4.5. Radiated Emissions Measurement

4.5.1. Limit

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

Frequencies (MHz)	Field Strength (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

4.5.2. Measuring Instruments and Setting

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

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

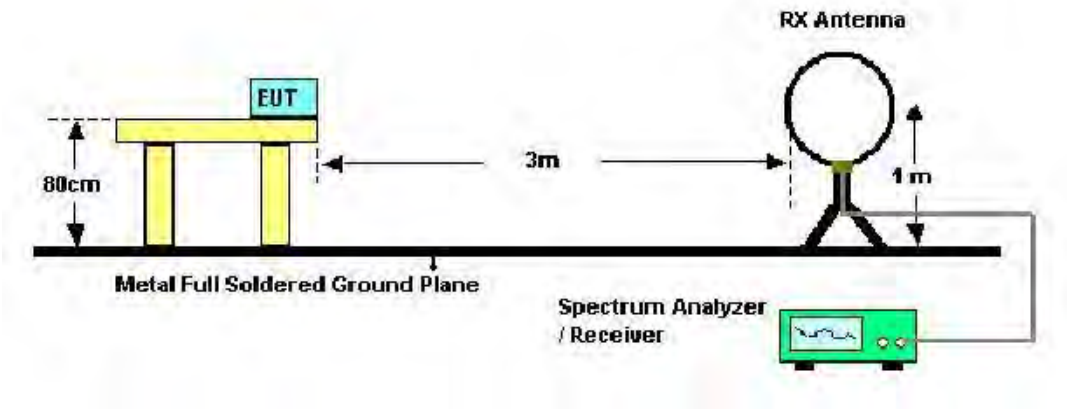
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

4.5.3. Test Procedures

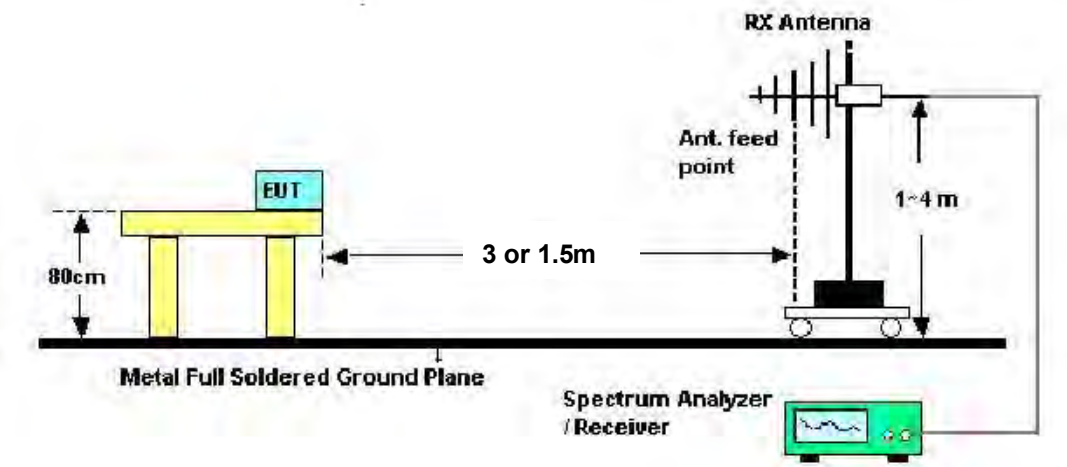
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting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

4.5.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



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

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

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

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Test Date	Mar. 09, 2011

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

Note:

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

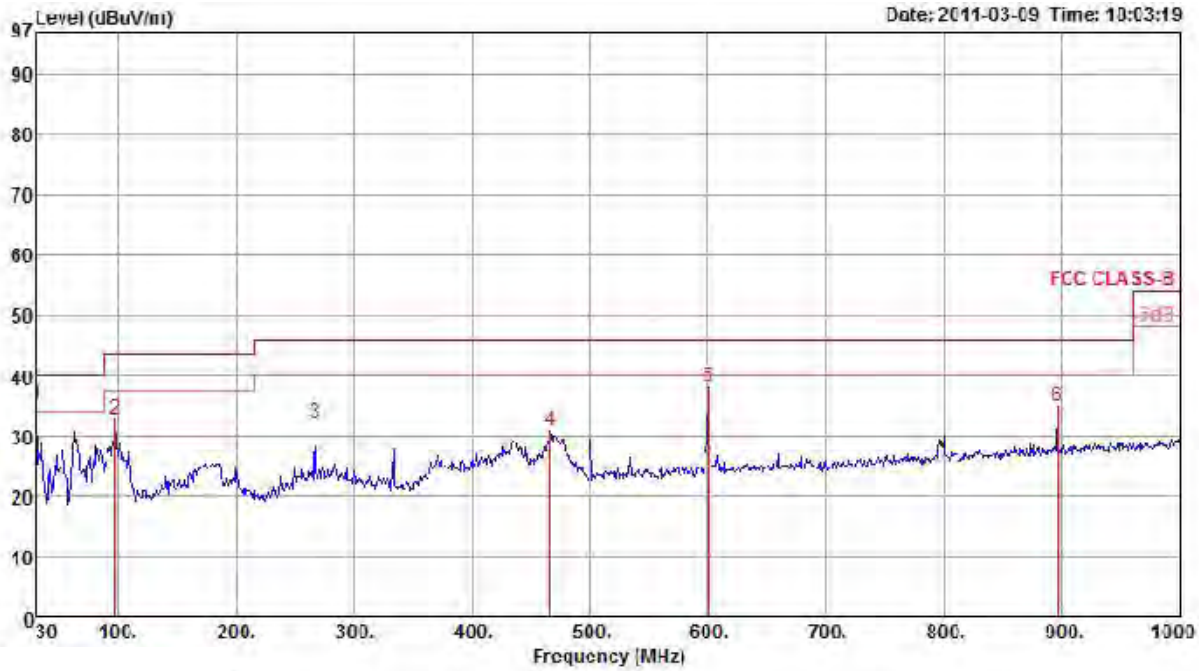
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

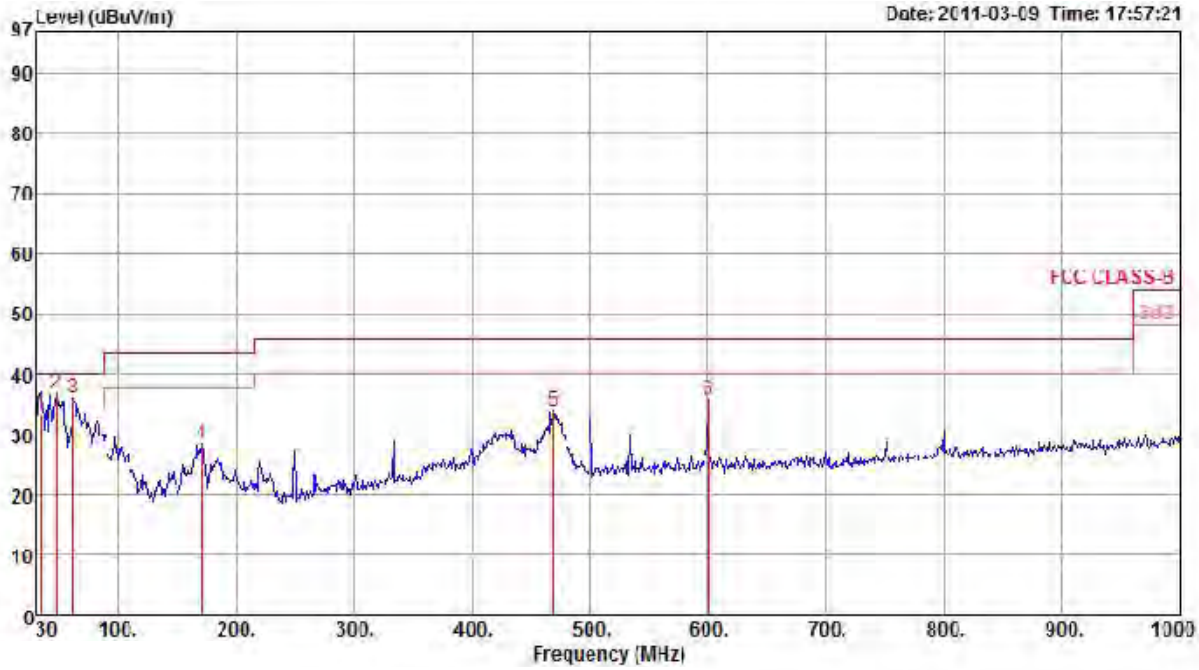
Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	Normal Link / Mode 2

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	30.00	35.03	40.00	-4.97	43.02	0.50	27.80	18.41	0	100	Peak	HORIZONTAL
2	97.90	32.74	43.50	-10.76	48.76	1.16	27.61	10.43	0	100	Peak	HORIZONTAL
3	266.68	32.16	46.00	-13.84	44.23	1.97	26.97	12.93	0	100	Peak	HORIZONTAL
4	466.50	30.31	46.00	-15.19	38.99	2.63	27.93	17.12	0	100	Peak	HORIZONTAL
5	600.36	33.12	46.00	-7.88	44.50	2.90	28.10	18.82	0	100	Peak	HORIZONTAL
6	896.21	34.34	46.00	-11.66	37.53	3.58	27.41	21.14	0	100	Peak	HORIZONTAL

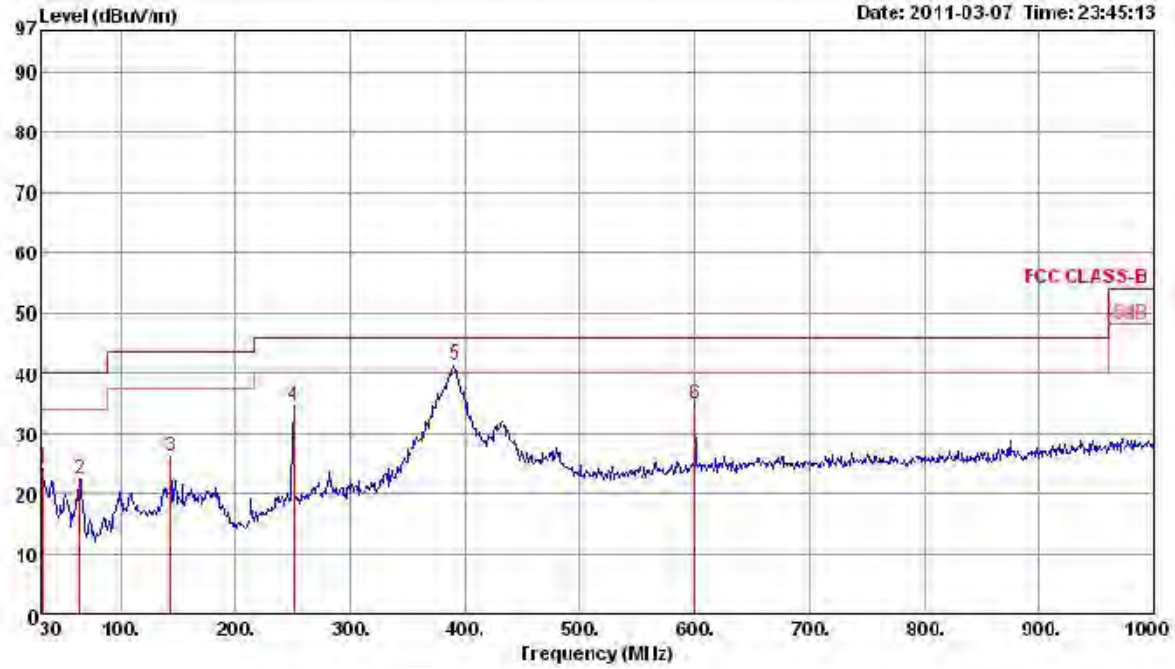
Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Fac.o.	Antenna Factor	T/Pos	A/Pcs	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 q	34.85	33.30	40.00	-6.70	45.27	0.50	27 80	15.33	256	135	QP	VERTICAL
2 p	47.46	36.37	40.00	-3.13	55.47	0.70	27 80	8.50	0	400	Peak	VERTICAL
3 !	62.01	36.03	40.00	-3.97	56.67	0.84	27 75	6.27	0	400	Peak	VERTICAL
4	171.62	28.37	43.50	-15.13	44.73	1.56	27 24	9.32	0	400	Peak	VERTICAL
5	469.41	33.36	46.00	-12.14	42.01	2.64	27 95	17.16	0	400	Peak	VERTICAL
6	600.36	35.78	46.00	-10.22	42.16	2.90	28 10	18.62	0	400	Peak	VERTICAL

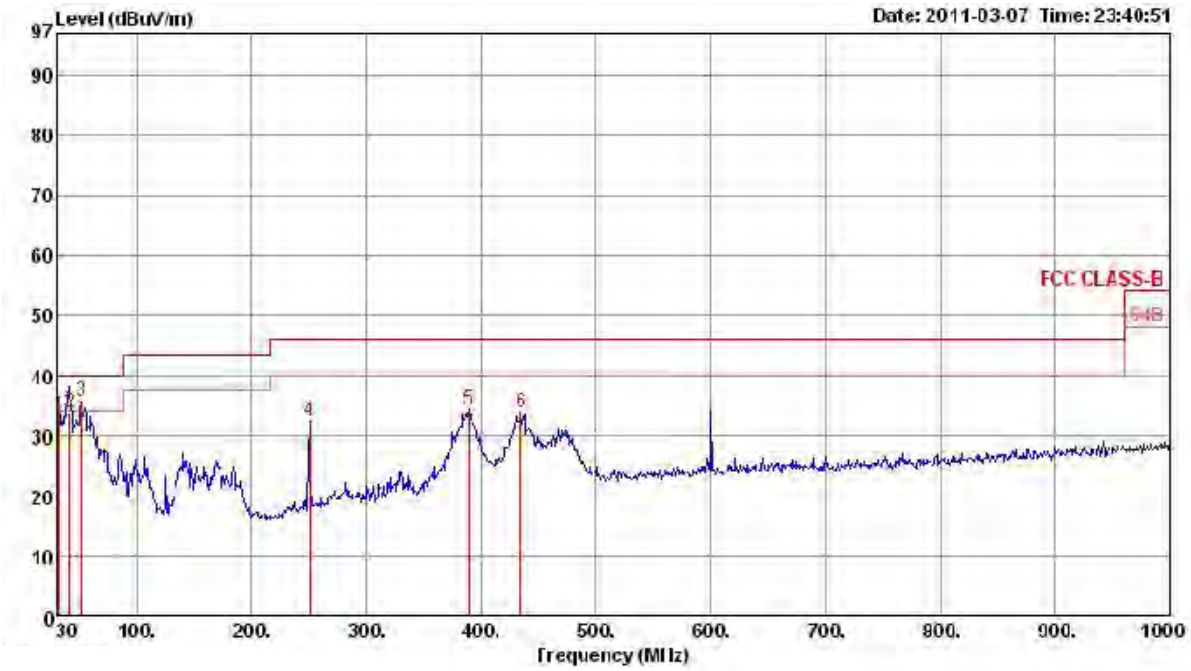
Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	Normal Link / Mode 4

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	31.94	24.32	40.00	-15.98	33.63	0.50	27.80	17.69	0	100	Peak	HORIZONTAL
2	63.95	22.54	40.00	-17.46	42.68	0.88	27.74	6.72	0	100	Peak	HORIZONTAL
3	143.49	26.10	43.50	-17.40	39.89	1.42	27.38	12.17	0	100	Peak	HORIZONTAL
4	250.19	34.53	46.00	-11.47	46.86	1.90	27.00	12.77	0	100	Peak	HORIZONTAL
5 p	391.81	41.35	46.00	-4.65	50.77	2.28	27.55	15.65	0	100	Peak	HORIZONTAL
6	600.36	34.72	46.00	-11.28	41.15	2.90	28.10	18.77	0	100	Peak	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	30.97	36.59	40.00	-3.41	45.67	0.50	27.80	18.22	0	400	Peak	VERTICAL
2 q	41.63	33.39	40.00	-6.11	49.00	0.70	27.80	11.99	178	100	QP	VERTICAL
3 !	51.34	35.66	40.00	-4.34	54.38	0.72	27.79	8.35	0	400	Peak	VERTICAL
4	250.19	32.53	46.00	-13.47	44.86	1.90	27.00	12.77	0	400	Peak	VERTICAL
5	388.90	34.33	46.00	-11.67	43.80	2.28	27.52	15.77	0	400	Peak	VERTICAL
6	434.49	33.70	46.00	-12.30	42.36	2.51	27.77	16.60	0	400	Peak	VERTICAL

Note:

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

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

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

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

<For External Antenna / Ant. 2>

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4819.84	29.96	54.00	-24.04	29.76	3.00	35.26	32.46	202	100	Average	HORIZONTAL
2 p	4820.01	42.34	74.00	-31.66	42.14	3.00	35.26	32.46	202	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4819.98	40.68	74.00	-33.32	40.48	3.00	35.26	32.46	135	100	Peak	VERTICAL
2 a	4820.26	29.04	54.00	-24.96	28.84	3.00	35.26	32.46	135	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4870.22	47.12	74.00	-26.88	46.70	3.01	35.15	32.56	199	100	Peak	HORIZONTAL
2		4870.87	33.39	54.00	-20.61	32.97	3.01	35.15	32.56	199	100	Average	HORIZONTAL
3	p	7310.01	57.94	74.00	-16.06	52.46	3.75	34.94	36.67	168	112	Peak	HORIZONTAL
4	a	7310.47	42.18	54.00	-11.82	36.70	3.75	34.94	36.67	168	112	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4870.52	31.36	54.00	-22.64	30.94	3.01	35.15	32.56	166	100	Average	VERTICAL
2		4871.00	44.10	74.00	-29.90	43.68	3.01	35.15	32.56	166	100	Peak	VERTICAL
3	p	7309.18	55.16	74.00	-18.84	49.68	3.75	34.94	36.67	172	100	Peak	VERTICAL
4	a	7309.69	39.05	54.00	-14.95	33.57	3.75	34.94	36.67	172	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4928.33	33.56	54.00	-20.44	32.91	3.02	35.03	32.66	126	123	Average	HORIZONTAL
2		4928.37	49.12	74.00	-24.88	48.47	3.02	35.03	32.66	126	123	Peak	HORIZONTAL
3	p	7389.28	54.81	74.00	-19.19	49.15	3.77	34.89	36.78	201	108	Peak	HORIZONTAL
4	a	7389.53	39.14	54.00	-14.86	33.48	3.77	34.89	36.78	201	108	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4928.65	31.46	54.00	-22.54	30.81	3.02	35.03	32.66	346	104	Average	VERTICAL
2		4928.74	46.00	74.00	-28.00	45.35	3.02	35.03	32.66	346	104	Peak	VERTICAL
3	p	7386.75	51.48	74.00	-22.52	45.84	3.76	34.90	36.78	155	100	Peak	VERTICAL
4	a	7387.66	36.02	54.00	-17.98	30.38	3.76	34.90	36.78	155	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4844.20	28.08	54.00	-25.92	27.78	3.01	35.20	32.49	213	100	Average	HORIZONTAL
2 p	4844.41	41.07	74.00	-32.93	40.77	3.01	35.20	32.49	213	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4843.67	40.72	74.00	-33.28	40.42	3.01	35.20	32.49	176	100	Peak	VERTICAL
2 a	4844.19	27.90	54.00	-26.10	27.60	3.01	35.20	32.49	176	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4873.60	40.38	74.00	-33.62	39.96	3.01	35.15	32.56	272	100	Peak	HORIZONTAL
2 a	4873.68	28.09	54.00	-25.91	27.67	3.01	35.15	32.56	272	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4873.51	27.83	54.00	-26.17	27.41	3.01	35.15	32.56	221	100	Average	VERTICAL
2 p	4874.21	40.96	74.00	-33.04	40.54	3.01	35.15	32.56	221	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4904.01	28.84	54.00	-25.16	28.28	3.02	35.09	32.63	207	100	Average	HORIZONTAL
2 p	4904.03	41.35	74.00	-32.65	40.79	3.02	35.09	32.63	207	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4903.92	41.37	74.00	-32.63	40.81	3.02	35.09	32.63	119	100	Peak	VERTICAL
2 a	4903.93	28.45	54.00	-25.55	27.89	3.02	35.09	32.63	119	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.89	48.99	74.00	-25.01	48.79	3.00	35.26	32.46	108	122	Peak	HORIZONTAL
2 a	4823.91	45.15	54.00	-8.85	44.95	3.00	35.26	32.46	108	122	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.95	47.01	74.00	-26.99	46.81	3.00	35.26	32.46	324	103	Peak	VERTICAL
2 a	4823.96	43.66	54.00	-10.34	43.46	3.00	35.26	32.46	324	103	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.88	42.94	54.00	-11.06	42.52	3.01	35.15	32.56	130	122	Average	HORIZONTAL
2		4873.95	47.20	74.00	-26.80	46.78	3.01	35.15	32.56	130	122	Peak	HORIZONTAL
3	p	7313.45	51.37	74.00	-22.63	45.88	3.75	34.93	36.67	198	110	Peak	HORIZONTAL
4	a	7313.64	44.26	54.00	-9.74	38.77	3.75	34.93	36.67	198	110	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.83	46.66	74.00	-27.34	46.24	3.01	35.15	32.56	12	100	Peak	VERTICAL
2		4874.00	41.32	54.00	-12.68	40.90	3.01	35.15	32.56	12	100	Average	VERTICAL
3	p	7312.85	49.34	74.00	-24.66	43.85	3.75	34.93	36.67	184	100	Peak	VERTICAL
4	a	7313.06	43.34	54.00	-10.66	37.85	3.75	34.93	36.67	184	110	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 15, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4923.83	47.77	74.00	-26.23	46.17	3.35	33.26	35.01	115	121	Peak	HORIZONTAL
2	4923.90	43.37	54.00	-10.63	41.77	3.35	33.26	35.01	115	121	Average	HORIZONTAL
3	7386.62	45.86	54.00	-8.14	41.11	4.06	36.09	35.40	47	115	Average	HORIZONTAL
4	7386.77	53.68	74.00	-20.32	48.93	4.06	36.09	35.40	47	115	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	4923.86	46.53	74.00	-27.47	44.93	3.35	33.26	35.01	349	100	Peak	VERTICAL
2	4923.92	41.55	54.00	-12.45	39.95	3.35	33.26	35.01	349	100	Average	VERTICAL
3	7387.64	46.43	54.00	-7.57	41.68	4.06	36.09	35.40	356	108	Average	VERTICAL
4	7387.89	52.88	74.00	-21.12	48.13	4.06	36.09	35.40	356	108	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.51	42.87	74.00	-31.13	42.67	3.00	35.26	32.46	107	100	Peak	HORIZONTAL
2 a	4823.55	30.16	54.00	-23.84	29.96	3.00	35.26	32.46	107	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4823.52	28.58	54.00	-25.42	28.38	3.00	35.26	32.46	186	100	Average	VERTICAL
2 p	4823.77	40.92	74.00	-33.08	40.72	3.00	35.26	32.46	186	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7310.81	56.22	74.00	-17.78	50.74	3.75	34.94	36.67	194	100	Peak	HORIZONTAL
2 a	7310.91	43.47	54.00	-10.53	37.99	3.75	34.94	36.67	194	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7305.30	54.63	74.00	-19.37	49.15	3.75	34.94	36.67	176	100	Peak	VERTICAL
2 a	7305.56	40.89	54.00	-13.11	35.41	3.75	34.94	36.67	176	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 22, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	7387.79	40.47	54.00	-13.53	34.81	3.77	34.89	36.78	202	100	Average	HORIZONTAL
2 p	7387.84	55.52	74.00	-18.48	49.86	3.77	34.89	36.78	202	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7381.32	51.41	74.00	-22.59	45.79	3.76	34.90	36.76	157	112	Peak	VERTICAL
2 a	7381.76	38.41	54.00	-15.59	32.79	3.76	34.90	36.76	157	112	Average	VERTICAL

