FCC TEST REPORT

REPORT NO. : RF940511L04
MODEL NO. : WAP54GX
RECEIVED : May 16, 2005
TESTED : May 16 ~ May 26, 2005
ISSUED : Jun. 02, 2005

APPLICANT : Cisco-Linksys LLC

ADDRESS : 121 Theory Drive Irvine, CA 92617, U.S.A.

ISSUED BY: Advance Data Technology Corporation

LAB ADDRESS: 47 14th Lin, Chiapau Tsun, Linko, Taipei, Taiwan, R.O.C.

TEST LOCATION: No. 19, Hwa Ya 2nd Rd., Kueishan, Taoyuan, Taiwan, R.O.C.

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1. CERTIFICATION

PRODUCT : Wireless-G Access Point with SRX
MODEL NO. : WAP54GX
BRAND NAME: Linksys
APPLICANT : Cisco-Linksys LLC
TESTED : May 16 ~ May 20, 2005
TEST ITEM : 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 : Wendy Liao , **DATE:** Jun. 02, 2005

TECHNICAL ACCEPTANCE : Gary Chang , **DATE:** Jun. 02, 2005
Responsible for RF

APPROVED BY : Cody Chang / Deputy Manager , **DATE:** Jun. 02, 2005

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	PASS	Meet the requirement of limit. Minimum passing margin is –8.28dB at 0.322MHz.
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit : min. 500kHz	PASS	Meet the requirement of limit.
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit.
15.247(d)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit. Minimum passing margin is –1.70dB at 2483.50MHz.
15.247(e)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit.
15.247(d)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	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	3.73 dB
	200MHz ~1000MHz	3.74 dB
	1GHz ~ 18GHz	2.20 dB
	18GHz ~ 40GHz	1.88 dB

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Wireless-G Access Point with SRX
MODEL NO.	WAP54GX
POWER SUPPLY	12Vdc from AC adapter
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 (MIMO OFDM: 54/48/36Mbps *see NOTE 8)
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
MAXIMUM OUTPUT POWER (SINGAL CHAIN)	71.121mW
MAXIMUM OUTPUT POWER (DUAL CHAIN)	101.167mW
ANTENNA TYPE	Dipole antenna with 2dBi gain
DATA CABLE	NA
I/O PORTS	RJ45
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT was operated with following adapter:

BRAND	LINKSYS
MODEL NO.	411210OO3CT
INPUT POWER	120Vac, 60Hz, 20W
OUTPUT POWER	12Vdc, 1000mA
POWER LINE	DC 1.8m non-shielded cable without core

2. The EUT incorporates a MIMO function with IEEE 802.11b/g. Physically, the card provides two complete transmit and three receivers.
3. The EUT can operate in a single chain configuration (the chain 0 or 1 transceiver is operational) or dual chain configuration (both chain 0 and chain 1 transceivers are operational).
4. When the EUT is in the 802.11b mode, it is always in the single chain configuration.
5. When the EUT is operating in the 802.11g mode, it can operate in either configuration. Switching between the single and dual chain configurations is accomplished electronically, with no hardware changes required.

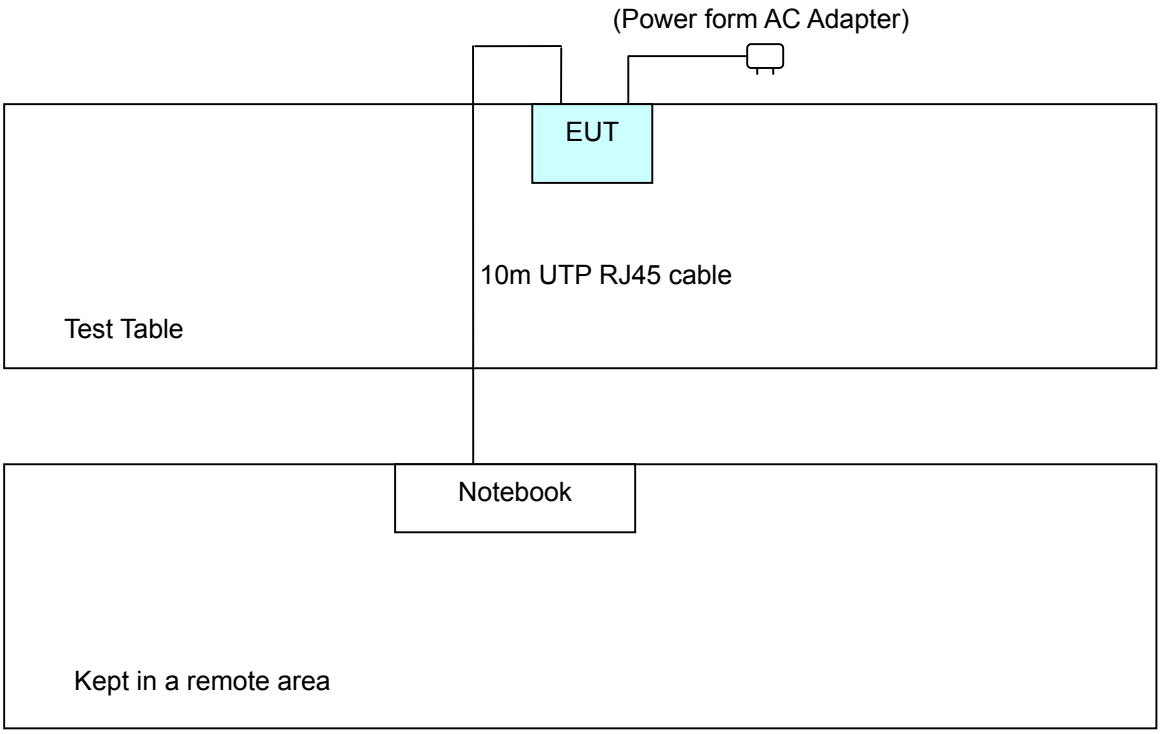
6. The EUT complies with IEEE 802.11g standards and backwards compatible with IEEE 802.11b products.
7. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.
8. The transfer rate of transmitting in MIMO-OFDM mode is up to 54Mbps, but only receiving could up to 108Mbps
9. 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.

3.2 DESCRIPTION OF TEST MODES

For 802.11b/g: Eleven channels are provided to this EUT for normal mode.

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

3.2.1 CONFIGURATION OF SYSTEM UNDER TEST



3.2.2 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL

FOR SINGLE CHAIN (TX):

APPLICABLE TO				DESCRIPTION
PLC	RE<1G	RE≥1G	APCM	
v	v	v	v	NA

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

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)
802.11g	1 to 11	1, 6, 11	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 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)
802.11g	1 to 11	11	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)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	11
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

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)
802.11b	1 to 11	1, 11	DSSS	CCK	11
802.11g	1 to 11	1, 11	OFDM	BPSK	6

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)
802.11b	1 to 11	1, 6, 11	DSSS	CCK	11
802.11g	1 to 11	1, 6, 11	OFDM	BPSK	6

FOR DUAL CHAIN (TX):

APPLICABLE TO				DESCRIPTION
PLC	RE<1G	RE≥1G	APCM	
v	v	v	v	NA

Where **PLC:** Power Line Conducted Emission **RE<1G:** Radiated Emission below 1GHz
RE≥1G: Radiated Emission above 1GHz **APCM:** Antenna Port Conducted Measurement

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)
802.11g	1 to 11	1, 6, 11	OFDM	16QAM	36

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)
802.11g	1 to 11	11	OFDM	16QAM	36

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)
802.11g	1 to 11	1, 6, 11	OFDM	16QAM	36

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)
802.11g	1 to 11	1, 11	OFDM	16QAM	36

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)
802.11g	1 to 11	1, 6, 11	OFDM	16QAM	36

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless-G Access Point with SRX. 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	20838027664	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 act as a communication partner to transfer data.

4. TEST TYPES AND RESULTS (FOR SINGLE CHAIN (TX))

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	100291	Nov. 16, 2005
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 09, 2006
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Feb. 15, 2006
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Feb. 15, 2006
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 1.
3. The VCCI Site Registration No. is C-2040.

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.

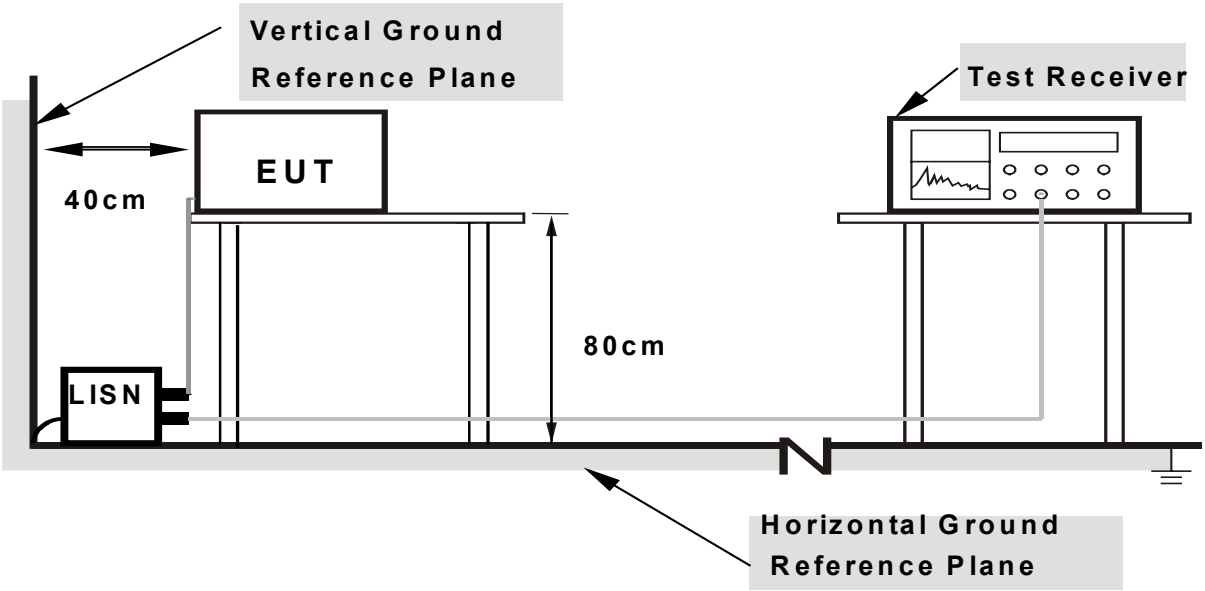
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

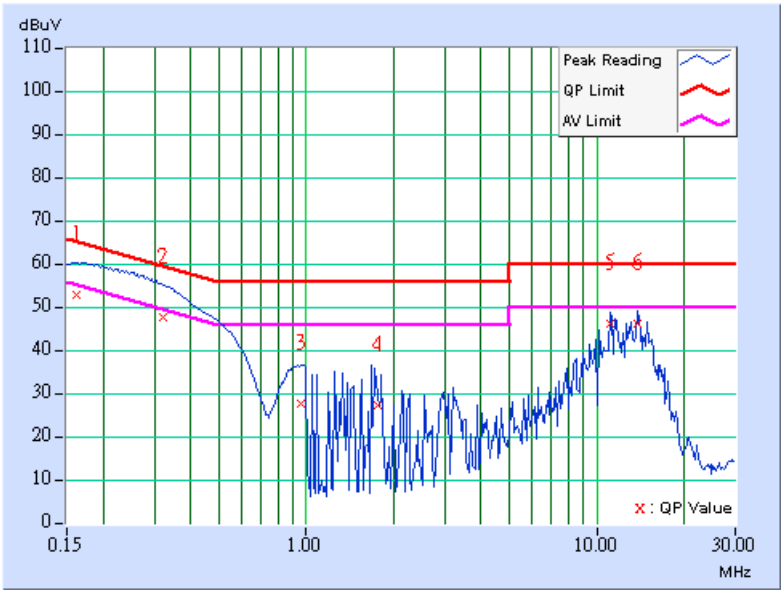
4.1.7 TEST RESULTS

CONDUCTED WORST CASE DATA

EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	52.34	23.81	52.45	23.92	65.38	55.38	-12.93	-31.46
2	0.323	0.11	47.29	21.39	47.40	21.50	59.62	49.62	-12.22	-28.12
3	0.962	0.23	27.21	-	27.44	-	56.00	-	-28.56	-
4	1.765	0.26	26.98	-	27.24	-	56.00	-	-28.76	-
5	11.082	0.54	45.66	35.59	46.20	36.13	60.00	50.00	-13.80	-13.87
6	13.816	0.55	45.79	35.44	46.34	35.99	60.00	50.00	-13.66	-14.01

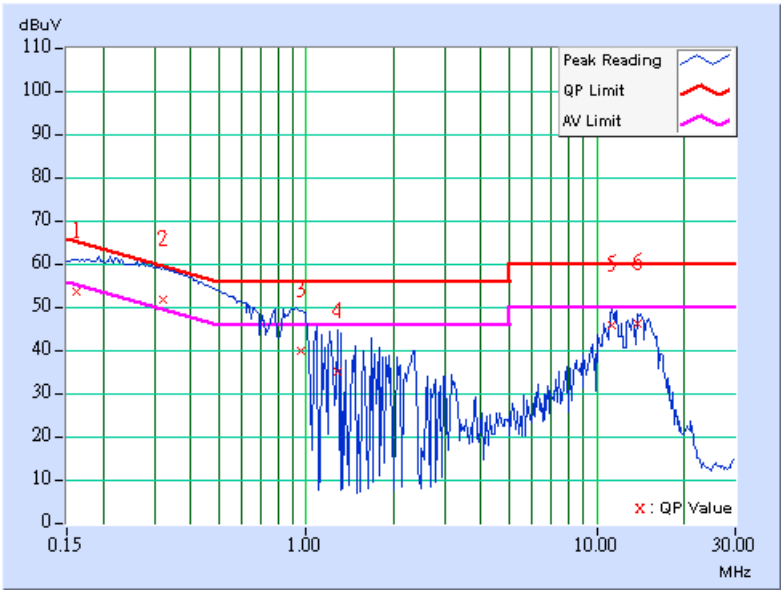
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	53.24	24.32	53.35	24.43	65.38	55.38	-12.03	-30.95
2	**0.322**	**0.11**	**51.27**	**23.67**	**51.38**	**23.78**	**59.66**	**49.66**	**-8.28**	**-25.88**
3	0.964	0.23	39.71	15.86	39.94	16.09	56.00	46.00	-16.06	-29.91
4	1.289	0.25	34.76	-	35.01	-	56.00	-	-20.99	-
5	11.258	0.44	45.45	35.00	45.89	35.44	60.00	50.00	-14.11	-14.56
6	13.816	0.45	45.95	35.53	46.40	35.98	60.00	50.00	-13.60	-14.02

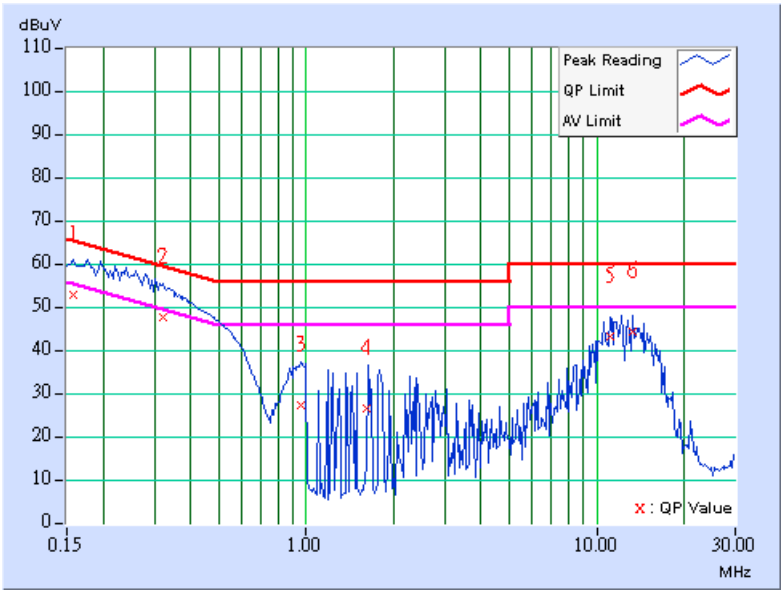
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.11	52.54	23.66	52.65	23.77	65.58	55.58	-12.93	-31.81
2	0.323	0.11	47.19	21.53	47.30	21.64	59.63	49.63	-12.33	-27.99
3	0.963	0.23	27.01	-	27.24	-	56.00	-	-28.76	-
4	1.608	0.25	26.11	-	26.36	-	56.00	-	-29.64	-
5	11.098	0.54	42.93	32.39	43.47	32.93	60.00	50.00	-16.53	-17.07
6	13.348	0.55	44.07	34.15	44.62	34.70	60.00	50.00	-15.38	-15.30

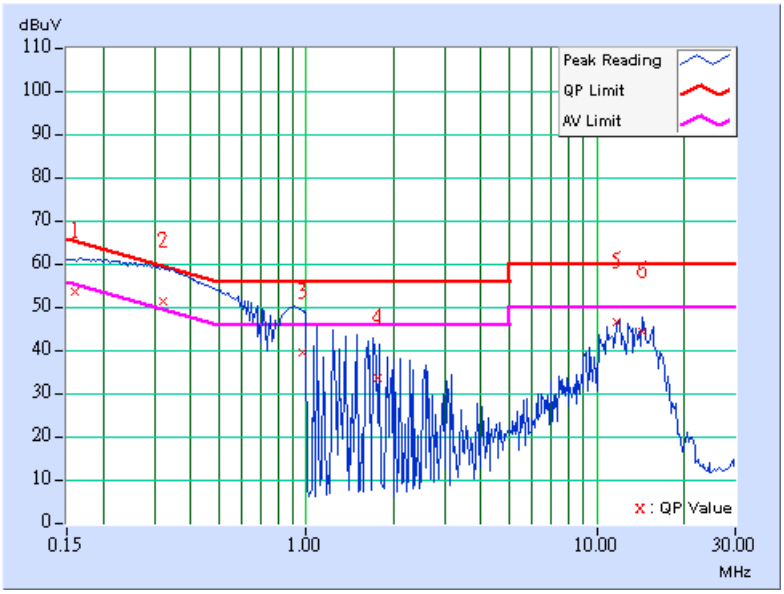
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.159	0.11	53.18	24.19	53.29	24.30	65.52	55.52	-12.23	-31.22
2	0.322	0.11	50.95	23.45	51.06	23.56	59.64	49.64	-8.58	-26.08
3	0.966	0.23	39.26	15.65	39.49	15.88	56.00	46.00	-16.51	-30.12
4	1.772	0.26	33.11	-	33.37	-	56.00	-	-22.63	-
5	11.738	0.44	46.32	36.22	46.76	36.66	60.00	50.00	-13.24	-13.34
6	14.302	0.45	44.01	32.74	44.46	33.19	60.00	50.00	-15.54	-16.81

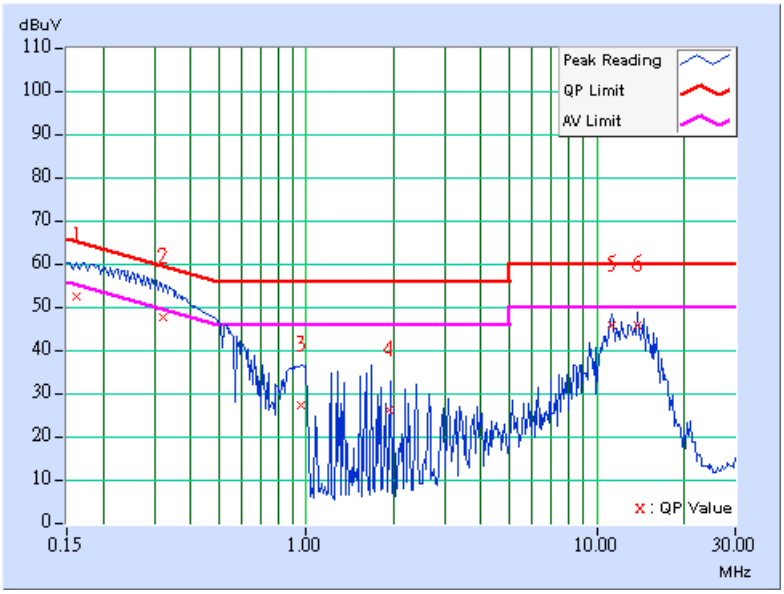
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	52.22	23.66	52.33	23.77	65.38	55.38	-13.05	-31.61
2	0.323	0.11	47.13	21.44	47.24	21.55	59.63	49.63	-12.39	-28.08
3	0.964	0.23	26.97	-	27.20	-	56.00	46.00	-28.80	-
4	1.929	0.26	25.81	-	26.07	-	56.00	46.00	-29.93	-
5	11.258	0.54	45.33	34.90	45.87	35.44	60.00	50.00	-14.13	-14.56
6	13.816	0.55	45.51	34.18	46.06	34.73	60.00	50.00	-13.94	-15.27

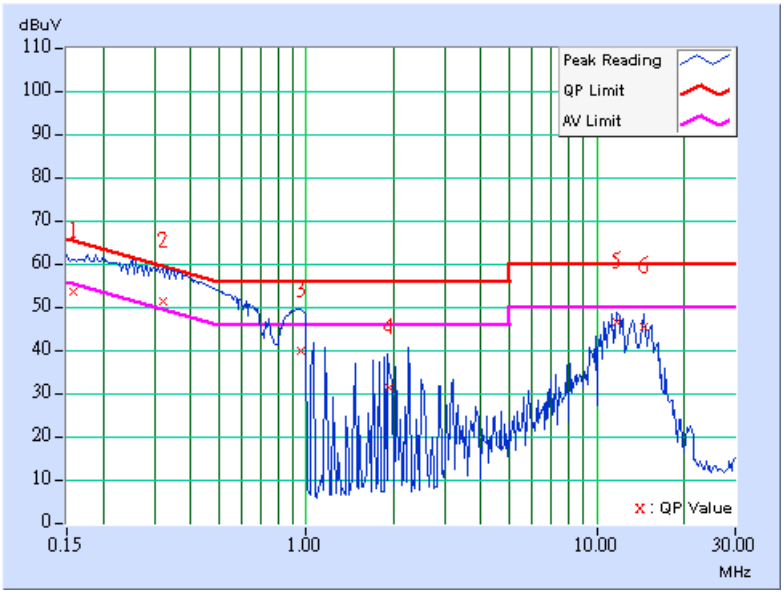
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.11	53.32	24.12	53.43	24.23	65.58	55.58	-12.15	-31.35
2	0.322	0.11	51.21	23.60	51.32	23.71	59.67	49.67	-8.35	-25.96
3	0.963	0.23	39.63	15.11	39.86	15.34	56.00	46.00	-16.14	-30.66
4	1.928	0.26	31.18	-	31.44	-	56.00	-	-24.56	-
5	11.730	0.44	46.20	36.52	46.64	36.96	60.00	50.00	-13.36	-13.04
6	14.465	0.45	44.94	34.80	45.39	35.25	60.00	50.00	-14.61	-14.75

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 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 19, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 21, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 22, 2006
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 16, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2006
Preamplifier Agilent	8449B	3008A01961	Nov. 09, 2005
Preamplifier Agilent	8447D	2944A10629	Nov. 09, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Feb. 17, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Feb. 17, 2006
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

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

2. The test was performed in HwaYa Chamber 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.

4.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter 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.

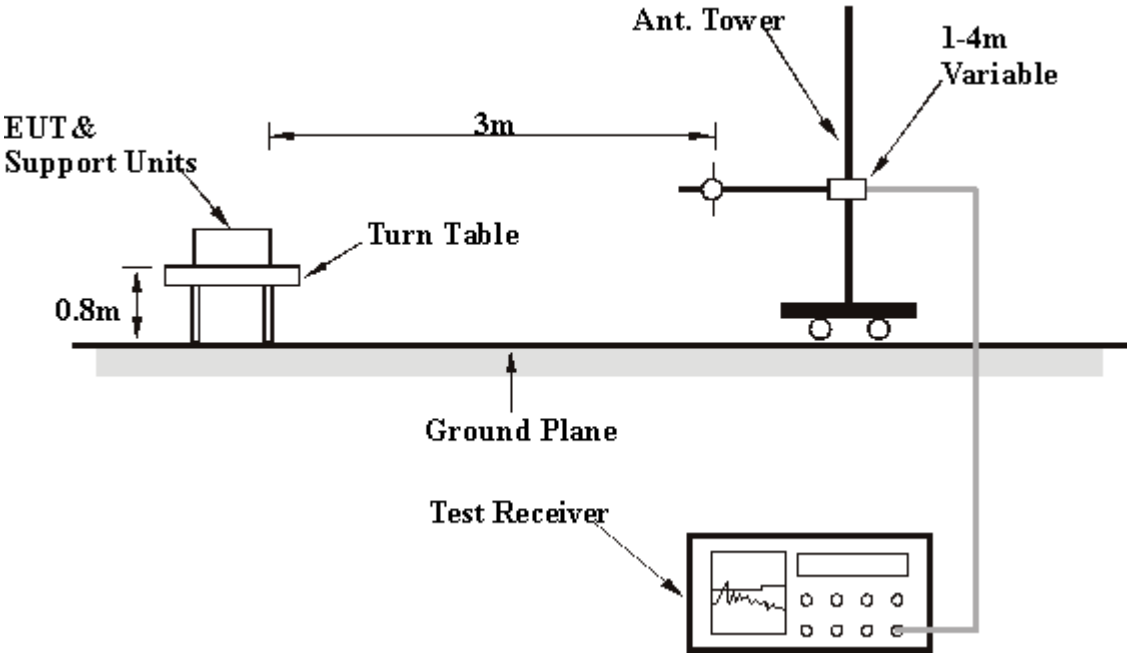
NOTE:

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 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 1kHz for Average detection (AV) at frequency above 1GHz.

