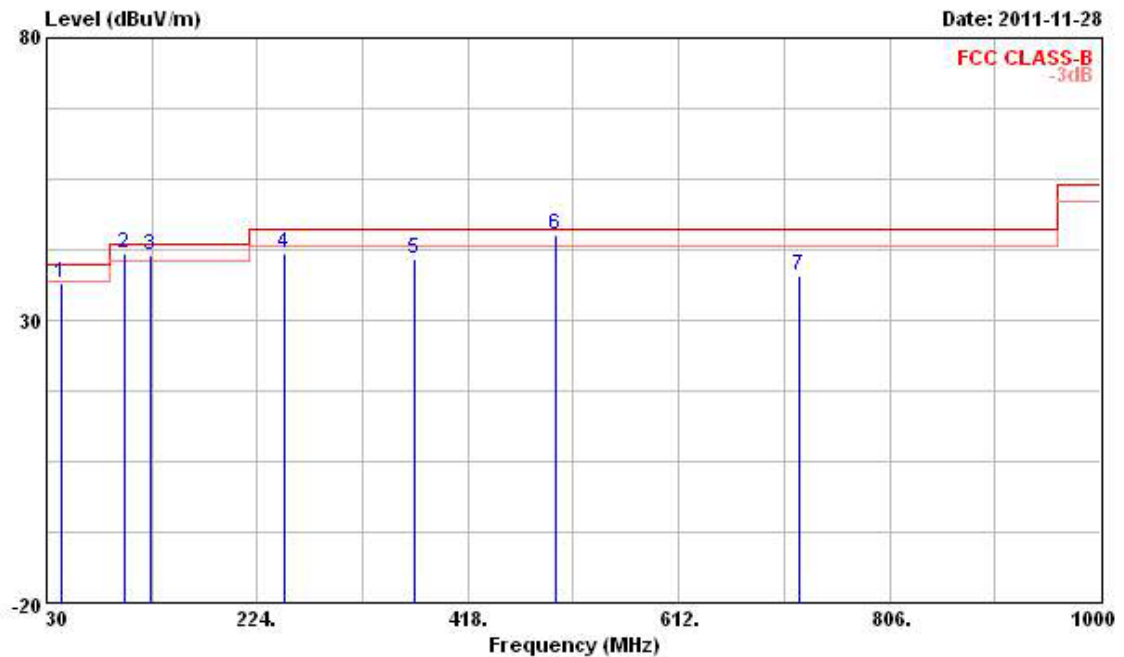


Vertical



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp		Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	43.580	36.69	-3.31	40.00	51.21	12.27	1.09	27.88	QP	---
2	101.780	41.70	-1.80	43.50	56.45	11.41	1.68	27.84	QP	---
3	125.060	41.54	-1.96	43.50	54.24	13.18	1.86	27.74	QP	---
4	249.220	41.85	-4.15	46.00	53.40	12.97	2.77	27.29	Peak	---
5	369.500	40.99	-5.01	46.00	50.60	14.78	3.27	27.66	Peak	---
6	498.510	45.20	-0.80	46.00	52.48	17.26	3.82	28.36	QP	---
7	723.550	37.76	-8.24	46.00	42.16	19.18	4.62	28.20	Peak	---

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).

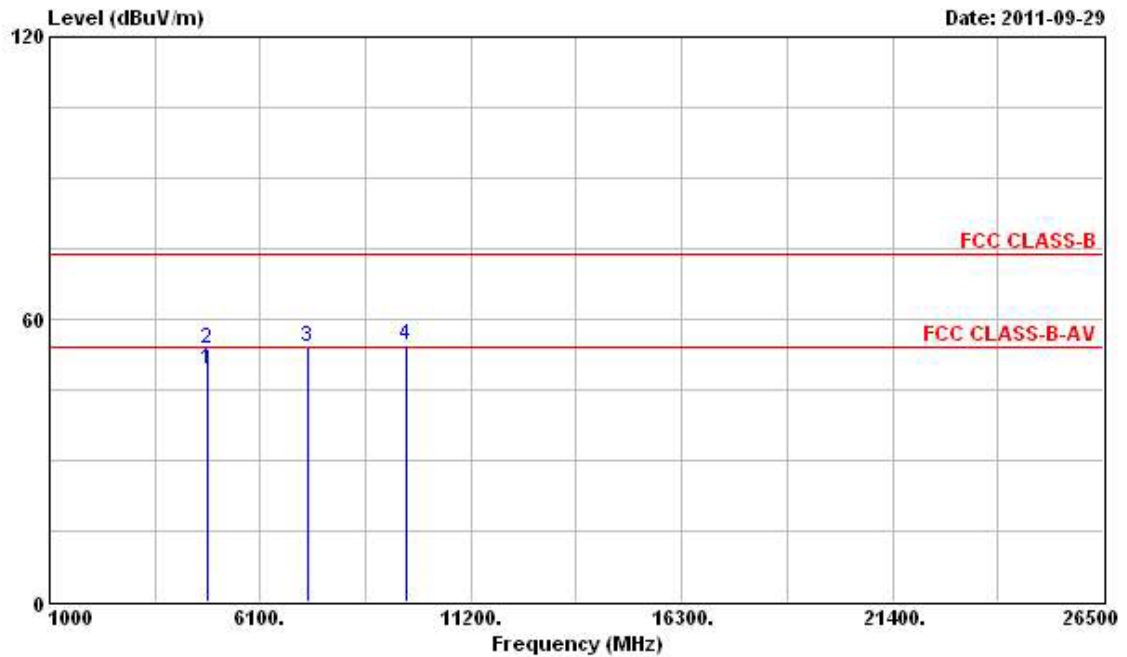
Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

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

For Single Chain:

Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24℃	Humidity	69%
Test Engineer	Daniel	Configuration	802.11b Ch. 1 (Mode 1)

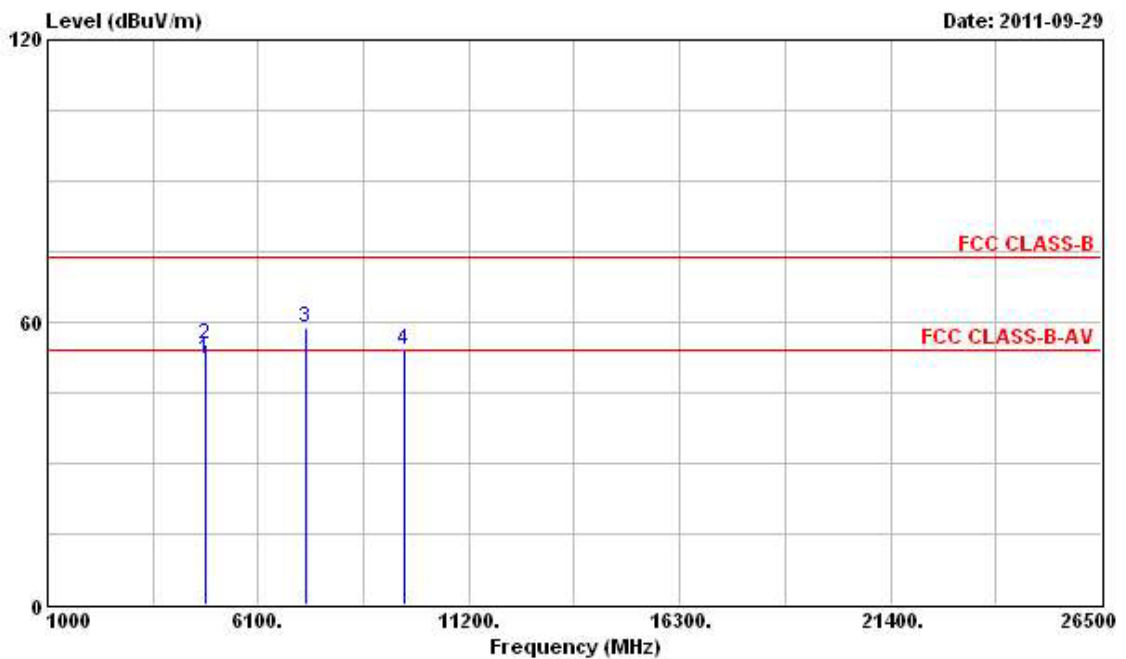
Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	49.23	-4.77	54.00	43.36	33.06	5.43	32.62	Average	---	---
2	4824.000	53.60	-20.40	74.00	47.73	33.06	5.43	32.62	Peak	---	---
3	7236.000	54.12			46.03	35.83	5.14	32.88	Peak	---	---
4	9648.000	54.59			42.98	38.24	6.70	33.33	Peak	---	---

Note: The items 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

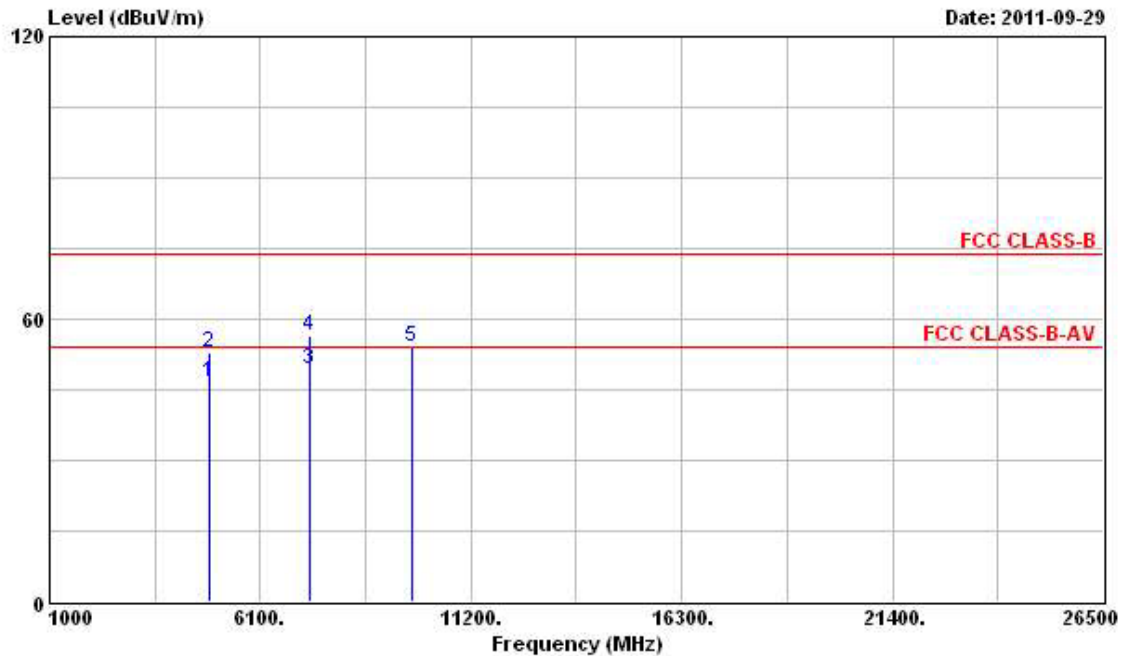
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	52.18	-1.82	54.00	46.31	33.06	5.43	32.62	Average	---	---
2	4824.000	55.39	-18.61	74.00	49.52	33.06	5.43	32.62	Peak	---	---
3	7236.000	58.78			50.69	35.83	5.14	32.88	Peak	---	---
4	9648.000	54.04			42.43	38.24	6.70	33.33	Peak	---	---

