870	36.74	-17.26	54.00	36.12	4.48	39.35	35.48	HORIZONTAL	AVERAGE
8	7386.890	48.86	-25.14	74.00	36.12	4.48	39.35	47.60	HORIZONTAL	PEAK
9 @	9848.030	46.78	-7.22	54.00	39.54	4.93	36.28	38.59	HORIZONTAL	AVERAGE
10	9848.030	55.38	-18.62	74.00	39.54	4.93	36.28	47.18	HORIZONTAL	PEAK

Vertical

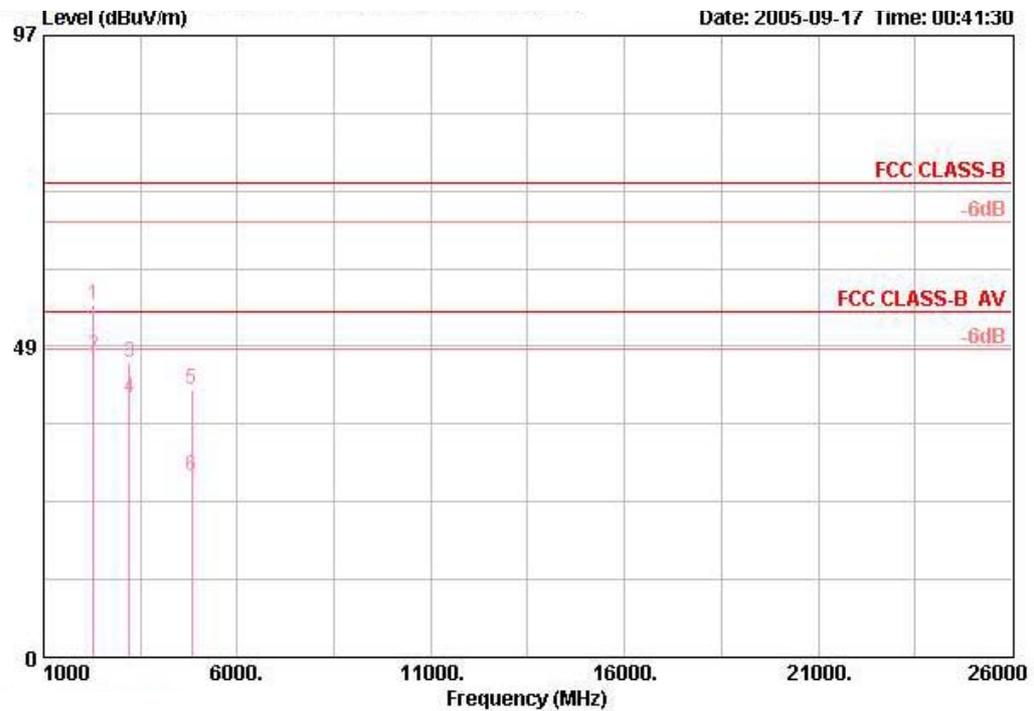


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4921.400	64.01	-9.99	74.00	33.45	3.25	35.10	62.41	VERTICAL	PEAK
2 @	4923.800	46.86	-7.14	54.00	33.45	3.25	35.10	45.26	VERTICAL	AVERAGE
3 @	7382.840	44.00	-10.00	54.00	36.41	4.48	35.35	38.46	VERTICAL	AVERAGE
4	7384.080	54.52	-19.48	74.00	36.45	4.48	35.35	48.93	VERTICAL	PEAK
5 @	9847.960	49.51	-4.49	54.00	38.68	4.93	35.87	41.77	VERTICAL	AVERAGE
6	9847.960	59.46	-14.54	74.00	38.68	4.93	35.87	51.72	VERTICAL	PEAK



