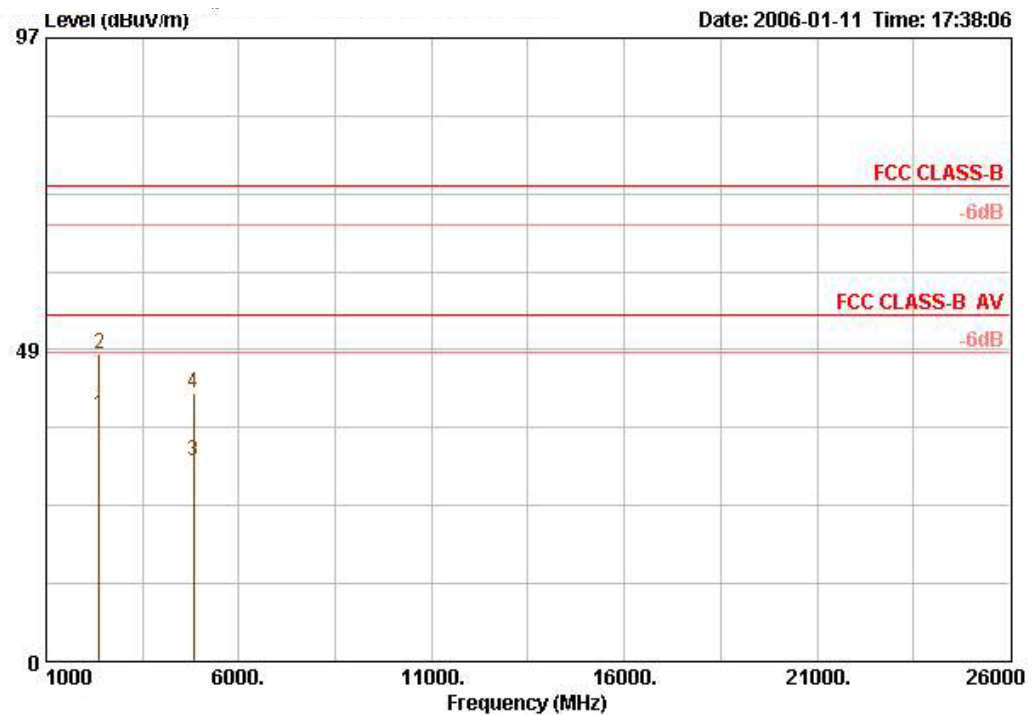
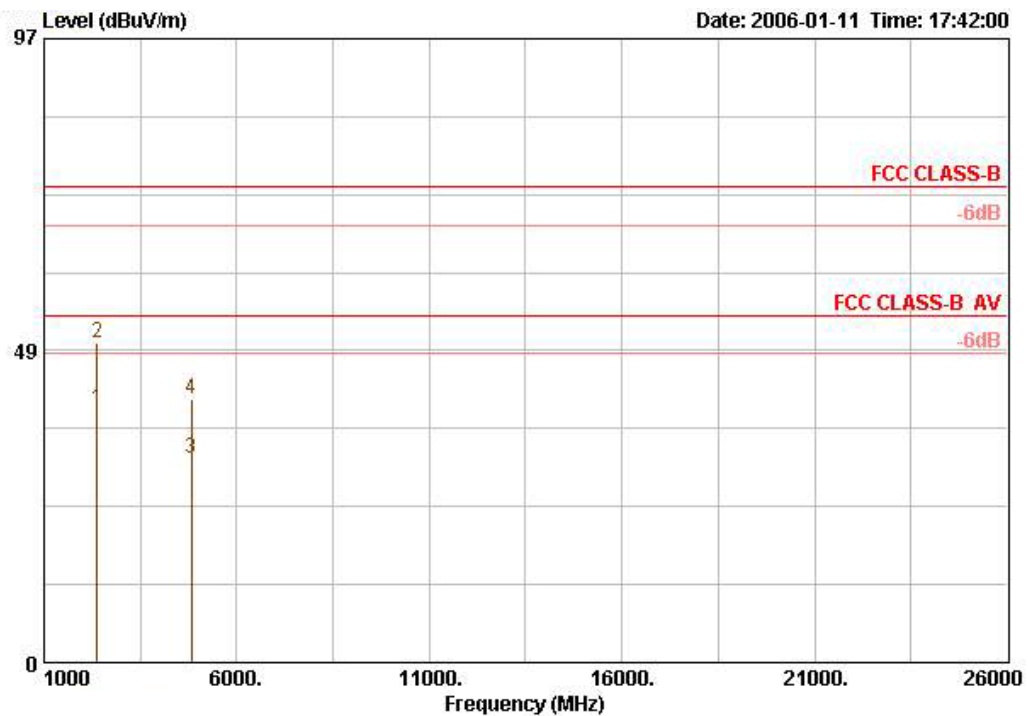


|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | V / Ant 19 / 802.11g ch 1 |



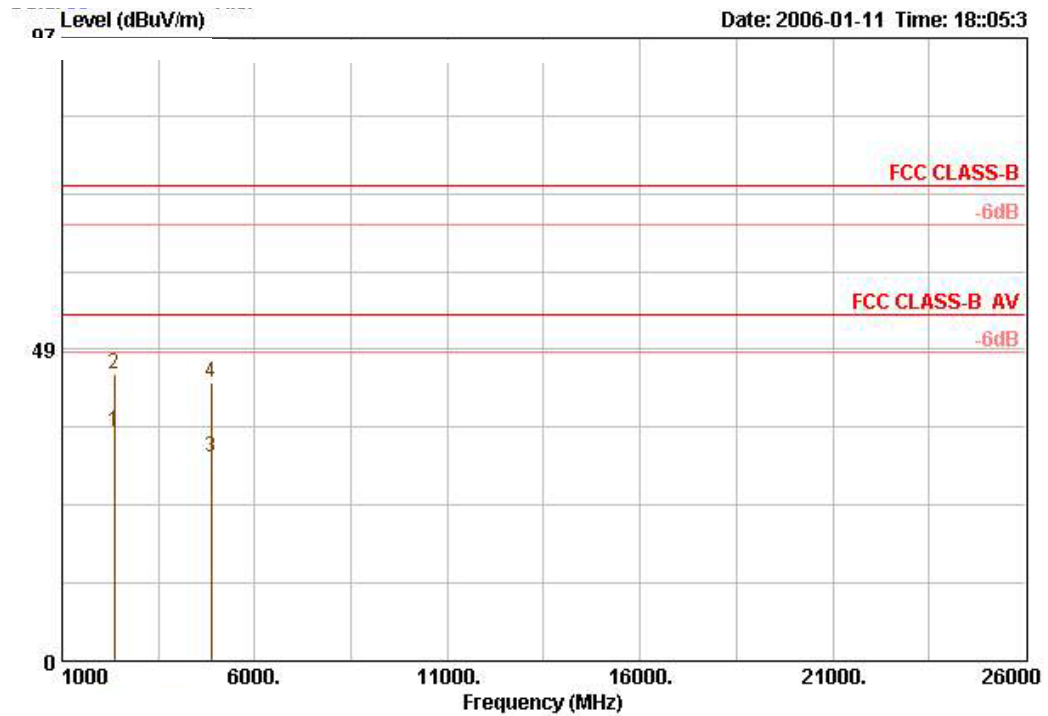
|   | Freq     | Level  | Over Limit | Antenna Line | Antenna Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------------|----------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m       | dB/m           | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2371.900 | 38.39  | -15.61     | 54.00        | 28.09          | 2.56       | 34.98         | 42.72      | AVERAGE | 126     | 347       |
| 2 | 2371.900 | 47.75  | -26.25     | 74.00        | 28.09          | 2.56       | 34.98         | 52.08      | PEAK    | 126     | 347       |
| 3 | 4824.200 | 31.11  | -22.89     | 54.00        | 33.22          | 4.68       | 35.10         | 28.31      | AVERAGE | 126     | 290       |
| 4 | 4824.200 | 41.63  | -32.37     | 74.00        | 33.22          | 4.68       | 35.10         | 38.84      | PEAK    | 126     | 290       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11g ch 1 |



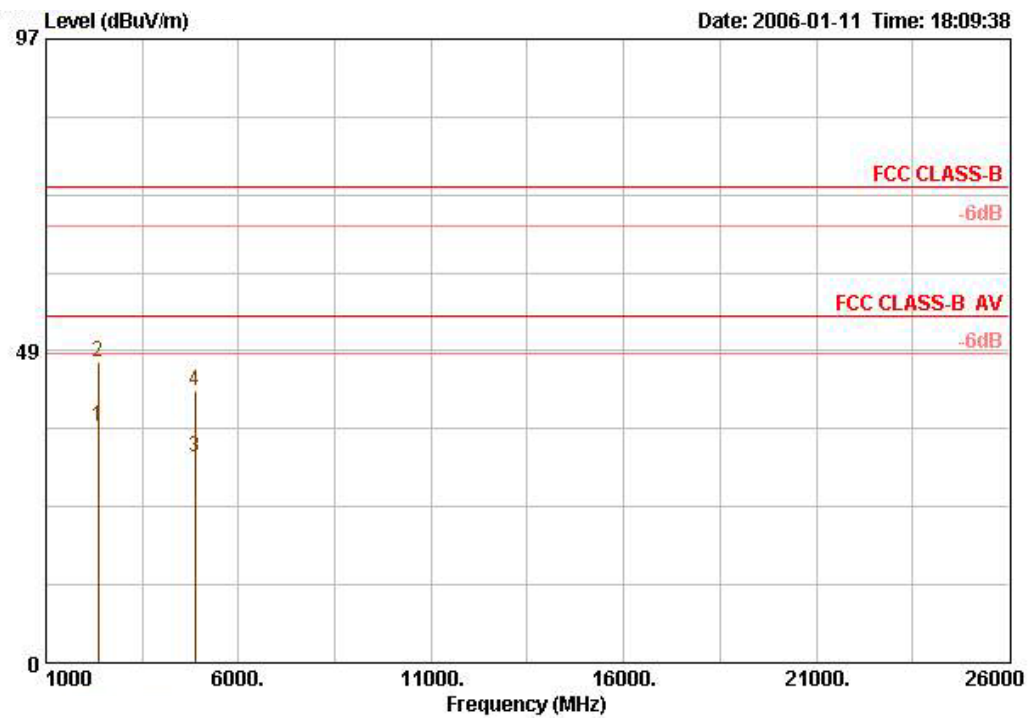
|   | Freq     | Level  | Over Limit | Antenna Line | Antenna Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------------|----------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m       | dB/m           | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2372.080 | 39.37  | -14.63     | 54.00        | 28.09          | 2.56       | 34.98         | 43.71      | AVERAGE | 121     | 365       |
| 2 | 2372.080 | 49.80  | -24.20     | 74.00        | 28.09          | 2.56       | 34.98         | 54.13      | PEAK    | 121     | 365       |
| 3 | 4823.980 | 31.70  | -22.30     | 54.00        | 33.22          | 4.68       | 35.10         | 28.91      | AVERAGE | 138     | 197       |
| 4 | 4823.980 | 40.94  | -33.06     | 74.00        | 33.22          | 4.68       | 35.10         | 38.15      | PEAK    | 138     | 197       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | V / Ant 19 / 802.11g ch 6 |



