

3.4 Conducted Band Edges and Spurious Emission Measurement

3.4.1 Limit of Conducted Band Edges and Spurious Emission Measurement

In any 100 kHz bandwidth outside of the authorized frequency band, the emissions which fall in the non-restricted bands shall be attenuated at least 20 dB / 30dB relative to the maximum PSD level in 100 kHz by RF conducted measurement and radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a).

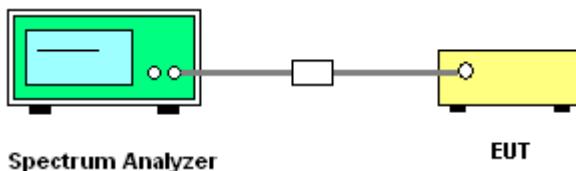
3.4.2 Measuring Instruments

See list of measuring instruments of this test report.

3.4.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB No. 558074 D01 DTS Meas. Guidance v03r01.
2. The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
3. Set to the maximum power setting and enable the EUT transmit continuously.
4. Set RBW = 100 KHz, VBW=300 KHz, Peak Detector. Unwanted Emissions measured in any 100 kHz bandwidth outside of the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum in-band peak PSD level in 100 kHz, when maximum peak conducted output power procedure is used. The attenuation is set to 30dB, when maximum conducted output power procedure is used.
5. Measure and record the results in the test report.

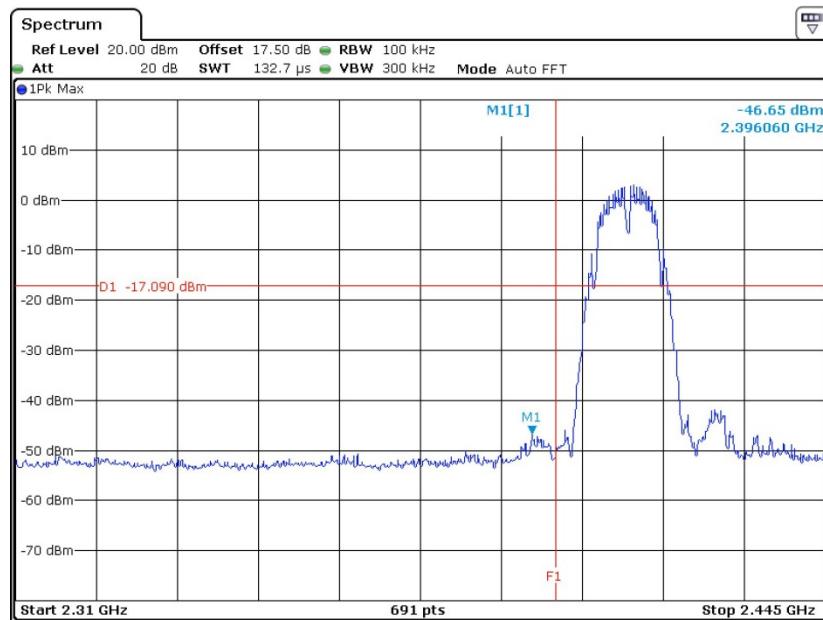
3.4.4 Test Setup



3.4.5 Test Plots of Conducted Band Edges

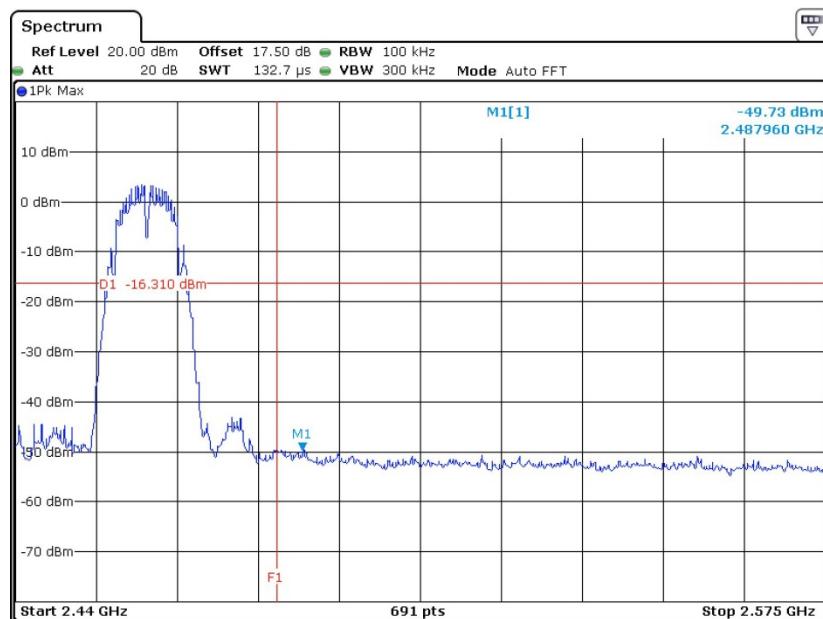
Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Blithe Li

Low Band Edge Plot on 802.11b Channel 01



Date: 29.APR.2013 11:58:56

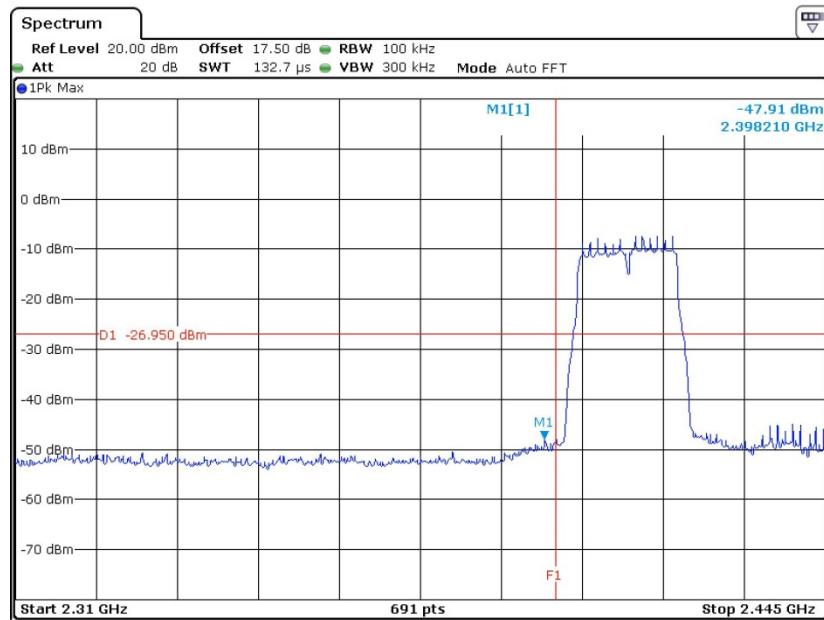
High Band Edge Plot on 802.11b Channel 11



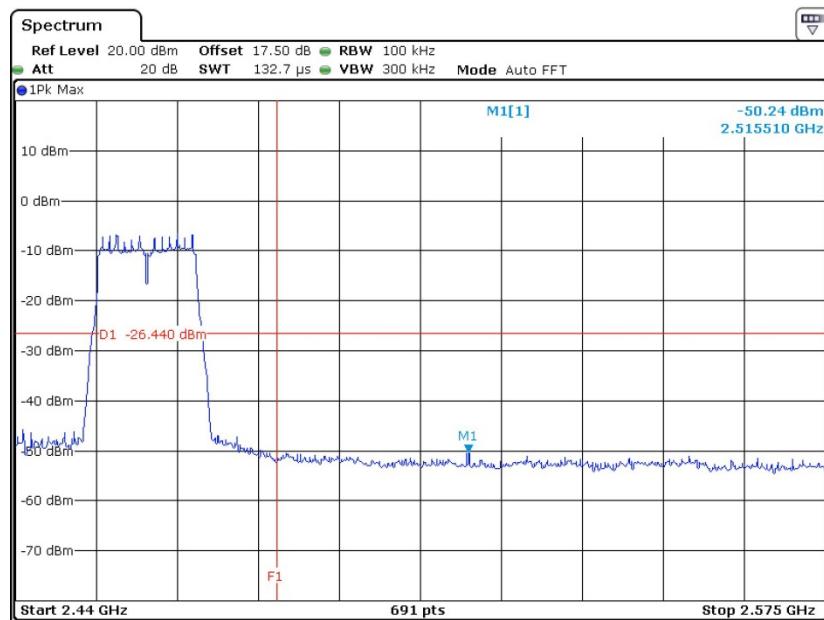
Date: 29.APR.2013 12:02:37



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Blithe Li

Low Band Edge Plot on 802.11g Channel 01

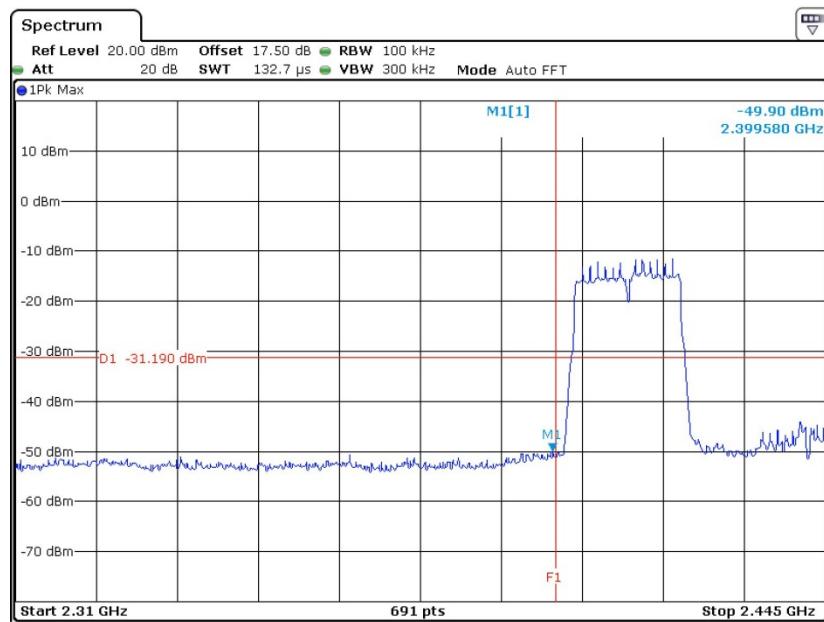
Date: 29.APR.2013 12:14:28

High Band Edge Plot on 802.11g Channel 11

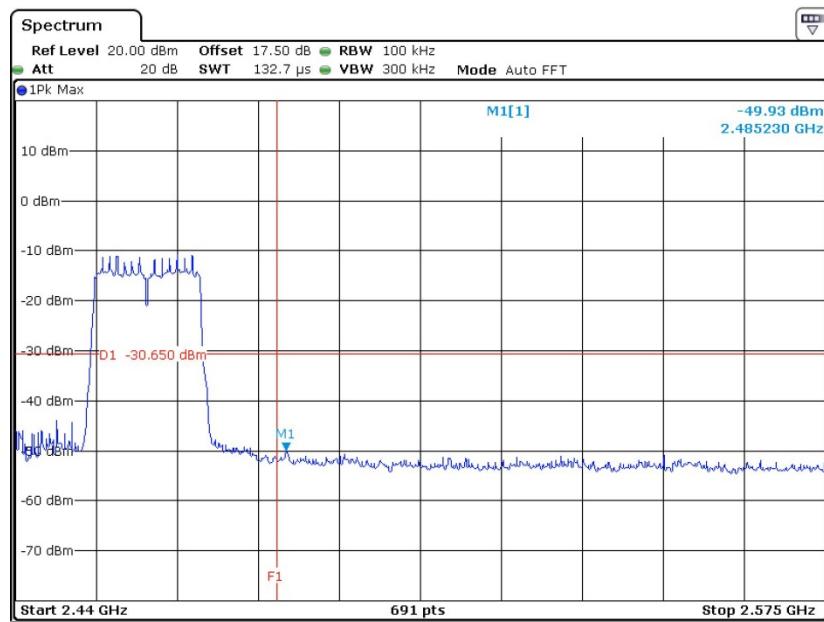
Date: 29.APR.2013 12:08:35



Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	01 and 11	Test Engineer :	Blithe Li

