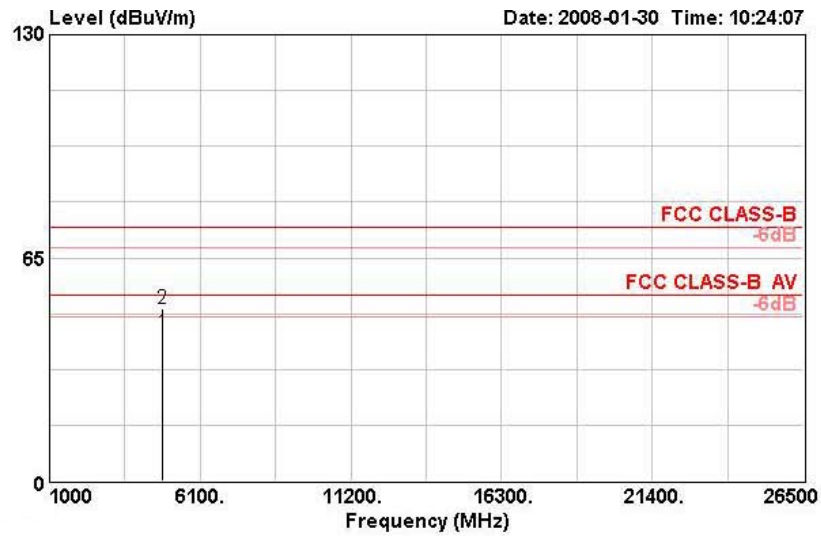


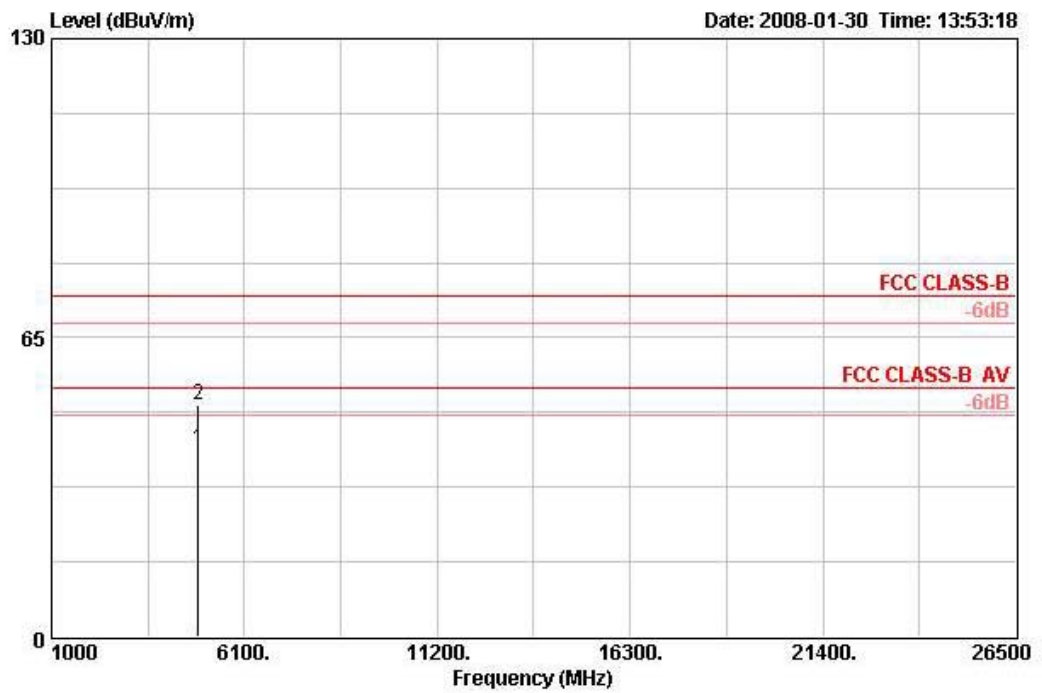
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	4824.010	43.01	-10.99	54.00	38.72	33.06	6.40	35.16	AVERAGE	102	318	VERTICAL
2	4824.110	50.19	-23.81	74.00	45.91	33.06	6.40	35.16	PEAK	102	318	VERTICAL

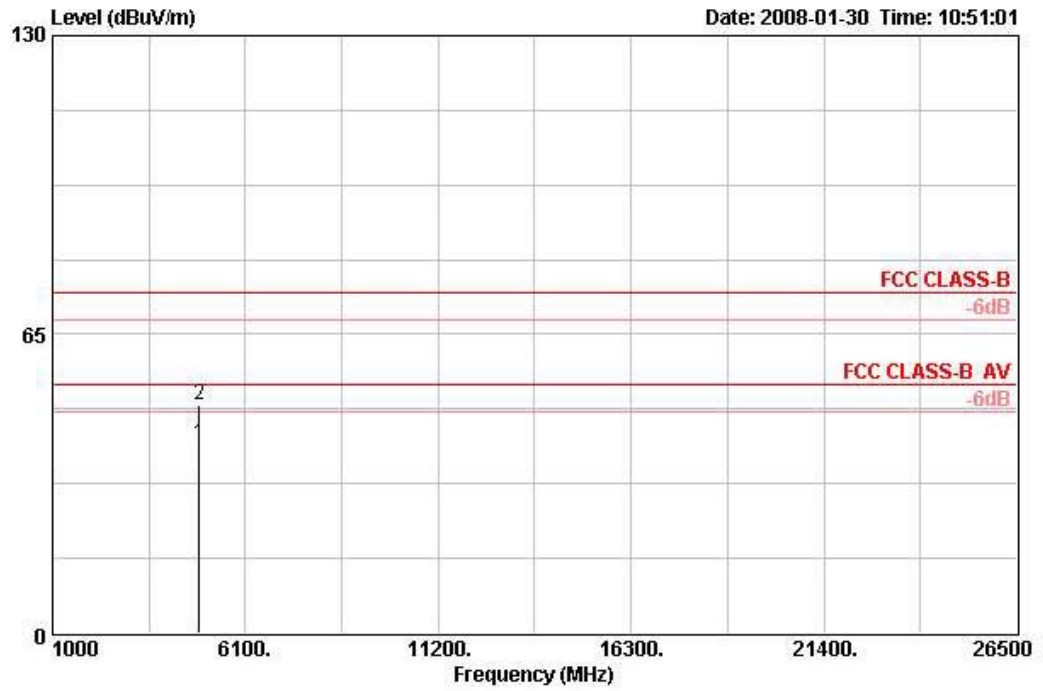
Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11b CH 6 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4873.950	40.75	-13.25	54.00	36.33	33.16	6.42	35.15	AVERAGE	101	266	HORIZONTAL
2	4874.130	50.50	-23.50	74.00	46.07	33.16	6.42	35.15	PEAK	101	266	HORIZONTAL

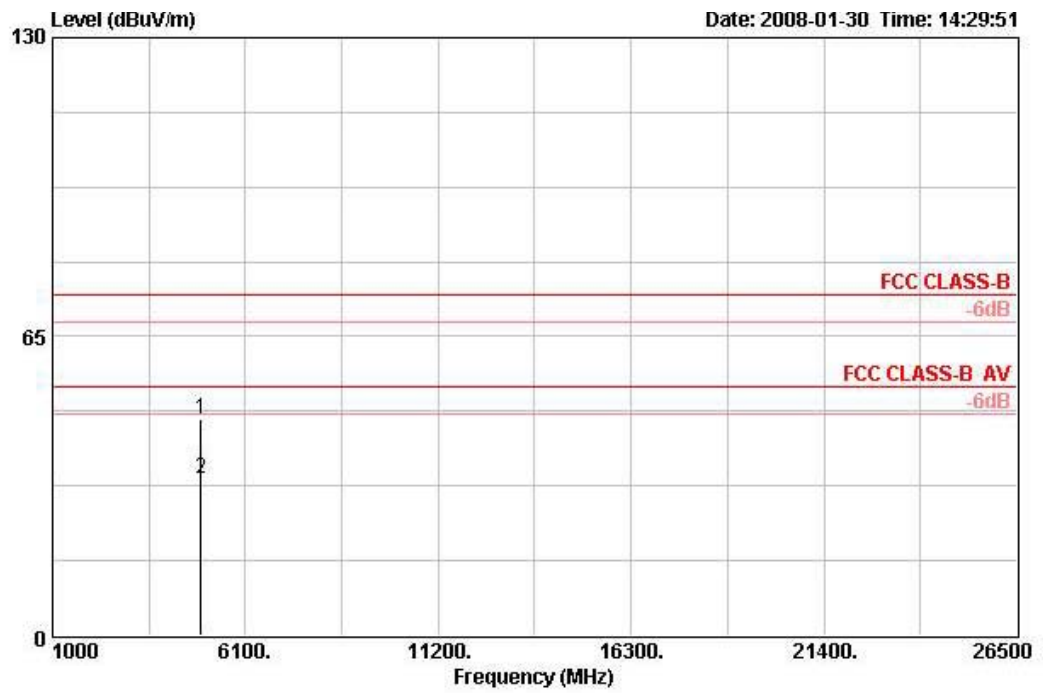
**Vertical**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4874.030	41.17	-12.83	54.00	36.74	33.16	6.42	35.15	AVERAGE	100	123	VERTICAL
2	4874.130	49.53	-24.47	74.00	45.11	33.16	6.42	35.15	PEAK	100	123	VERTICAL

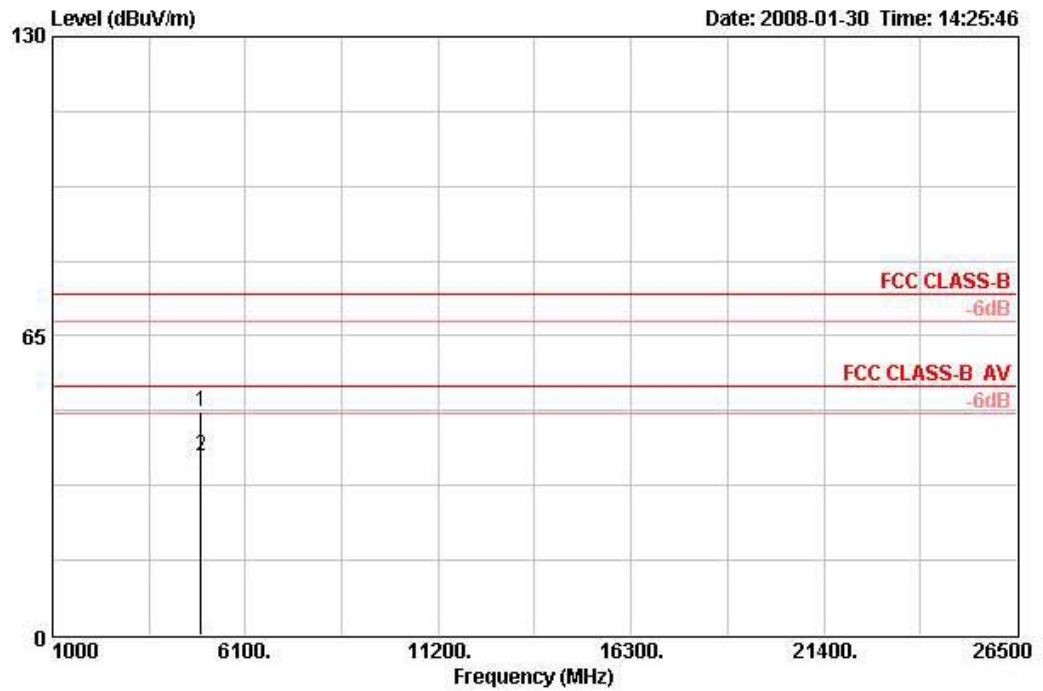
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11b CH 11 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4922.910	46.98	-27.02	74.00	42.42	33.26	6.44	35.14	PEAK	100	360	HORIZONTAL
2	4923.970	34.05	-19.95	54.00	29.49	33.26	6.44	35.14	AVERAGE	100	360	HORIZONTAL

