

Ref 20 dBm • Att 20 dB • RBW 100 kHz Marker 1 [T1] -0.54 dBm
 • VBW 300 kHz SWT 20 ms 5.783728756 GHz

20 Offset 26.3 dB

1 99.99999999999999

1

0

-10

-20

-30

-40

-50

-60

-70

-80

Center 5.785 GHz 2.1918 MHz/ Span 21.918 MHz

Ref 20 dBm Att 20 dB RBW 100 kHz VBW 300 kHz SWT 20 ms Marker 1 [T1] 0.55 dBm 5.786259700 GHz

Offset 26.8 dB

1 99% MAXH

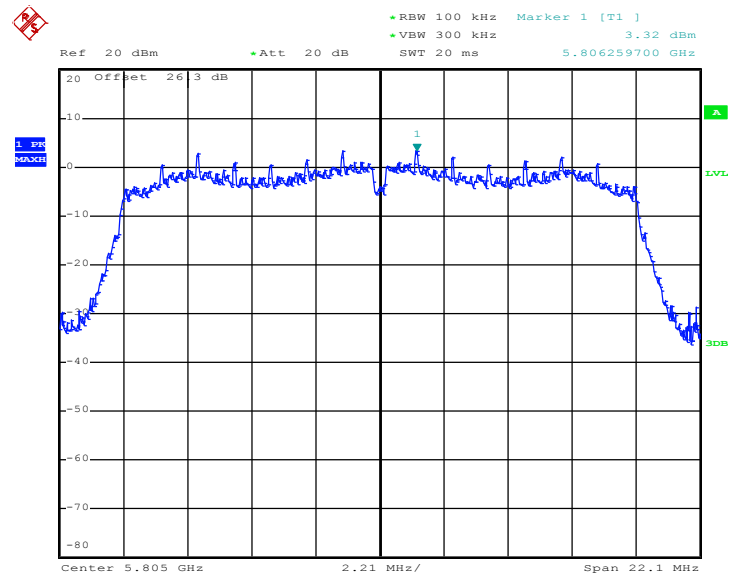
1

10 0 -10 -20 -30 -40 -50 -60 -70 -80

Center 5.785 GHz 2.21 MHz/ Span 22.1 MHz

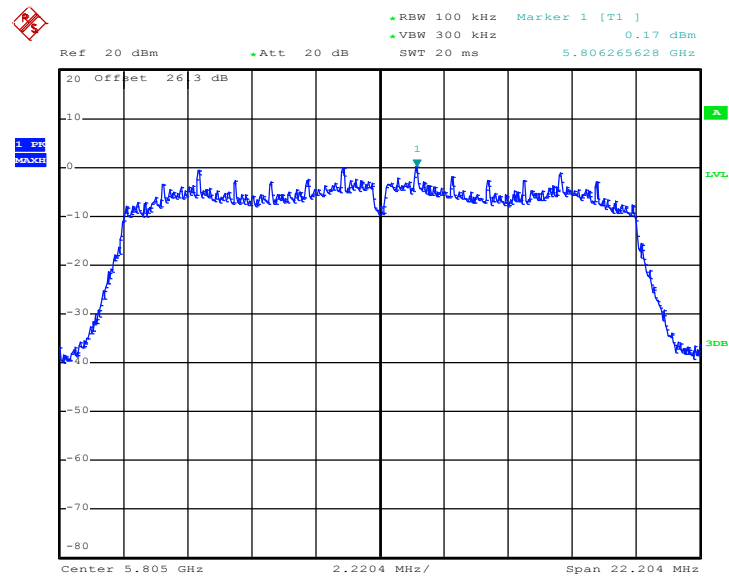
Report No. : FR210222
Report Version : Rev. 02
Page Number : 111 of 220

PSD Plot on 5GHz 802.11n (BW 20MHz) Channel 161 - SISO Ant 1



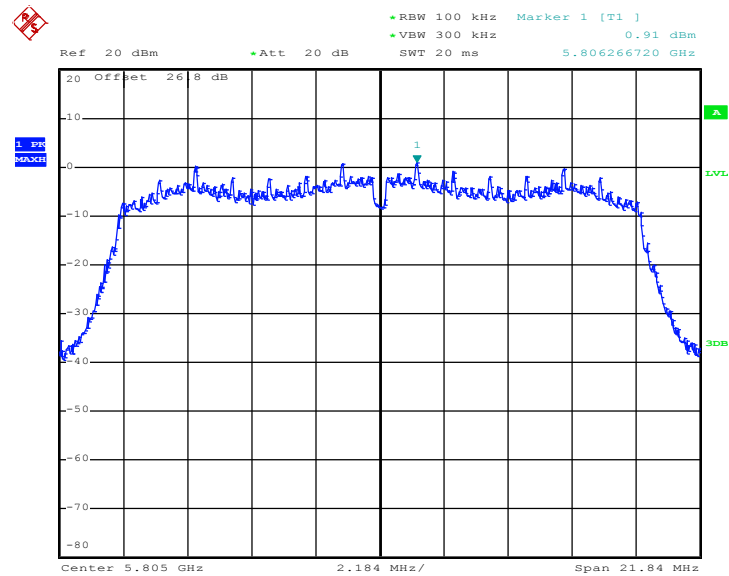
Date: 30.MAY.2012 16:39:42

PSD Plot on 5GHz 802.11n (BW 20MHz) Channel 161 - MIMO Ant 1



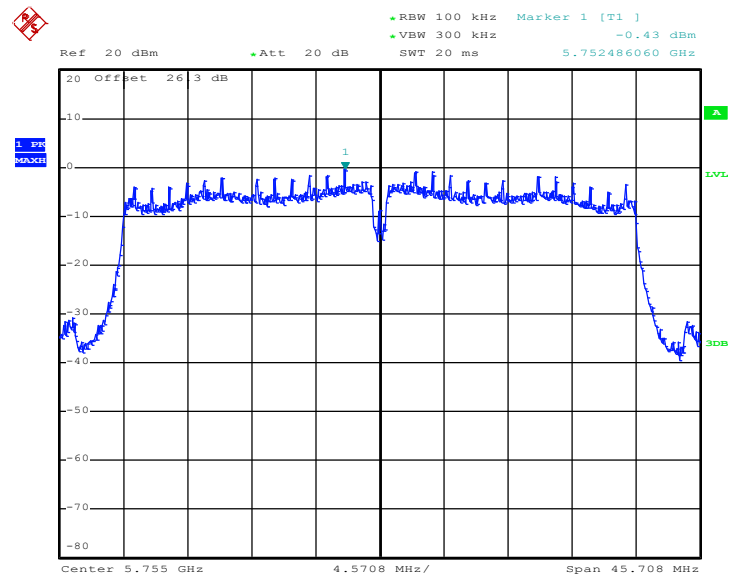
Date: 30.MAY.2012 16:30:10

PSD Plot on 5GHz 802.11n (BW 20MHz) Channel 161 - MIMO Ant 2



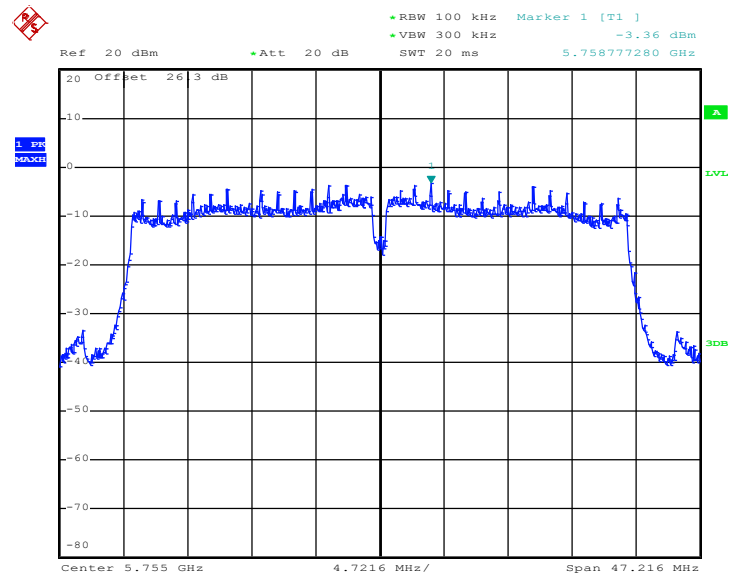
Date: 30.MAY.2012 18:31:08

PSD Plot on 5GHz 802.11n (BW 40MHz) Channel 151 - SISO Ant 1



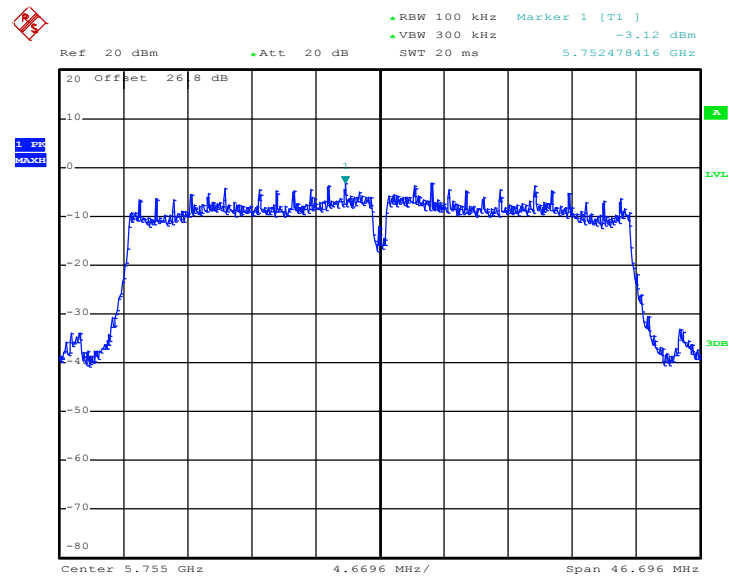
Date: 30.MAY.2012 15:40:30

PSD Plot on 5GHz 802.11n (BW 40MHz) Channel 151 - MIMO Ant 1

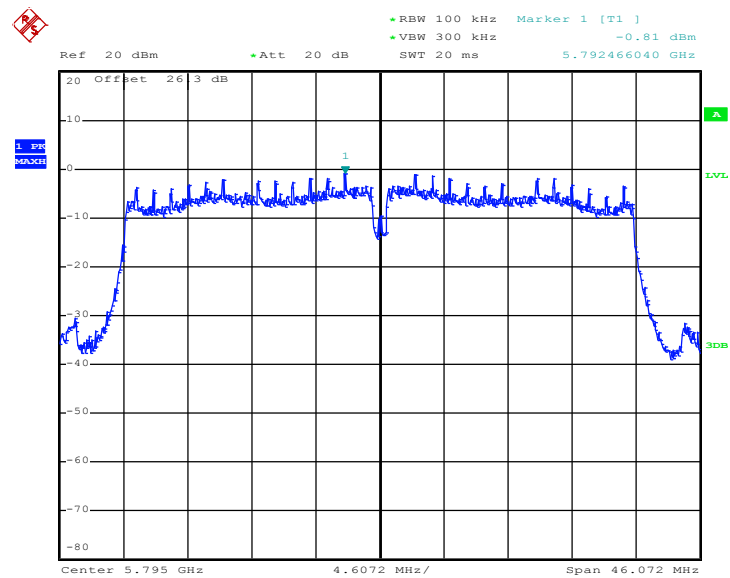


Date: 30.MAY.2012 16:51:28

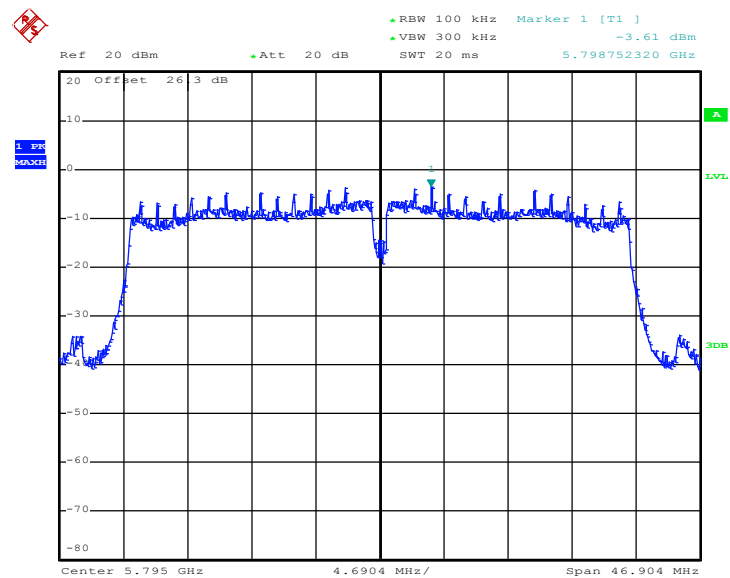
PSD Plot on 5GHz 802.11n (BW 40MHz) Channel 151 - MIMO Ant 2



Date: 30.MAY.2012 19:39:32

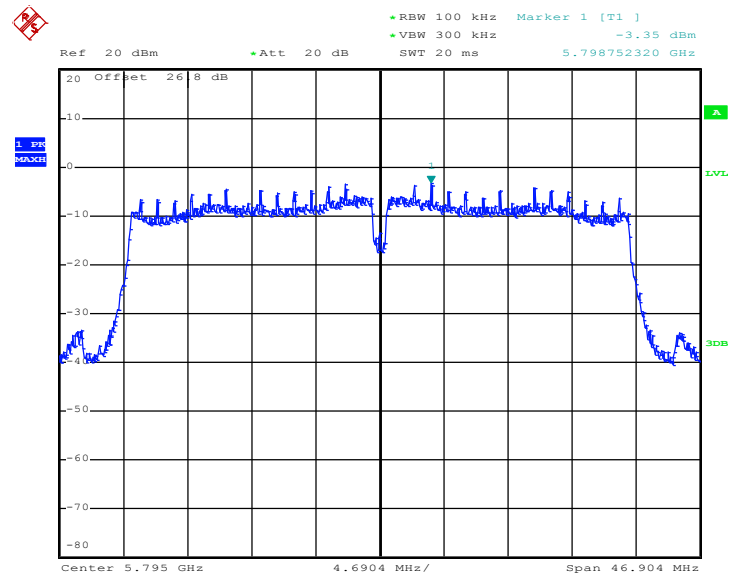


Date: 30.MAY.2012 15:36:41



Date: 30.MAY.2012 16:43:34

PSD Plot on 5GHz 802.11n (BW 40MHz) Channel 159 - MIMO Ant 2



Date: 30.MAY.2012 18:15:46

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.

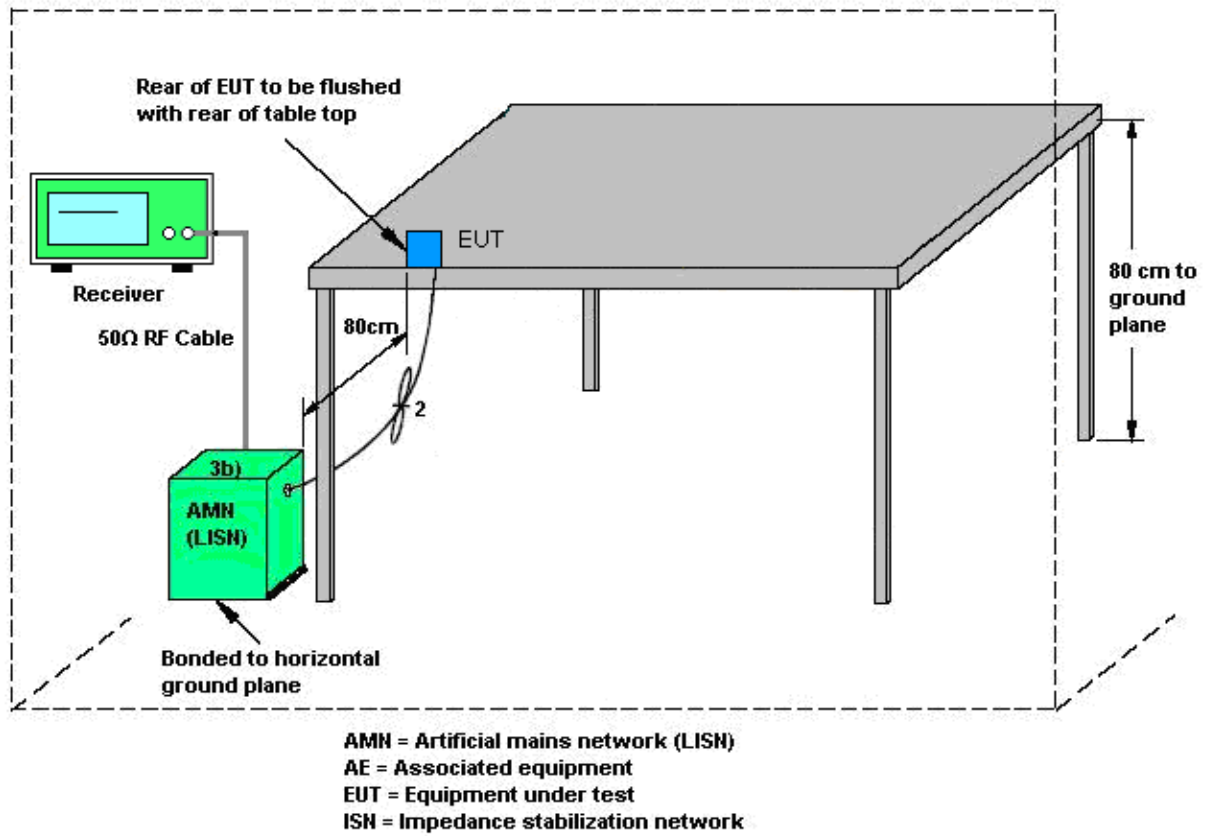
3.6.2 Measuring Instruments

See list of measuring instruments of this test report.

3.6.3 Test Procedures

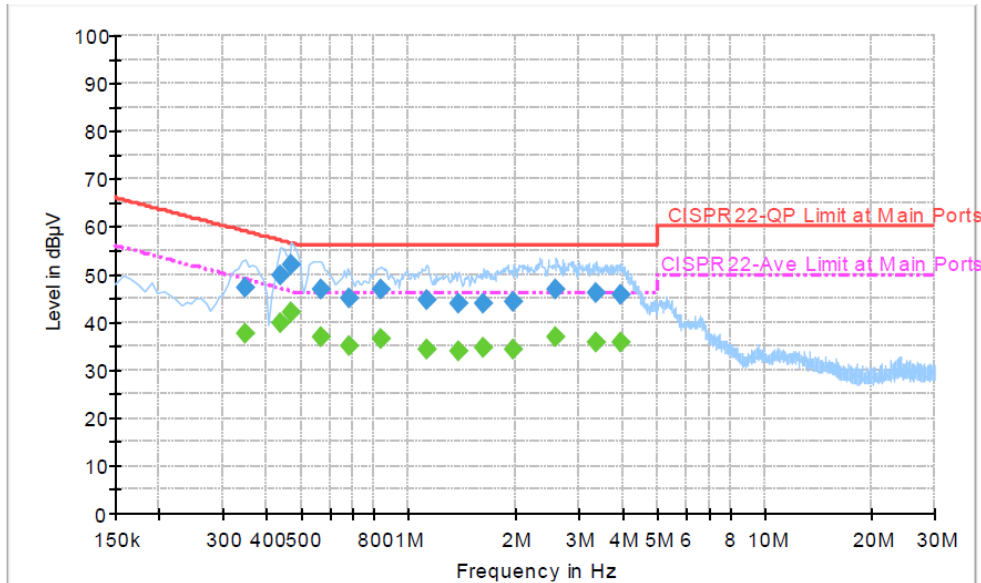
1. The testing follows the guidelines in ANSI C63.4-2003.
2. The EUT was placed 0.4 meter from the conducting wall of the shielding room, and it was kept at least 80 centimeters from any other grounded conducting surface.
3. Connect EUT to the power mains through a line impedance stabilization network (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

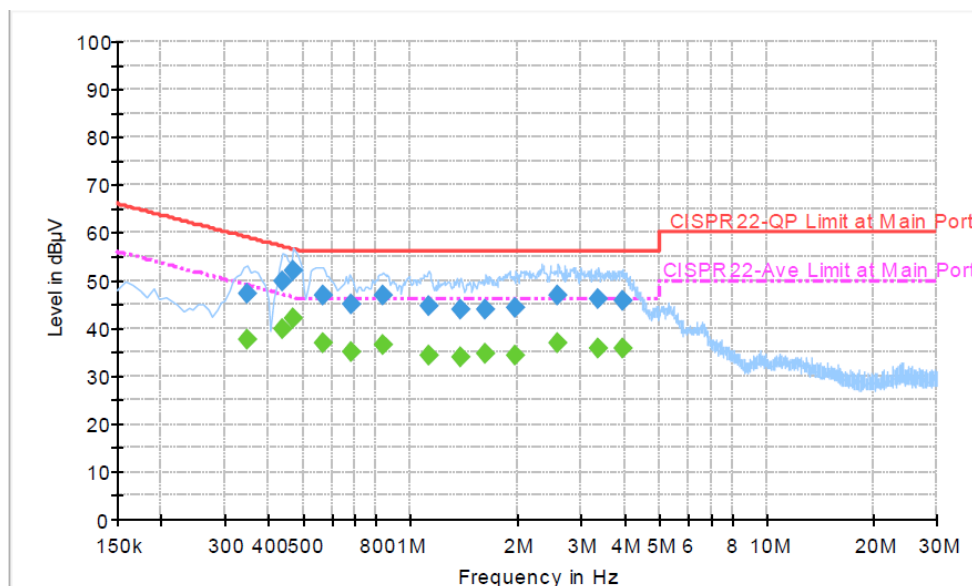
Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.350000	47.4	Off	L1	19.3	11.6	59.0
0.438000	49.9	Off	L1	19.4	7.2	57.1
0.470000	52.1	Off	L1	19.4	4.4	56.5
0.566000	47.0	Off	L1	19.3	9.0	56.0
0.686000	45.0	Off	L1	19.5	11.0	56.0
0.838000	46.7	Off	L1	19.5	9.3	56.0
1.126000	44.5	Off	L1	19.4	11.5	56.0
1.390000	43.9	Off	L1	19.4	12.1	56.0
1.630000	43.7	Off	L1	19.4	12.3	56.0
1.974000	44.3	Off	L1	19.4	11.7	56.0
2.598000	46.9	Off	L1	19.5	9.1	56.0
3.382000	46.0	Off	L1	19.5	10.0	56.0
3.926000	45.9	Off	L1	19.5	10.1	56.0

