Temperature	24℃	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 11

Configuration IEEE 802.11a

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5280 MHz	4.5	13	Complies
5300 MHz	4.80	13	Complies
5320 MHz	3.45	13	Complies

Configuration IEEE 802.11a Turbo

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5290 MHz	3.66	13	Complies

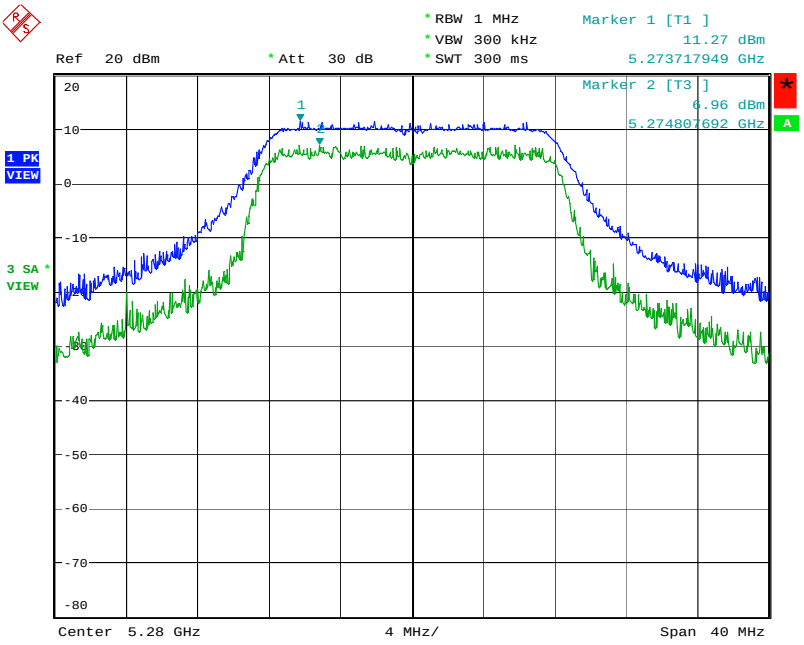
Temperature	24℃	Humidity	64%
Test Engineer	Rush Kao	Configurations	802.11a/ Ant. 13

Configuration IEEE 802.11a

Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
5280 MHz	5.3	13	Complies
5300 MHz	3.76	13	Complies
5320 MHz	3.99	13	Complies

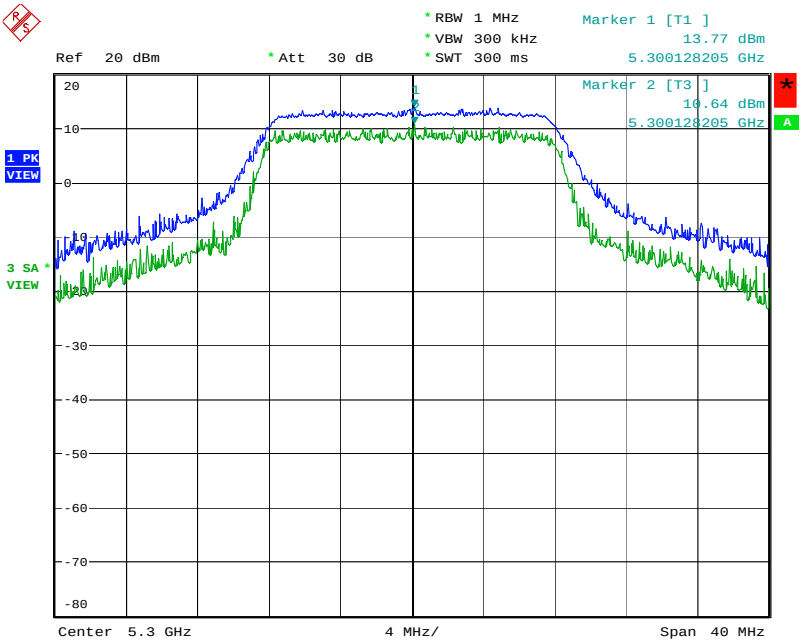
For Ant. 6/7

Peak Excursion Plot on Configuration IEEE 802.11a / 5280 MHz



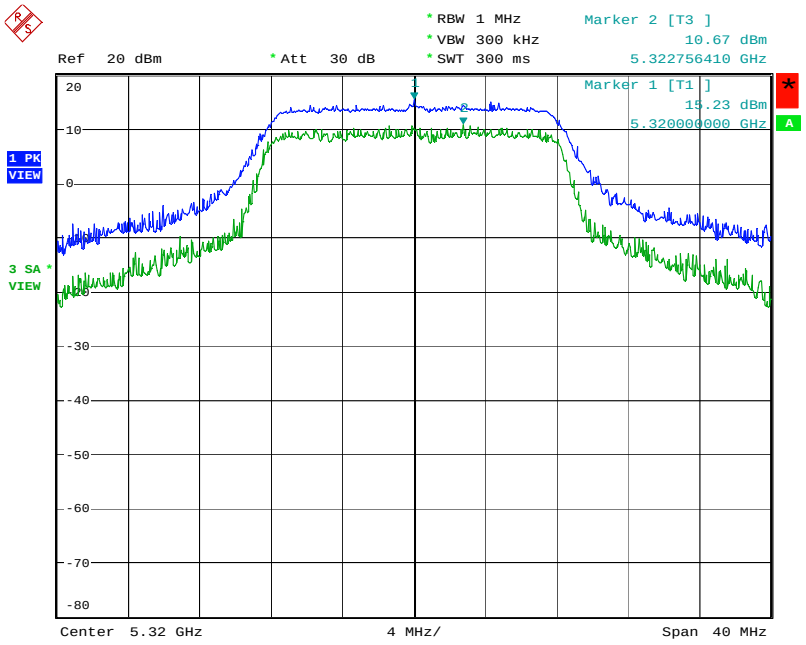
Date: 30.MAY.2006 20:48:41

Peak Excursion Plot on Configuration IEEE 802.11a / 5300 MHz



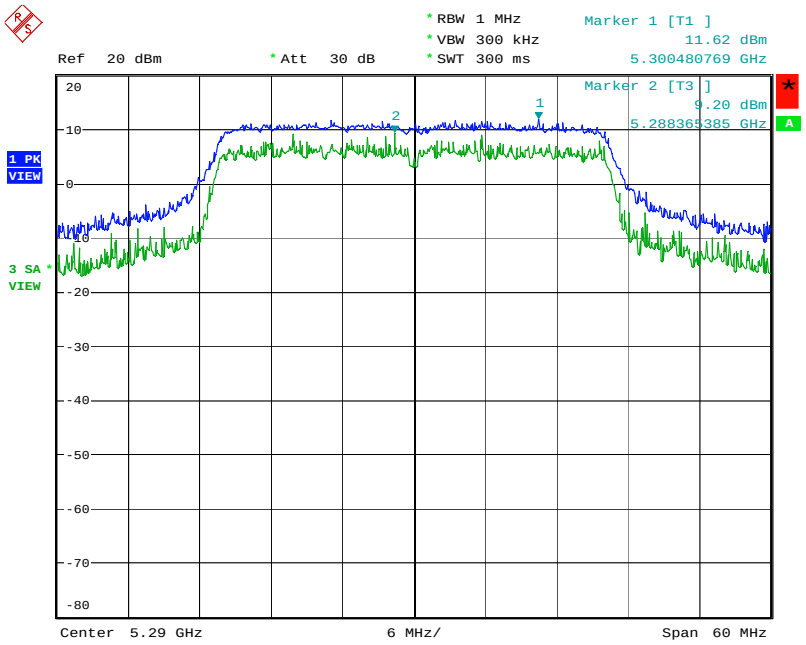
Date: 30.MAY.2006 20:47:06

Peak Excursion Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:47:58

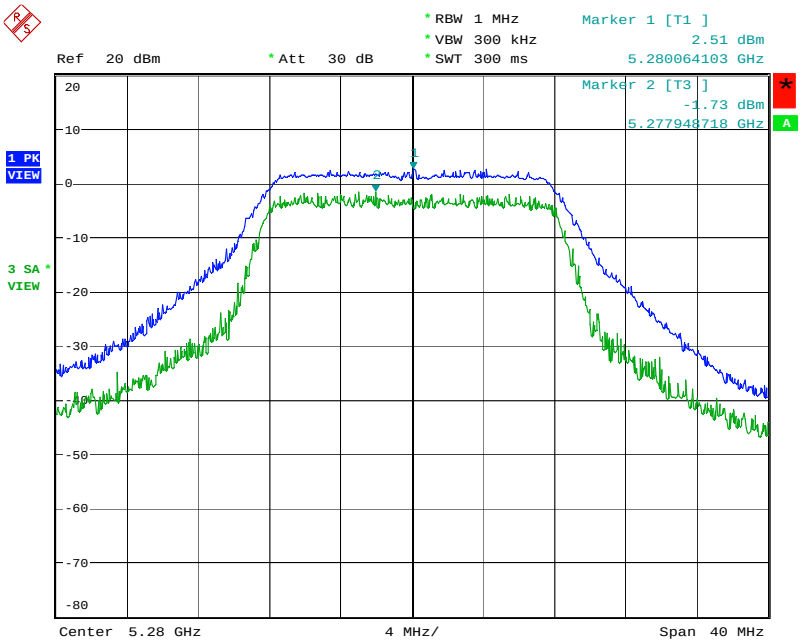
Peak Excursion Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 30.MAY.2006 20:06:24

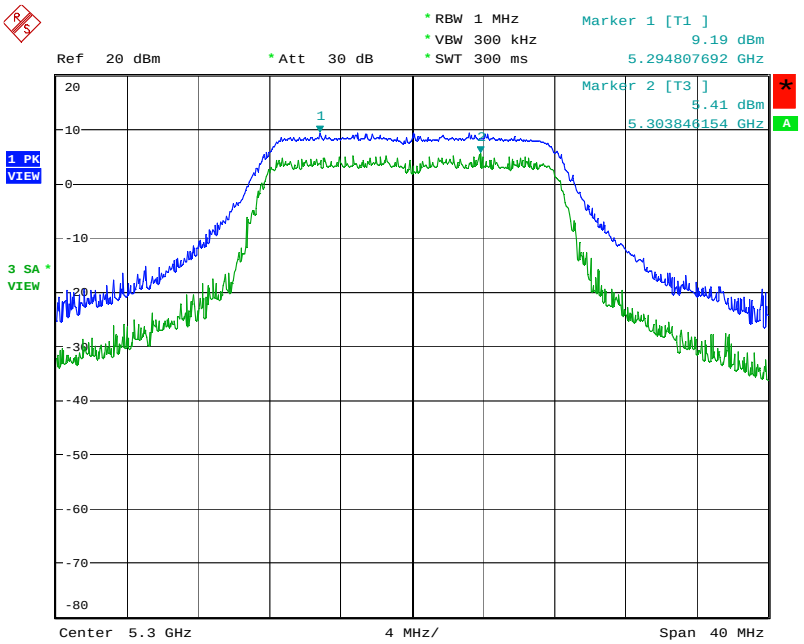
For Ant. 10

Peak Excursion Plot on Configuration IEEE 802.11a / 5280 MHz



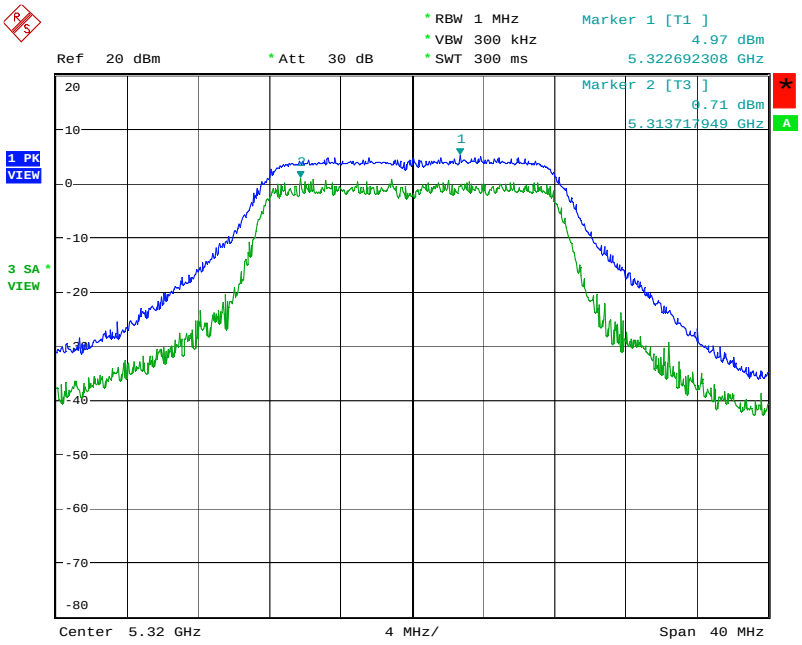
Date: 9.MAY.2006 19:29:16

Peak Excursion Plot on Configuration IEEE 802.11a / 5300 MHz



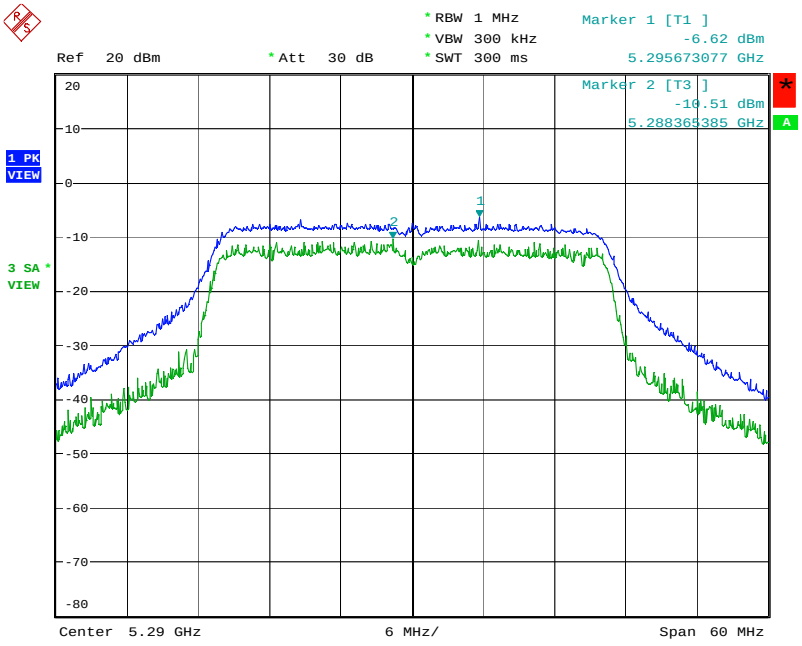
Date: 9.MAY.2006 19:28:08

Peak Excursion Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 19:27:04

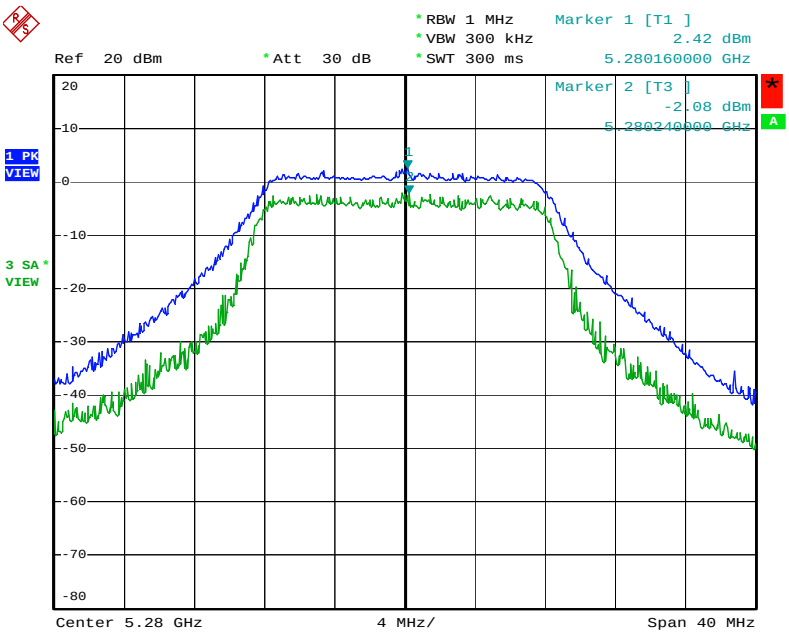
Peak Excursion Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 9.MAY.2006 19:40:17

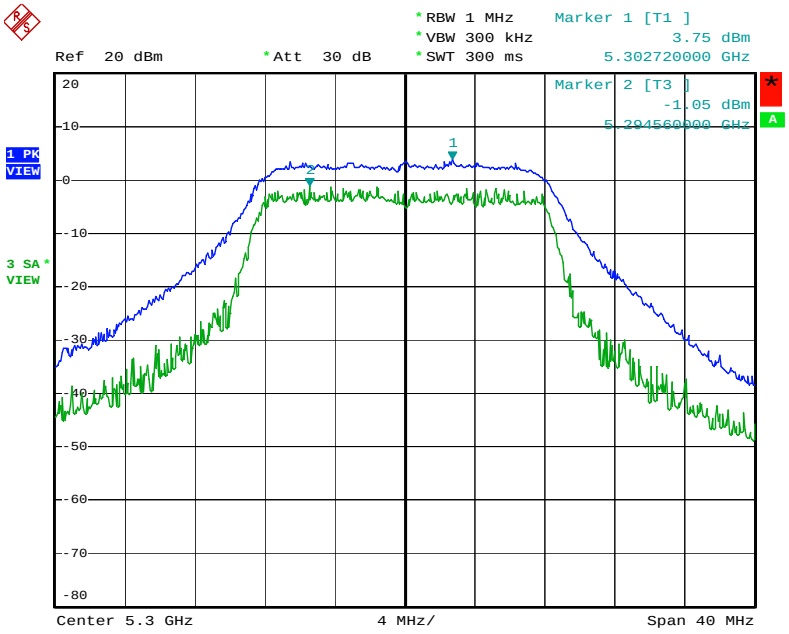
For Ant. 11

Peak Excursion Plot on Configuration IEEE 802.11a / 5280 MHz



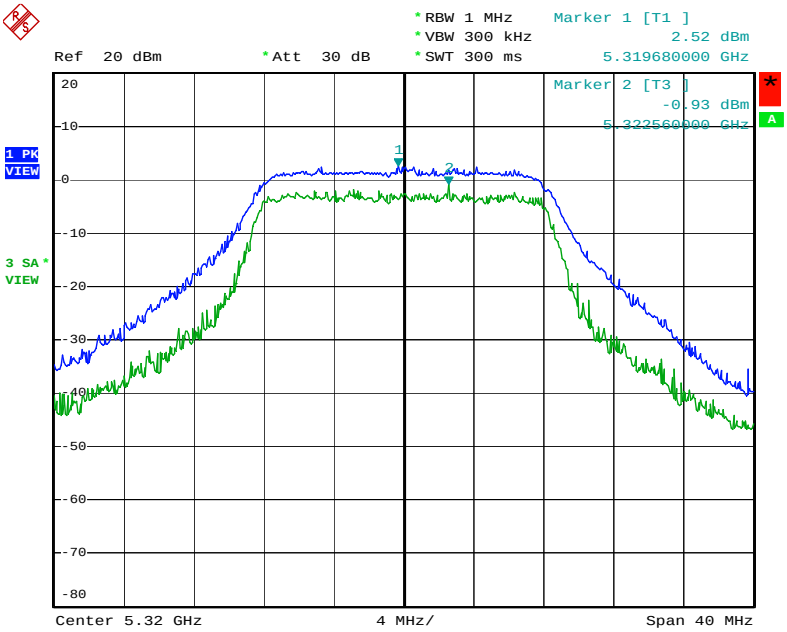
Date: 27.MAY.2006 11:17:54

Peak Excursion Plot on Configuration IEEE 802.11a / 5300 MHz



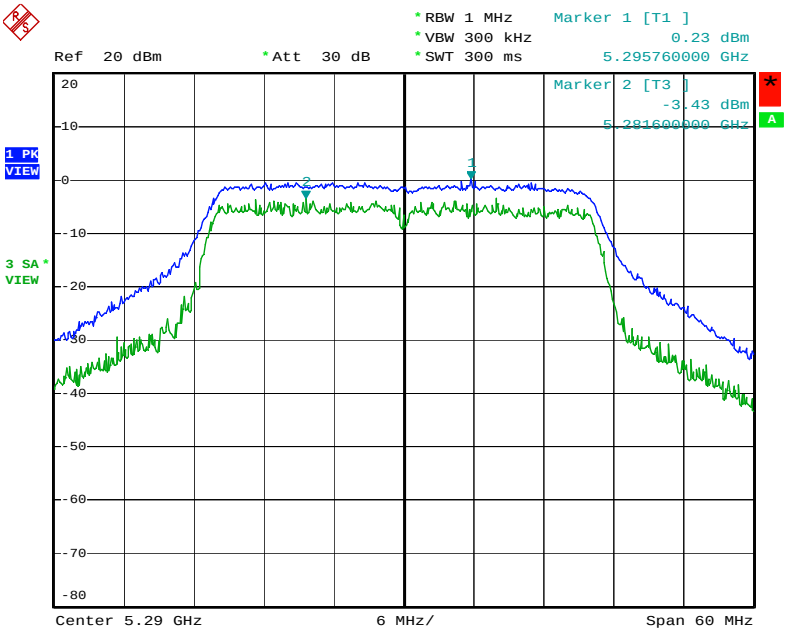
Date: 27.MAR.2006 18:09:47

Peak Excursion Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 27.MAR.2006 19:15:14

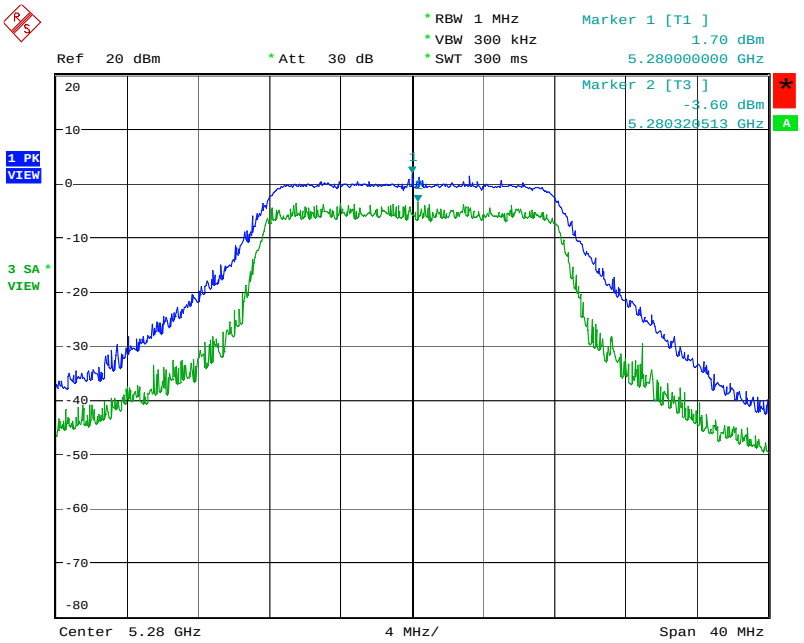
Peak Excursion Plot on Configuration IEEE 802.11a Turbo / 5290 MHz



