

FCC TEST REPORT

REPORT NO.: RF950509L08B

MODEL NO.: WAP4400N

RECEIVED: Dec. 04, 2006

TESTED: Dec. 12 ~ Dec. 13, 2006

ISSUED: Dec. 15, 2006

APPLICANT: Cisco-Linksys LLC

ADDRESS: 121 Theory Drive Irvine, CA 92617 (USA)

ISSUED BY: Advance Data Technology Corporation

LAB ADDRESS: No.47, 14th Ling, Chia Pau Tsuen, Linko Hsiang

244, Taipei Hsien, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd, Wen Hwa Tsuen, Kwei

Shan Hsiang, Taoyuan Hsien 333, Taiwan,

R.O.C.

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Report No.: RF950509L08B Reference No.: 951117L09

Report Format Version 2.0.5



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1. CERTIFICATION

PRODUCT: Wireless-N Access Point with Power Over Ethernet

MODEL: WAP4400N

BRAND: Linksys

APPLICANT: Cisco-Linksys LLC

TESTED: Dec. 12 ~ Dec. 13, 2006 **TEST SAMPLE:** ENGINEERING SAMPLE

STANDARDS: FCC Part 15, Subpart C (Section 15.247),

ANSI C63.4-2003

The above equipment has been tested by **Advance Data Technology Corporation**, 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

>

ATE: Dec. 15, 2006

TECHNICAL

ACCEPTANCE

Responsible for RF

Long Chen

Jessie Wang

DATE

Dec. 15, 2006

APPROVED BY

Cary Chang / Sunamina

DATE:

Dec. 15, 2006



2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart C							
STANDARD SECTION	TEST TYPE AND LIMIT	RESULT	REMARK				
15.207	AC Power Conducted Emission		Meet the requirement of limit. Minimum passing margin is –3.84dB at 0.505MHz.				
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209		Meet the requirement of limit. Minimum passing margin is –1.71dB at 319.64MHz.				

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:

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	9kHz ~ 30MHz	2.44dB
Radiated emissions	30MHz ~ 200MHz	3.62 dB

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



3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless-N Access Point with Power Over Ethernet
MODEL NO.	WAP4400N
FCC ID	Q87-WAP4400N
POWER SUPPLY	12Vdc from AC Adapter
TOWER GOLLE	48Vdc from POE
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS
MODULATION THE	64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
	802.11b: 11/ 5.5/ 2/ 1Mbps
	802.11g: 54/ 48/ 36/ 24/ 18/ 12/ 9/ 6Mbps
	Draft 802.11n (20MHz): 144.444/ 130.000/ 115.556/
TRANSFER RATE	86.667/ 57.778/ 43.333/ 28.889/ 14.444/ 72.2/ 65.0/
	57.8/ 43.3/ 28.9/ 21.7/ 14.4/ 7.2Mbps
	Draft 802.11n (40MHz): 300/ 270/ 240/ 180/ 120/ 90/ 60/ 30/ 150/ 135/ 120/ 90/ 60/ 45/ 30/ 15Mbps
FREQUENCY RANGE	2400MHz ~ 2483.5MHz
FREQUENCY RANGE	
NUMBER OF CHANNEL	11 for 802.11b, 802.11g, draft 802.11n (20MHz)
	7 for draft 802.11n (40MHz), 802.11b (CB mode)
MAXIMUM OUTPUT POWER	253.533mW
ANTENNA TYPE	Dipole antenna with 3.14dBi gain
DATA CABLE	NA
I/O PORTS	RJ45

NOTE:

- 1. This report is issued as a supplementary report of ADT report no.: RF950509L08. This report shall be used combined together with its original report.
- 2. This report is prepared for FCC class II permissive change. The model in this report is identical to the original application one. The difference is:
 - ◆ Adding one new adapter to this EUT. The detail as below:

BRAND	Linksys			
MODEL	MT12-4120100-A1			
INPUT	120Vac, 60Hz, 0.3A			
OUTPUT	12Vdc, 1.0A			
POWER LINE	DC 1.9 m non-shielded cable without core			

- 3. The EUT incorporates a MIMO function with 802.11b, 802.11g, draft 802.11n. Physically, the card provides two completed transmitters and three receivers.
- 4. The EUT is 2 * 3 spatial MIMO (2Tx & 3Rx) without beam forming function that only operate dual chain configuration (both chain 0 and chain 1 transceivers are operational).
- 5. When the EUT operating in 802.11b, 802.11g, the software operation, which is defined by manufacturer, only set dual Tx.
- 6. When the EUT operating in 802.11b with "Channel Binding function", the software operation, which is defined by manufacturer, only set dual Tx.
- 7. When the EUT operating in draft 802.11n, the software operation, which is defined by manufacturer, only set $0 \sim 15$ of "MCS" (MCS: Modulation and Coding Schemes) for dual Tx.



ADT CORP.
 8. The EUT complies with draft 802.11n standards and backwards compatible with 802.11b, 802.11g products. 9. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 300Mbps. 10. The above EUT information was declared by manufacturer and for more detailed features description, please refer to the manufacturer's specifications or user's manual.

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3.2 DESCRIPTION OF TEST MODES

Eleven channels are provided for 802.11b, 802.11g, draft 802.11n (20MHz):

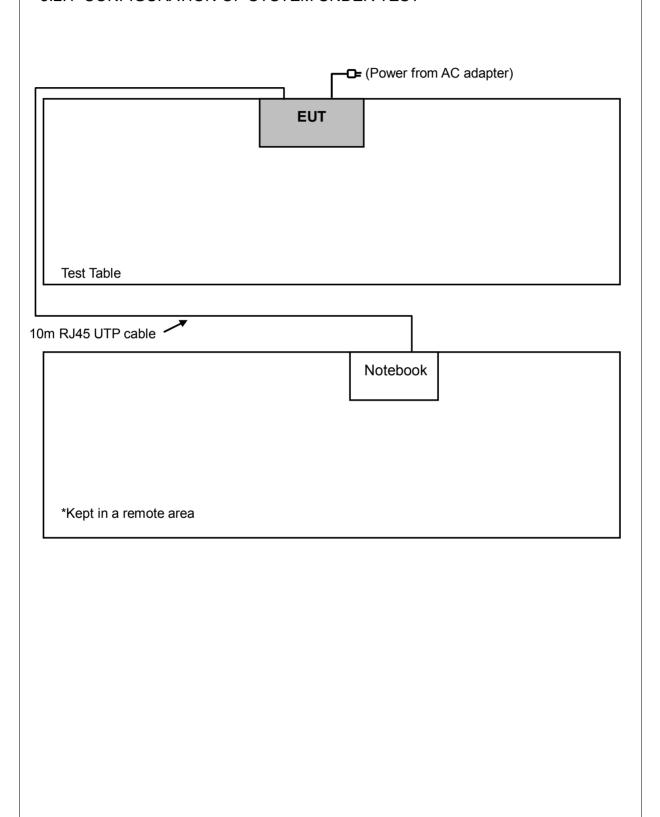
CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2412MHz	7	2442MHz
2	2417MHz	8	2447MHz
3	2422MHz	9	2452MHz
4	2427MHz	10	2457MHz
5	2432MHz	11	2462MHz
6	2437MHz		

