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Supplemental “Transmit Simultaneously” Test Report

REPORT NO.: RF110718E01-2 R1

MODEL NO.: RT-N53

FCC ID: MSQ-RTN53

RECEIVED: July 18, 2011

TESTED: Sep. 15, 2011

ISSUED: Sep. 15, 2011

APPLICANT: ASUSTEK Computer Inc.

ADDRESS: No.15 Li-Te Rd., Peitou, Taipei 112, Taiwan.

ISSUED BY: Bureau Veritas Consumer Products Services
(H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

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Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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TEST LOCATION (2): No. 49, Ln. 206, Wende Rd., Shangshan Tsuen,
Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
RF110718E01-2	Original release	Aug. 26, 2011
RF110718E01-2 R1	Modified the section 3.1 maximum output power.	Sep. 15, 2011



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1. CERTIFICATION

PRODUCT : ASUS Dual band Wireless N Router
BRAND NAME : ASUS
MODEL NO. : RT-N53
TEST ITEM: R&D SAMPLE
APPLICANT : ASUSTEK Computer Inc.
TESTED: Sep. 15, 2011
STANDARDS : FCC Part 15, Subpart C (Section 15.247)
ANSI C63.4-2003
ANSI C63.10-2009

The above equipment (Model: RT-N53) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY :  , **DATE:** Sep. 15, 2011
(Claire Kuan, Specialist)

APPROVED BY :  , **DATE:** Sep. 15, 2011
(May Chen, Deputy Manager)



2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	Remark
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -6.94dB at 0.150MHz
15.247(d)	Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -0.50 dB at 11490.00MHz

2.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Conducted emissions	2.45 dB
Radiated emissions (30MHz-1GHz)	3.89 dB
Radiated emissions (1GHz -18GHz)	2.19 dB
Radiated emissions (18GHz -40GHz)	2.56 dB



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	ASUS Dual band Wireless N Router
MODEL NO.	RT-N53
FCC ID	MSQ-RTN53
POWER SUPPLY	DC 12V from power adapter
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11a/g: 54/48/36/24/18/12/9/6Mbps 802.11b:11/5.5/2/1Mbps 802.11n (20MHz, 400ns GI): 7.2/14.4/21.7/28.9/43.3/57.8/65.0/72.2Mbps 14.444 / 28.889 / 43.333 / 57.778 / 86.667 /115.556 / 130.000 / 144.444Mbps 802.11n (40MHz, 400ns GI): 15.0/30.0/45.0/60.0/90.0/120.0/135.0/150.0Mbps 30.0 / 60.0 / 90.0 / 120.0 / 180.0 / 240.0 / 270.0 / 300.0Mbps
OPERATING FREQUENCY	For 15.407 802.11a: 5.18 ~ 5.24GHz
	For 15.247 802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.745 ~ 5.825GHz



NUMBER OF CHANNEL	For 15.407 4 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
	For 15.247(2.4GHz) 11 for 802.11b, 802.11g, 802.11n (20MHz) 7 for 802.11n (40MHz)
	For 15.247(5GHz) 5 for 802.11a, 802.11n (20MHz) 2 for 802.11n (40MHz)
MAXIMUM OUTPUT POWER	For 15.407 802.11a: 13.4mW 802.11n (20MHz): 19.8mW 802.11n (40MHz): 43.9mW For 15.247(2.4GHz) 802.11b: 151.4mW 802.11g: 649.9mW 802.11n (20MHz): 656.8mW 802.11n (40MHz): 449.6mW For 15.247(5GHz) 802.11a: 335.8mW 802.11n (20MHz): 335.8mW 802.11n (40MHz): 335.8mW
ANTENNA TYPE	Please see note
DATA CABLE	NA
I/O PORTS	WAN port x 1 LAN port x 4
ASSOCIATED DEVICES	Adapter x 1

NOTE:

- There are two antennas provided to this EUT, please refer to the following table:

Transmitter Circuit	Antenna Type	2.4G Gain (dBi) Net gain	2.4G (dBi) Cable loss	5G Gain (dBi) Net gain	Antenna Connector
Chain (0)	PCB Printed	1.44	1.2	3.53	NA
Chain (1)	PCB Printed	3.55	2	4.52	NA



2. The EUT must be supplied with a power adapter and following two different model names could be chosen:

Adapter	Brand	Model No.	Spec.
Adapter 1	LEI	MU12-G120100-A1	AC Input: 100-240V 0.5A, 50-60Hz DC Output: 12V, 1A DC output cable: Unshielded, 1.6m
Adapter 2	DVE	DSA-12G-12 FUS 120120	

Note:

1. From the above adapters, the worst radiated test item was found in Adapter 1. Therefore only the test data of the mode was recorded in this report.