Low Band Edge Plot on 802.11n HT20 Channel 01

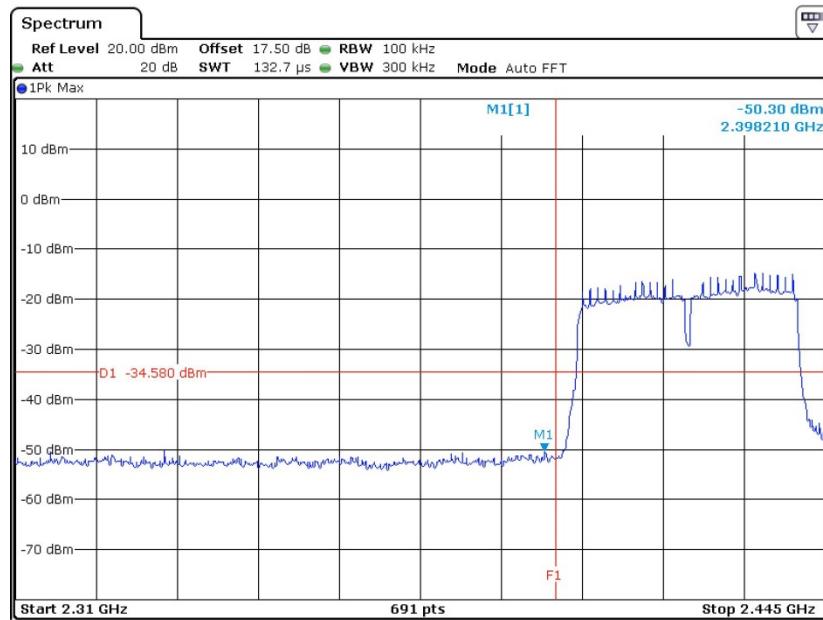
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High Band Edge Plot on 802.11n HT20 Channel 11

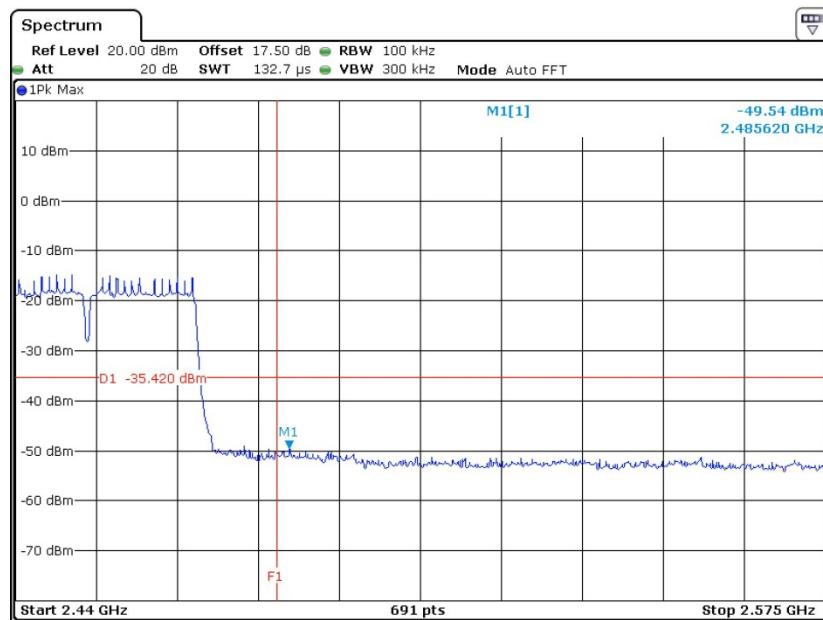
Date: 29.APR.2013 12:20:46



Test Mode :	802.11n HT40	Temperature :	24~26°C
Test Band :	Low and High	Relative Humidity :	50~53%
Test Channel :	03 and 09	Test Engineer :	Blithe Li

Low Band Edge Plot on 802.11n HT40 Channel 03

Date: 29.APR.2013 12:25:46

High Band Edge Plot on 802.11n HT40 Channel 09

Date: 29.APR.2013 12:29:52

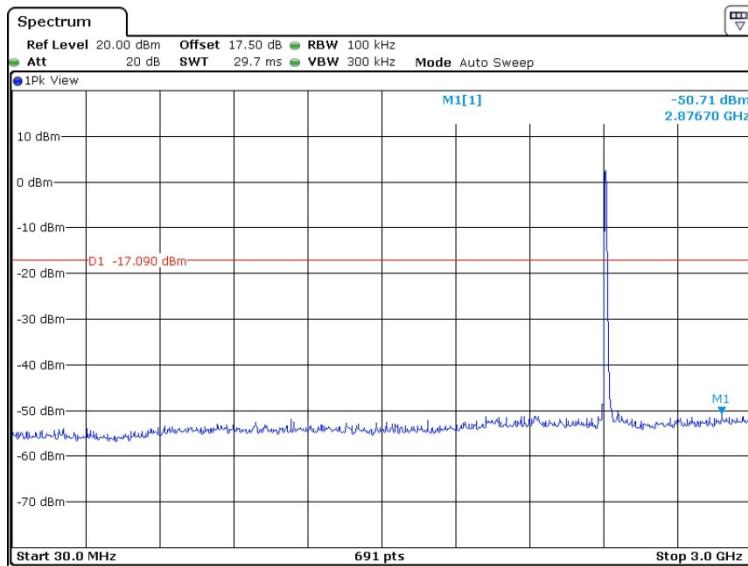


3.4.6 Test Plots of Spurious Emission

Test Mode :	802.11b	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Blithe Li

802.11b 30 MHz~3 GHz

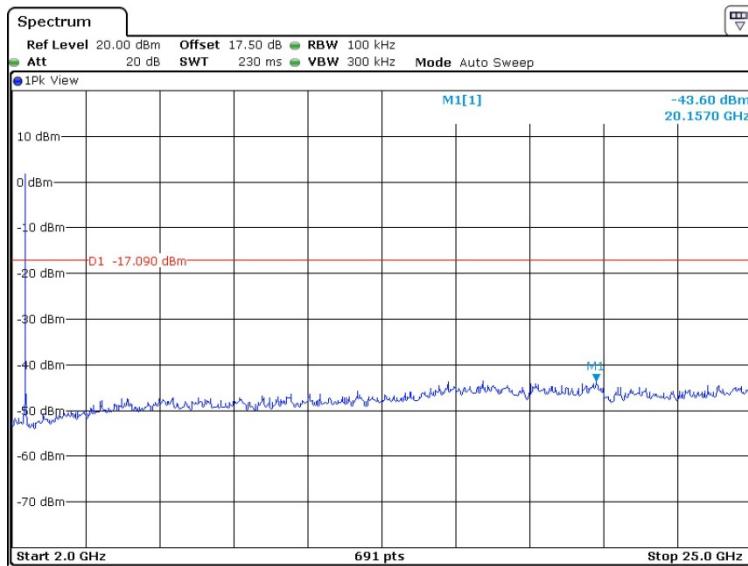
Conducted Spurious Emission Plot on Channel 01



Date: 29.APR.2013 12:31:40

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 01

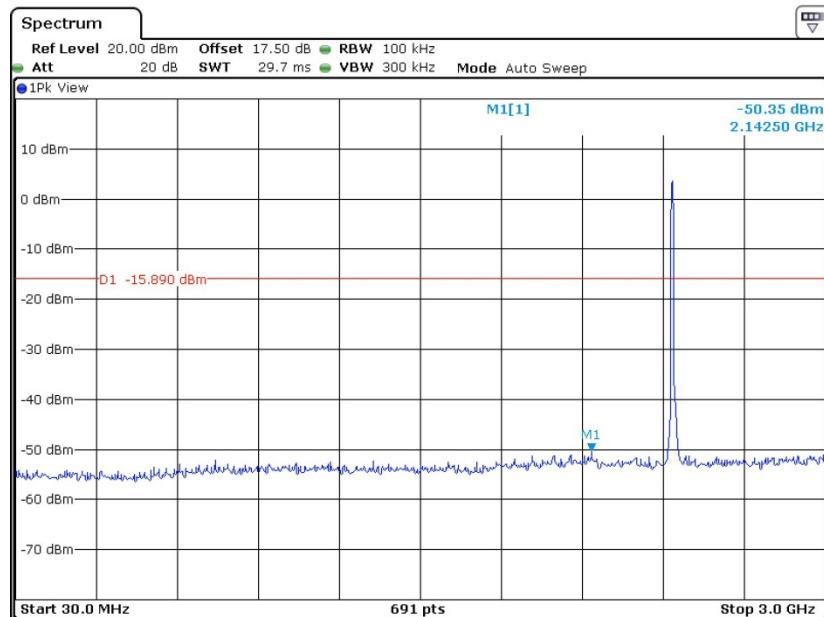


Date: 29.APR.2013 12:32:36



802.11b 30 MHz~3 GHz

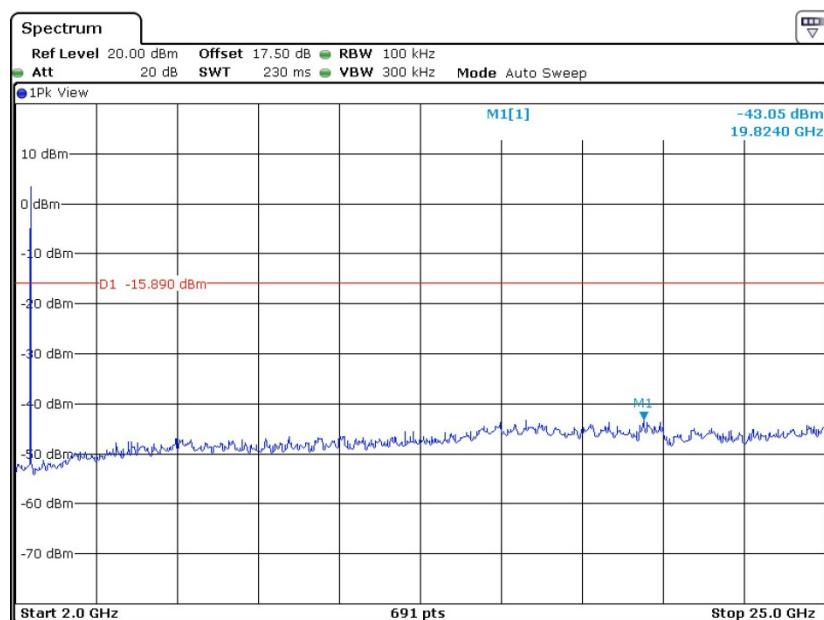
Conducted Spurious Emission Plot on Channel 06



Date: 29.APR.2013 12:42:48

802.11b 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

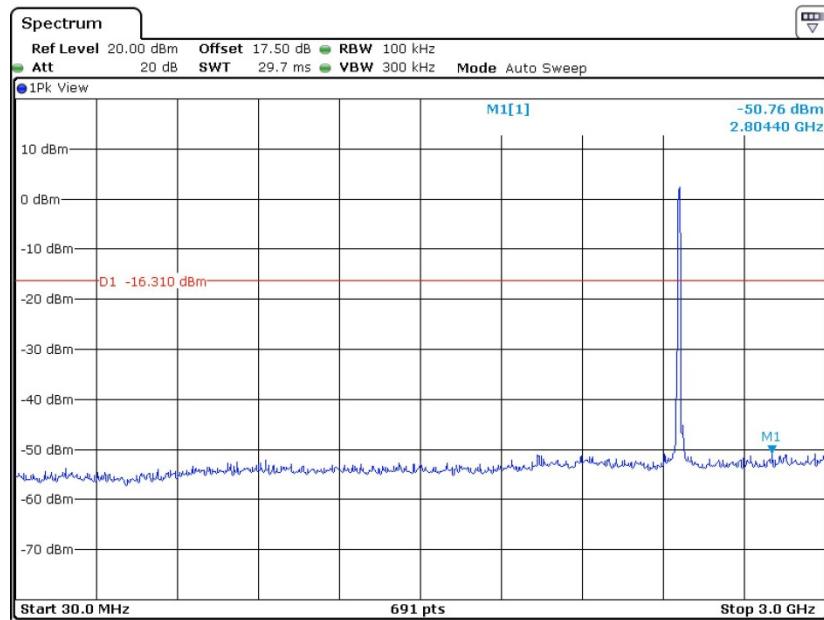


Date: 29.APR.2013 12:43:46



802.11b 30 MHz~3 GHz

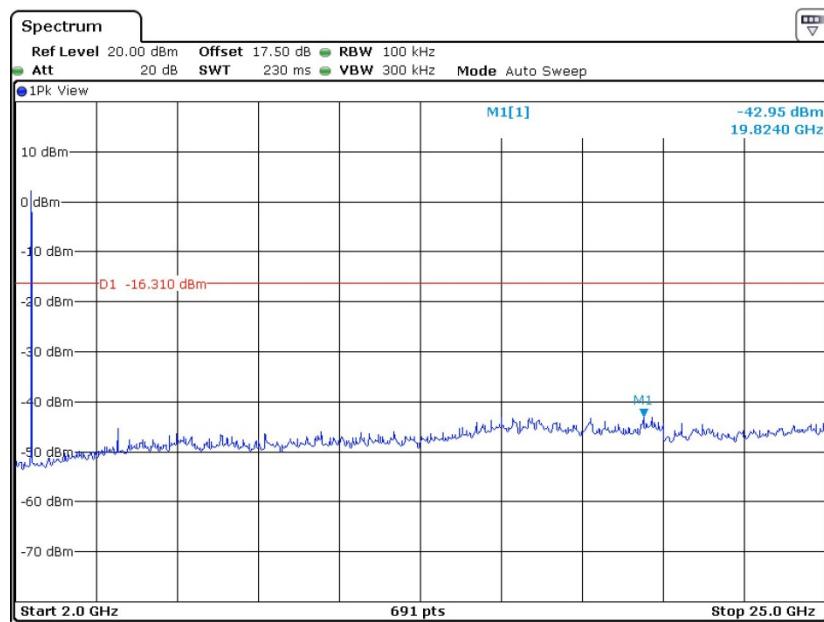
Conducted Spurious Emission Plot on Channel 11