Seven channels are provided for 802.11b(CB mode), draft 802.11n (40MHz):

CHANNEL	FREQUENCY	CHANNEL	FREQUENCY
1	2422MHz	5	2442MHz
2	2427MHz	6	2447MHz
3	2432MHz	7	2452MHz
4	2437MHz		



3.2.1 CONFIGURATION OF SYSTEM UNDER TEST





3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

EUT	APPLICA	ABLE TO	DESCRIPTION
CONFIGURE MODE	PLC	RE < 1G	DESCRIPTION
-	\checkmark	\checkmark	-

Where **PLC**: Power Line Conducted Emission

RE < 1G: Radiated Emission below 1GHz

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)	TX CONDITION
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1, 6, 11	OFDM	BPSK	7.2	Dual
Draft 802.11n (40MHz)	1 to 7	1, 4, 7	OFDM	BPSK	15	Dual
802.11b (CB Mode)	1 to 7	1, 4, 7	DSSS	DBPSK	1	Dual

RADIATED EMISSION TEST (BELOW 1 GHz):

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)	TX CONDITION
802.11g	1 to 11	1	OFDM	BPSK	6	Dual
Draft 802.11n (20MHz)	1 to 11	1	OFDM	BPSK	7.2	Dual
Draft 802.11n (40MHz)	1 to 7	1	OFDM	BPSK	15	Dual
802.11b (CB Mode)	1 to 7	1	DSSS	DBPSK	1	Dual

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3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a RF product. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC Part 15, Subpart C. (15.247) ANSI C63.4-2003

All test items have been performed and recorded as per the above standards.

NOTE: The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 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	PP05L	12130898320	E2K24CLNS

NO.	SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	NA

NOTE:

- 1. All power cords of the above support units are non shielded (1.8m).
- 2. Item 1 acted as communication partners to transfer data.



4. TEST TYPES AND RESULTS

4.1 CONDUCTED EMISSION MEASUREMENT

4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBµV)				
	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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Sep. 25, 2007
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.



4.1.3 TEST PROCEDURES

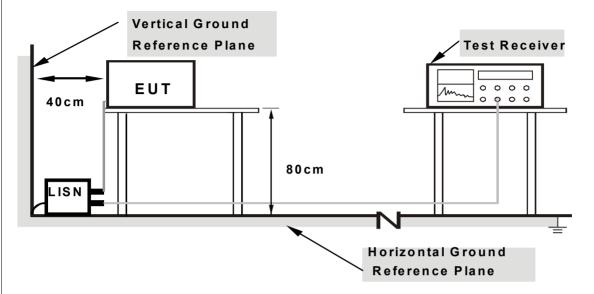
- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling 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) was not recorded.

4.1.4	DEVIA	TION FROM	/I TEST	STANDARD
-------	-------	-----------	---------	----------

Nο	deviation
110	ueviation



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 attached file (Test Setup Photo).

4.1.6 EUT OPERATING CONDITIONS

- a. Placed the EUT on the testing table.
- b. Prepared another notebook system to act as a communication partner and placed it outside of testing area.
- c. The communication partner run a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency via an RJ45 cable.
- d. The communication partner sent data to EUT by command "PING".



4.1.7 TEST RESULTS

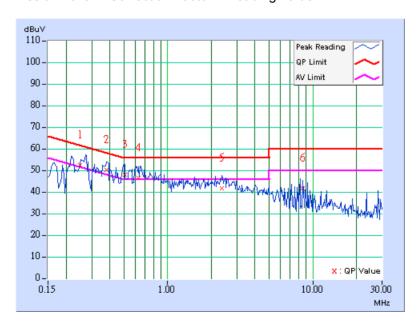
CONDUCTED WORST-CASE DATA:

802.11g OFDM MODULATION:

EUT TEST CONDITION	N .	MEASUREMENT DETAIL		
CHANNEL	Channel 1	PHASE	Line 1	
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz	
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen	

No.	FREQ. [MHz]	CORR. Factor	READING VALUE [dB (uV)]		LE\	SION /EL (uV)]	LIMIT [dB (uV)]		MAR (d	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.250	0.10	52.31	45.49	52.41	45.59	61.76	51.76	-9.35	-6.17
2	0.378	0.10	50.13	43.01	50.23	43.11	58.32	48.32	-8.09	-5.21
3	0.505	0.10	47.91	42.06	48.01	42.16	56.00	46.00	-7.99	-3.84
4	0.633	0.10	46.35	38.69	46.45	38.79	56.00	46.00	-9.55	-7.21
5	2.358	0.23	41.36	-	41.59	-	56.00	46.00	-14.41	_
6	8.543	0.36	41.42	-	41.78	-	60.00	50.00	-18.22	_

- 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.

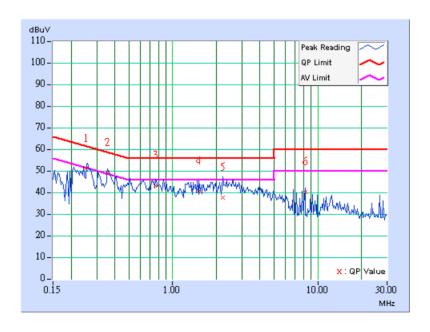




EUT TEST CONDITION	N	MEASUREMENT DETAIL		
CHANNEL	Channel 1	PHASE	Line 2	
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz	
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen	

No.	FREQ. [MHz]	CORR. Factor	VAL	DING EMISS LUE LEVE (uV)] [dB (u		/EL	LIMIT [dB (uV)]		MAF (d	RGIN B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.252	0.10	50.57	-	50.67	-	61.70	51.70	-11.03	-
2	0.357	0.10	48.86	31.55	48.96	31.65	58.80	48.80	-9.84	-17.15
3	0.763	0.16	43.07	-	43.23	-	56.00	46.00	-12.77	-
4	1.523	0.20	40.16	-	40.36	-	56.00	46.00	-15.64	-
5	2.223	0.22	37.44	-	37.66	-	56.00	46.00	-18.34	-
6	8.184	0.43	40.06	-	40.49	-	60.00	50.00	-19.51	-

- 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.