3. The EUT incorporates CDD function with 802.11a, 802.11g.

4. The EUT is 2 * 2 spatial MIMO (2Tx & 2Rx) without beam forming function.

5. When the EUT operating in 802.11n, the software operation, which is defined by manufacturer, MCS (Modulation and Coding Schemes) from 0 to 15.

6. Conducted emission and Radiated emission of the simultaneous operation has been evaluated and no non-compliance found.

7. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.



3.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to			Description
	PLC	RE<1G	RE [≥] 1G	
1	√	√	√	With adapter 1
2	√	-	-	With adapter 2

Where PLC: Power Line Conducted Emission RE<1G RE: Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz

Note1: Pre-Scan has been conducted to determine the worst case mode from antenna power.

POWER LINE CONDUCTED EMISSION TEST:

- 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.

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	151 to 159	151	OFDM	BPSK	6

Radiated Emission Test:

- 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.

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	151 to 159	151	OFDM	BPSK	6

TEST CONDITION:

APPLICABLE TO	ENVIRONMENTAL CONDITIONS	INPUT POWER	TESTED BY
PLC	26deg. C, 60%RH	120Vac, 60Hz	Andy Ho
RE<1G	26deg. C, 71%RH	120Vac, 60Hz	Rex Huang
RE [≥] 1G	27deg. C, 71%RH	120Vac, 60Hz	Frank Liu



3.3 DESCRIPTION OF SUPPORT UNITS

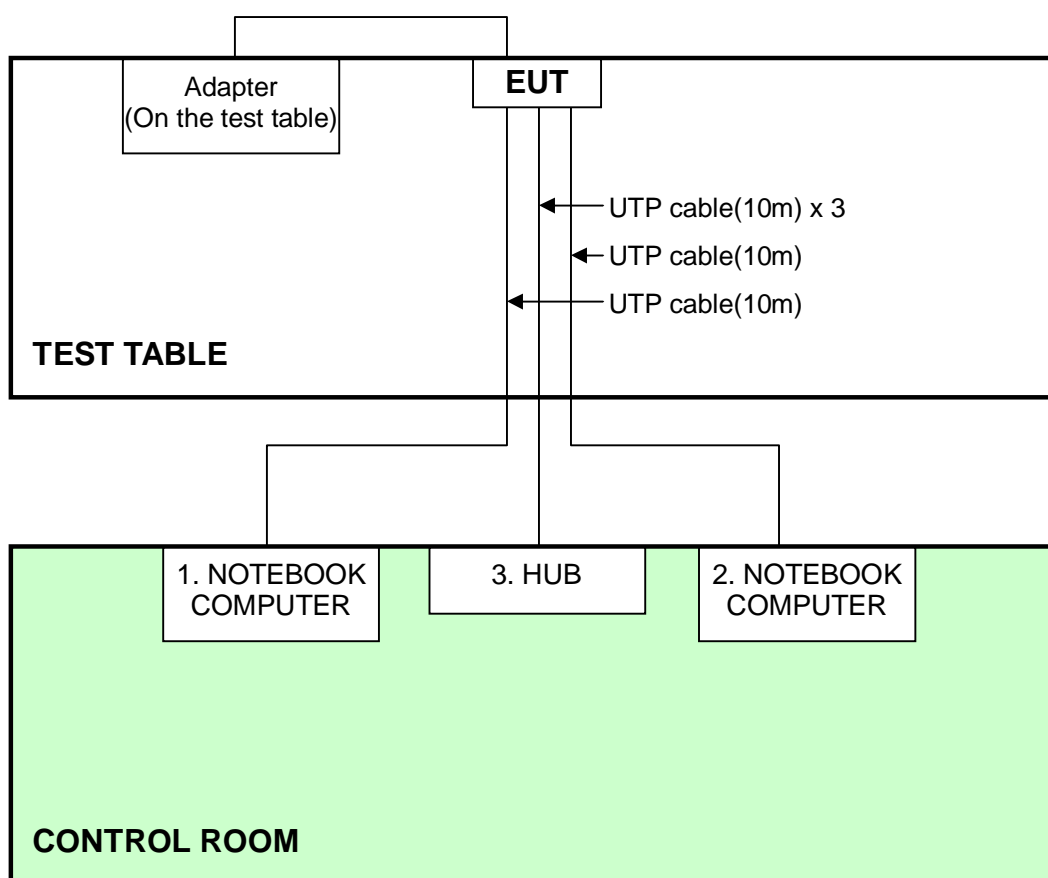
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP32LA	FSLB32S	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP32LA	GSLB32S	FCC DoC
3	HUB	ZyXEL	ES-116P	S060H02000215	FCC DoC