4.2.4 DEVIATION FROM TEST STANDARD

No deviation

4.2.5 TEST SETUP



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

4.2.6 EUT OPERATING CONDITIONS

Same as 4.1.6

4.2.7 TEST RESULTS

RADIATED WORST CASE DATA:

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	Below 1000MHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Quasi-Peak
MODULATION TYPE	BPSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 45%RH, 991hPa
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	59.16	29.06 QP	40.00	-10.94	2.50 H	211	15.53	13.54
2	111.64	35.70 QP	43.50	-7.80	2.50 H	214	23.76	11.94
3	144.69	30.71 QP	43.50	-12.79	2.00 H	19	16.39	14.32
4	195.23	31.72 QP	43.50	-11.78	1.50 H	355	20.21	11.51
5	278.82	37.81 QP	46.00	-8.19	1.00 H	316	23.80	14.01
6	352.69	30.96 QP	46.00	-15.04	1.00 H	298	15.44	15.53
7	420.72	35.81 QP	46.00	-10.19	2.00 H	307	18.64	17.16
8	560.68	32.20 QP	46.00	-13.80	1.50 H	322	12.31	19.88
9	628.72	31.81 QP	46.00	-14.19	1.00 H	301	10.52	21.29
10	700.64	32.32 QP	46.00	-13.68	1.00 H	61	10.06	22.26
11	751.18	34.53 QP	46.00	-11.47	1.00 H	55	11.10	23.42

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.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	Below 1000MHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Quasi-Peak
MODULATION TYPE	BPSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 45%RH, 991hPa
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TESTED BY	Match Tsui		

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	61.10	36.50 QP	40.00	-3.50	1.00 V	1	23.17	13.33
2	94.15	26.69 QP	43.50	-16.81	1.00 V	91	16.41	10.28
3	138.86	30.74 QP	43.50	-12.76	1.00 V	232	16.60	14.13
4	195.23	33.19 QP	43.50	-10.31	1.00 V	214	21.68	11.51
5	278.82	36.28 QP	46.00	-9.72	1.50 V	31	22.27	14.01
6	420.72	34.40 QP	46.00	-11.60	1.50 V	220	17.23	17.16
7	560.68	29.71 QP	46.00	-16.29	1.00 V	274	9.82	19.88
8	630.66	29.49 QP	46.00	-16.51	1.00 V	262	8.17	21.32
9	700.64	32.56 QP	46.00	-13.44	1.50 V	67	10.30	22.26
10	751.18	32.25 QP	46.00	-13.75	1.50 V	49	8.83	23.42

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.

802.11b DSSS MODULATION

EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	FREQUENCY RANGE	1 ~ 25GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	CCK	ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa
TRANSFER RATE	11Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
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	1680.00	43.44 PK	74.00	-30.56	1.22 H	160	15.33	28.10
1	1680.00	38.13 AV	54.00	-15.87	1.22 H	160	10.02	28.10
2	2386.00	53.88 PK	74.00	-20.12	1.07 H	182	22.92	30.96
2	2386.00	44.93 AV	54.00	-9.07	1.07 H	182	13.97	30.96
3	*2412.00	100.29 PK			1.07 H	182	69.23	31.06
3	*2412.00	93.75 AV			1.07 H	182	62.69	31.06
4	4824.00	46.36 PK	74.00	-27.64	1.18 H	1	9.93	36.43
4	4824.00	33.30 AV	54.00	-20.70	1.18 H	1	-3.13	36.43

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	1680.00	47.49 PK	74.00	-26.51	1.00 V	143	19.38	28.10
1	1680.00	43.93 AV	54.00	-10.07	1.00 V	143	15.82	28.10
2	2386.00	60.10 PK	74.00	-13.90	1.07 V	3	29.14	30.96
2	2386.00	51.91 AV	54.00	-2.09	1.07 V	3	20.95	30.96
3	*2412.00	112.19 PK			1.07 V	3	81.13	31.06
3	*2412.00	106.64 AV			1.07 V	3	75.58	31.06
4	2628.00	55.08 PK	74.00	-18.92	1.23 V	189	23.38	31.70
4	2628.00	49.23 AV	54.00	-4.77	1.23 V	189	17.53	31.70
5	4824.00	48.46 PK	74.00	-25.54	1.09 V	319	12.03	36.43
5	4824.00	39.38 AV	54.00	-14.62	1.09 V	319	2.95	36.43

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	CCK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	11Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1740.00	44.28 PK	74.00	-29.72	1.16 H	208	16.07	28.21
1	1740.00	38.39 AV	54.00	-15.61	1.16 H	208	10.18	28.21
2	*2437.00	104.97 PK			1.37 H	238	73.80	31.17
2	*2437.00	99.68 AV			1.37 H	238	68.51	31.17
3	4874.00	47.27 PK	74.00	-26.73	1.15 H	291	10.73	36.54
3	4874.00	38.50 AV	54.00	-15.50	1.15 H	291	1.96	36.54

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	1740.00	49.05 PK	74.00	-24.95	1.00 V	360	20.84	28.21
1	1740.00	44.57 AV	54.00	-9.43	1.00 V	360	16.36	28.21
2	2376.00	59.56 PK	74.00	-14.44	1.04 V	24	28.64	30.92
2	2376.00	49.96 AV	54.00	-4.04	1.04 V	24	19.04	30.92
3	*2437.00	115.89 PK			1.04 V	24	84.72	31.17
3	*2437.00	109.52 AV			1.04 V	24	78.35	31.17
4	2783.00	54.12 PK	74.00	-19.88	1.00 V	151	22.16	31.96
4	2783.00	47.07 AV	54.00	-6.93	1.00 V	151	15.11	31.96
5	3134.00	47.62 PK	74.00	-26.38	1.14 V	210	15.13	32.49
5	3134.00	43.07 AV	54.00	-10.93	1.14 V	210	10.58	32.49
6	4874.00	51.46 PK	74.00	-22.54	1.06 V	346	14.92	36.54
6	4874.00	44.47 AV	54.00	-9.53	1.06 V	346	7.93	36.54

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	CCK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	11Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1760.00	43.93 PK	74.00	-30.07	1.11 H	227	15.69	28.24
1	1760.00	37.93 AV	54.00	-16.07	1.11 H	227	9.69	28.24
2	*2462.00	102.61 PK			1.06 H	216	71.33	31.28
2	*2462.00	97.25 AV			1.06 H	216	65.97	31.28
3	2483.50	53.95 PK	74.00	-20.05	1.06 H	216	22.58	31.37
3	2483.50	45.00 AV	54.00	-9.00	1.06 H	216	13.63	31.37
4	4924.00	47.66 PK	74.00	-26.34	1.08 H	310	11.00	36.66
4	4924.00	33.56 AV	54.00	-20.44	1.08 H	310	-3.10	36.66

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	1760.00	45.72 PK	74.00	-28.28	1.00 V	302	17.48	28.24
1	1760.00	41.45 AV	54.00	-12.55	1.00 V	302	13.21	28.24
2	*2462.00	112.96 PK			1.03 V	38	81.68	31.28
2	*2462.00	107.66 AV			1.03 V	38	76.38	31.28
3	2487.00	60.70 PK	74.00	-13.30	1.03 V	38	29.32	31.38
3	2487.00	51.88 AV	54.00	-2.12	1.03 V	38	20.50	31.38
4	2818.00	51.13 PK	74.00	-22.87	1.12 V	360	19.11	32.02
4	2818.00	44.87 AV	54.00	-9.13	1.12 V	360	12.85	32.02
5	4924.00	52.21 PK	74.00	-21.79	1.06 V	348	15.55	36.66
5	4924.00	43.60 AV	54.00	-10.40	1.06 V	348	6.94	36.66

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.
5. " * ": Fundamental frequency.

802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	FREQUENCY RANGE	1 ~ 25GHz
CHANNEL	Channel 1	DETECTOR FUNCTION	Peak (PK) Average (AV)
MODULATION TYPE	BPSK	ENVIRONMENTAL CONDITIONS	25deg. C, 70%RH, 991hPa
TRANSFER RATE	6Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
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	1680.00	43.23 PK	74.00	-30.77	1.20 H	186	15.12	28.10
1	1680.00	37.31 AV	54.00	-16.69	1.20 H	186	9.20	28.10
2	2390.00	54.45 PK	74.00	-19.55	1.10 H	193	23.48	30.97
2	2390.00	45.26 AV	54.00	-8.74	1.10 H	193	14.29	30.97
3	*2412.00	96.47 PK			1.10 H	193	65.41	31.06
3	*2412.00	87.10 AV			1.10 H	193	56.04	31.06
4	4824.00	44.72 PK	74.00	-29.28	1.11 H	120	8.29	36.43
4	4824.00	31.70 AV	54.00	-22.30	1.11 H	120	-4.73	36.43

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	1680.00	45.81 PK	74.00	-28.19	1.00 V	169	17.70	28.10
1	1680.00	42.21 AV	54.00	-11.79	1.00 V	169	14.10	28.10
2	2040.00	47.46 PK	74.00	-26.54	1.42 V	177	17.94	29.52
2	2040.00	35.16 AV	54.00	-18.84	1.42 V	177	5.64	29.52
3	2390.00	66.29 PK	74.00	-7.71	1.08 V	253	35.32	30.97
3	2390.00	51.81 AV	54.00	-2.19	1.08 V	253	20.84	30.97
4	*2412.00	106.74 PK			1.08 V	253	75.68	31.06
4	*2412.00	96.24 AV			1.08 V	253	65.18	31.06
5	2628.00	53.51 PK	74.00	-20.49	1.00 V	191	21.81	31.70
5	2628.00	43.53 AV	54.00	-10.47	1.00 V	191	11.83	31.70
6	4824.00	45.71 PK	74.00	-28.29	1.00 V	1	9.28	36.43
6	4824.00	31.92 AV	54.00	-22.08	1.00 V	1	-4.51	36.43

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	BPSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1740.00	44.91 PK	74.00	-29.09	1.19 H	198	16.70	28.21
1	1740.00	38.82 AV	54.00	-15.18	1.19 H	198	10.61	28.21
2	*2437.00	105.15 PK			1.08 H	193	73.98	31.17
2	*2437.00	95.60 AV			1.08 H	193	64.43	31.17
3	4874.00	48.06 PK	74.00	-25.94	1.15 H	200	11.52	36.54
3	4874.00	34.44 AV	54.00	-19.56	1.15 H	200	-2.10	36.54

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	1740.00	47.54 PK	74.00	-26.46	1.00 V	298	19.33	28.21
1	1740.00	43.14 AV	54.00	-10.86	1.00 V	298	14.93	28.21
2	2380.00	61.37 PK	74.00	-12.63	1.30 V	1	30.44	30.93
2	2380.00	51.40 AV	54.00	-2.60	1.30 V	1	20.47	30.93
3	*2437.00	116.49 PK			1.30 V	1	85.32	31.17
3	*2437.00	106.96 AV			1.30 V	1	75.79	31.17
4	2783.00	55.21 PK	74.00	-18.79	1.13 V	16	23.25	31.96
4	2783.00	45.51 AV	54.00	-8.49	1.13 V	16	13.55	31.96
5	3134.00	49.03 PK	74.00	-24.97	1.17 V	210	16.54	32.49
5	3134.00	44.96 AV	54.00	-9.04	1.17 V	210	12.47	32.49
6	4874.00	50.76 PK	74.00	-23.24	1.05 V	336	14.22	36.54
6	4874.00	38.14 AV	54.00	-15.86	1.05 V	336	1.60	36.54

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	BPSK	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	6Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1760.00	42.88 PK	74.00	-31.12	1.15 H	193	14.64	28.24
1	1760.00	36.71 AV	54.00	-17.29	1.15 H	193	8.47	28.24
2	*2462.00	100.19 PK			1.32 H	217	68.91	31.28
2	*2462.00	90.82 AV			1.32 H	217	59.54	31.28
3	2483.50	60.01 PK	74.00	-13.99	1.32 H	217	28.64	31.37
3	2483.50	47.10 AV	54.00	-6.90	1.32 H	217	15.73	31.37
4	4924.00	46.70 PK	74.00	-27.30	1.15 H	135	10.04	36.66
4	4924.00	34.29 AV	54.00	-19.71	1.15 H	135	-2.37	36.66

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	1760.00	44.47 PK	74.00	-29.53	1.30 V	171	16.23	28.24
1	1760.00	39.71 AV	54.00	-14.29	1.30 V	171	11.47	28.24
2	*2462.00	110.74 PK			1.07 V	138	79.46	31.28
2	*2462.00	100.50 AV			1.07 V	138	69.22	31.28
3	2483.50	66.42 PK	74.00	-7.58	1.07 V	138	35.05	31.37
3	2483.50	51.78 AV	54.00	-2.22	1.07 V	138	20.41	31.37
4	2817.00	49.04 PK	74.00	-24.96	1.34 V	5	17.02	32.02
4	2817.00	39.17 AV	54.00	-14.83	1.34 V	5	7.15	32.02
5	4924.00	47.69 PK	74.00	-26.31	1.07 V	1	11.03	36.66
5	4924.00	34.97 AV	54.00	-19.03	1.07 V	1	-1.69	36.66

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.
5. “ * “: Fundamental frequency.

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

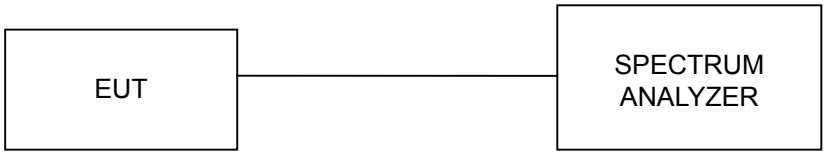
4.3.3 TEST PROCEDURE

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

4.3.4 DEVIATION FROM TEST STANDARD

No deviation

4.3.5 TEST SETUP



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

4.3.6 EUT OPERATING CONDITIONS

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

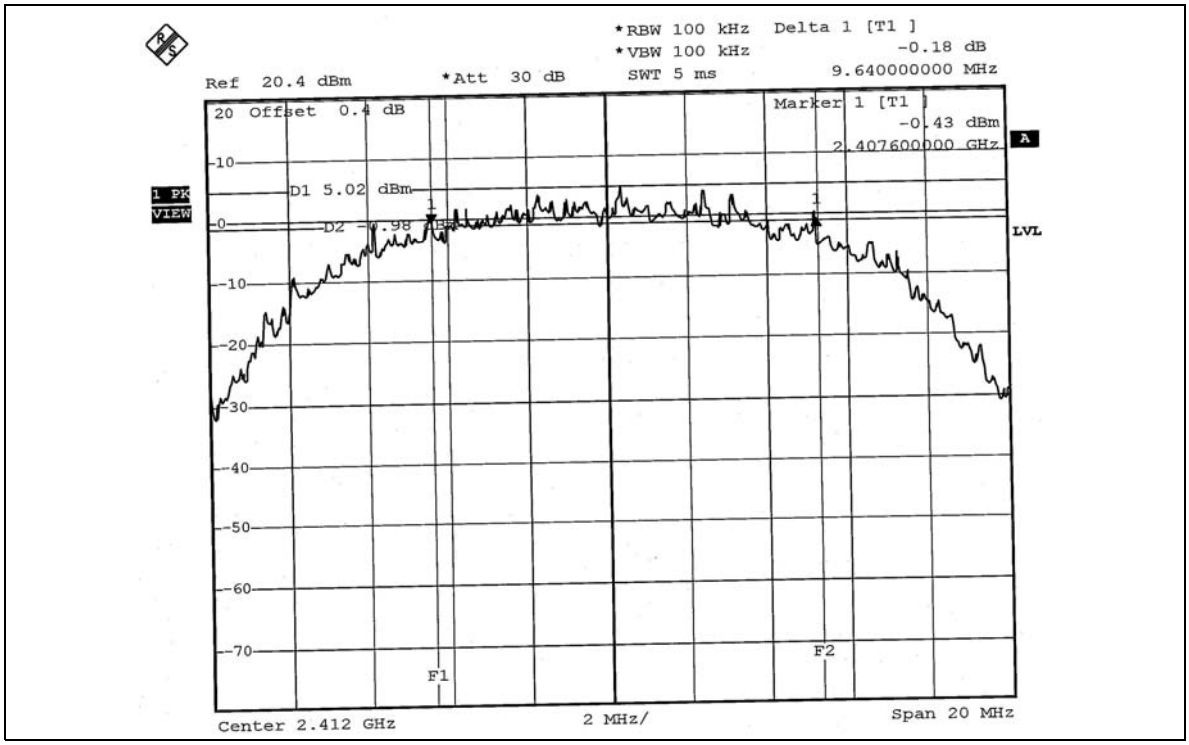
4.3.7 TEST RESULTS

802.11b DSSS MODULATION

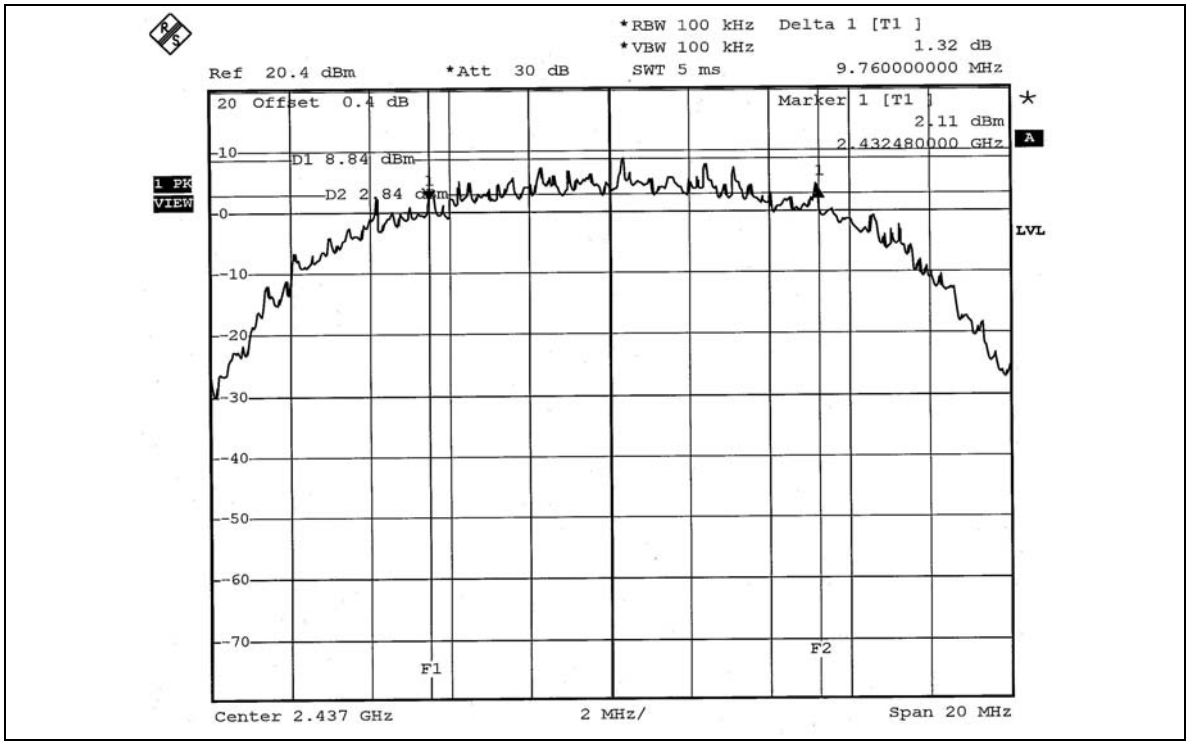
EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	CCK	**TRANSFER RATE**	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	9.64	0.5	PASS
6	2437	9.76	0.5	PASS
11	2462	8.04	0.5	PASS

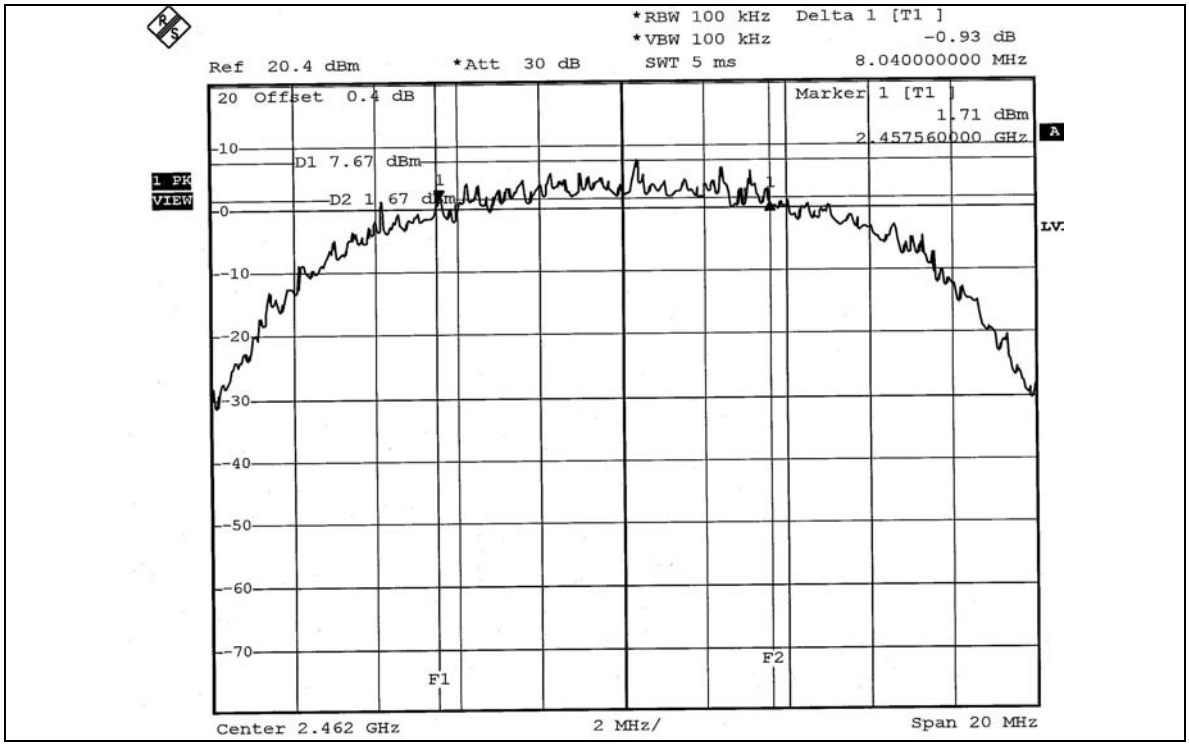
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.18 dB
9.640000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-0.43 dBm
2.407600000 GHz
D1 5.02 dBm
D2 -0.98 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
1.32 dB
9.760000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
2.11 dBm
2.432480000 GHz
D1 8.84 dBm
D2 2.84 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11

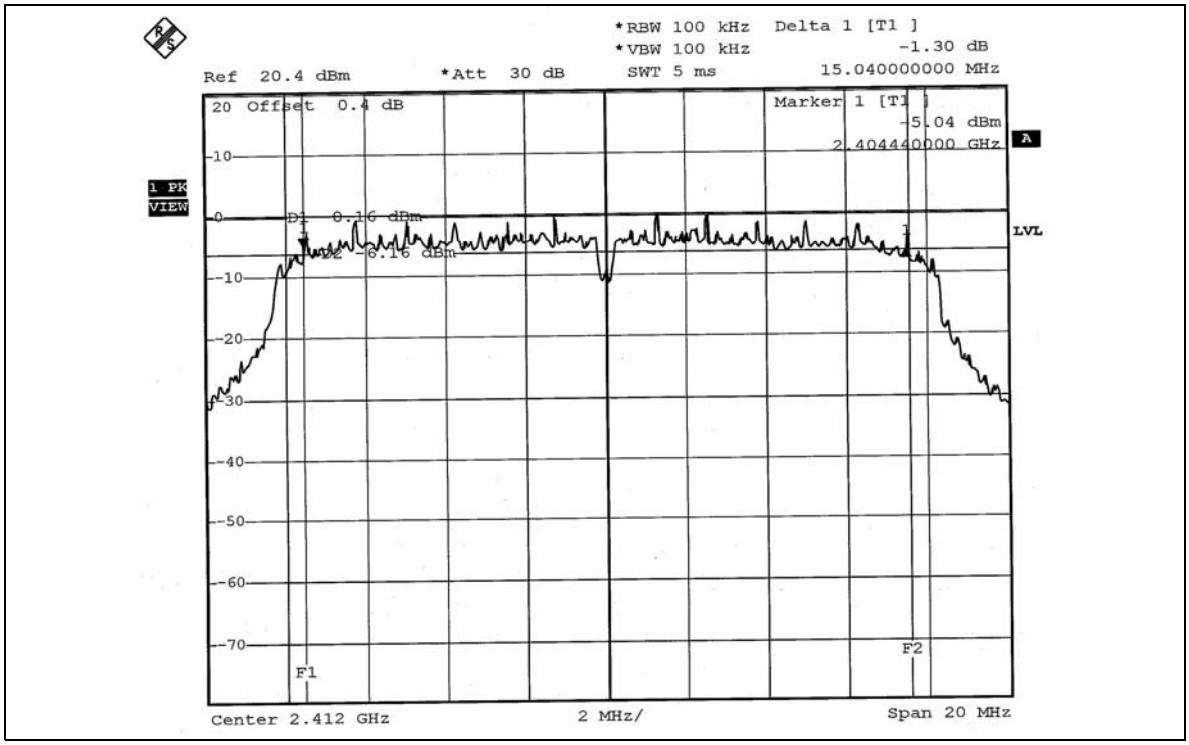

*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.93 dB
8.040000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
1.71 dBm
2.457560000 GHz
D1 7.67 dBm
D2 1.67 dBm
1 PK
VIEW
A
LV
10
0
-10
-20
-30
-40
-50
-60
-70
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