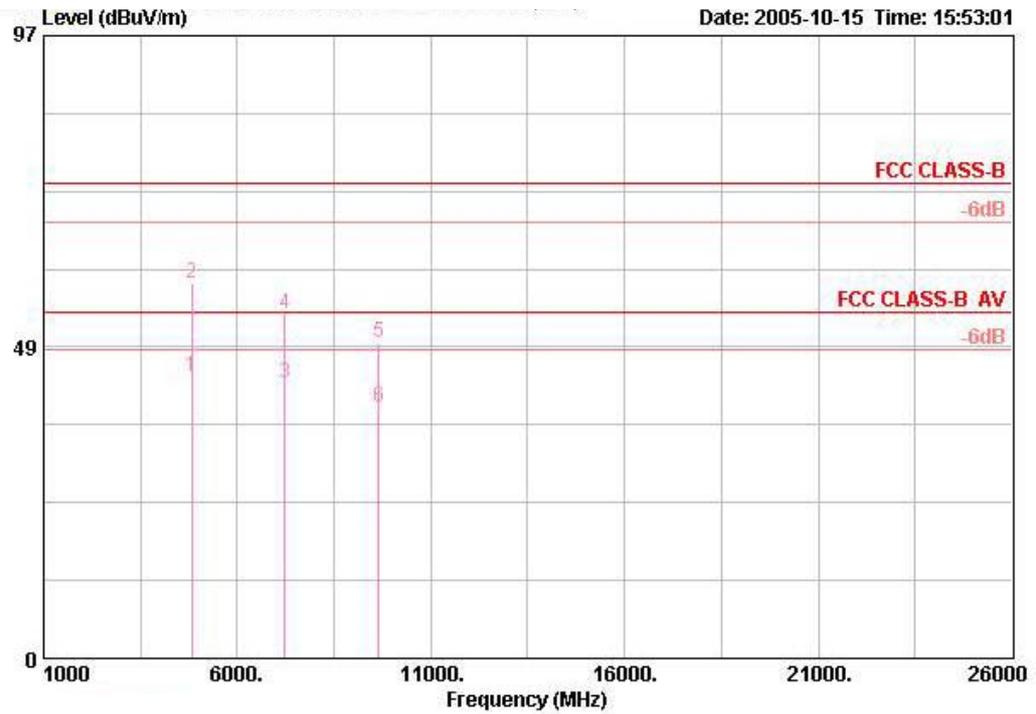
Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 1

Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	2280.040	54.86	-19.14	74.00	28.97	1.94	35.94	59.89	HORIZONTAL	PEAK
2 @	2280.040	46.93	-7.07	54.00	28.97	1.94	35.94	51.96	HORIZONTAL	AVERAGE
3	3216.000	45.87	-28.13	74.00	30.91	1.97	36.60	49.59	HORIZONTAL	PEAK
4	3216.040	40.55	-13.45	54.00	30.91	1.97	36.60	44.27	HORIZONTAL	AVERAGE
5	4820.840	41.79	-32.21	74.00	32.92	3.20	37.61	43.28	HORIZONTAL	PEAK
6	4825.640	28.17	-25.83	54.00	32.92	3.20	37.61	29.66	HORIZONTAL	AVERAGE