Date: 29.APR.2013 12:45:23

802.11b 2 GHz~25 GHz

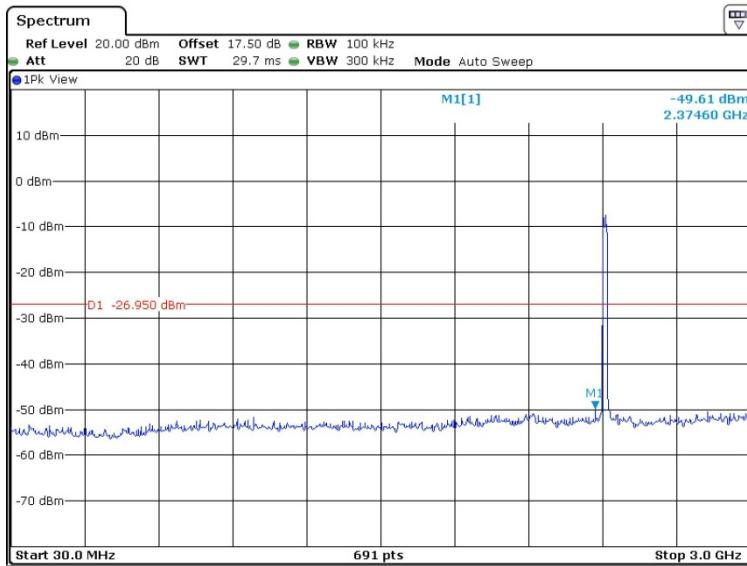
Conducted Spurious Emission Plot on Channel 11



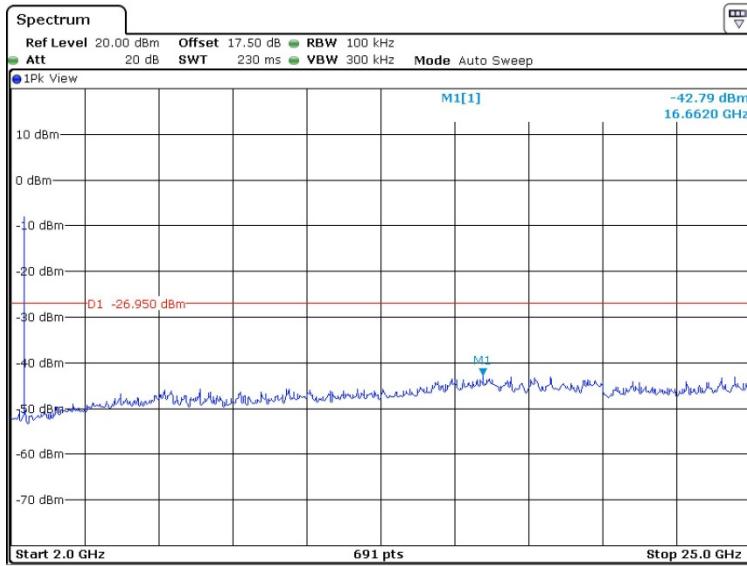
Date: 29.APR.2013 12:44:33



Test Mode :	802.11g	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Blithe Li

802.11g 30 MHz~3 GHz**Conducted Spurious Emission Plot on Channel 01**

Date: 29.APR.2013 12:46:19

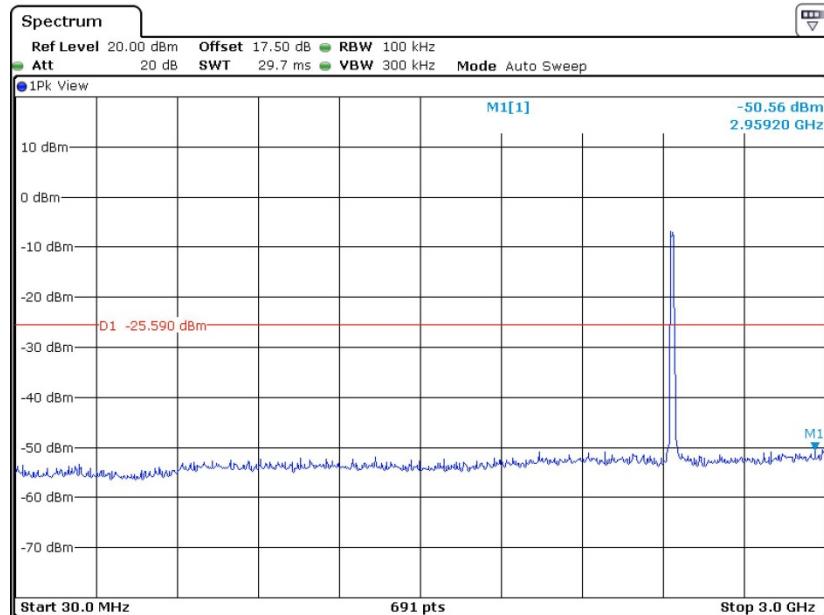
802.11g 2 GHz~25 GHz**Conducted Spurious Emission Plot on Channel 01**

Date: 29.APR.2013 12:47:27



802.11g 30 MHz~3 GHz

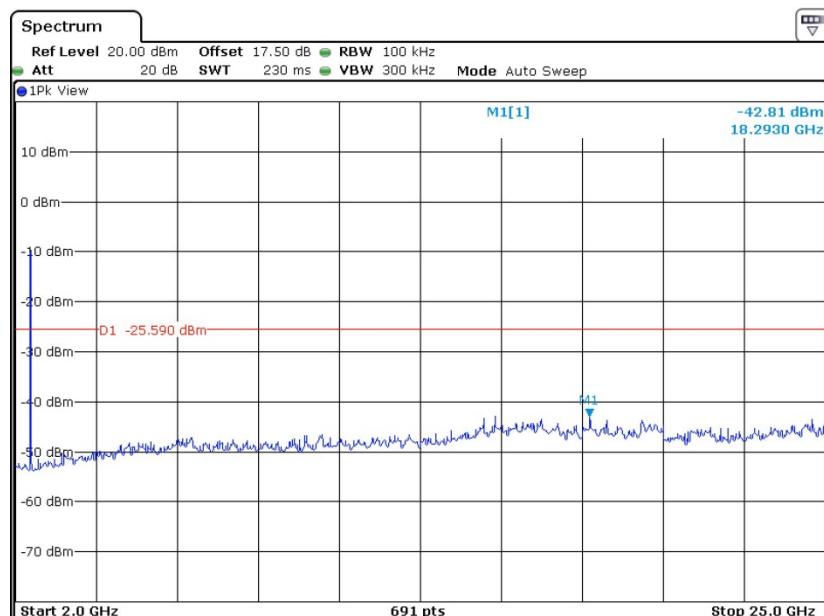
Conducted Spurious Emission Plot on Channel 06



Date: 29.APR.2013 12:49:08

802.11g 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

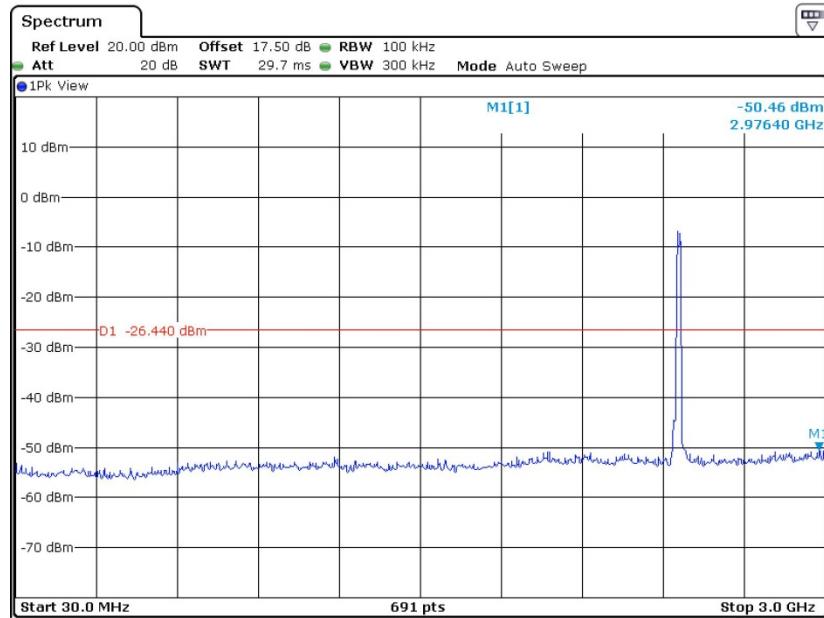


Date: 29.APR.2013 12:48:28



802.11g 30 MHz~3 GHz

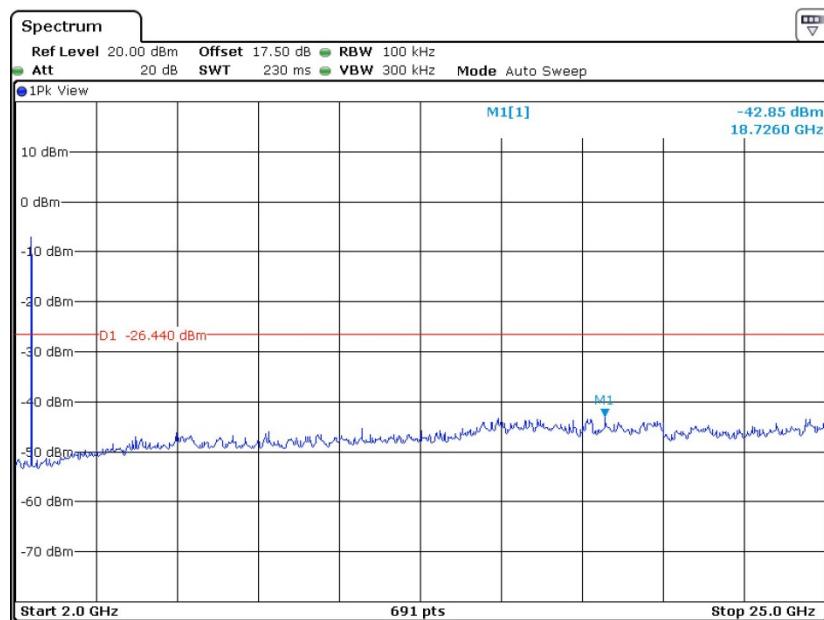
Conducted Spurious Emission Plot on Channel 11