802.11g OFDM MODULATION

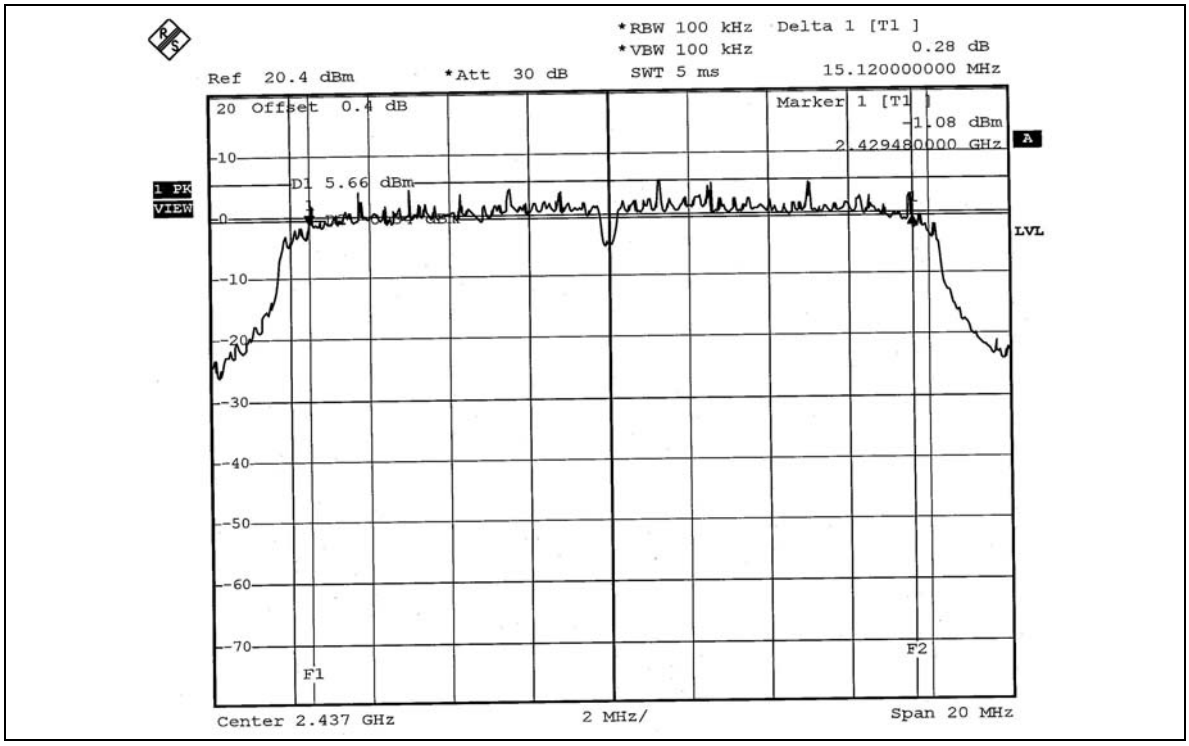
EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	15.04	0.5	PASS
6	2437	15.12	0.5	PASS
11	2462	15.16	0.5	PASS

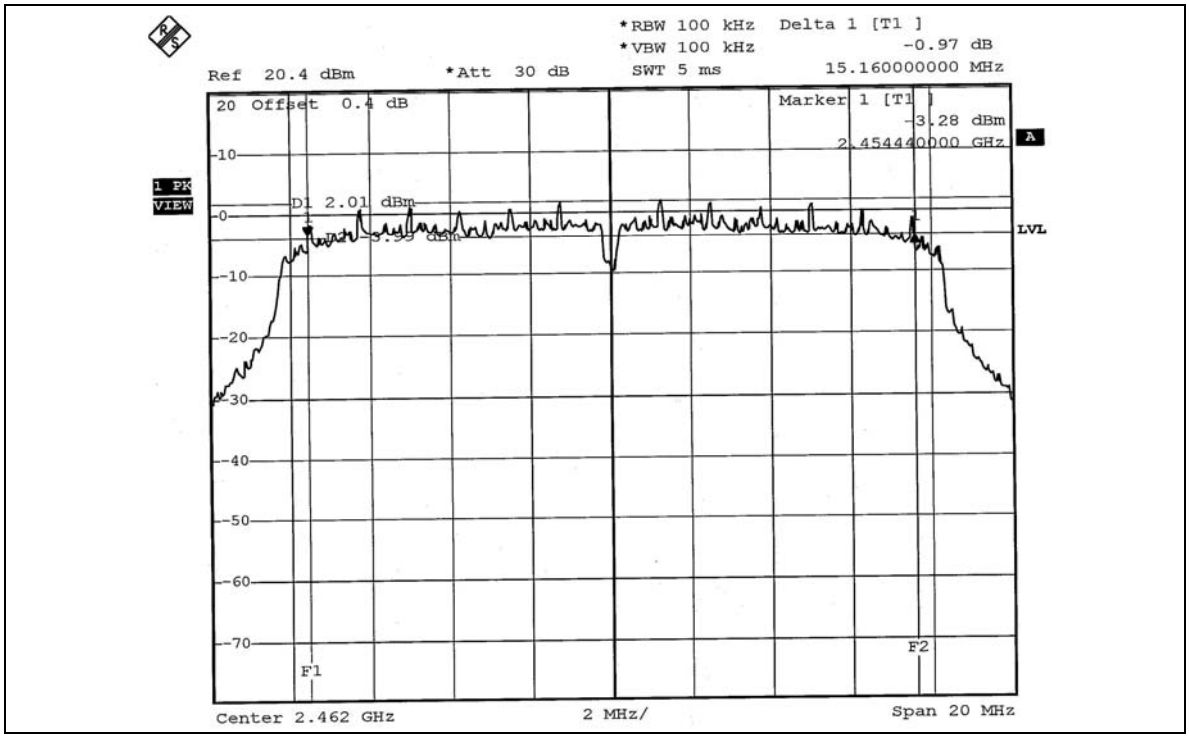
CH1


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-1.30 dB
15.040000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-5.04 dBm
2.404440000 GHz
1 PK
VIEW
A
LVL
D1 0.16 dBm
D2 -6.16 dBm
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz

CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.28 dB
15.120000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-1.08 dBm
2.429480000 GHz
1 PK
VIEW
A
LVL
D1 5.66 dBm
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
-0.97 dB
15.160000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-3.28 dBm
2.454440000 GHz
1 PK
VIEW
A
LVL
D1 2.01 dBm
-10
0
-10
-20
-30
-40
-50
-60
-70
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 06, 2005
TEKTRONIX OSCILLOSCOPE	TDS 220	C019167	Feb. 01, 2006
NARDA DETECTOR	4503A	FSCM99899	NA

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

4.4.3 TEST PROCEDURES

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP

4.4.6 EUT OPERATING CONDITIONS

Same as Item 4.3.6

4.4.7 TEST RESULTS

802.11b DSSS MODULATION

EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	CCK	**TRANSFER RATE**	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	35.645	15.52	30	PASS
6	2437	70.958	18.51	30	PASS
11	2462	51.523	17.12	30	PASS

802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	28.510	14.55	30	PASS
6	2437	71.121	18.52	30	PASS
11	2462	39.902	16.01	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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 PROCEDURE

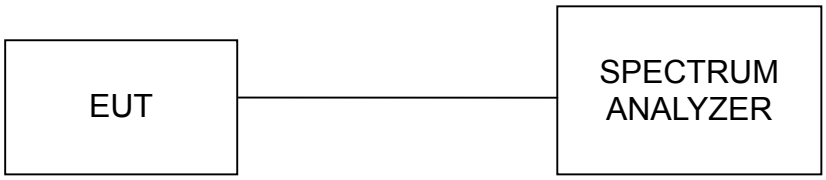
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

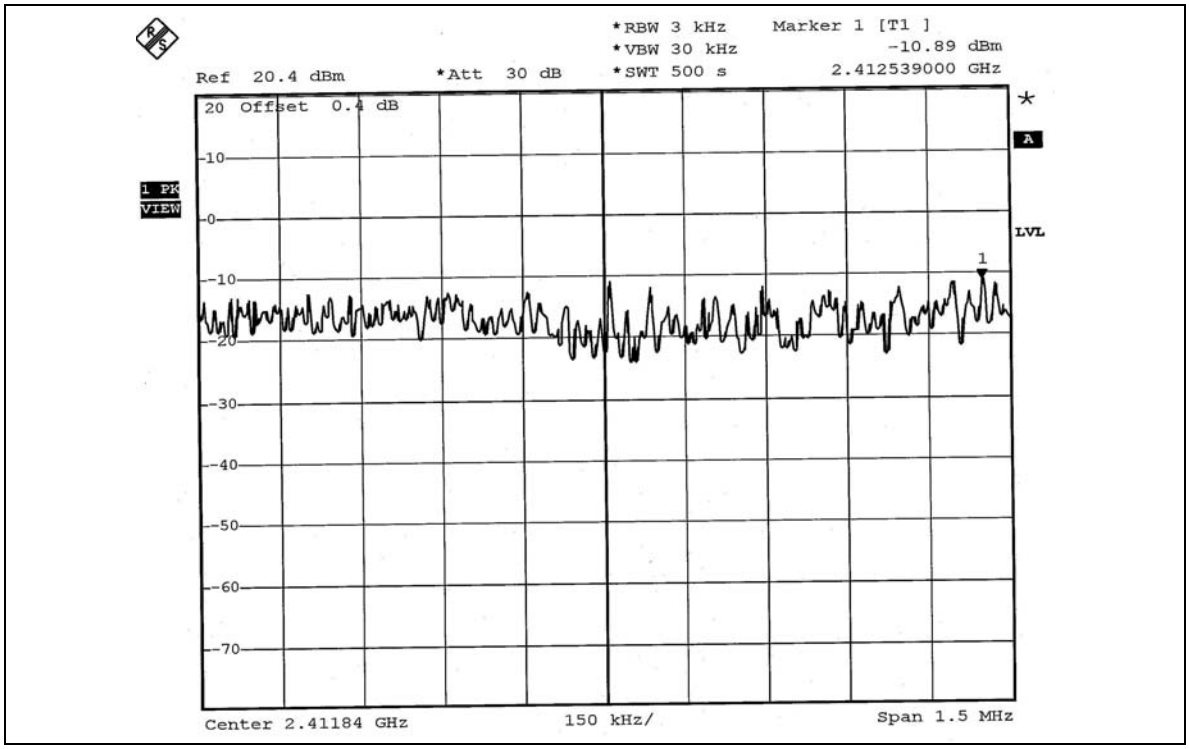
4.5.7 TEST RESULTS

802.11b DSSS MODULATION

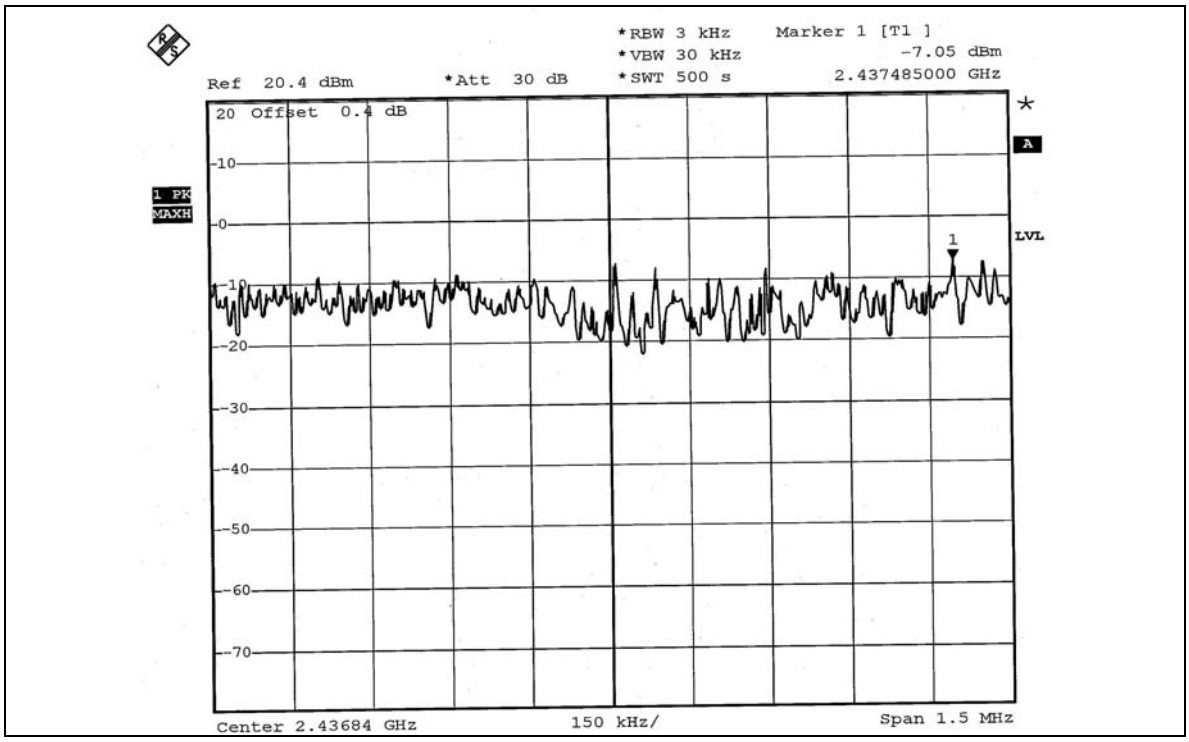
EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	CCK	**TRANSFER RATE**	11Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-10.89	8	PASS
6	2437	-7.05	8	PASS
11	2462	-7.91	8	PASS

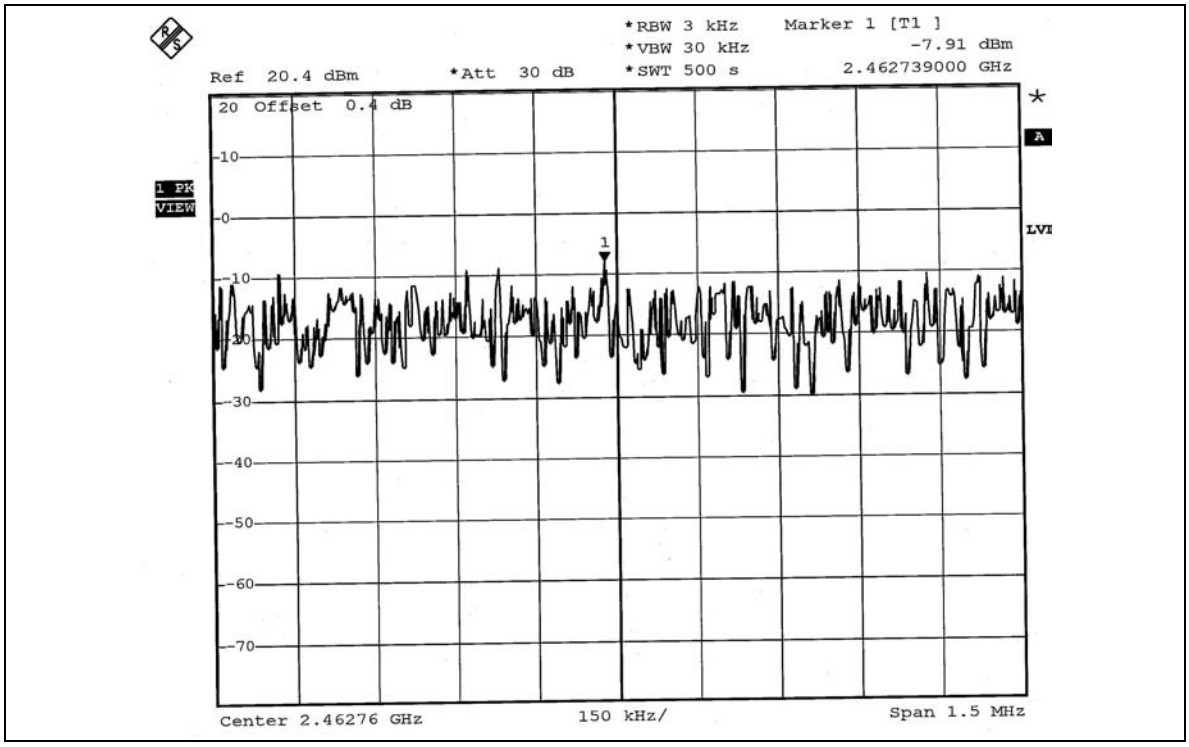
CH1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-10.89 dBm
2.412539000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
VIEW
A
LVL
Center 2.41184 GHz
150 kHz/
Span 1.5 MHz

CH6


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-7.05 dBm
2.437485000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
MAXH
A
LVL
Center 2.43684 GHz
150 kHz/
Span 1.5 MHz

CH11

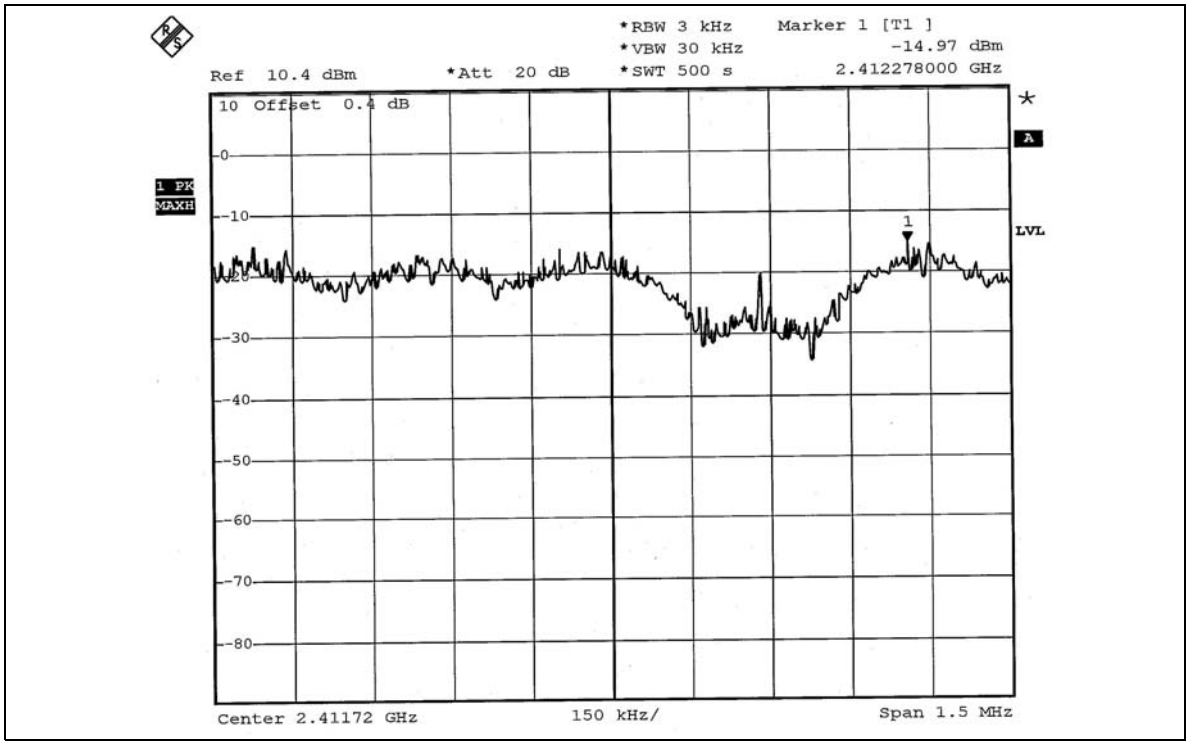

*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-7.91 dBm
2.462739000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
VIEW
A
LVI
1
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.46276 GHz
150 kHz/
Span 1.5 MHz

802.11g OFDM MODULATION

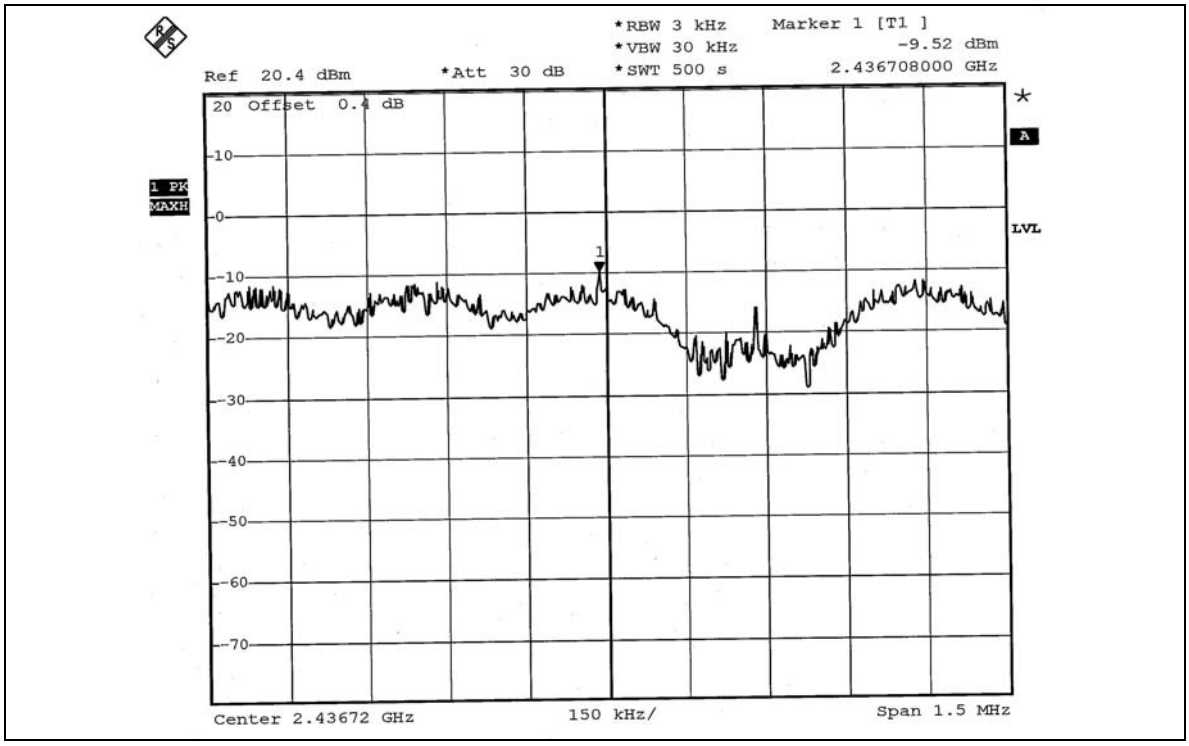
EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-14.97	8	PASS
6	2437	-9.52	8	PASS
11	2462	-12.76	8	PASS

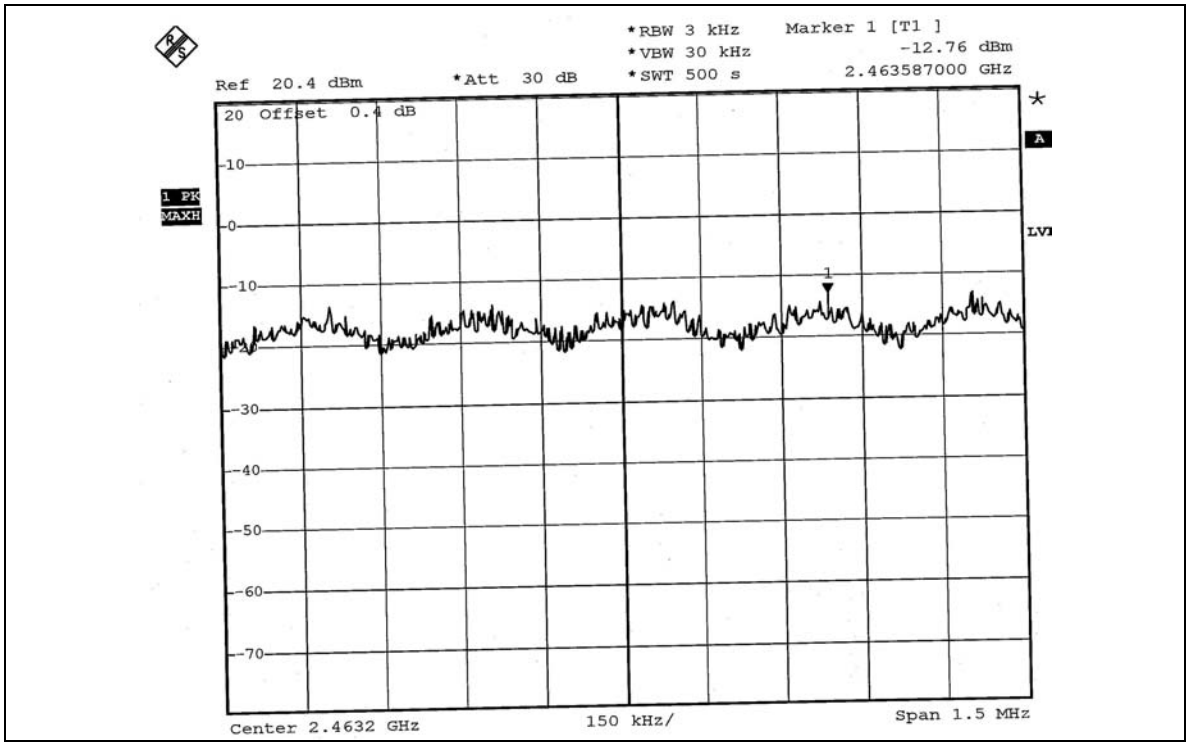
CH1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-14.97 dBm
2.412278000 GHz
Ref 10.4 dBm
*Att 20 dB
10 Offset 0.4 dB
1 PK
MAXH
A
LVL
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 2.41172 GHz
150 kHz/
Span 1.5 MHz

CH6


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.52 dBm
2.436708000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
MAXH
A
LVL
10
0
-10
-20
-30
-40
-50
-60
-70
Center 2.43672 GHz
150 kHz/
Span 1.5 MHz

CH11


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.76 dBm
2.463587000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
MAXH
A
LVI
10
0
-10
-30
-40
-50
-60
-70
Center 2.4632 GHz
150 kHz/
Span 1.5 MHz

4.6 BAND EDGES MEASUREMENT

4.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

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

The spectrum plots (Peak RBW=VBW=100kHz; Average RBW=1MHz, VBW=1kHz) are attached on the following pages.