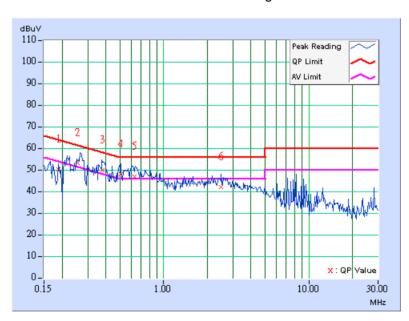




EUT TEST CONDITION	N .	MEASUREMENT DETAIL		
CHANNEL	Channel 6	PHASE	Line 1	
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz	
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen	

No.	FREQ. [MHz]	CORR. Factor	VAL	VALUE LE		SION /EL (uV)]	LIMIT [dB (uV)]		MAR (d	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.189	0.10	50.31	-	50.41	-	64.10	54.10	-13.69	-
2	0.254	0.10	53.22	47.12	53.32	47.22	61.61	51.61	-8.29	-4.39
3	0.380	0.10	49.71	42.46	49.81	42.56	58.27	48.27	-8.46	-5.71
4	0.505	0.10	47.95	40.79	48.05	40.89	56.00	46.00	-7.95	-5.11
5	0.633	0.10	46.66	39.09	46.76	39.19	56.00	46.00	-9.24	-6.81
6	2.496	0.24	42.03	-	42.27	-	56.00	46.00	-13.73	-

- 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.

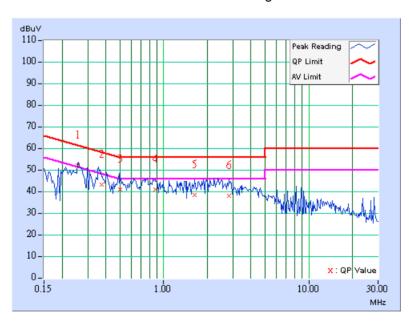




EUT TEST CONDITION	N .	MEASUREMENT DETAIL		
CHANNEL	Channel 6	PHASE	Line 2	
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz	
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz	
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen	

No.	FREQ. [MHz]	CORR. Factor	I VALUE I LEVEL I I I				MAF (d	RGIN B)		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.256	0.10	51.86	37.76	51.96	37.86	61.57	51.57	-9.61	-13.71
2	0.375	0.10	43.12	-	43.22	-	58.39	48.39	-15.17	-
3	0.504	0.12	40.75	-	40.87	-	56.00	46.00	-15.13	-
4	0.878	0.18	40.88	-	41.06	-	56.00	46.00	-14.94	-
5	1.637	0.20	38.40	-	38.60	-	56.00	46.00	-17.40	-
6	2.822	0.27	37.76	-	38.03	-	56.00	46.00	-17.97	-

- 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.

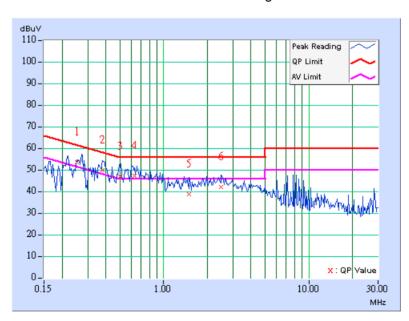




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 11	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	I VALUE I LEVEL I I				MAF (d	RGIN B)		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.253	0.10	53.48	47.44	53.58	47.54	61.67	51.67	-8.09	-4.13
2	0.380	0.10	49.73	42.46	49.83	42.56	58.27	48.27	-8.44	-5.71
3	0.500	0.10	46.70	35.77	46.80	35.87	56.00	46.00	-9.20	-10.13
4	0.631	0.10	47.04	39.66	47.14	39.76	56.00	46.00	-8.86	-6.24
5	1.504	0.15	38.64	-	38.79	-	56.00	46.00	-17.21	-
6	2.496	0.24	42.11	-	42.35	-	56.00	46.00	-13.65	-

- 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.

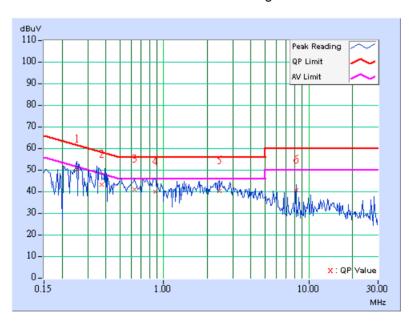




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 11	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	VAL	VALUE I LEVEL I I				MAR (d		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.252	0.10	50.10	-	50.20	-	61.71	51.71	-11.51	-
2	0.375	0.10	42.76	-	42.86	1	58.38	48.38	-15.52	-
3	0.630	0.14	40.83	-	40.97	-	56.00	46.00	-15.03	-
4	0.881	0.18	39.55	-	39.73	1	56.00	46.00	-16.27	=
5	2.414	0.24	39.78	-	40.02	-	56.00	46.00	-15.98	-
6	8.188	0.43	40.40	-	40.83	-	60.00	50.00	-19.17	-

- 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.



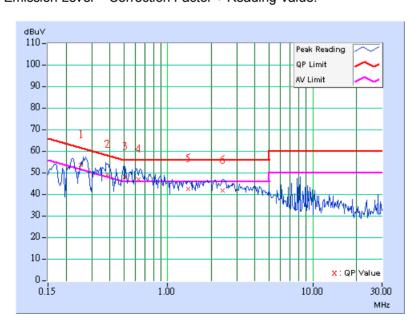


DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITION	· ·	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	VAL	READING EMISSION LIMIT MAR VALUE [dB (uV)] [dB (uV)] (d				RGIN B)		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.252	0.10	53.46	47.36	53.56	47.46	61.69	51.69	-8.13	-4.23
2	0.382	0.10	48.98	41.21	49.08	41.31	58.24	48.24	-9.16	-6.93
3	0.505	0.10	47.97	41.19	48.07	41.29	56.00	46.00	-7.93	-4.71
4	0.632	0.10	46.94	39.52	47.04	39.62	56.00	46.00	-8.96	-6.38
5	1.391	0.14	42.40	-	42.54	-	56.00	46.00	-13.46	-
6	2.395	0.23	41.58	-	41.81	-	56.00	46.00	-14.19	-

- 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.

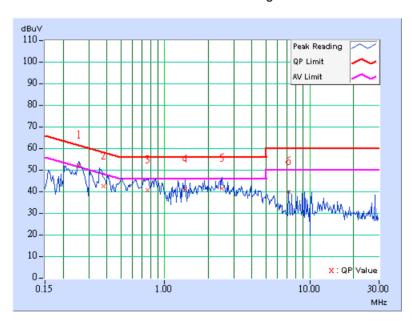




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	READING VALUE [dB (uV)]		VALUE LEVEL Id		LIMIT [dB (uV)]		MAF (d	RGIN B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	51.90	37.82	52.00	37.92	61.58	51.58	-9.58	-13.66
2	0.377	0.10	42.32	-	42.42	-	58.34	48.34	-15.92	-
3	0.760	0.16	40.24	-	40.40	-	56.00	46.00	-15.60	-
4	1.387	0.20	40.74	-	40.94	-	56.00	46.00	-15.06	-
5	2.500	0.24	41.01	-	41.25	-	56.00	46.00	-14.75	-
6	7.117	0.42	39.40	-	39.82	-	60.00	50.00	-20.18	-

- 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.