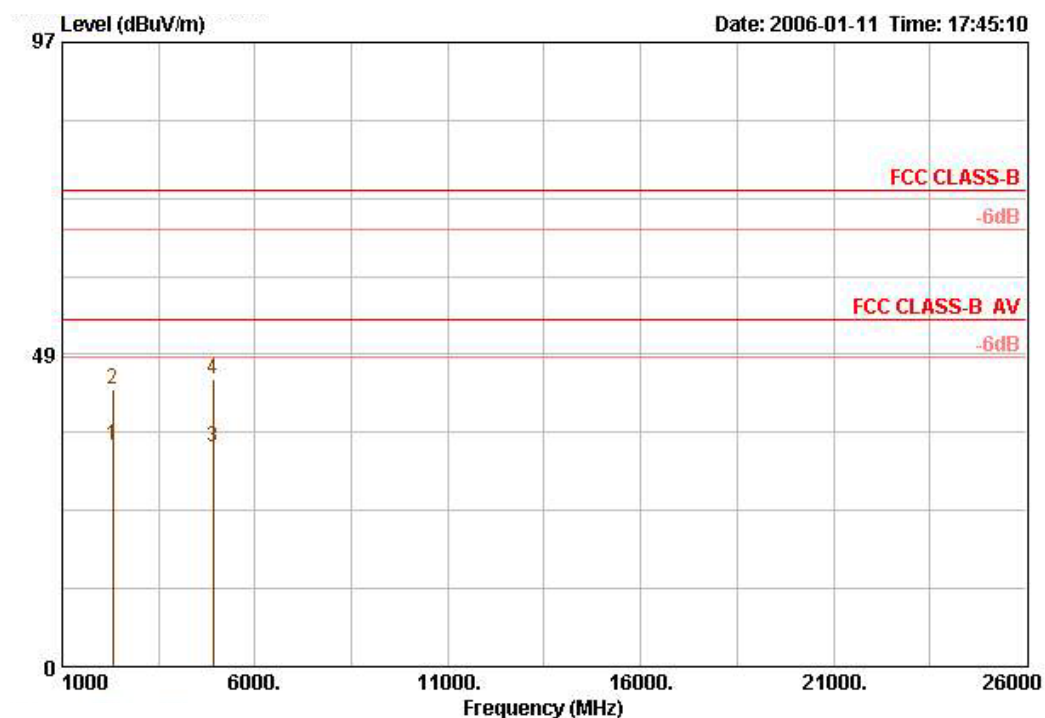
|   | Freq     | Level  | Over Limit | Limit  | Antenna Line Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------|---------------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m | dB/m                | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2356.960 | 35.81  | -18.19     | 54.00  | 28.04               | 2.56       | 34.97         | 40.18      | AVERAGE | 105     | 4         |
| 2 | 2356.960 | 44.77  | -29.23     | 74.00  | 28.04               | 2.56       | 34.97         | 49.14      | PEAK    | 105     | 4         |
| 3 | 4873.980 | 31.63  | -22.37     | 54.00  | 33.33               | 4.69       | 35.10         | 28.71      | AVERAGE | 106     | 342       |
| 4 | 4873.980 | 43.33  | -30.67     | 74.00  | 33.33               | 4.69       | 35.10         | 40.40      | PEAK    | 106     | 342       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11g ch 6 |



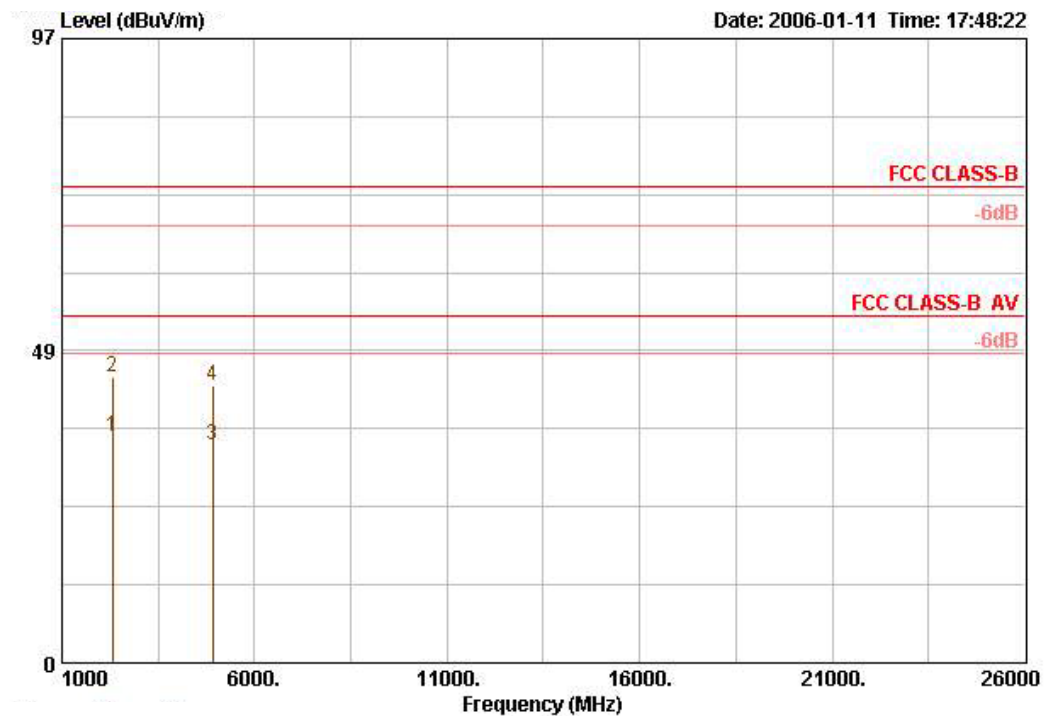
|   | Freq     | Level  | Over Limit | Antenna Line | Antenna Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------------|----------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m       | dB/m           | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2356.960 | 36.77  | -17.23     | 54.00        | 28.04          | 2.56       | 34.97         | 41.14      | AVERAGE | 123     | 374       |
| 2 | 2356.960 | 46.68  | -27.32     | 74.00        | 28.04          | 2.56       | 34.97         | 51.05      | PEAK    | 123     | 374       |
| 3 | 4873.920 | 31.85  | -22.15     | 54.00        | 33.33          | 4.69       | 35.10         | 28.93      | AVERAGE | 112     | 343       |
| 4 | 4873.920 | 42.22  | -31.78     | 74.00        | 33.33          | 4.69       | 35.10         | 39.29      | PEAK    | 112     | 343       |

|               |          |                |                            |
|---------------|----------|----------------|----------------------------|
| Temperature   | 20°C     | Humidity       | 64%                        |
| Test Engineer | Rush Kao | Configurations | V / Ant 19 / 802.11g ch 11 |



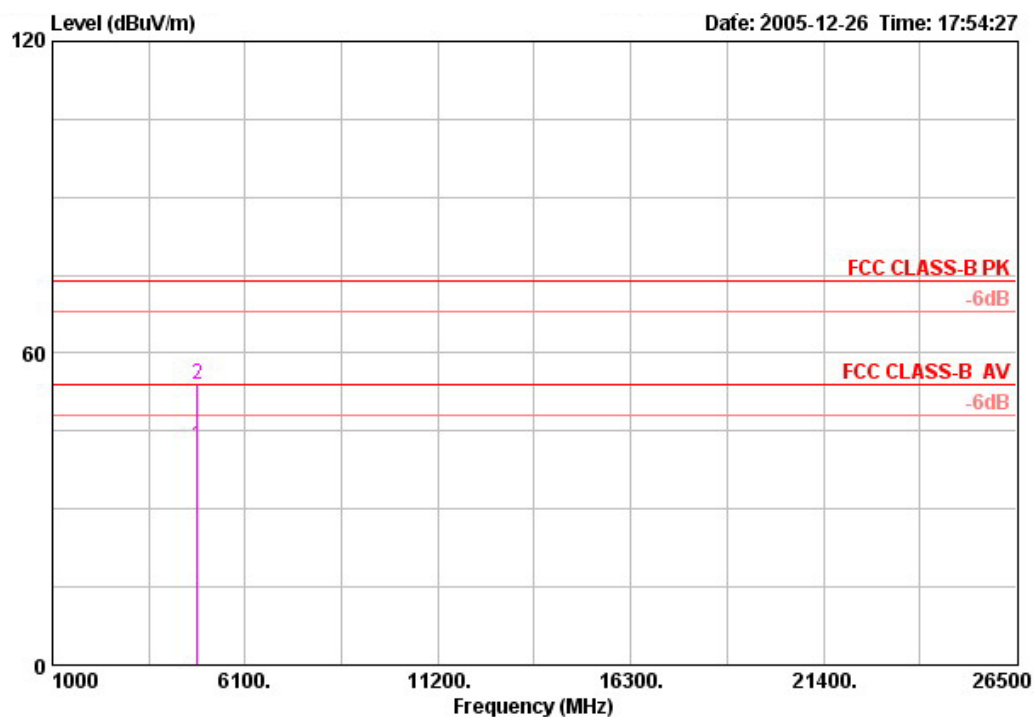
|   | Freq     | Level  | Over Limit | Antenna Line | Cable Loss | Preamp Factor | Read Level | Remark        | Ant Pos | Table Pos |
|---|----------|--------|------------|--------------|------------|---------------|------------|---------------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m       | dB/m       | dB            | dB         | dBuV          | cm      | deg       |
| 1 | 2320.060 | 34.35  | -19.65     | 54.00        | 27.95      | 2.53          | 34.97      | 38.83 AVERAGE | 132     | 358       |
| 2 | 2320.060 | 43.15  | -30.85     | 74.00        | 27.95      | 2.53          | 34.97      | 47.63 PEAK    | 132     | 358       |
| 3 | 4923.840 | 34.04  | -19.96     | 54.00        | 33.45      | 4.73          | 35.10      | 30.96 AVERAGE | 129     | 304       |
| 4 | 4923.840 | 44.65  | -29.35     | 74.00        | 33.45      | 4.73          | 35.10      | 41.58 PEAK    | 129     | 304       |

|               |          |                |                            |
|---------------|----------|----------------|----------------------------|
| Temperature   | 20°C     | Humidity       | 64%                        |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11g ch 11 |