Note: The items 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

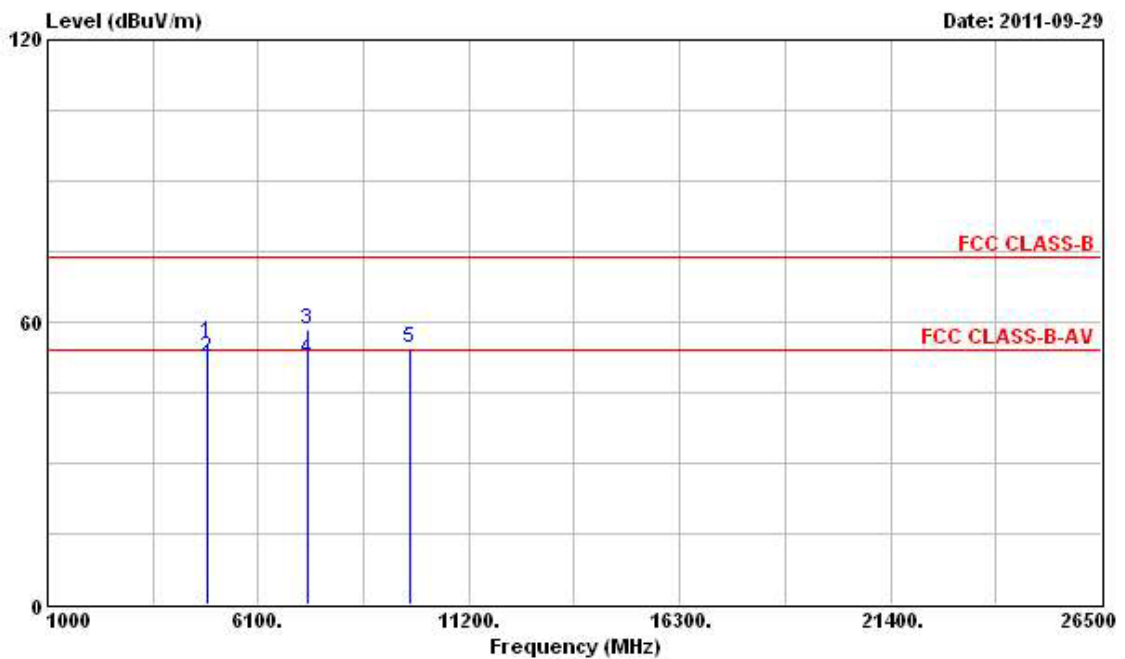
Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11b Ch. 6 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	46.56	-7.44	54.00	40.58	33.16	5.43	32.61	Average	---	---
2	4874.000	52.87	-21.13	74.00	46.89	33.16	5.43	32.61	Peak	---	---
3	7311.000	49.44	-4.56	54.00	40.96	36.01	5.36	32.89	Average	---	---
4	7311.000	56.45	-17.55	74.00	47.97	36.01	5.36	32.89	Peak	---	---
5	9748.000	54.04			42.15	38.47	6.74	33.32	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

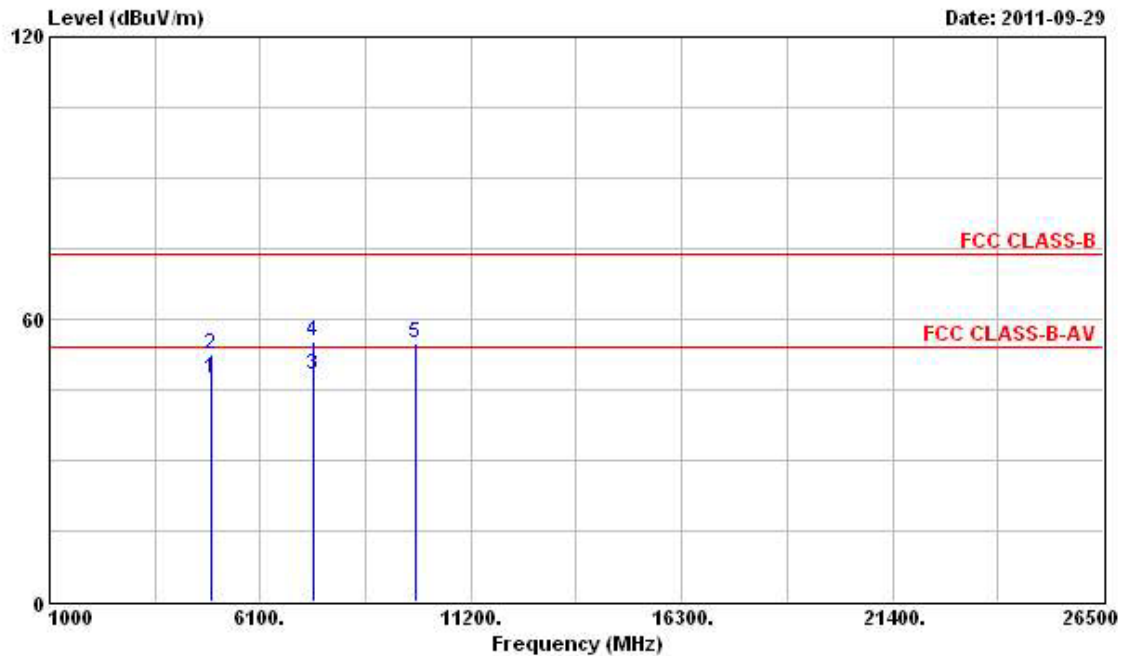
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	55.63	-18.37	74.00	49.65	33.16	5.43	32.61	Peak	---	---
2	4874.000	52.36	-21.64	74.00	46.38	33.16	5.43	32.61	Peak	---	---
3	7311.000	58.36	-15.64	74.00	49.88	36.01	5.36	32.89	Peak	---	---
4	7311.000	52.12	-1.88	54.00	43.64	36.01	5.36	32.89	Average	---	---
5	9748.000	54.38			42.49	38.47	6.74	33.32	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

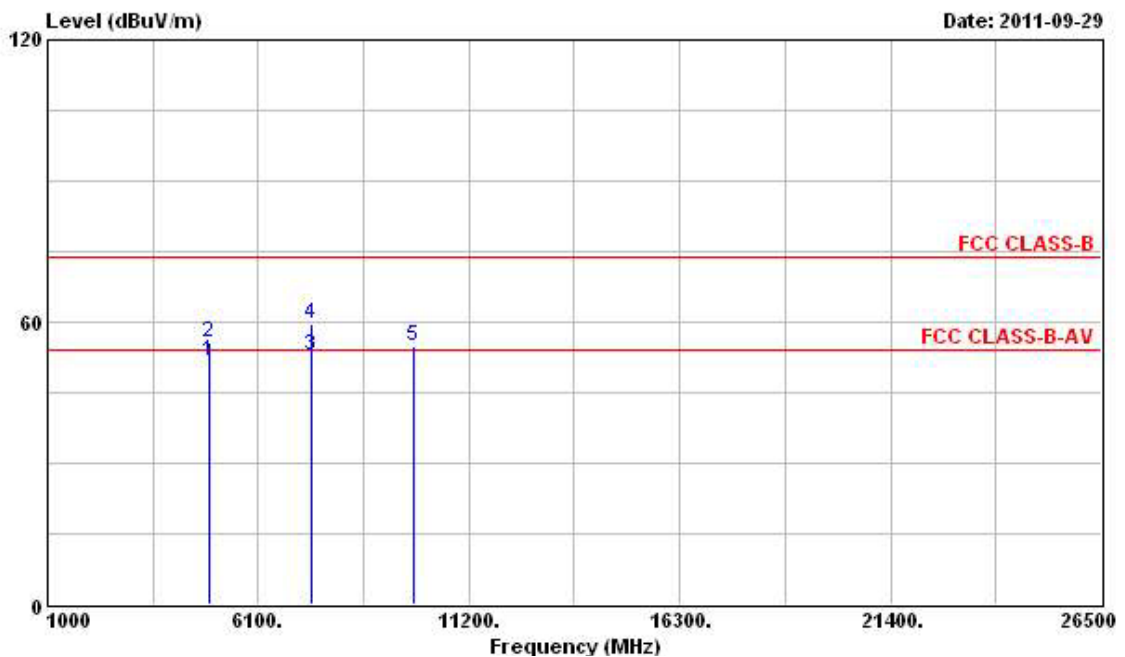
Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11b Ch. 11 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	4924.000	47.39	-6.61	54.00	41.32	33.26	5.41	32.60 Average	---	---
2	4924.000	52.59	-21.41	74.00	46.52	33.26	5.41	32.60 Peak	---	---
3	7386.000	48.34	-5.66	54.00	39.45	36.23	5.57	32.91 Average	---	---
4	7386.000	55.43	-18.57	74.00	46.54	36.23	5.57	32.91 Peak	---	---
5	9848.000	55.04			42.89	38.66	6.80	33.31 Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

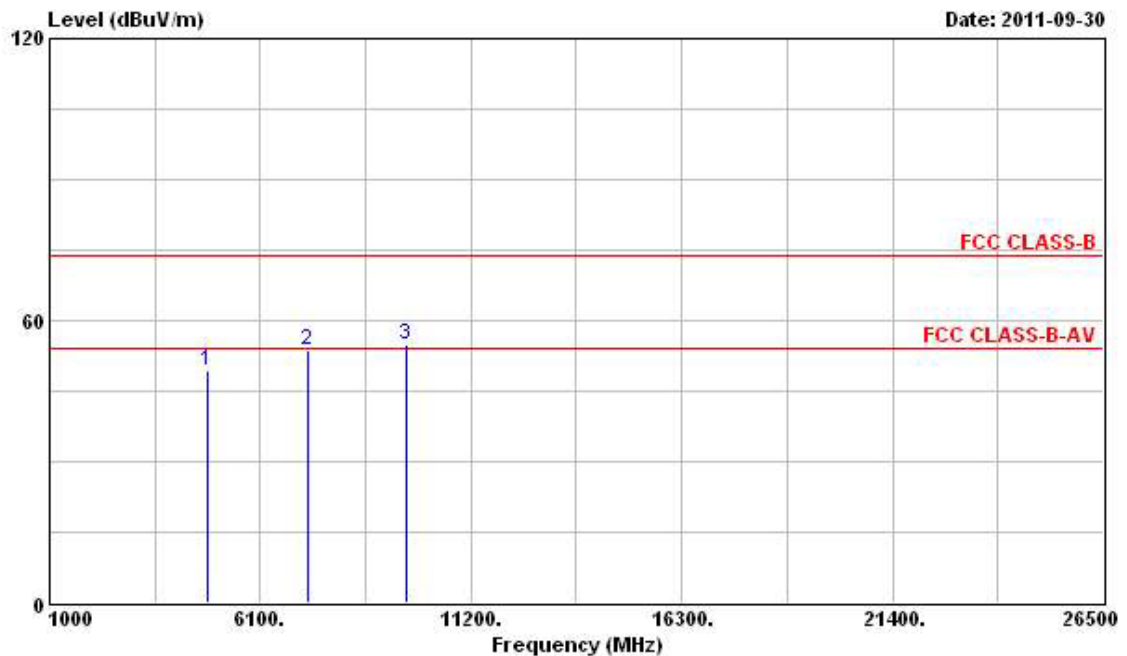
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	51.69	-2.31	54.00	45.62	33.26	5.41	32.60	Average	---	---
2	4924.000	55.55	-18.45	74.00	49.48	33.26	5.41	32.60	Peak	---	---
3	7386.000	52.79	-1.21	54.00	43.90	36.23	5.57	32.91	Average	---	---
4	7386.000	59.80	-14.20	74.00	50.91	36.23	5.57	32.91	Peak	---	---
5	9848.000	54.97			42.82	38.66	6.80	33.31	Peak	---	---

N Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

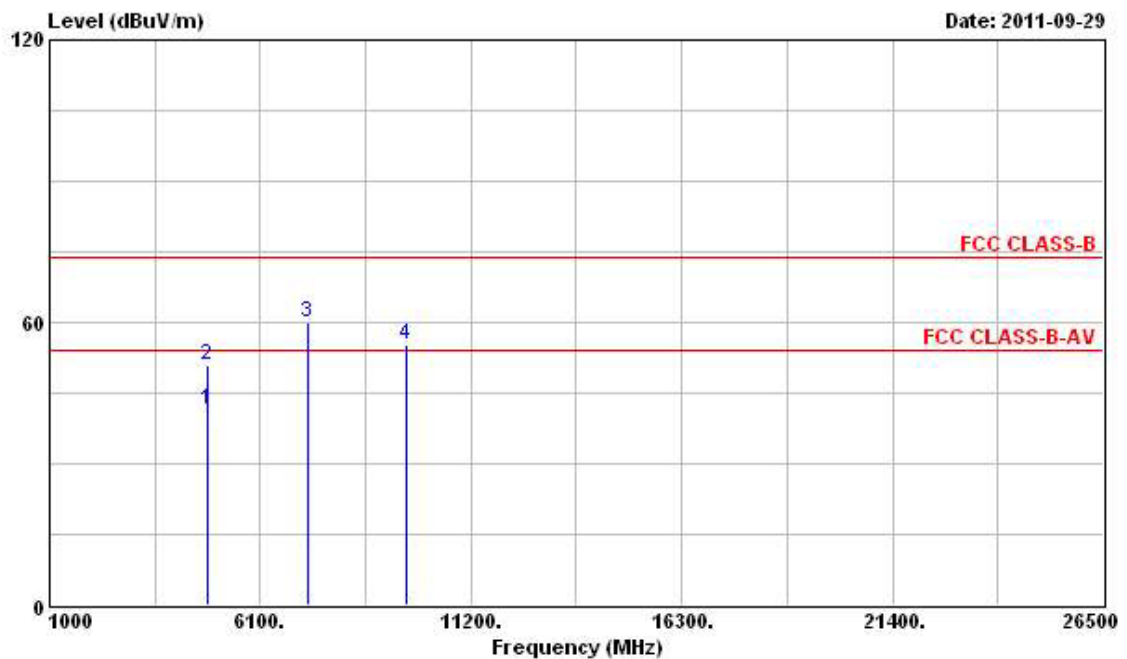
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11g Ch. 1 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	49.31	-4.69	54.00	43.44	33.06	5.43	32.62	PK	---	---
2	7236.000	53.60			45.51	35.83	5.14	32.88	Peak	---	---
3	9648.000	54.79			43.18	38.24	6.70	33.33	Peak	---	---