Vertical

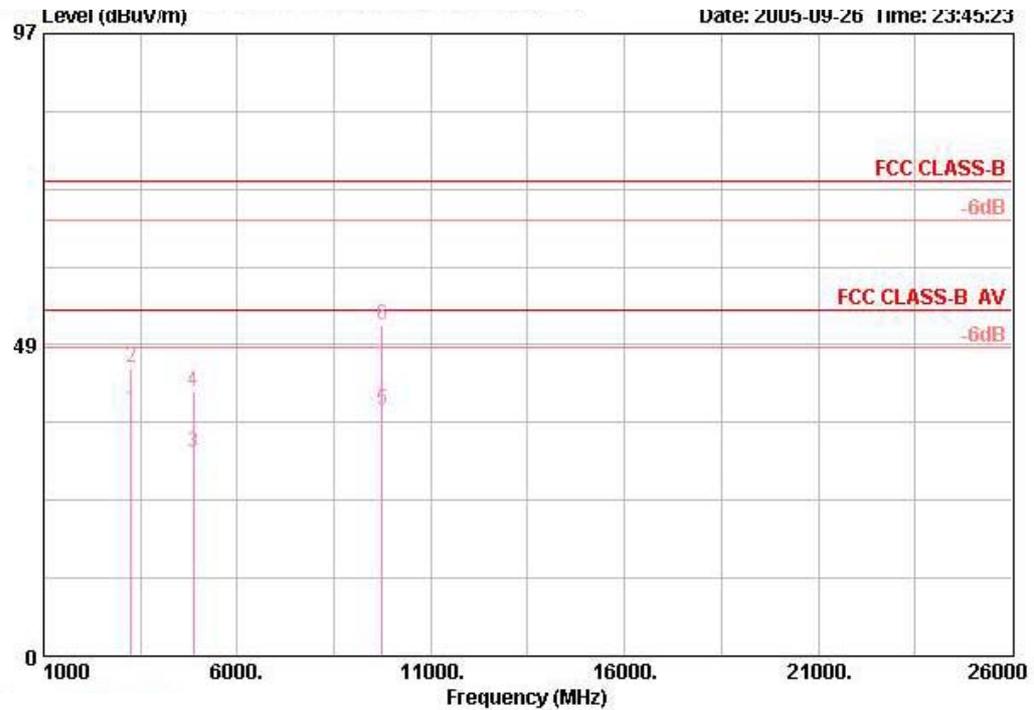


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4824.000	43.88	-10.12	54.00	33.22	3.20	35.10	42.56	VERTICAL	AVERAGE
2	4824.000	58.35	-15.65	74.00	33.22	3.20	35.10	57.03	VERTICAL	PEAK
3	7236.000	42.81	-11.19	54.00	36.08	4.41	35.30	37.63	VERTICAL	AVERAGE
4	7236.000	53.74	-20.26	74.00	36.08	4.41	35.30	48.55	VERTICAL	PEAK
5	9648.000	49.12	-24.88	74.00	38.42	5.16	35.83	41.38	VERTICAL	PEAK
6	9648.000	39.09	-14.91	54.00	38.42	5.16	35.83	31.35	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 6

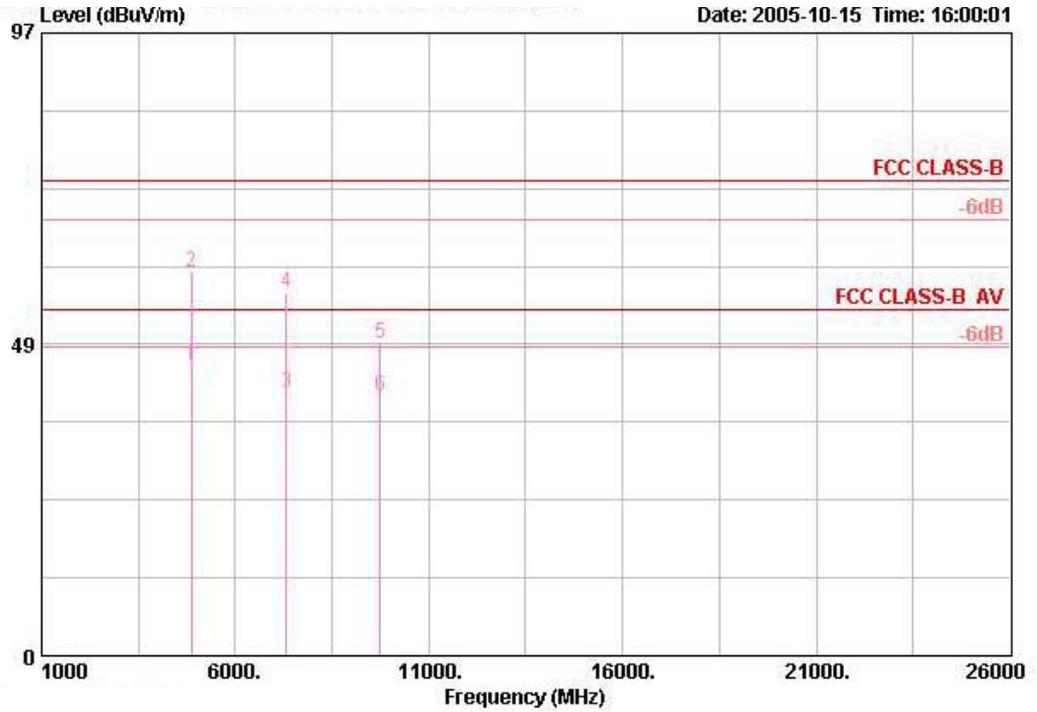
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1	3249.240	38.37	-15.63	54.00	30.98	2.03	36.60	41.96	HORIZONTAL	AVERAGE
2	3249.370	44.82	-29.18	74.00	30.98	2.03	36.60	48.41	HORIZONTAL	PEAK
3	4874.460	31.72	-22.28	54.00	32.94	3.22	37.65	33.21	HORIZONTAL	AVERAGE
4	4876.340	41.35	-32.65	74.00	32.94	3.22	37.65	42.84	HORIZONTAL	PEAK
5	9746.840	38.27	-15.73	54.00	39.46	5.07	36.16	29.91	HORIZONTAL	AVERAGE
6	9749.580	51.56	-22.44	74.00	39.46	5.07	36.16	43.19	HORIZONTAL	PEAK



