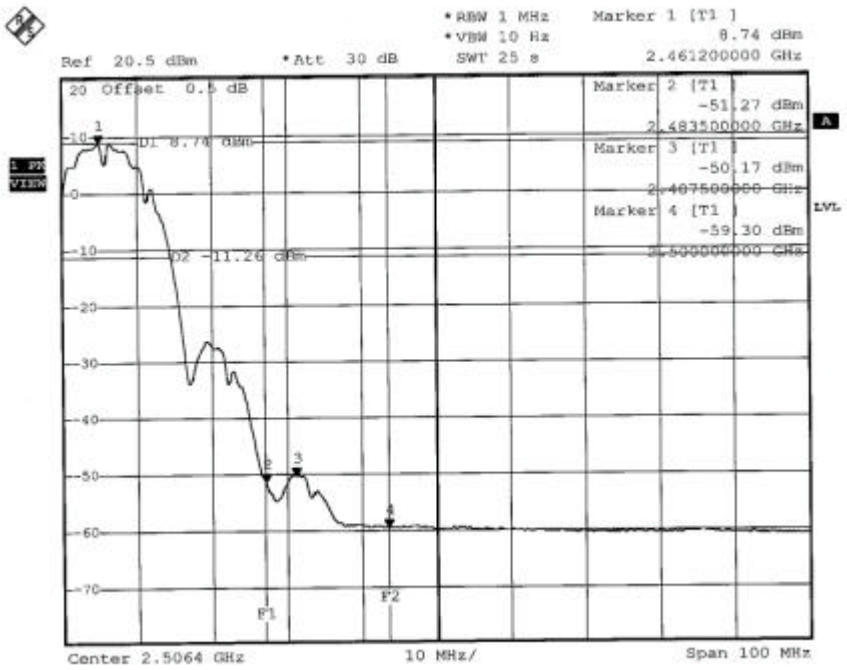
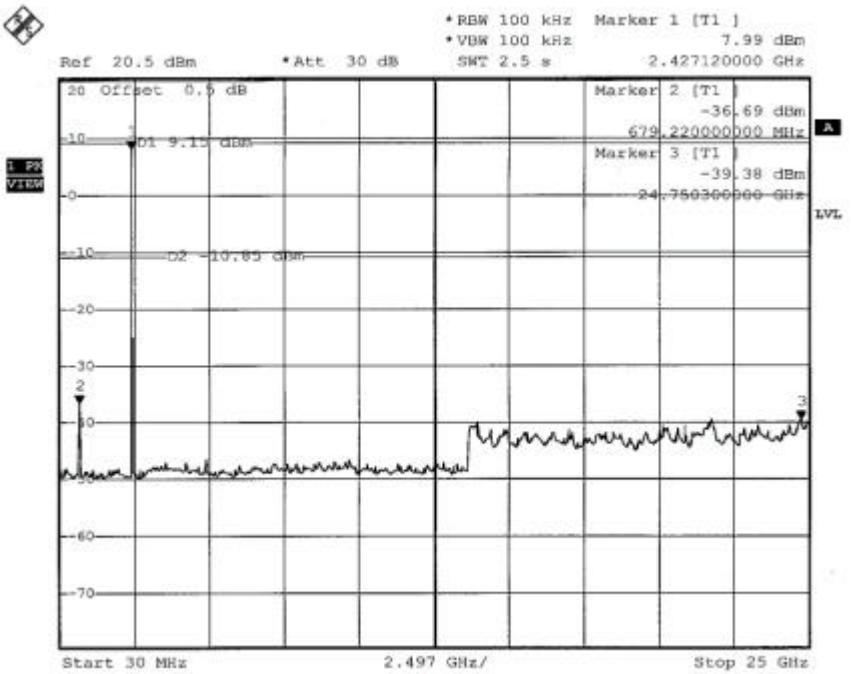

*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
0.74 dBm
2.461200000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-51.27 dBm
2.483500000 GHz
Marker 3 [T1]
-50.17 dBm
2.407500000 GHz
Marker 4 [T1]
-59.30 dBm
2.500000000 GHz
D1 8.74 dBm
D2 -11.26 dBm
F1
F2
Center 2.5064 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
7.99 dBm
2.427120000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-36.69 dBm
679.220000000 MHz
Marker 3 [T1]
-39.38 dBm
24.750300000 GHz
D1 9.15 dBm
D2 -10.85 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

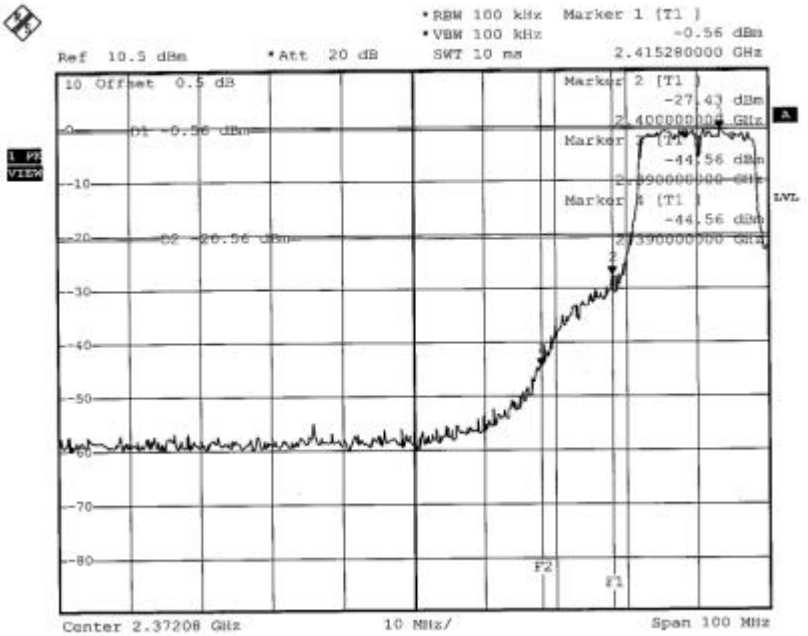
802.11g OFDM MODULATION

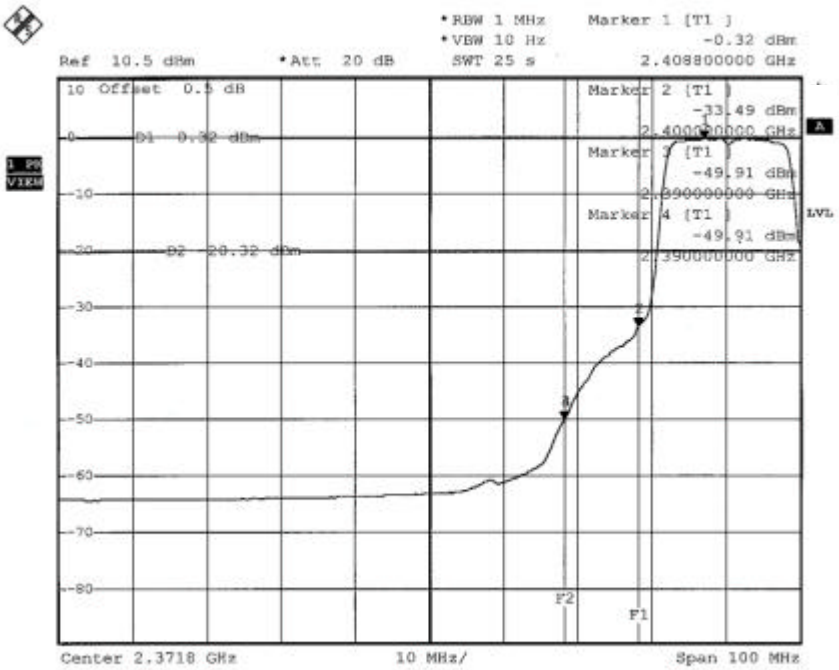
NOTE 1: The band edge emission plot on the next page shows 44.00dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 108.23dBuV/m (Peak), so the maximum field strength in restrict band is 108.23-44.00=64.23dBuV/m which is under 74dBuV/m limit.

