

## 4.5. Radiated Emissions Measurement

### 4.5.1. Limit

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

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

### 4.5.2. Measuring Instruments and Setting

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

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

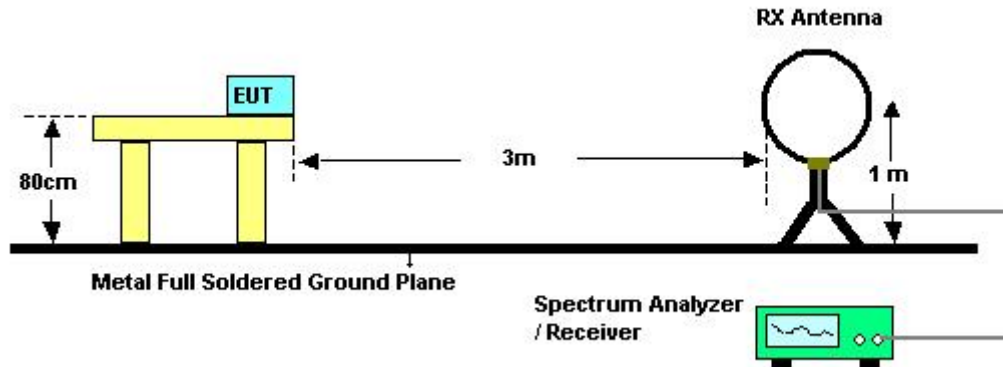
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

#### 4.5.3. Test Procedures

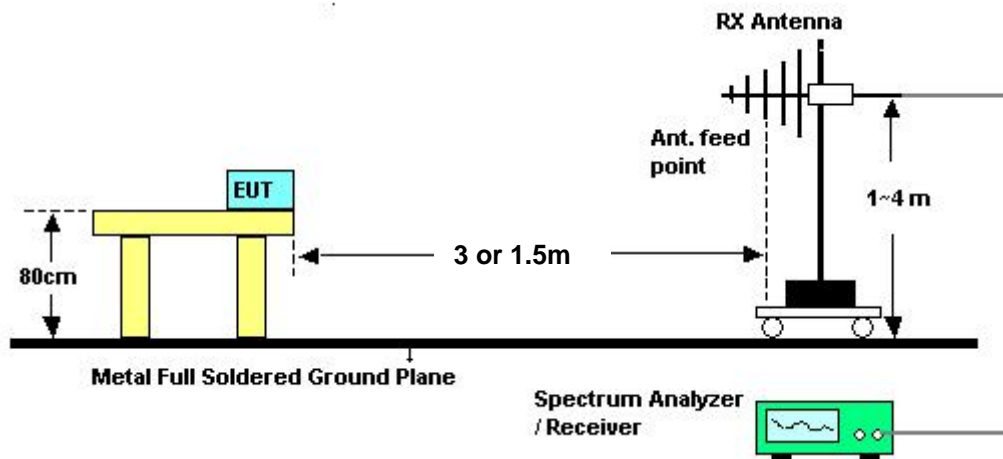
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting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

#### 4.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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

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

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

#### 4.5.5. Test Deviation

There is no deviation with the original standard.

#### 4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Johnson Chang		

<b>Freq. (MHz)</b>	<b>Level (dBuV)</b>	<b>Over Limit (dB)</b>	<b>Limit Line (dBuV)</b>	<b>Remark</b>
-	-	-	-	See Note

Note:

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

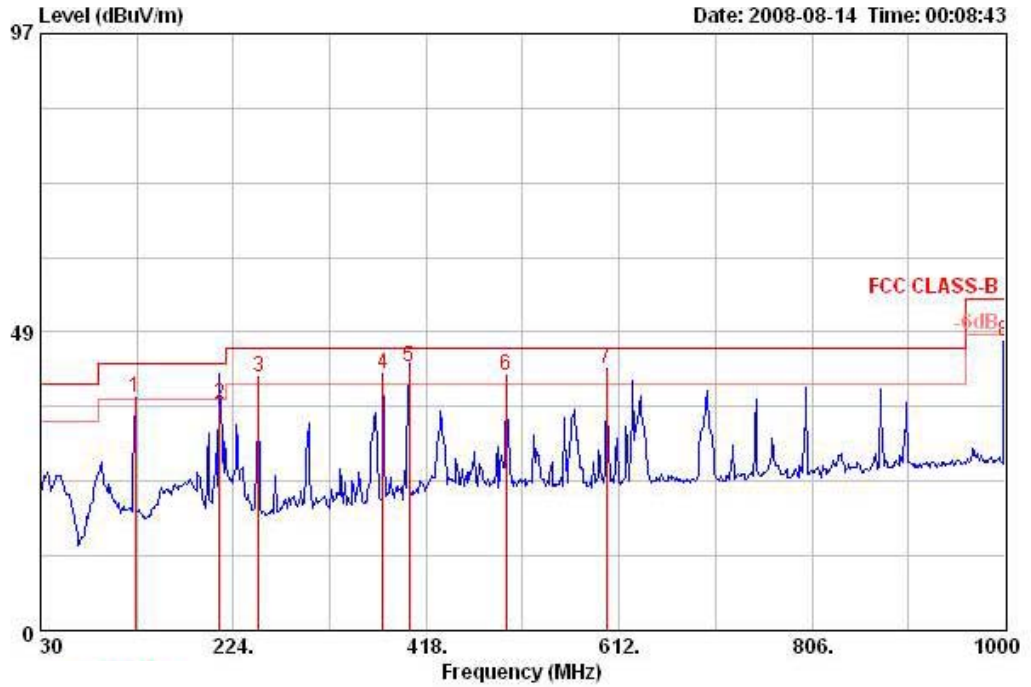
Distance extrapolation factor =  $40 \log(\text{specific distance} / \text{test distance})$  (dB);

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

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

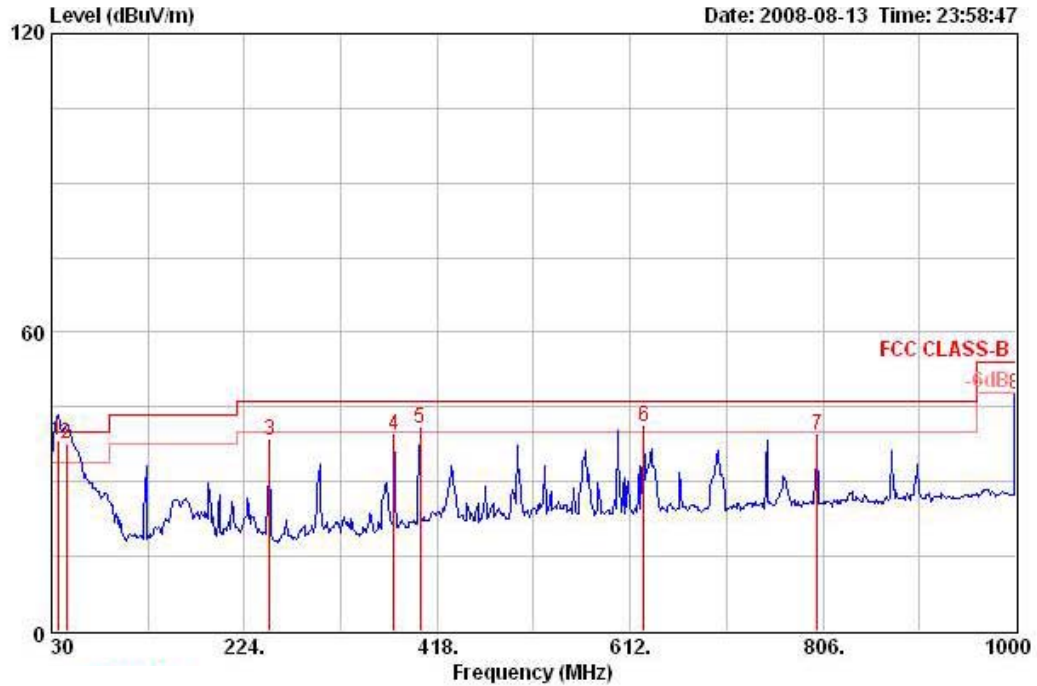
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Ant. 4 (Horizontal)

Horizontal



	Freq	Level	Over	Limit	Read	Antenna	Preamp	Cable	Remark	Pol/Phase	Table	Ant
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Factor	Loss			Pos	Pos
					dBuV	dB/m	dB	dB			deg	cm
1 !	125.060	37.91	-5.59	43.50	51.93	12.21	27.48	1.25	Peak	HORIZONTAL	0	400
2	210.420	36.74	-6.76	43.50	52.24	9.84	27.08	1.74	QP	HORIZONTAL	165	161
3 !	249.220	41.24	-4.76	46.00	53.65	12.70	27.00	1.90	Peak	HORIZONTAL	0	400
4 !	374.350	41.66	-4.34	46.00	51.45	15.38	27.42	2.25	Peak	HORIZONTAL	0	400
5 !	400.540	42.77	-3.23	46.00	52.00	16.08	27.61	2.31	QP	HORIZONTAL	228	100
6 !	498.510	41.33	-4.67	46.00	49.12	17.60	28.09	2.70	Peak	HORIZONTAL	0	400
7 !	599.390	42.59	-3.41	46.00	49.03	18.76	28.10	2.90	Peak	HORIZONTAL	0	400
8	1000.000	47.01	-6.99	54.00	49.02	21.29	27.00	3.70	Peak	HORIZONTAL	0	400

**Vertical**



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Remark	Pol/Phase	Table Pos	Ant Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB			deg	cm
1	36.790	38.34	-1.66	40.00	50.67	14.89	27.80	0.58	QP	VERTICAL	324	100
2	44.550	37.57	-2.43	40.00	54.35	10.32	27.80	0.70	QP	VERTICAL	164	100
3	249.220	38.43	-7.57	46.00	50.84	12.70	27.00	1.90	Peak	VERTICAL	0	400
4	374.350	39.28	-6.72	46.00	49.07	15.38	27.42	2.25	Peak	VERTICAL	0	400
5	400.540	40.64	-5.36	46.00	49.86	16.08	27.61	2.31	Peak	VERTICAL	0	400
6	625.580	40.93	-5.07	46.00	47.10	18.85	28.07	3.05	Peak	VERTICAL	0	400
7	800.180	39.16	-6.84	46.00	43.69	19.77	27.60	3.30	Peak	VERTICAL	0	400
8	1000.000	47.54	-6.46	54.00	49.55	21.29	27.00	3.70	Peak	VERTICAL	0	400

**Note:**

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

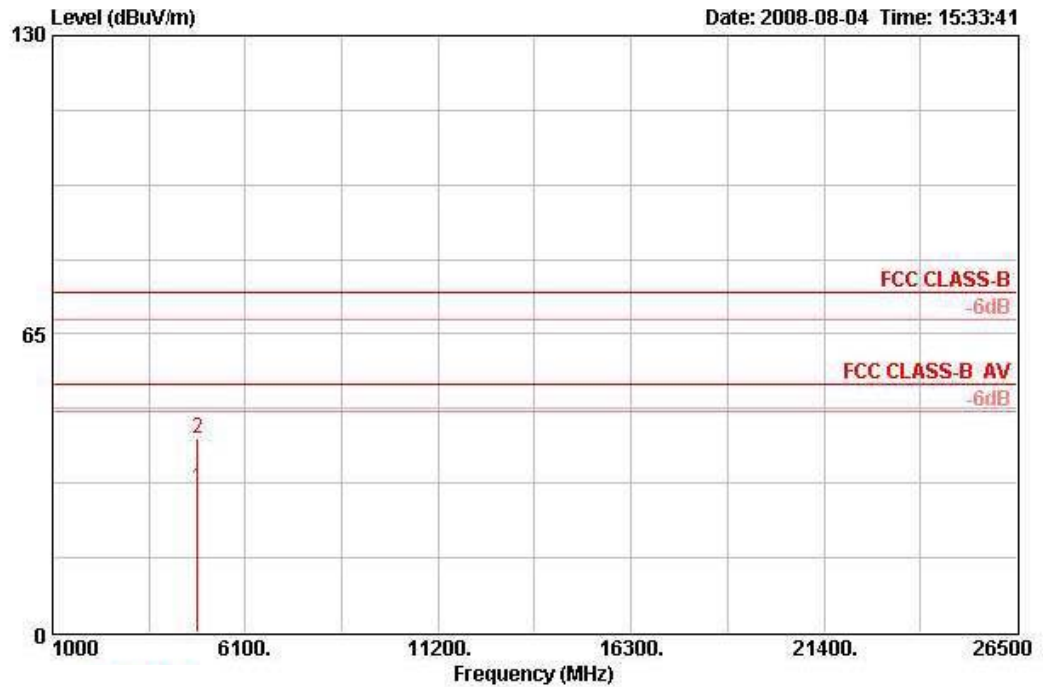
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

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

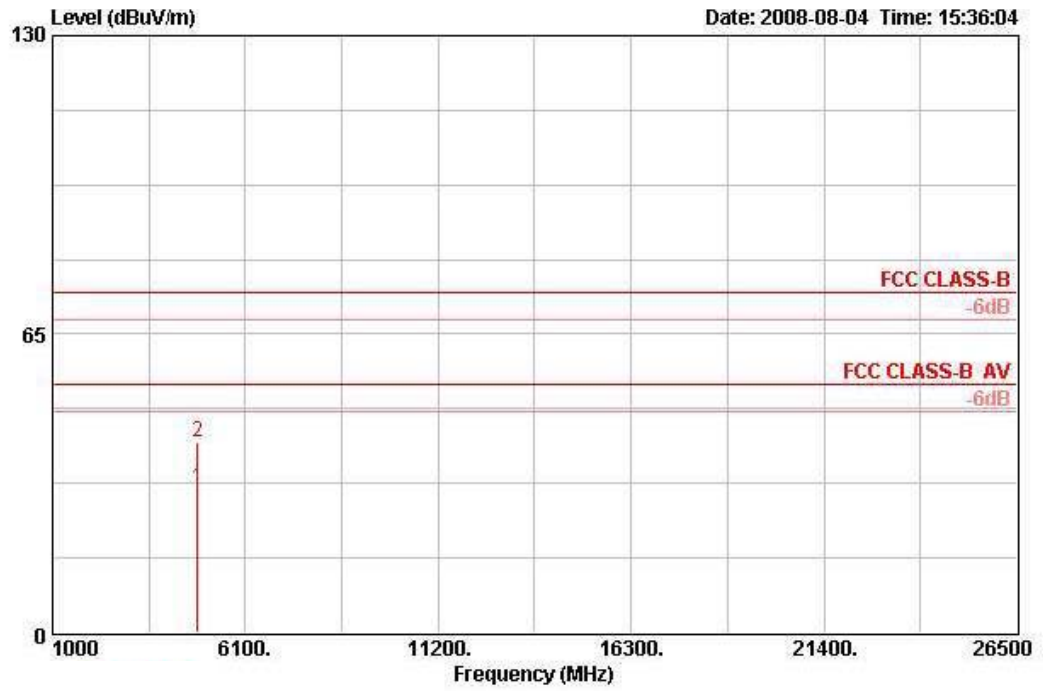
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 1 Ant. 1

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	4824.800	31.51	-22.49	54.00	29.68	33.06	3.94	35.16	AVERAGE	100	129	HORIZONTAL
2	4824.800	42.39	-31.61	74.00	40.56	33.06	3.94	35.16	PERK	100	129	HORIZONTAL

**Vertical**



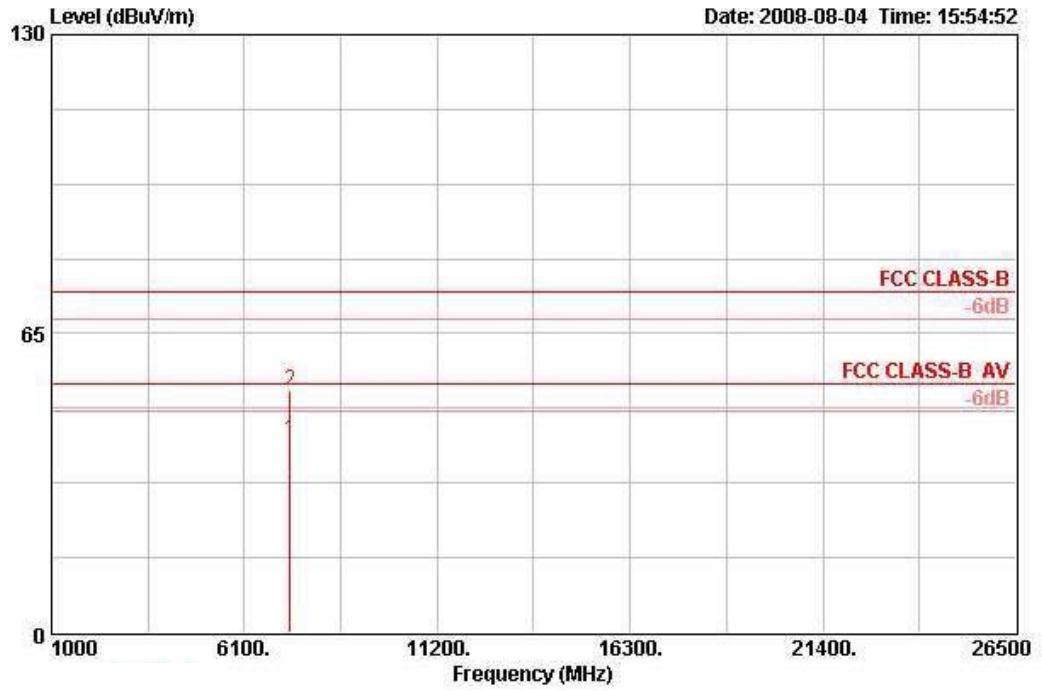
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos	Pol/Phase
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4832.000	31.35	-22.65	54.00	29.51	33.06	3.95	35.16	AVERAGE	100	28	VERTICAL
2	4832.000	41.49	-32.51	74.00	39.65	33.06	3.95	35.16	PEAK	100	28	VERTICAL





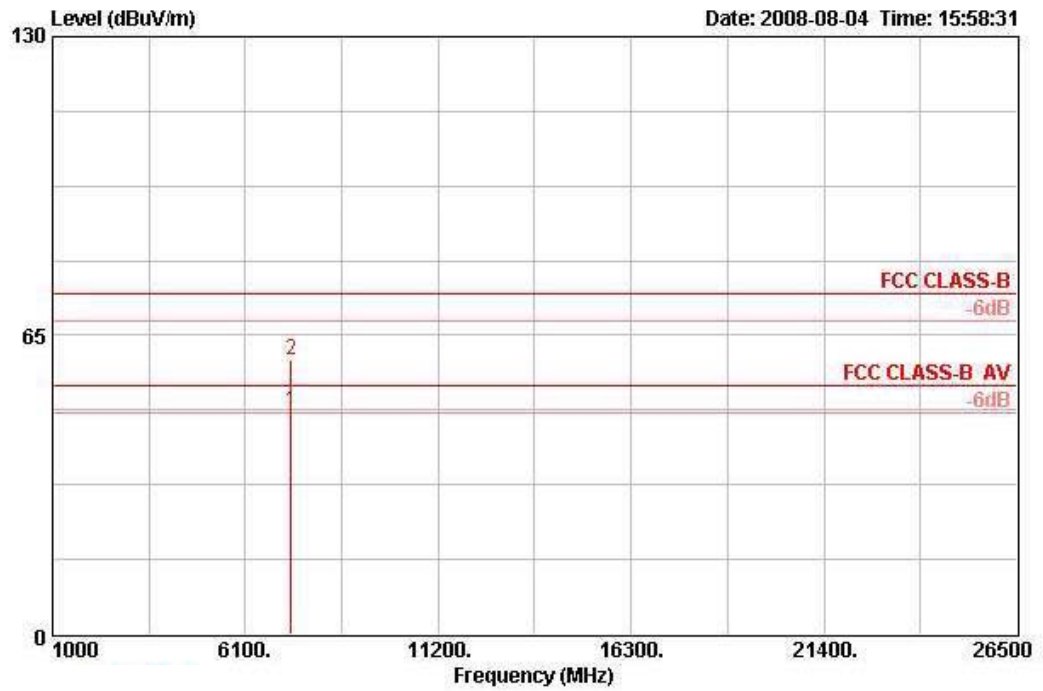
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 6 Ant. 1