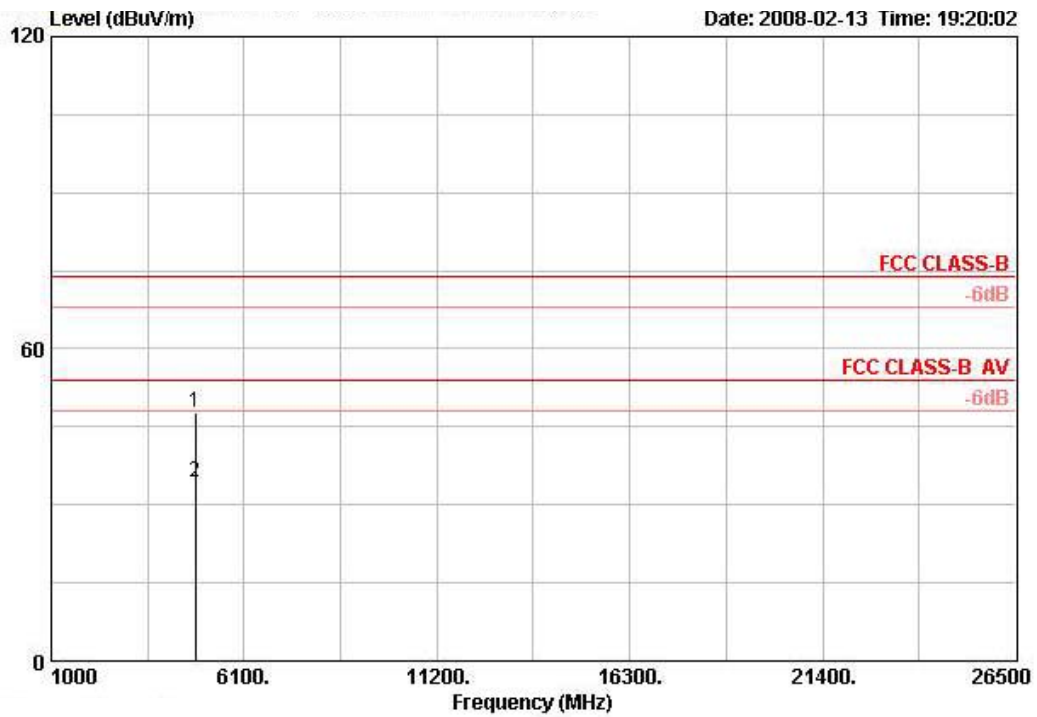
**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4923.850	48.57	-25.43	74.00	44.01	33.26	6.44	35.14	PEAK	100	306	VERTICAL
2	4923.990	38.95	-15.05	54.00	34.40	33.26	6.44	35.14	AVERAGE	100	306	VERTICAL

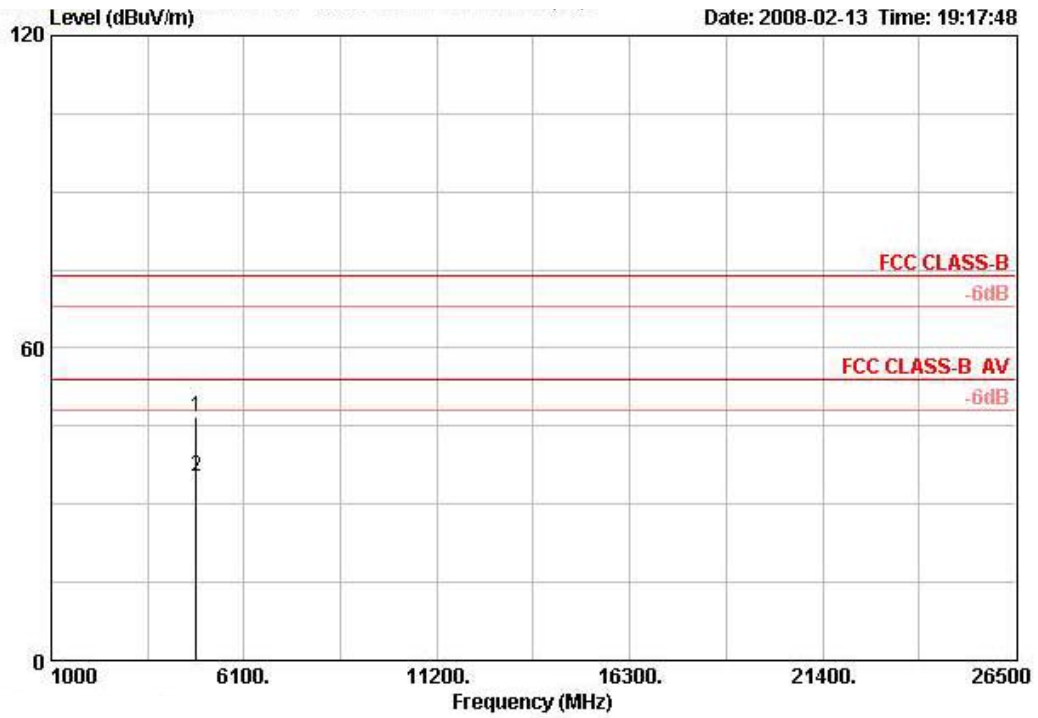
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 1 / Ant. A POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4821.740	47.63	-26.37	74.00	41.58	33.39	7.91	35.25	PEAK	100	360	HORIZONTAL
2	4822.380	34.44	-19.56	54.00	28.39	33.39	7.91	35.25	AVERAGE	100	360	HORIZONTAL

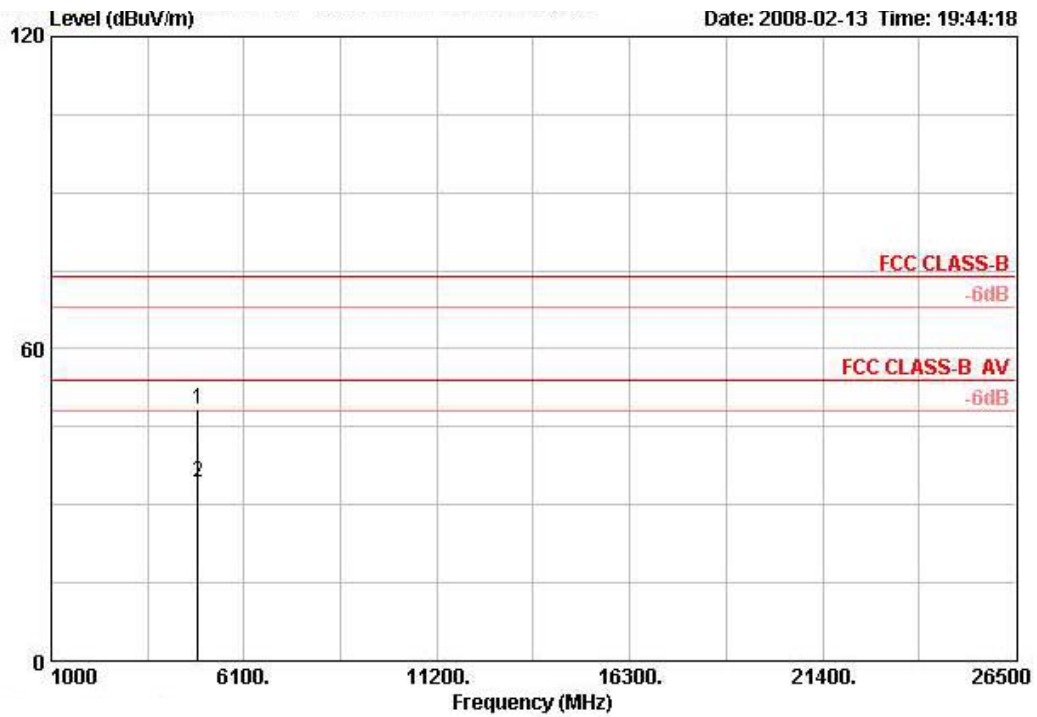
**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4823.910	46.83	-27.17	74.00	40.78	33.39	7.91	35.25	PEAK	100	40	VERTICAL
2	4825.090	35.39	-18.61	54.00	29.33	33.39	7.91	35.25	AVERAGE	100	40	VERTICAL

<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 6 / Ant. A POE Mode (Horizontal)

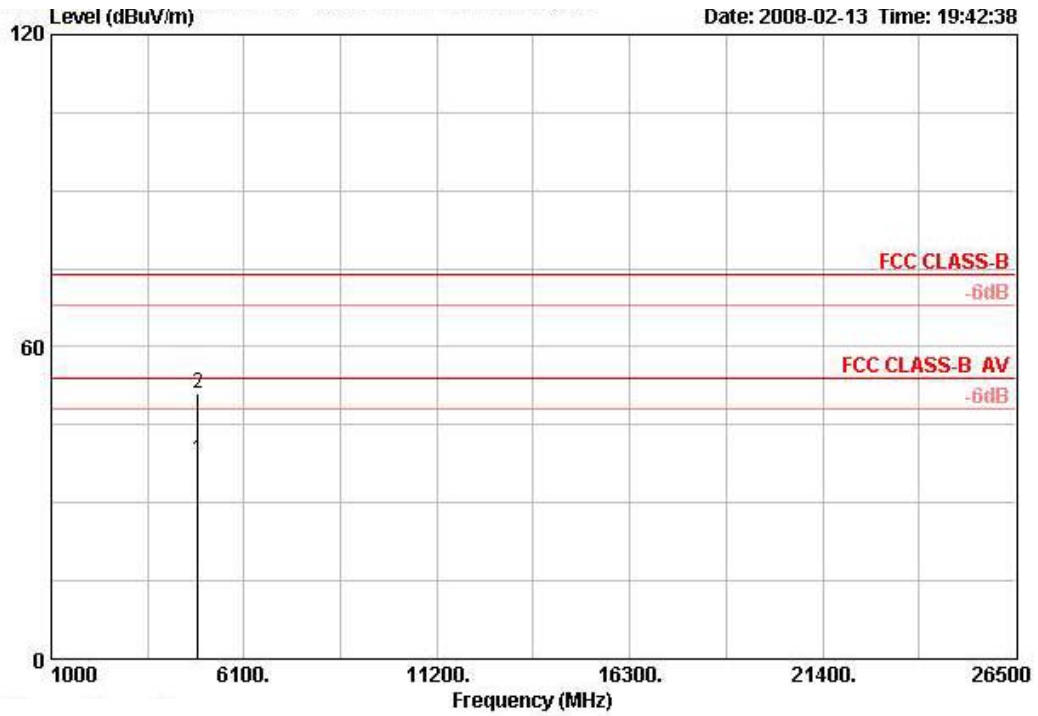
**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4871.510	48.37	-25.63	74.00	42.17	33.48	7.96	35.25	PEAK	100	360	HORIZONTAL
2	4873.690	34.35	-19.65	54.00	28.15	33.48	7.96	35.25	AVERAGE	100	360	HORIZONTAL



**Vertical**

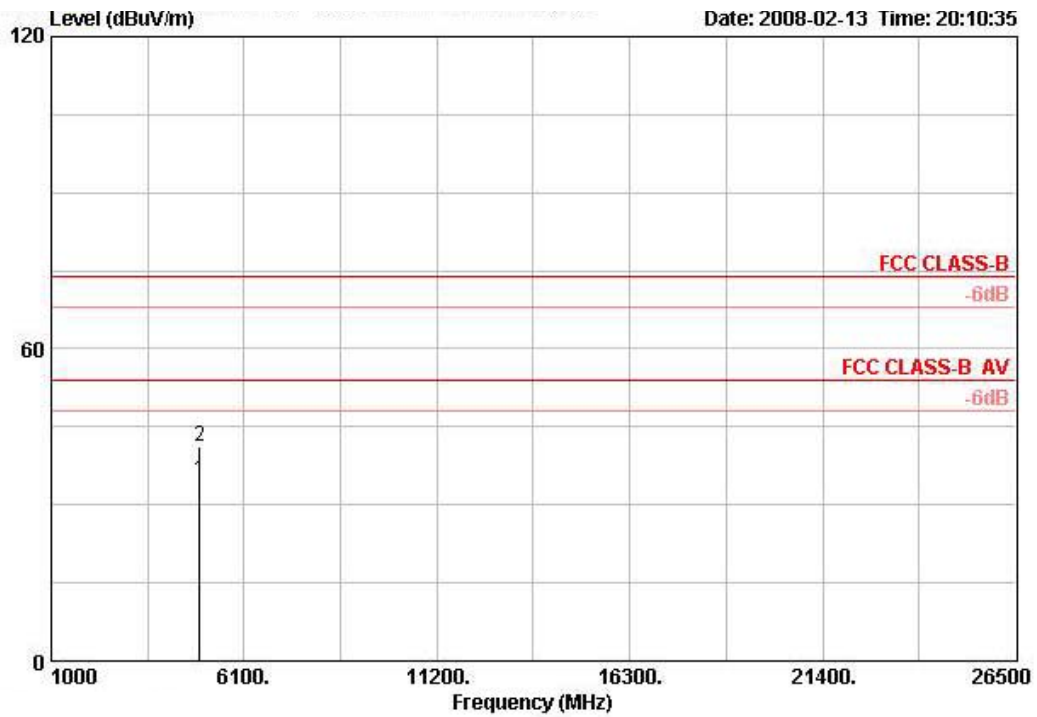


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4873.710	38.13	-15.87	54.00	31.93	33.48	7.96	35.25	AVERAGE	100	41	VERTICAL
2	4874.320	51.01	-22.99	74.00	44.81	33.48	7.96	35.25	PEAK	100	41	VERTICAL