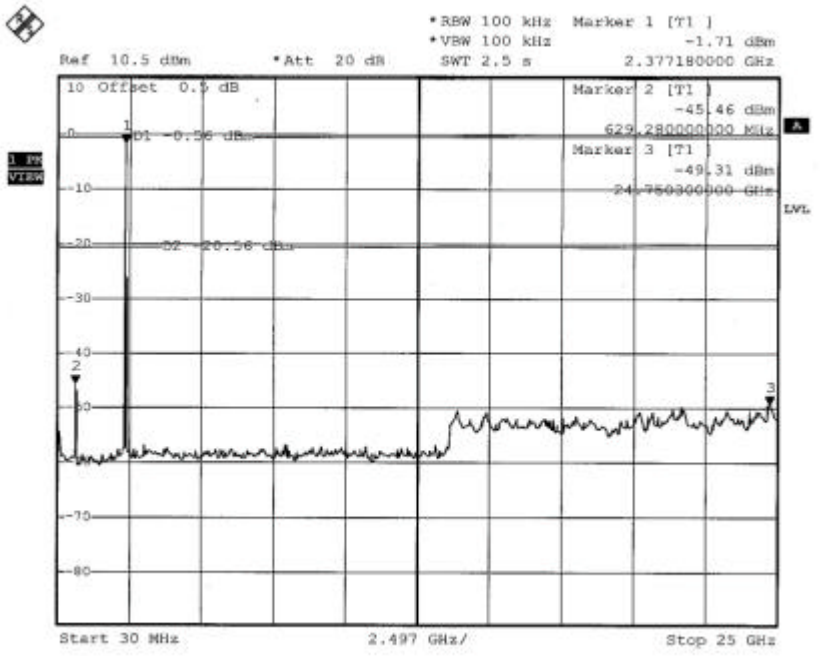
The band edge emission plot of on the next page shows 49.59dBc between carrier maximum power and local maximum emission in restrict band (2.39000GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 99.21dBuV/m (Average), so the maximum field strength in restrict band is 99.21-49.59=49.62dBuV/m which is under 54dBuV/m limit.

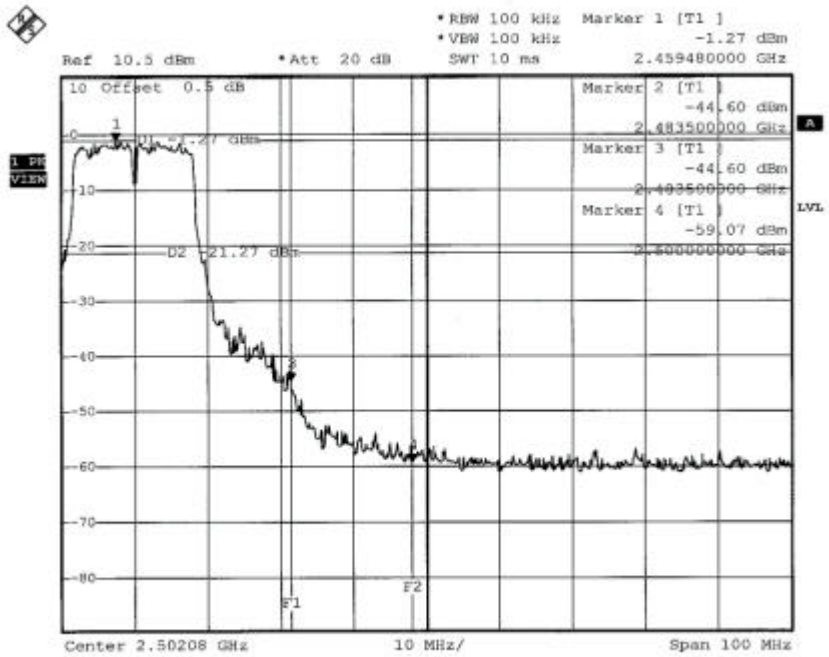
NOTE 2: The band edge emission plot on the next second page shows 43.33dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 109.39dBuV/m (Peak), so the maximum field strength in restrict band is 109.39-43.33=66.06dBuV/m which is under 74dBuV/m limit.

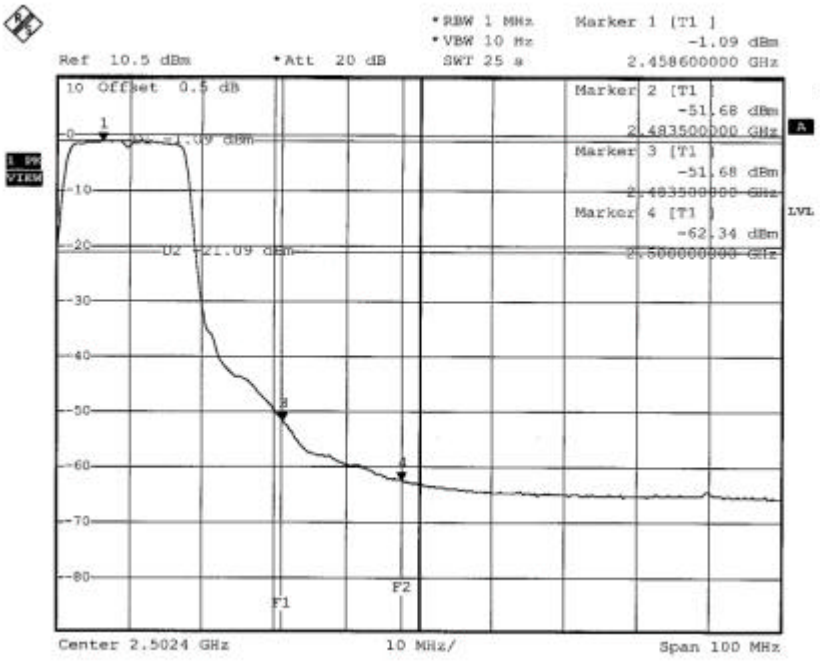
The band edge emission plot on the next third page shows 50.59dBc between carrier maximum power and local maximum emission in restrict band (2.48350GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.51dBuV/m (Average), so the maximum field strength in restrict band is 100.51-50.59=49.92dBuV/m which is under 54dBuV/m limit.