Date: 29.APR.2013 12:49:49

802.11g 2 GHz~25 GHz

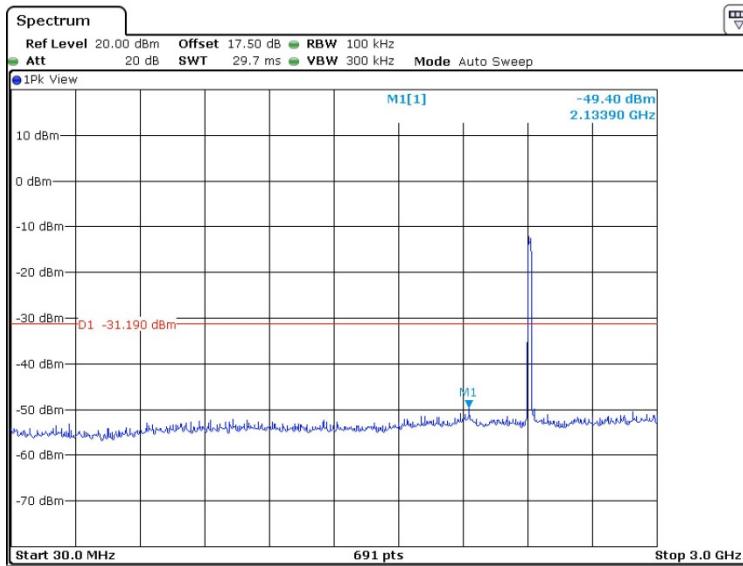
Conducted Spurious Emission Plot on Channel 11



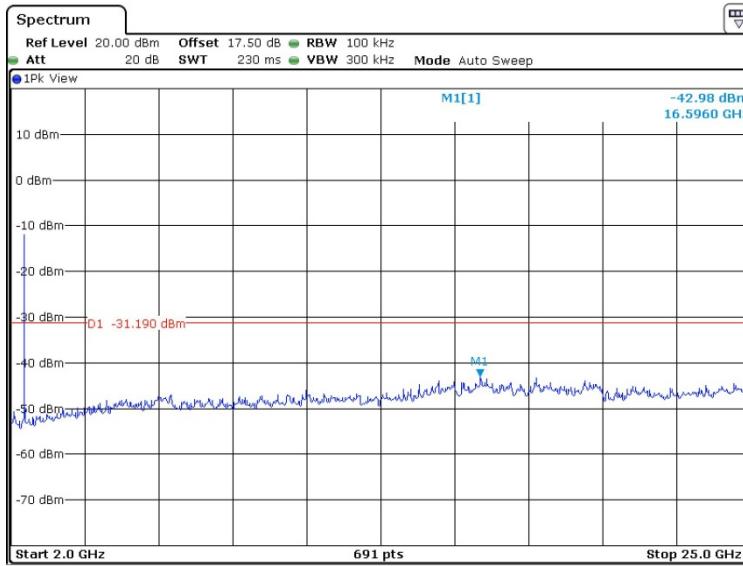
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Test Mode :	802.11n HT20	Temperature :	24~26°C
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53%
Test Channel :	01, 06, 11	Test Engineer :	Blithe Li

802.11n HT20 30 MHz~3 GHz**Conducted Spurious Emission Plot on Channel 01**

Date: 29.APR.2013 12:38:24

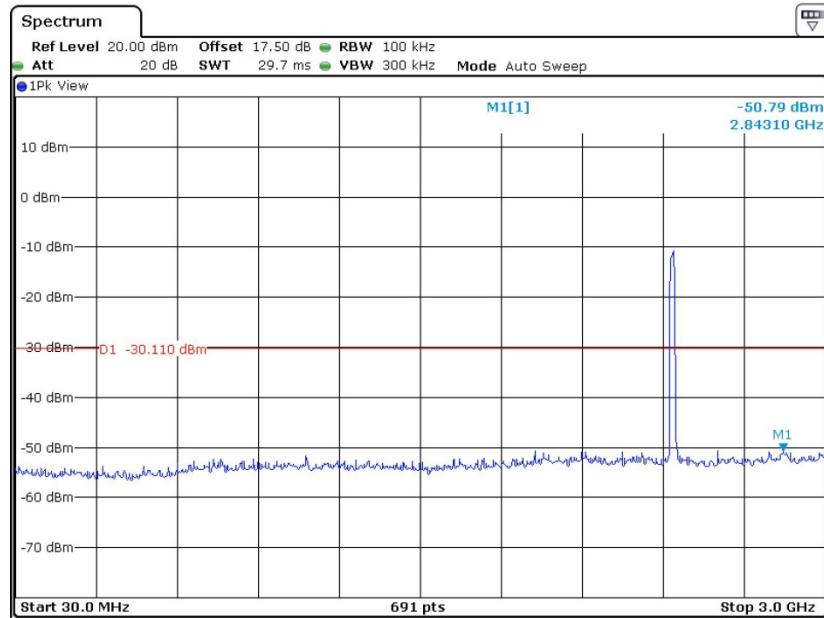
802.11n HT20 2 GHz~25 GHz**Conducted Spurious Emission Plot on Channel 01**

Date: 29.APR.2013 12:37:43



802.11n HT20 30 MHz~3 GHz

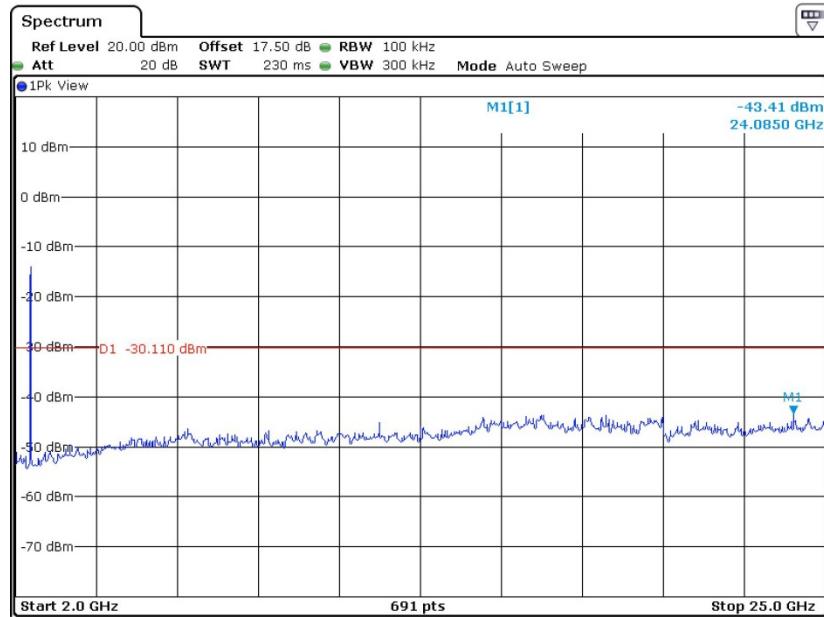
Conducted Spurious Emission Plot on Channel 06



Date: 29.APR.2013 12:39:39

802.11n HT20 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

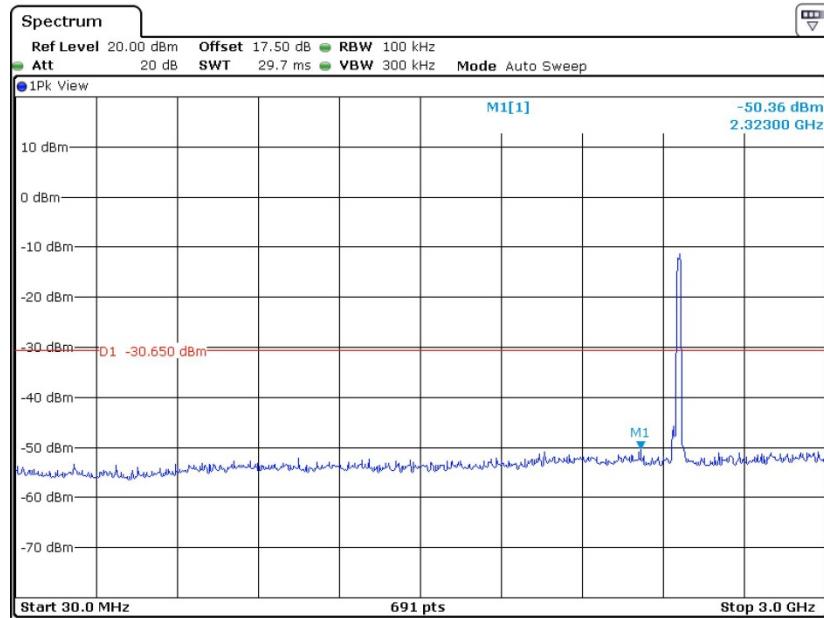


Date: 29.APR.2013 12:40:10



802.11n HT20 30 MHz~3 GHz

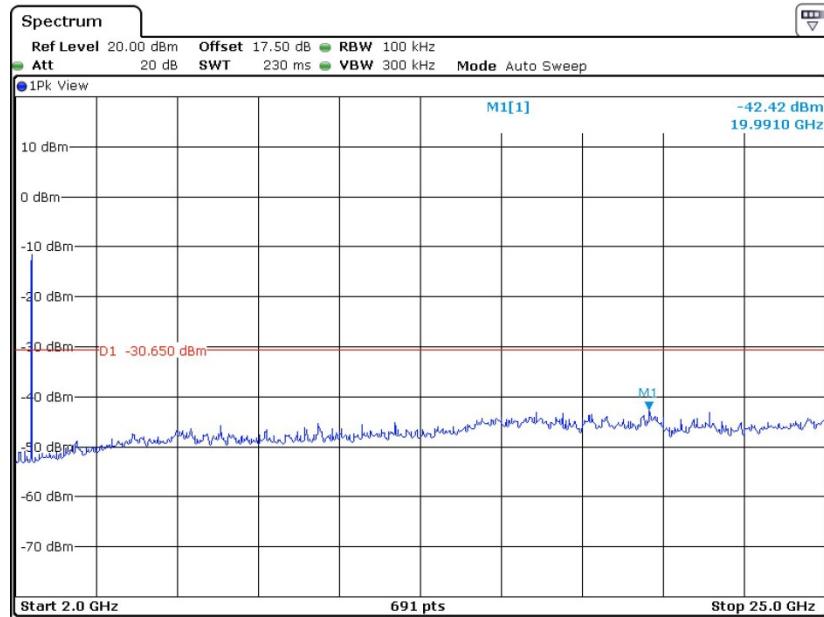
Conducted Spurious Emission Plot on Channel 11



Date: 29.APR.2013 12:41:44

802.11n HT20 2 GHz~25 GHz

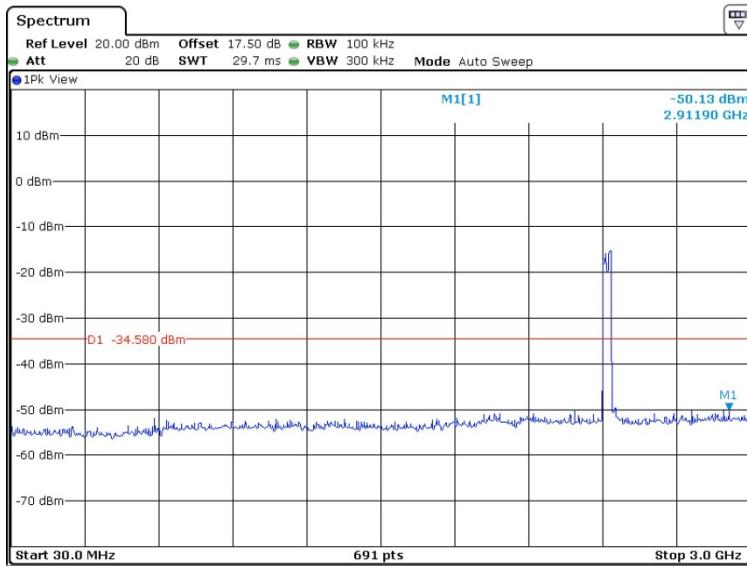
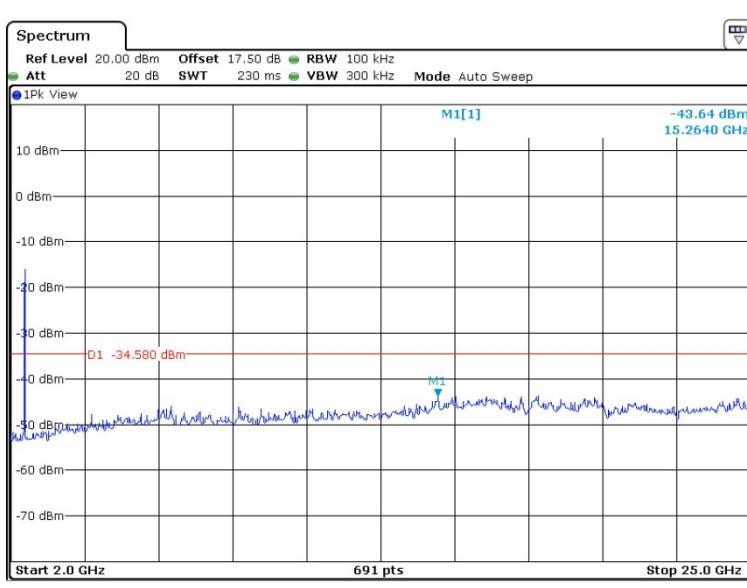
Conducted Spurious Emission Plot on Channel 11