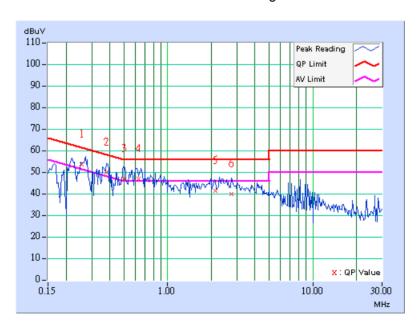




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 6	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	READING EMISSION LIMIT VALUE LEVEL [dB (uV)] [dB (uV)] [dB (uV)]		VALUE				MAF (d	RGIN B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	53.28	47.21	53.38	47.31	61.61	51.61	-8.23	-4.30
2	0.380	0.10	49.82	42.60	49.92	42.70	58.27	48.27	-8.35	-5.57
3	0.500	0.10	46.72	34.94	46.82	35.04	56.00	46.00	-9.18	-10.96
4	0.633	0.10	46.68	39.09	46.78	39.19	56.00	46.00	-9.22	-6.81
5	2.140	0.21	41.29	-	41.50	-	56.00	46.00	-14.50	-
6	2.770	0.27	39.68	-	39.95	-	56.00	46.00	-16.05	-

- 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.

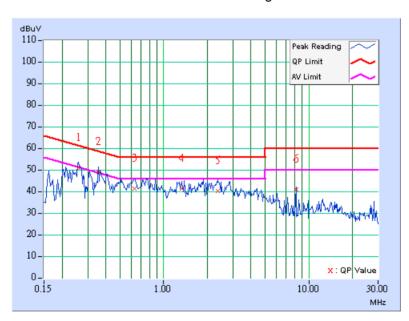




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 6	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	READING VALUE [dB (uV)]			SION /EL (uV)]	LIMIT [dB (uV)]		MAF (d	RGIN B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.259	0.10	50.85	-	50.95	-	61.45	51.45	-10.50	-
2	0.357	0.10	48.90	31.95	49.00	32.05	58.80	48.80	-9.80	-16.75
3	0.627	0.14	40.99	-	41.13	-	56.00	46.00	-14.87	-
4	1.328	0.20	40.88	-	41.08	-	56.00	46.00	-14.92	-
5	2.355	0.23	40.12	-	40.35	-	56.00	46.00	-15.65	-
6	8.188	0.43	40.56	-	40.99	-	60.00	50.00	-19.01	-

- 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.

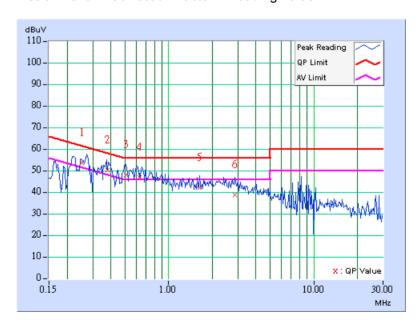




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 11	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	I [MHz] I		READING VALUE [dB (uV)]		EMISSION LEVEL [dB (uV)]		LIMIT [dB (uV)]		MARGIN (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.253	0.10	53.48	47.44	53.58	47.54	61.64	51.64	-8.06	-4.10
2	0.379	0.10	50.19	43.01	50.29	43.11	58.30	48.30	-8.01	-5.19
3	0.505	0.10	48.03	41.43	48.13	41.53	56.00	46.00	-7.87	-4.47
4	0.630	0.10	46.84	38.80	46.94	38.90	56.00	46.00	-9.06	-7.10
5	1.640	0.16	41.92	-	42.08	-	56.00	46.00	-13.92	-
6	2.875	0.27	38.46	-	38.73	-	56.00	46.00	-17.27	-

- 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.

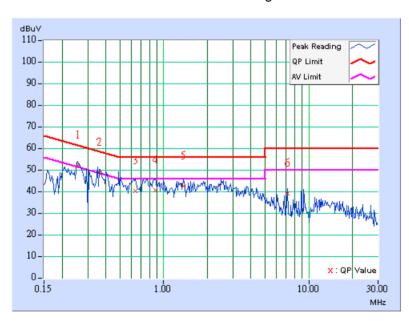




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 11	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	7.2Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	I [MHz] I		READING VALUE [dB (uV)]		EMISSION LEVEL [dB (uV)]		LIMIT [dB (uV)]		MARGIN (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	51.92	37.76	52.02	37.86	61.58	51.58	-9.56	-13.72
2	0.358	0.10	48.62	-	48.72	-	58.76	48.76	-10.04	-
3	0.638	0.14	39.78	-	39.92	-	56.00	46.00	-16.08	-
4	0.878	0.18	40.35	-	40.53	-	56.00	46.00	-15.47	-
5	1.375	0.20	42.12	-	42.32	-	56.00	46.00	-13.68	-
6	7.117	0.42	39.02	-	39.44	-	60.00	50.00	-20.56	-

- 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.



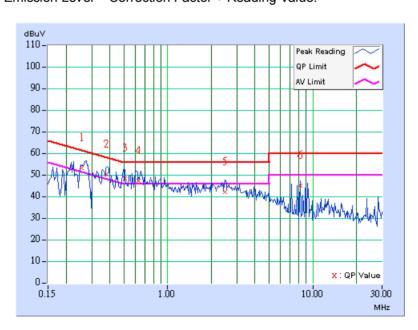


DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	[MHz] Factor [dB (uV)]		EMISSION LEVEL [dB (uV)]		LIMIT [dB (uV)]		MARGIN (dB)		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.256	0.10	53.12	46.36	53.22	46.46	61.57	51.57	-8.35	-5.11
2	0.378	0.10	50.19	43.07	50.29	43.17	58.32	48.32	-8.03	-5.15
3	0.505	0.10	48.09	41.26	48.19	41.36	56.00	46.00	-7.81	-4.64
4	0.633	0.10	46.90	39.24	47.00	39.34	56.00	46.00	-9.00	-6.66
5	2.491	0.24	41.92	-	42.16	-	56.00	46.00	-13.84	-
6	8.184	0.36	44.98	-	45.34	-	60.00	50.00	-14.66	-

- 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.