**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	7307.800	41.82	-12.18	54.00	35.92	35.96	5.12	35.18	AVERAGE	100	123	HORIZONTAL
2	7307.800	52.73	-21.27	74.00	46.84	35.96	5.12	35.18	PEAK	100	123	HORIZONTAL

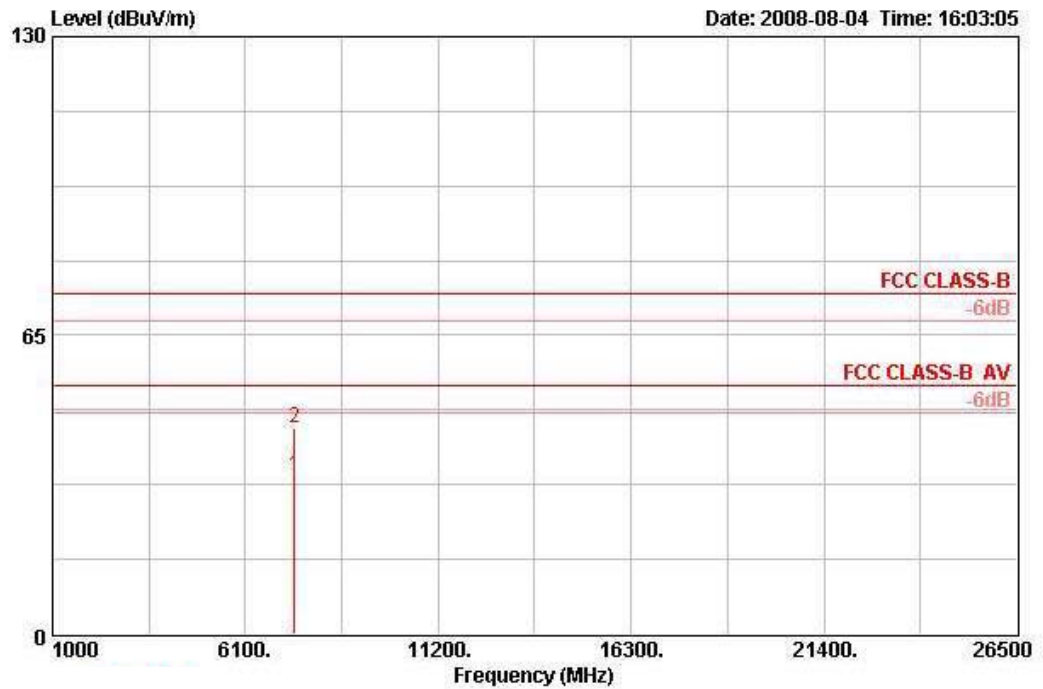
**Vertical**



	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	7311.800	48.51	-5.49	54.00	42.62	35.96	5.12	35.18	AVERAGE	100	184	VERTICAL
2	7311.800	59.57	-14.43	74.00	53.67	35.96	5.12	35.18	PEAK	100	184	VERTICAL

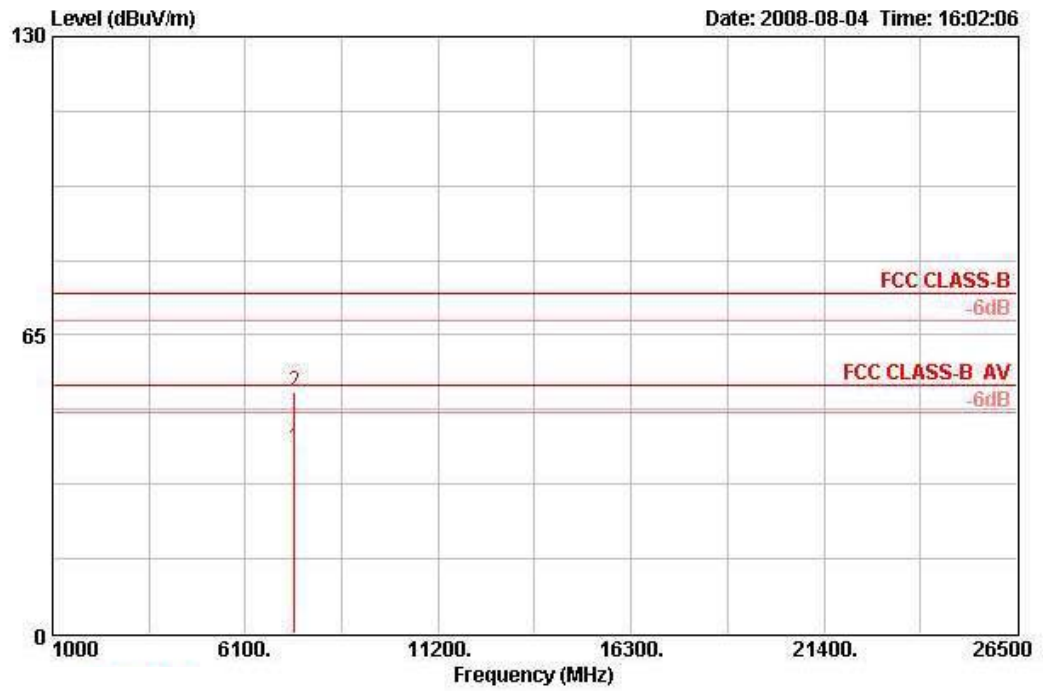
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch11 Ant. 1

**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	7392.800	34.33	-19.67	54.00	28.19	36.13	5.17	35.16	AVERAGE	100	160	HORIZONTAL
2	7392.800	44.92	-29.08	74.00	38.79	36.13	5.17	35.16	PEAK	100	160	HORIZONTAL

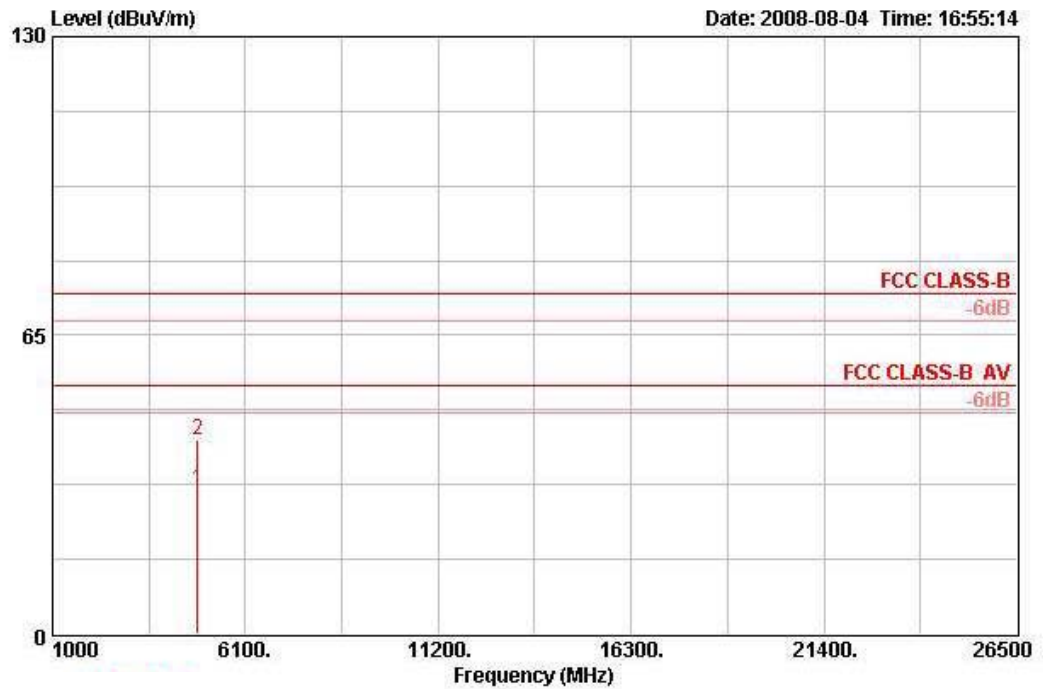
**Vertical**



	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	7386.600	40.53	-13.47	54.00	34.43	36.09	5.17	35.16	AVERAGE	114	184	VERTICAL
2	7386.600	52.44	-21.56	74.00	46.34	36.09	5.17	35.16	PEAK	114	184	VERTICAL

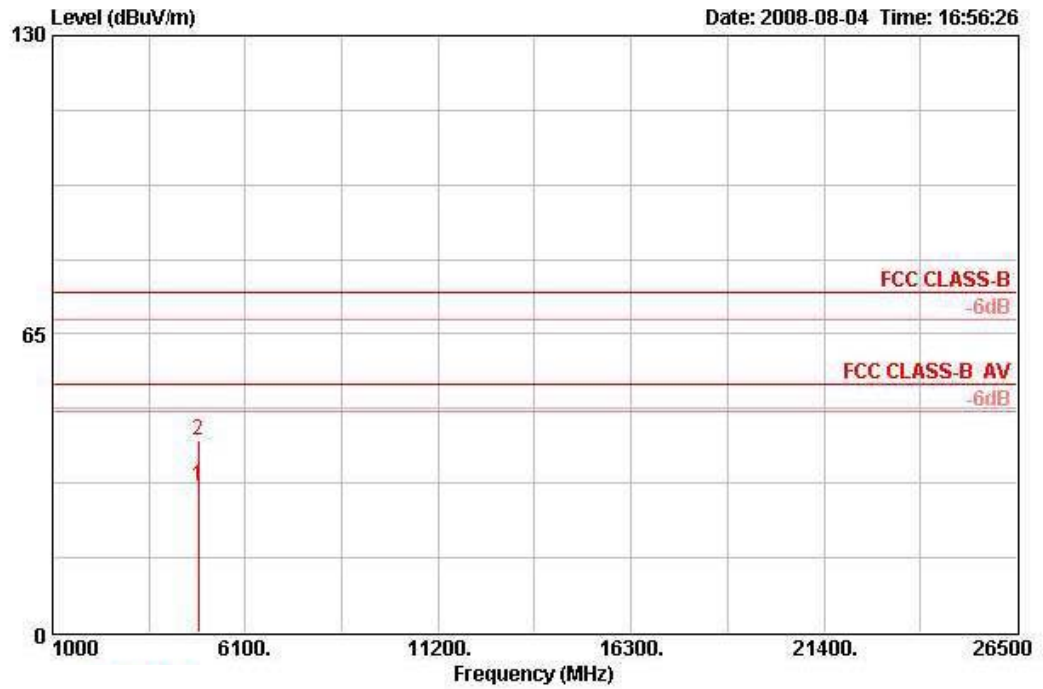
<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Johnson Chang	<b>Configurations</b>	Draft n MCS8 40MHz Ch 3 Ant. 1

**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	4844.400	31.47	-22.53	54.00	29.60	33.09	3.95	35.16	AVERAGE	100	141	HORIZONTAL
2	4844.400	42.09	-31.91	74.00	40.22	33.09	3.95	35.16	PEAK	100	141	HORIZONTAL

**Vertical**

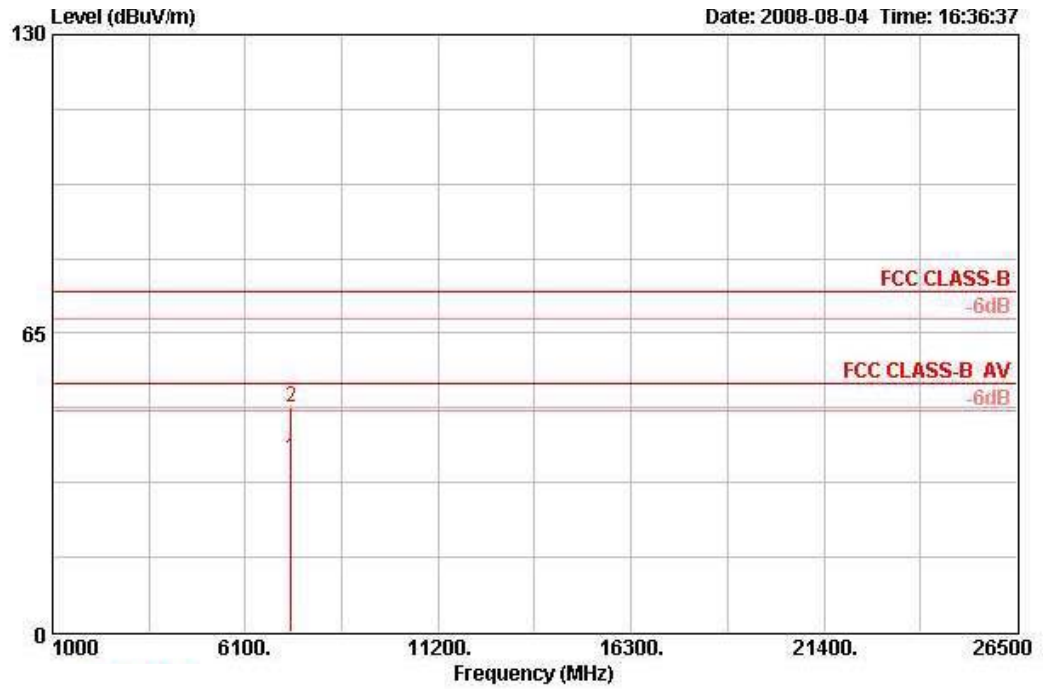


	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	Pos	Pol/Phase
1	4846.000	31.81	-22.19	54.00	29.94	33.09	3.95	35.16	AVERAGE	100	276 VERTICAL
2	4846.000	41.96	-32.04	74.00	40.08	33.09	3.95	35.16	PEAK	100	276 VERTICAL



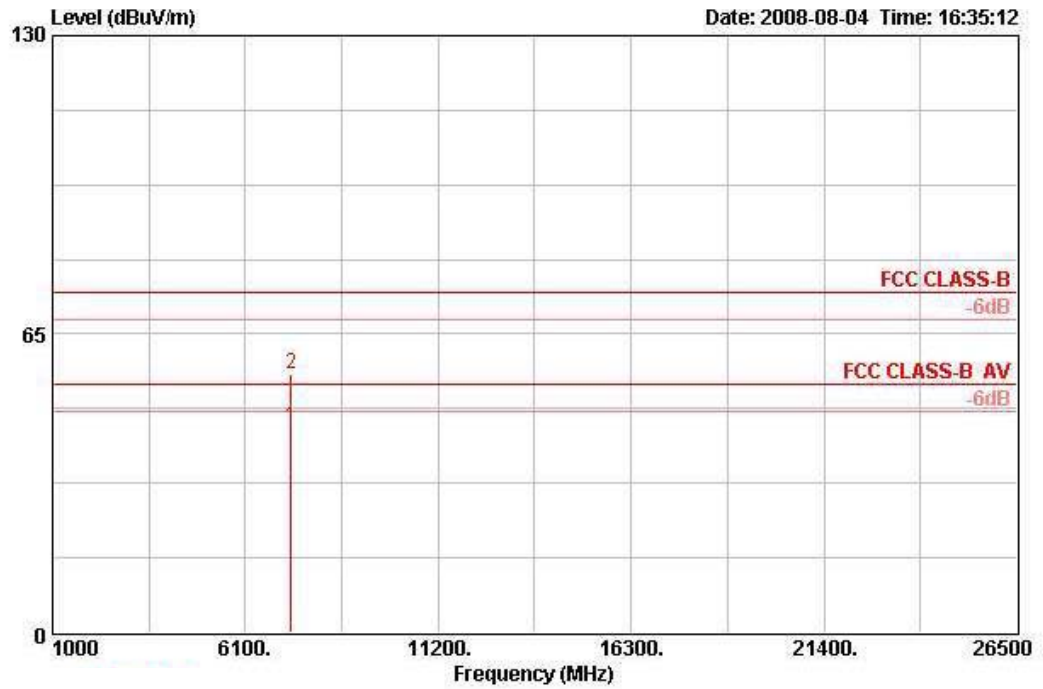
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 6 Ant. 1

**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	7299.400	37.64	-16.36	54.00	31.81	35.92	5.10	35.19	AVERAGE	100	122	HORIZONTAL
2	7299.400	48.85	-25.15	74.00	43.02	35.92	5.10	35.19	PEAK	100	122	HORIZONTAL

**Vertical**



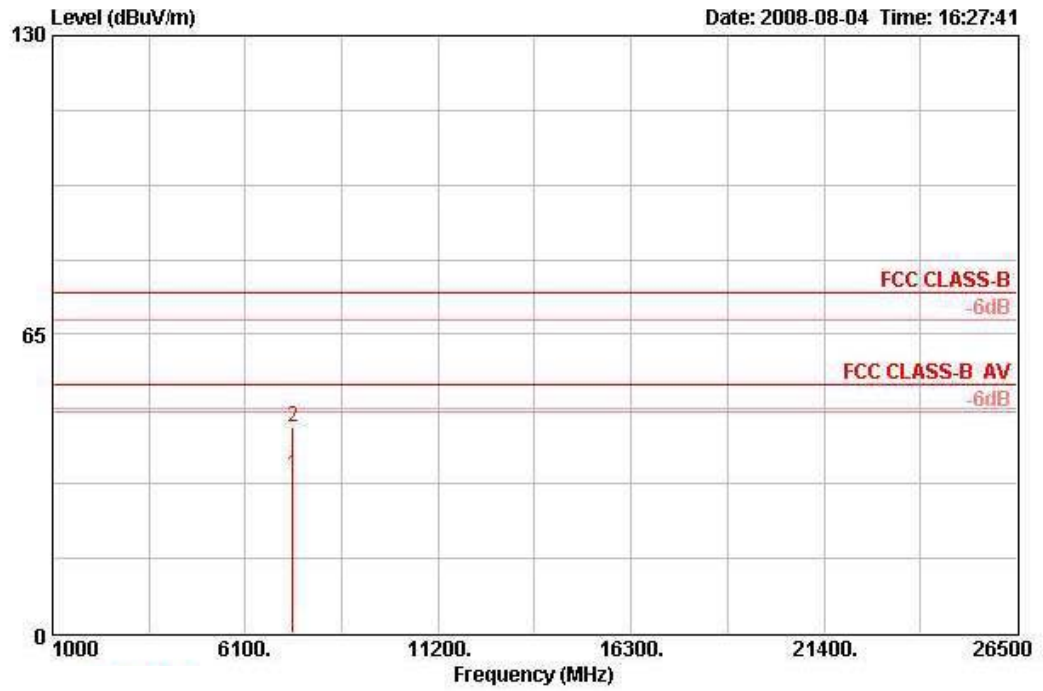
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	7299.400	44.71	-9.29	54.00	38.87	35.92	5.10	35.19	AVERAGE	100	184	VERTICAL
2	7299.400	56.22	-17.78	74.00	50.38	35.92	5.10	35.19	PEAK	100	184	VERTICAL