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	10m UTP cable
2	10m UTP cable
3	10m UTP cable

Note: The power cords of the above support units were unshielded (1.8m).

3.4 CONFIGURATION OF SYSTEM UNDER TEST





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4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 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.

4.1.2 TEST INSTRUMENTS

Test date: Sep. 15, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Test Receiver	ESCS 30	100375	Mar. 09, 2011	Mar. 08, 2012
Line-Impedance Stabilization Network (for EUT)	NSLK 8127	8127-522	Sep. 07, 2011	Sep. 06, 2012
Line-Impedance Stabilization Network (for Peripheral)	ESH3-Z5	848773/004	Nov. 03, 2010	Nov. 02, 2011
RF Cable (JYEBAO)	5DFB	COCCAB-002	Aug. 29, 2011	Aug. 28, 2012
50 ohms Terminator	50	3	Oct. 07, 2010	Oct. 06, 2011
Software	BV ADT_Cond_V7.3.7	NA	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 Shielded Room No. C.
3. The VCCI Con C Registration No. is C-3611.



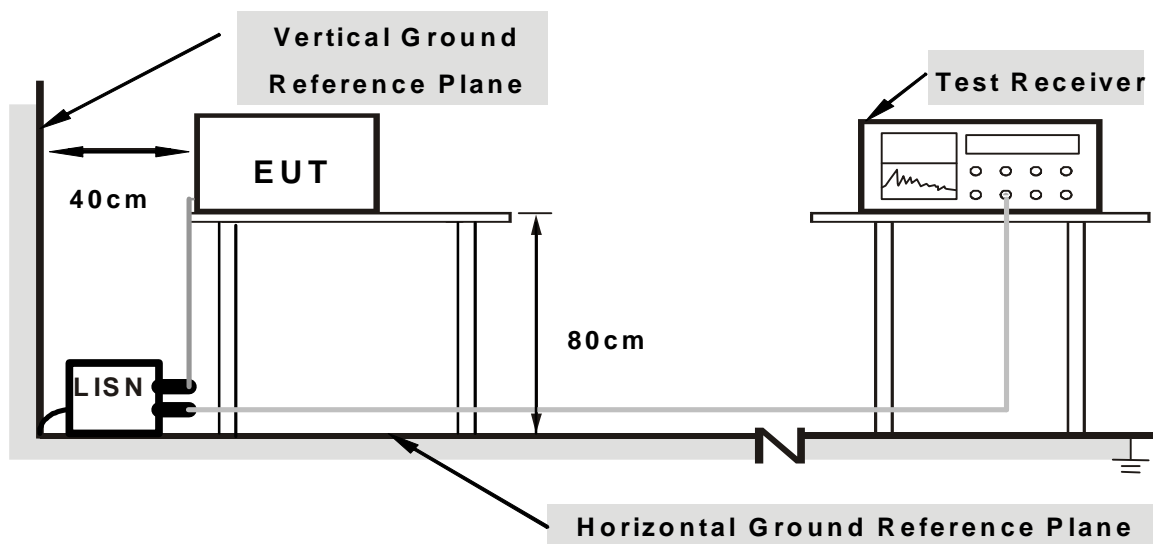
4.1.3 TEST PROCEDURES

- 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) were not recorded.