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 EUT OPERATING CONDITION

Same as Item 4.3.6

4.6.6 TEST RESULTS

The spectrum plots are attached on the following 18 images. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

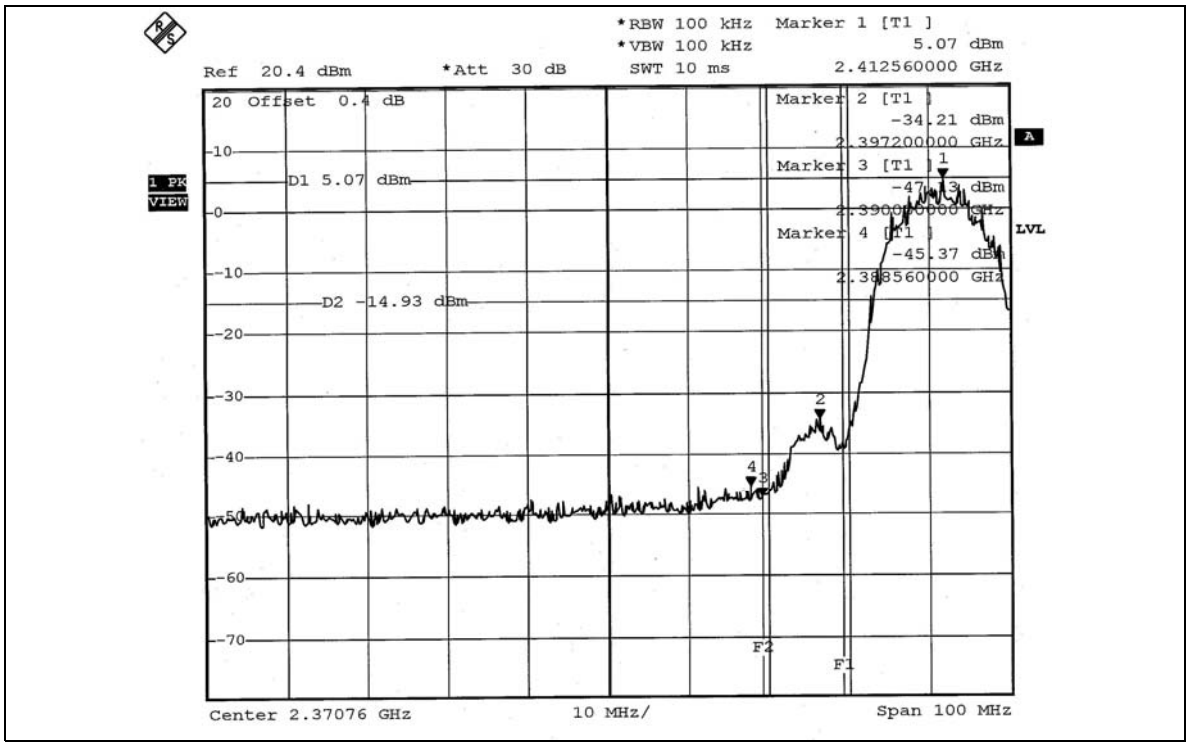
802.11b DSSS MODULATION

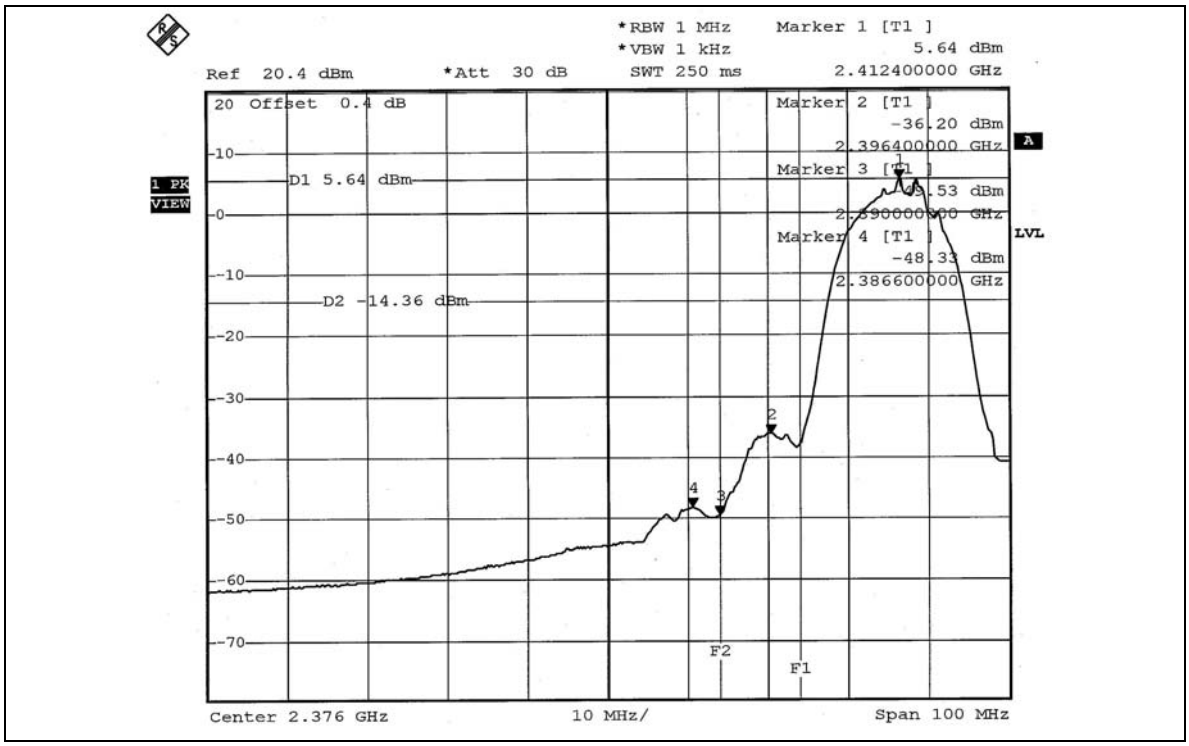
NOTE 1: The band edge emission plot on page 57 shows 50.44dBc between carrier maximum power and local maximum emission in restrict band (2.3886GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 112.19dBuV/m (Peak), so the maximum field strength in restrict band is 112.19 – 50.44 = 61.75dBuV/m, which is under 74dBuV/m limit.

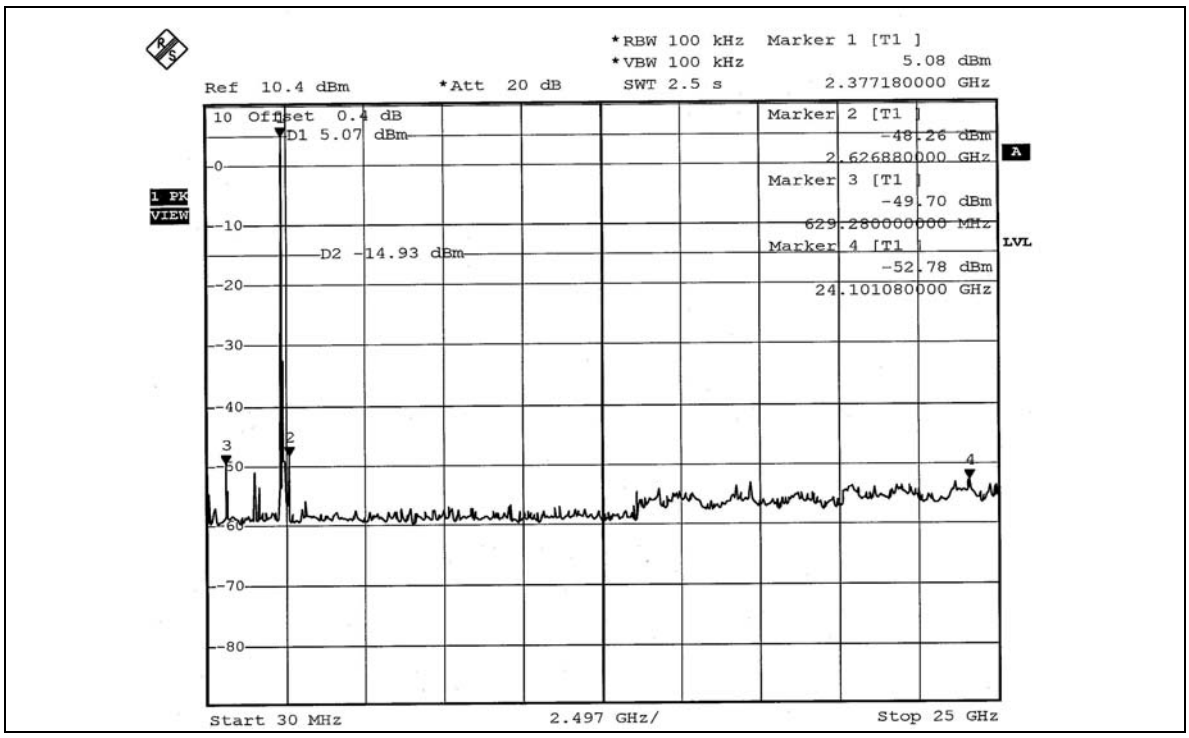
The band edge emission plot on page 57 shows 53.97dBc between carrier maximum power and local maximum emission in restrict band (2.3866GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.64dBuV/m (Average), so the maximum field strength in restrict band is 106.64 – 53.97 = 52.67dBuV/m, which is under 54dBuV/m limit.

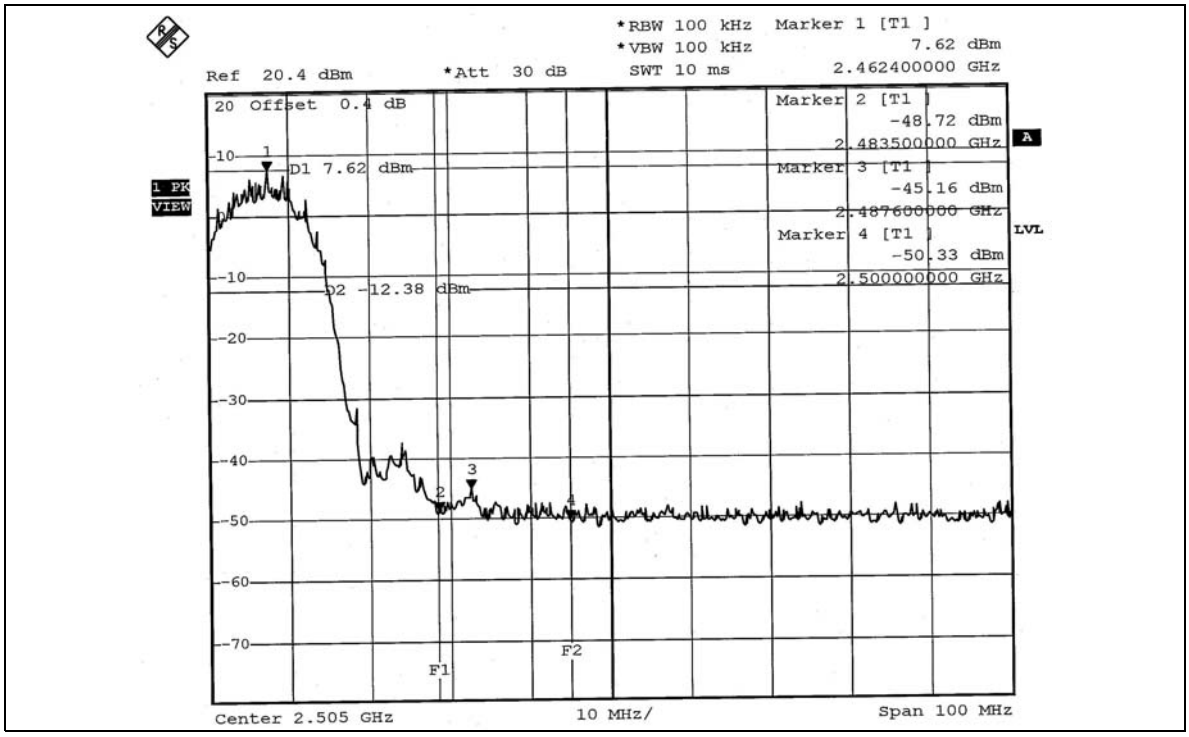
NOTE 2: The band edge emission plot on page 58 shows 52.78dBc between carrier maximum power and local maximum emission in restrict band (2.4876GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 112.96dBuV/m (Peak), so the maximum field strength in restrict band is 112.96 – 52.78 = 60.18dBuV/m, which is under 74dBuV/m limit.

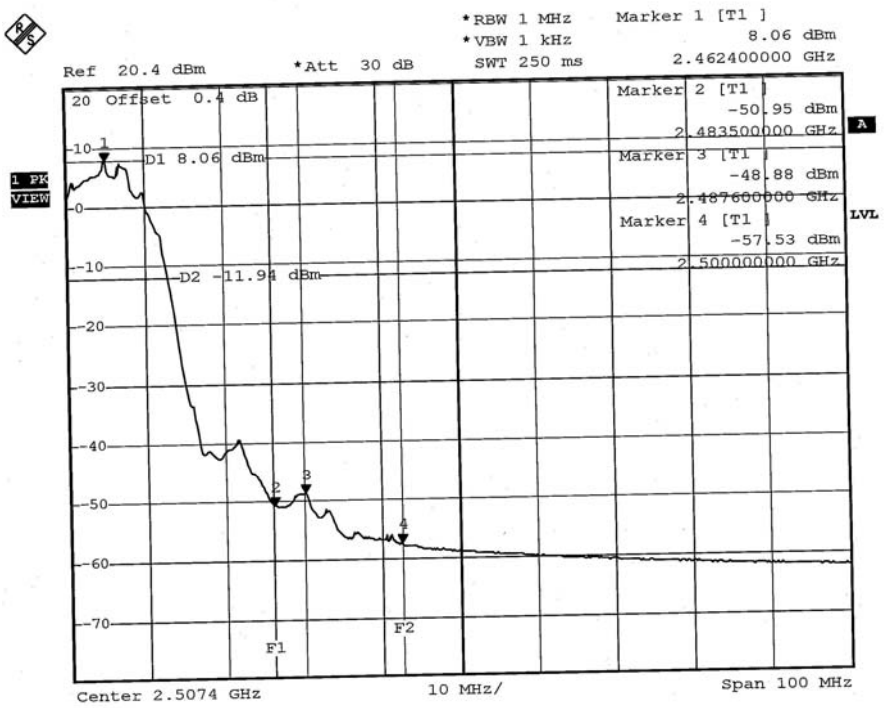
The band edge emission plot on page 59 shows 56.94dBc between carrier maximum power and local maximum emission in restrict band (2.4876GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 107.66dBuV/m (Average), so the maximum field strength in restrict band is 107.66 – 56.94 = 50.72dBuV/m, which is under 54dBuV/m limit.

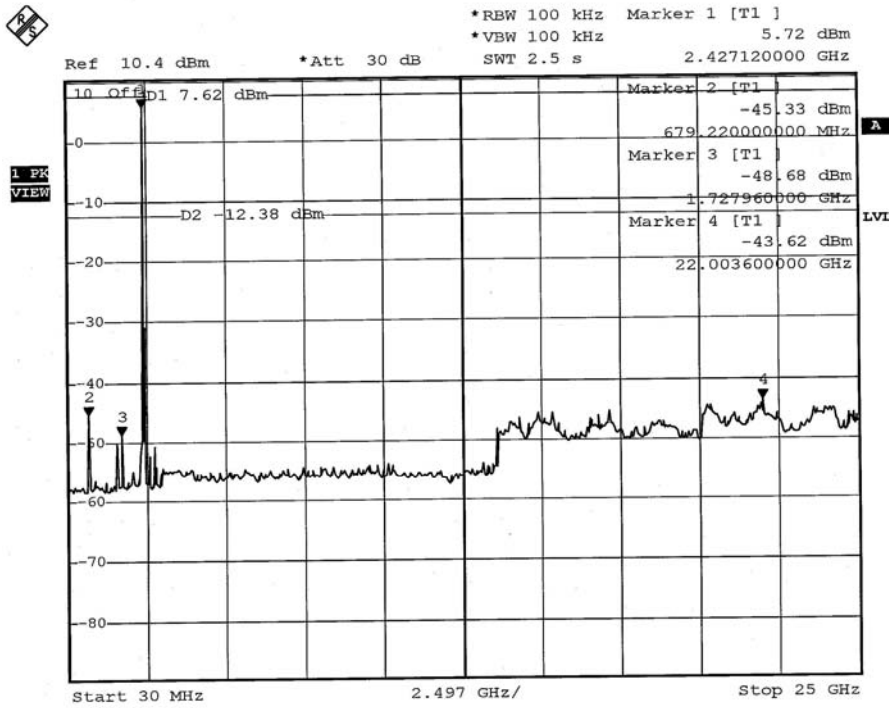

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
5.07 dBm
2.412560000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 2 [T1]
-34.21 dBm
2.397200000 GHz
Marker 3 [T1]
-47.13 dBm
2.390000000 GHz
Marker 4 [T1]
-45.37 dBm
2.388560000 GHz
D1 5.07 dBm
D2 -14.93 dBm
1 PK
VIEW
A
LVL
F2
F1
Center 2.37076 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
5.64 dBm
2.412400000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 2 [T1]
-36.20 dBm
2.396400000 GHz
Marker 3 [T1]
-49.53 dBm
2.390000000 GHz
Marker 4 [T1]
-48.33 dBm
2.386600000 GHz
D1 5.64 dBm
D2 -14.36 dBm
1 PK
VIEW
A
LVL
F2
F1
Center 2.376 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
5.08 dBm
2.377180000 GHz
Ref 10.4 dBm
*Att 20 dB
10 Offset 0.4 dB
D1 5.07 dBm
D2 -14.93 dBm
Marker 2 [T1]
-48.26 dBm
2.626880000 GHz
Marker 3 [T1]
-49.70 dBm
629.280000000 MHz
Marker 4 [T1]
-52.78 dBm
24.101080000 GHz
1 PK
VIEW
A
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
7.62 dBm
2.462400000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
D1 7.62 dBm
D2 -12.38 dBm
Marker 2 [T1]
-48.72 dBm
2.483500000 GHz
Marker 3 [T1]
-45.16 dBm
2.487600000 GHz
Marker 4 [T1]
-50.33 dBm
2.500000000 GHz
1 PK
VIEW
A
LVL
F1
F2
Center 2.505 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
8.06 dBm
2.462400000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
D1 8.06 dBm
D2 -11.94 dBm
Marker 2 [T1]
-50.95 dBm
2.483500000 GHz
Marker 3 [T1]
-48.88 dBm
2.487600000 GHz
Marker 4 [T1]
-57.53 dBm
2.500000000 GHz
1 PK
VIEW
A
LVL
F1
F2
Center 2.5074 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
5.72 dBm
2.427120000 GHz
Ref 10.4 dBm
*Att 30 dB
10 Off
D1 7.62 dBm
D2 -12.38 dBm
Marker 2 [T1]
-45.33 dBm
679.220000000 MHz
Marker 3 [T1]
-48.68 dBm
1.727960000 GHz
Marker 4 [T1]
-43.62 dBm
22.003600000 GHz
1 PK
VIEW
A
Start 30 MHz
2.497 GHz/
Stop 25 GHz

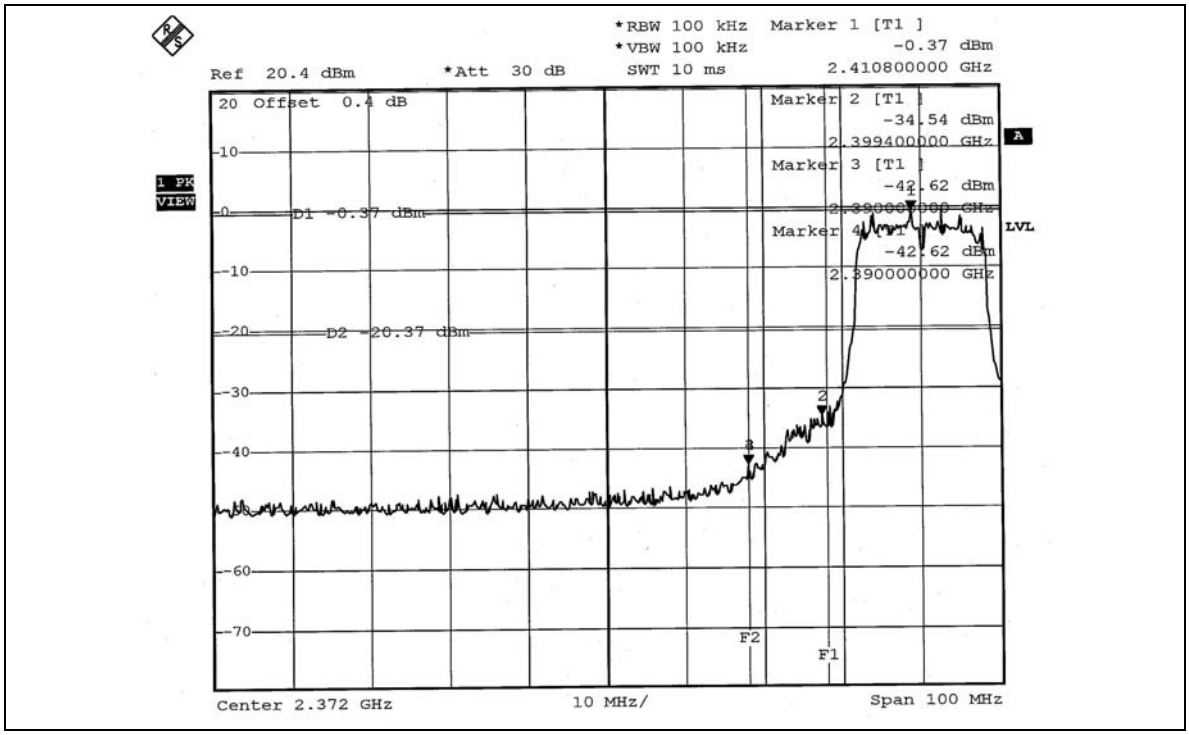
802.11g OFDM MODULATION

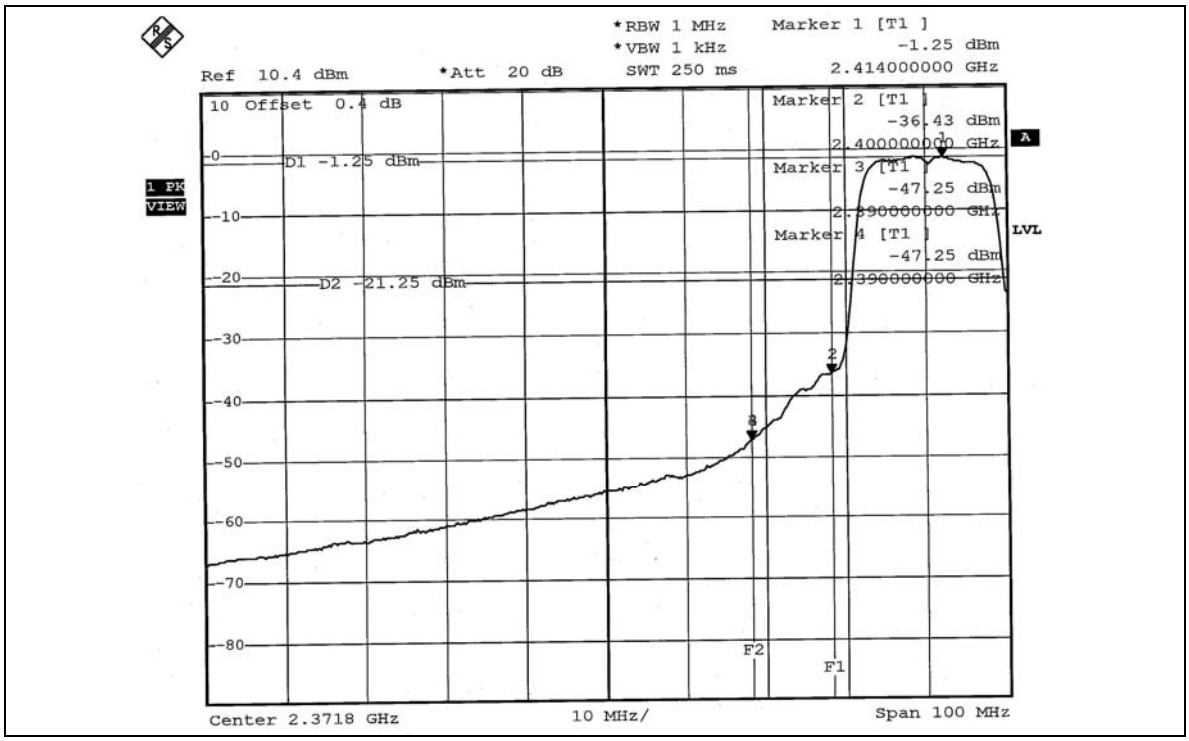
NOTE 1: The band edge emission plot on page 61 shows 42.25dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 106.74dBuV/m (Peak), so the maximum field strength in restrict band is 106.74 – 42.25 = 64.49dBuV/m, which is under 74dBuV/m limit.

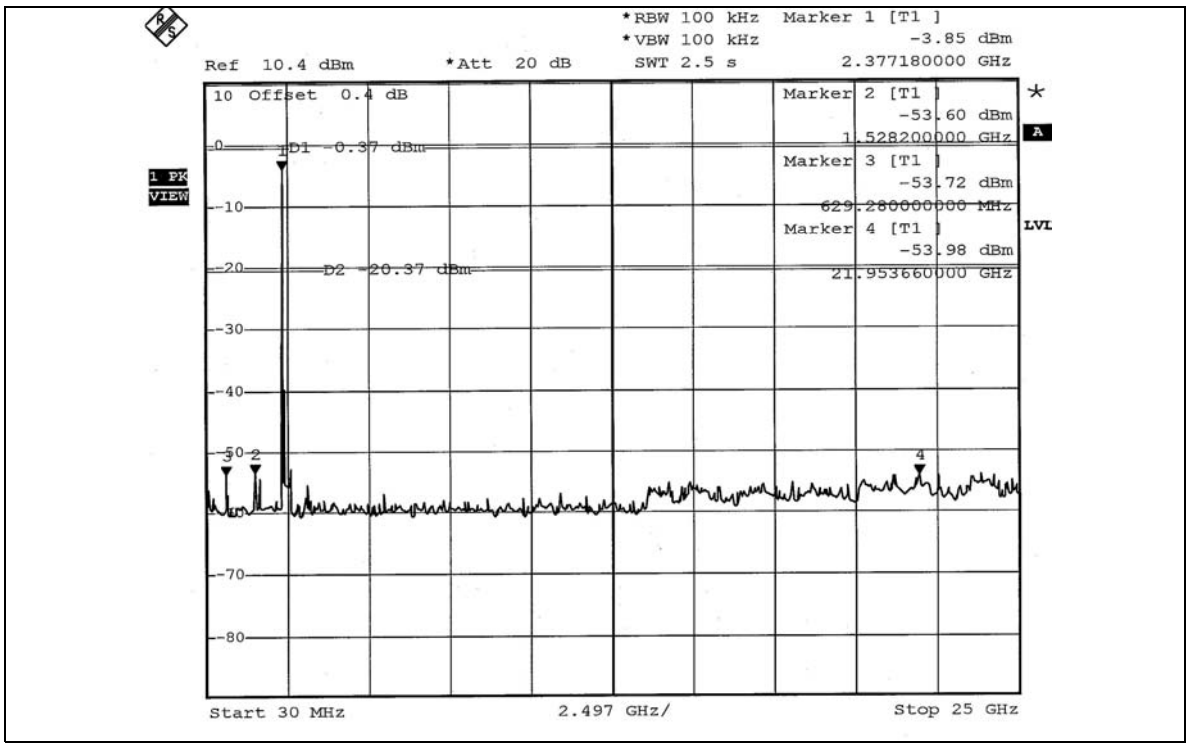
The band edge emission plot on page 61 shows 46.00dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2.7 is 96.24dBuV/m (Average), so the maximum field strength in restrict band is 96.24 – 46.00 = 50.24dBuV/m, which is under 54dBuV/m limit.

