



Supplemental “Dual Xmit” Test Report

REPORT NO.: RF970423H02-01
MODEL NO.: WRT610N
RECEIVED: April 23, 2008
TESTED: May 21 to June 02, 2008
ISSUED: June 03, 2008

APPLICANT: Cisco-Linksys LLC
ADDRESS: 121 Theory Drive Irvine, CA 92617(USA)

ISSUED BY: Advance Data Technology Corporation

LAB LOCATION: No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung Tsuen,
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1. CERTIFICATION

PRODUCT : Simultaneous Dual-N Band Wireless Router
BRAND NAME : Linksys
MODEL NO. : WRT610N
TESTED: May 21 to June 02, 2008
APPLICANT : Cisco-Linksys LLC
TEST ITEM: ENGINEERING SAMPLE
STANDARDS : 47 CFR FCC Part 15, Subpart C
ANSI C63.4-2003

PREPARED BY : Midoli Peng , **DATE:** June 03, 2008
(Midoli Peng, Specialist)

TECHNICAL ACCEPTANCE : Hank Chung , **DATE:** June 03, 2008
Responsible for RF (Hank Chung, Deputy Manager)

APPROVED BY : May Chen , **DATE:** June 03, 2008
(May Chen, Deputy Manager)

Note:

Per a request of the FCC, the access point radio was tested for radiated emissions in restricted bands while transmitting on both 2.4 GHz and 5 GHz at simultaneously.



2. DUAL XMIT, CONDUCTED EMISSION MEASUREMENT

2.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

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

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
 2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
 3. 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.



2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	100287	Mar. 10, 2009
Line-Impedance Stabilization Network(for EUT)	KNW-407	8-1395-12	Aug. 19, 2008
Line-Impedance Stabilization Network(for Peripheral)	ENV-216	100072	Nov. 08, 2008
RF Cable (JETBAO)	RG5B/U-6m	COACAB-9KHz-3 0MHz	Aug. 15, 2008
50 ohms Terminator	50	3	Nov. 15, 2008
Software	ADT_Cond_V7.3.2	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 ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.

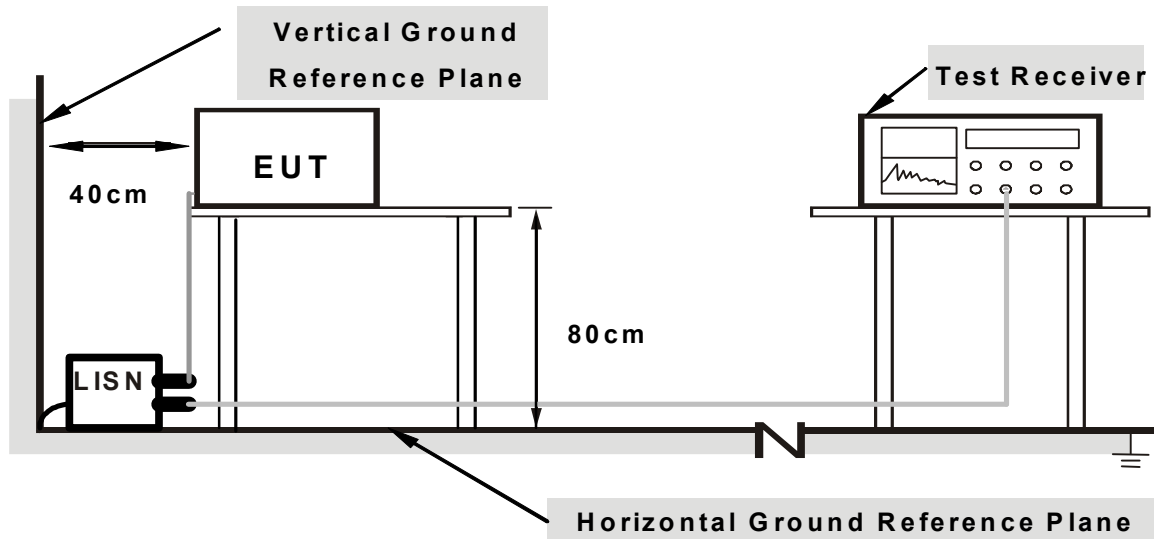
2.3 TEST PROCEDURES

- 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) were not recorded.

2.4 DEVIATION FROM TEST STANDARD

No deviation

2.5 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.



