

FCC TEST REPORT

(PART 15, SUBPART E, 15.407)

REPORT NO.: RF950210L12

MODEL NO.: WAG302v2

RECEIVED: Feb. 21, 2006

TESTED: Feb. 27 ~ Mar, 07, 2006

ISSUED: Mar. 09, 2006

APPLICANT: NETGEAR, INC.

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ISSUED BY: Advance Data Technology Corporation

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R.O.C.

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No. 2177-01



0528

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1. CERTIFICATION

PRODUCT: 802.11a/g Prosafe Wireless Access Point

MODEL: WAG302v2

BRAND: NETGEAR

APPLICANT: NETGEAR, INC.

TEST SAMPLE: ENGINEERING SAMPLE

TESTED: Feb. 27 ~ Mar, 07, 2006

STANDARDS: FCC Part 15, Subpart E (Section 15.407)
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

Wendy Liao
(Wendy Liao)

, **DATE:** Mar. 09, 2006

TECHNICAL

ACCEPTANCE

Responsible for RF

: Long Chen
(Long Chen)

, **DATE:** Mar. 09, 2006

APPROVED BY

: Gary Chang
(Gary Chang / Supervisor)

, **DATE:** Mar. 09, 2006

2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)			
Standard Section	Test Type	Result	Remark
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -18.07dB at 0.287MHz
15.407(b/1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.39.dB at 15540.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

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	2.44 dB
Radiated emissions	30MHz ~ 200MHz	3.55 dB
	200MHz ~ 1000MHz	3.58 dB
	1GHz ~ 18GHz	1.10 dB
	18GHz ~ 40GHz	0.91 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

EUT	802.11a/g Prosafe Wireless Access Point
MODEL NO.	WAG302v2
FCC ID	PY306100028
POWER SUPPLY	12Vdc from AC adapter or 48Vdc from POE
MODULATION TYPE	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
MODULATION TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps (up to 108Mbps in 802.11g & 802.11a turbo mode)
FREQUENCY RANGE	802.11b & 802.11g: 2.412 ~ 2.462GHz 802.11a: 5.150 ~ 5.350GHz and 5.725 ~ 5.850GHz
NUMBER OF CHANNEL	802.11b & 802.11g: 11 for Normal mode / 1 for Turbo mode 802.11a: 13 for Normal mode / 5 for Turbo mode
CHANNEL SPACING	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode / 40MHz for Turbo mode
OUTPUT POWER	50.466mW for 802.11b 50.699mW for 802.11g 28.642mW for 5.150 ~ 5.350GHz 51.168mW for 5.725 ~ 5.850GHz
ANTENNA TYPE	Refer to Note 2
DATA CABLE	NA
I/O PORTS	Refer to user's manual

NOTE:

- The EUT was operated with the following POE and adapter:

POE	
BRAND	Netgear
MODEL	WLS538
INPUT	100-240Vac, 50-60Hz
OUTPUT	48Vdc, 2.7A

** The POE is for support unit only.

Adapter	
BRAND	NETGEAR
MODEL	DVS-120A12FUS
INPUT	100-240Vac, 50/60Hz, 0.7A, 40VA
OUTPUT	12Vdc, 1.2A
POWER LINE	DC 1.8m non-shielded cable without core

2. The following antennas were provided to this EUT.

Item	Antenna Type	Gain (dBi)		With cable loss (dBi)	Length of cable
		2.4G	5G		
1	Patch	14.0	-	-4.64	30m
2	Dipole	8.5	-	-1.69	10m
3	Dipole	4.59352	5.39536	-	-

3. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.
4. The EUT is capable of providing data rates of up to 108Mbps in 802.11g & 802.11a turbo mode depending upon reception quality.
5. The following antennas were pre-tested and we found the worst case as below:

Item	Antenna Port 1	Antenna Port 2
1	Patch (antenna 1)	Dipole (antenna 3)
2	Dipole (antenna 2)	Dipole (antenna 3)
3	Dipole (antenna 3)	Dipole (antenna 3)

*Note: The item 1 was the worst case and recorded the test data in the test report.

6. 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 DESCRIPTION OF TEST MODES

Operated in 5180 ~ 5320MHz

8 channels are provided to this EUT.

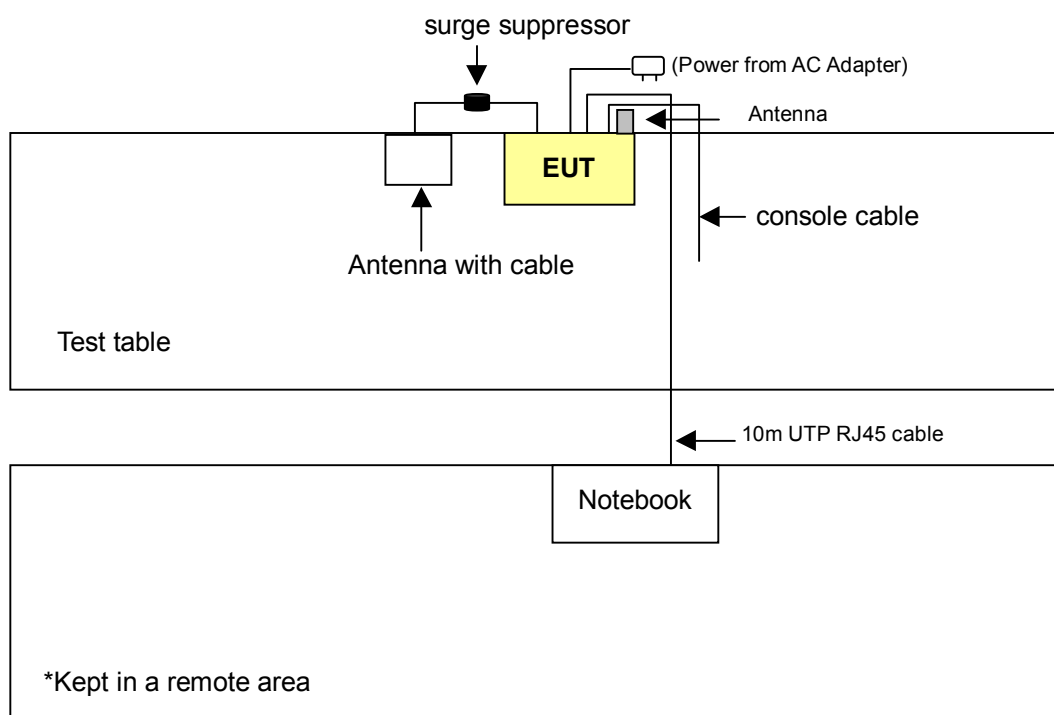
CHANNEL	FREQUENCY
1	5180 MHz
2	5200 MHz
3	5220 MHz
4	5240 MHz
5	5260 MHz
6	5280 MHz
7	5300 MHz
8	5320 MHz

3 channels are provided to this EUT for turbo mode.

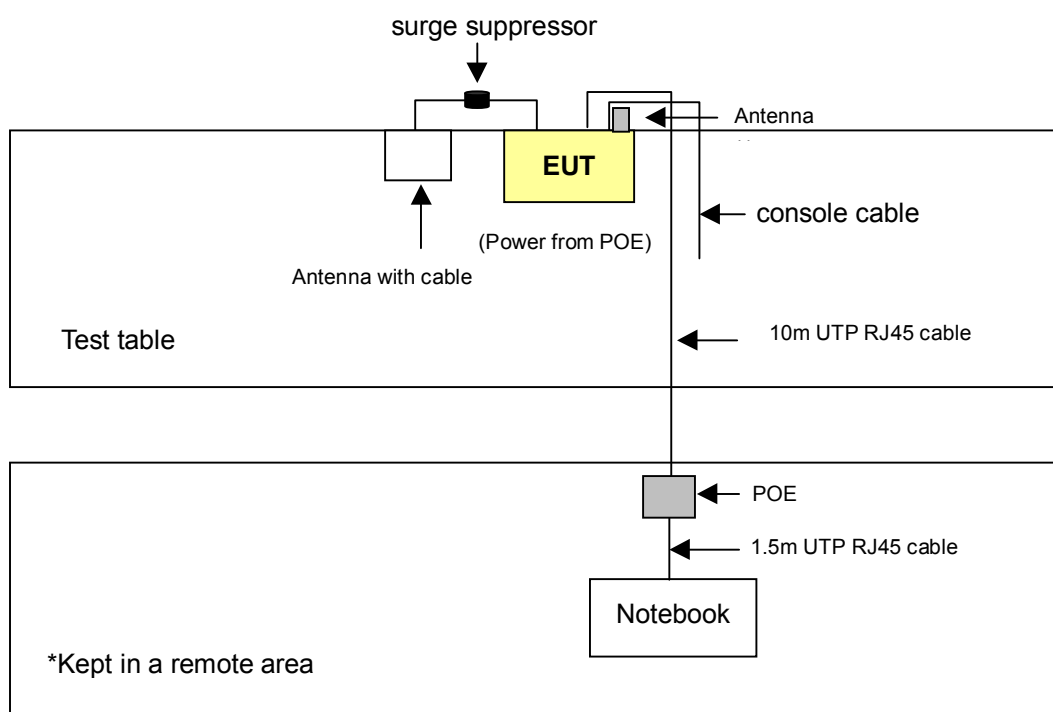
CHANNEL	FREQUENCY
1	5210 MHz
2	5250 MHz
3	5290 MHz

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST

TEST MODE A:



TEST MODE B:



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
A	√	√	√	√	Adapter mode with antenna 1, 3
B	√	√	-	-	POE mode with antenna 1, 3

Where PLC: Power Line Conducted Emission

RE<1G RE: Radiated Emission below 1GHz

RE≥1G: Radiated Emission above 1GHz

APCM: Antenna Port Conducted Measurement

NOTE: "-" means no effect.

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.

EUT CONFIGURE MODE	Mode	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	1 to 8	5	OFDM	BPSK	6
B	802.11a	1 to 8	5	OFDM	BPSK	6

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, antenna ports (if EUT with antenna diversity architecture).
- ☒ Following channel(s) was (were) selected for the final test as listed below.

EUT CONFIGURE MODE	MODE	AVAILABLE CHANNEL	TESTED CHANNEL	MODULATION TECHNOLOGY	MODULATION TYPE	DATA RATE (Mbps)
A	802.11a	1 to 8	5	OFDM	BPSK	6
B	802.11a	1 to 8	5	OFDM	BPSK	6

Radiated Emission Test (Above 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)
802.11a	1 to 8	1, 4, 5, 8	OFDM	BPSK	6
802.11a Turbo	1 to 3	1, 2, 3	OFDM	QPSK	12

Bandedge Measurement:

- ☒ 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)
802.11a	1 to 8	1, 8	OFDM	BPSK	6
802.11a Turbo	1 to 3	1, 3	OFDM	QPSK	12

Antenna Port Conducted Measurement:

- ☒ 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)
802.11a	1 to 8	1, 4, 5, 8	OFDM	BPSK	6
802.11a Turbo	1 to 3	1, 2, 3	OFDM	QPSK	12

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 E (15.407)

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	DELL	PP05L	12130898320	E2K24CLNS
2	POE	Netgear	WLS538	NA	NA

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

NOTE: All power cords of the above support units are non shielded (1.8m).

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

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100288	Nov. 02, 2006
RF signal cable Woken	5D-FB	Cable-HyC02-01	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 3.
 3. The VCCI Site Registration No. is C-2047.

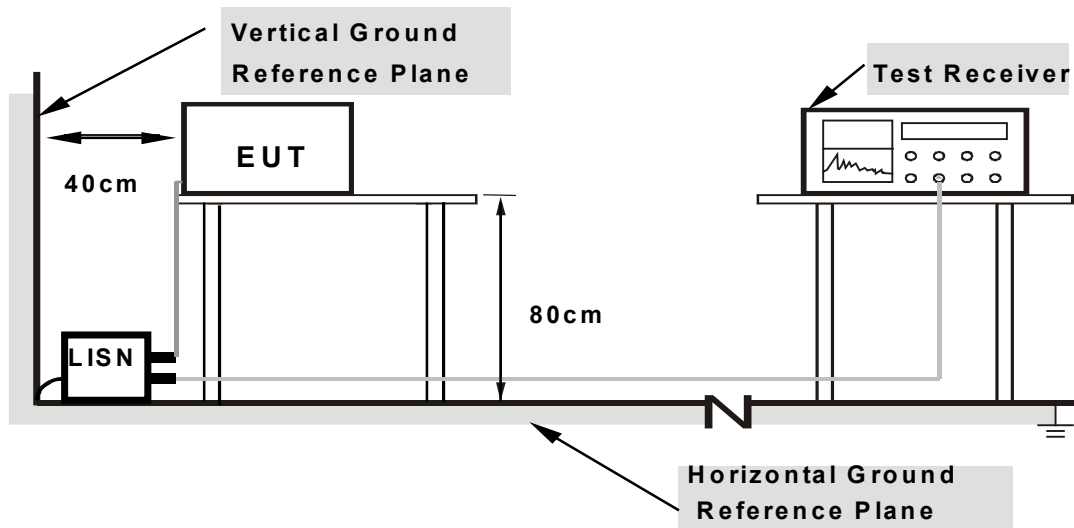
4.1.3 TEST PROCEDURES

- 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 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

- a. The EUT connected with notebook system via a RJ45 cable.
- b. The notebook system ran a test program (provided by manufacturer) to enable EUT under transmission condition continuously at specific channel frequency.

4.1.7 TEST RESULTS

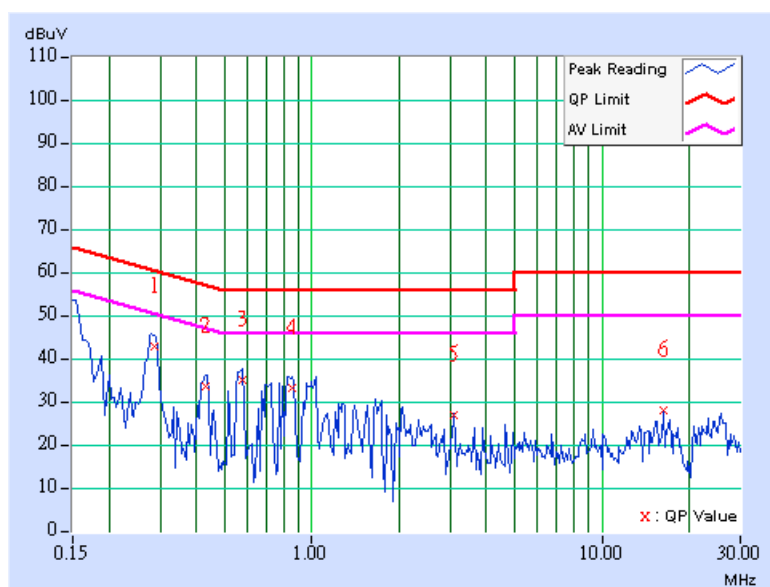
Conducted Worst-Case Data

Adapter mode with antenna 1, 3

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

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	0.287	0.10	42.45	-	42.55	-	60.62	50.62	-18.07	-
2	0.429	0.10	33.13	-	33.23	-	57.28	47.28	-24.05	-
3	0.580	0.10	34.42	-	34.52	-	56.00	46.00	-21.48	-
4	0.857	0.10	32.69	-	32.79	-	56.00	46.00	-23.21	-
5	3.102	0.29	26.43	-	26.72	-	56.00	46.00	-29.28	-
6	16.230	0.61	27.71	-	28.32	-	60.00	50.00	-31.68	-

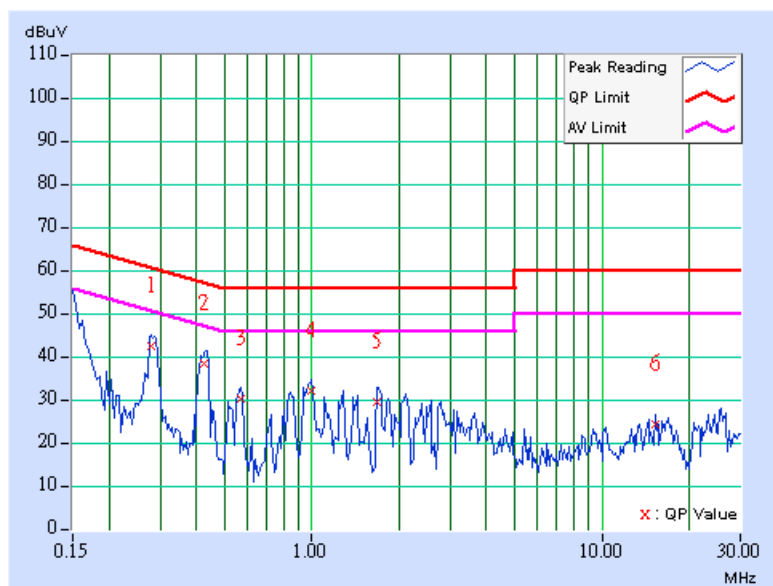
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



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

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	0.279	0.10	41.81	-	41.91	-	60.85	50.85	-18.94	-
2	0.426	0.10	37.80	-	37.90	-	57.33	47.33	-19.42	-
3	0.568	0.13	29.76	-	29.89	-	56.00	46.00	-26.11	-
4	0.998	0.20	31.71	-	31.91	-	56.00	46.00	-24.09	-
5	1.676	0.20	28.93	-	29.13	-	56.00	46.00	-26.87	-
6	15.246	0.63	23.87	-	24.50	-	60.00	50.00	-35.50	-

- 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.