Note:

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

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

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

<For External Antenna / Ant. 5>

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.93	49.04	74.00	-24.96	48.84	3.00	35.26	32.46	229	145	Peak	HORIZONTAL
2 a	4824.12	33.78	54.00	-20.22	33.58	3.00	35.26	32.46	229	145	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.89	43.40	74.00	-30.60	43.20	3.00	35.26	32.46	160	100	Peak	VERTICAL
2 a	4824.17	30.21	54.00	-23.79	30.01	3.00	35.26	32.46	160	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4874.00	53.06	74.00	-20.94	52.64	3.01	35.15	32.56	229	148	Peak	HORIZONTAL
2		4874.60	38.64	54.00	-15.36	38.22	3.01	35.15	32.56	229	148	Average	HORIZONTAL
3	p	7302.10	55.01	74.00	-18.99	49.53	3.75	34.94	36.67	224	136	Peak	HORIZONTAL
4	a	7308.20	42.46	54.00	-11.54	36.98	3.75	34.94	36.67	224	136	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4872.50	44.34	74.00	-29.66	43.92	3.01	35.15	32.56	173	100	Peak	VERTICAL
2		4874.90	32.70	54.00	-21.30	32.28	3.01	35.15	32.56	173	100	Average	VERTICAL
3	a	7308.50	39.11	54.00	-14.89	33.63	3.75	34.94	36.67	16	122	Average	VERTICAL
4	p	7312.20	51.37	74.00	-22.63	45.88	3.75	34.93	36.67	16	122	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar.26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	p	4923.84	53.66	74.00	-20.34	53.01	3.02	35.03	32.66	222	142	Peak	HORIZONTAL
2		4923.88	38.32	54.00	-15.68	37.67	3.02	35.03	32.66	222	142	Average	HORIZONTAL
3		7381.65	53.05	74.00	-20.95	47.43	3.76	34.90	36.76	232	128	Peak	HORIZONTAL
4	a	7382.35	40.01	54.00	-13.99	34.39	3.76	34.90	36.76	232	128	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4924.00	43.45	74.00	-30.55	42.80	3.02	35.03	32.66	158	100	Peak	VERTICAL
2		4924.75	31.93	54.00	-22.07	31.28	3.02	35.03	32.66	158	100	Average	VERTICAL
3	p	7386.25	48.05	74.00	-25.95	42.41	3.76	34.90	36.78	356	123	Peak	VERTICAL
4	a	7388.05	35.71	54.00	-18.29	30.05	3.77	34.89	36.78	356	123	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4845.45	29.80	54.00	-24.20	29.50	3.01	35.20	32.49	214	144	Average	HORIZONTAL
2 p	4846.50	41.87	74.00	-32.13	41.57	3.01	35.20	32.49	214	144	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4845.56	29.34	54.00	-24.66	29.04	3.01	35.20	32.49	167	102	Average	VERTICAL
2 p	4846.08	42.35	74.00	-31.65	42.05	3.01	35.20	32.49	167	102	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	p	4873.98	49.78	74.00	-24.22	49.36	3.01	35.15	32.56	231	134	Peak	HORIZONTAL
2		4873.98	33.28	54.00	-20.72	32.86	3.01	35.15	32.56	231	134	Average	HORIZONTAL
3	a	7301.08	34.86	54.00	-19.14	29.38	3.75	34.94	36.67	216	121	Average	HORIZONTAL
4		7314.84	47.22	74.00	-26.78	41.73	3.75	34.93	36.67	216	121	Peak	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.94	43.53	74.00	-30.47	43.11	3.01	35.15	32.56	161	110	Peak	VERTICAL
2		4874.50	30.32	54.00	-23.68	29.90	3.01	35.15	32.56	161	110	Average	VERTICAL
3	a	7303.42	33.15	54.00	-20.85	27.67	3.75	34.94	36.67	351	120	Average	VERTICAL
4	p	7319.96	46.73	74.00	-27.27	41.22	3.75	34.93	36.69	351	120	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4904.00	48.89	74.00	-25.11	48.33	3.02	35.09	32.63	220	148	Peak	HORIZONTAL
2	4904.28	32.12	54.00	-21.88	31.56	3.02	35.09	32.63	220	148	Average	HORIZONTAL
3 a	7351.92	36.04	54.00	-17.96	30.47	3.76	34.92	36.73	224	128	Average	HORIZONTAL
4 p	7354.20	49.16	74.00	-24.84	43.59	3.76	34.92	36.73	224	128	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4902.64	29.90	54.00	-24.10	29.34	3.02	35.09	32.63	177	110	Average	VERTICAL
2	4905.41	42.08	74.00	-31.92	41.52	3.02	35.09	32.63	177	110	Peak	VERTICAL
3 a	7353.72	34.50	54.00	-19.50	28.93	3.76	34.92	36.73	350	115	Average	VERTICAL
4 p	7356.30	47.16	74.00	-26.84	41.59	3.76	34.92	36.73	350	115	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 149 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11482.44	45.75	60.00	-14.25	37.14	5.11	38.78	35.28	298	100	Average	HORIZONTAL
2	11482.89	61.62	80.00	-18.38	53.01	5.11	38.78	35.28	298	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11489.57	57.11	80.00	-22.89	48.50	5.11	38.78	35.28	38	100	Peak	VERTICAL
2	11490.00	43.93	60.00	-16.07	35.32	5.11	38.78	35.28	38	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 157 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.87	44.31	60.00	-15.69	35.64	5.14	38.83	35.30	306	100	Average	HORIZONTAL
2	11570.21	60.61	80.00	-19.39	51.94	5.14	38.83	35.30	306	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11570.93	54.74	80.00	-25.26	46.07	5.14	38.83	35.30	40	100	Peak	VERTICAL
2	11570.96	40.38	60.00	-19.62	31.71	5.14	38.83	35.30	40	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 165 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11648.59	44.72	60.00	-15.28	36.00	5.16	38.86	35.30	304	100	Average	HORIZONTAL
2	11649.27	60.30	80.00	-19.70	51.58	5.16	38.86	35.30	304	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11647.42	55.96	80.00	-24.04	47.24	5.16	38.86	35.30	38	100	Peak	VERTICAL
2	11647.49	40.25	60.00	-19.75	31.53	5.16	38.86	35.30	38	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 151 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11518.55	44.82	60.00	-15.18	36.19	5.12	38.80	35.29	301	100	Average	HORIZONTAL
2	11518.80	58.84	80.00	-21.16	50.20	5.13	38.80	35.29	301	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11518.00	40.24	60.00	-19.76	31.61	5.12	38.80	35.29	68	100	Average	VERTICAL
2	11518.28	53.15	80.00	-26.85	44.52	5.12	38.80	35.29	68	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 159 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11596.90	44.14	60.00	-15.86	35.46	5.15	38.83	35.30	298	100	Average	HORIZONTAL
2	11597.09	57.10	80.00	-22.90	48.42	5.15	38.83	35.30	298	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11604.90	41.35	60.00	-18.65	32.66	5.15	38.84	35.30	217	100	Average	VERTICAL
2	11611.30	52.21	80.00	-27.79	43.52	5.15	38.84	35.30	217	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.84	48.71	74.00	-25.29	48.51	3.00	35.26	32.46	229	136	Peak	HORIZONTAL
2 a	4823.92	44.32	54.00	-9.68	44.12	3.00	35.26	32.46	229	136	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4823.86	40.84	54.00	-13.16	40.64	3.00	35.26	32.46	162	100	Average	VERTICAL
2 p	4823.93	46.80	74.00	-27.20	46.60	3.00	35.26	32.46	162	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.90	49.32	74.00	-24.68	48.90	3.01	35.15	32.56	220	146	Peak	HORIZONTAL
2		4873.93	45.92	54.00	-8.08	45.50	3.01	35.15	32.56	220	146	Average	HORIZONTAL
3	p	7309.88	52.13	74.00	-21.87	46.65	3.75	34.94	36.67	224	128	Peak	HORIZONTAL
4	a	7311.66	45.92	54.00	-8.08	40.43	3.75	34.93	36.67	224	128	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.92	40.72	74.00	-33.28	40.30	3.01	35.15	32.56	160	110	Peak	VERTICAL
2	a	4873.96	45.84	54.00	-8.16	45.42	3.01	35.15	32.56	160	110	Average	VERTICAL
3		7312.64	41.96	54.00	-12.04	36.47	3.75	34.93	36.67	349	121	Average	VERTICAL
4	p	7313.28	50.23	74.00	-23.77	44.74	3.75	34.93	36.67	349	121	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	a	4923.92	49.18	54.00	-4.82	48.53	3.02	35.03	32.66	221	145	Average	HORIZONTAL
2	p	4924.00	51.87	74.00	-22.13	51.22	3.02	35.03	32.66	221	145	Peak	HORIZONTAL
3		7386.26	50.43	74.00	-23.57	44.79	3.76	34.90	36.78	232	129	Peak	HORIZONTAL
4		7386.62	42.65	54.00	-11.35	37.01	3.76	34.90	36.78	232	129	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4923.84	46.42	74.00	-27.58	45.77	3.02	35.03	32.66	161	107	Peak	VERTICAL
2		4923.87	38.56	54.00	-15.44	37.91	3.02	35.03	32.66	161	107	Average	VERTICAL
3	p	7386.88	49.44	74.00	-24.56	43.80	3.76	34.90	36.78	356	133	Peak	VERTICAL
4	a	7387.62	40.55	54.00	-13.45	34.91	3.76	34.90	36.78	356	133	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4821.25	48.65	74.00	-25.35	48.45	3.00	35.26	32.46	230	126	Peak	HORIZONTAL
2 a	4821.40	35.89	54.00	-18.11	35.69	3.00	35.26	32.46	230	126	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4821.50	44.49	74.00	-29.51	44.29	3.00	35.26	32.46	162	100	Peak	VERTICAL
2 a	4823.25	33.45	54.00	-20.55	33.25	3.00	35.26	32.46	162	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4871.14	39.14	54.00	-14.86	38.72	3.01	35.15	32.56	231	134	Average	HORIZONTAL
2		4881.32	52.16	74.00	-21.84	51.74	3.01	35.15	32.56	231	134	Peak	HORIZONTAL
3	a	7308.38	43.82	54.00	-10.18	38.34	3.75	34.94	36.67	232	126	Average	HORIZONTAL
4	p	7308.44	58.09	74.00	-15.91	52.61	3.75	34.94	36.67	232	126	Peak	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4871.84	32.97	54.00	-21.03	32.55	3.01	35.15	32.56	170	100	Average	VERTICAL
2		4873.68	44.69	74.00	-29.31	44.27	3.01	35.15	32.56	170	100	Peak	VERTICAL
3	P	7312.04	52.79	74.00	-21.21	47.30	3.75	34.93	36.67	348	131	Peak	VERTICAL
4	a	7312.04	39.93	54.00	-14.07	34.44	3.75	34.93	36.67	348	131	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4925.60	39.19	54.00	-14.81	38.54	3.02	35.03	32.66	221	142	Average	HORIZONTAL
2		4925.70	51.93	74.00	-22.07	51.28	3.02	35.03	32.66	221	142	Peak	HORIZONTAL
3	p	7384.55	54.33	74.00	-19.67	48.69	3.76	34.90	36.78	226	121	Peak	HORIZONTAL
4	a	7384.55	41.24	54.00	-12.76	35.60	3.76	34.90	36.78	226	121	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4922.40	31.95	54.00	-22.05	31.30	3.02	35.03	32.66	171	100	Average	VERTICAL
2		4923.90	44.00	74.00	-30.00	43.35	3.02	35.03	32.66	171	100	Peak	VERTICAL
3	a	7384.30	37.64	54.00	-16.36	32.00	3.76	34.90	36.78	350	114	Average	VERTICAL
4	p	7384.85	50.54	74.00	-23.46	44.90	3.76	34.90	36.78	350	114	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 149 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11490.99	67.73	80.00	-12.27	59.12	5.11	38.78	35.28	299	100	Peak	HORIZONTAL
2	11491.47	50.46	60.00	-9.54	41.85	5.11	38.78	35.28	299	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11491.71	44.17	60.00	-15.83	35.56	5.11	38.78	35.28	37	100	Average	VERTICAL
2	11491.78	60.06	80.00	-19.94	51.45	5.11	38.78	35.28	37	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 157 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11570.53	50.90	60.00	-9.10	42.23	5.14	38.83	35.30	303	100	Average	HORIZONTAL
2	11570.68	67.76	80.00	-12.24	59.09	5.14	38.83	35.30	303	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11570.71	60.31	80.00	-19.69	51.64	5.14	38.83	35.30	38	100	Peak	VERTICAL
2	11571.06	44.57	60.00	-15.43	35.90	5.14	38.83	35.30	38	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 165 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 04, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11650.29	65.00	80.00	-15.00	56.28	5.16	38.86	35.30	302	100	Peak	HORIZONTAL
2	11650.43	48.85	60.00	-11.15	40.13	5.16	38.86	35.30	302	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11652.03	44.45	60.00	-15.55	35.73	5.16	38.86	35.30	39	105	Average	VERTICAL
2	11652.10	60.15	80.00	-19.85	51.43	5.16	38.86	35.30	39	105	Peak	VERTICAL

Note:

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

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

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

<For External Antenna / Ant. 6>

Temperature	23℃	**Humidity**	61%
Test Engineer	Sean Ku	**Configurations**	11a IEEE 802.11n MCS8 20MHz CH 149 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11488.46	52.47	60.00	-7.53	43.86	5.11	38.78	35.28	269	100	Average	HORIZONTAL
2	11488.62	68.25	80.00	-11.75	59.64	5.11	38.78	35.28	269	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11488.64	44.75	60.00	-15.25	36.14	5.11	38.78	35.28	115	100	Average	VERTICAL
2	11488.69	60.91	80.00	-19.09	52.30	5.11	38.78	35.28	115	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 157 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.00	52.05	60.00	-7.95	43.39	5.13	38.83	35.30	269	100	Average	HORIZONTAL
2	11569.87	69.45	80.00	-10.55	60.78	5.14	38.83	35.30	269	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11568.93	45.11	60.00	-14.89	36.45	5.13	38.83	35.30	17	100	Average	VERTICAL
2	11569.63	61.01	80.00	-18.99	52.35	5.13	38.83	35.30	17	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 165 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11646.17	64.66	80.00	-15.34	55.94	5.16	38.86	35.30	271	100	Peak	HORIZONTAL
2	11646.24	48.88	60.00	-11.12	40.16	5.16	38.86	35.30	271	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11649.76	45.58	60.00	-14.42	36.86	5.16	38.86	35.30	111	100	Average	VERTICAL
2	11649.87	61.44	80.00	-18.56	52.72	5.16	38.86	35.30	111	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 151 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11508.60	49.02	60.00	-10.98	40.39	5.12	38.79	35.28	270	100	Average	HORIZONTAL
2	11509.59	66.11	80.00	-13.89	57.48	5.12	38.79	35.28	270	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11503.33	42.16	60.00	-17.84	33.53	5.12	38.79	35.28	17	100	Average	VERTICAL
2	11504.24	56.82	80.00	-23.18	48.19	5.12	38.79	35.28	17	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 159 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11581.13	48.38	60.00	-11.62	39.71	5.14	38.83	35.30	270	100	Average	HORIZONTAL
2	11581.17	63.45	80.00	-16.55	54.78	5.14	38.83	35.30	270	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11582.17	43.02	60.00	-16.98	34.35	5.14	38.83	35.30	16	100	Average	VERTICAL
2	11582.69	58.40	80.00	-21.60	49.73	5.14	38.83	35.30	16	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 149 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11485.77	54.72	60.00	-5.28	46.11	5.11	38.78	35.28	267	100	Average	HORIZONTAL
2	11485.82	71.62	80.00	-8.38	63.01	5.11	38.78	35.28	267	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11492.36	63.54	80.00	-16.46	54.93	5.11	38.78	35.28	261	100	Peak	VERTICAL
2	11492.40	47.85	60.00	-12.15	39.24	5.11	38.78	35.28	261	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 157 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11571.36	54.23	60.00	-5.77	45.56	5.14	38.83	35.30	269	100	Average	HORIZONTAL
2	11571.71	69.99	80.00	-10.01	61.32	5.14	38.83	35.30	269	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11571.24	49.16	60.00	-10.84	40.49	5.14	38.83	35.30	357	100	Average	VERTICAL
2	11572.00	65.07	80.00	-14.93	56.40	5.14	38.83	35.30	357	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 165 / Ant. 6 / Connector J2 + J3 + J4
Test Date	Mar. 23, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11651.94	68.00	80.00	-12.00	59.28	5.16	38.86	35.30	268	100	Peak	HORIZONTAL
2	11652.67	51.76	60.00	-8.24	43.04	5.16	38.86	35.30	268	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11651.69	65.96	80.00	-14.04	57.24	5.16	38.86	35.30	354	100	Peak	VERTICAL
2	11651.73	48.95	60.00	-11.05	40.23	5.16	38.86	35.30	354	100	Average	VERTICAL

Note:

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

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

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

<For External Antenna / Ant. 7>

Temperature	23℃	**Humidity**	61%
Test Engineer	Sean Ku	**Configurations**	11a IEEE 802.11n MCS8 20MHz CH 149 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11489.61	51.07	60.00	-8.93	42.46	5.11	38.78	35.28	250	100	Average	HORIZONTAL
2	11489.84	65.24	80.00	-14.76	56.63	5.11	38.78	35.28	250	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11489.89	60.79	80.00	-19.21	52.18	5.11	38.78	35.28	102	100	Peak	VERTICAL
2	11490.10	46.38	60.00	-13.62	37.77	5.11	38.78	35.28	102	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 157 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.73	63.82	80.00	-16.18	55.16	5.13	38.83	35.30	250	100	Peak	HORIZONTAL
2	11570.00	50.53	60.00	-9.47	41.86	5.14	38.83	35.30	250	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.80	59.84	80.00	-20.16	51.17	5.14	38.83	35.30	112	100	Peak	VERTICAL
2	11570.10	45.55	60.00	-14.45	36.88	5.14	38.83	35.30	112	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 165 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11649.73	62.13	80.00	-17.87	53.41	5.16	38.86	35.30	251	100	Peak	HORIZONTAL
2	11650.20	48.88	60.00	-11.12	40.16	5.16	38.86	35.30	251	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11644.60	46.31	60.00	-13.69	37.59	5.16	38.86	35.30	98	100	Average	VERTICAL
2	11644.99	59.97	80.00	-20.03	51.25	5.16	38.86	35.30	98	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 151 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11521.10	47.77	60.00	-12.23	39.13	5.13	38.80	35.29	251	100	Average	HORIZONTAL
2	11521.60	61.65	80.00	-18.35	53.01	5.13	38.80	35.29	251	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11502.77	57.16	80.00	-22.84	48.53	5.12	38.79	35.28	103	100	Peak	VERTICAL
2	11503.20	43.82	60.00	-16.18	35.19	5.12	38.79	35.28	103	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 159 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11581.22	59.99	80.00	-20.01	51.32	5.14	38.83	35.30	258	101	Peak	HORIZONTAL
2	11581.70	46.65	60.00	-13.35	37.98	5.14	38.83	35.30	258	101	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11582.50	43.52	60.00	-16.48	34.85	5.14	38.83	35.30	255	101	Average	VERTICAL
2	11582.56	58.24	80.00	-21.76	49.57	5.14	38.83	35.30	255	101	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 149 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11491.47	50.69	60.00	-9.31	42.08	5.11	38.78	35.28	255	100	Average	HORIZONTAL
2	11491.90	66.48	80.00	-13.52	57.87	5.11	38.78	35.28	255	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11490.10	46.53	60.00	-13.47	37.92	5.11	38.78	35.28	357	100	Average	VERTICAL
2	11490.80	62.75	80.00	-17.25	54.14	5.11	38.78	35.28	357	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 157 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11570.92	67.55	80.00	-12.45	58.88	5.14	38.83	35.30	258	100	Peak	HORIZONTAL
2	11571.30	52.96	60.00	-7.04	44.29	5.14	38.83	35.30	258	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11571.15	62.74	80.00	-17.26	54.07	5.14	38.83	35.30	109	100	Peak	VERTICAL
2	11571.40	49.61	60.00	-10.39	40.94	5.14	38.83	35.30	109	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 165 / Ant. 7 / Connector J2 + J3 + J4
Test Date	Mar. 07, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11651.40	53.07	60.00	-6.93	44.35	5.16	38.86	35.30	249	100	Average	HORIZONTAL
2	11651.89	67.37	80.00	-12.63	58.65	5.16	38.86	35.30	249	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11652.02	65.05	80.00	-14.95	56.33	5.16	38.86	35.30	96	100	Peak	VERTICAL
2	11652.04	50.67	60.00	-9.33	41.95	5.16	38.86	35.30	96	100	Average	VERTICAL

Note:

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

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

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

<For Internal Antenna / Ant. 8>

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	7235.08	34.87	54.00	-19.13	28.56	5.34	35.40	36.37	0	100	Average	HORIZONTAL
2 p	7235.92	48.44	74.00	-25.56	42.13	5.34	35.40	36.37	0	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	7235.25	33.85	54.00	-20.15	27.54	5.34	35.40	36.37	276	100	Average	VERTICAL
2 p	7235.51	46.69	74.00	-27.31	40.38	5.34	35.40	36.37	276	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.65	32.89	54.00	-21.11	30.28	4.33	35.20	33.48	344	100	Average	HORIZONTAL
2		4873.90	47.06	74.00	-26.94	44.45	4.33	35.20	33.48	344	100	Peak	HORIZONTAL
3	a	7310.20	43.33	54.00	-10.67	36.89	5.36	35.43	36.51	22	124	Average	HORIZONTAL
4	p	7312.00	56.21	74.00	-17.79	49.76	5.37	35.43	36.51	22	124	Peak	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.19	32.12	54.00	-21.88	29.51	4.33	35.20	33.48	360	100	Average	VERTICAL
2		4874.09	46.06	74.00	-27.94	43.45	4.33	35.20	33.48	360	100	Peak	VERTICAL
3	p	7310.64	54.12	74.00	-19.88	47.68	5.36	35.43	36.51	354	138	Peak	VERTICAL
4	a	7313.04	41.29	54.00	-12.71	34.84	5.37	35.43	36.51	354	138	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch11 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7386.10	47.29	74.00	-26.71	40.75	5.39	35.46	36.61	264	100	Peak	HORIZONTAL
2 a	7387.00	35.78	54.00	-18.22	29.24	5.39	35.46	36.61	264	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	7384.95	35.12	54.00	-18.88	28.58	5.39	35.46	36.61	1	100	Average	VERTICAL
2 p	7405.95	46.72	74.00	-27.28	40.13	5.41	35.46	36.64	1	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7266.67	47.05	74.00	-26.95	40.68	5.35	35.41	36.43	360	100	Peak	HORIZONTAL
2 a	7266.99	34.10	54.00	-19.90	27.73	5.35	35.41	36.43	360	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7270.92	46.65	74.00	-27.35	40.28	5.35	35.41	36.43	354	100	Peak	VERTICAL
2 a	7270.99	34.27	54.00	-19.73	27.90	5.35	35.41	36.43	354	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4873.58	31.03	54.00	-22.97	28.42	4.33	35.20	33.48	3	100	Average	HORIZONTAL
2	4874.08	44.27	74.00	-29.73	41.66	4.33	35.20	33.48	3	100	Peak	HORIZONTAL
3 a	7310.13	34.84	54.00	-19.16	28.40	5.36	35.43	36.51	320	100	Average	HORIZONTAL
4 p	7311.80	46.42	74.00	-27.58	39.97	5.37	35.43	36.51	320	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4876.34	30.98	54.00	-23.02	28.37	4.33	35.20	33.48	234	100	Average	VERTICAL
2	4883.98	43.85	74.00	-30.15	41.24	4.33	35.20	33.48	234	100	Peak	VERTICAL
3 a	7301.34	33.71	54.00	-20.29	27.29	5.36	35.42	36.48	88	100	Average	VERTICAL
4 p	7305.56	46.04	74.00	-27.96	39.62	5.36	35.42	36.48	88	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7355.50	46.58	74.00	-27.42	40.08	5.38	35.44	36.56	248	100	Peak	HORIZONTAL
2 a	7356.81	34.00	54.00	-20.00	27.50	5.38	35.44	36.56	248	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	7355.55	47.01	74.00	-26.99	40.51	5.38	35.44	36.56	6	100	Peak	VERTICAL
2 a	7356.81	33.93	54.00	-20.07	27.43	5.38	35.44	36.56	6	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 149 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11488.54	52.95	60.00	-7.05	44.34	5.11	38.78	35.28	316	121	Average	HORIZONTAL
2	11488.66	68.93	80.00	-11.07	60.32	5.11	38.78	35.28	316	121	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11489.83	63.45	80.00	-16.55	54.84	5.11	38.78	35.28	9	114	Peak	VERTICAL
2	11490.24	46.62	60.00	-13.38	38.01	5.11	38.78	35.28	9	114	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 157 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.11	68.54	80.00	-11.46	59.88	5.13	38.83	35.30	75	100	Peak	HORIZONTAL
2	11569.83	51.69	60.00	-8.31	43.02	5.14	38.83	35.30	75	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.57	46.21	60.00	-13.79	37.55	5.13	38.83	35.30	5	100	Average	VERTICAL
2	11569.81	64.43	80.00	-15.57	55.76	5.14	38.83	35.30	5	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 20MHz CH 165 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11647.31	65.55	80.00	-14.45	56.83	5.16	38.86	35.30	59	100	Peak	HORIZONTAL
2	11648.20	50.79	60.00	-9.21	42.07	5.16	38.86	35.30	59	100	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11649.56	48.03	60.00	-11.97	39.31	5.16	38.86	35.30	4	134	Average	VERTICAL
2	11649.81	64.67	80.00	-15.33	55.95	5.16	38.86	35.30	4	134	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 151 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11503.61	49.87	60.00	-10.13	41.24	5.12	38.79	35.28	315	100	Average	HORIZONTAL
2	11503.65	65.29	80.00	-14.71	56.66	5.12	38.79	35.28	315	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11509.40	45.24	60.00	-14.76	36.61	5.12	38.79	35.28	9	110	Average	VERTICAL
2	11509.85	62.61	80.00	-17.39	53.98	5.12	38.79	35.28	9	110	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	11a IEEE 802.11n MCS8 40MHz CH 159 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11584.10	48.75	60.00	-11.25	40.08	5.14	38.83	35.30	314	100	Average	HORIZONTAL
2	11584.12	64.08	80.00	-15.92	55.41	5.14	38.83	35.30	314	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11596.21	45.53	60.00	-14.47	36.85	5.15	38.83	35.30	356	108	Average	VERTICAL
2	11596.57	59.01	80.00	-20.99	50.33	5.15	38.83	35.30	356	108	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 12, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.97	50.43	74.00	-23.57	47.98	4.26	35.20	33.39	45	127	Peak	HORIZONTAL
2 a	4824.03	45.03	54.00	-8.97	42.58	4.26	35.20	33.39	45	127	Average	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4823.97	47.31	74.00	-26.69	44.86	4.26	35.20	33.39	318	117	Peak	VERTICAL
2 a	4823.97	41.43	54.00	-12.57	38.98	4.26	35.20	33.39	318	117	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	4873.88	50.97	74.00	-23.03	48.36	4.33	35.20	33.48	40	126	Peak	HORIZONTAL
2 a	4873.96	47.27	54.00	-6.73	44.66	4.33	35.20	33.48	40	126	Average	HORIZONTAL
3	7307.14	42.16	54.00	-11.84	35.75	5.36	35.43	36.48	319	126	Average	HORIZONTAL
4	7307.46	50.42	74.00	-23.58	43.98	5.36	35.43	36.51	319	126	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 a	4873.97	43.45	54.00	-10.55	40.84	4.33	35.20	33.48	321	103	Average	VERTICAL
2	4874.02	48.45	74.00	-25.55	45.84	4.33	35.20	33.48	321	103	Peak	VERTICAL
3	7308.18	39.38	54.00	-14.62	32.94	5.36	35.43	36.51	319	100	Average	VERTICAL
4 p	7309.68	48.89	74.00	-25.11	42.45	5.36	35.43	36.51	319	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4923.85	50.94	74.00	-23.06	48.17	4.39	35.20	33.58	41	126	Peak	HORIZONTAL
2	a	4923.97	44.54	54.00	-9.46	41.77	4.39	35.20	33.58	41	126	Average	HORIZONTAL
3	p	7386.55	52.09	74.00	-21.91	45.55	5.39	35.46	36.61	313	133	Peak	HORIZONTAL
4		7386.73	43.18	54.00	-10.82	36.64	5.39	35.46	36.61	313	133	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4923.83	46.95	74.00	-27.05	44.18	4.39	35.20	33.58	187	148	Peak	VERTICAL
2		4924.00	36.58	54.00	-17.42	33.81	4.39	35.20	33.58	187	148	Average	VERTICAL
3	p	7382.59	48.87	74.00	-25.13	42.32	5.39	35.45	36.61	1	138	Peak	VERTICAL
4	a	7386.87	40.24	54.00	-13.76	33.70	5.39	35.46	36.61	1	138	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreAmp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4820.60	31.59	54.00	-22.41	29.14	4.26	35.20	33.39	337	100	Average	HORIZONTAL
2		4823.60	44.02	74.00	-29.98	41.57	4.26	35.20	33.39	337	100	Peak	HORIZONTAL
3	p	7237.36	49.54	74.00	-24.46	43.23	5.34	35.40	36.37	24	100	Peak	HORIZONTAL
4	a	7237.98	37.24	54.00	-16.76	30.93	5.34	35.40	36.37	24	100	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreAmp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4823.81	30.70	54.00	-23.30	28.25	4.26	35.20	33.39	0	100	Average	VERTICAL
2		4824.88	43.20	74.00	-30.80	40.75	4.26	35.20	33.39	0	100	Peak	VERTICAL
3	a	7236.28	34.94	54.00	-19.06	28.63	5.34	35.40	36.37	353	100	Average	VERTICAL
4	p	7236.92	47.42	74.00	-26.58	41.11	5.34	35.40	36.37	353	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4873.37	47.77	74.00	-26.23	45.16	4.33	35.20	33.48	40	100	Peak	HORIZONTAL
2		4874.02	36.35	54.00	-17.65	33.74	4.33	35.20	33.48	40	100	Average	HORIZONTAL
3	p	7306.62	60.02	74.00	-13.98	53.60	5.36	35.42	36.48	20	114	Peak	HORIZONTAL
4	a	7306.62	46.84	54.00	-7.16	40.42	5.36	35.42	36.48	20	114	Average	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		4874.41	37.20	54.00	-16.80	34.59	4.33	35.20	33.48	318	117	Average	VERTICAL
2		4874.75	51.06	74.00	-22.94	48.45	4.33	35.20	33.48	318	117	Peak	VERTICAL
3	a	7311.27	45.67	54.00	-8.33	39.22	5.37	35.43	36.51	355	137	Average	VERTICAL
4	p	7311.47	58.12	74.00	-15.88	51.67	5.37	35.43	36.51	355	137	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 17, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4922.55	35.13	54.00	-18.87	32.36	4.39	35.20	33.58	40	147	Average	HORIZONTAL
2	4924.25	47.54	74.00	-26.46	44.77	4.39	35.20	33.58	40	147	Peak	HORIZONTAL
3 a	7383.20	39.89	54.00	-14.11	33.34	5.39	35.45	36.61	313	134	Average	HORIZONTAL
4 p	7383.55	53.10	74.00	-20.90	46.56	5.39	35.46	36.61	313	134	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	4924.95	32.61	54.00	-21.39	29.84	4.39	35.20	33.58	316	100	Average	VERTICAL
2	4925.05	44.48	74.00	-29.52	41.71	4.39	35.20	33.58	316	100	Peak	VERTICAL
3 a	7383.90	35.81	54.00	-18.19	29.27	5.39	35.46	36.61	3	100	Average	VERTICAL
4 p	7385.70	47.88	74.00	-26.12	41.34	5.39	35.46	36.61	3	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 149 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11491.53	56.06	60.00	-3.94	47.45	5.11	38.78	35.28	76	100	Average	HORIZONTAL
2	11492.01	71.69	80.00	-8.31	63.08	5.11	38.78	35.28	76	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11490.27	49.64	60.00	-10.36	41.03	5.11	38.78	35.28	354	100	Average	VERTICAL
2	11490.49	65.45	80.00	-14.55	56.84	5.11	38.78	35.28	354	100	Peak	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 157 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11571.29	57.43	60.00	-2.57	48.76	5.14	38.83	35.30	74	100	Average	HORIZONTAL
2	11571.71	73.32	80.00	-6.68	64.65	5.14	38.83	35.30	74	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11569.66	66.01	80.00	-13.99	57.35	5.13	38.83	35.30	357	100	Peak	VERTICAL
2	11569.79	49.92	60.00	-10.08	41.25	5.14	38.83	35.30	357	100	Average	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11a CH 165 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Feb. 11, 2011		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11651.36	51.66	60.00	-8.34	42.94	5.16	38.86	35.30	72	100	Average	HORIZONTAL
2	11651.66	67.45	80.00	-12.55	58.73	5.16	38.86	35.30	72	100	Peak	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	11650.85	64.90	80.00	-15.10	56.18	5.16	38.86	35.30	360	135	Peak	VERTICAL
2	11651.10	50.74	60.00	-9.26	42.02	5.16	38.86	35.30	360	135	Average	VERTICAL

Note:

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

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

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

4.6. Band Edge Emissions Measurement

4.6.1. Limit

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

Frequencies (MHz)	Field Strength (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 of equipments list in this report. The following table is the setting of the spectrum analyzer.

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

4.6.3. Test Procedures

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

4.6.4. Test Setup Layout

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

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

<For External Antenna / Ant. 2>

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 2 / Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2390.00	55.91	74.00	-18.09	25.99	2.05	0.00	27.87	316	113	Peak	HORIZONTAL
2	!	2390.00	53.91	54.00	-0.09	23.99	2.05	0.00	27.87	316	113	Average	HORIZONTAL
3	p	2408.40	111.46	74.00			2.05	0.00	27.84	316	113	Peak	HORIZONTAL
4	a	2408.40	99.46	54.00			2.05	0.00	27.84	316	113	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 2 / Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2356.40	64.08	74.00	-9.92	34.13	2.03	0.00	27.92	4	122	Peak	HORIZONTAL
2	!	2357.00	53.25	54.00	-0.75	23.30	2.03	0.00	27.92	4	122	Average	HORIZONTAL
3	p	2435.80	117.62	74.00			2.07	0.00	27.81	4	122	Peak	HORIZONTAL
4	a	2435.80	104.30	54.00			2.07	0.00	27.81	4	122	Average	HORIZONTAL
5		2483.50	45.51	54.00	-8.49	15.68	2.10	0.00	27.73	4	122	Average	HORIZONTAL
6		2486.50	57.39	74.00	-16.61	27.56	2.10	0.00	27.73	4	122	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 11 / Ant. 2 / Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2359.90	53.05	54.00	-0.95	23.10	2.03	0.00	27.92	331	119	Average	HORIZONTAL
2		2373.20	62.58	74.00	-11.42	32.65	2.04	0.00	27.89	331	119	Peak	HORIZONTAL
3	p	2469.80	110.98	74.00			2.10	0.00	27.76	331	119	Peak	HORIZONTAL
4	a	2469.80	99.80	54.00			2.10	0.00	27.76	331	119	Average	HORIZONTAL
5	!	2483.50	48.02	54.00	-5.98	18.19	2.10	0.00	27.73	331	119	Average	HORIZONTAL
6	!	2488.90	68.15	74.00	-5.85	38.35	2.10	0.00	27.70	331	119	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 2 Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 3

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2387.60	72.05	74.00	-1.95	42.14	2.04	0.00	27.87	2	100	Peak	HORIZONTAL
2	!	2390.00	53.84	54.00	-0.16	23.92	2.05	0.00	27.87	2	100	Average	HORIZONTAL
3	a	2410.80	92.23	54.00			2.05	0.00	27.84	2	100	Average	HORIZONTAL
4	p	2411.20	105.26	74.00			2.05	0.00	27.84	2	100	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 2 Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2389.20	71.96	74.00	-2.04	42.05	2.04	0.00	27.87	2	117	Peak	HORIZONTAL
2	!	2390.00	53.39	54.00	-0.61	23.47	2.05	0.00	27.87	2	117	Average	HORIZONTAL
3	a	2421.00	99.46	54.00			2.07	0.00	27.81	2	117	Average	HORIZONTAL
4	p	2422.20	112.12	74.00			2.07	0.00	27.81	2	117	Peak	HORIZONTAL
5	!	2483.50	53.33	54.00	-0.67	23.50	2.10	0.00	27.73	2	117	Average	HORIZONTAL
6	!	2488.70	68.32	74.00	-5.68	38.52	2.10	0.00	27.70	2	117	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 2 Connector J2 + J3 + J4
Test date	Feb. 21, 2011		

Channel 9

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	a	2443.20	92.64	54.00			2.08	0.00	27.78	321	109	Average	HORIZONTAL
2	p	2447.60	106.35	74.00			2.08	0.00	27.78	321	109	Peak	HORIZONTAL
3	!	2483.50	68.16	74.00	-5.84	38.33	2.10	0.00	27.73	321	109	Peak	HORIZONTAL
4	!	2483.50	53.29	54.00	-0.71	23.46	2.10	0.00	27.73	321	109	Average	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

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

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2328.80	53.33	54.00	-0.67	23.13	2.18	28.02	0.00	10	118	Average	HORIZONTAL
2	2386.40	72.25	74.00	-1.75	41.87	2.21	28.17	0.00	10	118	Peak	HORIZONTAL
3	2410.20	110.97	54.00			2.22	28.21	0.00	10	118	Average	HORIZONTAL
4	2410.20	114.36	74.00			2.22	28.21	0.00	10	118	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2355.80	53.88	54.00	-0.12	23.59	2.19	28.10	0.00	348	121	Average	HORIZONTAL
2	2386.40	63.15	74.00	-10.85	32.77	2.21	28.17	0.00	348	121	Peak	HORIZONTAL
3	2438.20	110.82	74.00			2.23	28.29	0.00	348	121	Peak	HORIZONTAL
4	2438.80	106.95	54.00			2.23	28.29	0.00	348	121	Average	HORIZONTAL
5	2492.50	58.77	74.00	-15.23	28.08	2.27	28.42	0.00	348	121	Peak	HORIZONTAL
6	2499.70	46.13	54.00	-7.87	15.44	2.27	28.42	0.00	348	121	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	deg	cm		
1	2377.40	53.90	54.00	-0.10	23.56	2.21	28.13	0.00	8	146	Average	HORIZONTAL
2	2377.40	63.57	74.00	-10.43	33.23	2.21	28.13	0.00	8	146	Peak	HORIZONTAL
3	2459.00	105.08	54.00			2.24	28.33	0.00	8	146	Average	HORIZONTAL
4	2459.60	108.86	74.00			2.24	28.33	0.00	8	146	Peak	HORIZONTAL
5	2483.50	48.58	54.00	-5.42	17.94	2.26	28.38	0.00	8	146	Average	HORIZONTAL
6	2484.70	67.57	74.00	-6.43	36.93	2.26	28.38	0.00	8	146	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	70.99	74.00	-3.01	41.07	2.05	0.00	27.87	352	114	Peak	HORIZONTAL
2	!	2390.00	53.88	54.00	-0.12	23.96	2.05	0.00	27.87	352	114	Average	HORIZONTAL
3	p	2410.80	113.50	74.00			2.05	0.00	27.84	352	114	Peak	HORIZONTAL
4	a	2410.80	102.05	54.00			2.05	0.00	27.84	352	114	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 2 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2349.20	64.08	74.00	-9.92	34.10	2.03	0.00	27.95	337	119	Peak	HORIZONTAL
2	!	2351.00	53.23	54.00	-0.77	23.25	2.03	0.00	27.95	337	119	Average	HORIZONTAL
3	a	2440.00	105.19	54.00			2.07	0.00	27.78	337	119	Average	HORIZONTAL
4	p	2440.60	116.95	74.00			2.07	0.00	27.78	337	119	Peak	HORIZONTAL
5		2485.30	59.45	74.00	-14.55	29.62	2.10	0.00	27.73	337	119	Peak	HORIZONTAL
6	!	2485.30	48.81	54.00	-5.19	18.98	2.10	0.00	27.73	337	119	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Feb. 21, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2359.60	53.61	54.00	-0.39	23.66	2.03	0.00	27.92	320	114	Average	HORIZONTAL
2		2376.20	64.62	74.00	-9.38	34.69	2.04	0.00	27.89	320	114	Peak	HORIZONTAL
3	a	2454.80	101.73	54.00			2.08	0.00	27.76	320	114	Average	HORIZONTAL
4	p	2455.40	113.02	74.00			2.08	0.00	27.76	320	114	Peak	HORIZONTAL
5	!	2484.10	71.79	74.00	-2.21	41.96	2.10	0.00	27.73	320	114	Peak	HORIZONTAL
6	!	2484.10	52.46	54.00	-1.54	22.63	2.10	0.00	27.73	320	114	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Note:

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

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

<For External Antenna / Ant. 5>

Temperature	23℃	**Humidity**	61%
Test Engineer	Sean Ku	**Configurations**	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 5 / Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	68.80	74.00	-5.20	38.88	2.05	0.00	27.87	351	135	Peak	VERTICAL
2	!	2390.00	53.67	54.00	-0.33	23.75	2.05	0.00	27.87	351	135	Average	VERTICAL
3	p	2408.40	109.85	74.00			2.05	0.00	27.84	351	135	Peak	VERTICAL
4	a	2409.20	95.54	54.00			2.05	0.00	27.84	351	135	Average	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz

Temperature	23℃	**Humidity**	61%
Test Engineer	Sean Ku	**Configurations**	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 5 / Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2352.80	53.60	54.00	-0.40	23.65	2.03	0.00	27.92	29	153	Average	HORIZONTAL
2		2354.80	66.39	74.00	-7.61	36.44	2.03	0.00	27.92	29	153	Peak	HORIZONTAL
3	a	2431.80	99.38	54.00			2.07	0.00	27.81	29	153	Average	HORIZONTAL
4	p	2434.60	114.21	74.00			2.07	0.00	27.81	29	153	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 11 / Ant. 5 / Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	a	2455.00	96.31	54.00			2.08	0.00	27.76	35	148	Average	HORIZONTAL
2	p	2455.80	111.33	74.00			2.08	0.00	27.76	35	148	Peak	HORIZONTAL
3	!	2483.50	53.10	54.00	-0.90	23.27	2.10	0.00	27.73	35	148	Average	HORIZONTAL
4	!	2484.50	69.33	74.00	-4.67	39.50	2.10	0.00	27.73	35	148	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 5 Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 3

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2389.20	72.51	74.00	-1.49	42.60	2.04	0.00	27.87	357	161	Peak	VERTICAL
2	!	2390.00	53.50	54.00	-0.50	23.58	2.05	0.00	27.87	357	161	Average	VERTICAL
3	a	2405.60	89.37	54.00			2.05	0.00	27.84	357	161	Average	VERTICAL
4	p	2408.40	105.01	74.00			2.05	0.00	27.84	357	161	Peak	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 5 Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2388.80	68.07	74.00	-5.93	38.16	2.04	0.00	27.87	351	100	Peak	VERTICAL
2	!	2390.00	53.22	54.00	-0.78	23.30	2.05	0.00	27.87	351	100	Average	VERTICAL
3	a	2428.20	91.88	54.00			2.07	0.00	27.81	351	100	Average	VERTICAL
4	p	2446.60	108.28	74.00			2.08	0.00	27.78	351	100	Peak	VERTICAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 5 Connector J2 + J3 + J4
Test date	Mar. 26, 2011		

Channel 9

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	p	2438.80	105.39	74.00			2.07	0.00	27.78	6	100	Peak	VERTICAL
2	a	2440.80	89.49	54.00			2.08	0.00	27.78	6	100	Average	VERTICAL
3	!	2483.50	68.65	74.00	-5.35	38.82	2.10	0.00	27.73	6	100	Peak	VERTICAL
4	!	2483.50	53.39	54.00	-0.61	23.56	2.10	0.00	27.73	6	100	Average	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

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

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2324.40	61.22	74.00	-12.78	31.23	2.01	0.00	27.98	13	152	Peak	HORIZONTAL
2	!	2325.50	53.60	54.00	-0.40	23.61	2.01	0.00	27.98	13	152	Average	HORIZONTAL
3	p	2413.20	108.30	74.00			2.05	0.00	27.84	13	152	Peak	HORIZONTAL
4	a	2413.60	105.10	54.00			2.05	0.00	27.84	13	152	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2350.00	60.89	74.00	-13.11	30.91	2.03	0.00	27.95	31	149	Peak	HORIZONTAL
2	!	2350.40	53.62	54.00	-0.38	23.64	2.03	0.00	27.95	31	149	Average	HORIZONTAL
3	a	2435.40	103.65	54.00			2.07	0.00	27.81	31	149	Average	HORIZONTAL
4	p	2436.20	107.33	74.00			2.07	0.00	27.81	31	149	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2375.60	53.24	54.00	-0.76	23.31	2.04	0.00	27.89	358	125	Average	HORIZONTAL
2		2376.80	61.22	74.00	-12.78	31.29	2.04	0.00	27.89	358	125	Peak	HORIZONTAL
3	a	2463.60	99.80	54.00			2.08	0.00	27.76	358	125	Average	HORIZONTAL
4	p	2464.80	103.81	74.00			2.08	0.00	27.76	358	125	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2388.80	72.35	74.00	-1.65	42.44	2.04	0.00	27.87	19	144	Peak	HORIZONTAL
2	!	2390.00	53.70	54.00	-0.30	23.78	2.05	0.00	27.87	19	144	Average	HORIZONTAL
3	a	2405.40	98.57	54.00			2.05	0.00	27.84	19	144	Average	HORIZONTAL
4	p	2406.20	109.86	74.00			2.05	0.00	27.84	19	144	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2352.00	65.81	74.00	-8.19	35.86	2.03	0.00	27.92	31	154	Peak	HORIZONTAL
2	!	2352.00	53.86	54.00	-0.14	23.91	2.03	0.00	27.92	31	154	Average	HORIZONTAL
3	p	2430.20	113.05	74.00			2.07	0.00	27.81	31	154	Peak	HORIZONTAL
4	a	2430.60	101.98	54.00			2.07	0.00	27.81	31	154	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 5 / Connector J2 + J3 + J4
Test Date	Mar. 26, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2376.00	64.16	74.00	-9.84	34.23	2.04	0.00	27.89	30	154	Peak	HORIZONTAL
2	!	2376.80	53.41	54.00	-0.59	23.48	2.04	0.00	27.89	30	154	Average	HORIZONTAL
3	p	2454.40	109.41	74.00			2.08	0.00	27.76	30	154	Peak	HORIZONTAL
4	a	2455.20	98.50	54.00			2.08	0.00	27.76	30	154	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Note:

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

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

<For Internal Antenna / Ant. 8>

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 1 / Ant. 8 / Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	71.43	74.00	-2.57	40.50	2.88	0.00	28.05	296	188	Peak	HORIZONTAL
2	!	2390.00	53.47	54.00	-0.53	22.54	2.88	0.00	28.05	296	188	Average	HORIZONTAL
3	p	2404.40	110.59	74.00			2.88	0.00	28.09	296	188	Peak	HORIZONTAL
4	a	2413.50	96.53	54.00			2.88	0.00	28.09	296	188	Average	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2412 MHz

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 6 / Ant. 8 / Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2387.60	72.70	74.00	-1.30	41.79	2.86	0.00	28.05	298	187	Peak	HORIZONTAL
2	!	2390.00	53.12	54.00	-0.88	22.19	2.88	0.00	28.05	298	187	Average	HORIZONTAL
3	a	2432.20	102.96	54.00			2.89	0.00	28.13	298	187	Average	HORIZONTAL
4	p	2432.40	118.64	74.00			2.89	0.00	28.13	298	187	Peak	HORIZONTAL
5	!	2483.50	50.78	54.00	-3.22	19.59	2.93	0.00	28.26	298	187	Average	HORIZONTAL
6	!	2485.90	68.00	74.00	-6.00	36.77	2.93	0.00	28.30	298	187	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 20MHz Ch 11 / Ant. 8 / Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	p	2456.90	114.87	74.00			2.91	0.00	28.22	305	180	Peak	HORIZONTAL
2	a	2457.20	98.14	54.00			2.91	0.00	28.22	305	180	Average	HORIZONTAL
3	!	2483.50	53.10	54.00	-0.90	21.91	2.93	0.00	28.26	305	180	Average	HORIZONTAL
4	!	2484.70	73.89	74.00	-0.11	42.70	2.93	0.00	28.26	305	180	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 3 / Ant. 8 Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 3

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	70.15	74.00	-3.85	39.22	2.88	0.00	28.05	296	189	Peak	HORIZONTAL
2	!	2390.00	53.35	54.00	-0.65	22.42	2.88	0.00	28.05	296	189	Average	HORIZONTAL
3	a	2407.20	89.19	54.00			2.88	0.00	28.09	296	189	Average	HORIZONTAL
4	p	2407.60	104.85	74.00			2.88	0.00	28.09	296	189	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 6 / Ant. 8 Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreampFactor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	70.08	74.00	-3.92	39.15	2.88	0.00	28.05	267	107	Peak	HORIZONTAL
2	!	2390.00	53.57	54.00	-0.43	22.64	2.88	0.00	28.05	267	107	Average	HORIZONTAL
3	a	2419.40	89.43	54.00			2.89	0.00	28.13	267	107	Average	HORIZONTAL
4	p	2432.60	106.52	74.00			2.89	0.00	28.13	267	107	Peak	HORIZONTAL
5		2483.50	46.49	54.00	-7.51	15.30	2.93	0.00	28.26	267	107	Average	HORIZONTAL
6		2487.90	62.14	74.00	-11.86	30.91	2.93	0.00	28.30	267	107	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11n MCS8 40MHz Ch 9 / Ant. 8 Connector J2 + J3 + J4
Test date	Jan. 13, 2011		

Channel 9

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	p	2440.40	106.50	74.00			2.89	0.00	28.18	306	179	Peak	HORIZONTAL
2	a	2443.00	90.91	54.00			2.91	0.00	28.18	306	179	Average	HORIZONTAL
3		2483.50	53.94	54.00	-0.06	22.75	2.93	0.00	28.26	306	179	Average	HORIZONTAL
4		2485.10	68.95	74.00	-5.05	37.72	2.93	0.00	28.30	306	179	Peak	HORIZONTAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

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

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 1 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 12, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreAmp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2322.00	53.35	54.00	-0.65	22.63	2.83	0.00	27.89	306	162	Average	HORIZONTAL
2		2389.20	65.61	74.00	-8.39	34.70	2.86	0.00	28.05	306	162	Peak	HORIZONTAL
3	p	2410.00	110.16	74.00			2.88	0.00	28.09	306	162	Peak	HORIZONTAL
4	a	2410.00	106.63	54.00			2.88	0.00	28.09	306	162	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 13, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	PreAmp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2350.00	61.24	74.00	-12.76	30.42	2.85	0.00	27.97	306	159	Peak	HORIZONTAL
2	!	2351.10	53.18	54.00	-0.82	22.36	2.85	0.00	27.97	306	159	Average	HORIZONTAL
3	a	2439.20	105.95	54.00			2.89	0.00	28.18	306	159	Average	HORIZONTAL
4	p	2439.60	110.10	74.00			2.89	0.00	28.18	306	159	Peak	HORIZONTAL
5		2487.10	58.54	74.00	-15.46	27.31	2.93	0.00	28.30	306	159	Peak	HORIZONTAL
6		2500.00	44.69	54.00	-9.31	13.45	2.94	0.00	28.30	306	159	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11b CH 11 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 11, 2011		

Channel 11

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1		2375.00	60.58	74.00	-13.42	29.71	2.86	0.00	28.01	297	190	Peak	HORIZONTAL
2	!	2375.00	53.38	54.00	-0.62	22.51	2.86	0.00	28.01	297	190	Average	HORIZONTAL
3	a	2463.50	100.47	54.00			2.91	0.00	28.22	297	190	Average	HORIZONTAL
4	p	2464.50	103.90	74.00			2.91	0.00	28.22	297	190	Peak	HORIZONTAL

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 1 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 13, 2011		

Channel 1

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2389.20	72.87	74.00	-1.13	41.96	2.86	0.00	28.05	266	106	Peak	HORIZONTAL
2	!	2390.00	53.61	54.00	-0.39	22.68	2.88	0.00	28.05	266	106	Average	HORIZONTAL
3	a	2409.70	97.52	54.00			2.88	0.00	28.09	266	106	Average	HORIZONTAL
4	p	2410.90	108.77	74.00			2.88	0.00	28.09	266	106	Peak	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 6 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 13, 2011		

Channel 6

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1	!	2390.00	72.24	74.00	-1.76	41.31	2.88	0.00	28.05	296	186	Peak	HORIZONTAL
2	!	2390.00	53.85	54.00	-0.15	22.92	2.88	0.00	28.05	296	186	Average	HORIZONTAL
3	p	2435.60	118.45	74.00			2.89	0.00	28.18	296	186	Peak	HORIZONTAL
4	a	2435.60	106.97	54.00			2.89	0.00	28.18	296	186	Average	HORIZONTAL
5	!	2485.10	71.80	74.00	-2.20	40.57	2.93	0.00	28.30	296	186	Peak	HORIZONTAL
6	!	2485.90	53.00	54.00	-1.00	21.77	2.93	0.00	28.30	296	186	Average	HORIZONTAL

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

Temperature	23℃	Humidity	61%
Test Engineer	Sean Ku	Configurations	IEEE 802.11g CH 11 / Ant. 8 / Connector J2 + J3 + J4
Test Date	Jan. 13, 2011		

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	T/Pos	A/Pos	Remark	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m	deg	cm		
1 p	2462.80	111.56	74.00			2.91	0.00	28.22	305	220	Peak	HORIZONTAL
2 a	2462.80	99.58	54.00			2.91	0.00	28.22	305	220	Average	HORIZONTAL
3 !	2483.50	70.91	74.00	-3.09	39.72	2.93	0.00	28.26	305	220	Peak	HORIZONTAL
4 !	2483.50	53.09	54.00	-0.91	21.90	2.93	0.00	28.26	305	220	Average	HORIZONTAL

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

Note:

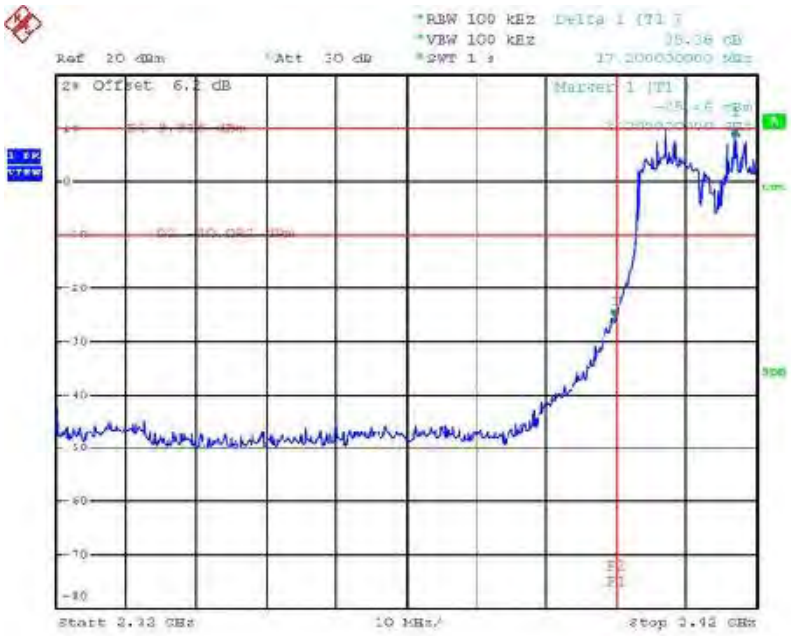
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

For Emission not in Restricted Band

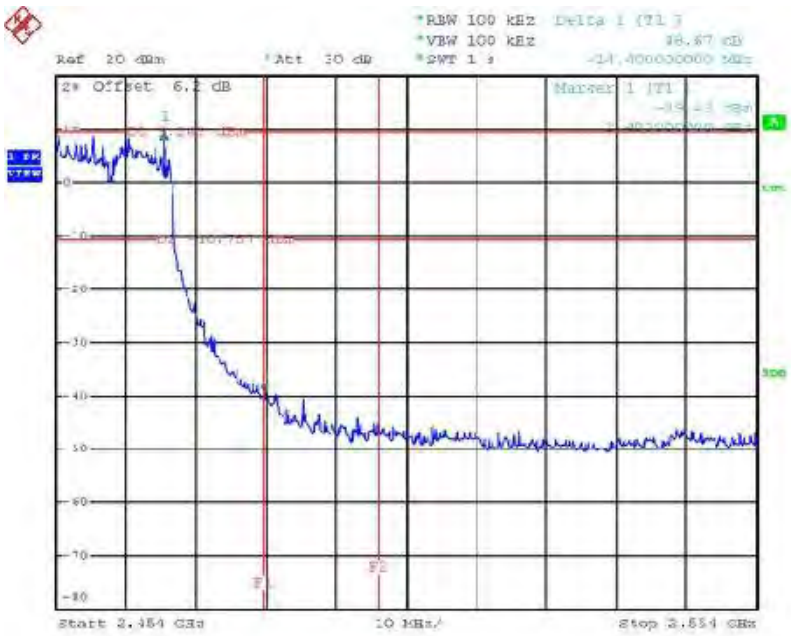
<For External Antenna / Ant. 2>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2412 MHz