2.5 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared other computer systems to act as a communication partner and placed them outside of testing area.
- c. The communication partner run test program “MFGTEST” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

Note:

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

FCC 15.247

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
2.4 GHz 802.11g +	1 to 11	6	OFDM	BPSK	6
5 GHz 802.11a	1 to 4	1	OFDM	BPSK	6

FCC 15.407

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
2.4 GHz 802.11g +	1 to 11	6	OFDM	BPSK	6
5 GHz Draft 802.11n (20MHz)	1 to 4	1	OFDM	BPSK	6

- The EUT was Pre-tested as the following test modes:

Test Mode	Description
Mode 1	With Adapter 1
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

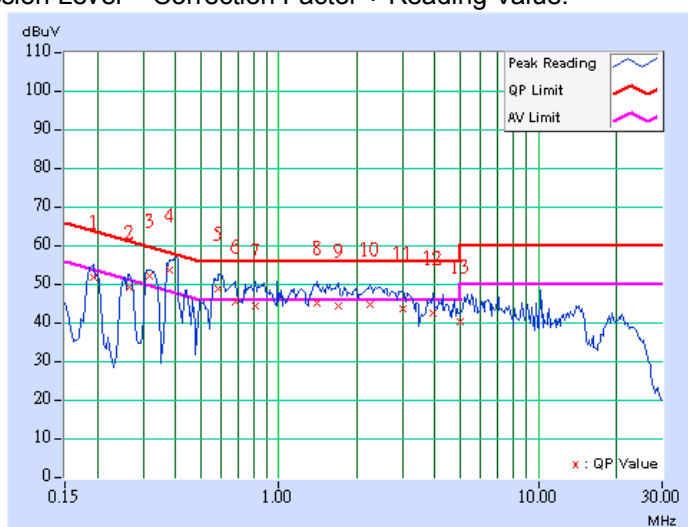
Mode 1, the worse case one, was chosen for final test.

2.6 TEST RESULTS (For 15.247)

TEST MODE	Dual transmission 11g, 2437MHz 11a, 5745MHz	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 961hPa	TESTED BY	Moris Lin

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.193	0.34	51.58	-	51.92	-	63.91
2	0.267	0.26	48.66	-	48.92	-	61.20	51.20	-12.29	-
3	0.318	0.20	51.79	45.82	51.99	46.02	59.76	49.76	-7.77	-3.74
4	0.380	0.12	53.10	45.12	53.22	45.24	58.27	48.27	-5.05	-3.03
5	0.588	0.17	48.30	40.30	48.47	40.47	56.00	46.00	-7.53	-5.53
6	0.677	0.20	45.07	-	45.27	-	56.00	46.00	-10.73	-
7	0.814	0.25	43.93	-	44.18	-	56.00	46.00	-11.82	-
8	1.408	0.30	44.77	-	45.07	-	56.00	46.00	-10.93	-
9	1.693	0.29	43.95	-	44.24	-	56.00	46.00	-11.76	-
10	2.240	0.30	44.32	-	44.62	-	56.00	46.00	-11.38	-
11	2.994	0.34	43.24	-	43.58	-	56.00	46.00	-12.42	-
12	3.934	0.41	42.02	-	42.43	-	56.00	46.00	-13.57	-
13	5.000	0.43	40.00	-	40.43	-	56.00	46.00	-15.57	-

- 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.