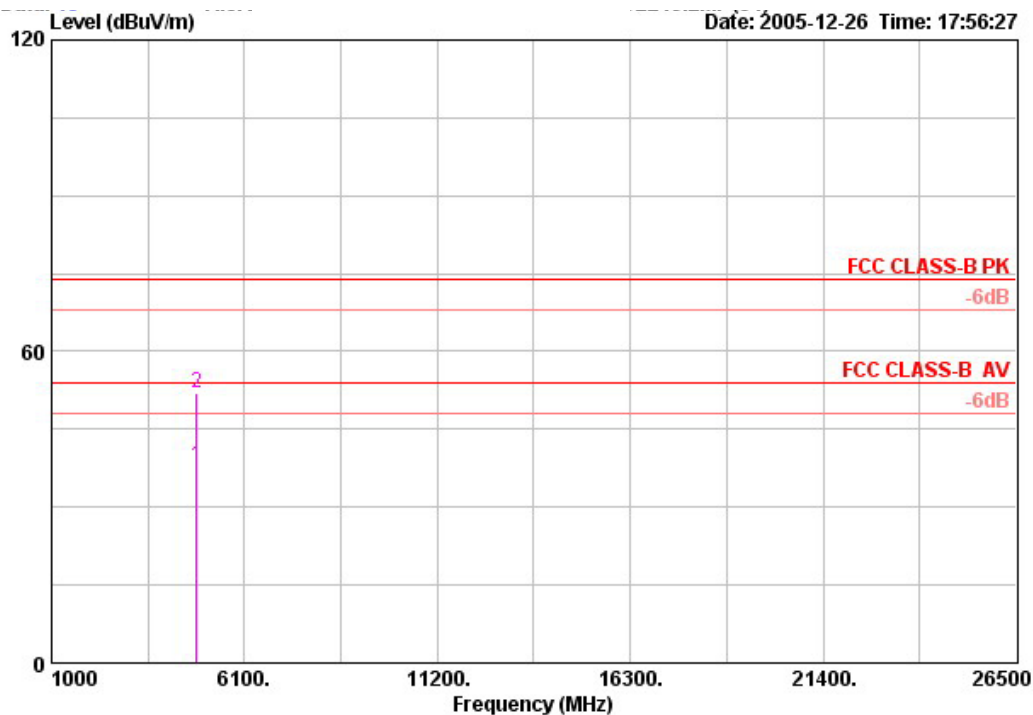
|   | Freq     | Level  | Over Limit | Antenna Line | Antenna Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------------|----------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m       | dB/m           | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2320.060 | 35.09  | -18.91     | 54.00        | 27.95          | 2.53       | 34.97         | 39.57      | AVERAGE | 100     | 5         |
| 2 | 2320.060 | 44.45  | -29.55     | 74.00        | 27.95          | 2.53       | 34.97         | 48.93      | PEAK    | 100     | 5         |
| 3 | 4923.840 | 33.70  | -20.30     | 54.00        | 33.45          | 4.73       | 35.10         | 30.63      | AVERAGE | 112     | 237       |
| 4 | 4923.840 | 43.02  | -30.98     | 74.00        | 33.45          | 4.73       | 35.10         | 39.94      | PEAK    | 112     | 237       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11b ch 1 |



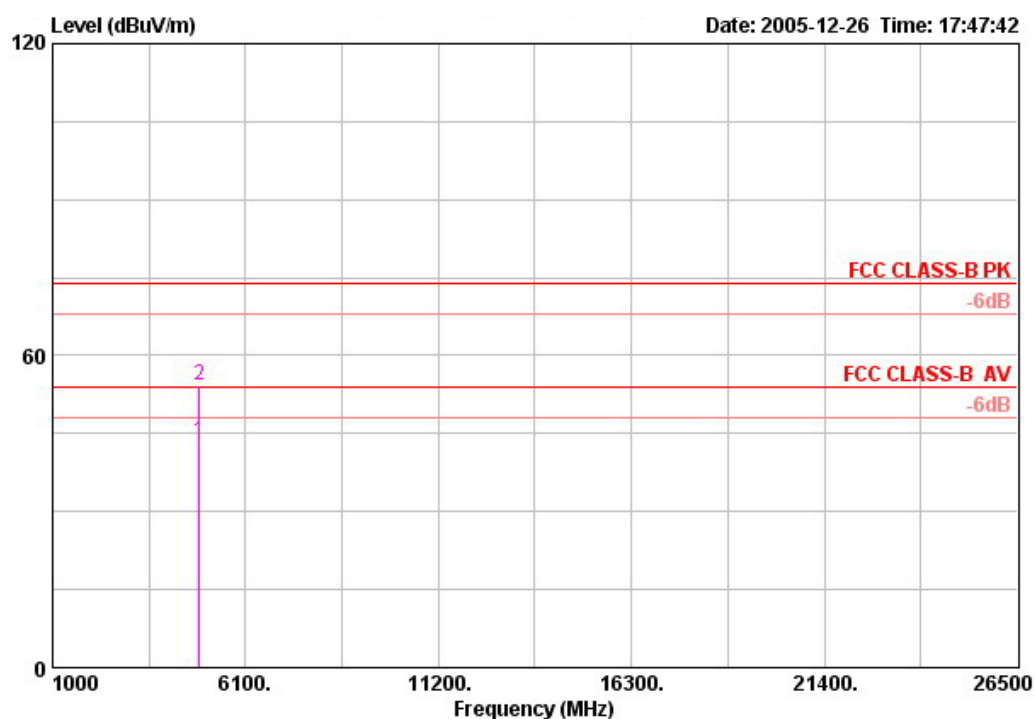
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4824.012 | 42.34  | -11.66     | 54.00      | 32.86             | 32.83          | 11.82      | 35.16         | AVERAGE | ---     | ---       |
| 2 | 4824.032 | 53.94  | -20.06     | 74.00      | 44.45             | 32.83          | 11.82      | 35.16         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11b ch 1 |



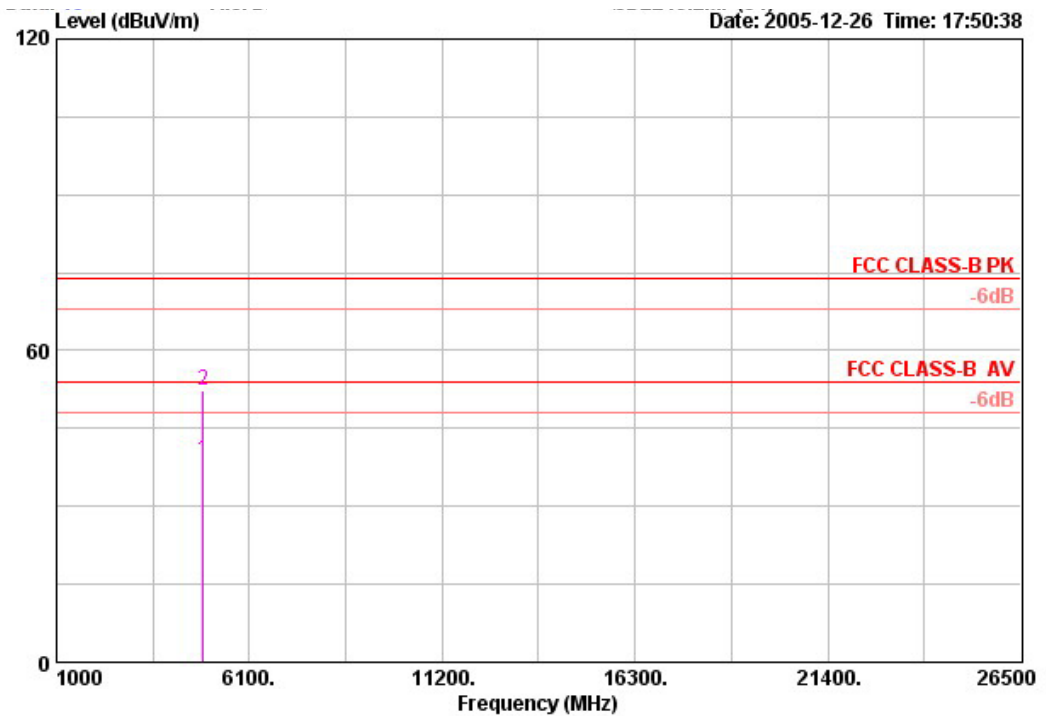
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4823.974 | 38.08  | -15.92     | 54.00      | 28.60             | 32.83          | 11.82      | 35.16         | AVERAGE | ---     | ---       |
| 2 | 4824.444 | 51.86  | -22.14     | 74.00      | 42.38             | 32.83          | 11.82      | 35.16         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11b ch 6 |



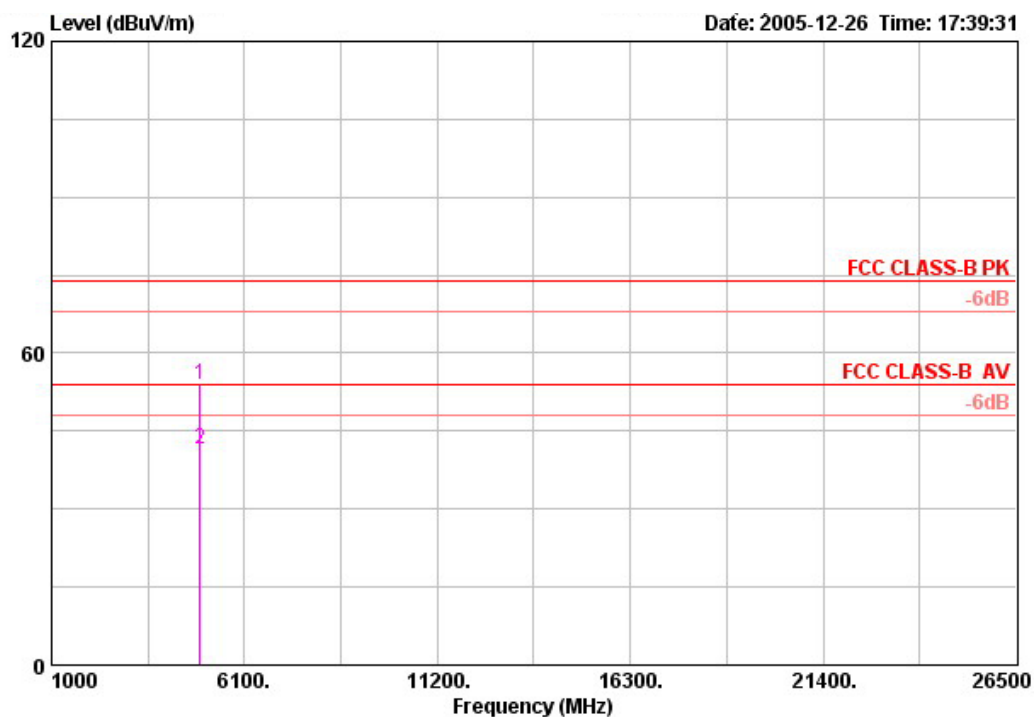
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4873.988 | 43.49  | -10.51     | 54.00      | 33.89             | 32.88          | 11.87      | 35.15         | AVERAGE | ---     | ---       |
| 2 | 4874.104 | 54.12  | -19.88     | 74.00      | 44.52             | 32.88          | 11.87      | 35.15         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11b ch 6 |