4.1.4 DEVIATION FROM TEST STANDARD

No deviation

4.1.5 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.

4.1.6 EUT OPERATING CONDITIONS

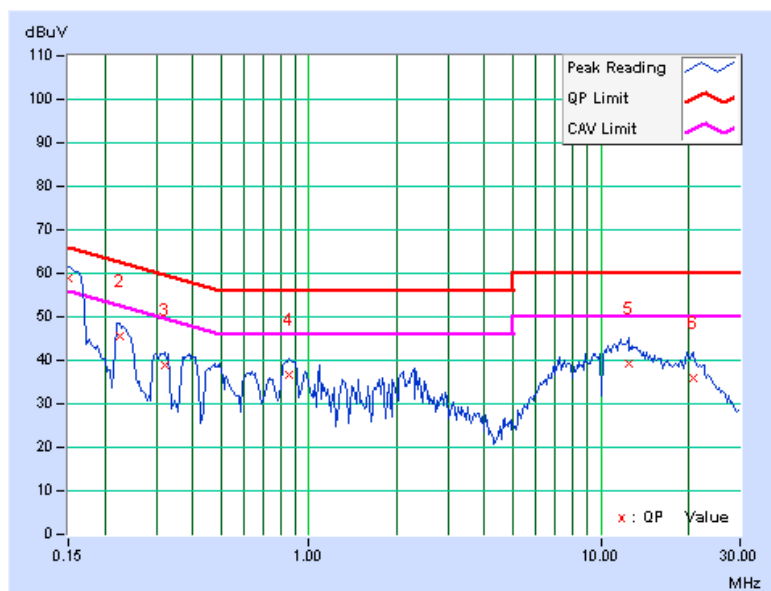
1. Placed the EUT on testing table.
2. Prepared other computer systems (support units 1~2) to act as communication partners and placed them outside of testing area.
3. The communication partners ran test program “Broadcom WL COMMANDS.txt” to enable EUT under transmission/receiving condition continuously via UTP cables transmission.

4.1.7 TEST RESULTS(MODE 1)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.150	0.11	58.94	46.62	59.05	46.73	65.99	55.99	-6.94	-9.26
2	0.224	0.14	45.34	31.86	45.48	32.00	62.66	52.66	-17.18	-20.66
3	0.322	0.15	38.79	26.14	38.94	26.29	59.67	49.67	-20.72	-23.37
4	0.853	0.18	36.38	23.77	36.56	23.95	56.00	46.00	-19.44	-22.05
5	12.475	0.73	38.69	32.43	39.42	33.16	60.00	50.00	-20.58	-16.84
6	20.644	1.01	34.76	31.53	35.77	32.54	60.00	50.00	-24.23	-17.46

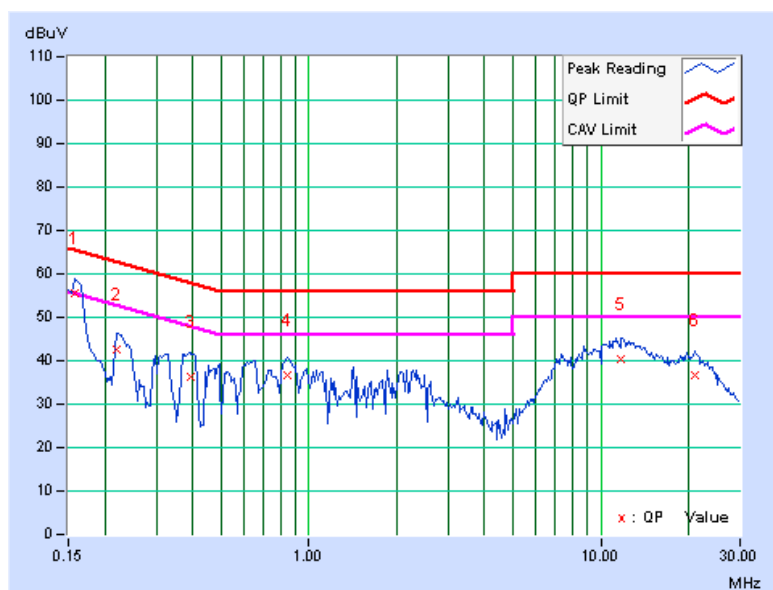
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. The emission levels of other frequencies were very low against the limit.
 3. Margin value = Emission level - Limit value
 4. Correction factor = Insertion loss + Cable loss
 5. Emission Level = Correction Factor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



PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
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No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.12	55.34	46.71	55.46	46.83	65.58	55.58	-10.12	-8.75
2	0.220	0.15	42.26	25.92	42.41	26.07	62.80	52.80	-20.39	-26.73
3	0.393	0.17	36.28	28.56	36.45	28.73	58.01	48.01	-21.56	-19.28
4	0.842	0.18	36.64	23.45	36.82	23.63	56.00	46.00	-19.18	-22.37
5	11.723	1.14	39.14	31.05	40.28	32.19	60.00	50.00	-19.72	-17.81
6	21.121	1.87	34.86	30.99	36.73	32.86	60.00	50.00	-23.27	-17.14

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

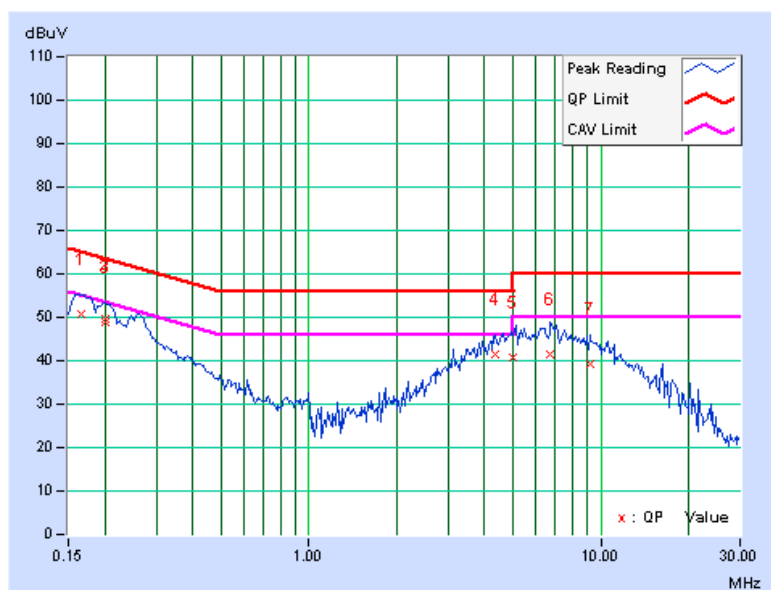


4.1.8 TEST RESULTS(MODE 2)

PHASE	Line (L)	6dB BANDWIDTH	9 kHz
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No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.166	0.12	50.63	41.22	50.75	41.34	65.18	55.18	-14.43	-13.84
2	0.201	0.14	49.35	38.23	49.49	38.37	63.58	53.58	-14.09	-15.21
3	0.201	0.14	48.86	37.52	49.00	37.66	63.58	53.58	-14.58	-15.92
4	4.371	0.30	41.25	32.18	41.55	32.48	56.00	46.00	-14.45	-13.52
5	5.000	0.34	40.33	32.86	40.67	33.20	60.00	50.00	-19.33	-16.80
6	6.727	0.45	41.08	33.49	41.53	33.94	60.00	50.00	-18.47	-16.06
	9.227	0.60	38.53	30.71	39.13	31.31	60.00	50.00	-20.87	-18.69