Note: The items 2 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

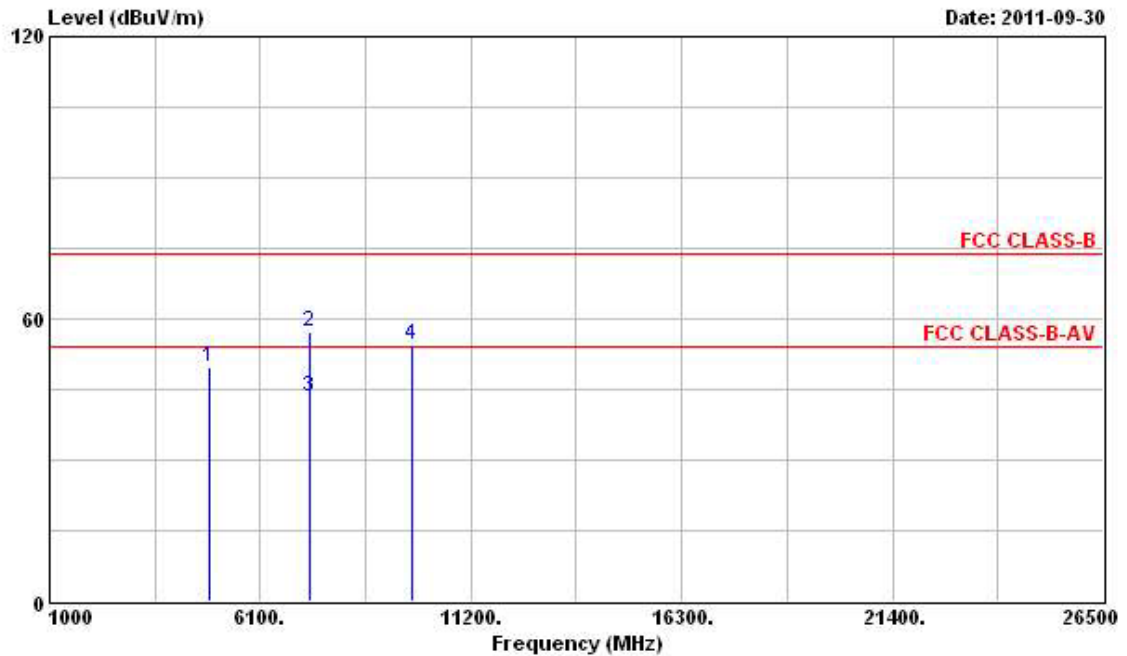
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	41.61	-12.39	54.00	35.74	33.06	5.43	32.62	Average	---	---
2	4824.000	51.09	-22.91	74.00	45.22	33.06	5.43	32.62	Peak	---	---
3	7236.000	59.82			51.73	35.83	5.14	32.88	Peak	---	---
4	9648.000	55.09			43.48	38.24	6.70	33.33	Peak	---	---

Note: The items 3 and 4 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

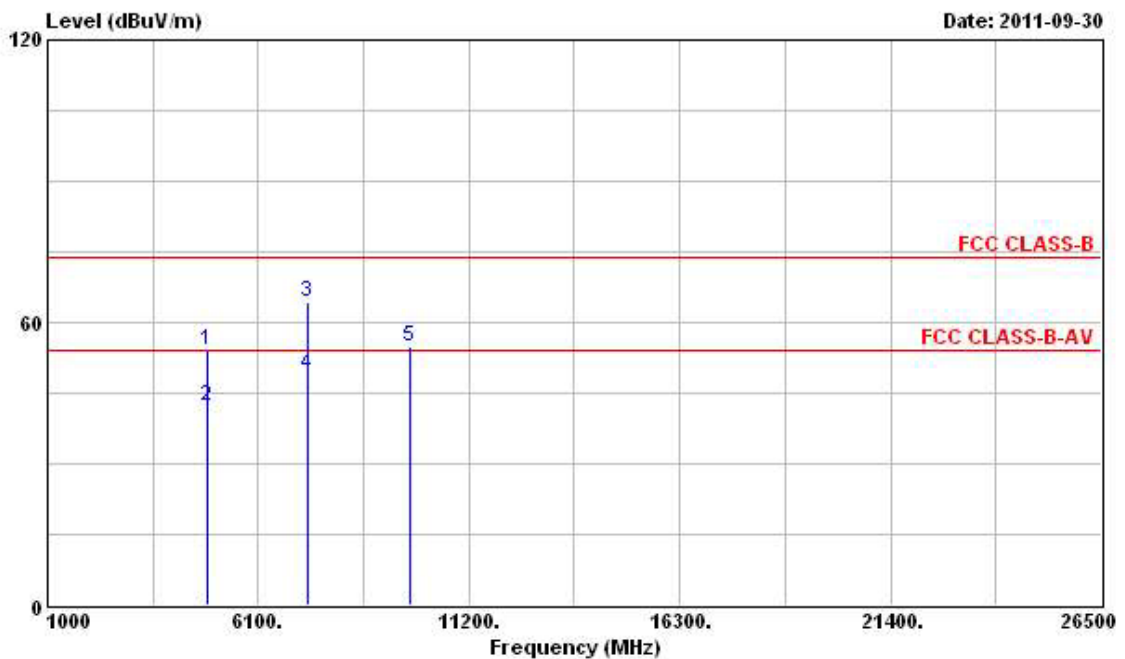
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11g Ch. 6 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	49.91	-4.09	54.00	43.93	33.16	5.43	32.61	PK	---	---
2	7311.000	57.28	-16.72	74.00	48.80	36.01	5.36	32.89	Peak	---	---
3	7311.000	43.51	-10.49	54.00	35.03	36.01	5.36	32.89	Average	---	---
4	9748.000	54.52			42.63	38.47	6.74	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

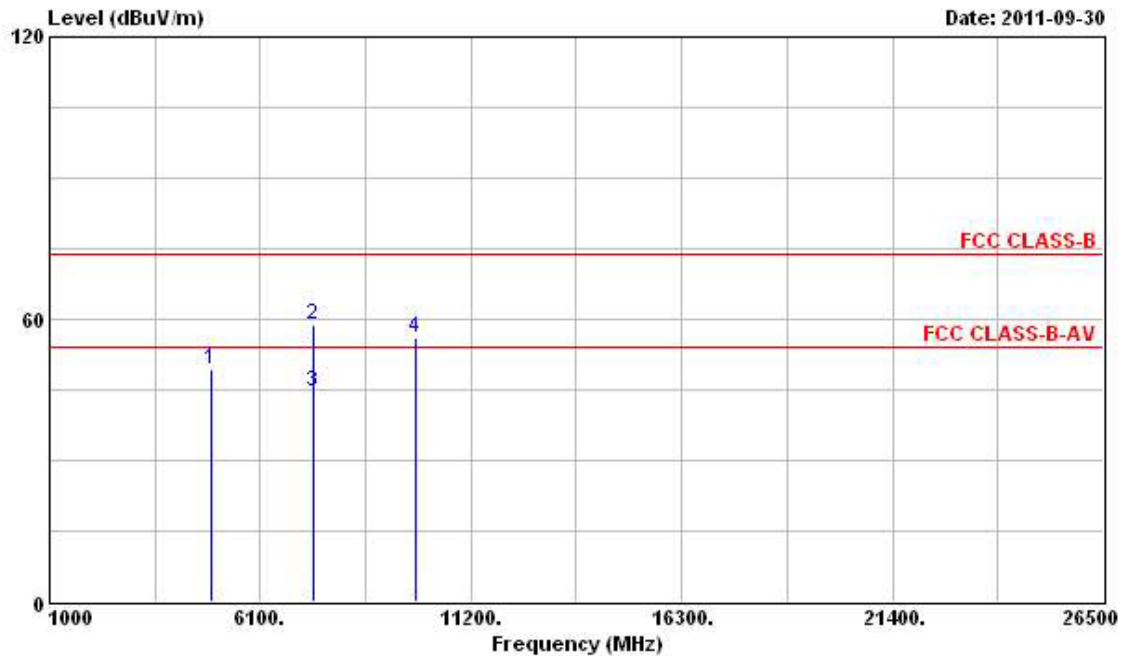
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	54.27	-19.73	74.00	48.29	33.16	5.43	32.61	Peak	---	---
2	4874.000	42.10	-11.90	54.00	36.12	33.16	5.43	32.61	Average	---	---
3	7311.000	64.50	-9.50	74.00	56.02	36.01	5.36	32.89	Peak	---	---
4	7311.000	48.98	-5.02	54.00	40.50	36.01	5.36	32.89	Average	---	---
5	9748.000	54.84			42.95	38.47	6.74	33.32	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

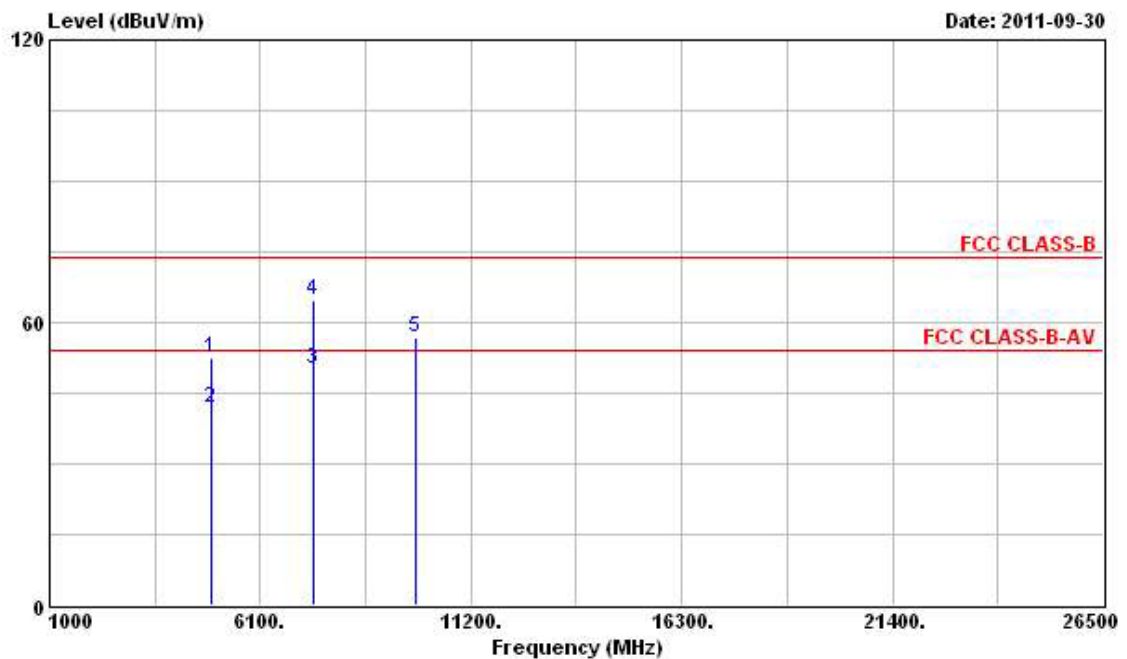
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11g Ch. 11 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	49.21	-4.79	54.00	43.14	33.26	5.41	32.60	PK	---	---
2	7386.000	58.97	-15.03	74.00	50.08	36.23	5.57	32.91	Peak	---	---
3	7386.000	44.57	-9.43	54.00	35.68	36.23	5.57	32.91	Average	---	---
4	9848.000	56.04			43.89	38.66	6.80	33.31	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical



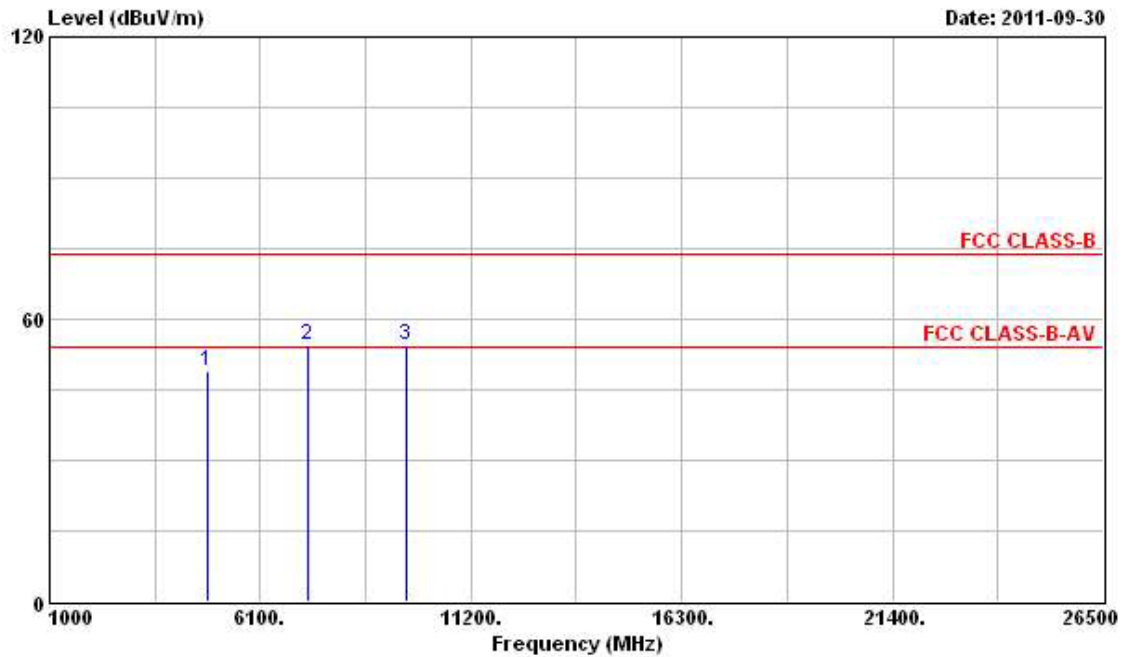
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	52.63	-21.37	74.00	46.56	33.26	5.41	32.60	Peak	---	---
2	4924.000	41.67	-12.33	54.00	35.60	33.26	5.41	32.60	Average	---	---
3	7386.000	50.09	-3.91	54.00	41.20	36.23	5.57	32.91	Average	---	---
4	7386.000	64.62	-9.38	74.00	55.73	36.23	5.57	32.91	Peak	---	---
5	9848.000	57.03			44.88	38.66	6.80	33.31	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

For Two Chains:

Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (20MHz) Ch. 1 (Mode 1)

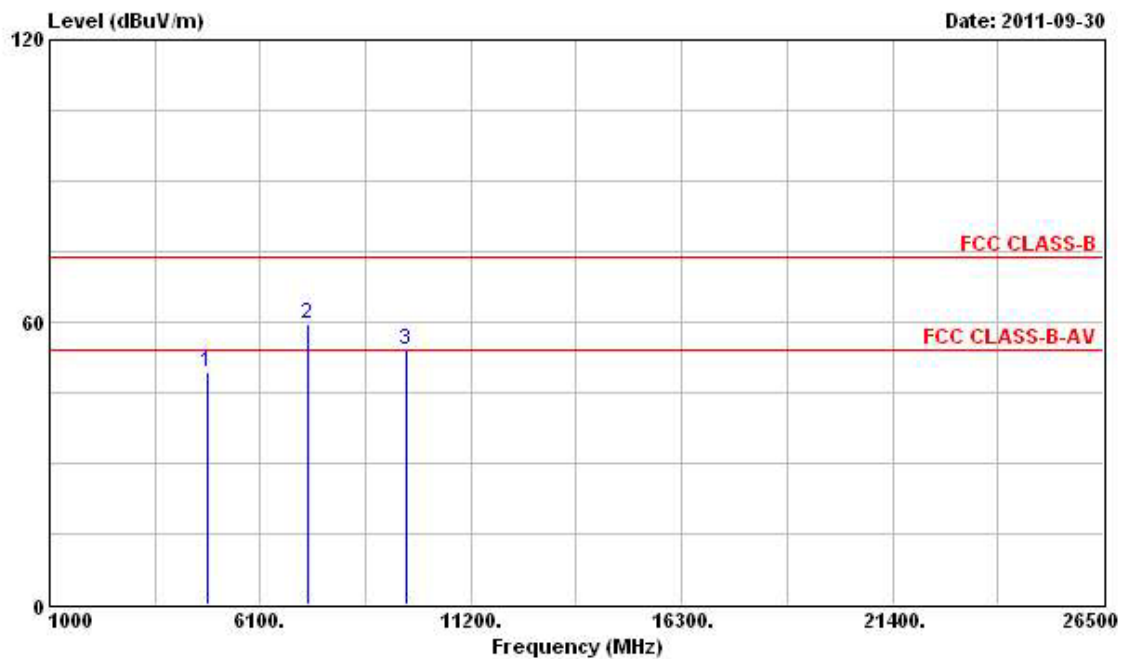
Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	48.90	-5.10	54.00	43.03	33.06	5.43	32.62	PK	---	---
2	7236.000	54.49			46.40	35.83	5.14	32.88	Peak	---	---
3	9648.000	54.61			43.00	38.24	6.70	33.33	Peak	---	---

Note: The items 2 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

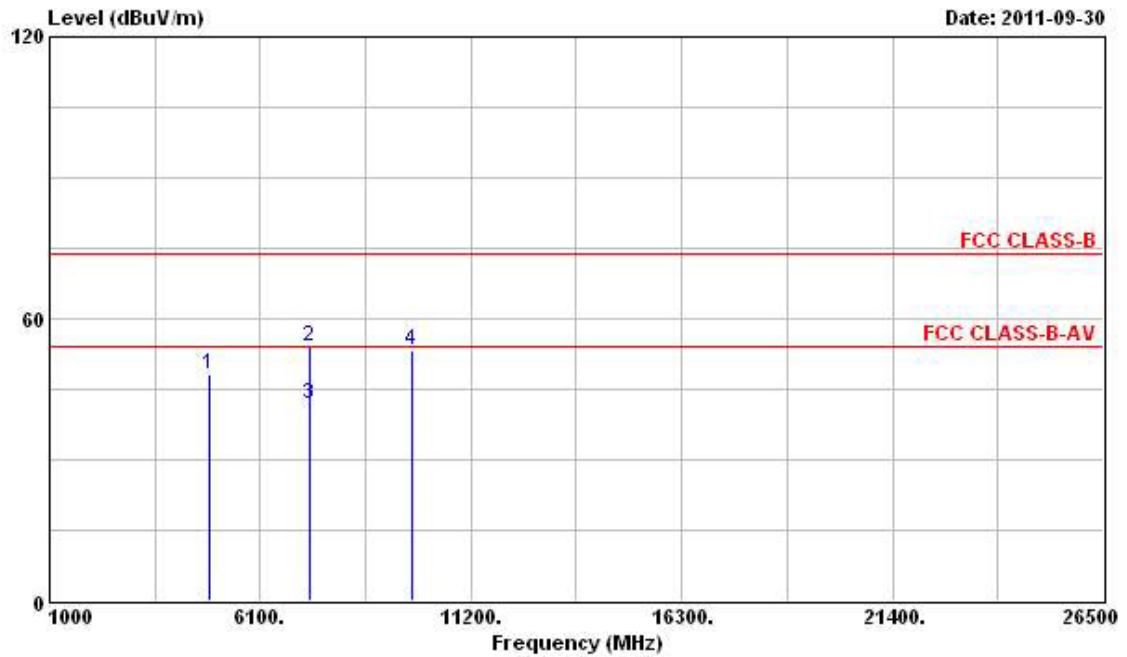
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4824.000	49.53	-4.47	54.00	43.66	33.06	5.43	32.62	PK	---	---
2	7236.000	59.73			51.64	35.83	5.14	32.88	Peak	---	---
3	9648.000	53.88			42.27	38.24	6.70	33.33	Peak	---	---

Note: The items 2 and 3 are on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

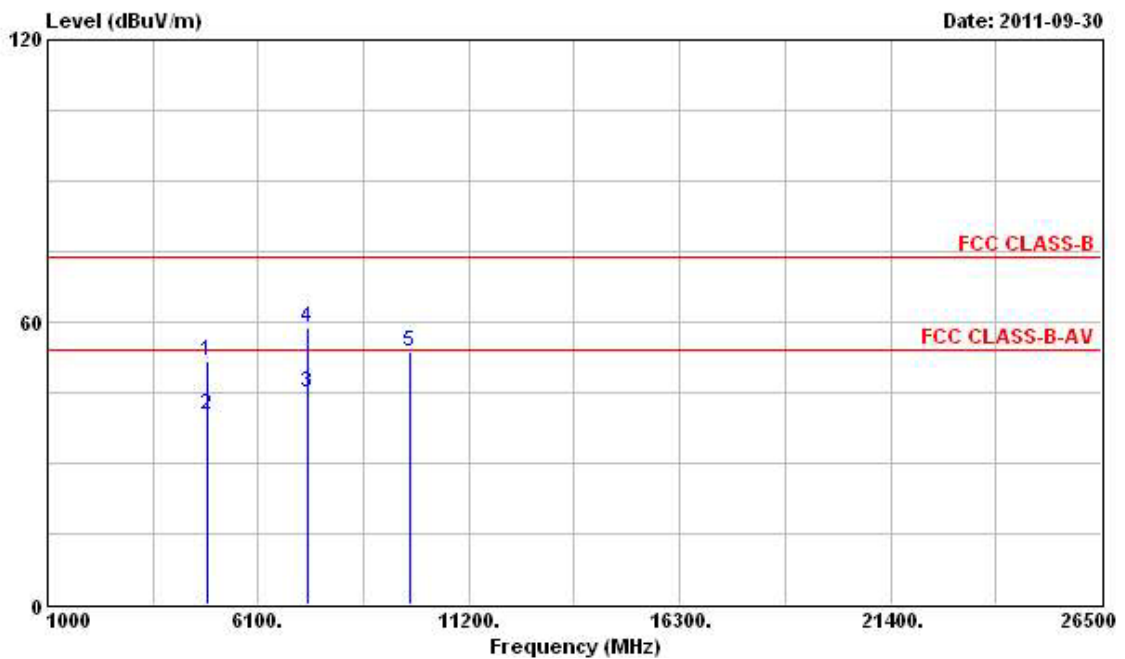
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (20MHz) Ch. 6 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	48.19	-5.81	54.00	42.21	33.16	5.43	32.61	PK	---	---
2	7311.000	54.03	-19.97	74.00	45.55	36.01	5.36	32.89	Peak	---	---
3	7311.000	41.85	-12.15	54.00	33.37	36.01	5.36	32.89	Average	---	---
4	9748.000	53.25			41.36	38.47	6.74	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

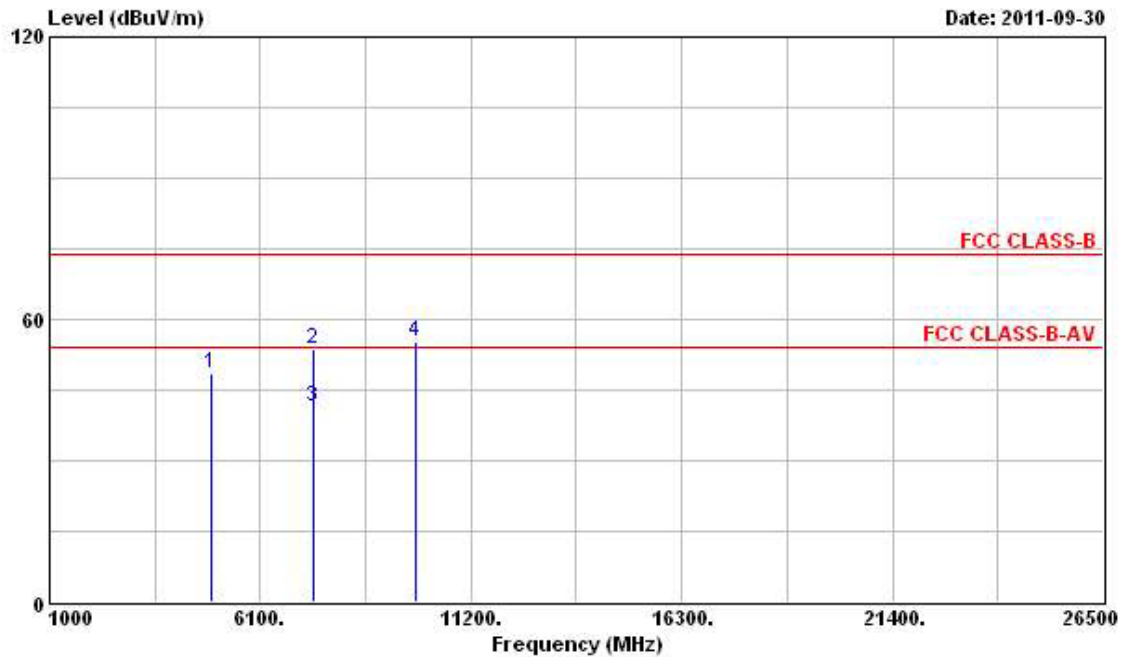
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	51.56	-22.44	74.00	45.58	33.16	5.43	32.61	Peak	---	---
2	4874.000	40.10	-13.90	54.00	34.12	33.16	5.43	32.61	Average	---	---
3	7311.000	45.12	-8.88	54.00	36.64	36.01	5.36	32.89	Average	---	---
4	7311.000	58.76	-15.24	74.00	50.28	36.01	5.36	32.89	Peak	---	---
5	9748.000	53.72			41.83	38.47	6.74	33.32	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