Date: 27.MAR.2006 18:26:59

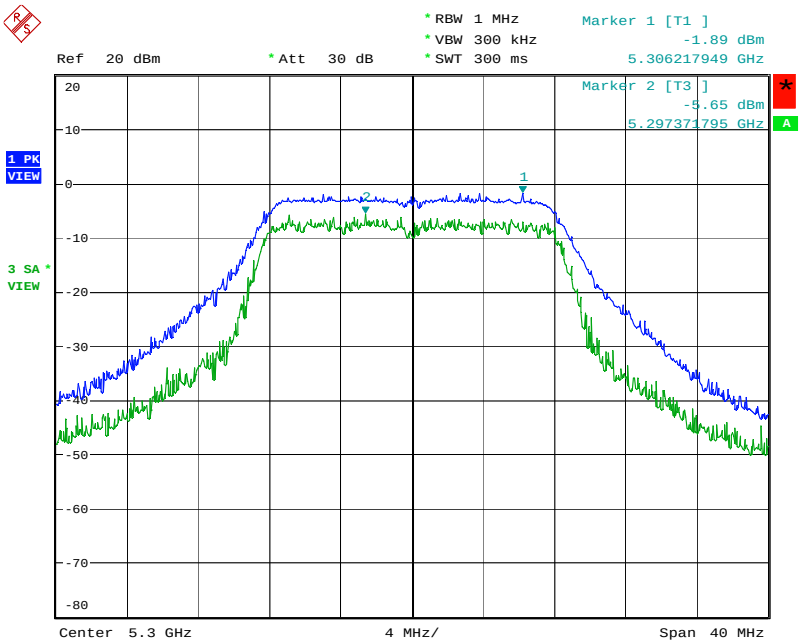
For Ant. 13

Peak Excursion Plot on Configuration IEEE 802.11a / 5280 MHz



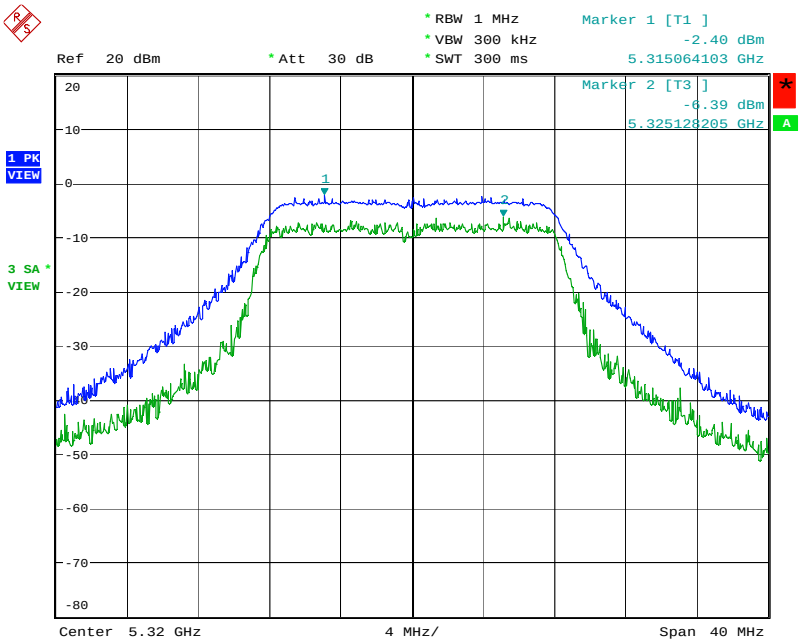
Date: 9.MAY.2006 21:32:57

Peak Excursion Plot on Configuration IEEE 802.11a / 5300 MHz



Date: 9.MAY.2006 21:32:19

Peak Excursion Plot on Configuration IEEE 802.11a / 5320 MHz



Date: 9.MAY.2006 21:31:40

4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.25-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.6.2. Measuring Instruments and Setting

Please refer to section 5 in this report. The following table is the setting of 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 (other emission)	100KHz / 100KHz for peak

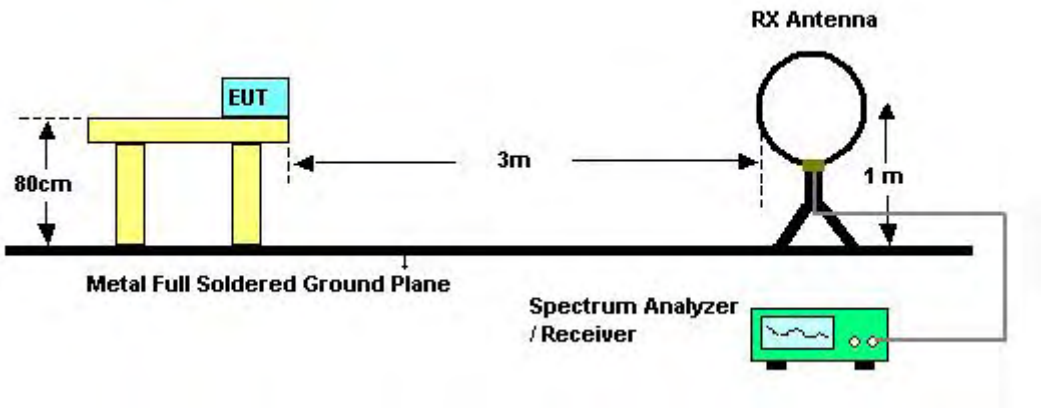
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.6.3. Test Procedures

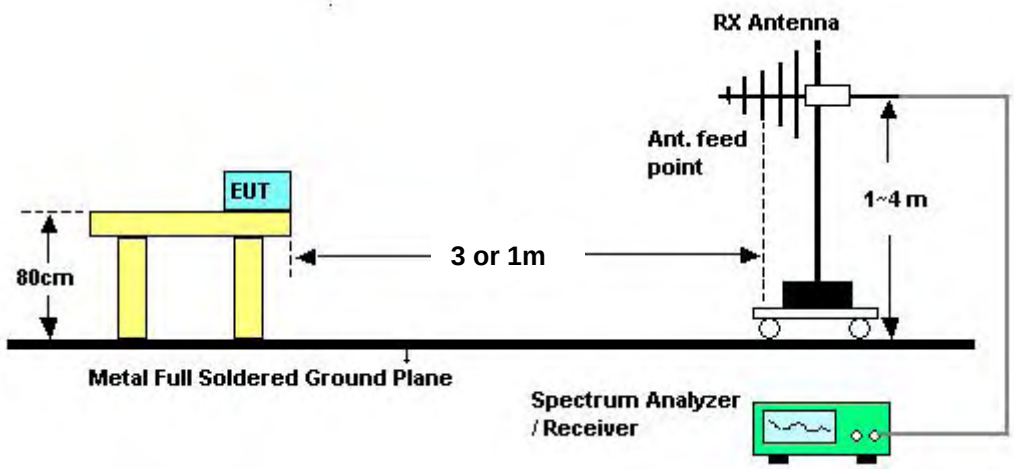
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting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

4.6.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1m]) (dB);

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

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

Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64

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

Note:

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

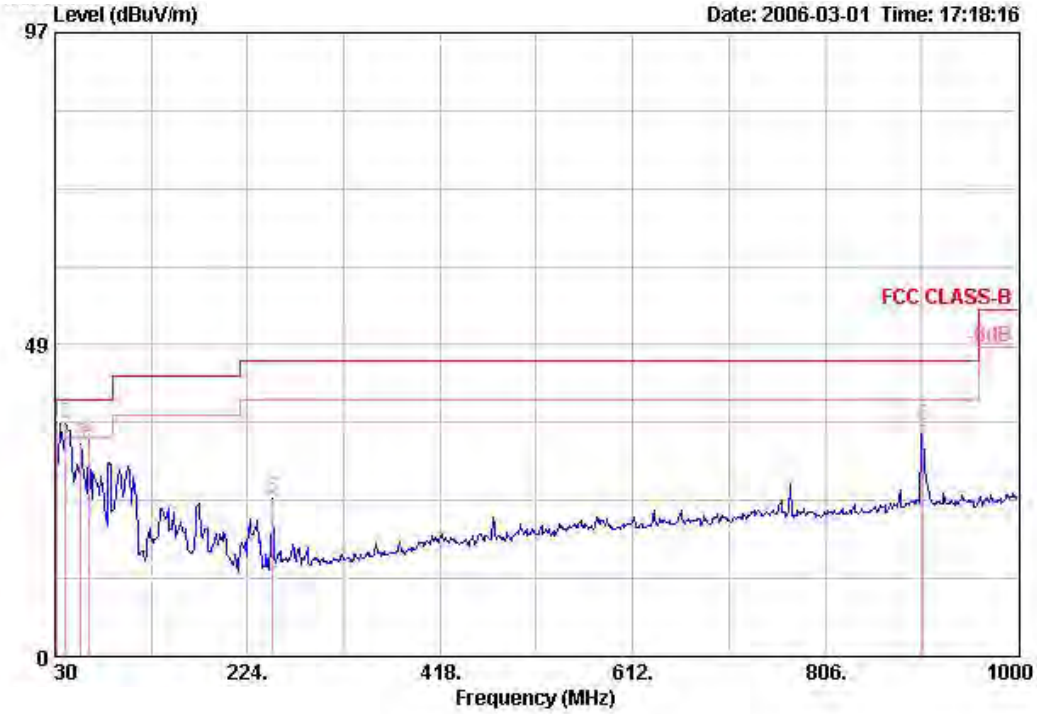
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

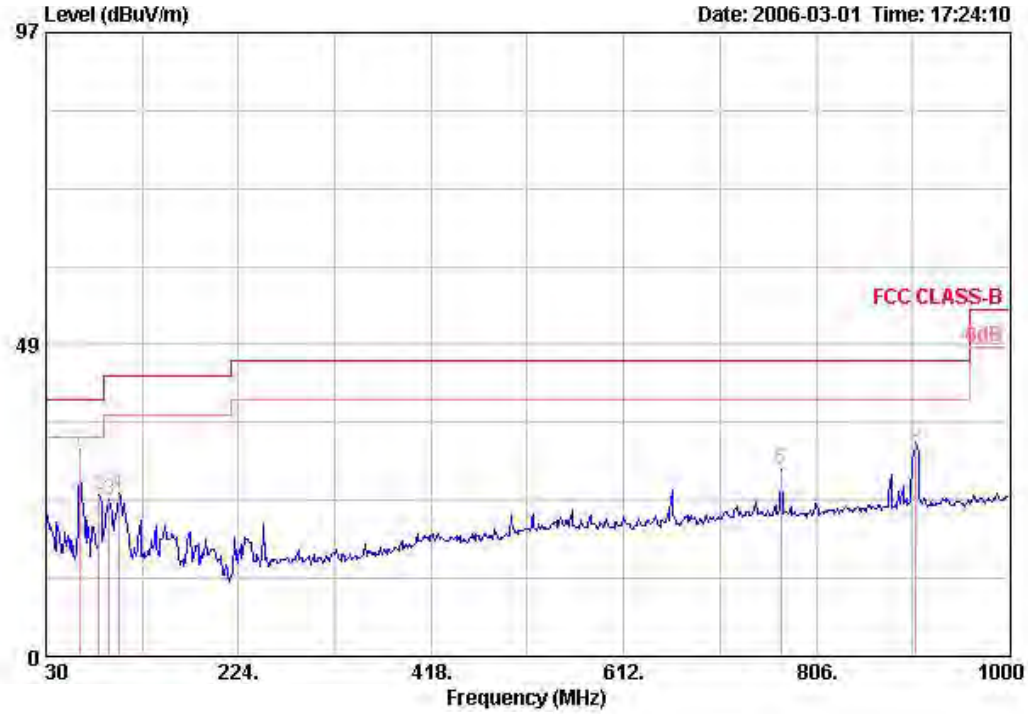
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 6/7

Vertical



	Freq	Level	Over Limit	Limit 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 @	31.940	36.49	-3.51	40.00	17.00	0.48	29.79	48.79	Peak	---	---
2 @	40.670	36.34	-3.66	40.00	11.90	0.54	29.81	53.72	Peak	---	---
3 @	56.190	33.09	-6.91	40.00	6.00	0.63	29.82	56.28	Peak	---	---
4 @	63.950	33.62	-6.38	40.00	5.10	0.67	29.89	57.74	Peak	---	---
5 @	249.220	24.52	-21.48	46.00	11.99	1.24	30.13	41.41	Peak	---	---
6 @	904.940	35.83	-10.17	46.00	20.55	2.42	28.77	41.63	Peak	---	---

Horizontal



	Freq	Level	Over Limit	Limit 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 @	63.950	32.28	-7.72	40.00	5.10	0.67	29.89	56.39	Peak	---	---
2 @	83.350	25.17	-14.83	40.00	7.40	0.73	29.97	47.01	Peak	---	---
3 @	94.020	24.42	-19.08	43.50	9.60	0.79	30.11	44.14	Peak	---	---
4 @	102.750	25.34	-18.16	43.50	10.89	0.81	30.08	43.72	Peak	---	---
5 @	770.110	29.14	-16.86	46.00	19.92	2.19	30.09	37.12	Peak	---	---
6 @	905.910	33.24	-12.76	46.00	20.56	2.42	28.77	39.03	Peak	---	---

Note:

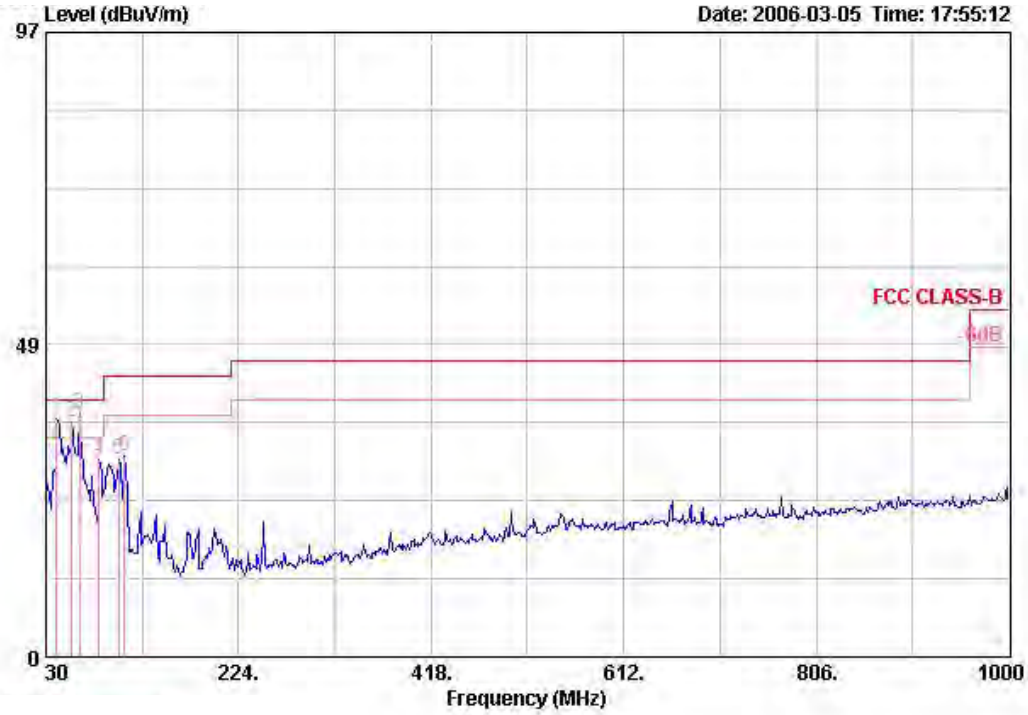
The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

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

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

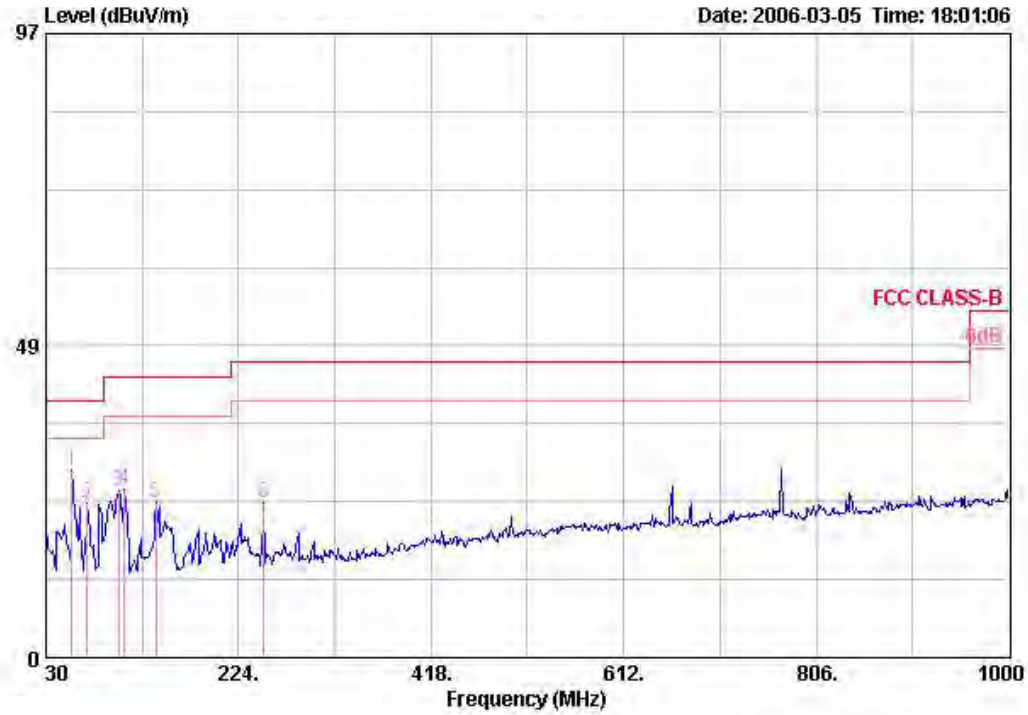
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 10

Vertical



	Freq	Level	Over Limit	Limit 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 @	40.670	36.99	-3.01	40.00	11.90	0.54	29.81	54.37	Peak	---	---
2 @	56.190	36.44	-3.56	40.00	6.00	0.63	29.82	59.63	Peak	---	---
3 @	63.950	37.84	-2.16	40.00	5.10	0.67	29.89	61.95	Peak	---	---
4 @	83.350	30.62	-9.38	40.00	7.40	0.73	29.97	52.45	Peak	---	---
5 @	102.750	30.78	-12.72	43.50	10.89	0.81	30.08	49.17	Peak	---	---
6 @	109.540	31.15	-12.35	43.50	11.50	0.84	30.07	48.88	Peak	---	---

Horizontal



	Freq	Level	Over Limit	Limit 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 @	56.190	29.02	-10.98	40.00	6.00	0.63	29.82	52.20	Peak	---	---
2 @	71.710	24.06	-15.94	40.00	5.60	0.69	29.94	47.71	Peak	---	---
3 @	102.750	25.99	-17.51	43.50	10.89	0.81	30.08	44.37	Peak	---	---
4 @	109.540	26.07	-17.43	43.50	11.50	0.84	30.07	43.80	Peak	---	---
5 @	140.580	24.05	-19.45	43.50	10.93	0.93	30.04	42.23	Peak	---	---
6 @	249.220	24.13	-21.87	46.00	11.99	1.24	30.13	41.02	Peak	---	---

Note:

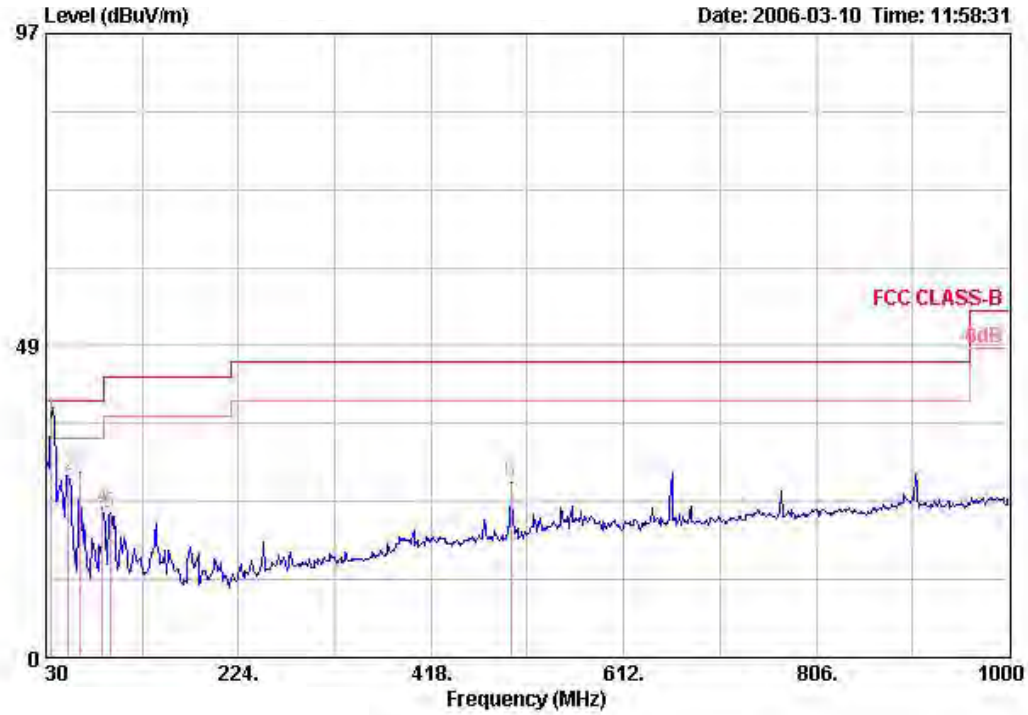
The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

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

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

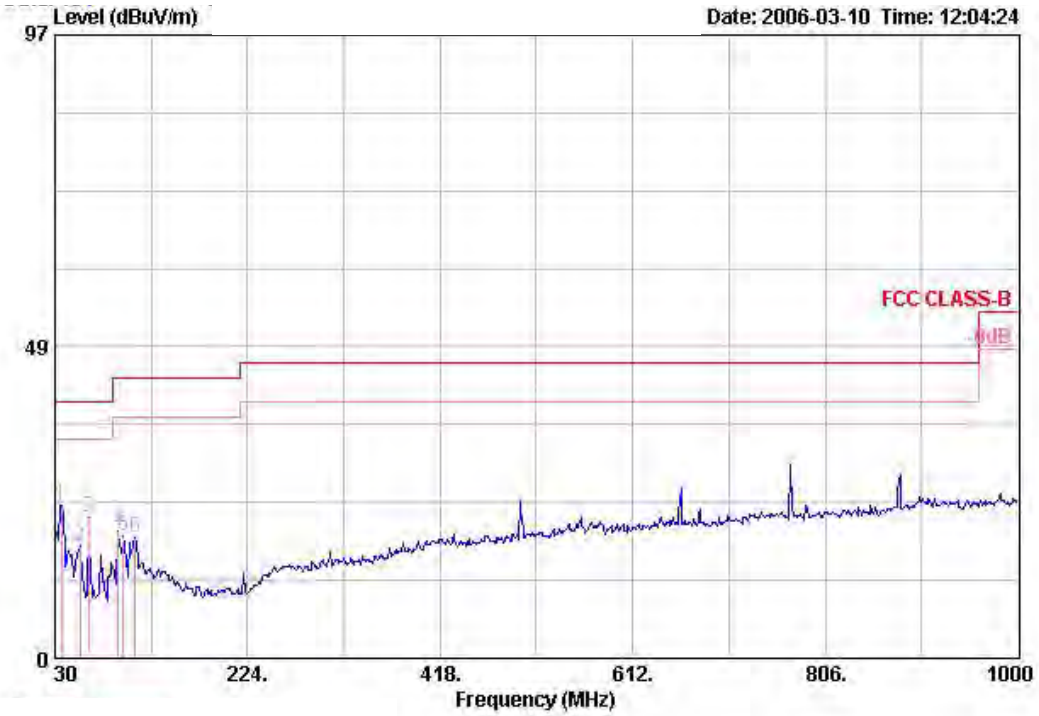
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 11

Vertical



	Freq	Level	Over Limit	Limit 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 @	35.820	37.37	-2.63	40.00	14.70	0.51	29.78	51.94	QP	---	---
2 @	52.310	28.40	-11.60	40.00	7.00	0.61	29.82	50.61	Peak	---	---
3 @	63.950	28.88	-11.12	40.00	5.10	0.67	29.89	53.00	Peak	---	---
4 @	87.230	23.29	-16.71	40.00	8.20	0.75	30.04	44.38	Peak	---	---
5 @	94.990	22.55	-20.95	43.50	9.75	0.79	30.12	42.13	Peak	---	---
6 @	498.510	27.26	-18.74	46.00	17.36	1.77	30.53	38.66	Peak	---	---

Horizontal



	Freq	Level	Over Limit	Limit 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 @	36.790	23.82	-16.18	40.00	14.10	0.51	29.79	39.00	Peak	---	---
2 @	55.220	17.36	-22.64	40.00	6.25	0.63	29.81	40.29	Peak	---	---
3 @	63.950	22.01	-17.99	40.00	5.10	0.67	29.89	46.13	Peak	---	---
4 @	94.020	19.76	-23.74	43.50	9.60	0.79	30.11	39.48	Peak	---	---
5 @	98.870	19.15	-24.35	43.50	10.35	0.80	30.10	38.10	Peak	---	---
6 @	110.510	18.73	-24.77	43.50	11.50	0.84	30.07	36.45	Peak	---	---

Note:

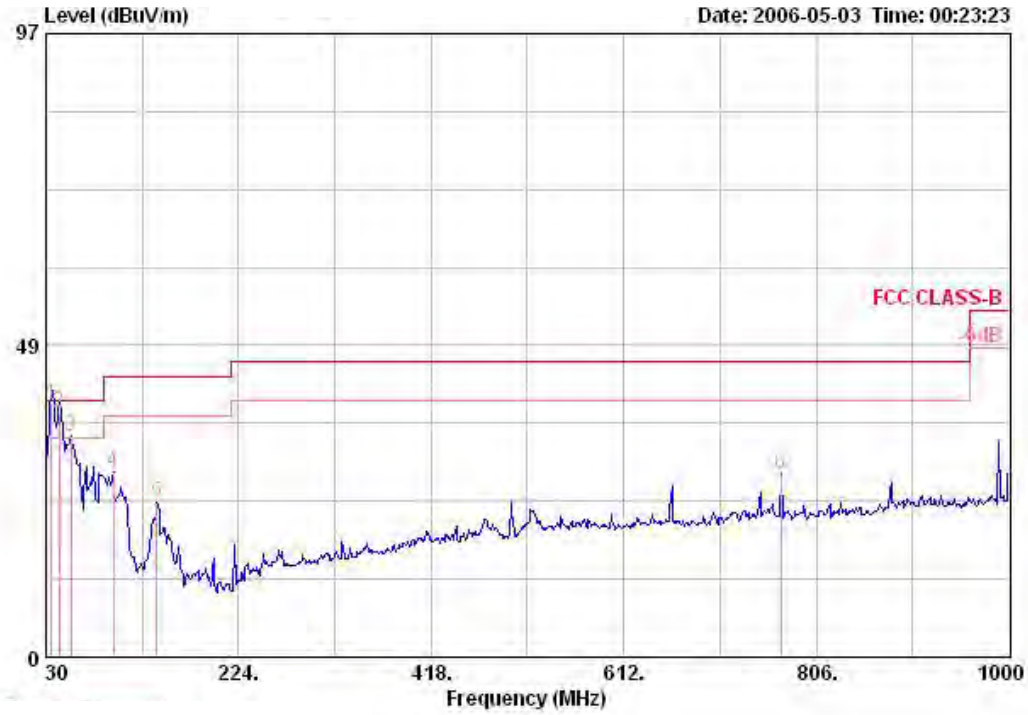
The amplitude of spurious emissions which are attenuated by more than 20 dB below the permissible value has no need to be reported.