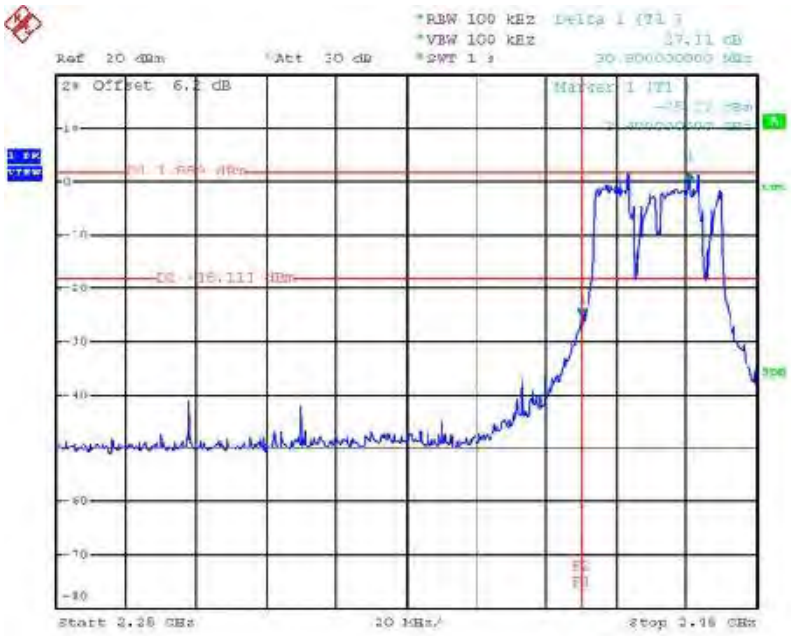
Date: 8.MAR.2011 16:17:55

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2462 MHz



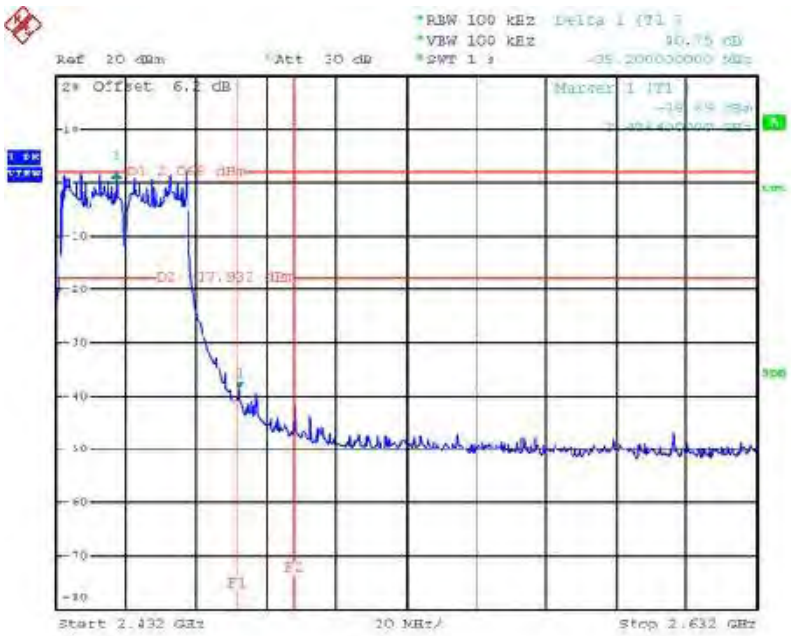
Date: 8.MAR.2011 16:22:09

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2422 MHz



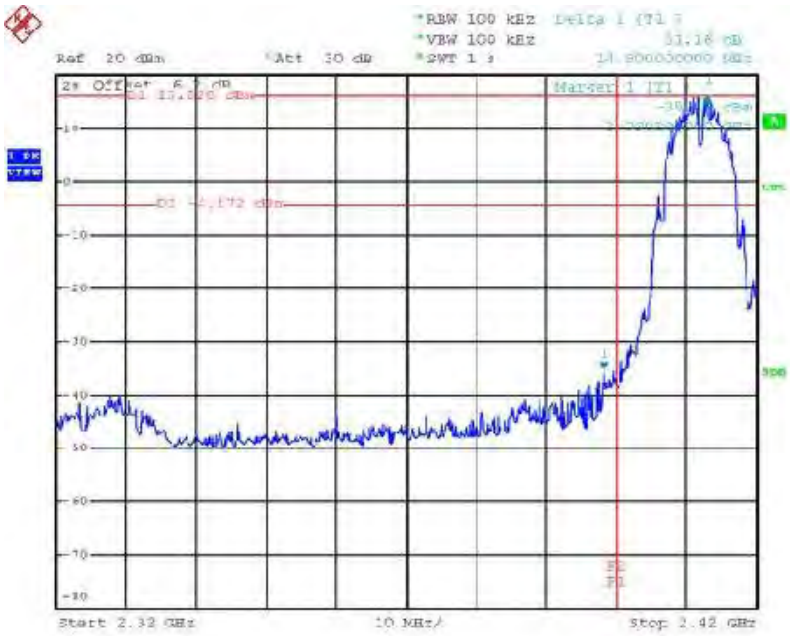
Date: 8.MAR.2011 16:15:51

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2452 MHz



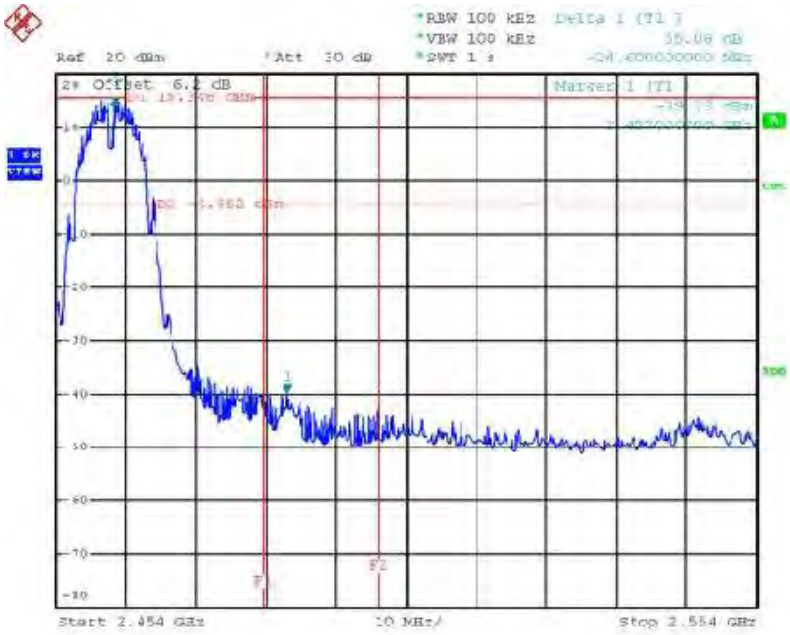
Date: 8.MAR.2011 16:11:33

Low Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2412 MHz



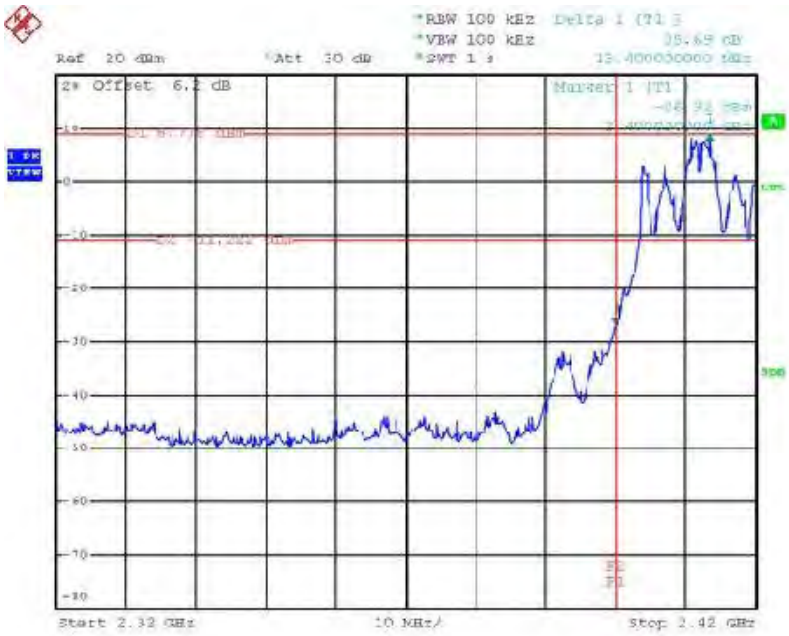
Date: 8.MAR.2011 16:30:48

High Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2462 MHz

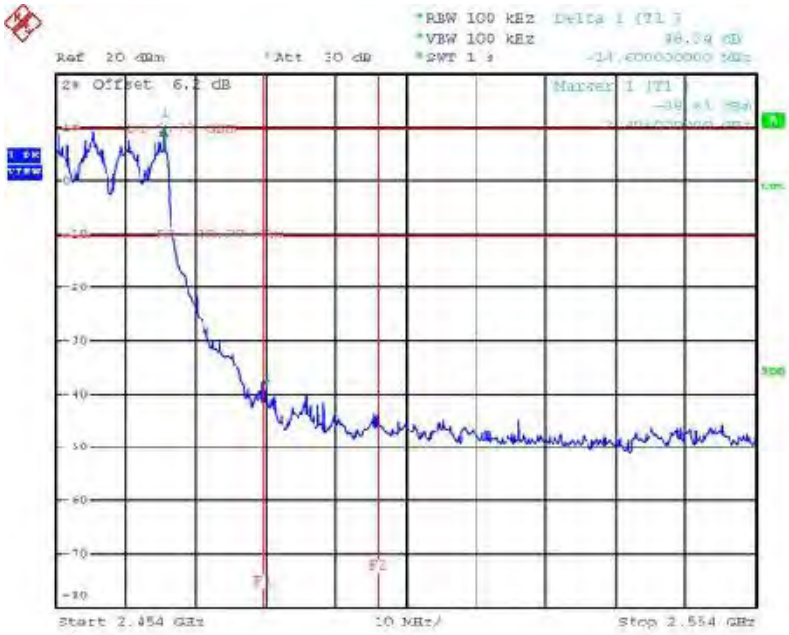


Date: 8.MAR.2011 16:34:50

Low Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2412 MHz



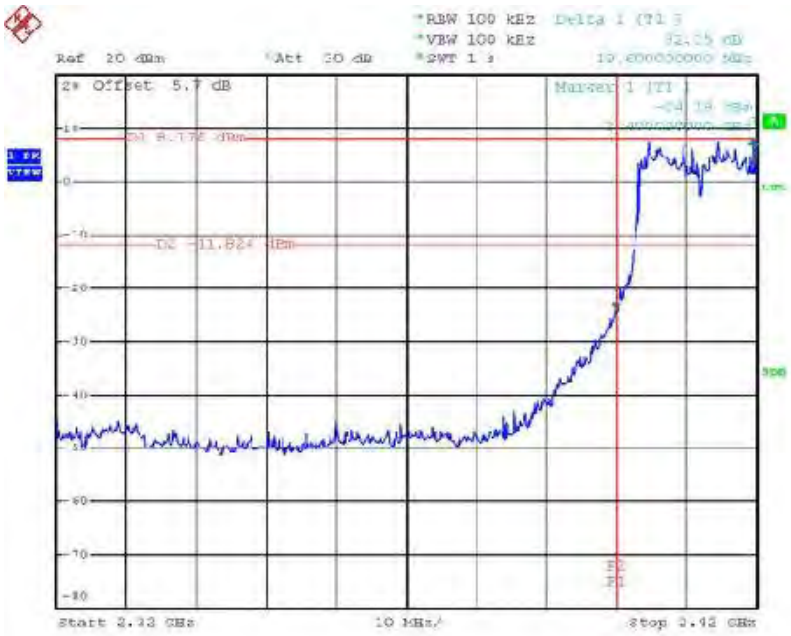
High Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2462 MHz



For Emission not in Restricted Band

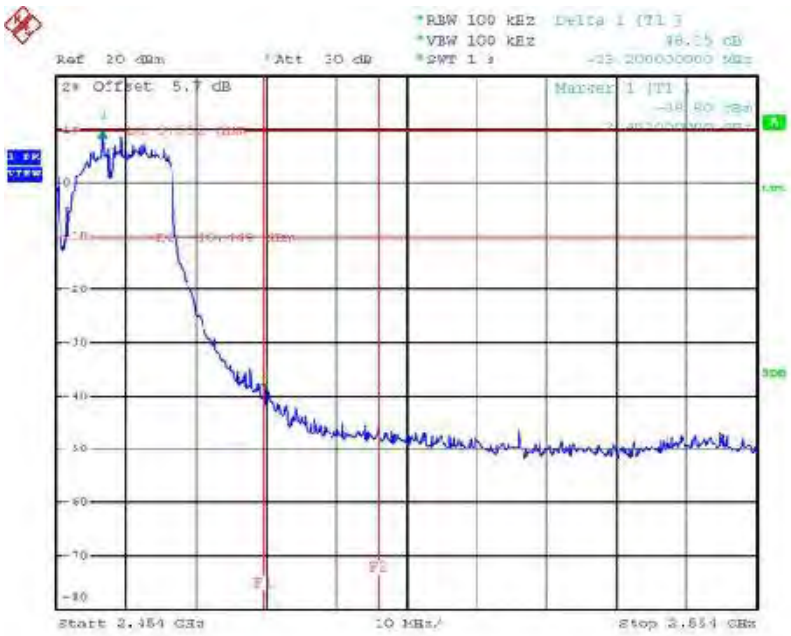
<For External Antenna / Ant. 5>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2412 MHz



