



4.4 PEAK POWER EXCURSION MEASUREMENT

4.4.1 LIMITS OF PEAK POWER EXCURSION MEASUREMENT

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

4.4.2 TEST INSTRUMENTS

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

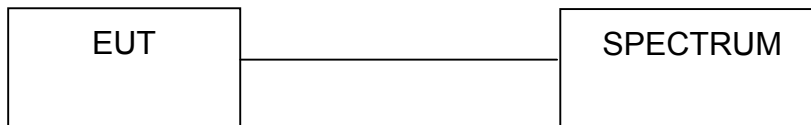
4.4.3 TEST PROCEDURE

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

4.4.4 DEVIATION FROM TEST STANDARD

No deviation

4.4.5 TEST SETUP



4.4.6 EUT OPERATING CONDITIONS

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

4.4.7 TEST RESULTS

802.11a OFDM modulation

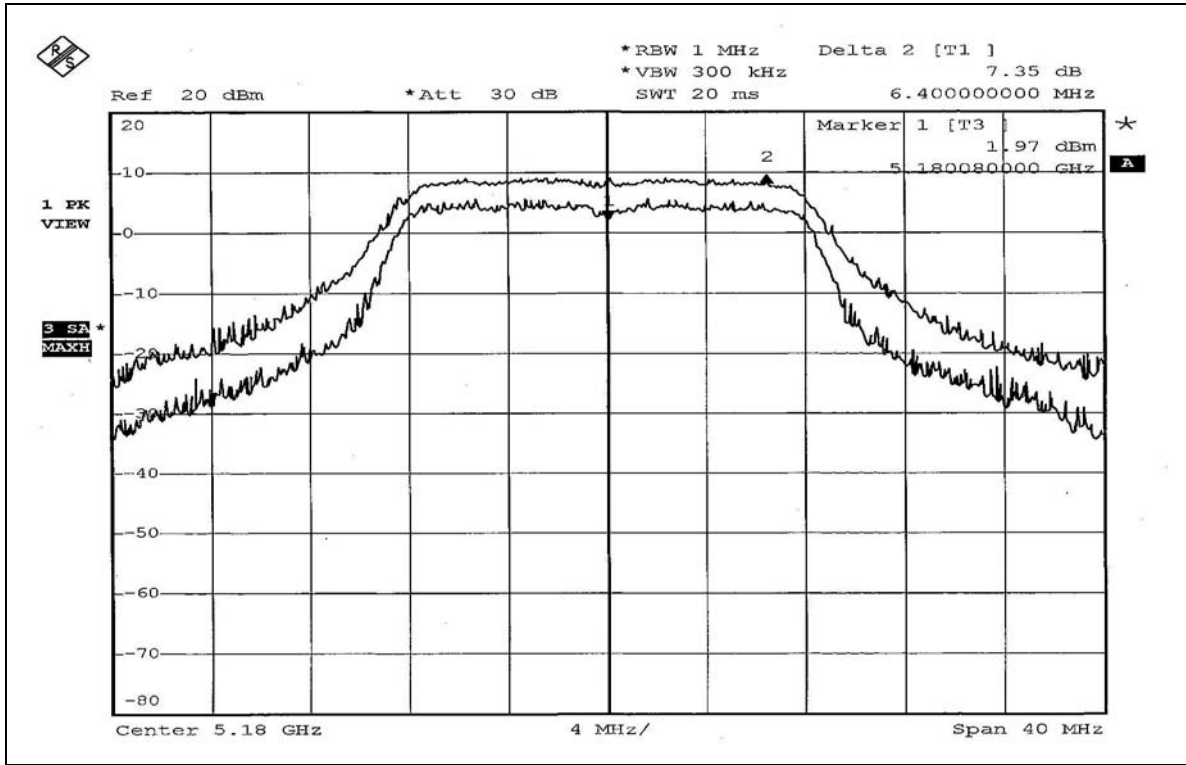
EUT	WLAN 802.11a/b/g PCI Adapter	MODEL	WL-760A
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg.C, 55%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5180	7.35	13	PASS
4	5240	7.50	13	PASS
5	5260	6.68	13	PASS
8	5320	7.34	13	PASS