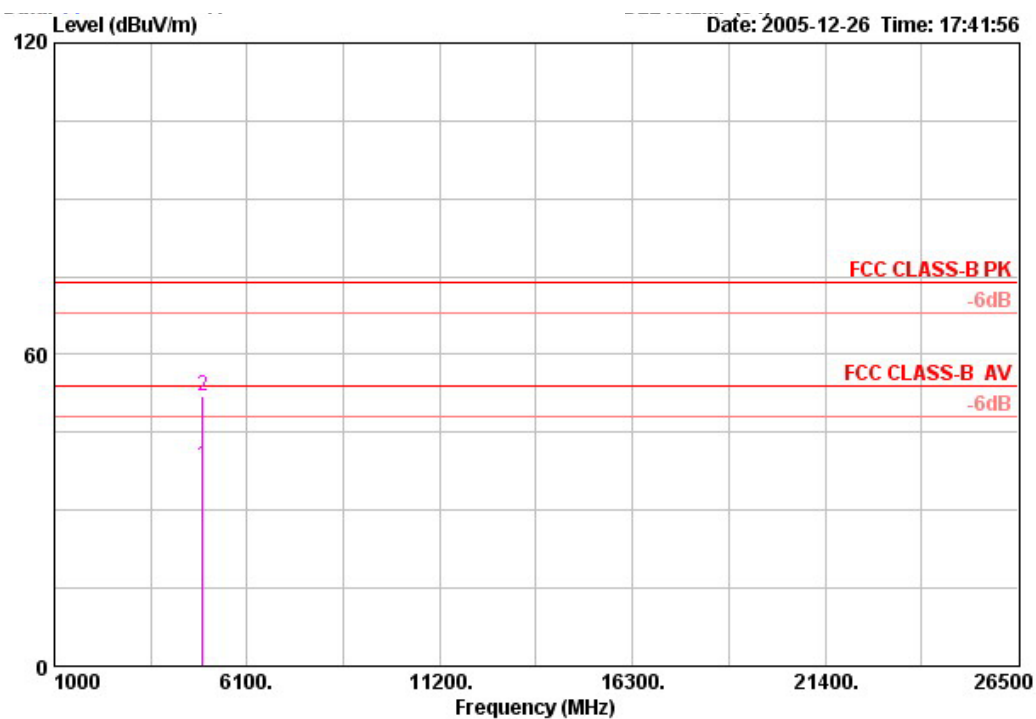
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.048 | 38.95  | -15.05     | 54.00      | 29.36             | 32.88          | 11.87      | 35.15         | AVERAGE | ---     | ---       |
| 2 | 4874.384 | 52.31  | -21.69     | 74.00      | 42.72             | 32.88          | 11.87      | 35.15         | PEAK    | ---     | ---       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11b ch 11 |



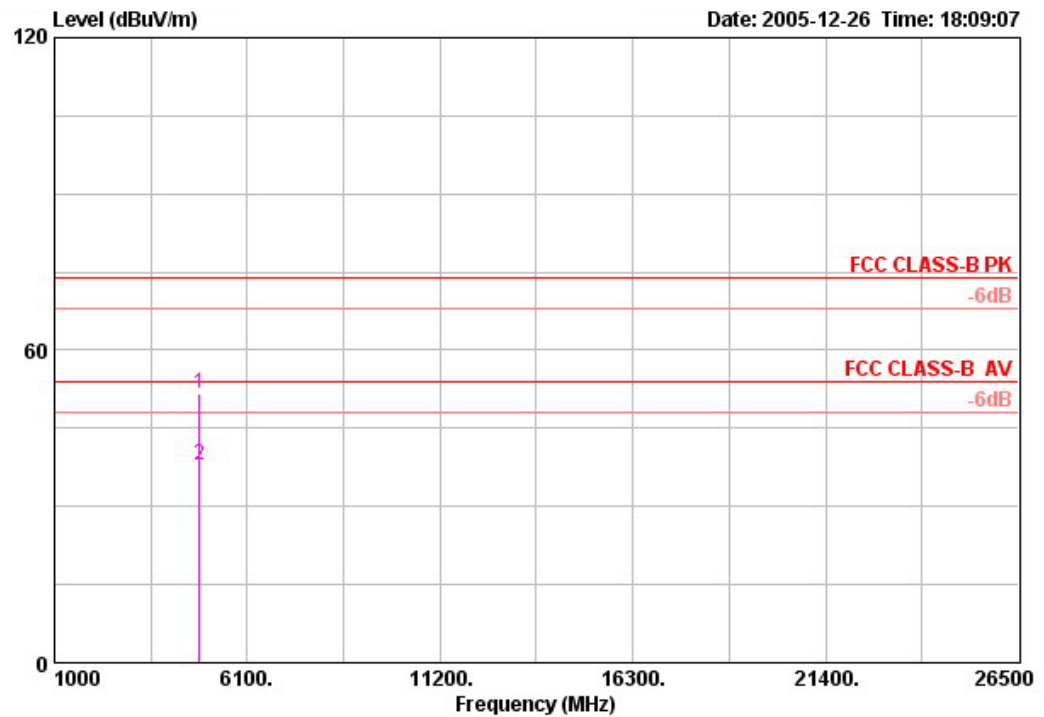
|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBUV/m | dB         | dBUV/m     | dBuV       | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4923.638 | 53.92  | -20.08     | 74.00      | 44.24      | 32.93          | 11.89      | 35.14         | PEAK    | ---     | ---       |
| 2 | 4924.012 | 41.45  | -12.55     | 54.00      | 31.77      | 32.93          | 11.89      | 35.14         | AVERAGE | ---     | ---       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11b ch 11 |



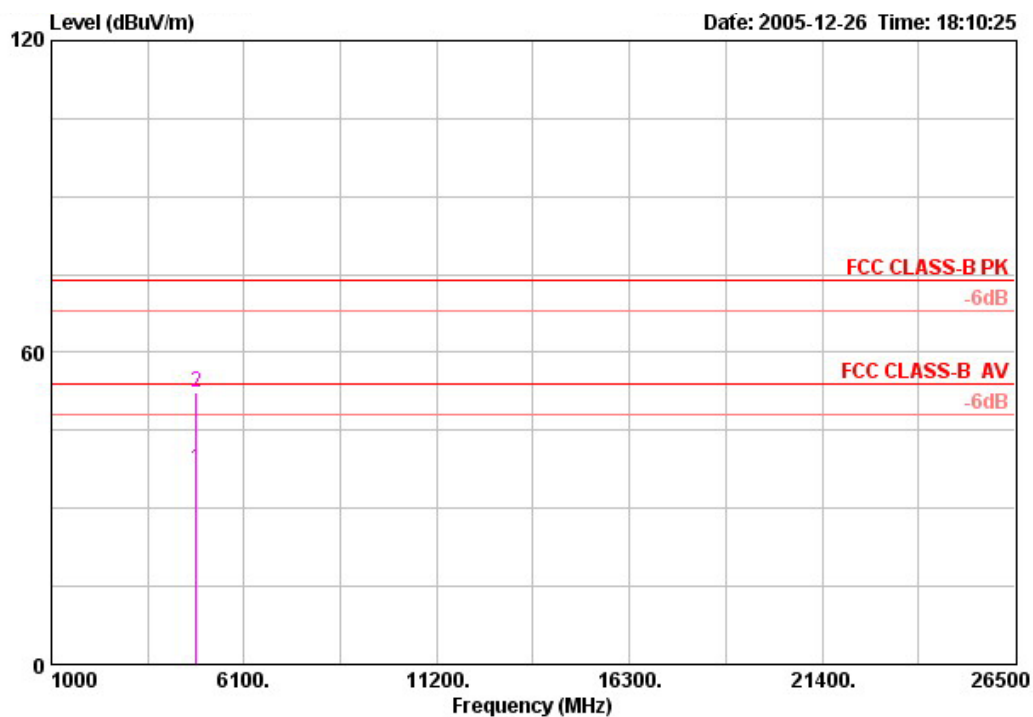
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4924.088 | 38.50  | -15.50     | 54.00      | 28.82             | 32.93          | 11.89      | 35.14         | AVERAGE | ---     | ---       |
| 2 | 4924.224 | 52.00  | -22.00     | 74.00      | 42.32             | 32.93          | 11.89      | 35.14         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11g ch 1 |



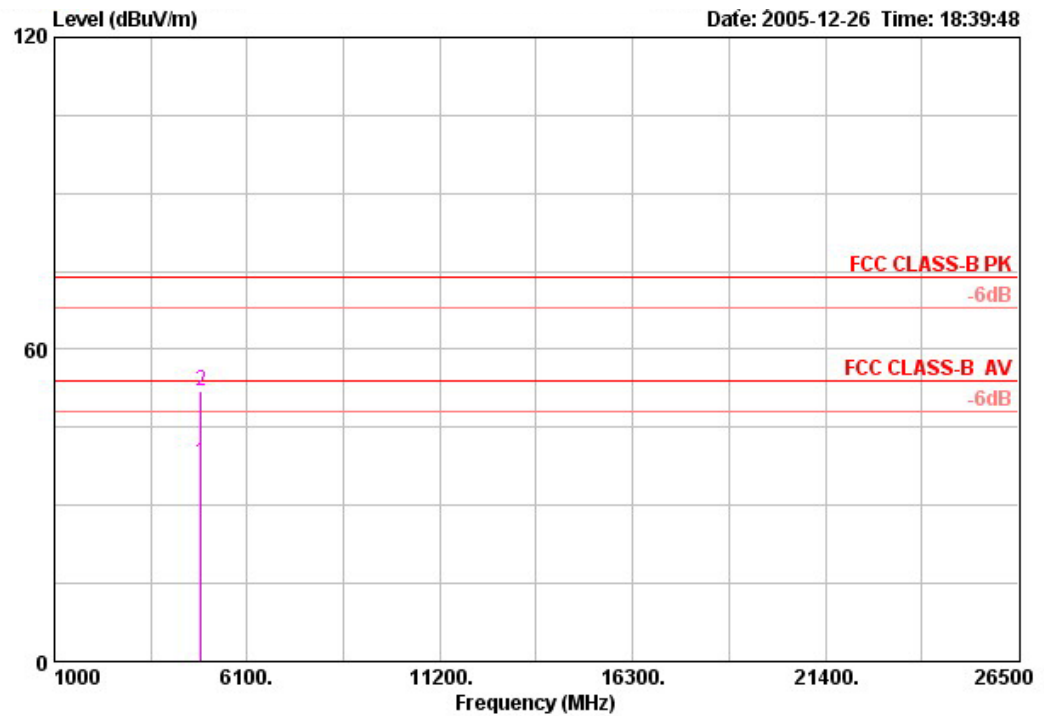
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4824.120 | 51.73  | -22.27     | 74.00      | 42.25             | 32.83          | 11.82      | 35.16         | PEAK    | ---     | ---       |
| 2 | 4824.174 | 37.85  | -16.15     | 54.00      | 28.36             | 32.83          | 11.82      | 35.16         | AVERAGE | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11g ch 1 |