Vertical

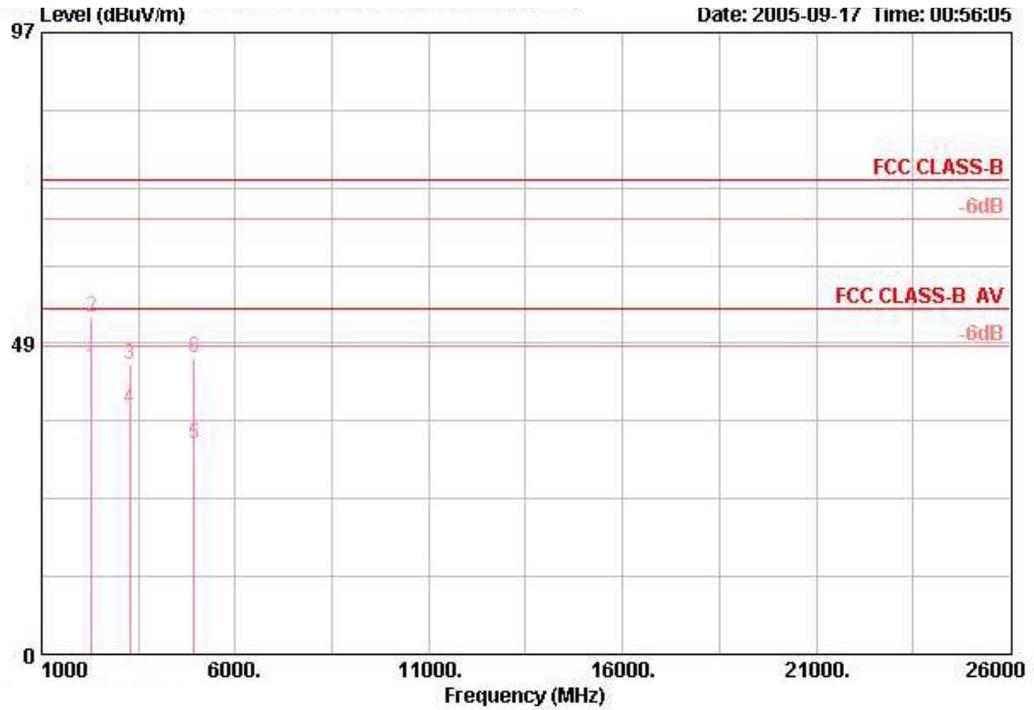


	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	4874.000	45.14	-8.86	54.00	33.33	3.22	35.10	43.69	VERTICAL	AVERAGE
2	4874.000	59.67	-14.33	74.00	33.33	3.22	35.10	58.22	VERTICAL	PEAK
3	7311.000	40.92	-13.08	54.00	36.24	4.44	35.32	35.56	VERTICAL	AVERAGE
4	7311.000	56.52	-17.48	74.00	36.24	4.44	35.32	51.15	VERTICAL	PEAK
5	9748.000	48.55	-25.45	74.00	38.56	5.07	35.85	40.77	VERTICAL	PEAK
6	9748.000	40.38	-13.62	54.00	38.56	5.07	35.85	32.60	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 11