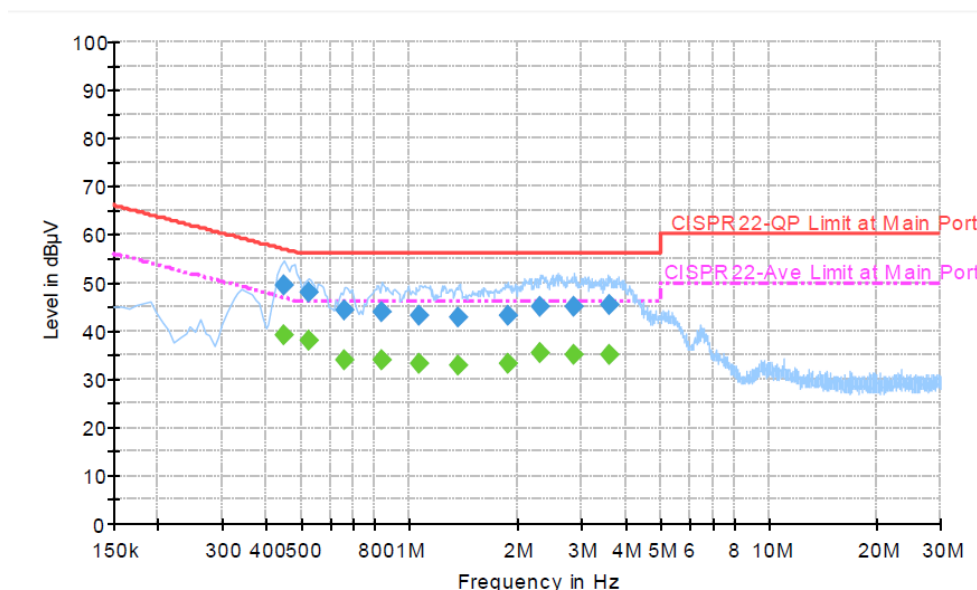
Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.350000	37.5	Off	L1	19.3	11.5	49.0
0.438000	40.0	Off	L1	19.4	7.1	47.1
0.470000	42.0	Off	L1	19.4	4.5	46.5
0.566000	37.0	Off	L1	19.3	9.0	46.0
0.686000	34.9	Off	L1	19.5	11.1	46.0
0.838000	36.6	Off	L1	19.5	9.4	46.0
1.126000	34.5	Off	L1	19.4	11.5	46.0
1.390000	34.0	Off	L1	19.4	12.0	46.0
1.630000	34.6	Off	L1	19.4	11.4	46.0
1.974000	34.4	Off	L1	19.4	11.6	46.0
2.598000	37.0	Off	L1	19.5	9.0	46.0
3.382000	35.9	Off	L1	19.5	10.1	46.0
3.926000	35.8	Off	L1	19.5	10.2	46.0

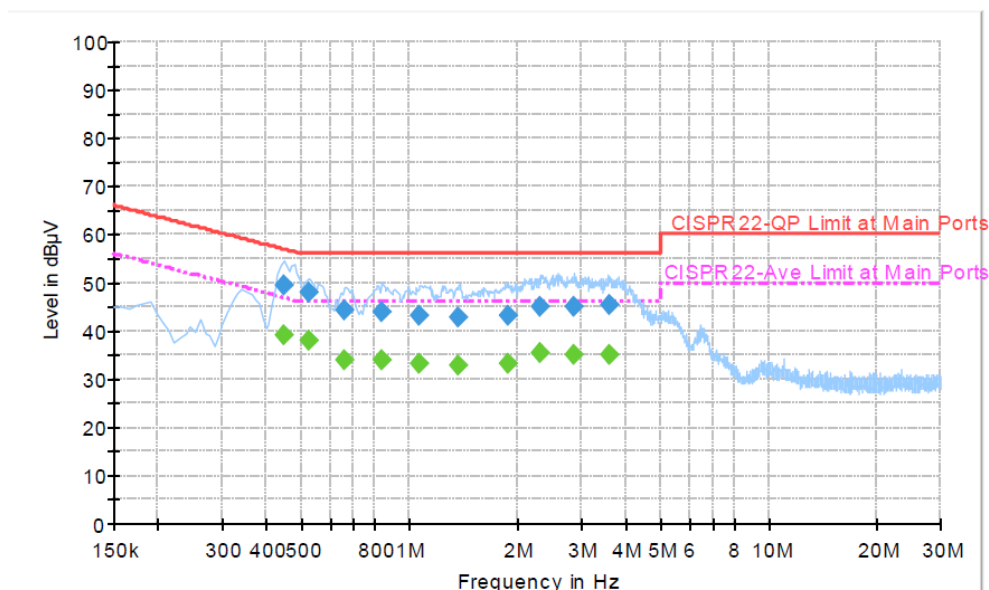
Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.446000	49.4	Off	N	19.3	7.5	56.9
0.526000	48.0	Off	N	19.3	8.0	56.0
0.662000	44.1	Off	N	19.4	11.9	56.0
0.838000	43.9	Off	N	19.5	12.1	56.0
1.070000	43.2	Off	N	19.4	12.8	56.0
1.374000	42.9	Off	N	19.5	13.1	56.0
1.878000	43.3	Off	N	19.4	12.7	56.0
2.302000	45.2	Off	N	19.5	10.8	56.0
2.862000	45.0	Off	N	19.5	11.0	56.0
3.606000	45.3	Off	N	19.5	10.7	56.0

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.446000	39.2	Off	N	19.3	7.7	46.9
0.526000	38.1	Off	N	19.3	7.9	46.0
0.662000	34.0	Off	N	19.4	12.0	46.0
0.838000	34.0	Off	N	19.5	12.0	46.0
1.070000	33.3	Off	N	19.4	12.7	46.0
1.374000	33.0	Off	N	19.5	13.0	46.0
1.878000	33.2	Off	N	19.4	12.8	46.0
2.302000	35.3	Off	N	19.5	10.7	46.0
2.862000	34.9	Off	N	19.5	11.1	46.0
3.606000	35.2	Off	N	19.5	10.8	46.0

3.7 Radiated Emission Measurement

3.7.1 Limit of Radiated 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

3.7.2 Measuring Instruments

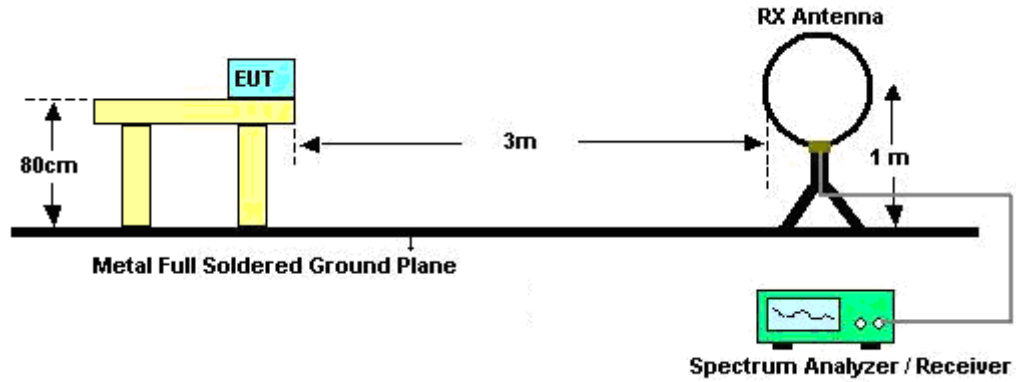
See list of measuring instruments of this test report.

3.7.3 Test Procedures

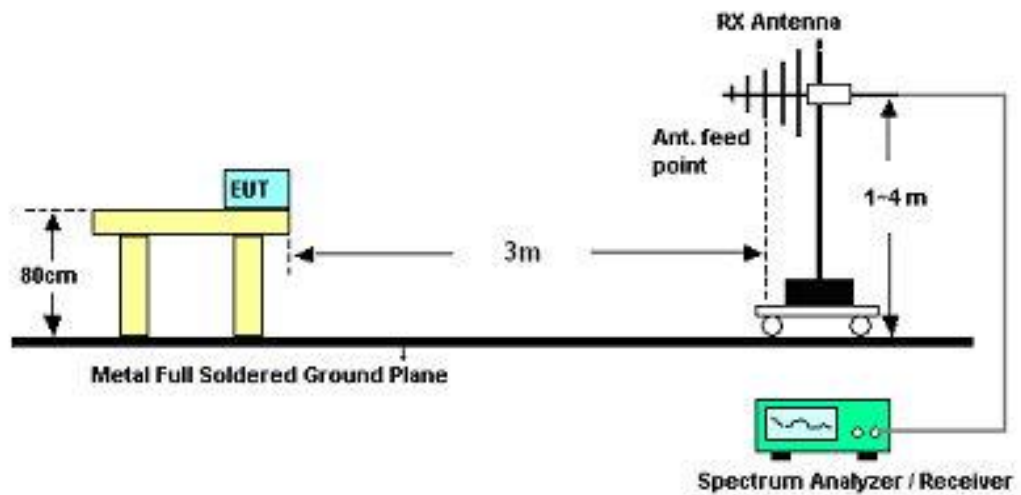
1. The testing follows the guidelines in ANSI C63.4-2003
 2. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines in ANSI C63.4-2003.
 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. The table was rotated 360 degrees to determine the position of the highest radiation.
 6. 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, and then set VBW=10Hz, while maintaining all of the other instrument settings for Average measurement.
- Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
7. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
 8. If the emission level of the EUT measured by the peak detector is more than 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

3.7.4 Test Setup

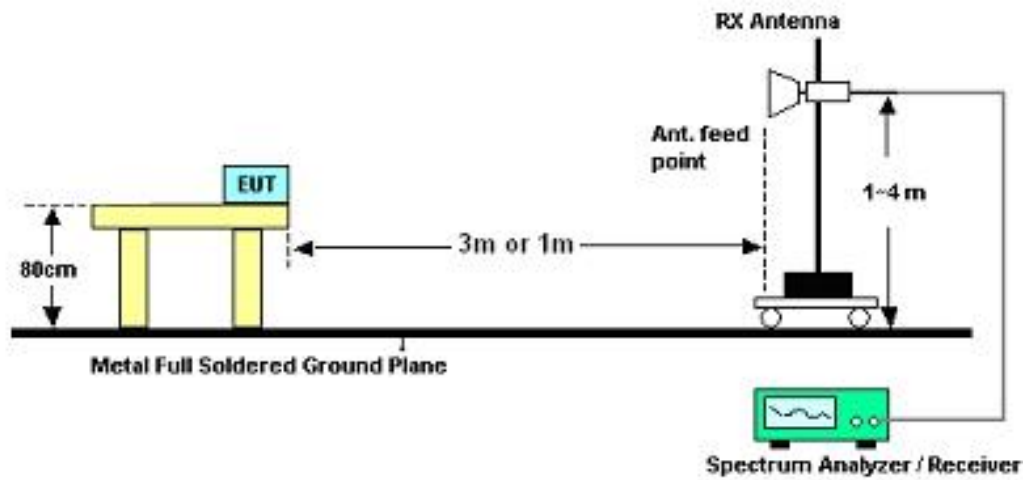
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



3.7.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

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.

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

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 3216 MHz, 7236 MHz, and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 110.69 dBuV/m - 20dB = 90.69dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.8	50.41	-3.59	54	46.28	32.06	6.03	33.96	109	343	Average
2389.8	61.49	-12.51	74	57.36	32.06	6.03	33.96	109	343	Peak
2412	106.72	-	-	102.54	32.08	6.07	33.97	109	343	Average
2412	110.69	-	-	106.51	32.08	6.07	33.97	109	343	Peak
2490	37.18	-16.82	54	32.8	32.2	6.18	34	109	343	Average
2490	48.87	-25.13	74	44.49	32.2	6.18	34	109	343	Peak
3216	42.59	-48.1	90.69	63.01	32.74	7.19	60.35	100	0	Peak
4824	51.92	-2.08	54	68.69	34.1	9.12	59.99	100	269	Average
4824	54.39	-19.61	74	71.16	34.1	9.12	59.99	100	269	Peak
7236	47.7	-42.99	90.69	61.36	35.7	10.03	59.39	100	0	Peak
9648	43.85	-46.84	90.69	55.56	36.62	11.99	60.32	100	0	Peak

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz and 9648 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 104.29 dBuV/m - 20dB = 84.29 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	45.05	-8.95	54	40.92	32.06	6.03	33.96	100	99	Average
2389.99	55.93	-18.07	74	51.8	32.06	6.03	33.96	100	99	Peak
2412	100.46	-	-	96.28	32.08	6.07	33.97	100	99	Average
2412	104.29	-	-	100.11	32.08	6.07	33.97	100	99	Peak
2496	33.67	-20.33	54	29.29	32.2	6.18	34	100	99	Average
2496	45.88	-28.12	74	41.5	32.2	6.18	34	100	99	Peak
4824	47.82	-26.18	74	64.59	34.1	9.12	59.99	100	0	Peak
7236	47.14	-37.15	84.29	60.8	35.7	10.03	59.39	100	0	Peak
9648	47.81	-36.48	84.29	59.52	36.62	11.99	60.32	100	0	Peak

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2437 MHz is Fundamental signal which can be ignored. 2. 3249 MHz and 9748 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 109.56 dBuV/m - 20dB = 89.56 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
86.7	23.15	-16.85	40	45.68	8.24	0.92	31.69	144	187	Peak
162.03	26.4	-17.1	43.5	46.24	10.31	1.22	31.37	-	-	Peak
231.96	20.94	-25.06	46	39.34	11.32	1.49	31.21	-	-	Peak
326.6	24.46	-21.54	46	39.81	14.03	1.84	31.22	-	-	Peak
417.6	26.5	-19.5	46	39.2	16.38	2.2	31.28	-	-	Peak
559	26.68	-19.32	46	36.15	19.09	2.57	31.13	-	-	Peak
2362	49.24	-4.76	54	45.19	32.01	5.99	33.95	110	344	Average
2362	61.15	-12.85	74	57.1	32.01	5.99	33.95	110	344	Peak
2437	105.75	-	-	101.49	32.13	6.11	33.98	110	344	Average
2437	109.56	-	-	105.33	32.1	6.11	33.98	110	344	Peak
2484	39.33	-14.67	54	34.97	32.18	6.18	34	110	344	Average
2484	52.55	-21.45	74	48.19	32.18	6.18	34	110	344	Peak
3249	42.08	-47.48	89.56	62.43	32.75	7.29	60.39	100	0	Peak
4874	52.95	-1.05	54	69.5	34.1	9.13	59.78	113	274	Average
4874	55.11	-18.89	74	71.66	34.1	9.13	59.78	113	274	Peak
7311	47.75	-6.25	54	61.44	35.7	10.06	59.45	100	274	Average
7311	51.59	-22.41	74	65.28	35.7	10.06	59.45	100	274	Peak
9748	46.11	-43.45	89.56	57.82	36.76	11.94	60.41	100	0	Peak

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2437 MHz is Fundamental signal which can be ignored. 2. 9748 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 102.66 dBuV/m - 20dB = 82.66 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.69	24.04	-15.96	40	43.45	11.7	0.64	31.75	100	221	Peak
142.59	25.3	-18.2	43.5	44.19	11.35	1.2	31.44			Peak
162.3	26.23	-17.27	43.5	46.07	10.31	1.22	31.37			Peak
407.8	28.23	-17.77	46	41.31	16.16	2.17	31.41			Peak
512.1	27.01	-18.99	46	37.22	18.3	2.47	30.98			Peak
796.3	24.45	-21.55	46	29.47	22.04	3.13	30.19			Peak
2366	41.96	-12.04	54	37.91	32.01	5.99	33.95	126	94	Average
2366	54.81	-19.19	74	50.76	32.01	5.99	33.95	126	94	Peak
2437	98.79	-	-	94.53	32.13	6.11	33.98	126	94	Average
2437	102.66	-	-	98.4	32.13	6.11	33.98	126	94	Peak
2484	33.78	-20.22	54	29.42	32.18	6.18	34	126	94	Average
2484	45.7	-28.3	74	41.34	32.18	6.18	34	126	94	Peak
4874	48.02	-5.98	54	64.57	34.1	9.13	59.78	100	49	Average
4874	51.53	-22.47	74	68.08	34.1	9.13	59.78	100	49	Peak
7311	50.79	-23.21	74	64.48	35.7	10.06	59.45	100	0	Peak
9748	49.49	-33.17	82.66	61.2	36.76	11.94	60.41	100	0	Peak

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 3282 MHz and 9848 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 110.64 dBuV/m - 20dB = 90.64 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2364	49.96	-4.04	54	45.91	32.01	5.99	33.95	111	347	Average
2364	61.27	-12.73	74	57.22	32.01	5.99	33.95	111	347	Peak
2462	106.68	-	-	102.38	32.15	6.14	33.99	111	347	Average
2462	110.64	-	-	106.34	32.15	6.14	33.99	111	347	Peak
2483.85	50.21	-3.79	54	45.85	32.18	6.18	34	111	347	Average
2483.85	59.17	-14.83	74	54.81	32.18	6.18	34	111	347	Peak
3282	41.9	-48.74	90.64	62.23	32.76	7.34	60.43	100	0	Peak
4924	52.02	-1.98	54	68.35	34.1	9.15	59.58	102	241	Average
4924	53.55	-20.45	74	69.88	34.1	9.15	59.58	102	241	Peak
7386	48.77	-25.23	74	62.49	35.7	10.1	59.52	100	0	Peak
9848	45.22	-45.42	90.64	56.94	36.88	11.88	60.48	100	0	Peak

Test Mode :	802.11b <Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2462 MHz is fundamental signal which can be ignored. 2. 9848 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 103.69 dBuV/m - 20dB = 83.69 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2350	41.57	-12.43	54	37.58	31.98	5.95	33.94	122	95	Average
2350	54.88	-19.12	74	50.89	31.98	5.95	33.94	122	95	Peak
2382	43.63	-10.37	54	39.53	32.03	6.03	33.96	122	95	Average
2382	55.37	-18.63	74	51.27	32.03	6.03	33.96	122	95	Peak
2462	99.79	-	-	95.49	32.15	6.14	33.99	122	95	Average
2462	103.69	-	-	99.39	32.15	6.14	33.99	122	95	Peak
2483.5	43.87	-10.13	54	39.51	32.18	6.18	34	122	95	Average
2483.5	53.41	-20.59	74	49.05	32.18	6.18	34	122	95	Peak
4924	50.4	-23.6	74	66.73	34.1	9.15	59.58	100	0	Peak
7386	47.06	-6.94	54	60.78	35.7	10.1	59.52	100	312	Average
7386	51.09	-22.91	74	64.81	35.7	10.1	59.52	100	312	Peak
9848	47.07	-36.62	83.69	58.79	36.88	11.88	60.48	100	0	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.28	53.55	-0.45	54	49.42	32.06	6.03	33.96	138	5	Average
2388.28	70.98	-3.02	74	66.85	32.06	6.03	33.96	138	5	Peak
2412	100.41	-	-	96.23	32.08	6.07	33.97	138	5	Average
2412	110.72	-	-	106.54	32.08	6.07	33.97	138	5	Peak
2486	35.92	-18.08	54	31.56	32.18	6.18	34	138	5	Average
2486	50.26	-23.74	74	45.9	32.18	6.18	34	138	5	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2387.9	51.33	-2.67	54	47.2	32.06	6.03	33.96	127	29	Average
2387.9	70.09	-3.91	74	65.96	32.06	6.03	33.96	127	29	Peak
2412	97.11	-	-	92.93	32.08	6.07	33.97	127	29	Average
2412	108.32	-	-	104.14	32.08	6.07	33.97	127	29	Peak
2488	38.69	-15.31	54	34.31	32.2	6.18	34	127	29	Average
2488	50.56	-23.44	74	46.18	32.2	6.18	34	127	29	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2364	50.9	-3.1	54	46.85	32.01	5.99	33.95	100	93	Average
2364	62.86	-11.14	74	58.81	32.01	5.99	33.95	100	93	Peak
2437	96.45	-	-	92.19	32.13	6.11	33.98	100	93	Average
2437	108.23	-	-	104	32.1	6.11	33.98	100	93	Peak
2486	37.69	-16.31	54	33.33	32.18	6.18	34	100	93	Average
2486	50.43	-23.57	74	46.07	32.18	6.18	34	100	93	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2364	44.58	-9.42	54	40.53	32.01	5.99	33.95	127	96	Average
2364	55.82	-18.18	74	51.77	32.01	5.99	33.95	127	96	Peak
2437	92.58	-	-	88.32	32.13	6.11	33.98	127	96	Average
2437	103.33	-	-	99.1	32.1	6.11	33.98	127	96	Peak
2486	34.5	-19.5	54	30.14	32.18	6.18	34	127	96	Average
2486	46.48	-27.52	74	42.12	32.18	6.18	34	127	96	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2358	48.28	-5.72	54	44.23	32.01	5.99	33.95	194	96	Average
2358	60.47	-13.53	74	56.42	32.01	5.99	33.95	194	96	Peak
2462	98.45	-	-	94.15	32.15	6.14	33.99	194	96	Average
2462	110	-	-	105.7	32.15	6.14	33.99	194	96	Peak
2483.66	51.37	-2.63	54	47.01	32.18	6.18	34	194	96	Average
2483.66	70.76	-3.24	74	66.4	32.18	6.18	34	194	96	Peak