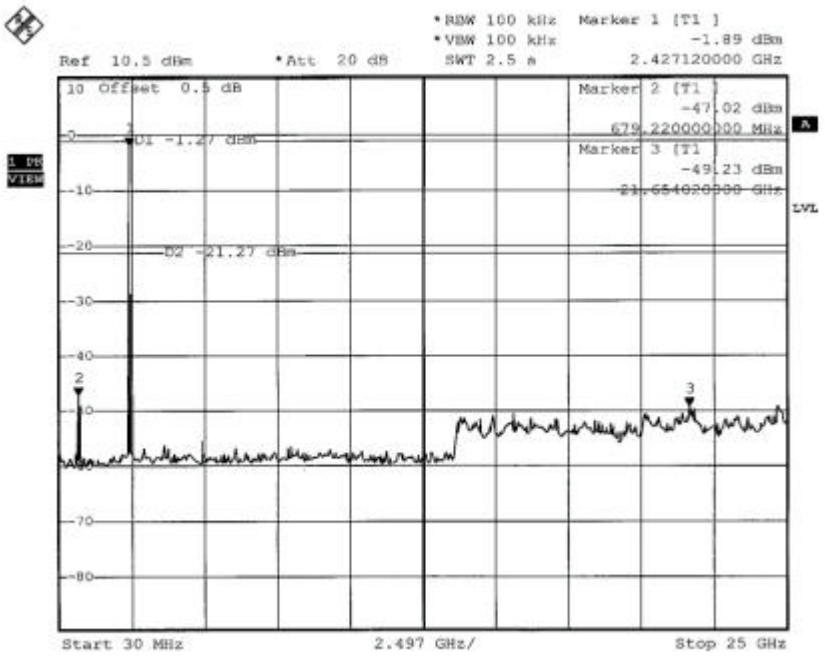

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-0.56 dBm
2.415280000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
D1 -0.56 dBm
D2 -20.56 dBm
Marker 2 [T1]
-27.43 dBm
2.400000000 GHz
Marker 3 [T1]
-44.56 dBm
2.390000000 GHz
Marker 4 [T1]
-44.56 dBm
2.390000000 GHz
1 PK VIEW
A
LVL
F2
F1
Center 2.37208 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-0.32 dBm
2.408800000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
D1 -0.32 dBm
D2 -20.32 dBm
Marker 2 [T1]
-33.49 dBm
2.400000000 GHz
Marker 3 [T1]
-49.91 dBm
2.390000000 GHz
Marker 4 [T1]
-49.91 dBm
2.390000000 GHz
1 PK VIEW
A
LVL
F2
F1
Center 2.3718 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-1.71 dBm
2.377180000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
D1 -0.56 dBm
D2 -20.56 dBm
Marker 2 [T1]
-45.46 dBm
629.280000000 MHz
Marker 3 [T1]
-49.31 dBm
24.750300000 GHz
1 PK VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-1.27 dBm
2.459480000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
D1 -1.27 dBm
D2 -21.27 dBm
Marker 2 [T1]
-44.60 dBm
2.483500000 GHz
Marker 3 [T1]
-44.60 dBm
2.483500000 GHz
Marker 4 [T1]
-59.07 dBm
2.500000000 GHz
1 PK VIEW
A
LVL
F1
F2
Center 2.50208 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
-1.09 dBm
2.458600000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
Marker 2 [T1]
-51.68 dBm
2.483500000 GHz
Marker 3 [T1]
-51.68 dBm
2.483500000 GHz
Marker 4 [T1]
-62.34 dBm
2.500000000 GHz
D2 -21.09 dBm
F1
F2
Center 2.5024 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-1.89 dBm
2.427120000 GHz
Ref 10.5 dBm
*Att 20 dB
10 Offset 0.5 dB
Marker 2 [T1]
-47.02 dBm
679.220000000 MHz
Marker 3 [T1]
-49.23 dBm
21.654020000 GHz
D1 -1.27 dBm
D2 -21.27 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

4.7 ANTENNA REQUIREMENT

4.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Inverted F antenna with I-PEX connector. The maximum Gain of the antenna is 1.56dBi.

5. TEST TYPES AND RESULTS (FOR 802.11a 5725~5850MHz Band)

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15-0.5 0.5-5 5-30	66 to 56 56 60	56 to 46 46 50

NOTE: 1. The lower limit shall apply at the transition frequencies.
1. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
2. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 02, 2006
RF signal cable Woken	5D-FB	Cable-HYCO3-01	Jan. 06, 2007
LISN ROHDE & SCHWARZ	ESH2-Z5	100100	Jan. 09, 2007
LISN ROHDE & SCHWARZ	ESH3-Z5	100311	Jan. 22, 2007
Software ADT	ADT_Cond_V3	NA	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

2. The test was performed in HwaYa Shielded Room 2.

3. The VCCI Site Registration No. is C-2047.

5.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

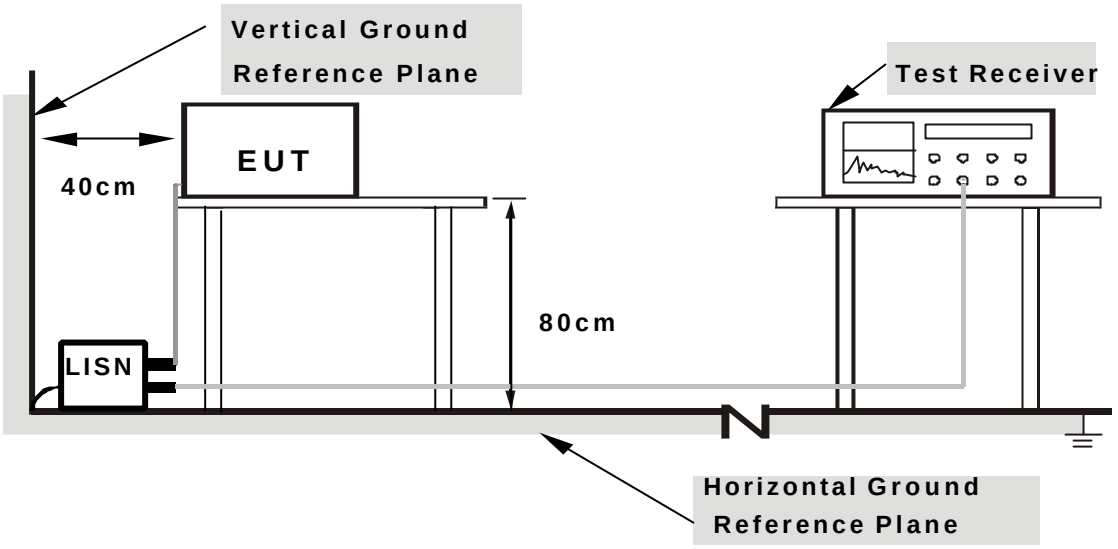
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 150kHz to 30MHz was searched. Emission levels under (Limit – 20dB) was not recorded.

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6

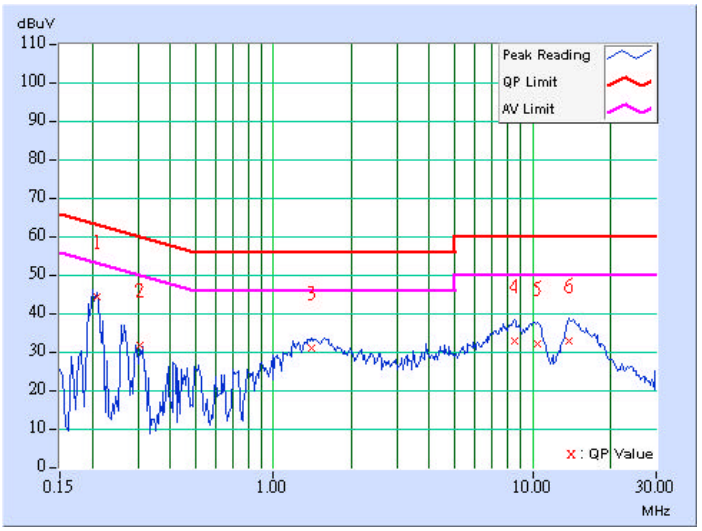
5.1.7 TEST RESULTS

CONDUCTED WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	**PHASE**	Line 1
MODULATION TYPE	BPSK	**6dB BANDWIDTH**	9 kHz
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	20deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Match Tsui

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		**Factor**	**[dB (uV)]**		**[dB (uV)]**		**[dB (uV)]**		**(dB)**	
	[MHz]	**(dB)**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**	**Q.P.**	**AV.**
1	0.209	0.10	43.75	-	43.85	-	63.26	53.26	-19.41	-
2	0.306	0.10	31.24	-	31.34	-	60.07	50.07	-28.73	-
3	1.402	0.14	30.55	-	30.69	-	56.00	46.00	-25.31	-
4	8.523	0.36	32.33	-	32.69	-	60.00	50.00	-27.31	-
5	10.457	0.38	31.78	-	32.16	-	60.00	50.00	-27.84	-
6	13.797	0.57	32.51	-	33.08	-	60.00	50.00	-26.92	-