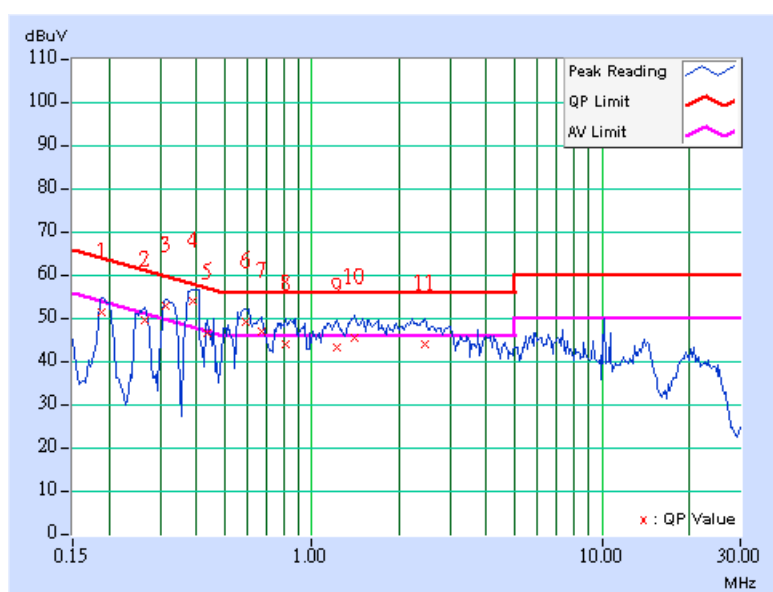




TEST MODE	Dual transmission 11g, 2437MHz 11a, 5745MHz	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 961hPa	TESTED BY	Moris Lin

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
	1	0.189	0.36	51.34	-	51.70	-	64.08	54.08	-12.37
2	0.267	0.27	49.14	-	49.41	-	61.20	51.20	-11.80	-
3	0.314	0.21	52.53	44.79	52.74	45.00	59.86	49.86	-7.13	-4.87
4	0.388	0.11	53.79	44.77	53.90	44.88	58.10	48.10	-4.20	-3.22
5	0.438	0.10	46.48	-	46.58	-	57.11	47.11	-10.52	-
6	0.591	0.16	48.92	40.13	49.08	40.29	56.00	46.00	-6.92	-5.71
7	0.673	0.19	46.68	32.82	46.87	33.01	56.00	46.00	-9.13	-12.99
8	0.810	0.25	43.65	-	43.90	-	56.00	46.00	-12.10	-
9	1.220	0.31	42.93	-	43.24	-	56.00	46.00	-12.76	-
10	1.408	0.30	45.39	-	45.69	-	56.00	46.00	-10.31	-
11	2.443	0.31	43.87	-	44.18	-	56.00	46.00	-11.82	-

- 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.

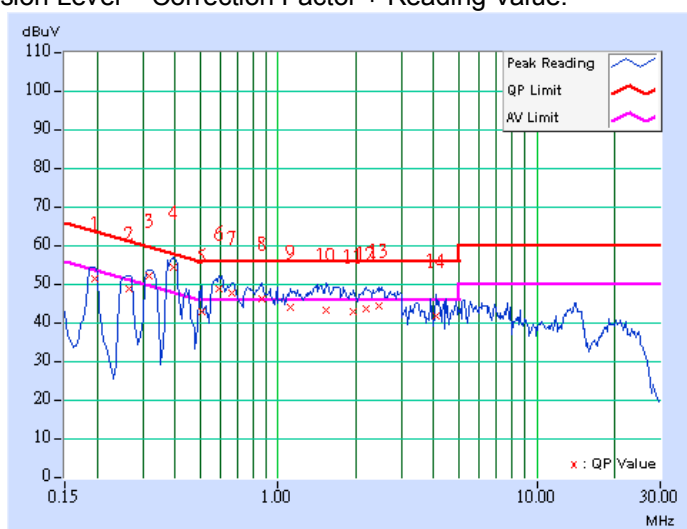


2.7 TEST RESULTS (For 15.407)

TEST MODE	Dual transmission 11g, 2437MHz 11a, 5180MHz	6dB BANDWIDTH	9 kHz
INPUT POWER	120Vac, 60 Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 961hPa	TESTED BY	Moris Lin

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.197	0.34	51.06	-	51.40	-	63.74
2	0.267	0.26	48.66	-	48.92	-	61.20	51.20	-12.29	-
3	0.318	0.20	51.87	45.92	52.07	46.12	59.76	49.76	-7.69	-3.64
4	0.396	0.10	54.21	45.03	54.31	45.13	57.93	47.93	-3.62	-2.80
5	0.505	0.14	42.53	-	42.67	-	56.00	46.00	-13.33	-
6	0.591	0.17	48.50	40.17	48.67	40.34	56.00	46.00	-7.33	-5.66
7	0.662	0.20	47.28	37.69	47.48	37.89	56.00	46.00	-8.52	-8.11
8	0.861	0.27	45.88	35.97	46.15	36.24	56.00	46.00	-9.85	-9.76
9	1.123	0.32	43.58	-	43.90	-	56.00	46.00	-12.10	-
10	1.525	0.30	42.75	-	43.05	-	56.00	46.00	-12.95	-
11	1.963	0.28	42.70	-	42.98	-	56.00	46.00	-13.02	-
12	2.189	0.29	43.32	-	43.61	-	56.00	46.00	-12.39	-
13	2.443	0.31	44.18	-	44.49	-	56.00	46.00	-11.51	-
14	4.090	0.41	41.34	-	41.75	-	56.00	46.00	-14.25	-