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

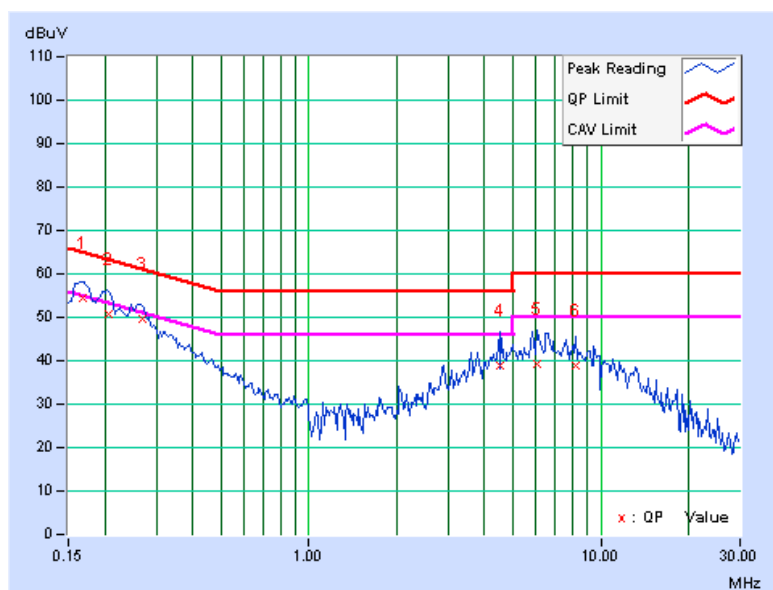




PHASE	Neutral (N)	6dB BANDWIDTH	9 kHz
--------------	-------------	----------------------	-------

No	Freq.	Corr.	Reading Value		Emission Level		Limit		Margin	
	[MHz]	Factor	[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.169	0.13	54.36	42.93	54.49	43.06	65.00	55.00	-10.51	-11.94
2	0.205	0.15	50.73	38.54	50.88	38.69	63.41	53.41	-12.53	-14.72
3	0.268	0.16	49.36	38.25	49.52	38.41	61.19	51.19	-11.67	-12.78
4	4.500	0.41	38.64	30.43	39.05	30.84	56.00	46.00	-16.95	-15.16
5	6.043	0.57	38.58	30.48	39.15	31.05	60.00	50.00	-20.85	-18.95
6	8.204	0.81	37.93	30.26	38.74	31.07	60.00	50.00	-21.26	-18.93

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





4.2 RADIATED EMISSION MEASUREMENT

4.2.1 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.
4. Section 15.205 restricted bands of operation shall compliance with the limits in Section 15.209.



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4.2.2 TEST INSTRUMENTS

Test date: Sep. 15, 2011

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED DATE	CALIBRATED UNTIL
Agilent Spectrum Analyzer	E4446A	MY48250253	Aug. 29, 2011	Aug. 28, 2012
Agilent Pre-Selector	N9039A	MY46520310	Aug. 29, 2011	Aug. 28, 2012
Agilent Signal Generator	N5181A	MY49060347	July 25, 2011	July 24, 2012
LIG NEX1 Test Receiver	ER-265	L09068005	Oct. 25, 2010	Oct. 24, 2011
Mini-Circuits Pre-Amplifier	ZFL-1000VH2B	AMP-ZFL-04	Nov. 16, 2010	Nov. 15, 2011
Agilent Pre-Amplifier	8449B	3008A02465	Feb. 28, 2011	Feb. 27, 2012
Miteq Pre-Amplifier	AFS33-1800265 0-30-8P-44	881786	Nov. 16, 2010	Nov. 15, 2011
SCHWARZBECK Trilog Broadband Antenna	VULB 9168	9168-361	Apr. 14, 2011	Apr. 13, 2012
AISI Horn_Antenna	AIH.8018	0000220091110	Nov. 22, 2010	Nov. 21, 2011
SCHWARZBECK Horn_Antenna	BBHA 9170	9170-424	Oct. 08, 2010	Oct. 07, 2011
RF CABLE	NA	RF104-205 RF104-207 RF104-202	Dec. 28, 2010	Dec. 27, 2011
RF Cable	NA	CHHCAB_001	Oct. 17, 2010	Oct. 16, 2011
Software	ADT_Radiated_V8.7.05	NA	NA	NA
CT Antenna Tower & Turn Table	NA	NA	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 horn antenna, preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

3. The test was performed in 966 Chamber No. H.

4. The FCC Site Registration No. is 797305.

5. The CANADA Site Registration No. is IC 7450H-3.



4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter chamber room. 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 height of antenna 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 quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz. If the peak reading value also meets average limit, measurement with the average detector is unnecessary.