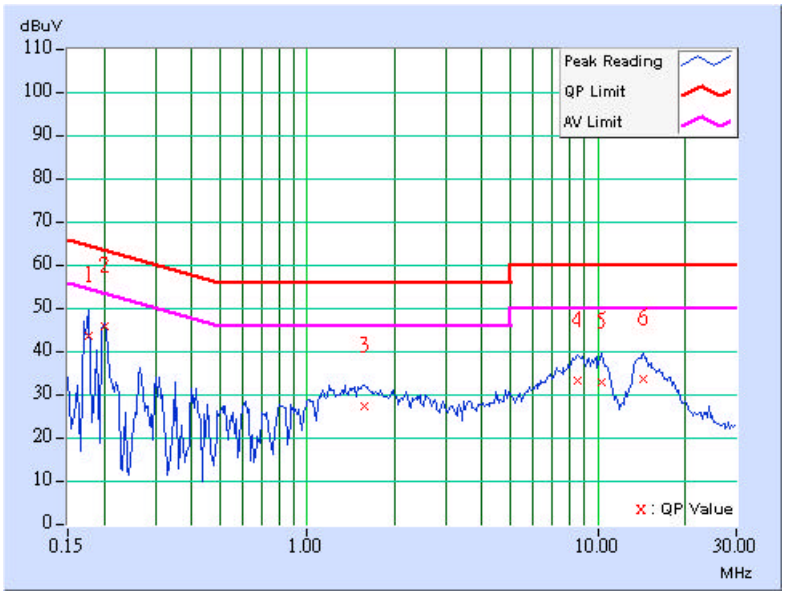
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	PHASE	Line 2
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Match Tsui

	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
No		Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.177	0.10	43.10	-	43.20	-	64.61	54.61	-21.41	-
2	0.201	0.10	45.37	-	45.47	-	63.58	53.58	-18.11	-
3	1.570	0.20	26.71	-	26.91	-	56.00	46.00	-29.09	-
4	8.496	0.44	32.84	-	33.28	-	60.00	50.00	-26.72	-
5	10.281	0.47	32.34	-	32.81	-	60.00	50.00	-27.19	-
6	14.289	0.61	33.04	-	33.65	-	60.00	50.00	-26.35	-

REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Correction factor = Insertion loss + Cable loss
6. Emission Level = Correction Factor + Reading Value.



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

Frequencies (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

NOTE:

1. The lower limit shall apply at the transition frequencies.
2. Emission level (dBuV/m) = 20 log Emission level (uV/m).
3. As shown in 15.35(b), for frequencies above 1000MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20dB under any condition of modulation.

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 20, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 27, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 15, 2007
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 22, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170147	Jan. 26, 2007
Preamplifier Agilent	8449B	3008A01961	Oct. 23, 2006
Preamplifier Agilent	8447D	2944A10629	Oct. 27, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	214380/4	Jan. 16, 2007
RF signal cable HUBER+SUHNER	SUCOFLEX 104	219266/4	Jan. 16, 2007
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

NOTE: 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.
2. The test was performed in HwaYa Chamber 2.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC4924-2.

5.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation.

b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

f. If the emission level of the EUT in peak mode was lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

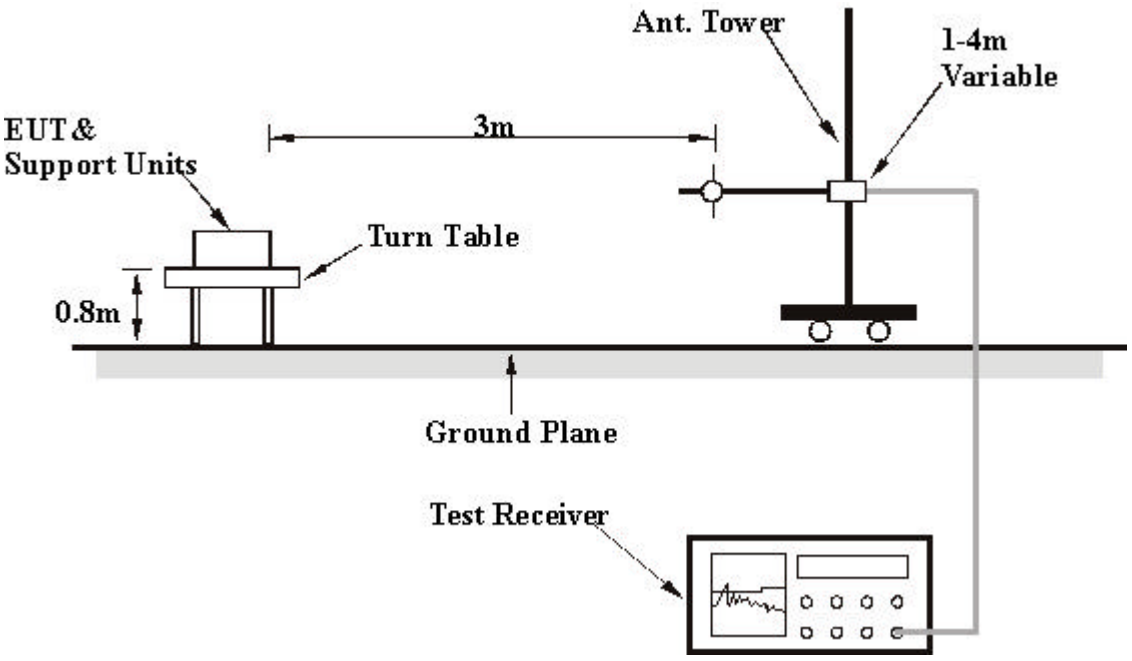
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



For the actual test configuration, please refer to the related item – Photographs of the Test Configuration.

5.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

5.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	**FREQUENCY RANGE**	Below 1000MHz
MODULATION TYPE	BPSK	**DETECTOR FUNCTION**	Quasi-Peak
TRANSFER RATE	6Mbps	**ENVIRONMENTAL CONDITIONS**	27deg. C, 69%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**TESTED BY**	Lori Chiu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	85.45	32.48 QP	40.00	-7.52	1.97 H	19	22.70	9.78
2	113.59	32.37 QP	43.50	-11.13	2.00 H	22	22.14	10.23
3	133.03	36.04 QP	43.50	-7.46	1.00 H	103	23.51	12.53
4	183.57	31.30 QP	43.50	-12.20	2.00 H	40	19.37	11.94
5	239.94	40.12 QP	46.00	-5.88	1.50 H	31	27.98	12.14
6	274.93	34.41 QP	46.00	-11.59	2.00 H	358	20.00	14.40
7	389.62	34.13 QP	46.00	-11.87	2.00 H	46	16.54	17.59
8	399.34	33.29 QP	46.00	-12.71	1.00 H	34	15.37	17.92
9	479.04	37.47 QP	46.00	-8.53	2.00 H	355	17.87	19.60
10	720.08	33.60 QP	46.00	-12.40	2.00 H	46	8.80	24.80
11	877.54	33.31 QP	46.00	-12.69	2.00 H	58	6.41	26.90

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M

No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	158.30	28.78 QP	43.50	-14.72	1.00 V	133	15.37	13.41
2	168.02	25.61 QP	43.50	-17.89	1.00 V	307	12.70	12.91
3	239.94	28.50 QP	46.00	-17.50	1.00 V	307	16.37	12.14
4	479.04	28.68 QP	46.00	-17.32	1.00 V	226	9.08	19.60
5	539.30	28.36 QP	46.00	-17.64	1.00 V	214	7.43	20.93
6	665.65	30.68 QP	46.00	-15.32	1.00 V	229	7.30	23.38
7	720.08	31.06 QP	46.00	-14.94	1.00 V	133	6.27	24.80
8	852.26	28.99 QP	46.00	-17.01	1.00 V	307	2.29	26.69
9	931.96	28.99 QP	46.00	-17.01	1.00 V	304	0.42	28.57

REMARKS: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.