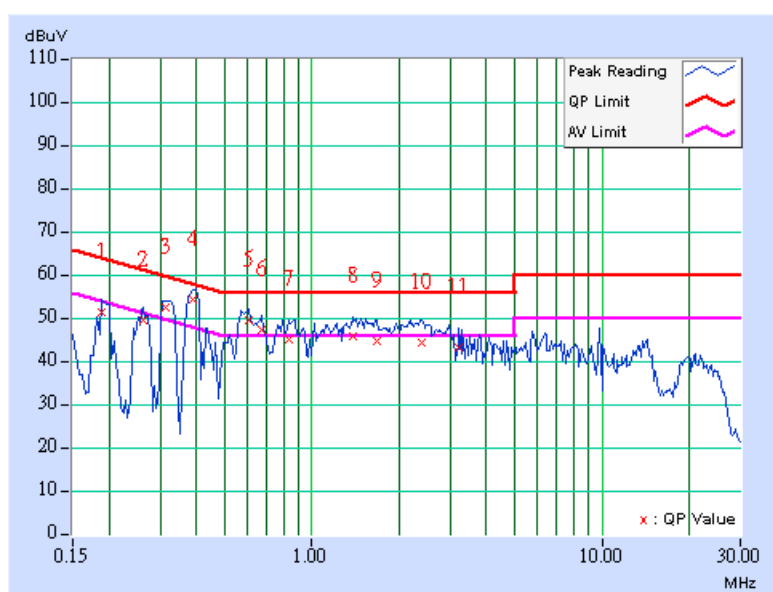
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



TEST MODE	Dual transmission	6dB BANDWIDTH	9 kHz
	11g, 2437MHz 11a, 5180MHz		
INPUT POWER	120Vac, 60 Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 961hPa	TESTED BY	Moris Lin

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.189	0.36	51.28	-	51.64	-	64.08
2	0.263	0.27	49.20	-	49.47	-	61.33	51.33	-11.85	-
3	0.314	0.21	52.41	45.05	52.62	45.26	59.86	49.86	-7.25	-4.61
4	0.388	0.11	54.03	44.92	54.14	45.03	58.10	48.10	-3.96	-3.07
5	0.603	0.17	49.29	35.19	49.46	35.36	56.00	46.00	-6.54	-10.64
6	0.673	0.19	47.10	32.18	47.29	32.37	56.00	46.00	-8.71	-13.63
7	0.838	0.26	44.78	-	45.04	-	56.00	46.00	-10.96	-
8	1.384	0.30	45.54	-	45.84	-	56.00	46.00	-10.16	-
9	1.681	0.29	44.60	-	44.89	-	56.00	46.00	-11.11	-
10	2.396	0.31	43.93	-	44.24	-	56.00	46.00	-11.76	-
11	3.215	0.36	42.95	-	43.31	-	56.00	46.00	-12.69	-

- 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.





3. DUAL XMIT, RADIATED EMISSION MEASUREMENT

3.1 LIMITS OF RADIATED EMISSION MEASUREMENT

Field strength limits are at the distance of 3 meters, 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.



3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 15, 2008
HP Pre_Amplifier	8449B	3008A01922	Oct. 04, 2008
ROHDE & SCHWARZ Test Receiver	ESCS30	100375	Mar. 31, 2009
SCHWARZBECK TRILOG Broadband Antenna	VULB 9168	138	July 26, 2008
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 16, 2008
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 27, 2009
RF Switches (ARNITSU)	CS-201	1565157	Aug. 13, 2008
RF CABLE (Chaintek)	SF102	22054-2	Dec. 06. 2008
RF Cable(RICHTEC)	9913-30M N-N Cable	STCCAB-30M-1 GHz	Aug. 13, 2008
Software	ADT_Radiated_V 7.6.15.8	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	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 horn antenna, HP preamplifier (model: 8449B) and Spectrum Analyzer (model: R3271A) are used only for the measurement of emission frequency above 1GHz if tested.
 3. The test was performed in ADT Open Site No. C.
 4. The FCC Site Registration No. is 656396.
 5. The VCCI Site Registration No. is R-1626.
 6. The CANADA Site Registration No. is IC 3789C-3.