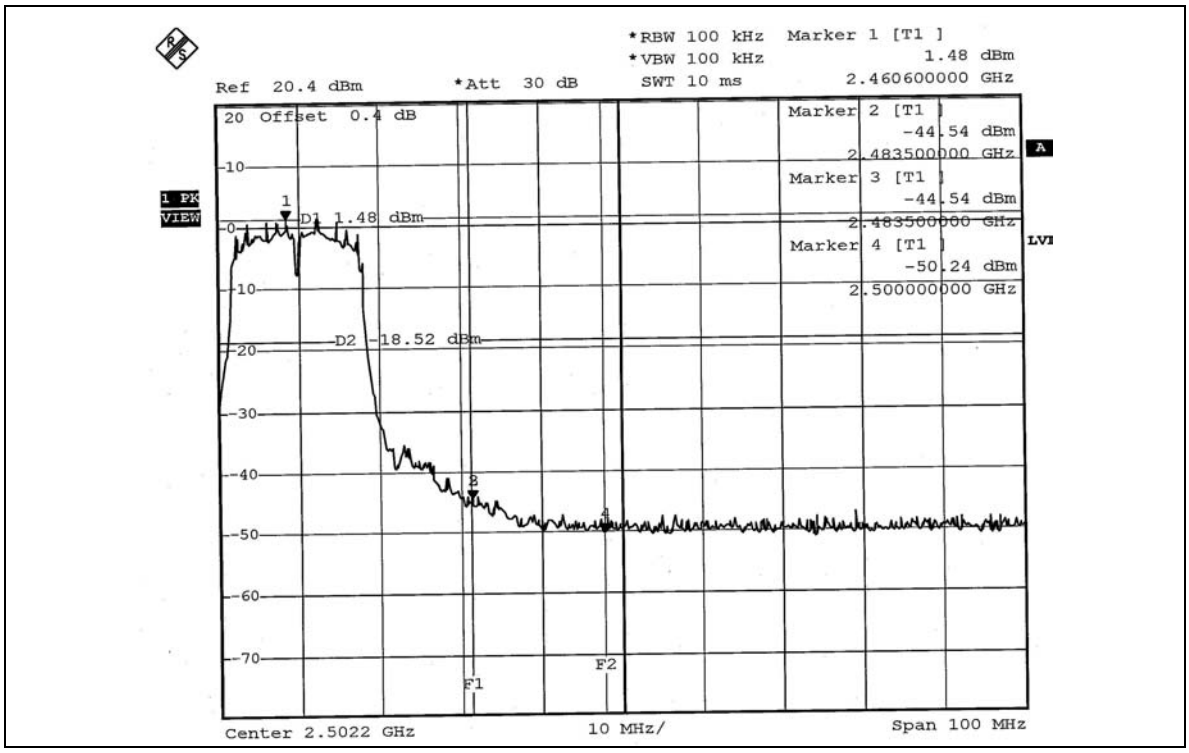
NOTE 2: The band edge emission plot on page 62 shows 46.02dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 110.74dBuV/m (Peak), so the maximum field strength in restrict band is 110.74 – 46.02 = 64.72dBuV/m, which is under 74dBuV/m limit.

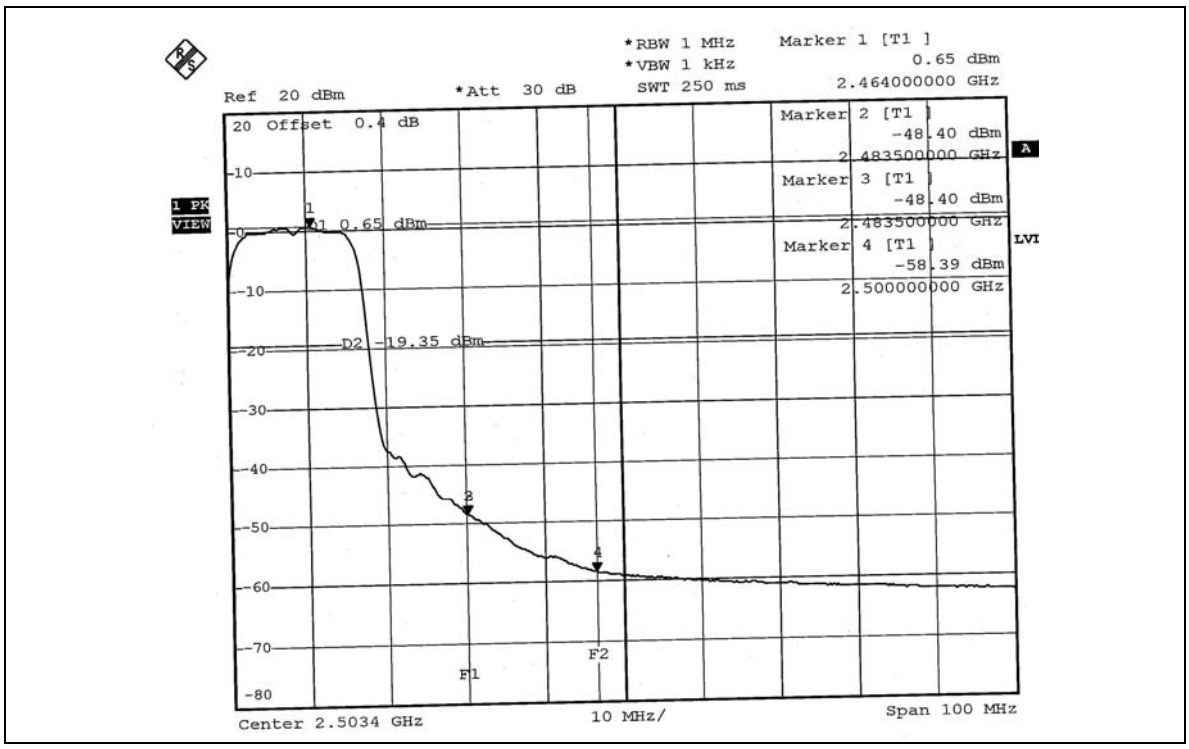
The band edge emission plot on page 63 shows 49.05dBc between carrier maximum power and local maximum emission in restrict band (2.4835GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2.7 is 100.50dBuV/m (Average), so the maximum field strength in restrict band is 100.50 – 49.05 = 51.45dBuV/m, which is under 54dBuV/m limit.

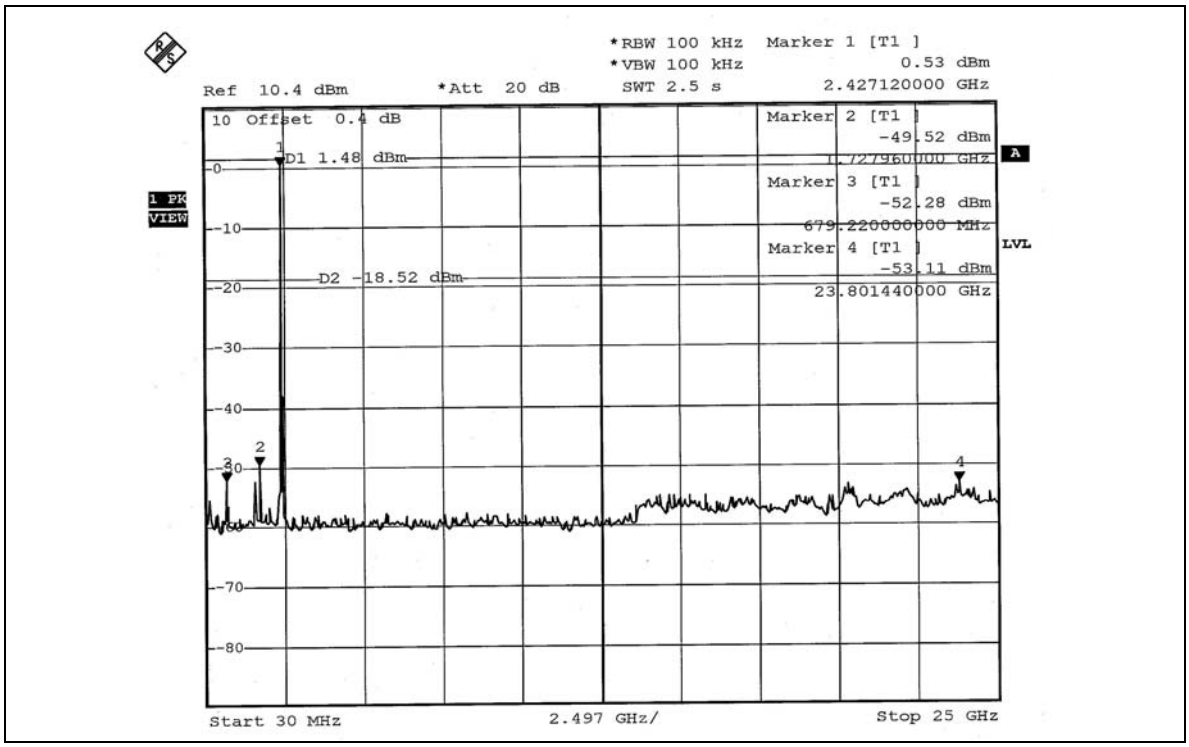

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
-0.37 dBm
2.410800000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 2 [T1]
-34.54 dBm
2.399400000 GHz
Marker 3 [T1]
-42.62 dBm
2.390000000 GHz
Marker 4 [T1]
-42.62 dBm
2.390000000 GHz
D1 -0.37 dBm
D2 -20.37 dBm
1 PK
VIEW
A
LVL
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
-1.25 dBm
2.414000000 GHz
Ref 10.4 dBm
*Att 20 dB
10 Offset 0.4 dB
Marker 2 [T1]
-36.43 dBm
2.400000000 GHz
Marker 3 [T1]
-47.25 dBm
2.390000000 GHz
Marker 4 [T1]
-47.25 dBm
2.390000000 GHz
D1 -1.25 dBm
D2 -21.25 dBm
1 PK
VIEW
A
LVL
F2
F1
Center 2.3718 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
-3.85 dBm
2.377180000 GHz
Ref 10.4 dBm
*Att 20 dB
10 Offset 0.4 dB
D1 -0.37 dBm
D2 -20.37 dBm
Marker 2 [T1]
-53.60 dBm
1.528200000 GHz
Marker 3 [T1]
-53.72 dBm
629.280000000 MHz
Marker 4 [T1]
-53.98 dBm
21.953660000 GHz
1 PK
VIEW
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
1.48 dBm
2.460600000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
D1 1.48 dBm
D2 -18.52 dBm
Marker 2 [T1]
-44.54 dBm
2.483500000 GHz
Marker 3 [T1]
-44.54 dBm
2.483500000 GHz
Marker 4 [T1]
-50.24 dBm
2.500000000 GHz
1 PK
VIEW
F1
F2
Center 2.5022 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
0.65 dBm
2.464000000 GHz
Ref 20 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 2 [T1]
-48.40 dBm
2.483500000 GHz
Marker 3 [T1]
-48.40 dBm
2.483500000 GHz
Marker 4 [T1]
-58.39 dBm
2.500000000 GHz
1 PK
VIEW
D1 0.65 dBm
D2 -19.35 dBm
F1
F2
Center 2.5034 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
0.53 dBm
2.427120000 GHz
Ref 10.4 dBm
*Att 20 dB
10 Offset 0.4 dB
Marker 2 [T1]
-49.52 dBm
1.727960000 GHz
Marker 3 [T1]
-52.28 dBm
679.220000000 MHz
Marker 4 [T1]
-53.11 dBm
23.801440000 GHz
1 PK
VIEW
D1 1.48 dBm
D2 -18.52 dBm
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5. TEST TYPES AND RESULTS (For Dual CHAIN (TX))

5.1 CONDUCTED EMISSION MEASUREMENT

5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dBμV)	
	Quasi-peak	Average
0.15 ~ 0.5	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.

5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESCS30	100291	Nov. 16, 2005
RF signal cable Woken	5D-FB	Cable-HYC01-01	Jan. 09, 2006
LISN ROHDE & SCHWARZ	ESH3-Z5	100312	Feb. 15, 2006
LISN ROHDE & SCHWARZ	ESH2-Z5	100104	Feb. 15, 2006
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 1.
3. The VCCI Site Registration No. is C-2040.

5.1.3 TEST PROCEDURES

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

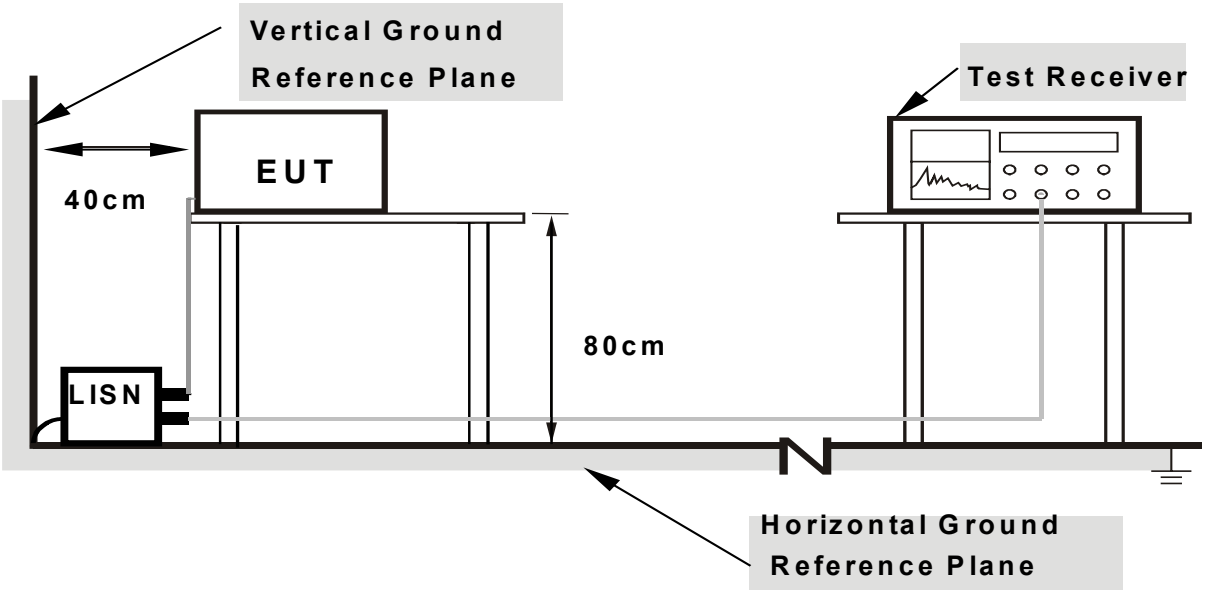
b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

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

5.1.4 DEVIATION FROM TEST STANDARD

No deviation

5.1.5 TEST SETUP



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

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

5.1.6 EUT OPERATING CONDITIONS

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.

c. The communication partner connected with EUT via “RJ45” cable and run a test program (provided by manufacturer) to enable EUT under transmission / receiving condition continuously at specific channel frequency.

d. The communication partner sent data to EUT by command "PING".

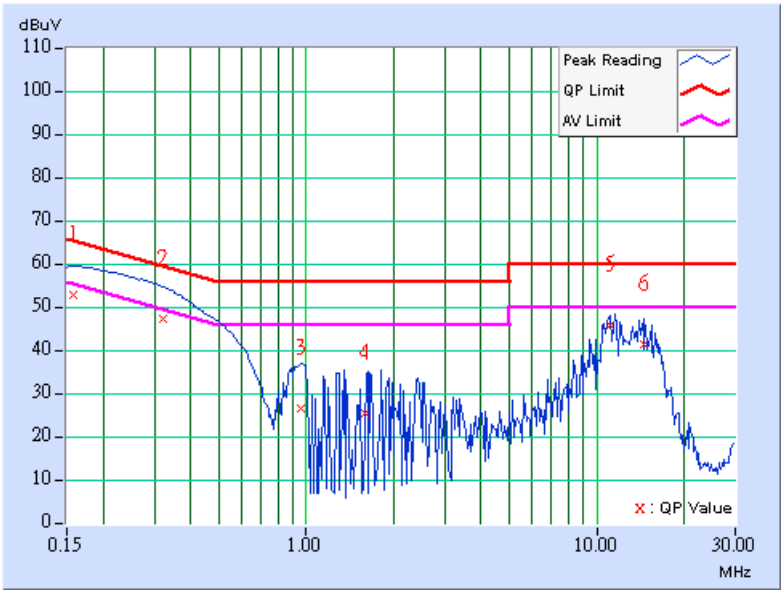
5.1.7 TEST RESULTS

CONDUCTED WORST CASE DATA

EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.158	0.11	52.28	2.52	52.39	23.63	65.59	55.59	-13.21	-31.97
2	0.322	0.11	46.89	21.71	47.00	21.82	59.66	49.66	-12.66	-27.84
3	0.959	0.23	26.00	-	26.23	-	56.00	-	-29.77	-
4	1.603	0.25	25.00	-	25.25	-	56.00	-	-30.75	-
5	11.086	0.54	45.26	36.28	45.80	36.82	60.00	50.00	-14.20	-13.18
6	14.469	0.55	40.81	30.83	41.36	31.38	60.00	50.00	-18.64	-18.62

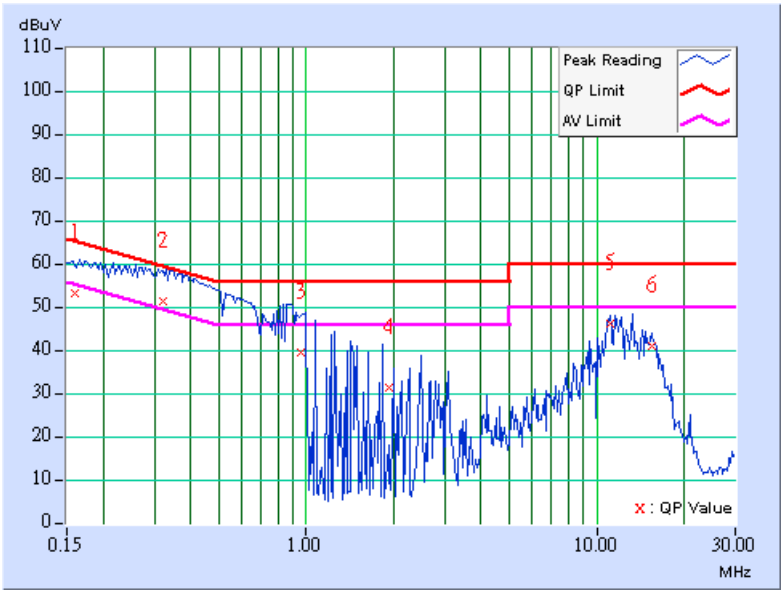
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 1	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.160	0.11	53.04	24.32	53.15	24.43	65.44	55.44	-12.30	-31.02
2	0.322	0.11	50.85	23.45	50.96	23.56	59.65	49.65	-8.69	-26.09
3	0.963	0.23	39.26	15.86	39.49	16.09	56.00	46.00	-16.51	-29.91
4	1.925	0.26	30.98	-	31.24	-	56.00	-	-24.76	-
5	11.082	0.44	45.90	37.21	46.34	37.65	60.00	50.00	-13.66	-12.35
6	15.406	0.47	40.71	29.93	41.18	30.40	60.00	50.00	-18.82	-19.60

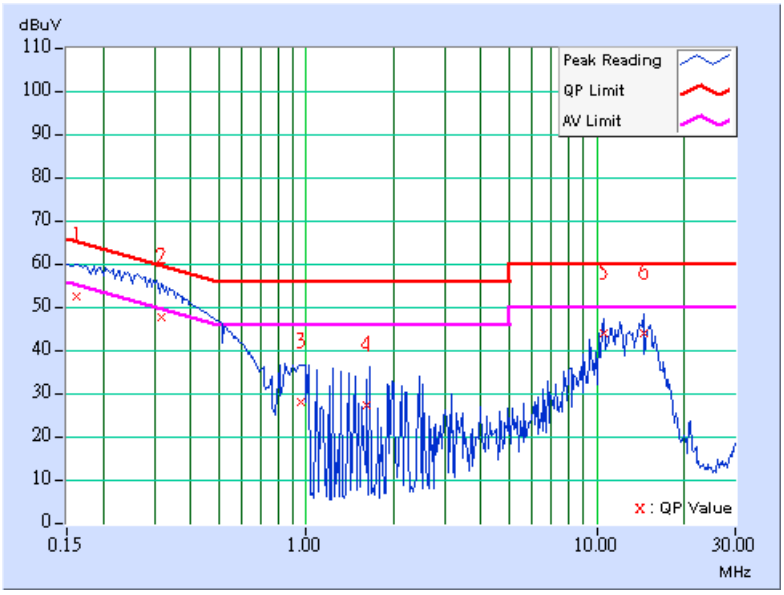
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.161	0.11	52.14	23.74	52.25	23.85	65.40	55.40	-13.15	-31.55
2	0.319	0.11	47.17	21.58	47.28	21.69	59.73	49.73	-12.45	-28.04
3	0.965	0.23	27.45	-	27.68	-	56.00	-	-28.32	-
4	1.608	0.25	26.90	-	27.15	-	56.00	-	-28.85	-
5	10.605	0.54	43.45	34.43	43.99	34.97	60.00	50.00	-16.01	-15.03
6	14.469	0.55	43.66	33.80	44.21	34.35	60.00	50.00	-15.79	-15.65

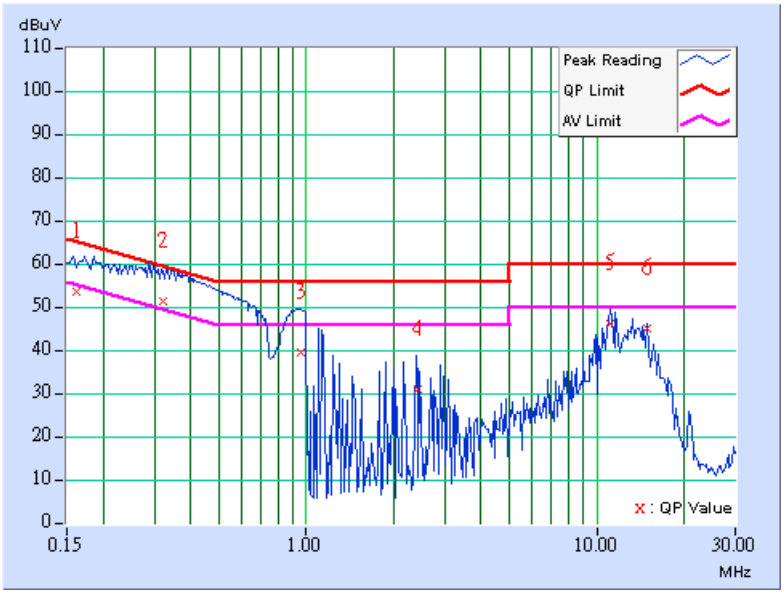
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 6	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	53.16	24.32	53.27	24.43	65.39	55.39	-12.12	-30.96
2	0.320	0.11	50.97	23.53	51.08	23.64	59.71	49.71	-8.63	-26.07
3	0.963	0.23	39.28	15.86	39.51	16.09	56.00	46.00	-16.49	-29.91
4	2.412	0.29	30.68	-	30.97	-	56.00	-	-25.03	-
5	11.086	0.44	45.92	36.88	46.36	37.32	60.00	50.00	-13.64	-12.68
6	14.942	0.45	44.60	34.57	45.05	35.02	60.00	50.00	-14.95	-14.98

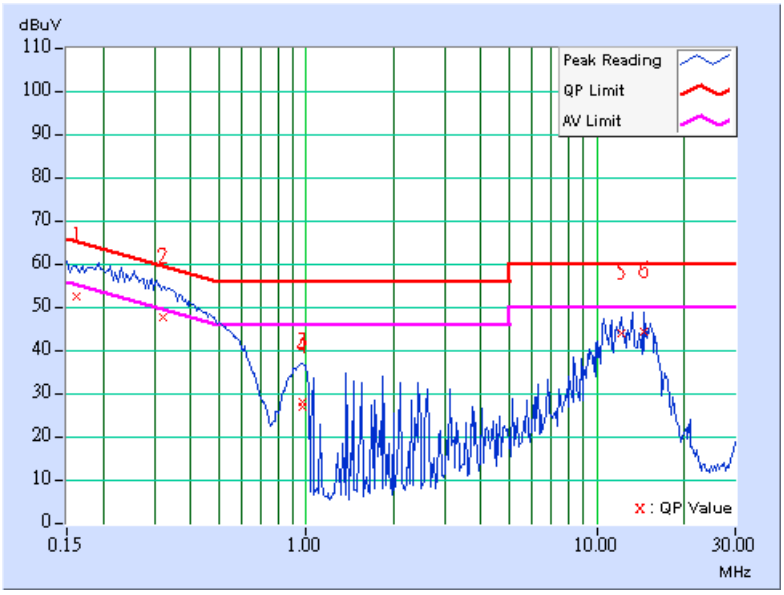
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 1
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.162	0.11	52.18	23.59	52.29	23.70	65.37	55.37	-13.08	-31.67
2	0.321	0.11	47.17	21.76	47.28	21.87	59.68	49.68	-12.40	-27.81
3	0.966	0.23	27.51	-	27.74	-	56.00	-	-28.26	-
4	0.966	0.23	26.61	-	26.84	-	56.00	-	-29.16	-
5	12.211	0.54	43.61	34.69	44.15	35.23	60.00	50.00	-15.85	-14.77
6	14.469	0.55	43.84	33.86	44.39	34.41	60.00	50.00	-15.61	-15.59

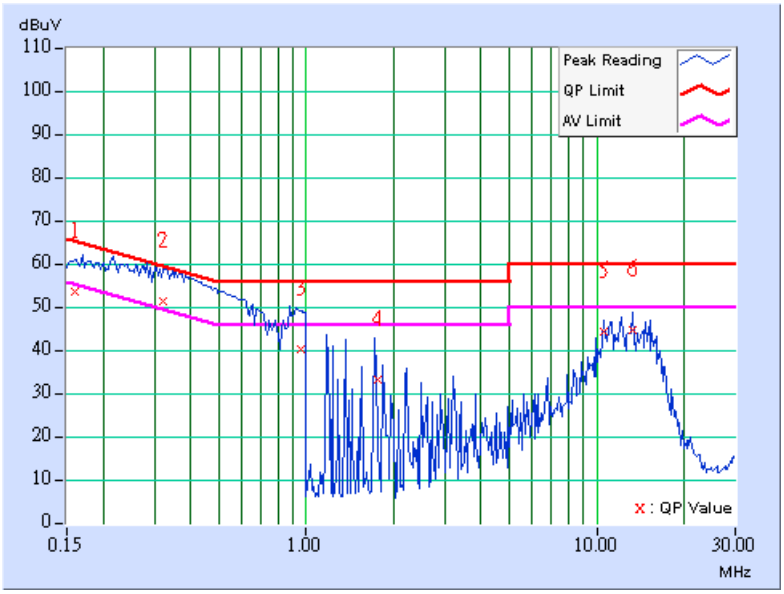
REMARKS: 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission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



EUT	Wireless-G Access Point with SRX	MEASUREMENT DETAIL	
MODEL	WAP54GX	PHASE	Line 2
CHANNEL	Channel 11	6dB BANDWIDTH	9 kHz
MODULATION TYPE	16QAM	ENVIRONMENTAL CONDITIONS	20deg. C, 60%RH, 991hPa
TRANSFER RATE	36Mbps	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Match Tsui		

No	Freq.	Corr. Factor	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
	[MHz]	(dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.159	0.11	53.30	24.39	53.41	24.50	65.50	55.50	-12.09	-31.00
2	0.321	0.11	51.17	23.67	51.28	23.78	59.68	49.68	-8.40	-25.90
3	0.963	0.23	39.95	16.08	40.18	16.31	56.00	46.00	-15.82	-29.69
4	1.766	0.26	32.87	-	33.13	-	56.00	-	-22.87	-
5	10.609	0.44	43.98	34.16	44.42	34.60	60.00	50.00	-15.58	-15.40
6	13.344	0.45	44.27	35.10	44.72	35.55	60.00	50.00	-15.28	-14.45

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



5.2 RADIATED EMISSION MEASUREMENT

5.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

FREQUENCIES (MHz)	FIELD STRENGTH (microvolts/meter)	MEASUREMENT DISTANCE (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

NOTE:

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

5.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
Test Receiver ROHDE & SCHWARZ	ESIB7	100188	Dec. 19, 2005
Spectrum Analyzer ROHDE & SCHWARZ	FSP40	100039	Nov. 21, 2005
BILOG Antenna SCHWARZBECK	VULB9168	9168-157	Jan. 22, 2006
HORN Antenna SCHWARZBECK	BBHA 9120 D	9120D-407	Jan. 16, 2006
HORN Antenna SCHWARZBECK	BBHA 9170	BBHA 9170241	Feb. 23, 2006
Preamplifier Agilent	8449B	3008A01961	Nov. 09, 2005
Preamplifier Agilent	8447D	2944A10629	Nov. 09, 2005
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218182/4	Feb. 17, 2006
RF signal cable HUBER+SUHNER	SUCOFLEX 104	218194/4	Feb. 17, 2006
Software ADT.	ADT_Radiated_V5.14	NA	NA
Antenna Tower ADT.	AT100	AT93021702	NA
Turn Table ADT.	TT100.	TT93021702	NA
Controller ADT.	SC100.	SC93021702	NA

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

2. The test was performed in HwaYa Chamber 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.

5.2.3 TEST PROCEDURES

a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 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 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.