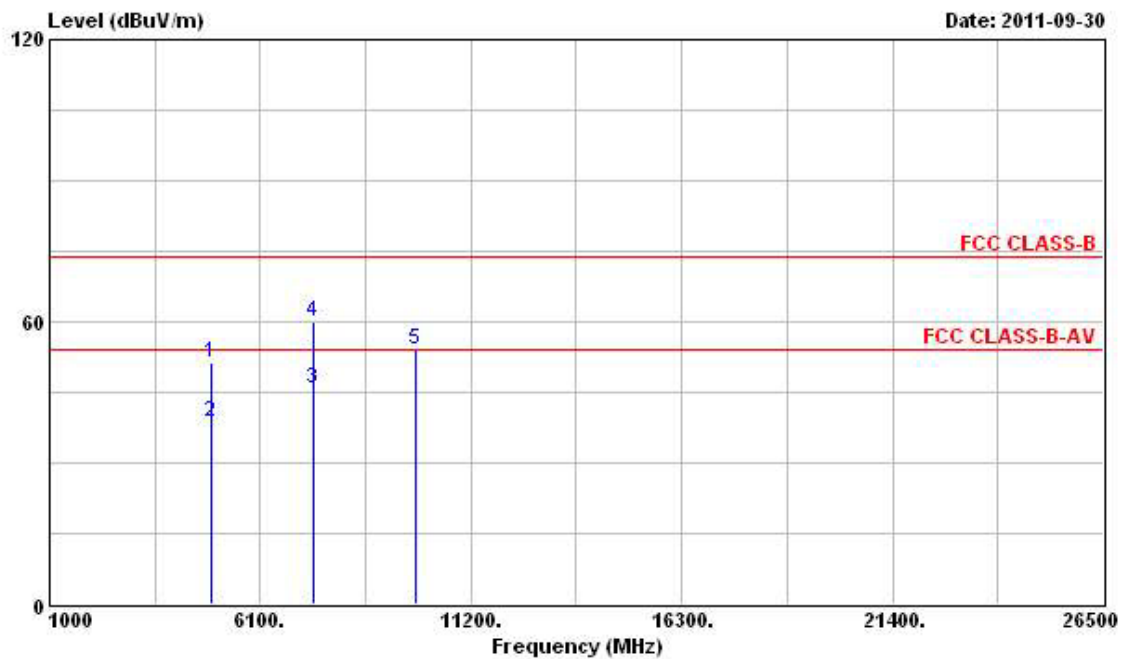
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (20MHz) Ch. 11 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	48.50	-5.50	54.00	42.43	33.26	5.41	32.60	PK	---	---
2	7386.000	53.81	-20.19	74.00	44.92	36.23	5.57	32.91	Peak	---	---
3	7386.000	41.43	-12.57	54.00	32.54	36.23	5.57	32.91	Average	---	---
4	9848.000	55.20			43.05	38.66	6.80	33.31	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

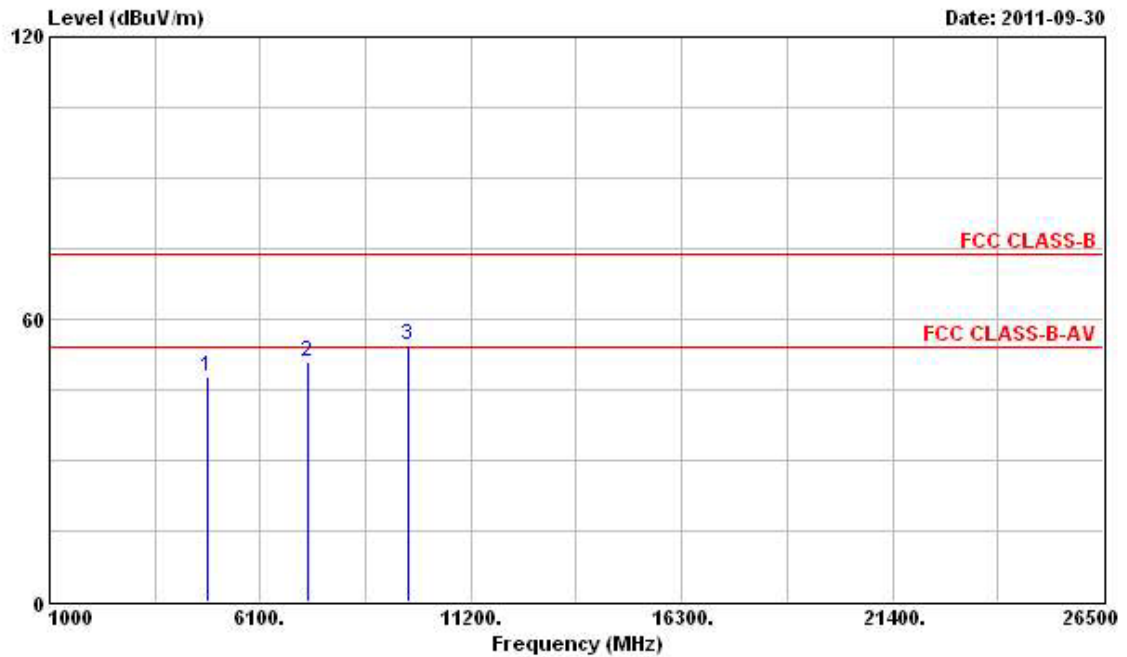
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4924.000	51.27	-22.73	74.00	45.20	33.26	5.41	32.60	Peak	---	---
2	4924.000	38.49	-15.51	54.00	32.42	33.26	5.41	32.60	Average	---	---
3	7386.000	45.72	-8.28	54.00	36.83	36.23	5.57	32.91	Average	---	---
4	7386.000	59.85	-14.15	74.00	50.96	36.23	5.57	32.91	Peak	---	---
5	9848.000	53.89			41.74	38.66	6.80	33.31	Peak	---	---

Note: The item 5 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

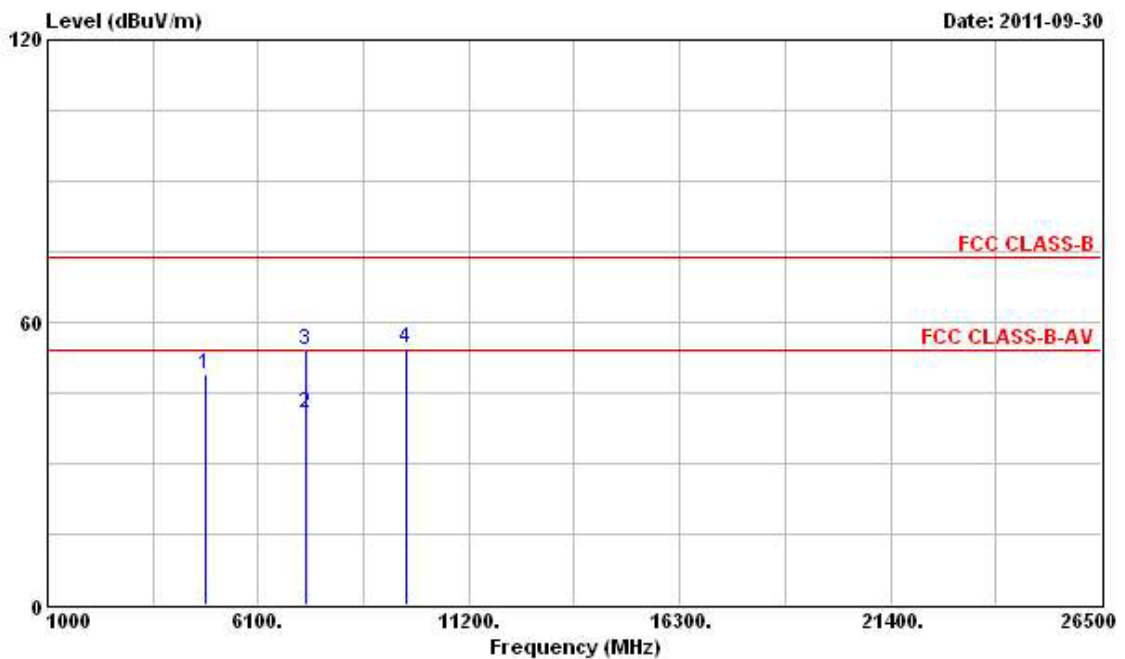
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (40MHz) Ch. 3 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4844.000	47.89	-6.11	54.00	41.99	33.09	5.43	32.62	PK	---	---
2	7266.000	50.91	-3.09	54.00	42.62	35.92	5.25	32.88	PK	---	---
3	9688.000	54.31			42.59	38.32	6.72	33.32	Peak	---	---

Note: The item 3 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

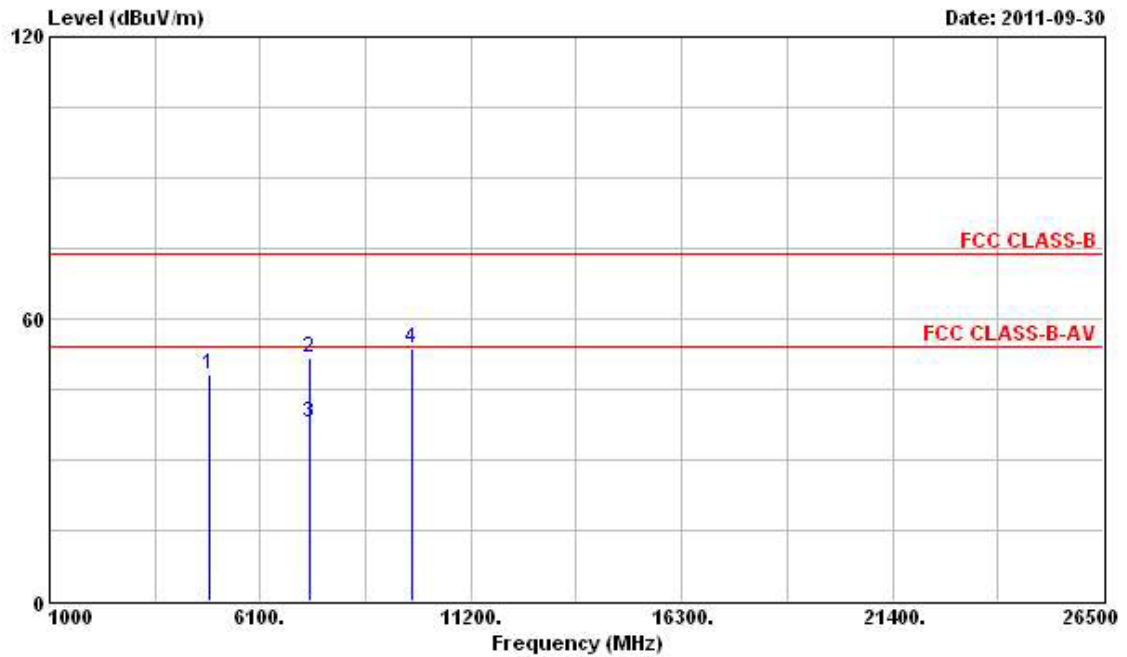
Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4844.000	48.77	-5.23	54.00	42.87	33.09	5.43	32.62	PK	---	---
2	7266.000	40.74	-13.26	54.00	32.45	35.92	5.25	32.88	Average	---	---
3	7266.000	53.91	-20.09	74.00	45.62	35.92	5.25	32.88	Peak	---	---
4	9688.000	54.66			42.94	38.32	6.72	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