3.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using the quasi-peak method or average method as specified and then reported in Data sheet peak mode and QP mode.
- g. The emissions up to 40 GHz were examined. Those emission falling within a restricted band were evaluated against the “restricted band emission limit” (54 dB μ V / 74 dB μ V).

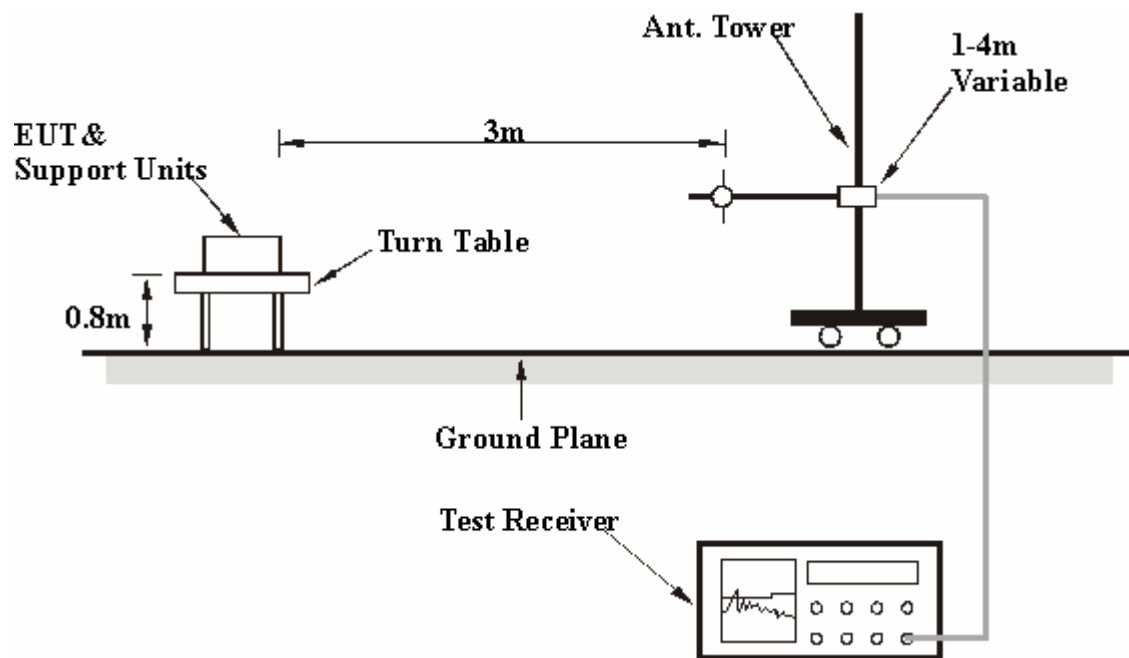
NOTE:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection (PK) at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 300 Hz for Average detection (AV) at frequency above 1GHz.

3.4 DEVIATION FROM TEST STANDARD

No deviation

3.5 TEST SETUP



3.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared other computer systems to act as a communication partner and placed them outside of testing area.
- c. The communication partner run test program “MFGTEST .exe” to enable EUT under transmission/receiving condition continuously at specific channel frequency.

Note:

For 15.247:

The EUT was tested for out of band radiated emissions with the unit transmitting on 802.11b, 2412 MHz and 802.11a on 5805 MHz. These frequencies and power levels were chosen because these frequencies produced the worst case radiated emissions during the radiated emissions in restricted bands test performed previously. The unit was set to transmit at the same power level as was used in the initial radiated emissions tests and was transmitting at the same data rate. (Please refer to RF970423H02 test report)

The harmonic of the fundamental signals were recorded in this report.

The antennas tested in this product are as following:

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector	Note
Chain(0)	PIFA	0.75	3	NA	With TX & RX function
Chain(1)	PIFA	1.5	2.23	NA	With TX & RX function
Chain(2)	PIFA	3.5	2.5	NA	Only RX function

The EUT was Pre-tested as the following test modes:

Test Mode	Description
Mode 1	With Adapter 1
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

Mode 1, the worse case one, was chosen for final test.