Test Mode :	802.11g <Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2368	42.41	-11.59	54	38.36	32.01	5.99	33.95	156	103	Average
2368	55.07	-18.93	74	51.02	32.01	5.99	33.95	156	103	Peak
2462	94.14	-	-	89.84	32.15	6.14	33.99	156	103	Average
2462	106.17	-	-	101.87	32.15	6.14	33.99	156	103	Peak
2483.5	45.67	-8.33	54	41.31	32.18	6.18	34	156	103	Average
2483.5	63.95	-10.05	74	59.59	32.18	6.18	34	156	103	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 3216 MHz and 7236 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.64 dBuV/m - 20dB = 87.64 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
86.43	22.5	-17.5	40	45.04	8.24	0.92	31.7	-	-	Peak
162.03	27.36	-16.14	43.5	47.2	10.31	1.22	31.37	177	308	Peak
228.99	21.74	-24.26	46	40.36	11.12	1.47	31.21	-	-	Peak
417.6	27.57	-18.43	46	40.27	16.38	2.2	31.28	-	-	Peak
552	25.9	-20.1	46	35.6	18.97	2.56	31.23	-	-	Peak
792.1	24.39	-21.61	46	29.5	21.98	3.13	30.22	-	-	Peak
2389.8	52.16	-1.84	54	48.03	32.06	6.03	33.96	100	94	Average
2389.8	68.38	-5.62	74	64.25	32.06	6.03	33.96	100	94	Peak
2412	96.11	-	-	91.93	32.08	6.07	33.97	100	94	Average
2412	107.64	-	-	103.46	32.08	6.07	33.97	100	94	Peak
2484	34.43	-19.57	54	30.07	32.18	6.18	34	100	94	Average
2484	46.78	-27.22	74	42.42	32.18	6.18	34	100	94	Peak
3216	40.93	-46.71	87.64	61.35	32.74	7.19	60.35	100	0	Peak
4824	48.37	-25.63	74	65.14	34.1	9.12	59.99	100	0	Peak
7236	44.57	-43.07	87.64	58.23	35.7	10.02	59.38	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2412 MHz is fundamental signal which can be ignored. 2. 7236 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.66 dBuV/m - 20dB = 80.66 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
42.69	25.21	-14.79	40	44.62	11.7	0.64	31.75	133	200	Peak
142.32	25.14	-18.36	43.5	44.04	11.35	1.2	31.45	-	-	Peak
231.69	25.55	-20.45	46	43.95	11.32	1.49	31.21	-	-	Peak
415.5	29.42	-16.58	46	42.23	16.32	2.19	31.32	-	-	Peak
514.2	27.84	-18.16	46	38.02	18.33	2.48	30.99	-	-	Peak
794.2	23.99	-22.01	46	29.05	22.01	3.13	30.2	-	-	Peak
2389.8	46.81	-7.19	54	42.68	32.06	6.03	33.96	100	96	Average
2389.8	62.97	-11.03	74	58.84	32.06	6.03	33.96	100	96	Peak
2412	89.38	-	-	85.2	32.08	6.07	33.97	100	96	Average
2412	100.66	-	-	96.48	32.08	6.07	33.97	100	96	Peak
2500	33.41	-20.59	54	29.03	32.2	6.18	34	100	96	Average
2500	45.9	-28.1	74	41.52	32.2	6.18	34	100	96	Peak
4824	42.77	-31.23	74	59.54	34.1	9.12	59.99	100	0	Peak
7236	44.15	-36.51	80.66	57.8	35.7	10.03	59.38	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2437 MHz is fundamental signal which can be ignored. 2. 3249 MHz is not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 109.01 dBuV/m - 20dB = 89.01 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2366	48.17	-5.83	54	44.12	32.01	5.99	33.95	114	343	Average
2366	59.93	-14.07	74	55.88	32.01	5.99	33.95	114	343	Peak
2437	97.51	-	-	93.25	32.13	6.11	33.98	114	343	Average
2437	109.01	-	-	104.78	32.1	6.11	33.98	114	343	Peak
2486	36.95	-17.05	54	32.59	32.18	6.18	34	114	343	Average
2486	49.13	-24.87	74	44.77	32.18	6.18	34	114	343	Peak
3249	40.74	-48.27	89.01	61.09	32.75	7.29	60.39	100	0	Peak
4874	49.39	-24.61	74	65.94	34.1	9.13	59.78	100	0	Peak
7311	46.24	-27.76	74	59.94	35.7	10.06	59.46	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2358	39.17	-14.83	54	35.12	32.01	5.99	33.95	195	108	Average
2358	51.68	-22.32	74	47.63	32.01	5.99	33.95	195	108	Peak
2437	90.64	-	-	86.38	32.13	6.11	33.98	195	108	Average
2437	103.51	-	-	99.25	32.13	6.11	33.98	195	108	Peak
2490	33.82	-20.18	54	29.44	32.2	6.18	34	195	108	Average
2490	46.82	-27.18	74	42.44	32.2	6.18	34	195	108	Peak
4874	43.66	-30.34	74	60.2	34.1	9.14	59.78	100	0	Peak
7311	45.87	-28.13	74	59.56	35.7	10.06	59.45	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388	46.96	-7.04	54	42.83	32.06	6.03	33.96	111	344	Average
2388	58.87	-15.13	74	54.74	32.06	6.03	33.96	111	344	Peak
2462	96.32	-	-	92.02	32.15	6.14	33.99	111	344	Average
2462	108.44	-	-	104.14	32.15	6.14	33.99	111	344	Peak
2483.66	49.6	-4.4	54	45.24	32.18	6.18	34	111	344	Average
2483.66	67.86	-6.14	74	63.5	32.18	6.18	34	111	344	Peak
4924	46.77	-27.23	74	63.11	34.1	9.14	59.58	100	0	Peak
7386	44.1	-29.9	74	57.82	35.7	10.1	59.52	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2366	38.19	-15.81	54	34.14	32.01	5.99	33.95	121	86	Average
2366	50.97	-23.03	74	46.92	32.01	5.99	33.95	121	86	Peak
2462	89.61	-	-	85.31	32.15	6.14	33.99	121	86	Average
2462	101.3	-	-	97	32.15	6.14	33.99	121	86	Peak
2483.66	39.37	-14.63	54	35.01	32.18	6.18	34	121	86	Average
2483.66	56.26	-17.74	74	51.9	32.18	6.18	34	121	86	Peak
4924	44.73	-29.27	74	61.06	34.1	9.15	59.58	100	0	Peak
7386	47.59	-26.41	74	61.31	35.7	10.1	59.52	100	0	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.22 dBuV/m - 20dB = 87.22 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	76.09	-11.13	87.22	64.62	34.81	9.92	33.26	100	245	Peak
5745	95.78	-	-	84.33	34.84	9.91	33.3	100	245	Average
5745	107.22	-	-	95.77	34.84	9.91	33.3	100	245	Peak
5825	55.06	-32.16	87.22	43.64	34.96	9.88	33.42	100	245	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.51 dBuV/m - 20dB = 86.51 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	72.03	-14.48	86.51	60.56	34.81	9.92	33.26	134	88	Peak
5745	95.28	-	-	83.83	34.84	9.91	33.3	134	88	Average
5745	106.51	-	-	95.06	34.84	9.91	33.3	134	88	Peak
5825	53.89	-32.62	86.51	42.47	34.96	9.88	33.42	134	88	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5825 MHz, and 17355 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 116.77 dBuV/m - 20dB = 96.77 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
48.9	24.41	-15.59	40	46.46	8.9	0.68	31.63	-	-	Peak
86.43	22.5	-17.5	40	45.04	8.24	0.92	31.7	-	-	Peak
159.87	28.56	-14.94	43.5	48.23	10.5	1.22	31.39	110	254	Peak
417.6	27.57	-18.43	46	40.27	16.38	2.2	31.28	-	-	Peak
496.7	25.02	-20.98	46	35.46	18.02	2.44	30.9	-	-	Peak
552	25.9	-20.1	46	35.6	18.97	2.56	31.23	-	-	Peak
5725	69.19	-27.58	96.77	57.72	34.81	9.92	33.26	100	49	Peak
5785	107.45	-	-	96	34.89	9.9	33.34	100	49	Average
5785	116.77	-	-	105.3	34.91	9.9	33.34	100	49	Peak
5825	72.08	-24.69	96.77	60.66	34.96	9.88	33.42	100	49	Peak
11570	41.19	-12.81	54	47.66	38.3	13.17	57.94	100	35	Average
11570	51.69	-22.31	74	58.16	38.3	13.17	57.94	100	35	Peak
17355	48.32	-48.45	96.77	49.33	41.95	14.42	57.38	100	0	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 110.76 dBuV/m - 20dB = 90.76 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.05	26.78	-13.22	40	40.97	17.12	0.57	31.88	116	205	Peak
142.32	25.14	-18.36	43.5	44.04	11.35	1.2	31.45	-	-	Peak
162.03	26.39	-17.11	43.5	46.23	10.31	1.22	31.37	-	-	Peak
415.5	29.42	-16.58	46	42.23	16.32	2.19	31.32	-	-	Peak
514.2	27.84	-18.16	46	38.02	18.33	2.48	30.99	-	-	Peak
553.4	25.84	-20.16	46	35.49	19.01	2.56	31.22	-	-	Peak
5725	62.07	-28.69	90.76	50.6	34.81	9.92	33.26	103	130	Peak
5785	101.24	-	-	89.79	34.89	9.9	33.34	103	130	Average
5785	110.76	-	-	99.31	34.89	9.9	33.34	103	130	Peak
5825	63.93	-26.83	90.76	52.51	34.96	9.88	33.42	103	130	Peak
11570	41.15	-12.85	54	47.62	38.3	13.17	57.94	100	24	Average
11570	52.66	-21.34	74	59.13	38.3	13.17	57.94	100	24	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 113.11 dBuV/m - 20dB = 93.11 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	56.84	-36.27	93.11	45.37	34.81	9.92	33.26	100	51	Peak
5805	103.14	-	-	91.7	34.93	9.89	33.38	100	51	Average
5805	113.11	-	-	101.67	34.93	9.89	33.38	100	51	Peak
5825	75.58	-17.53	93.11	64.16	34.96	9.88	33.42	100	51	Peak

Test Mode :	802.11a <Ant 1>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.86 dBuV/m - 20dB = 88.86 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.85	-35.01	88.86	42.38	34.81	9.92	33.26	100	302	Peak
5805	95.24	-	-	83.8	34.93	9.89	33.38	100	302	Average
5805	108.86	-	-	97.42	34.93	9.89	33.38	100	302	Peak
5825	64.27	-24.59	88.86	52.85	34.96	9.88	33.42	100	302	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.64 dBuV/m - 20dB = 87.64 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	76.09	-11.55	87.64	64.62	34.81	9.92	33.26	100	245	Peak
5745	95.92	-	-	84.47	34.84	9.91	33.3	100	245	Average
5745	107.64	-	-	96.19	34.84	9.91	33.3	100	245	Peak
5825	55.37	-32.27	87.64	43.95	34.96	9.88	33.42	100	245	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 103.54 dBuV/m - 20dB = 83.54 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	71.19	-12.35	83.54	59.72	34.81	9.92	33.26	125	102	Peak
5745	91.25	-	-	79.8	34.84	9.91	33.3	125	102	Average
5745	103.54	-	-	92.09	34.84	9.91	33.3	125	102	Peak
5825	53.73	-29.81	83.54	42.31	34.96	9.88	33.42	125	102	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.75 dBuV/m - 20dB = 86.75 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.85	-32.9	86.75	42.38	34.81	9.92	33.26	139	243	Peak
5785	97.34	-	-	85.89	34.89	9.9	33.34	139	243	Average
5785	106.75	-	-	95.3	34.89	9.9	33.34	139	243	Peak
5825	61.49	-25.26	86.75	50.07	34.96	9.88	33.42	139	243	Peak
11570	46.75	-27.25	74	53.22	38.3	13.17	57.94	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 103.29 dBuV/m - 20dB = 83.29 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.78	-30.51	83.29	41.31	34.81	9.92	33.26	118	84	Peak
5785	93.85	-	-	82.4	34.89	9.9	33.34	118	84	Average
5785	103.29	-	-	91.84	34.89	9.9	33.34	118	84	Peak
5825	60.77	-22.52	83.29	49.35	34.96	9.88	33.42	118	84	Peak
11570	45.52	-28.48	74	51.99	38.3	13.17	57.94	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.26 dBuV/m - 20dB = 86.26 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.63	-32.63	86.26	42.16	34.81	9.92	33.26	100	245	Peak
5805	96.32	-	-	84.88	34.93	9.89	33.38	100	245	Average
5805	106.26	-	-	94.82	34.93	9.89	33.38	100	245	Peak
5825	74.2	-12.06	86.26	62.78	34.96	9.88	33.42	100	245	Peak

Test Mode :	802.11n (BW 20MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 101.91 dBuV/m - 20dB = 81.91 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.4	-29.51	81.91	40.93	34.81	9.92	33.26	190	86	Peak
5805	92.85	-	-	81.41	34.93	9.89	33.38	190	86	Average
5805	101.91	-	-	90.47	34.93	9.89	33.38	190	86	Peak
5825	65.86	-16.05	81.91	54.44	34.96	9.88	33.42	190	86	Peak

Test Mode :	802.11n (BW 40MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	151	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. 5714.52 MHz, 5724.2 MHz, and 5824 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 103.15 dBuV/m - 20dB = 83.15dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5714.52	67.58	-15.57	83.15	56.08	34.79	9.93	33.22	100	241	Peak
5724.2	72.14	-11.01	83.15	60.67	34.81	9.92	33.26	100	241	Peak
5755	93.83	-	-	82.36	34.86	9.91	33.3	100	241	Average
5755	103.15	-	-	91.68	34.86	9.91	33.3	100	241	Peak
5824	54.23	-28.92	83.15	42.81	34.96	9.88	33.42	100	241	Peak

Test Mode :	802.11n (BW 40MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	151	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. 5714.52 MHz, 5724.2 MHz, and 5824 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.07 dBuV/m - 20dB = 80.07 BuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5712.76	64.38	-15.69	80.07	52.88	34.79	9.93	33.22	123	89	Peak
5724.84	68.84	-11.23	80.07	57.37	34.81	9.92	33.26	123	89	Peak
5755	90.91	-	-	79.44	34.86	9.91	33.3	123	89	Average
5755	100.07	-	-	88.6	34.86	9.91	33.3	123	89	Peak
5824	52.98	-27.09	80.07	41.56	34.96	9.88	33.42	123	89	Peak

Test Mode :	802.11n (BW 40MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	159	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5827.96 MHz, and 5836.52 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 101.06 dBuV/m - 20dB = 81.06 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.42	-28.64	81.06	40.95	34.81	9.92	33.26	100	241	Peak
5795	91.35	-	-	79.93	34.91	9.89	33.38	100	241	Average
5795	101.06	-	-	89.64	34.91	9.89	33.38	100	241	Peak
5827.96	69.75	-11.31	81.06	58.33	34.96	9.88	33.42	100	241	Peak
5836.52	67.48	-13.58	81.06	56.09	34.98	9.87	33.46	100	241	Peak

Test Mode :	802.11n (BW 40MHz) <SISO Ant 1>	Temperature :	23~25°C
Test Channel :	159	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5825.64 MHz, and 5836.2 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 97.2 dBuV/m - 20dB = 77.2 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	52.55	-24.65	77.2	41.08	34.81	9.92	33.26	110	84	Peak
5795	87.03	-	-	75.61	34.91	9.89	33.38	110	84	Average
5795	97.2	-	-	85.78	34.91	9.89	33.38	110	84	Peak
5825.64	64	-13.2	77.2	52.58	34.96	9.88	33.42	110	84	Peak
5836.2	61.9	-15.3	77.2	50.53	34.96	9.87	33.46	110	84	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	53.29	-0.71	54	49.16	32.06	6.03	33.96	140	12	Average
2389.99	69.86	-4.14	74	65.73	32.06	6.03	33.96	140	12	Peak
2412	96.34	-	-	92.16	32.08	6.07	33.97	140	12	Average
2412	110.05	-	-	105.87	32.08	6.07	33.97	140	12	Peak
2492	35.86	-18.14	54	31.48	32.2	6.18	34	140	12	Average
2492	48.77	-25.23	74	44.39	32.2	6.18	34	140	12	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	01	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2412 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2389.99	46.93	-7.07	54	42.8	32.06	6.03	33.96	100	97	Average
2389.99	65.35	-8.65	74	61.22	32.06	6.03	33.96	100	97	Peak
2412	90.05	-	-	85.87	32.08	6.07	33.97	100	97	Average
2412	103.82	-	-	99.64	32.08	6.07	33.97	100	97	Peak
2486	34.55	-19.45	54	30.19	32.18	6.18	34	100	97	Average
2486	47.93	-26.07	74	43.57	32.18	6.18	34	100	97	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	49.67	-4.33	54	45.54	32.06	6.03	33.96	100	91	Average
2390	67.95	-6.05	74	63.82	32.06	6.03	33.96	100	91	Peak
2437	101.58	-	-	97.32	32.13	6.11	33.98	100	91	Average
2437	115.92	-	-	111.66	32.13	6.11	33.98	100	91	Peak
2484	42.23	-11.77	54	37.87	32.18	6.18	34	100	91	Average
2484	59.2	-14.8	74	54.84	32.18	6.18	34	100	91	Peak
4874	41.16	-12.84	54	57.71	34.1	9.13	59.78	100	261	Average
4874	52.02	-21.98	74	68.57	34.1	9.13	59.78	100	261	Peak
7311	42.75	-11.25	54	56.44	35.7	10.06	59.45	100	13	Average
7311	54.78	-19.22	74	68.47	35.7	10.06	59.45	100	13	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	06	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2437 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2390	44.06	-9.94	54	39.93	32.06	6.03	33.96	164	244	Average
2390	61.62	-12.38	74	57.49	32.06	6.03	33.96	164	244	Peak
2437	98.67	-	-	94.41	32.13	6.11	33.98	164	244	Average
2437	111.7	-	-	107.44	32.13	6.11	33.98	164	244	Peak
2484	42.12	-11.88	54	37.76	32.18	6.18	34	164	244	Average
2484	62.31	-11.69	74	57.95	32.18	6.18	34	164	244	Peak
4874	47.7	-26.3	74	64.25	34.1	9.13	59.78	200	0	Peak
7311	50.62	-23.38	74	64.31	35.7	10.06	59.45	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2382	47.66	-6.34	54	43.56	32.03	6.03	33.96	113	341	Average
2382	60.59	-13.41	74	56.49	32.03	6.03	33.96	113	341	Peak
2462	98.89	-	-	94.59	32.15	6.14	33.99	113	341	Average
2462	111.87	-	-	107.57	32.15	6.14	33.99	113	341	Peak
2483.5	52.96	-1.04	54	48.6	32.18	6.18	34	113	341	Average
2483.5	67.62	-6.38	74	63.26	32.18	6.18	34	113	341	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	11	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	2462 MHz is fundamental signal which can be ignored.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2378	41.1	-12.9	54	37.03	32.03	5.99	33.95	168	106	Average
2378	53.67	-20.33	74	49.6	32.03	5.99	33.95	168	106	Peak
2462	90.87	-	-	86.57	32.15	6.14	33.99	168	106	Average
2462	104.32	-	-	100.02	32.15	6.14	33.99	168	106	Peak
2483.5	42.77	-11.23	54	38.41	32.18	6.18	34	168	106	Average
2483.5	57.99	-16.01	74	53.63	32.18	6.18	34	168	106	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5825 MHz, and 5906 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.51 dBuV/m - 20dB = 88.51 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	73.3	-15.21	88.51	61.83	34.81	9.92	33.26	100	32	Peak
5745	97.89	-	-	86.44	34.84	9.91	33.3	100	32	Average
5745	108.51	-	-	97.06	34.84	9.91	33.3	100	32	Peak
5825	55.93	-32.58	88.51	44.51	34.96	9.88	33.42	100	32	Peak
5906	57.5	-31.01	88.51	46.12	35.08	9.84	33.54	100	32	Peak
11490	48.55	-25.45	74	55.26	38.19	13.14	58.04	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	149	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5745 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5825 MHz, and 5904 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.71 dBuV/m - 20dB = 86.71 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	66.12	-20.59	86.71	54.65	34.81	9.92	33.26	100	289	Peak
5745	96.82	-	-	85.37	34.84	9.91	33.3	100	289	Average
5745	106.71	-	-	95.26	34.84	9.91	33.3	100	289	Peak
5825	55.22	-31.49	86.71	43.8	34.96	9.88	33.42	100	289	Peak
5904	57.09	-29.62	86.71	45.73	35.06	9.84	33.54	100	289	Peak
11490	51.09	-22.91	74	57.8	38.19	13.14	58.04	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.33 dBuV/m - 20dB = 88.33 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
49.98	23.39	-16.61	40	46.2	8.1	0.7	31.61	-	-	Peak
86.43	22.5	-17.5	40	45.04	8.24	0.92	31.7	-	-	Peak
162.03	27.36	-16.14	43.5	47.2	10.31	1.22	31.37	116	205	Peak
326.6	24.77	-21.23	46	40.12	14.03	1.84	31.22	-	-	Peak
423.9	27.41	-18.59	46	39.92	16.5	2.22	31.23	-	-	Peak
552	25.9	-20.1	46	35.6	18.97	2.56	31.23	-	-	Peak
5725	54.33	-64.36	88.33	42.86	34.81	9.92	33.26	100	43	Peak
5785	97.6	-	-	86.15	34.89	9.9	33.34	100	43	Average
5785	108.33	-	-	96.88	34.89	9.9	33.34	100	43	Peak
5825	63.24	-25.09	88.33	51.82	34.96	9.88	33.42	100	43	Peak
11570	47.35	-26.65	74	53.82	38.3	13.17	57.94	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	157	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5785 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.4 dBuV/m - 20dB = 87.4 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
34.05	26.78	-13.22	40	40.97	17.12	0.57	31.88	110	204	Peak
42.69	25.21	-14.79	40	44.62	11.7	0.64	31.75	-	-	Peak
142.32	25.14	-18.36	43.5	44.04	11.35	1.2	31.45	-	-	Peak
415.5	29.42	-16.58	46	42.23	16.32	2.19	31.32	-	-	Peak
514.2	27.84	-18.16	46	38.02	18.33	2.48	30.99	-	-	Peak
553.4	25.84	-20.16	46	35.49	19.01	2.56	31.22	-	-	Peak
5725	54.8	-32.6	87.4	43.33	34.81	9.92	33.26	100	288	Peak
5785	97.44	-	-	85.99	34.89	9.9	33.34	100	288	Average
5785	107.4	-	-	95.95	34.89	9.9	33.34	100	288	Peak
5825	56.08	-31.32	87.4	44.66	34.96	9.88	33.42	100	288	Peak
11570	48.17	-25.83	74	54.64	38.3	13.17	57.94	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.82 dBuV/m - 20dB = 87.82 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	55.86	-41.96	87.82	44.39	34.81	9.92	33.26	100	42	Peak
5805	97.02	-	-	85.58	34.93	9.89	33.38	100	42	Average
5805	107.82	-	-	96.38	34.93	9.89	33.38	100	42	Peak
5825	76.1	-11.72	87.82	64.68	34.96	9.88	33.42	100	42	Peak
11610	47.82	-26.18	74	54.21	38.34	13.19	57.92	100	0	Peak

Test Mode :	802.11n (BW 20MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	161	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5805 MHz is fundamental signal which can be ignored. 2. 5725 MHz and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 107.82 dBuV/m - 20dB = 87.82 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	56.91	-30.91	87.82	45.44	34.81	9.92	33.26	100	287	Peak
5805	97.51	-	-	86.07	34.93	9.89	33.38	100	287	Average
5805	107.82	-	-	96.38	34.93	9.89	33.38	100	287	Peak
5825	68.52	-19.3	87.82	57.1	34.96	9.88	33.42	100	287	Peak
11610	49.58	-24.42	74	55.97	38.34	13.19	57.92	100	0	Peak

Test Mode :	802.11n (BW 40MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	151	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. 5714.68 MHz, 5724.92 MHz, and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 101.59 dBuV/m - 20dB = 81.59 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5714.68	68.11	-13.48	81.59	56.61	34.79	9.93	33.22	100	30	Peak
5724.92	72.5	-9.09	81.59	61.03	34.81	9.92	33.26	100	30	Peak
5755	91.29	-	-	79.82	34.86	9.91	33.3	100	30	Average
5755	101.59	-	-	90.12	34.86	9.91	33.3	100	30	Peak
5825	53.15	-28.44	81.59	41.73	34.96	9.88	33.42	100	30	Peak

Test Mode :	802.11n (BW 40MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	151	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5755 MHz is fundamental signal which can be ignored. 2. 5714.68 MHz, 5724.92 MHz, and 5825 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 101.79 dBuV/m - 20dB = 81.79 dBuV/m. 3. All other emission found more than 20dB below limit line is not reported.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5713.72	67.86	-13.93	81.79	56.36	34.79	9.93	33.22	100	293	Peak
5724.92	73.4	-8.39	81.79	61.93	34.81	9.92	33.26	100	293	Peak
5755	91.56	-	-	80.09	34.86	9.91	33.3	100	293	Average
5755	101.79	-	-	90.32	34.86	9.91	33.3	100	293	Peak
5825	52.5	-29.29	81.79	41.08	34.96	9.88	33.42	100	293	Peak

Test Mode :	802.11n (BW 40MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	159	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5833.32 MHz, and 5836.52 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.17 dBuV/m - 20dB = 80.17 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.42	-26.75	80.17	41.95	34.81	9.92	33.26	104	61	Peak
5795	89.92	-	-	78.5	34.91	9.89	33.38	104	61	Average
5795	100.17	-	-	88.75	34.91	9.89	33.38	104	61	Peak
5833.32	67.26	-12.91	80.17	55.84	34.96	9.88	33.42	104	61	Peak
5836.52	64.5	-15.67	80.17	53.11	34.98	9.87	33.46	104	61	Peak

Test Mode :	802.11n (BW 40MHz) <MIMO>	Temperature :	23~25°C
Test Channel :	159	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 5795 MHz is fundamental signal which can be ignored. 2. 5725 MHz, 5832.84 MHz, and 5836.68 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.99 dBuV/m - 20dB = 80.99 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
5725	53.62	-27.37	80.99	42.15	34.81	9.92	33.26	100	287	Peak
5795	91.3	-	-	79.88	34.91	9.89	33.38	100	287	Average
5795	100.99	-	-	89.57	34.91	9.89	33.38	100	287	Peak
5832.84	68.9	-12.09	80.99	57.48	34.96	9.88	33.42	100	287	Peak
5836.68	68.03	-12.96	80.99	56.64	34.98	9.87	33.46	100	287	Peak

3.8 Antenna Requirements

3.8.1 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.

3.8.2 Antenna Connected Construction

The antennas type used in this product is with non-standard connector and it is considered to meet antenna requirement.

3.8.3 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. The EUT supports completely uncorrelated MIMO mode. The composite antenna gain for 2.4GHz is 2.15 dBi. The composite antenna gain for 5GHz is 3.21 dBi as following table.

	2.4GHz	5GHz
ANT 1 GAIN (dBi)	2.00	3.50
ANT 2 GAIN (dBi)	2.30	2.90
COMPOSITE GAIN (dBi)	2.15	3.21

FCC KDB 662911 D01 Multiple Transmitter Output v01r01

Unequal antenna gains, with equal transmit powers.

For antenna gains given by G_1, G_2, \dots, G_N dBi.

If all transmit signals are *completely uncorrelated*, then

Directional gain = $10 \log[(10^{G_1/10} + 10^{G_2/10} + \dots + 10^{G_N/10})/N]$ dBi

4 BT Test Result

4.1 Number of Channel Measurement

4.1.1 Limits of Number of Hopping Frequency

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels.