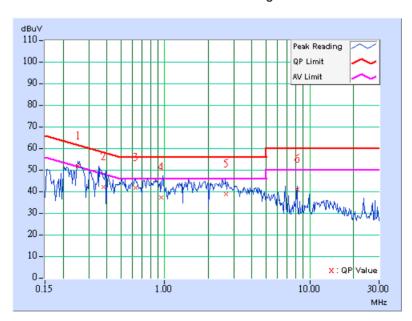




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	ctor			MAR (d				
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.253	0.10	51.28	_	51.38	ı	61.66	51.66	-10.28	_
2	0.379	0.10	41.73	-	41.83	ı	58.30	48.30	-16.47	-
3	0.627	0.14	41.25	-	41.39	-	56.00	46.00	-14.61	-
4	0.945	0.19	36.99	-	37.18	-	56.00	46.00	-18.82	-
5	2.653	0.26	38.54	-	38.80	-	56.00	46.00	-17.20	-
6	8.188	0.43	40.50	-	40.93	-	60.00	50.00	-19.07	-

- 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.

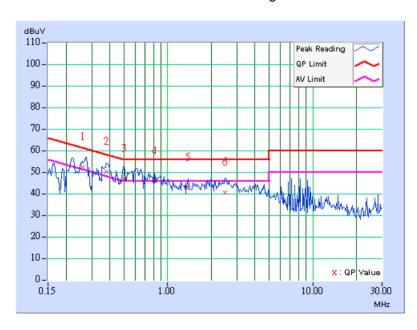




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 4	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	[MHz]		READING VALUE [dB (uV)]		EMISSION LEVEL [dB (uV)]		LIMIT [dB (uV)]		MARGIN (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.259	0.10	52.47	45.79	52.57	45.89	61.45	51.45	-8.88	-5.56
2	0.379	0.10	50.11	43.01	50.21	43.11	58.30	48.30	-8.09	-5.19
3	0.502	0.10	46.78	36.40	46.88	36.50	56.00	46.00	-9.12	-9.50
4	0.818	0.10	45.82	-	45.92	-	56.00	46.00	-10.08	-
5	1.392	0.14	42.70	-	42.84	-	56.00	46.00	-13.16	-
6	2.491	0.24	40.62	-	40.86	-	56.00	46.00	-15.14	-

- 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.

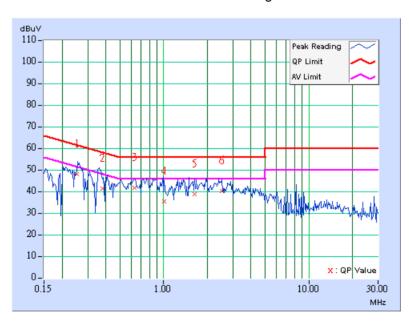




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 4	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	REAI VAL [dB (.UE	EMIS LE\ [dB (/EL	LIMIT [dB (uV)]		LIMII MARGIN		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	
1	0.251	0.10	47.99	-	48.09	-	61.72	51.72	-13.63	-	
2	0.381	0.10	41.23	-	41.33	1	58.25	48.25	-16.92	-	
3	0.627	0.14	41.50	-	41.64	-	56.00	46.00	-14.36	-	
4	1.009	0.20	35.37	-	35.57	1	56.00	46.00	-20.43	=	
5	1.641	0.20	38.72	-	38.92	-	56.00	46.00	-17.08	-	
6	2.516	0.24	40.04	-	40.28	-	56.00	46.00	-15.72	-	

- 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.

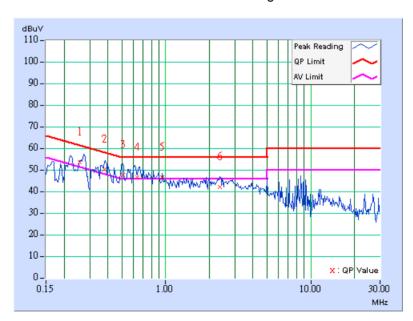




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 7	PHASE	Line 1		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	READING EMISSION LIMIT LEVEL [dB (uV)] [dB (uV)]				MAR (d			
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	53.32	47.29	53.42	47.39	61.60	51.60	-8.18	-4.21
2	0.381	0.10	50.12	42.94	50.22	43.04	58.27	48.27	-8.05	-5.23
3	0.505	0.10	47.65	39.75	47.75	39.85	56.00	46.00	-8.25	-6.15
4	0.637	0.10	46.33	38.80	46.43	38.90	56.00	46.00	-9.57	-7.10
5	0.949	0.10	46.44	37.57	46.54	37.67	56.00	46.00	-9.46	-8.33
6	2.357	0.23	42.07	-	42.30	-	56.00	46.00	-13.70	-

- 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.

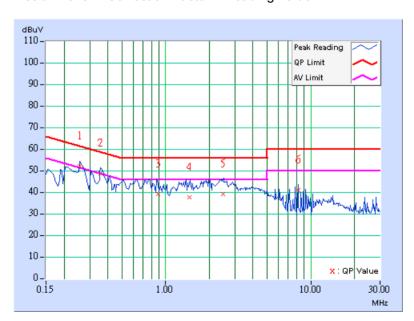




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 7	PHASE	Line 2		
MODULATION TYPE	BPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	15Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	READING EMISSION LIMIT [dB (uV)] [dB (uV)]				MAF (d	RGIN B)		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	51.88	37.71	51.98	37.81	61.58	51.58	-9.60	-13.77
2	0.357	0.10	48.46	-	48.56	-	58.80	48.80	-10.24	-
3	0.888	0.18	38.84	-	39.02	-	56.00	46.00	-16.98	-
4	1.463	0.20	37.17	-	37.37	-	56.00	46.00	-18.63	-
5	2.497	0.24	38.68	-	38.92	-	56.00	46.00	-17.08	-
6	8.188	0.43	40.79	-	41.22	-	60.00	50.00	-18.78	-

- 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.



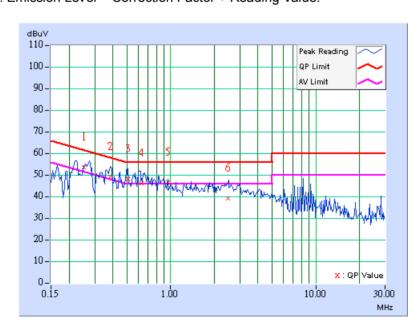


802.11b (CB mode) DSSS MODULATION: DUAL TX:

EUT TEST CONDITION	· ·	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 1		
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	REAI VAL [dB (UE LEVEL LIMIT MARGII						
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.253	0.10	53.42	47.12	53.52	47.22	61.65	51.65	-8.13	-4.43
2	0.384	0.10	48.96	40.39	49.06	40.49	58.18	48.18	-9.12	-7.69
3	0.505	0.10	47.77	39.61	47.87	39.71	56.00	46.00	-8.13	-6.29
4	0.631	0.10	46.21	36.98	46.31	37.08	56.00	46.00	-9.69	-8.92
5	0.955	0.10	46.44	37.26	46.54	37.36	56.00	46.00	-9.46	-8.64
6	2.490	0.24	39.04	-	39.28	-	56.00	46.00	-16.72	-

- 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.