For 15.407:

The EUT was tested for out of band radiated emissions with the unit transmitting on 802.11b, 2412 MHz and 802.11a on 5180 MHz. These frequencies and power levels were chosen because these frequencies produced the worst case radiated emissions during the radiated emissions in restricted bands test performed previously. The unit was set to transmit at the same power level as was used in the initial radiated emissions tests and was transmitting at the same data rate.

(Please refer to RF970423H02 test report)

The harmonic of the fundamental signals were recorded in this report.

The antennas tested in this product are as following:

Transmitter Circuit	Antenna Type	For 2.4GHz Gain (dBi)	For 5GHz Gain (dBi)	Antenna Connector	Note
Chain(0)	PIFA	0.75	3	NA	With TX & RX function
Chain(1)	PIFA	1.5	2.23	NA	With TX & RX function
Chain(2)	PIFA	3.5	2.5	NA	Only RX function

The EUT was Pre-tested as the following test modes:

Test Mode	Description
Mode 1	With Adapter 1
Mode 2	With Adapter 2
Mode 3	With Adapter 3
Mode 4	With Adapter 4

Mode 1, the worse case one, was chosen for final test.



3.7 TEST RESULTS (For 15.247)

TEST MODE	Dual transmission 11b, 2412MHz 11a, 5805MHz	FREQUENCY RANGE	30MHz~1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 973 hPa	TESTED BY	Frank Liu

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	125.00	39.43 QP	43.50	-4.07	1.35 H	85	26.20	13.23
2	201.90	30.29 QP	43.50	-13.21	1.44 H	82	18.23	12.06
3	250.01	36.79 QP	46.00	-9.21	1.00 H	260	23.96	12.83
4	300.00	37.44 QP	46.00	-8.56	1.00 H	282	20.85	16.59
5	375.01	33.13 QP	46.00	-12.87	1.03 H	213	15.65	17.48
6	450.00	32.85 QP	46.00	-13.15	1.82 H	12	12.97	19.88
7	500.00	33.66 QP	46.00	-12.34	1.56 H	190	12.61	21.05
8	625.02	33.67 QP	46.00	-12.33	1.71 H	86	9.67	24.00
9	900.00	34.15 QP	46.00	-11.85	1.80 H	43	4.48	29.67

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	46.49	37.44 QP	40.00	-2.56	1.00 V	34	21.54	15.90
2	125.00	40.47 QP	43.50	-3.03	1.00 V	221	27.24	13.23
3	250.00	33.26 QP	46.00	-12.74	1.00 V	216	20.43	12.83
4	375.00	37.84 QP	46.00	-8.16	1.00 V	327	20.36	17.48
5	384.02	33.67 QP	46.00	-12.33	1.06 V	157	15.98	17.69
6	500.00	34.45 QP	46.00	-11.55	1.00 V	351	13.40	21.05
7	625.00	37.68 QP	46.00	-8.32	1.21 V	347	13.68	24.00
8	750.00	35.59 QP	46.00	-10.41	1.23 V	304	8.33	27.26

NOTE:

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



TEST MODE	Dual transmission 11b, 2412MHz 11a, 5805MHz	FREQUENCY RANGE	1000MHz~40000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 973 hPa	TESTED BY	Rex Huang

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	4824.00	52.20 PK	74.00	-21.80	1.42 H	314	16.41	35.79
2	4824.00	46.60 AV	54.00	-7.40	1.42 H	314	10.81	35.79
3	7236.00	56.30 PK	74.00	-17.70	1.22 H	177	14.70	41.60
4	7236.00	44.10 AV	54.00	-9.90	1.22 H	177	2.50	41.60
5	11610.00	58.60 PK	74.00	-15.40	1.42 H	349	12.04	46.56
6	11610.00	45.30 AV	54.00	-8.70	1.42 H	349	-1.26	46.56
7	14472.00	64.30 PK	74.00	-9.70	1.45 H	267	14.29	50.01
8	14472.00	49.80 AV	54.00	-4.20	1.45 H	267	-0.21	50.01