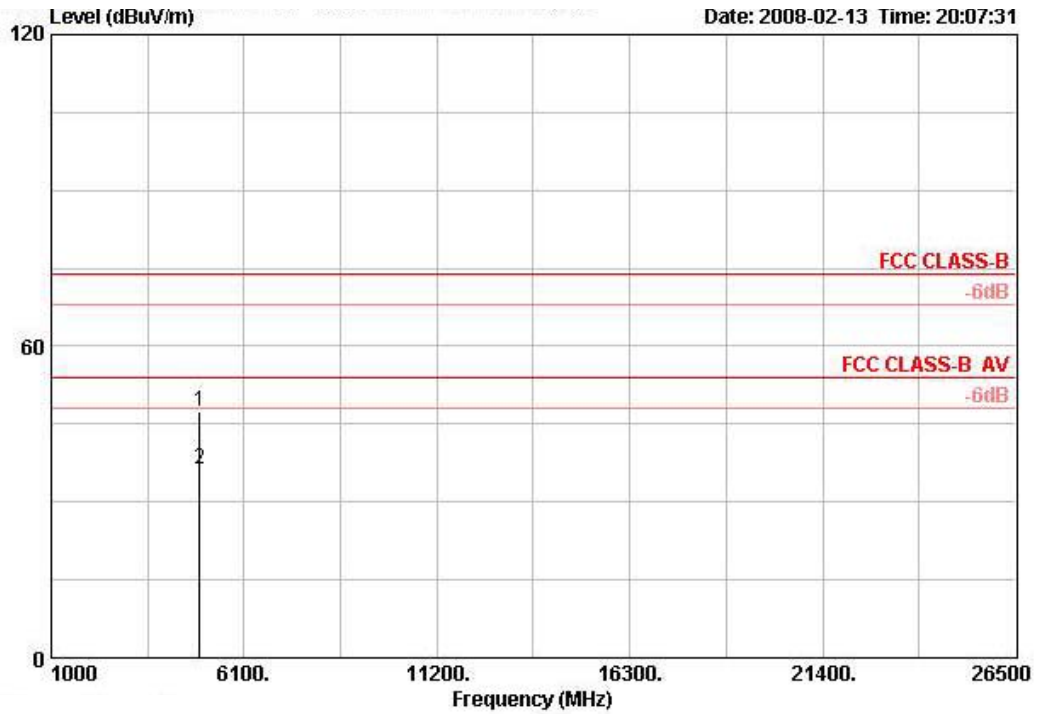
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 11 / Ant. A POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4922.660	34.54	-19.46	54.00	28.19	33.58	8.01	35.24	AVERAGE	100	95	HORIZONTAL
2	4924.100	41.15	-32.85	74.00	34.80	33.58	8.01	35.24	PEAK	100	95	HORIZONTAL

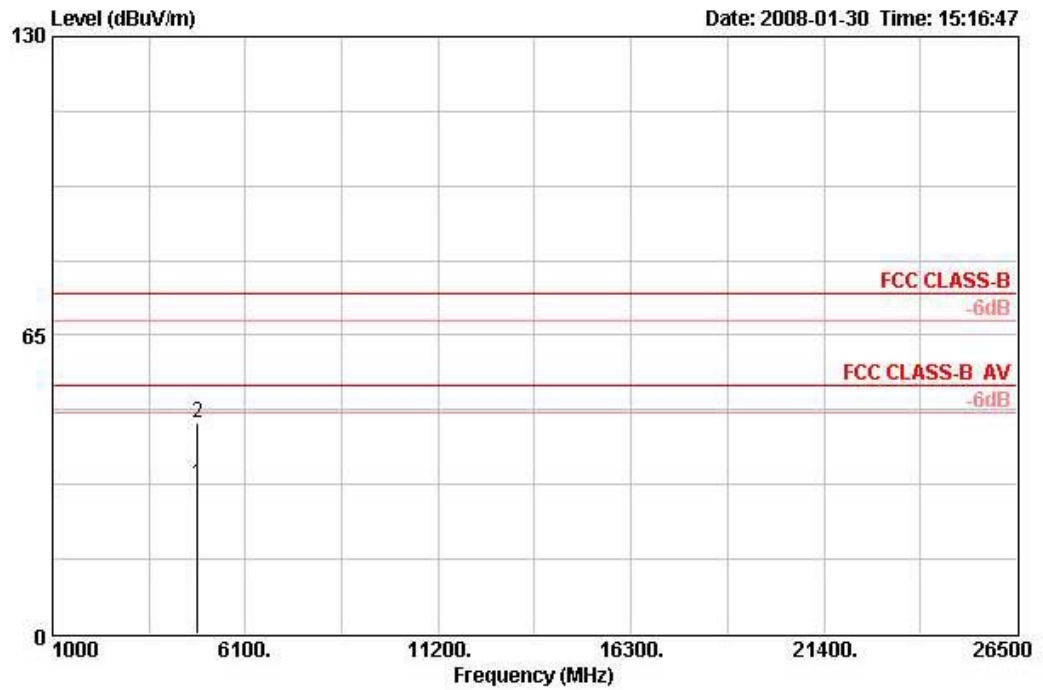
**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4923.490	47.38	-26.62	74.00	41.04	33.58	8.01	35.24	PEAK	100	41	VERTICAL
2	4926.060	36.35	-17.65	54.00	30.01	33.58	8.01	35.24	AVERAGE	100	41	VERTICAL

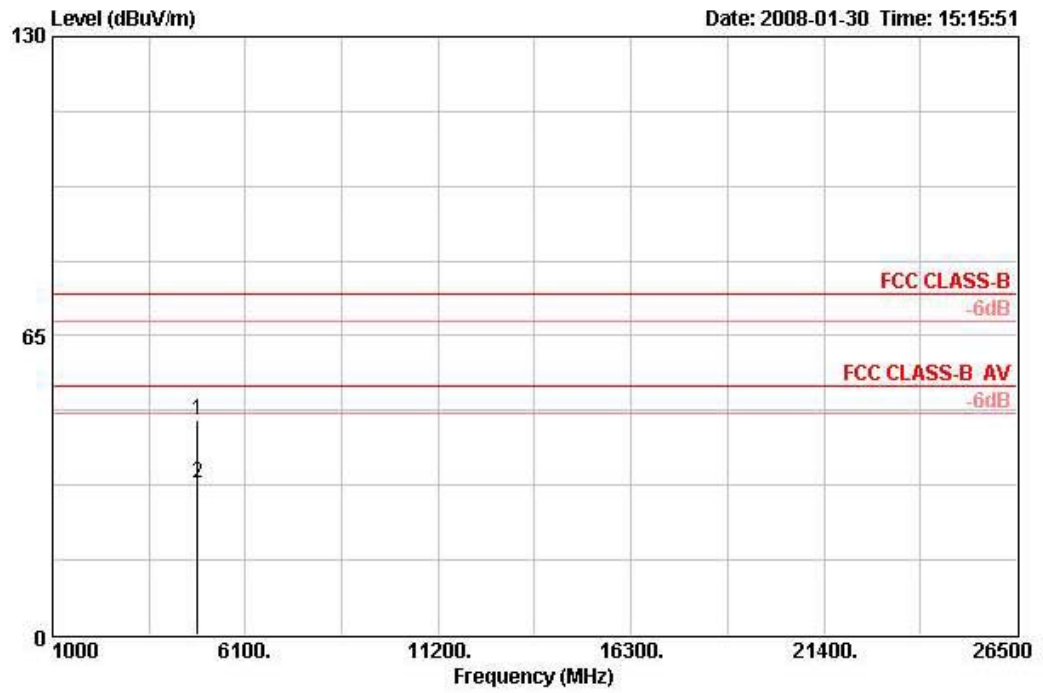
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 1 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4822.910	32.73	-21.27	54.00	28.44	33.06	6.40	35.16	AVERAGE	100	360	HORIZONTAL
2	4824.840	45.98	-28.02	74.00	41.69	33.06	6.40	35.16	PEAK	100	360	HORIZONTAL

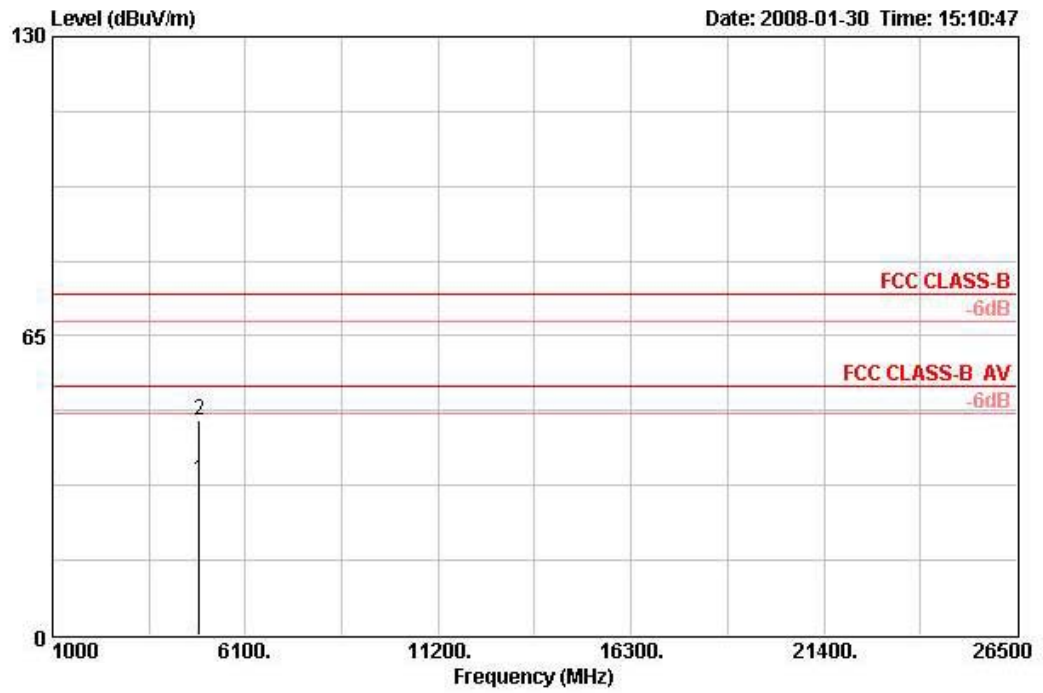
**Vertical**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4823.240	46.67	-27.33	74.00	42.38	33.06	6.40	35.16	PEAK	100	86	VERTICAL
2	4826.110	32.90	-21.10	54.00	28.61	33.06	6.40	35.16	AVERAGE	100	86	VERTICAL

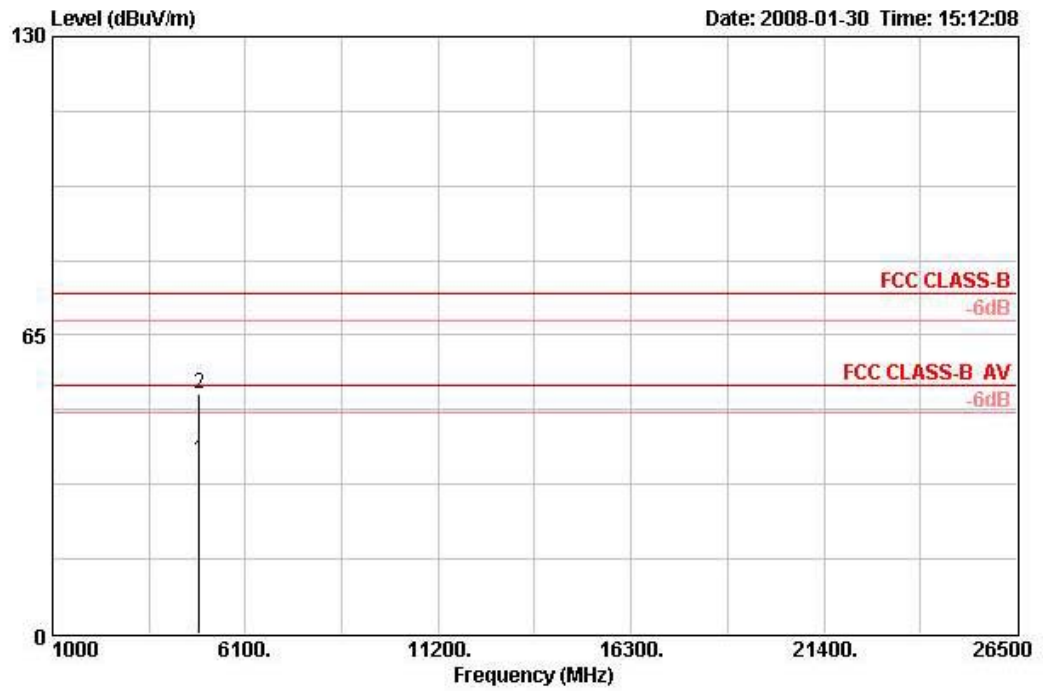
Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11g CH 6 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4871.600	33.58	-20.42	54.00	29.15	33.16	6.42	35.15	AVERAGE	100	320	HORIZONTAL
2	4874.780	46.67	-27.33	74.00	42.25	33.16	6.42	35.15	PEAK	100	320	HORIZONTAL