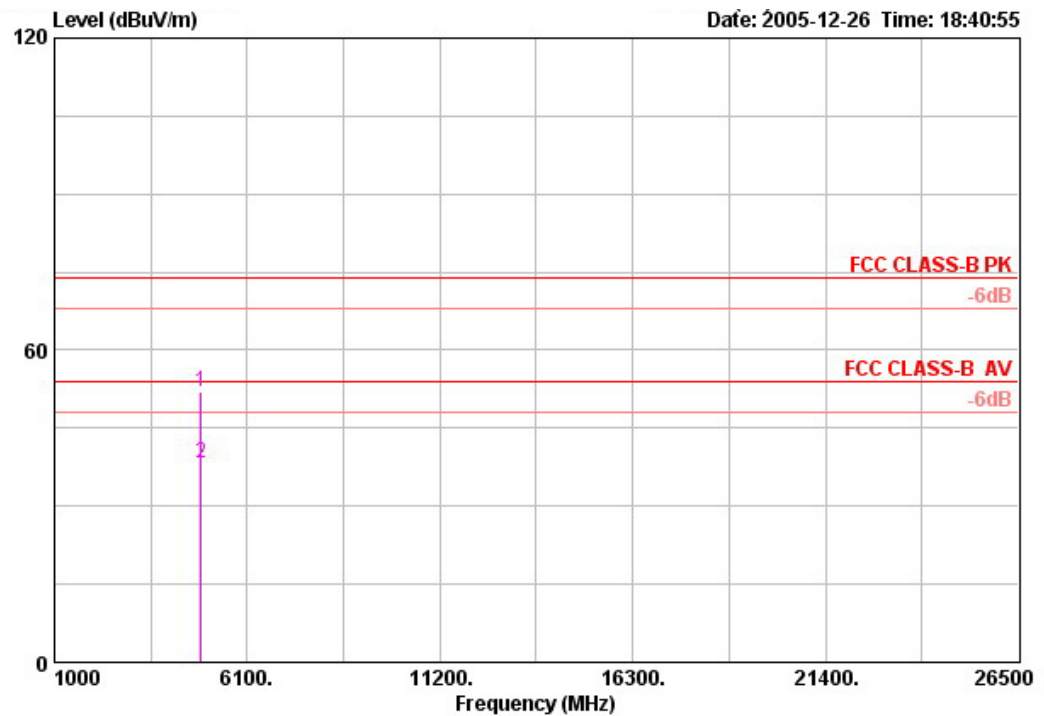
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4823.979 | 37.74  | -16.26     | 54.00      | 28.26             | 32.83          | 11.82      | 35.16         | AVERAGE | ---     | ---       |
| 2 | 4823.989 | 52.19  | -21.81     | 74.00      | 42.71             | 32.83          | 11.82      | 35.16         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11g ch 6 |



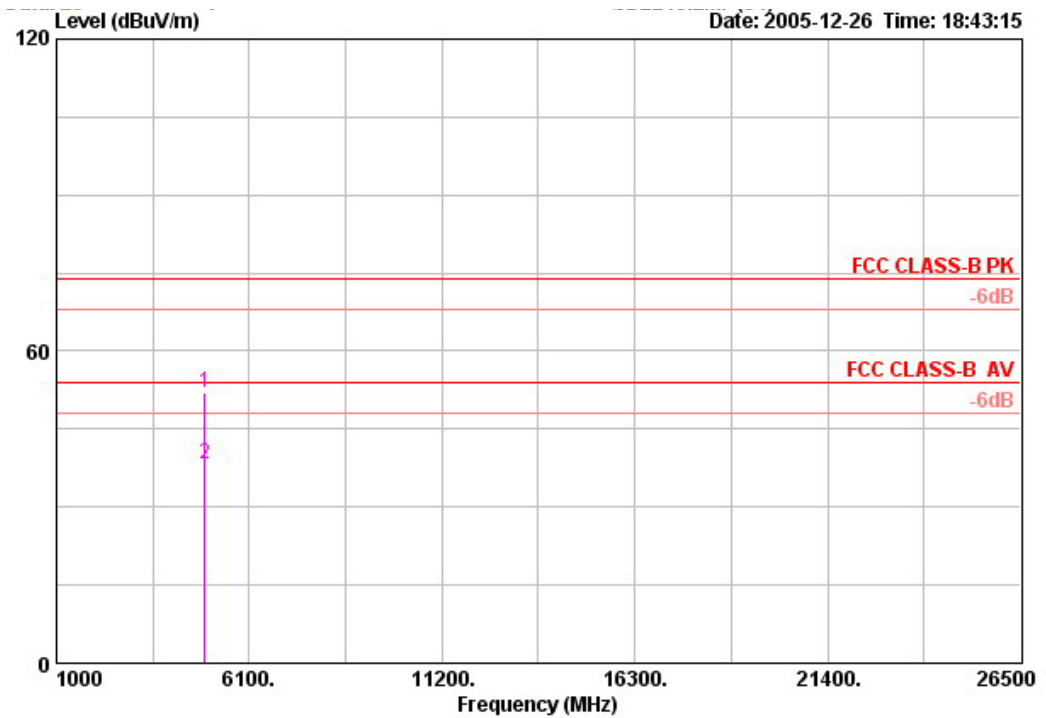
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4874.078 | 38.30  | -15.70     | 54.00      | 28.71             | 32.88          | 11.87      | 35.15         | AVERAGE | ---     | ---       |
| 2 | 4874.082 | 51.87  | -22.13     | 74.00      | 42.27             | 32.88          | 11.87      | 35.15         | PEAK    | ---     | ---       |

|               |          |                |                          |
|---------------|----------|----------------|--------------------------|
| Temperature   | 20°C     | Humidity       | 64%                      |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11g ch 6 |



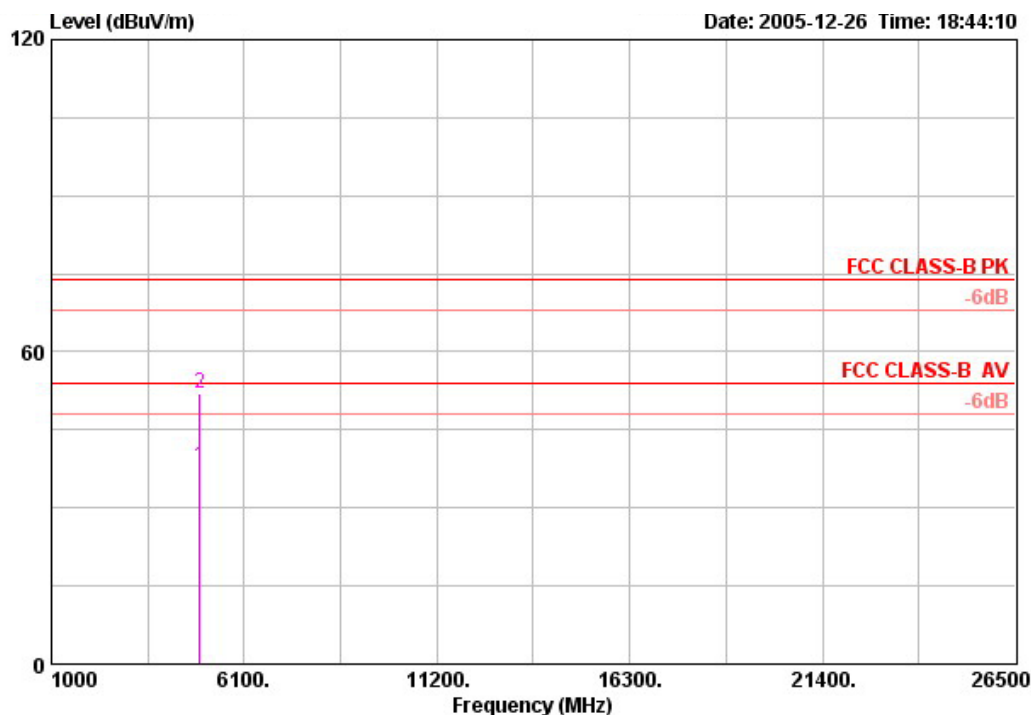
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4873.976 | 52.07  | -21.93     | 74.00      | 42.48             | 32.88          | 11.87      | 35.15         | PEAK    | ---     | ---       |
| 2 | 4874.025 | 38.22  | -15.78     | 54.00      | 28.62             | 32.88          | 11.87      | 35.15         | AVERAGE | ---     | ---       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11g ch 11 |



|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4923.993 | 51.96  | -22.04     | 74.00      | 42.28             | 32.93          | 11.89      | 35.14         | PEAK    | ---     | ---       |
| 2 | 4924.025 | 38.10  | -15.90     | 54.00      | 28.42             | 32.93          | 11.89      | 35.14         | AVERAGE | ---     | ---       |

|               |          |                |                           |
|---------------|----------|----------------|---------------------------|
| Temperature   | 20°C     | Humidity       | 64%                       |
| Test Engineer | Rush Kao | Configurations | H / Ant 2 / 802.11g ch 11 |



|   | Freq     | Level  | Over Limit | Limit Line | Read Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV       | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 4923.975 | 38.08  | -15.92     | 54.00      | 28.40      | 32.93          | 11.89      | 35.14         | AVERAGE | ---     | ---       |
| 2 | 4923.982 | 51.97  | -22.03     | 74.00      | 42.29      | 32.93          | 11.89      | 35.14         | 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<br>(MHz) | Field Strength<br>(micorvolts/meter) | Measurement Distance<br>(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

- The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around bandedges.
- 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.

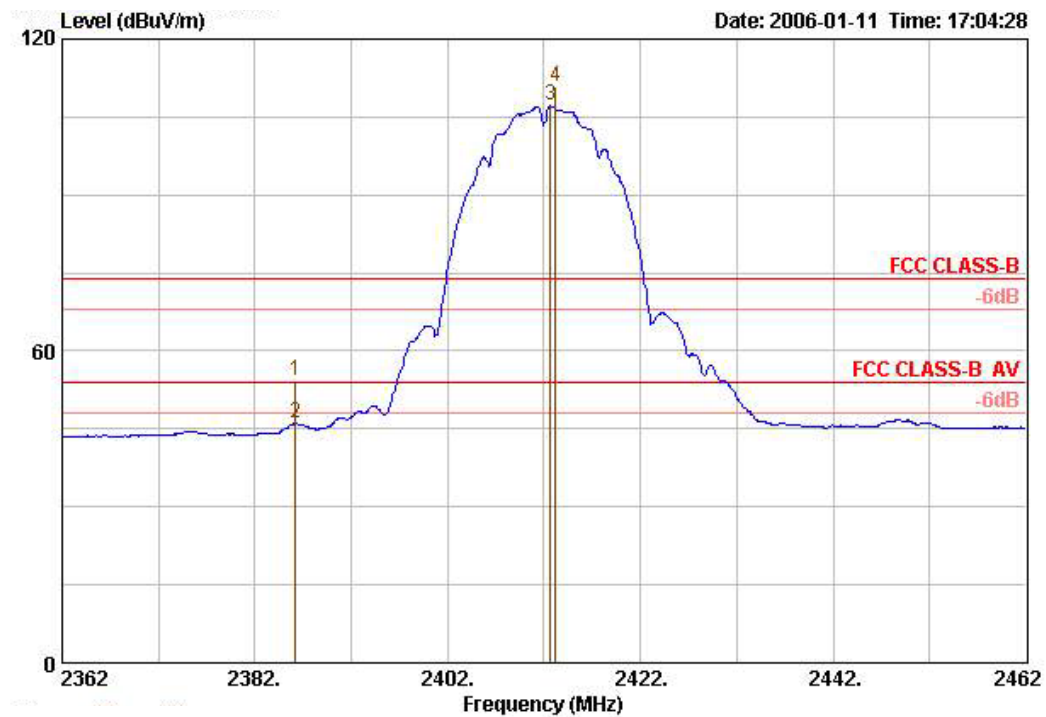
### 4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