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

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

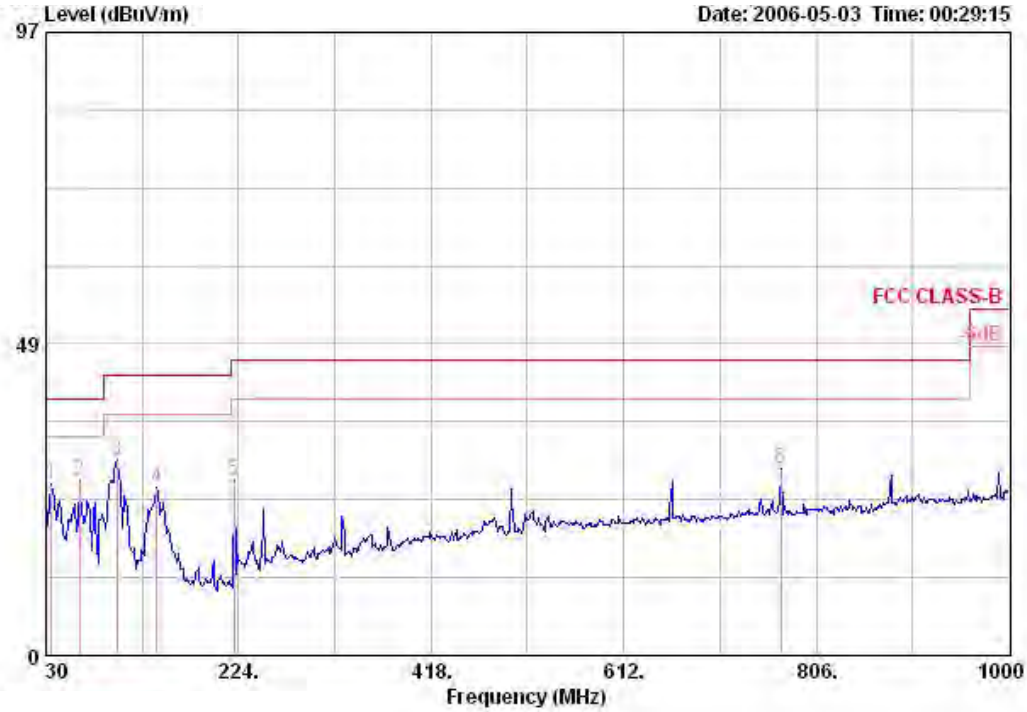
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 13

Vertical



	Freq	Level	Over Limit	Limit 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 !	35.820	39.38	-0.62	40.00	14.70	0.51	29.78	53.95	QP	---	---
2 !	43.580	38.08	-1.92	40.00	10.30	0.56	29.83	57.04	QP	---	---
3 !	55.220	34.32	-5.68	40.00	6.25	0.63	29.81	57.25	Peak	---	---
4	97.900	28.87	-14.63	43.50	10.20	0.80	30.10	47.98	Peak	---	---
5	141.550	23.99	-19.51	43.50	10.85	0.94	30.04	42.24	Peak	---	---
6	770.110	28.67	-17.33	46.00	19.92	2.19	30.09	36.65	Peak	---	---

Horizontal



	Freq	Level	Over Limit	Limit 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	35.820	26.78	-13.22	40.00	14.70	0.51	29.78	41.36	Peak	---	---
2	63.950	27.11	-12.89	40.00	5.10	0.67	29.89	51.23	Peak	---	---
3	101.780	30.52	-12.98	43.50	10.76	0.81	30.09	49.04	Peak	---	---
4	141.550	26.20	-17.30	43.50	10.85	0.94	30.04	44.46	Peak	---	---
5	219.150	27.25	-18.75	46.00	8.47	1.17	30.02	47.63	Peak	---	---
6	770.110	29.19	-16.81	46.00	19.92	2.19	30.09	37.17	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.

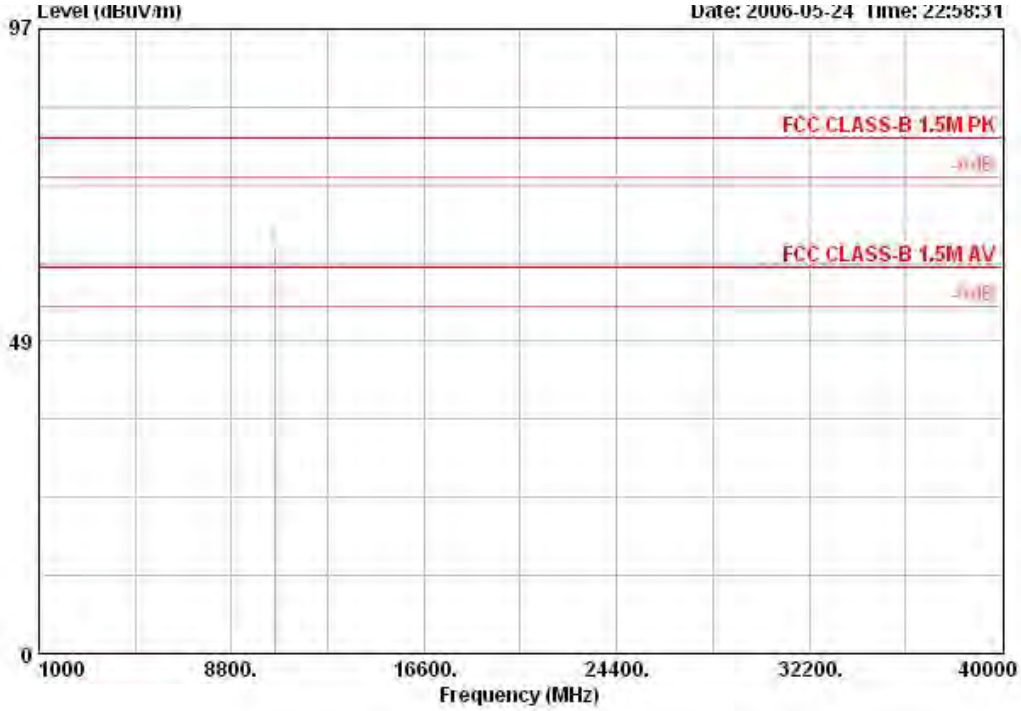
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56/ Ant. 6/7

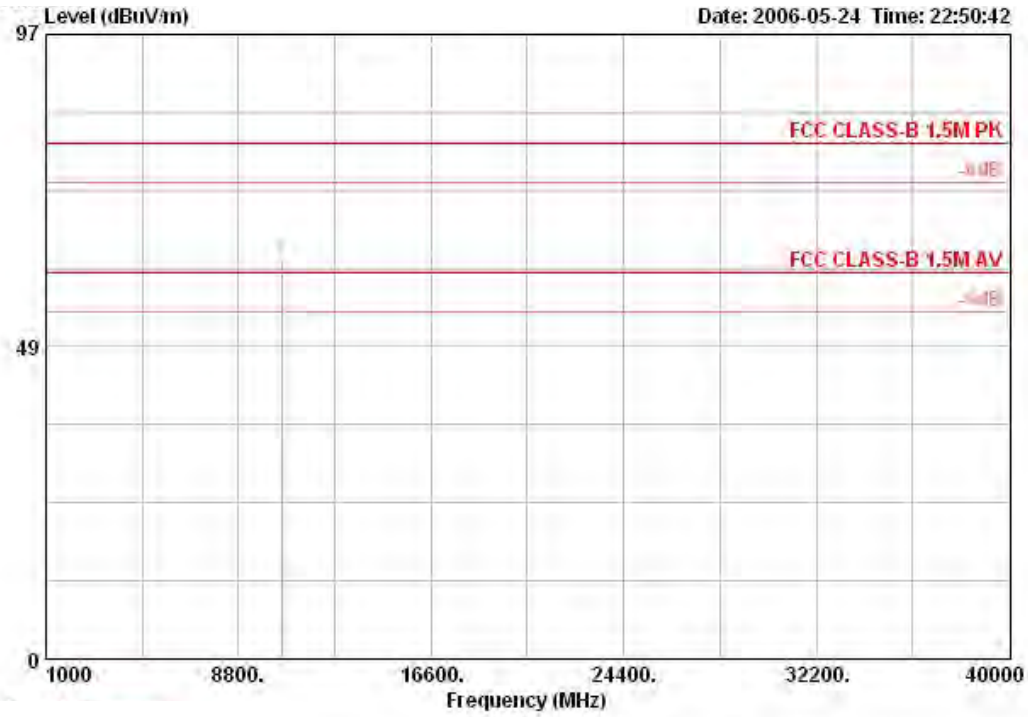
Vertical



	Freq	Level	Over Limit	Limit 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	10560.200	63.23			39.47	5.97	35.37	53.17	PEAK	100	20

Note: Item 1 is on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

Horizontal

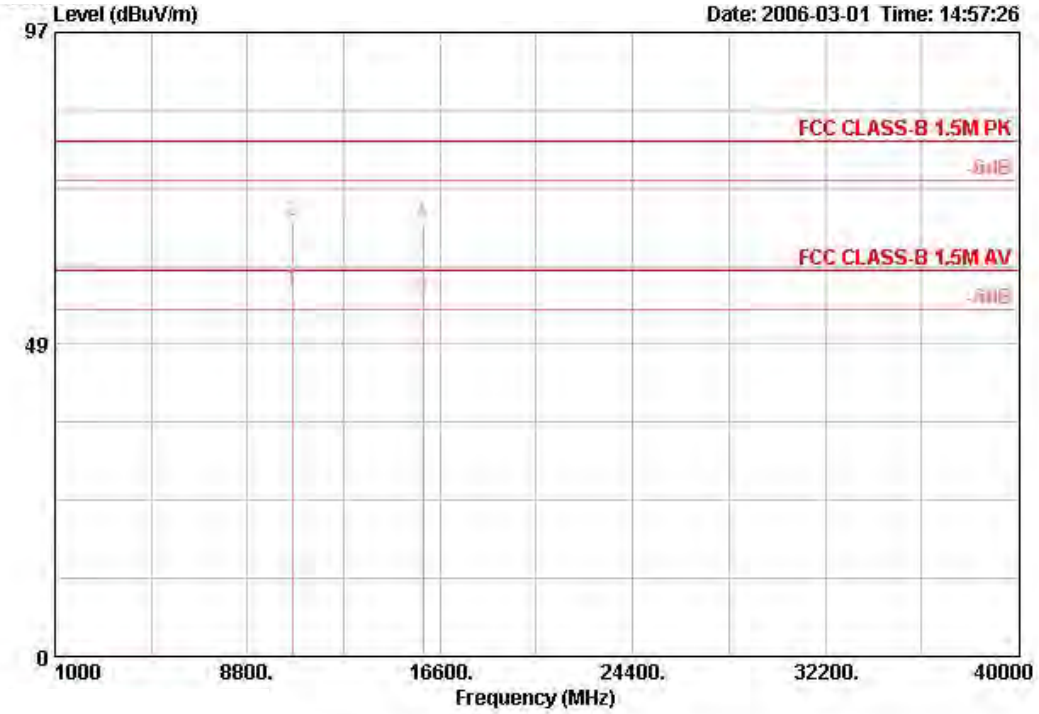


	Freq	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1	10558.900	61.76			39.47	5.97	35.37	51.69	PEAK	100	230

Note: Item 1 is on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

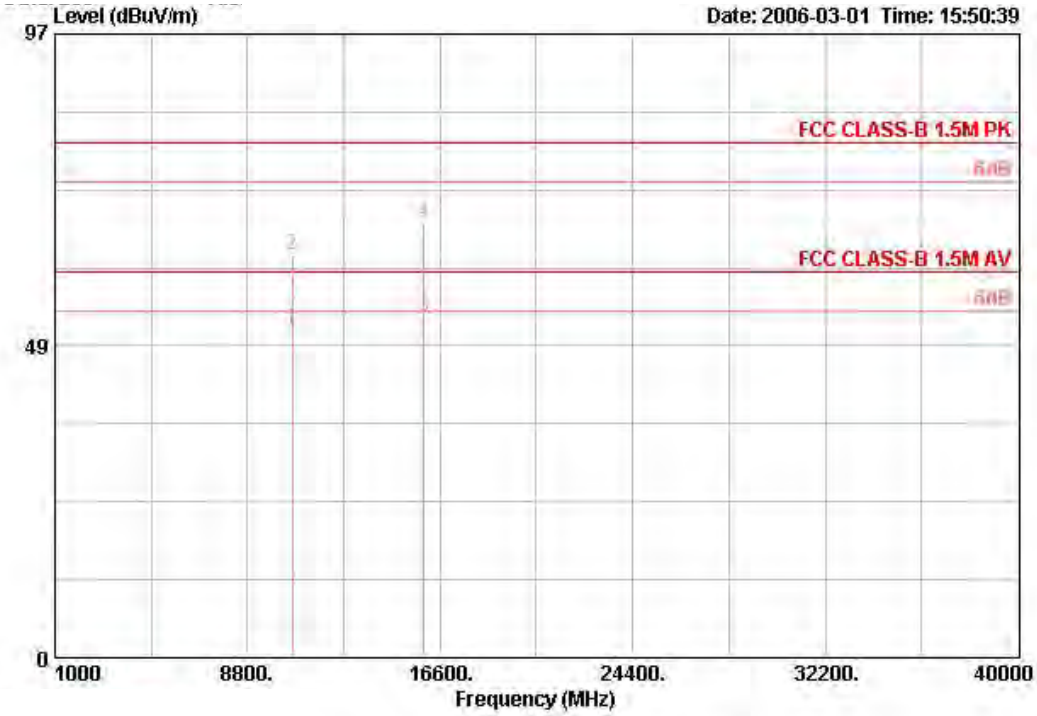
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 60/ Ant. 6/7

Vertical



	Freq	Level	Over Limit	Limit 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 @	10598.840	56.72	-3.28	60.00	39.44	6.00	35.35	46.63	AVERAGE	100	254
2 @	10598.840	67.60	-12.40	80.00	39.44	6.00	35.35	57.51	PEAK	100	254
3 @	15900.640	55.54	-4.46	60.00	37.62	9.55	35.46	43.83	AVERAGE	102	306
4 @	15900.640	67.03	-12.97	80.00	37.62	9.55	35.46	55.32	PEAK	102	306

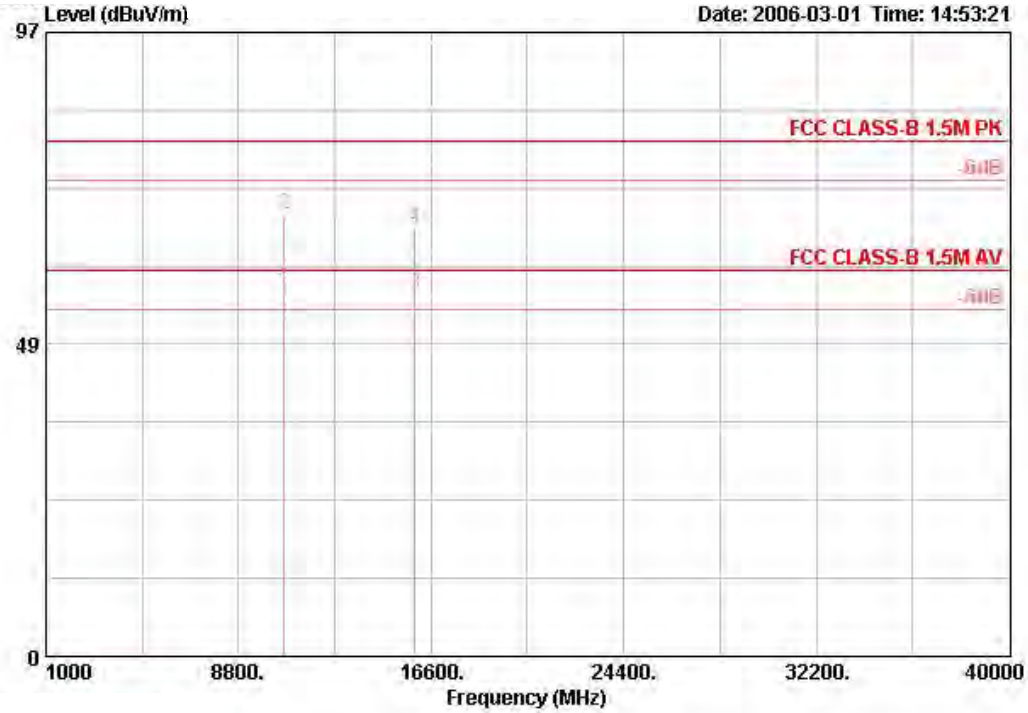
Horizontal



	Freq	Level	Over Limit	Limit 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 @	10600.100	51.00	-9.00	60.00	39.42	6.03	35.32	40.87	AVERAGE	103	247
2 @	10600.100	62.54	-17.46	80.00	39.42	6.03	35.32	52.41	PEAK	103	247
3 @	15959.200	53.14	-6.86	60.00	37.55	9.62	35.42	41.39	AVERAGE	100	279
4 @	15959.200	67.70	-12.30	80.00	37.55	9.62	35.42	55.95	PEAK	100	279

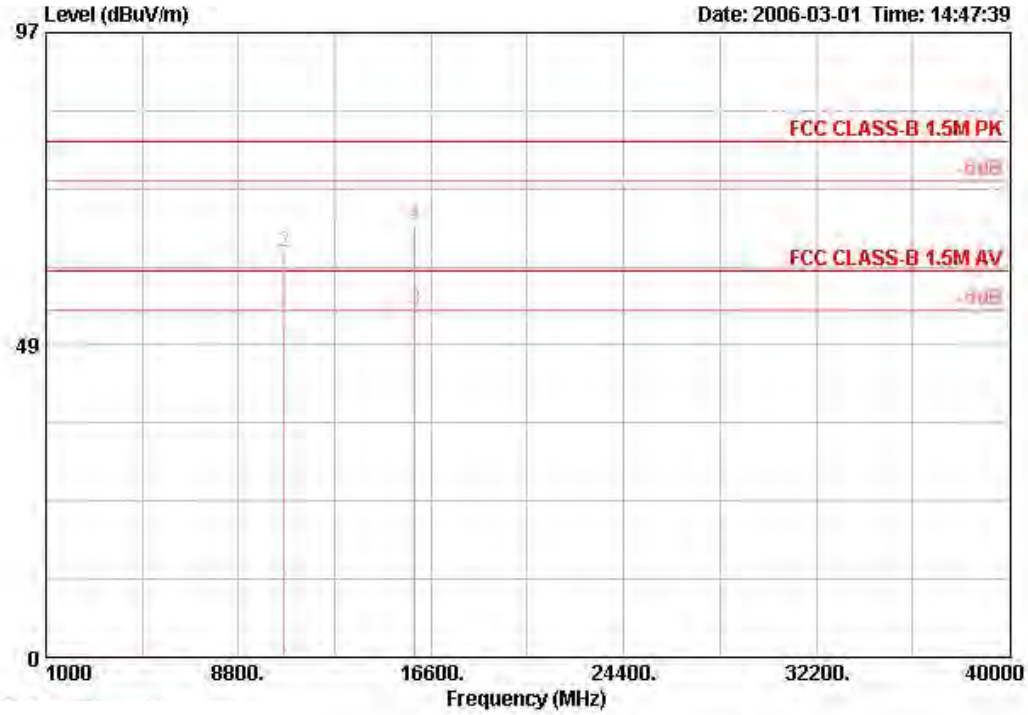
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 6/7

Vertical



	Freq	Level	Over Limit	Limit 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 @	10639.600	56.60	-3.40	60.00	39.42	6.03	35.32	46.47	AVERAGE	103	254
2 @	10639.600	68.67	-11.33	80.00	39.42	6.03	35.32	58.54	PEAK	103	254
3 @	15958.000	56.25	-3.75	60.00	37.55	9.62	35.42	44.50	AVERAGE	101	306
4 @	15958.000	66.51	-13.49	80.00	37.55	9.62	35.42	54.76	PEAK	101	306