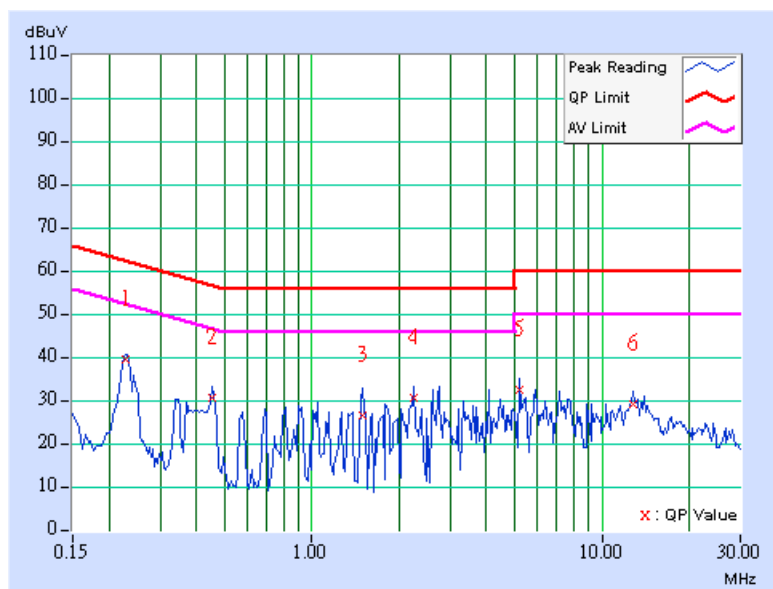


Conducted Worst-Case Data POE mode with antenna 1, 3

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

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	0.228	0.10	39.16	-	39.26	-	62.52	52.52	-23.26	-
2	0.455	0.10	30.35	-	30.45	-	56.79	46.79	-26.34	-
3	1.500	0.15	25.99	-	26.14	-	56.00	46.00	-29.86	-
4	2.258	0.22	30.11	-	30.33	-	56.00	46.00	-25.67	-
5	5.176	0.37	32.02	-	32.39	-	60.00	50.00	-27.61	-
6	12.820	0.51	28.80	-	29.31	-	60.00	50.00	-30.69	-

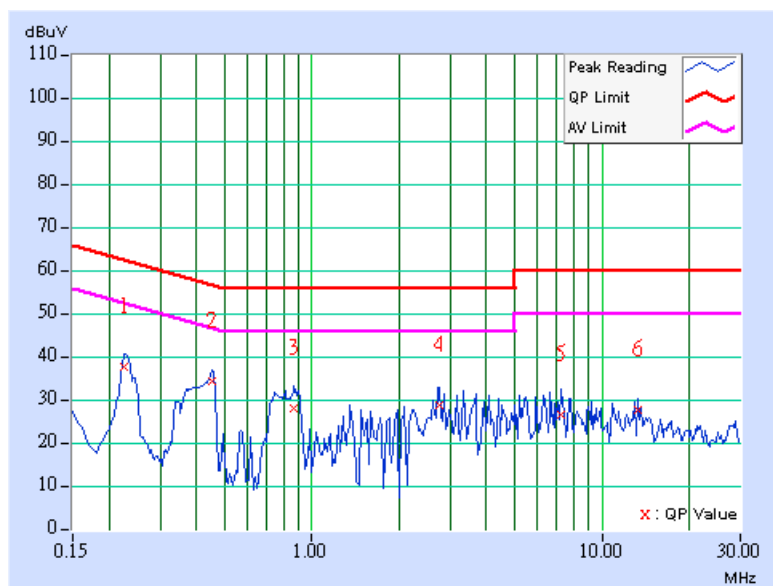
- REMARKS:**
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
 2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
 3. The emission levels of other frequencies were very low against the limit.
 4. Margin value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



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

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	0.224	0.10	37.31	-	37.41	-	62.66	52.66	-25.25	-
2	0.451	0.11	33.79	-	33.90	-	56.86	46.86	-22.96	-
3	0.865	0.18	27.49	-	27.67	-	56.00	46.00	-28.33	-
4	2.758	0.26	28.33	-	28.59	-	56.00	46.00	-27.41	-
5	7.270	0.42	26.10	-	26.52	-	60.00	50.00	-33.48	-
6	13.313	0.57	27.28	-	27.85	-	60.00	50.00	-32.15	-

- 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.



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 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

Frequencies (MHz)	EIRP Limit (dBm)	Equivalent Field Strength at 3m (dBμV/m) *note 3
5150~5250	-27	68.3
5250~5350	-27	68.3
5725~5825	-27 *note 1	68.3
	-17 *note 2	78.3

NOTE:

1. For frequencies 10MHz or greater above or below the band edge.
2. All emissions within the frequency range from the band edge to 10MHz above or below the band edge.
3. The following formula is used to convert the equipment isotropic radiated power (eirp) to field strength

$$E = \frac{1000000\sqrt{30P}}{3} \mu\text{V/m, where P is the eirp (Watts)}$$

4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 20, 2006
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 27, 2006
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 15, 2007
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 22, 2007
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA9170147	Jan. 26, 2007
Preamplifier Agilent	8449B	3008A01961	Oct. 23, 2006
Preamplifier Agilent	8447D	2944A10629	Oct. 27, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	214380/4	Jan. 16, 2007
RF signal cable HUBER+SUHNER	SUCOFLEX 104	219266/4	Jan. 16, 2007
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA
26GHz ~ 40GHz Amplifier	AMF-6F-2600400	923362	Mar. 13, 2006

- 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 1.
3. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
4. The IC Site Registration No. is IC4924-2.

4.2.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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 10dB 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 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

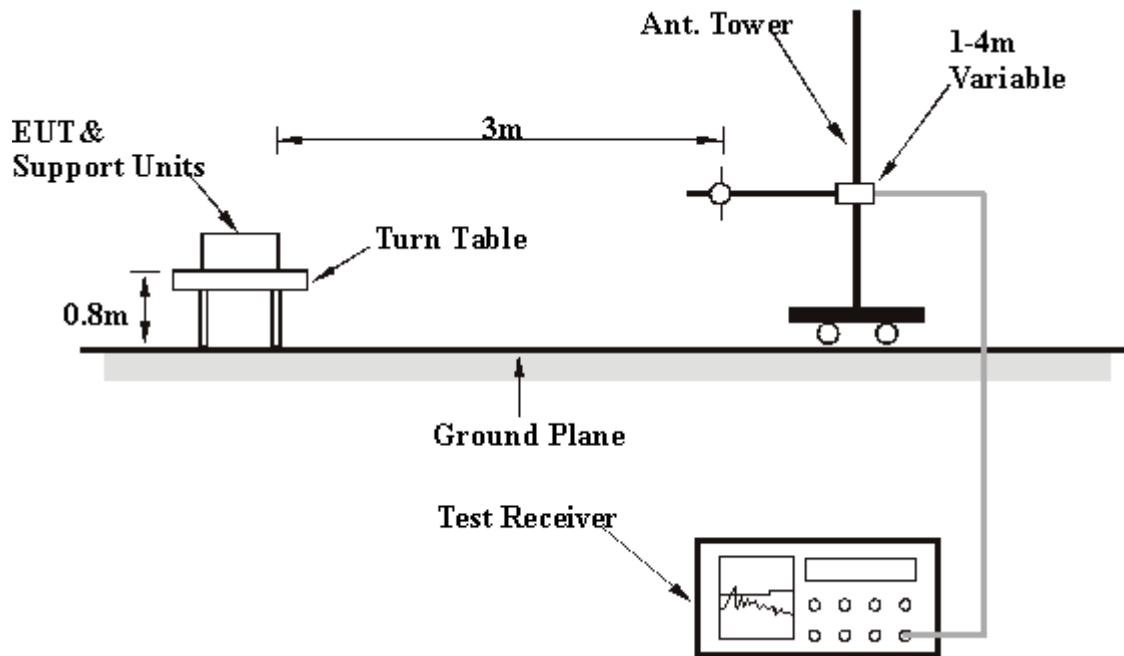
NOTE:

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 and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10Hz for Average detection (AV) at frequency above 1GHz.

4.2.5 DEVIATION FROM TEST STANDARD

No deviation

4.2.6 TEST SETUP



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

4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

4.2.8 TEST RESULTS

Below 1GHz Worst-Case Data

Adapter mode with antenna 1, 3

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Match Tsui	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	A		

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	395.45	37.52 QP	46.00	-8.48	1.00 H	64	19.74	17.79
2	428.50	35.53 QP	46.00	-10.47	1.00 H	64	17.02	18.52
3	461.54	35.63 QP	46.00	-10.37	1.00 H	64	16.42	19.21
4	506.25	36.73 QP	46.00	-9.27	1.00 H	28	16.53	20.20
5	527.64	38.27 QP	46.00	-7.73	1.00 H	64	17.60	20.67
6	659.82	41.95 QP	46.00	-4.05	1.00 H	64	18.70	23.25
7	792.00	37.18 QP	46.00	-8.82	1.00 H	106	11.22	25.96
8	924.19	41.99 QP	46.00	-4.01	1.50 H	10	13.78	28.21

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	31.94	37.79 QP	40.00	-2.21	1.00 V	208	25.25	12.54
2	395.45	38.55 QP	46.00	-7.45	1.00 V	208	20.76	17.79
3	440.16	37.52 QP	46.00	-8.48	1.00 V	37	18.77	18.75
4	461.54	34.52 QP	46.00	-11.48	1.00 V	208	15.31	19.21
5	527.64	34.78 QP	46.00	-11.22	1.00 V	208	14.11	20.67
6	659.82	37.18 QP	46.00	-8.82	1.00 V	208	13.93	23.25
7	792.00	34.63 QP	46.00	-11.37	1.00 V	169	8.67	25.96
8	858.10	34.19 QP	46.00	-11.81	1.00 V	166	7.44	26.74
9	924.19	41.39 QP	46.00	-4.61	1.50 V	340	13.18	28.21

- 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.

Below 1GHz Worst-Case Data

POE mode with antenna 1, 3

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 5	FREQUENCY RANGE	Below 1000MHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Quasi-Peak
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Match Tsui	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TEST MODE	B		

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	263.27	32.91 QP	46.00	-13.09	1.50 H	43	19.91	13.01
2	307.98	33.77 QP	46.00	-12.23	1.50 H	136	18.05	15.72
3	350.74	43.06 QP	46.00	-2.94	1.00 H	292	26.76	16.31
4	362.40	33.72 QP	46.00	-12.28	1.50 H	43	17.03	16.69
5	395.45	43.45 QP	46.00	-2.55	1.50 H	43	25.66	17.79
6	445.99	40.01 QP	46.00	-5.99	1.00 H	4	21.14	18.87
7	461.54	33.69 QP	46.00	-12.31	1.50 H	43	14.48	19.21
8	494.59	32.05 QP	46.00	-13.95	1.50 H	43	12.11	19.94
9	527.64	34.55 QP	46.00	-11.45	1.50 H	43	13.88	20.67
10	659.82	33.53 QP	46.00	-12.47	1.50 H	43	10.28	23.25
11	924.19	37.20 QP	46.00	-8.80	1.50 H	22	8.99	28.21

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	47.49	26.79 QP	40.00	-13.21	1.00 V	184	12.07	14.72
2	84.43	31.87 QP	40.00	-8.13	1.00 V	1	21.94	9.92
3	99.98	29.60 QP	43.50	-13.90	1.00 V	178	20.60	8.99
4	395.45	39.33 QP	46.00	-6.67	1.00 V	250	21.54	17.79
5	494.59	32.31 QP	46.00	-13.69	1.00 V	250	12.36	19.94
6	527.64	35.41 QP	46.00	-10.59	1.00 V	250	14.74	20.67
7	659.82	35.60 QP	46.00	-10.40	1.00 V	250	12.35	23.25
8	792.00	33.87 QP	46.00	-12.13	1.00 V	241	7.90	25.96
9	924.19	39.88 QP	46.00	-6.12	1.00 V	229	11.67	28.21

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

802.11a OFDM modulation

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

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	3453.00	42.91 PK	68.30	-25.39	1.17 H	8	9.16	33.75
2	#5150.00	39.81 PK	74.00	-34.19	1.00 H	215	1.99	37.82
2	#5150.00	30.15 AV	54.00	-23.85	1.00 H	215	-7.67	37.82
3	*5180.00	97.19 PK			1.00 H	215	59.33	37.86
3	*5180.00	87.53 AV			1.00 H	215	49.67	37.86
4	6906.00	51.50 PK	68.30	-16.80	1.08 H	210	7.86	43.64
5	10360.00	59.03 PK	68.30	-9.27	1.26 H	128	9.57	49.46
6	#15540.00	66.61 PK	74.00	-7.39	1.05 H	208	18.28	48.33
6	#15540.00	52.52 AV	54.00	-1.48	1.05 H	208	4.19	48.33

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

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

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	3453.00	47.28 PK	68.30	-21.02	1.06 V	170	13.53	33.75
2	#5150.00	50.90 PK	74.00	-23.10	1.04 V	139	13.08	37.82
2	#5150.00	41.16 AV	54.00	-12.84	1.04 V	139	3.34	37.82
3	*5180.00	110.04 PK			1.04 V	138	72.18	37.86
3	*5180.00	99.54 AV			1.04 V	138	61.68	37.86
4	6906.00	53.57 PK	68.30	-14.73	1.12 V	213	9.93	43.64
5	10360.00	58.03 PK	68.30	-10.27	1.16 V	201	8.57	49.46
6	#15540.00	66.48 PK	74.00	-7.52	1.35 V	144	18.15	48.33
6	#15540.00	52.61 AV	54.00	-1.39	1.35 V	144	4.28	48.33

NOTE:

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 4	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Match Tsui	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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	3493.00	43.11 PK	68.30	-25.19	1.11 H	355	9.26	33.85
2	*5240.00	97.26 PK			1.03 H	89	59.36	37.90
2	*5240.00	87.24 AV			1.03 H	89	49.34	37.90
3	10480.00	41.87 PK	68.30	-26.43	1.31 H	240	-7.87	49.74
4	#15720.00	66.50 PK	74.00	-7.50	1.30 H	260	18.14	48.36
4	#15720.00	52.17 AV	54.00	-1.83	1.30 H	260	3.81	48.36

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	3493.00	48.54 PK	68.30	-19.76	1.11 V	189	14.69	33.85
2	*5240.00	110.85 PK			1.00 V	178	72.95	37.90
2	*5240.00	100.11 AV			1.00 V	178	62.21	37.90
3	10480.00	58.24 PK	68.30	-10.06	1.07 V	199	8.50	49.74
4	#15720.00	66.06 PK	74.00	-7.94	1.03 V	163	17.70	48.36
4	#15720.00	51.95 AV	54.00	-2.05	1.03 V	163	3.59	48.36

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

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

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	3506.00	48.34 PK	68.30	-19.96	1.10 H	174	14.46	33.88
2	*5260.00	97.89 PK			1.21 H	227	59.98	37.91
2	*5260.00	88.10 AV			1.21 H	227	50.19	37.91
3	7012.00	51.12 PK	68.30	-17.18	1.11 H	134	7.12	44.00
4	#15780.00	64.30 PK	74.00	-9.70	1.36 H	39	15.99	48.31
4	#15780.00	51.38 AV	54.00	-2.62	1.36 H	39	3.07	48.31

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	3506.00	48.21 PK	68.30	-20.09	1.07 V	196	14.33	33.88
2	*5260.00	110.02 PK			1.09 V	164	72.11	37.91
2	*5260.00	99.66 AV			1.09 V	164	61.75	37.91
3	7013.00	58.68 PK	68.30	-9.62	1.04 V	169	14.68	44.00
4	10520.00	61.25 PK	68.30	-7.05	1.25 V	136	11.39	49.87
5	#15780.00	64.55 PK	74.00	-9.45	1.17 V	211	16.24	48.31
5	#15780.00	51.00 AV	54.00	-3.00	1.17 V	211	2.69	48.31

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

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 8	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	BPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	6Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Match Tsui	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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	3546.00	44.40 PK	68.30	-23.90	1.17 H	360	10.44	33.96
2	*5320.00	98.21 PK			1.25 H	0	60.27	37.94
2	*5320.00	88.43 AV			1.25 H	0	50.49	37.94
3	#5350.00	45.04 PK	74.00	-28.96	1.25 H	0	7.08	37.96
3	#5350.00	35.29 AV	54.00	-18.71	1.25 H	0	-2.67	37.96
4	#10640.00	58.07 PK	74.00	-15.93	1.10 H	194	7.91	50.15
4	#10640.00	47.64 AV	54.00	-6.36	1.10 H	194	-2.52	50.15
5	#15960.00	65.63 PK	74.00	-8.37	1.34 H	82	17.36	48.27
5	#15960.00	51.50 AV	54.00	-2.50	1.34 H	82	3.23	48.27

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	3546.00	45.99 PK	68.30	-22.31	1.36 V	360	12.03	33.96
2	*5320.00	111.57 PK			1.00 V	151	73.63	37.94
2	*5320.00	101.34 AV			1.00 V	151	63.40	37.94
3	#5350.00	59.40 PK	74.00	-14.60	1.00 V	151	21.44	37.96
3	#5350.00	49.17 AV	54.00	-4.83	1.00 V	151	11.21	37.96
4	#10640.00	59.18 PK	74.00	-14.82	1.09 V	170	9.02	50.15
4	#10640.00	47.31 AV	54.00	-6.69	1.09 V	170	-2.85	50.15
5	#15960.00	63.51 PK	74.00	-10.49	1.12 V	189	15.24	48.27
5	#15960.00	49.16 AV	54.00	-4.84	1.12 V	189	0.89	48.27

NOTE:

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

802.11a Turbo OFDM modulation

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	QPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	12Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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)
1	3473.00	43.42 PK	68.30	-24.88	1.01 H	189	9.62	33.80
2	#5150.00	44.51 PK	74.00	-29.49	1.44 H	94	6.69	37.82
2	#5150.00	35.26 AV	54.00	-18.74	1.44 H	94	-2.56	37.82
3	*5210.00	95.16 PK			1.44 H	94	57.28	37.88
3	*5210.00	85.91 AV			1.44 H	94	48.02	37.88
4	6946.00	52.69 PK	68.30	-15.61	1.36 H	17	8.91	43.78
5	10420.00	57.04 PK	68.30	-11.26	1.05 H	89	7.49	49.55
6	#15630.00	64.65 PK	74.00	-9.35	1.44 H	224	16.32	48.34
6	#15630.00	51.13 AV	54.00	-2.87	1.44 H	224	2.80	48.34

NOTE:

1. Emission level = Raw value + Correction Factor.
2. Correction Factor = Ant. Factor + Cable loss.
3. Margin value = Emission level - Limit value.
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency.
6. "#" The radiated frequency falling in the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 1	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	QPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	12Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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)
1	3473.00	44.07 PK	68.30	-24.23	1.12 V	288	10.27	33.80
2	#5150.00	57.39 PK	74.00	-16.61	1.02 V	350	19.57	37.82
2	#5150.00	48.04 AV	54.00	-5.96	1.02 V	350	10.22	37.82
3	*5210.00	108.04 PK			1.02 V	350	70.16	37.88
3	*5210.00	98.69 AV			1.02 V	350	60.80	37.88
4	6946.00	54.35 PK	68.30	-13.95	1.16 V	356	10.57	43.78
5	10420.00	57.09 PK	68.30	-11.21	1.11 V	205	7.54	49.55
6	#15630.00	64.40 PK	74.00	-9.60	1.86 V	332	16.07	48.34
6	#15630.00	50.58 AV	54.00	-3.42	1.86 V	332	2.25	48.34