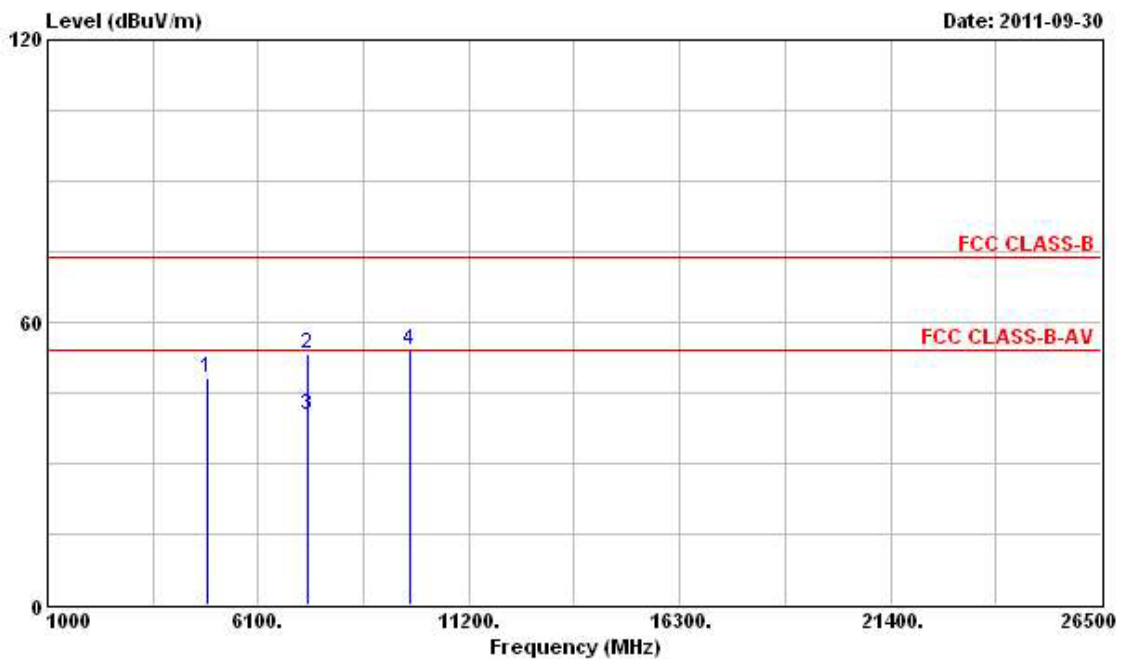
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (40MHz) Ch. 6 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4874.000	47.99	-6.01	54.00	42.01	33.16	5.43	32.61	PK	---	---
2	7311.000	51.76	-22.24	74.00	43.28	36.01	5.36	32.89	Peak	---	---
3	7311.000	38.02	-15.98	54.00	29.54	36.01	5.36	32.89	Average	---	---
4	9748.000	53.58			41.69	38.47	6.74	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

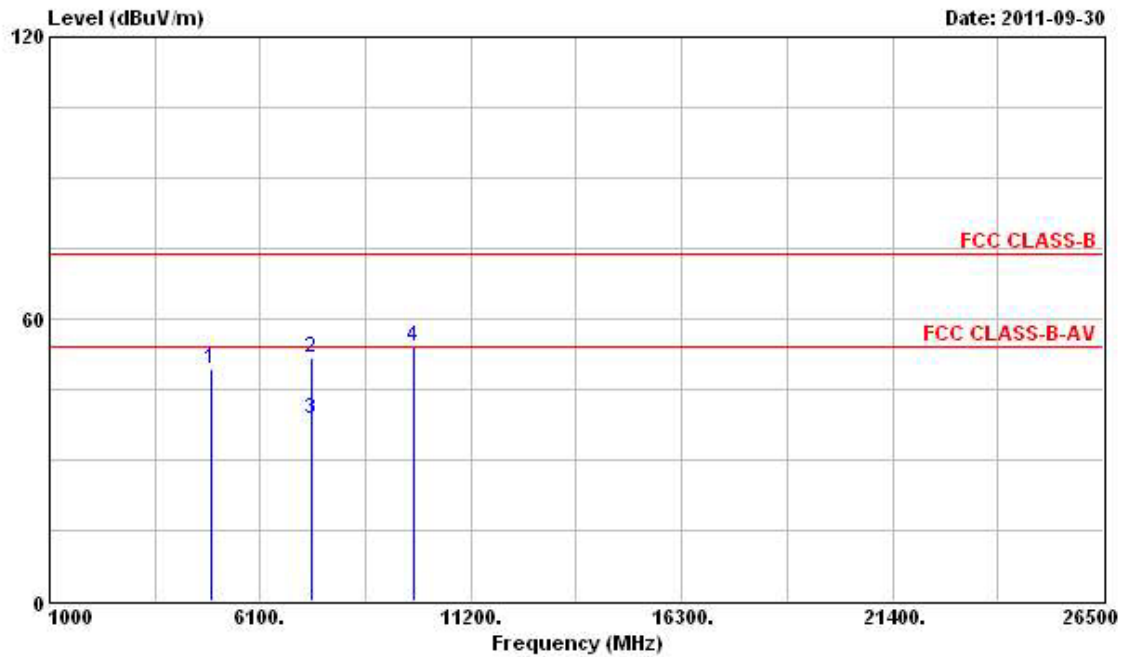
Vertical



	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark	Ant	Table
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		Pos	Pos
1	4874.000	48.32	-5.68	54.00	42.34	33.16	5.43	32.61	PK	---	---
2	7311.000	53.33	-20.67	74.00	44.85	36.01	5.36	32.89	Peak	---	---
3	7311.000	40.35	-13.65	54.00	31.87	36.01	5.36	32.89	Average	---	---
4	9748.000	54.06			42.17	38.47	6.74	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

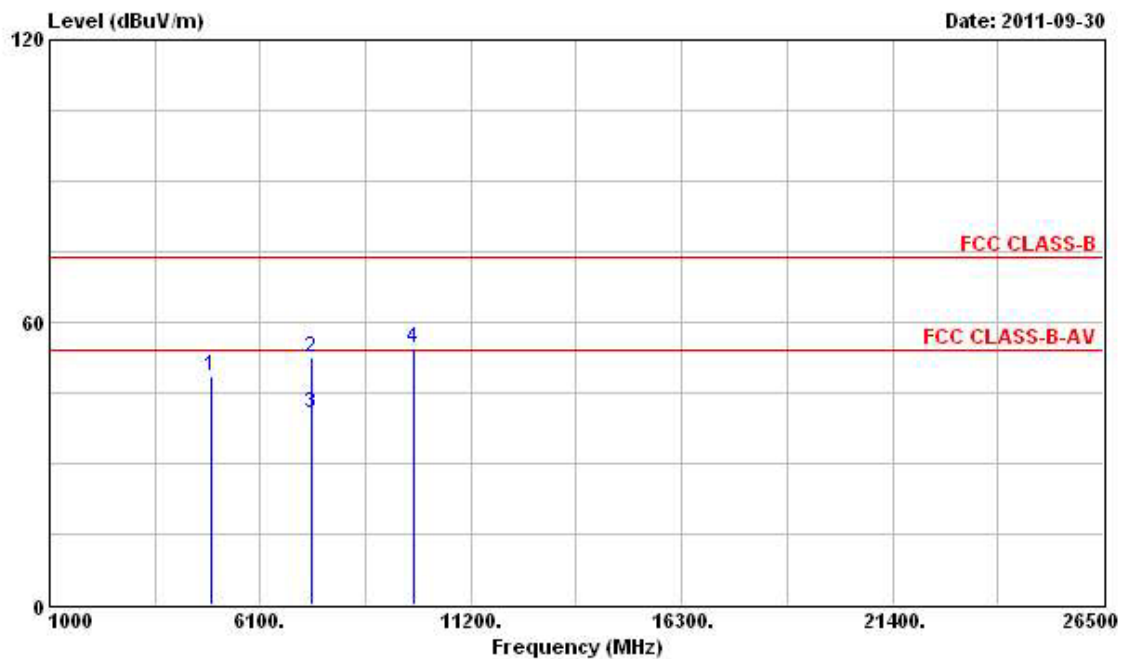
Final Test Date	Sep. 30, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (40MHz) Ch. 9 (Mode 1)

Horizontal

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4904.000	49.16	-24.84	74.00	43.12	33.23	5.42	32.61	PK	---	---
2	7356.000	51.74	-22.26	74.00	43.04	36.14	5.46	32.90	Peak	---	---
3	7356.000	38.64	-15.36	54.00	29.94	36.14	5.46	32.90	Average	---	---
4	9808.000	54.08			42.04	38.58	6.78	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

Vertical



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4904.000	48.37	-5.63	54.00	42.33	33.23	5.42	32.61	PK	---	---
2	7356.000	52.44	-21.56	74.00	43.74	36.14	5.46	32.90	Peak	---	---
3	7356.000	40.55	-13.45	54.00	31.85	36.14	5.46	32.90	Average	---	---
4	9808.000	54.54			42.50	38.58	6.78	33.32	Peak	---	---

Note: The item 4 is on un-restricted band, so the limit is -20dB for the field strength of the fundamental emissions (see section 3.6.7).

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

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

3.6 Band Edge and Fundamental Emissions Measurement

3.6.1 Limit

In any 100kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. If the transmitter measurement is based on the maximum conducted output power, the attenuation required under this paragraph shall be 30dB instead of 20dB. In addition, radiated emissions which fall in section 15.205(a) the restricted bands must also comply with the radiated emission limit specified in section 15.209(a).

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

3.6.2 Measuring Instruments and Setting

Please refer to section 4 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)	1MHz / 1MHz for Peak

3.6.3 Test Procedures

1. The test procedure is the same as section 3.5.3; only the frequency range investigated is limited to 100MHz around band edges.
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.

3.6.4 Test Setup Layout

This test setup layout is the same as that shown in section 3.5.4.

3.6.5 Test Deviation

There is no deviation with the original standard.

3.6.6 EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.6.7 Test Result of Band Edge and Fundamental Emissions

For Single Chain:

Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11b Ch. 1, 6, 11 (Mode 1)

Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2385.810	52.36	-1.64	54.00	19.50	28.21	4.65	0.00	Average	---	---
2 @	2410.890	109.65			76.76	28.24	4.65	0.00	Average	---	---
1 @	2347.810	62.81	-11.19	74.00	30.10	28.12	4.59	0.00	Peak	---	---
2 @	2410.700	114.34			81.45	28.24	4.65	0.00	Peak	---	---

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2437.490	110.55			77.53	28.31	4.71	0.00	Average	---	---
1 @	2438.060	115.20			82.18	28.31	4.71	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2462.570	110.34			77.23	28.34	4.77	0.00	Average	---	---
2 @	2486.890	52.62	-1.38	54.00	19.48	28.37	4.77	0.00	Average	---	---
1 @	2463.140	115.02			81.91	28.34	4.77	0.00	Peak	---	---
2 @	2486.700	63.20	-10.80	74.00	30.06	28.37	4.77	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11g Ch.1, 6, 11 (Mode 1)

Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2390.000	52.68	-1.32	54.00	19.82	28.21	4.65	0.00	Average	---	---
2 @	2409.370	104.40			71.51	28.24	4.65	0.00	Average	---	---
1 @	2390.000	71.75	-2.25	74.00	38.89	28.21	4.65	0.00	Peak	---	---
2 @	2408.420	115.04			82.15	28.24	4.65	0.00	Peak	---	---

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2439.010	106.50			73.48	28.31	4.71	0.00	Average	---	---
1 @	2438.820	117.14			84.12	28.31	4.71	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2466.180	102.73			69.62	28.34	4.77	0.00	Average	---	---
2 @	2483.500	52.43	-1.57	54.00	19.29	28.37	4.77	0.00	Average	---	---
1 @	2463.900	113.09			79.98	28.34	4.77	0.00	Peak	---	---
2 @	2483.500	69.00	-5.00	74.00	35.86	28.37	4.77	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Note:

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

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

For Two Chains:

Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (20MHz) Ch.1, 6, 11 (Mode 1)

Channel 1

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2390.000	52.61	-1.39	54.00	19.75	28.21	4.65	0.00	Average	---	---
2 @	2408.420	103.32			70.43	28.24	4.65	0.00	Average	---	---
1 @	2390.000	68.55	-5.45	74.00	35.69	28.21	4.65	0.00	Peak	---	---
2 @	2407.660	115.70			82.81	28.24	4.65	0.00	Peak	---	---

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2439.580	105.11			72.09	28.31	4.71	0.00	Average	---	---
1 @	2432.740	117.27			84.28	28.28	4.71	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Channel 11

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2465.420	103.13			70.02	28.34	4.77	0.00	Average	---	---
2 @	2483.500	52.78	-1.22	54.00	19.64	28.37	4.77	0.00	Average	---	---
1 @	2463.900	114.57			81.46	28.34	4.77	0.00	Peak	---	---
2 @	2483.500	70.89	-3.11	74.00	37.75	28.37	4.77	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Note:

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

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

Final Test Date	Sep. 29, 2011	Test Site No.	03CH03-HY
Temperature	24°C	Humidity	69%
Test Engineer	Daniel	Configuration	802.11n (40MHz) Ch.3, 6, 9 (Mode 3)

Channel 3

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2390.000	52.74	-1.26	54.00	19.88	28.21	4.65	0.00	Average	---	---
2 @	2437.300	101.01			67.99	28.31	4.71	0.00	Average	---	---
1	2388.850	66.49	-7.51	74.00	33.63	28.21	4.65	0.00	Peak	---	---
2 @	2435.780	112.07			79.08	28.28	4.71	0.00	Peak	---	---

The item 2 is Fundamental Emissions.