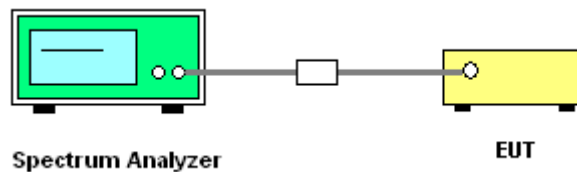
4.1.2 Measuring Instruments

See list of measuring instruments of this test report.

4.1.3 Test Procedure

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The modulation types of EUT are irrelevant to number of hopping channels deviation.
4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = the frequency band of operation; RBW \geq 1% of the span; VBW \geq RBW; Sweep = auto;
Detector function = peak; Trace = max hold.
5. The number of hopping frequency used is defined as the device has the numbers of total channel.

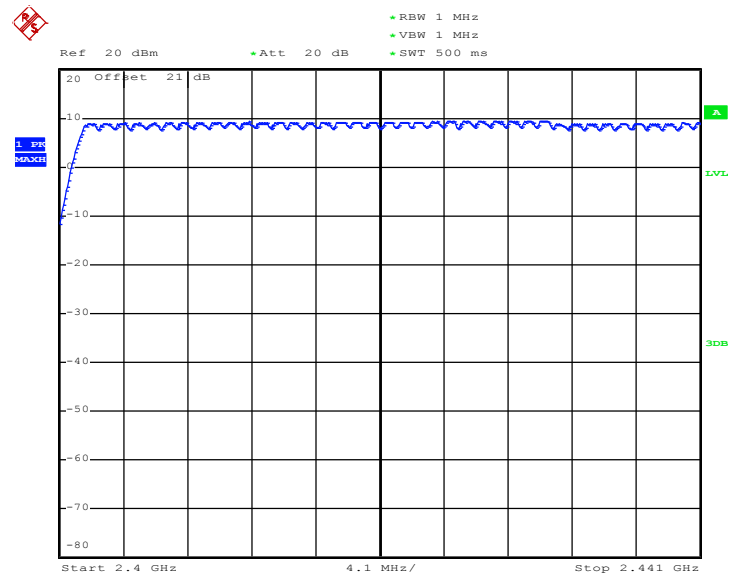
4.1.4 Test Setup



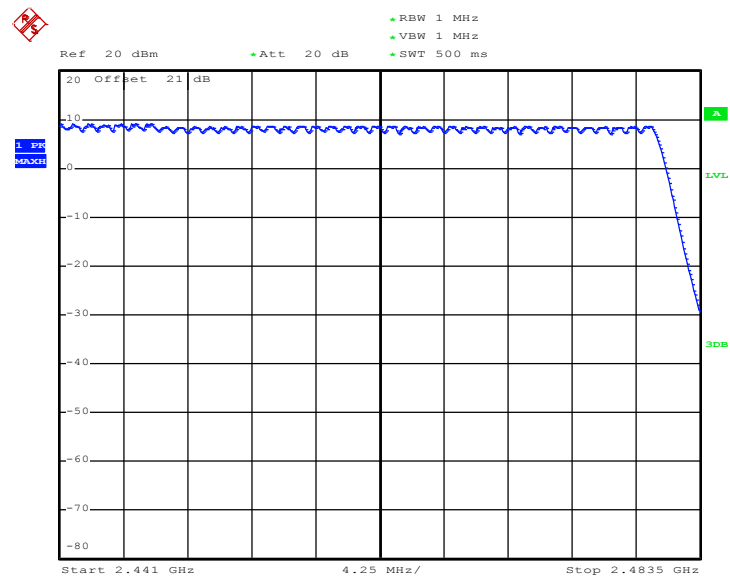
4.1.5 Test Result of Number of Hopping Frequency

Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%
Number of Hopping Channels (Channel)		Limits (Channel)	Pass/Fail
79		> 15	Pass

Number of Hopping Channel Plot on Channel 00 - 78



Date: 5.MAY.2012 17:56:38



Date: 5.MAY.2012 17:58:58

4.2 Hopping Channel Separation Measurement

4.2.1 Limit of Hopping Channel Separation

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 KHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

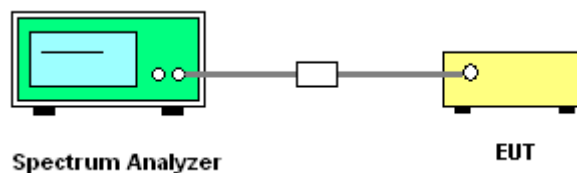
4.2.2 Measuring Instruments

See list of measuring instruments of this test report.

4.2.3 Test Procedures

1. Please refer FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. Use the following spectrum analyzer settings:
Span = wide enough to capture the peaks of two adjacent channels; $RBW \geq 1\%$ of the span;
 $VBW \geq RBW$; Sweep = auto; Detector function = peak; Trace = max hold.
5. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

4.2.4 Test Setup

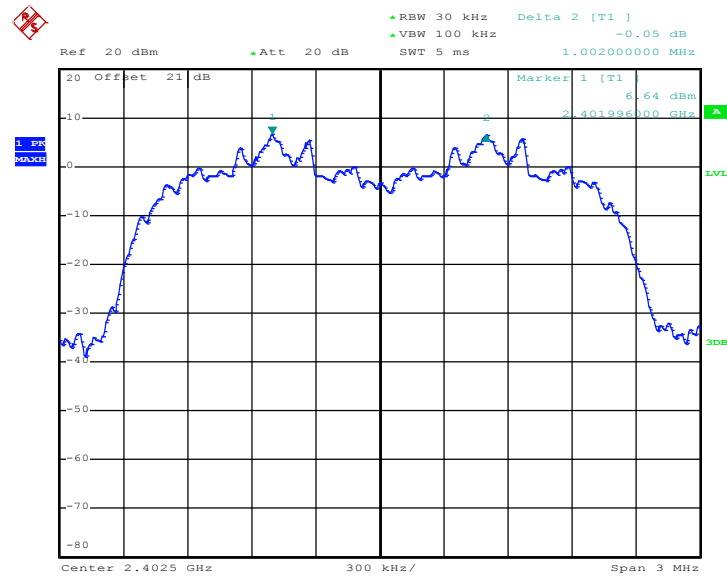


4.2.5 Test Result of Hopping Channel Separation

Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

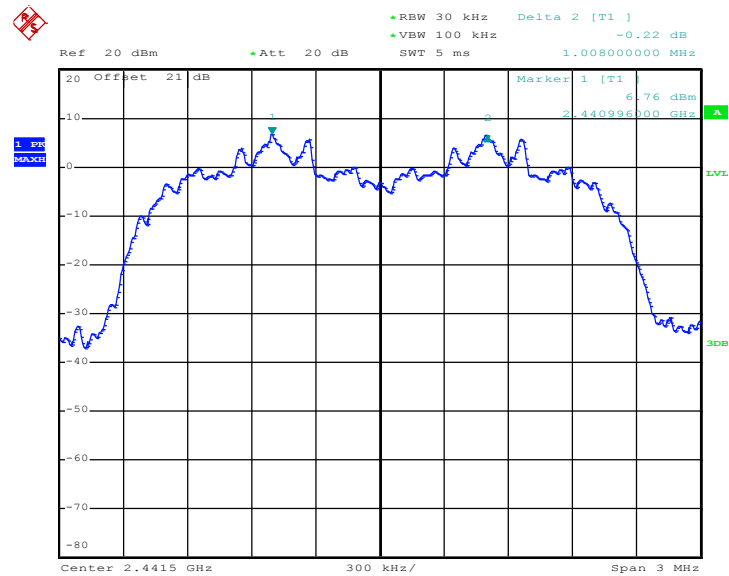
Channel	Frequency (MHz)	Frequency Separation (MHz)	(2/3 of 20dB BW) Limits (MHz)	Pass/Fail
00	2402	1.002	0.8680	Pass
39	2441	1.008	0.8680	Pass
78	2480	1.002	0.8680	Pass

Channel Separation Plot on Channel 00 - 01



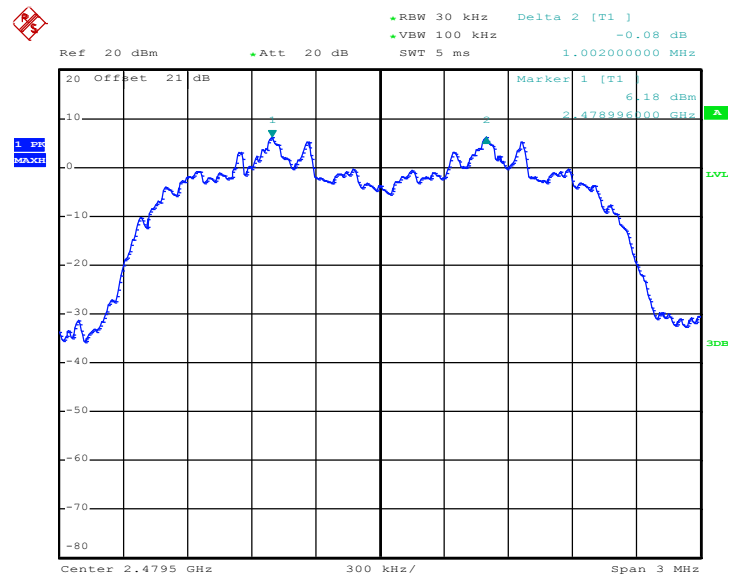
Date: 5.MAY.2012 18:06:46

Channel Separation Plot on Channel 39 - 40



Date: 5.MAY.2012 18:07:25

Channel Separation Plot on Channel 77 - 78



Date: 5.MAY.2012 18:08:03

4.3 Dwell Time Measurement

4.3.1 Limit of Dwell Time

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

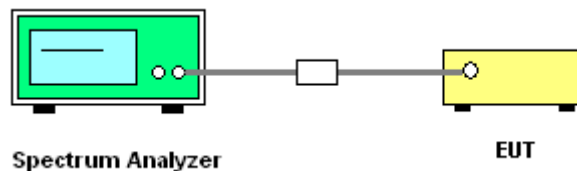
4.3.2 Measuring Instruments

See list of measuring instruments of this test report.

4.3.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. The EUT must have its hopping function enabled. Use the following spectrum analyzer settings:
Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW \geq RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold.
5. Use the marker-delta function to calculate the dwell time.

4.3.4 Test Setup



4.3.5 Test Result of Dwell Time

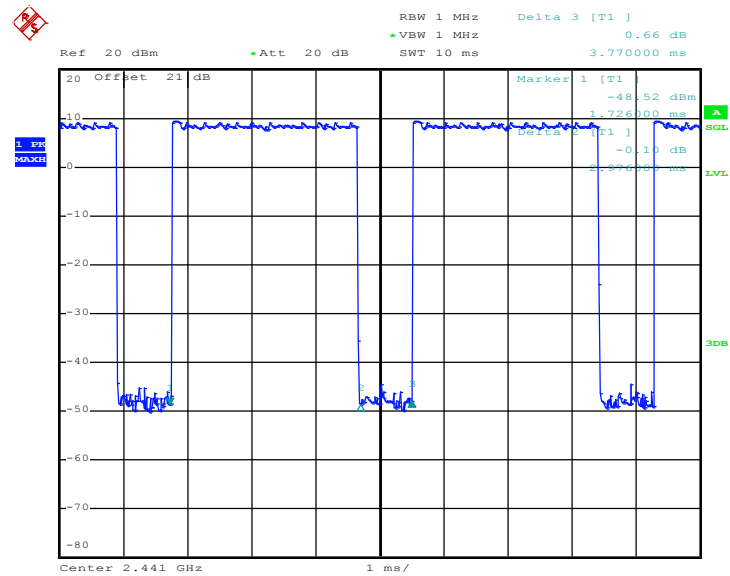
Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Package Mode	Average Hopping Channel	Package Transfer Time (usec)	Dwell Time (sec)	Limits (sec)	Pass/Fail
3DH5	3.10	2976.00	0.29	0.4	Pass

Remark:

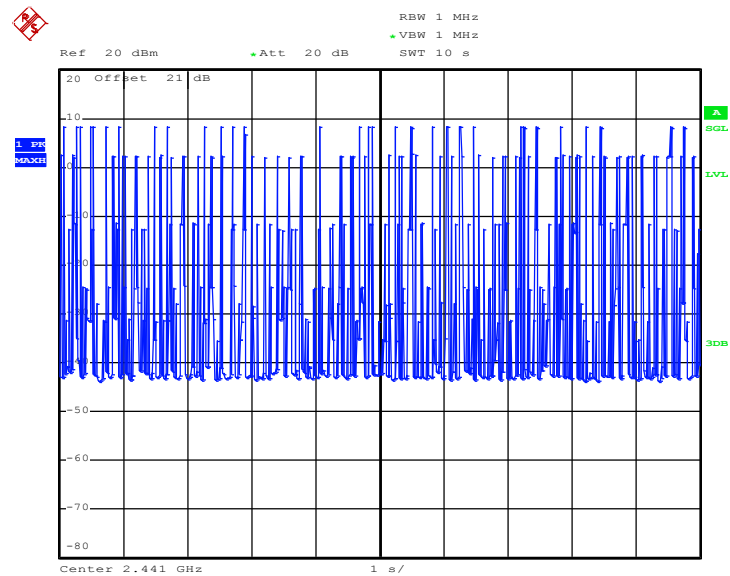
1. Dwell Time=79(channels) x 0.4(s) x average hopping channel x package transfer time
2. 79 channels come from the Hopping Channel number.
3. Average Hopping Channel = hops/sweep time
4. t: Package Transfer Time(us)

3DH5 Dwell Time (One Pulse) Plot on Channel 39



Date: 28.APR.2012 11:36:36

3DH5 Dwell Time (Count Pulses) Plot on Channel 39



Date: 5.MAY.2012 17:50:31

4.4 20dB Bandwidth Measurement

4.4.1 Limit of 20dB Bandwidth

N/A

4.4.2 Measuring Instruments

See list of measuring instruments of this test report.

4.4.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. The EUT should be transmitting at its maximum data rate as the worst cases.
4. For BT 20 dB BW measurement :

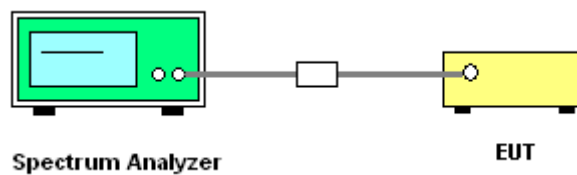
Use the following spectrum analyzer settings:

Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hopping channel;

RBW \geq 1% of the 20 dB bandwidth; VBW \geq RBW; Sweep = auto; Detector function = peak;

Trace = max hold. The marker-delta reading at this point is the 20 dB bandwidth of the emission.

4.4.4 Test Setup

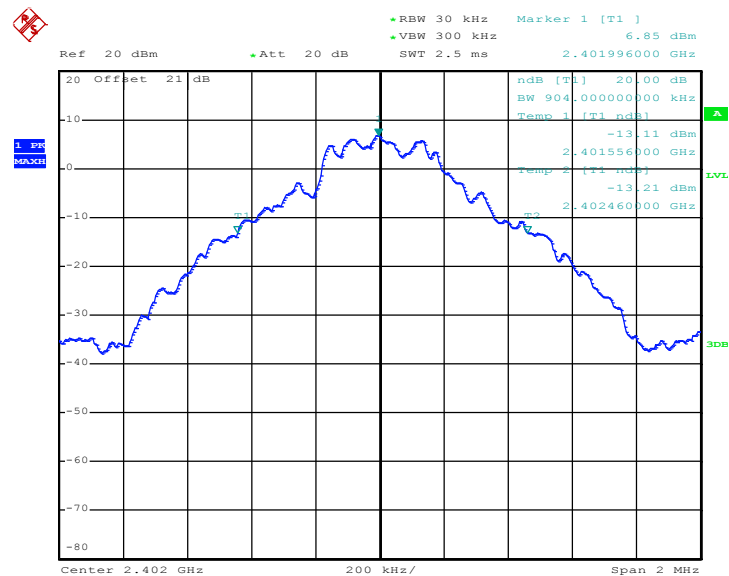


4.4.5 Test Result of 20dB Bandwidth

Test Mode :	<BT> : 1Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

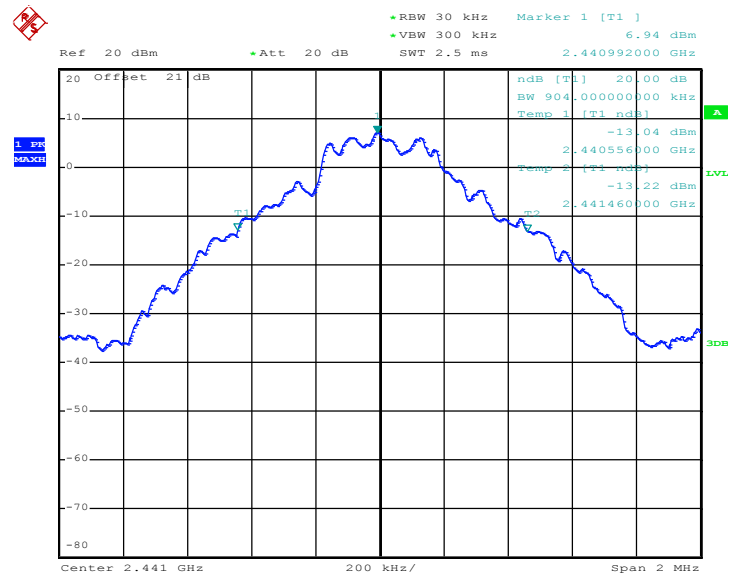
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	0.904
39	2441	0.904
78	2480	0.904

20 dB Bandwidth Plot on Channel 00



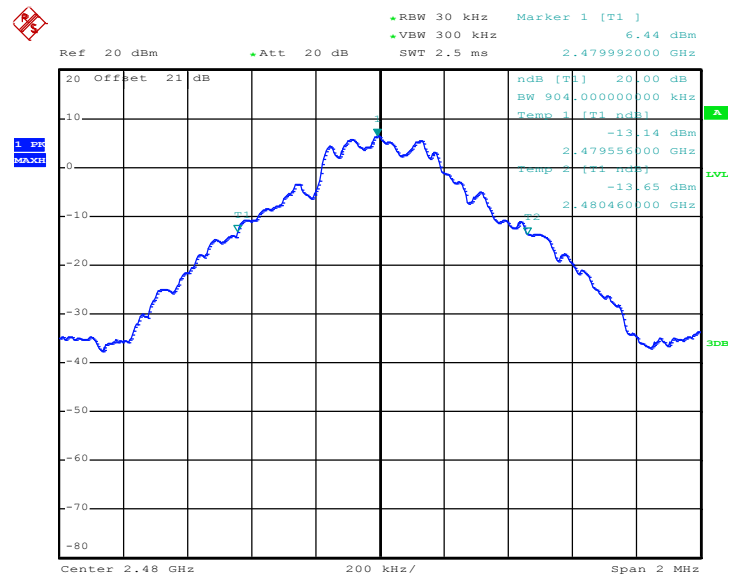
Date: 5.MAY.2012 18:08:41

20 dB Bandwidth Plot on Channel 39



Date: 5.MAY.2012 18:09:09

20 dB Bandwidth Plot on Channel 78

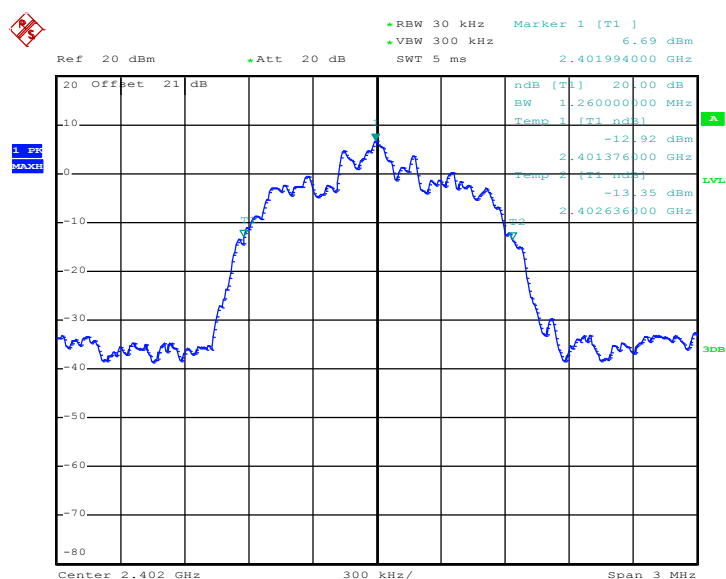


Date: 5.MAY.2012 18:10:28

Test Mode :	<BT> : 2Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

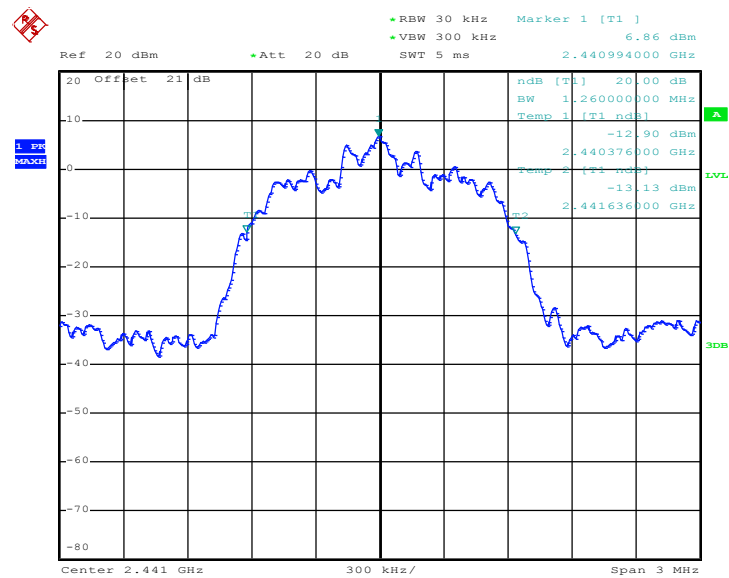
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.260
39	2441	1.260
78	2480	1.260