NOTE:

1. Emission level = Raw value + Correction Factor.
2. Correction Factor = Ant. Factor + Cable loss.
3. Margin value = Emission level - Limit value.
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency.
6. "#" The radiated frequency falling in the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 2	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	QPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	12Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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)
1	3500.00	43.65 PK	68.30	-24.65	1.27 H	243	9.78	33.87
2	*5250.00	95.02 PK			1.12 H	276	57.11	37.91
2	*5250.00	85.51 AV			1.12 H	276	47.61	37.91
3	7000.00	52.78 PK	68.30	-15.52	1.11 H	291	8.81	43.97
4	10500.00	58.46 PK	68.30	-9.84	1.28 H	324	8.65	49.81
5	#15750.00	61.79 PK	74.00	-12.21	1.05 H	159	13.45	48.34
5	#15750.00	48.89 AV	54.00	-5.11	1.05 H	159	0.55	48.34

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)
1	3500.00	44.15 PK	68.30	-24.15	1.26 V	357	10.28	33.87
2	*5250.00	107.96 PK			1.34 V	340	70.05	37.91
2	*5250.00	98.11 AV			1.34 V	340	60.20	37.91
3	7000.00	54.18 PK	68.30	-14.12	1.37 V	159	10.21	43.97
4	10500.00	57.86 PK	68.30	-10.44	1.29 V	327	8.05	49.81
5	#15750.00	61.55 PK	74.00	-12.45	1.44 V	258	13.21	48.34
5	#15750.00	47.69 AV	54.00	-6.31	1.44 V	258	-0.65	48.34

NOTE:

1. Emission level = Raw value + Correction Factor.
2. Correction Factor = Ant. Factor + Cable loss.
3. Margin value = Emission level - Limit value.
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency.
6. "#"The radiated frequency falling in the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	QPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	12Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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)
1	3526.00	43.64 PK	68.30	-24.66	1.00 H	189	9.72	33.92
2	*5290.00	94.75 PK			1.16 H	324	56.82	37.92
2	*5290.00	84.36 AV			1.16 H	324	46.44	37.92
3	#5350.00	40.21 PK	74.00	-33.79	1.16 H	324	2.25	37.96
3	#5350.00	29.82 AV	54.00	-24.18	1.16 H	324	-8.14	37.96
4	7052.00	52.69 PK	68.30	-15.61	1.39 H	351	8.59	44.11
5	10580.00	59.02 PK	68.30	-9.28	1.24 H	346	8.98	50.03
6	#15870.00	57.39 PK	74.00	-16.61	1.45 H	5	9.07	48.31
6	#15870.00	44.37 AV	54.00	-9.63	1.45 H	5	-3.95	48.31

NOTE:

1. Emission level = Raw value + Correction Factor.
2. Correction Factor = Ant. Factor + Cable loss.
3. Margin value = Emission level - Limit value.
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency.
6. "#" The radiated frequency falling in the restricted band.

EUT TEST CONDITION		MEASUREMENT DETAIL	
CHANNEL	Channel 3	FREQUENCY RANGE	1 ~ 40 GHz
MODULATION TYPE	QPSK	DETECTOR FUNCTION	Peak(PK) Average (AV)
TRANSFER RATE	12Mbps	ENVIRONMENTAL CONDITIONS	25deg. C, 65%RH, 991hPa
TESTED BY	Lori Chiu	INPUT POWER (SYSTEM)	120Vac, 60 Hz

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)
1	3526.00	44.46 PK	68.30	-23.84	1.08 V	276	10.54	33.92
2	*5290.00	107.70 PK			1.00 V	340	69.78	37.92
2	*5290.00	97.72 AV			1.00 V	340	59.80	37.92
3	#5350.00	53.16 PK	74.00	-20.84	1.00 V	340	15.20	37.96
3	#5350.00	43.18 AV	54.00	-10.82	1.00 V	340	5.22	37.96
4	7052.00	53.11 PK	68.30	-15.19	1.04 V	351	9.01	44.11
5	10580.00	58.11 PK	68.30	-10.19	1.36 V	146	8.07	50.03
6	#15870.00	58.47 PK	74.00	-15.53	1.05 V	353	10.15	48.31
6	#15870.00	44.65 AV	54.00	-9.35	1.05 V	353	-3.67	48.31

NOTE:

1. Emission level = Raw value + Correction Factor.
2. Correction Factor = Ant. Factor + Cable loss.
3. Margin value = Emission level - Limit value.
4. The other emission levels were very low against the limit.
5. "*" : Fundamental frequency.
6. "#" The radiated frequency falling in the restricted band.

4.3 PEAK TRANSMIT POWER MEASUREMENT

4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	The lesser of 50mW (17dBm) or 4dBm + 10logB
5.25 ~ 5.35GHz	The lesser of 250mW (24dBm) or 11dBm + 10logB
5.725 ~ 5.825GHz	The lesser of 1W (30dBm) or 17dBm + 10logB

NOTE: Where B is the 26dB emission bandwidth in MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 3MHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

NOTE:

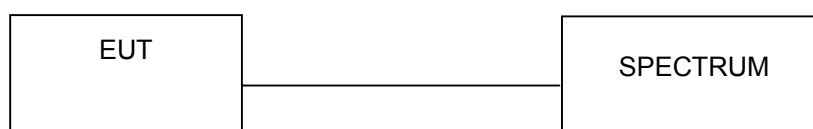
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

The transmitter output operates continuously therefore Method # 1 is used.

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



4.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.3.7 TEST RESULTS

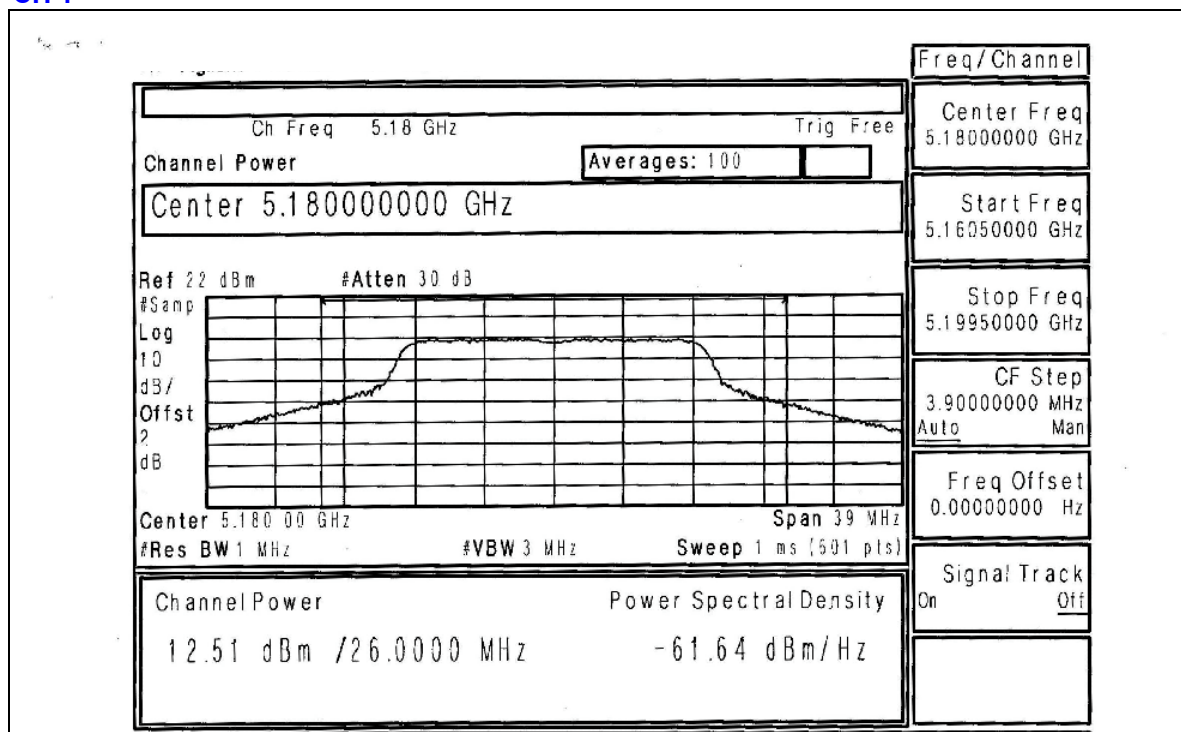
802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

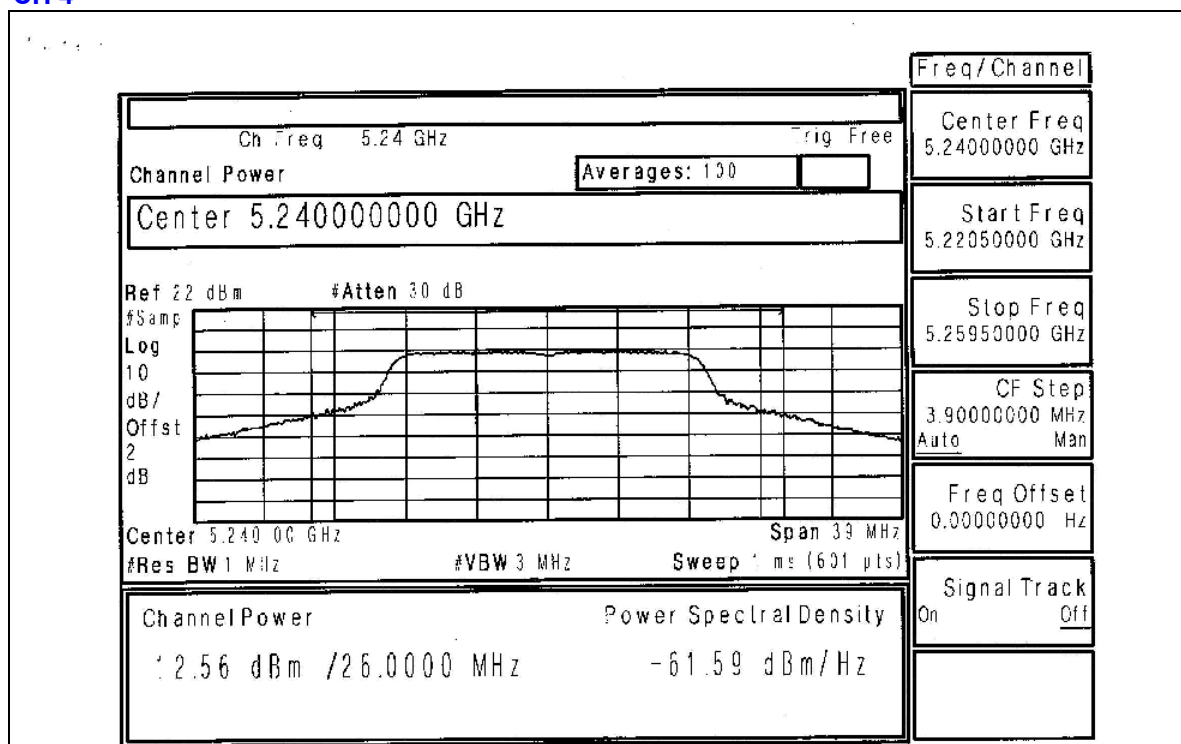
CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	17.824	12.51	17.00	25.84	PASS
4	5240	18.030	12.56	17.00	25.52	PASS
5	5260	17.824	12.51	24.00	25.60	PASS
8	5320	22.387	13.50	24.00	27.12	PASS

NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

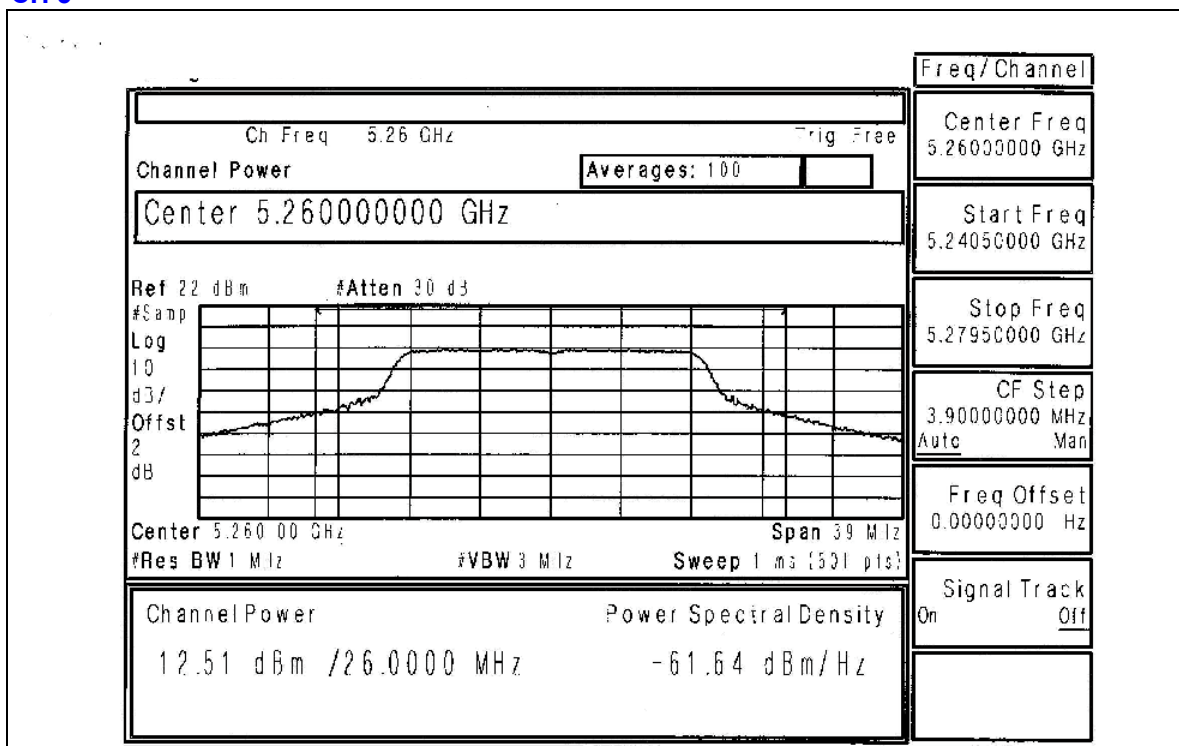
Peak Power Output: CH 1



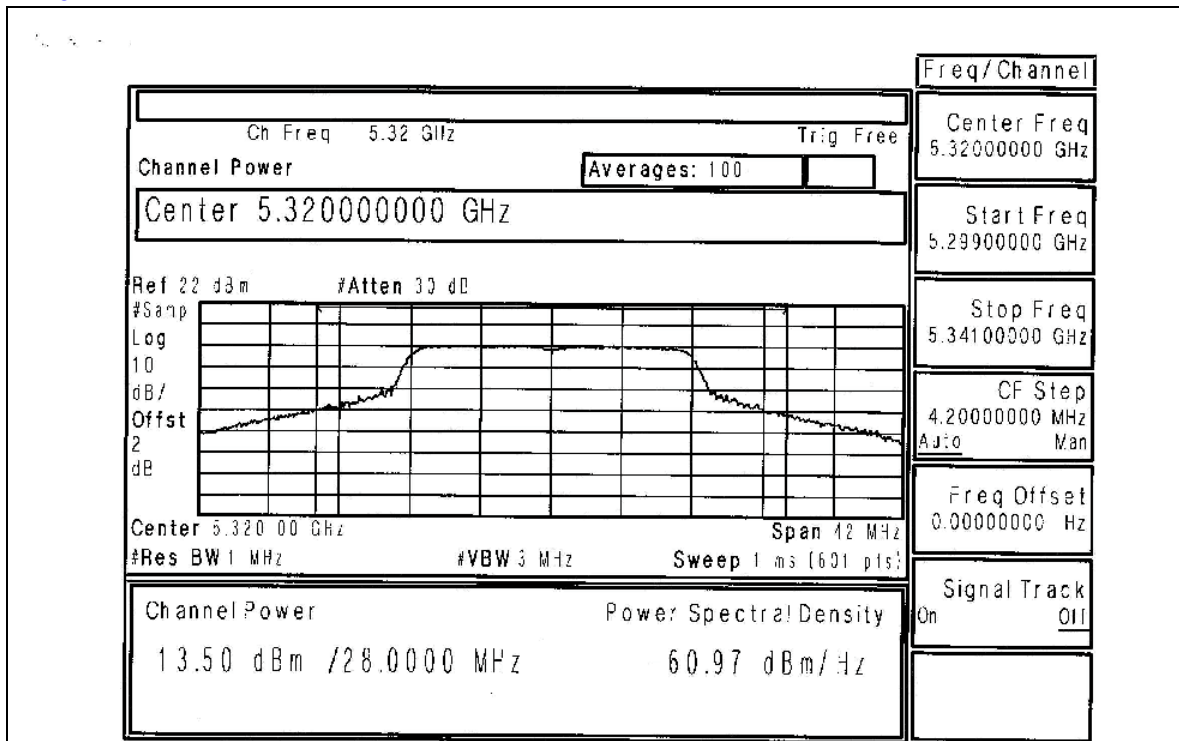
CH 4



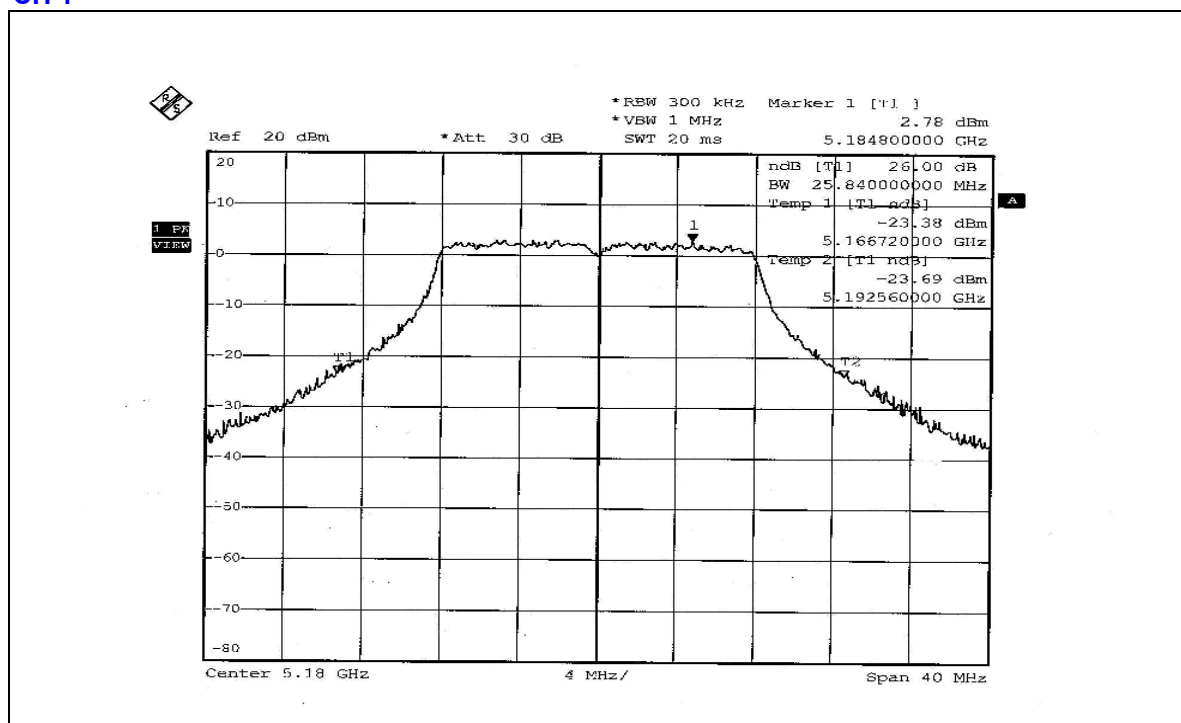
CH 5



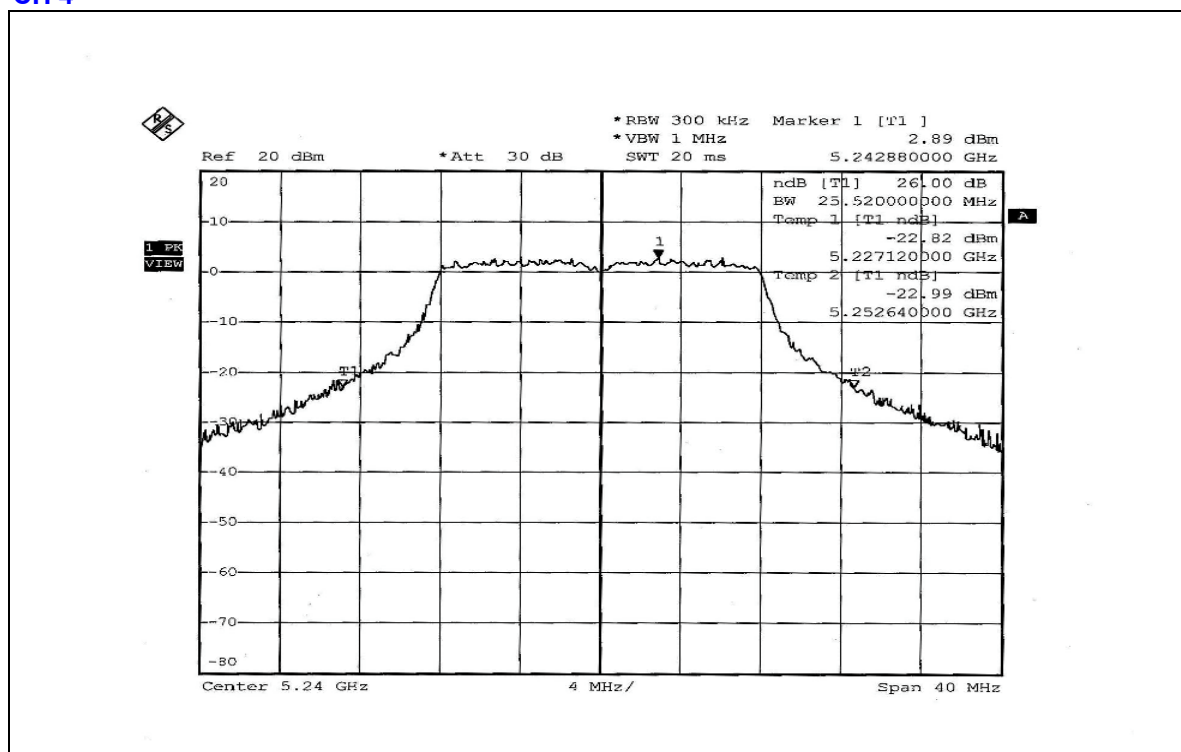
CH 8



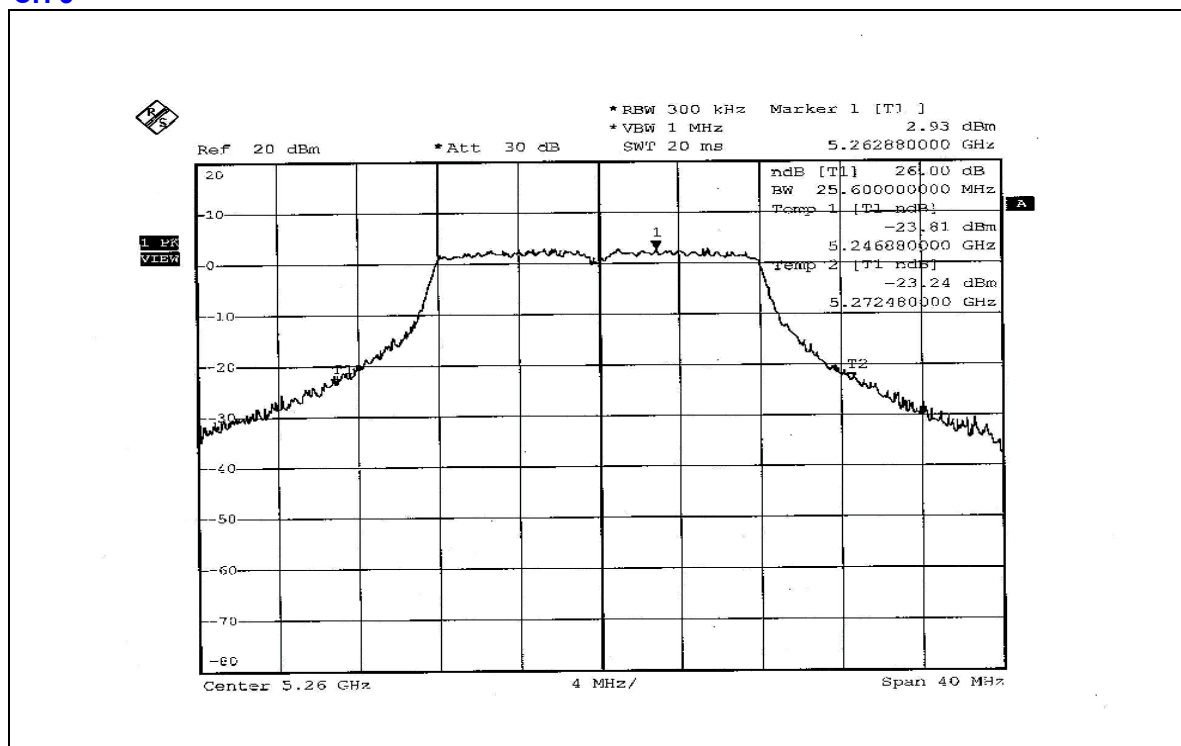
26dB Occupied Bandwidth: CH 1



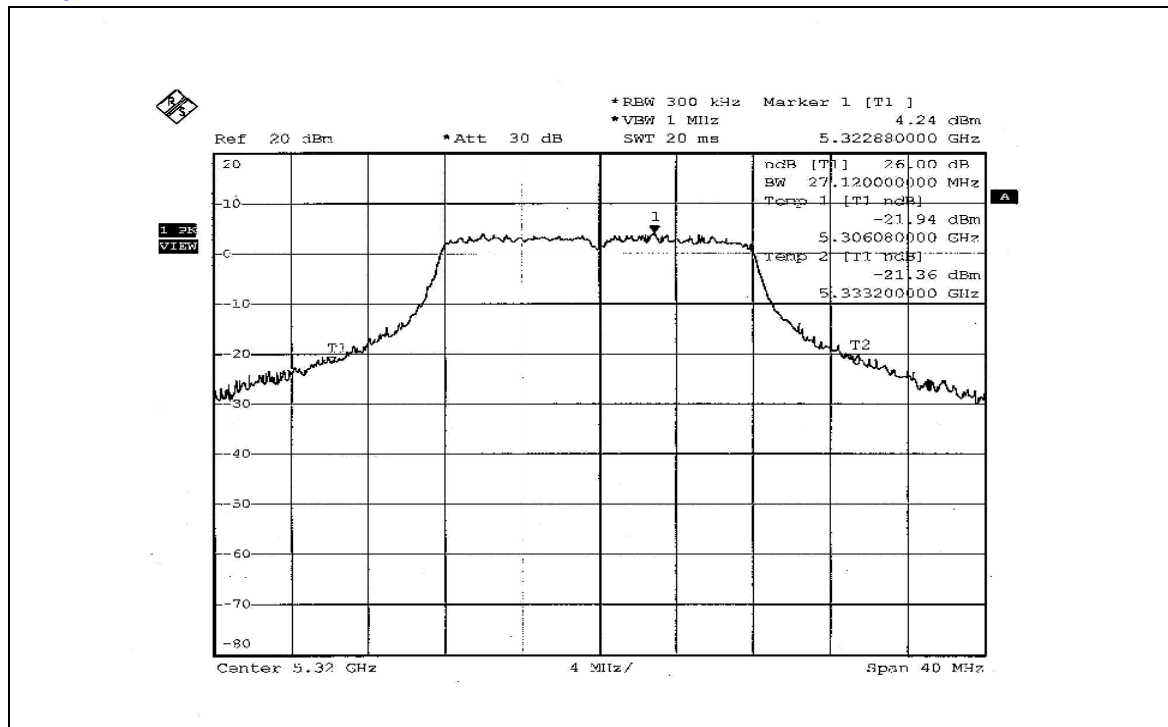
CH 4



CH 5



CH 8



802.11a Turbo OFDM modulation

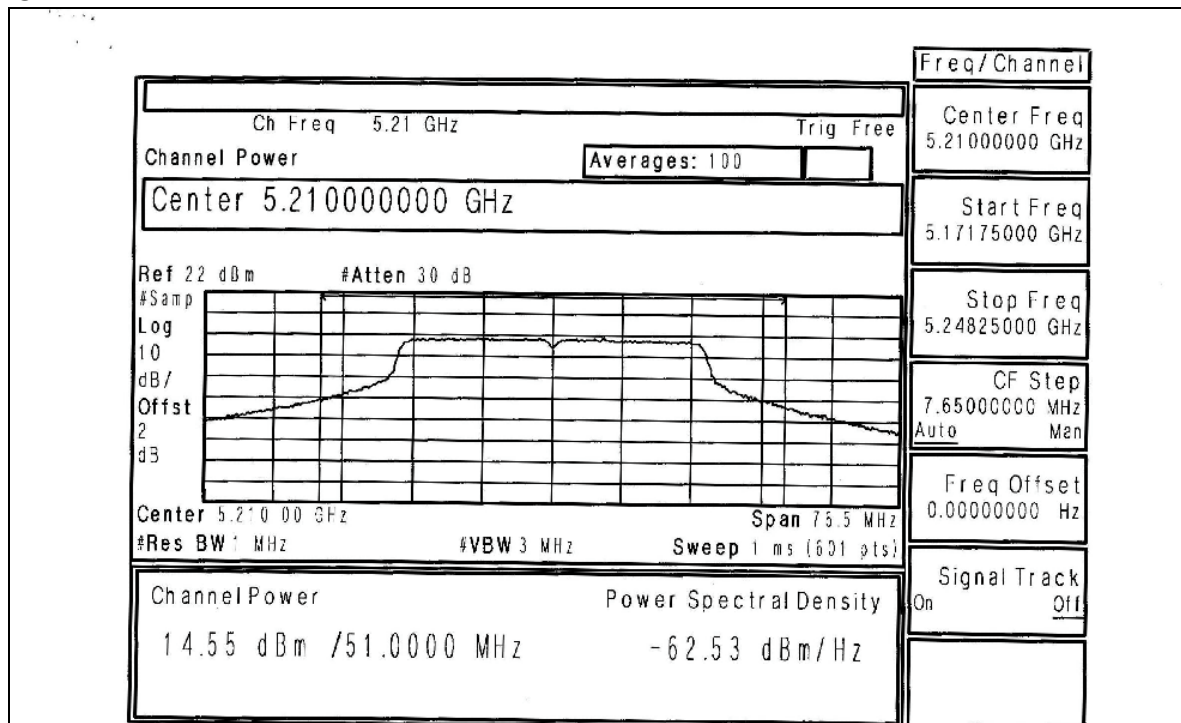
MODULATION TYPE	QPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc OCCUPIED BANDWIDTH (MHz)	PASS/FAIL
1	5210	28.510	14.55	17.00	50.72	PASS
2	5250	28.642	14.57	17.00	50.08	PASS
3	5290	28.314	14.52	24.00	50.56	PASS

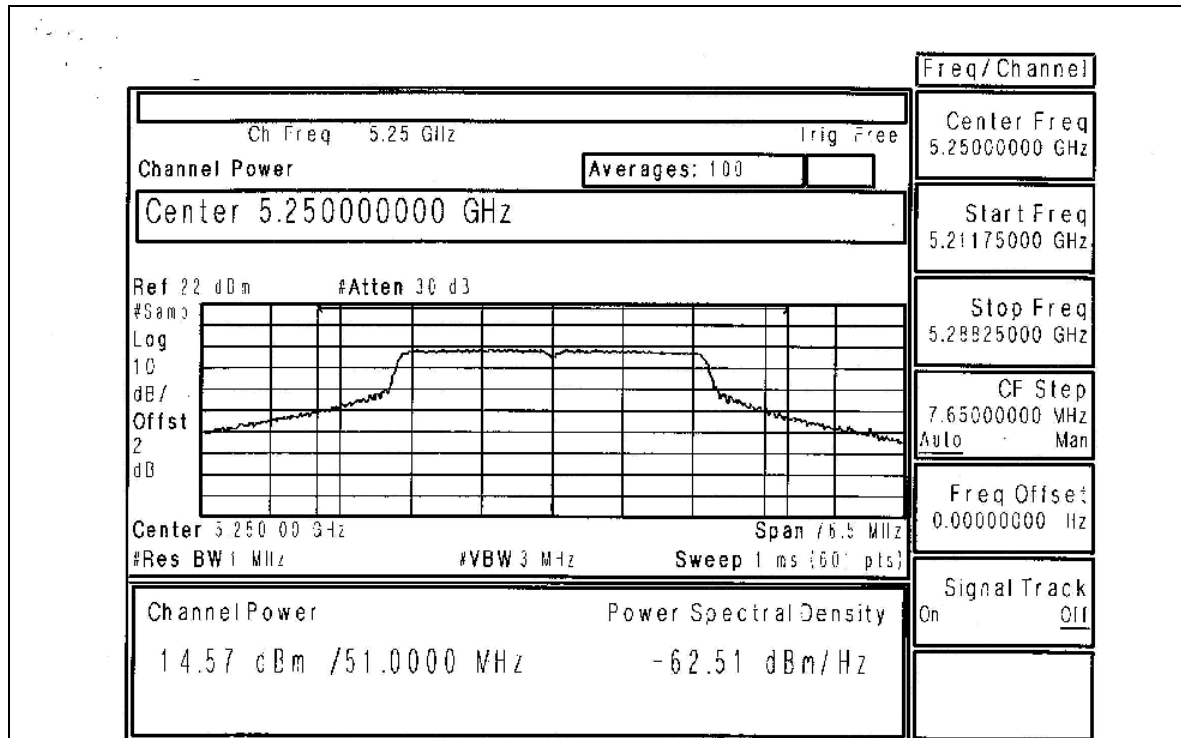
NOTE: The 26dBc Occupied Bandwidth plot, please refer to the following pages.

Peak Power Output:

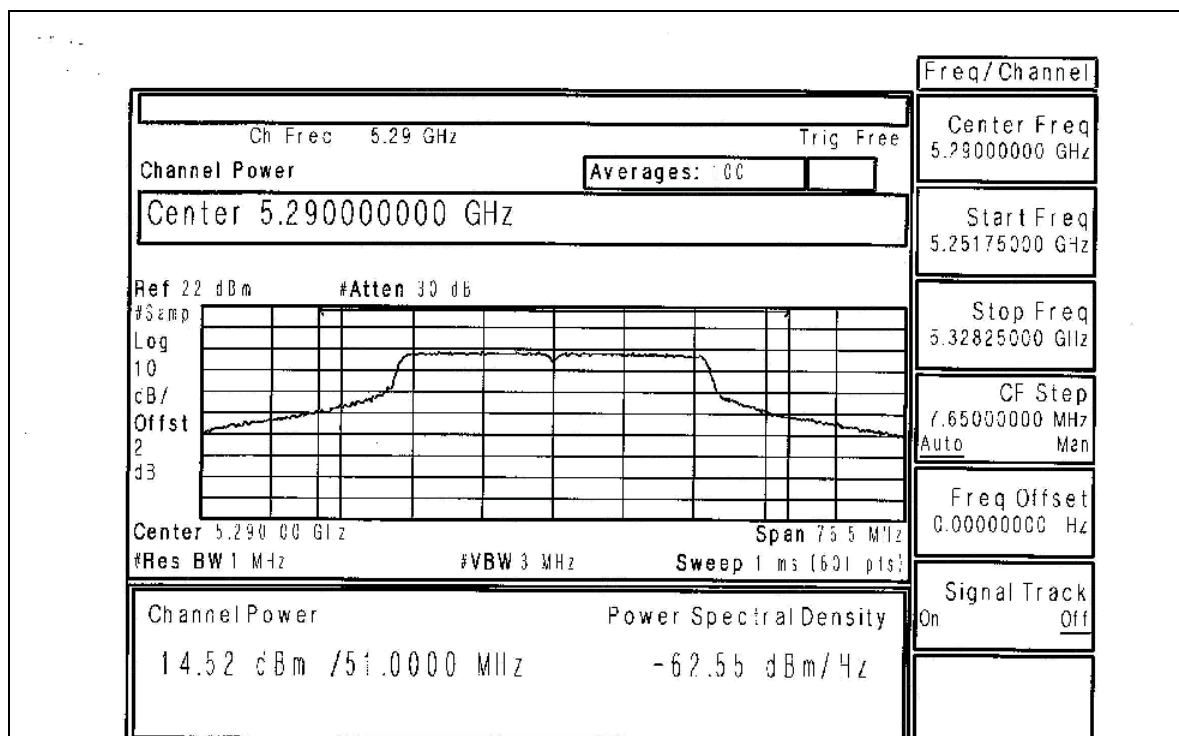
CH 1



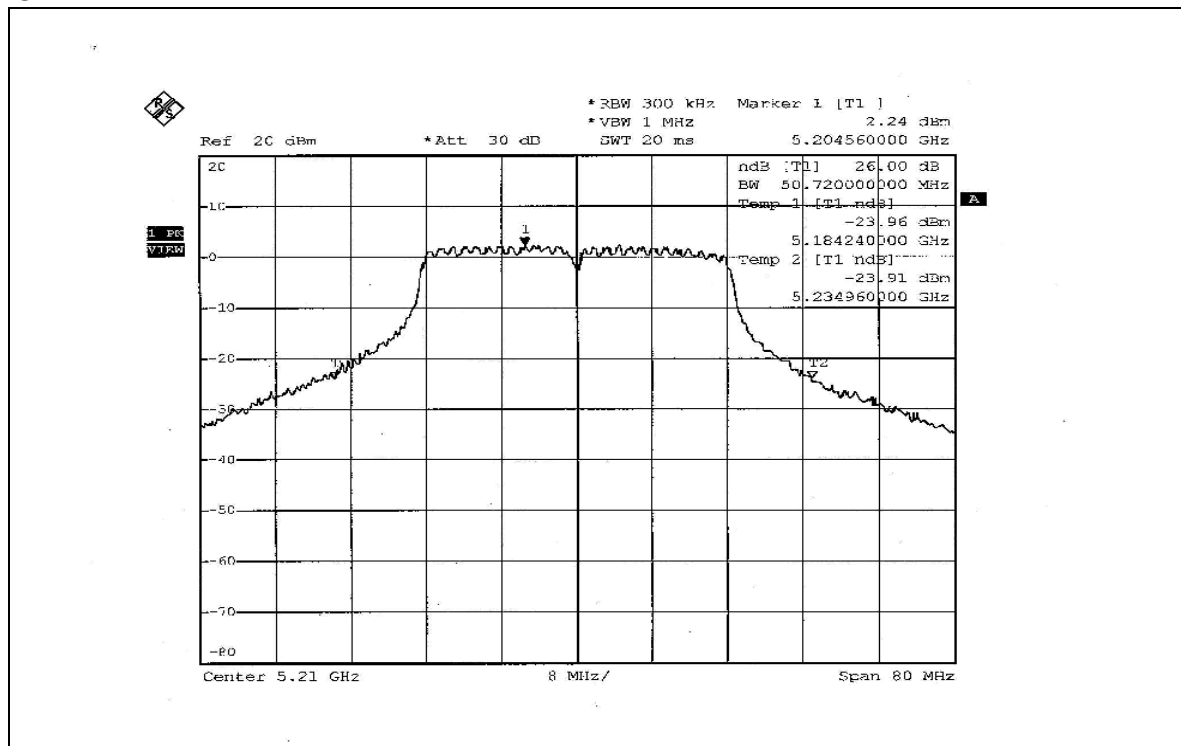
CH 2



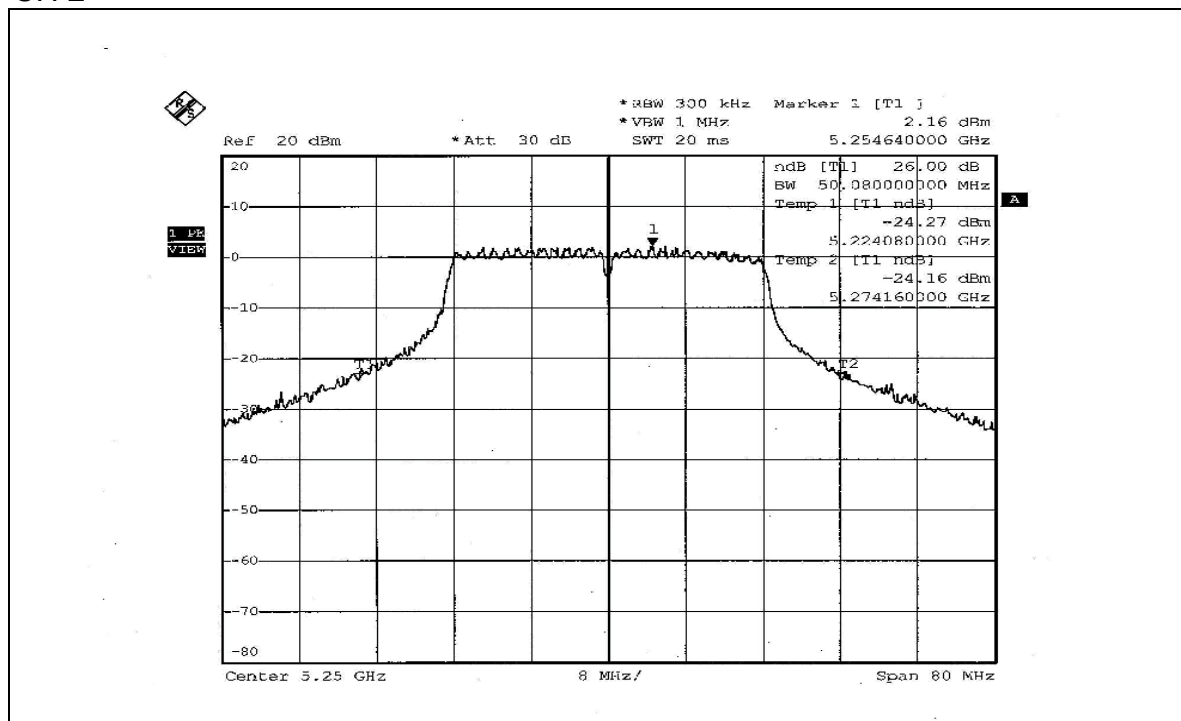
CH 3



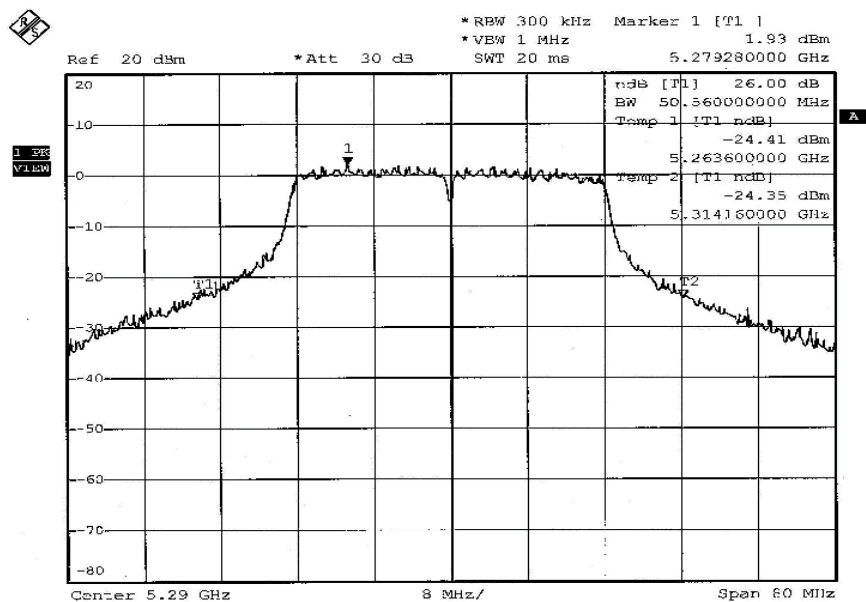
26dB Occupied Bandwidth: CH 1



CH 2



CH 3



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25 GHz	13dB
5.25 ~ 5.35 GHz	13dB
5.725 ~ 5.825 GHz	13dB

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

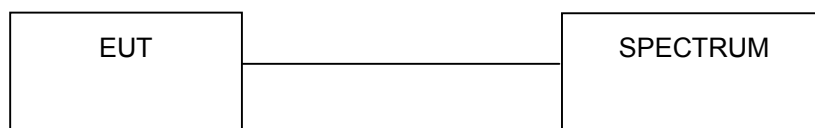
4.4.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set the spectrum bandwidth span to view the entire spectrum.
3. Using peak detector and Max-hold function for Trace 1 (RB=1MHz, VB=3MHz) and 2 (RB=1MHz, VB=300kHz).
4. The largest difference between Trace 1 and Trace 2 in any 1MHz band on any frequency was recorded.

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

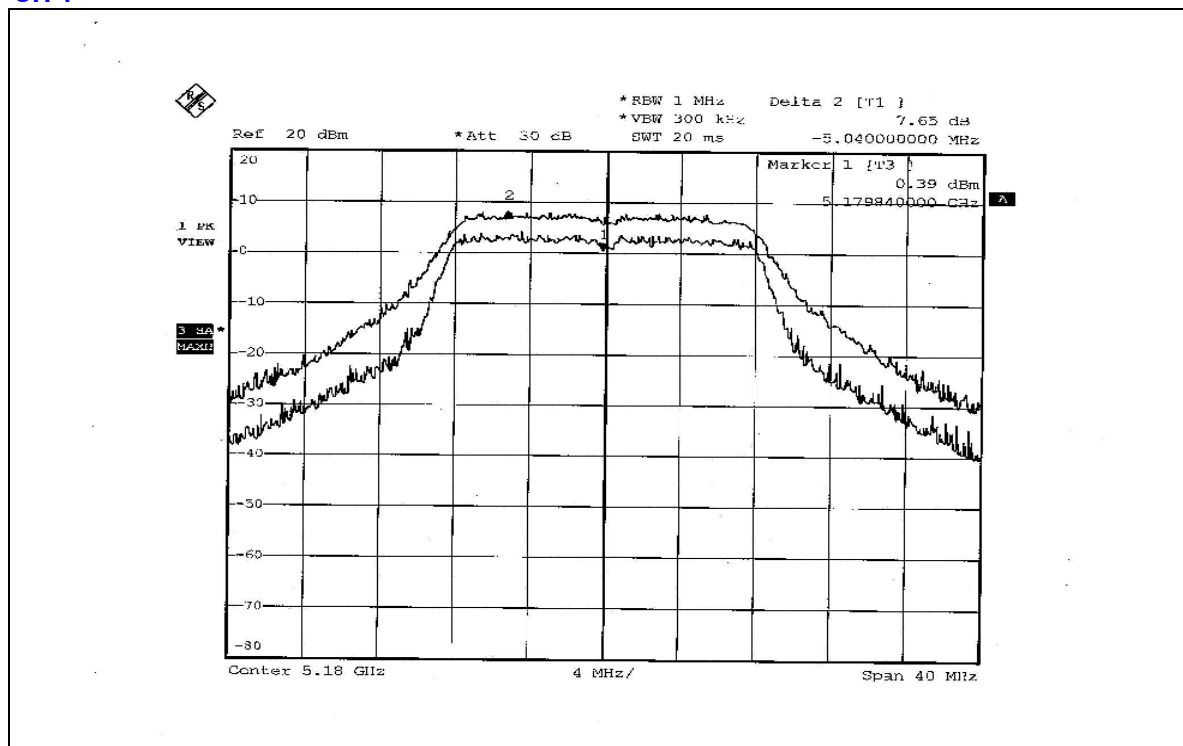
4.4.7 TEST RESULTS

802.11a OFDM modulation

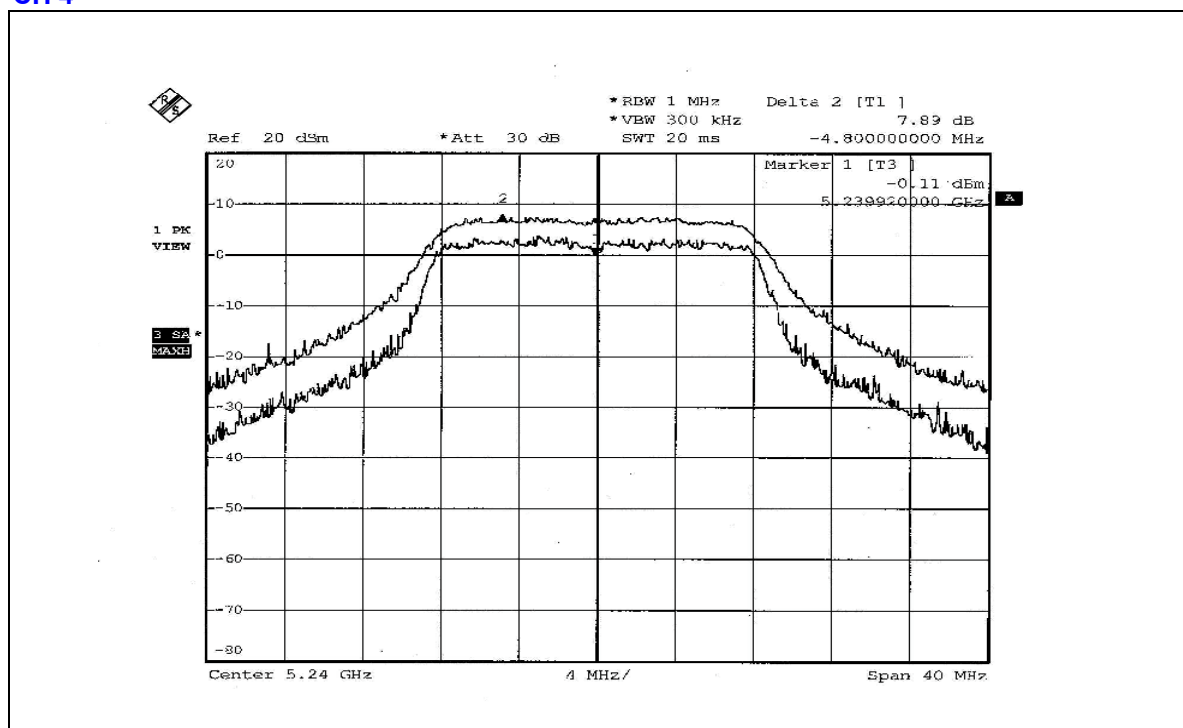
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.65	13	PASS
4	5240	7.89	13	PASS
5	5260	6.84	13	PASS
8	5320	7.19	13	PASS