Channel 6

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2440.530	98.93			65.91	28.31	4.71	0.00	Average	---	---
1 @	2442.810	110.07			77.05	28.31	4.71	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Channel 9

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2436.540	99.31			66.29	28.31	4.71	0.00	Average	---	---
2 @	2483.500	52.35	-1.65	54.00	19.21	28.37	4.77	0.00	Average	---	---
1 @	2435.780	110.69			77.70	28.28	4.71	0.00	Peak	---	---
2	2483.660	66.62	-7.38	74.00	33.48	28.37	4.77	0.00	Peak	---	---

The item 1 is Fundamental Emissions.

Note:

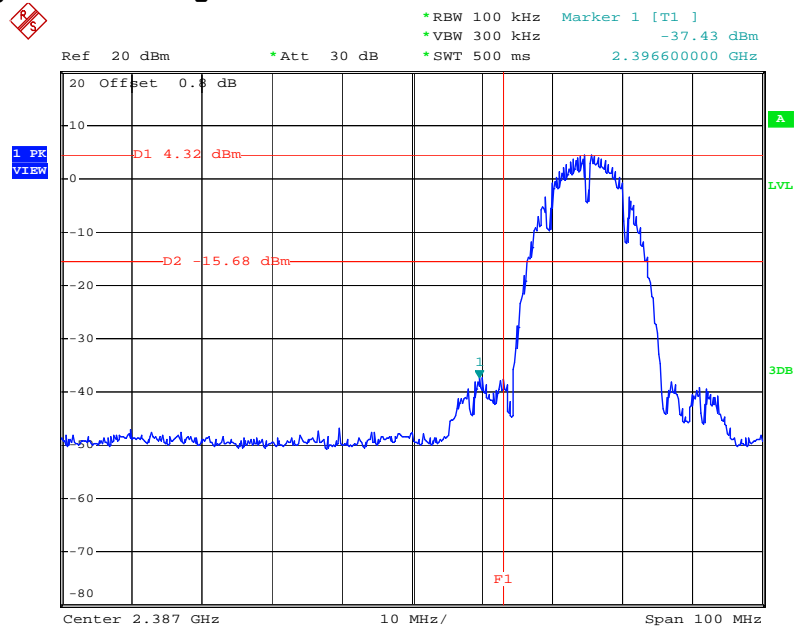
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

For Emission not in Restricted Band

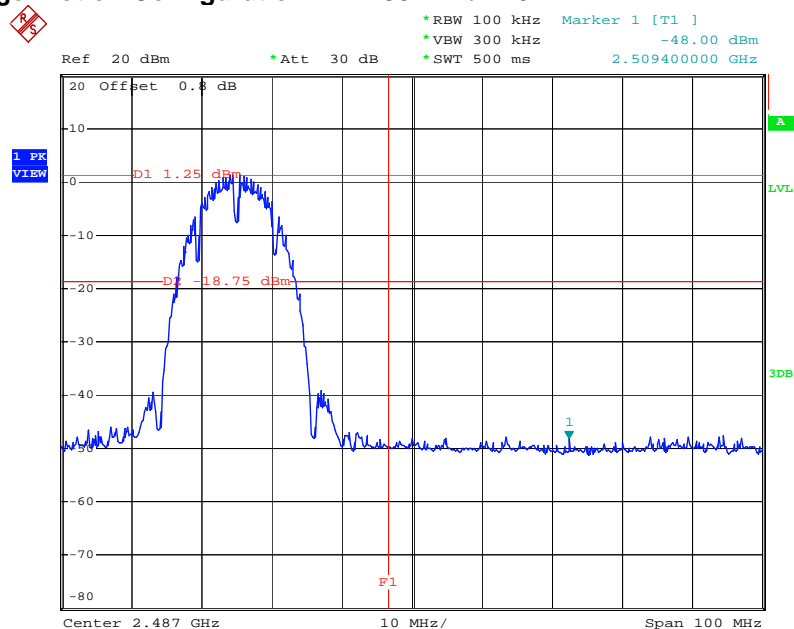
Final Test Date	Dec. 23, 2011	Test Site No.	TH01-HY
Temperature	23.1°C	Humidity	25%
Test Engineer	Ian	Configurations	802.11b/g/n