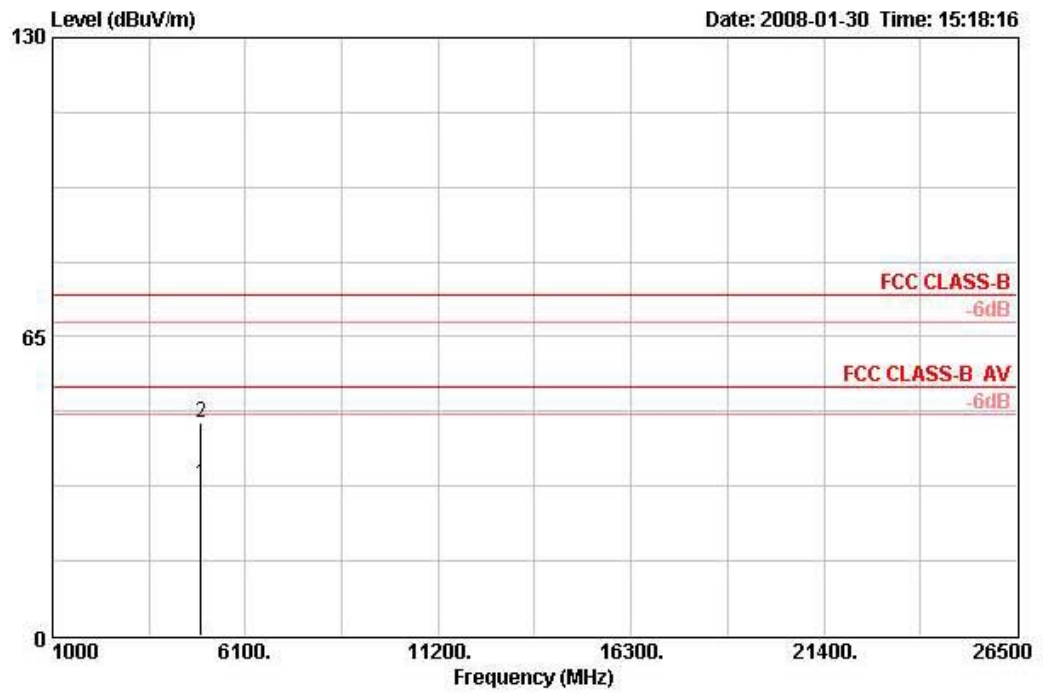
**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4871.690	37.60	-16.40	54.00	33.18	33.16	6.42	35.15	AVERAGE	100	66	VERTICAL
2	4871.800	52.10	-21.90	74.00	47.68	33.16	6.42	35.15	PEAK	100	66	VERTICAL

Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11g CH 11 / Ant. B POE Mode (Horizontal)

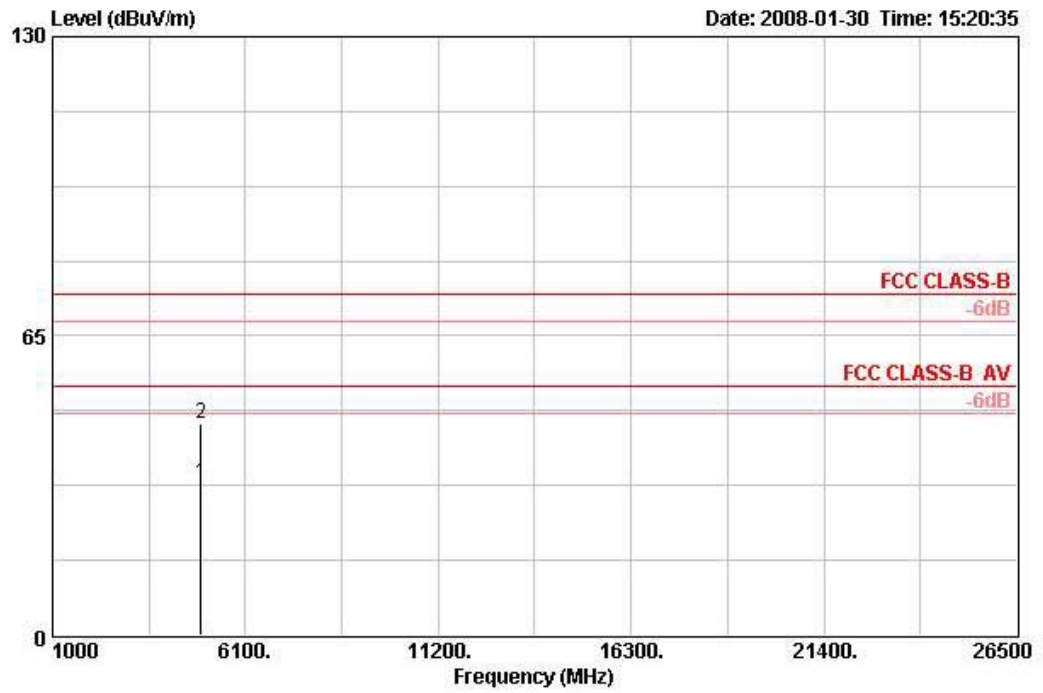
**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4923.030	33.08	-20.92	54.00	28.52	33.26	6.44	35.14	AVERAGE	100	0	HORIZONTAL
2	4924.980	46.13	-27.87	74.00	41.57	33.26	6.44	35.14	PEAK	100	0	HORIZONTAL



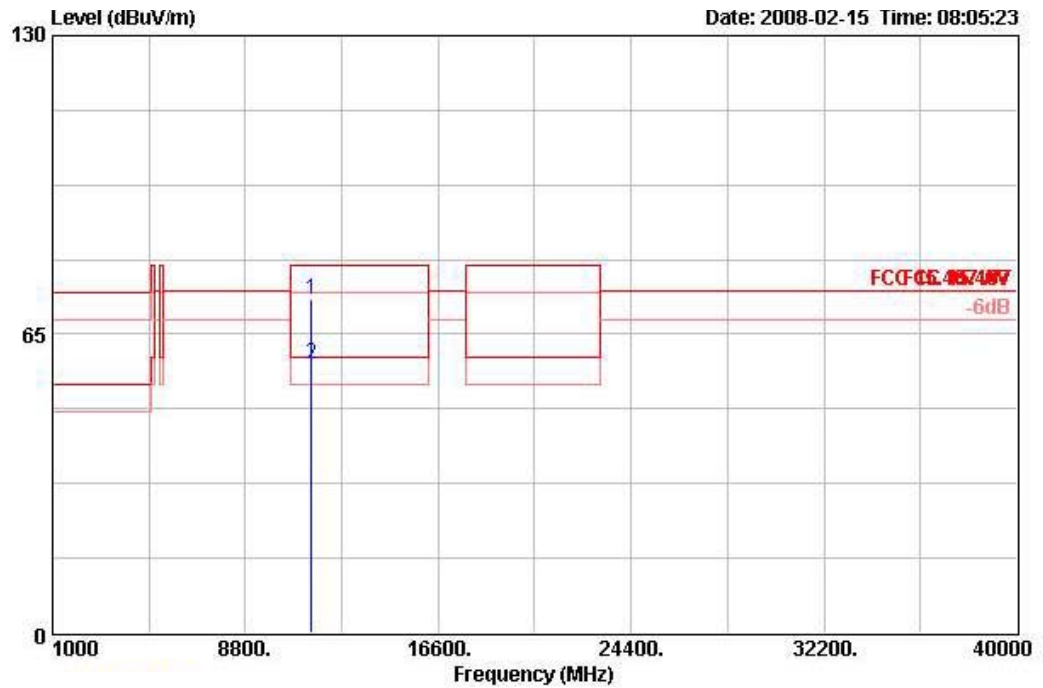
**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4925.820	33.01	-20.99	54.00	28.45	33.26	6.44	35.14	AVERAGE	100	260	VERTICAL
2	4926.220	46.03	-27.97	74.00	41.48	33.26	6.44	35.14	PEAK	100	260	VERTICAL

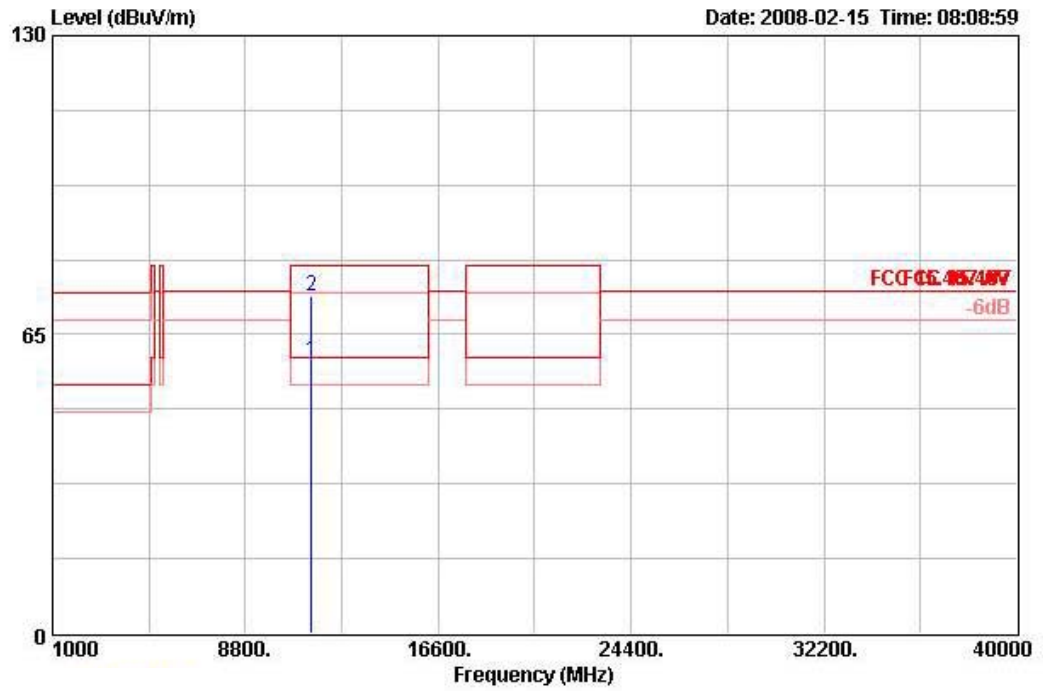
Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11a CH 149 / Ant. A POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Ant Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		deg	cm	
1	11488.840	72.50	-7.50	80.00	57.25	39.10	34.75	10.90	PEAK	250	100	HORIZONTAL
2	11488.920	58.50	-1.50	60.00	43.25	39.10	34.75	10.90	AVERAGE	250	100	HORIZONTAL

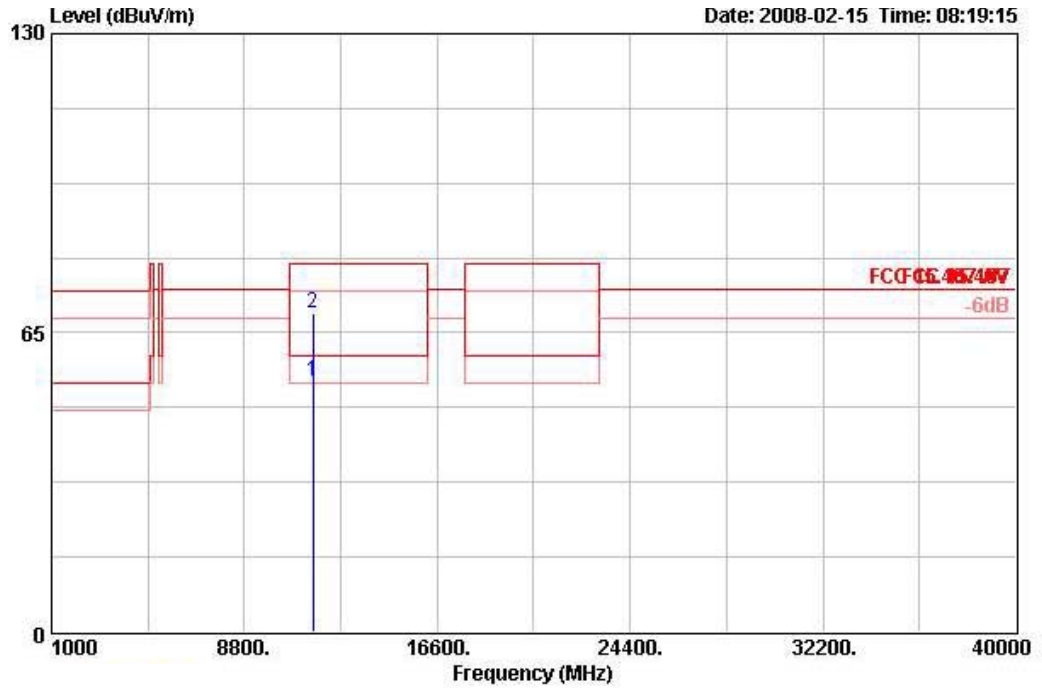
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1	11488.720	59.28	-0.72	60.00	44.03	39.10	34.75	10.90	AVERAGE	139	100	VERTICAL
2	11488.720	73.26	-6.74	80.00	58.01	39.10	34.75	10.90	PEAK	139	100	VERTICAL