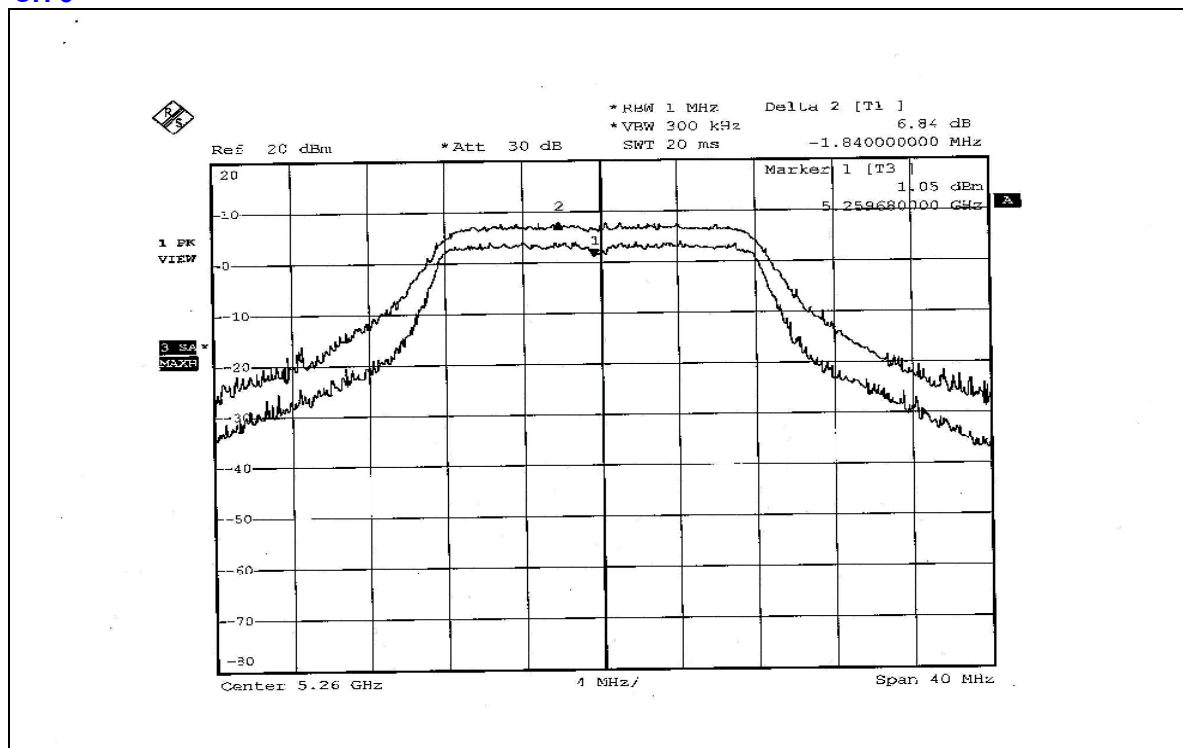
CH 1



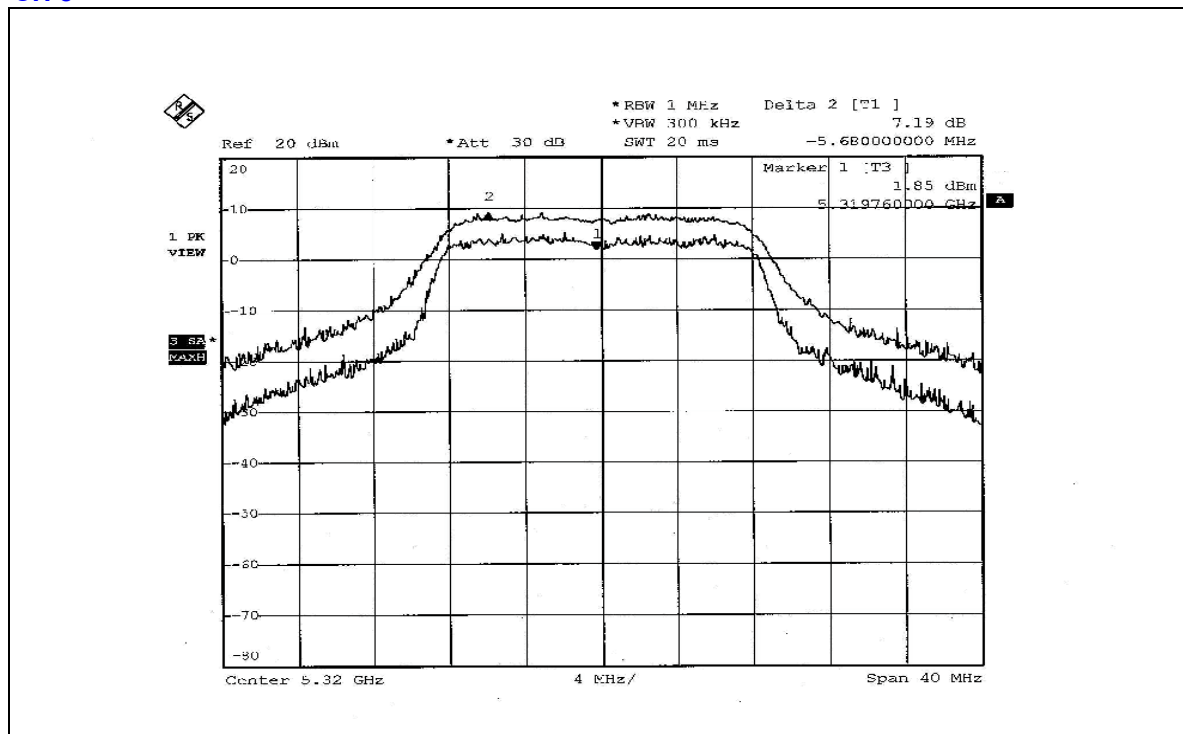
CH 4



CH 5



CH 8

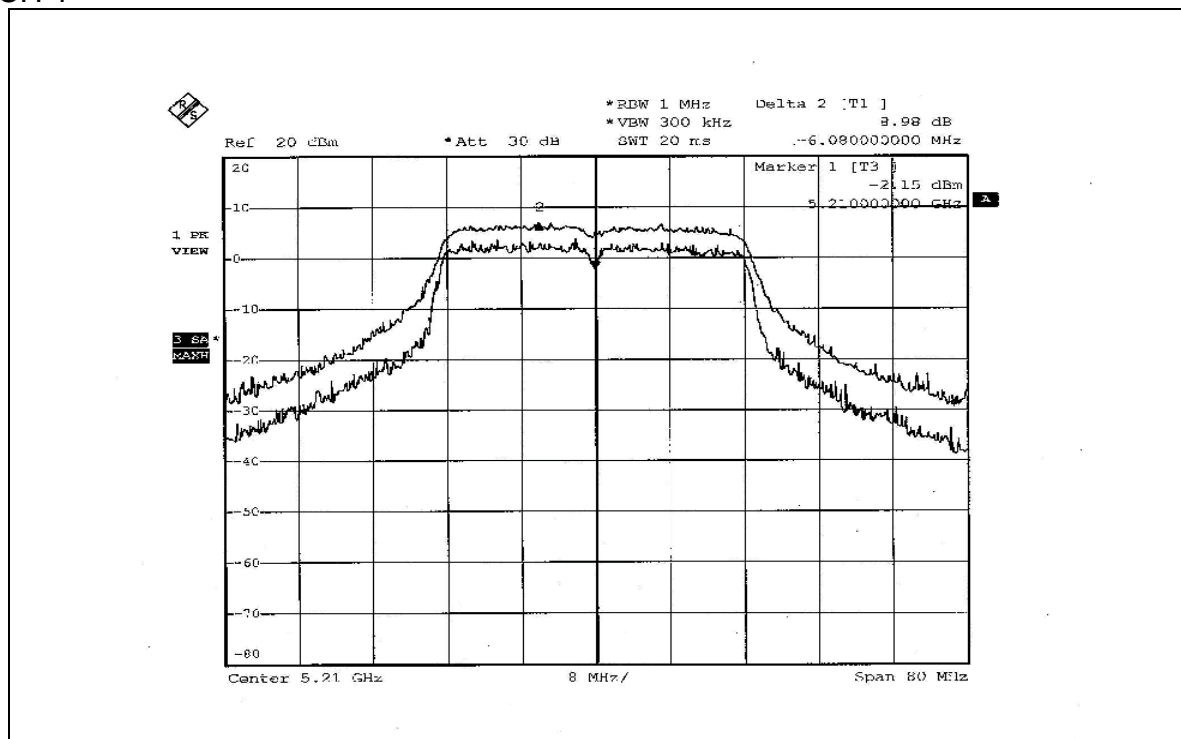


802.11a Turbo OFDM modulation

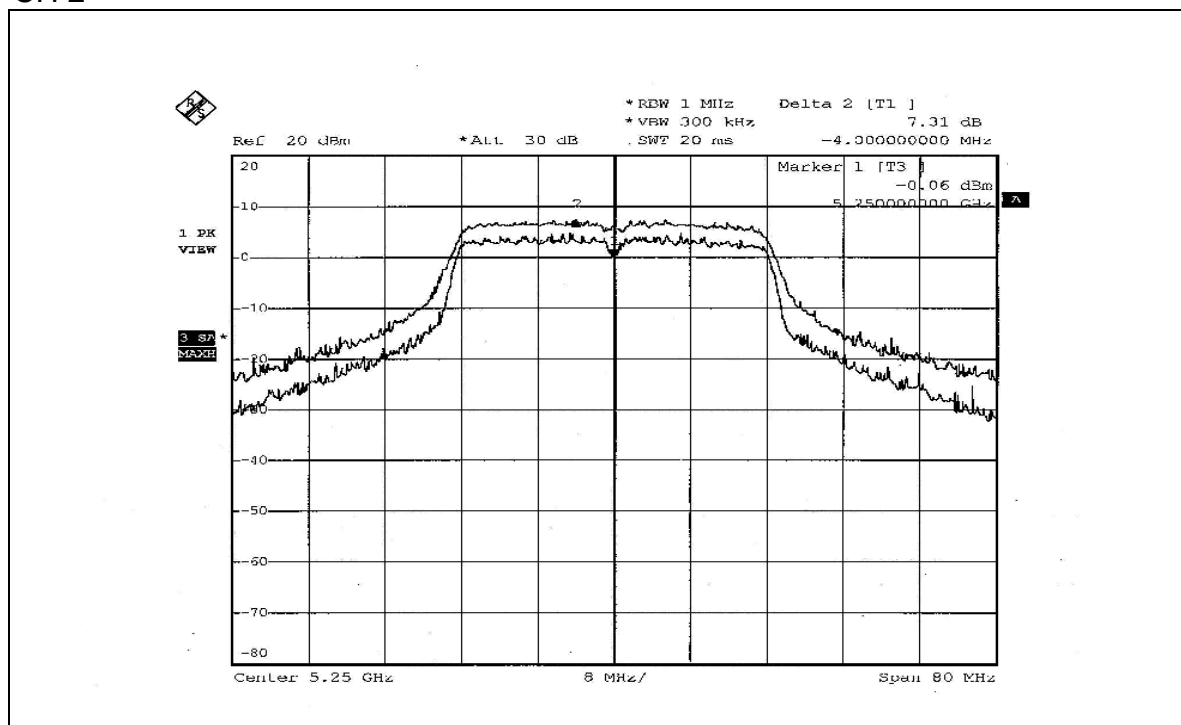
MODULATION TYPE	QPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	8.98	13	PASS
2	5250	7.31	13	PASS
3	5290	8.70	13	PASS

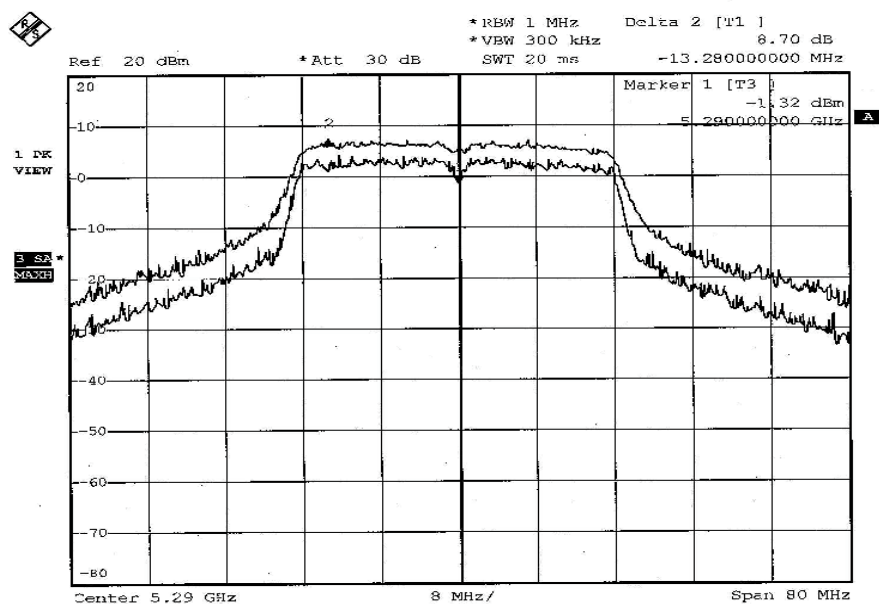
CH 1



CH 2



CH 3



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

Frequency Band	Limit
5.15 ~ 5.25GHz	4dBm
5.25 ~ 5.35GHz	11dBm
5.725 ~ 5.825GHz	17dBm

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.5.3 TEST PROCEDURES

1. The transmitter output was connected to the spectrum analyzer.
2. Set RBW=1MHz, VBW=3MHz. The PPSD is the highest level found across the emission in any 1MHz band.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6

4.5.7 TEST RESULTS

802.11a OFDM modulation

MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

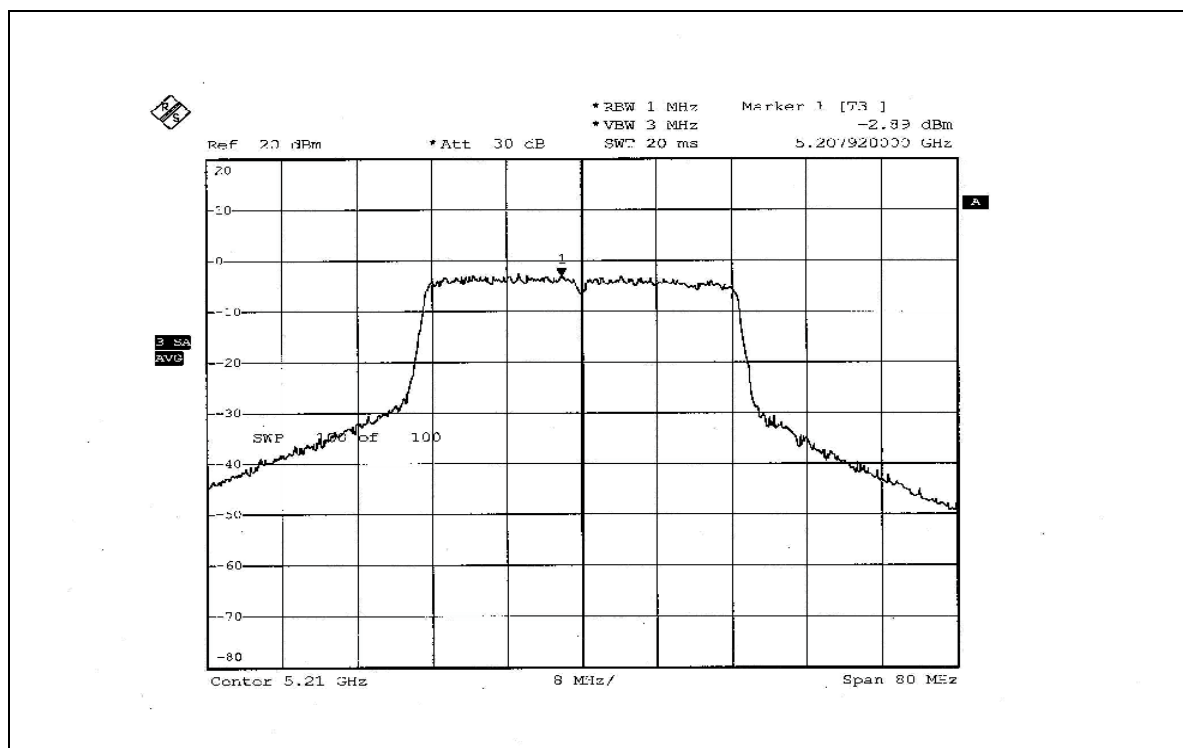
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-2.00	4	PASS
4	5240	-2.24	4	PASS
5	5260	-2.05	11	PASS
8	5320	-0.99	11	PASS

802.11a Turbo OFDM modulation

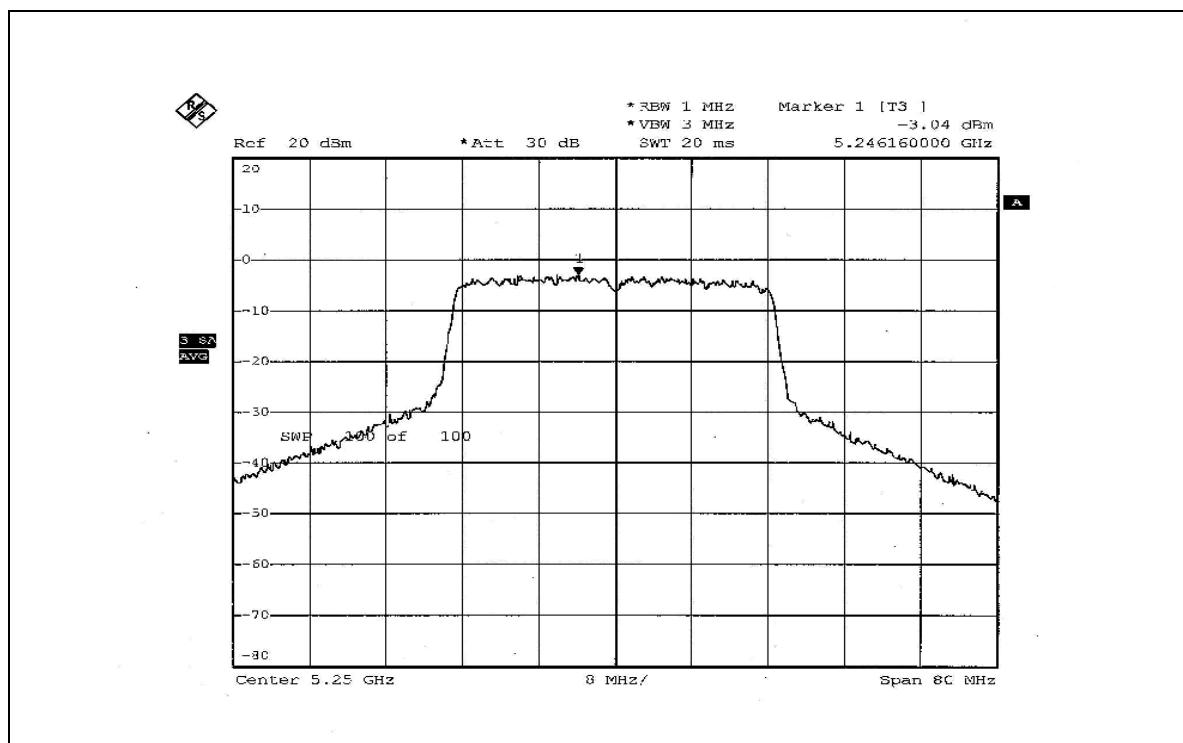
MODULATION TYPE	QPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	12Mbps	ENVIRONMENTAL CONDITIONS	25deg.C, 68%RH, 991hPa
TESTED BY	Morgan Chen		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-2.89	4	PASS
2	5250	-3.04	4	PASS
3	5290	-3.19	11	PASS

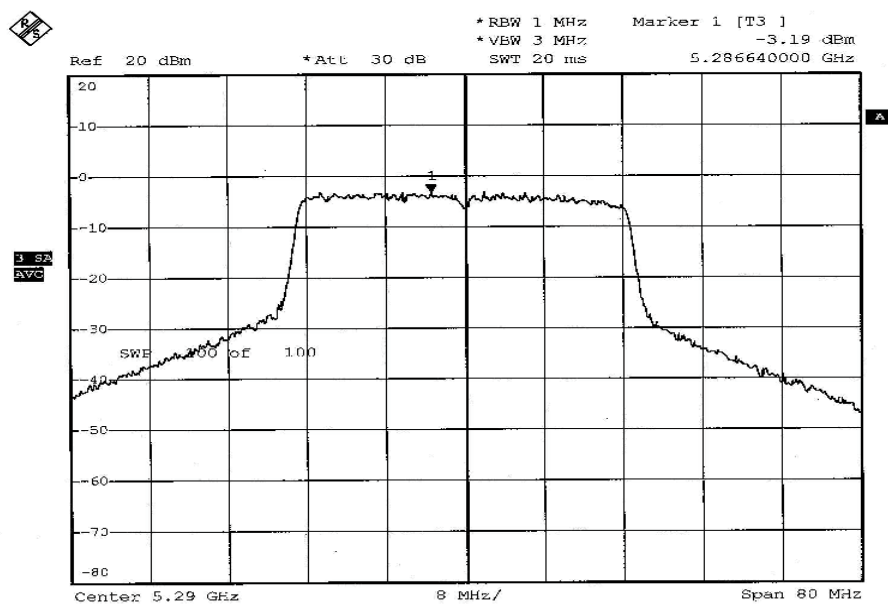
CH 1



CH 2



CH 3



4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

The frequency tolerance of the carrier signal shall be maintained within $\pm 0.02\%$ of the operating frequency over a temperature variation of -30 degrees to 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C.