802.11a OFDM MODULATION

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	48.85 PK	74.00	-25.15	1.13 H	265	19.64	29.21
2	1440.00	44.01 AV	54.00	-9.99	1.13 H	265	14.80	29.21
3	**5725.00**	**83.06 PK**	**87.07**	**-4.01**	**1.08 H**	**212**	**42.87**	**40.19**
4	5725.00	70.87 AV	77.67	-6.80	1.08 H	212	30.68	40.19
5	*5745.00	107.07 PK			1.08 H	212	66.82	40.25
6	*5745.00	97.67 AV			1.08 H	212	57.42	40.25
7	11490.00	61.77 PK	74.00	-12.23	1.02 H	79	9.92	51.84
8	11490.00	48.98 AV	54.00	-5.02	1.02 H	79	-2.87	51.84

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	47.51 PK	74.00	-26.49	1.09 V	204	18.30	29.21
2	1440.00	42.68 AV	54.00	-11.32	1.09 V	204	13.47	29.21
3	5725.00	76.28 PK	83.08	-6.80	1.34 V	223	36.09	40.19
4	5725.00	67.06 AV	73.86	-6.80	1.34 V	223	26.87	40.19
5	*5745.00	103.08 PK			1.34 V	223	62.83	40.25
6	*5745.00	93.86 AV			1.34 V	223	53.61	40.25
7	11490.00	58.79 PK	74.00	-15.21	1.07 V	26	6.95	51.84
8	11490.00	46.48 AV	54.00	-7.52	1.07 V	26	-5.37	51.84

NOTE: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value
5. "*" : Fundamental frequency
6. "#" The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	49.08 PK	74.00	-24.92	1.08 H	59	19.87	29.21
2	1440.00	44.23 AV	54.00	-9.77	1.08 H	59	15.02	29.21
3	*5785.00	106.68 PK			1.16 H	215	66.33	40.35
4	*5785.00	97.01 AV			1.16 H	215	56.66	40.35
5	11570.00	61.56 PK	74.00	-12.44	1.03 H	84	9.88	51.68
6	11570.00	48.74 AV	54.00	-5.26	1.03 H	84	-2.94	51.68

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	47.28 PK	74.00	-26.72	1.13 V	245	18.07	29.21
2	1440.00	42.45 AV	54.00	-11.55	1.13 V	245	13.24	29.21
3	*5785.00	102.51 PK			1.35 V	220	62.16	40.35
4	*5785.00	93.42 AV			1.35 V	220	53.07	40.35
5	11570.00	59.14 PK	74.00	-14.86	1.04 V	87	7.46	51.68
6	11570.00	46.92 AV	54.00	-7.08	1.04 V	87	-4.76	51.68

NOTE: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value
5. "*" : Fundamental frequency
6. "#" The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Brad Wu

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	48.72 PK	74.00	-25.28	1.09 H	76	19.51	29.21
2	1440.00	43.93 AV	54.00	-10.07	1.09 H	76	14.72	29.21
3	*5825.00	106.72 PK			1.07 H	213	66.27	40.45
4	*5825.00	97.39 AV			1.07 H	213	56.94	40.45
5	5850.00	73.90 PK	86.72	-12.82	1.07 H	213	33.38	40.52
6	5850.00	60.70 AV	77.39	-16.69	1.07 H	213	20.19	40.52
7	11650.00	61.52 PK	74.00	-12.48	1.07 H	263	10.04	51.48
8	11650.00	48.75 AV	54.00	-5.25	1.07 H	263	-2.73	51.48

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT 3 M								
No.	Freq. (MHz)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (m)	Table Angle (Degree)	Raw Value (dBuV)	Correction Factor (dB/m)
1	1440.00	47.69 PK	74.00	-26.31	1.13 V	274	18.48	29.21
2	1440.00	42.91 AV	54.00	-11.09	1.13 V	274	13.70	29.21
3	*5825.00	102.85 PK			1.35 V	226	62.40	40.45
4	*5825.00	93.63 AV			1.35 V	226	53.18	40.45
5	5850.00	66.16 PK	82.85	-16.69	1.35 V	226	25.64	40.52
6	5850.00	56.94 AV	73.63	-16.69	1.35 V	226	16.42	40.52
7	11650.00	58.64 PK	74.00	-15.36	1.10 V	48	7.16	51.48
8	11650.00	46.32 AV	54.00	-7.68	1.10 V	48	-5.16	51.48

NOTE: 1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value
5. "*" : Fundamental frequency
6. "#" The radiated frequency falling in the restricted band.
7. The limit value is defined as per 15.247

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP 40	100040	Jun. 07, 2007

NOTES: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

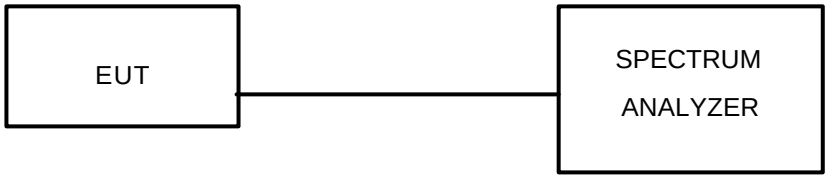
5.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

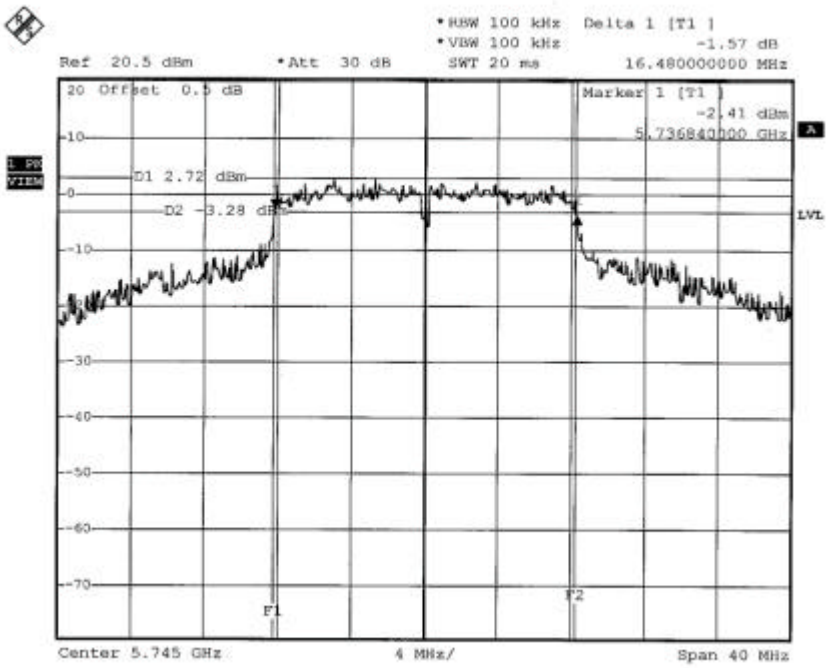
5.3.7 TEST RESULTS

802.11a OFDM MODULATION

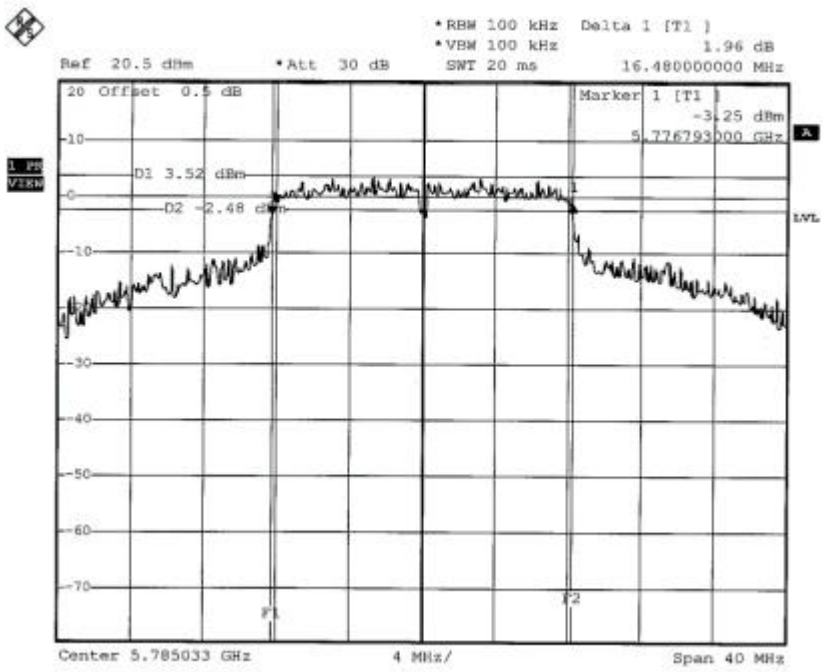
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	5745	16.48	0.5	PASS
3	5785	16.48	0.5	PASS
5	5825	16.56	0.5	PASS