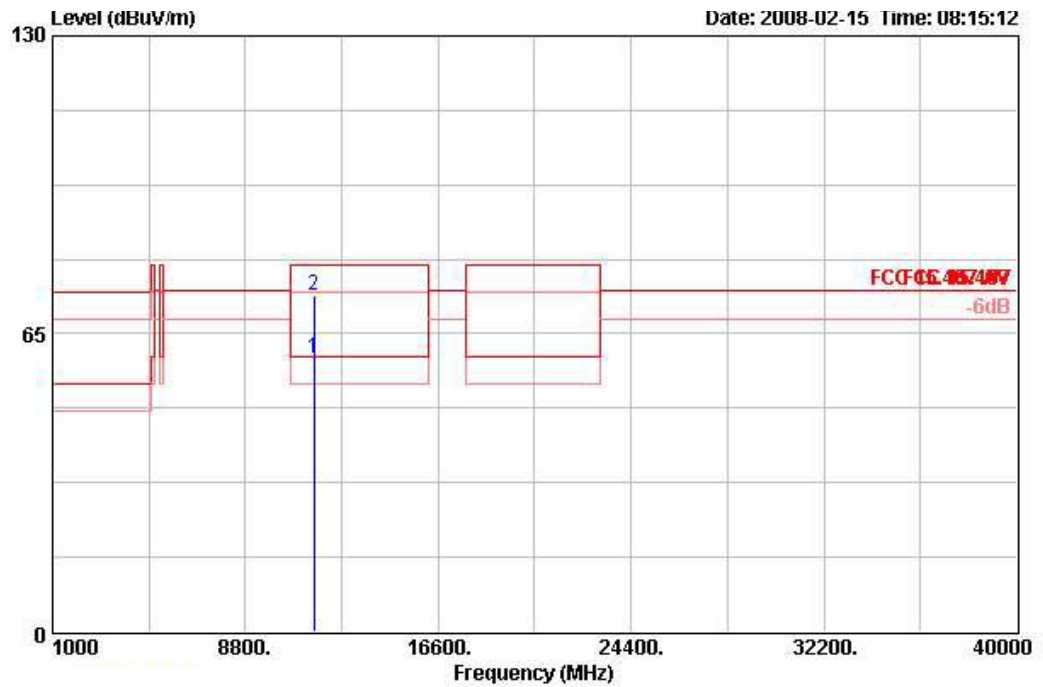
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11a CH 157 / Ant. A POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1	11567.520	54.33	-5.67	60.00	39.17	39.10	34.80	10.86	AVERAGE	155	100	HORIZONTAL
2	11568.000	69.21	-10.79	80.00	54.05	39.10	34.80	10.86	PEAK	155	100	HORIZONTAL

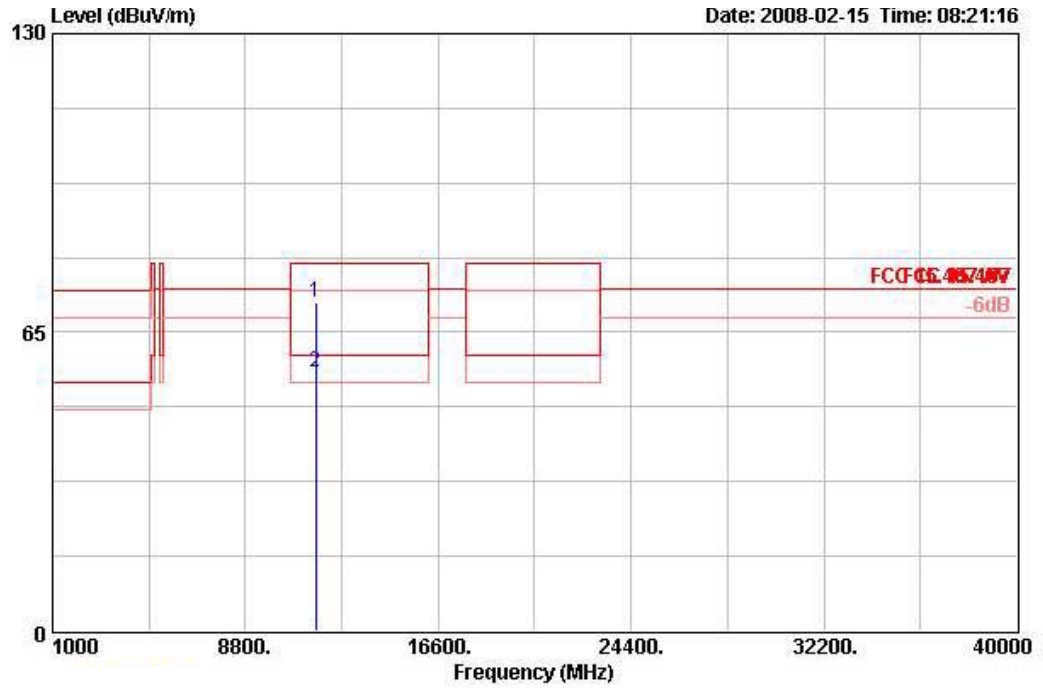
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		deg	cm	
1	11569.560	59.74	-0.26	60.00	44.58	39.10	34.80	10.86	AVERAGE	147	100	VERTICAL
2	11570.040	73.23	-6.77	80.00	58.13	39.10	34.82	10.83	PEAK	147	100	VERTICAL

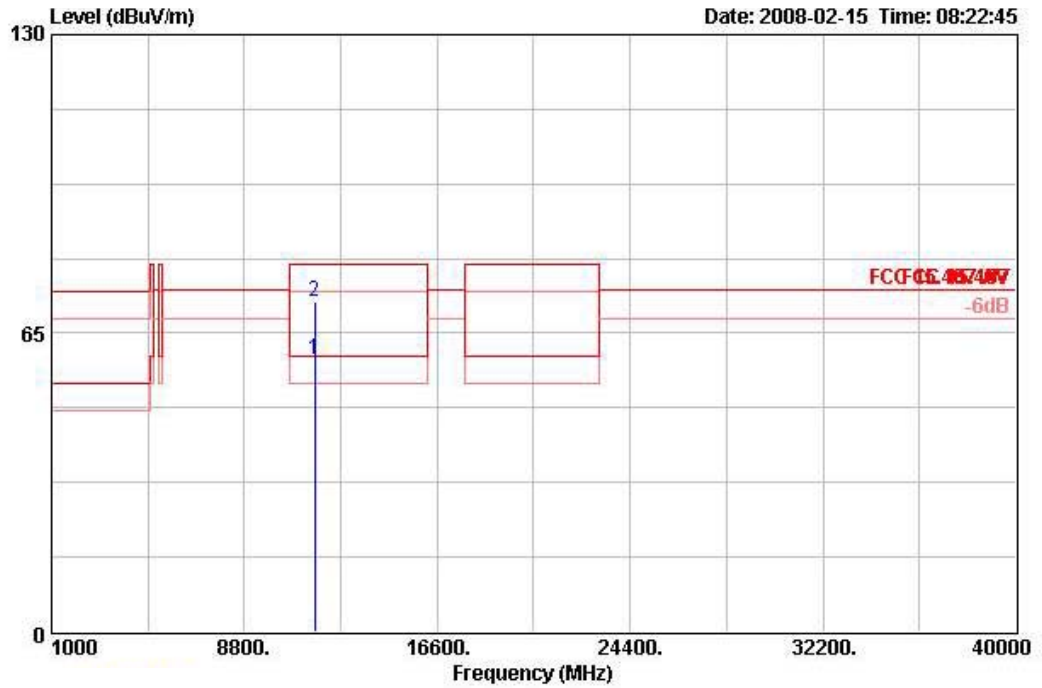
Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11a CH 165 / Ant. A POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1	11646.400	71.55	-8.45	80.00	56.62	39.10	34.90	10.72	PEAK	153	100	HORIZONTAL
2	11646.560	56.47	-3.53	60.00	41.54	39.10	34.90	10.72	AVERAGE	153	100	HORIZONTAL

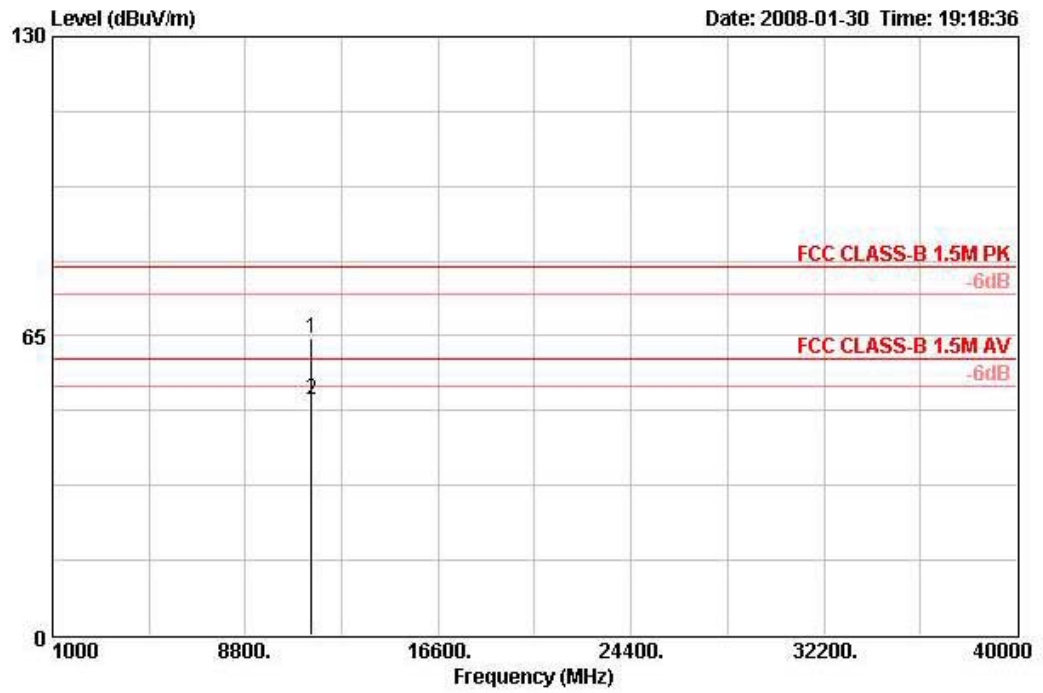
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Table Pos	Ant Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		deg	cm	
1 @	11648.400	59.14	-0.86	60.00	44.21	39.10	34.90	10.72	AVERAGE	115	100	VERTICAL
2 @	11648.600	71.69	-8.31	80.00	56.76	39.10	34.90	10.72	PEAK	115	100	VERTICAL

<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11a CH 149 / Ant. B POE Mode (Horizontal)

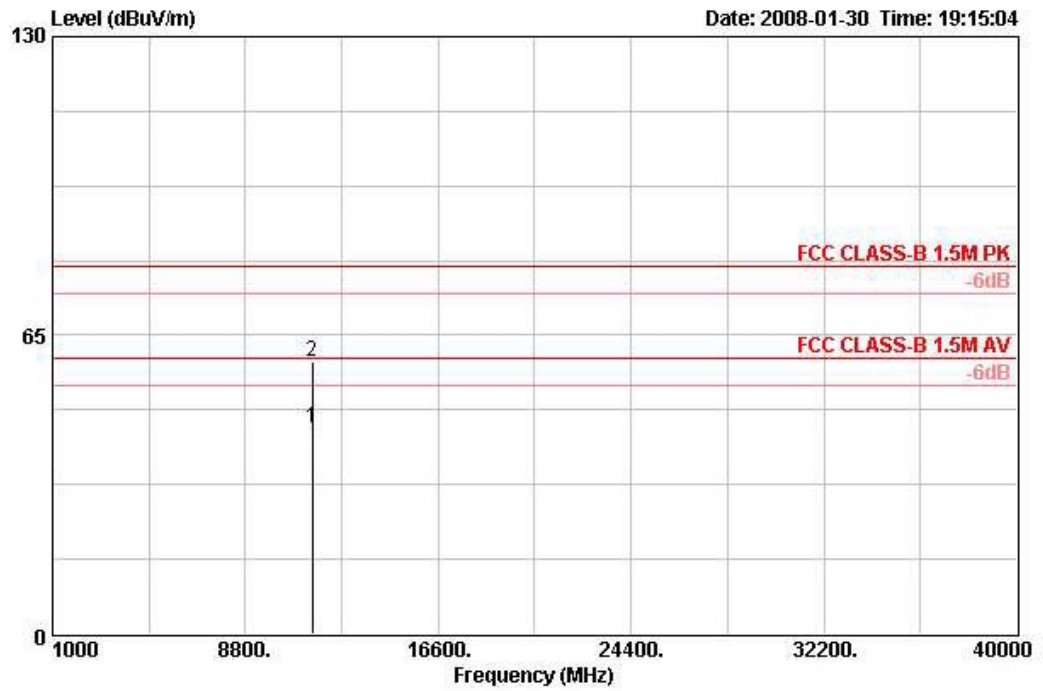
**Horizontal**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11488.510	64.53	-15.47	80.00	50.95	38.78	9.78	34.98	PEAK	121	244	HORIZONTAL
2	11488.770	51.24	-8.76	60.00	37.67	38.78	9.78	34.98	AVERAGE	121	244	HORIZONTAL