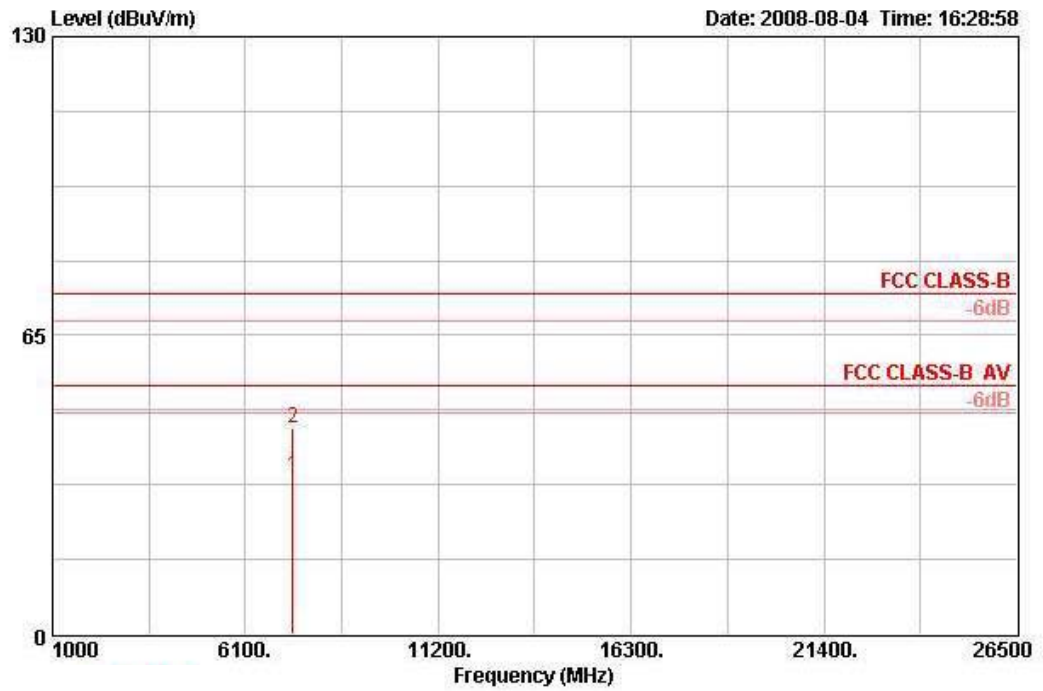
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 9 Ant. 1

**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	7357.200	34.42	-19.58	54.00	28.43	36.02	5.13	35.17	AVERAGE	100	54	HORIZONTAL
2	7357.200	44.80	-29.20	74.00	38.82	36.02	5.13	35.17	PEAK	100	54	HORIZONTAL

**Vertical**

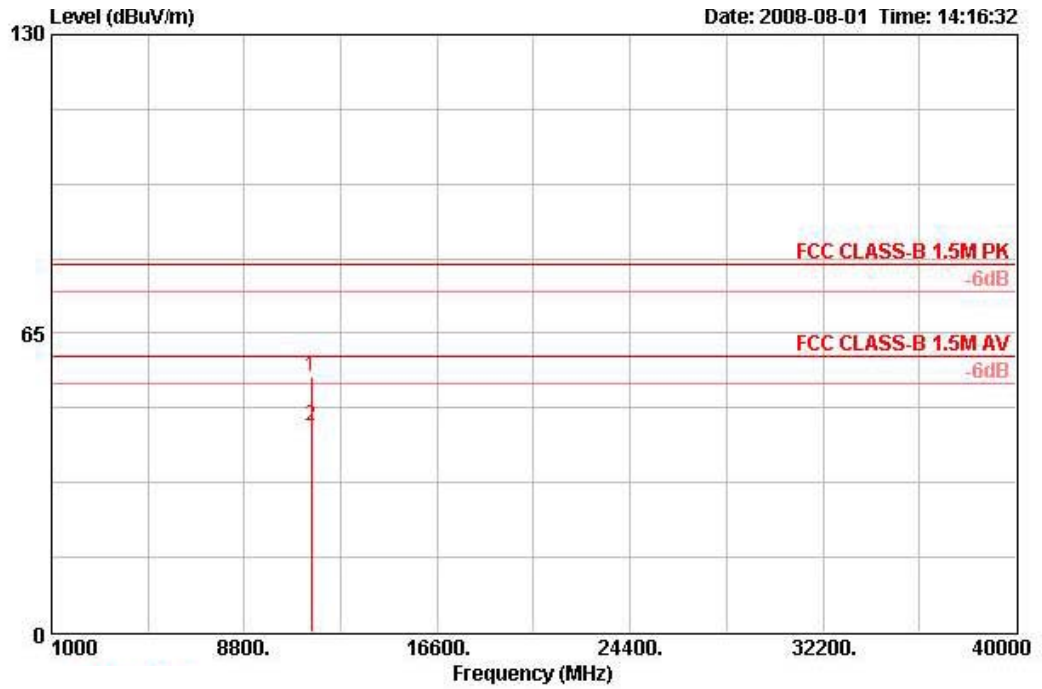


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	7357.200	34.43	-19.57	54.00	28.44	36.02	5.13	35.17	AVERAGE	100	149	VERTICAL
2	7357.200	44.91	-29.09	74.00	38.92	36.02	5.13	35.17	PEAK	100	149	VERTICAL



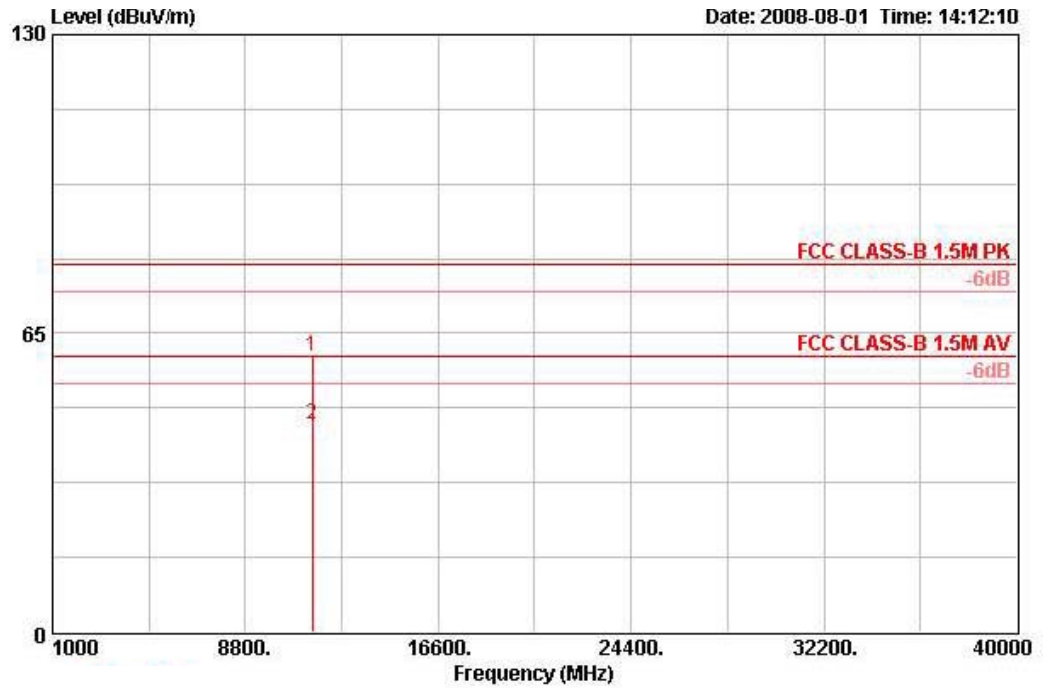
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	11a Draft n MCS8 20MHz CH 149 Ant. 1

**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	11491.000	55.45	-24.55	80.00	44.97	38.78	6.68	34.98	PEAK	100	213	HORIZONTAL
2	11491.000	44.87	-15.13	60.00	34.39	38.78	6.68	34.98	AVERAGE	100	213	HORIZONTAL

Vertical

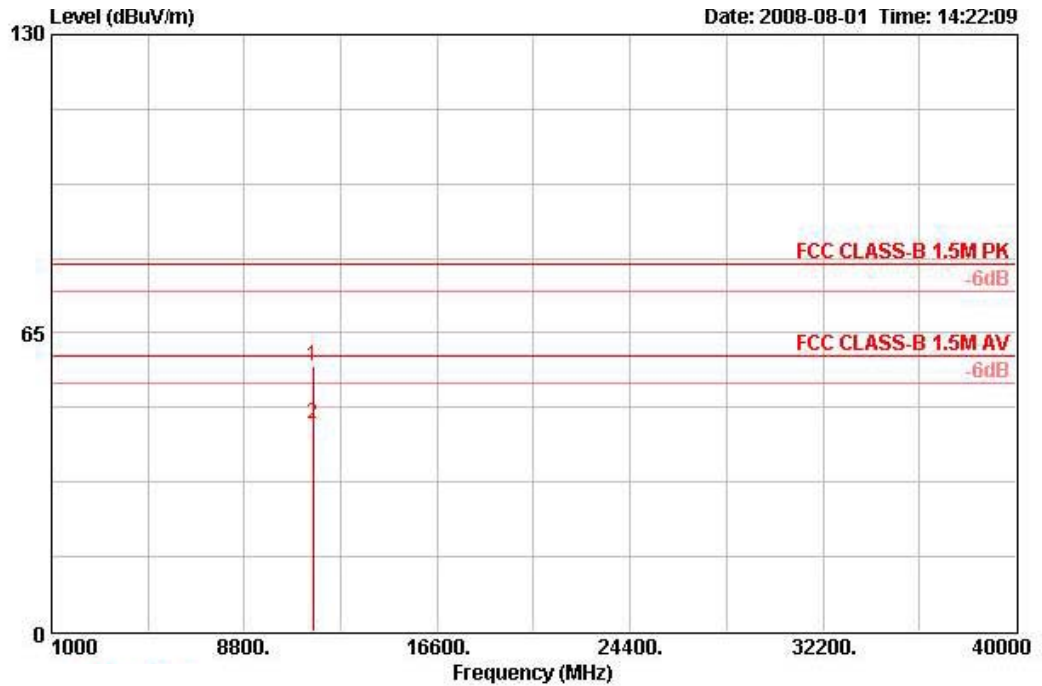


	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	11490.000	60.00	-20.00	80.00	49.52	38.78	6.68	34.98	PEAK	100	173 VERTICAL
2	11490.000	45.27	-14.73	60.00	34.79	38.78	6.68	34.98	AVERAGE	100	173 VERTICAL



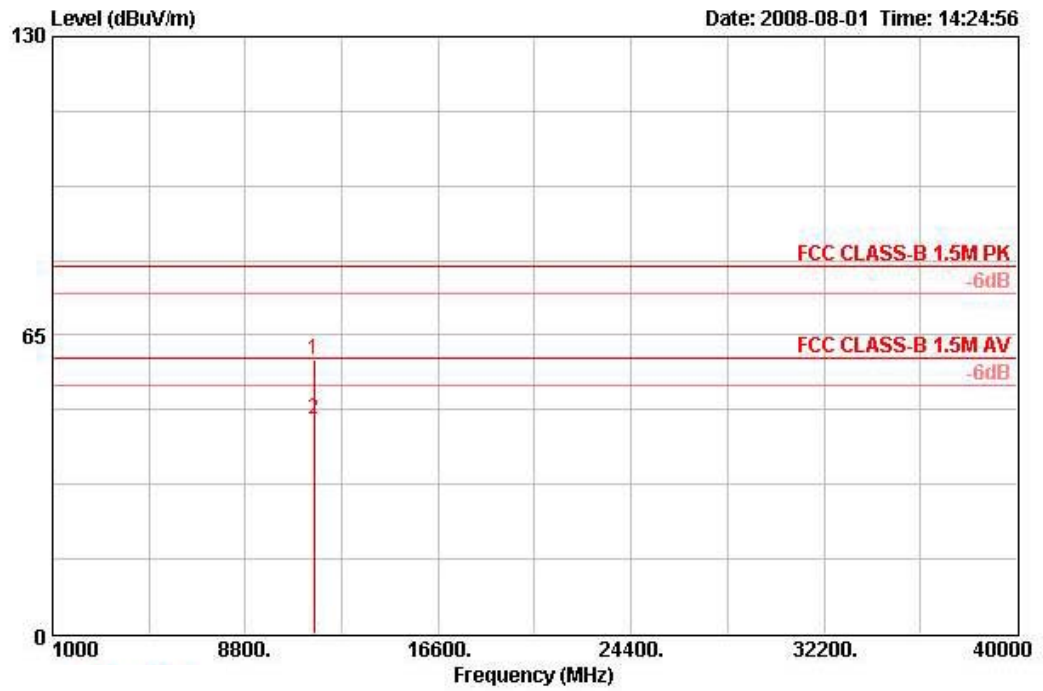
<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Johnson Chang	<b>Configurations</b>	11a Draft n MCS8 20MHz CH 157 Ant. 1

**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	11572.800	57.94	-22.06	80.00	47.45	38.83	6.67	35.00	PEAK	100	214	HORIZONTAL
2	11572.800	45.09	-14.91	60.00	34.60	38.83	6.67	35.00	AVERAGE	100	214	HORIZONTAL

**Vertical**

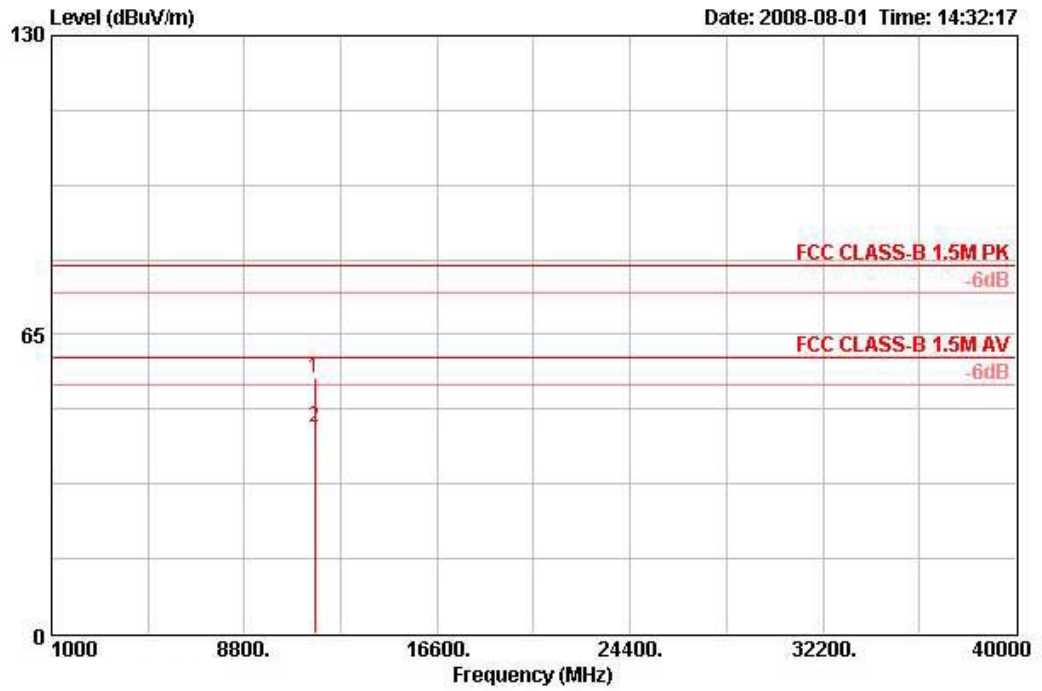


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11573.000	59.67	-20.33	80.00	49.18	38.83	6.67	35.00	PEAK	100	174	VERTICAL
2	11573.000	46.74	-13.26	60.00	36.24	38.83	6.67	35.00	AVERAGE	100	174	VERTICAL



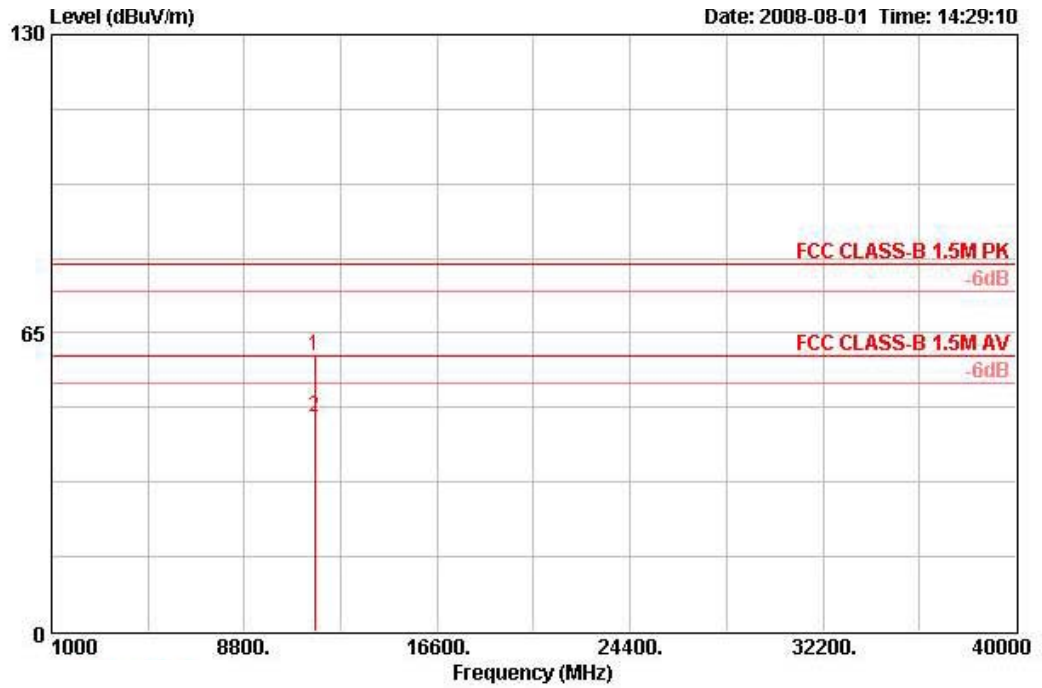
<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Johnson Chang	<b>Configurations</b>	11a Draft n MCS8 20MHz CH 165 Ant. 1

**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	11651.400	55.73	-24.27	80.00	45.22	38.86	6.66	35.01	PEAK	100	211	HORIZONTAL
2	11651.400	44.71	-15.29	60.00	34.21	38.86	6.66	35.01	AVERAGE	100	211	HORIZONTAL