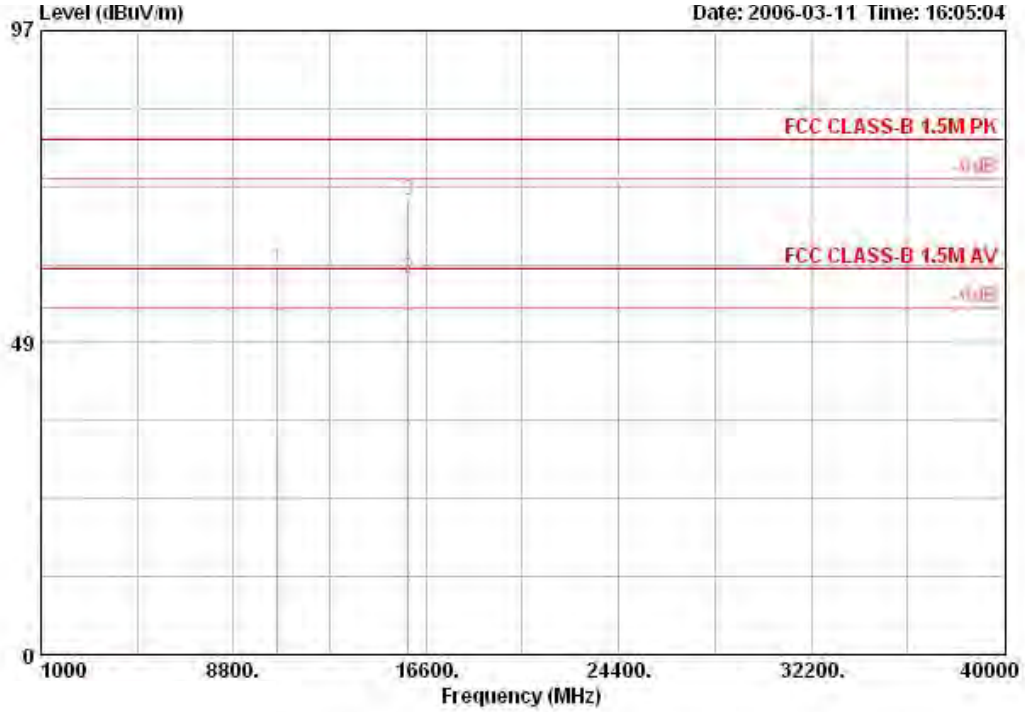
Horizontal



	Freq	Level	Over Limit	Limit 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 @	10640.200	51.86	-8.14	60.00	39.42	6.03	35.32	41.73	AVERAGE	103	247
2 @	10640.200	62.85	-17.15	80.00	39.42	6.03	35.32	52.72	PEAK	103	247
3 @	15958.200	53.89	-6.11	60.00	37.55	9.62	35.42	42.14	AVERAGE	100	279
4 @	15958.200	67.26	-12.74	80.00	37.55	9.62	35.42	55.51	PEAK	100	279

Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 6/7

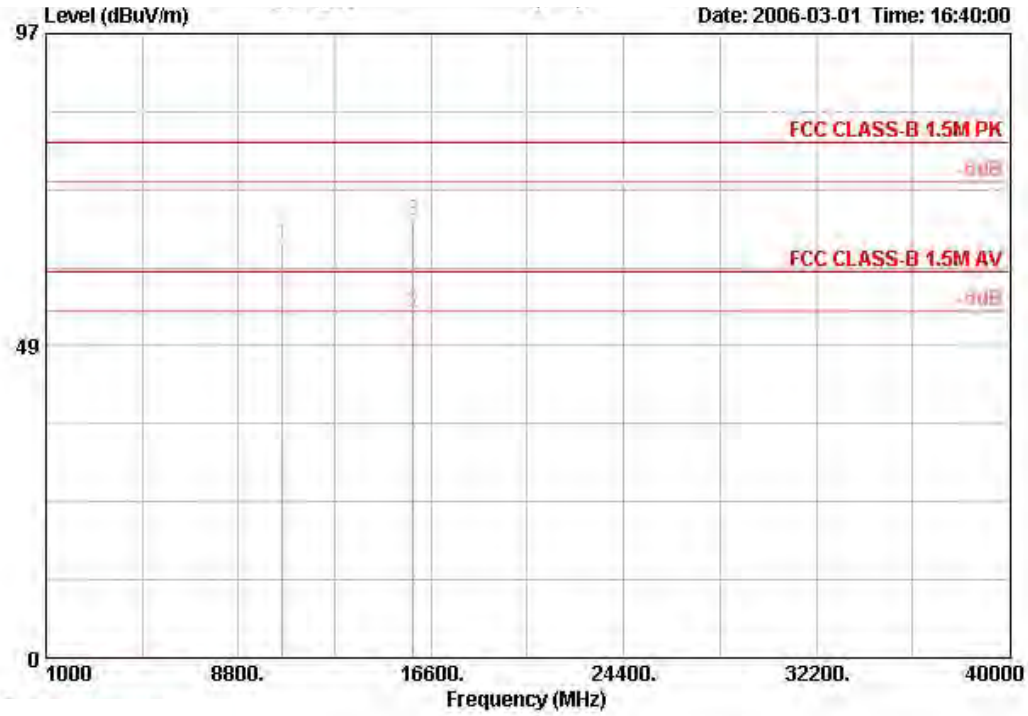
Vertical



	Freq	Level	Over Limit	Limit 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	10580.000	60.11			39.45	6.00	35.35	50.01	PEAK	103	254
2 @	15870.100	58.34			37.67	9.52	35.48	46.63	AVERAGE	103	289
3	15870.100	70.60			37.67	9.52	35.48	58.89	PEAK	103	289

Note: Item 1, 2, 3 are on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

Horizontal



	Freq	Level	Over Limit	Limit 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 @	10577.400	64.36			39.46	6.00	35.35	54.25	PEAK	103	317
2 @	15862.880	53.64			37.69	9.52	35.48	41.91	AVERAGE	100	278
3 @	15866.120	67.96			37.69	9.52	35.48	56.22	PEAK	100	278

Note: Item 1, 2, 3 are on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

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.

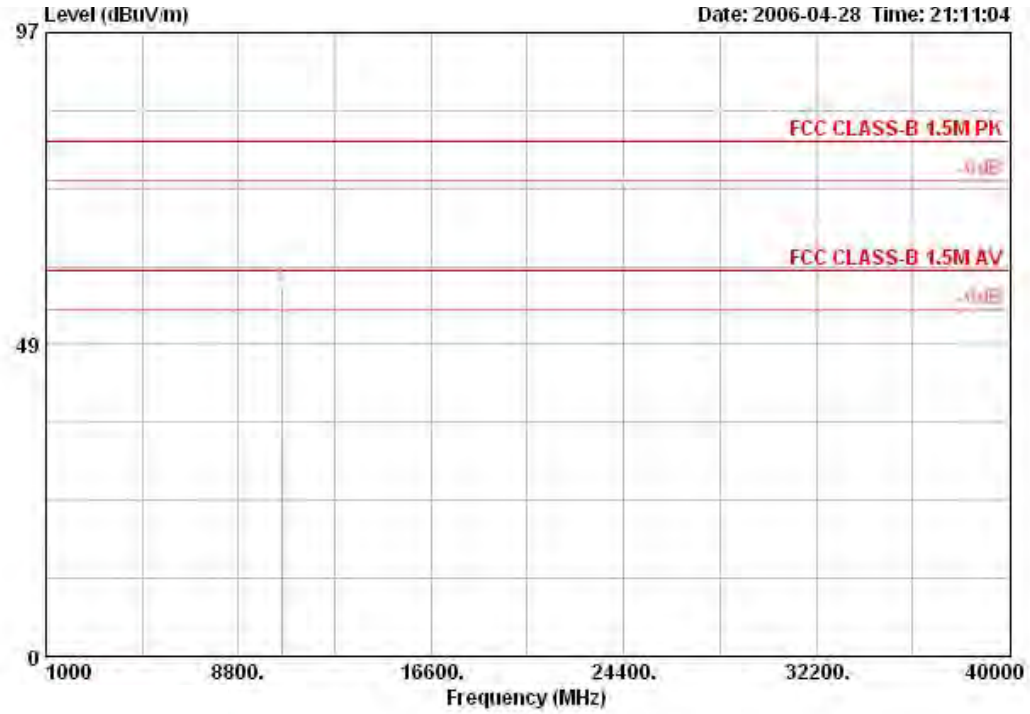
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

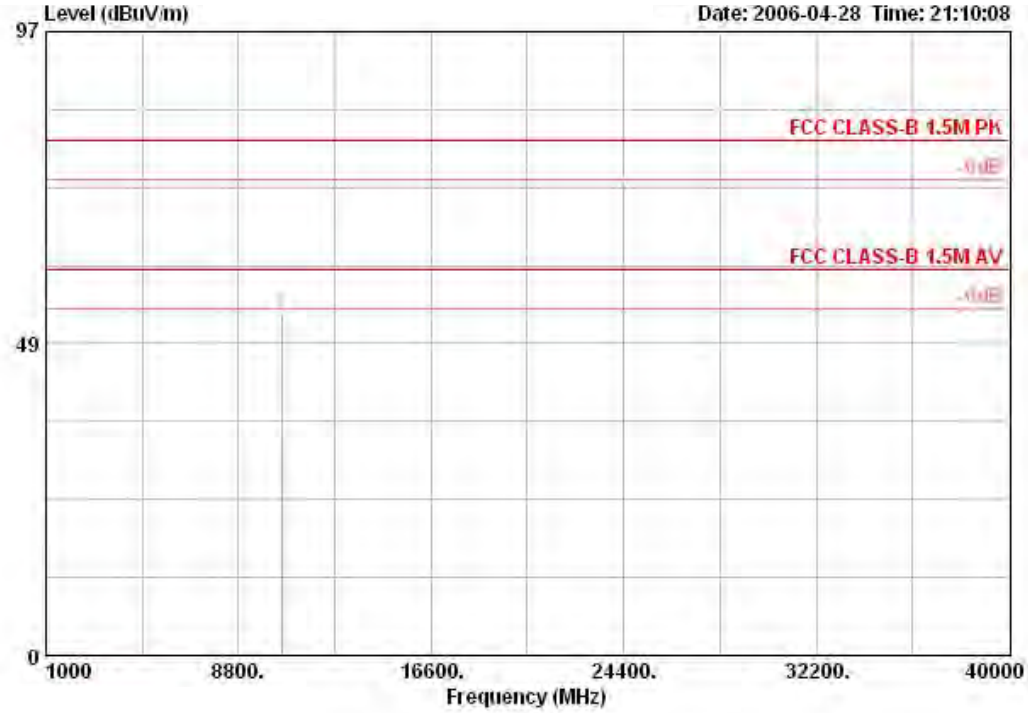
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56/ Ant.10

Vertical



	Freq	Level	Over Limit	Limit 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	10558.680	57.29	-22.71	80.00	39.47	5.97	35.37	47.22	PEAK	131	26

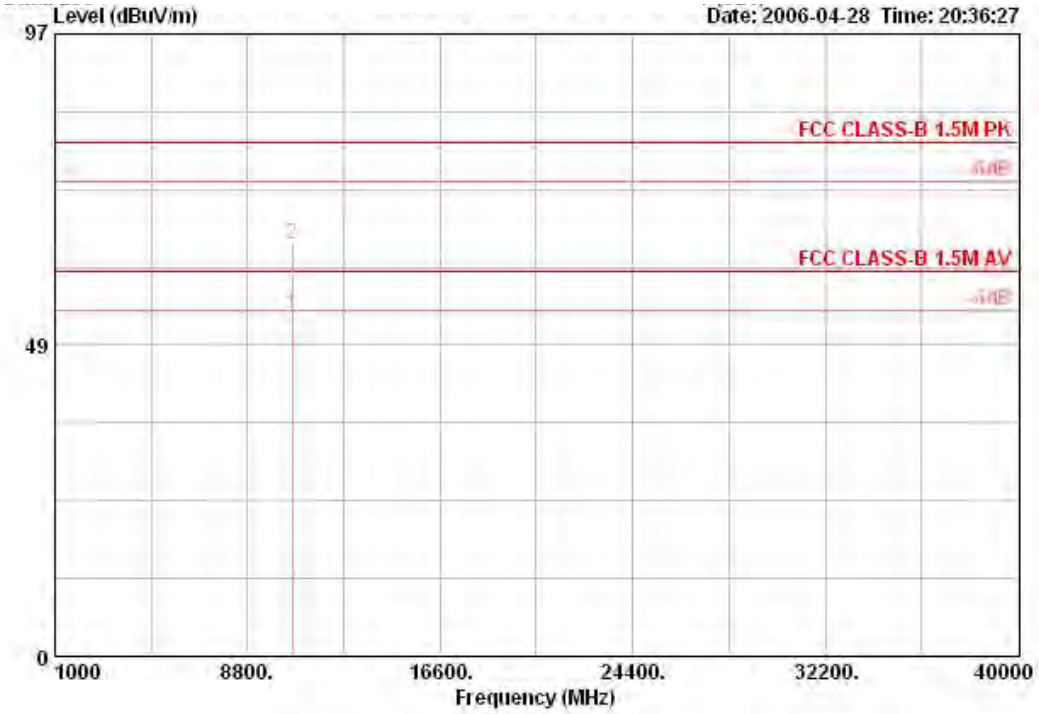
Horizontal



	Freq	Level	Over Limit	Limit 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	10558.920	53.22	-26.78	80.00	39.47	5.97	35.37	43.15	PEAK	131	40

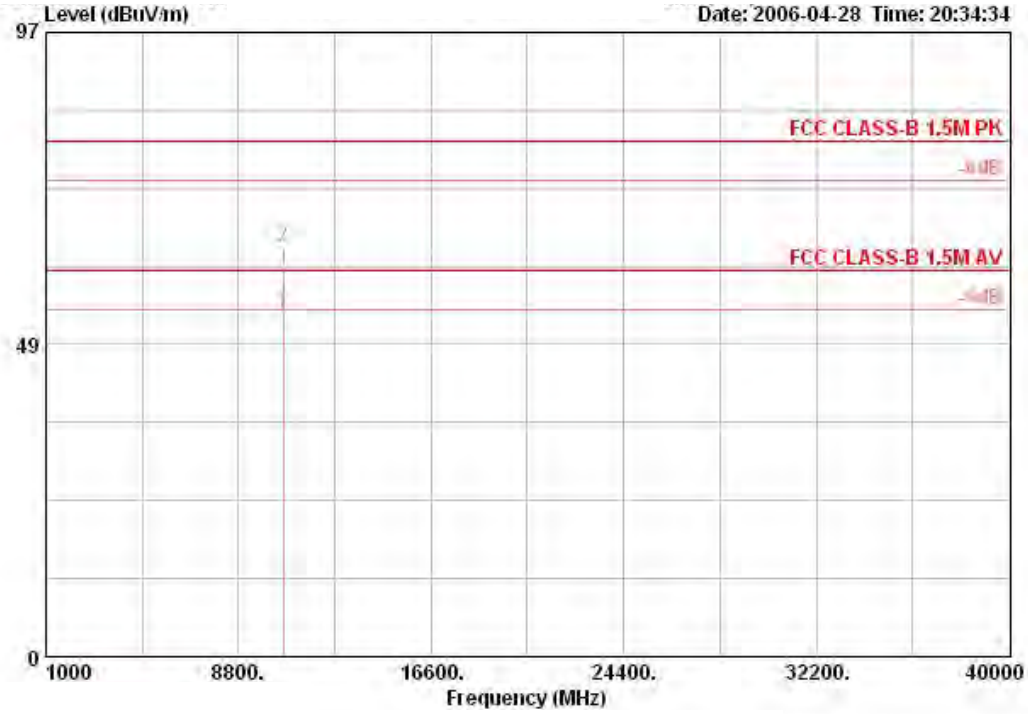
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 60/ Ant. 10

Vertical



	Freq	Level	Over Limit	Limit 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	10600.840	53.41	-6.59	60.00	39.44	6.00	35.34	43.31	AVERAGE	122	25
2	10600.840	64.23	-15.77	80.00	39.44	6.00	35.34	54.13	PEAK	122	25

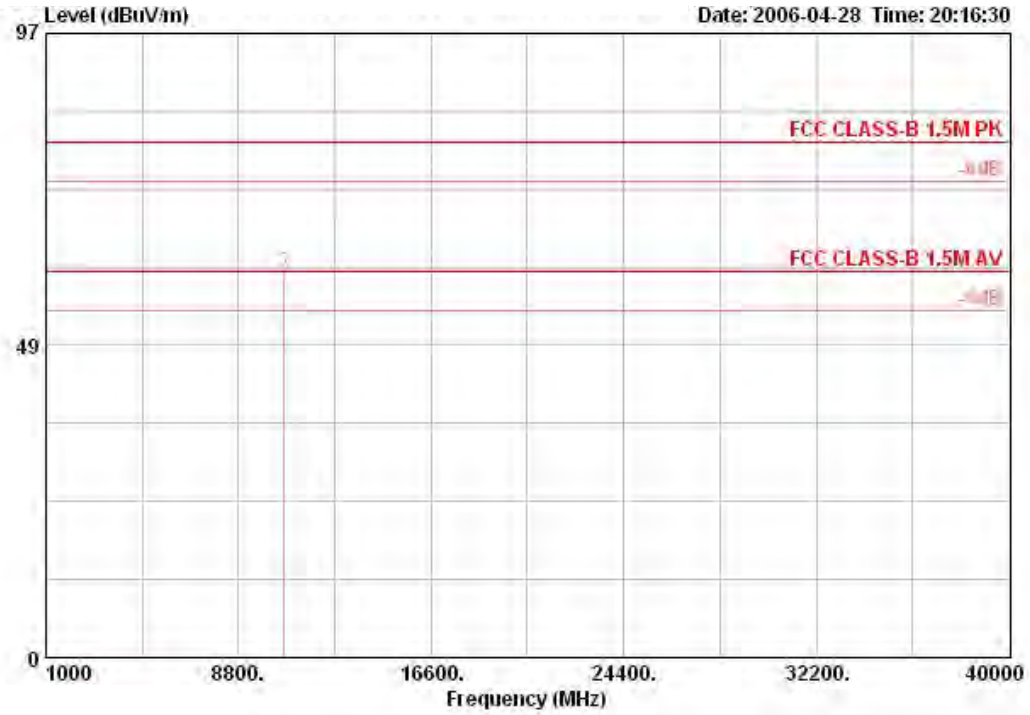
Horizontal



	Freq	Level	Over Limit	Limit 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	10599.600	53.10	-6.90	60.00	39.44	6.00	35.35	43.02	AVERAGE	121	31
2	10599.600	63.63	-16.37	80.00	39.44	6.00	35.35	53.55	PEAK	121	31

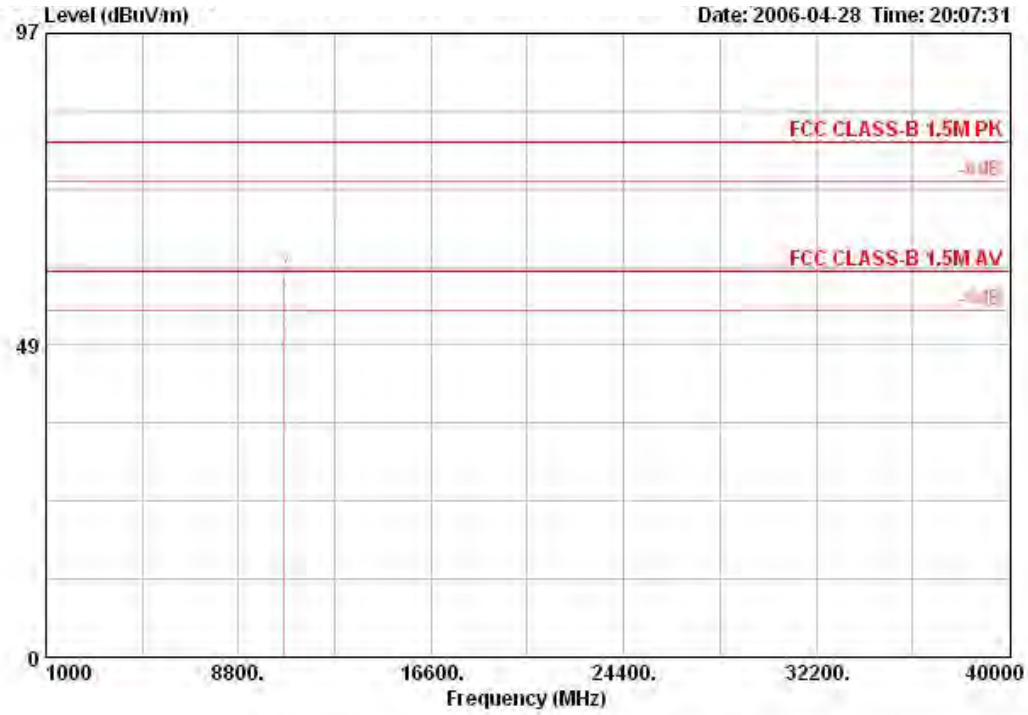
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 10

Vertical



	Freq	Level	Over Limit	Limit 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	10638.320	48.79	-11.21	60.00	39.42	6.03	35.32	38.66	AVERAGE	112	337
2	10638.320	59.66	-20.34	80.00	39.42	6.03	35.32	49.53	PEAK	112	337

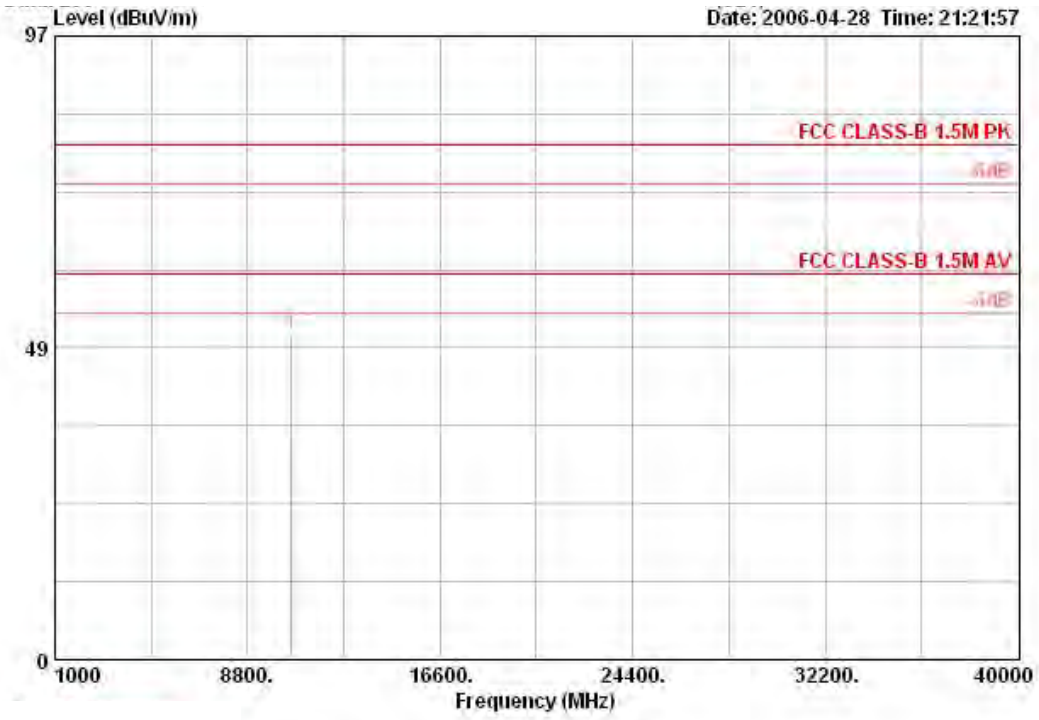
Horizontal



	Freq	Level	Over Limit	Limit 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	10640.760	46.03	-13.97	60.00	39.42	6.03	35.32	35.90	AVERAGE	124	32
2	10640.760	59.48	-20.52	80.00	39.42	6.03	35.32	49.35	PEAK	124	32

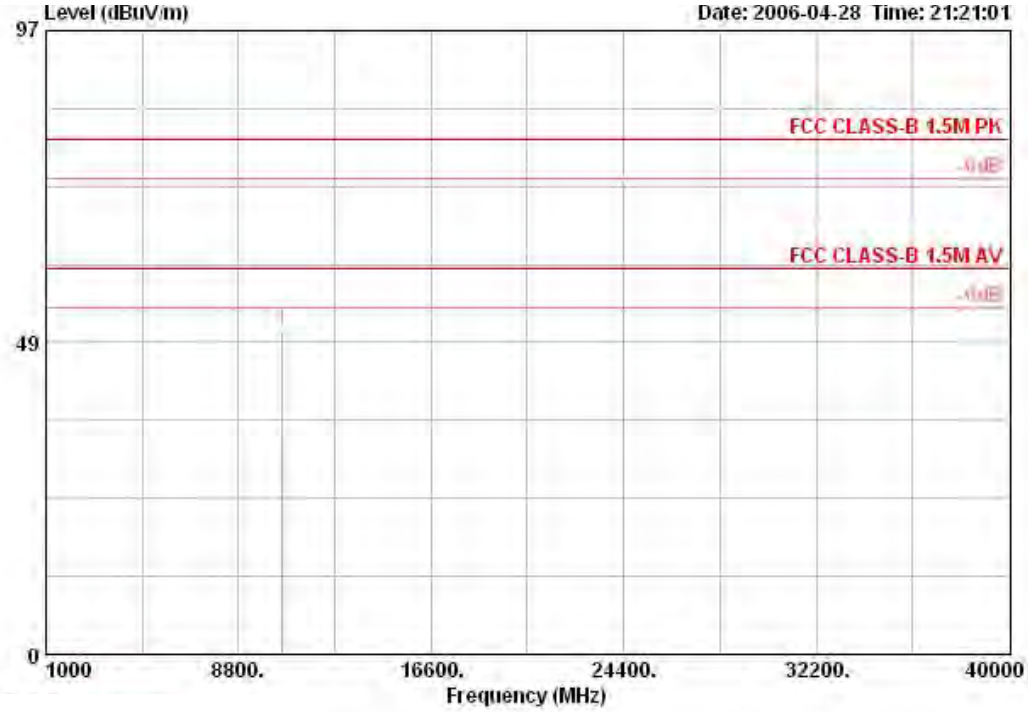
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 10

Vertical



	Freq	Level	Over Limit	Limit 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	10585.800	50.35	-29.65	80.00	39.45	6.00	35.35	40.26	PEAK	122	24

Horizontal



	Freq	Level	Over Limit	Limit 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	10581.600	50.17	-29.83	80.00	39.45	6.00	35.35	40.07	PEAK	110	18

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.