#### 4.6.7. Test Result of Band Edge Emissions

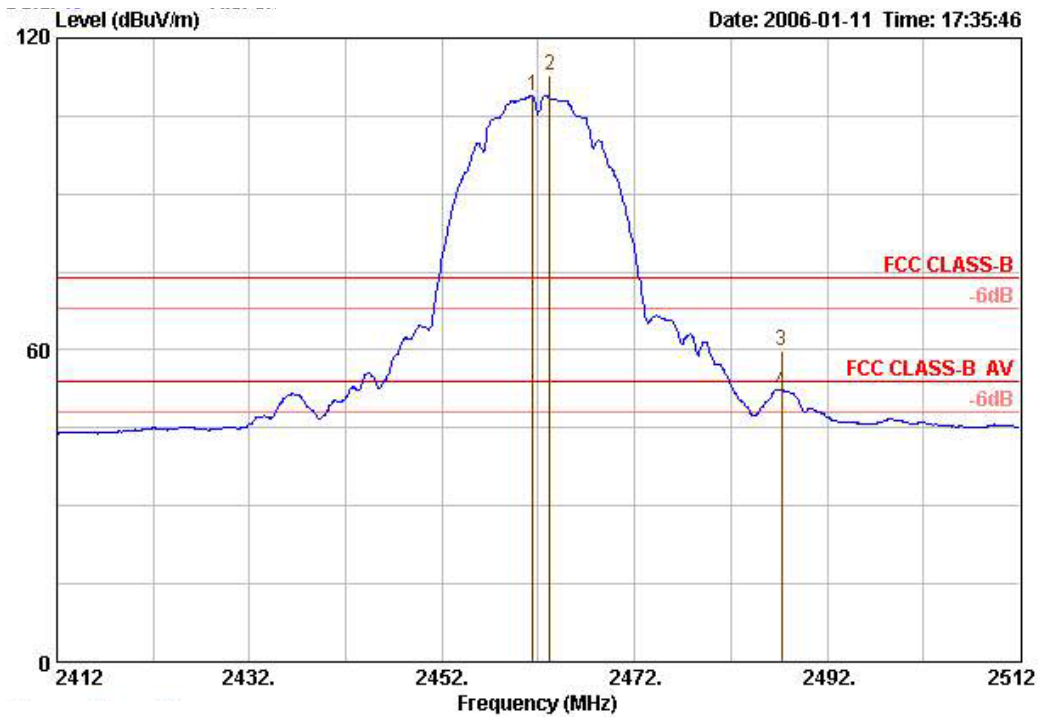
##### For Emission in Restricted Band

|               |          |                |                                |
|---------------|----------|----------------|--------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                            |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11b channel 1 |



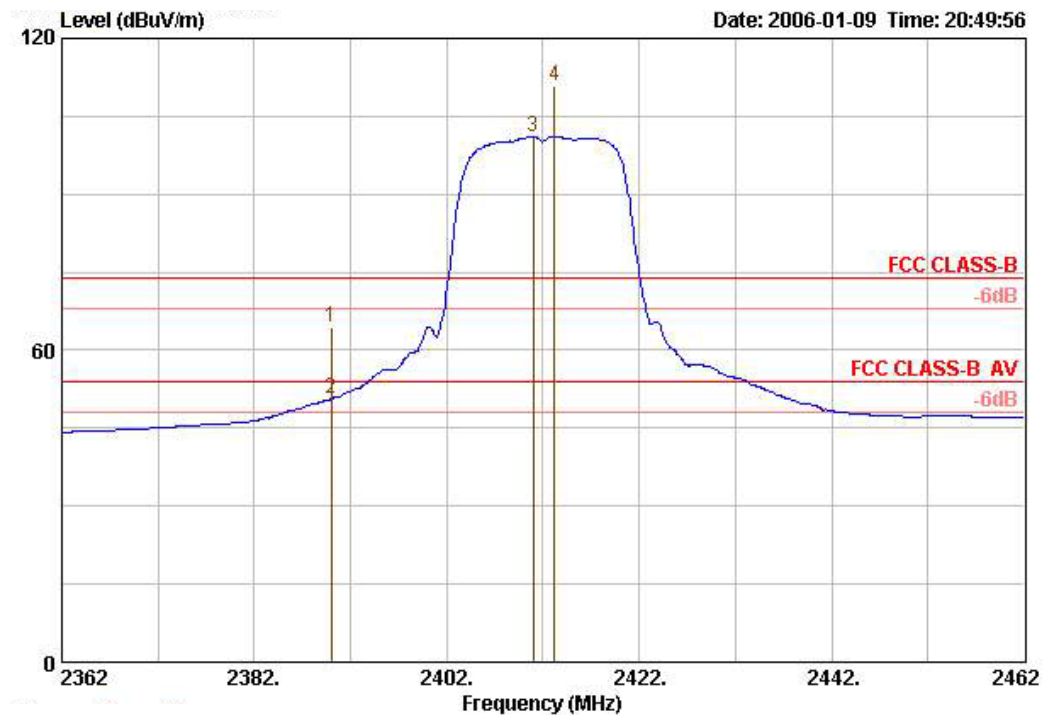
|   | Freq     | Level  | Over Limit | Antenna Line Factor | Cable Loss | Preamp Factor | Read Level | Remark        | Ant Pos | Table Pos |
|---|----------|--------|------------|---------------------|------------|---------------|------------|---------------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m              | dB/m       | dB            | dB         | dBuV          | cm      | deg       |
| 1 | 2386.200 | 54.32  | -19.68     | 74.00               | 28.13      | 2.58          | 0.00       | 23.62 PEAK    | 115     | 168       |
| 2 | 2386.200 | 46.09  | -7.91      | 54.00               | 28.13      | 2.58          | 0.00       | 15.38 AVERAGE | 115     | 168       |

|               |          |                |                                 |
|---------------|----------|----------------|---------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                             |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11b channel 11 |



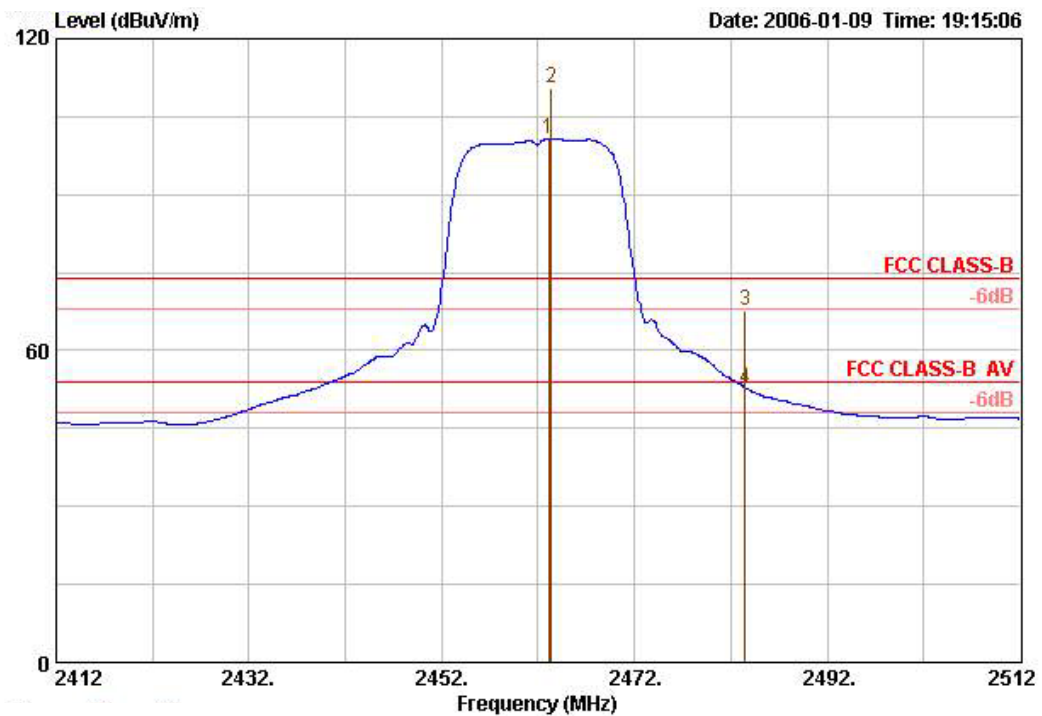
|     | Freq     | Level  | Over Limit | Antenna Line | Cable Factor | Preamp Factor | Read Level | Remark        | Ant Pos | Table Pos |
|-----|----------|--------|------------|--------------|--------------|---------------|------------|---------------|---------|-----------|
|     | MHz      | dBuV/m | dB         | dBuV/m       | dB/m         | dB            | dB         | dBuV          | cm      | deg       |
| 3   | 2487.300 | 59.81  | -14.19     | 74.00        | 28.36        | 2.62          | 0.00       | 28.83 PEAK    | 113     | 163       |
| 4 ! | 2487.300 | 52.13  | -1.87      | 54.00        | 28.36        | 2.62          | 0.00       | 21.16 AVERAGE | 113     | 163       |

|               |          |                |                                |
|---------------|----------|----------------|--------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                            |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11g channel 1 |



|   | Freq     | Level  | Over Limit | Limit  | Antenna Line Factor | Cable Loss | Preamp Factor | Read Level | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|--------|---------------------|------------|---------------|------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m | dB/m                | dB         | dB            | dBuV       |         | cm      | deg       |
| 1 | 2390.000 | 64.26  | -9.74      | 74.00  | 28.13               | 2.58       | 0.00          | 33.55      | PEAK    | 114     | 3         |
| 2 | 2390.000 | 50.63  | -3.37      | 54.00  | 28.13               | 2.58       | 0.00          | 19.92      | AVERAGE | 114     | 3         |

|               |          |                |                                 |
|---------------|----------|----------------|---------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                             |
| Test Engineer | Rush Kao | Configurations | H / Ant 19 / 802.11g channel 11 |



|   | Freq     | Level  | Over Limit | Antenna Line Factor | Cable Loss Factor | Preamp Factor | Read Level | Remark        | Ant Pos | Table Pos |
|---|----------|--------|------------|---------------------|-------------------|---------------|------------|---------------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m              | dB/m              | dB            | dB         | dBuV          | cm      | deg       |
| 3 | 2483.500 | 67.59  | -6.41      | 74.00               | 28.36             | 2.62          | 0.00       | 36.61 PEAK    | 112     | 5         |
| 4 | 2483.500 | 52.74  | -1.26      | 54.00               | 28.36             | 2.62          | 0.00       | 21.76 AVERAGE | 112     | 5         |