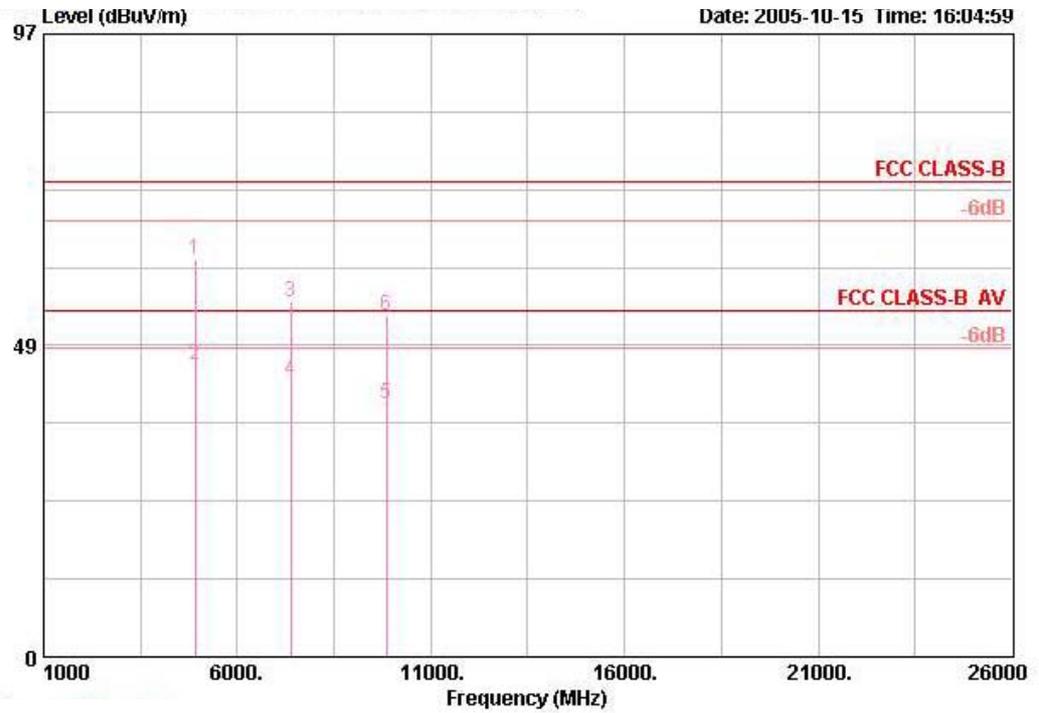
Horizontal



	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	2280.040	44.70	-9.30	54.00	28.97	1.94	35.94	49.73		HORIZONTAL AVERAGE
2	2280.180	52.67	-21.33	74.00	28.97	1.94	35.94	57.70		HORIZONTAL PEAK
3	3282.540	45.14	-28.86	74.00	31.05	2.10	36.60	48.59		HORIZONTAL PEAK
4	3282.700	38.39	-15.61	54.00	31.05	2.10	36.60	41.84		HORIZONTAL AVERAGE
5	4924.600	32.85	-21.15	54.00	32.97	3.25	37.69	34.32		HORIZONTAL AVERAGE
6	4924.680	46.31	-27.69	74.00	32.97	3.25	37.69	47.79		HORIZONTAL PEAK



Vertical



	Freq	Level	Over Limit	Limit	Antenna Line	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBUV/m	dB	dBUV/m	dB/m	dB	dB	dBUV		
1	4924.000	61.85	-12.15	74.00	33.45	3.25	35.10	60.25	VERTICAL	PEAK
2 @	4924.000	45.37	-8.63	54.00	33.45	3.25	35.10	43.77	VERTICAL	AVERAGE
3	7386.000	55.31	-18.69	74.00	36.45	4.48	35.35	49.72	VERTICAL	PEAK
4	7386.000	43.02	-10.98	54.00	36.45	4.48	35.35	37.44	VERTICAL	AVERAGE
5	9848.000	39.46	-14.54	54.00	38.68	4.93	35.87	31.71	VERTICAL	AVERAGE
6	9848.000	53.01	-20.99	74.00	38.68	4.93	35.87	45.27	VERTICAL	PEAK

Note:

The amplitude of spurious emissions which are attenuated by more than 20 dB 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.

Pol. : V is Vertical Polarization ; H is Horizontal Polarization.

## 4.6. Band Edge Emissions Measurement

### 4.6.1. 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

### 4.6.2. Measuring Instruments and Setting

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

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (other emission)	100 KHz /100 KHz for Peak

### 4.6.3. Test Procedures

1. The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.
2. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

### 4.6.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.5.4.

### 4.6.5. Test Deviation

There is no deviation with the original standard.