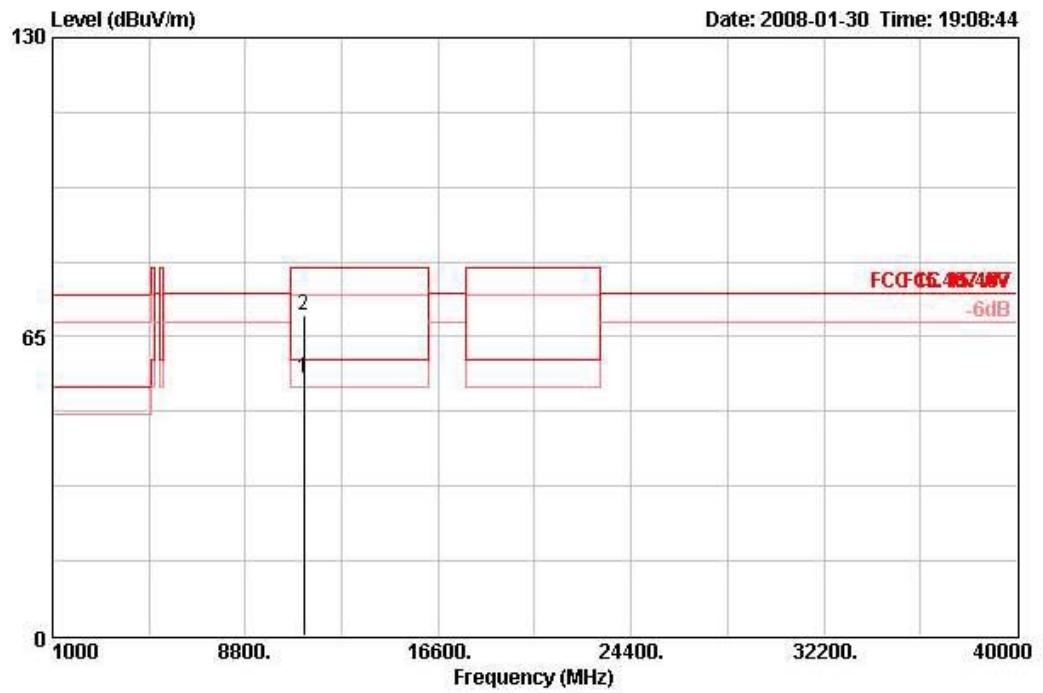
**Vertical**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11489.670	44.99	-15.01	60.00	31.41	38.78	9.78	34.98	AVERAGE	100	0	VERTICAL
2	11489.900	59.36	-20.64	80.00	45.78	38.78	9.78	34.98	PEAK	100	0	VERTICAL

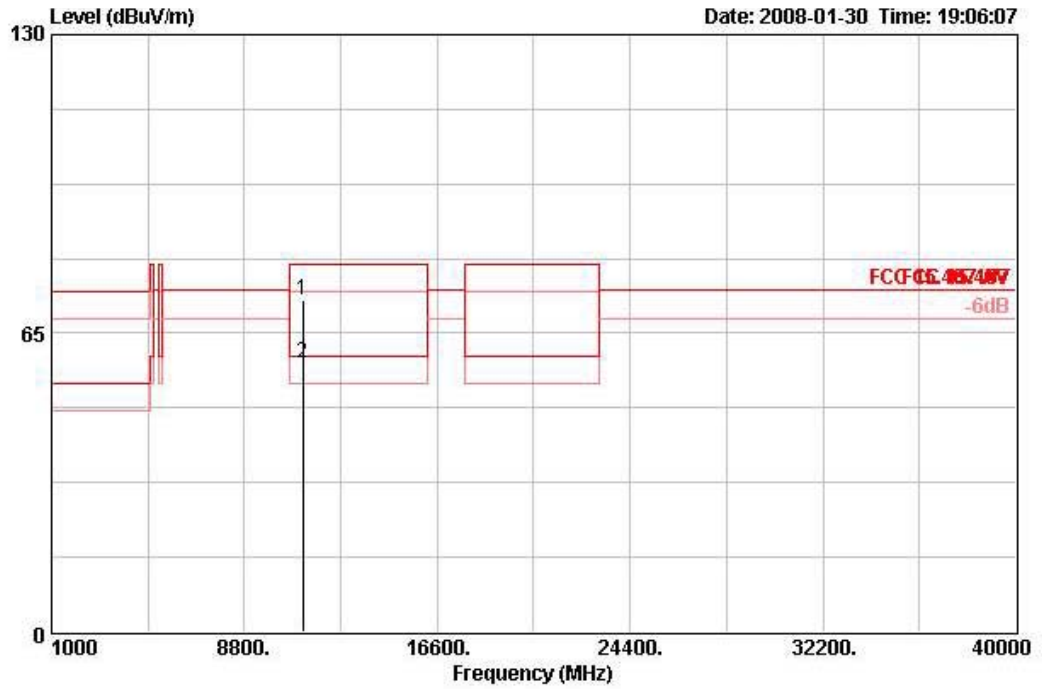
Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11a CH 157 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	11159.950	55.91	-4.09	60.00	42.55	38.47	9.72	34.83	AVERAGE	123	170	HORIZONTAL
2	11161.220	69.47	-10.53	80.00	56.11	38.47	9.72	34.83	PEAK	123	170	HORIZONTAL

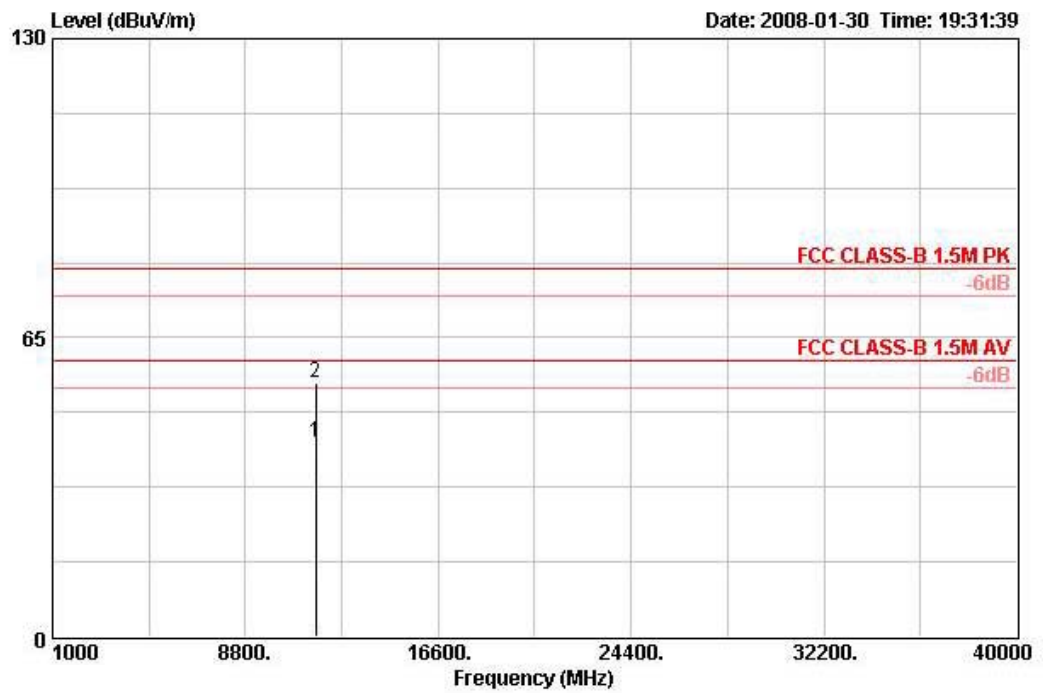
**Vertical**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11157.610	72.19	-7.81	80.00	58.84	38.47	9.72	34.83	PEAK	123	272	VERTICAL
2 !	11158.150	58.67	-1.33	60.00	45.32	38.47	9.72	34.83	AVERAGE	123	272	VERTICAL

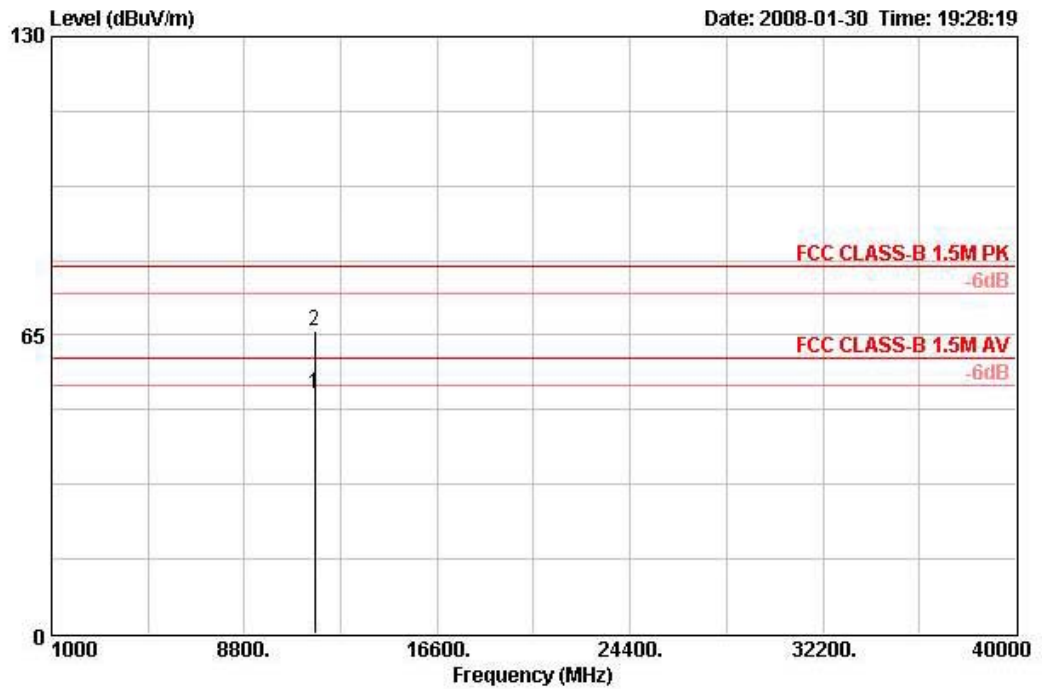
<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11a CH 165 / Ant. B POE Mode (Horizontal)

**Horizontal**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11649.110	42.09	-17.91	60.00	28.42	38.86	9.82	35.01	AVERAGE	100	246	HORIZONTAL
2	11649.160	55.14	-24.86	80.00	41.47	38.86	9.82	35.01	PEAK	100	246	HORIZONTAL

**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11649.210	52.12	-7.88	60.00	38.46	38.86	9.82	35.01	AVERAGE	124	277	VERTICAL
2	11649.900	65.97	-14.03	80.00	52.30	38.86	9.82	35.01	PEAK	124	277	VERTICAL

**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.

## 4.6. 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 (micovolts/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 of equipments list 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)	1 MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	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 and Fundamental Emissions

Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11b CH 1, 6, 11 / Ant. A POE Mode (Horizontal)

## Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2389.280	53.08	-0.92	54.00	19.23	28.05	5.80	0.00	AVERAGE	100	284	VERTICAL
2	2390.000	61.40	-12.60	74.00	27.51	28.05	5.84	0.00	PEAK	100	284	VERTICAL
3 @	2409.400	109.29			75.36	28.09	5.84	0.00	AVERAGE	100	284	VERTICAL
4 @	2411.000	114.21			80.28	28.09	5.84	0.00	PEAK	100	284	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

## Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 over	2439.600	115.55			81.50	28.18	5.87	0.00	PEAK	100	192	VERTICAL
2 @	2440.000	111.64			77.60	28.18	5.87	0.00	AVERAGE	100	192	VERTICAL

Item 1, 2 are the fundamental frequency at 2437 MHz.

## Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2460.600	114.19			80.07	28.22	5.91	0.00	PEAK	100	360	VERTICAL
2 @	2460.800	109.14			75.02	28.22	5.91	0.00	AVERAGE	100	360	VERTICAL
3	2483.500	63.07	-10.93	74.00	28.87	28.26	5.94	0.00	PEAK	100	360	VERTICAL
4 @	2488.100	53.16	-0.84	54.00	18.91	28.30	5.94	0.00	AVERAGE	100	360	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	18°C	Humidity	63%
Test Engineer	Aric Li	Configurations	802.11b CH 1, 6, 11 / Ant. B POE Mode (Horizontal)

**Channel 1**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	2385.600	52.97	-1.03	54.00	20.67	28.17	4.13	0.00	AVERAGE	100	91	VERTICAL
2	2386.000	62.67	-11.33	74.00	30.37	28.17	4.13	0.00	PEAK	100	91	VERTICAL
3 @	2409.800	107.27			74.90	28.21	4.15	0.00	AVERAGE	100	91	VERTICAL
4 over	2410.600	111.80			79.43	28.21	4.15	0.00	PEAK	100	91	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

**Channel 6**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	2388.800	58.35	-15.65	74.00	26.05	28.17	4.13	0.00	PEAK	100	342	VERTICAL
2	2389.200	46.76	-7.24	54.00	14.46	28.17	4.13	0.00	AVERAGE	100	342	VERTICAL
3 over	2438.600	117.04		74.00	84.58	28.29	4.18	0.00	PEAK	100	342	VERTICAL
4 @	2439.800	112.43		54.00	79.96	28.29	4.18	0.00	AVERAGE	100	342	VERTICAL
5	2483.700	58.79	-15.21	74.00	26.20	28.36	4.23	0.00	PEAK	100	342	VERTICAL
6	2484.100	47.45	-6.55	54.00	14.86	28.36	4.23	0.00	AVERAGE	100	342	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

**Channel 11**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2461.200	110.80			78.27	28.32	4.20	0.00	AVERAGE	104	22	VERTICAL
2 over	2463.200	115.33			82.80	28.32	4.20	0.00	PEAK	104	22	VERTICAL
3	2487.500	59.93	-14.07	74.00	27.31	28.40	4.23	0.00	PEAK	104	22	VERTICAL
4 !	2487.500	53.00	-1.00	54.00	20.38	28.40	4.23	0.00	AVERAGE	104	22	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.