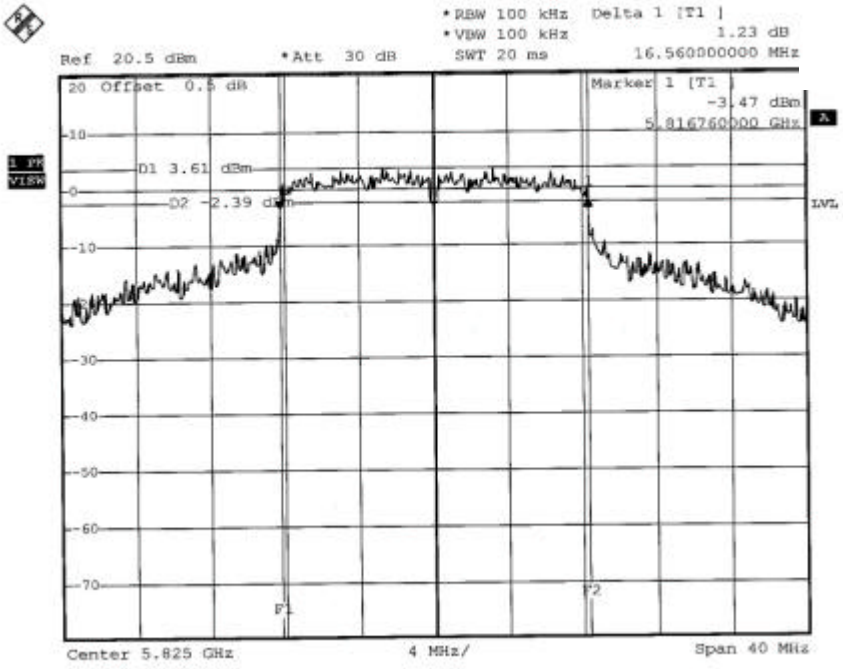
CH 1



CH 3


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
1.96 dB
16.480000000 MHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 1 [T1]
-3.25 dBm
5.776793000 GHz
D1 3.52 dBm
D2 -2.48 dBm
1 PK VIEW
LVL
F1
F2
Center 5.785033 GHz
4 MHz/
Span 40 MHz

CH 5


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 1 [T1]
1.23 dB
16.560000000 MHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 1 [T1]
-3.47 dBm
5.816760000 GHz
D1 3.61 dBm
D2 -2.39 dBm
1 PK VIEW
LVL
F1
F2
Center 5.825 GHz
4 MHz/
Span 40 MHz

5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP 40	100040	Jun. 07, 2007
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 30, 2006
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Jan. 16, 2007
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA..

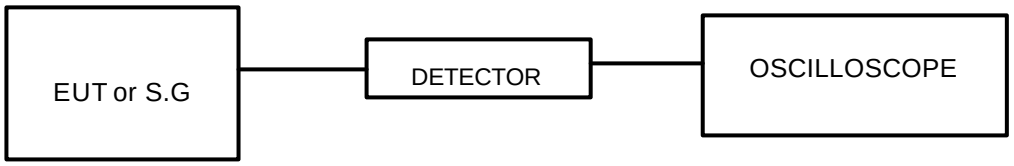
5.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator. The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP



5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11a OFDM MODULATION

MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	5745	56.364	17.51	30	PASS
3	5785	71.285	18.53	30	PASS
5	5825	40.179	16.04	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP 40	100040	Jun. 07, 2007

NOTES:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

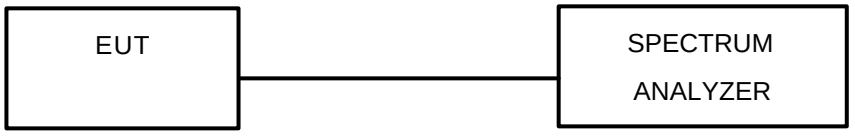
5.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 5.3.6

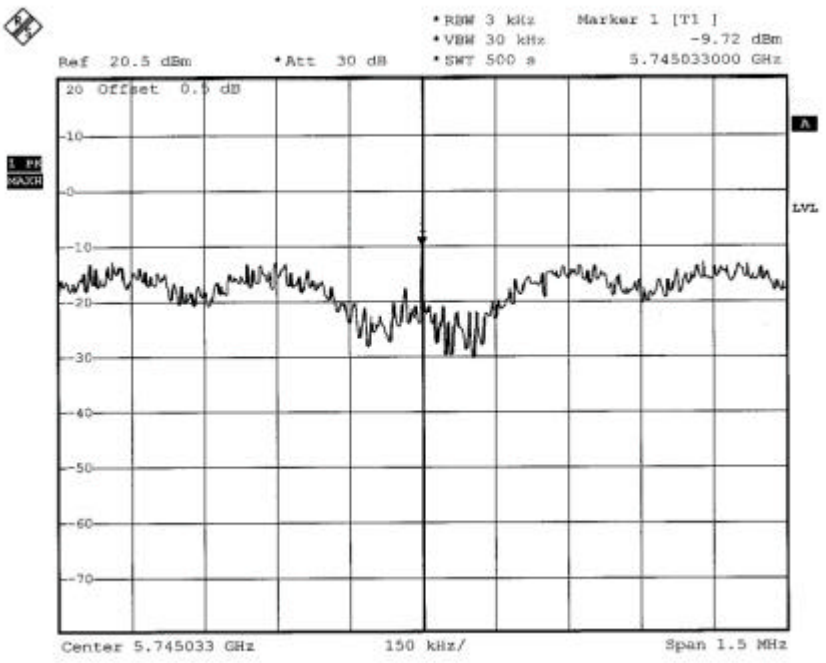
5.5.7 TEST RESULTS

802.11a OFDM MODULATION

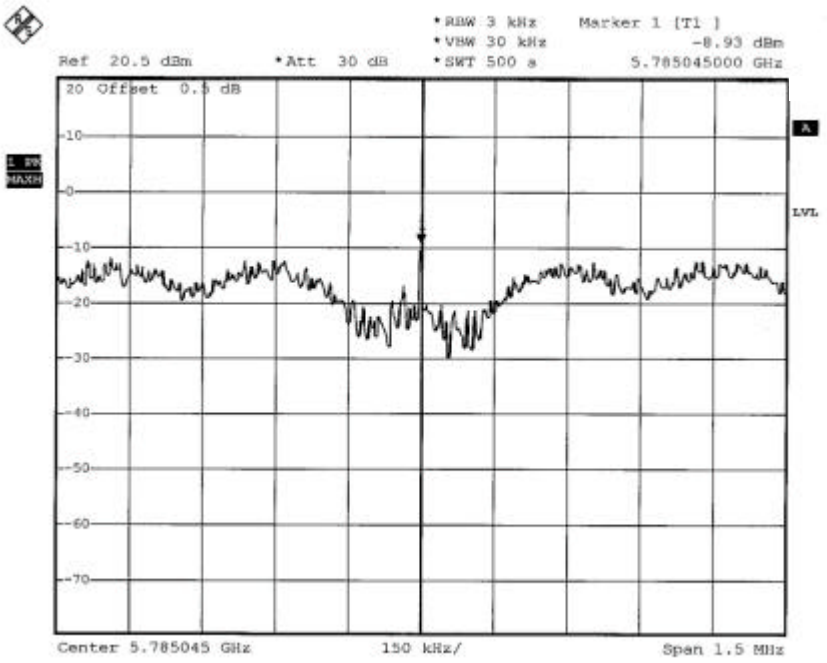
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	25deg.C, 67%RH, 991hPa
TESTED BY	Brad Wu		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5745	-9.72	8	PASS
3	5785	-8.93	8	PASS
5	5825	-8.67	8	PASS