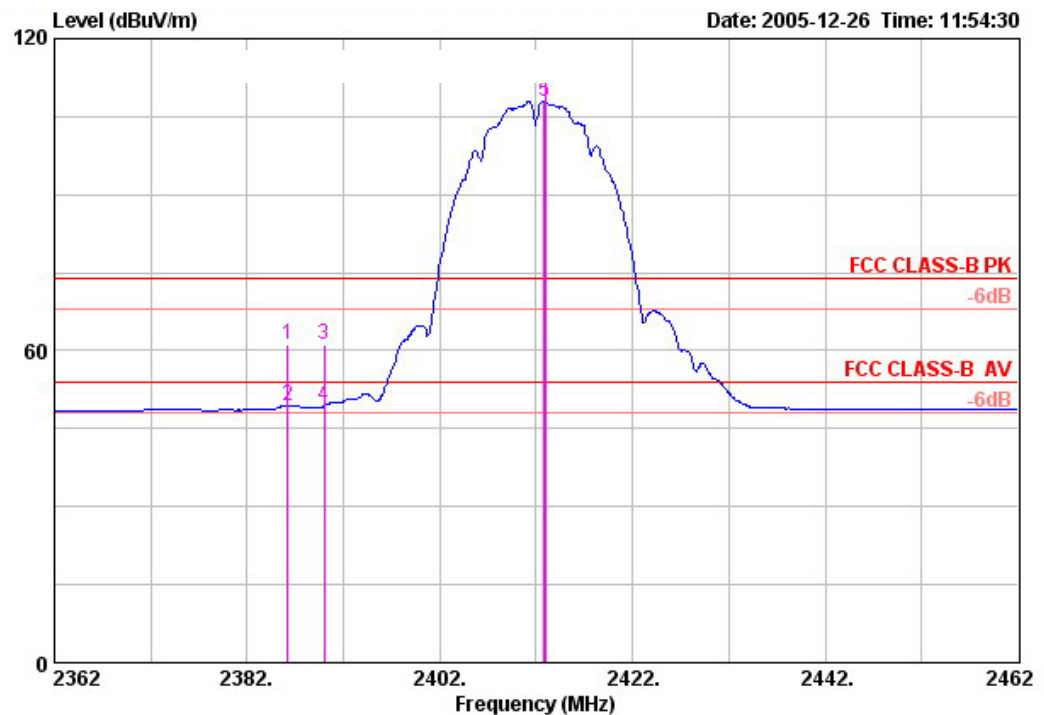
Note:

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

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

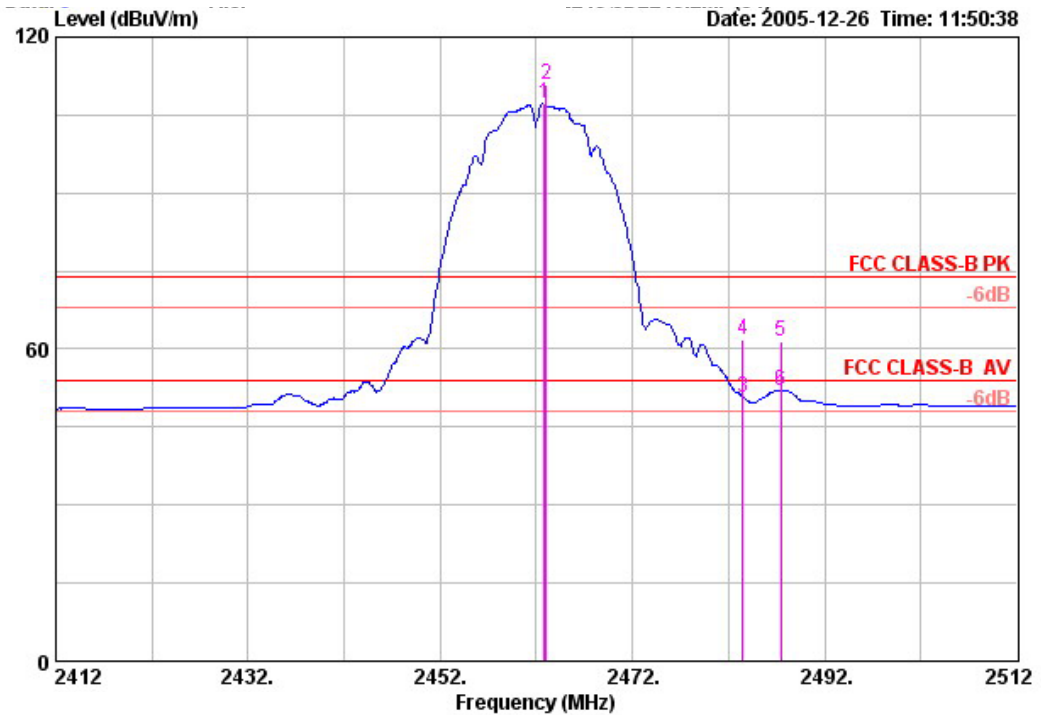
Receiving maximum band edge emissions are Horizontal Polarization.

|               |          |                |                              |
|---------------|----------|----------------|------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                          |
| Test Engineer | Rush Kao | Configurations | V/ Ant 2 / 802.11b channel 1 |



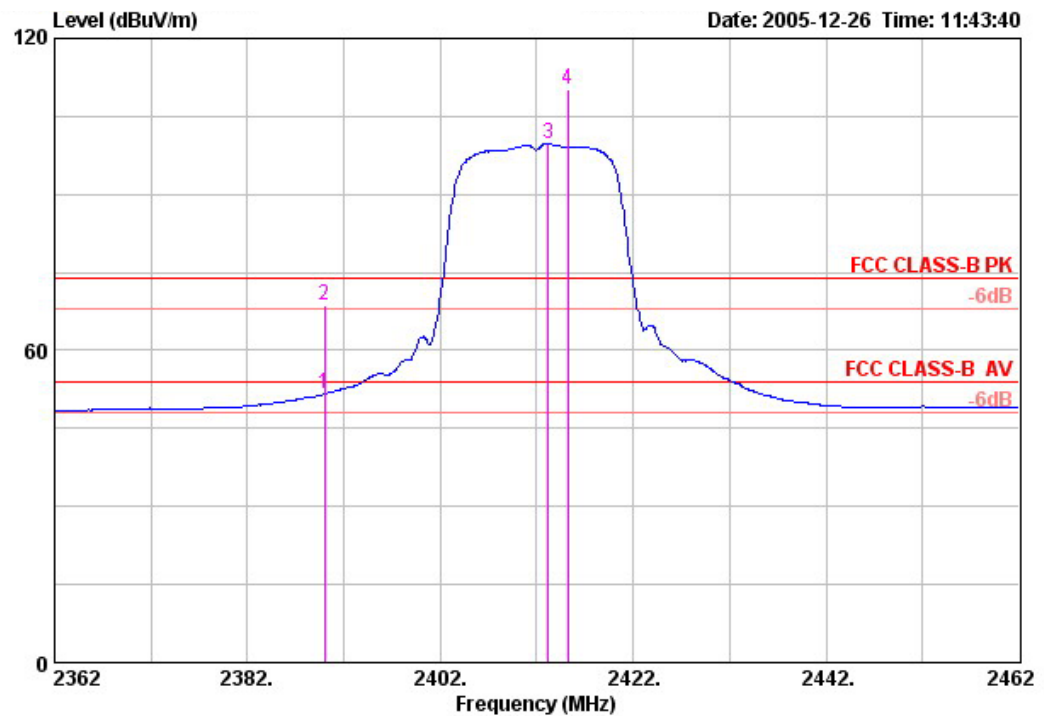
|     | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|-----|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|     | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1   | 2386.200 | 61.03  | -12.97     | 74.00      | 25.43             | 28.88          | 6.72       | 0.00          | PEAK    | ---     | ---       |
| 2 * | 2386.200 | 49.47  | -4.53      | 54.00      | 13.87             | 28.88          | 6.72       | 0.00          | AVERAGE | ---     | ---       |
| 3   | 2390.000 | 61.09  | -12.91     | 74.00      | 25.49             | 28.88          | 6.72       | 0.00          | PEAK    | ---     | ---       |
| 4 * | 2390.000 | 49.25  | -4.75      | 54.00      | 13.66             | 28.88          | 6.72       | 0.00          | AVERAGE | ---     | ---       |

|               |          |                |                                |
|---------------|----------|----------------|--------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                            |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11b channel 11 |



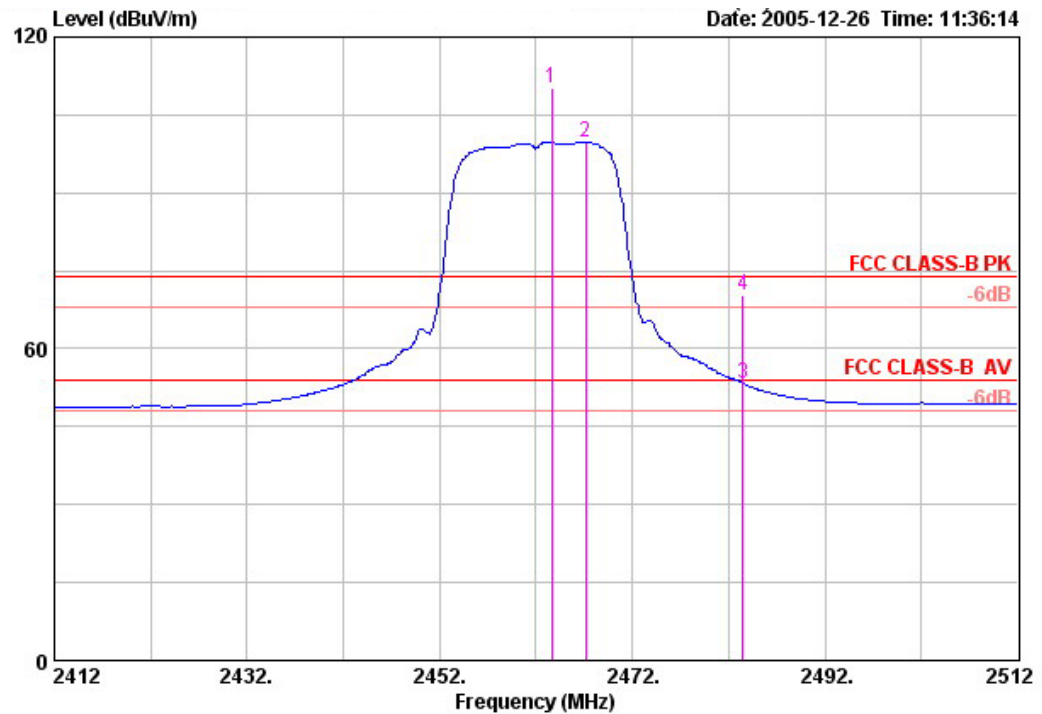
|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Cable Preamp Loss | Factor | Remark       | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|-------------------|--------|--------------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m              | dB     | dB           | cm      | deg       |
| 3 | 2483.500 | 50.70  | -3.30      | 54.00      | 14.78             | 28.98             | 6.94   | 0.00 AVERAGE | ---     | ---       |
| 4 | 2483.500 | 61.91  | -12.09     | 74.00      | 25.99             | 28.98             | 6.94   | 0.00 PEAK    | ---     | ---       |
| 5 | 2487.400 | 61.60  | -12.40     | 74.00      | 25.68             | 28.98             | 6.94   | 0.00 PEAK    | ---     | ---       |
| 6 | 2487.400 | 51.92  | -2.08      | 54.00      | 16.00             | 28.98             | 6.94   | 0.00 AVERAGE | ---     | ---       |

|               |          |                |                               |
|---------------|----------|----------------|-------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                           |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11g channel 1 |



|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 1 | 2390.000 | 51.56  | -2.44      | 54.00      | 15.96             | 28.88          | 6.72       | 0.00          | AVERAGE | ---     | ---       |
| 2 | 2390.000 | 68.58  | -5.42      | 74.00      | 32.98             | 28.88          | 6.72       | 0.00          | PEAK    | ---     | ---       |

|               |          |                |                                |
|---------------|----------|----------------|--------------------------------|
| Temperature   | 20°C     | Humidity       | 64%                            |
| Test Engineer | Rush Kao | Configurations | V / Ant 2 / 802.11g channel 11 |



|   | Freq     | Level  | Over Limit | Limit Line | ReadAntenna Level | Antenna Factor | Cable Loss | Preamp Factor | Remark  | Ant Pos | Table Pos |
|---|----------|--------|------------|------------|-------------------|----------------|------------|---------------|---------|---------|-----------|
|   | MHz      | dBuV/m | dB         | dBuV/m     | dBuV              | dB/m           | dB         | dB            |         | cm      | deg       |
| 3 | 2483.500 | 53.18  | -0.82      | 54.00      | 17.26             | 28.98          | 6.94       | 0.00          | AVERAGE | ---     | ---       |
| 4 | 2483.500 | 70.14  | -3.86      | 74.00      | 34.23             | 28.98          | 6.94       | 0.00          | PEAK    | ---     | ---       |