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Mar. 09, 2006
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jul. 18, 2006

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

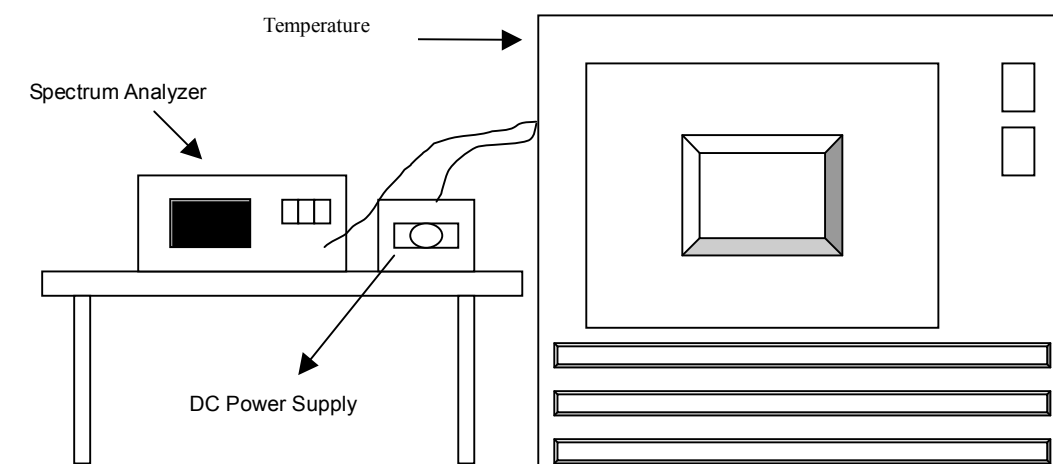
4.6.3 TEST PROCEDURE

1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
2. Turn the EUT on and couple its output to a spectrum analyzer.
3. Turn the EUT off and set the chamber to the highest temperature specified.
4. Allow sufficient time (approximately 30 min) for the temperature of the chamber to stabilize, turn the EUT on and measure the operating frequency after 2, 5, and 10 minutes.
5. Repeat step 2 and 3 with the temperature chamber set to the lowest temperature.
6. The test chamber was allowed to stabilize at $+20$ degree C for a minimum of 30 minutes. The supply voltage was then adjusted on the EUT from 85% to 115% and the frequency record.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6

4.6.7 TEST RESULTS

Operating frequency: 5320MHz						Limit : $\pm 0.01\%$			
Temp. (°C)	Power supply (Vac)	0 minute		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	138	5320.0623	0.0011701	5320.0610	0.0011472	5320.0605	0.0011368	5320.0685	0.0012882
	120	5320.0712	0.0013391	5320.0756	0.0014214	5320.0756	0.0014218	5320.0577	0.0010836
	102	5320.0700	0.0013148	5320.0662	0.0012451	5320.0661	0.0012427	5320.0661	0.0012421
40	138	5320.0544	0.0010216	5320.0495	0.0009306	5320.0473	0.0004573	5320.0425	0.0007996
	120	5320.0322	0.0006045	5320.0256	0.0004816	5320.0243	0.0004477	5320.0235	0.0004419
	102	5320.0240	0.0004508	5320.0242	0.0004553	5320.0238	0.0003237	5320.0230	0.0004325
30	138	5320.0188	0.0003524	5320.0181	0.0003393	5320.0172	0.0006977	5320.0151	0.0002840
	120	5320.0382	0.0007171	5320.0380	0.0007133	5320.0371	0.0003235	5320.0369	0.0006940
	102	5320.0155	0.0002908	5320.0177	0.0003318	5320.0172	0.0000190	5320.0162	0.0003049
20	138	5320.0198	0.0003729	5320.0050	0.0000286	5320.0010	0.0000605	5320.0012	0.0000216
	120	5320.0058	0.0001094	5320.0015	0.0000455	5320.0032	0.0000250	5320.0030	0.0000558
	102	5320.0075	0.0001414	5320.0024	-0.0022246	5320.0013	-0.0022389	5320.0025	0.0000472
10	138	5319.8828	-0.0022028	5319.8817	-0.0024383	5319.8809	-0.0024477	5319.8725	-0.0023961
	120	5319.8715	-0.0024152	5319.8703	-0.0022571	5319.8698	-0.0025836	5319.8643	-0.0025515
	102	5319.8803	-0.0022498	5319.8799	-0.0027212	5319.8626	-0.0027902	5319.8525	-0.0027720
0	138	5319.8556	-0.0027139	5319.8552	-0.0029412	5319.8516	-0.0029594	5319.8554	-0.0027175
	120	5319.8435	-0.0029412	5319.8435	-0.0033455	5319.8426	-0.0031945	5319.8424	-0.0029618
	102	5319.8226	-0.0033344	5319.8220	-0.0026804	5319.8301	-0.0053733	5319.8200	-0.0033831
-10	138	5319.5787	-0.0079188	5319.8574	-0.0057214	5319.7141	-0.0073293	5319.7131	-0.0053938
	120	5319.6916	-0.0057979	5319.6956	-0.0077177	5319.6101	-0.0077622	5319.6014	-0.0074923
	102	5319.5892	-0.0077227	5319.5894	-0.0083231	5319.5871	-0.0085711	5319.5761	-0.0079690
-20	138	5319.5571	-0.0083248	5319.5572	-0.0045818	5319.5440	-0.0086066	5319.5359	-0.0087246
	120	5319.7548	-0.0046094	5319.7563	-0.0062816	5319.5421	-0.0091968	5319.5359	-0.0087246
	102	5319.6601	-0.0063900	5319.6658	-0.0104095	5319.5107	-0.0095880	5319.5101	-0.0092096
-30	138	5319.4447	-0.0104387	5319.4462	-0.0084534	5319.4899	-0.0095955	5319.4890	-0.0096062
	120	5319.5424	-0.0086023	5319.5503	-0.0104891	5319.4895	-0.0097799	5319.4824	-0.0097286
	102	5319.4322	-0.0106737	5319.4420	-0.0104891	5319.4797	-0.0097799	5319.4765	-0.0098395

4.7 BAND EDGES MEASUREMENT

4.7.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 14, 2006

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

4.7.2 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 1MHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

4.7.3 EUT OPERATING CONDITION

The software provided by client to enable the EUT under transmission condition continuously at specific channel frequencies individually.

4.7.4 TEST RESULTS

For signals in the restricted bands above and below the 5.15 to 5.35GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

802.11a OFDM modulation

Channel 1 (5180MHz)

The band edge emission plot on the next page shows 48.10Bc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 110.04dBuV/m (Peak), so the maximum field strength in restrict band is $110.04 - 48.10 = 61.94$ dBuV/m which is under 74dBuV/m limit.

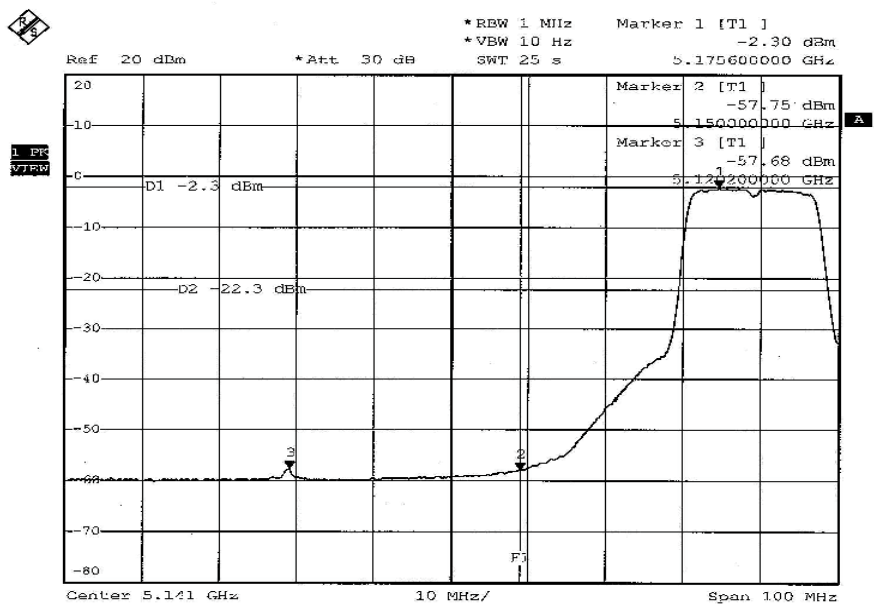
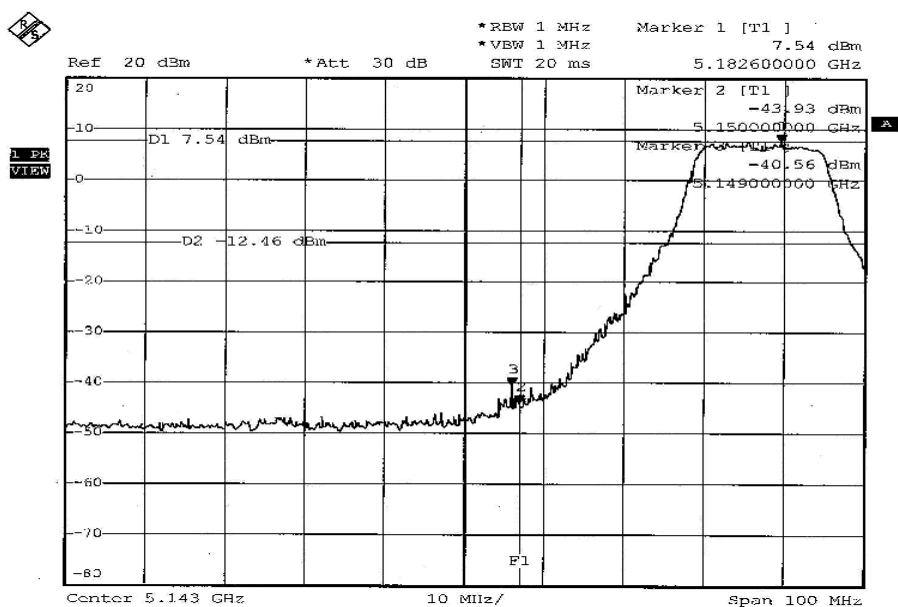
The band edge emission plot on the next page shows 55.38dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 99.54dBuV/m (Average), so the maximum field strength in restrict band is $99.54 - 55.38 = 44.16$ dBuV/m which is under 54dBuV/m limit.

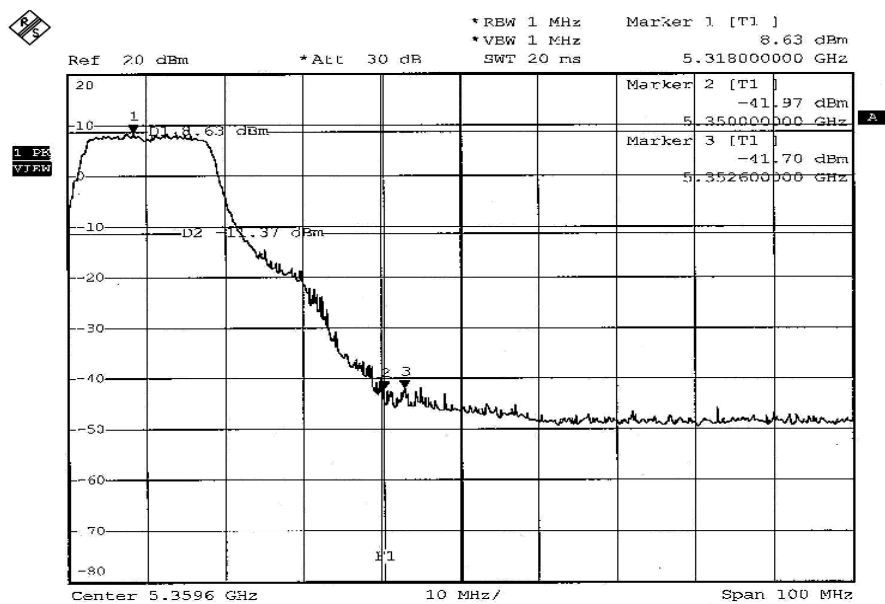
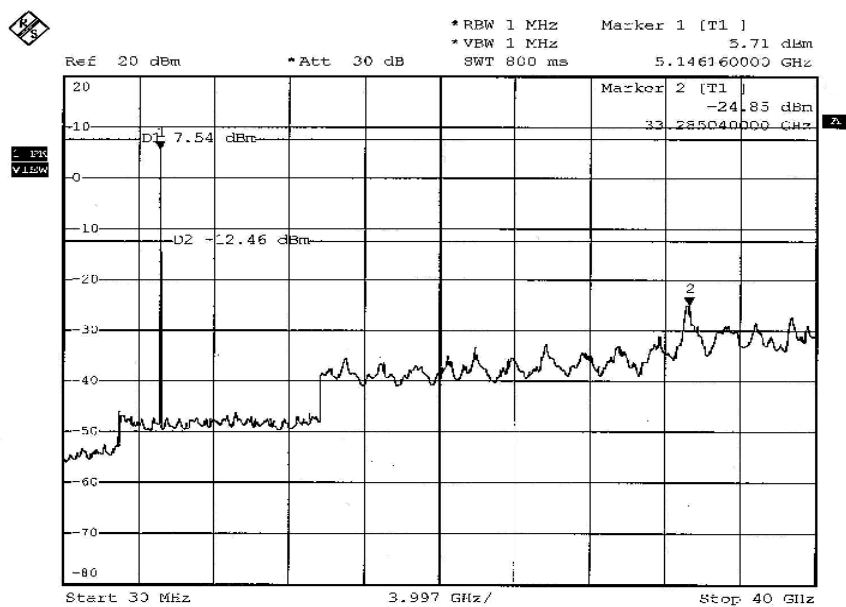
Channel 8 (5320MHz)

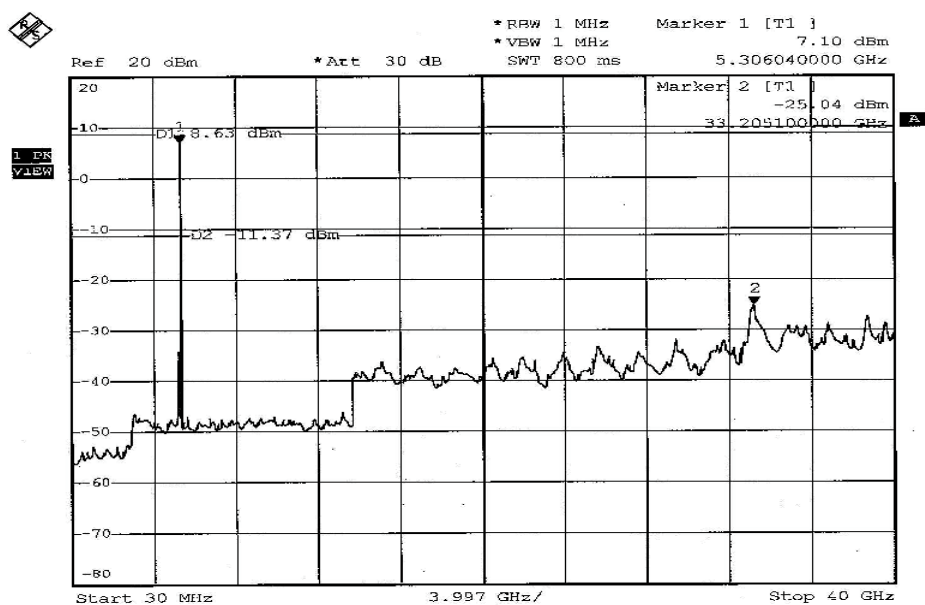
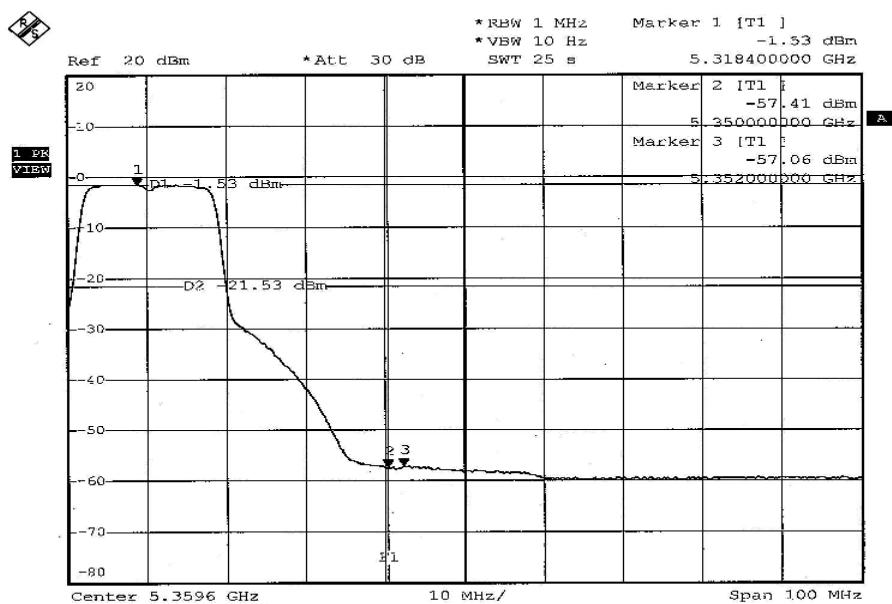
The band edge emission plot on the next second page shows 50.33dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 111.57dBuV/m (Peak), so the maximum field strength in restrict band is $111.57 - 50.33 = 61.24$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third page shows 55.53dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 101.34dBuV/m (Average), so the maximum field strength in restrict band is $101.34 - 55.53 = 45.81$ dBuV/m which is under 54dBuV/m limit.

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802.11a Turbo OFDM modulation

Channel 1 (5210MHz)

The band edge emission plot on the next page shows 41.35dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 108.04dBuV/m (Peak), so the maximum field strength in restrict band is $108.04 - 41.35 = 66.69$ dBuV/m which is under 74dBuV/m limit.

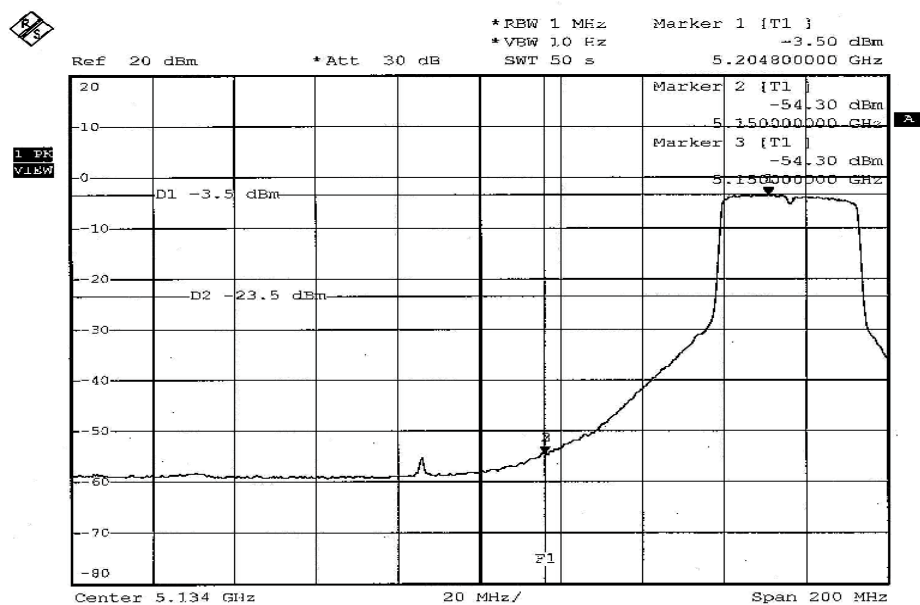
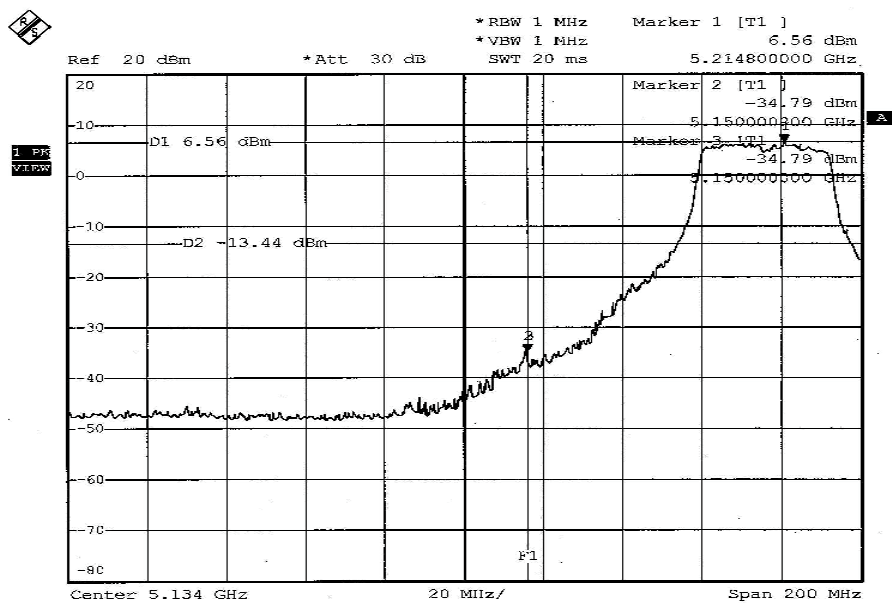
The band edge emission plot on the next page shows 50.80dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 98.69dBuV/m (Average), so the maximum field strength in restrict band is $98.69 - 50.80 = 47.89$ dBuV/m which is under 54dBuV/m limit.