Date: 29.APR.2013 12:40:57



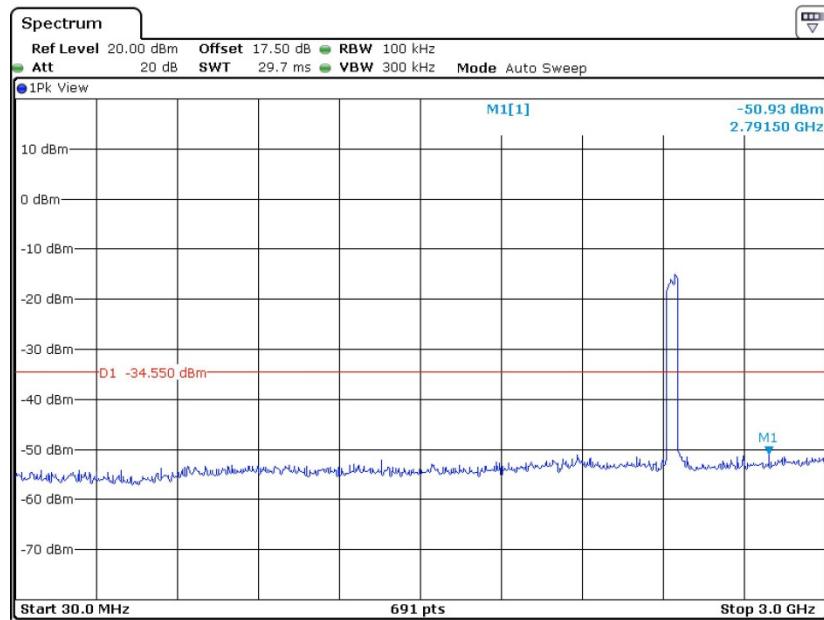
Test Mode :	802.11n HT40	Temperature :	24~26
Test Band :	30MHz-3GHz and 2G-25GHz	Relative Humidity :	50~53
Test Channel :	03, 06, 09	Test Engineer :	Blithe Li

802.11n HT40 30 MHz~3 GHz**Conducted Spurious Emission Plot on Channel 03****802.11n HT40 2 GHz~25 GHz****Conducted Spurious Emission Plot on Channel 03**



802.11n HT40 30 MHz~3 GHz

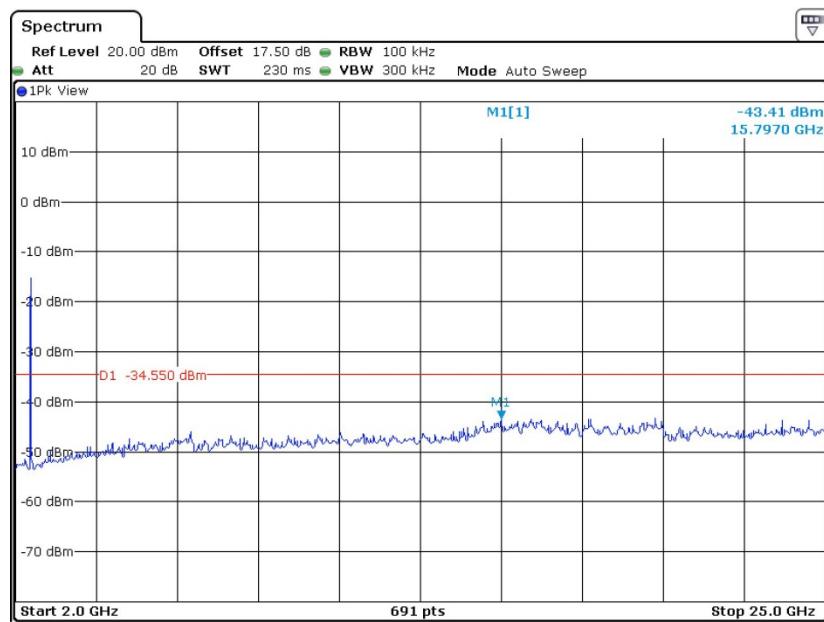
Conducted Spurious Emission Plot on Channel 06



Date: 29.APR.2013 12:35:41

802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 06

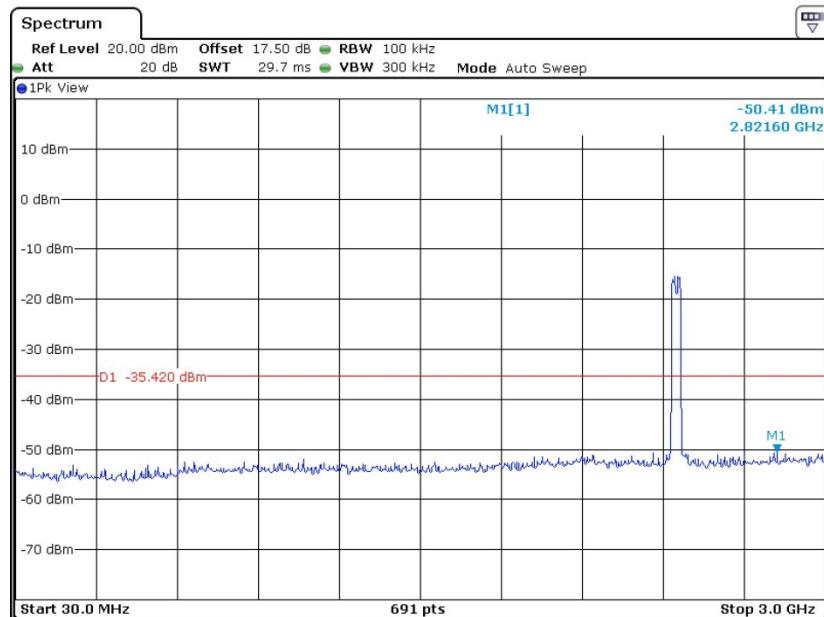


Date: 29.APR.2013 12:35:07



802.11n HT40 30 MHz~3 GHz

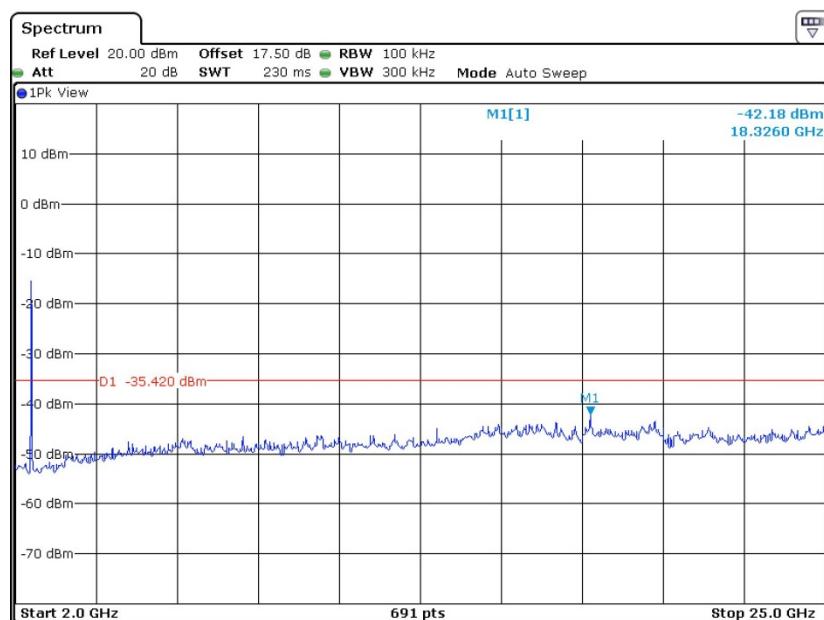
Conducted Spurious Emission Plot on Channel 09



Date: 29.APR.2013 12:36:27

802.11n HT40 2 GHz~25 GHz

Conducted Spurious Emission Plot on Channel 09



Date: 29.APR.2013 12:36:57



3.5 Radiated Band Edges and Spurious Emission Measurement

3.5.1 Limit of Radiated Band Edges and Spurious Emission

In any 100 KHz bandwidth outside the intentional radiator frequency band, all harmonics/spurious must be at least 20 dB below the highest emission level within the authorized band. If the output power of this device was measured by spectrum analyzer, the attenuation under this paragraph shall be 30 dB instead of 20 dB. In addition, radiated emissions which fall in the restricted bands must also comply with the FCC section 15.209 limits as below.

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

3.5.2 Measuring Instruments

See list of measuring instruments of this test report.



3.5.3 Test Procedures

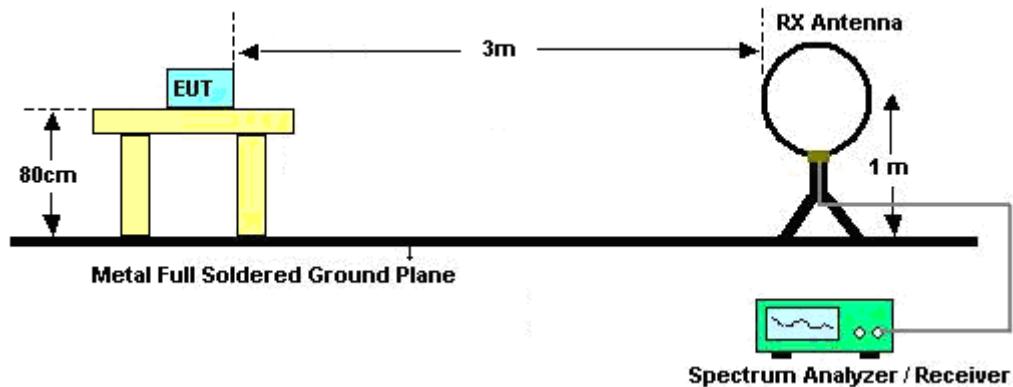
1. The testing follows the guidelines in ANSI C63. 10-2009
 2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level.
 3. The EUT was placed on a turntable with 0.8 meter above ground.
 4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.
 5. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
 6. For measurement below 1GHz, If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.
 7. Use the following spectrum analyzer settings:
 - (1) Span shall wide enough to fully capture the emission being measured;
 - (2) Set RBW=100 KHz for $f < 1$ GHz; VBW \geq RBW; Sweep = auto; Detector function = peak;
Trace = max hold;
 - (3) Set RBW = 1 MHz, VBW= 3MHz for $f \geq 1$ GHz for peak measurement.
- For average measurement:
- VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW $\geq 1/T$, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.

Band	Duty Cycle(%)	T(ms)	1/T(KHz)	VBW Setting
802.11b	98.38	-	-	10Hz
802.11g	93.45	1.398	0.715	1KHz
2.4G 802.11n HT20	91.90	1.304	0.767	1KHz
2.4G 802.11n HT40	85.83	0.654	1.529	3KHz

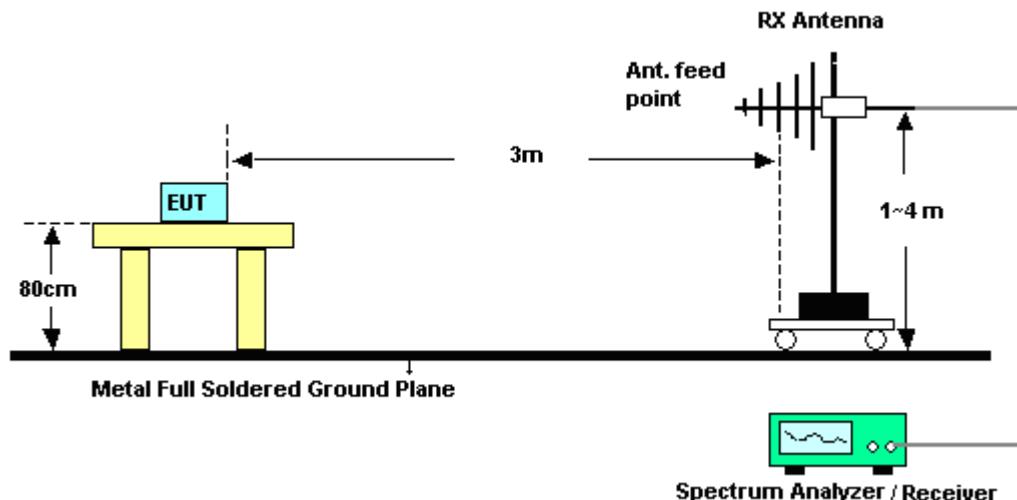
Note: For average measurement with duty cycle $< 98\%$, use reduced VBW measurement method 4.2.3.2.3 in ANSI C63.10.