**Vertical**

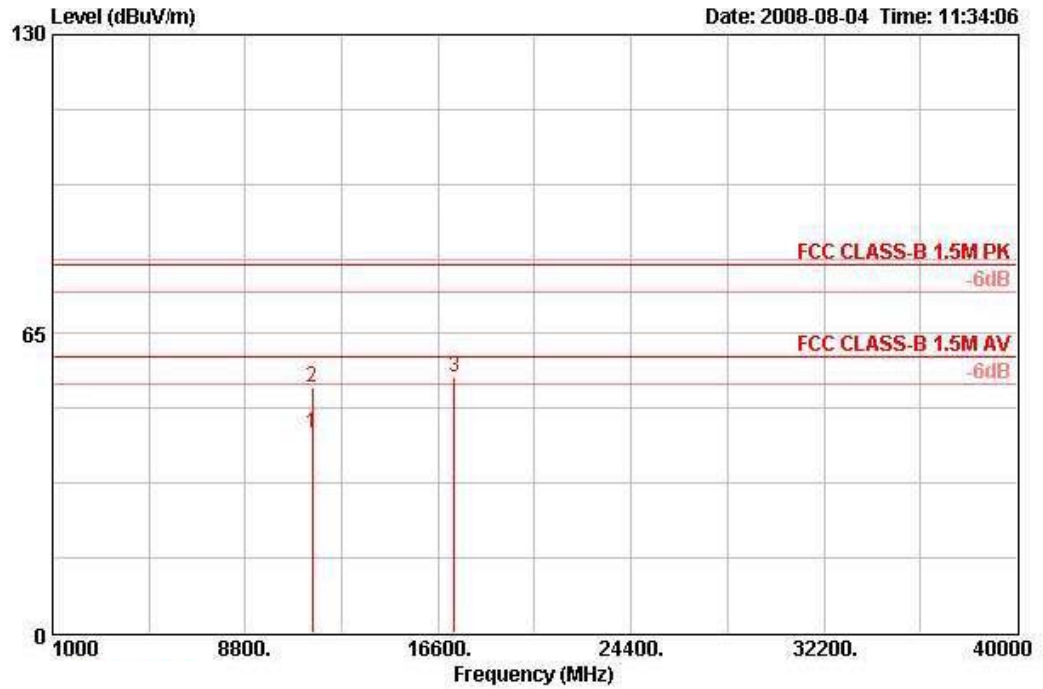


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11651.400	59.99	-20.01	80.00	49.48	38.86	6.66	35.01	PEAK	100	176	VERTICAL
2	11651.400	46.53	-13.47	60.00	36.03	38.86	6.66	35.01	AVERAGE	100	176	VERTICAL



<b>Temperature</b>	24.3°C	<b>Humidity</b>	56%
<b>Test Engineer</b>	Johnson Chang	<b>Configurations</b>	11a Draft n MCS8 40MHz CH 151 Ant. 1

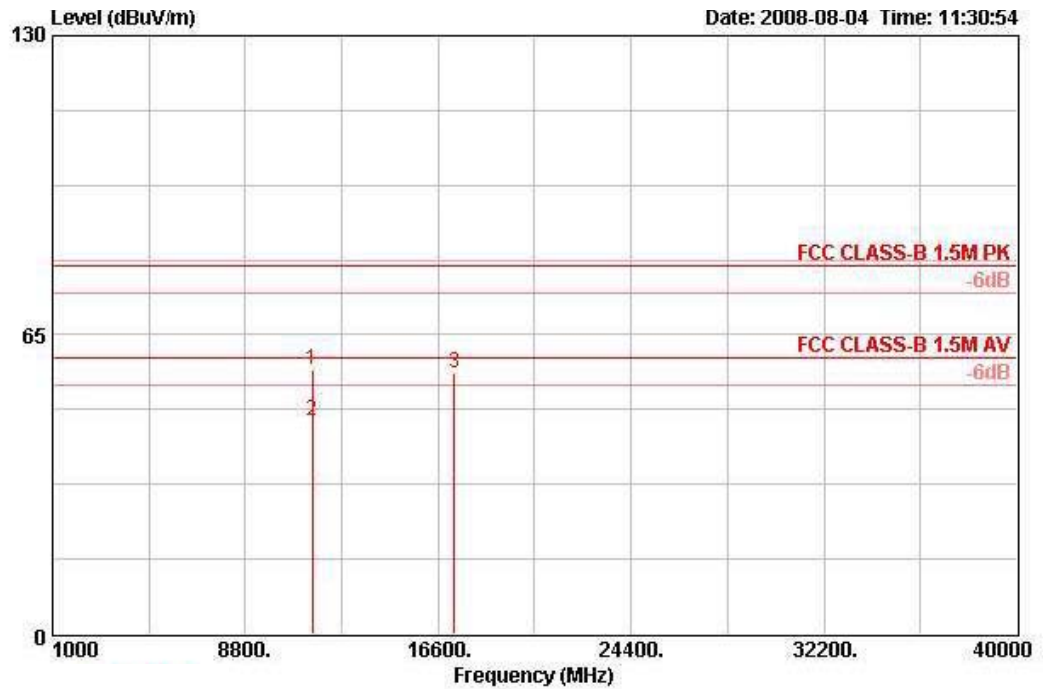
**Horizontal**



	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	11503.600	43.34	-16.66	60.00	32.87	38.79	6.68	35.00	AVERAGE	100	202	HORIZONTAL
2	11503.600	53.29	-26.71	80.00	42.82	38.79	6.68	35.00	PEAK	100	202	HORIZONTAL

Note: Item 3 is on an un-restricted band, so the limit is -20dBc for the field strength of fundamental emission.

**Vertical**

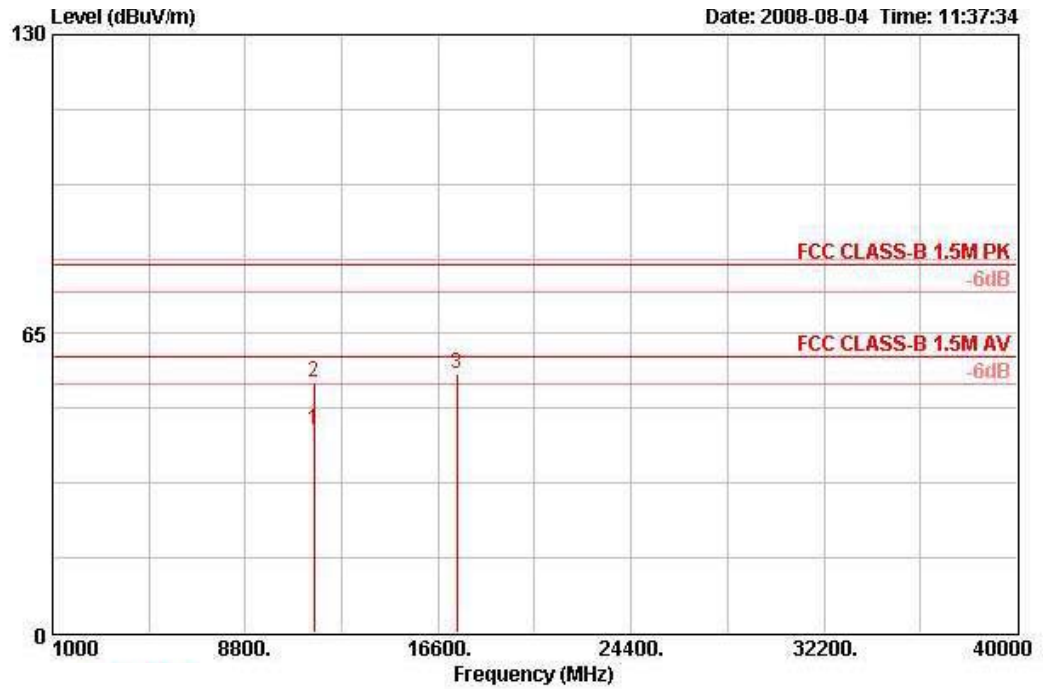


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11508.400	57.31	-22.69	80.00	46.83	38.79	6.68	35.00	PEAK	100	163	VERTICAL
2	11508.400	46.40	-13.60	60.00	35.93	38.79	6.68	35.00	AVERAGE	100	163	VERTICAL

Note: Item 3 is on un-restricted band, so the limit is -20dBc for the field strength of fundamental emission.

Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	11a Draft n MCS8 40MHz CH 159 Ant. 1

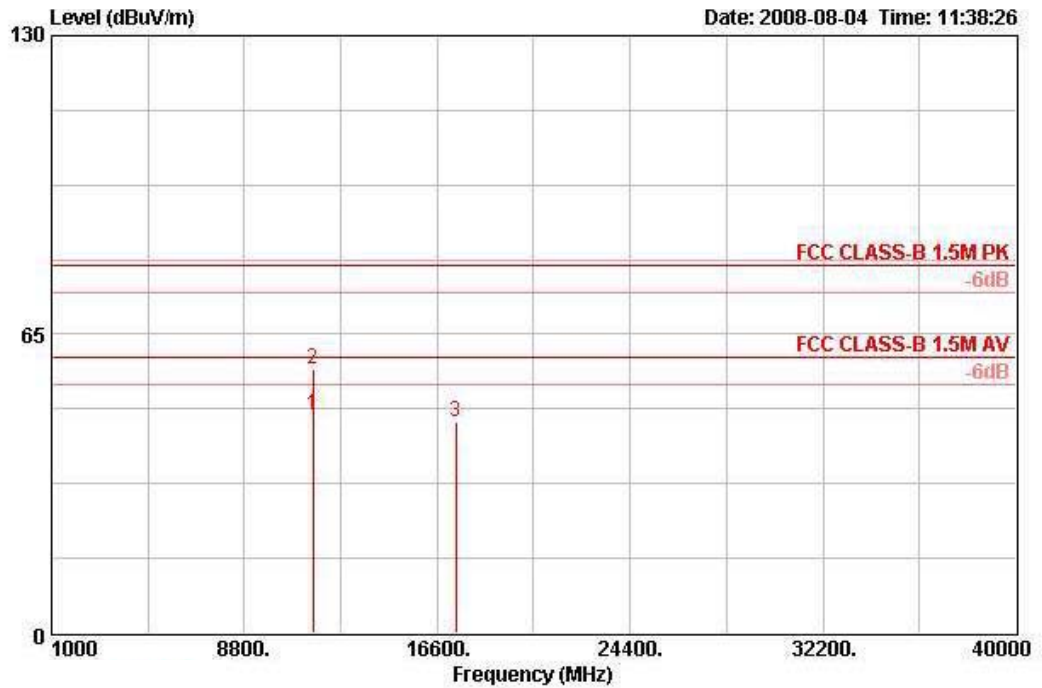
**Horizontal**



	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 @	11570.000	44.15	-15.85	60.00	33.65	38.83	6.67	35.00	AVERAGE	100	202	HORIZONTAL
2	11570.000	54.41	-25.59	80.00	43.91	38.83	6.67	35.00	PEAK	100	202	HORIZONTAL

Note: Item 3 is on un-restricted band, so the limit is -20dBc for the field strength of fundamental emission.

**Vertical**

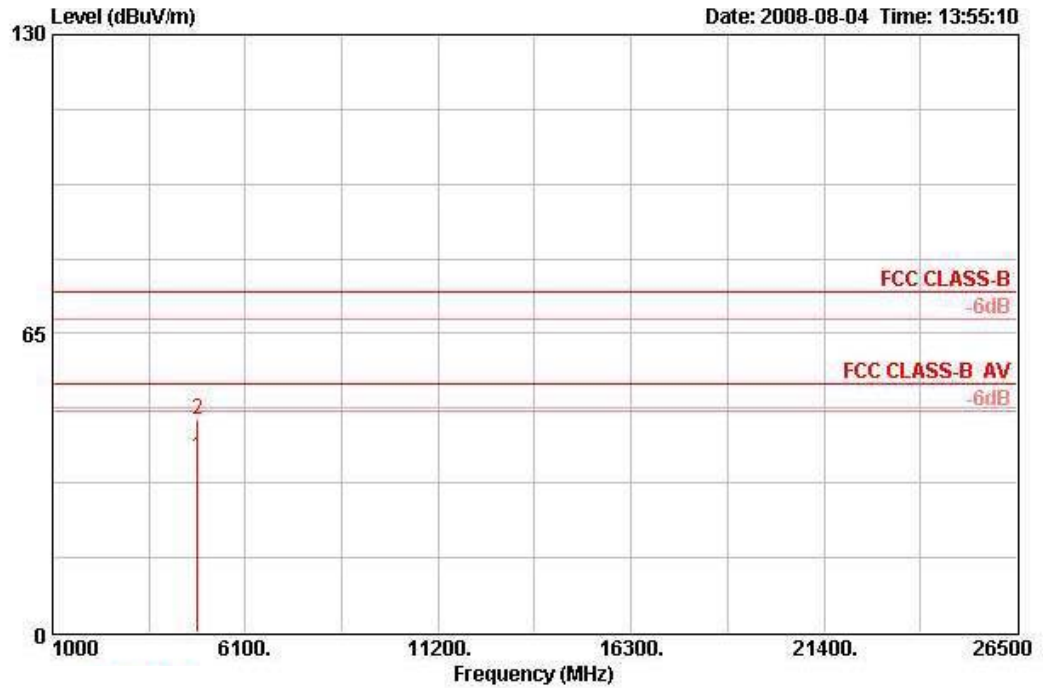


	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	11566.400	47.26	-12.74	60.00	36.77	38.82	6.67	35.00	AVERAGE	100	165	VERTICAL
2	11566.400	57.51	-22.49	80.00	47.02	38.82	6.67	35.00	PEAK	100	165	VERTICAL

Note: Item 3 is on un-restricted band, so the limit is -20dBc for the field strength of fundamental emission.

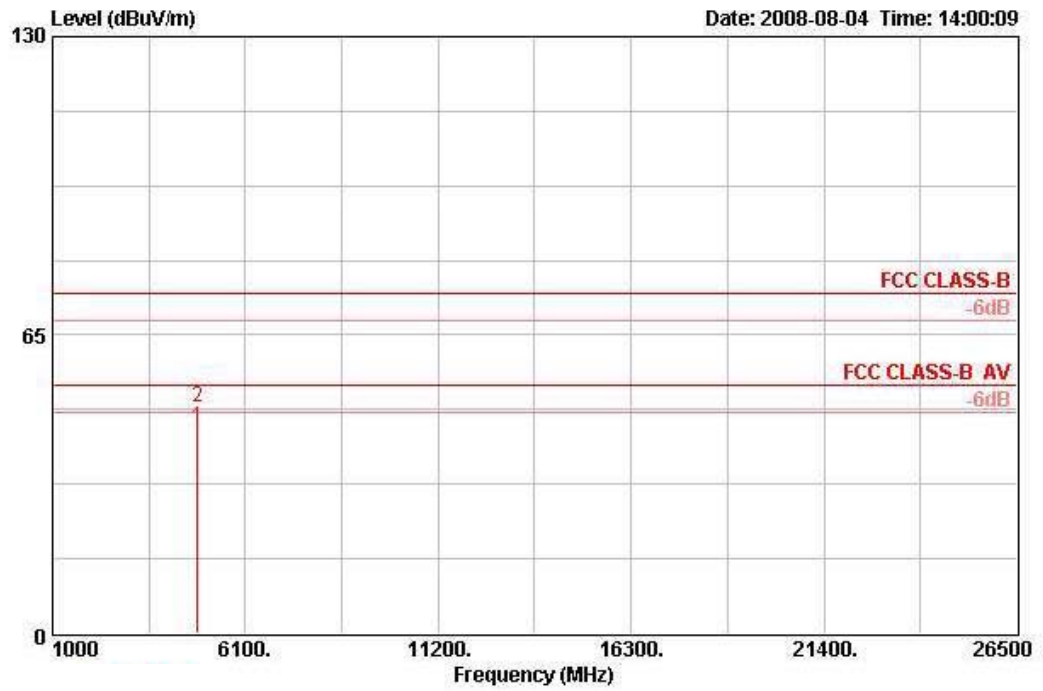
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11b CH 1 Ant. 1

**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	4823.900	38.23	-15.77	54.00	36.40	33.06	3.94	35.16	AVERAGE	138	169	HORIZONTAL
2	4823.900	46.17	-27.83	74.00	44.34	33.06	3.94	35.16	PEAK	138	169	HORIZONTAL

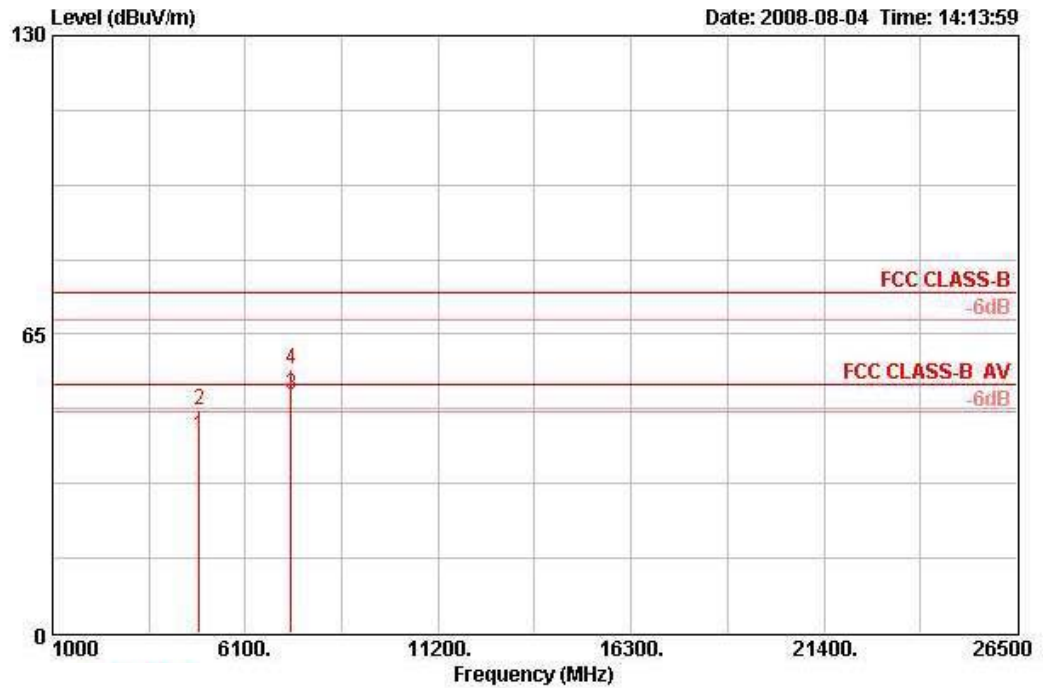
**Vertical**



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos	Pol/Phase
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4824.000	44.74	-9.26	54.00	42.91	33.06	3.94	35.16	AVERAGE	100	209	VERTICAL
2	4824.000	49.25	-24.75	74.00	47.42	33.06	3.94	35.16	PEAK	100	209	VERTICAL

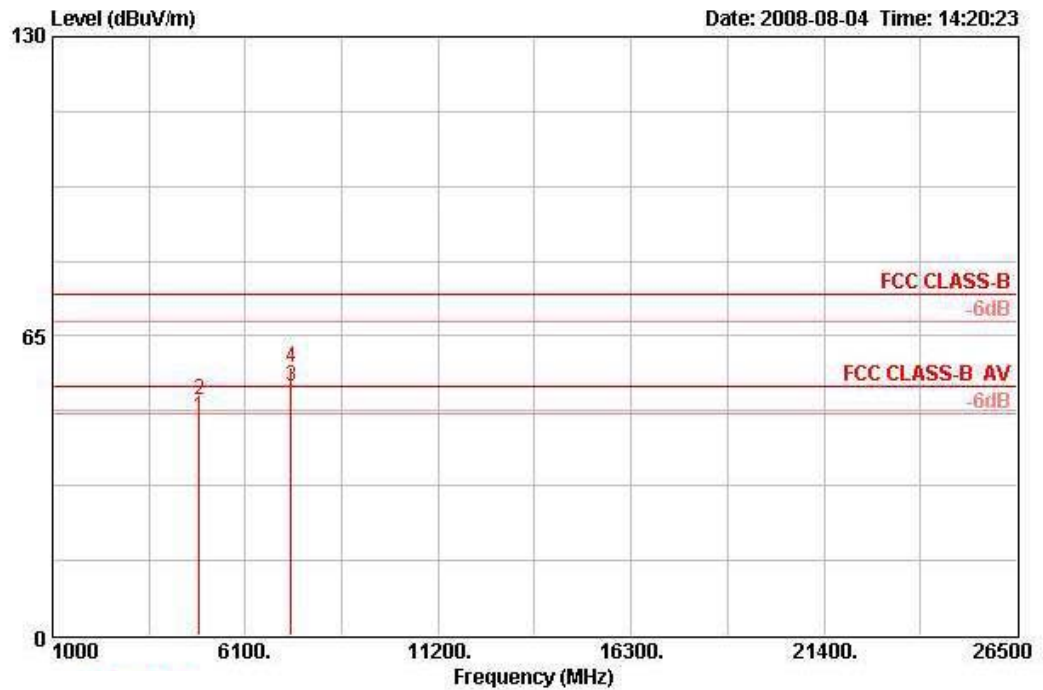
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11b CH 6 Ant. 1