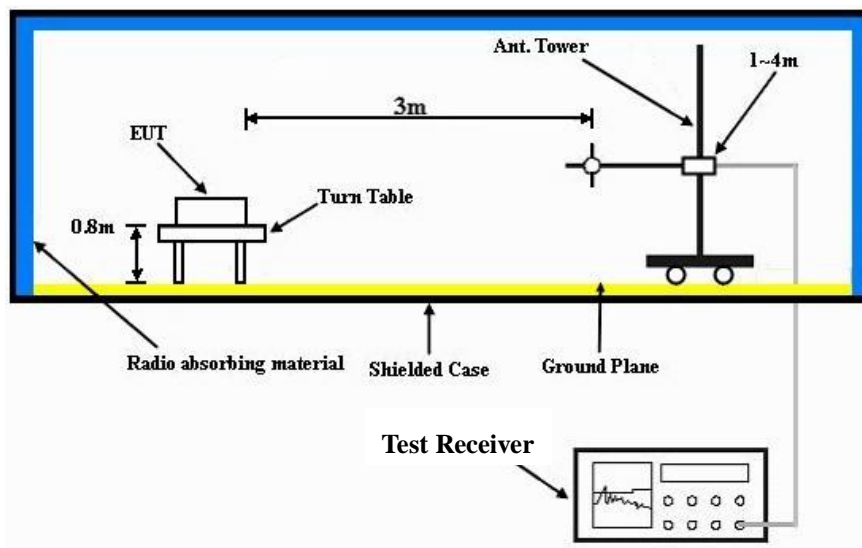
NOTE:

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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6



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4.2.7 TEST RESULTS

BELOW 1GHz DATA :

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6 / 151	FREQUENCY RANGE	Below 1000MHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Quasi-Peak
ENVIRONMENTAL CONDITIONS	26deg. C, 71%RH	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	47.68	28.8 QP	40.0	-11.2	1.25 H	312	14.58	14.20
2	118.68	33.9 QP	43.5	-9.6	1.25 H	156	21.69	12.19
3	169.45	33.7 QP	43.5	-9.8	1.50 H	189	20.03	13.68
4	228.80	37.6 QP	46.0	-8.4	1.25 H	211	25.34	12.26
5	254.91	36.8 QP	46.0	-9.2	1.00 H	188	23.56	13.25
6	719.99	27.9 QP	46.0	-18.1	1.00 H	151	5.35	22.59

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	37.88	34.8 QP	40.0	-5.2	1.00 V	163	21.05	13.72
2	109.84	36.8 QP	43.5	-6.7	1.00 V	165	25.94	10.83
3	178.99	36.8 QP	43.5	-6.7	1.00 V	152	23.98	12.84
4	257.51	39.7 QP	46.0	-6.3	1.25 V	233	26.35	13.36
5	549.42	28.7 QP	46.0	-17.3	1.25 V	123	8.11	20.60
6	715.68	28.6 QP	46.0	-17.4	1.25 V	182	6.12	22.49

- 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.



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ABOVE 1GHz DATA

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 6 / 151	FREQUENCY RANGE	1 ~ 29.5GHz
INPUT POWER	120Vac, 60 Hz	DETECTOR FUNCTION	Peak (PK) Average (AV)
ENVIRONMENTAL CONDITIONS	27deg. C, 71%RH	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	4874.00	54.9 PK	74.0	-19.1	1.41 H	134	27.87	27.03
2	4874.00	50.1 AV	54.0	-3.9	1.41 H	134	23.07	27.03
3	7311.00	60.4 PK	74.0	-13.6	1.32 H	116	33.37	27.03
4	7311.00	53.2 AV	54.0	-0.8	1.32 H	116	26.17	27.03
5	11490.00	64.7 PK	74.0	-9.3	1.34 H	151	37.67	27.03
6	11490.00	53.5 AV	54.0	-0.5	1.34 H	151	26.47	27.03
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	4874.00	57.4 PK	74.0	-16.6	1.02 V	324	30.37	27.03
2	4874.00	53.0 AV	54.0	-1.0	1.02 V	324	25.97	27.03
3	7311.00	51.3 PK	74.0	-22.7	1.26 V	46	24.27	27.03
4	7311.00	49.5 AV	54.0	-4.5	1.26 V	46	22.47	27.03
5	11490.00	57.9 PK	74.0	-16.1	1.18 V	46	30.87	27.03
6	11490.00	48.7 AV	54.0	-5.3	1.18 V	46	21.67	27.03

- 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.



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4. INFORMATION ON THE TESTING LABORATORIES

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved according to ISO/IEC 17025.

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.

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

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