20 dB Bandwidth Plot on Channel 00



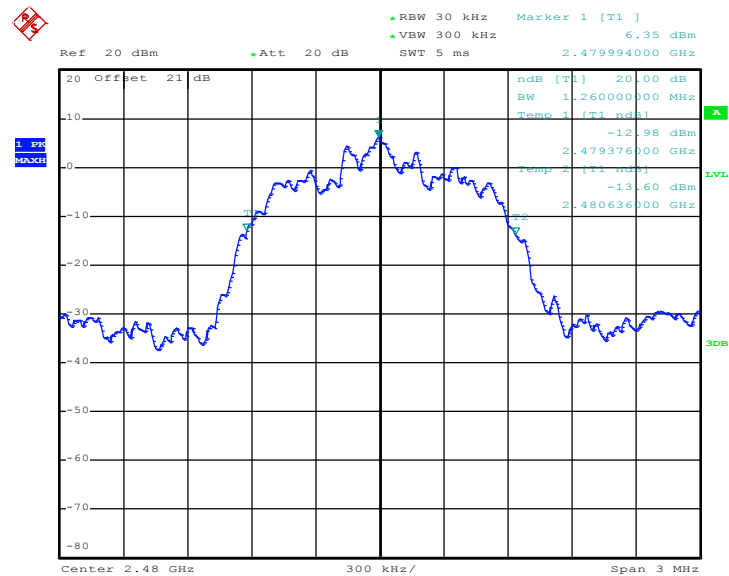
Date: 5.MAY.2012 18:11:07

20 dB Bandwidth Plot on Channel 39



Date: 5.MAY.2012 18:11:37

20 dB Bandwidth Plot on Channel 78

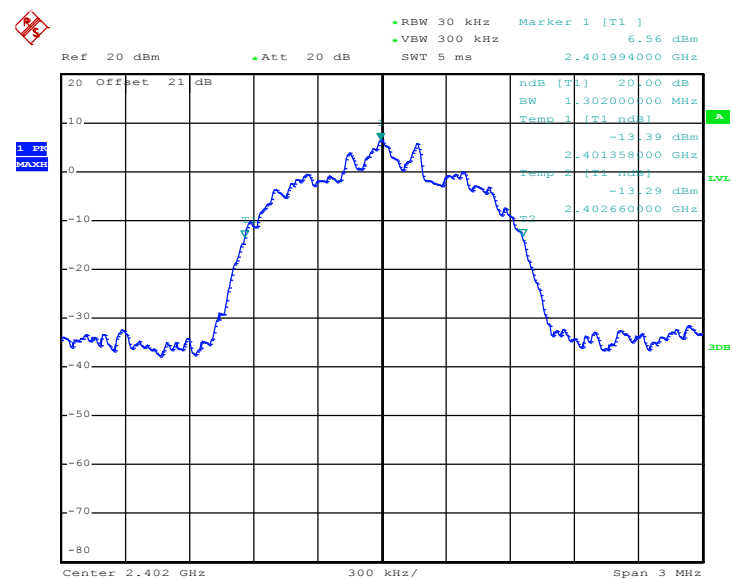


Date: 5.MAY.2012 18:11:56

Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

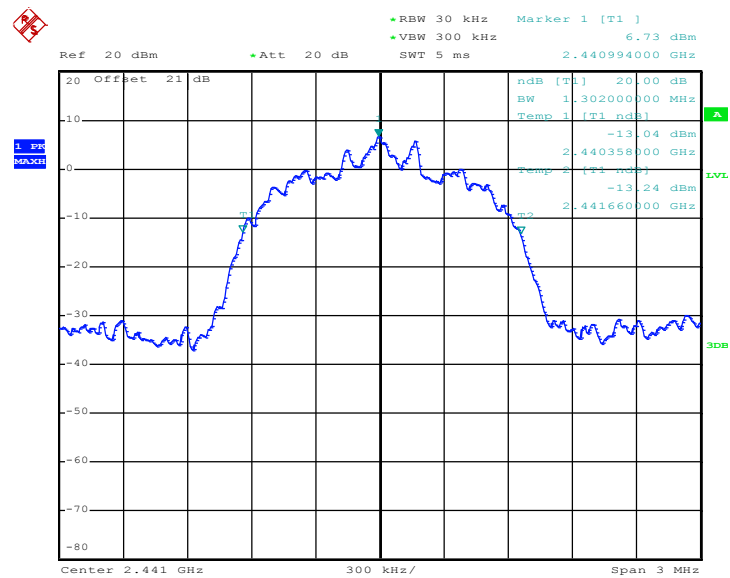
Channel	Frequency (MHz)	20dB Bandwidth (MHz)
00	2402	1.302
39	2441	1.302
78	2480	1.302

20 dB Bandwidth Plot on Channel 00



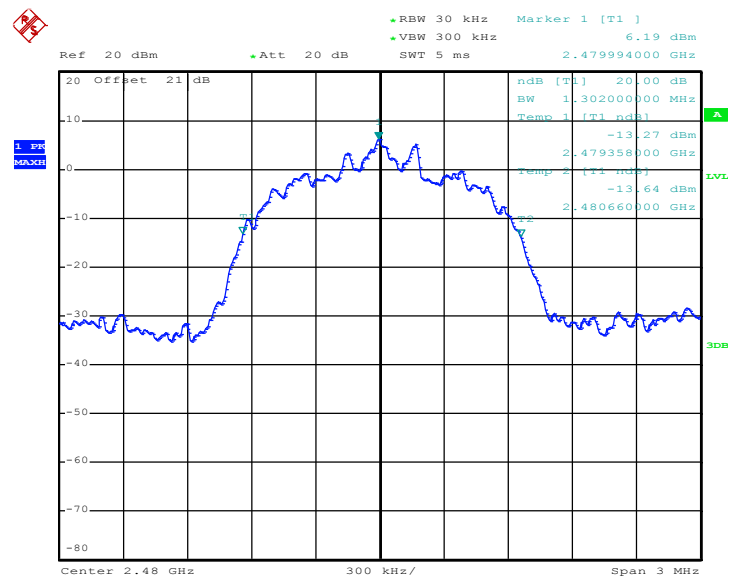
Date: 5.MAY.2012 18:12:51

20 dB Bandwidth Plot on Channel 39



Date: 5.MAY.2012 18:13:14

20 dB Bandwidth Plot on Channel 78



Date: 5.MAY.2012 18:13:46

4.5 Output Power Measurement

4.5.1 Limit of Output Power

Section 15.247 (b) The maximum peak conducted output power of the intentional radiator shall not exceed the following: (1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band 0.125 watts. The power limit for 1Mbps is 1watt, and for 2Mbps, and 3Mbps are 0.125 watts.

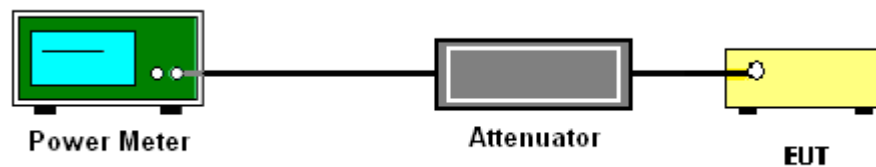
4.5.2 Measuring Instruments

See list of measuring instruments of this test report.

4.5.3 Test Procedures

1. The testing follows FCC Public Notice DA 00-705 Measurement Guidelines.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.

4.5.4 Test Setup

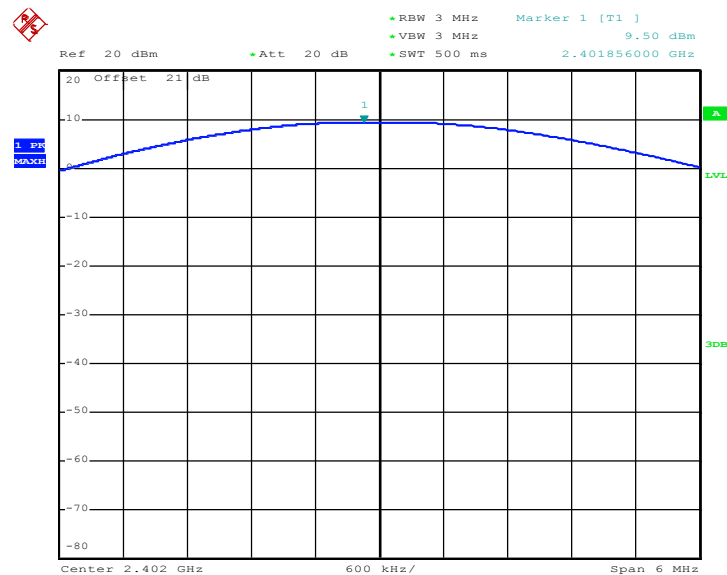


4.5.5 Test Result of Peak Output Power

Test Mode :	<BT> : 1Mbps	Temperature :	24~26°C
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

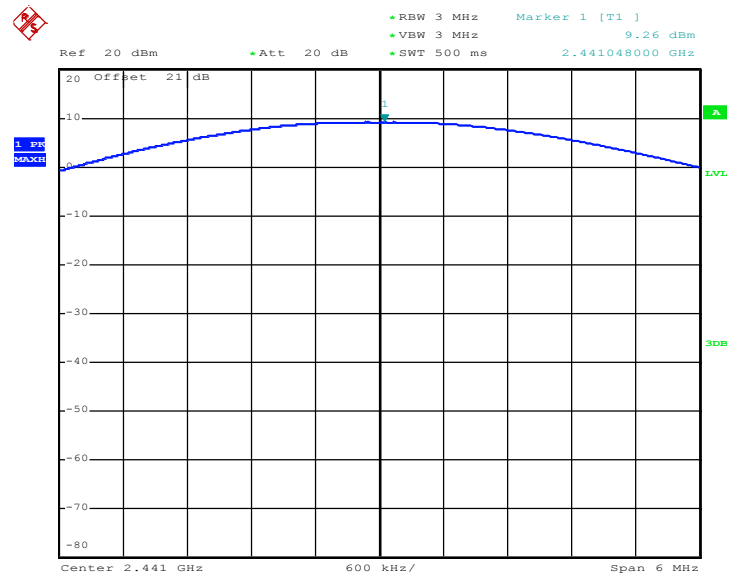
Channel	Frequency (MHz)	RF Power (dBm)		
		GFSK	Max. Limits (dBm)	Pass/Fail
		1 Mbps		
00	2402	9.50	30	Pass
39	2441	9.26	30	Pass
78	2480	8.03	30	Pass

Peak Output Power Plot on Channel 00



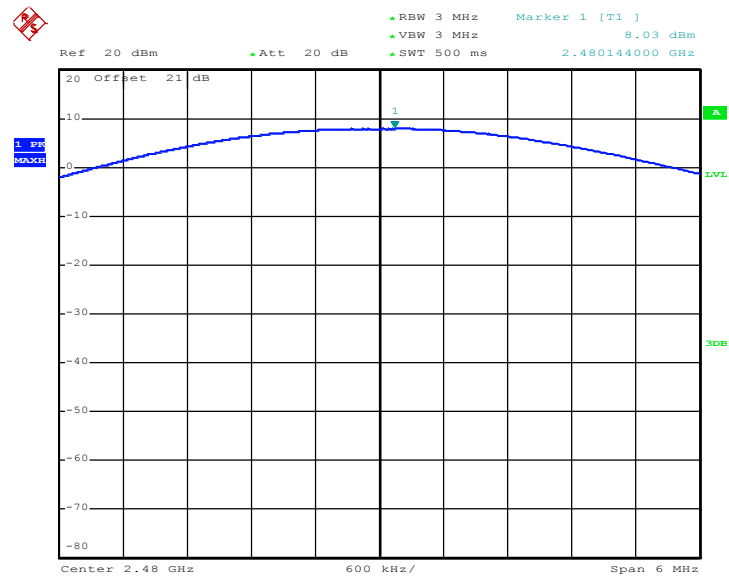
Date: 1.MAY.2012 09:27:30

Peak Output Power Plot on Channel 39



Date: 1.MAY.2012 09:28:44

Peak Output Power Plot on Channel 78

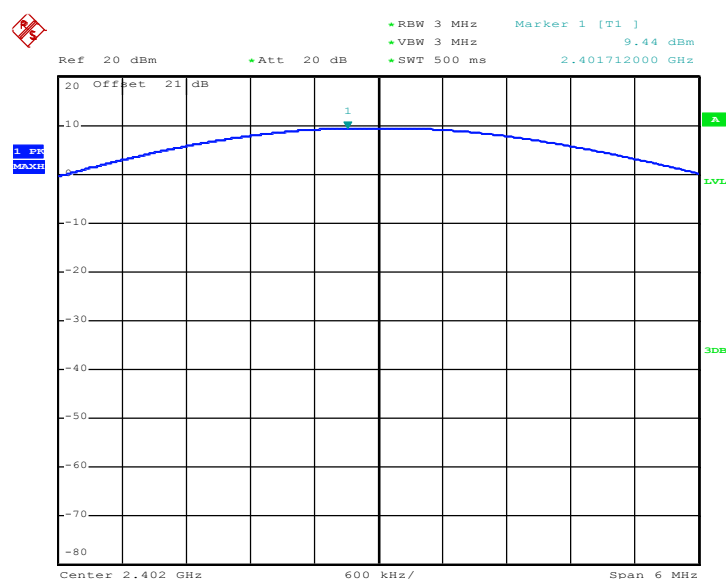


Date: 1.MAY.2012 09:29:58

Test Mode :	<BT> : 2Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

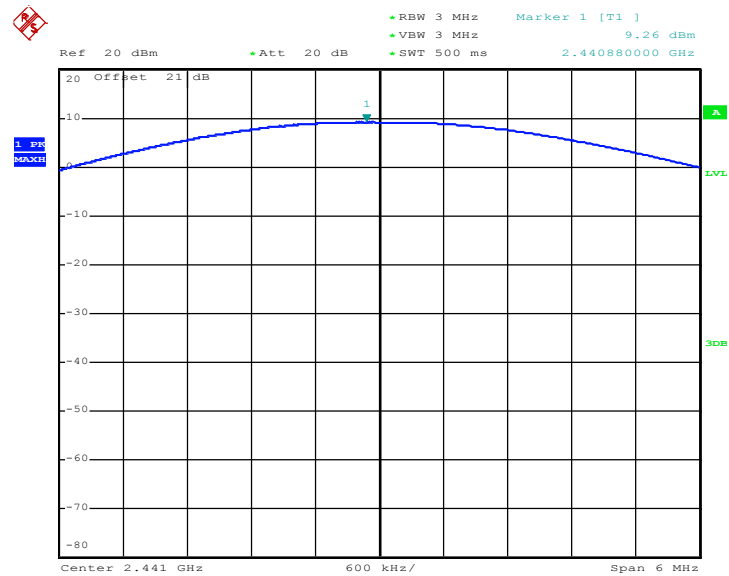
Channel	Frequency (MHz)	RF Power (dBm)		
		π /4-DQPSK	Max. Limits (dBm)	Pass/Fail
		2 Mbps		
00	2402	9.44	20.97	Pass
39	2441	9.26	20.97	Pass
78	2480	7.99	20.97	Pass

Peak Output Power Plot on Channel 00



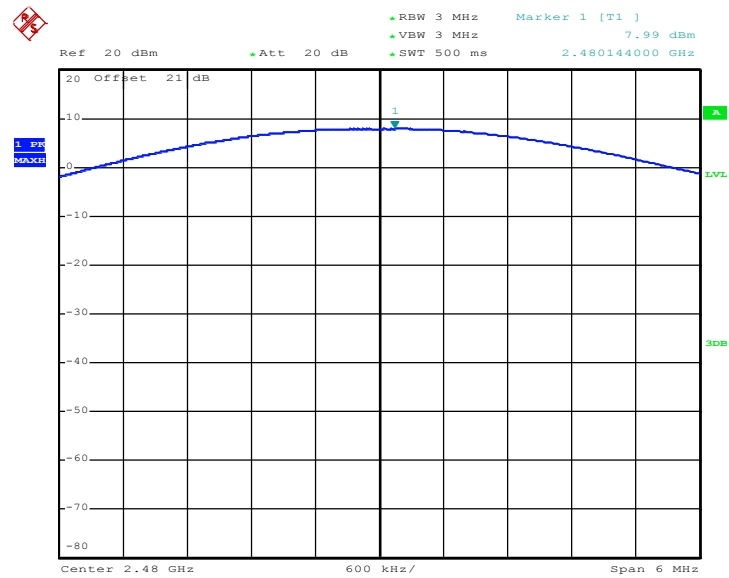
Date: 1.MAY.2012 09:27:55

Peak Output Power Plot on Channel 39



Date: 1.MAY.2012 09:29:09

Peak Output Power Plot on Channel 78

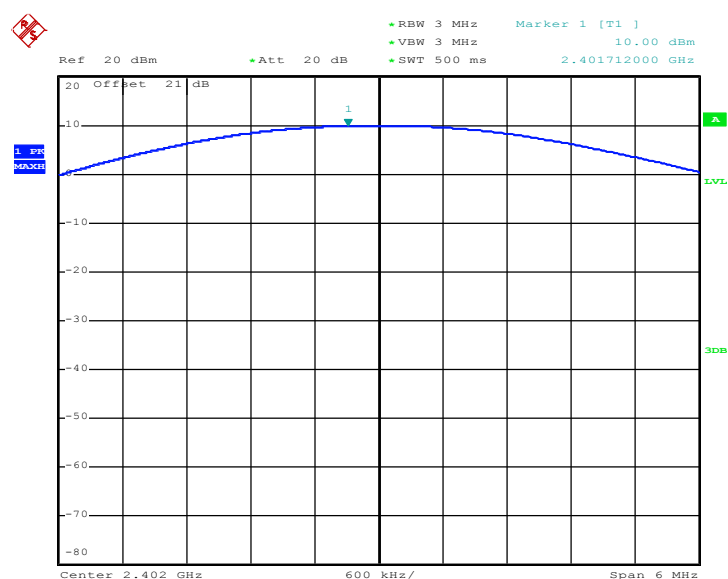


Date: 1.MAY.2012 09:30:23

Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

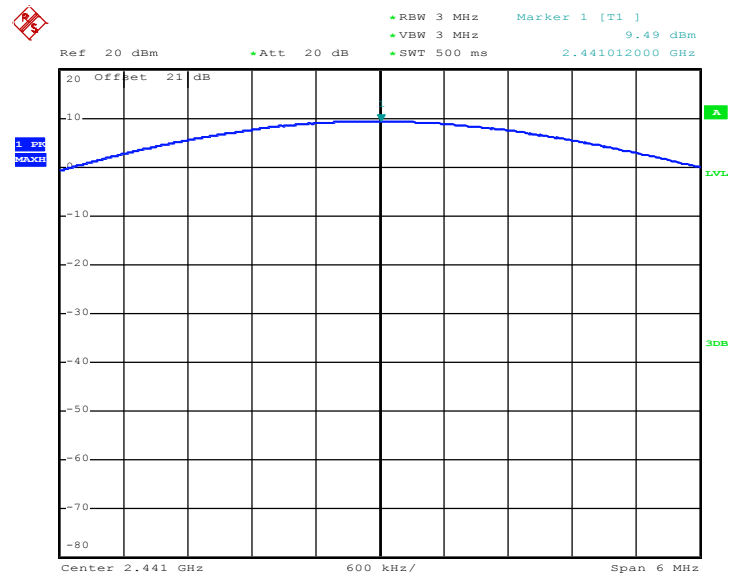
Channel	Frequency (MHz)	RF Power (dBm)		
		8-DPSK	Max. Limits (dBm)	Pass/Fail
		3 Mbps		
00	2402	10.00	20.97	Pass
39	2441	9.49	20.97	Pass
78	2480	9.47	20.97	Pass

Peak Output Power Plot on Channel 00



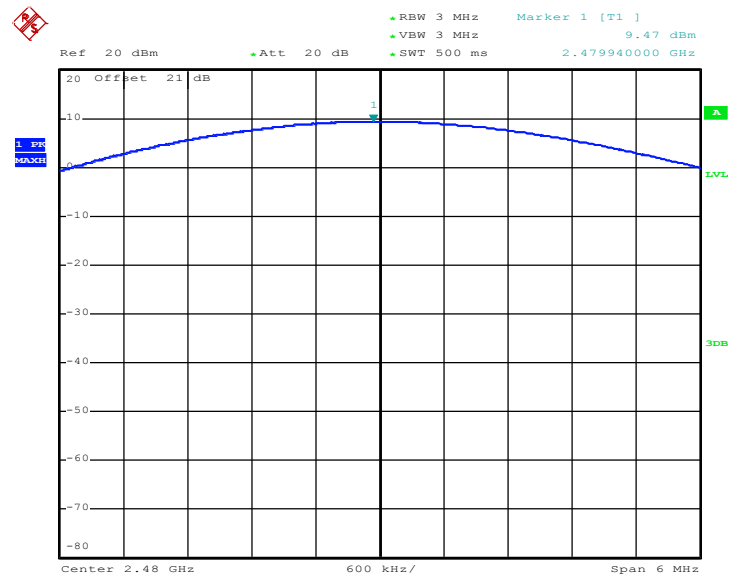
Date: 5.MAY.2012 17:39:20

Peak Output Power Plot on Channel 39



Date: 1.MAY.2012 09:29:50

Peak Output Power Plot on Channel 78



Date: 1.MAY.2012 09:31:03

4.5.6 Test Result of Average Output Power

Test Mode :	<BT> : 1Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	RF Power (dBm)
		GFSK
		1 Mbps
00	2402	8.65
39	2441	8.74
78	2480	8.49

Test Mode :	<BT> : 2Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	RF Power (dBm)
		$\pi/4$ -DQPSK
		2 Mbps
00	2402	7.41
39	2441	7.52
78	2480	7.29

Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	RF Power (dBm)
		8-DPSK
		3 Mbps
00	2402	7.45
39	2441	7.55
78	2480	7.34

Note: The average power is measured by power meter with average power sensor and is reporting only.

4.6 Band Edges Measurement

4.6.1 Limit of Band Edges

In any 100 KHz bandwidth outside the intentional radiation frequency band, the radio frequency power shall be at least 20 dB below the highest level of the radiated power. 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.

4.6.2 Measuring Instruments

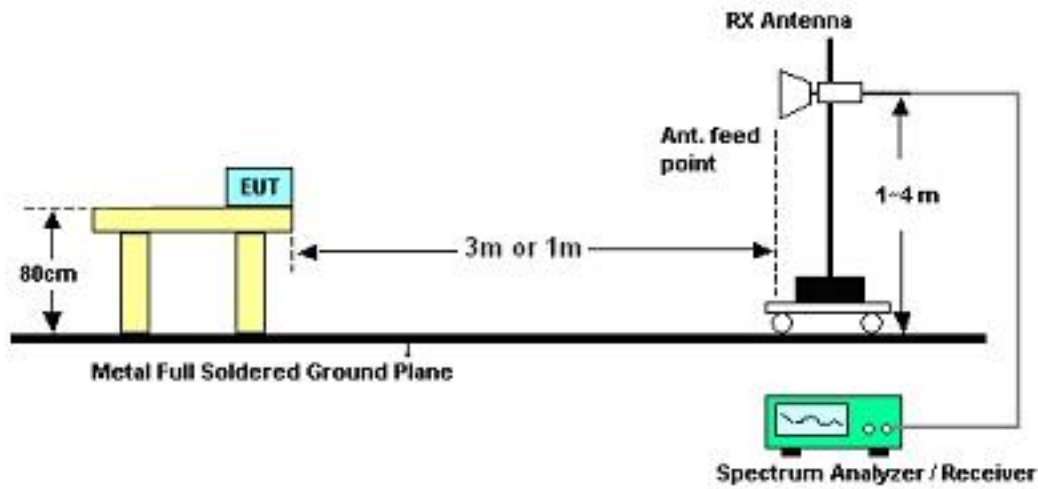
See list of measuring instruments of this test report.

4.6.3 Test Procedures

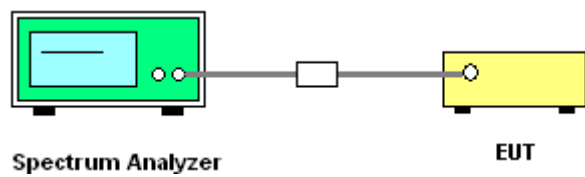
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.
2. RF antenna conducted test: Set RBW = 300kHz, Video bandwidth = 300kHz. Band edge emissions must be at least 20 dB down from the highest emission level within the authorized band as measured with a 300k Hz RBW. Note: If the device complies with the use of power option 2 the attenuation under this paragraph shall be 30 dB instead of 20 dB.
3. Radiated emission test: Applies to band edge emissions that fall in the restricted bands listed in FCC Section 15.205. The maximum permitted average field strength is listed in FCC Section 15.209. A pre-amp is necessary for this measurement. For measurements above 1 GHz, set RBW = 1MHz, VBW = 1MHz, Sweep: Auto for Peak; set RBW = 1MHz, VBW = 10 Hz, Sweep: Auto for Average. If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak-average correction factor, derived from the appropriate duty cycle calculation. See FCC Section 15.35(b) and (c).
4. In case the emission is fail due to the used RBW / VBW is too wide, marker-delta method of FCC Public Notice DA 00-705 will be followed.