**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	4874.000	42.92	-11.08	54.00	40.96	33.16	3.96	35.15	AVERAGE	100	64	HORIZONTAL
2	4874.000	48.59	-25.41	74.00	46.63	33.16	3.96	35.15	PEAK	100	64	HORIZONTAL
3	7311.880	51.92	-2.08	54.00	46.03	35.96	5.12	35.18	AVERAGE	155	184	HORIZONTAL
4	7311.880	57.23	-16.77	74.00	51.34	35.96	5.12	35.18	PEAK	155	184	HORIZONTAL

**Vertical**



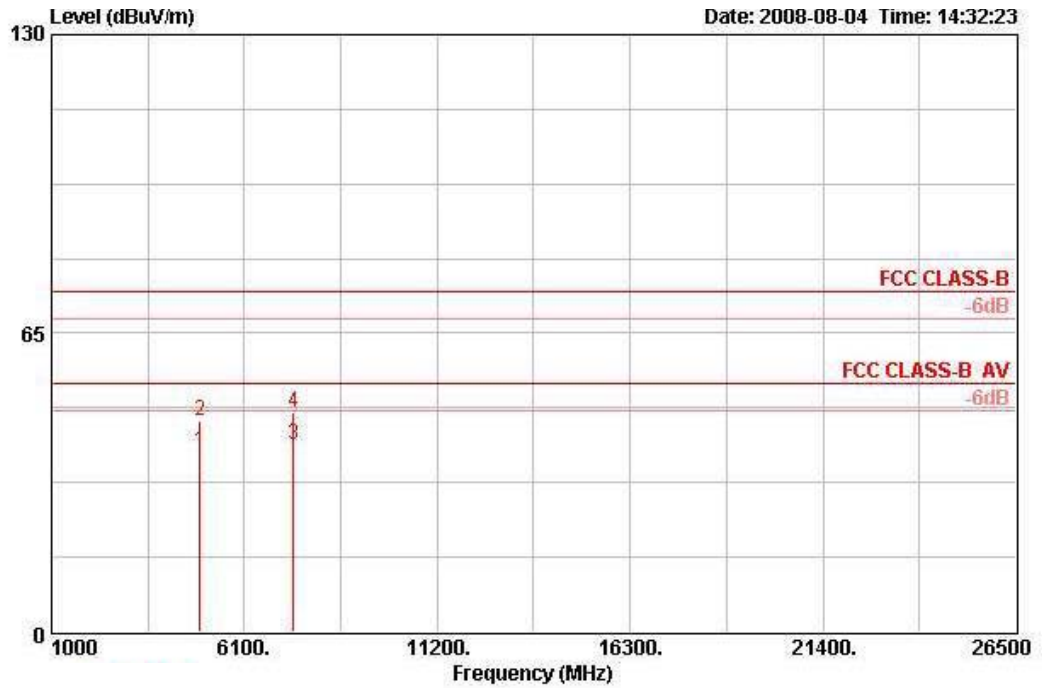
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1 @	4873.960	47.55	-6.45	54.00	45.58	33.16	3.96	35.15	AVERAGE	100	209	VERTICAL
2	4873.960	51.04	-22.96	74.00	49.08	33.16	3.96	35.15	PEAK	100	209	VERTICAL
3 @	7313.900	53.93	-0.07	54.00	48.04	35.96	5.12	35.18	AVERAGE	100	179	VERTICAL
4 @	7313.900	58.31	-15.69	74.00	52.41	35.96	5.12	35.18	PEAK	100	179	VERTICAL





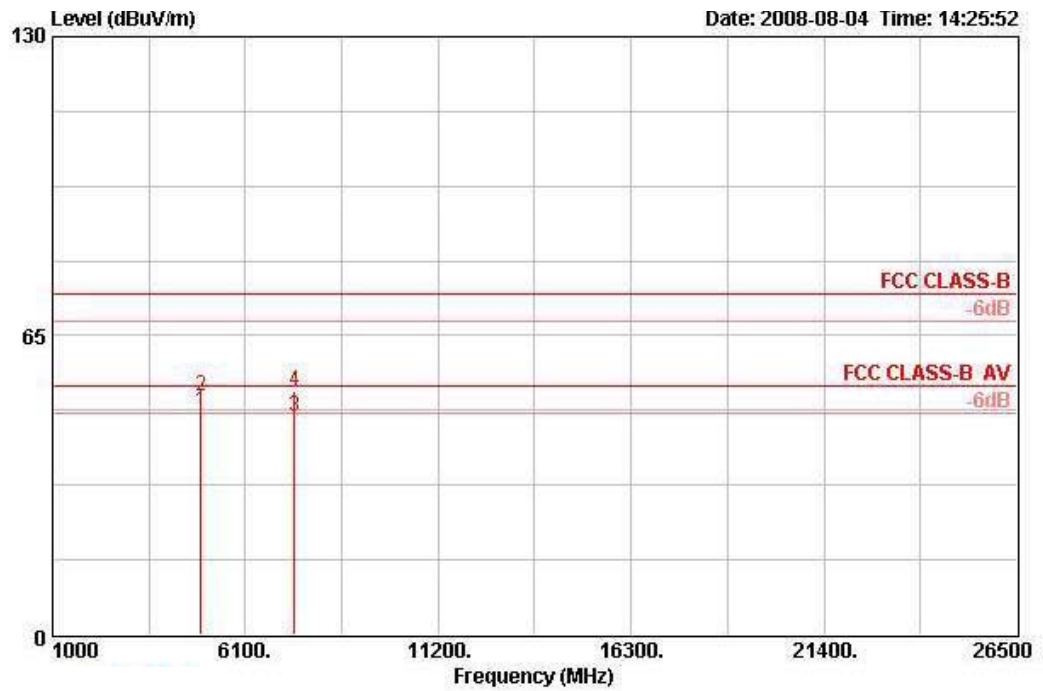
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11b CH 11 Ant. 1

**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	4923.900	39.26	-14.74	54.00	37.16	33.26	3.98	35.14	AVERAGE	100	126	HORIZONTAL
2	4923.900	46.04	-27.96	74.00	43.93	33.26	3.98	35.14	PEAK	100	126	HORIZONTAL
3	7388.700	40.61	-13.39	54.00	34.51	36.09	5.17	35.16	AVERAGE	100	162	HORIZONTAL
4	7388.700	47.61	-26.39	74.00	41.51	36.09	5.17	35.16	PEAK	100	162	HORIZONTAL

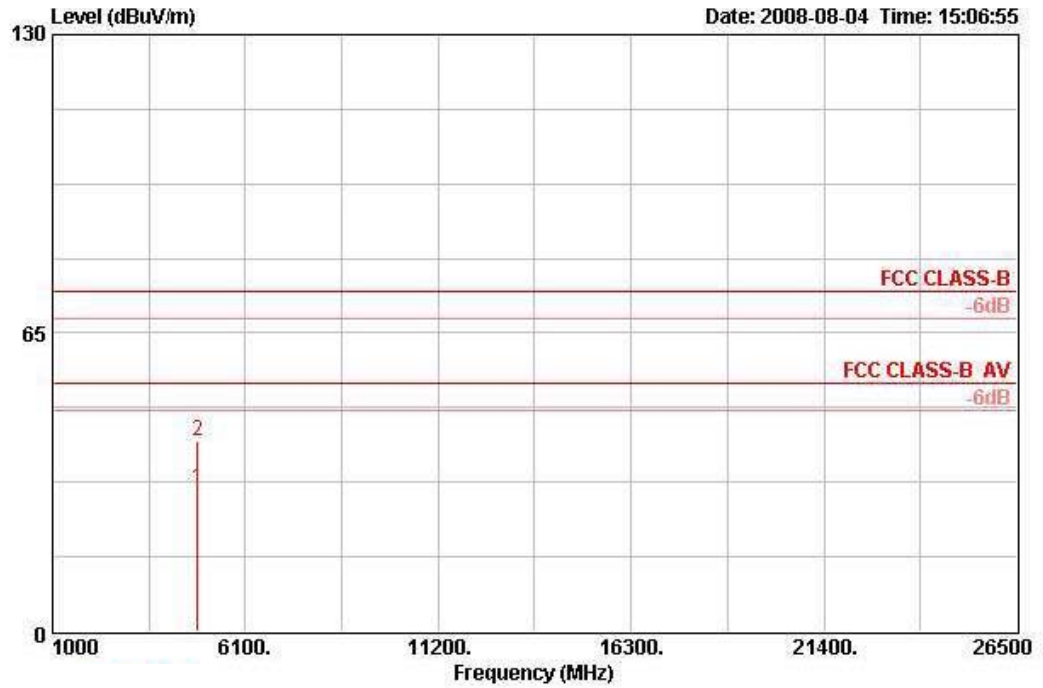
**Vertical**



	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 @	4923.880	48.53	-5.47	54.00	46.42	33.26	3.98	35.14	AVERAGE	164	138	VERTICAL
2	4923.880	51.76	-22.24	74.00	49.66	33.26	3.98	35.14	PEAK	164	138	VERTICAL
3 @	7388.700	47.57	-6.43	54.00	41.47	36.09	5.17	35.16	AVERAGE	165	125	VERTICAL
4 @	7388.700	52.86	-21.14	74.00	46.76	36.09	5.17	35.16	PEAK	165	125	VERTICAL

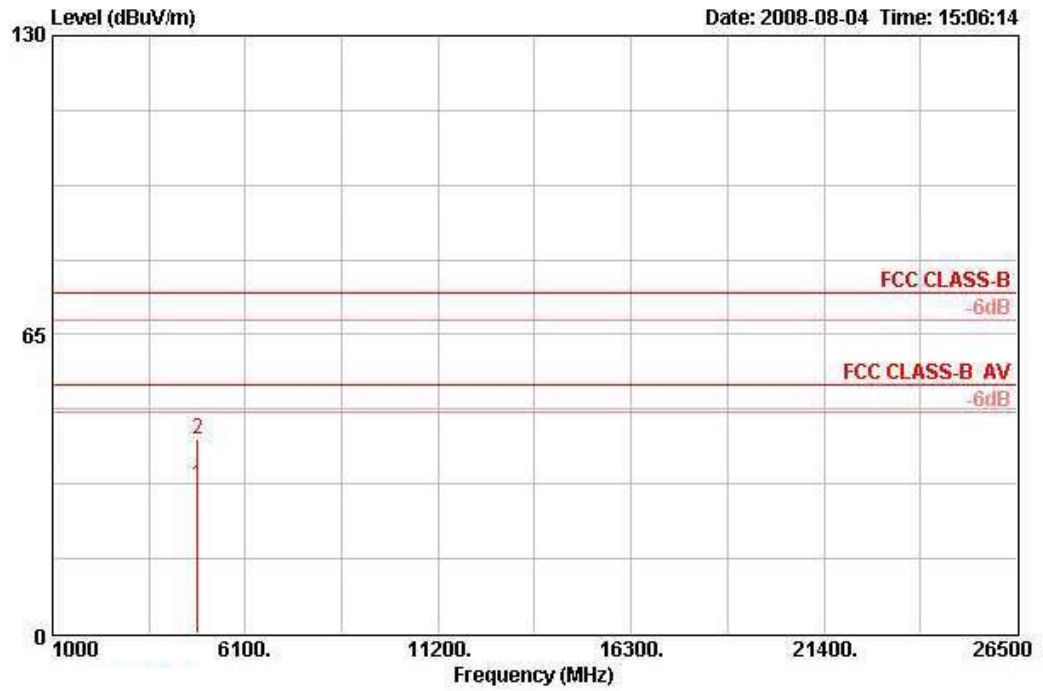
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11g CH 1 Ant. 1

**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	4827.000	31.21	-22.79	54.00	29.38	33.06	3.94	35.16	AVERAGE	100	53	HORIZONTAL
2	4827.000	41.50	-32.50	74.00	39.68	33.06	3.94	35.16	PEAK	100	53	HORIZONTAL

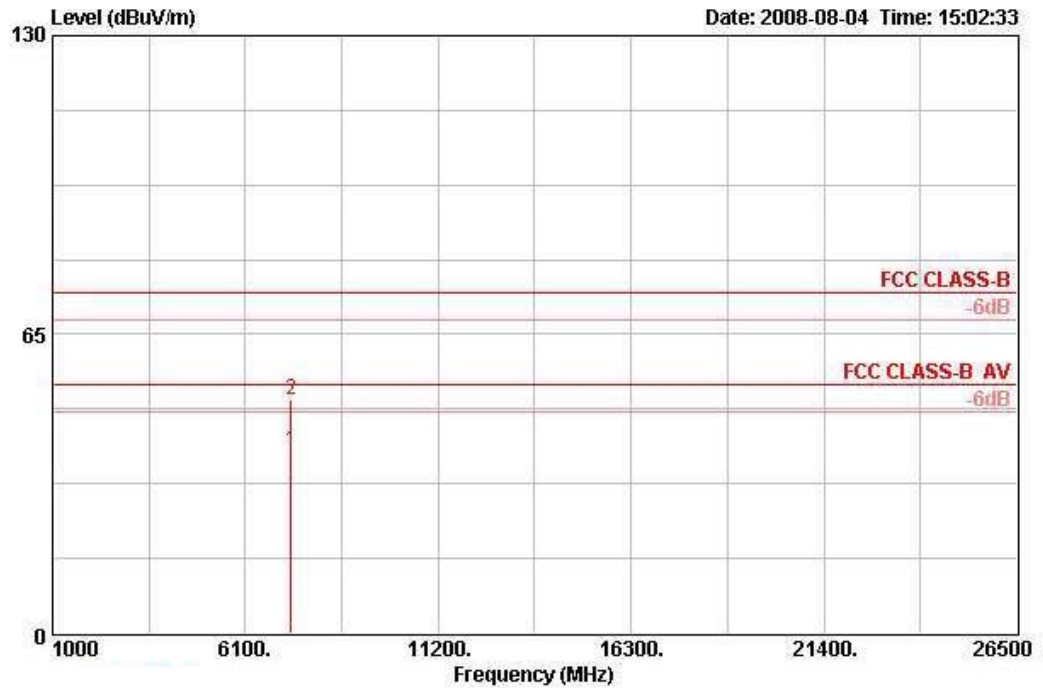
**Vertical**



	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	4827.000	32.30	-21.70	54.00	30.47	33.06	3.94	35.16	AVERAGE	100	210	VERTICAL
2	4827.000	42.24	-31.76	74.00	40.41	33.06	3.94	35.16	PEAK	100	210	VERTICAL

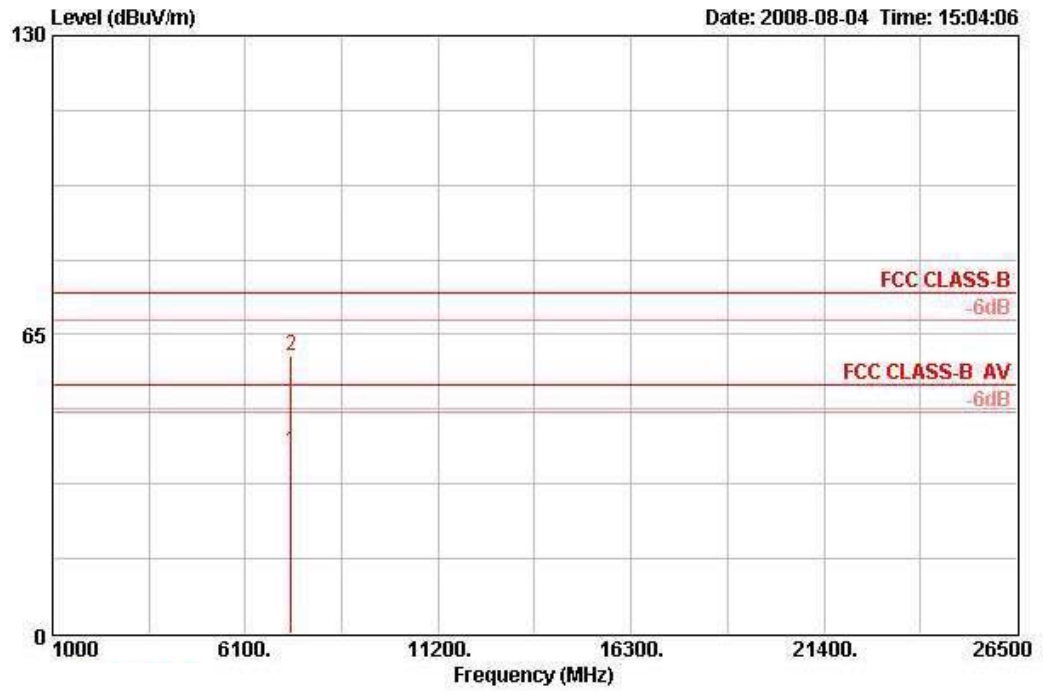
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11g CH 6 Ant. 1

**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	7314.000	39.53	-14.47	54.00	33.64	35.96	5.12	35.18	AVERAGE	100	287	HORIZONTAL
2	7314.000	50.83	-23.17	74.00	44.94	35.96	5.12	35.18	PEAK	100	287	HORIZONTAL

**Vertical**

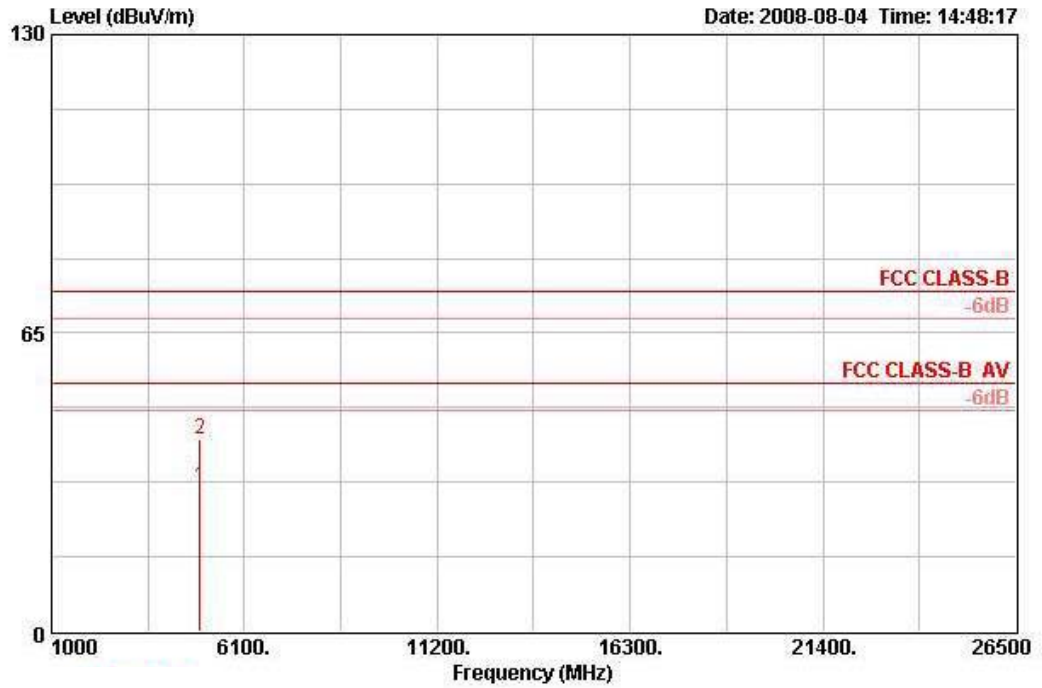


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1 ☒	7309.000	39.50	-14.50	54.00	33.61	35.96	5.12	35.18	AVERAGE	100	183	VERTICAL
2 ☒	7309.000	60.35	-13.65	74.00	54.45	35.96	5.12	35.18	PEAK	100	183	VERTICAL