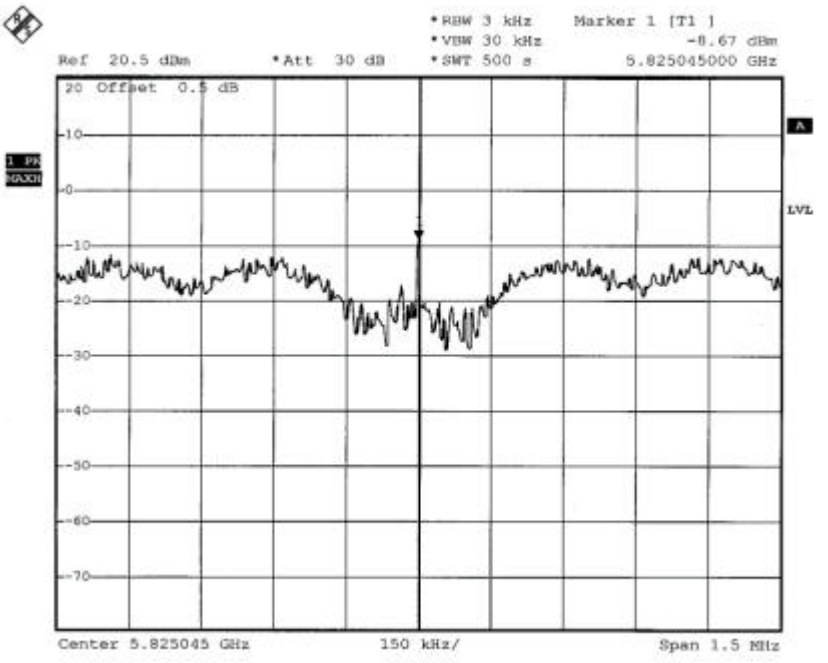
CH 1



CH 3


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-8.93 dBm
5.785045000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
10
0
-10
-20
-30
-40
-50
-60
-70
A
LVL
Center 5.785045 GHz
150 kHz/
Span 1.5 MHz

CH 5


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-8.67 dBm
5.825045000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
10
0
-10
-20
-30
-40
-50
-60
-70
A
LVL
Center 5.825045 GHz
150 kHz/
Span 1.5 MHz