### 4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.



4.6.7. Test Result of Band Edge Emissions

For Emission in Restricted Band

Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 1

	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	2390.000	44.35	-9.65	54.00	29.22	2.00	0.00	13.13	VERTICAL	AVERAGE
2	2390.000	54.22	-19.78	74.00	29.22	2.00	0.00	23.00	VERTICAL	PEAK

Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11b channel 11

	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	2483.500	56.76	-17.24	74.00	29.40	2.04	0.00	25.33	VERTICAL	PEAK
2 @	2483.500	44.91	-9.09	54.00	29.40	2.04	0.00	13.48	VERTICAL	AVERAGE



Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 1

	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	2390.000	45.62	-8.38	54.00	29.22	2.00	0.00	14.40	VERTICAL	AVERAGE
2	2390.000	58.12	-15.88	74.00	29.22	2.00	0.00	26.90	VERTICAL	PEAK

Temperature	20°C	Humidity	70%
Test Engineer	Steven Lu	Configurations	802.11g channel 11

	Freq	Level	Over Limit	Limit	Antenna Line Factor	Cable Loss	Preamp Factor	Read Level	Pol/Phase	Remark
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		
1 @	2483.500	61.43	-12.57	74.00	29.40	2.04	0.00	30.00	VERTICAL	PEAK
2 @	2483.500	47.52	-6.48	54.00	29.40	2.04	0.00	16.08	VERTICAL	AVERAGE

Note:

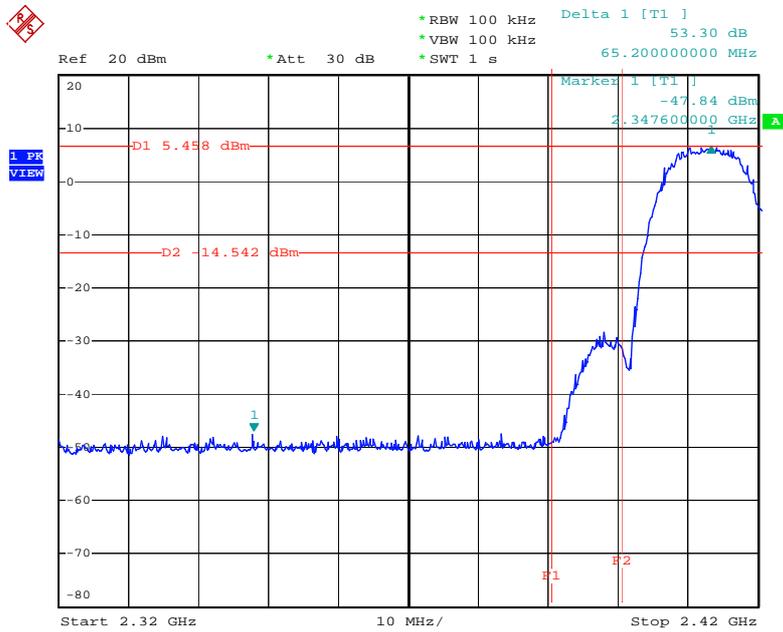
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

Receiving maximum band edge emissions are Vertical Polarization.