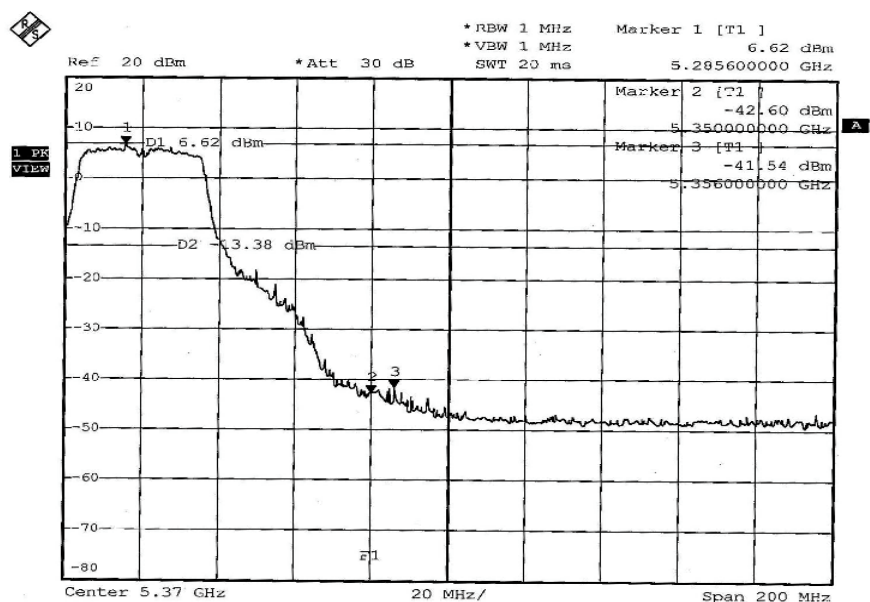
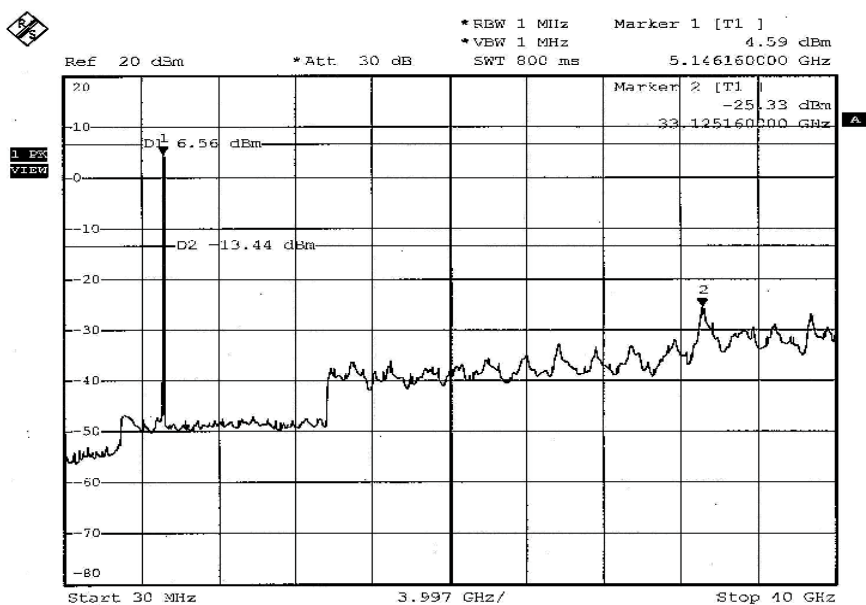
Channel 3 (5290MHz)

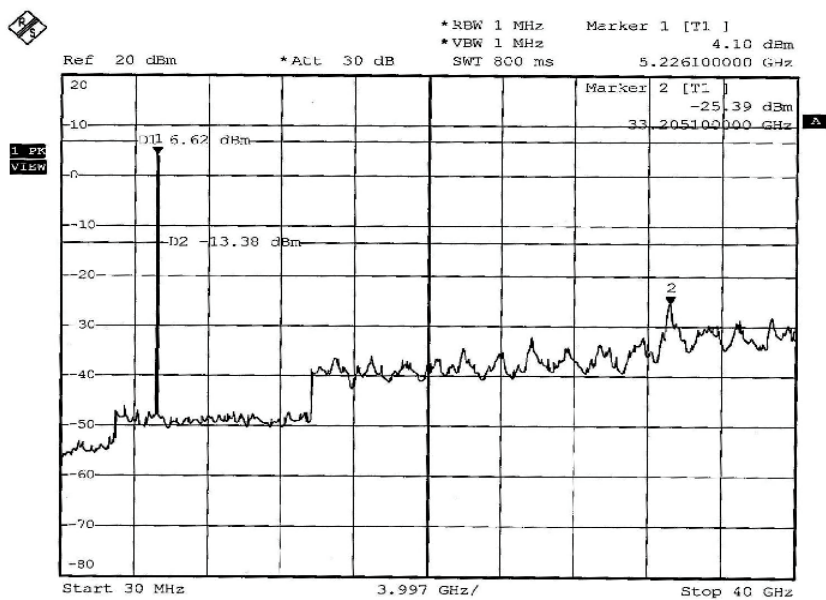
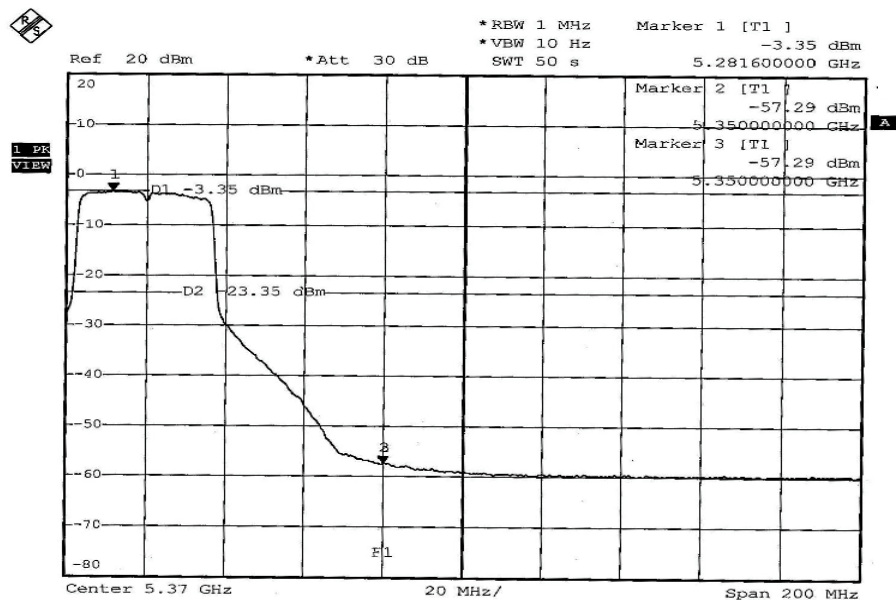
The band edge emission plot on the next second page shows 48.16dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 107.70dBuV/m (Peak), so the maximum field strength in restrict band is $107.70 - 48.16 = 59.54$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the next third shows 53.94dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 97.72dBuV/m (Average), so the maximum field strength in restrict band is $97.72 - 53.94 = 43.78$ dBuV/m which is under 54dBuV/m limit.

802.11a Turbo OFDM modulation







4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

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

And according to FCC 47 CFR Section 15.407(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

4.8.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with Reverse SMA connector. The maximum Gain of the antenna is 5.39536dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

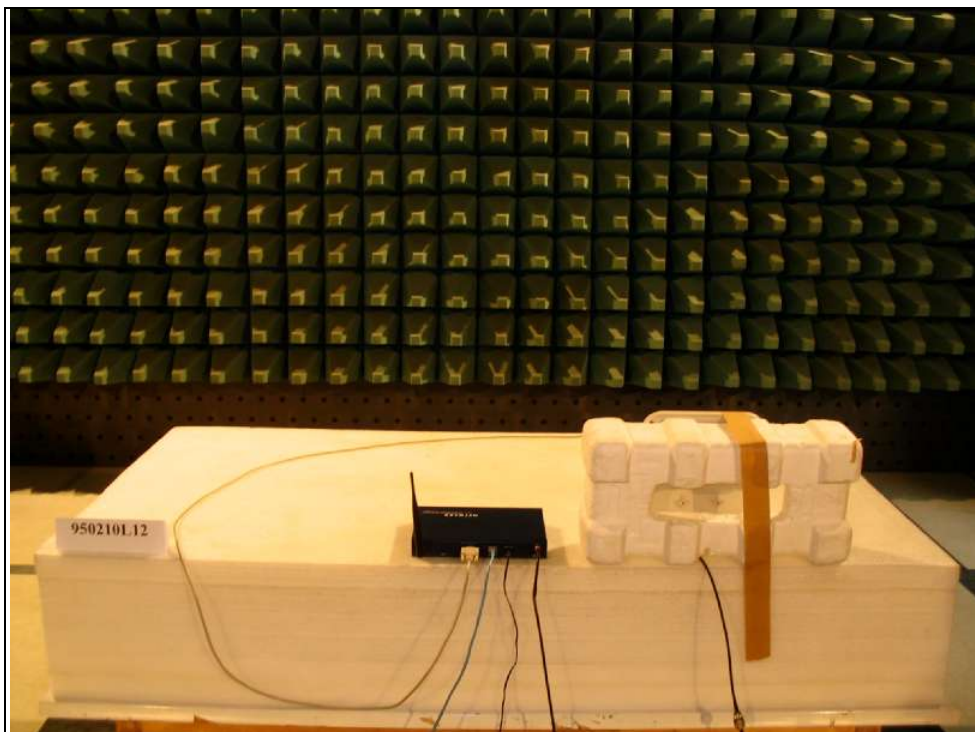
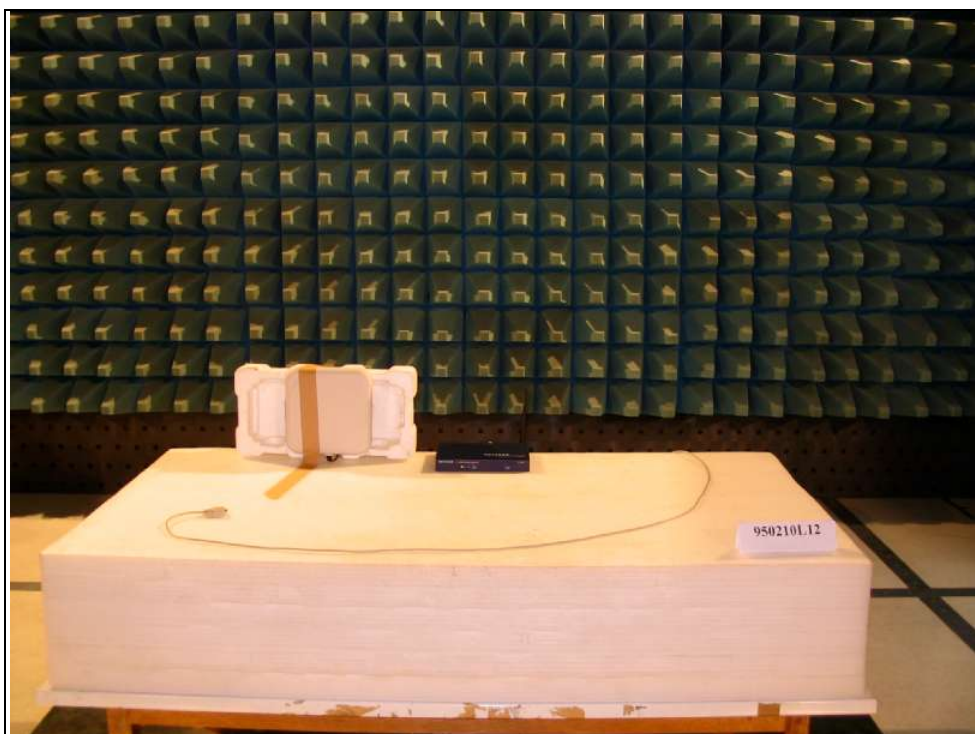
CONDUCTED EMISSION TEST
TEST MODE A



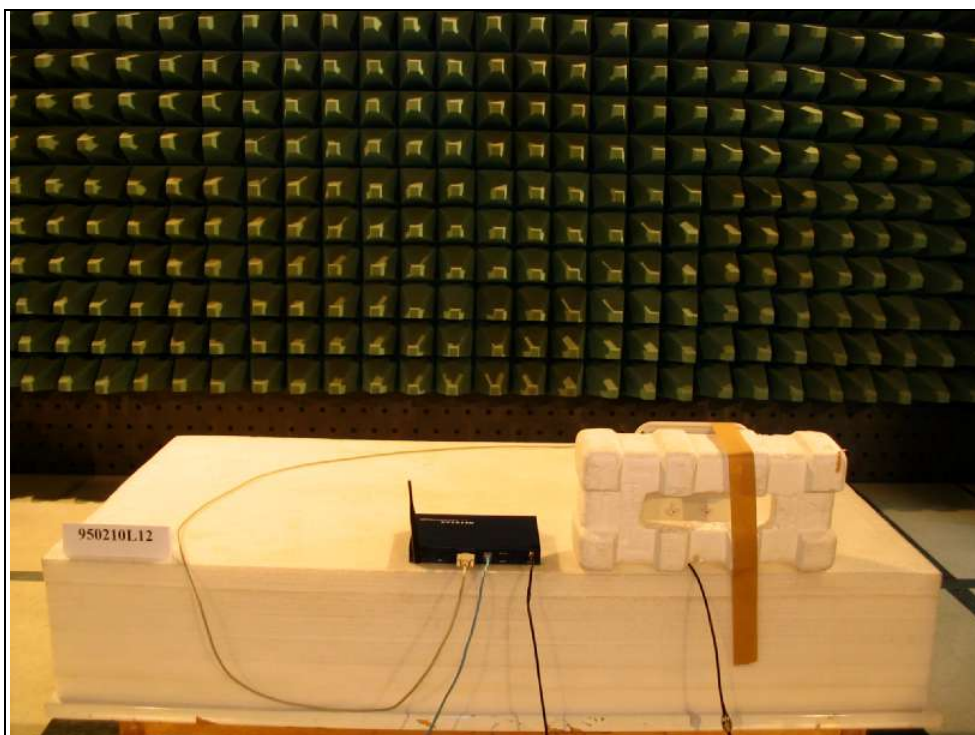
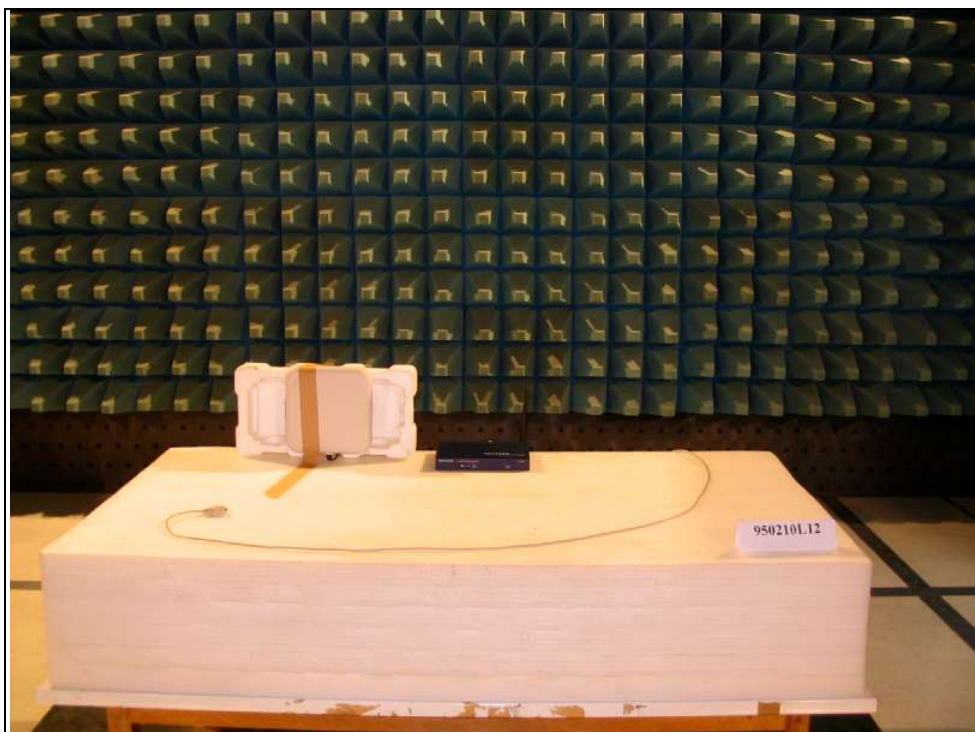
TEST MODE B



RADIATED EMISSION TEST TEST MODE A



TEST MODE B



6. INFORMATION ON THE TESTING LABORATORIES

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

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

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site:

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

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Linko RF Lab.

Tel: 886-3-3270910

Fax: 886-3-3270892

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.