3.5.4 Test Setup

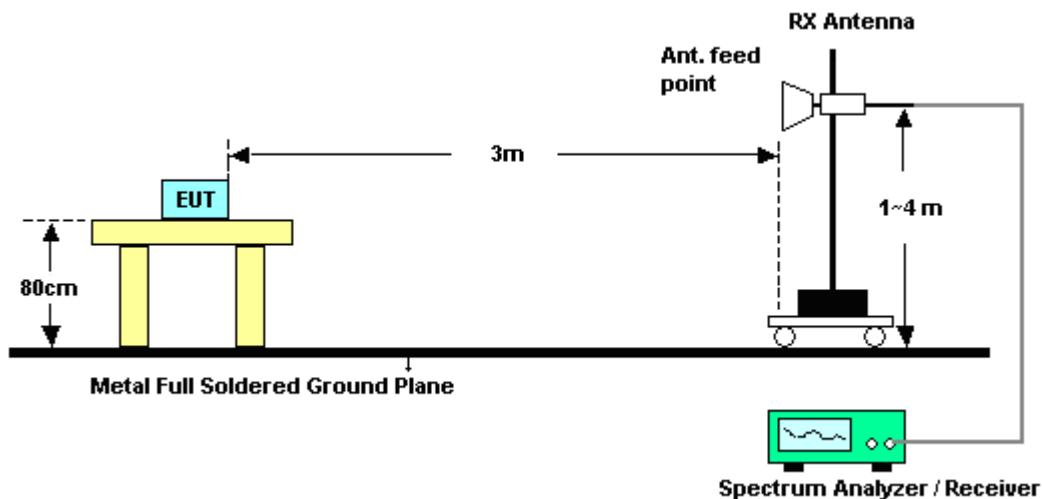
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.5.5 Test Results of Radiated Spurious Emission (9 KHz ~ 30 MHz)

The low frequency, which started from 9 KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.



3.5.6 Test Result of Radiated Band Edges

Test Mode :	802.11b			Temperature :	22~23°C			
Test Band :	Low			Relative Humidity :	41~42%			
Test Channel :	01			Test Engineer :	Steven Hao			

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.84	53.21	-20.79	74	49.75	32.86	2.11	31.51	158	140	Peak
2390	41.62	-12.38	54	38.16	32.86	2.11	31.51	158	140	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.2	52.94	-21.06	74	49.48	32.86	2.11	31.51	154	103	Peak
2390	40.84	-13.16	54	37.38	32.86	2.11	31.51	154	103	Average

Test Mode :	802.11b			Temperature :	22~23°C			
Test Band :	High			Relative Humidity :	41~42%			
Test Channel :	11			Test Engineer :	Steven Hao			

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.07	52.66	-21.34	74	49	33.01	2.16	31.51	151	137	Peak
2483.5	42.05	-11.95	54	38.39	33.01	2.16	31.51	151	137	Average

ANTENNA POLARITY : VERTICAL										
Frequency (mz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.68	52.97	-21.03	74	49.31	33.01	2.16	31.51	178	99	Peak
2483.5	41.75	-12.25	54	38.09	33.01	2.16	31.51	178	99	Average



Test Mode :	802.11g			Temperature :		22~23°C		
Test Band :	Low			Relative Humidity :		41~42%		
Test Channel :	01			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.3	55.63	-18.37	74	52.17	32.86	2.11	31.51	168	126	Peak
2390	39.81	-14.19	54	36.35	32.86	2.11	31.51	168	126	Average

ANTENNA POLARITY : VERTICAL

Frequency (mz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.56	55.17	-18.83	74	51.71	32.86	2.11	31.51	100	118	Peak
2390	39.28	-14.72	54	35.82	32.86	2.11	31.51	100	118	Average

Test Mode :	802.11g			Temperature :		22~23°C		
Test Band :	High			Relative Humidity :		41~42%		
Test Channel :	11			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL

Frequency (mz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.58	57.96	-16.04	74	54.3	33.01	2.16	31.51	105	131	Peak
2483.68	42.54	-11.46	54	38.88	33.01	2.16	31.51	105	131	Average

ANTENNA POLARITY : VERTICAL

Frequency (mz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.71	54.46	-19.54	74	50.8	33.01	2.16	31.51	123	87	Peak
2483.53	39.34	-14.66	54	35.68	33.01	2.16	31.51	123	87	Average



Test Mode :	802.11n HT20			Temperature :		22~23°C		
Test Band :	Low			Relative Humidity :		41~42%		
Test Channel :	01			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	54.02	-19.98	74	50.56	32.86	2.11	31.51	160	141	Peak
2390	38.78	-15.22	54	35.32	32.86	2.11	31.51	160	141	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	54.21	-19.79	74	50.75	32.86	2.11	31.51	100	97	Peak
2389.83	38.16	-15.84	54	34.7	32.86	2.11	31.51	100	97	Average

Test Mode :	802.11n HT20			Temperature :		22~23°C		
Test Band :	High			Relative Humidity :		41~42%		
Test Channel :	11			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2484.22	58.99	-15.01	74	55.33	33.01	2.16	31.51	100	132	Peak
2483.5	40.94	-13.06	54	37.28	33.01	2.16	31.51	100	132	Average

ANTENNA POLARITY : VERTICAL										
Frequency (mz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2488.69	56.06	-17.94	74	52.35	33.05	2.17	31.51	138	107	Peak
2483.56	39.82	-14.18	54	36.16	33.01	2.16	31.51	138	107	Average



Test Mode :	802.11n HT40			Temperature :		22~23°C		
Test Band :	Low			Relative Humidity :		41~42%		
Test Channel :	03			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2384.07	55.23	-18.77	74	51.82	32.83	2.09	31.51	199	297	Peak
2389.65	40.38	-13.62	54	36.92	32.86	2.11	31.51	199	297	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.56	55.57	-18.43	74	52.11	32.86	2.11	31.51	101	130	Peak
2390	40.33	-13.67	54	36.87	32.86	2.11	31.51	101	130	Average

Test Mode :	802.11n HT40			Temperature :		22~23°C		
Test Band :	High			Relative Humidity :		41~42%		
Test Channel :	09			Test Engineer :		Steven Hao		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2488.33	58.01	-15.99	74	54.3	33.05	2.17	31.51	102	131	Peak
2483.95	43.11	-10.89	54	39.45	33.01	2.16	31.51	102	131	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2486.8	54.83	-19.17	74	51.17	33.01	2.16	31.51	166	118	Peak
2485.42	40.31	-13.69	54	36.65	33.01	2.16	31.51	166	118	Average



3.5.7 Test Result of Radiated Spurious Emission (30 MHz ~ 10th Harmonic)

Note: Below 1GHz for radiated emission measurement, pre-scanned all test modes and only choose the worst case mode was recorded in the report.

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	01	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.75MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level. For example, 107.04dBuV/m - 20dB = 87.04dBuV/m. 3. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.75	59	-28.04	87.04	55.54	32.86	2.11	31.51	158	140	Peak
2412	107.04	-	-	103.54	32.89	2.12	31.51	125	142	Peak
2412	101.49	-	-	97.99	32.89	2.12	31.51	125	142	Average
4824	49.16	-24.84	74	42.43	35.17	3.09	31.53	121	56	Peak
7236	49.25	-37.79	87.04	40.78	36.18	3.24	30.95	100	236	Peak



Test Mode :	802.11b		Temperature :		22~23°C				
Test Channel :	01		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Vertical				
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.48MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.48	56.87	-28.45	85.32	53.41	32.86	2.11	31.51	154	103	Peak
2412	105.32	-	-	101.82	32.89	2.12	31.51	157	105	Peak
2412	100.07	-	-	96.57	32.89	2.12	31.51	157	105	Average
4824	49.35	-24.65	74	42.62	35.17	3.09	31.53	100	121	Peak
7236	50.47	-34.85	85.32	42	36.18	3.24	30.95	114	58	Peak

Test Mode :	802.11b		Temperature :		22~23°C				
Test Channel :	06		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Horizontal				
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	106.52	-	-	102.94	32.95	2.14	31.51	156	139	Peak
2437	101.07	-	-	97.49	32.95	2.14	31.51	156	139	Average
4874	49.73	-24.27	74	42.95	35.18	3.12	31.52	121	97	Peak
7311	48.91	-25.09	74	40.44	36.2	3.21	30.94	100	197	Peak



Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	104.44	-	-	100.86	32.95	2.14	31.51	157	88	Peak
2437	98.99	-	-	95.41	32.95	2.14	31.51	157	88	Average
4874	49.18	-24.82	74	42.4	35.18	3.12	31.52	121	54	Peak
7311	49.64	-24.36	74	41.17	36.2	3.21	30.94	100	0	Peak

Test Mode :	802.11b	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	106.49	-	-	102.87	32.98	2.15	31.51	102	49	Peak
2462	100.17	-	-	96.55	32.98	2.15	31.51	102	49	Average
4924	48.93	-25.07	74	42.1	35.19	3.15	31.51	121	56	Peak
7386	49.9	-24.1	74	41.4	36.24	3.19	30.93	100	221	Peak



Test Mode :	802.11b		Temperature :		22~23°C				
Test Channel :	11		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Vertical				
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	103.81	-	-	100.19	32.98	2.15	31.51	182	98	Peak
2462	98.48	-	-	94.86	32.98	2.15	31.51	182	98	Average
4924	48.08	-25.92	74	41.25	35.19	3.15	31.51	100	321	Peak
7386	50.3	-23.7	74	41.8	36.24	3.19	30.93	100	231	Peak

Test Mode :	802.11g		Temperature :		22~23°C				
Test Channel :	01		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Horizontal				
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2397.48MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.48	63.07	-22.34	85.41	59.61	32.86	2.11	31.51	168	126	Peak
2412	105.41	-	-	101.91	32.89	2.12	31.51	105	53	Peak
2412	94.06	-	-	90.56	32.89	2.12	31.51	105	53	Average
4824	48.83	-25.17	74	42.1	35.17	3.09	31.53	100	235	Peak
7236	50.11	-35.3	85.41	41.64	36.18	3.24	30.95	100	0	Peak

**FCC RF Test Report**

Report No. : FR341702C

Test Mode :	802.11g		Temperature :		22~23°C				
Test Channel :	01		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Vertical				
Remark :	<ol style="list-style-type: none">2412 MHz is fundamental signal which can be ignored.2394.96MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level.Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2394.96	63.15	-19.24	82.39	59.69	32.86	2.11	31.51	100	118	Peak
2412	102.39	-	-	98.89	32.89	2.12	31.51	101	100	Peak
2412	90.98	-	-	87.48	32.89	2.12	31.51	101	100	Average
4824	48.34	-25.66	74	41.61	35.17	3.09	31.53	125	48	Peak
7236	50.26	-32.13	82.39	41.79	36.18	3.24	30.95	112	326	Peak

Test Mode :	802.11g		Temperature :		22~23°C				
Test Channel :	06		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Horizontal				
Remark :	<ol style="list-style-type: none">2437 MHz is fundamental signal which can be ignored.Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	104.93	-	-	101.35	32.95	2.14	31.51	105	129	Peak
2437	94.14	-	-	90.56	32.95	2.14	31.51	105	129	Average
4874	49.57	-24.43	74	42.79	35.18	3.12	31.52	101	360	Peak
7311	50.51	-23.49	74	42.04	36.2	3.21	30.94	100	0	Peak



Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	102.18	-	-	98.6	32.95	2.14	31.51	103	71	Peak
2437	91.51	-	-	87.93	32.95	2.14	31.51	103	71	Average
4874	48.88	-25.12	74	42.1	35.18	3.12	31.52	132	68	Peak
7311	50.59	-23.41	74	42.12	36.2	3.21	30.94	112	323	Peak

Test Mode :	802.11g	Temperature :	22~23°C
Test Channel :	11	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	104.94	-	-	101.32	32.98	2.15	31.51	104	130	Peak
2462	94.25	-	-	90.63	32.98	2.15	31.51	104	130	Average
4924	49.08	-24.92	74	42.25	35.19	3.15	31.51	100	215	Peak
7386	50.36	-23.64	74	41.86	36.24	3.19	30.93	100	325	Peak



Test Mode :	802.11g		Temperature :		22~23°C				
Test Channel :	11		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Vertical				
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	100.88	-	-	97.26	32.98	2.15	31.51	129	71	Peak
2462	90.47	-	-	86.85	32.98	2.15	31.51	129	71	Average
4924	48.35	-25.65	74	41.52	35.19	3.15	31.51	110	268	Peak
7386	50.68	-23.32	74	42.18	36.24	3.19	30.93	100	326	Peak

Test Mode :	802.11n HT20			Temperature :		22~23°C				
Test Channel :	01			Relative Humidity :		41~42%				
Test Engineer :	Steven Hao			Polarization :		Horizontal				
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2398.92MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.									