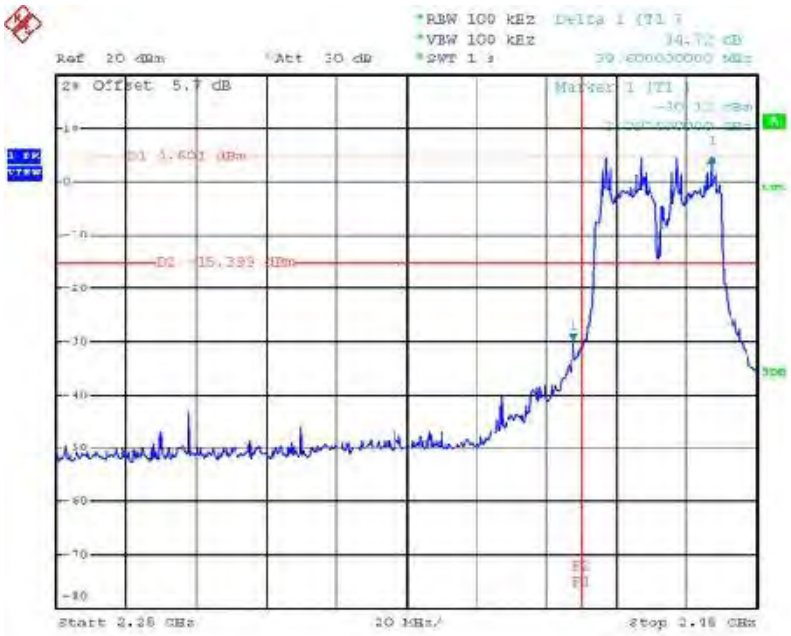
Date: 29.MAR.2011 06:20:58

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2462 MHz



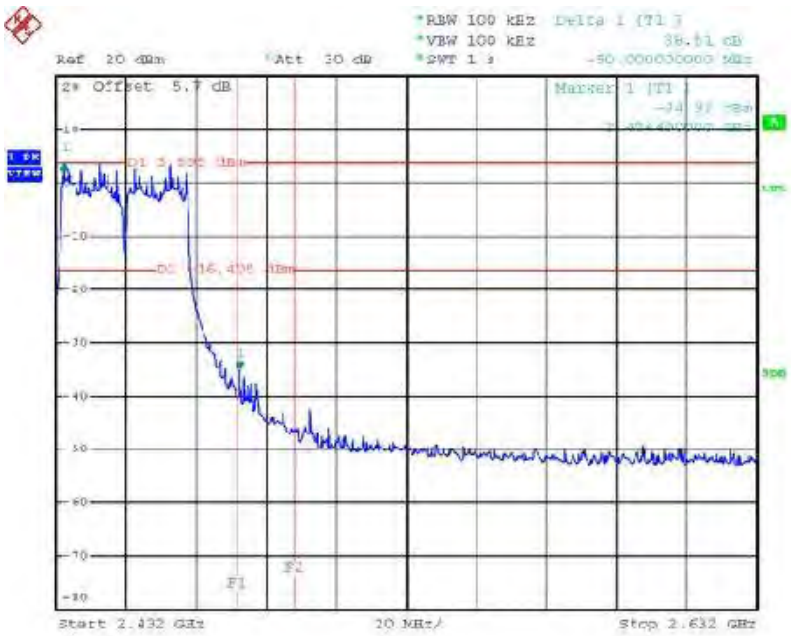
Date: 29.MAR.2011 06:25:16

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2422 MHz



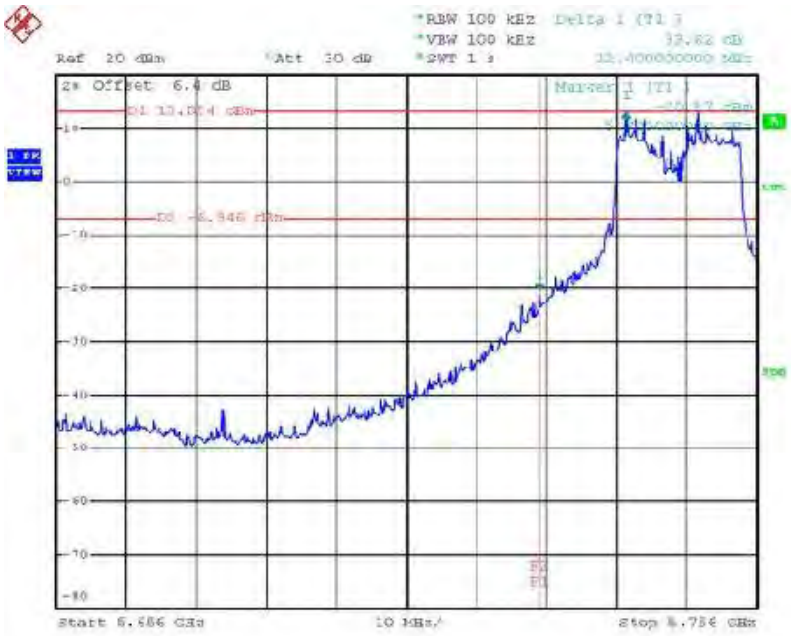
Date: 29.MAR.2011 06:27:38

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2452 MHz



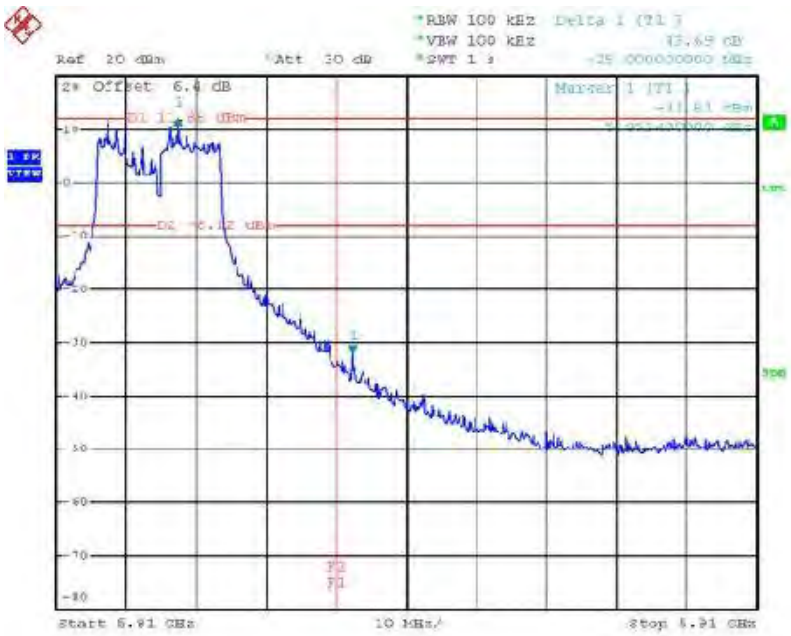
Date: 29.MAR.2011 06:32:02

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5745 MHz



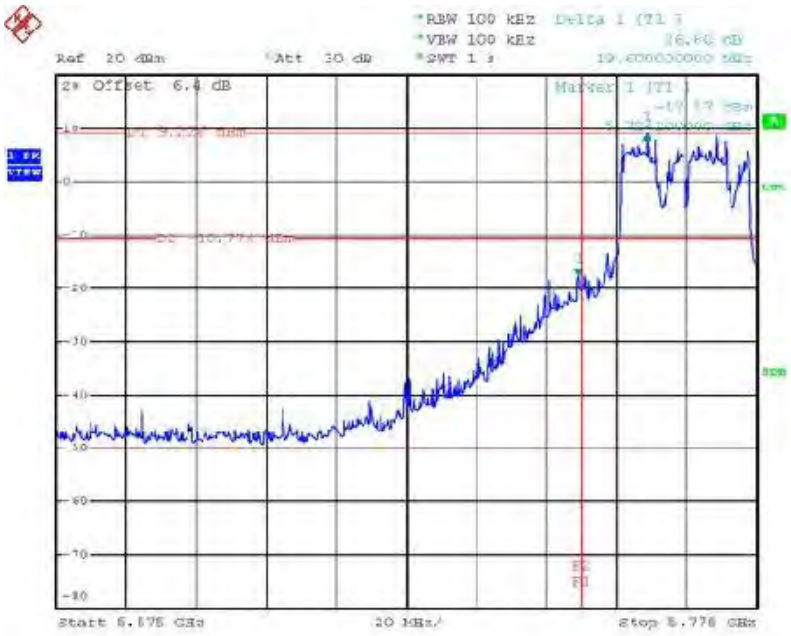
Date: 9.MAR.2011 11:20:32

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5825 MHz



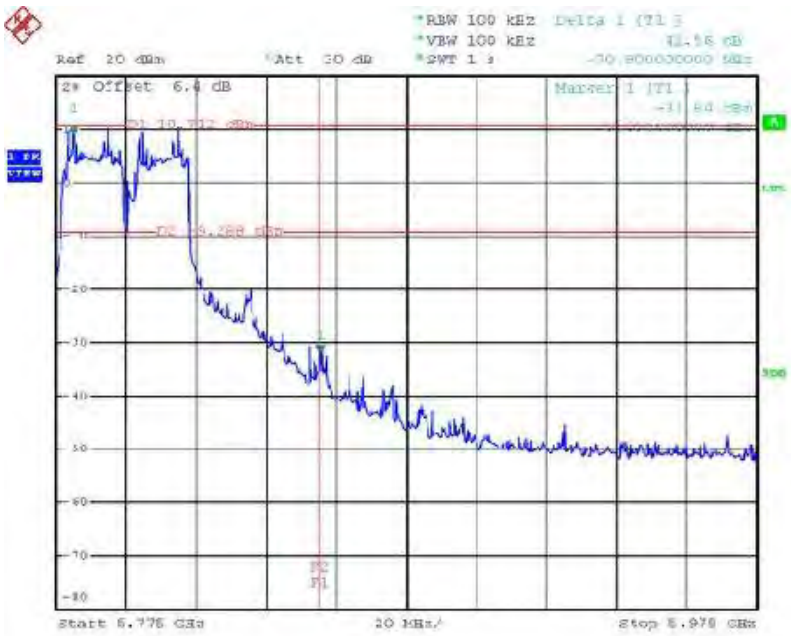
Date: 9.MAR.2011 11:18:24

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5755 MHz



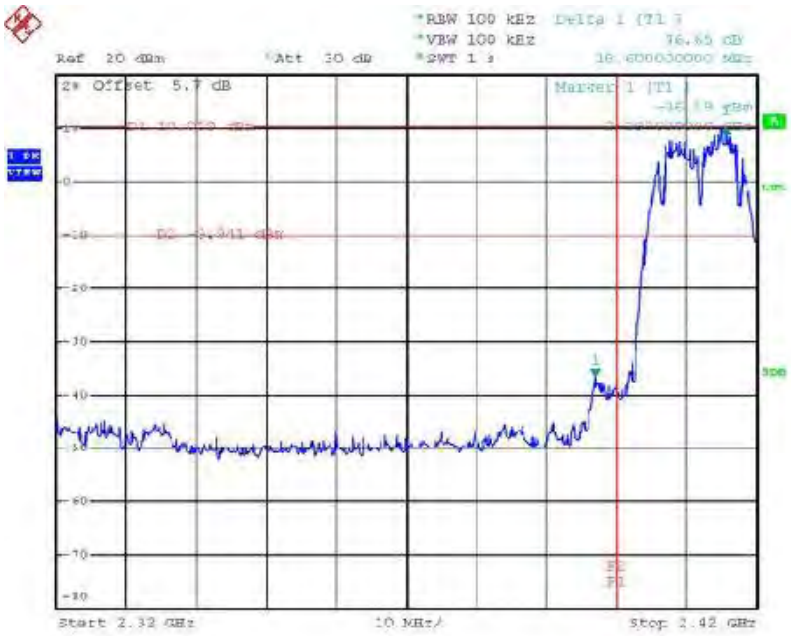
Date: 9.MAR.2011 11:13:02

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5795 MHz



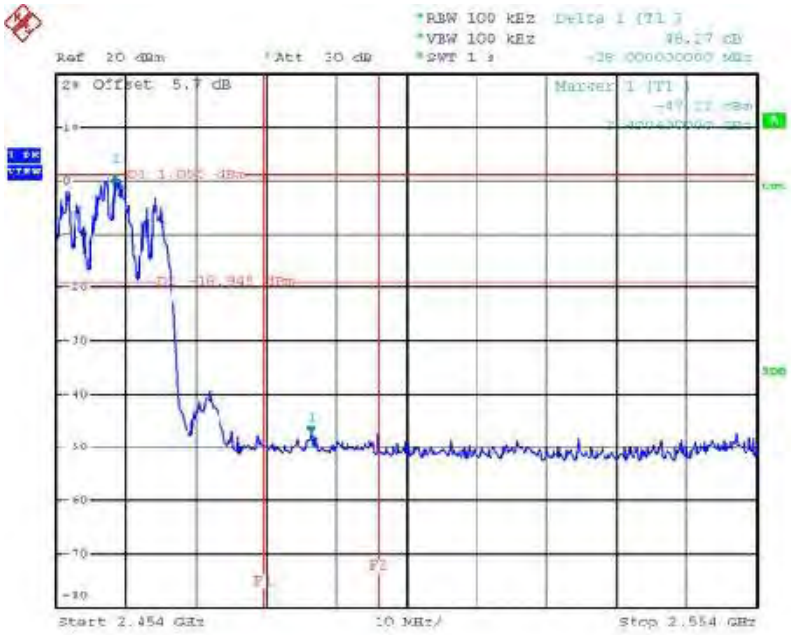
Date: 9.MAR.2011 11:10:42

Low Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2412 MHz



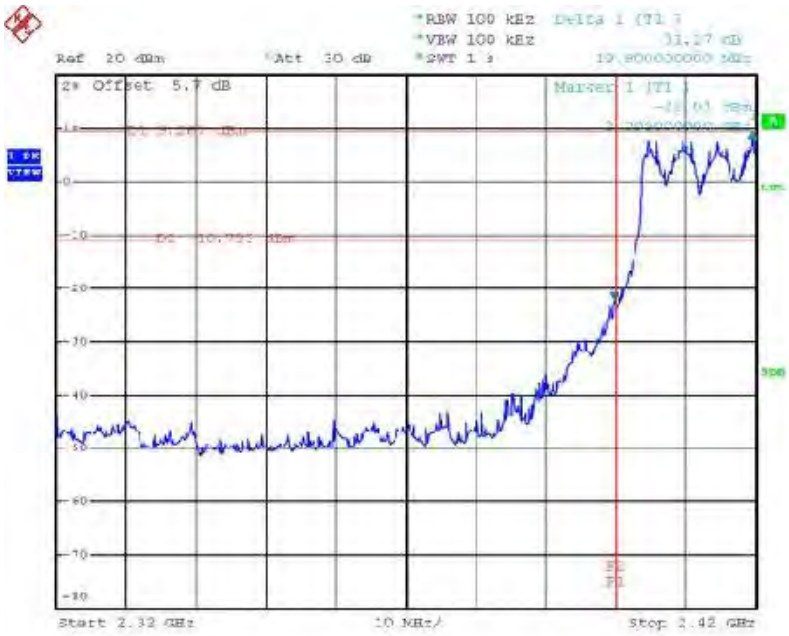
Date: 29.MAR.2011 06:11:56

High Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2462 MHz



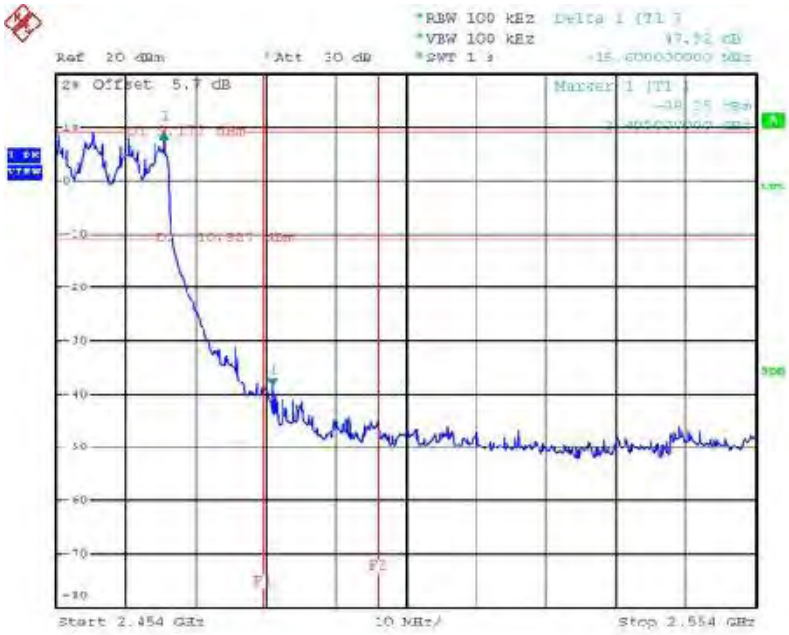
Date: 29.MAR.2011 06:09:47

Low Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2412 MHz



Date: 29.MAR.2011 06:14:09

High Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2462 MHz

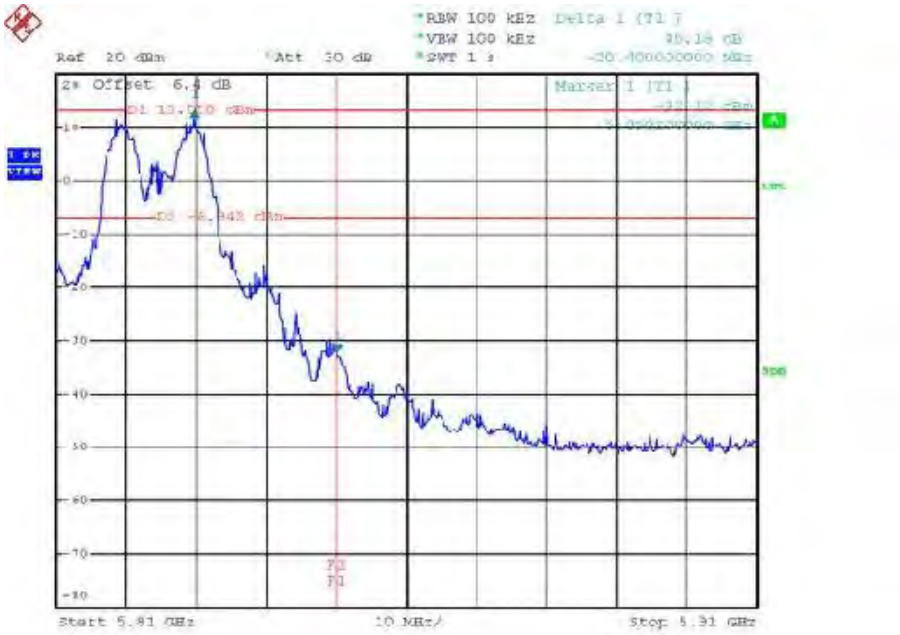


Date: 29.MAR.2011 06:18:29

Low Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5745 MHz

Date: 9.MAR.2011 11:32:19

High Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5825 MHz

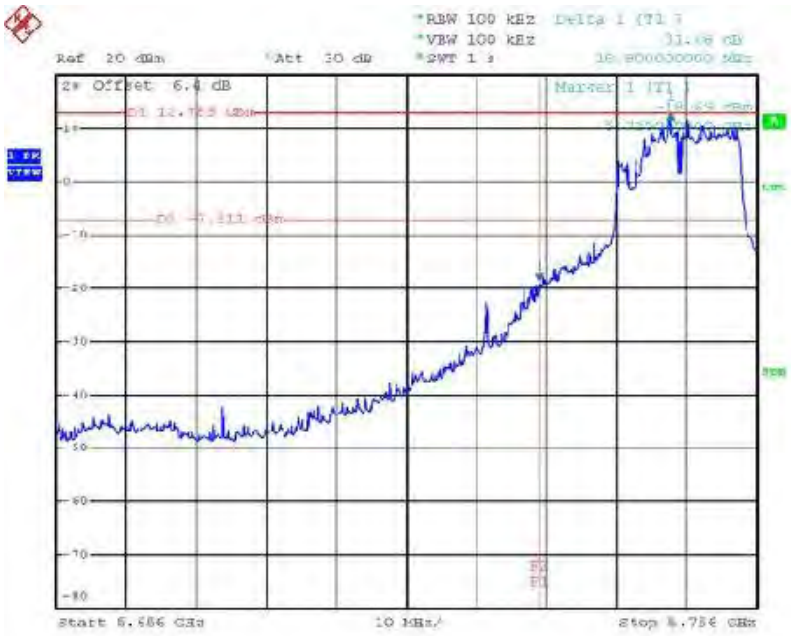


Date: 9.MAR.2011 11:37:58

For Emission not in Restricted Band

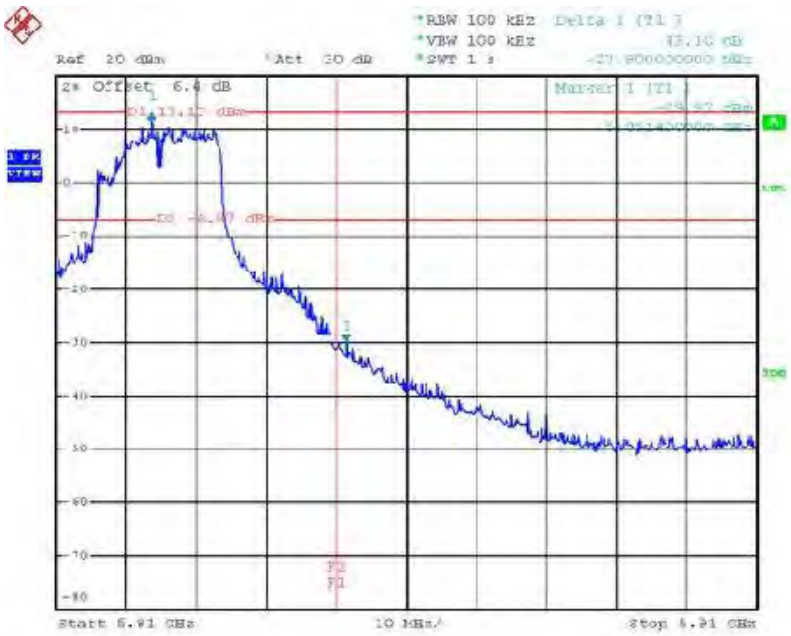
<For External Antenna / Ant. 6>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5745 MHz



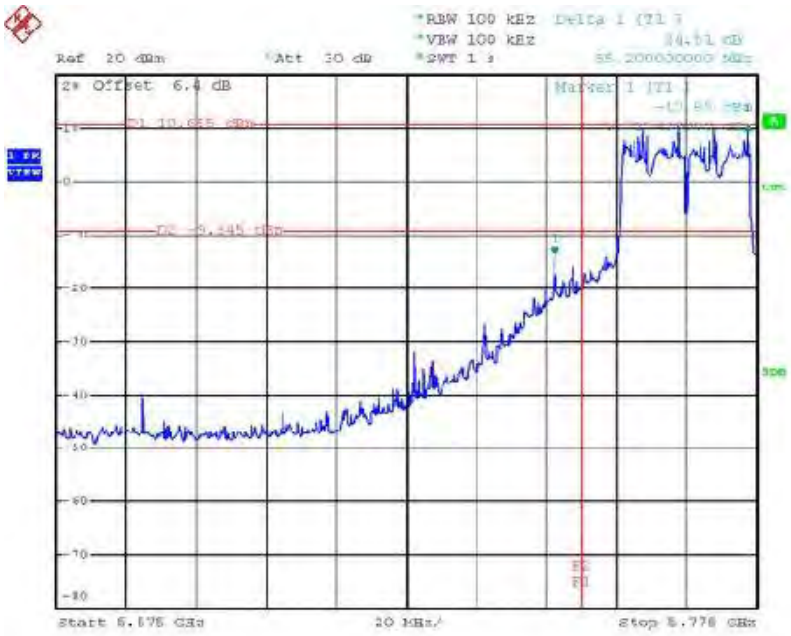
Date: 9.MAR.2011 12:57:54

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5825 MHz



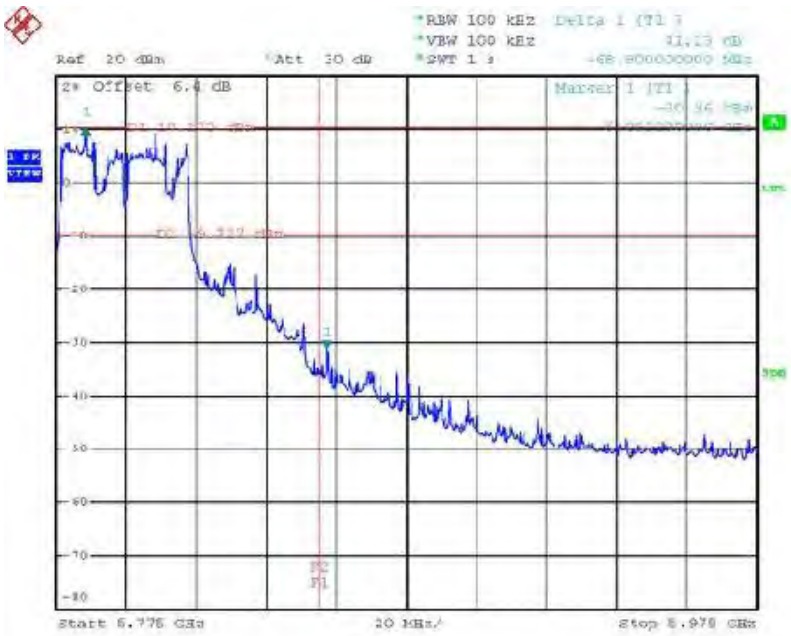
Date: 9.MAR.2011 12:42:03

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5755 MHz



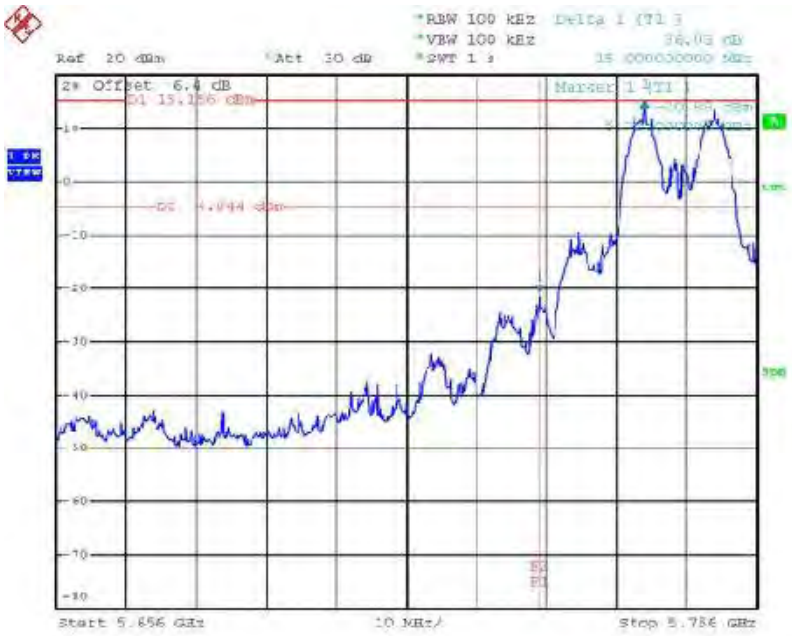
Date: 9.MAR.2011 13:00:48

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5795 MHz



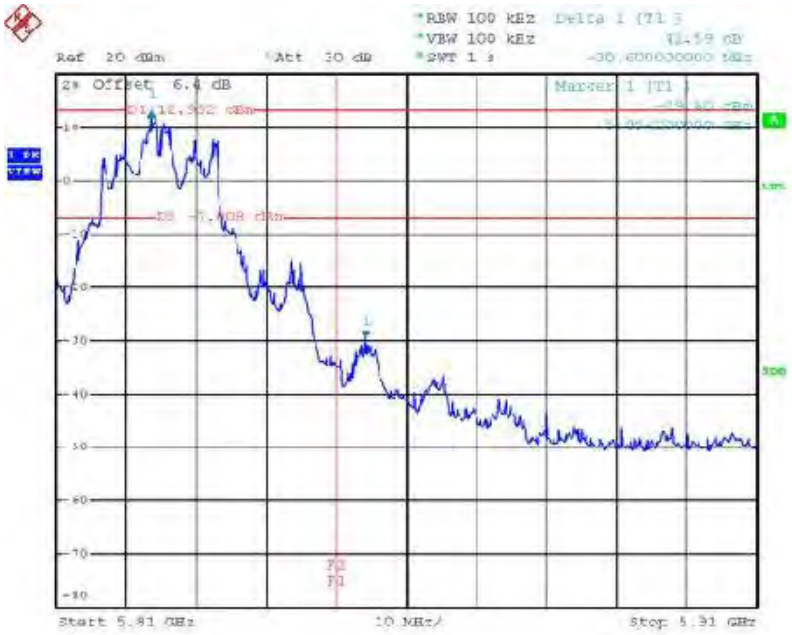
Date: 9.MAR.2011 13:02:56

Low Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5745 MHz



Date: 9.MAR.2011 12:34:46

High Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5825 MHz

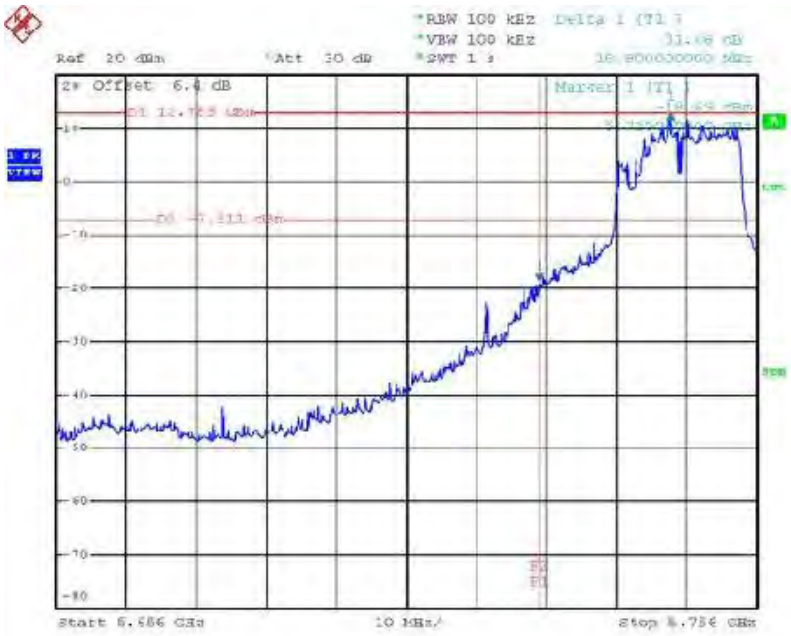


Date: 9.MAR.2011 12:39:40

For Emission not in Restricted Band

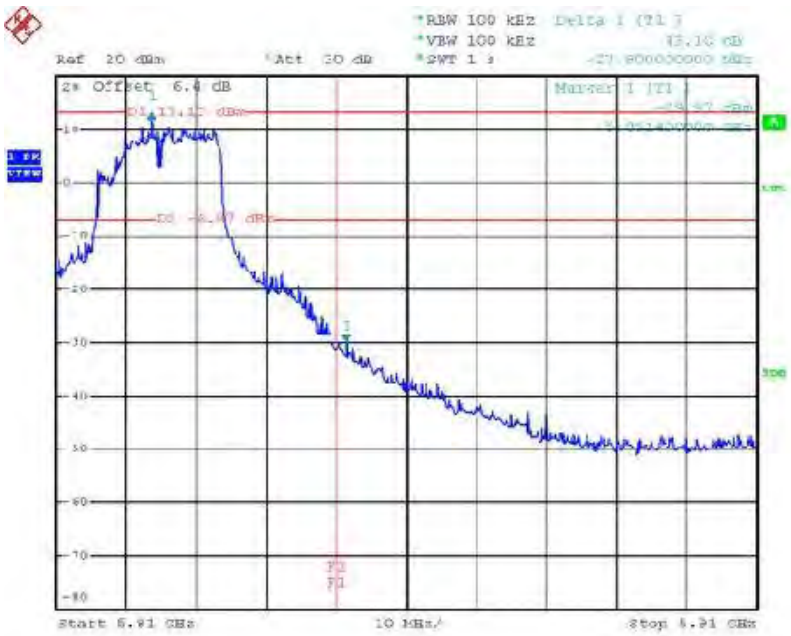
<For External Antenna / Ant. 7>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5745 MHz