4.6.4 Test Setup

<Radiated Band Edges>



<Conducted Band Edges>



4.6.5 Test Result of Radiated Band Edges

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	00	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.66	47.7	-26.3	74	43.57	32.06	6.03	33.96	134	5	Peak
2388.66	35.34	-18.66	54	31.21	32.06	6.03	33.96	134	5	Average

ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2378.02	45.15	-28.85	74	41.08	32.03	5.99	33.95	171	239	Peak
2378.02	32.87	-21.13	54	28.8	32.03	5.99	33.95	171	239	Average

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang		

ANTENNA POLARITY : HORIZONTAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	70.07	-3.93	74	65.71	32.18	6.18	34	130	0	Peak
2483.5	53.09	-0.91	54	48.73	32.18	6.18	34	130	0	Average

Summary results of marker-delta method:

Test mode	Maximum field strength of the fundamental emission (dBμV/m)	Delta Result (dB)	Average Result (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
Single Carrier Mode	89.68	60.26	29.42	54.00	-24.58	Pass
Hopping Mode	89.68	36.59	53.09	54.00	-0.91	Pass

Note : Average result = Maximum field strength – Delta result

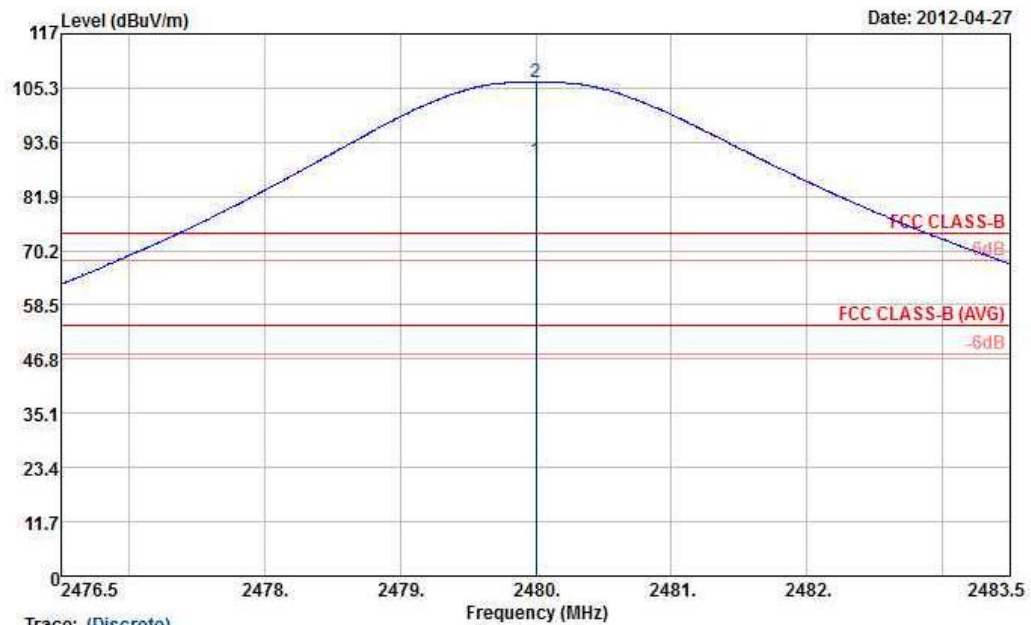
ANTENNA POLARITY : VERTICAL										
Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2483.5	63.8	-10.2	74	59.44	32.18	6.18	34	196	237	Peak
2483.5	48.54	-5.46	54	44.18	32.18	6.18	34	196	237	Average

Summary results of marker-delta method:

Test mode	Maximum field strength of the fundamental emission (dBμV/m)	Delta Result (dB)	Average Result (dBμV/m)	Average Limit (dBμV/m)	Margin (dB)	Result
Single Carrier Mode	84.90	58.81	26.09	54.00	-27.91	Pass
Hopping Mode	84.90	36.36	48.54	54.00	-5.46	Pass

Note : Average result = Maximum field strength – Delta result

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal

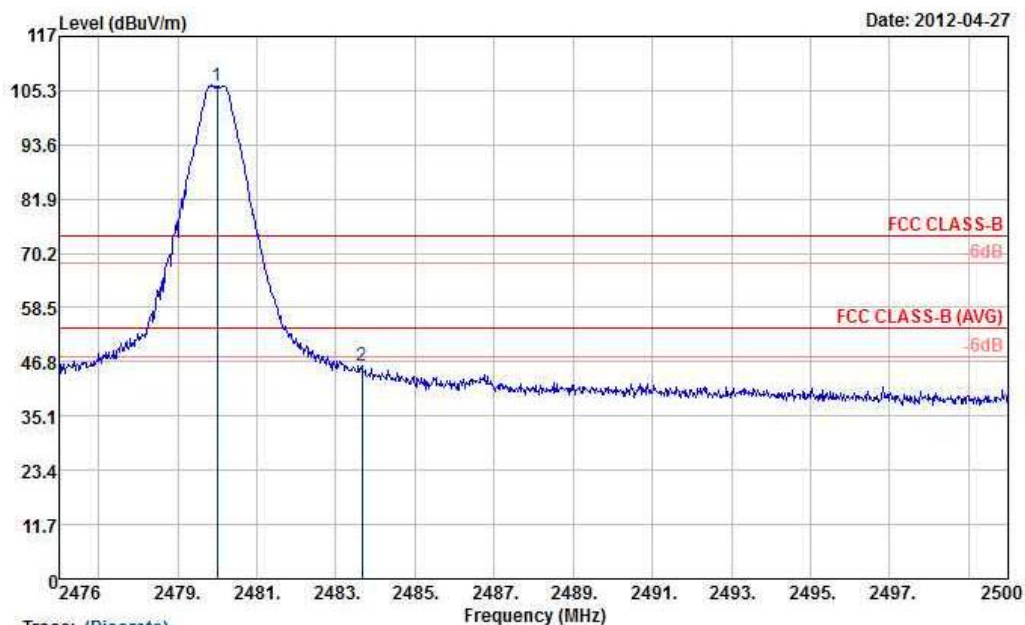


Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_110816 HORIZONTAL
Project : FR 210222

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Loss	Factor	cm	deg	
1 *	2480.00	89.68	35.68	54.00	85.32	32.18	6.18	34.00	130	0 Average
2 *	2480.00	106.58	32.58	74.00	102.22	32.18	6.18	34.00	130	0 Peak

* Maximum field strength of the fundamental emission

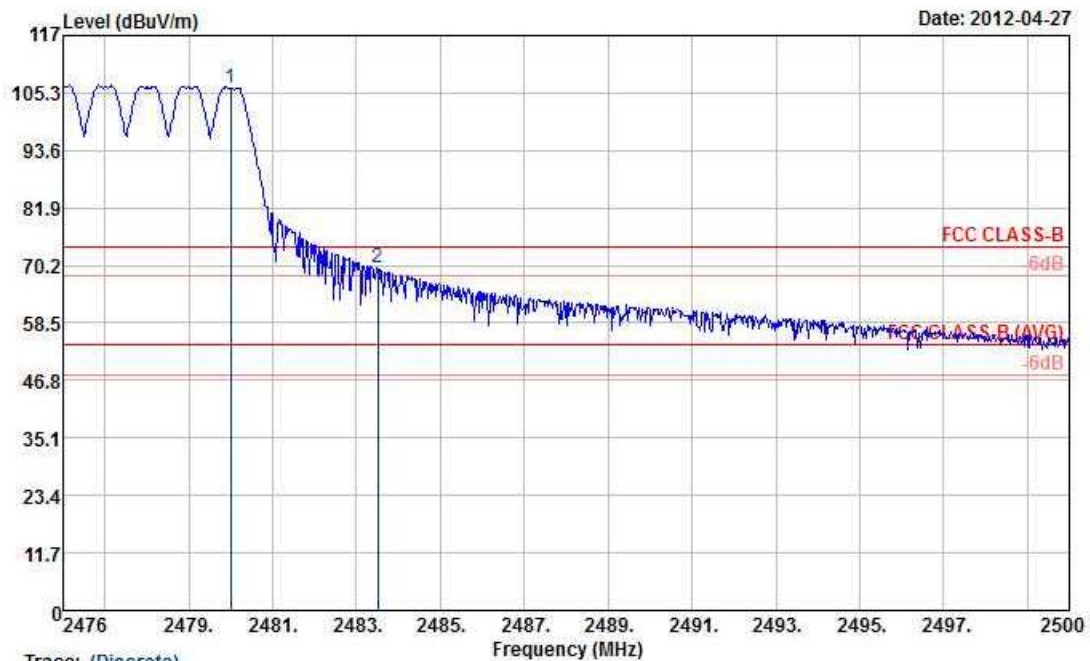
Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal



	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss Factor	Preamplifier Loss Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 *	2480.00	106.31	32.31	74.00	101.95	32.18	6.18	34.00	130	0 Peak
2	2483.66	46.05	-27.95	74.00	41.69	32.18	6.18	34.00	130	0 Peak

* Marker-Delta Method (RBW/VBW=100KHz): 60.26 dB , single carrier Mode

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal



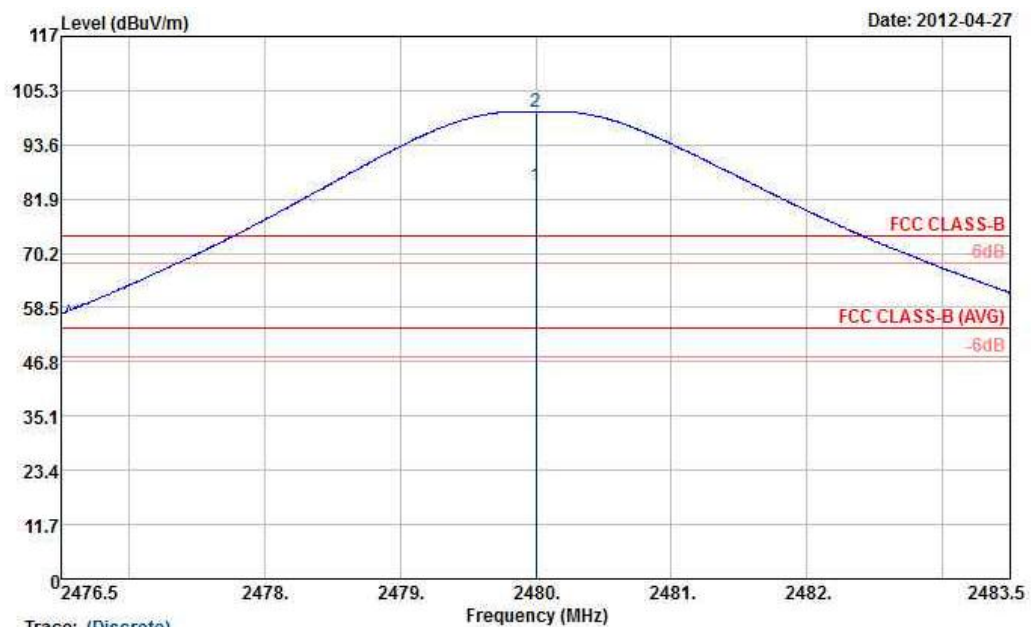
Trace: (Discrete)

Site : 03CH07-HY
Condition : FCC CLASS-B 3m HF-ANT_110816 HORIZONTAL
Project : FR 210222

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Antenna Factor	Cable Loss	Preamp Factor	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1 *	2480.00	106.22	32.22	74.00	101.86	32.18	6.18	34.00	130	0	Peak
2	2483.50	69.63	-4.37	74.00	65.27	32.18	6.18	34.00	130	0	Peak

* Marker-Delta Method (RBW/VBW=100KHz): 36.59 dB , Hopping Mode

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical

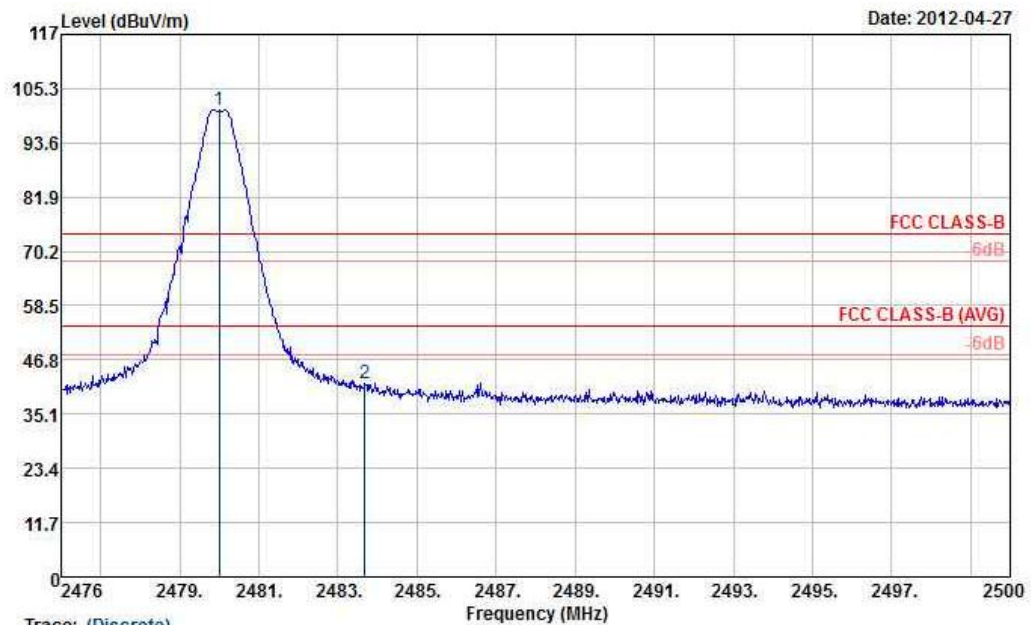


Site : 03CH07-HY
 Condition : FCC CLASS-B 3m HF-ANT_110816 VERTICAL
 Project : FR 210222

	Freq	Level	Over	Limit	ReadAntenna	Cable Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	Level Factor	Loss Factor			
1 *	2480.00	84.90	30.90	54.00	80.54	32.18	6.18	34.00	196 237 Average
2 *	2480.00	100.86	26.86	74.00	96.50	32.18	6.18	34.00	196 237 Peak

* Maximum field strength of the fundamental emission

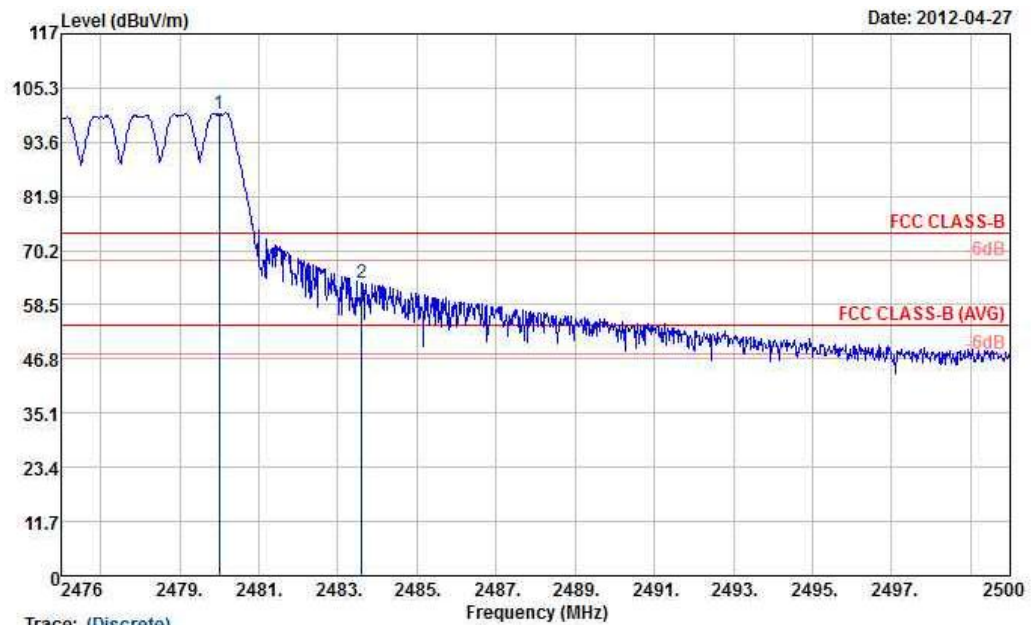
Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical



	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	cm	deg
1 *	2480.00	100.58	26.58	74.00	96.22	32.18	6.18	34.00	196	237 Peak
2	2483.68	41.77	-32.23	74.00	37.41	32.18	6.18	34.00	196	237 Peak

* Marker-Delta Method (RBW/VBW=100KHz): 58.81 dB , single carrier Mode

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical



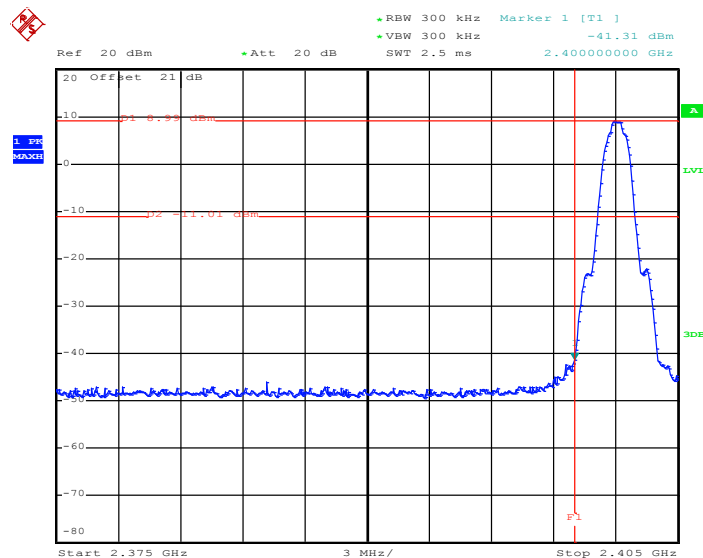
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	A/Pos	T/Pos	Remark
	MHz	dBUV/m	dB	dBUV/m	dBuV	dB/m	dB	dB	cm	deg
1 *	2480.00	99.69	25.69	74.00	95.33	32.18	6.18	34.00	196	237 Peak
2	2483.61	63.33	-10.67	74.00	58.97	32.18	6.18	34.00	196	237 Peak

* Marker-Delta Method (RBW/VBW=100KHz): 36.36 dB , Hopping Mode

4.6.6 Test Result of Conducted Band Edges

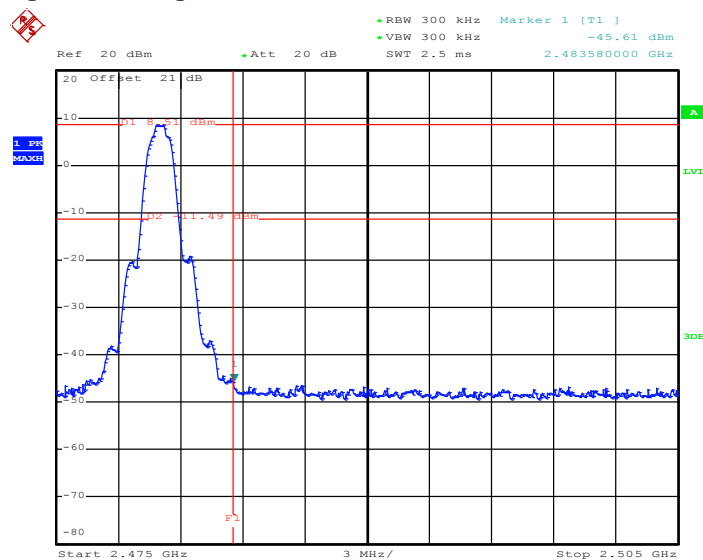
Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Channel :	00 and 78	Relative Humidity :	50~53%
		Test Engineer :	Pinkston Tu

Low Band Edge Plot on Channel 00



Date: 5.MAY.2012 18:18:26

High Band Edge Plot on Channel 78

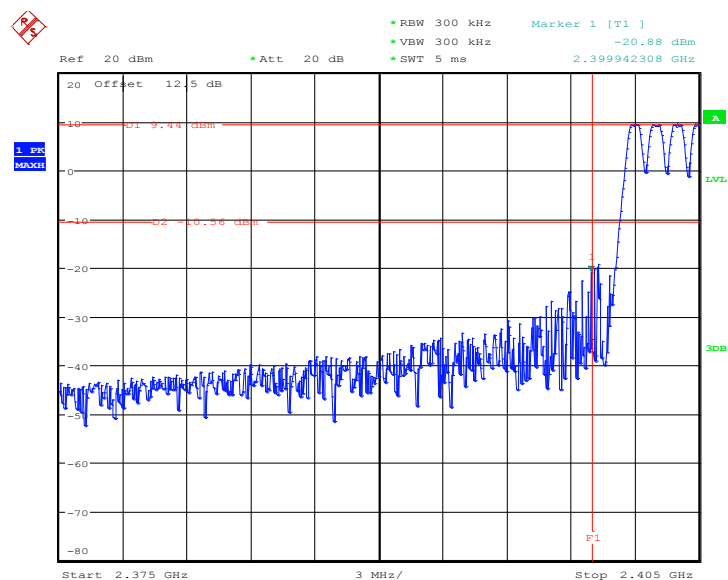


Date: 5.MAY.2012 18:19:29

4.6.7 Test Result of Conducted Hopping Mode Band Edges

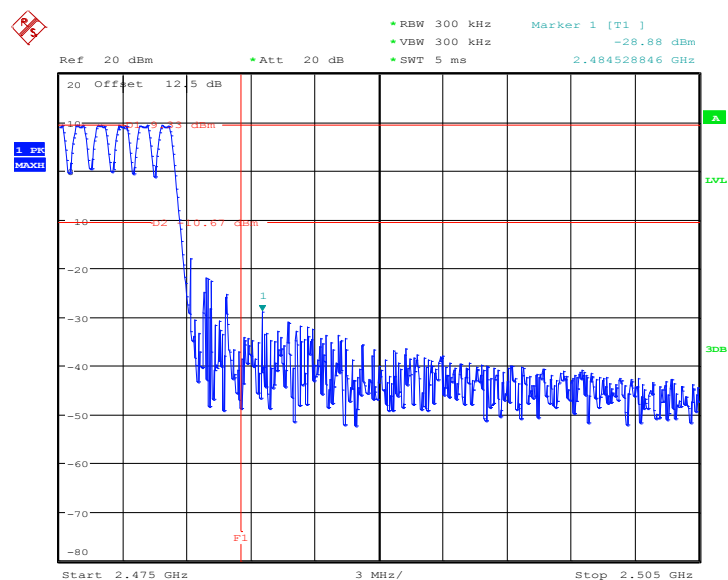
Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Channel :	00 and 78	Relative Humidity :	50~53%
		Test Engineer :	Pinkston Tu

Low Band Edge Plot on Channel 00



Date: 31.MAY.2012 18:02:34

High Band Edge Plot on Channel 78



Date: 31.MAY.2012 18:05:22

4.7 Spurious Emission Measurement

4.7.1 Limit of Spurious Emission Measurement

All harmonics/spurious must be at least 20 dB down from the highest emission level within the authorized band.

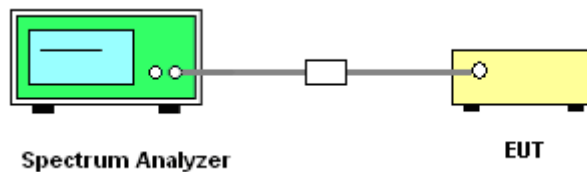
4.7.2 Measuring Instruments

See list of measuring instruments of this test report.

4.7.3 Test Procedure

1. The testing follows the guidelines FCC Public Notice DA 00-705 Measurement Guidelines.
2. The transmitter output was connected to the spectrum analyzer via a low loss cable. The path loss was compensated to the results for each measurement.
3. Set RBW = 100 KHz, Video bandwidth (VBW) \geq RBW, scan up through 10th harmonic. All harmonics/spurs must be at least 20 dB down from the highest emission level within the authorized band as measured with a 100 KHz RBW.