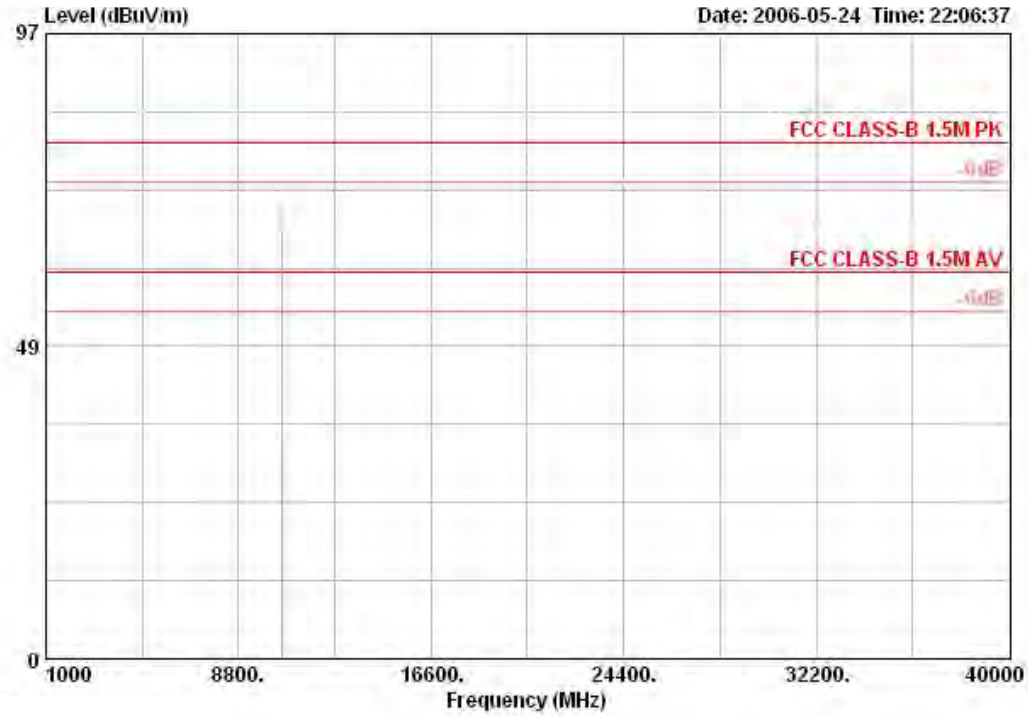
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56/ Ant. 11

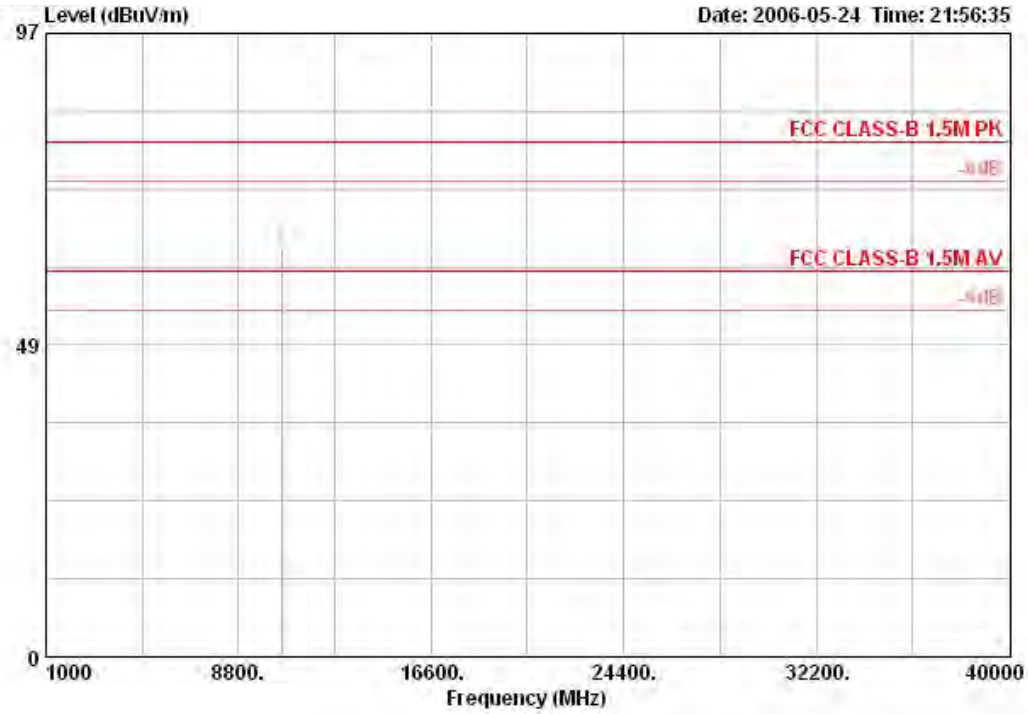
Vertical



	Freq	Level	Over Limit	Limit 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 @	10560.000	66.23			39.47	5.97	35.37	56.17	PEAK	100	360

Note: Item 1 is on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

Horizontal

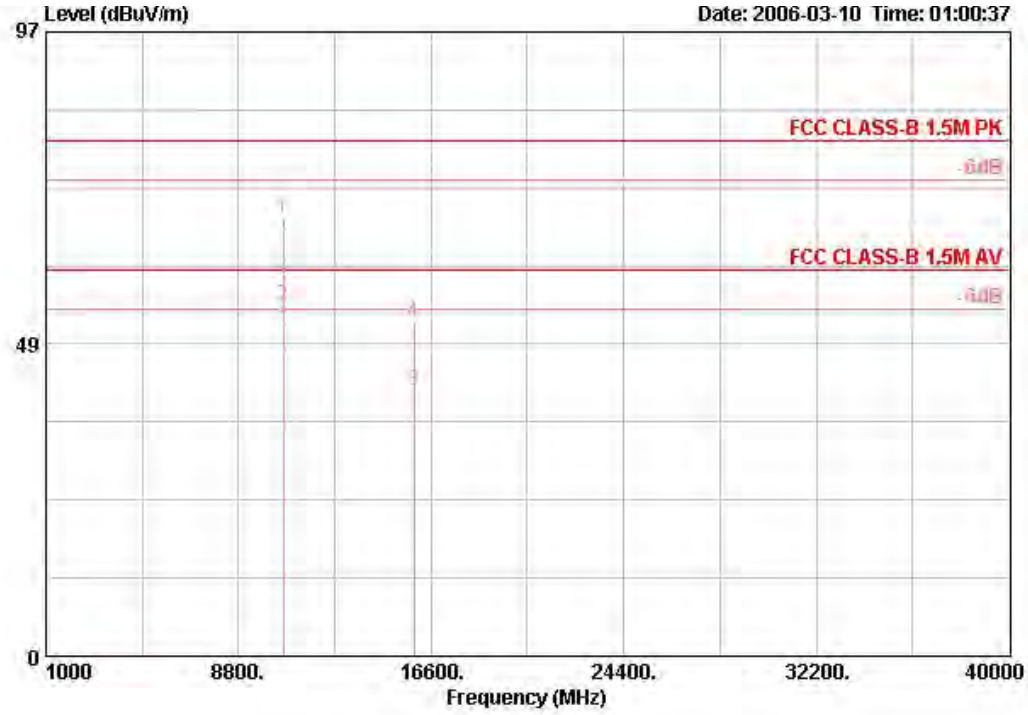


	Freq	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	10557.800	63.76			39.47	5.97	35.37	53.69	PEAK	100	360

Note: Item 1 is on un-restricted band, so the limit is an EIRP of –27dBm/MHz (77.77dBuv/m at 1m)

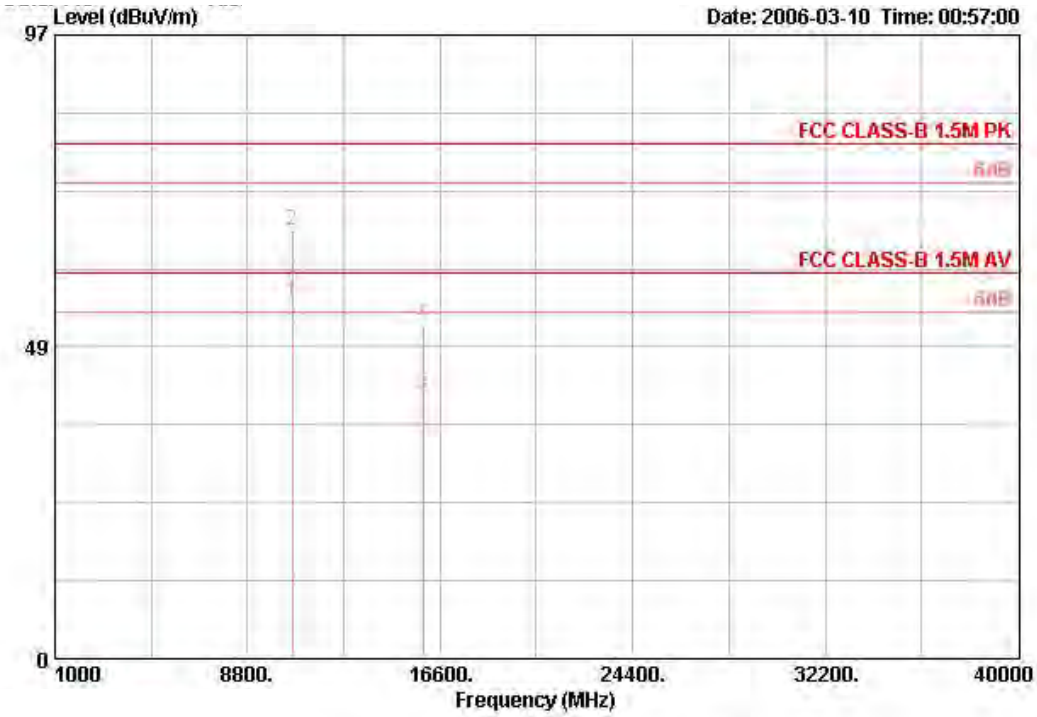
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 60/ Ant. 11

Vertical



	Freq	Level	Over Limit	Limit 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 @	10597.480	68.05	-11.95	80.00	39.44	6.00	35.35	57.96	PEAK	100	360
2 @	10600.880	54.44	-5.56	60.00	39.44	6.00	35.34	44.34	AVERAGE	100	360
3 @	15900.080	41.15	-18.85	60.00	37.64	9.55	35.46	29.42	AVERAGE	100	141
4 @	15900.080	51.85	-28.15	80.00	37.64	9.55	35.46	40.12	PEAK	100	141

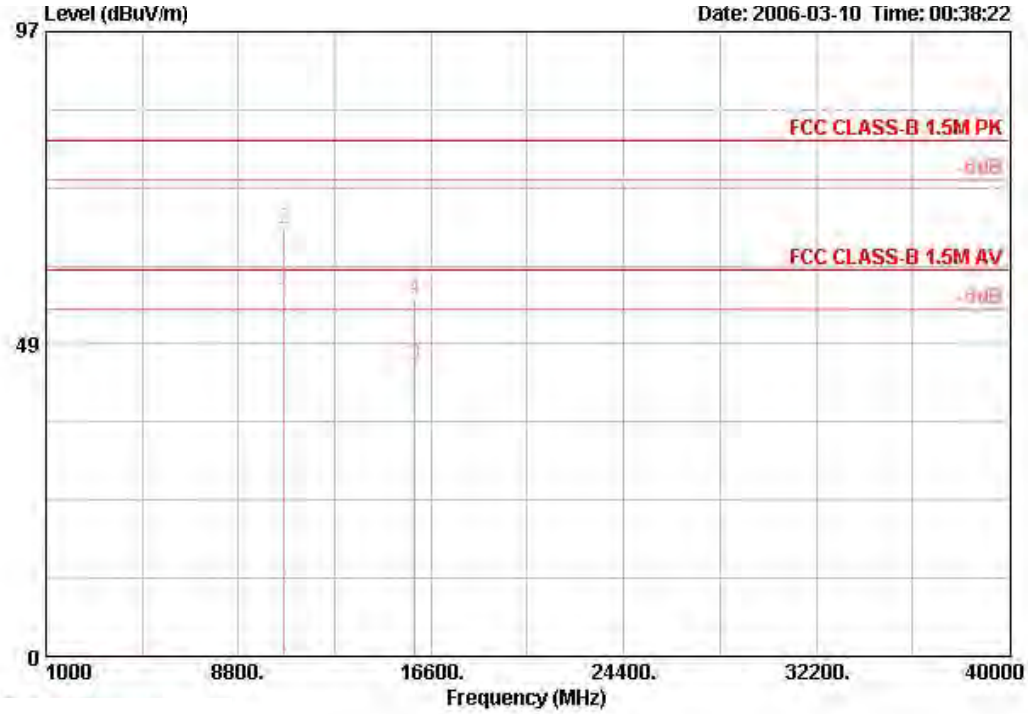
Horizontal



	Freq	Level	Over Limit	Limit 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 @	10600.160	55.41	-4.59	60.00	39.44	6.00	35.35	45.33	AVERAGE	108	50
2 @	10600.160	66.57	-13.43	80.00	39.44	6.00	35.35	56.48	PEAK	108	50
3 @	15900.080	40.96	-19.04	60.00	37.64	9.55	35.46	29.22	AVERAGE	100	327
4 @	15900.080	52.02	-27.98	80.00	37.64	9.55	35.46	40.29	PEAK	100	327

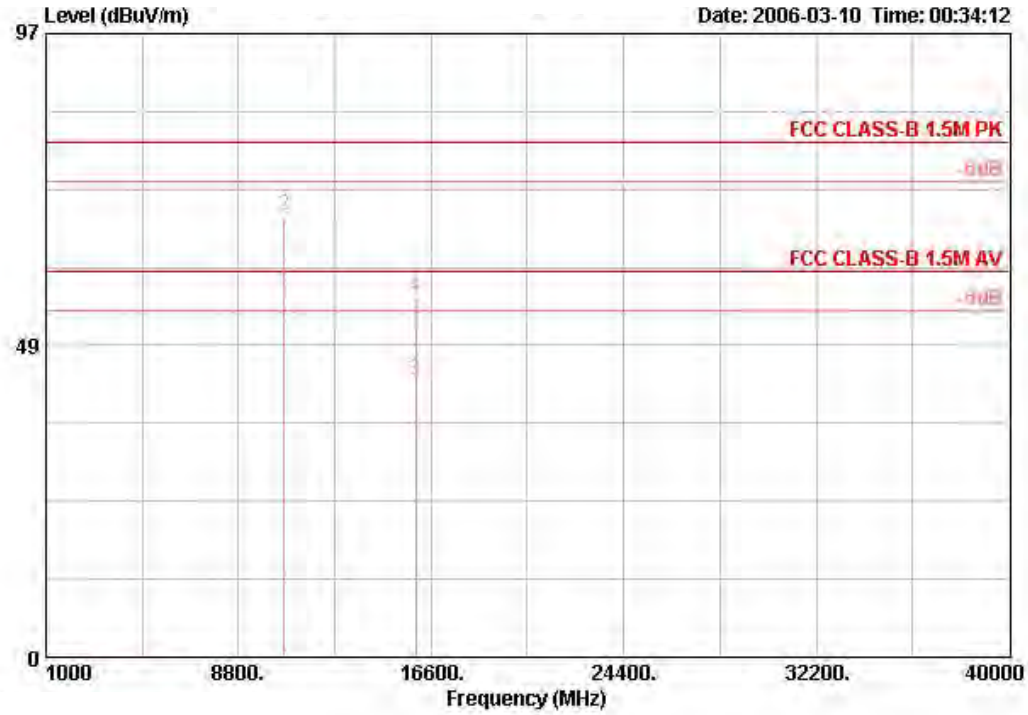
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 11

Vertical



	Freq	Level	Over Limit	Limit 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 @	10639.760	55.31	-4.69	60.00	39.42	6.03	35.32	45.18	AVERAGE	102	360
2 @	10639.760	66.46	-13.54	80.00	39.42	6.03	35.32	56.33	PEAK	102	360
3 @	15958.800	45.11	-14.89	60.00	37.55	9.62	35.42	33.36	AVERAGE	102	15
4 @	15958.800	55.43	-24.57	80.00	37.55	9.62	35.42	43.68	PEAK	102	15

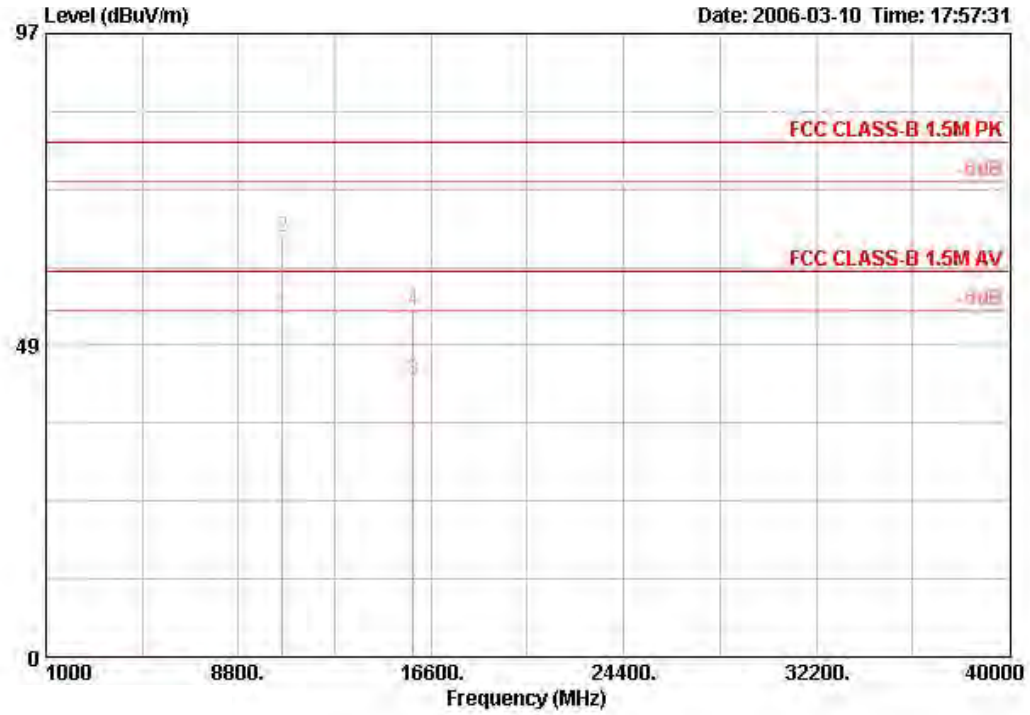
Horizontal



	Freq	Level	Over Limit	Limit 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 @	10639.640	56.82	-3.18	60.00	39.42	6.03	35.32	46.69	AVERAGE	109	53
2 @	10639.640	68.66	-11.34	80.00	39.42	6.03	35.32	58.53	PEAK	109	53
3 @	15961.400	43.11	-16.89	60.00	37.55	9.62	35.42	31.36	AVERAGE	100	81
4 @	15961.400	56.05	-23.95	80.00	37.55	9.62	35.42	44.30	PEAK	100	81

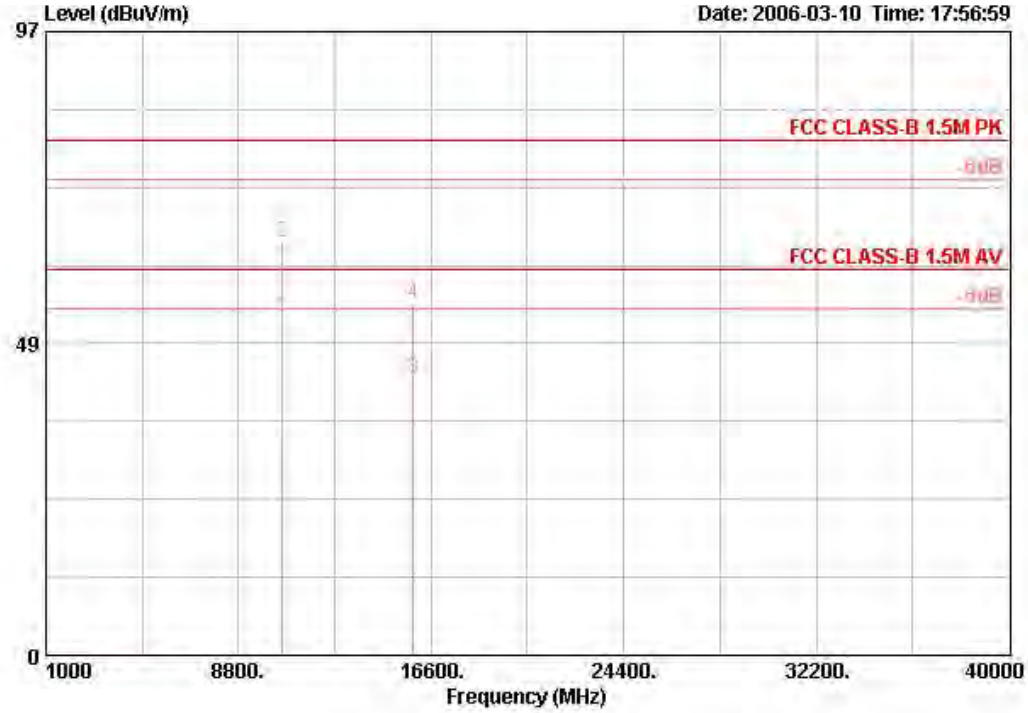
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 11

Vertical



	Freq	Level	Over Limit	Limit 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 @	10580.520	53.09	-6.91	60.00	39.45	6.00	35.35	43.00	AVERAGE	101	362
2 @	10580.520	65.24	-14.76	80.00	39.45	6.00	35.35	55.15	PEAK	101	362
3 @	15868.700	43.14	-16.86	60.00	37.67	9.52	35.48	31.44	AVERAGE	100	0
4 @	15868.700	54.04	-25.96	80.00	37.67	9.52	35.48	42.33	PEAK	100	0

Horizontal



	Freq	Level	Over Limit	Limit 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 @	10582.400	52.68	-7.32	60.00	39.45	6.00	35.35	42.58	AVERAGE	100	20
2 @	10582.400	64.27	-15.73	80.00	39.45	6.00	35.35	54.18	PEAK	100	20
3 @	15868.700	43.09	-16.91	60.00	37.67	9.52	35.48	31.38	AVERAGE	100	0
4 @	15868.700	54.78	-25.22	80.00	37.67	9.52	35.48	43.08	PEAK	100	0

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.