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2398.92	59.12	-20.28	79.4	55.66	32.86	2.11	31.51	160	141	Peak
2412	99.4	-	-	95.9	32.89	2.12	31.51	105	139	Peak
2412	87.69	-	-	84.19	32.89	2.12	31.51	105	139	Average
4824	48.32	-25.68	74	41.59	35.17	3.09	31.53	132	165	Peak
7236	49.42	-29.98	79.4	40.95	36.18	3.24	30.95	112	102	Peak



Test Mode :	802.11n HT20			Temperature :		22~23°C			
Test Channel :	01			Relative Humidity :		41~42%			
Test Engineer :	Steven Hao			Polarization :		Vertical			
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 2399MHz and 7236MHz are not within a restricted band, and their limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2399	59.75	-17.81	77.56	56.29	32.86	2.11	31.51	100	97	Peak
2412	97.56	-	-	94.06	32.89	2.12	31.51	100	96	Peak
2412	86.37	-	-	82.87	32.89	2.12	31.51	100	96	Average
4824	48.61	-25.39	74	41.88	35.17	3.09	31.53	100	359	Peak
7236	49.55	-28.01	77.56	41.08	36.18	3.24	30.95	100	326	Peak

Test Mode :	802.11n HT20			Temperature :		22~23°C			
Test Channel :	06			Relative Humidity :		41~42%			
Test Engineer :	Steven Hao			Polarization :		Horizontal			
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	101.69	-	-	98.11	32.95	2.14	31.51	106	54	Peak
2437	90.31	-	-	86.73	32.95	2.14	31.51	106	54	Average
4874	49.14	-24.86	74	42.36	35.18	3.12	31.52	100	326	Peak
7311	50.07	-23.93	74	41.6	36.2	3.21	30.94	100	235	Peak



Test Mode :	802.11n HT20		Temperature :		22~23°C				
Test Channel :	06		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Vertical				
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	97.64	-	-	94.06	32.95	2.14	31.51	100	93	Peak
2437	86.64	-	-	83.06	32.95	2.14	31.51	100	93	Average
4874	48.27	-25.73	74	41.49	35.18	3.12	31.52	121	295	Peak
7312	50.02	-23.98	74	41.55	36.2	3.21	30.94	100	32	Peak

Test Mode :	802.11n HT20		Temperature :		22~23°C				
Test Channel :	11		Relative Humidity :		41~42%				
Test Engineer :	Steven Hao		Polarization :		Horizontal				
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.								

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	100.81	-	-	97.19	32.98	2.15	31.51	105	128	Peak
2462	90.02	-	-	86.4	32.98	2.15	31.51	105	128	Average
4924	48.59	-25.41	74	41.76	35.19	3.15	31.51	121	59	Peak
7386	50.08	-23.92	74	41.58	36.24	3.19	30.93	121	154	Peak

**FCC RF Test Report**

Report No. : FR341702C

Test Mode :	802.11n HT20			Temperature :		22~23°C				
Test Channel :	11			Relative Humidity :		41~42%				
Test Engineer :	Steven Hao			Polarization :		Vertical				
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.									

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2462	96.38	-	-	92.76	32.98	2.15	31.51	100	119	Peak
2462	85.24	-	-	81.62	32.98	2.15	31.51	100	119	Average
4924	49.11	-24.89	74	42.28	35.19	3.15	31.51	100	237	Peak
7386	49.97	-24.03	74	41.47	36.24	3.19	30.93	100	251	Peak

Test Mode :	802.11n HT40			Temperature :		22~23°C				
Test Channel :	03			Relative Humidity :		41~42%				
Test Engineer :	Steven Hao			Polarization :		Horizontal				
Remark :	1. 2422 MHz is fundamental signal which can be ignored. 2. 2398.47MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. 3. Average measurement was not performed if peak level went lower than the average limit.									

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2398.47	54.35	-21.74	76.09	50.89	32.86	2.11	31.51	199	297	Peak
2422	96.09	-	-	92.55	32.92	2.13	31.51	107	50	Peak
2422	85.34	-	-	81.8	32.92	2.13	31.51	107	50	Average
4844	48.64	-25.36	74	41.89	35.18	3.1	31.53	102	49	Peak
7266	48.91	-25.09	74	40.45	36.19	3.22	30.95	121	326	Peak



Test Mode :	802.11n HT40			Temperature :		22~23°C				
Test Channel :	03			Relative Humidity :		41~42%				
Test Engineer :	Steven Hao			Polarization :		Vertical				
Remark :	<ol style="list-style-type: none">2422 MHz is fundamental signal which can be ignored.2397.12MHz is not within a restricted band, and its limit line is 20dB below the highest emission level.Average measurement was not performed if peak level went lower than the average limit.									

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2397.12	54.7	-20.51	75.21	51.24	32.86	2.11	31.51	101	130	Peak
2422	95.21	-	-	91.67	32.92	2.13	31.51	100	94	Peak
2422	83.81	-	-	80.27	32.92	2.13	31.51	100	94	Average
4844	48.91	-25.09	74	42.16	35.18	3.1	31.53	145	69	Peak
7266	49.77	-24.23	74	41.31	36.19	3.22	30.95	101	225	Peak

Test Mode :	802.11n HT40			Temperature :		22~23°C				
Test Channel :	06			Relative Humidity :		41~42%				
Test Engineer :	Steven Hao			Polarization :		Horizontal				
Remark :	<ol style="list-style-type: none">2437 MHz is fundamental signal which can be ignored.Average measurement was not performed if peak level went lower than the average limit.									

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	95.81	-	-	92.23	32.95	2.14	31.51	105	50	Peak
2437	85.67	-	-	82.09	32.95	2.14	31.51	105	50	Average
4874	48.96	-25.04	74	42.18	35.18	3.12	31.52	121	268	Peak
7311	49.54	-24.46	74	41.07	36.2	3.21	30.94	124	97	Peak



Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	06	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2437	93.61	-	-	90.03	32.95	2.14	31.51	139	103	Peak
2437	83.19	-	-	79.61	32.95	2.14	31.51	139	103	Average
4874	49.36	-24.64	74	42.58	35.18	3.12	31.52	154	69	Peak
7311	49.48	-24.52	74	41.01	36.2	3.21	30.94	132	45	Peak

Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Horizontal
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
31.29	18.63	-21.37	40	34.58	17.29	0.34	33.58	-	-	Peak
63.54	12.8	-27.2	40	40.67	5.22	0.5	33.59	-	-	Peak
113.71	24.36	-19.14	43.5	45.56	11.8	0.61	33.61	-	-	Peak
268.49	24.16	-21.84	46	44.3	12.34	0.94	33.42	-	-	Peak
343.18	23.12	-22.88	46	41.04	14.35	1.09	33.36	-	-	Peak
942.13	27.43	-18.57	46	37.42	20.7	1.75	32.44	200	106	Peak
2452	93.71	-	-	90.13	32.95	2.14	31.51	100	142	Peak
2452	83.03	-	-	79.45	32.95	2.14	31.51	100	142	Average
4904	48.96	-25.04	74	42.15	35.19	3.14	31.52	145	212	Peak
7356	49.37	-24.63	74	40.88	36.22	3.2	30.93	100	0	Peak



Test Mode :	802.11n HT40	Temperature :	22~23°C
Test Channel :	09	Relative Humidity :	41~42%
Test Engineer :	Steven Hao	Polarization :	Vertical
Remark :	1. 2452 MHz is fundamental signal which can be ignored. 2. Average measurement was not performed if peak level went lower than the average limit.		

Frequency (MHz)	Level (dB μ V/m)	Over Limit (dB)	Limit Line (dB μ V/m)	Read Level (dB μ V)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
30.11	25.36	-14.64	40	40.59	18	0.34	33.57	100	0	Peak
93.11	20.88	-22.62	43.5	44.43	9.51	0.56	33.62	-	-	Peak
117.36	22.12	-21.38	43.5	43.3	11.8	0.62	33.6	-	-	Peak
129.01	21.17	-22.33	43.5	42.38	11.71	0.67	33.59	-	-	Peak
188.41	17.38	-26.12	43.5	41.66	8.48	0.8	33.56	-	-	Peak
942.13	26.95	-19.05	46	36.94	20.7	1.75	32.44	-	-	Peak
2452	90.48	-	-	86.9	32.95	2.14	31.51	182	78	Peak
2452	79.32	-	-	75.74	32.95	2.14	31.51	182	78	Average
4904	48.22	-25.78	74	41.41	35.19	3.14	31.52	145	67	Peak
7356	49.65	-24.35	74	41.16	36.22	3.2	30.93	149	167	Peak



3.6 AC Conducted Emission Measurement

3.6.1 Limit of AC Conducted Emission

For equipment that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 KHz to 30 MHz shall not exceed the limits in the following table.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-Peak	Average
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of the frequency.

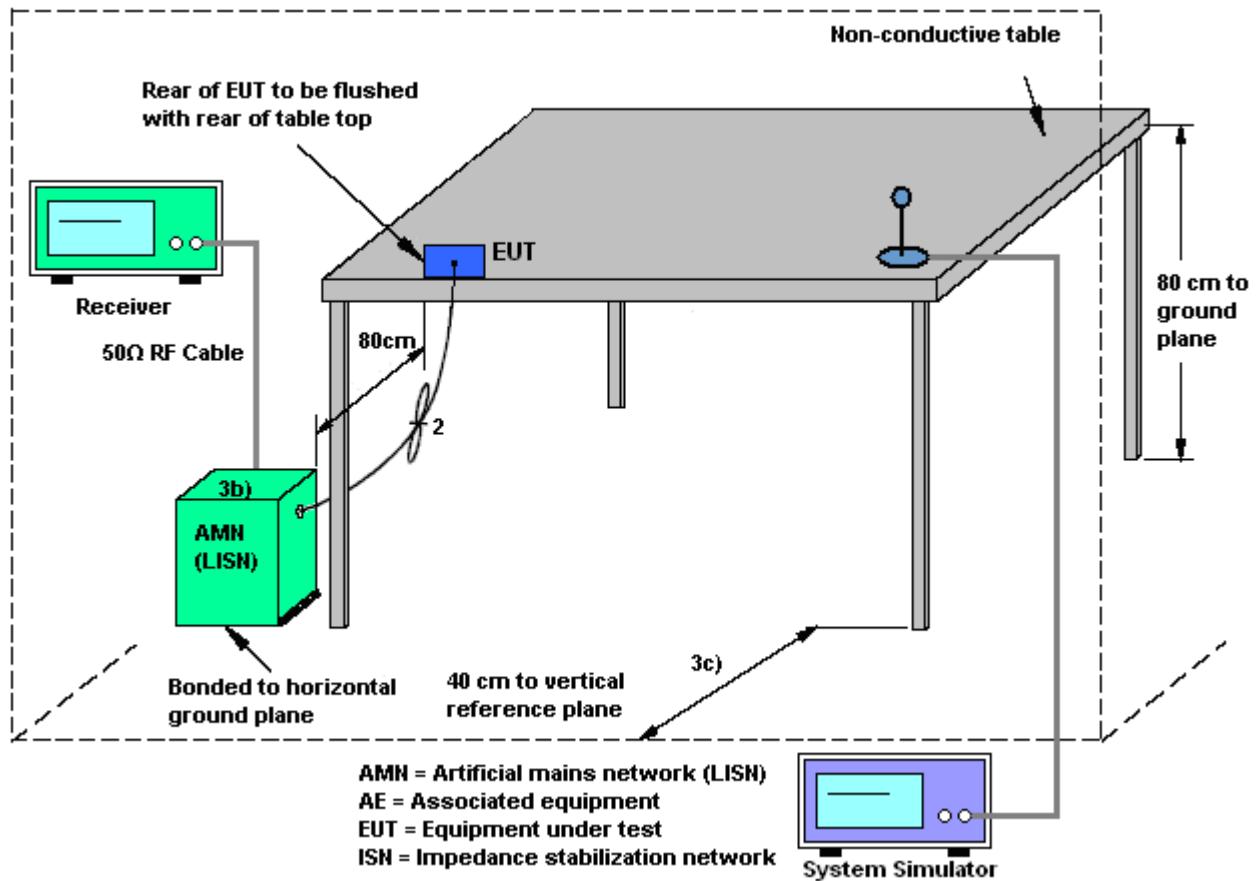
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.10-2009.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN).
4. All the support units are connecting to the other LISN.
5. The LISN provides 50 ohm coupling impedance for the measuring instrument.
6. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
7. Both sides of AC line were checked for maximum conducted interference.
8. The frequency range from 150 KHz to 30 MHz was searched.
9. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