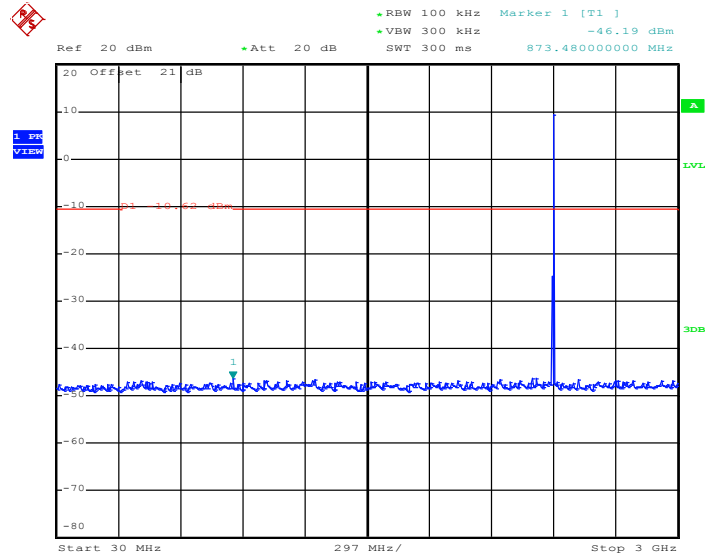
4.7.4 Test Setup



4.7.5 Test Result of Spurious Emission

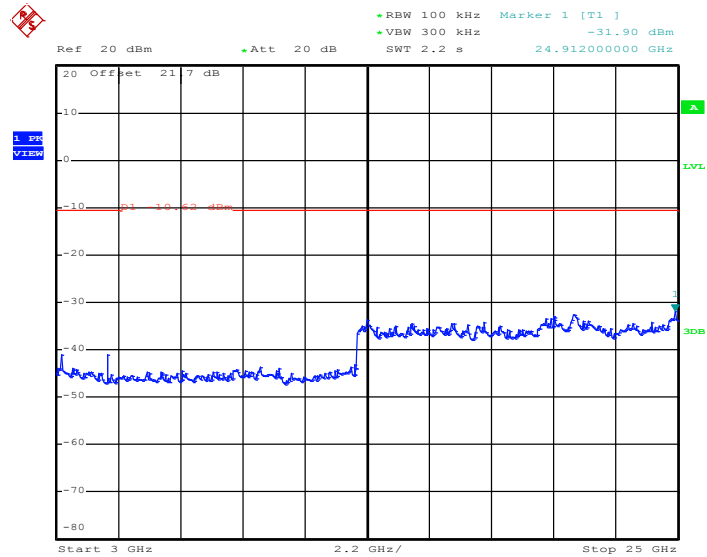
Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Channel :	00	Relative Humidity :	50~53%
		Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 5.MAY.2012 17:51:27

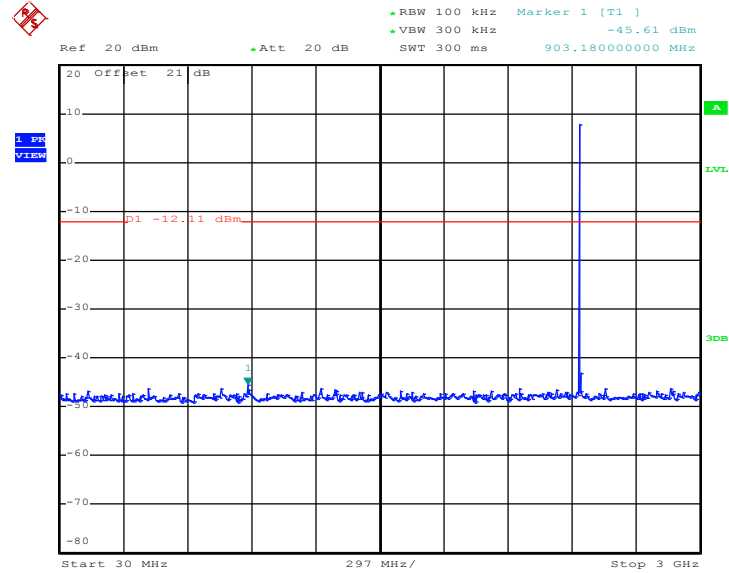
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 5.MAY.2012 17:51:39

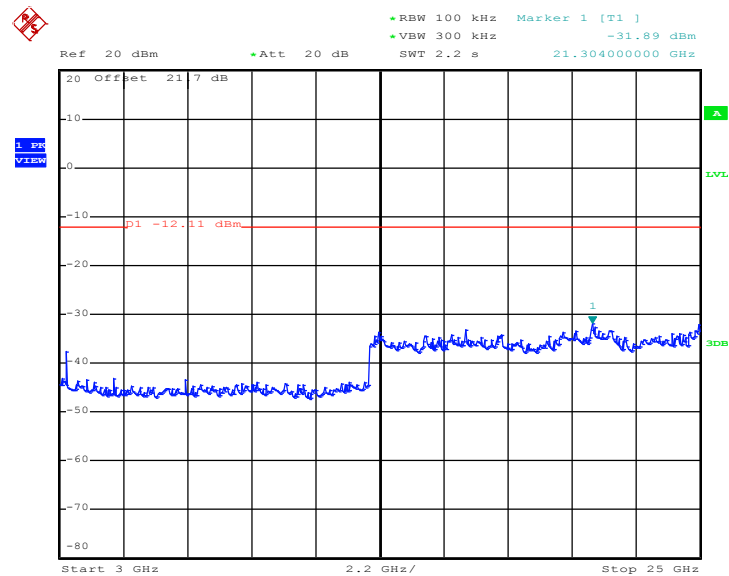
Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Channel :	39	Relative Humidity :	50~53%
		Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 5.MAY.2012 17:52:31

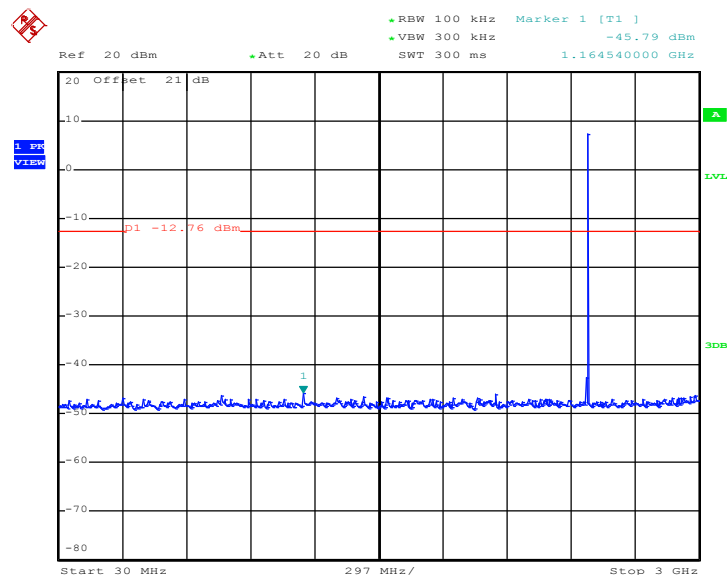
Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 5.MAY.2012 17:52:43

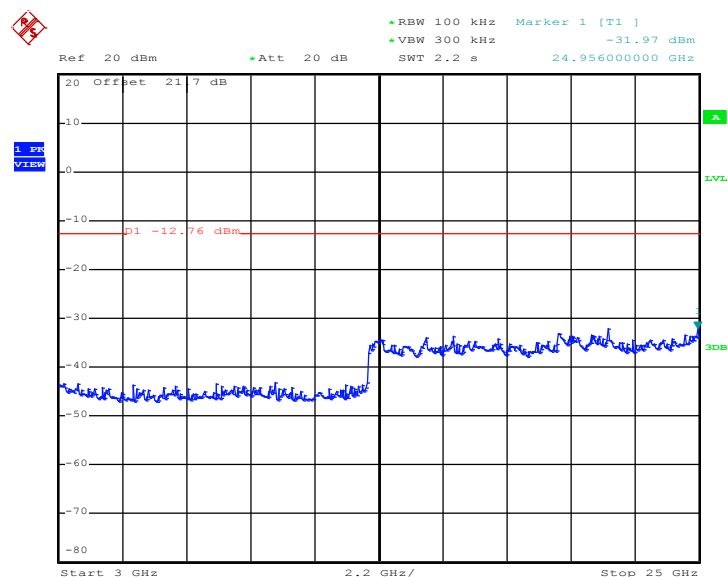
Test Mode :	<BT> : 3Mbps	Temperature :	24~26°C
Test Channel :	78	Relative Humidity :	50~53%
		Test Engineer :	Pinkston Tu

Conducted Spurious Emission Plot between 30MHz ~ 3 GHz



Date: 5.MAY.2012 17:53:34

Conducted Spurious Emission Plot between 3 GHz ~ 25 GHz



Date: 5.MAY.2012 17:53:46

4.8 Power Spectral Density Measurement

4.8.1 Limit of Power Spectral Density

The peak power spectral density shall not be greater than 8dBm in any 3KHz band at any time interval of continuous transmission.

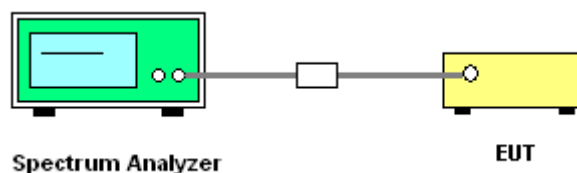
4.8.2 Measuring Instruments

See list of measuring instruments of this test report.

4.8.3 Test Procedures

1. The testing follows the Measurement Procedure of FCC KDB Publication No. 558074.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable. The path loss was compensated to the results for each measurement.
3. Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 3 KHz. Video bandwidth (VBW) \geq 10 KHz.
4. Record the measurement data derived from spectrum analyzer.

4.8.4 Test Setup



4.8.5 Test Result of Power Spectral Density

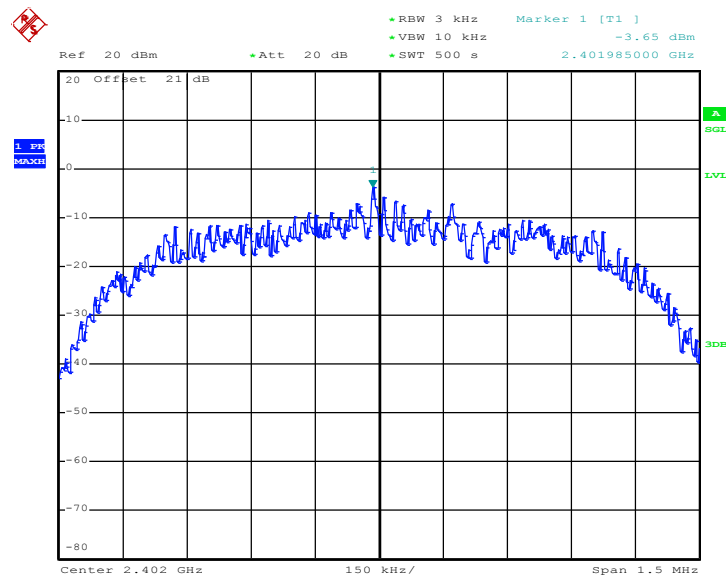
Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	BT Power Density	Max. Limits (dBm)	Pass /Fail
		PSD/3KHz (dBm)		
00	2402	-3.65	8	Pass
39	2441	-3.53	8	Pass
78	2480	-4.21	8	Pass

4.8.6 Test Result of Power Spectral Density Plots

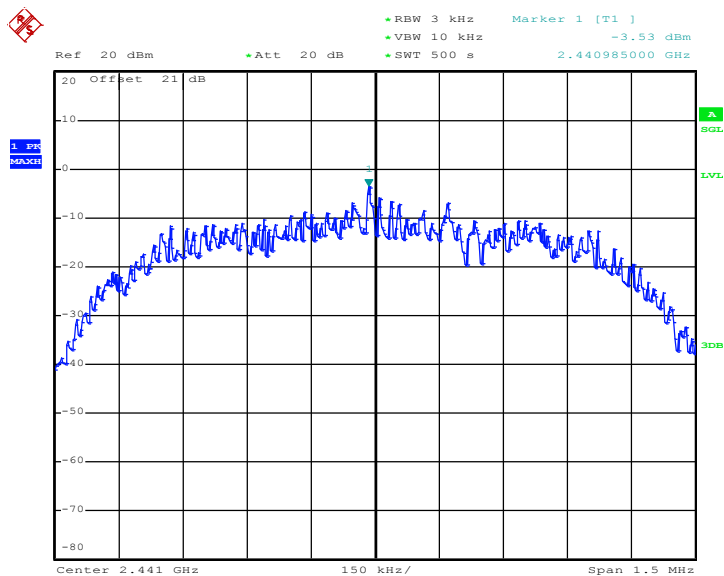
Test Mode :	<BT> : 3Mbps	Temperature :	24~26℃
Test Engineer :	Pinkston Tu	Relative Humidity :	50~53%

PSD Plot on Channel 00



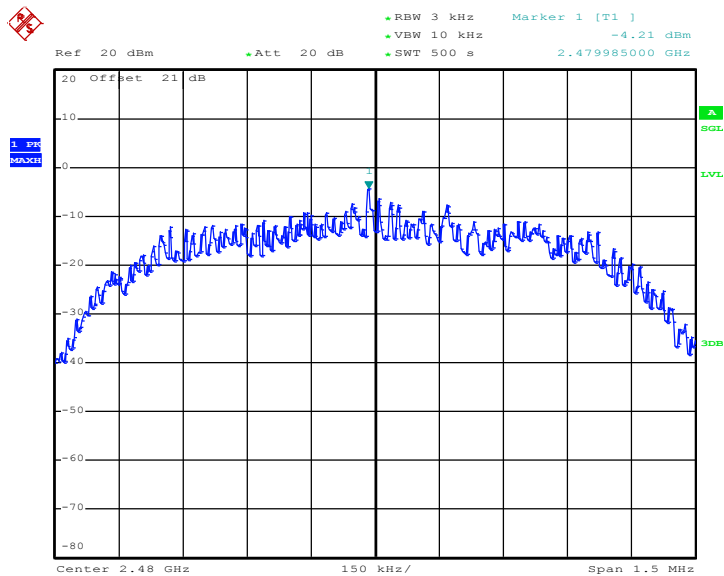
Date: 5.MAY.2012 18:37:08

PSD Plot on Channel 39



Date: 5.MAY.2012 18:45:58

PSD Plot on Channel 78



Date: 5.MAY.2012 18:54:42

4.9 AC Conducted Emission Measurement

4.9.1 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.

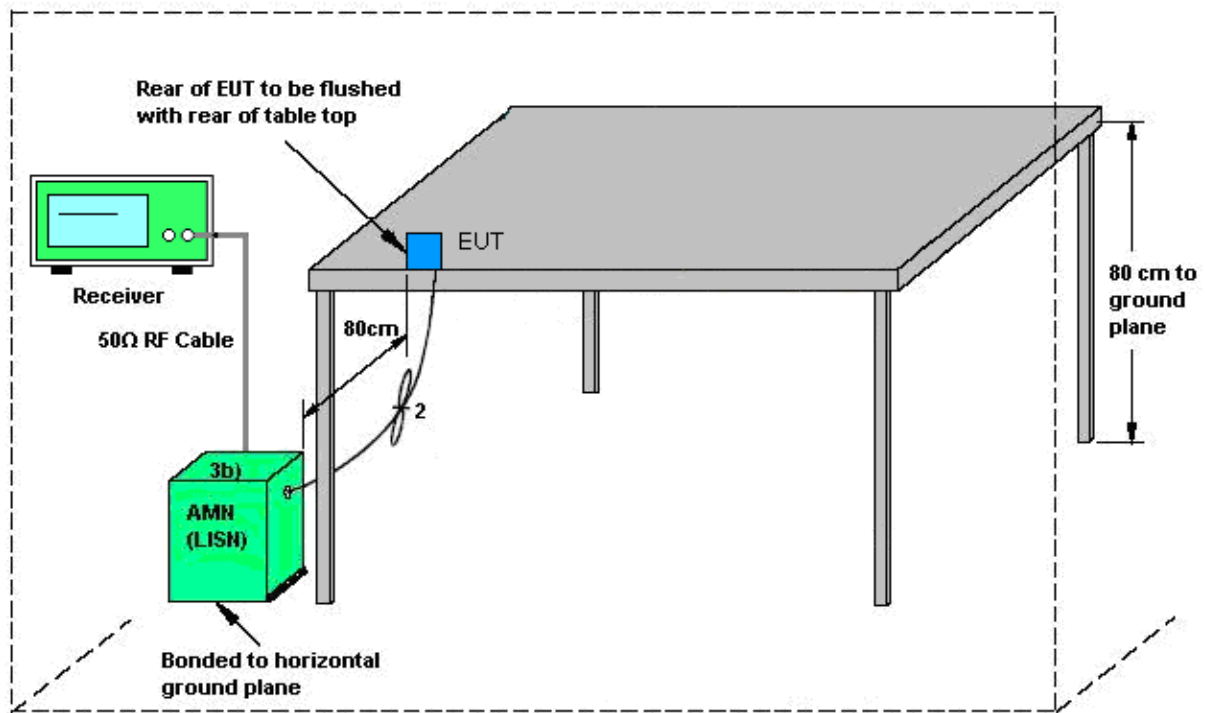
4.9.2 Measuring Instruments

See list of measuring instruments of this test report.

4.9.3 Test Procedures

1. The testing follows the guidelines in ANSI C63.4-2003.
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.

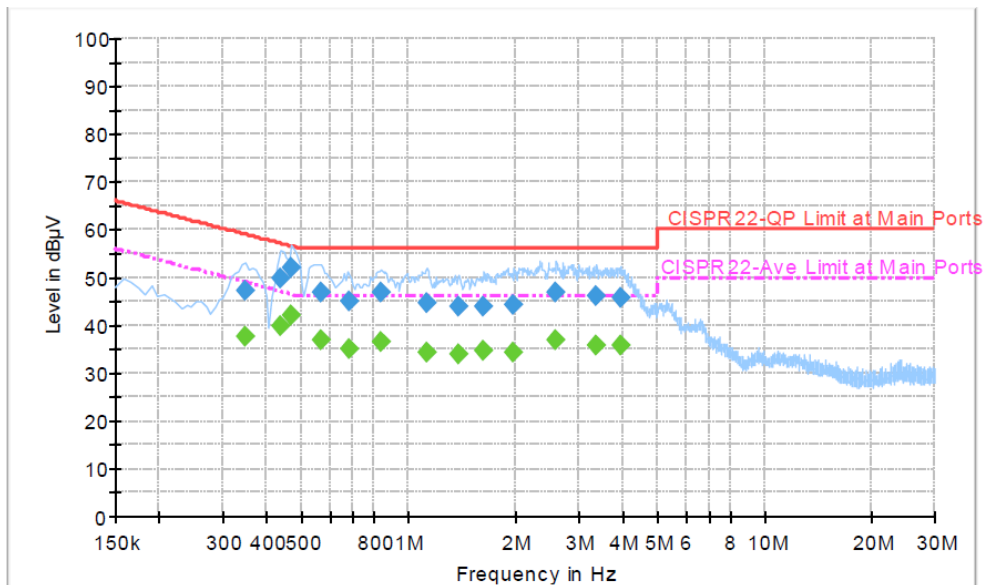
4.9.4 Test Setup



AMN = Artificial mains network (LISN)
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

4.9.5 Test Result of AC Conducted Emission

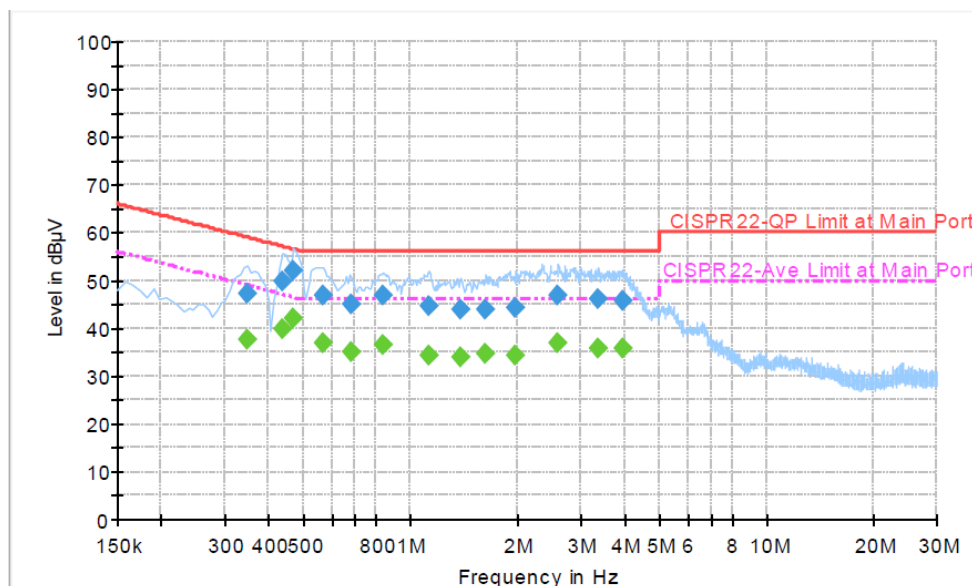
Test Mode :	Mode 1	Temperature :	21~23°C
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.350000	47.4	Off	L1	19.3	11.6	59.0
0.438000	49.9	Off	L1	19.4	7.2	57.1
0.470000	52.1	Off	L1	19.4	4.4	56.5
0.566000	47.0	Off	L1	19.3	9.0	56.0
0.686000	45.0	Off	L1	19.5	11.0	56.0
0.838000	46.7	Off	L1	19.5	9.3	56.0
1.126000	44.5	Off	L1	19.4	11.5	56.0
1.390000	43.9	Off	L1	19.4	12.1	56.0
1.630000	43.7	Off	L1	19.4	12.3	56.0
1.974000	44.3	Off	L1	19.4	11.7	56.0
2.598000	46.9	Off	L1	19.5	9.1	56.0
3.382000	46.0	Off	L1	19.5	10.0	56.0
3.926000	45.9	Off	L1	19.5	10.1	56.0

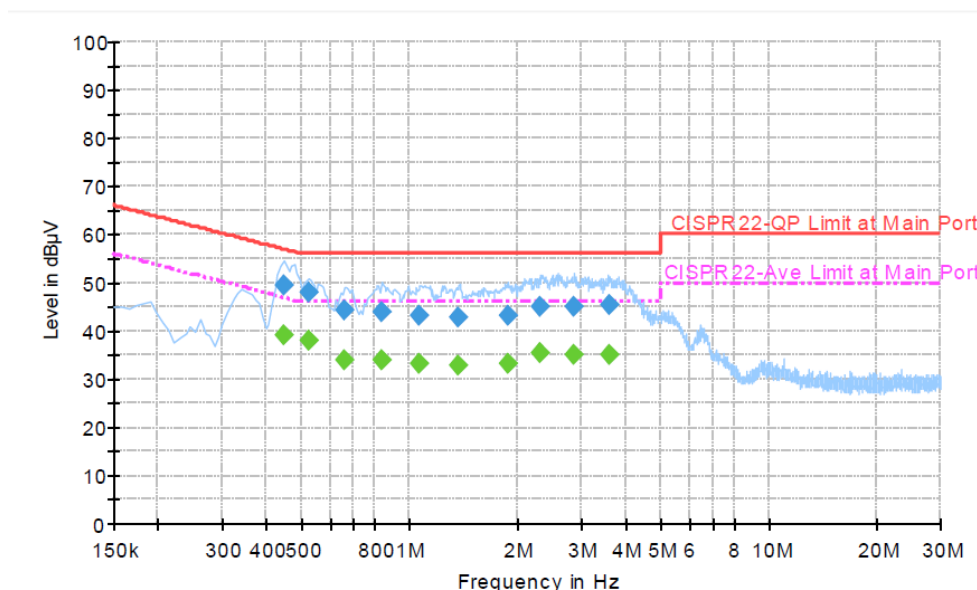
Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Line
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.350000	37.5	Off	L1	19.3	11.5	49.0
0.438000	40.0	Off	L1	19.4	7.1	47.1
0.470000	42.0	Off	L1	19.4	4.5	46.5
0.566000	37.0	Off	L1	19.3	9.0	46.0
0.686000	34.9	Off	L1	19.5	11.1	46.0
0.838000	36.6	Off	L1	19.5	9.4	46.0
1.126000	34.5	Off	L1	19.4	11.5	46.0
1.390000	34.0	Off	L1	19.4	12.0	46.0
1.630000	34.6	Off	L1	19.4	11.4	46.0
1.974000	34.4	Off	L1	19.4	11.6	46.0
2.598000	37.0	Off	L1	19.5	9.0	46.0
3.382000	35.9	Off	L1	19.5	10.1	46.0
3.926000	35.8	Off	L1	19.5	10.2	46.0