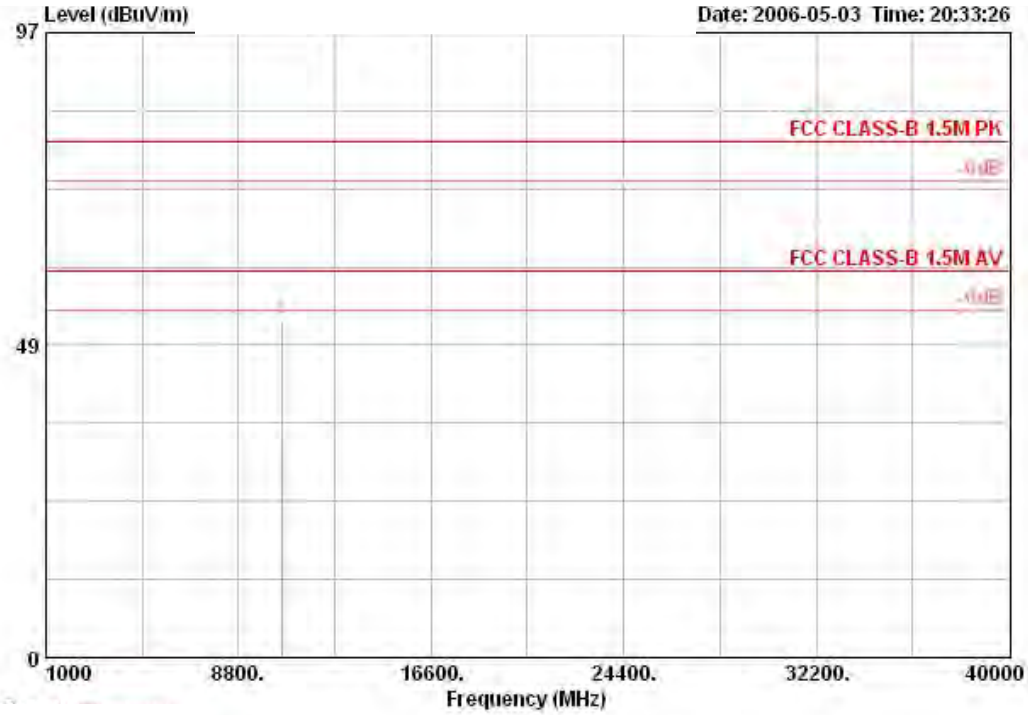
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

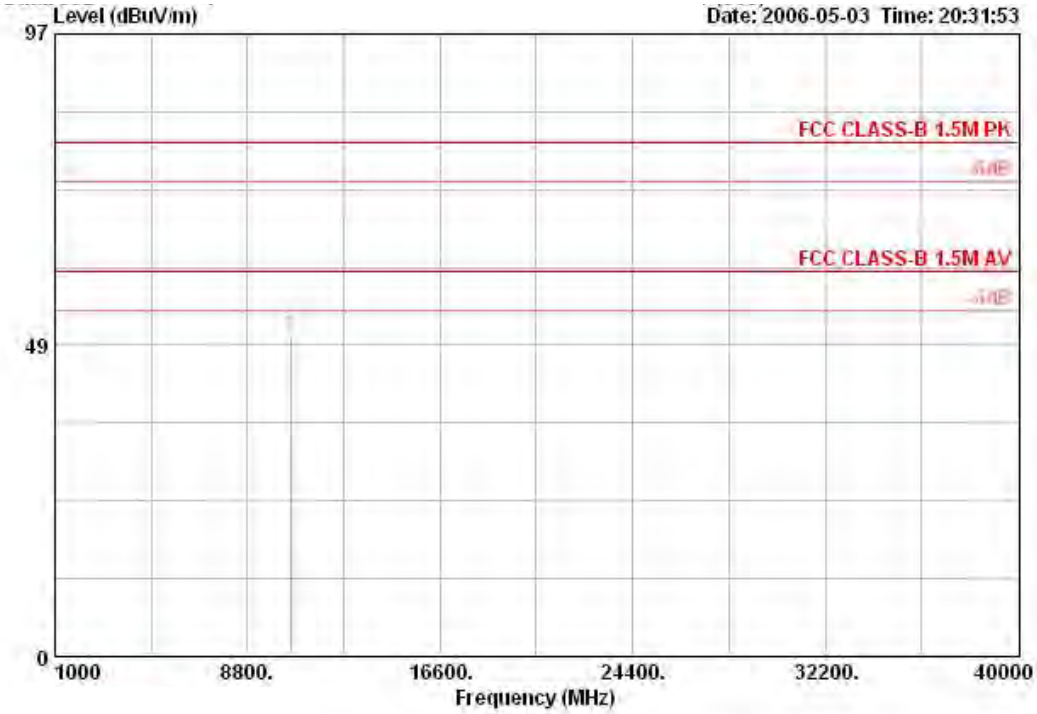
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56/ Ant. 13

Vertical



	Freq	Level	Over Limit	Limit 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	10556.080	52.28	-27.72	80.00	39.47	5.97	35.37	42.21	PEAK	102	1

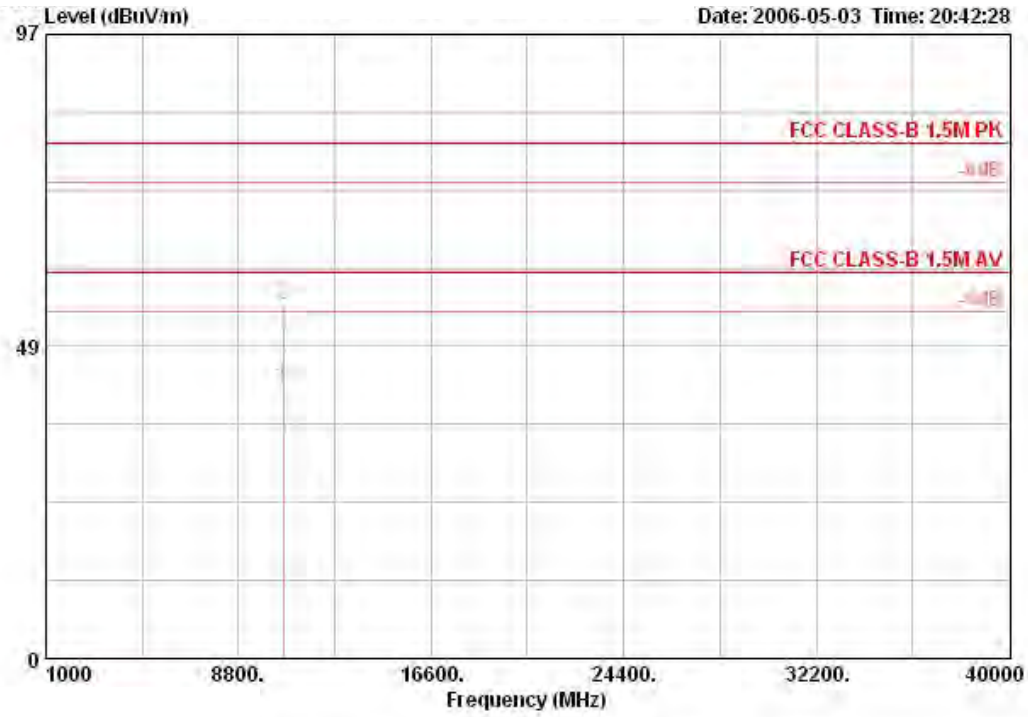
Horizontal



	Freq	Level	Over Limit	Limit 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	10560.160	50.08	-29.92	80.00	39.47	5.97	35.37	40.01	PEAK	104	15

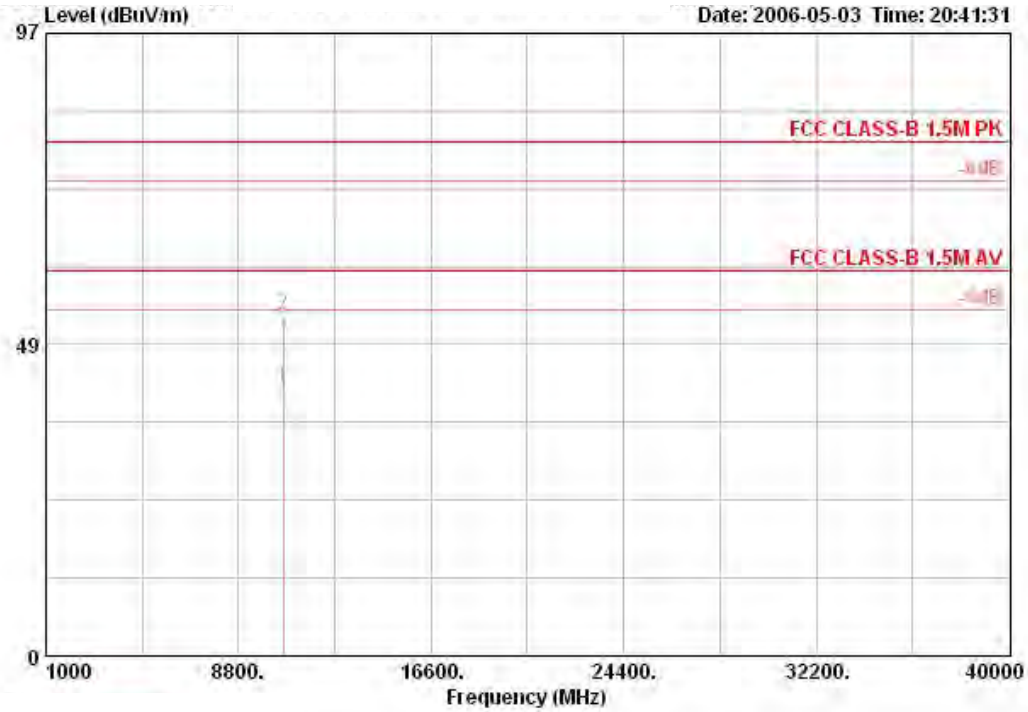
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 60/ Ant. 13

Vertical



	Freq	Level	Over Limit	Limit 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	10600.080	42.39	-17.61	60.00	39.44	6.00	35.35	32.31	AVERAGE	103	2
2	10600.080	54.96	-25.04	80.00	39.44	6.00	35.35	44.88	PEAK	103	2

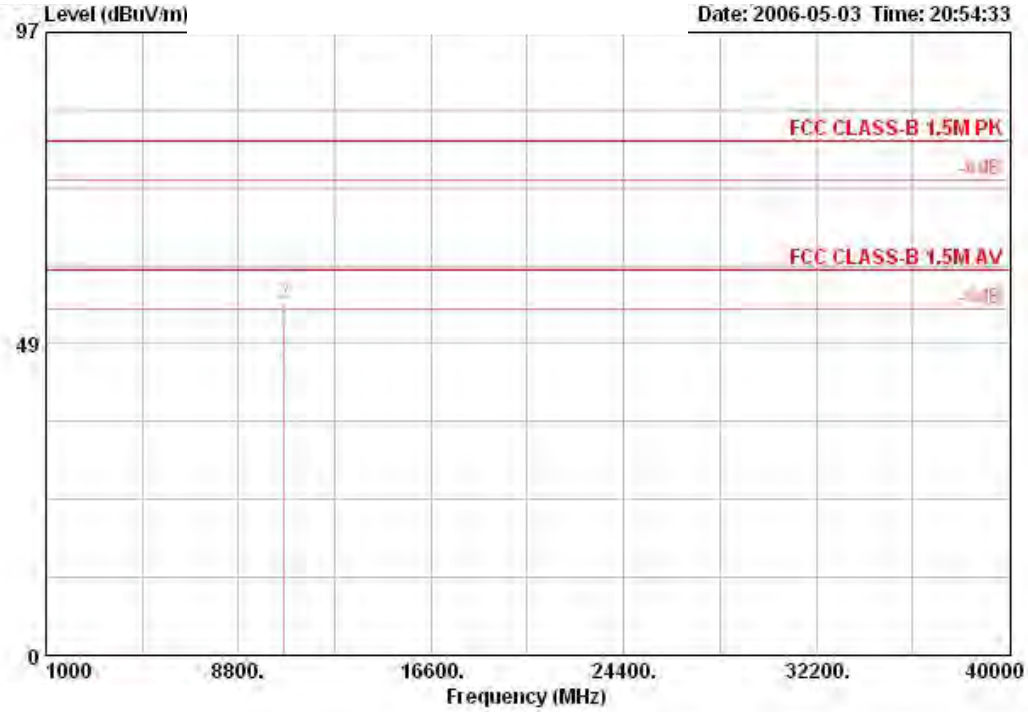
Horizontal



	Freq	Level	Over Limit	Limit 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	10600.480	41.80	-18.20	60.00	39.44	6.00	35.35	31.72	AVERAGE	106	9
2	10600.480	52.99	-27.01	80.00	39.44	6.00	35.35	42.91	PEAK	106	9

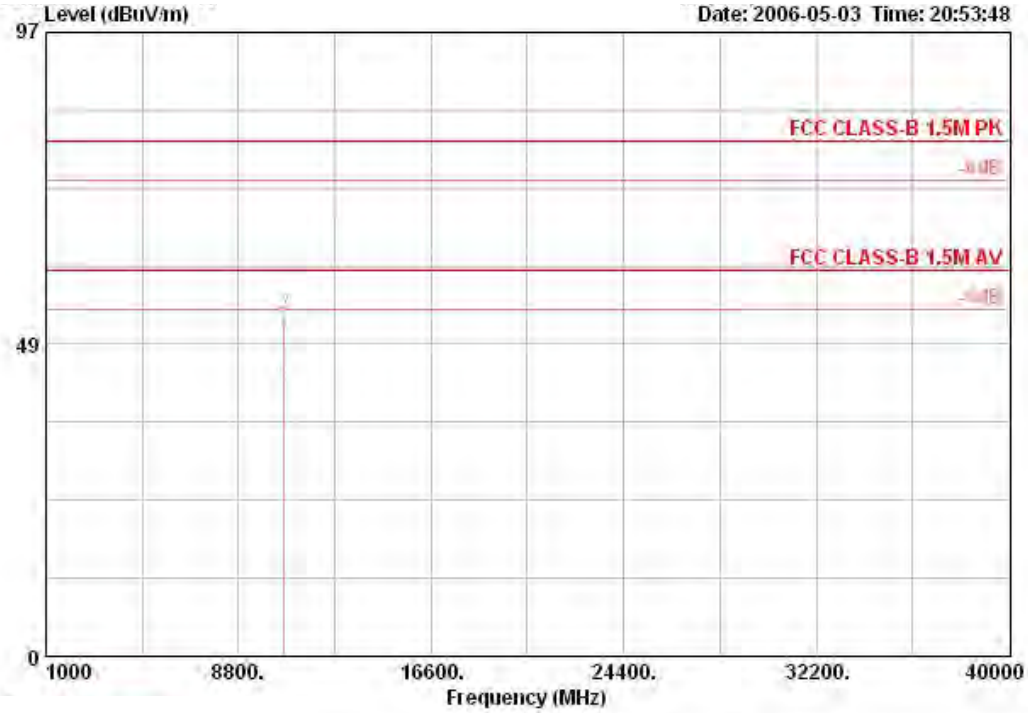
Temperature	24℃	Humidity	64%
Test Engineer	Leo Hung	Configurations	802.11a Channel 64/ Ant. 13

Vertical



	Freq	Level	Over Limit	Limit 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	10640.600	43.79	-16.21	60.00	39.42	6.03	35.32	33.66	AVERAGE	102	2
2	10640.600	54.76	-25.24	80.00	39.42	6.03	35.32	44.62	PEAK	102	2

Horizontal



	Freq	Level	Over Limit	Limit 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	10640.400	41.80	-18.20	60.00	39.42	6.03	35.32	31.67	AVERAGE	106	10
2	10640.400	53.23	-26.77	80.00	39.42	6.03	35.32	43.10	PEAK	106	10

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.

The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

4.7. Band Edge Emissions Measurement

4.7.1. Limit

For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.25-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz (68.3dBuV/m at 3m). In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

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

4.7.2. 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)	1 MHz /1 MHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.6.3, only the freqeuncy range investigated is limited to 100MHz around bandedges.
2. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

4.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

4.7.5. Test Deviation

There is no deviation with the original standard.

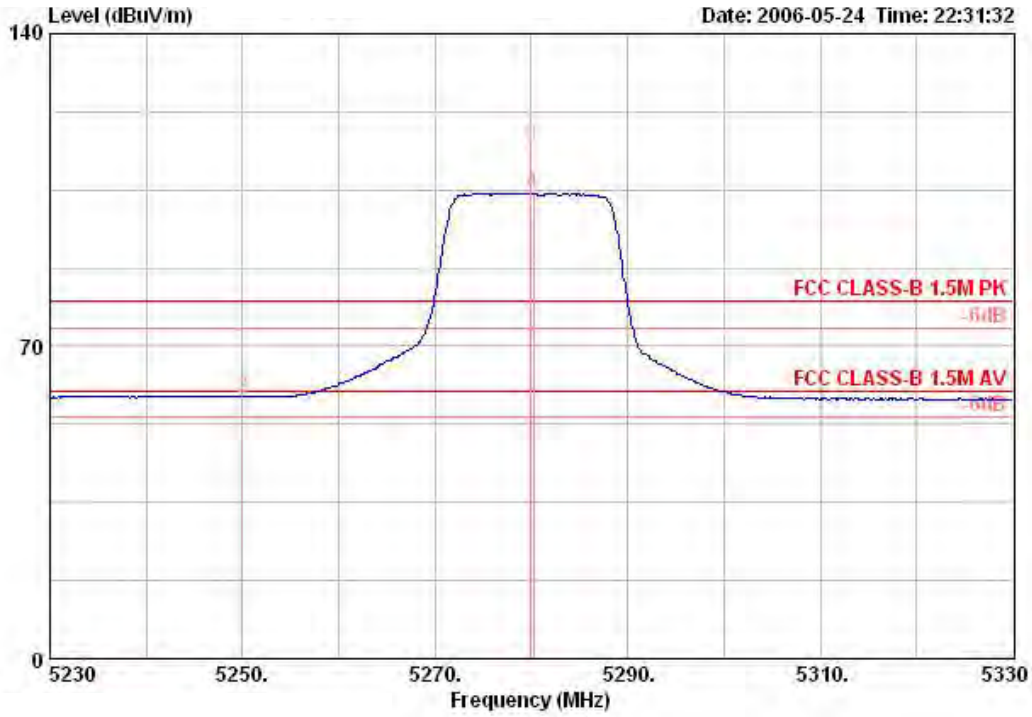
4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.7.7. Test Result of Band Edge and Fundamental Emissions

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56, 64/ Ant. 6/7

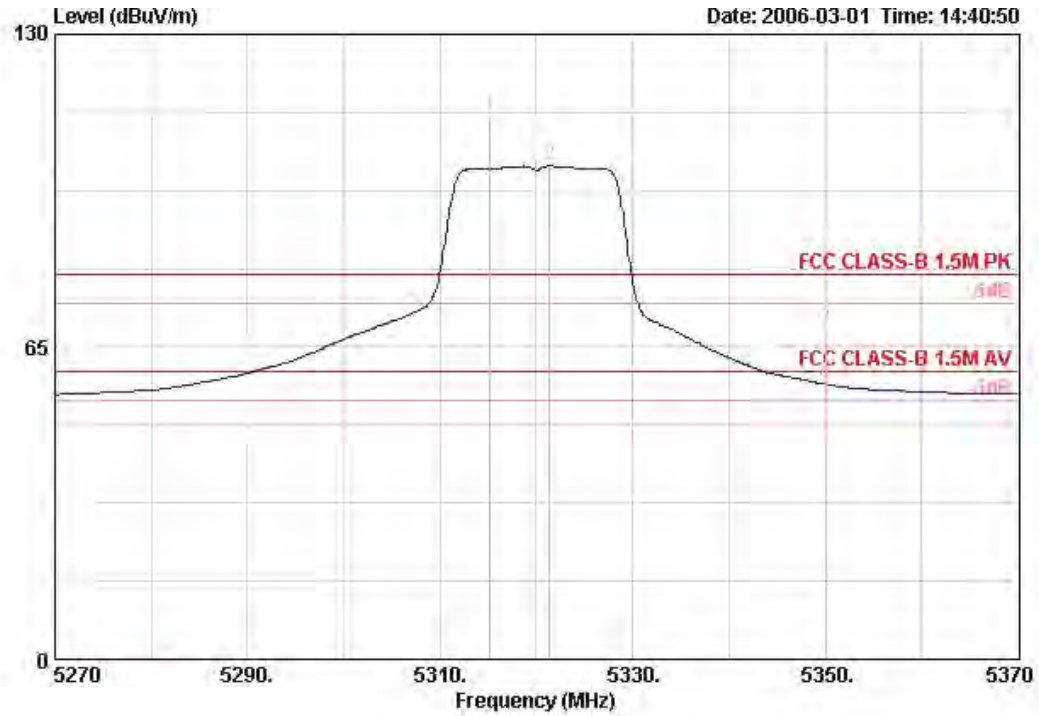
Channel 56



	Freq	Level	Over Limit	Limit 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	5250.000	69.87	-10.13	80.00	34.00	5.00	0.00	30.87	PEAK	100	360
2 !	5250.000	58.55	-1.45	60.00	34.00	5.00	0.00	19.55	AVERAGE	100	360
3	5280.000	114.80			34.05	5.03	0.00	75.71	PEAK	100	360
4	5280.200	104.32			34.05	5.03	0.00	65.23	Average	---	---

Channel 56 is fundamental frequency at 5280 MHz.

Channel 64

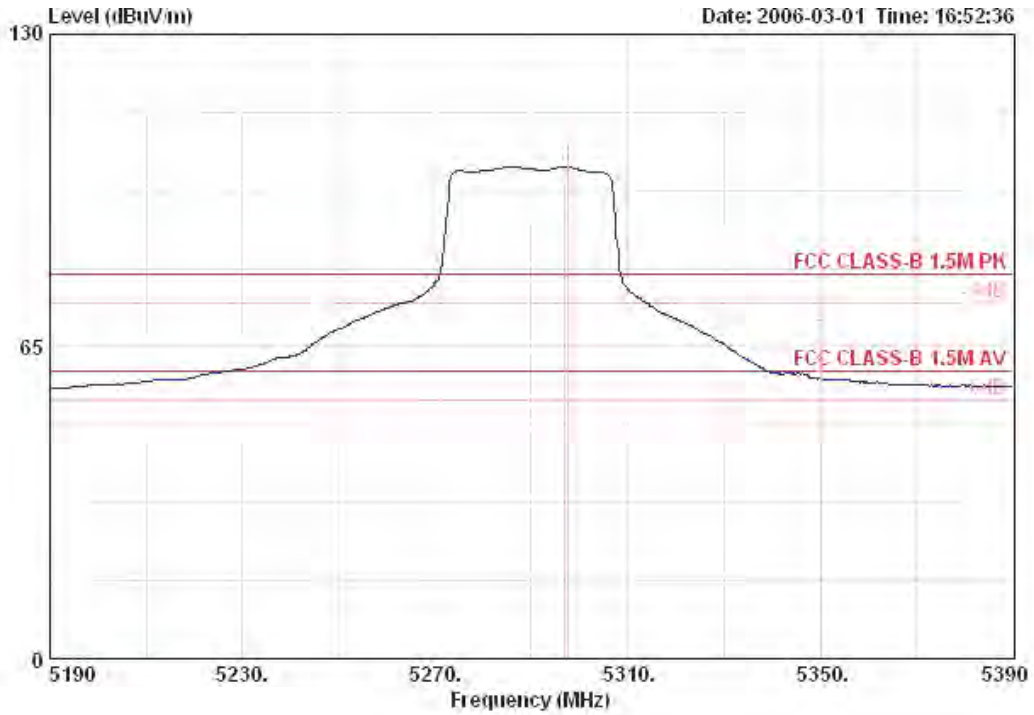


	Freq	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	5315.200	112.95			34.11	5.07	0.00	73.77	PEAK	106	82
2 @	5321.400	102.60			34.11	5.07	0.00	63.42	Average	---	---
3 @	5350.000	68.81	-11.19	80.00	34.16	5.11	0.00	29.54	PEAK	106	82
4 @	5350.000	57.21	-2.79	60.00	34.16	5.11	0.00	17.93	AVERAGE	106	82

Channel 64 is fundamental frequency at 5320 MHz.