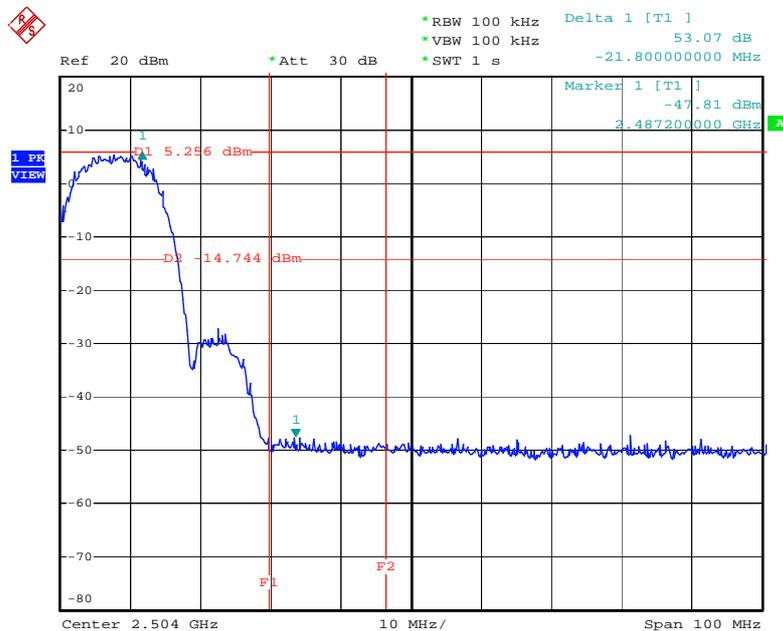
For Emission not in Restricted Band

Low Band Edge Plot on Configuration IEEE 802.11b / 2412 MHz



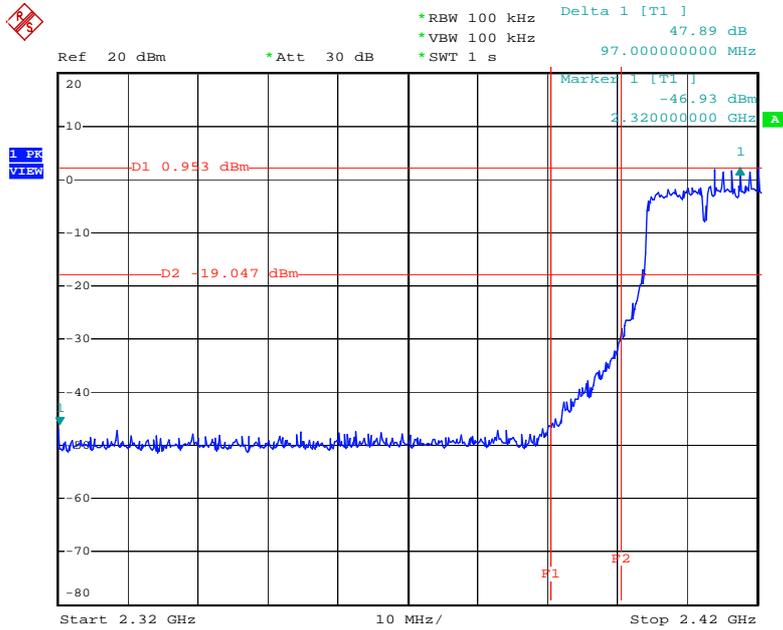
Date: 15.OCT.2005 18:27:44

High Band Edge Plot on Configuration IEEE 802.11b / 2462 MHz



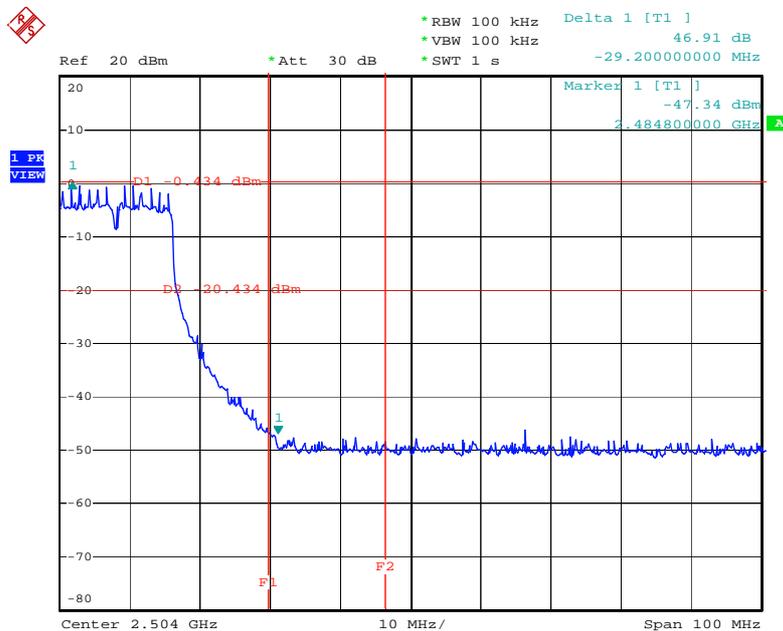
Date: 15.OCT.2005 18:29:20

### Low Band Edge Plot on Configuration IEEE 802.11g / 2412 MHz



Date: 15.OCT.2005 18:22:11

### High Band Edge Plot on Configuration IEEE 802.11g / 2462 MHz



Date: 15.OCT.2005 18:24:12

## 4.7. Antenna Requirements

### 4.7.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

### 4.7.2. Antenna Connector Construction

Please refer to section [3.3](#) in this test report, all antenna connectors comply with the requirements.