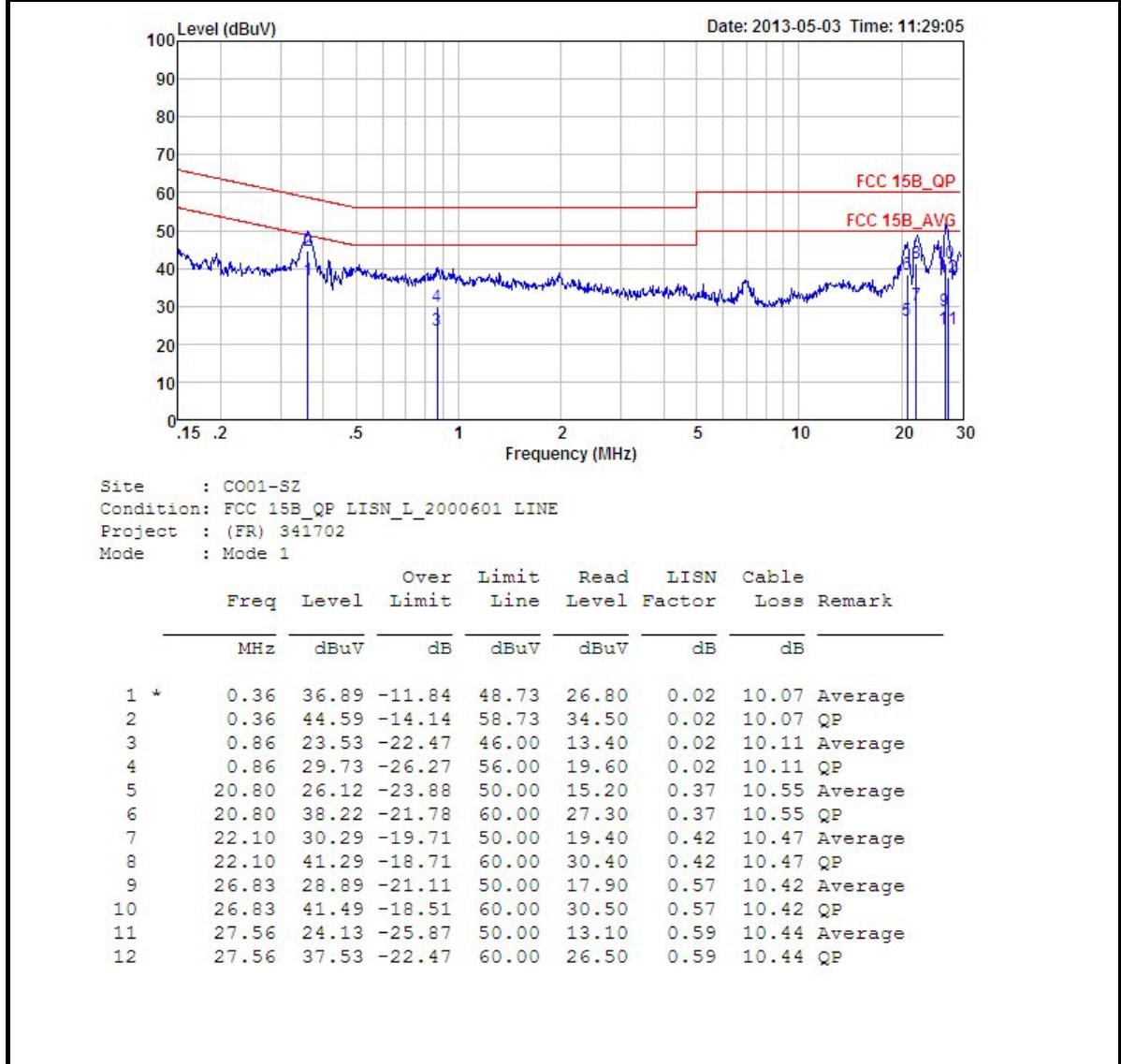
3.6.4 Test Setup





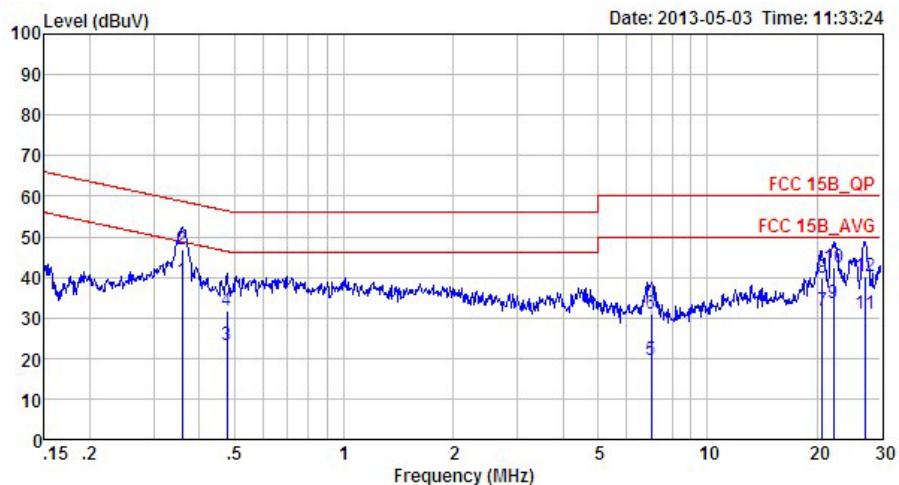
3.6.5 Test Result of AC Conducted Emission

Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	Jerry Li	Relative Humidity :	50~51%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		





Test Mode :	Mode 1	Temperature :	24~25°C
Test Engineer :	Jerry Li	Relative Humidity :	50~51%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	GSM850 Idle + Bluetooth Link + WLAN Link + USB Cable (Charging from Adapter) + Earphone		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Site : CO01-SZ
Condition: FCC 15B_QP LISN_N_2000601 NEUTRAL
Project : (FR) 341702
Mode : Mode 1

Freq	Level	Over	Limit	Read	LISN	Cable	Remark
		Freq	Level	Line	Level	Factor	
1 *	0.36	39.19	-9.56	48.75	29.10	0.02	10.07 Average
2	0.36	46.99	-11.76	58.75	36.90	0.02	10.07 QP
3	0.48	23.40	-23.01	46.41	13.30	0.02	10.08 Average
4	0.48	31.70	-24.71	56.41	21.60	0.02	10.08 QP
5	7.01	19.73	-30.27	50.00	9.40	0.13	10.20 Average
6	7.01	31.03	-28.97	60.00	20.70	0.13	10.20 QP
7	20.71	31.58	-18.42	50.00	20.49	0.53	10.56 Average
8	20.71	39.88	-20.12	60.00	28.79	0.53	10.56 QP
9	22.19	33.69	-16.31	50.00	22.59	0.63	10.47 Average
10	22.19	42.49	-17.51	60.00	31.39	0.63	10.47 QP
11	27.25	31.13	-18.87	50.00	19.80	0.90	10.43 Average
12	27.25	40.23	-19.77	60.00	28.90	0.90	10.43 QP



3.7 Antenna Requirements

3.7.1 Standard Applicable

If directional gain of transmitting antennas is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi. For the fixed point-to-point operation, the power shall be reduced by one dB for every 3 dB that the directional gain of the antenna exceeds 6 dBi. 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 FCC rule.

3.7.2 Antenna Connected Construction

Non-standard connector used.

3.7.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP30	101400	9kHz~30GHz	Mar. 28, 2013	Apr. 29, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Power Meter	Anritsu	ML2495A	1218010	N/A	Mar. 28, 2013	Apr. 29, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Power Sensor	Anritsu	MA2411B	1207253	N/A	Mar. 28, 2013	Apr. 29, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
DC Power Supply	TOPWORD	3303DR	N/A714621	N/A	Mar. 28, 2013	Apr. 29, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
Thermal Chamber	Hongzhan	LP-150U	HD20120425	N/A	Mar. 28, 2013	Apr. 29, 2013	Mar. 27, 2014	Conducted (TH01-SZ)
EMI Test Receiver	R&S	ESCI	100534	9kHz~3GHz	Nov. 08, 2012	May 14,2013	Nov. 07, 2013	Radiation (03CH01-KS)
Spectrum Analyzer	R&S	FSP30	100400	9kHz~30GHz	Jun. 01, 2012	May 14,2013	May 31, 2013	Radiation (03CH01-KS)
Bilog Antenna	SCHAFFNER	CBL6112D	23182	25MHz~2GHz	Dec. 07, 2012	May 14,2013	Dec. 06, 2013	Radiation (03CH01-KS)
HFH2-Z2 Loop Antenna	R&S	HFH2-Z2	100321	9KHZ-30MHZ	Oct. 22, 2012	May 14,2013	Oct. 21, 2013	Radiation (03CH01-KS)
Double Ridge Horn Antenna	ETS-Lindgren	1908/7/13	00075957	1GHz~18GHz	Dec. 07, 2012	May 14,2013	Dec. 06, 2013	Radiation (03CH01-KS)
Amplifier	com-power	PA-103A	161069	1MHz~1GHz	Jun. 01, 2012	May 14,2013	May 31, 2013	Radiation (03CH01-KS)
Amplifier	Agilent	8449B	3008A02370	1GHz~26.5GHz	Dec. 29, 2012	May 14,2013	Dec. 28, 2013	Radiation (03CH01-KS)
Active Horn Antenna	com-power	AHA-118	701023	1GHz~18GHz	Nov. 07, 2012	May 14,2013	Nov. 06, 2013	Radiation (03CH01-KS)
SHF-EHF Horn	Schwarzbeck	BBHA 9170	9170249	15GHz~40GHz	Nov. 23, 2012	May 14,2013	Nov. 22, 2013	Radiation (03CH01-KS)
ESCIO TEST Receiver	R&S	1142.8007.03	100724	9K-3GHz	Mar. 28, 2013	May 03, 2013	Mar. 27, 2014	Conduction (CO01-SZ)
AC LISN	ETS-LINDGREN	3816/2SH	00103912	9KHz~30MHz	Mar. 28, 2013	May 03, 2013	Mar. 27, 2014	Conduction (CO01-SZ)
AC LISN	ETS-LINDGREN	3816/2SH	00103892	9KHz~30MHz	Mar. 28, 2013	May 03, 2013	Mar. 27, 2014	Conduction (CO01-SZ)
AC Source	Chroma	61602	616020000891	N/A	Nov.20, 2012	May 03, 2013	Nov. 19, 2013	Conduction (CO01-SZ)
System Simulator	Agilent	E5515C	MY50264168	GSM/WCDMA /CDMA2000	Oct. 09, 2012	May 03, 2013	Oct. 08, 2013	Conduction (CO01-SZ)



5 Uncertainty of Evaluation

Uncertainty of Conducted Emission Measurement (150 KHz ~ 30 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.26
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Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.54
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Uncertainty of Radiated Emission Measurement (1 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	4.72
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Appendix A. Photographs of EUT

Please refer to Sporton report number EP341702 as below.