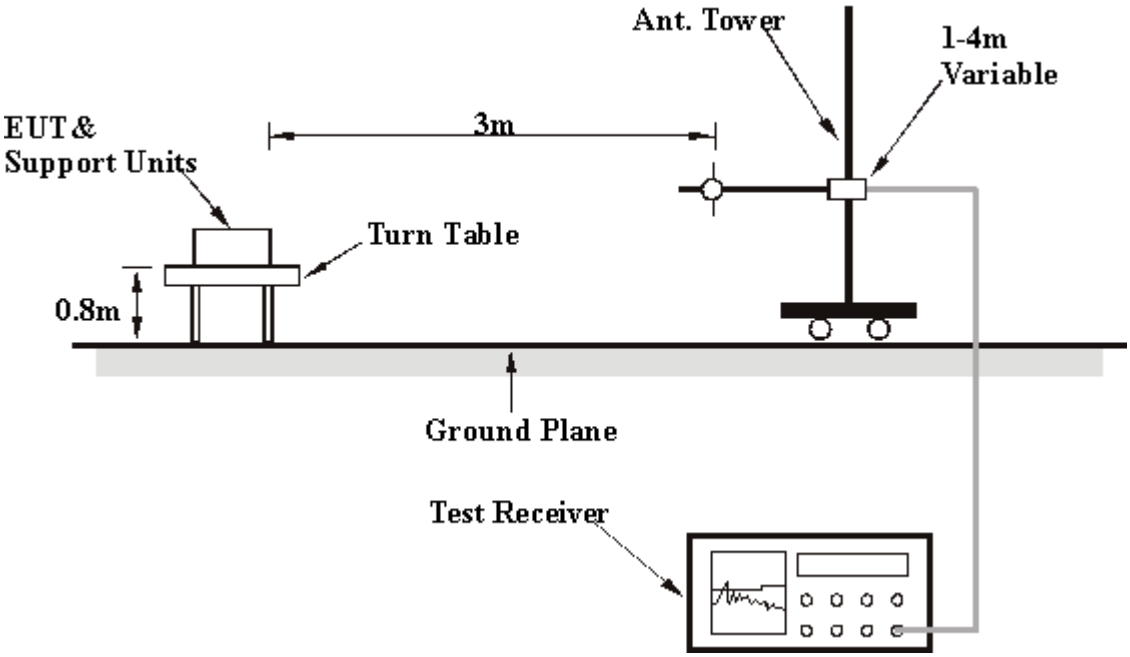
NOTE:

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 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 1kHz for Average detection (AV) at frequency above 1GHz.

5.2.4 DEVIATION FROM TEST STANDARD

No deviation

5.2.5 TEST SETUP



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

5.2.6 EUT OPERATING CONDITIONS

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.

c. The communication partner connected with EUT via “RJ45” cable and run a test program (provided by manufacturer) to enable EUT under transmission / receiving condition continuously at specific channel frequency.

d. The communication partner sent data to EUT by command "PING".

5.2.7 TEST RESULTS

RADIATED WORST CASE DATA: 802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	Below 1000MHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Quasi-Peak
MODULATION TYPE	16QAM	**ENVIRONMENTAL CONDITIONS**	25deg. C, 45%RH, 991hPa
TRANSFER RATE	36Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	61.10	26.96 QP	40.00	-13.04	1.50 H	190	13.63	13.33
2	109.70	35.88 QP	43.50	-7.62	1.50 H	232	24.14	11.74
3	144.69	29.12 QP	43.50	-14.38	1.00 H	55	14.80	14.32
4	197.17	32.35 QP	43.50	-11.15	1.25 H	358	21.00	11.35
5	241.88	35.15 QP	46.00	-10.85	1.00 H	109	22.20	12.95
6	280.76	35.10 QP	46.00	-10.90	1.00 H	256	21.03	14.07
7	348.80	29.66 QP	46.00	-16.34	1.00 H	100	14.23	15.43
8	420.72	33.45 QP	46.00	-12.55	1.75 H	223	16.28	17.16
9	560.68	30.97 QP	46.00	-15.03	1.50 H	340	11.09	19.88
10	599.56	29.23 QP	46.00	-16.77	1.50 H	325	8.35	20.88
11	632.61	33.62 QP	46.00	-12.38	1.00 H	67	12.28	21.35
12	702.59	29.51 QP	46.00	-16.49	1.00 H	88	7.20	22.31
13	751.18	34.41 QP	46.00	-11.59	1.00 H	31	10.99	23.42
14	908.64	41.86 QP	46.00	-4.14	1.75 H	88	16.66	25.19

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.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	Below 1000MHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Quasi-Peak
MODULATION TYPE	16QAM	**ENVIRONMENTAL CONDITIONS**	25deg. C, 45%RH, 991hPa
TRANSFER RATE	36Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
TESTED BY	Match Tsui		

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	59.16	37.89 QP	40.00	-2.11	1.00 V	133	24.35	13.54
2	94.15	27.22 QP	43.50	-16.28	1.00 V	310	16.94	10.28
3	138.86	31.22 QP	43.50	-12.28	1.25 V	115	17.08	14.13
4	195.23	32.68 QP	43.50	-10.82	1.00 V	205	21.17	11.51
5	241.88	29.85 QP	46.00	-16.15	1.25 V	217	16.91	12.95
6	278.82	35.79 QP	46.00	-10.21	2.00 V	82	21.78	14.01
7	420.72	33.75 QP	46.00	-12.25	1.25 V	214	16.59	17.16
8	560.68	29.84 QP	46.00	-16.16	1.00 V	274	9.96	19.88
9	628.72	29.02 QP	46.00	-16.98	1.00 V	253	7.73	21.29
10	700.64	33.92 QP	46.00	-12.08	1.75 V	46	11.66	22.26
11	751.18	31.41 QP	46.00	-14.59	1.50 V	64	7.99	23.42

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.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 1	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	16QAM	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	36Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1680.00	43.37 PK	74.00	-30.63	1.21 H	179	15.26	28.10
1	1680.00	36.36 AV	54.00	-17.64	1.21 H	179	8.25	28.10
2	2390.00	54.15 PK	74.00	-19.85	1.49 H	358	23.18	30.97
2	2390.00	44.80 AV	54.00	-9.20	1.49 H	358	13.83	30.97
3	*2412.00	101.45 PK			1.49 H	358	70.39	31.06
3	*2412.00	92.10 AV			1.49 H	358	61.04	31.06
4	4824.00	45.10 PK	74.00	-28.90	1.18 H	21	8.67	36.43
4	4824.00	32.58 AV	54.00	-21.42	1.18 H	21	-3.85	36.43

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	1680.00	47.09 PK	74.00	-26.91	1.00 V	162	18.98	28.10
1	1680.00	42.11 AV	54.00	-11.89	1.00 V	162	14.00	28.10
2	2052.00	54.10 PK	74.00	-19.90	1.05 V	194	24.52	29.58
2	2052.00	38.78 AV	54.00	-15.22	1.05 V	194	9.20	29.58
3	2390.00	64.17 PK	74.00	-9.83	1.11 V	348	33.20	30.97
3	2390.00	51.40 AV	54.00	-2.60	1.11 V	348	20.43	30.97
4	*2412.00	113.21 PK			1.11 V	348	82.15	31.06
4	*2412.00	101.30 AV			1.11 V	348	70.24	31.06
5	2628.00	56.14 PK	74.00	-17.86	1.20 V	104	24.44	31.70
5	2628.00	47.05 AV	54.00	-6.95	1.20 V	104	15.35	31.70
6	4824.00	47.74 PK	74.00	-26.26	1.07 V	24	11.31	36.43
6	4824.00	34.97 AV	54.00	-19.03	1.07 V	24	-1.46	36.43

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 6	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	16QAM	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	36Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1740.00	45.96 PK	74.00	-28.04	1.18 H	175	17.75	28.21
1	1740.00	40.58 AV	54.00	-13.42	1.18 H	175	12.37	28.21
2	*2437.00	105.47 PK			1.08 H	168	74.30	31.17
2	*2437.00	95.83 AV			1.08 H	168	64.66	31.17
3	4874.00	45.12 PK	74.00	-28.88	1.20 H	163	8.58	36.54
3	4874.00	32.82 AV	54.00	-21.18	1.20 H	163	-3.72	36.54

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	1740.00	47.93 PK	74.00	-26.07	1.00 V	257	19.72	28.21
1	1740.00	42.50 AV	54.00	-11.50	1.00 V	257	14.29	28.21
2	2050.00	64.84 PK	74.00	-9.16	1.29 V	360	35.27	29.57
2	2050.00	41.02 AV	54.00	-12.98	1.29 V	360	11.45	29.57
3	*2437.00	115.73 PK			1.08 V	114	84.56	31.17
3	*2437.00	105.20 AV			1.08 V	114	74.03	31.17
4	2784.00	56.34 PK	74.00	-17.66	1.13 V	100	24.38	31.96
4	2784.00	46.50 AV	54.00	-7.50	1.13 V	100	14.54	31.96
5	4874.00	50.30 PK	74.00	-23.70	1.05 V	28	13.76	36.54
5	4874.00	37.93 AV	54.00	-16.07	1.05 V	28	1.39	36.54

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.
5. " * ": Fundamental frequency.

EUT	Wireless-G Access Point with SRX	**MEASUREMENT DETAIL**	
MODEL	WAP54GX	**FREQUENCY RANGE**	1 ~ 25GHz
CHANNEL	Channel 11	**DETECTOR FUNCTION**	Peak (PK) Average (AV)
MODULATION TYPE	16QAM	**ENVIRONMENTAL CONDITIONS**	25deg. C, 70%RH, 991hPa
TRANSFER RATE	36Mbps	**INPUT POWER (SYSTEM)**	120Vac, 60 Hz
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	1760.00	45.33 PK	74.00	-28.67	1.18 H	164	17.09	28.24
1	1760.00	40.99 AV	54.00	-13.01	1.18 H	164	12.75	28.24
2	*2462.00	102.87 PK			1.24 H	12	71.59	31.28
2	*2462.00	92.66 AV			1.24 H	12	61.38	31.28
3	2483.50	60.93 PK	74.00	-13.07	1.24 H	12	29.56	31.37
3	2483.50	47.47 AV	54.00	-6.53	1.24 H	12	16.10	31.37
4	4924.00	45.20 PK	74.00	-28.80	1.20 H	12	8.54	36.66
4	4924.00	32.65 AV	54.00	-21.35	1.20 H	12	-4.01	36.66

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	1760.00	46.81 PK	74.00	-27.19	1.27 V	205	18.57	28.24
1	1760.00	43.16 AV	54.00	-10.84	1.27 V	205	14.92	28.24
2	2049.00	69.17 PK	74.00	-4.83	1.00 V	204	39.60	29.57
2	2049.00	42.06 AV	54.00	-11.94	1.00 V	204	12.49	29.57
3	*2462.00	112.72 PK			1.11 V	6	81.44	31.28
3	*2462.00	101.74 AV			1.11 V	6	70.46	31.28
4	2483.50	66.57 PK	74.00	-7.43	1.11 V	6	35.20	31.37
4	**2483.50**	**52.30 AV**	**54.00**	**-1.70**	**1.11 V**	**6**	**20.93**	**31.37**
5	4924.00	47.92 PK	74.00	-26.08	1.17 V	309	11.26	36.66
5	4924.00	35.23 AV	54.00	-18.77	1.17 V	309	-1.43	36.66

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.
5. " * ": Fundamental frequency.

5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

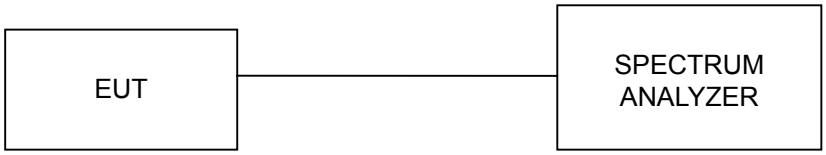
5.3.3 TEST PROCEDURE

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

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



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

5.3.6 EUT OPERATING CONDITIONS

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

5. 3.7 TEST RESULTS

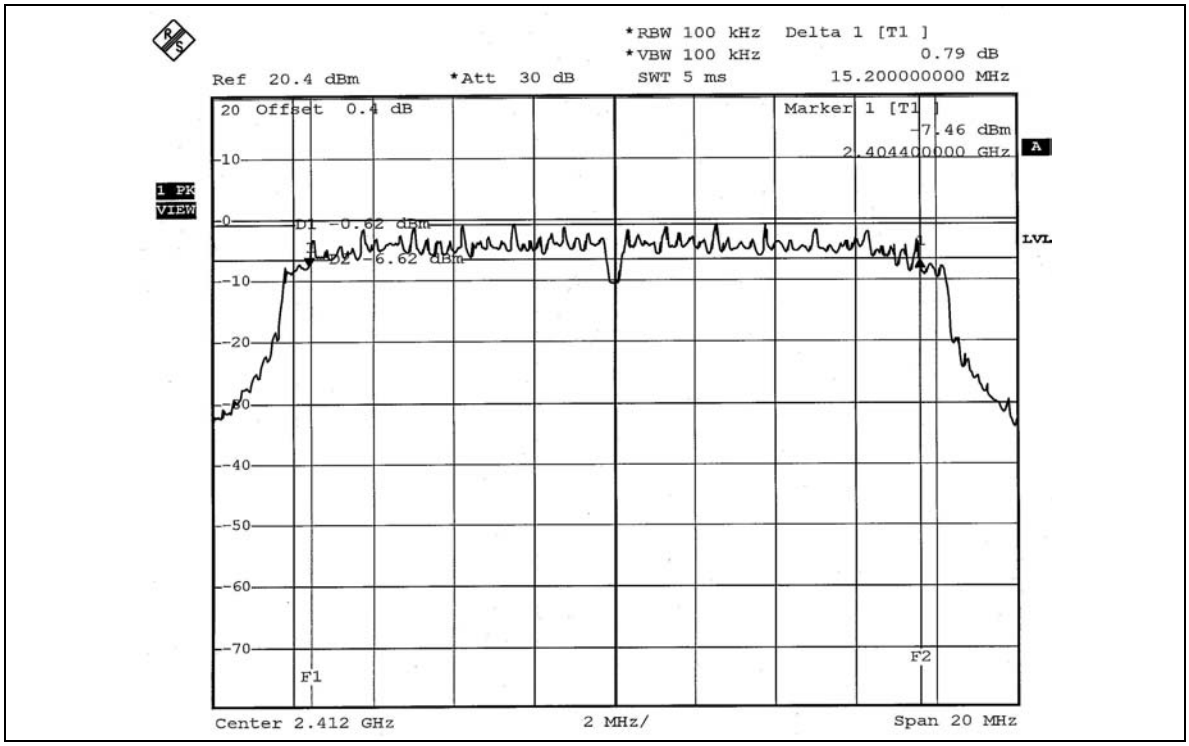
802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	16QAM	**TRANSFER RATE**	36Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

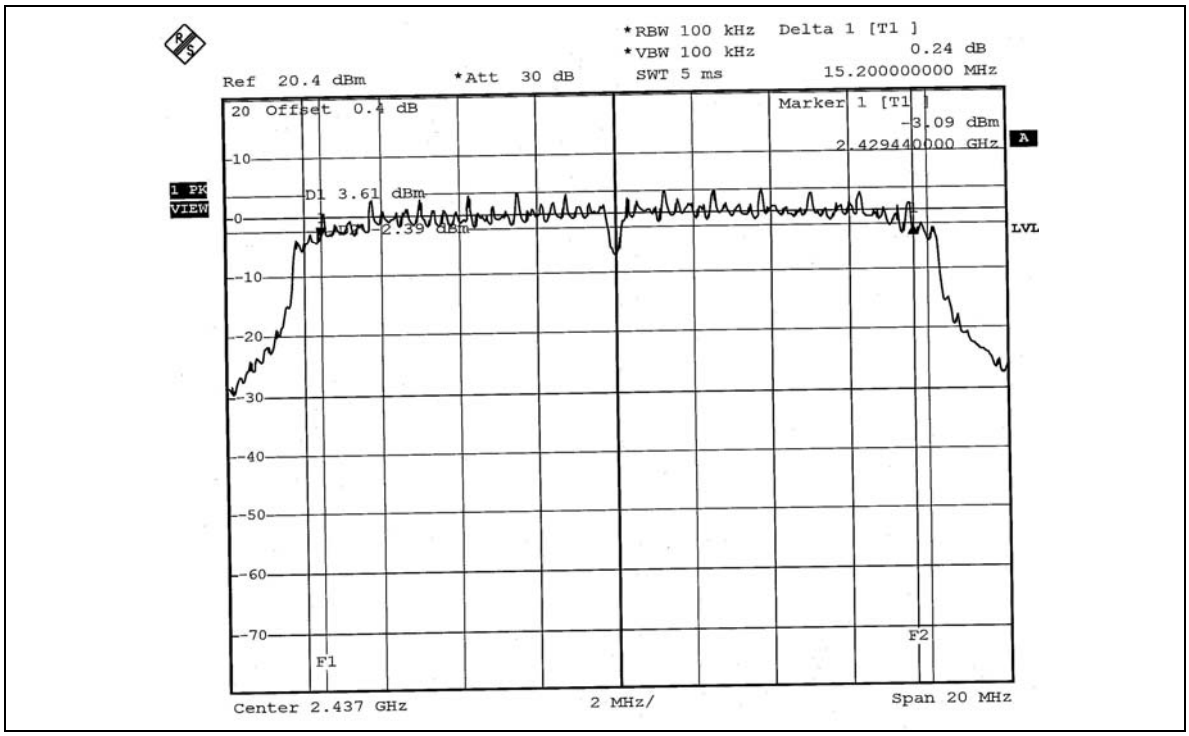
CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)		MINIMUM LIMIT (MHz)	PASS/FAIL
		CHAIN 0	CHAIN 1		
1	2412	15.20	15.20	0.5	PASS
6	2437	15.20	15.20	0.5	PASS
11	2462	15.20	15.20	0.5	PASS

FOR CHAIN 0:

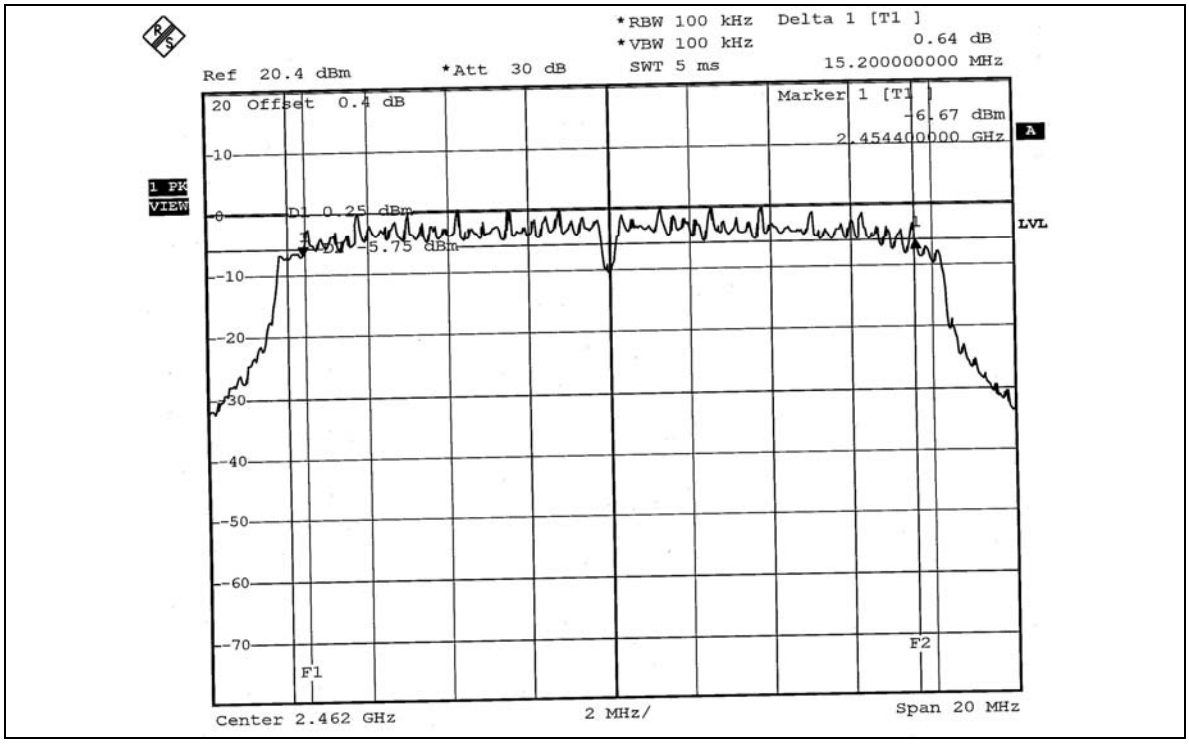
CH1



CH6

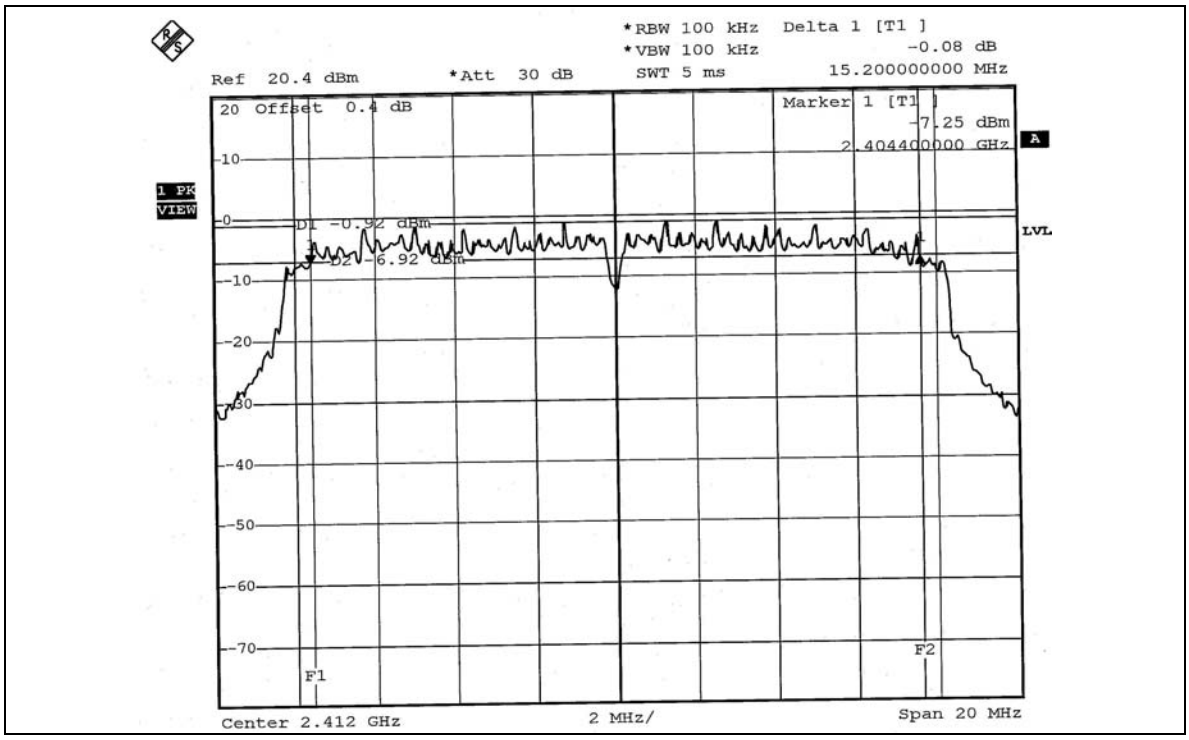


CH11

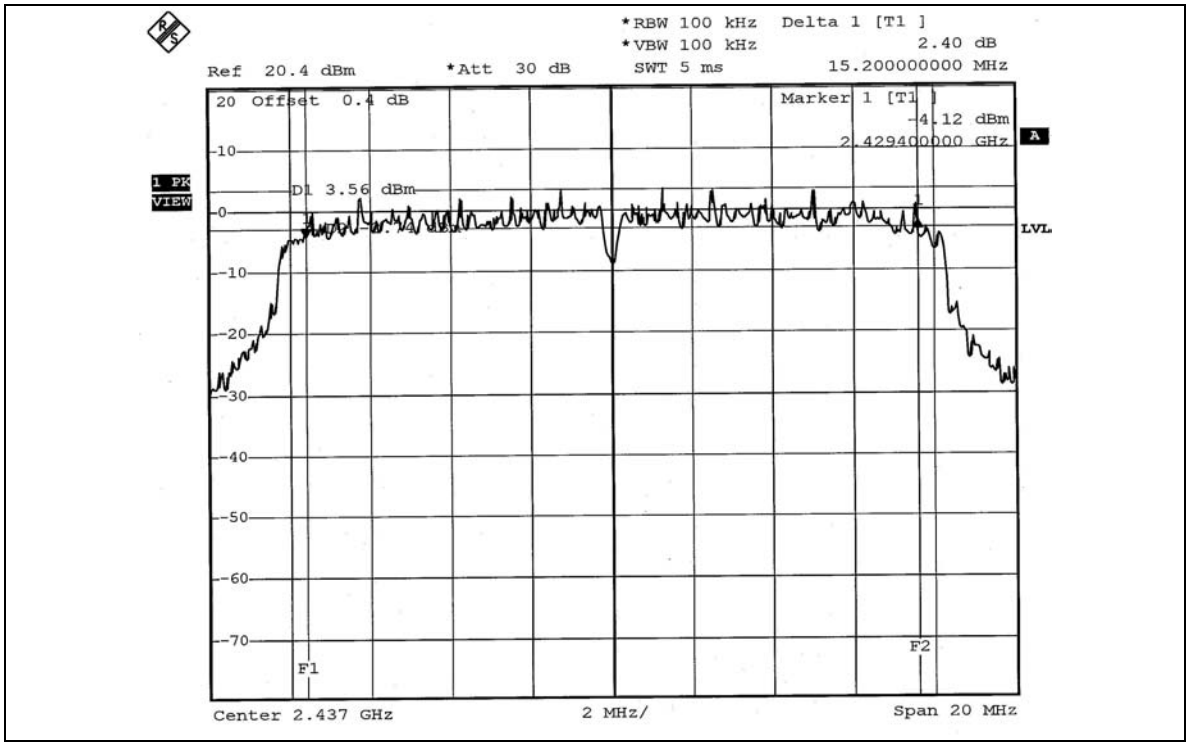


FOR CHAIN 1:

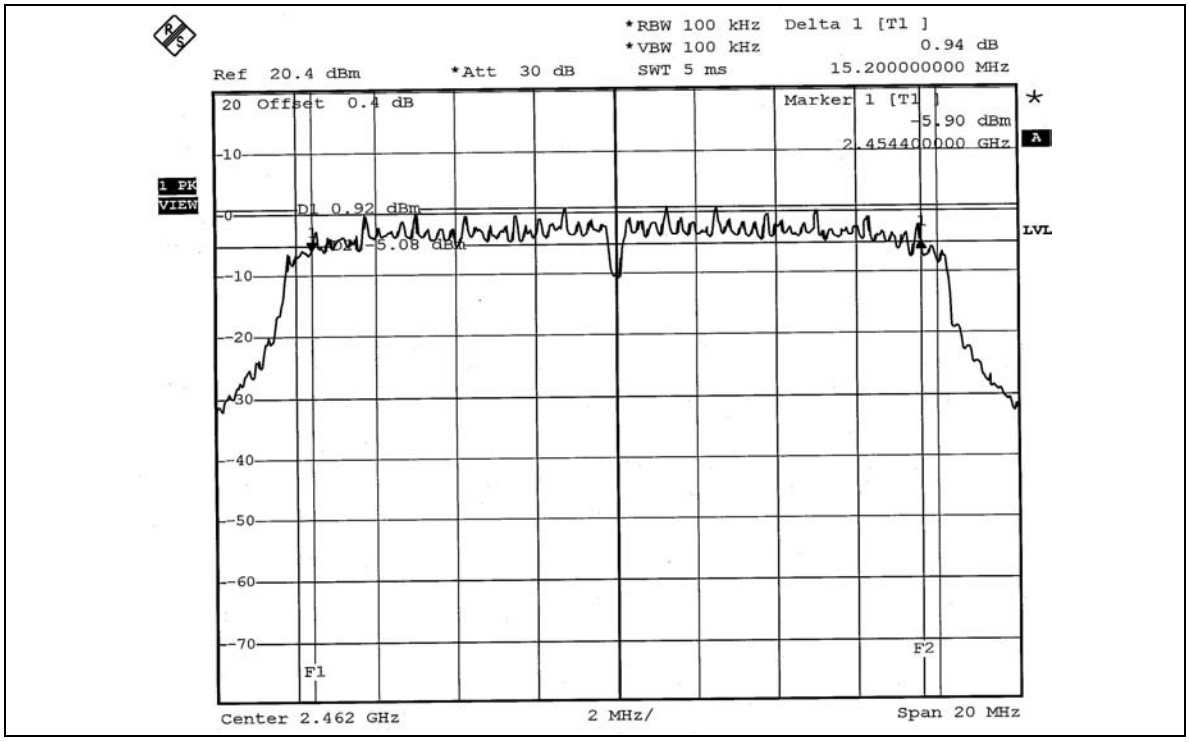
CH1



CH6


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
2.40 dB
15.200000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-4.12 dBm
2.429400000 GHz
D1 3.56 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.437 GHz
2 MHz/
Span 20 MHz

CH11


*RBW 100 kHz
*VBW 100 kHz
SWT 5 ms
Delta 1 [T1]
0.94 dB
15.200000000 MHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
Marker 1 [T1]
-5.90 dBm
2.454400000 GHz
D1 0.92 dBm
-5.08 dBm
1 PK
VIEW
A
LVL
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz

5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 06, 2005
TEKTRONIX OSCILLOSCOPE	TDS 220	C019167	Feb. 01, 2006
NARDA DETECTOR	4503A	FSCM99899	NA

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

5.4.3 TEST PROCEDURES

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

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.3.6

5.4.7 TEST RESULTS

802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	16QAM	**TRANSFER RATE**	36Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)		PEAK POWER OUTPUT (dBm)		TOTAL PEAK POWER (mW)	TOTAL PEAK POWER (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
		CHAIN 0	CHAIN 1	CHAIN 0	CHAIN 1				
1	2412	28.510	28.249	14.55	14.51	56.759	17.54	30	PASS
6	2437	50.933	50.234	17.07	17.01	101.167	20.05	30	PASS
11	2462	40.365	40.272	16.06	16.05	80.637	19.07	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

5.5.3 TEST PROCEDURE

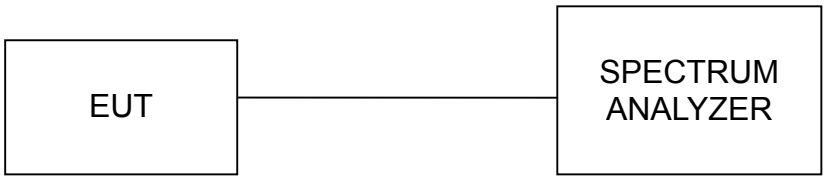
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3kHz RBW and 30kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3kHz for a full response of the mixer in the spectrum analyzer.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITIONS

Same as 4.3.6

5.5.7 TEST RESULTS

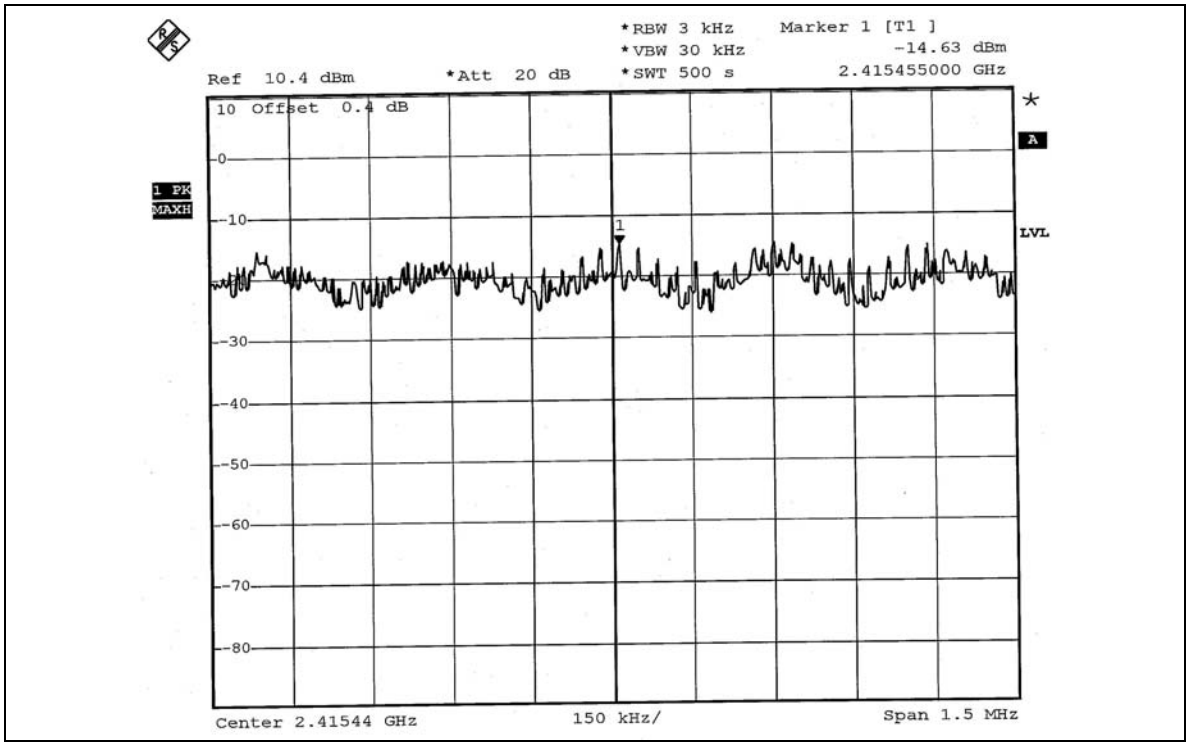
802.11g OFDM MODULATION

EUT	Wireless-G Access Point with SRX	**MODEL**	WAP54GX
MODULATION TYPE	16QAM	**TRANSFER RATE**	36Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	26deg. C, 64%RH, 991hPa
TESTED BY	Match Tsui		

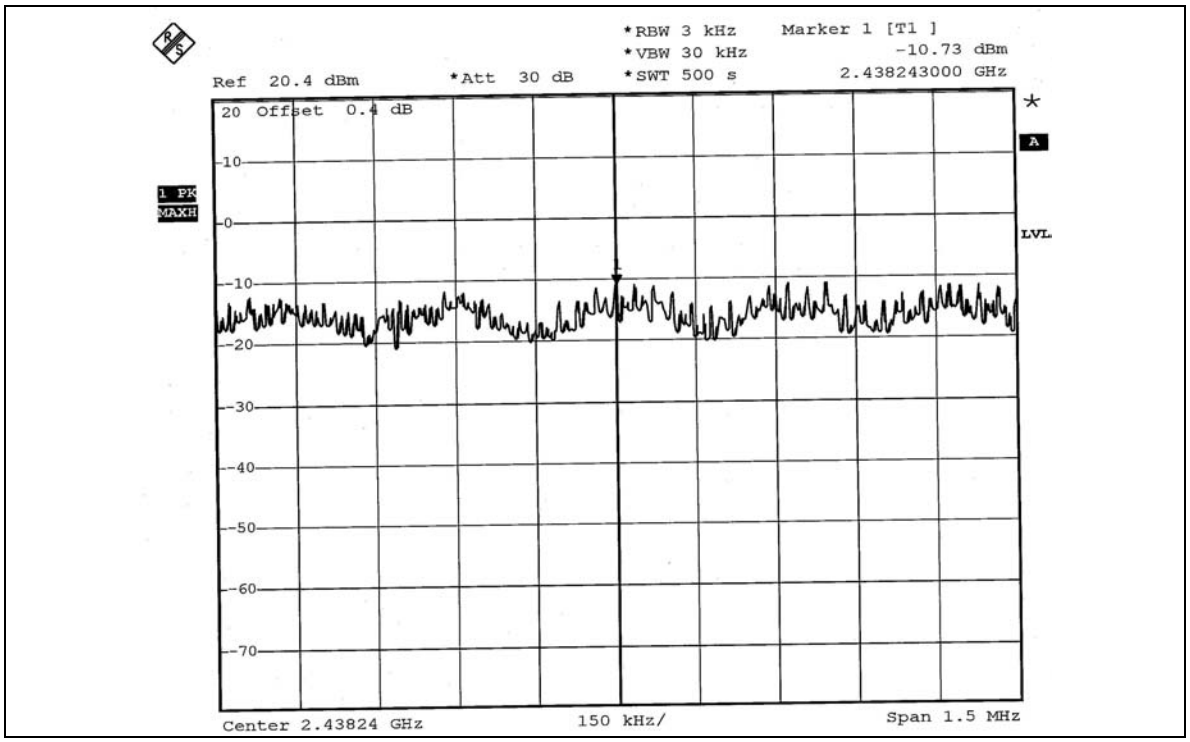
CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)		MAXIMUM LIMIT (dBm)	PASS/FAIL
		CHAIN 0	CHAIN 1		
1	2412	-14.63	-14.97	8	PASS
6	2437	-10.73	-10.93	8	PASS
11	2462	-12.68	-12.89	8	PASS

FOR CHAIN 0:

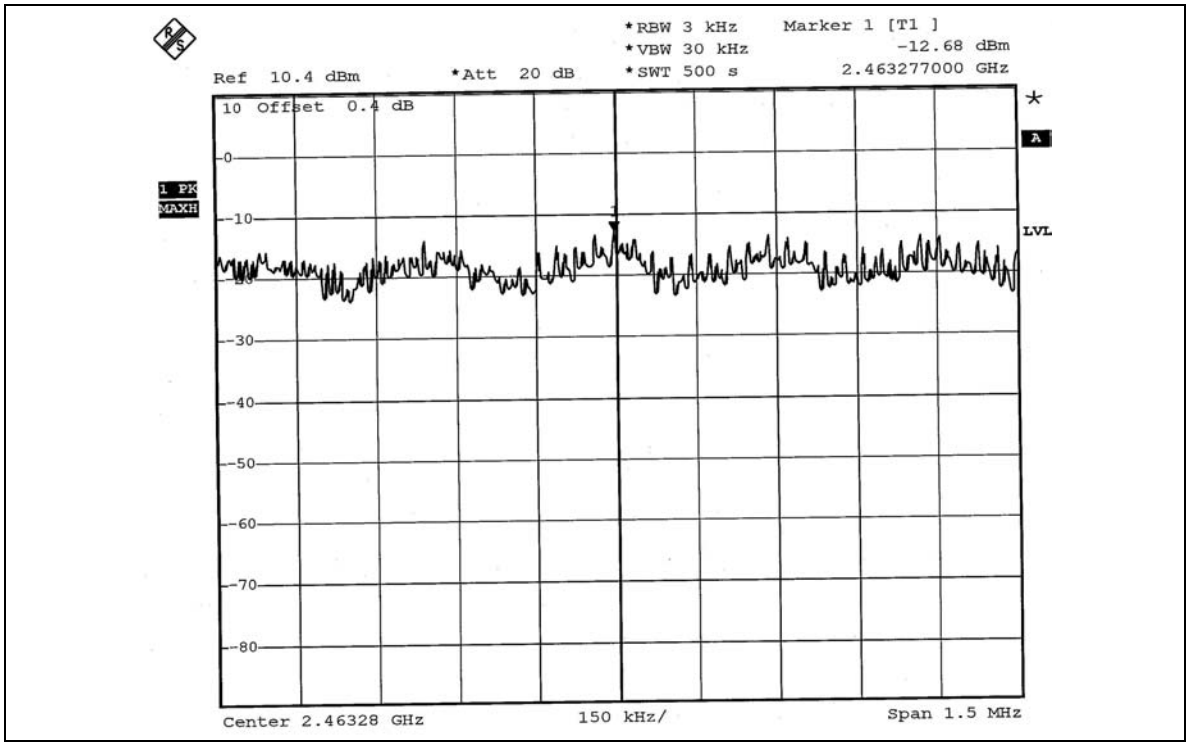
CH1



CH6

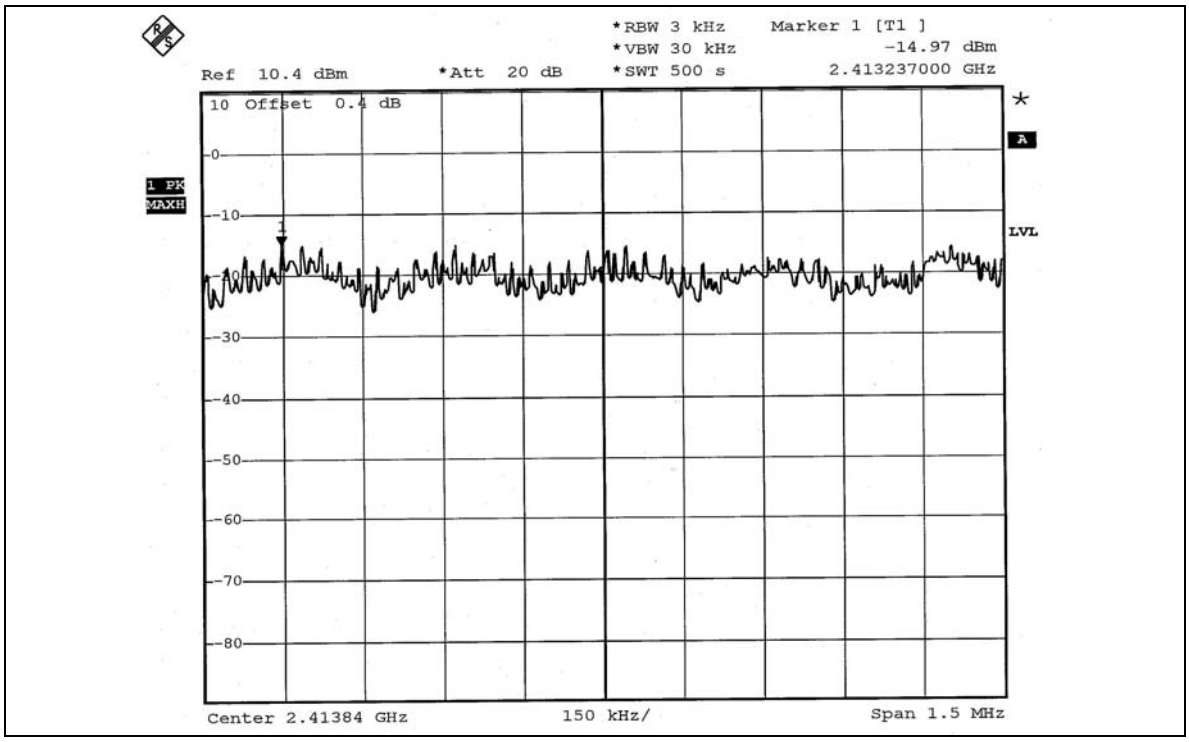


CH11

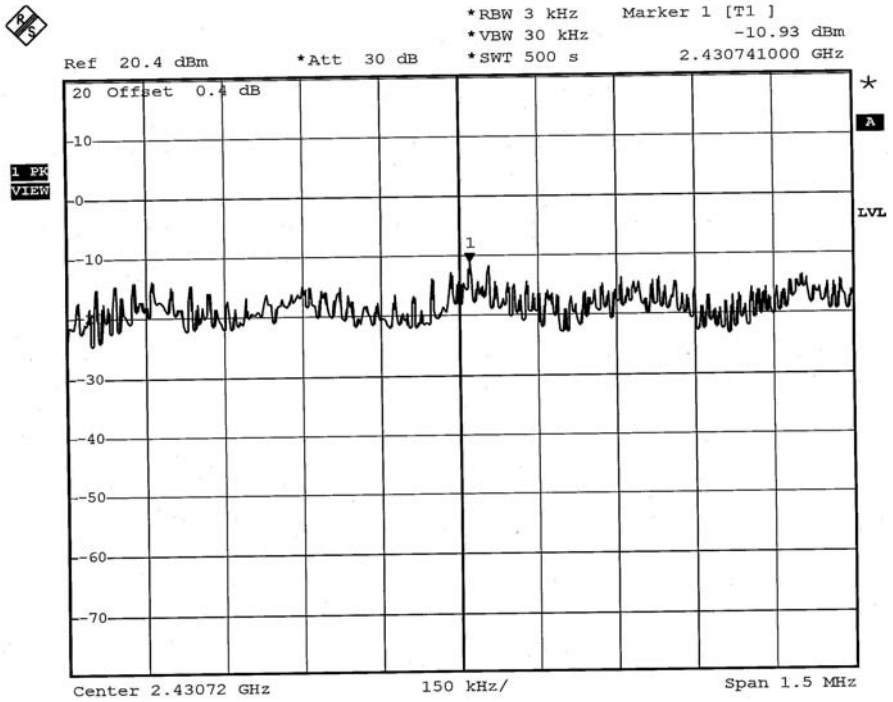


FOR CHAIN 1:

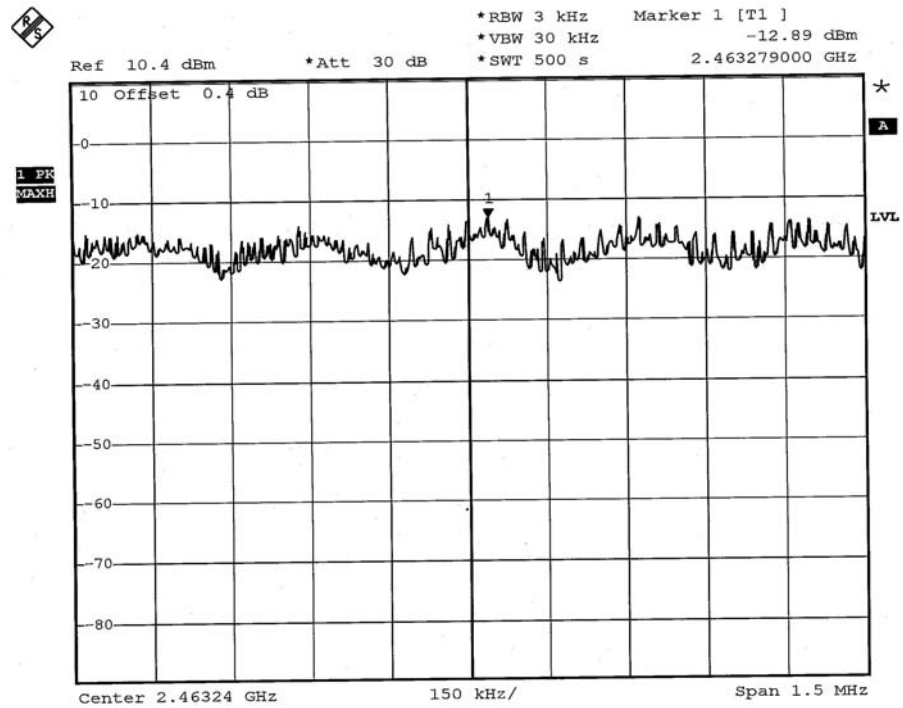
CH1



CH6


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-10.93 dBm
2.430741000 GHz
Ref 20.4 dBm
*Att 30 dB
20 Offset 0.4 dB
1 PK
VIEW
A
LVL
Center 2.43072 GHz
150 kHz/
Span 1.5 MHz

CH11


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.89 dBm
2.463279000 GHz
Ref 10.4 dBm
*Att 30 dB
10 Offset 0.4 dB
1 PK
MAXH
A
LVL
Center 2.46324 GHz
150 kHz/
Span 1.5 MHz

5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

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

5.6.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

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

5.6.3 TEST PROCEDURE

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 1 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.