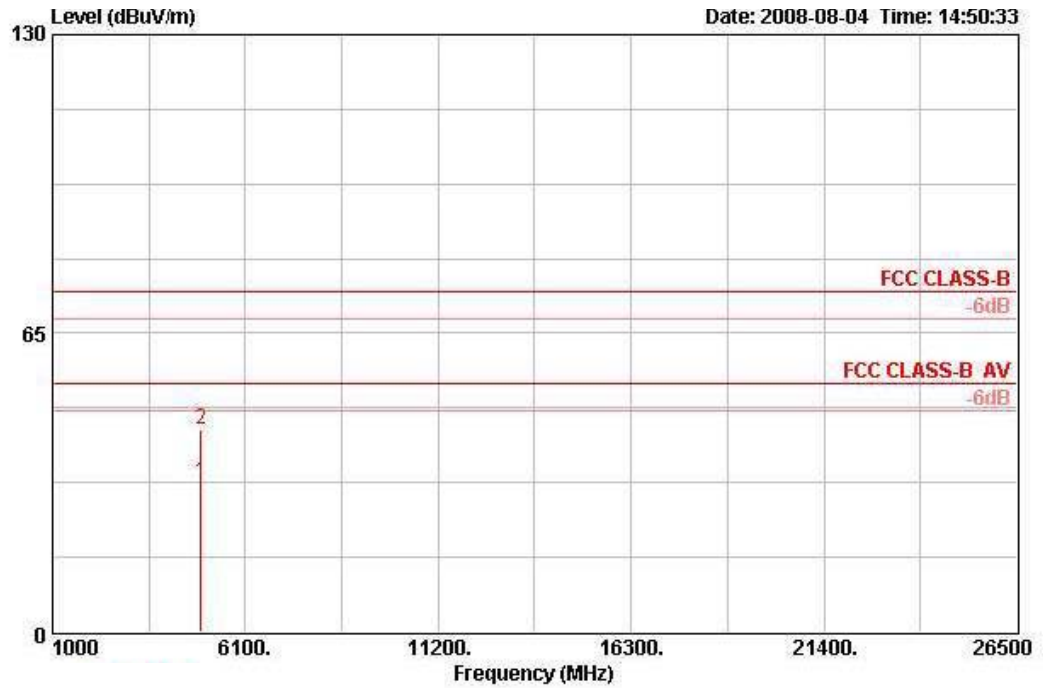
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11g CH 11 Ant. 1

**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	4924.000	31.60	-22.40	54.00	29.50	33.26	3.98	35.14	AVERAGE	100	191	HORIZONTAL
2	4924.000	41.99	-32.01	74.00	39.89	33.26	3.98	35.14	PEAK	100	191	HORIZONTAL

**Vertical**

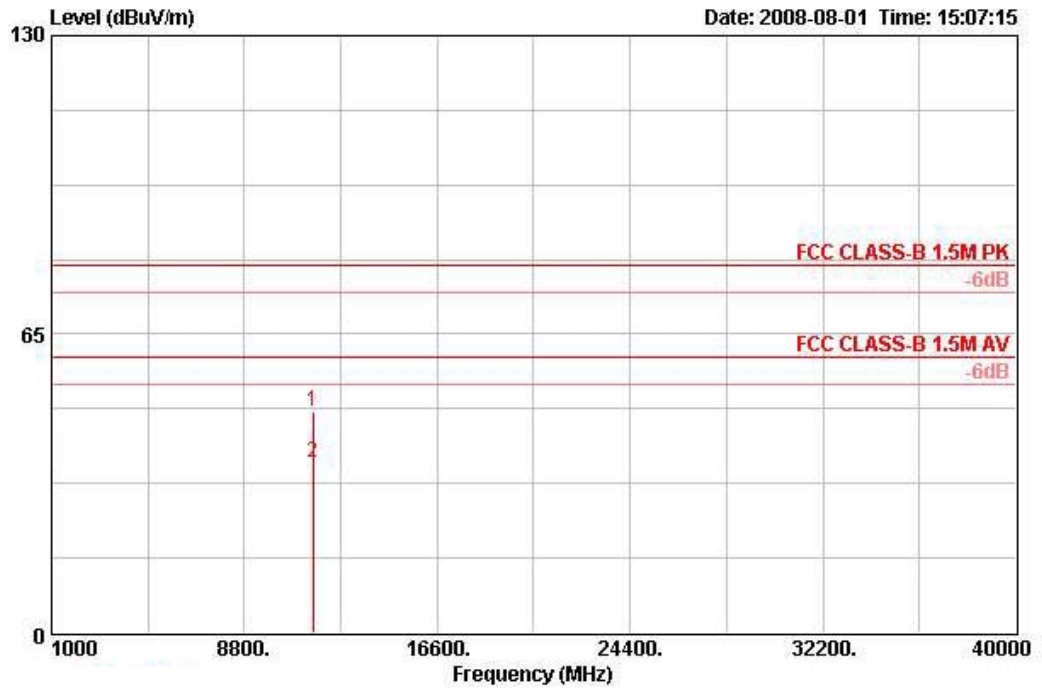


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4925.800	32.66	-21.34	54.00	30.55	33.26	3.98	35.14	AVERAGE	100	283	VERTICAL
2	4925.800	43.92	-30.08	74.00	41.81	33.26	3.98	35.14	PEAK	100	283	VERTICAL



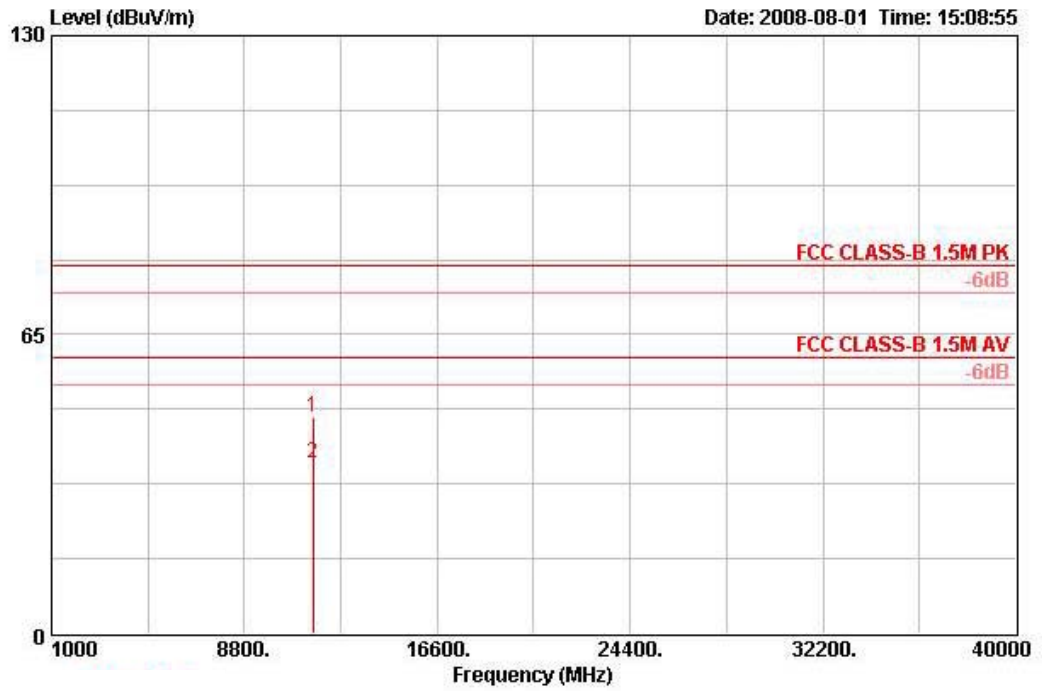
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a CH 149 Ant. 1

**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	11570.200	48.17	-31.83	80.00	37.67	38.83	6.67	35.00	PEAK	100	187	HORIZONTAL
2	11570.200	37.13	-22.87	60.00	26.63	38.83	6.67	35.00	AVERAGE	100	187	HORIZONTAL

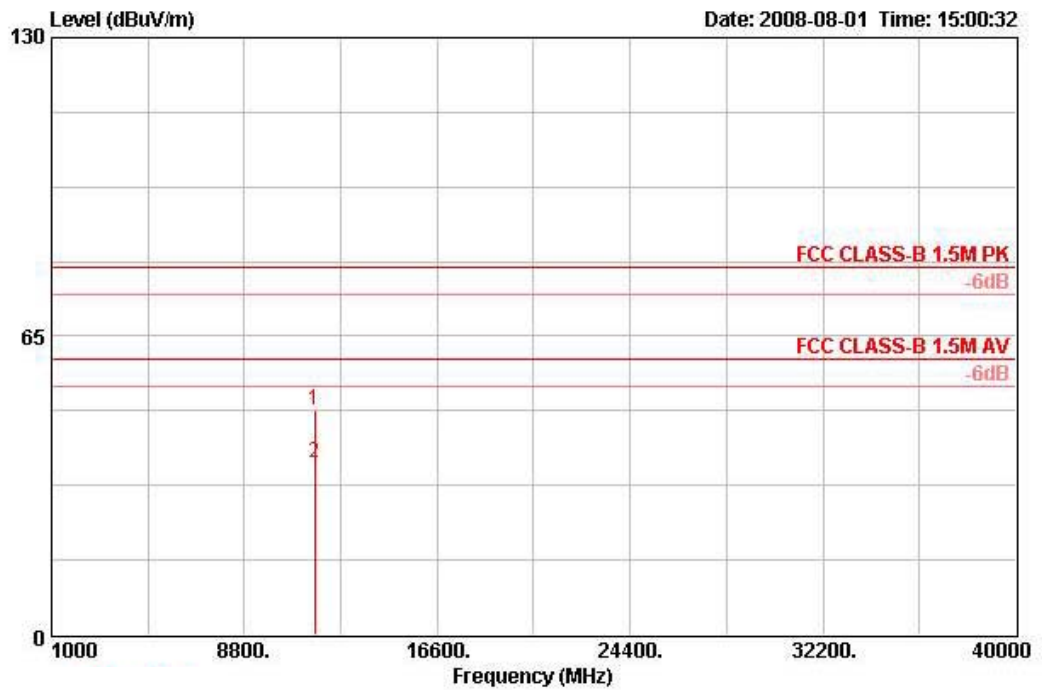
**Vertical**



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11570.800	47.16	-32.84	80.00	36.66	38.83	6.67	35.00	PEAK	100	67	VERTICAL
2	11570.800	36.95	-23.05	60.00	26.45	38.83	6.67	35.00	AVERAGE	100	67	VERTICAL

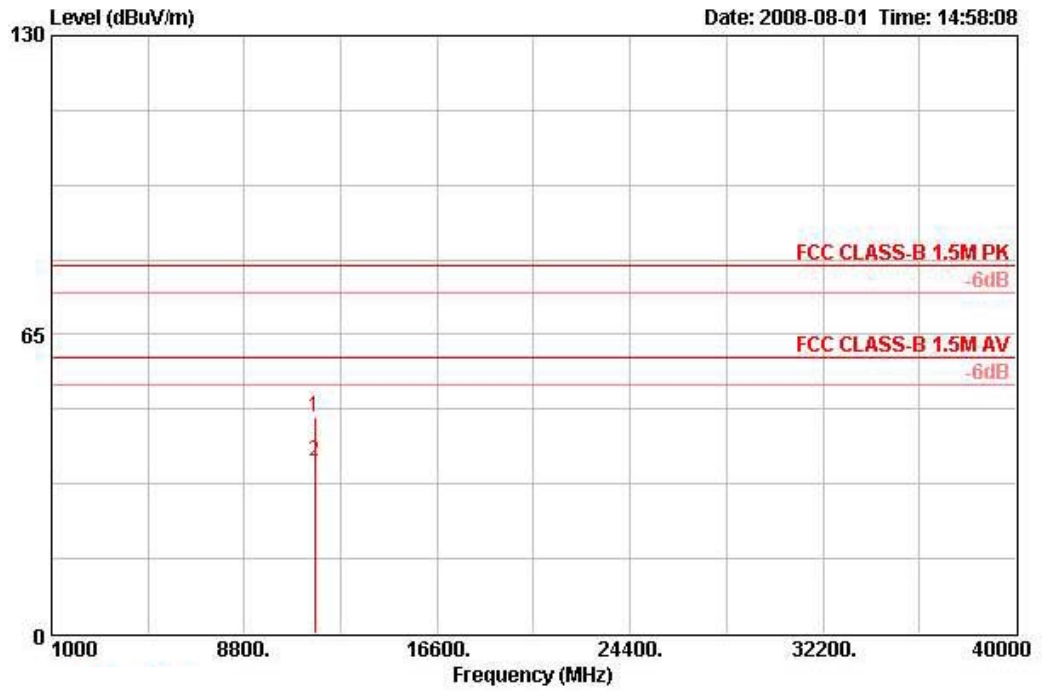
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a CH 157 Ant. 1

**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	11651.400	49.05	-30.95	80.00	38.55	38.86	6.66	35.01	PEAK	100	253	HORIZONTAL
2	11651.400	37.31	-22.69	60.00	26.80	38.86	6.66	35.01	AVERAGE	100	253	HORIZONTAL

Vertical

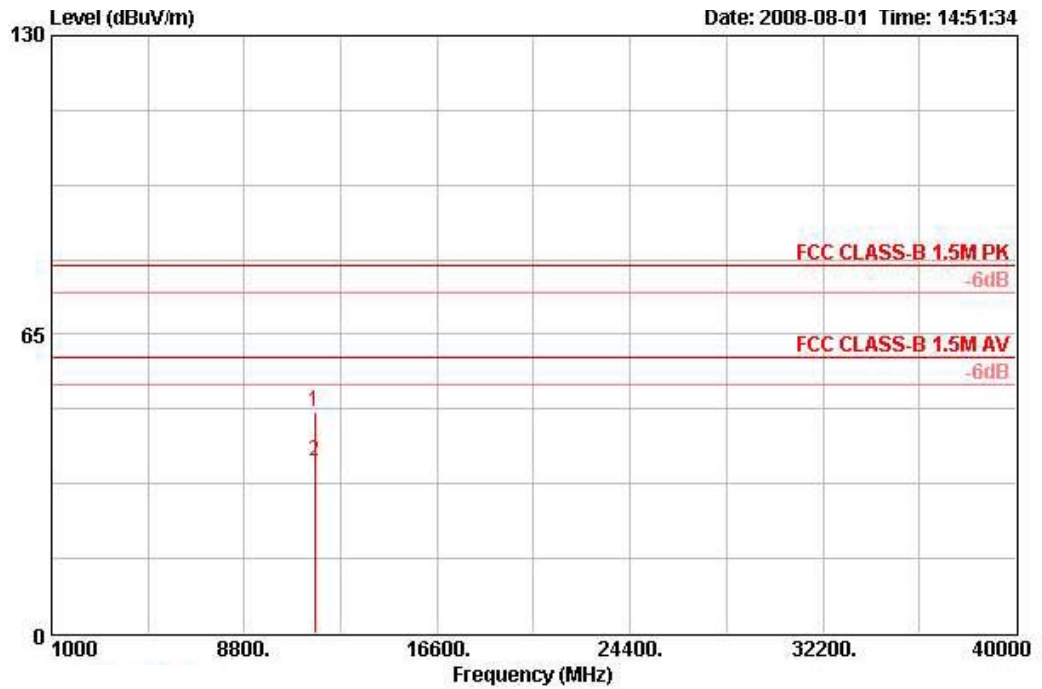


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamplifier Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	11650.600	46.98	-33.02	80.00	36.48	38.86	6.66	35.01	PEAK	100	188	VERTICAL
2	11650.600	37.57	-22.43	60.00	27.06	38.86	6.66	35.01	AVERAGE	100	188	VERTICAL



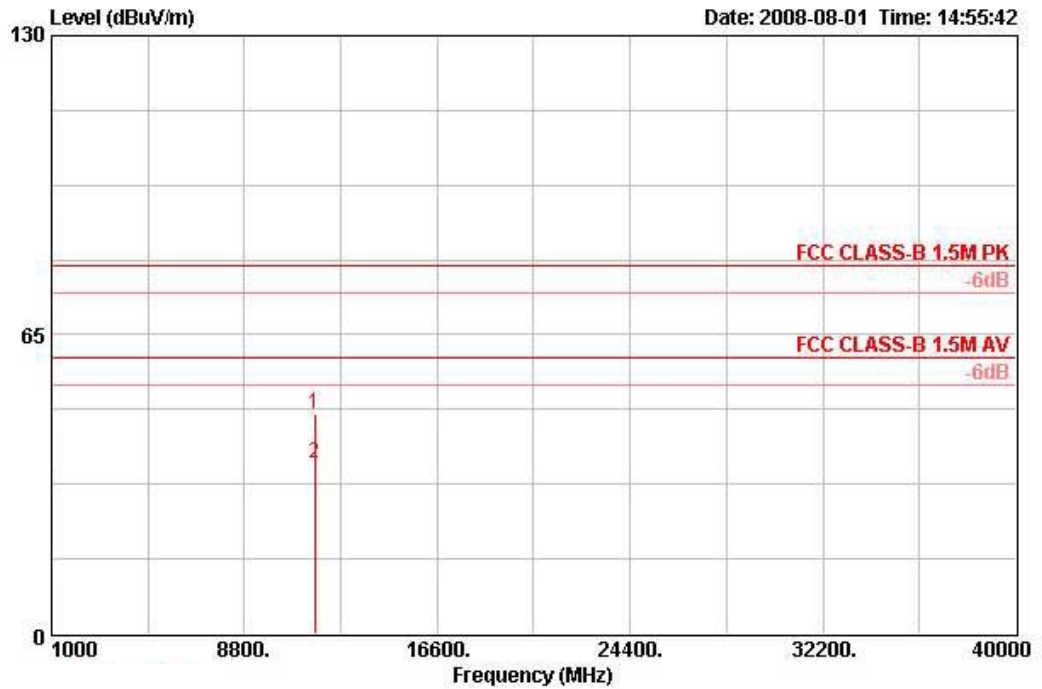
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	802.11a CH 165 Ant. 1

**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	11650.400	47.98	-32.02	80.00	37.48	38.86	6.66	35.01	PEAK	100	117	HORIZONTAL
2	11650.400	37.26	-22.74	60.00	26.75	38.86	6.66	35.01	AVERAGE	100	117	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	11650.600	47.85	-32.15	80.00	37.35	38.86	6.66	35.01	PEAK	100	142	VERTICAL
2	11650.600	37.20	-22.80	60.00	26.70	38.86	6.66	35.01	AVERAGE	100	142	VERTICAL

**Note:**

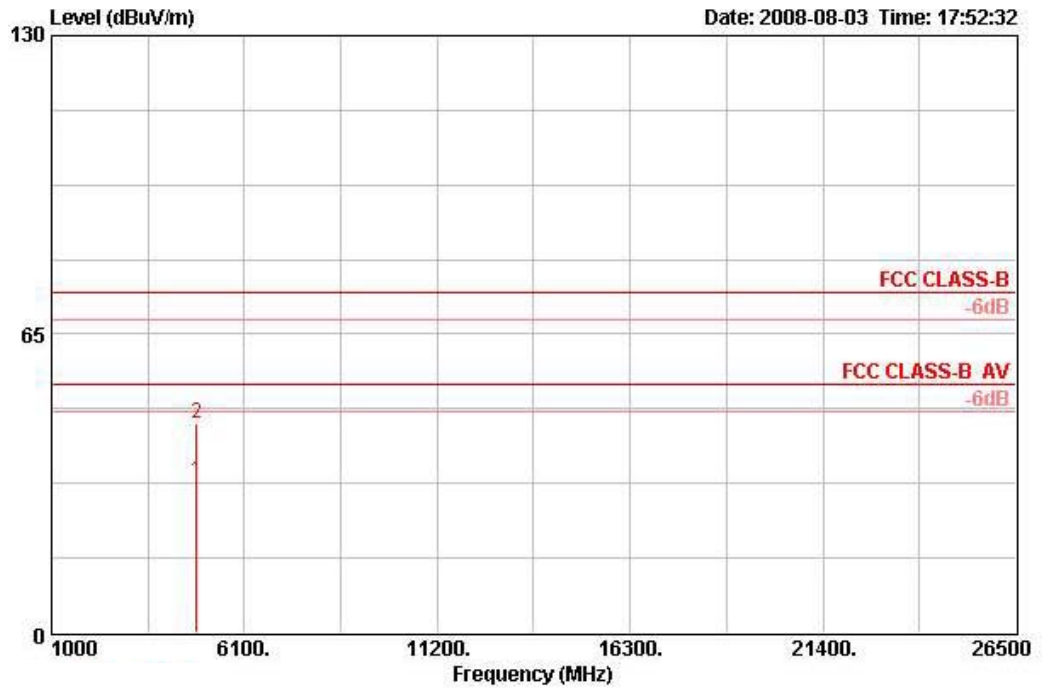
The amplitude of spurious emissions that are attenuated by more than 20dB below the permissible value has no need to be reported.