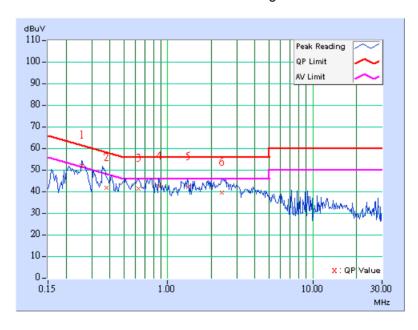




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 1	PHASE	Line 2		
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	VALUE LE			SION /EL (uV)]	LIMIT [dB (uV)]		MAF (d	RGIN B)
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	51.86	37.99	51.96	38.09	61.58	51.58	-9.62	-13.49
2	0.381	0.10	41.46	-	41.56	-	58.25	48.25	-16.69	-
3	0.630	0.14	41.23	-	41.37	-	56.00	46.00	-14.63	-
4	0.877	0.18	42.26	-	42.44	-	56.00	46.00	-13.56	-
5	1.386	0.20	42.16	-	42.36	-	56.00	46.00	-13.64	-
6	2.350	0.23	39.39	-	39.62	-	56.00	46.00	-16.38	-

- 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.

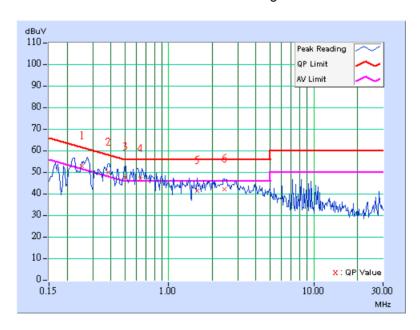




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL	Channel 4	PHASE	Line 1		
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	VAL	READING EMISSION VALUE LEVEL [dB (uV)] [dB (uV)]		LIMIT [dB (uV)]		MAR (d		
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.252	0.10	52.85	46.23	52.95	46.33	61.70	51.70	-8.75	-5.37
2	0.382	0.10	49.76	42.40	49.86	42.50	58.24	48.24	-8.38	-5.74
3	0.504	0.10	47.45	39.04	47.55	39.14	56.00	46.00	-8.45	-6.86
4	0.635	0.10	46.88	39.39	46.98	39.49	56.00	46.00	-9.02	-6.51
5	1.570	0.16	41.23	-	41.39	-	56.00	46.00	-14.61	-
6	2.410	0.23	42.07	-	42.30	-	56.00	46.00	-13.70	-

- 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.

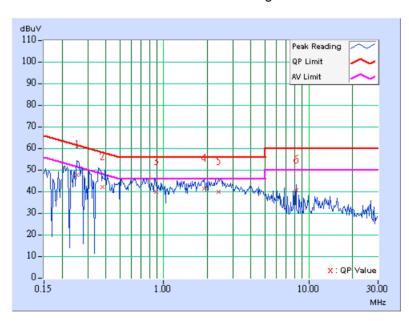




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	Channel 4	PHASE	Line 2		
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	$\begin{bmatrix} 1 & Factor & [dB(uV)] & [dB(uV)] & [dB(uV)] \end{bmatrix}$			MARGIN (dB)					
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.252	0.10	47.23	-	47.33	ı	61.71	51.71	-14.38	-
2	0.381	0.10	41.84	-	41.94	ı	58.26	48.26	-16.32	-
3	0.885	0.18	39.65	-	39.83	-	56.00	46.00	-16.17	-
4	1.903	0.20	40.92	-	41.12	1	56.00	46.00	-14.88	=
5	2.398	0.23	39.50	-	39.73	-	56.00	46.00	-16.27	-
6	8.188	0.43	40.34	-	40.77	-	60.00	50.00	-19.23	-

- 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.

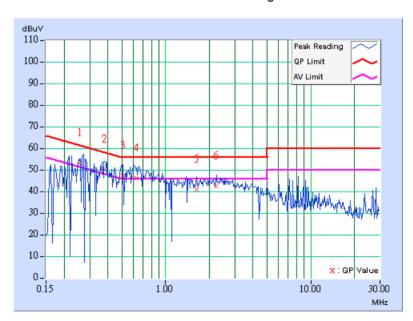




EUT TEST CONDITION	N .	MEASUREMENT DETAIL			
CHANNEL	CHANNEL Channel 7 PHASE		Line 1		
MODULATION TYPE	DBPSK	6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz]	CORR. Factor	VAL	DING LUE (uV)]	EMIS LEV [dB (/EL	LIN [dB (MAR (d	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.256	0.10	53.26	45.09	53.36	45.19	61.55	51.55	-8.19	-6.36
2	0.380	0.10	50.12	42.05	50.22	42.15	58.27	48.27	-8.05	-6.12
3	0.509	0.10	47.35	41.35	47.45	41.45	56.00	46.00	-8.55	-4.55
4	0.631	0.10	46.05	37.29	46.15	37.39	56.00	46.00	-9.85	-8.61
5	1.641	0.16	40.79	-	40.95	-	56.00	46.00	-15.05	-
6	2.219	0.22	42.33	-	42.55	-	56.00	46.00	-13.45	-

- 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.

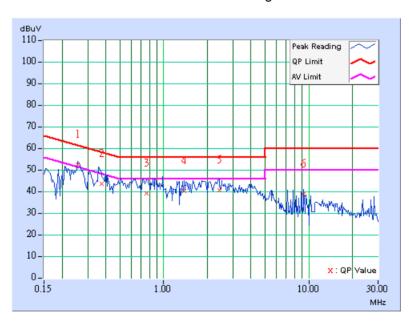




EUT TEST CONDITION	N	MEASUREMENT DETAIL			
CHANNEL Channel 7 P		PHASE	Line 2		
MODULATION TYPE DBPSK		6dB BANDWIDTH	9 kHz		
TRANSFER RATE	1Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa	TESTED BY	Long Chen		

No.	FREQ. [MHz] CORR. Factor		READING VALUE [dB (uV)]			SION /EL (uV)]	LIMIT [dB (uV)]		MARGIN (dB)	
		(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.255	0.10	51.98	38.05	52.08	38.15	61.58	51.58	-9.50	-13.43
2	0.376	0.10	43.10	-	43.20	-	58.37	48.37	-15.17	-
3	0.761	0.16	38.97	-	39.13	-	56.00	46.00	-16.87	-
4	1.394	0.20	39.77	-	39.97	-	56.00	46.00	-16.03	-
5	2.414	0.24	40.46	-	40.70	-	56.00	46.00	-15.30	-
6	9.254	0.45	38.49	-	38.94	-	60.00	50.00	-21.06	-

- 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.