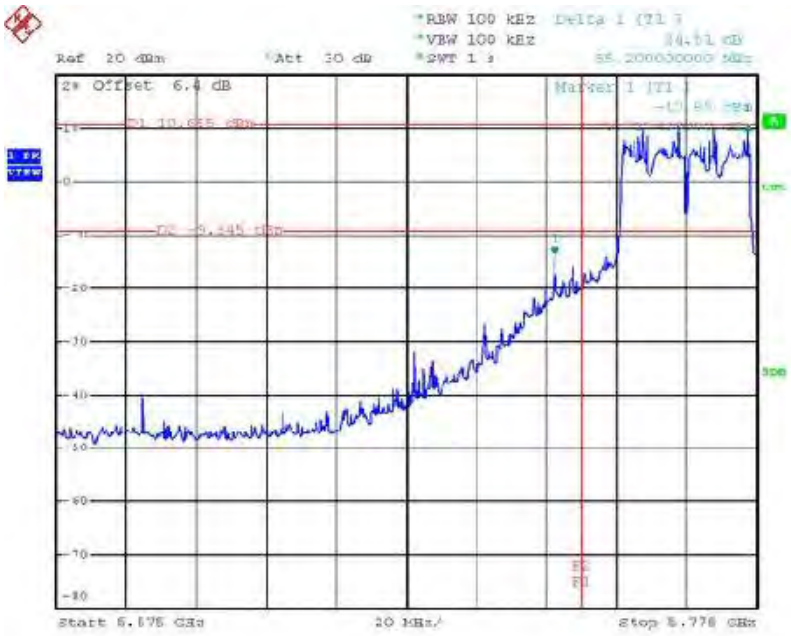
Date: 9.MAR.2011 12:57:54

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5825 MHz



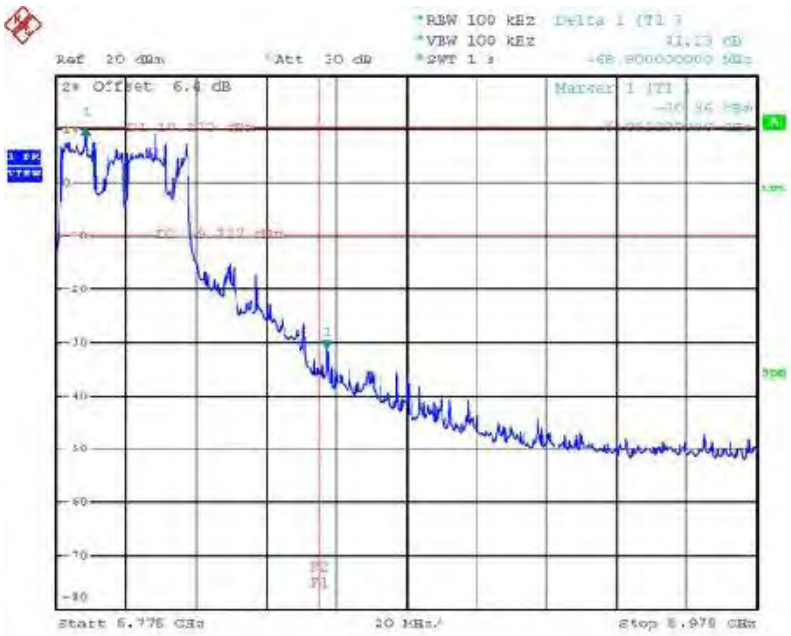
Date: 9.MAR.2011 12:42:03

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5755 MHz



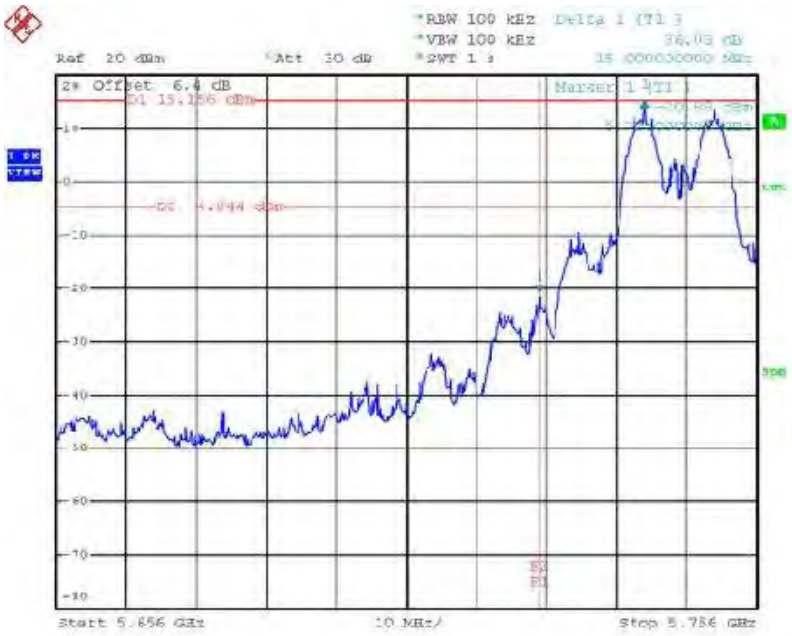
Date: 9.MAR.2011 13:00:48

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5795 MHz



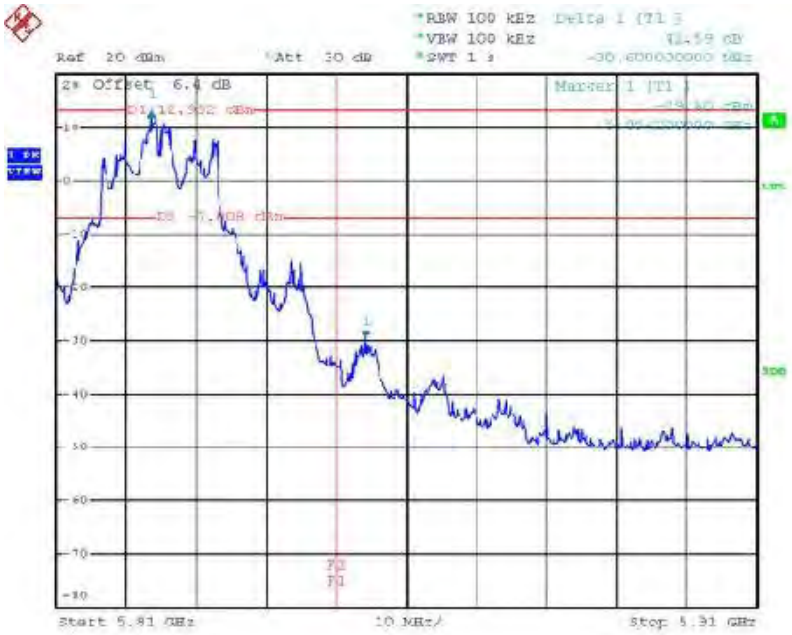
Date: 9.MAR.2011 13:02:56

Low Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5745 MHz



Date: 9.MAR.2011 12:34:46

High Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5825 MHz

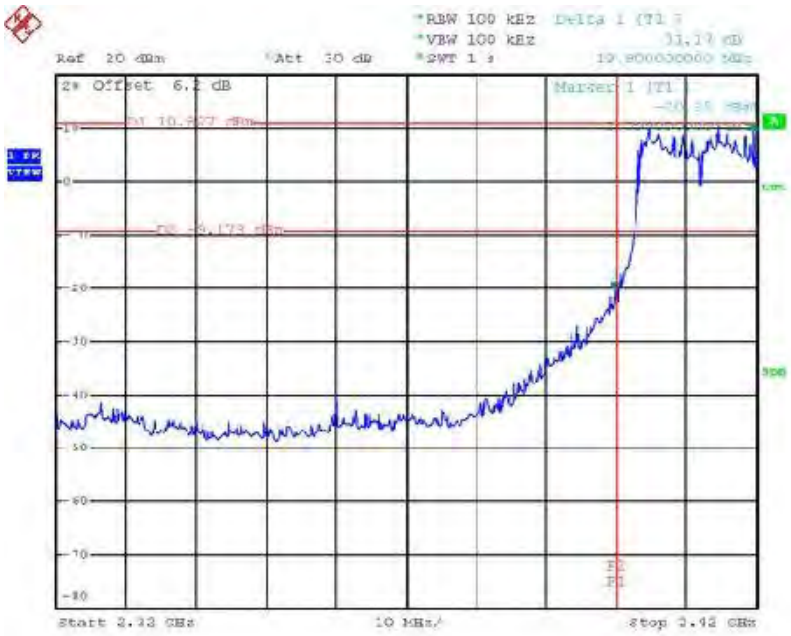


Date: 9.MAR.2011 12:39:40

For Emission not in Restricted Band

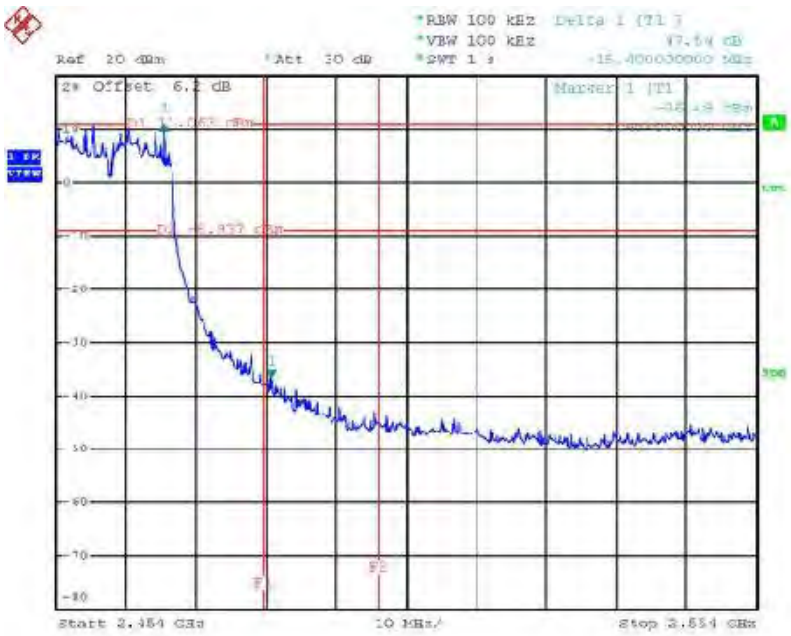
<For Internal Antenna / Ant. 8>

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2412 MHz



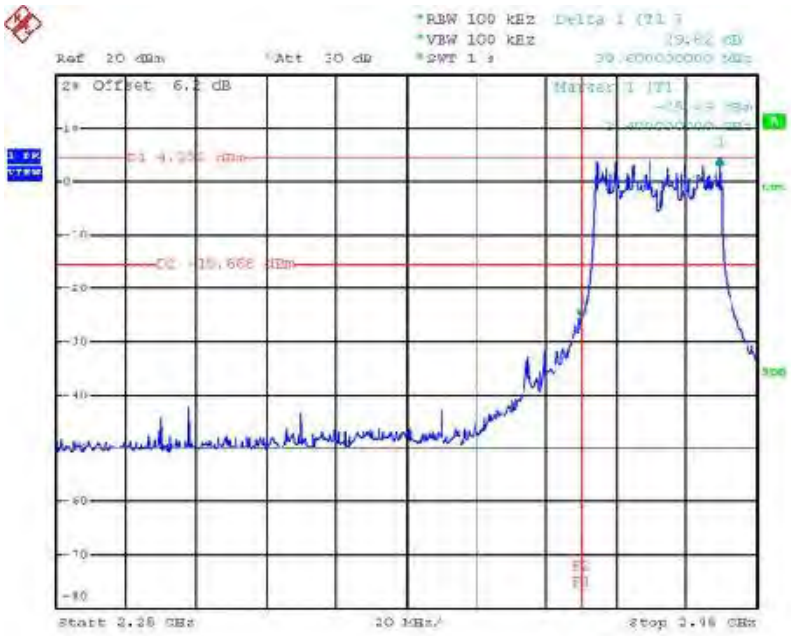
Date: 8.MAR.2011 15:46:01

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 2462 MHz



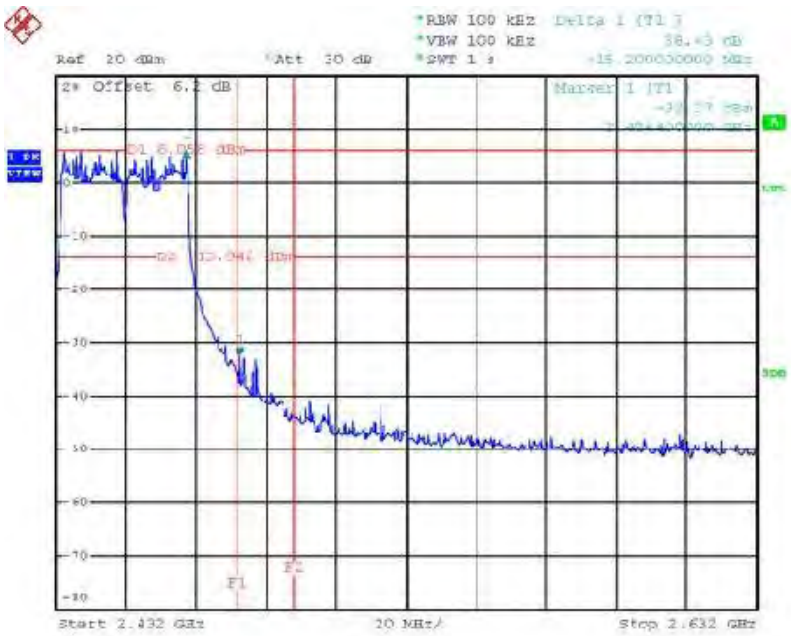
Date: 8.MAR.2011 15:37:07

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2422 MHz



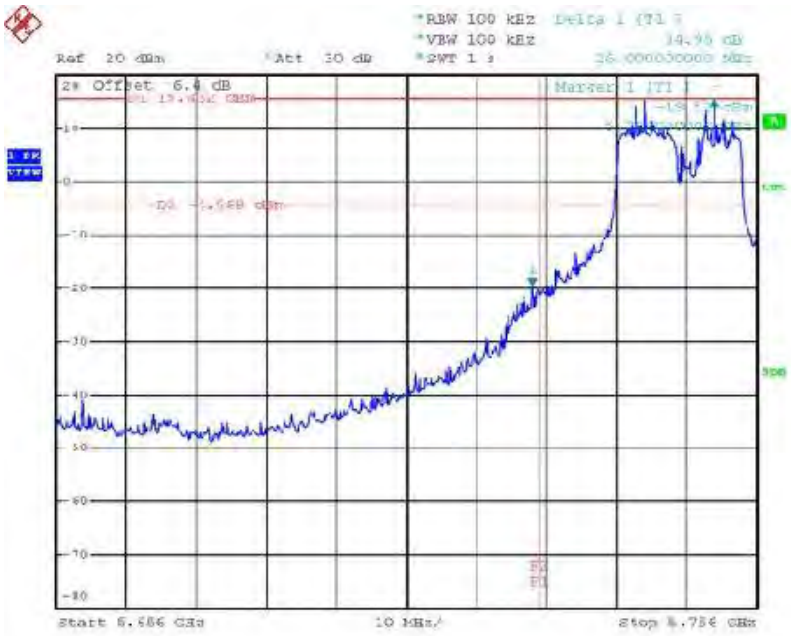
Date: 8.MAR.2011 15:49:12

High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 2452 MHz



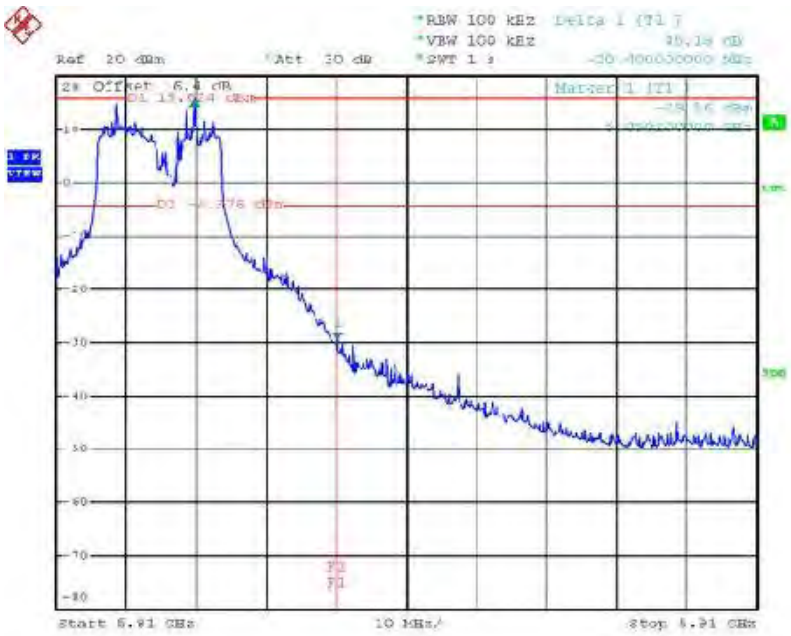
Date: 8.MAR.2011 15:53:08

Low Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5745 MHz



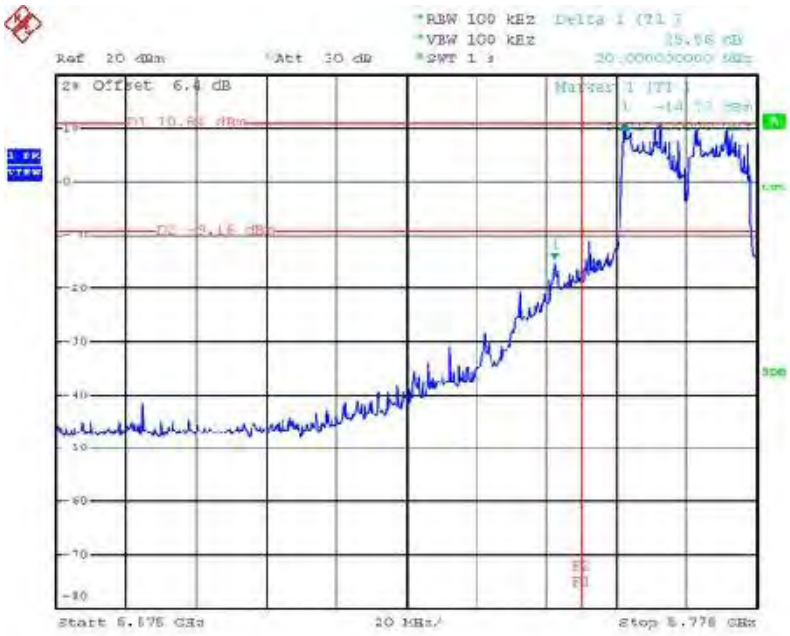
Date: 9.MAR.2011 08:42:27

High Band Edge Plot on Configuration IEEE 802.11n MCS8 20MHz Connector J2 + J3 + J4 / 5825 MHz

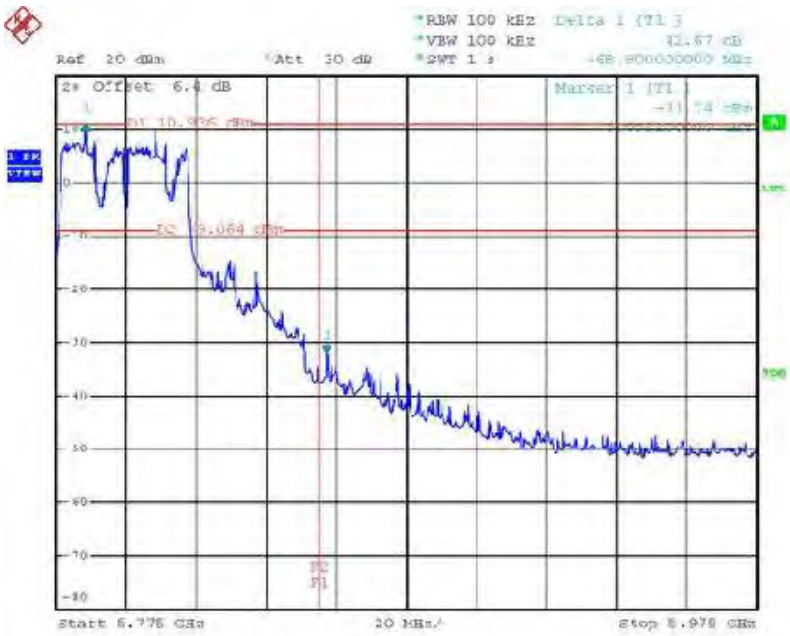


Date: 9.MAR.2011 08:47:09

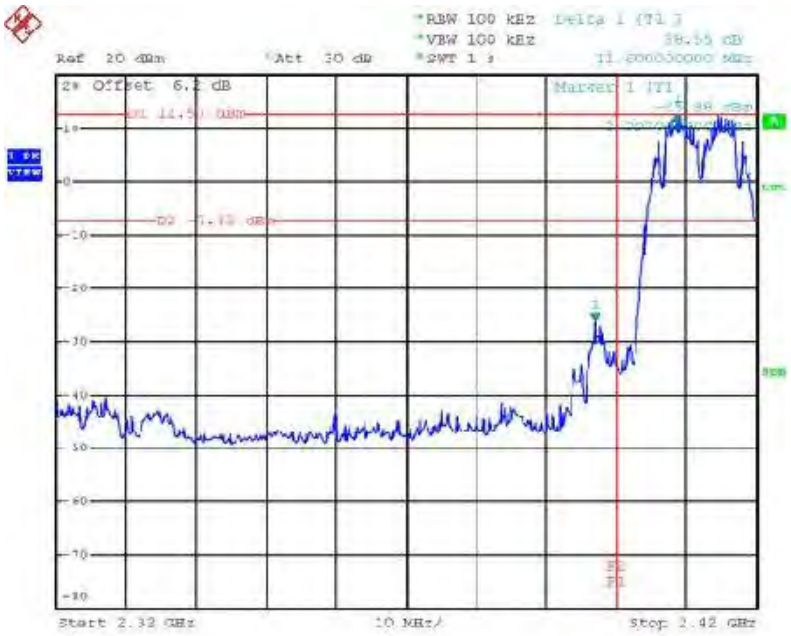
Low Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5755 MHz