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

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

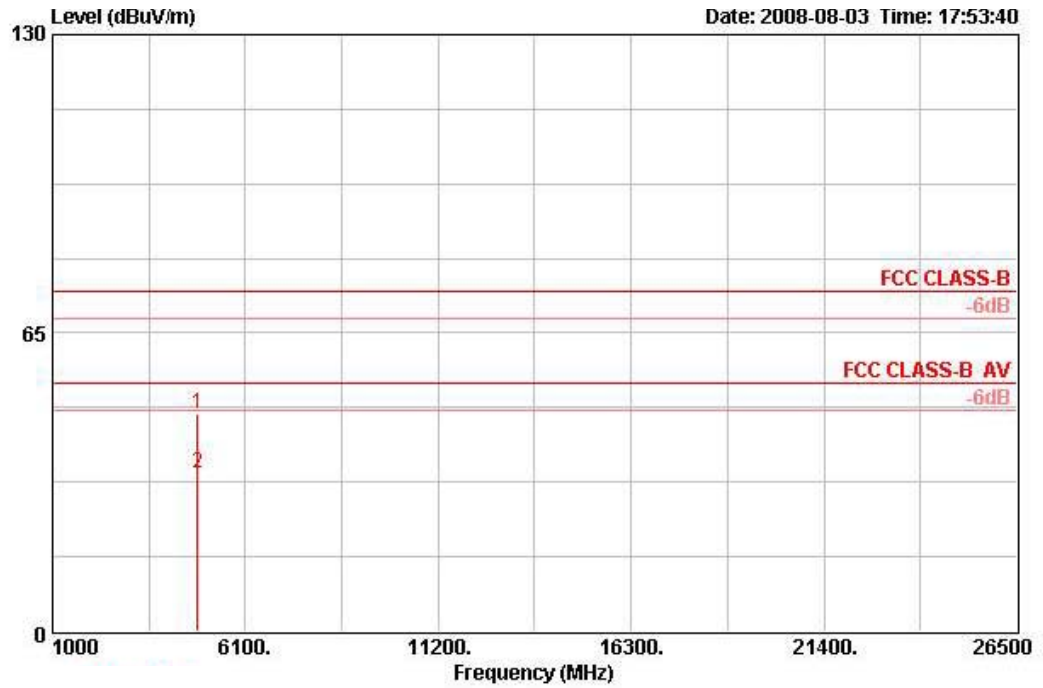
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 1 Ant. 2

**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	4824.420	32.94	-21.06	54.00	31.11	33.06	3.94	35.16	AVERAGE	100	63	HORIZONTAL
2	4824.580	45.51	-28.49	74.00	43.68	33.06	3.94	35.16	PEAK	100	63	HORIZONTAL

**Vertical**



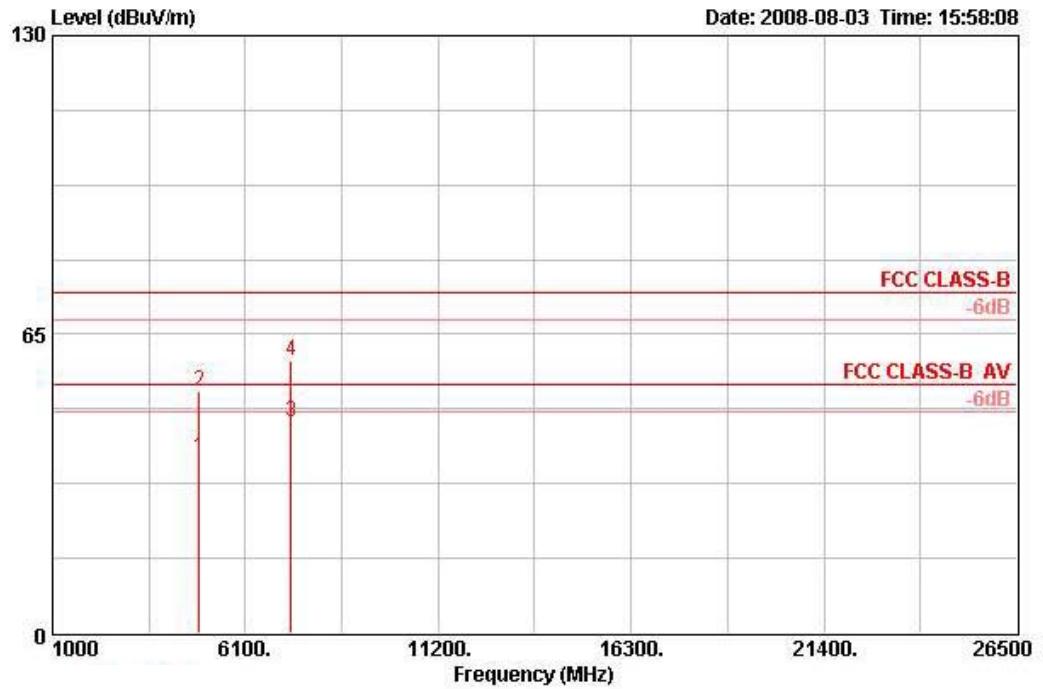
	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4823.900	47.57	-26.43	74.00	45.74	33.06	3.94	35.16	PEAK	100	226	VERTICAL
2	4824.600	34.51	-19.49	54.00	32.69	33.06	3.94	35.16	AVERAGE	100	226	VERTICAL





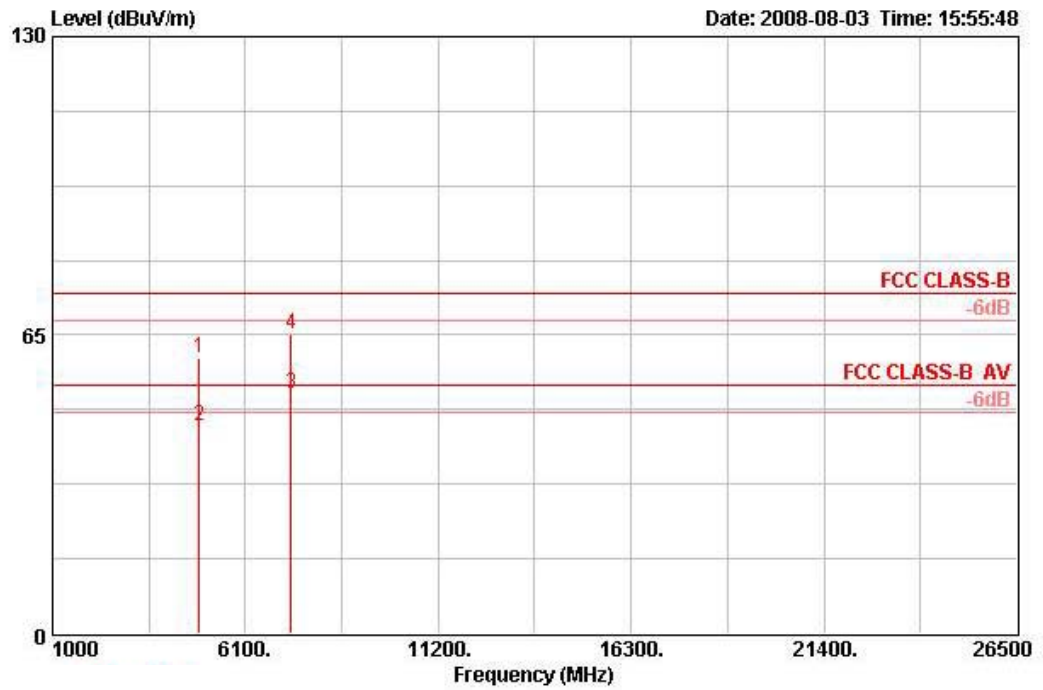
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch 6 Ant. 2

**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	4873.700	38.24	-15.76	54.00	36.28	33.16	3.96	35.15	AVERAGE	118	153	HORIZONTAL
2	4873.900	52.49	-21.51	74.00	50.53	33.16	3.96	35.15	PEAK	118	153	HORIZONTAL
3	7315.100	45.80	-8.20	54.00	39.91	35.96	5.12	35.18	AVERAGE	148	156	HORIZONTAL
4	7317.800	59.23	-14.77	74.00	53.33	35.96	5.12	35.18	PEAK	148	156	HORIZONTAL

**Vertical**

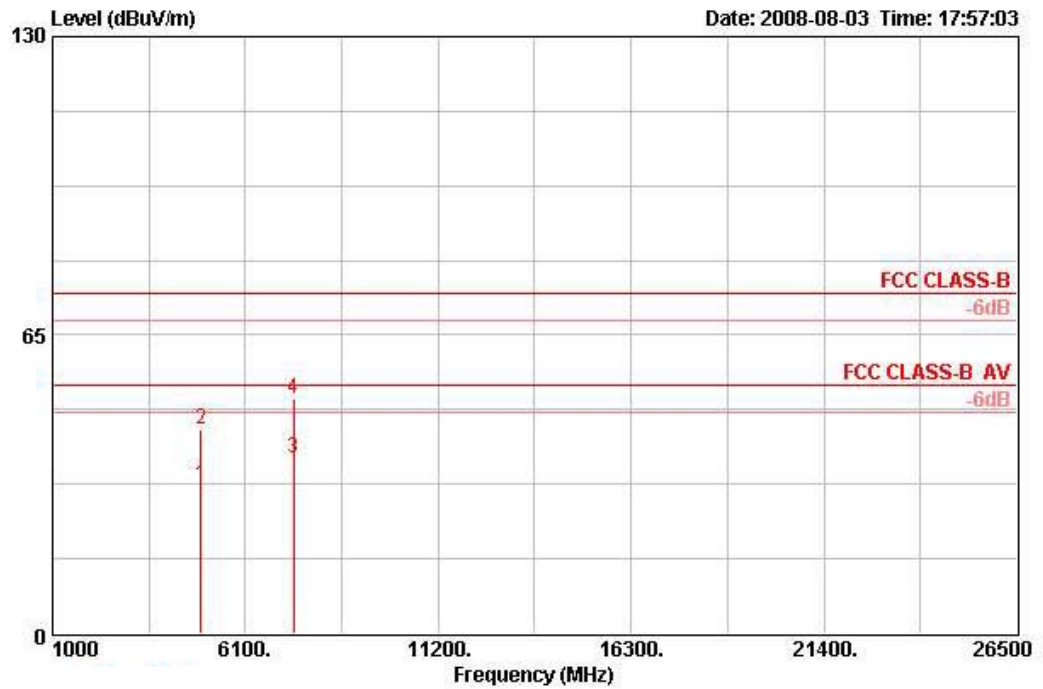


	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos	Pol/Phase
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4874.100	59.88	-14.12	74.00	57.92	33.16	3.96	35.15	PEAK	100	230	VERTICAL
2	4874.100	45.25	-8.75	54.00	43.29	33.16	3.96	35.15	AVERAGE	100	230	VERTICAL
3	7309.700	52.20	-1.80	54.00	46.30	35.96	5.12	35.18	AVERAGE	153	182	VERTICAL
4	7310.180	65.27	-8.73	74.00	59.38	35.96	5.12	35.18	PEAK	153	182	VERTICAL



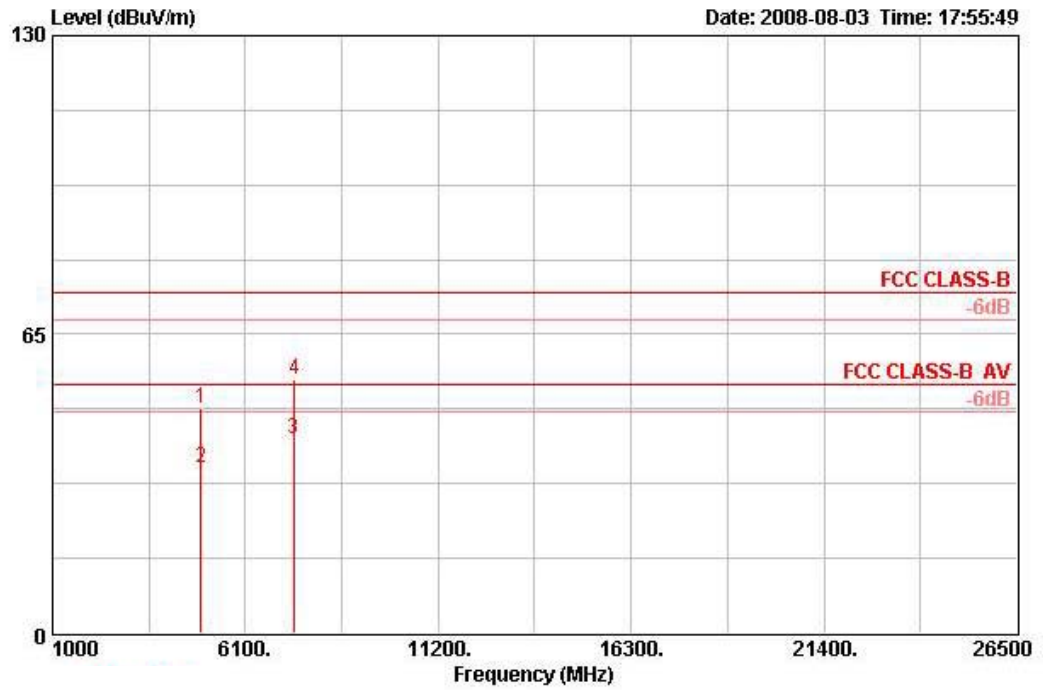
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 20MHz Ch11 Ant. 2

**Horizontal**



	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table			
Freq	Level	Line	Level	Factor	Loss	Factor		Pos	Pos			
MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB		cm	deg			
1	4925.200	32.20	-21.80	54.00	30.10	33.26	3.98	35.14	AVERAGE	104	49	HORIZONTAL
2	4925.600	44.28	-29.72	74.00	42.18	33.26	3.98	35.14	PEAK	104	49	HORIZONTAL
3	7385.600	38.04	-15.96	54.00	31.94	36.09	5.17	35.16	AVERAGE	149	152	HORIZONTAL
4	7385.900	51.20	-22.80	74.00	45.10	36.09	5.17	35.16	PEAK	149	152	HORIZONTAL

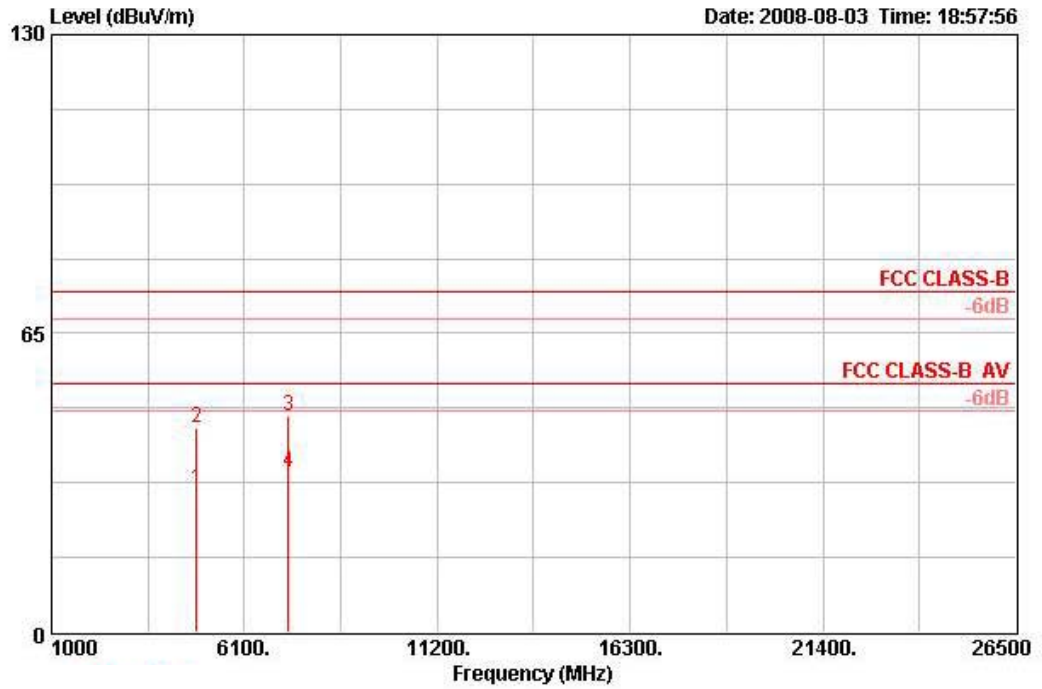
**Vertical**



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.100	48.78	-25.22	74.00	46.68	33.26	3.98	35.14	PEAK	100	231
2	4924.300	36.08	-17.92	54.00	33.98	33.26	3.98	35.14	AVERAGE	100	231
3	7384.400	42.11	-11.89	54.00	36.01	36.09	5.17	35.16	AVERAGE	157	147
4	7388.600	55.15	-18.85	74.00	49.06	36.09	5.17	35.16	PEAK	157	147