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.



4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL	
Test Receiver ROHDE & SCHWARZ	ESI7	838496/016	Jan. 01, 2007	
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100041	Dec. 03, 2007	
BILOG Antenna SCHWARZBECK	VULB9168	9168-155	Jan. 15, 2007	
HORN Antenna SCHWARZBECK	BBHA 9120D	9120D-404	Jan. 01, 2007	
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 19, 2007	
Preamplifier Agilent	8449B	3008A1960	Oct. 30, 2007	
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	219268/4	Dec. 20, 2006	
RF signal cable HUBER+SUHNNER	SUCOFLEX 104	230129/4	Dec. 20, 2006	
Software ADT.	ADT_Radiated_V5.14	NA	NA	
Antenna Tower inn-co GmbH	MA 4000	010303	NA	
Antenna Tower Controller inn-co GmbH	CO2000	019303	NA	
Turn Table ADT.	TT100.	TT93021704	NA	
Turn Table Controller ADT.	SC100.	SC93021704	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 4.

^{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 IC4924-4.



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 meters semi-anechoic chamber. 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:

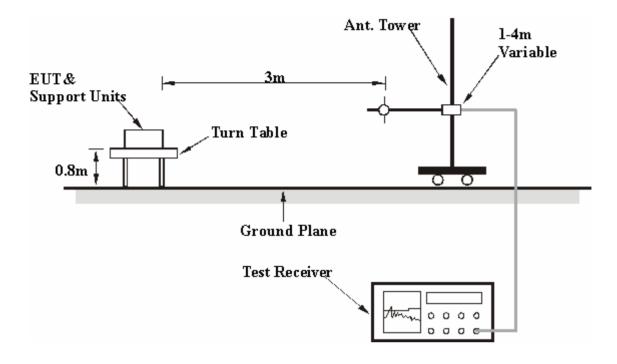
- 1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
- 2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and video bandwidth is 3MHz for Peak detection at frequency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

4.2.4 DEVIATION FROM TEST STANDARD

No deviation



4.2.5 TEST SETUP



For the actual test configuration, please refer to the attached file (Test Setup Photo).

4.2.6 EUT OPERATING CONDITIONS

Same as item 4.1.6.



4.2.7 TEST RESULTS

BELOW 1GHz WORST-CASE DATA: 802.11g OFDM MODULATION: DUAL TX:

EUT TEST CONDITIO	N	MEASUREMENT DETAIL			
CHANNEL Channel 1		FREQUENCY RANGE	Below 1000MHz		
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
TRANSFER RATE	6Mbps	DETECTOR FUNCTION	Quasi-Peak		
ENVIRONMENTAL CONDITIONS	25deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui		

	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	249.66	41.67 QP	46.00	-4.33	1.50 H	127	29.25	12.43		
2	274.93	39.31 QP	46.00	-6.69	2.00 H	103	24.98	14.33		
3	319.64	42.54 QP	46.00	-3.46	1.50 H	247	26.84	15.70		
4	479.04	37.79 QP	46.00	-8.21	2.00 H	73	18.37	19.42		
5	500.42	42.58 QP	46.00	-3.42	1.50 H	31	22.63	19.95		
6	525.69	37.32 QP	46.00	-8.68	2.00 H	145	16.84	20.49		
7	562.63	38.79 QP	46.00	-7.21	2.50 H	16	17.40	21.39		
8	675.37	37.66 QP	46.00	-8.34	1.00 H	100	14.03	23.64		
9	725.91	40.45 QP	46.00	-5.55	2.50 H	16	15.46	24.99		
10	776.45	42.94 QP	46.00	-3.06	1.50 H	52	16.99	25.96		
11	799.78	38.82 QP	46.00	-7.18	1.00 H	136	12.71	26.11		
12	875.59	39.16 QP	46.00	-6.84	1.50 H	73	12.05	27.10		
13	926.13	39.41 QP	46.00	-6.59	1.00 H	100	10.73	28.67		

		ANTENNA	POLARITY	& TEST DI	STANCE: V	ERTICAL A	T 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	31.94	35.76 QP	40.00	-4.24	1.00 V	127	23.18	12.58
2	74.71	31.31 QP	40.00	-8.69	1.00 V	196	20.21	11.10
3	224.39	38.71 QP	46.00	-7.29	1.00 V	31	27.13	11.58
4	249.66	37.73 QP	46.00	-8.27	1.00 V	31	25.30	12.43
5	325.47	39.29 QP	46.00	-6.71	1.00 V	355	23.51	15.78
6	374.07	38.28 QP	46.00	-7.72	1.00 V	349	21.36	16.93
7	479.04	37.84 QP	46.00	-8.16	1.00 V	274	18.42	19.42
8	675.37	39.77 QP	46.00	-6.23	1.00 V	169	16.13	23.64
9	799.78	41.14 QP	46.00	-4.86	1.00 V	166	15.03	26.11

- 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.



DRAFT 802.11n (20MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITIO	N	MEASUREMENT DETAIL			
CHANNEL Channel 1 FR		FREQUENCY RANGE	Below 1000MHz		
MODULATION TYPE	BPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
TRANSFER RATE	7.2Mbps	DETECTOR FUNCTION	Quasi-Peak		
ENVIRONMENTAL CONDITIONS	25deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui		

		NTENNA P	OLARITY 8	R TEST DIS	TANCE: HO	RIZONTAL	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	249.66	41.37 QP	46.00	-4.63	2.00 H	133	28.94	12.43
2	274.93	37.89 QP	46.00	-8.11	1.00 H	133	23.56	14.33
3	319.64	43.55 QP	46.00	-2.45	1.00 H	277	27.85	15.70
4	479.04	37.10 QP	46.00	-8.90	2.00 H	109	17.68	19.42
5	500.42	43.24 QP	46.00	-2.76	2.00 H	148	23.29	19.95
6	525.69	37.50 QP	46.00	-8.50	1.50 H	70	17.02	20.49
7	562.63	39.40 QP	46.00	-6.60	1.50 H	154	18.01	21.39
8	675.37	37.66 QP	46.00	-8.34	1.50 H	82	14.02	23.64
9	725.91	39.98 QP	46.00	-6.02	1.50 H	154	14.99	24.99
10	776.45	42.58 QP	46.00	-3.42	2.00 H	115	16.63	25.96
11	799.78	38.36 QP	46.00	-7.64	1.00 H	142	12.25	26.11
12	875.59	40.09 QP	46.00	-5.91	1.50 H	181	12.99	27.10
13	926.13	39.78 QP	46.00	-6.22	1.50 H	82	11.11	28.67

	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	39.72	35.32 QP	40.00	-4.68	1.00 V	178	20.91	14.42
2	68.88	31.81 QP	40.00	-8.19	1.00 V	118	19.97	11.84
3	224.39	39.05 QP	46.00	-6.95	1.00 V	247	27.47	11.58
4	325.47	39.43 QP	46.00	-6.57	1.00 V	232	23.65	15.78
5	374.07	37.71 QP	46.00	-8.29	1.00 V	178	20.78	16.93
6	479.04	38.64 QP	46.00	-7.36	1.00 V	61	19.22	19.42
7	675.37	39.37 QP	46.00	-6.63	1.00 V	22	15.73	23.64
8	799.78	41.24 QP	46.00	-4.76	1.00 V	262	15.13	26.11

- 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.