High Band Edge Plot on Configuration IEEE 802.11n MCS8 40MHz Connector J2 + J3 + J4 / 5795 MHz

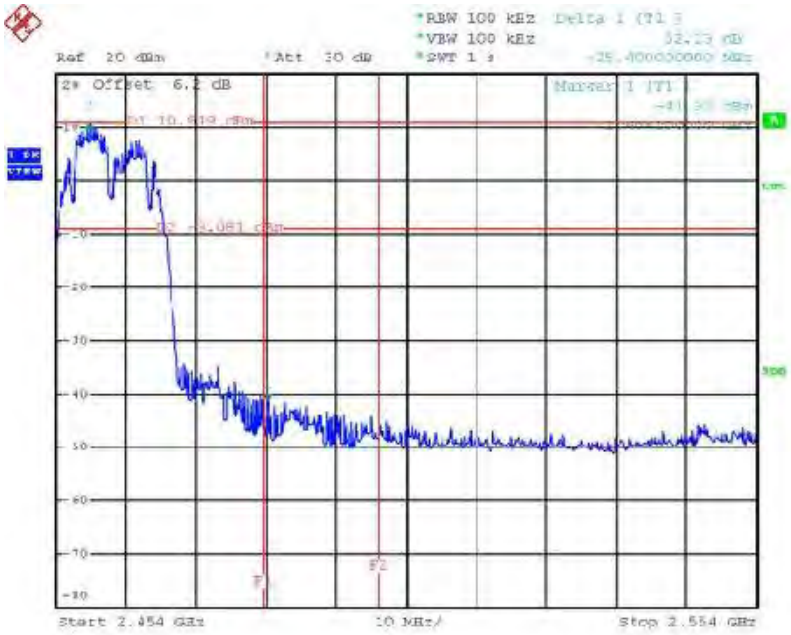


Low Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2412 MHz



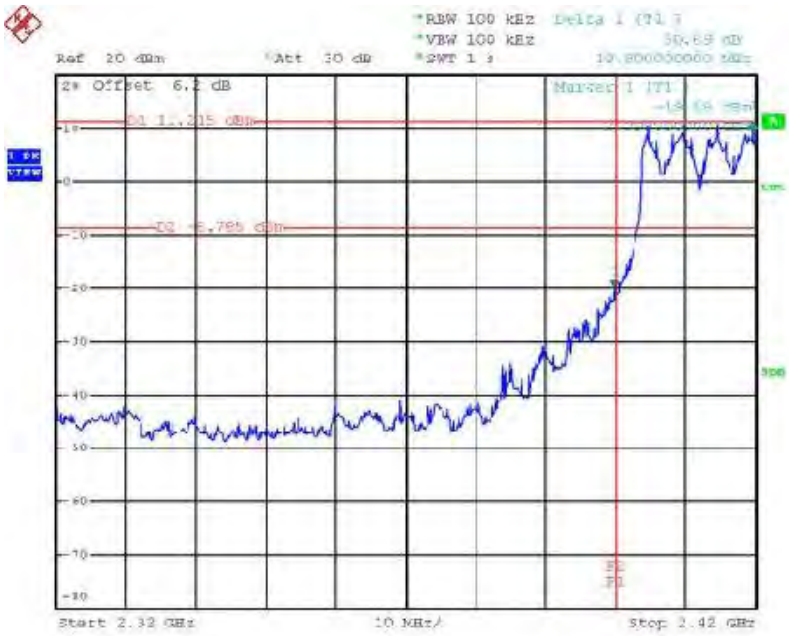
Date: 8.MAR.2011 15:28:00

High Band Edge Plot on Configuration IEEE 802.11b Connector J2 + J3 + J4 / 2462 MHz



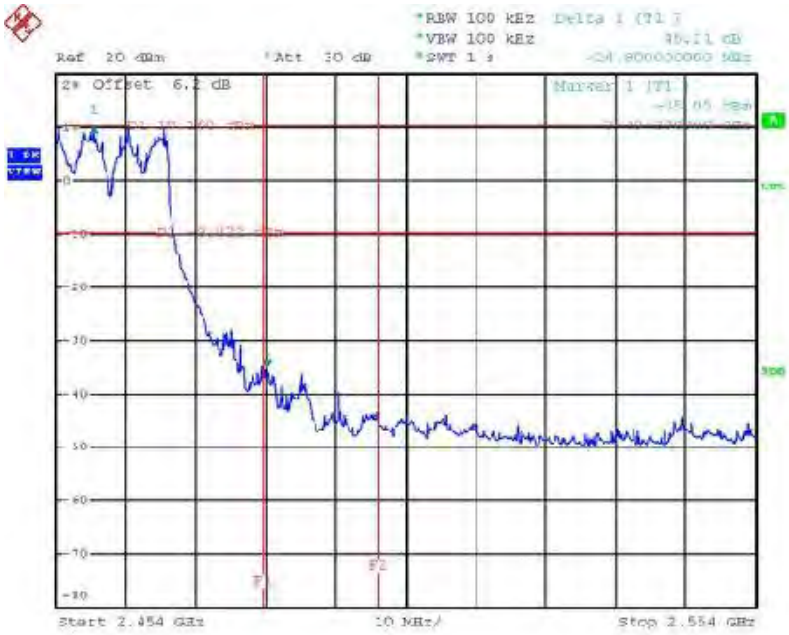
Date: 8.MAR.2011 15:25:45

Low Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2412 MHz



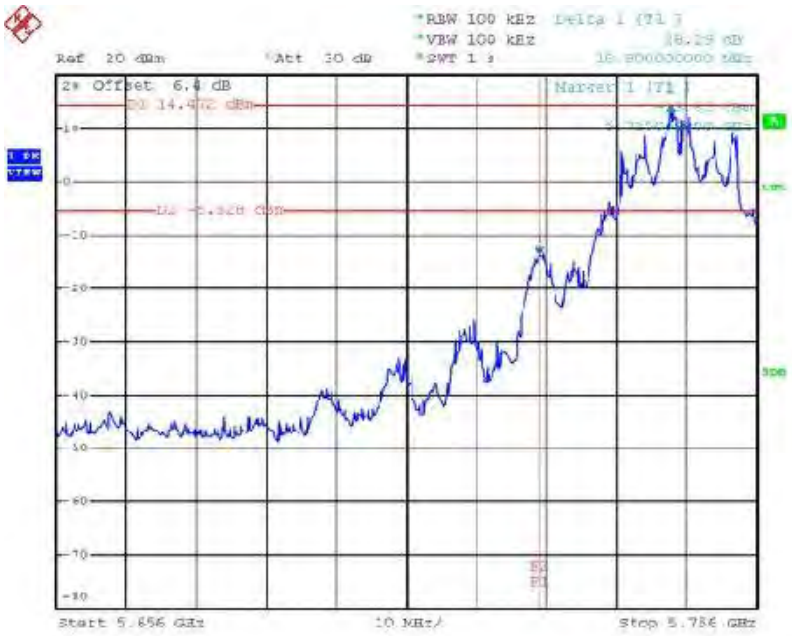
Date: 8.MAR.2011 15:30:03

High Band Edge Plot on Configuration IEEE 802.11g Connector J2 + J3 + J4 / 2462 MHz



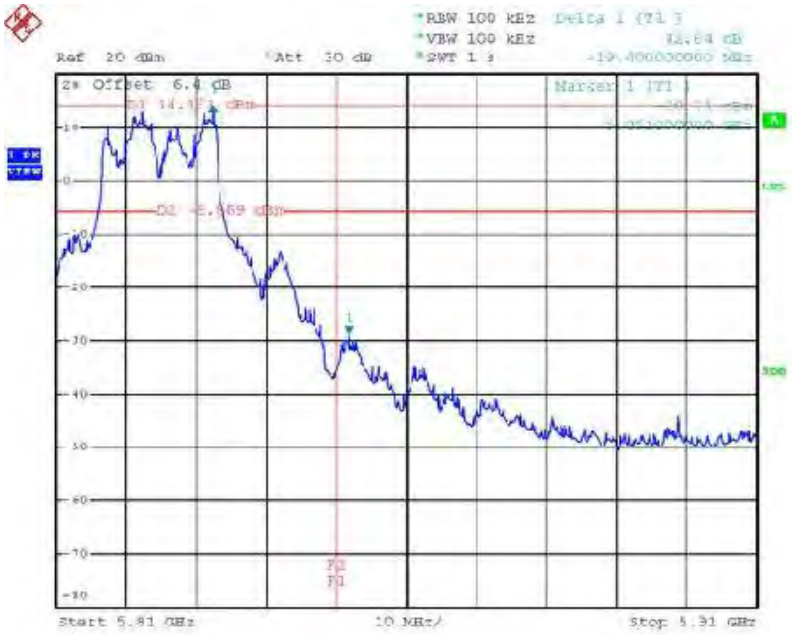
Date: 8.MAR.2011 15:34:29

Low Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5745 MHz



Date: 9.MAR.2011 08:16:43

High Band Edge Plot on Configuration IEEE 802.11a Connector J2 + J3 + J4 / 5825 MHz



Date: 9.MAR.2011 08:13:58

4.7. Antenna Requirements

4.7.1. Limit

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

4.7.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100377	9kHz ~ 2.75GHz	Sep. 01, 2010	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Apr. 24, 2010	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127-478	9K ~ 30MHz	Oct. 30, 2010	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Jan. 04, 2010	Conduction (CO01-CB)
PULSE LIMITER	R&S	ESH3-Z2	100430	9K~30MHz	Jan. 04, 2011	Conduction (CO01-CB)
COND Cable	-	Cable	-	0.15MHz~30MHz	Dec. 01, 2010	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Oct. 17, 2010	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 13, 2010	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Oct. 08, 2010	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 17, 2010	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 06, 2010	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Nov. 17, 2010	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP	100304	9kHz ~ 40GHz	Nov. 06, 2010	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 06, 2010	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Mar. 06, 2011	Radiation (03CH01-CB)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	Sep. 09, 2010*	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N/A	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N/A	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	-	30 MHz - 1 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	-	1 GHz - 40 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	-	1 GHz - 40 GHz	Nov. 17, 2010	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP30	100023	9KHz~30GHz	Mar. 05, 2011	Conducted (TH01-CB)
Temp. and Humidity Chamber	TEN BILLION	TTH-D3SP	TBN-931011	-30~100℃	May 21, 2010	Conducted (TH01-CB)
Signal Generator	R&S	SMR40	100302	10MHz-40GHz	Mar. 09, 2010	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Signal Generator	R&S	SMR40	100302	10MHz-40GHz	Mar. 09, 2011	Conducted (TH01-CB)
RF Power Divider	HP	11636A	00306	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Power Splitter	Anaren	44100	1839	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
RF Power Splitter	Anaren	42100	17930	2GHz ~ 18GHz	N/A	Conducted (TH01-CB)
Signal generator	R&S	SMU200A	102782	10MHz-40GHz	Mar. 09, 2010	Conducted (TH01-CB)
Signal generator	R&S	SMU200A	102782	10MHz-40GHz	Mar. 09, 2011	Conducted (TH01-CB)
Horn Antenna	COM-POWER	AH-118	071187	1GHz – 18GHz	Apr. 16, 2010	Conducted (TH01-CB)
Horn Antenna	COM-POWER	AH-118	071042	1GHz – 18GHz	Oct. 14, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-12	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-13	-	1 GHz – 26.5 GHz	Nov. 17, 2010	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 13, 2010	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 08, 2010	Conducted (TH01-CB)

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

* Calibration Interval of instruments listed above is two year.

NCR means Non-Calibration required.

6. TEST LOCATION

SHIJR	ADD	:	6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL	:	886-2-2696-2468
	FAX	:	886-2-2696-2255
HW A YA	ADD	:	No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	:	886-3-327-3456
	FAX	:	886-3-318-0055
LINKOU	ADD	:	No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL	:	886-2-2601-1640
	FAX	:	886-2-2601-1695
DUNGHU	ADD	:	No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL	:	886-2-2631-4739
	FAX	:	886-2-2631-9740
JUNGHE	ADD	:	7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C.
	TEL	:	886-2-8227-2020
	FAX	:	886-2-8227-2626
NEIHU	ADD	:	4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL	:	886-2-2794-8886
	FAX	:	886-2-2794-9777
JHUBEI	ADD	:	No.8, Lane 724, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
	TEL	:	886-3-656-9065
	FAX	:	886-3-656-9085

7. TAF CERTIFICATE OF ACCREDITATION

TAF

Certificate No.: L1190-091230

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

Certificate of Accreditation

This is to certify that

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

is accredited in respect of laboratory

Accreditation Criteria	:	ISO/IEC 17025:2005
Accreditation Number	:	1190
Originally Accredited	:	December 15, 2003
Effective Period	:	January 10, 2010 to January 09, 2013
Accredited Scope	:	Testing Field, see described in the Appendix
Specific Accreditation Program	:	Accreditation Program for Designated Testing Laboratory for Commodities Inspection Accreditation Program for Telecommunication Equipment Testing Laboratory Accreditation Program for BSMI Mutual Recognition Arrangment with Foreign Authorities

Jay-San Chen
President, Taiwan Accreditation Foundation
Date : December 30, 2009

P1, total 22 pages

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

Appendix D. New Power Measurement for MIMO Device

In order to comply with latest FCC regulations(KDB662911) the RF power in legacy modes (802.11 a/b/g) must be added the additional antenna gain by 4.77 dB (10log(N), N=3). In tables below RF power in legacy mode was re-tested and new RF power limits re-calculated. For the In-band PSD and out –Band Measurement, it is measured by original power value so that it is over –estimated so it is not measured again.

Test Result of Maximum Conducted Output Power for legacy mode

Temperature	22℃	**Humidity**	65%
Test Engineer	Allen Liu	**Configurations**	IEEE 802.11b/g / Ant. 2
Test Date	Mar. 08, 2011& April 29,2011		

Power Parameters of IEEE 802.11b/g

Test Software Version	**ART2-GUI 1.7**		
Frequency	2412MHz	2437MHz	2462MHz
IEEE 802.11b	17	16	16
IEEE 802.11g	14	14.5	15

Configuration IEEE 802.11b

Channel	**Frequency**	**Power output (dBm)**			**Total power (dBm)**	**Max. Limit (dBm)**	**Result**
		Connector J2	**Connector J3**	**Connector J4**			
1	2412MHz	18.5	17.46	18.51	22.96	28.63	**Complies**
6	2437MHz	16.92	16.5	16.95	21.57	28.63	**Complies**
11	2462MHz	16.86	16.81	17.47	21.83	28.63	**Complies**

Directional gain=2.6dBi +10log (3)= 7.37dBi >6dBi ,so the conducted output power limit should be reduced to 30-(7.37-6) =28.63dBm

Configuration IEEE 802.11g

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
1	2412MHz	23.2	22.54	23.37	27.82	28.63	**Complies**
6	2437MHz	23.5	23.87	23.62	28.44	28.63	**Complies**
11	2462MHz	22.92	23.69	24.08	28.36	28.63	**Complies**

Directional gain=2.6dBi +10log (3)= 7.37dBi >6dBi ,so the conducted output power limit should be reduced to 30-(7.37-6) =28.63dBm

Temperature	22℃	**Humidity**	65%
Test Engineer	Allen Liu	**Configurations**	IEEE 802.11a/b/g / Ant. 5
Test Date	Mar. 08, 2011& April 29,2011		

Power Parameters of IEEE 802.11b/g

Test Software Version	ART2-GUI 1.7		
Frequency	2412MHz	2437MHz	2462MHz
IEEE 802.11b	16	14.5	14
IEEE 802.11g	12	12	12

Power Parameters of IEEE 802.11a

Test Software Version	ART2-GUI 1.7		
Frequency	5745MHz	5785MHz	5825MHz
IEEE 802.11a	15.5	15	15

Configuration IEEE 802.11b

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
1	2412MHz	17.55	17.02	16.66	21.86	26.03	**Complies**
6	2437MHz	16.11	16.2	15.56	20.74	26.03	**Complies**
11	2462MHz	15.44	15.39	14.95	20.04	26.03	**Complies**

Directional gain=5.2dBi +10log (3)= 9.97dBi >6dBi ,so the conducted output power limit should be reduced to 30-(9.97-6) =26.03dBm

Configuration IEEE 802.11g

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
1	2412MHz	21.05	21.38	20.36	25.72	26.03	**Complies**
6	2437MHz	20.8	21.77	21	25.98	26.03	**Complies**
11	2462MHz	21.09	21.4	21	25.94	26.03	**Complies**

Directional gain=5.2dBi +10log (3)= 9.97dBi >6dBi ,so the conducted output power limit should be reduced to 30-(9.97-6) =26.03dBm

Configuration IEEE 802.11a

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
149	5745 MHz	22.19	22.11	22.45	27.02	27.03	**Complies**
157	5785 MHz	22.16	22.04	22.51	27.01	27.03	**Complies**
165	5825 MHz	22.19	21.66	22.5	26.90	27.03	**Complies**

Directional gain=4.2dBi +10log (3)= 8.97dBi >6dBi ,so the conducted output power limit should be reduced to 30-(8.97-6) =27.03 dBm

Temperature	22℃	**Humidity**	65%
Test Engineer	Allen Liu	**Configurations**	IEEE 802.11a / Ant. 6
Test Date	Mar. 08, 2011& April 29,2011		

Power Parameters of IEEE 802.11a

Test Software Version	ART2-GUI 1.7		
Frequency	5745MHz	5785MHz	5825MHz
IEEE 802.11a	18	18	18

Configuration IEEE 802.11a

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
149	5745 MHz	22.75	23.05	23.07	27.73	28.53	**Complies**
157	5785 MHz	22.74	22.90	23.08	27.68	28.53	**Complies**
165	5825 MHz	22.70	22.81	23.13	27.66	28.53	**Complies**

Directional gain=2.7dBi +10log (3)= 7.47dBi >6dBi ,so the conducted output power limit should be reduced to 30-(7.47-6) =28.53 dBm

Temperature	22℃	**Humidity**	65%
Test Engineer	Allen Liu	**Configurations**	IEEE 802.11a/b/g / Ant. 8
Test Date	Mar. 08, 2011& April 29,2011		

Power Parameters of IEEE 802.11b/g

Test Software Version	**ART2-GUI 1.7**		
Frequency	2412MHz	2437MHz	2462MHz
IEEE 802.11b	16	14.5	14
IEEE 802.11g	14	14	14.5

Power Parameters of IEEE 802.11a

Test Software Version	**ART2-GUI 1.7**		
Frequency	5745MHz	5785MHz	5825MHz
IEEE 802.11a	13.0	12.5	12.5

Configuration IEEE 802.11b

Channel	**Frequency**	**Power output (dBm)**			**Total power (dBm)**	**Max. Limit (dBm)**	**Result**
		Connector J2	**Connector J3**	**Connector J4**			
1	2412MHz	19.8	18.9	19.97	24.35	27.73	**Complies**
6	2437MHz	19.13	19.19	19.65	24.10	27.73	**Complies**
11	2462MHz	16.31	15.6	16.24	20.83	27.73	**Complies**

Directional gain=3.5dBi +10log (3)= 8.27dBi >6dBi ,so the conducted output power limit should be reduced to 30-(8.27-6) =27.73dBm

Configuration IEEE 802.11g

Channel	**Frequency**	**Power output (dBm)**			**Total power (dBm)**	**Max. Limit (dBm)**	**Result**
		Connector J2	**Connector J3**	**Connector J4**			
1	5745 MHz	22.66	23.34	22.75	27.70	27.73	**Complies**
6	5785 MHz	22.95	22.59	22.52	27.46	27.73	**Complies**
11	5825 MHz	22.87	22.78	23.2	27.72	27.73	**Complies**

Directional gain=3.5dBi +10log (3)= 8.27dBi >6dBi ,so the conducted output power limit should be reduced to 30-(8.27-6) =27.73dBm

Configuration IEEE 802.11a

Channel	Frequency	Power output (dBm)			Total power (dBm)	Max. Limit (dBm)	Result
		Connector J2	Connector J3	Connector J4			
149	5745 MHz	21.97	21.56	21.84	26.56	26.73	**Complies**
157	5785 MHz	21.88	21.21	22.16	26.54	26.73	**Complies**
165	5825 MHz	21.87	21.4	21.87	26.49	26.73	**Complies**

Directional gain=4.5dBi +10log (3)= 9.27dBi >6dBi ,so the conducted output power limit should be reduced to 30-(9.27-6) =26.73 dBm