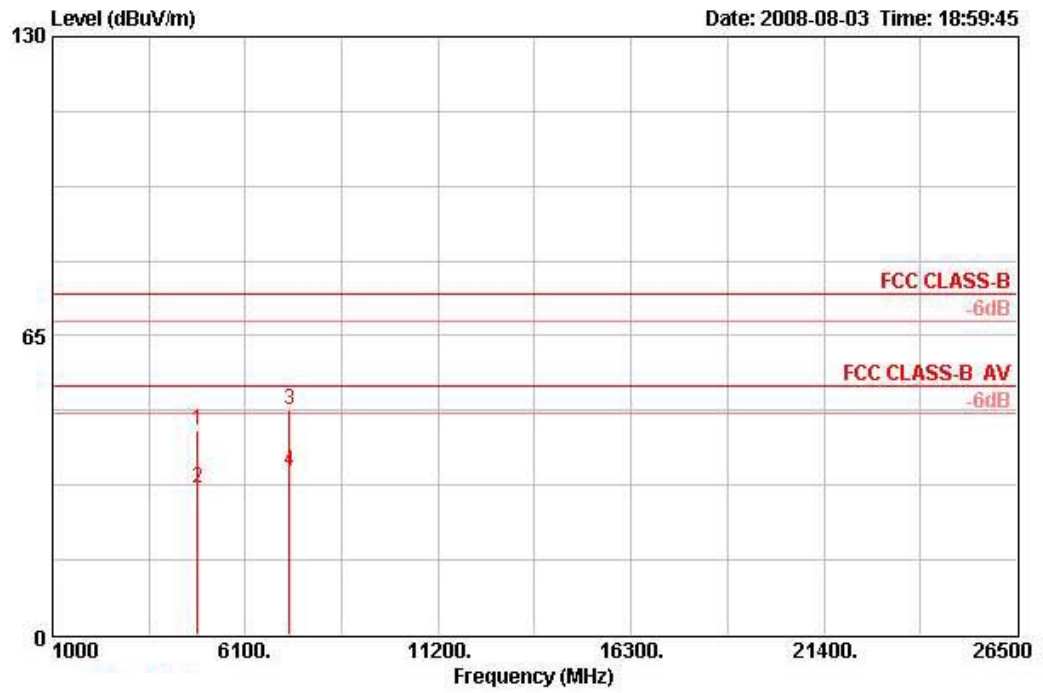
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 3 Ant. 2

**Horizontal**



	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos	Pol/Phase
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4844.080	31.11	-22.89	54.00	29.23	33.09	3.95	35.16	AVERAGE	118	156	HORIZONTAL
2	4844.280	44.40	-29.60	74.00	42.52	33.09	3.95	35.16	PEAK	118	156	HORIZONTAL
3	7266.140	46.92	-27.08	74.00	41.17	35.85	5.09	35.19	PEAK	146	156	HORIZONTAL
4	7266.310	34.81	-19.19	54.00	29.07	35.85	5.09	35.19	AVERAGE	146	156	HORIZONTAL

**Vertical**

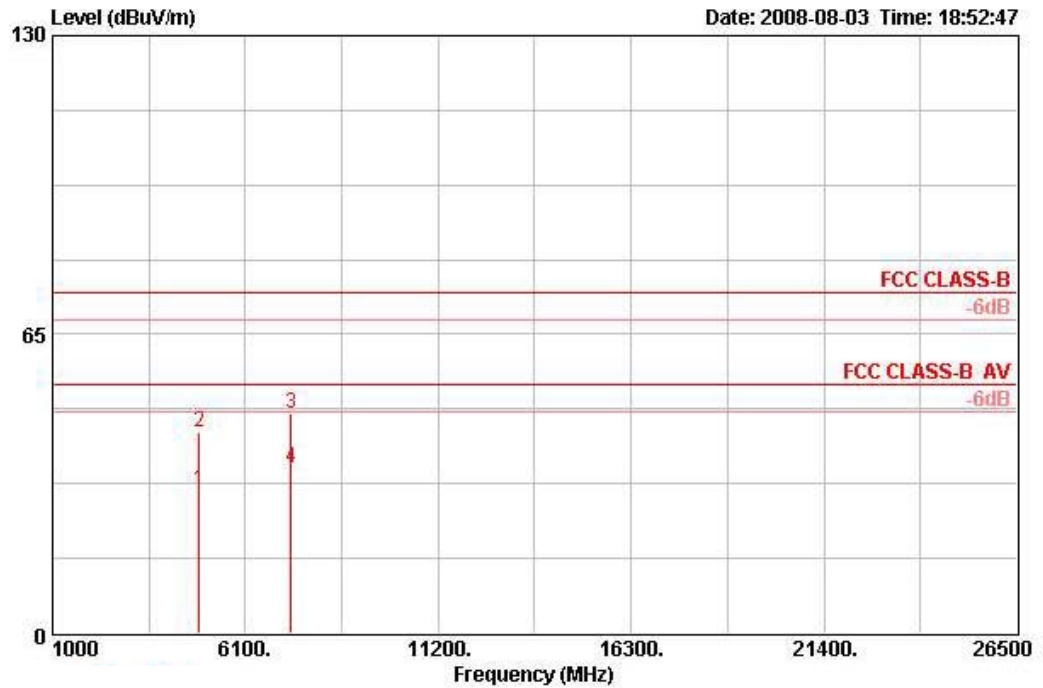


	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	4844.160	44.36	-29.64	74.00	42.48	33.09	3.95	35.16	PEAK	100	231 VERTICAL
2	4844.430	32.00	-22.00	54.00	30.12	33.09	3.95	35.16	AVERAGE	100	231 VERTICAL
3	7266.210	48.98	-25.02	74.00	43.23	35.85	5.09	35.19	PEAK	153	179 VERTICAL
4	7266.500	35.38	-18.62	54.00	29.64	35.85	5.09	35.19	AVERAGE	153	179 VERTICAL



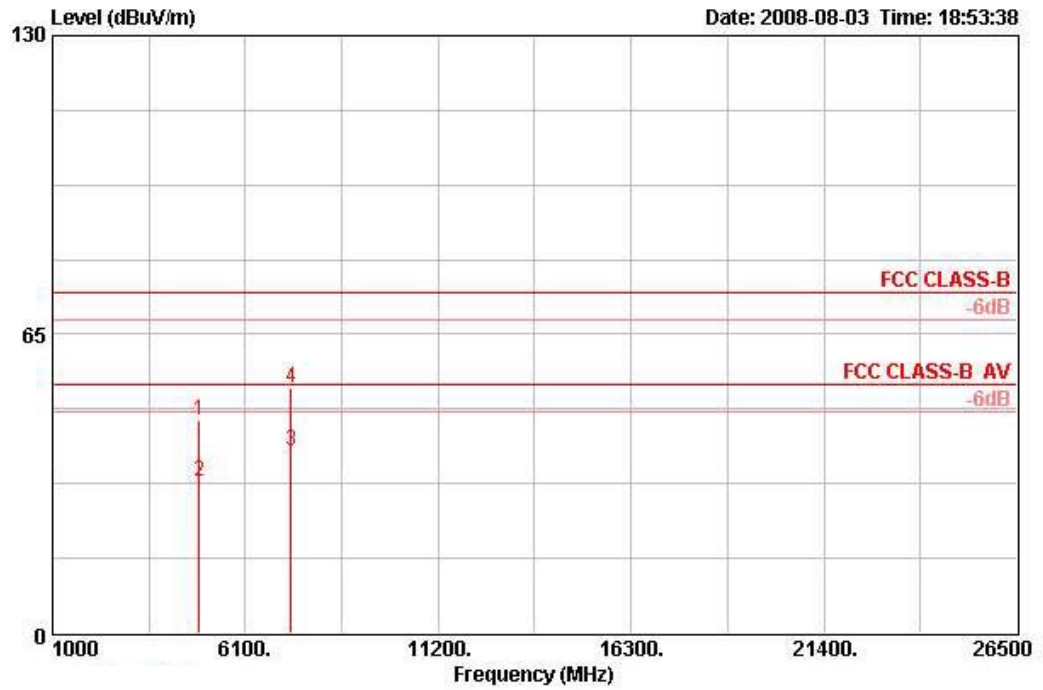
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 6 Ant. 2

**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	4874.000	31.25	-22.75	54.00	29.29	33.16	3.96	35.15	AVERAGE	118	182	HORIZONTAL
2	4874.000	43.85	-30.15	74.00	41.89	33.16	3.96	35.15	PEAK	118	182	HORIZONTAL
3	7307.800	47.89	-26.11	74.00	41.99	35.96	5.12	35.18	PEAK	144	158	HORIZONTAL
4	7317.000	35.91	-18.09	54.00	30.02	35.96	5.12	35.18	AVERAGE	144	158	HORIZONTAL

**Vertical**

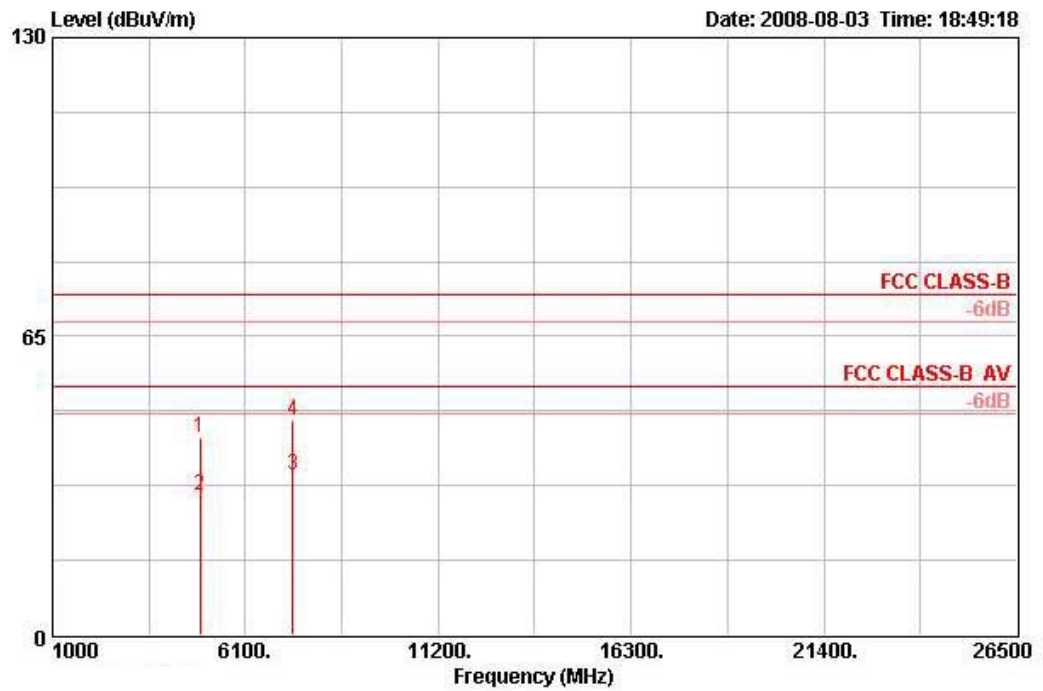


	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table
	MHz	dBUV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos
			dB	dBUV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	46.25	-27.75	74.00	44.29	33.16	3.96	35.15	PEAK	100	228
2	4874.400	32.82	-21.18	54.00	30.86	33.16	3.96	35.15	AVERAGE	100	228
3	7303.400	39.46	-14.54	54.00	33.63	35.92	5.10	35.19	AVERAGE	150	207
4	7308.200	53.28	-20.72	74.00	47.39	35.96	5.12	35.18	PEAK	150	207



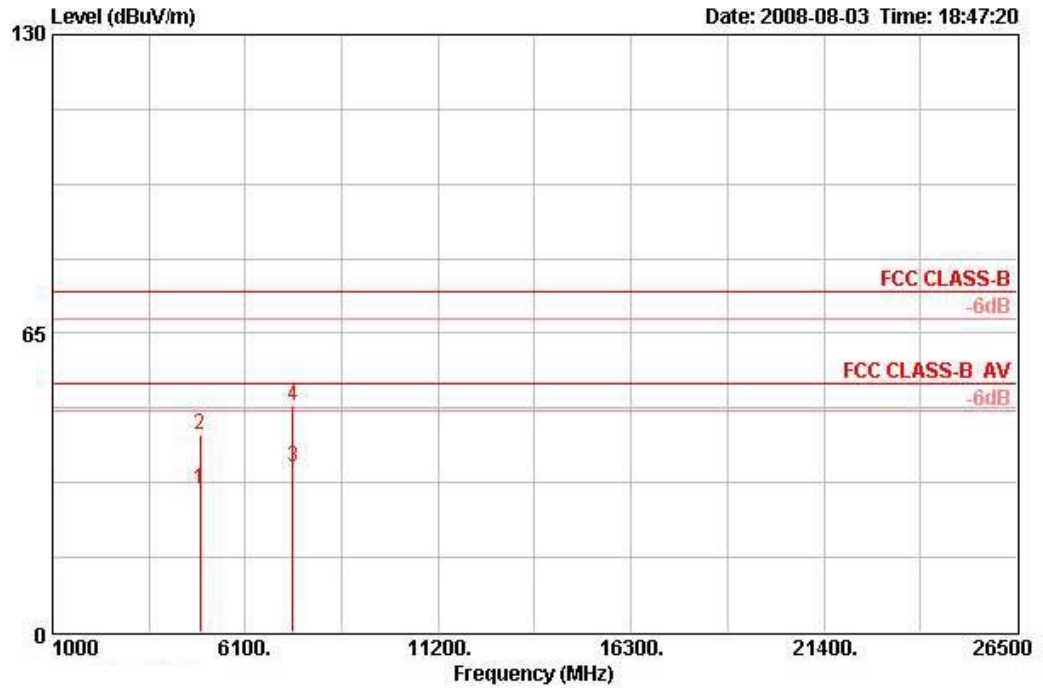
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	Draft n MCS8 40MHz Ch 9 Ant. 2

**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	4903.200	43.01	-30.99	74.00	40.99	33.19	3.97	35.15	PEAK	118	140	HORIZONTAL
2	4904.400	30.31	-23.69	54.00	28.29	33.19	3.97	35.15	AVERAGE	118	140	HORIZONTAL
3	7354.000	34.75	-19.25	54.00	28.77	36.02	5.13	35.17	AVERAGE	148	150	HORIZONTAL
4	7359.600	46.65	-27.35	74.00	40.61	36.06	5.15	35.17	PEAK	148	150	HORIZONTAL

**Vertical**

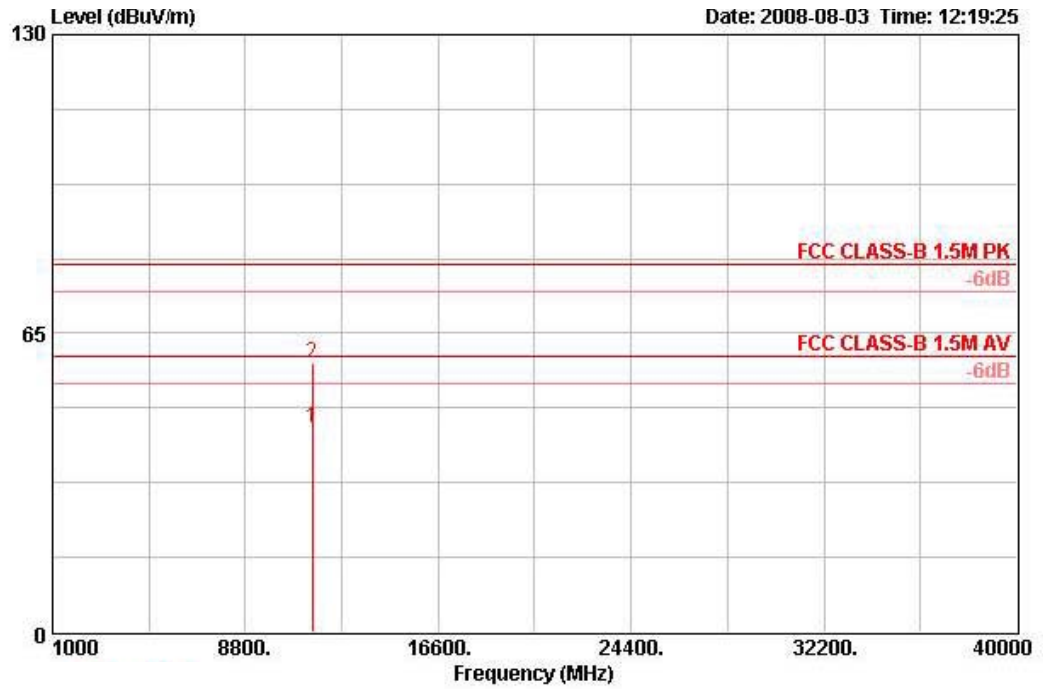


	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Remark	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor		Pos	Pos	Pol/Phase
			dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg	
1	4904.000	31.01	-22.99	54.00	28.99	33.19	3.97	35.15	AVERAGE	100	231	VERTICAL
2	4904.800	42.90	-31.10	74.00	40.84	33.23	3.97	35.15	PEAK	100	231	VERTICAL
3	7349.200	36.09	-17.91	54.00	30.10	36.02	5.13	35.17	AVERAGE	153	181	VERTICAL
4	7361.200	49.16	-24.84	74.00	43.12	36.06	5.15	35.17	PEAK	153	181	VERTICAL



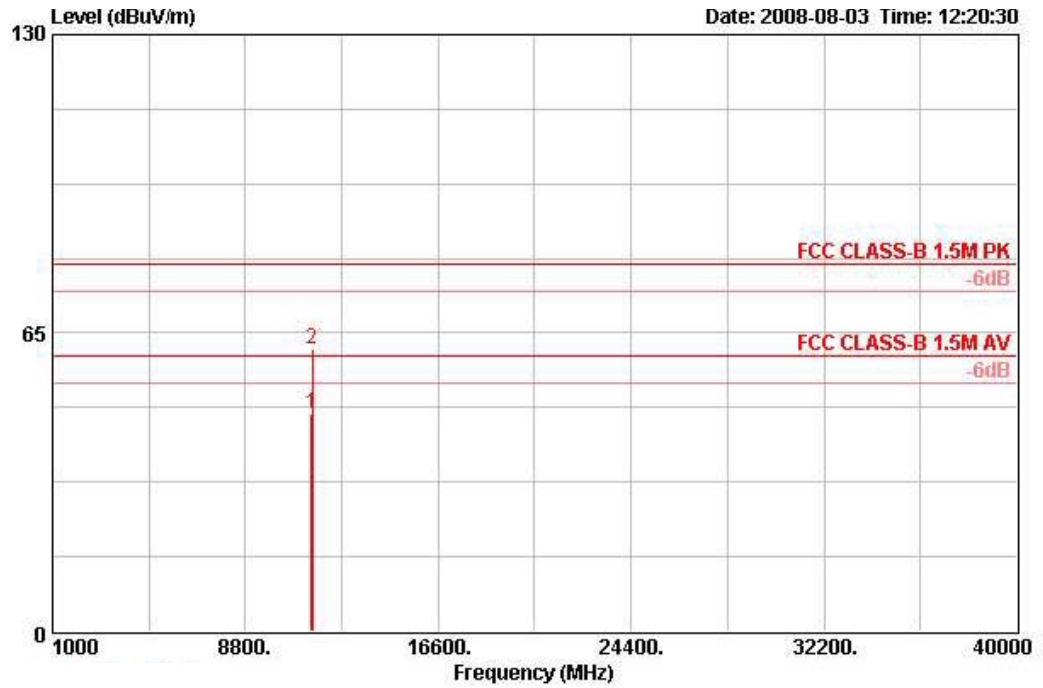
Temperature	24.3°C	Humidity	56%
Test Engineer	Johnson Chang	Configurations	11a Draft n MCS8 20MHz CH 149 Ant. 2

**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	11489.600	44.63	-15.37	60.00	34.15	38.78	6.68	34.98	AVERAGE	103	218	HORIZONTAL
2	11490.200	58.61	-21.39	80.00	48.13	38.78	6.68	34.98	PERK	103	218	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	11489.200	47.48	-12.52	60.00	37.00	38.78	6.68	34.98	AVERAGE	101	177	VERTICAL
2	11490.000	61.61	-18.39	80.00	51.14	38.78	6.68	34.98	PEAK	101	177	VERTICAL