Low Band Edge Plot on Configuration IEEE 802.11b 2412 MHz



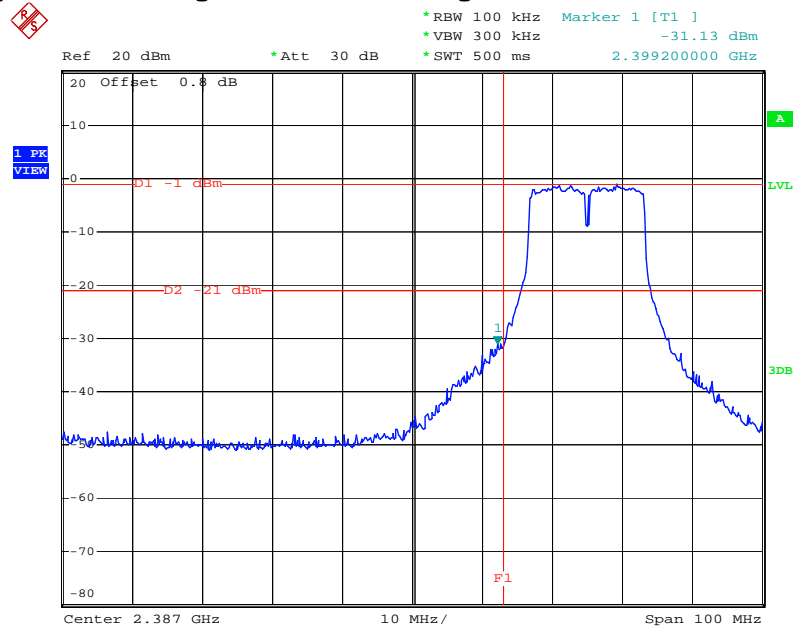
Date: 23.DEC.2011 11:02:26

High Band Edge Plot on Configuration IEEE 802.11b 2462 MHz



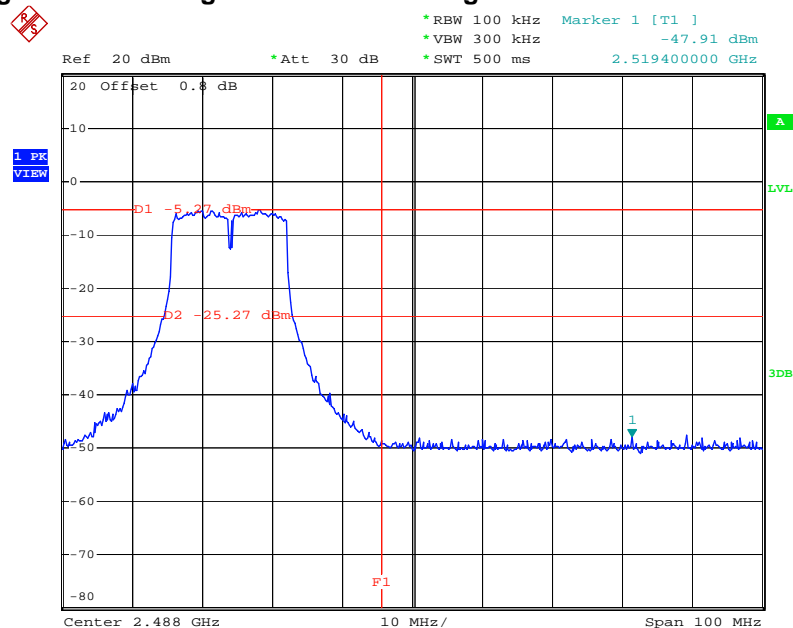
Date: 23.DEC.2011 17:57:46

Low Band Edge Plot on Configuration IEEE 802.11g 2412 MHz



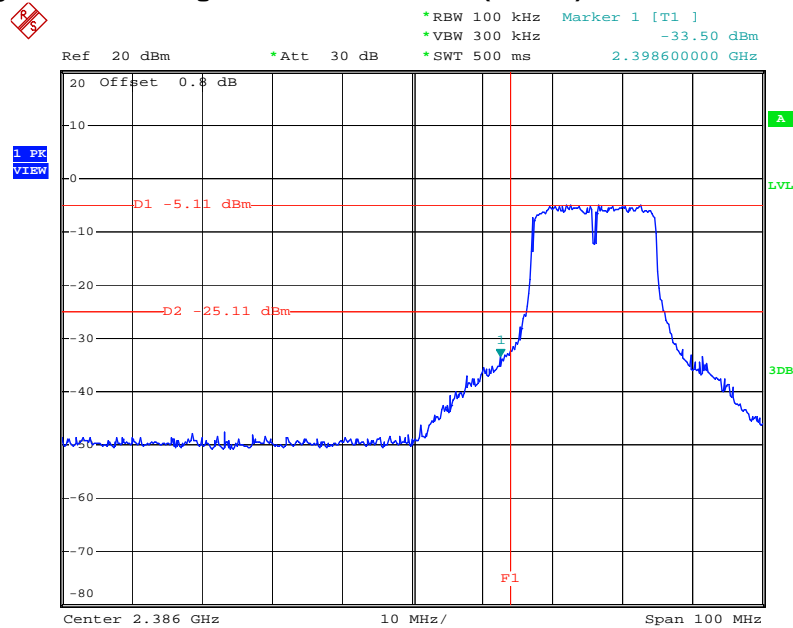
Date: 23.DEC.2011 11:28:50

High Band Edge Plot on Configuration IEEE 802.11g 2462 MHz



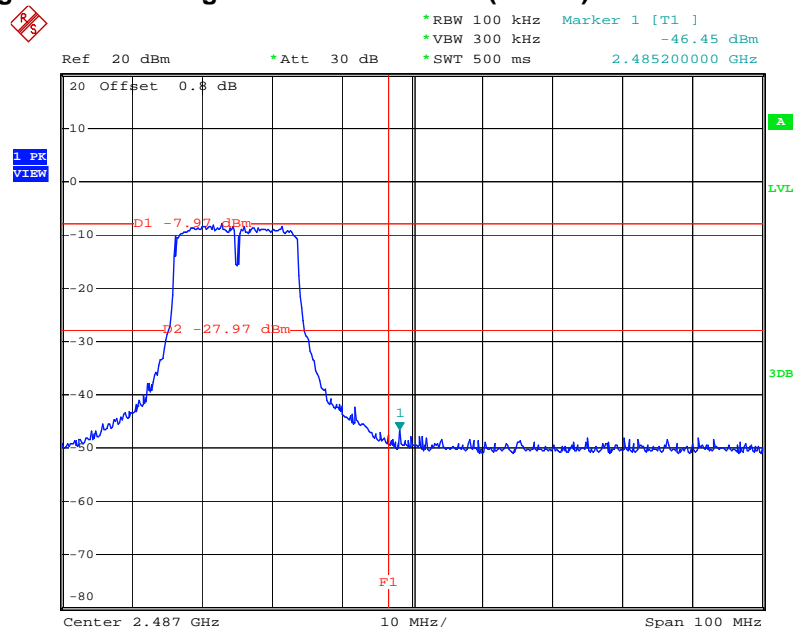
Date: 23.DEC.2011 17:47:02

Low Band Edge Plot on Configuration IEEE 802.11n (20MHz) 2412 MHz Port 1



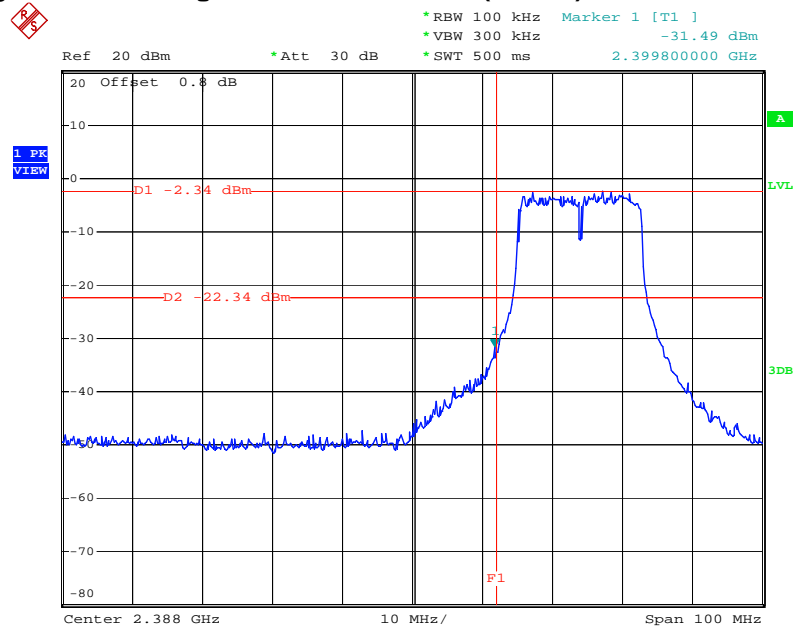
Date: 23.DEC.2011 13:54:00

High Band Edge Plot on Configuration IEEE 802.11n (20MHz) 2462 MHz Port 1



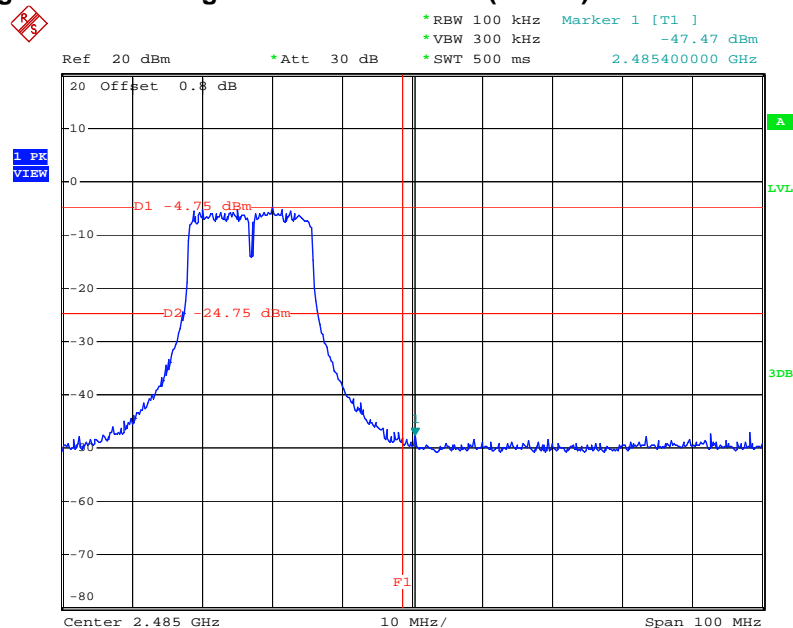
Date: 23.DEC.2011 17:27:52

Low Band Edge Plot on Configuration IEEE 802.11n (20MHz) 2412 MHz Port 2



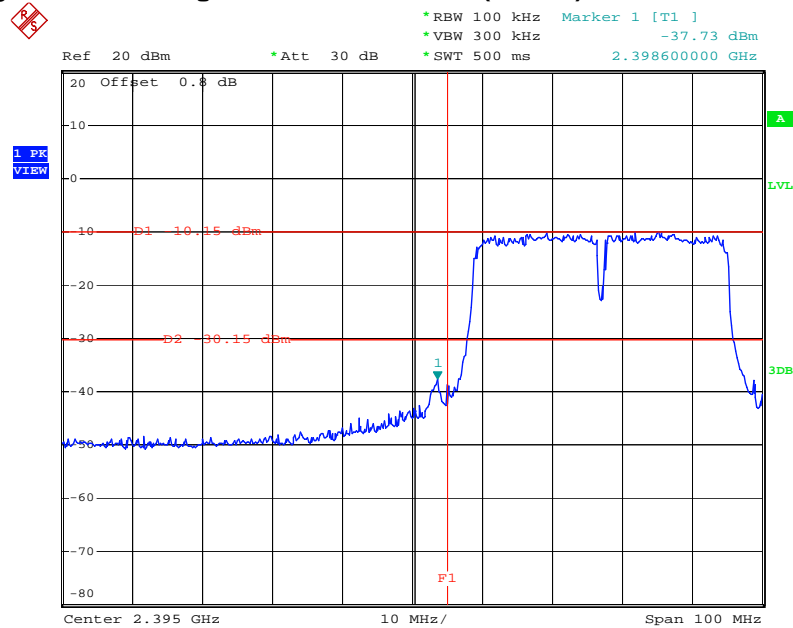
Date: 23.DEC.2011 13:59:15

High Band Edge Plot on Configuration IEEE 802.11n (20MHz) 2462 MHz Port 2



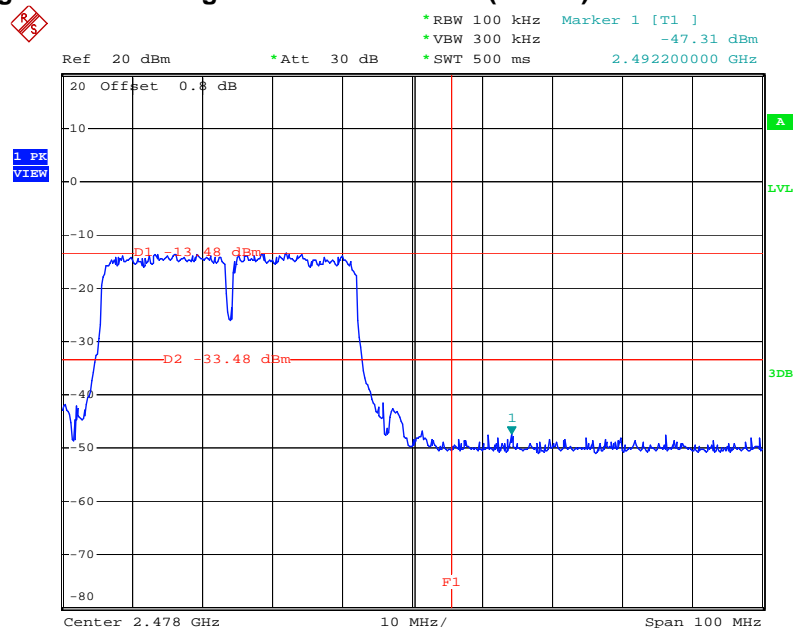
Date: 23.DEC.2011 17:35:03

Low Band Edge Plot on Configuration IEEE 802.11n (40MHz) 2422 MHz Port 1



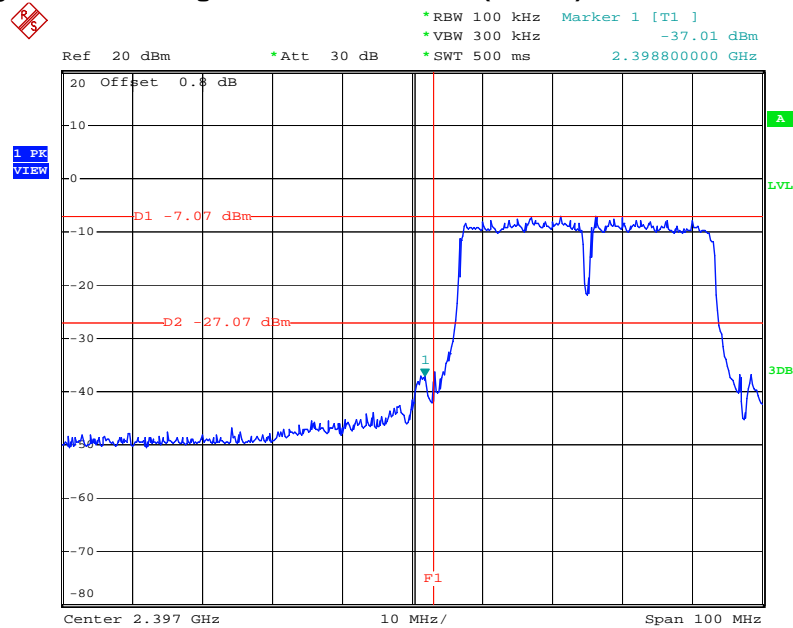
Date: 23.DEC.2011 14:55:28

High Band Edge Plot on Configuration IEEE 802.11n (40MHz) 2452 MHz Port 1



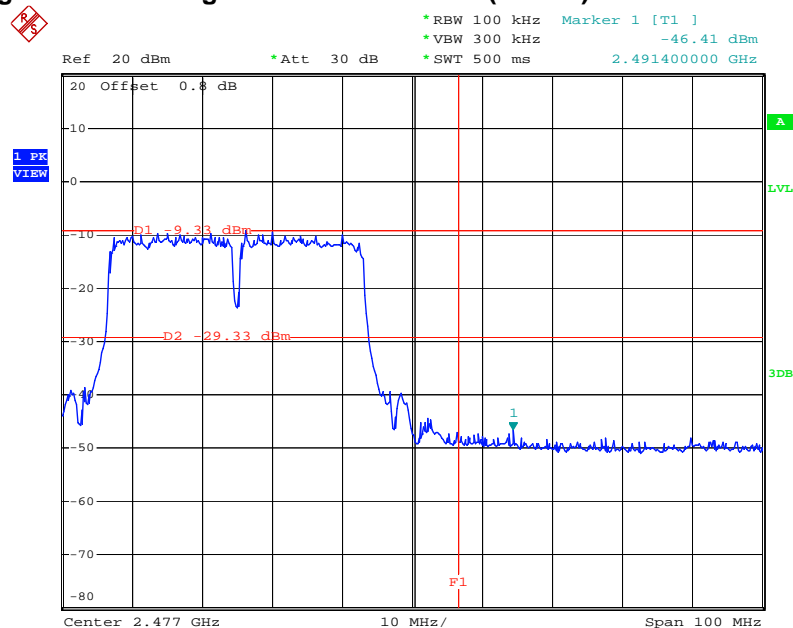
Date: 23.DEC.2011 15:56:15

Low Band Edge Plot on Configuration IEEE 802.11n (40MHz) 2422 MHz Port 2



Date: 23.DEC.2011 15:35:36

High Band Edge Plot on Configuration IEEE 802.11n (40MHz) 2452 MHz Port 2



Date: 23.DEC.2011 16:01:53

3.7 Antenna Requirements

3.7.1 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.

3.7.2 Antenna Connector Construction

Please refer to section 2.3 in this test report; antenna connector complied with the requirements.

4 LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100174	9 kHz ~ 2.75 GHz	Apr. 20, 2011	Conduction (CO04-HY)
LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	8127-477	9kHz – 30MHz	Jan.17, 2011	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9 kHz ~ 30 MHz	May 04, 2011	Conduction (CO04-HY)
RF Cable-CON	HUBER+SUHNER	RG213/U	CB049	9 kHz ~ 30 MHz	Apr. 21, 2011	Conduction (CO04-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Spectrum Analyzer	R&S	FSP 30	100023	9 KHz ~ 30 GHz	Mar. 15, 2011	Conducted (TH01-HY)
Temp. and Humidity Chamber	Giant Force	GTH-225-20-S	MAB0103-001	N/A	Nov. 17, 2011	Conducted (TH01-HY)
RF Cable-1m	Jye Bao	RG142	CB034-1m	20 MHz ~ 7 GHz	Dec. 03, 2011	Conducted (TH01-HY)
RF Cable-2m	Jye Bao	RG142	CB035-2m	20 MHz ~ 1 GHz	Dec. 03, 2011	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10 MHz ~ 40 GHz	Jun. 07, 2011	Conducted (TH01-HY)
Power Sensor	Anritsu	MA2411B	0917017	300 MHz ~ 40 GHz	Jan. 06, 2011	Conducted (TH01-HY)
Power Meter	Anritsu	ML2495A	0949003	300 MHz ~ 40 GHz	Jan. 06, 2011	Conducted (TH01-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	Jun. 09, 2011*	Conducted (TH01-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz ~ 1 GHz 3m	Jun. 17, 2011	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	COA9231A	18667	9 kHz ~ 2 GHz	Jan. 25, 2011	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz ~ 26.5 GHz	Aug. 08, 2011	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100305/040	9 kHz ~ 40 GHz	Feb. 11, 2011	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz ~ 1 GHz	Oct. 22, 2011	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1 GHz ~ 18 GHz	May 30, 2011	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz ~ 40 GHz	Jan.13, 2011	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz ~ 1 GHz	Jan. 18, 2011	Radiation (03CH03-HY)
RF Cable-high	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz ~ 40 GHz	Jan. 18, 2011	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 – 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)

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

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz ~ 30 MHz	Jul. 29, 2010*	Radiation (03CH03-HY)

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

5 TEST LOCATION

SHIJR	ADD : 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei 221, Taiwan, R.O.C. TEL : 886-2-2696-2468 FAX : 886-2-2696-2255
HWA YA	ADD : No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL : 886-3-327-3456 FAX : 886-3-318-0055
LINKOU	ADD : No. 30-2, Dingfu Vil., Linkou Dist., New Taipei City 244, Taiwan, R.O.C. TEL : 886-2-2601-1640 FAX : 886-2-2601-1695
DUNGHU	ADD : No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei 114, Taiwan, R.O.C. TEL : 886-2-2631-4739 FAX : 886-2-2631-9740
JUNGHE	ADD : 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei 235, Taiwan, R.O.C. TEL : 886-2-8227-2020 FAX : 886-2-8227-2626
NEIHU	ADD : 4Fl., No. 339, Hsin Hu 2 nd 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

6 TAF CERTIFICATE OF ACCREDITATION


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

Certificate No. : L1190-111208

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 Arrangement with Foreign Authorities


Jay-San Chen
President, Taiwan Accreditation Foundation
Date : December 08, 2011

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