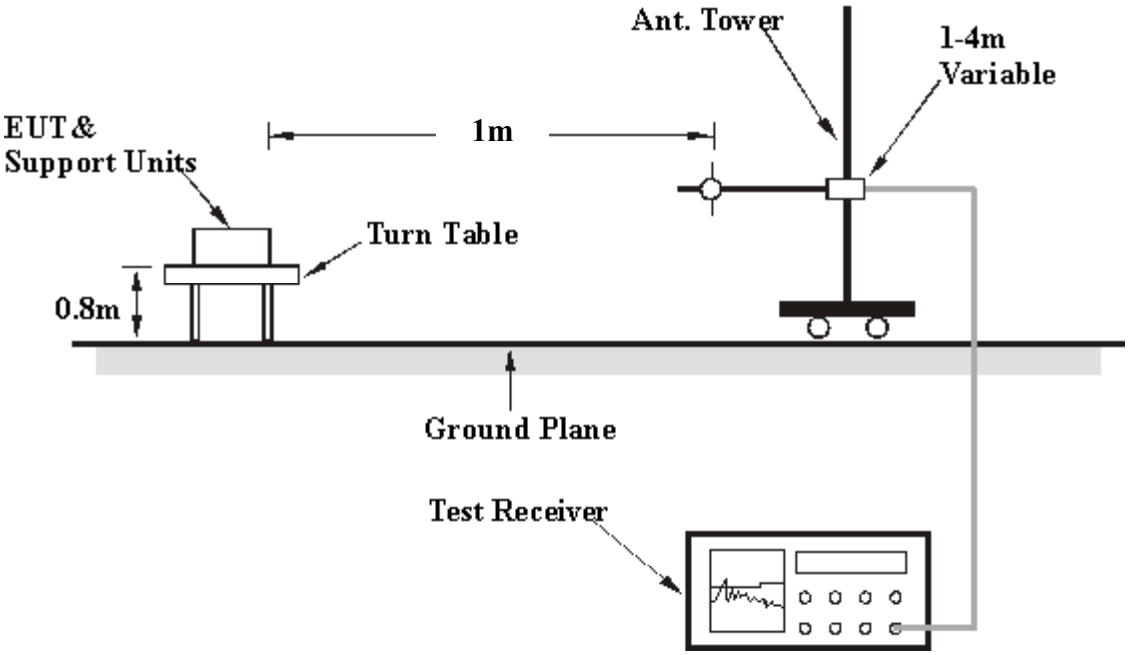
d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

e. Set both RBW and VBW of spectrum analyzer to 100kHz with suitable frequency span including 100MHz bandwidth from band edge. The band edges was measured and recorded.

The spectrum plots (Peak RBW = VBW = 100kHz; Average RBW = 1MHz, VBW = 1kHz)

NOTE: The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 1kHz for Average detection (AV) at frequency above 1GHz.

5.6.4 TEST SETUP



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

5.6.5 DEVIATION FROM TEST STANDARD

No deviation

5.6.6 EUT OPERATING CONDITION

Same as Item 4.3.6

5.6.7 TEST RESULTS

The spectrum plots are attached on the following 18 images. D2 line indicates the highest level, and D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

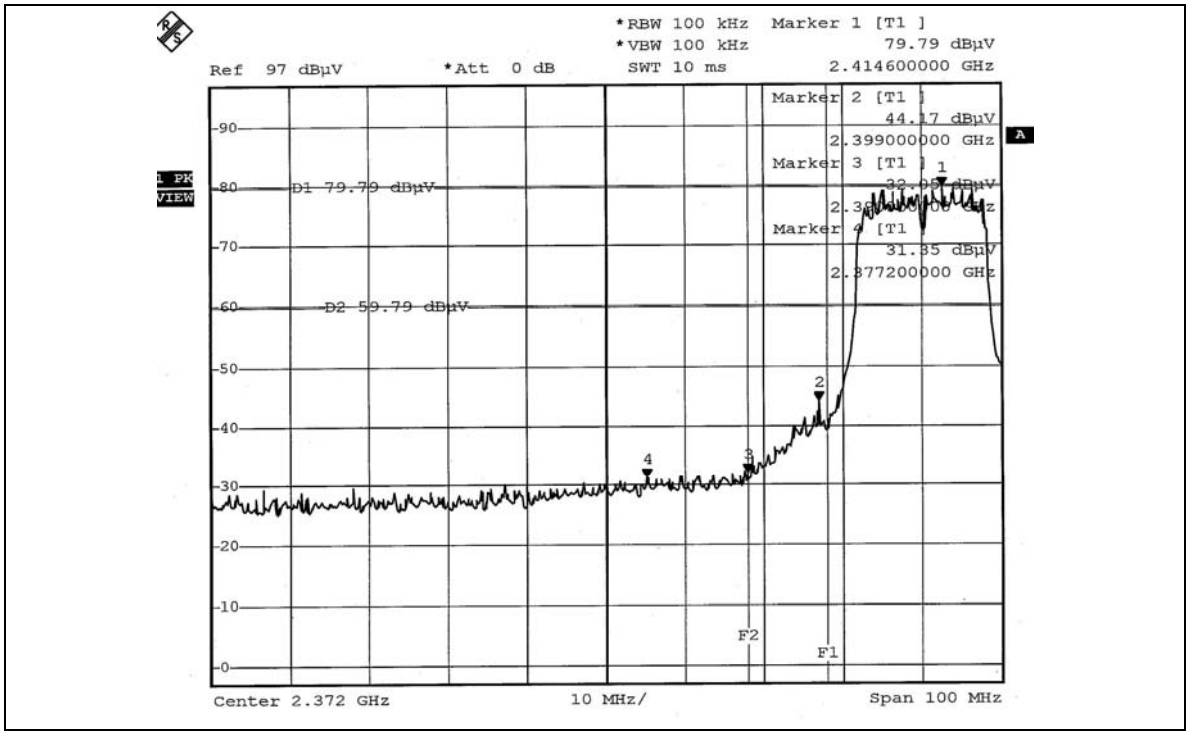
802.11g OFDM MODULATION

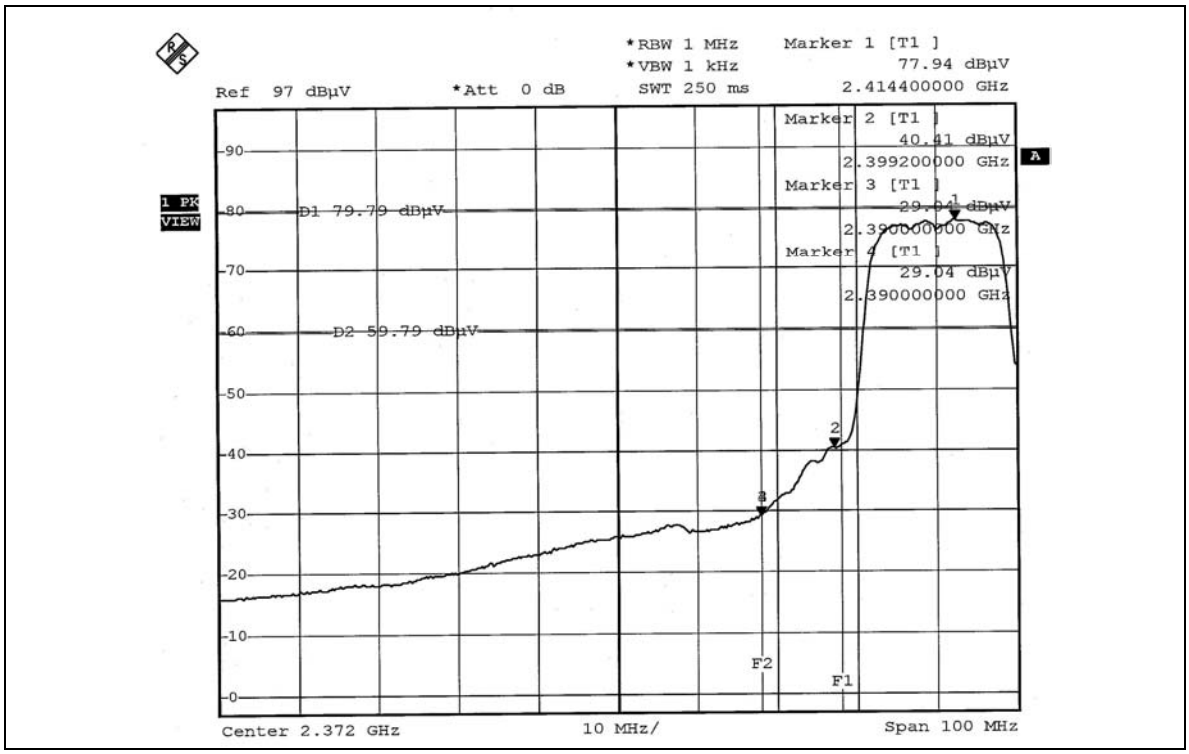
NOTE 1: The band edge emission plot on page 100 shows 48.44dBc between carrier maximum power and local maximum emission in restrict band (2.3772GHz). The emission of carrier strength list in the test result of channel 1 at the item 5.2.7 is 113.21dBuV/m (Peak), so the maximum field strength in restrict band is 113.21 – 48.44 = 64.77dBuV/m, which is under 74dBuV/m limit.

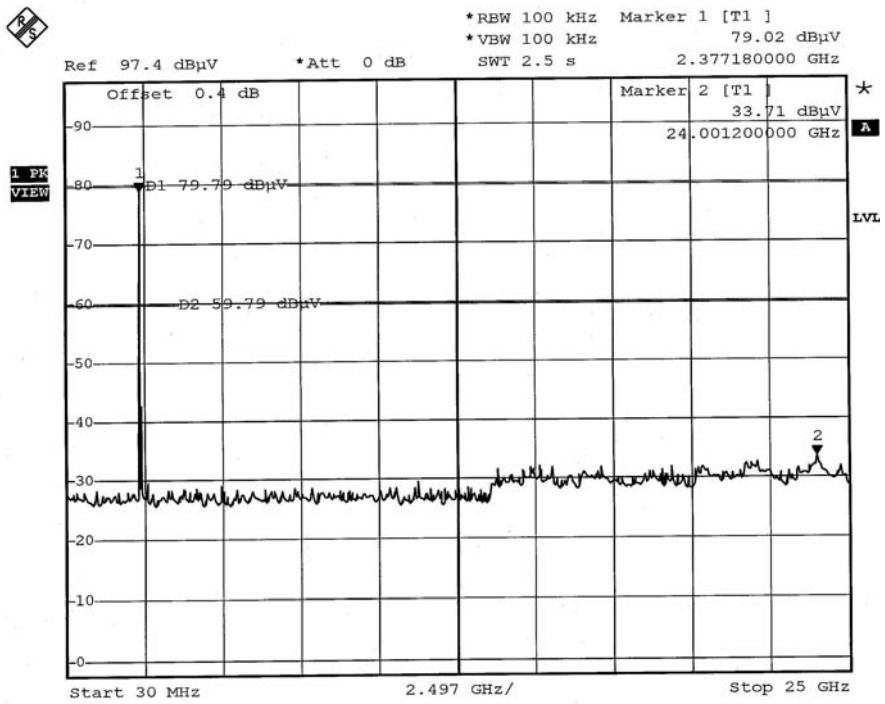
The band edge emission plot on page 100 shows 50.75dBc between carrier maximum power and local maximum emission in restrict band (2.3900GHz). The emission of carrier strength list in the test result of channel 1 at the item 5.2.7 is 101.30dBuV/m (Average), so the maximum field strength in restrict band is 101.30 – 50.75 = 50.55dBuV/m, which is under 54dBuV/m limit.

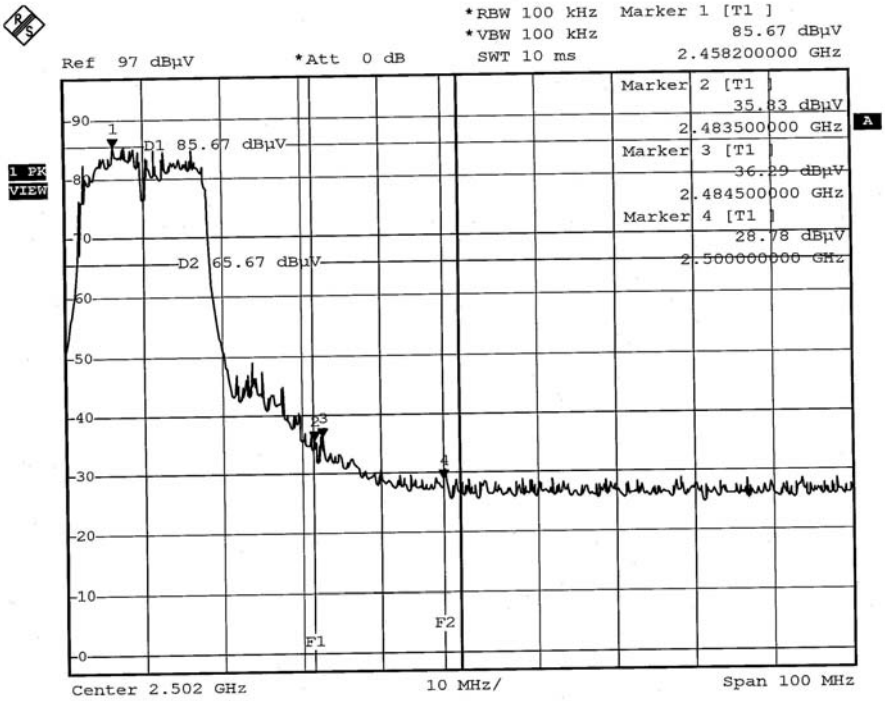
NOTE 2: The band edge emission plot on page 101 shows 56.89dBc between carrier maximum power and local maximum emission in restrict band (2.5000GHz). The emission of carrier strength list in the test result of channel 11 at the item 5.2.7 is 112.72dBuV/m (Peak), so the maximum field strength in restrict band is 112.72 – 56.89 = 55.83dBuV/m, which is under 74dBuV/m limit.

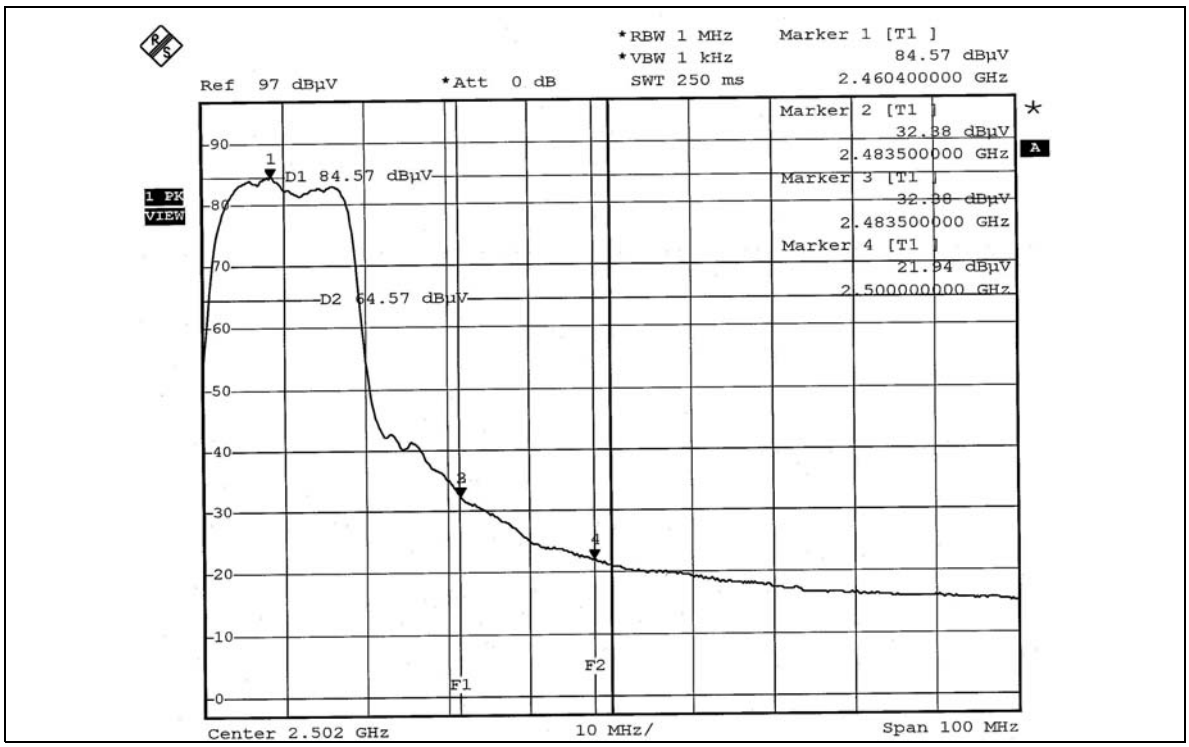
The band edge emission plot on page 102 shows 62.63dBc between carrier maximum power and local maximum emission in restrict band (2.5000GHz). The emission of carrier strength list in the test result of channel 11 at the item 5.2.7 is 101.74dBuV/m (Average), so the maximum field strength in restrict band is 101.74 – 62.63 = 39.11dBuV/m, which is under 54dBuV/m limit.

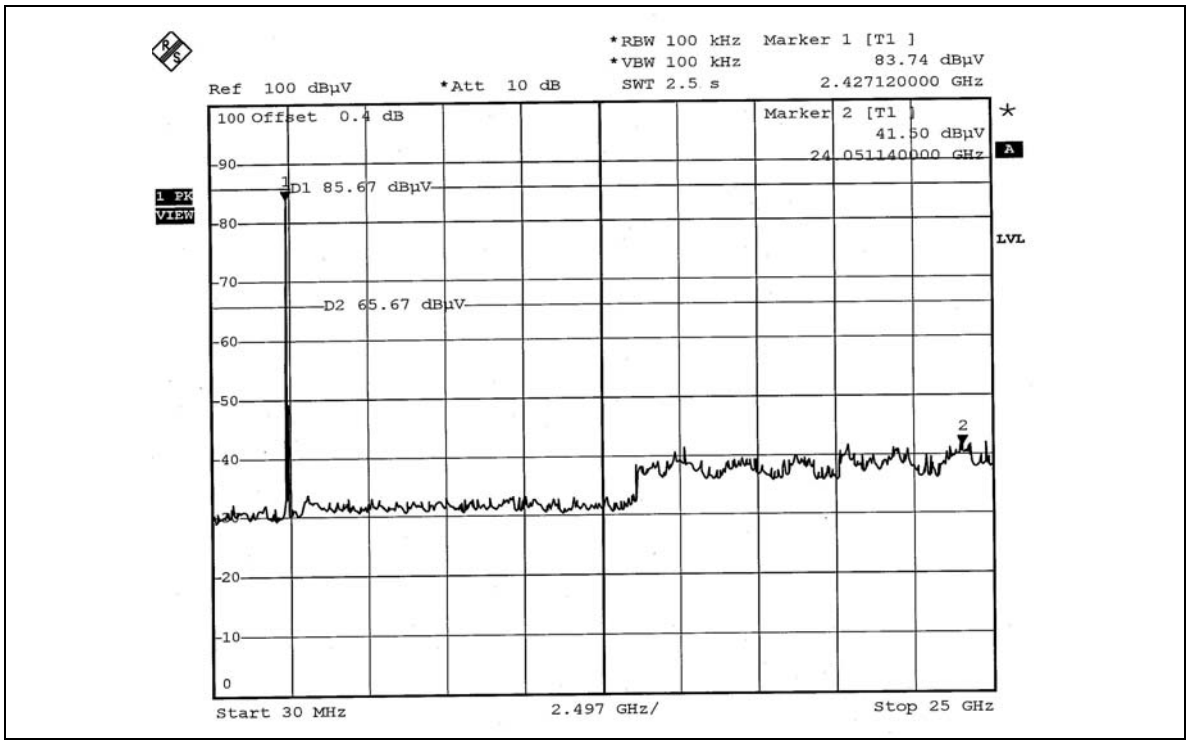

*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
79.79 dBµV
2.414600000 GHz
Ref 97 dBµV
*Att 0 dB
Marker 2 [T1]
44.17 dBµV
2.399000000 GHz
Marker 3 [T1]
Marker 4 [T1]
31.35 dBµV
2.377200000 GHz
D1 79.79 dBµV
D2 59.79 dBµV
1 PK VIEW
A
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
77.94 dBµV
2.414400000 GHz
Ref 97 dBµV
*Att 0 dB
Marker 2 [T1]
40.41 dBµV
2.399200000 GHz
Marker 3 [T1]
Marker 4 [T1]
29.04 dBµV
2.390000000 GHz
D1 79.79 dBµV
D2 59.79 dBµV
1 PK VIEW
A
F2
F1
Center 2.372 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
79.02 dBµV
2.377180000 GHz
Ref 97.4 dBµV
*Att 0 dB
Offset 0.4 dB
Marker 2 [T1]
33.71 dBµV
24.001200000 GHz
1 PK
VIEW
D1 79.79 dBµV
D2 59.79 dBµV
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 10 ms
Marker 1 [T1]
85.67 dBµV
2.458200000 GHz
Ref 97 dBµV
*Att 0 dB
Marker 2 [T1]
35.83 dBµV
2.483500000 GHz
Marker 3 [T1]
36.29 dBµV
2.484500000 GHz
Marker 4 [T1]
28.78 dBµV
2.500000000 GHz
1 PK
VIEW
D1 85.67 dBµV
D2 65.67 dBµV
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


*RBW 1 MHz
*VBW 1 kHz
SWT 250 ms
Marker 1 [T1]
84.57 dBµV
2.460400000 GHz
Ref 97 dBµV
*Att 0 dB
Marker 2 [T1]
32.38 dBµV
2.483500000 GHz
Marker 3 [T1]
32.30 dBµV
2.483500000 GHz
Marker 4 [T1]
21.94 dBµV
2.500000000 GHz
1 PK
VIEW
D1 84.57 dBµV
D2 64.57 dBµV
F1
F2
Center 2.502 GHz
10 MHz/
Span 100 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 1 [T1]
83.74 dBµV
2.427120000 GHz
Ref 100 dBµV
*Att 10 dB
100 Offset 0.4 dB
Marker 2 [T1]
41.50 dBµV
24.051140000 GHz
1 PK
VIEW
D1 85.67 dBµV
D2 65.67 dBµV
LVL
Start 30 MHz
2.497 GHz/
Stop 25 GHz

5.7 ANTENNA REQUIREMENT

5.7.1 STANDARD APPLICABLE

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

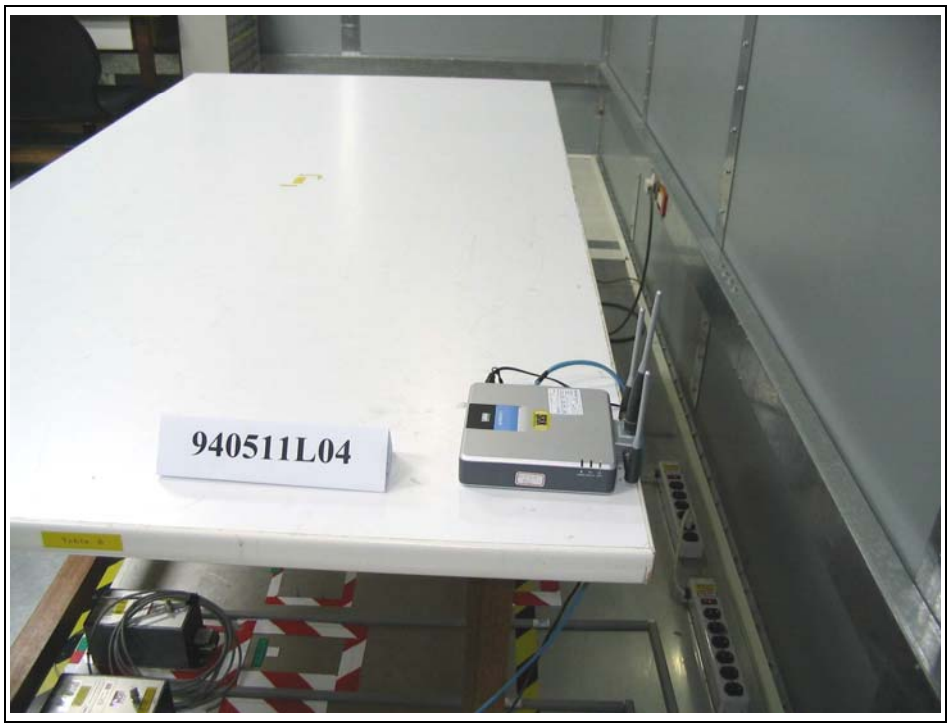
And according to FCC 47 CFR Section 15.247 (b), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.7.2 ANTENNA CONNECTED CONSTRUCTION

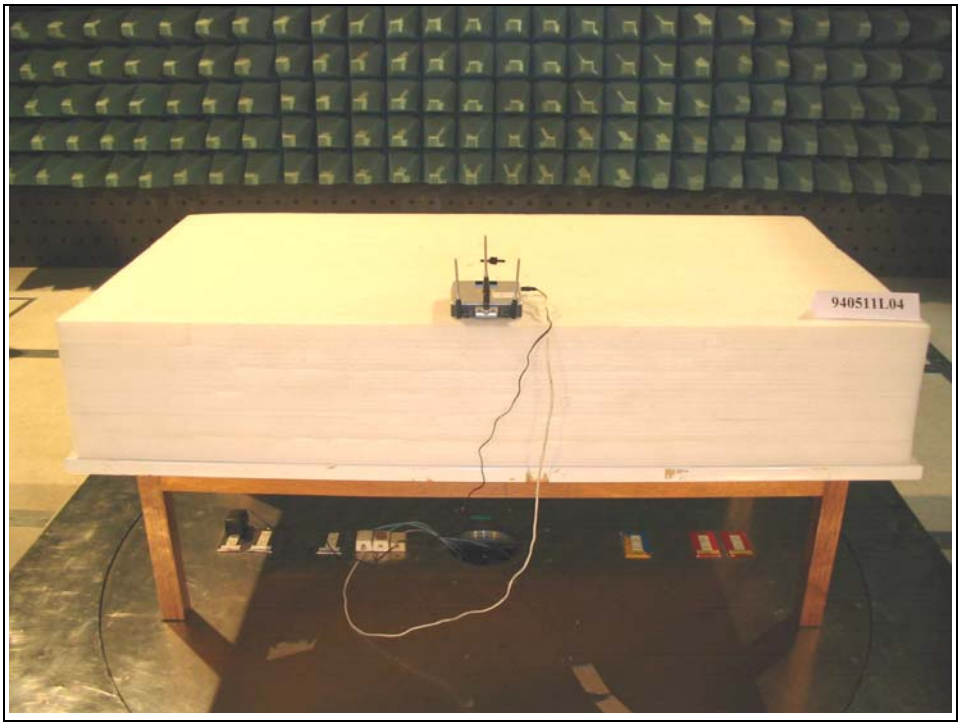
The antenna type used in this product is Diople antenna with reverse RPSMA connector. The maximum Gain of this antenna is only 2dBi.

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST



7. 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, NVLAP, 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:

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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.