<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 1, 6, 11 / Ant. A POE Mode (Horizontal)

**Channel 1**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2390.000	72.05	-1.95	74.00	38.16	28.05	5.84	0.00	PEAK	100	96	VERTICAL
2 @	2390.000	52.66	-1.34	54.00	18.77	28.05	5.84	0.00	AVERAGE	100	96	VERTICAL
3 @	2410.000	100.25			66.33	28.09	5.84	0.00	AVERAGE	100	96	VERTICAL
4 @	2410.800	113.03			79.10	28.09	5.84	0.00	PEAK	100	96	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

**Channel 6**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2433.000	104.29			70.28	28.13	5.87	0.00	AVERAGE	100	0	VERTICAL
2 @	2438.800	111.89			77.84	28.18	5.87	0.00	PEAK	100	0	VERTICAL

Item 1, 2 are the fundamental frequency at 2437 MHz.

**Channel 11**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	2458.000	101.48			67.35	28.22	5.91	0.00	AVERAGE	100	0	VERTICAL
2 @	2462.800	113.70			79.57	28.22	5.91	0.00	PEAK	100	0	VERTICAL
3 @	2483.500	53.75	-0.25	54.00	19.55	28.26	5.94	0.00	AVERAGE	100	0	VERTICAL
4 @	2483.500	73.76	-0.24	74.00	39.55	28.26	5.94	0.00	PEAK	100	0	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11g CH 1, 6, 11 / Ant. B POE Mode (Horizontal)

**Channel 1**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	2389.400	71.47	-2.53	74.00	39.17	28.17	4.13	0.00	PEAK	100	245	VERTICAL
2 !	2389.600	49.58	-4.42	54.00	17.28	28.17	4.13	0.00	AVERAGE	100	245	VERTICAL
3 over	2414.600	112.22			79.86	28.21	4.15	0.00	PEAK	100	245	VERTICAL
4 over	2418.200	99.80			67.41	28.21	4.18	0.00	AVERAGE	100	245	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

**Channel 6**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 !	2388.000	68.45	-5.55	74.00	36.15	28.17	4.13	0.00	PEAK	110	185	VERTICAL
2 !	2390.000	50.19	-3.81	54.00	17.87	28.17	4.15	0.00	AVERAGE	110	185	VERTICAL
3 over	2434.200	119.01			86.58	28.25	4.18	0.00	PEAK	110	185	VERTICAL
4 @	2436.400	106.25			73.82	28.25	4.18	0.00	AVERAGE	110	185	VERTICAL
5 !	2483.500	50.75	-3.25	54.00	18.16	28.36	4.23	0.00	AVERAGE	110	185	VERTICAL
6 !	2484.900	68.95	-5.05	74.00	36.37	28.36	4.23	0.00	PEAK	110	185	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

**Channel 11**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 over	2465.800	99.38			66.86	28.32	4.20	0.00	AVERAGE	100	202	VERTICAL
2 over	2466.200	112.43			79.91	28.32	4.20	0.00	PEAK	100	202	VERTICAL
3 !	2483.500	53.83	-0.17	54.00	21.24	28.36	4.23	0.00	AVERAGE	100	202	VERTICAL
4 !	2483.500	73.90	-0.10	74.00	41.32	28.36	4.23	0.00	PEAK	100	202	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.



<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11a CH 149, 157, 165 / Ant. A POE Mode (Horizontal)

**Channel 149**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5743.800	118.17			77.91	34.89	5.37	0.00	AVERAGE	100	2	VERTICAL
2 @	5746.000	129.73			89.47	34.89	5.37	0.00	PEAK	100	2	VERTICAL

Item 1, 2 are the fundamental frequency at 5745 MHz.

**Channel 157**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5782.000	128.90			88.59	34.92	5.39	0.00	PEAK	100	0	VERTICAL
2 @	5783.600	117.32			77.01	34.92	5.39	0.00	AVERAGE	100	0	VERTICAL

Item 1, 2 are the fundamental frequency at 5785 MHz.

**Channel 165**

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5821.200	116.45			76.09	34.96	5.40	0.00	AVERAGE	100	0	VERTICAL
2 @	5821.400	128.20			87.84	34.96	5.40	0.00	PEAK	100	0	VERTICAL

Item 1, 2 are the fundamental frequency at 5825 MHz.

<b>Temperature</b>	18°C	<b>Humidity</b>	63%
<b>Test Engineer</b>	Aric Li	<b>Configurations</b>	802.11a CH 149, 157, 165 / Ant. B POE Mode (Horizontal)

**Channel 149**

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5747.600	113.48			72.30	34.35	6.84	0.00	AVERAGE	142	125	VERTICAL
2 over	5748.400	126.72			85.53	34.35	6.84	0.00	PEAK	142	125	VERTICAL

Item 1, 2 are the fundamental frequency at 5745 MHz.

**Channel 157**

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 over	5781.000	111.87			70.66	34.36	6.85	0.00	AVERAGE	135	130	VERTICAL
2 over	5782.000	125.72			84.50	34.36	6.86	0.00	PEAK	135	130	VERTICAL

Item 1, 2 are the fundamental frequency at 5785 MHz.

**Channel 165**

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	5822.600	112.78			71.54	34.37	6.88	0.00	AVERAGE	133	120	VERTICAL
2 over	5823.000	125.70			84.46	34.37	6.88	0.00	PEAK	133	120	VERTICAL

Item 1, 2 are the fundamental frequency at 5825 MHz.

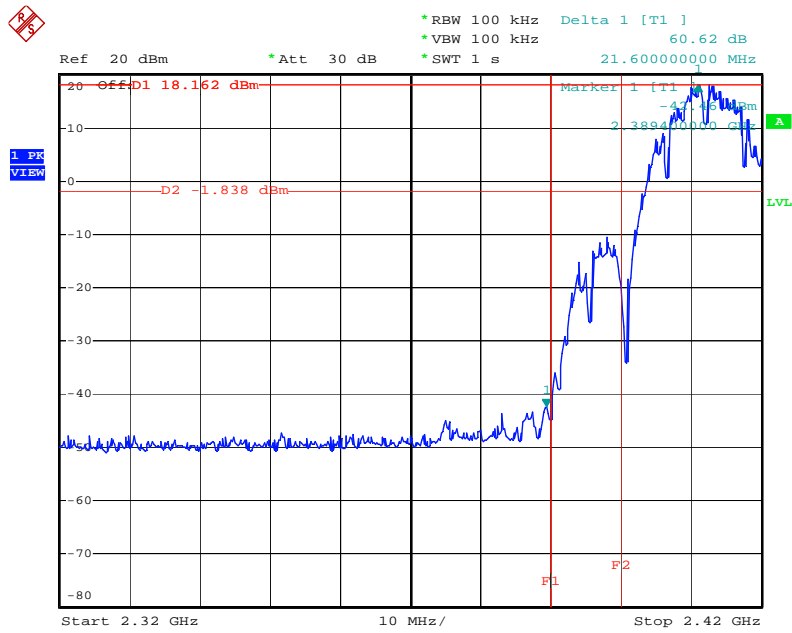
Note:

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

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

For Emission not in Restricted Band

Low Band Edge Plot on Configuration IEEE 802.11b Ant. A-1+A-2+A-3 / 2412 MHz



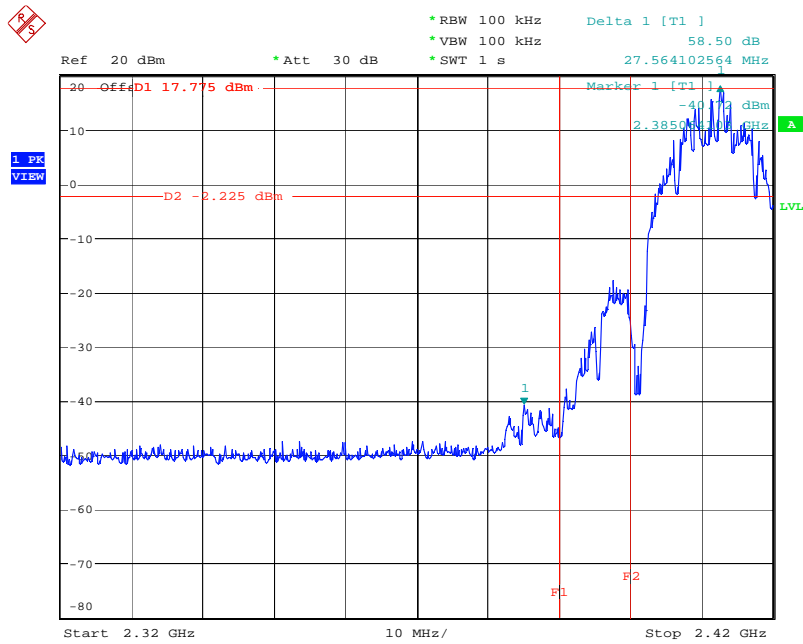
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High Band Edge Plot on Configuration IEEE 802.11b Ant. A-1+A-2+A-3 / 2462 MHz



Date: 19.FEB.2008 15:47:33

Low Band Edge Plot on Configuration IEEE 802.11b Ant. B-1+B-2+B-3 / 2412 MHz



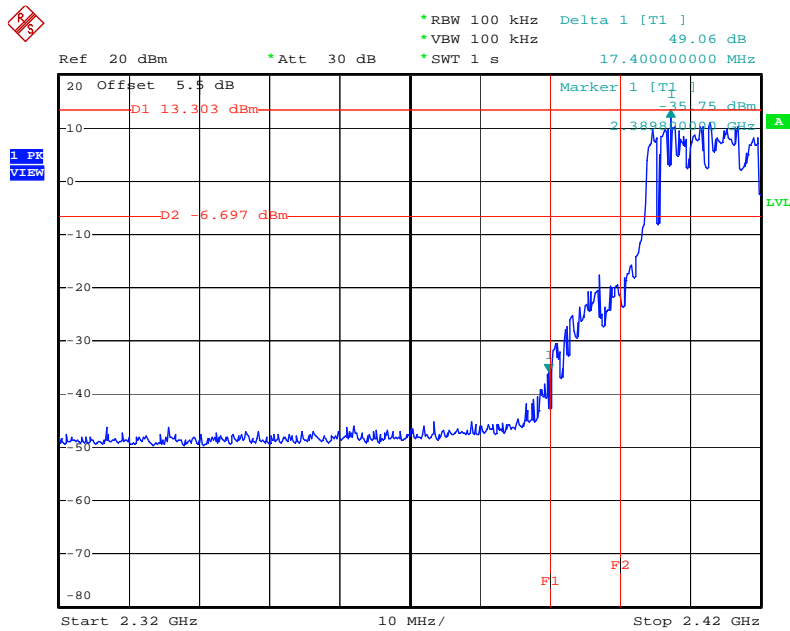
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High Band Edge Plot on Configuration IEEE 802.11b Ant. B-1+B-2+B-3 / 2462 MHz



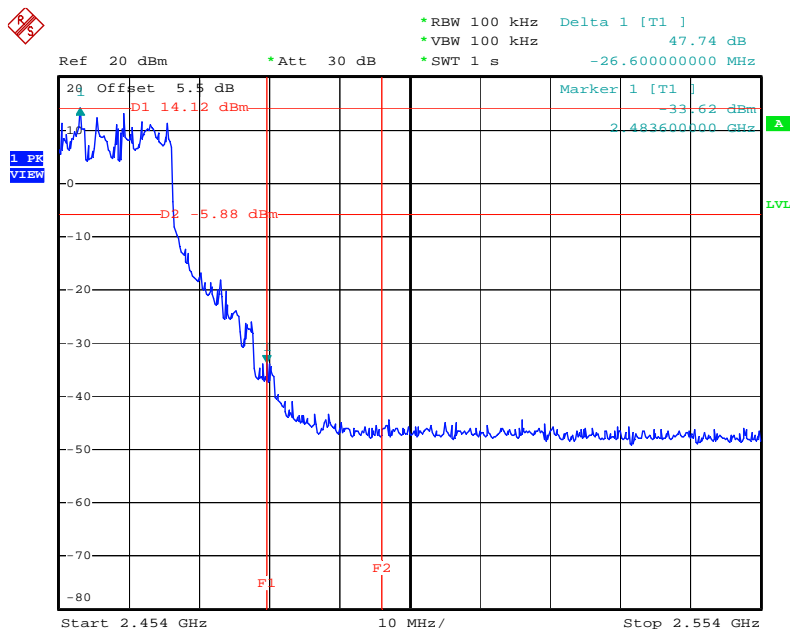
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Low Band Edge Plot on Configuration IEEE 802.11g Ant. A-1+A-2+A-3 / 2412 MHz