Note:

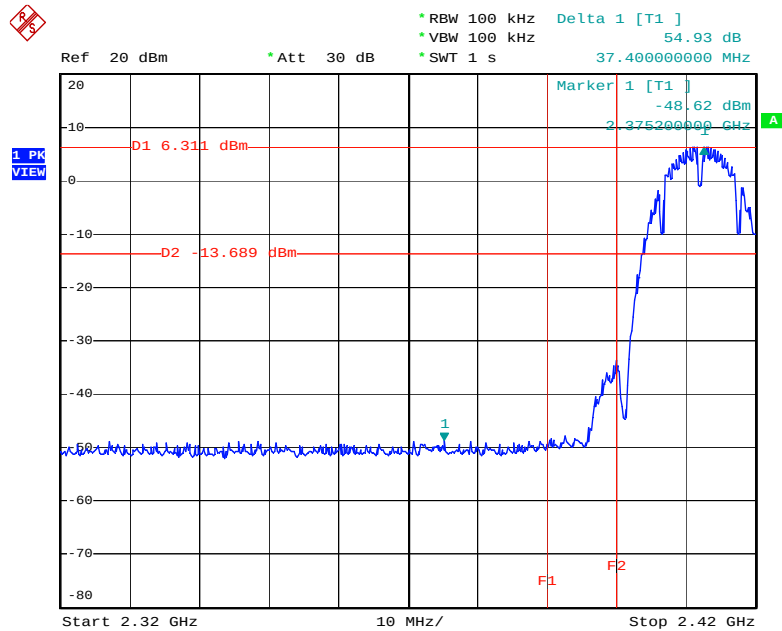
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

Receiving maximum band edge emissions are Vertical Polarization.

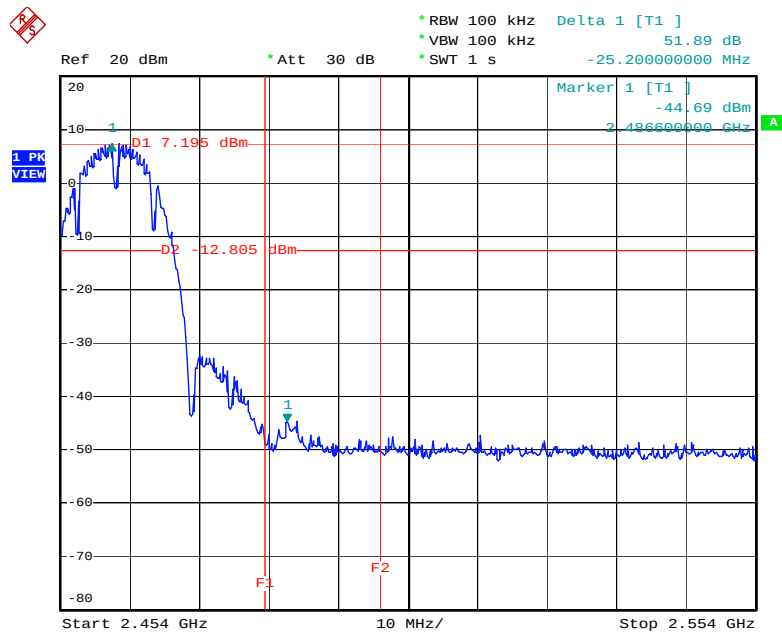
## For Emission not in Restricted Band

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



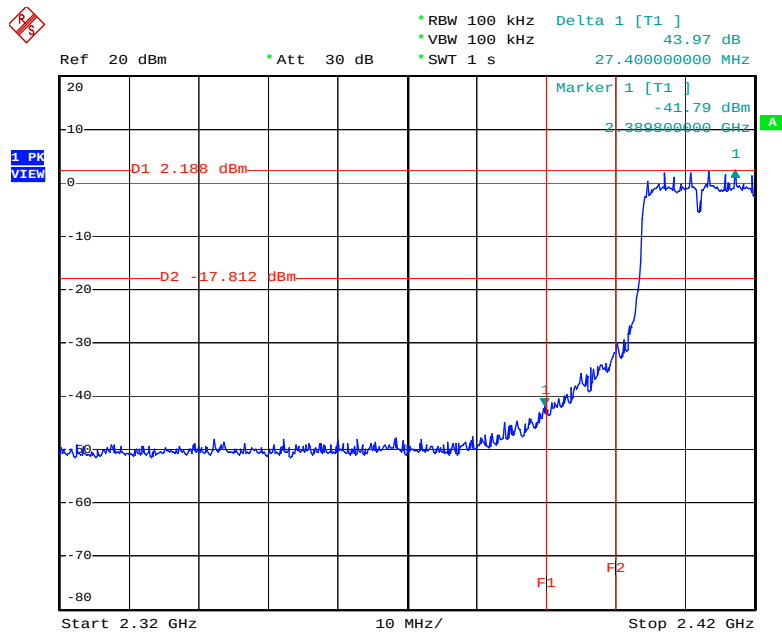
Date: 4.JAN.2006 22:53:35

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



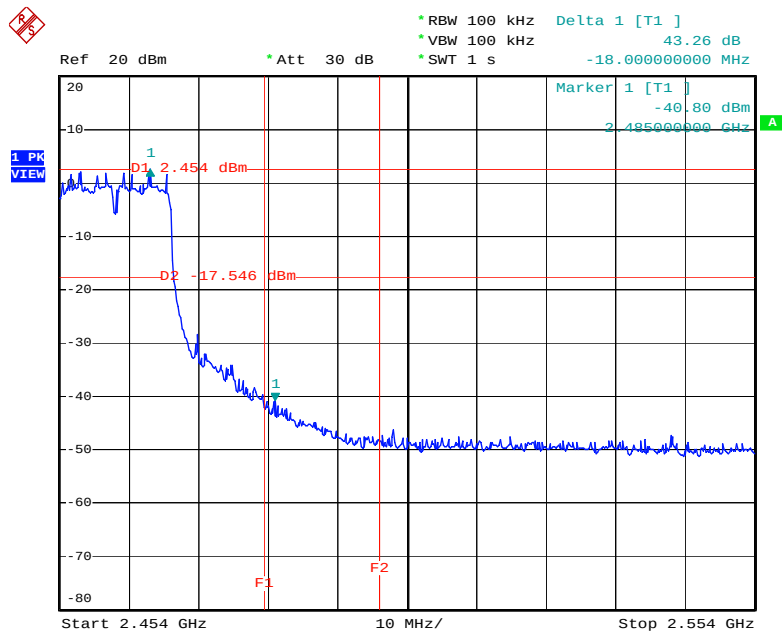
Date: 4.JAN.2006 22:55:20

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



Date: 4.JAN.2006 22:47:54

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



Date: 4.JAN.2006 22:51:27

## **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 3.2 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    | 99079       | 9kHz – 30MHz       | Dec. 15, 2005    | Conduction (CO04-HY)  |
| LISN (Support Unit)        | EMCO           | 3810/2NM     | 9708-1839   | 9kHz – 30MHz       | Mar. 14, 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   | 30MHz ~ 1GHz<br>3m | Jun. 20, 2005    | Radiation (03CH03-HY) |
| Spectrum analyzer          | R&S            | FSP40        | 100004      | 9KHZ ~ 40GHz       | Aug. 30, 2005    | Radiation (03CH03-HY) |
| Amplifier                  | SCHAFFNER      | CPA9231A     | 3565        | 9 kHz - 2 GHz      | Mar. 08, 2005    | Radiation (03CH03-HY) |
| Amplifier                  | Agilent        | 8449B        | 3008A02120  | 1 GHz - 26.5 GHz   | May 31, 2005     | Radiation (03CH03-HY) |
| Biconical Antenna          | SCHWARZBECK    | VHBB 9124    | 301         | 30MHz ~ 200MHz     | Jul. 27, 2005    | Radiation (03CH03-HY) |
| Log Antenna                | SCHWARZBECK    | VUSLP 9111   | 221         | 200MHz ~ 1GHz      | Jul. 27, 2005    | Radiation (03CH03-HY) |
| Horn Antenna               | EMCO           | 3115         | 6741        | 1GHz ~ 18GHz       | Apr. 22, 2005    | Radiation (03CH03-HY) |
| RF Cable-R03m              | Jye Bao        | RG142        | CB021       | 30MHz ~ 1GHz       | Feb. 22, 2005    | Radiation (03CH03-HY) |
| RF Cable-HIGH              | SUHNER         | SUCOFLEX 106 | 03CH03-HY   | 1GHz ~ 40GHz       | Nov. 30, 2005    | 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       | Nov. 26, 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        | Dec. 28, 2005    | 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       | Dec. 30, 2005    | Conducted (TH01-HY)   |
| RF CABLE-2m                | Jye Bao        | RG142        | CB035-2m    | 20MHz ~ 1GHz       | Dec. 30, 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. 30, 2005    | Conducted (TH01-HY)   |
| Data Generator             | Tektronix      | DG2030       | 063-2920-50 | 0.1Hz~400MHz       | Jun. 02, 2005    | Conducted (TH01-HY)   |

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

| Instrument     | Manufacturer | Model No. | Serial No.  | Characteristics | Calibration Date | Remark                |
|----------------|--------------|-----------|-------------|-----------------|------------------|-----------------------|
| Loop Antenna   | R&S          | HFH2-Z2   | 860004/001  | 9kHz ~ 30MHz    | May 04, 2004     | Radiation (03CH03-HY) |
| Horn Antenna   | SCHWARZBECK  | BBHA9170  | BBHA9170154 | 15GHz ~ 40GHz   | Jun. 09, 2004    | Radiation (03CH03-HY) |
| Data Generator | Tektronix    | DG2030    | 063-2920-50 | 0.1Hz~400MHz    | Jun. 02, 2005    | Conducted (TH01-HY)   |

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

## 7. NVLAP CERTIFICATE OF ACCREDITATION

United States Department of Commerce  
National Institute of Standards and Technology



### Certificate of Accreditation to ISO/IEC 17025:1999

NVLAP LAB CODE: 200079-0

**Sporton International, Inc. Hwa Ya EMC Laboratory**

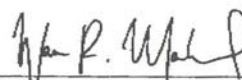
Tao Yuan Hsien 333  
TAIWAN

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

**ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS**

2006-01-01 through 2006-12-31

*Effective dates*



*For the National Institute of Standards and Technology*