5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP 40	100040	Jun. 07, 2007

NOTES:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

5.6.4 DEVIATION FROM TEST STANDARD

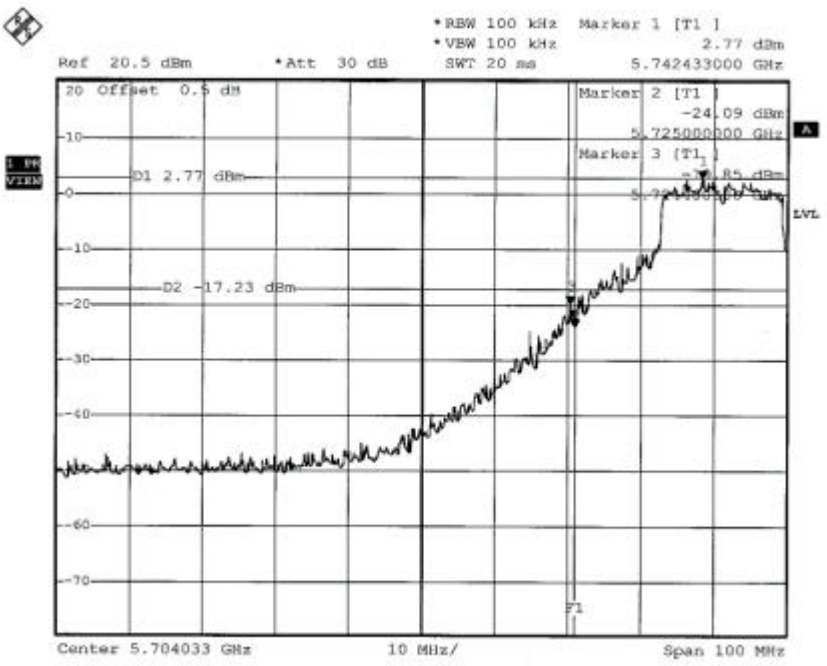
No deviation

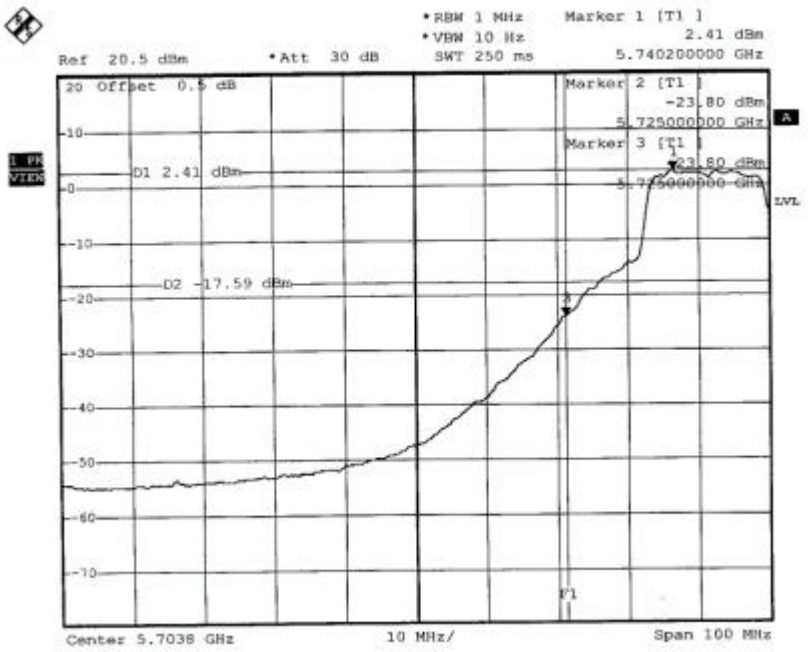
5.6.5 EUT OPERATING CONDITION

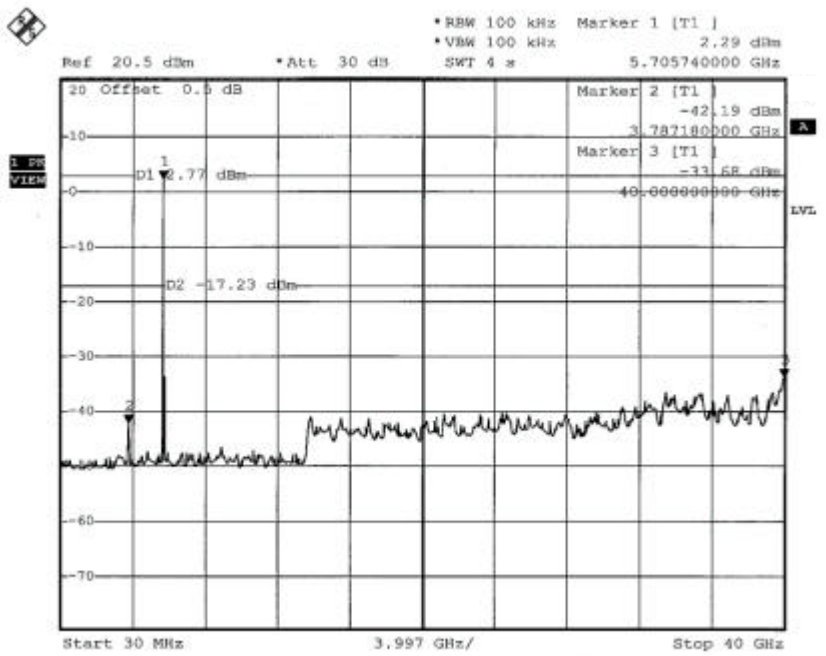
Same as Item 5.9.6

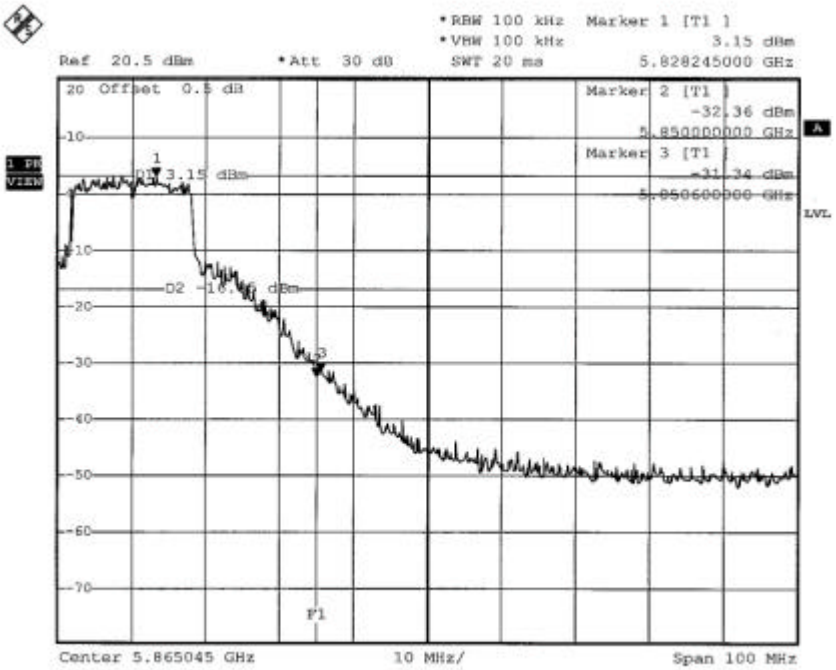
5.6.6 TEST RESULTS

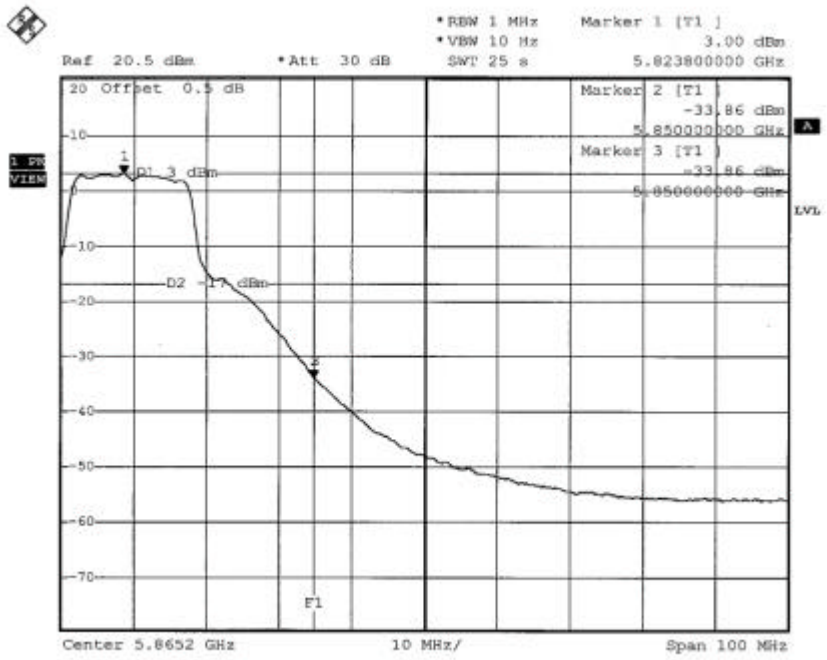
The spectrum plots are attached on the following pages. D1 line indicates the highest level, D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(d).

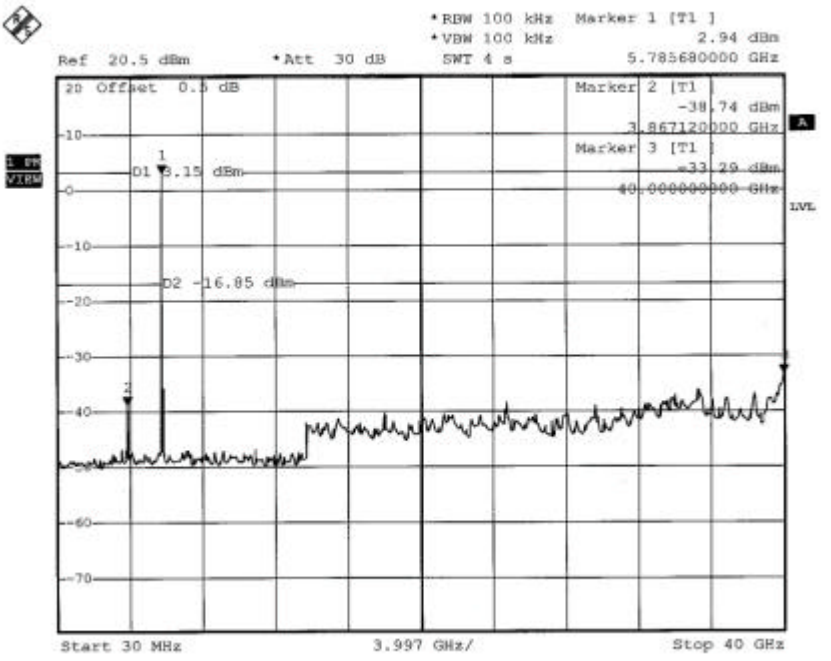

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
2.77 dBm
5.742433000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-24.09 dBm
5.725000000 GHz
Marker 3 [T1]
D1 2.77 dBm
D2 -17.23 dBm
LVL
F1
Center 5.704033 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 250 ms
Marker 1 [T1]
2.41 dBm
5.740200000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-23.80 dBm
5.725000000 GHz
Marker 3 [T1]
D1 2.41 dBm
D2 -17.59 dBm
LVL
F1
Center 5.7038 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 4 s
Marker 1 [T1]
2.29 dBm
5.705740000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-42.19 dBm
3.787180000 GHz
Marker 3 [T1]
-33.68 dBm
40.000000000 GHz
D1 2.77 dBm
D2 -17.23 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
3.15 dBm
5.828245000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-32.36 dBm
5.850000000 GHz
Marker 3 [T1]
-31.34 dBm
5.850600000 GHz
D1 3.15 dBm
D2 -16.85 dBm
F1
Center 5.865045 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
3.00 dBm
5.823800000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-33.86 dBm
5.850000000 GHz
Marker 3 [T1]
-33.86 dBm
5.850000000 GHz
D1 3 dBm
D2 -17 dBm
F1
Center 5.8652 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 4 s
Marker 1 [T1]
2.94 dBm
5.785680000 GHz
Ref 20.5 dBm
*Att 30 dB
20 Offset 0.5 dB
Marker 2 [T1]
-38.74 dBm
3.867120000 GHz
Marker 3 [T1]
-33.29 dBm
40.000000000 GHz
D1 3.15 dBm
D2 -16.85 dBm
Start 30 MHz
3.997 GHz/
Stop 40 GHz

5.7 ANTENNA REQUIREMENT

5.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Inverted F antenna with I-PEX connector. The maximum Gain of the antenna is 1.95dBi.

6. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, NCC
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

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Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also.

APPENDIX-A

MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications are made to the EUT by the lab during the test.