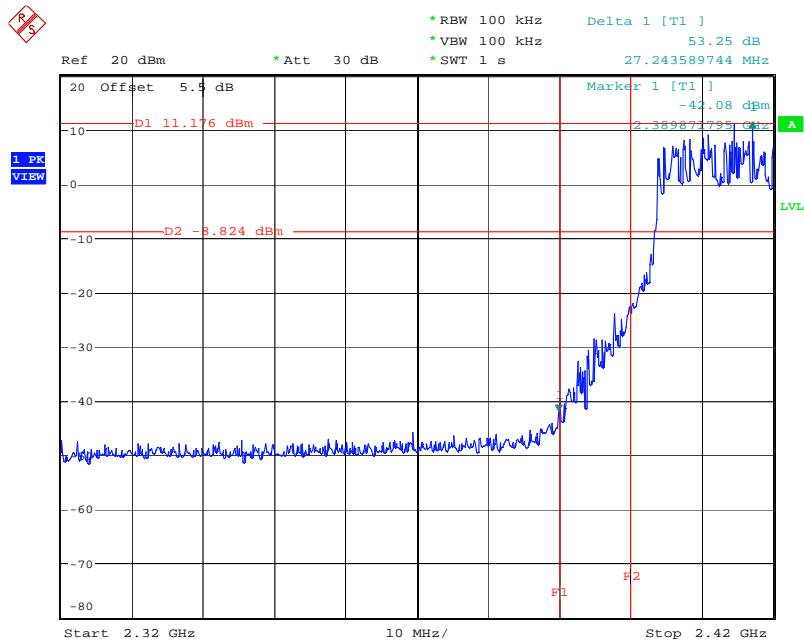
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High Band Edge Plot on Configuration IEEE 802.11g Ant. A-1+A-2+A-3 / 2462 MHz



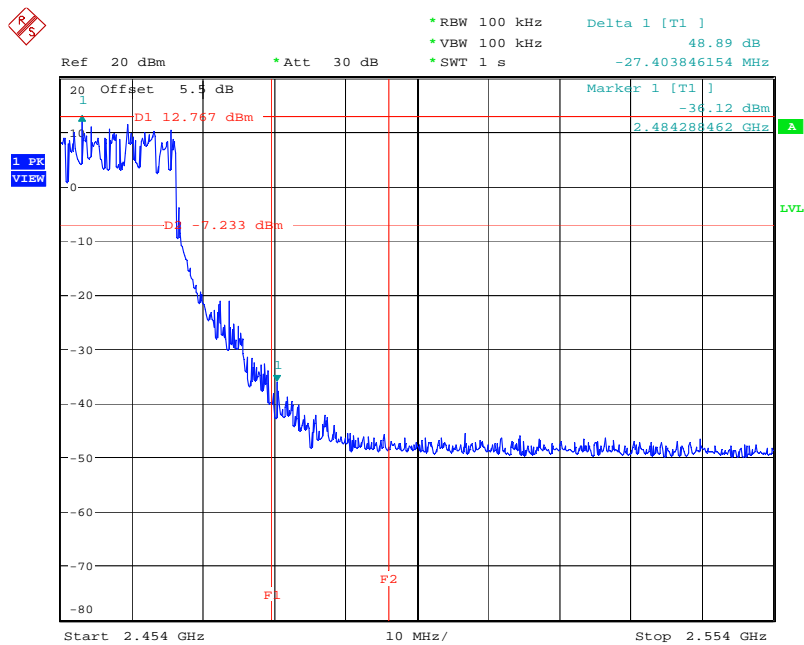
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### Low Band Edge Plot on Configuration IEEE 802.11g Ant. B-1+B-2+B-3 / 2412 MHz



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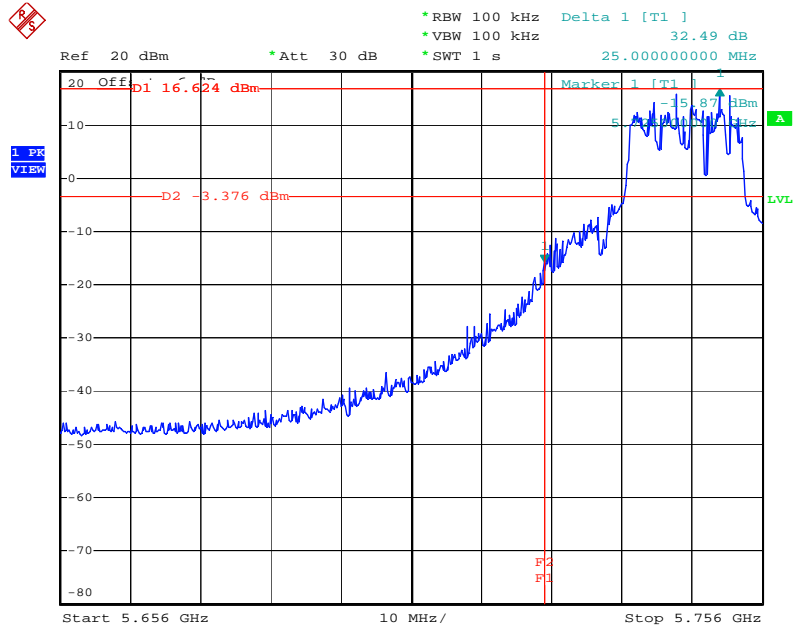
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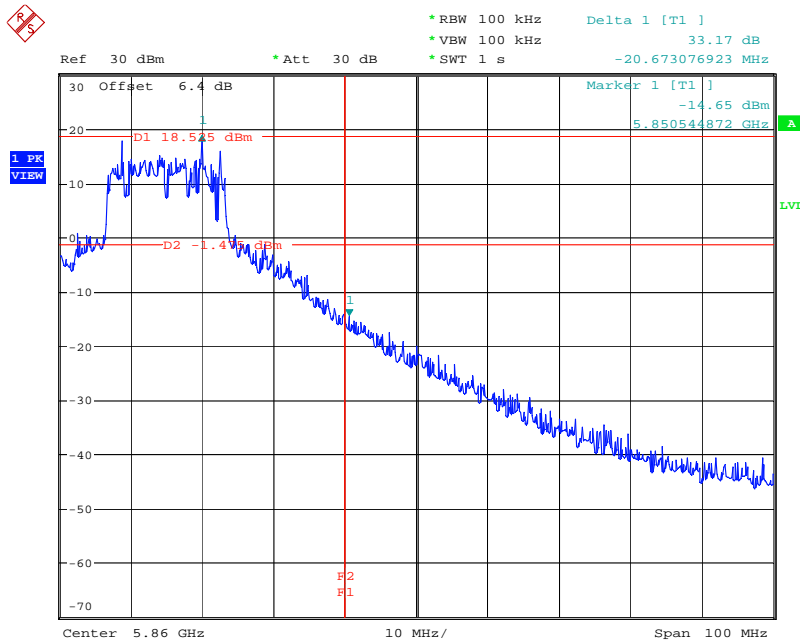


**Low Band Edge Plot on Configuration IEEE 802.11a Ant. A-1+A-2+A-3 / 5745 MHz**



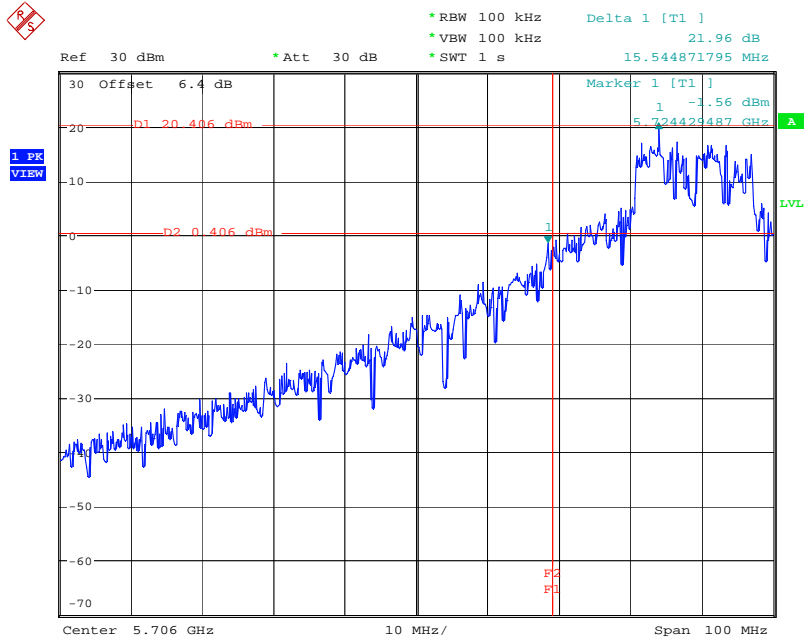
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**High Band Edge Plot on Configuration IEEE 802.11a Ant. A-1+A-2+A-3 / 5825 MHz**



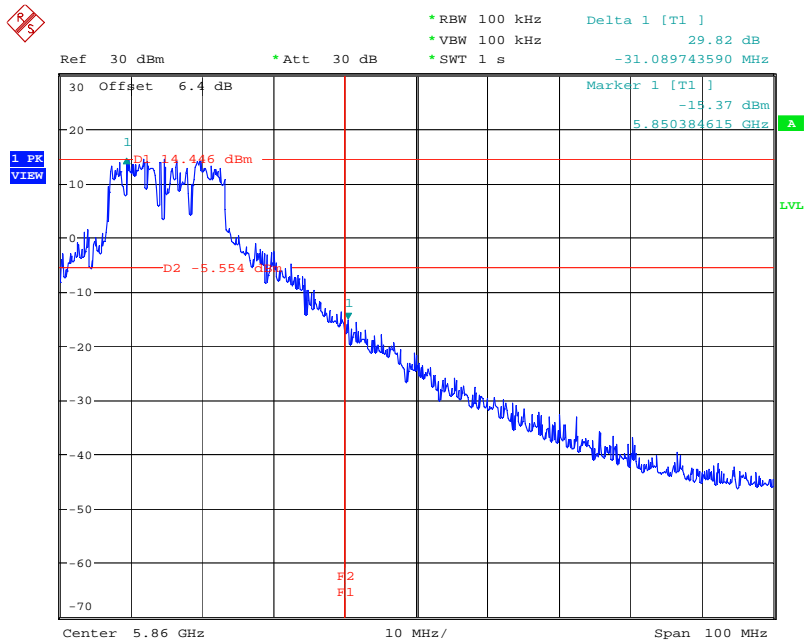
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Low Band Edge Plot on Configuration IEEE 802.11a Ant. B-1+B-2+B-3 / 5745 MHz



Date: 24.MAR.2008 10:11:02

High Band Edge Plot on Configuration IEEE 802.11a Ant. B-1+B-2+B-3 / 5825 MHz



Date: 24.MAR.2008 10:12:18

## 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; antenna connector complied 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	Mar. 03, 2007	Conduction (CO04-HY)
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Mar. 03, 2008	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Conduction (CO04-HY)
ISN	SCHAFFNER	ISN T400	21653	9kHz – 30MHz	Mar. 27, 2007	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. 14, 2007	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	COA9231A	18667	9 kHz - 2 GHz	Jan. 14, 2008	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02116	1 GHz - 26.5 GHz	Jun. 07, 2007	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	9121372	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100305	9 kHz - 40 GHz	Sep. 27, 2007	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2006*	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 21, 2007	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	May 04, 2007	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jan.18, 2008	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec. 03, 2007	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec. 03, 2007	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)
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Jan. 10, 2008	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100444	DC ~ 40GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100458	DC ~ 30GHz	Jun. 27, 2007	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 27, 2007	Conducted (TH01-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	May 04, 2007*	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2007	Conducted (TH01-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2008	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Jan. 14, 2008	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Jan. 04, 2008	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Jan. 04, 2008	Conducted (TH01-HY)
Vector Signal Generator	R&S	SMU200A	102098	100kHz ~ 6GHz	Nov. 14, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2008	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year.

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

NCR means Non-Calibration required.

## 6. TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 <sup>nd</sup> Rd., Taipei 114, Taiwan, R.O.C. TEL : 886-2-2794-8886 FAX : 886-2-2794-9777
JHUBEI	ADD : No.8, Lane 728, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C. TEL : 886-3-656-9065 FAX : 886-3-656-9085

## 7. TAF CERTIFICATE OF ACCREDITATION



Certificate No. : L1190-070110

財團法人全國認證基金會  
Taiwan Accreditation Foundation

### Certificate of Accreditation

This is to certify that

**Sporton International Inc.**  
**EMC & Wireless Communications Laboratory**  
No.52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien,  
Taiwan, R.O.C.

is accredited in respect of laboratory

Accreditation Criteria	: ISO/IEC 17025:2005
Accreditation Number	: 1190
Originally Accredited	: December 15, 2003
Effective Period	: January 10, 2007 to January 09, 2010
Accredited Scope	: Testing Field, see described in the Appendix
Specific Accreditation Program	: Accreditation Program for Designated Testing Laboratory for Commodities Inspection : Accreditation Program for Telecommunication Equipment Testing Laboratory

  
Jay-San Chen  
President, Taiwan Accreditation Foundation  
Date : January 10, 2007

PI, total 9 pages

The Appendix forms an integral part of this Certificate, which shall be invalid when used without the Appendix.