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	4824.00	49.30 PK	74.00	-24.70	1.00 V	326	13.51	35.79
2	4824.00	40.60 AV	54.00	-13.40	1.00 V	326	4.81	35.79
3	7236.00	53.40 PK	74.00	-20.60	1.12 V	275	11.80	41.60
4	7236.00	39.50 AV	54.00	-14.50	1.12 V	275	-2.10	41.60
5	11610.00	58.40 PK	74.00	-15.60	1.00 V	346	11.84	46.56
6	11610.00	44.70 AV	54.00	-9.30	1.00 V	346	-1.86	46.56
7	14472.00	62.80 PK	74.00	-11.20	1.31 V	20	12.79	50.01
8	14472.00	48.10 AV	54.00	-5.90	1.31 V	20	-1.91	50.01

NOTE:

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



3.8 TEST RESULTS (For 15.407)

TEST MODE	Dual transmission 11b, 2412MHz 11a, 5180MHz	FREQUENCY RANGE	30MHz~1000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 973 hPa	TESTED BY	Frank Liu

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	125.00	39.55 QP	43.50	-3.95	1.35 H	85	26.32	13.23
2	201.90	30.43 QP	43.50	-13.07	1.44 H	82	18.37	12.06
3	250.01	36.38 QP	46.00	-9.62	1.00 H	260	23.55	12.83
4	300.00	37.29 QP	46.00	-8.71	1.00 H	282	20.70	16.59
5	375.01	33.21 QP	46.00	-12.79	1.03 H	213	15.73	17.48
6	450.00	32.66 QP	46.00	-13.34	1.82 H	12	12.78	19.88
7	500.00	33.25 QP	46.00	-12.75	1.56 H	190	12.20	21.05
8	625.02	33.43 QP	46.00	-12.57	1.71 H	86	9.43	24.00
9	900.00	34.29 QP	46.00	-11.71	1.80 H	43	4.62	29.67

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	46.49	37.98 QP	40.00	-2.02	1.00 V	34	22.08	15.90
2	125.00	40.55 QP	43.50	-2.95	1.00 V	221	27.32	13.23
3	250.00	33.43 QP	46.00	-12.57	1.00 V	216	20.60	12.83
4	375.00	37.72 QP	46.00	-8.28	1.00 V	327	20.24	17.48
5	384.02	33.45 QP	46.00	-12.55	1.06 V	157	15.76	17.69
6	500.00	34.65 QP	46.00	-11.35	1.00 V	351	13.60	21.05
7	625.00	37.43 QP	46.00	-8.57	1.21 V	347	13.43	24.00
8	750.00	35.44 QP	46.00	-10.56	1.23 V	304	8.18	27.26

NOTE:

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



TEST MODE	Dual transmission 11b, 2412MHz 11a, 5180MHz	FREQUENCY RANGE	1000MHz~40000MHz
INPUT POWER	120Vac, 60Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	25deg. C, 75%RH, 973 hPa	TESTED BY	Rex Huang

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	4824.00	52.10 PK	74.00	-21.90	1.41 H	312	16.31	35.79
2	4824.00	46.50 AV	54.00	-7.50	1.41 H	312	10.71	35.79
3	7236.00	56.60 PK	68.30	-11.70	1.24 H	183	15.00	41.60
4	7236.00	44.30 AV	54.00	-9.70	1.24 H	183	2.70	41.60
5	10360.00	67.10 PK	68.30	-1.20	1.52 H	64	21.52	45.58
6	10360.00	52.10 AV	54.00	-1.90	1.52 H	64	6.52	45.58
7	14472.00	64.10 PK	74.00	-9.90	1.48 H	271	14.09	50.01
8	14472.00	49.60 AV	54.00	-4.40	1.48 H	271	-0.41	50.01

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	4824.00	49.20 PK	74.00	-24.80	1.00 V	325	13.41	35.79
2	4824.00	40.60 AV	54.00	-13.40	1.00 V	325	4.81	35.79
3	7236.00	53.60 PK	68.30	-14.70	1.14 V	278	12.00	41.60
4	7236.00	39.70 AV	54.00	-14.30	1.14 V	278	-1.90	41.60
5	10360.00	64.70 PK	68.30	-3.60	1.02 V	354	19.12	45.58
6	10360.00	47.30 AV	54.00	-6.70	1.02 V	354	1.72	45.58
7	14472.00	63.10 PK	74.00	-10.90	1.32 V	16	13.09	50.01
8	14472.00	48.40 AV	54.00	-5.60	1.32 V	16	-1.61	50.01

NOTE:

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



4. 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.	TAF, BSMI, NCC
Netherlands	Telefication
Singapore	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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The address and road map of all our labs can be found in our web site also