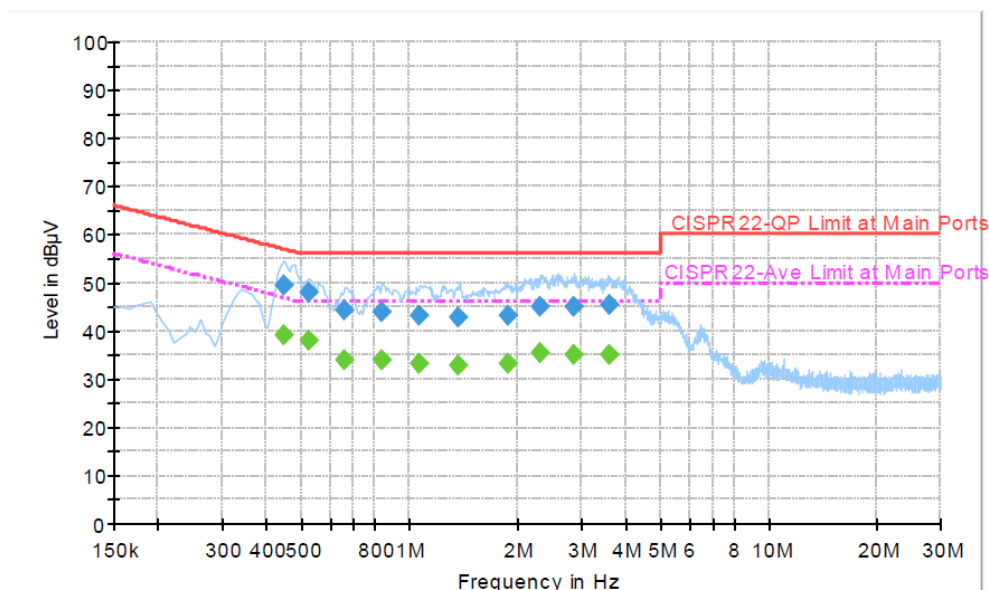
Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : QuasiPeak

Frequency (MHz)	QuasiPeak (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.446000	49.4	Off	N	19.3	7.5	56.9
0.526000	48.0	Off	N	19.3	8.0	56.0
0.662000	44.1	Off	N	19.4	11.9	56.0
0.838000	43.9	Off	N	19.5	12.1	56.0
1.070000	43.2	Off	N	19.4	12.8	56.0
1.374000	42.9	Off	N	19.5	13.1	56.0
1.878000	43.3	Off	N	19.4	12.7	56.0
2.302000	45.2	Off	N	19.5	10.8	56.0
2.862000	45.0	Off	N	19.5	11.0	56.0
3.606000	45.3	Off	N	19.5	10.7	56.0

Test Mode :	Mode 1	Temperature :	21~23℃
Test Engineer :	Kai-Chun Chu	Relative Humidity :	53~55%
Test Voltage :	120Vac / 60Hz	Phase :	Neutral
Function Type :	WLAN Link + Bluetooth Link + HDMI Cable + USB Cable (Charging from Adapter) + Earphone + MPEG4 + Adapter		
Remark :	All emissions not reported here are more than 10 dB below the prescribed limit.		



Final Result : Average

Frequency (MHz)	Average (dBμV)	Filter	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)
0.446000	39.2	Off	N	19.3	7.7	46.9
0.526000	38.1	Off	N	19.3	7.9	46.0
0.662000	34.0	Off	N	19.4	12.0	46.0
0.838000	34.0	Off	N	19.5	12.0	46.0
1.070000	33.3	Off	N	19.4	12.7	46.0
1.374000	33.0	Off	N	19.5	13.0	46.0
1.878000	33.2	Off	N	19.4	12.8	46.0
2.302000	35.3	Off	N	19.5	10.7	46.0
2.862000	34.9	Off	N	19.5	11.1	46.0
3.606000	35.2	Off	N	19.5	10.8	46.0

4.10 Radiated Emission Measurement

4.10.1 Limit of Radiated 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

4.10.2 Measuring Instruments

See list of measuring instruments of this test report.

4.10.3 Test Procedures

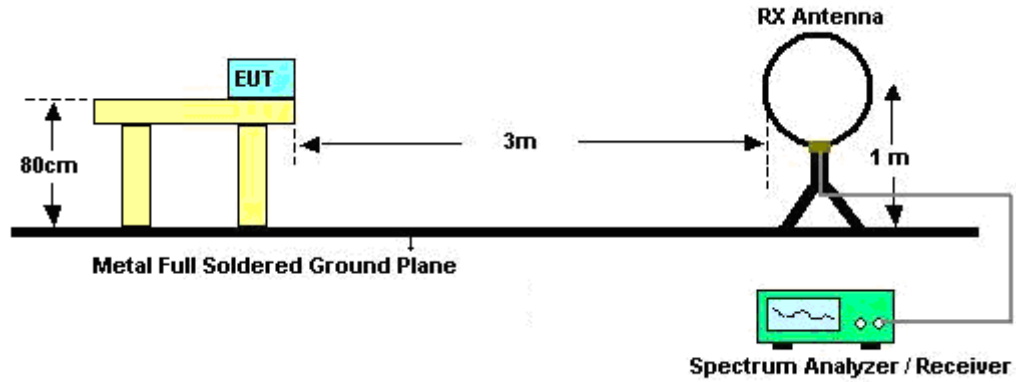
1. The testing follows the guidelines in ANSI C63.4-2003 and FCC Public Notice DA 00-705 Measurement Guidelines.
2. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level to comply with the guidelines in ANSI C63.4-2003.
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. The table was rotated 360 degrees to determine the position of the highest radiation.
6. 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= 1MHz for $f \geq 1$ GHz for Peak measurement, and then set VBW=10Hz, while maintaining all of the other instrument settings for Average measurement.

Distance extrapolation factor = $20 \log (\text{specific distance [3m]} / \text{test distance [1m]})$ (dB)
7. Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level
8. If the emission level of the EUT measured by the peak detector is more than 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

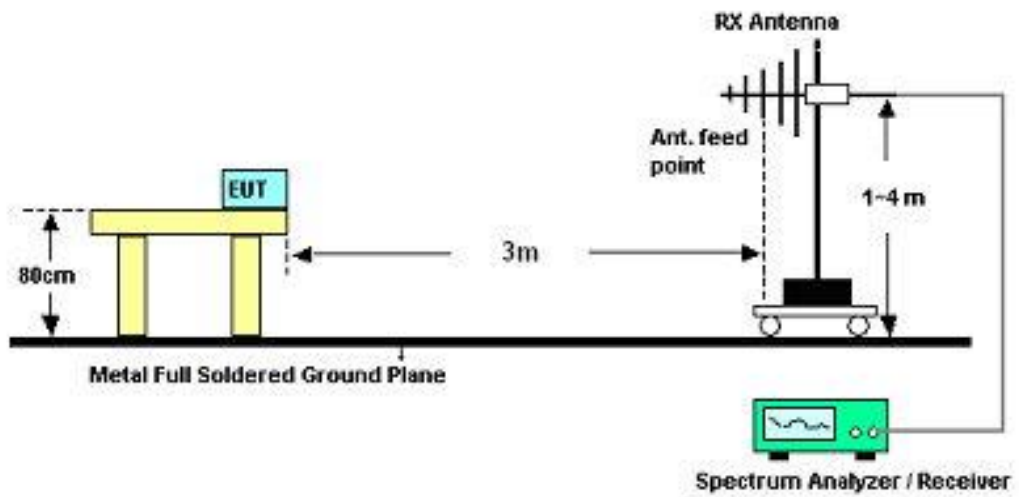
Note : The average measurement for Bluetooth may calculate from the peak level corrected with duty cycle correction factor, derived from the appropriate duty cycle calculation per 15.35(b) and (c). The result by calculation method is no worse than direct measurement by using VBW=10Hz.

4.10.4 Test Setup

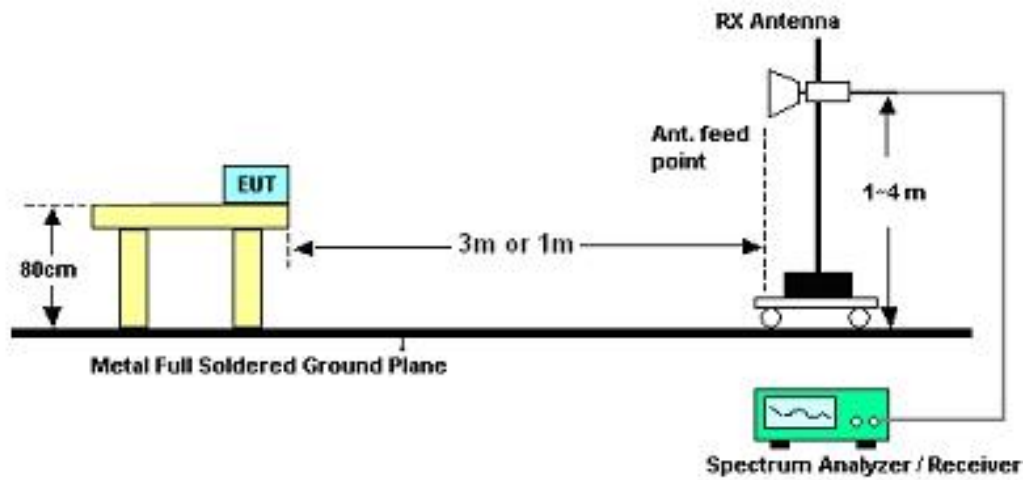
For radiated emissions below 30MHz



For radiated emissions from 30MHz to 1GHz



For radiated emissions above 1GHz



4.10.5 Test Results of Radiated Emissions (9KHz ~ 30MHz)

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.

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

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	00	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2402 MHz is fundamental signal which can be ignored. 2. 2562 MHz, 3201 MHz, 7206 MHz, and 9608 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.92 dBuV/m - 20dB = 88.92 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2388.66	35.34	-18.66	54	31.21	32.06	6.03	33.96	134	5	Average
2388.66	47.7	-26.3	74	43.57	32.06	6.03	33.96	134	5	Peak
2402	91.18	-	-	87.05	32.06	6.03	33.96	134	5	Average
2402	108.92	-	-	104.79	32.06	6.03	33.96	134	5	Peak
2494	31.73	-22.27	54	27.35	32.2	6.18	34	134	5	Average
2494	43.63	-30.37	74	39.25	32.2	6.18	34	134	5	Peak
2562	51.58	-37.34	88.92	47.04	32.27	6.26	33.99	100	0	Peak
3201	47.14	-41.78	88.92	67.54	32.74	7.19	60.33	100	0	Peak
4804	51.62	-2.38	54	68.47	34.1	9.11	60.06	100	76	Average
4804	60.06	-13.94	74	76.91	34.1	9.11	60.06	100	76	Peak
7206	42.41	-46.51	88.92	56.06	35.7	10.02	59.37	100	0	Peak
9608	52.68	-36.24	88.92	64.41	36.54	12.01	60.28	100	0	Peak

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	00	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2402 MHz is fundamental signal which can be ignored. 2. 3201 MHz and 9608 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.26 dBuV/m - 20dB = 80.26 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2378.02	32.87	-21.13	54	28.8	32.03	5.99	33.95	171	239	Average
2378.02	45.15	-28.85	74	41.08	32.03	5.99	33.95	171	239	Peak
2402	84.38	-	-	80.25	32.06	6.03	33.96	171	239	Average
2402	100.26	-	-	96.13	32.06	6.03	33.96	171	239	Peak
2494	31.62	-22.38	54	27.24	32.2	6.18	34	171	239	Average
2494	43.29	-30.71	74	38.91	32.2	6.18	34	171	239	Peak
3201	42.49	-37.77	80.26	62.89	32.74	7.19	60.33	100	0	Peak
4804	47.69	-6.31	54	64.54	34.1	9.11	60.06	100	53	Average
4804	56.51	-17.49	74	73.36	34.1	9.11	60.06	100	53	Peak
9608	52.55	-27.71	80.26	64.28	36.54	12.01	60.28	100	0	Peak

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	39	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2441 MHz is fundamental signal which can be ignored. 2. 2564 MHz, 3255 MHz, and 9764 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 108.46 dBuV/m - 20dB = 88.46 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2366	33.09	-20.91	54	29.04	32.01	5.99	33.95	100	11	Average
2366	44.08	-29.92	74	40.03	32.01	5.99	33.95	108	11	Peak
2441	91.04	-	-	86.78	32.13	6.11	33.98	100	11	Average
2441	108.46	-	-	104.2	32.13	6.11	33.98	108	11	Peak
2492	32.16	-21.84	54	27.78	32.2	6.18	34	100	11	Average
2492	44.51	-29.49	74	40.13	32.2	6.18	34	108	11	Peak
2564	50.22	-38.24	88.46	45.68	32.27	6.26	33.99	100	0	Peak
3255	42.41	-46.05	88.46	62.78	32.75	7.29	60.41	100	0	Peak
4882	50.44	-3.56	54	66.98	34.1	9.14	59.78	101	35	Average
4882	57.3	-16.7	74	73.84	34.1	9.14	59.78	101	35	Peak
7323	41.34	-32.66	74	55.04	35.7	10.06	59.46	100	0	Peak
9764	54.51	-33.95	88.46	66.21	36.79	11.93	60.42	100	0	Peak

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	39	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2441 MHz is fundamental signal which can be ignored. 2. 3255 and 9764 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.71 dBuV/m - 20dB = 80.71 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
2366	32.61	-21.39	54	28.56	32.01	5.99	33.95	168	247	Average
2366	43.93	-30.07	74	39.88	32.01	5.99	33.95	168	247	Peak
2441	85.08	-	-	80.72	32.18	6.18	34	168	247	Average
2441	100.71	-	-	96.45	32.13	6.11	33.98	168	247	Peak
2484	31.8	-22.2	54	27.44	32.18	6.18	34	168	247	Average
2484	42.9	-31.1	74	38.54	32.18	6.18	34	168	247	Peak
3255	40.72	-39.99	80.71	61.09	32.75	7.29	60.41	100	0	Peak
4882	46.16	-7.84	54	62.7	34.1	9.14	59.78	100	48	Average
4882	53.52	-20.48	74	70.06	34.1	9.14	59.78	100	48	Peak
7323	41.17	-32.83	74	54.87	35.7	10.06	59.46	100	0	Peak
9764	52.77	-27.94	80.71	64.47	36.79	11.93	60.42	100	0	Peak

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Horizontal
Remark :	1. 2480 MHz is fundamental signal which can be ignored. 2. 2564 MHz, 3306 MHz, and 9920 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 106.95 dBuV/m - 20dB = 86.95 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
86.43	20.64	-19.36	40	43.18	8.24	0.92	31.7	-	-	Peak
108.84	25.8	-17.7	43.5	45.89	10.61	1.04	31.74	-	-	Peak
200.37	22.18	-21.32	43.5	43	9.17	1.32	31.31	-	-	Peak
407.1	31.39	-14.61	46	44.49	16.16	2.17	31.43	105	180	Peak
485.5	26.87	-19.13	46	37.61	17.8	2.4	30.94	-	-	Peak
650.7	23.8	-22.2	46	31.11	20.2	2.84	30.35	-	-	Peak
2324	32.75	-21.25	54	28.8	31.96	5.92	33.93	130	0	Average
2324	43.86	-30.14	74	39.91	31.96	5.92	33.93	130	0	Peak
2480	89.8	-	-	85.44	32.18	6.18	34	130	0	Average
2480	106.95	-	-	102.59	32.18	6.18	34	130	0	Peak
2483.5	53.09	-0.91	54	48.73	32.18	6.18	34	130	0	Average
2483.5	70.07	-3.93	74	65.71	32.18	6.18	34	130	0	Peak
2564	53.55	-33.4	86.95	49.01	32.27	6.26	33.99	100	0	Peak
3306	40.71	-46.24	86.95	61.03	32.76	7.39	60.47	100	0	Peak
4960	48.93	-5.07	54	65.11	34.1	9.16	59.44	100	34	Average
4960	56.3	-17.7	74	72.48	34.1	9.16	59.44	100	34	Peak
9920	53.27	-33.68	86.95	64.97	37	11.84	60.54	100	0	Peak

Test Mode :	<BT> : 3Mbps	Temperature :	23~25°C
Test Channel :	78	Relative Humidity :	52~54%
Test Engineer :	Kyle Zhuang	Polarization :	Vertical
Remark :	1. 2480 MHz is fundamental signal which can be ignored. 2. 2562 MHz, 3306 MHz, and 9920 MHz are not within a restricted band, and its limit line is 20dB below the highest emission level. For example, 100.69 dBuV/m - 20dB = 80.69 dBuV/m.		

Frequency (MHz)	Level (dBμV/m)	Over Limit (dB)	Limit Line (dBμV/m)	Read Level (dBμV)	Antenna Factor (dB)	Cable Loss (dB)	Preamp Factor (dB)	Ant Pos (cm)	Table Pos (deg)	Remark
51.6	23.98	-16.02	40	47.02	7.9	0.71	31.65	100	204	Peak
106.95	22.77	-20.73	43.5	43.03	10.43	1.03	31.72	-	-	Peak
220.35	27.53	-18.47	46	46.82	10.51	1.42	31.22	-	-	Peak
405.7	27.23	-18.77	46	40.39	16.12	2.16	31.44	-	-	Peak
490.4	26.06	-19.94	46	36.66	17.9	2.42	30.92	-	-	Peak
643.7	26.13	-19.87	46	33.53	20.15	2.82	30.37	-	-	Peak
2388	32.76	-21.24	54	28.63	32.06	6.03	33.96	196	237	Average
2388	44.81	-29.19	74	40.68	32.06	6.03	33.96	196	237	Peak
2480	85.16	-	-	80.8	32.18	6.18	34	196	237	Average
2480	100.69	-	-	96.33	32.18	6.18	34	196	237	Peak
2483.5	48.54	-5.46	54	44.18	32.18	6.18	34	196	237	Average
2483.5	63.8	-10.2	74	59.44	32.18	6.18	34	196	237	Peak
2562	50.85	-29.84	80.69	46.31	32.27	6.26	33.99	100	0	Peak
3306	39.16	-41.53	80.69	59.48	32.76	7.39	60.47	100	0	Peak
4960	45.17	-8.83	54	61.35	34.1	9.16	59.44	100	107	Average
4960	52.03	-21.97	74	68.21	34.1	9.16	59.44	100	107	Peak
9920	53.11	-27.58	80.69	64.81	37	11.84	60.54	100	0	Peak

4.11 Antenna Requirements

4.11.1 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.

4.11.2 Antenna Connected Construction

The antennas type used in this product is with non-standard connector and it is considered to meet antenna requirement.

4.11.3 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.

5 List of Measuring Equipment

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Spectrum Analyzer	R&S	FSP40	100055	9kHz~40GHz	Jun. 13, 2011	Apr. 27, 2012~ May 31, 2012	Jun. 12, 2012	Conducted (TH02-HY)
Bluetooth Base Station	R&S	CBT32	100522	N/A	Feb. 09, 2012	Apr. 27, 2012~ May 31, 2012	Feb. 08, 2014	Conducted (TH02-HY)
EMI Test Receive	R&S	ESCS 30	100356	9KHz ~ 2.75GHz	Oct. 27, 2011	Jan. 31, 2012	Oct. 26, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100081	9KHz ~ 30MHz	Dec. 09, 2011	Jan. 31, 2012	Dec. 08, 2012	Conduction (CO05-HY)
Two-LISN	R&S	ENV216	11-100080	9KHz ~ 30MHz	Dec. 06, 2011	Jan. 31, 2012	Dec. 05, 2012	Conduction (CO05-HY)
AC Power Source	APC	APC-1000W	N/A	N/A	N/A	Jan. 31, 2012	N/A	Conduction (CO05-HY)
Bilog Antenna	SCHAFFNER	CBL6111C	2726	30MHz ~ 1GHz	Oct. 22, 2011	Apr. 27, 2012~ May 21, 2012	Oct. 21, 2012	Radiation (03CH07-HY)
Spectrum Analyzer	R&S	FSP30	101067	9KHz ~ 30GHz	Dec. 06, 2011	Apr. 27, 2012~ May 21, 2012	Dec. 05, 2012	Radiation (03CH07-HY)
Double Ridge Horn Antenna	ESCO	3117	00075962	1GHz ~ 18GHz	Aug. 10, 2011	Apr. 27, 2012~ May 21, 2012	Aug. 09, 2012	Radiation (03CH07-HY)
Pre Amplifier	Agilent	8449B	3008A023 62	1GHz ~ 26.5GHz	Dec. 05, 2011	Apr. 27, 2012~ May 21, 2012	Dec. 04, 2012	Radiation (03CH07-HY)
Pre Amplifier	COM-POWER	PA-103A	161241	10-1000MHz.32 dB.GAIN	Feb. 27, 2012	Apr. 27, 2012~ May 21, 2012	Feb. 26, 2013	Radiation (03CH07-HY)
EMI TEST RECEIVER	R&S	ESCI 7	100724	9kHz ~ 7GHz	Aug. 22, 2011	Apr. 27, 2012~ May 21, 2012	Aug. 21, 2012	Radiation (03CH07-HY)
Pre Amplifier	MITEQ	AMF-7D-0010 1800-30-10P	159088	1GHz ~ 18GHz	Mar. 10, 2012	Apr. 27, 2012~ May 21, 2012	Mar. 09, 2013	Radiation (03CH07-HY)
Loop Antenna	R&S	HFH2-Z2	860004/00 1	9 kHz~30 MHz	Jul. 29, 2010	Apr. 27, 2012~ May 21, 2012	Jul. 28, 2012	Radiation (03CH07-HY)

6 Uncertainty of Evaluation

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

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.10	Normal (k=2)	0.05
Cable Loss	0.10	Normal (k=2)	0.05
AMN Insertion Loss	2.50	Rectangular	0.63
Receiver Specification	1.50	Rectangular	0.43
Site Imperfection	1.39	Rectangular	0.80
Mismatch	+0.34 / -0.35	U-Shape	0.24
Combined Standard Uncertainty $U_c(y)$	1.13		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of X_i		$u(X_i)$
	dB	Probability Distribution	
Receiver Reading	0.41	Normal (k=2)	0.21
Antenna Factor Calibration	0.83	Normal (k=2)	0.42
Cable Loss Calibration	0.25	Normal (k=2)	0.13
Pre-Amplifier Gain Calibration	0.27	Normal (k=2)	0.14
RCV/SPA Specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site Imperfection	1.43	Rectangular	0.83
Mismatch	+0.39 / -0.41	U-Shape	0.28
Combined Standard Uncertainty $U_c(y)$	1.27		
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of X_i		$u(X_i)$	C_i	$C_i * u(X_i)$
	dB	Probability Distribution			
Receiver Reading	± 0.10	Normal (k=2)	0.10	1	0.10
Antenna Factor Calibration	± 1.70	Normal (k=2)	0.85	1	0.85
Cable Loss Calibration	± 0.50	Normal (k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site Imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20\text{Log}(1-\Gamma_1*\Gamma_2)$	+0.34 / -0.35	U-Shape	0.244	1	0.244
Combined Standard Uncertainty $U_c(y)$	2.36				
Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$)	4.72				