DRAFT 802.11n (40MHz) OFDM MODULATION: DUAL TX:

EUT TEST CONDITIO	N	MEASUREMENT DETAIL			
CHANNEL	Channel 1	FREQUENCY RANGE	Below 1000MHz		
MODULATION TYPE	BPSK for draft 802.11n (40MHz)	INPUT POWER (SYSTEM)	120Vac, 60 Hz		
TRANSFER RATE	15Mbps	DETECTOR FUNCTION	Quasi-Peak		
ENVIRONMENTAL CONDITIONS	25deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui		

	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	249.66	41.47 QP	46.00	-4.53	2.00 H	124	29.04	12.43
2	274.93	37.72 QP	46.00	-8.28	1.50 H	106	23.39	14.33
3	319.64	44.12 QP	46.00	-1.88	2.00 H	313	28.42	15.70
4	479.04	37.70 QP	46.00	-8.30	1.00 H	154	18.28	19.42
5	500.42	43.66 QP	46.00	-2.34	1.00 H	85	23.71	19.95
6	525.69	38.18 QP	46.00	-7.82	1.50 H	70	17.69	20.49
7	562.63	38.14 QP	46.00	-7.86	1.00 H	295	16.75	21.39
8	675.37	38.21 QP	46.00	-7.79	1.00 H	97	14.57	23.64
9	725.91	39.98 QP	46.00	-6.02	1.00 H	295	14.99	24.99
10	776.45	42.95 QP	46.00	-3.05	2.00 H	265	16.99	25.96
11	799.78	38.26 QP	46.00	-7.74	1.00 H	145	12.15	26.11
12	875.59	40.21 QP	46.00	-5.79	1.00 H	79	13.10	27.10

	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	39.72	35.02 QP	40.00	-4.98	1.00 V	238	20.60	14.42
2	68.88	32.70 QP	40.00	-7.30	1.50 V	130	20.85	11.84
3	123.31	35.23 QP	43.50	-8.27	1.00 V	292	23.95	11.28
4	224.39	39.38 QP	46.00	-6.62	1.00 V	202	27.81	11.58
5	325.47	39.80 QP	46.00	-6.20	1.00 V	262	24.02	15.78
6	374.07	38.29 QP	46.00	-7.71	1.00 V	283	21.37	16.93
7	479.04	38.61 QP	46.00	-7.39	1.00 V	115	19.19	19.42
8	675.37	40.11 QP	46.00	-5.89	1.00 V	250	16.47	23.64
9	799.78	40.67 QP	46.00	-5.33	1.00 V	268	14.57	26.11

- 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.



802.11b (CB mode) DSSS MODULATION: DUAL TX:

EUT TEST CONDITIO	N	MEASUREMENT DETAIL		
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 25GHz	
MODULATION TYPE	DBPSK	INPUT POWER (SYSTEM)	120Vac, 60 Hz	
TRANSFER RATE	1Mbps	DETECTOR FUNCTION	Quasi-Peak	
ENVIRONMENTAL CONDITIONS	25deg. C, 64%RH, 991hPa	TESTED BY	Match Tsui	

	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	249.66	41.46 QP	46.00	-4.54	1.50 H	244	29.03	12.43
2	274.93	37.86 QP	46.00	-8.14	1.00 H	97	23.53	14.33
3	319.64	44.29 QP	46.00	-1.71	1.00 H	142	28.59	15.70
4	449.88	37.67 QP	46.00	-8.33	1.00 H	139	18.97	18.70
5	479.04	38.05 QP	46.00	-7.95	1.50 H	88	18.62	19.42
6	500.42	43.29 QP	46.00	-2.71	1.50 H	121	23.34	19.95
7	525.69	37.87 QP	46.00	-8.13	1.50 H	118	17.39	20.49
8	725.91	39.66 QP	46.00	-6.34	1.00 H	118	14.67	24.99
9	776.45	42.42 QP	46.00	-3.58	1.00 H	139	16.46	25.96
10	799.78	37.60 QP	46.00	-8.40	1.00 H	133	11.49	26.11
11	875.59	39.89 QP	46.00	-6.11	1.00 H	34	12.78	27.10

	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	249.66	41.80 QP	46.00	-4.20	1.00 V	94	29.37	12.43
2	274.93	38.17 QP	46.00	-7.83	2.00 V	118	23.85	14.33
3	319.64	44.08 QP	46.00	-1.92	1.50 V	241	28.38	15.70
4	449.88	38.02 QP	46.00	-7.98	1.00 V	82	19.32	18.70
5	500.42	42.20 QP	46.00	-3.80	1.00 V	127	22.25	19.95
6	525.69	37.59 QP	46.00	-8.41	2.50 V	136	17.10	20.49
7	562.63	38.53 QP	46.00	-7.47	2.50 V	46	17.14	21.39
8	675.37	38.07 QP	46.00	-7.93	2.00 V	106	14.43	23.64
9	725.91	40.25 QP	46.00	-5.75	2.50 V	46	15.26	24.99
10	776.45	42.98 QP	46.00	-3.02	1.00 V	82	17.03	25.96
11	799.78	38.84 QP	46.00	-7.16	1.50 V	91	12.73	26.11
12	875.59	40.32 QP	46.00	-5.68	2.50 V	46	13.22	27.10
13	900.86	37.86 QP	46.00	-8.14	1.00 V	82	10.37	27.49
14	926.13	39.38 QP	46.00	-6.62	2.00 V	106	10.70	28.67

- 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. 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:

<u>www.adt.com.tw/index.5/phtml</u>. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab: Hsin Chu EMC/RF Lab:

Tel: 886-2-26052180 Tel: 886-3-5935343 Fax: 886-2-26051924 Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232 Fax: 886-3-3185050

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.