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 6/7

Turbo Channel 58



	Freq	Level	Over Limit	Limit 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 @	5296.800	102.39			34.08	5.03	0.00	63.28	Average	---	---
2	5297.600	112.45			34.08	5.03	0.00	73.33	PEAK	122	290
3 !	5350.000	58.30	-1.70	60.00	34.16	5.11	0.00	19.03	Average	---	---
4	5350.000	68.30	-11.70	80.00	34.16	5.11	0.00	29.03	Peak	122	290

Channel 58 is fundamental frequency at 5290 MHz.

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

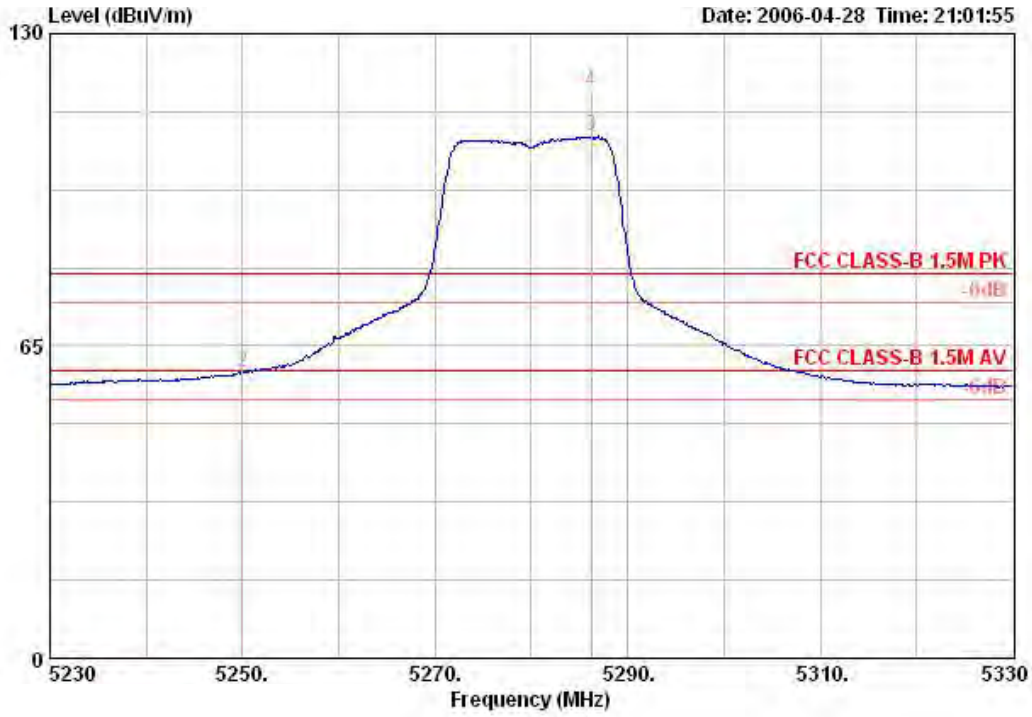
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56, 64/ Ant. 10

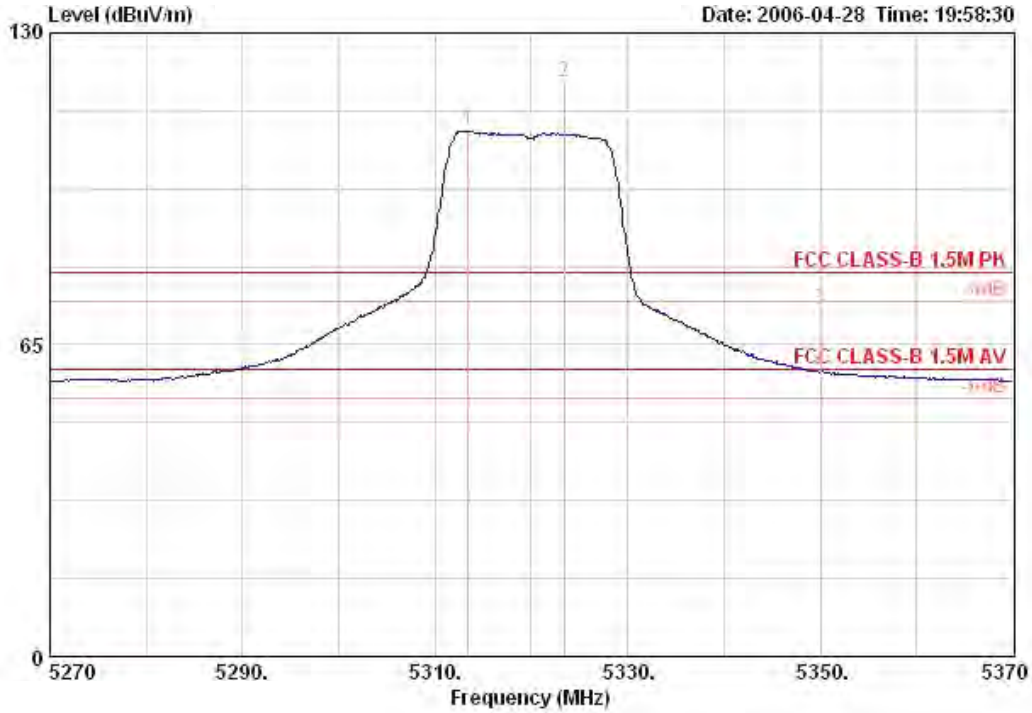
Channel 56



	Freq	Level	Over Limit	Limit 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	5250.000	72.66	-7.34	80.00	34.00	5.00	0.00	33.67	PEAK	121	34
2 !	5250.000	59.41	-0.59	60.00	34.00	5.00	0.00	20.42	AVERAGE	121	34
3	5286.200	108.62			34.05	5.03	0.00	69.53	Average	---	---
4	5286.200	117.81			34.05	5.03	0.00	78.72	PEAK	121	34

Channel 56 is fundamental frequency at 5280 MHz.

Channel 64

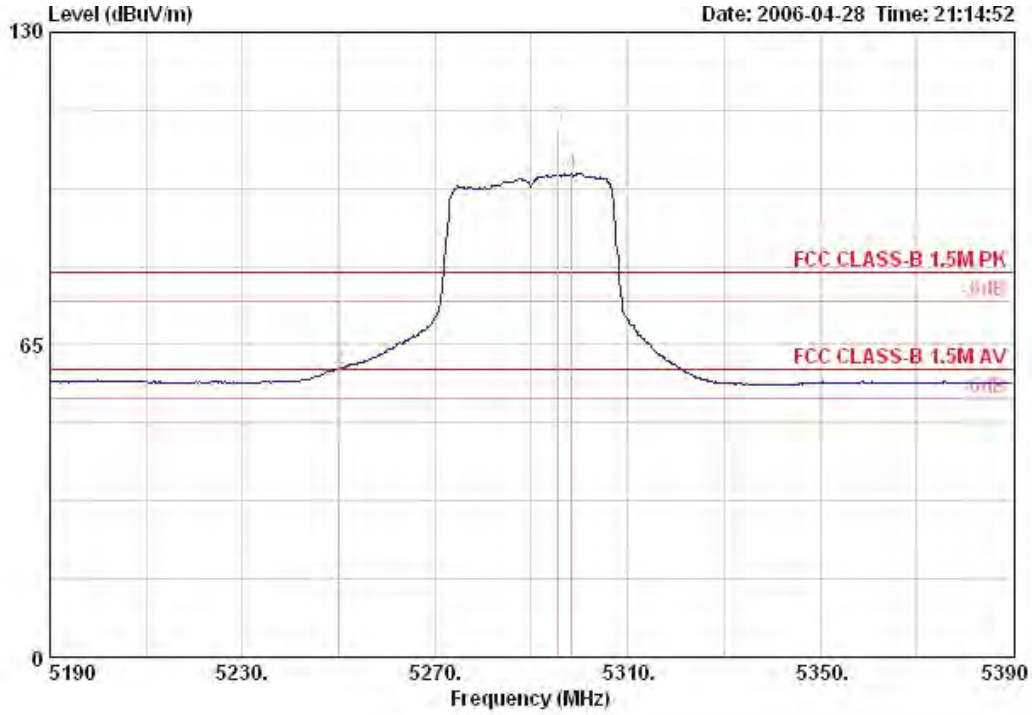


	Freq	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	5313.400	109.49			34.11	5.07	0.00	70.31	Average	---	---
2	5323.400	119.67			34.11	5.07	0.00	80.49	PEAK	124	36
3	5350.000	72.38	-7.62	80.00	34.16	5.11	0.00	33.11	PEAK	124	36
4 !	5350.000	59.05	-0.95	60.00	34.16	5.11	0.00	19.78	AVERAGE	124	36

Channel 64 is fundamental frequency at 5320 MHz.

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 10

Turbo Channel 58



	Freq	Level	Over Limit	Limit 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	5250.000	69.81	-10.19	80.00	34.00	5.00	0.00	30.82	PEAK	120	325
2 !	5250.000	59.77	-0.23	60.00	34.00	5.00	0.00	20.77	AVERAGE	120	325
3	5295.600	110.25			34.08	5.03	0.00	71.14	PEAK	120	325
4	5298.400	100.63			34.08	5.03	0.00	61.52	Average	---	---

Channel 58 is fundamental frequency at 5290 MHz.

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

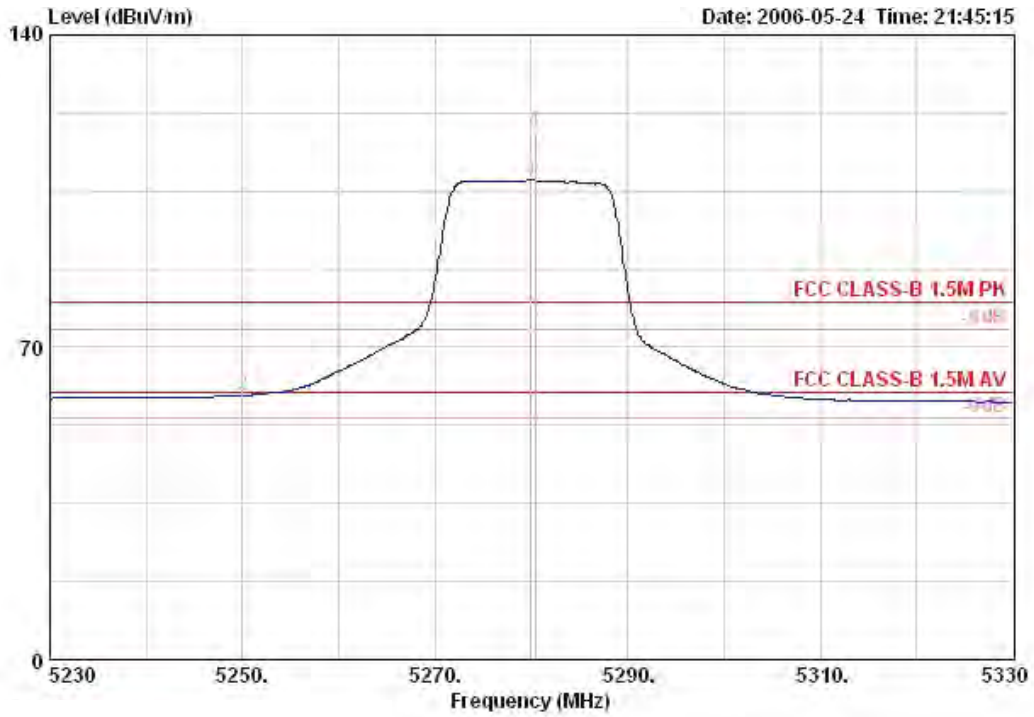
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56, 64/ Ant. 11

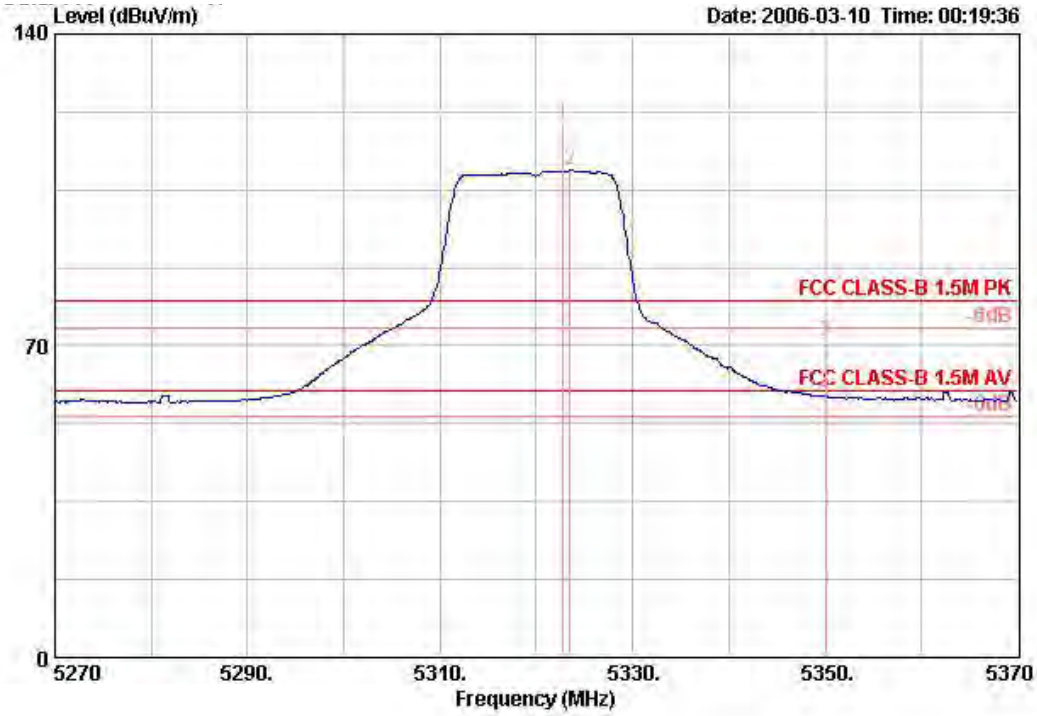
Channel 56



	Freq	Level	Over Limit	Limit 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	5250.000	71.15	-8.85	80.00	34.00	5.00	0.00	32.16	PEAK	100	21
2 !	5250.000	59.12	-0.88	60.00	34.00	5.00	0.00	20.13	AVERAGE	100	21
3 @	5279.900	107.62			34.05	5.03	0.00	68.53	Average	---	---
4	5280.400	118.20			34.05	5.03	0.00	79.11	PEAK	100	21

Channel 56 is fundamental frequency at 5280 MHz.

Channel 64

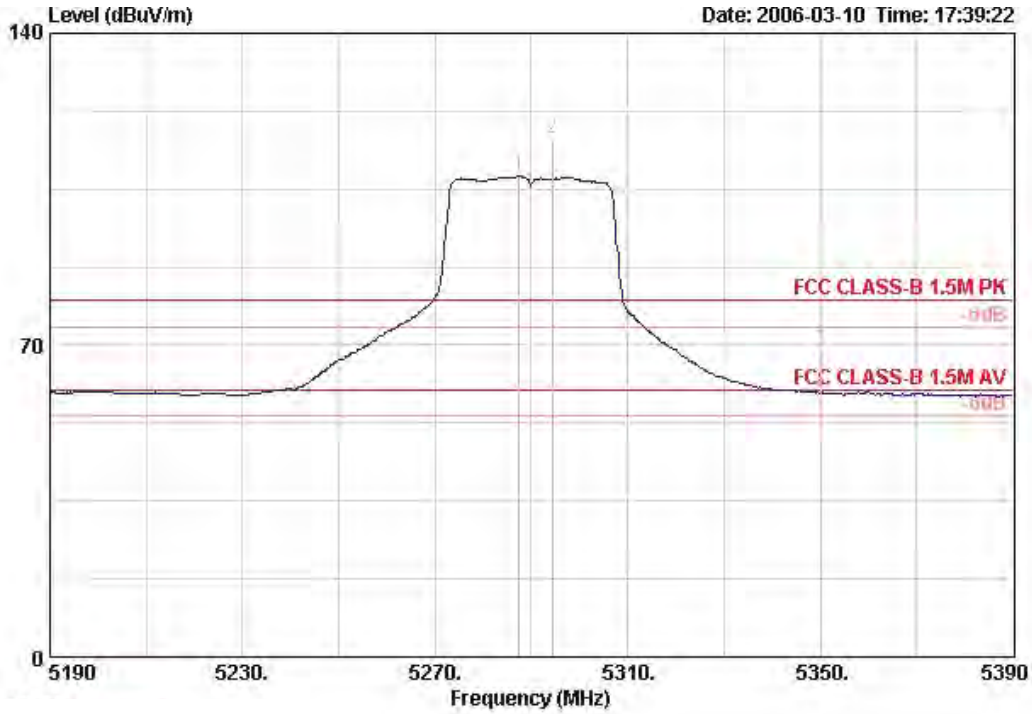


	Freq	Level	Over Limit	Limit Line	Antenna Factor	Cable Loss	Preamp Factor	Read Level	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	dBuV		cm	deg
1 @	5322.800	119.94			34.11	5.07	0.00	80.76	PEAK	100	0
2 @	5323.500	109.35			34.11	5.07	0.00	70.17	Average	---	---
3 @	5350.000	71.04	-8.96	80.00	34.16	5.11	0.00	31.77	PEAK	100	0
4 @	5350.000	58.70	-1.30	60.00	34.16	5.11	0.00	19.43	AVERAGE	100	0

Channel 64 is fundamental frequency at 5320 MHz.

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Turbo Channel 58/ Ant. 11

Turbo Channel 58



	Freq	Level	Over Limit	Limit 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 @	5287.400	107.80			34.05	5.03	0.00	68.71	Average	---	---
2 @	5294.400	116.33			34.08	5.03	0.00	77.22	PEAK	100	1
3	5350.000	68.76	-11.24	80.00	34.16	5.11	0.00	29.49	PEAK	100	1
4 !	5350.000	58.91	-1.09	60.00	34.16	5.11	0.00	19.64	AVERAGE	100	1

Channel 58 is fundamental frequency at 5290 MHz.

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

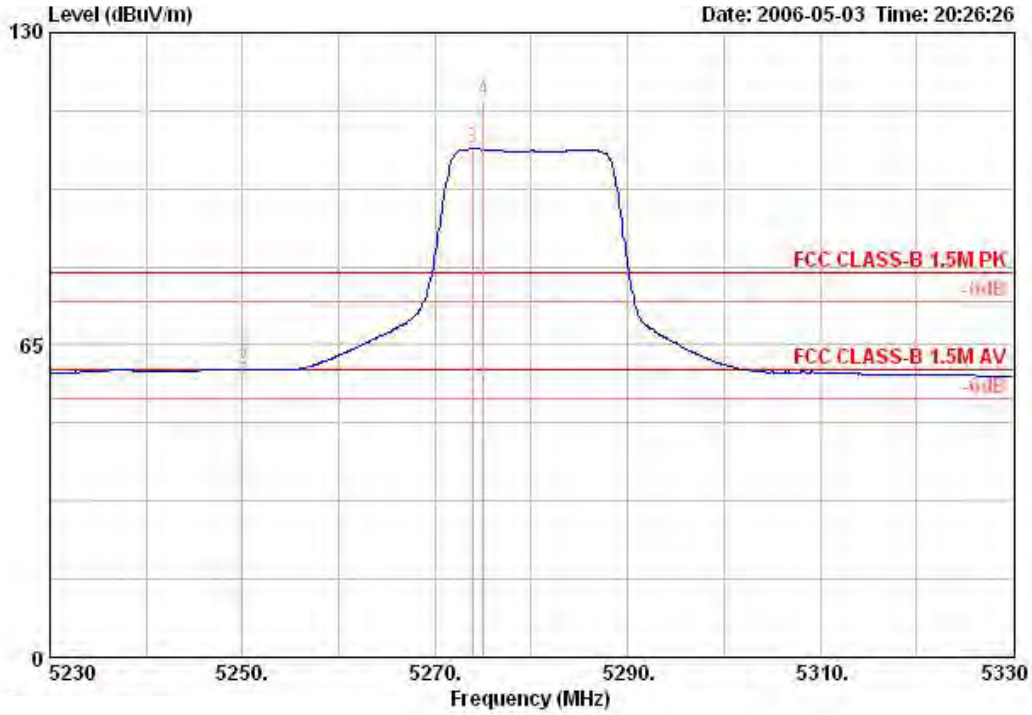
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

Temperature	26℃	Humidity	65%
Test Engineer	Leo Hung	Configurations	802.11a Channel 56, 64/ Ant. 13

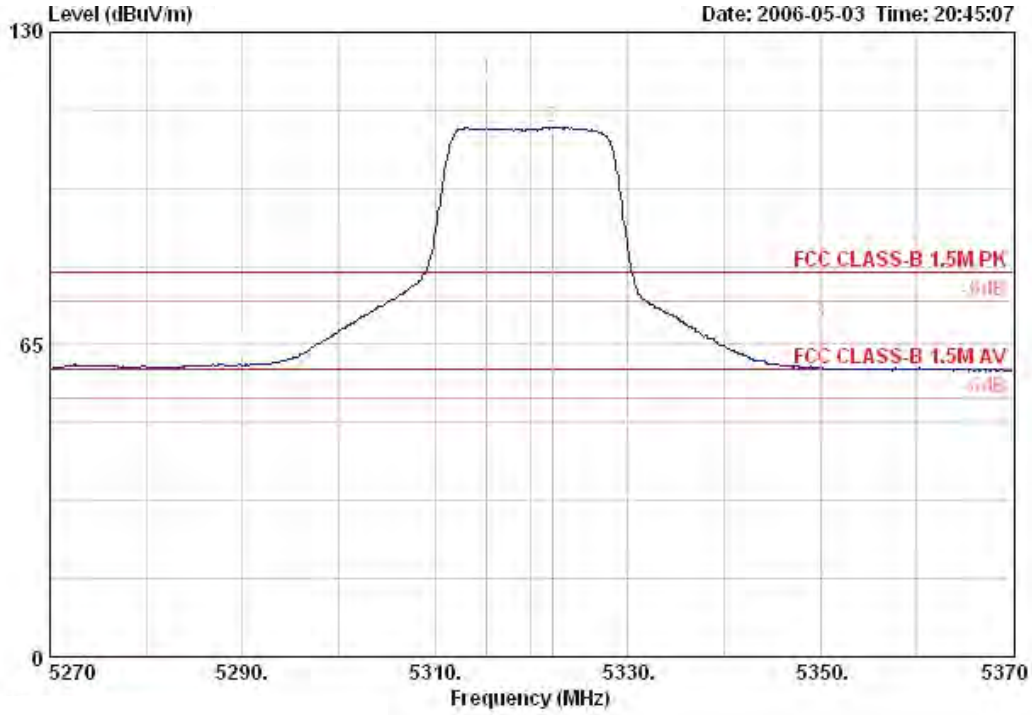
Channel 56



	Freq	Level	Over Limit	Limit 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	5250.000	71.33	-8.67	80.00	34.00	5.00	0.00	32.33	PEAK	100	2
2 !	5250.000	59.90	-0.10	60.00	34.00	5.00	0.00	20.91	AVERAGE	100	2
3 @	5273.900	105.80			34.03	5.03	0.00	66.74	Average	---	---
4	5275.000	115.69			34.03	5.03	0.00	76.63	PEAK	100	2

Channel 56 is fundamental frequency at 5280 MHz.