## 5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 16, 2005	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 20, 2005	Conduction (CO04-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	99041	9kHz – 30MHz	May. 05, 2005	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2005	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 16, 2005	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	CPA9231A	18667	9 kHz - 2 GHz	Jan. 10, 2005	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	May 31, 2005	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	923364	26.5 GHz - 40 GHz	Jan. 05, 2004*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100019	9 kHz - 40 GHz	Jul. 21, 2005	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 24, 2004*	Radiation (03CH03-HY)
Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30 MHz - 200 MHz	Jul. 22, 2005	Radiation (03CH03-HY)
Log Antenna	SCHWARZBECK	VUSLP 9111	221	200 MHz - 1 GHz	Jul. 22, 2005	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1 GHz - 18 GHz	Apr. 22, 2005	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jun. 09, 2004*	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Feb. 22, 2005	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec.01, 2004	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 - 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)

× Calibration Interval of instruments listed above is one year.

\* Calibration Interval of instruments listed above is two year.



Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum analyzer	R&S	FSP40	100116	9kHz ~ 40GHz	Jan. 28, 2005	Conducted (TH01-HY)
Power meter	R&S	NRVS	100444	DC ~ 40GHz	Jul. 06, 2005	Conducted (TH01-HY)
Power sensor	R&S	NRV-Z55	100049	DC ~ 40GHz	Jul. 06, 2005	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Apr. 28, 2005	Conducted (TH01-HY)
AC power source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	Apr. 21, 2005	Conducted (TH01-HY)
DC power source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Nov. 28, 2004	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 01, 2005	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Jan. 01, 2005	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Jan. 01, 2005	Conducted (TH01-HY)
Oscilloscope	Tektronix	TDS1012	CO38515	100MHz / 1GS/s	Apr. 15, 2005	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Dec. 31, 2004	Conducted (TH01-HY)
Data Generator	Tektronix	DG2030	063-2920-50	0.1Hz~400MHz	Jun. 02, 2005	Conducted (TH01-HY)

※ Calibration Interval of instruments listed above is one year.

## 6. SPORTON COMPANY PROFILE

SPORTON Lab. was established in 1986 with one shielded room: the first private EMI test facility, offering local manufacturers an alternative EMI test facility apart from ERSO. In 1988, one 3M and 10M/3M open area test site were setup and also obtained official accreditation from FCC, VCCI and NEMKO. In 1993, a Safety laboratory was founded and obtained accreditation from UL of USA, CSA of Canada and TUV (Rhineland & PS) of Germany. In 1995, one EMC lab, including EMI and EMS test facilities was setup. In 1997, SPORTON Group has provided financial expense to relocate the headquarter to Orient Scientific Park in Taipei Hsien to offer more comprehensive, more qualified and better service to local suppliers and manufactures. In 1999, Safety Group and Component Group were setup. In 2001, SPORTON has established 3M/10M chamber in Hwa Ya Technology Park.

### 6.1. Test Location

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 02-2696-2468 FAX : 02-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 03-327-3456 FAX : 03-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 02-2601-1640 FAX : 02-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 02-2631-4739 FAX : 02-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 02-8227-2020 FAX : 02-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 <sup>nd</sup> Rd., Taipei 114, Taiwan, R.O.C. TEL : 02-2794-8886 FAX : 02-2794-9777
JHUBEI	ADD : No.8, Lane 728, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C. TEL : 03-656-9065 FAX : 03-656-9085

## 7. CERTIFICATE OF NVLAP ACCREDITATION

United States Department of Commerce  
National Institute of Standards and Technology

**NVLAP**<sup>®</sup>

Certificate of Accreditation

SPORTON INTERNATIONAL, INC.  
TAIPEI HSIEN 221  
TAIWAN

*is recognized by the National Voluntary Laboratory Accreditation Program  
for satisfactory compliance with criteria set forth in NIST Handbook 150:2001,  
all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994.  
Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:*

**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

ISO/IEC 17025:1999  
ISO 9002:1994

DEPARTMENT OF COMMERCE  
UNITED STATES OF AMERICA

December 31, 2005  
*Effective through*

*[Signature]*  
For the National Institute of Standards and Technology  
NVLAP Lab Code: 200079-0

NVLAP-01C (06-01)