Channel 64



	Freq	Level	Over Limit	Limit 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	5315.400	120.22			34.11	5.07	0.00	81.04	PEAK	100	0
2 @	5322.200	110.21			34.11	5.07	0.00	71.03	Average	---	---
3	5350.000	69.34	-10.66	80.00	34.16	5.11	0.00	30.06	PEAK	100	0
4 !	5350.000	59.87	-0.13	60.00	34.16	5.11	0.00	20.60	AVERAGE	100	0

Channel 64 is fundamental frequency at 5320 MHz.

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

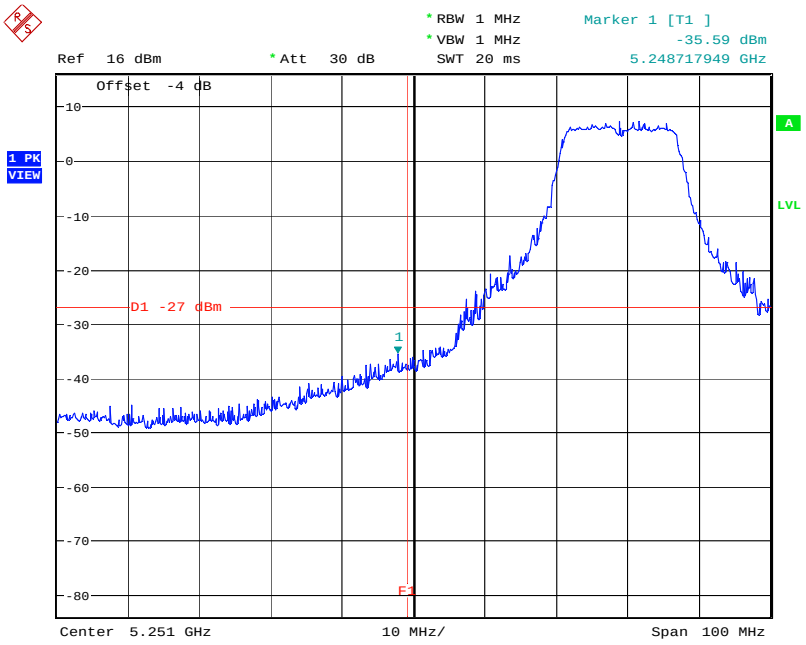
The limits above 5GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1.5m.

Distance extrapolation factor = 20 log (specific distanc [3m] / test distance [1.5m]) (dB);

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

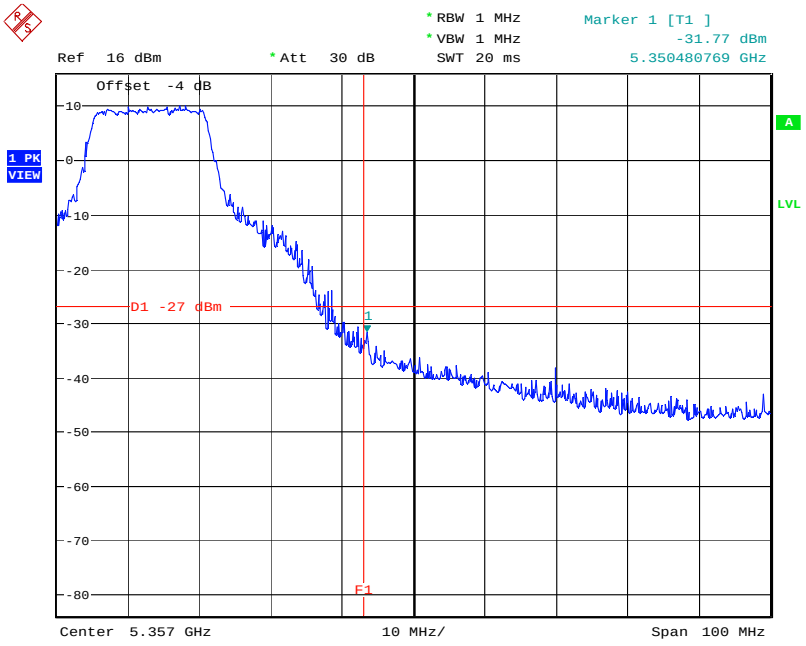
For Ant. 6/7

EIRP Emission in Band on Configuration IEEE 802.11a / 5280 MHz



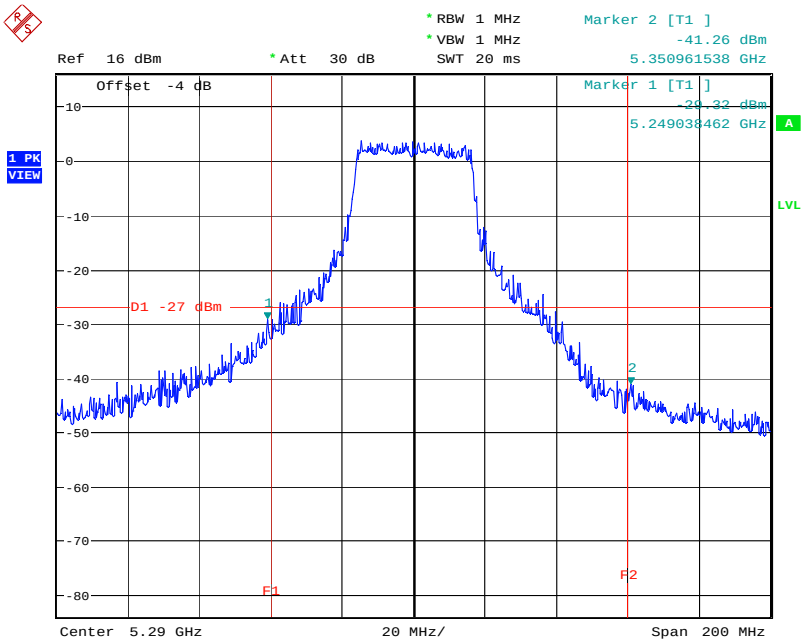
Date: 30.MAY.2006 20:45:08

EIRP Emission in Band on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:44:29

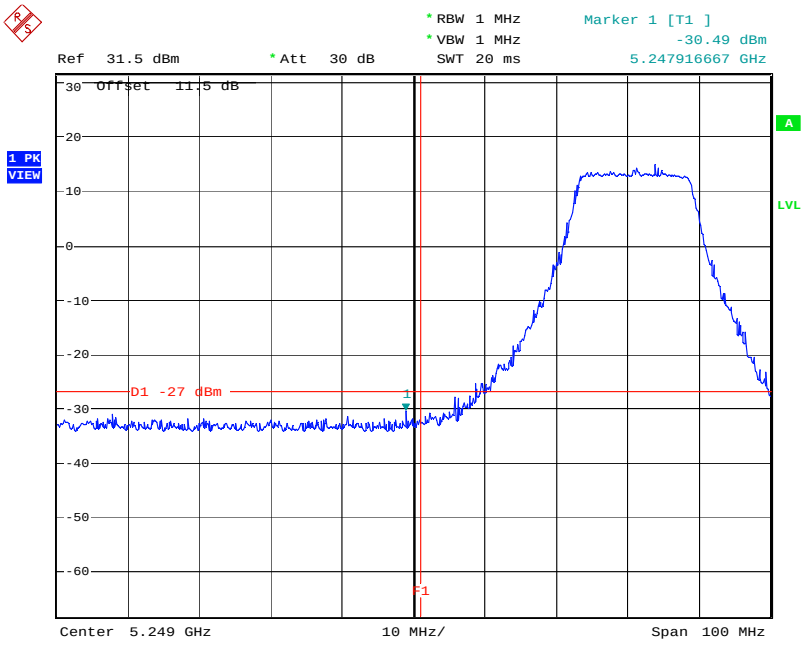
EIRP Emission in Band on Configuration IEEE 802.11a Turbo / 5290MHz



Date: 30.MAY.2006 20:08:06

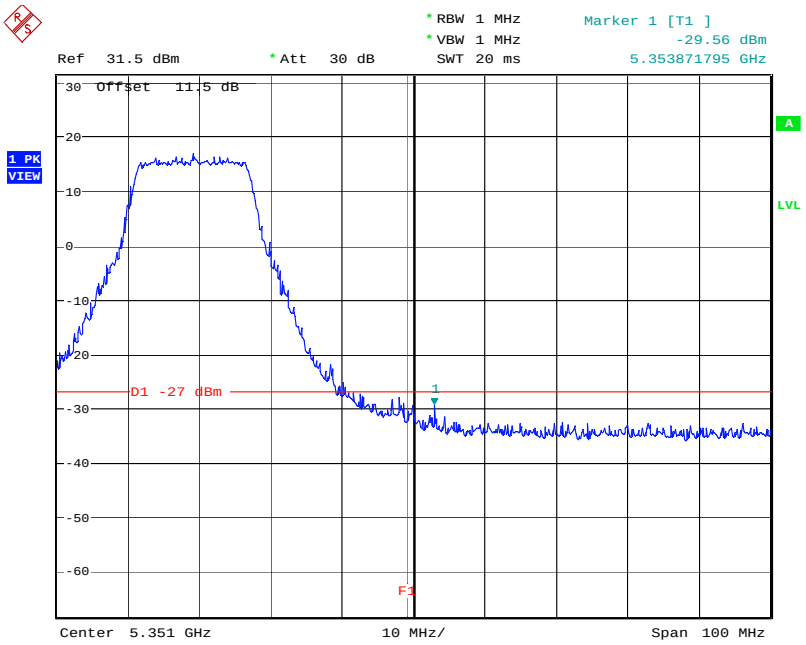
For Ant. 10

EIRP Emission in Band on Configuration IEEE 802.11a / 5280 MHz



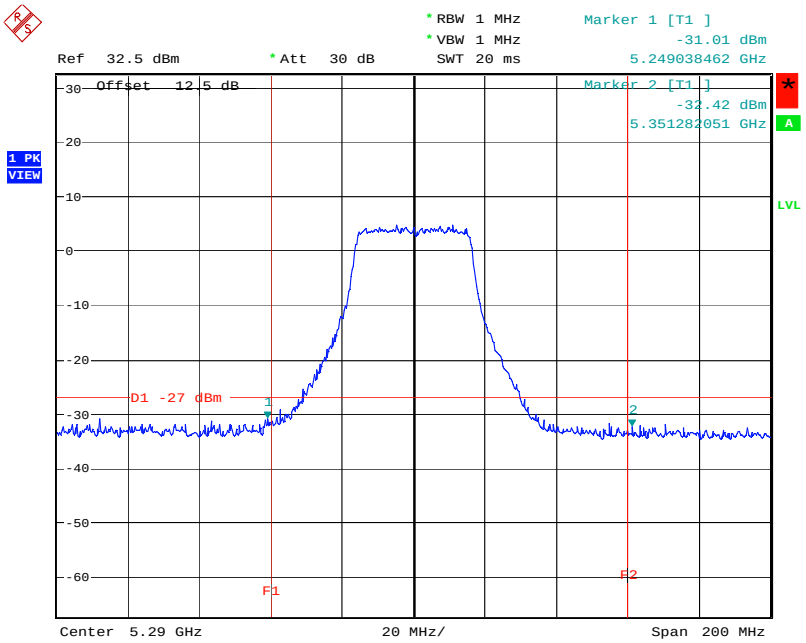
Date: 30.MAY.2006 20:28:12

EIRP Emission in Band on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:28:53

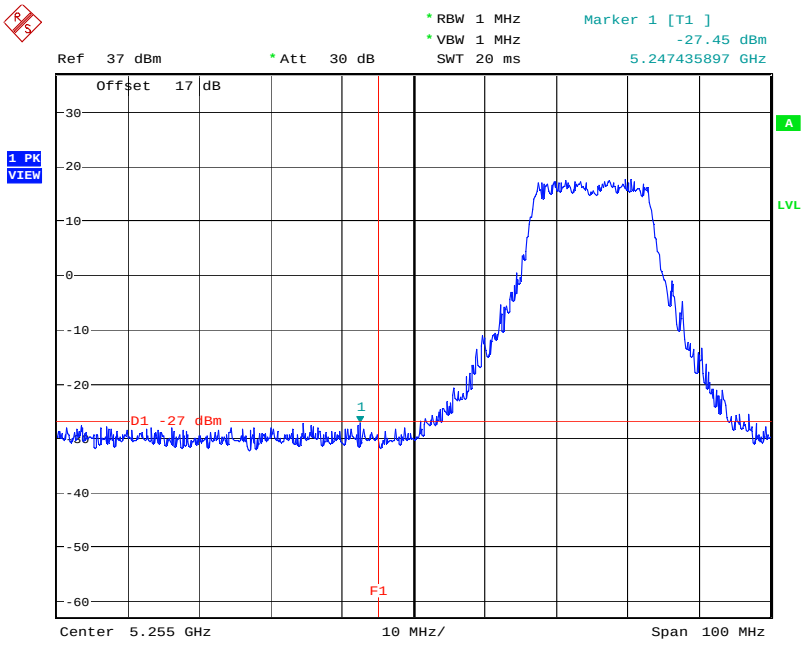
EIRP Emission in Band on Configuration IEEE 802.11a Turbo / 5290MHz



Date: 9.MAY.2006 19:41:16

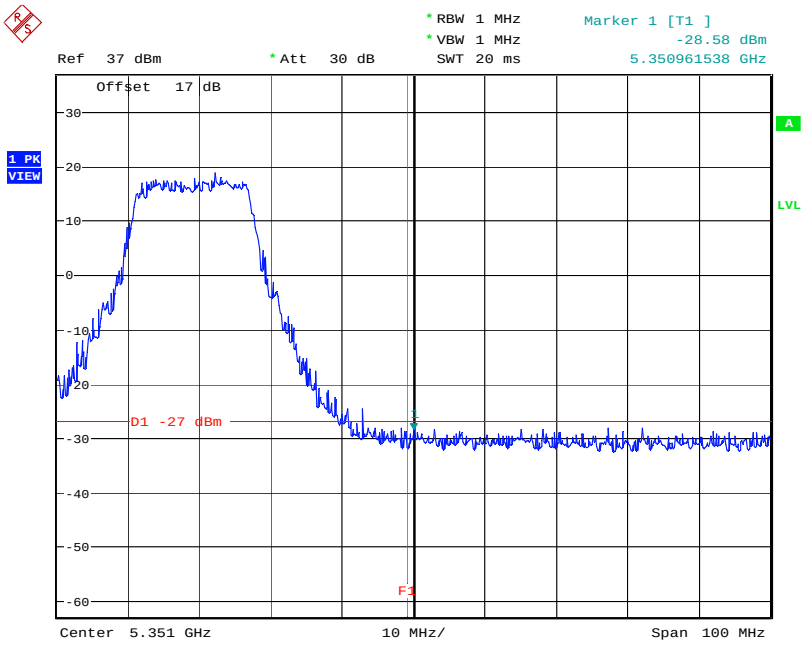
For Ant. 11

EIRP Emission in Band on Configuration IEEE 802.11a / 5280 MHz



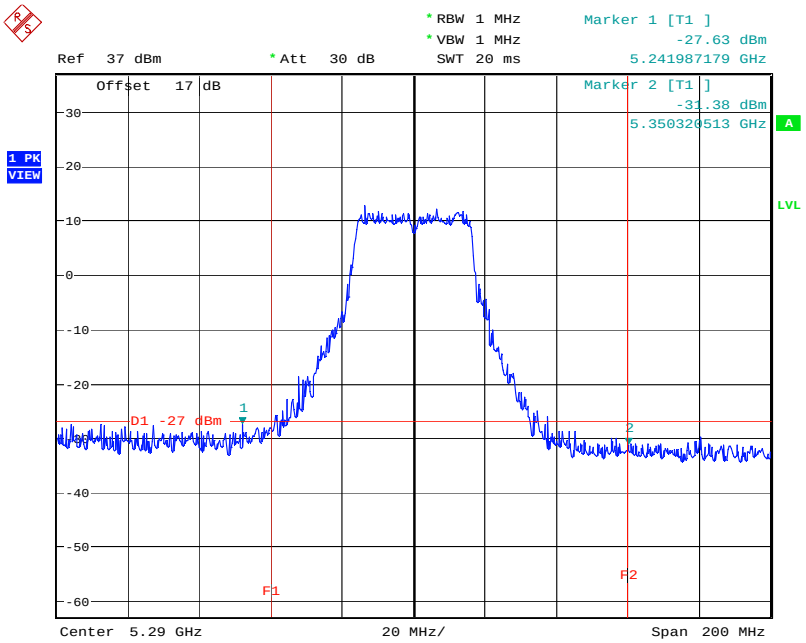
Date: 30.MAY.2006 20:22:43

EIRP Emission in Band on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:21:28

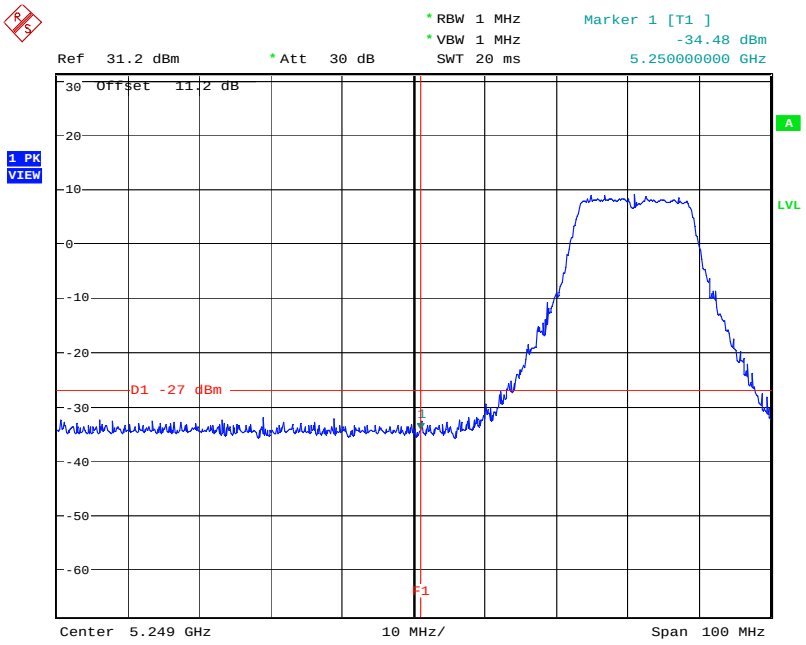
EIRP Emission in Band on Configuration IEEE 802.11a Turbo / 5290MHz



Date: 30.MAY.2006 20:24:17

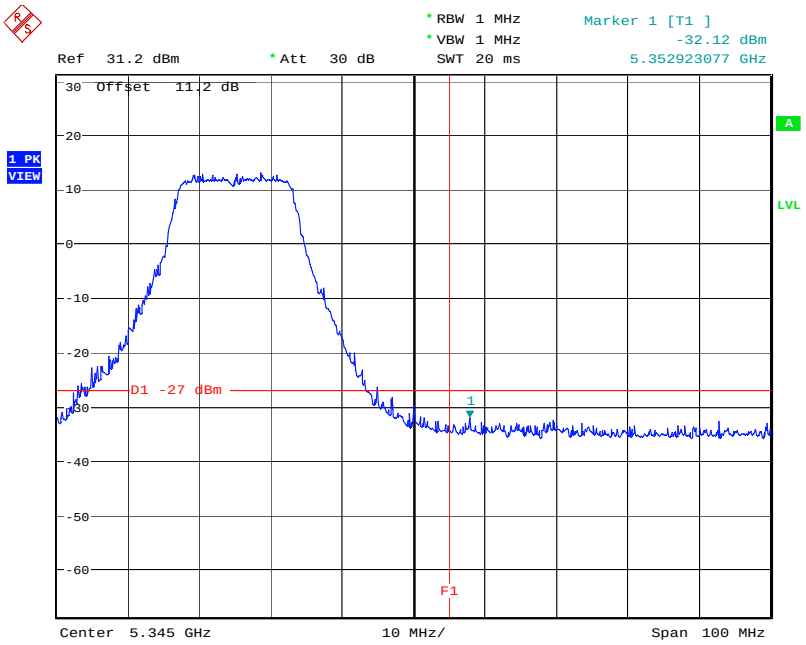
For Ant. 13

EIRP Emission in Band on Configuration IEEE 802.11a / 5280 MHz



Date: 30.MAY.2006 20:27:01

EIRP Emission in Band on Configuration IEEE 802.11a / 5320 MHz



Date: 30.MAY.2006 20:26:21

4.8. Frequency Stability Measurement

4.8.1. Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emissions is maintained within the band of operation under all conditions of normal operation as specified in the user's manual or ±20ppm (IEEE 802.11a specification).

4.8.2. Measuring Instruments and Setting

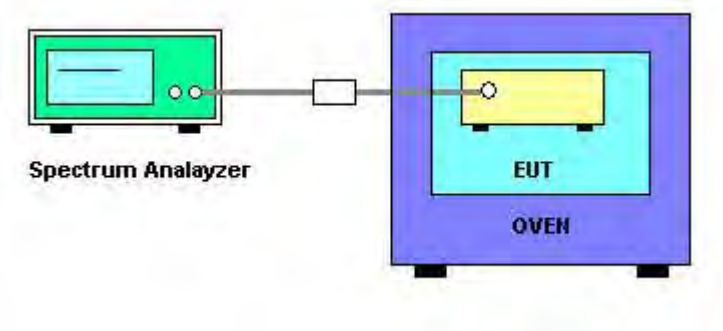
Please refer to section 5 in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RB	10 kHz
VB	10 kHz
Sweep Time	Auto

4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11a specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature rule is -30°C~50°C.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.8.7. Test Result of Frequency Stability

Voltage vs. Frequency Stability

Voltage	Measurement Frequency (MHz)
(V)	5260
126.5	5259.9866
110	5259.9860
93.5	5259.9862
Max. Deviation (MHz)	0.0140
Max. Deviation (ppm)	2.6616

Temperature vs. Frequency Stability

Temperature	Measurement Frequency (MHz)
(℃)	5260
-30	5260.0216
-20	5260.0134
-10	5259.9980
0	5259.9894
10	5259.9826
20	5259.9860
30	5259.9918
40	5259.9800
50	5259.9889
Max. Deviation (MHz)	0.0216
Max. Deviation (ppm)	4.1065

4.9. Antenna Requirements

4.9.1. 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,

4.9.2. Antenna Connector Construction

Please refer to section 3.3 in this test report, all antenna connectors comply with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9kHz – 2.75GHz	Feb. 22, 2006	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Dec. 19, 2005	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9708-1839	9kHz – 30MHz	Mar. 18, 2006	Conduction (CO04-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 22, 2005	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	Conduction (CO04-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 16, 2005	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	CPA9231A	3565	9 kHz - 2 GHz	Jan. 18, 2006	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	May 31, 2005	Radiation (03CH03-HY)
Amplifier	MITEQ	AMF-6F-260400	923364	26.5 GHz - 40 GHz	Jan. 24, 2006*	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100004/040	9 kHZ - 40 GHz	Sep. 30, 2005	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 24, 2004*	Radiation (03CH03-HY)
Biconical Antenna	SCHWARZBECK	VHBB 9124	301	30 MHz - 200 MHz	Jul. 22, 2005	Radiation (03CH03-HY)
Log Antenna	SCHWARZBECK	VUSLP 9111	221	200 MHz - 1 GHz	Jul. 22, 2005	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6903	1GHz ~ 18GHz	Mar. 15, 2006	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	Jun. 09, 2004*	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec.02, 2005	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec.02, 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. 27, 2006	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)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
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.

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

6.1. Test Location

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

7. NVLAP CERTIFICATE OF ACCREDITATION

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

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

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Institute of Standards and Technology

NVLAP-01C (REV. 2005-05-19)