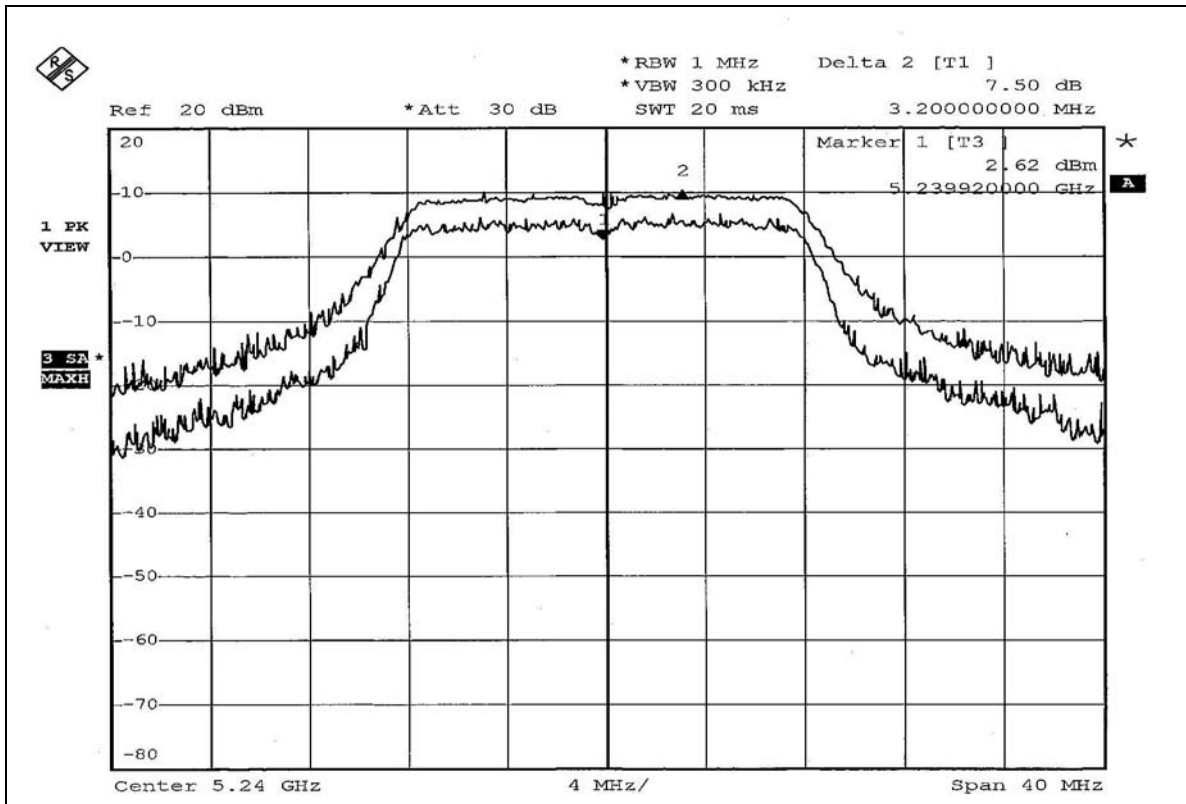
*(The test data is in accordance with ADT Report No.: RF940321L05.)



CH1

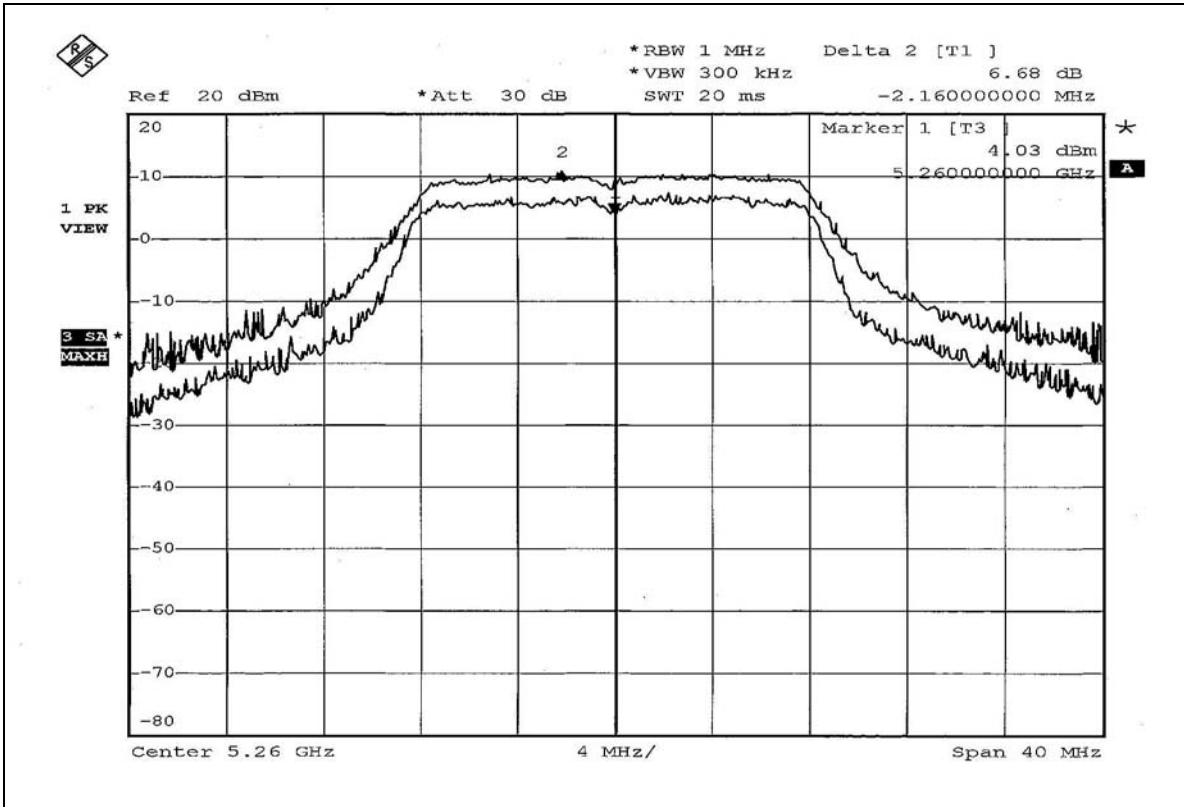


CH4

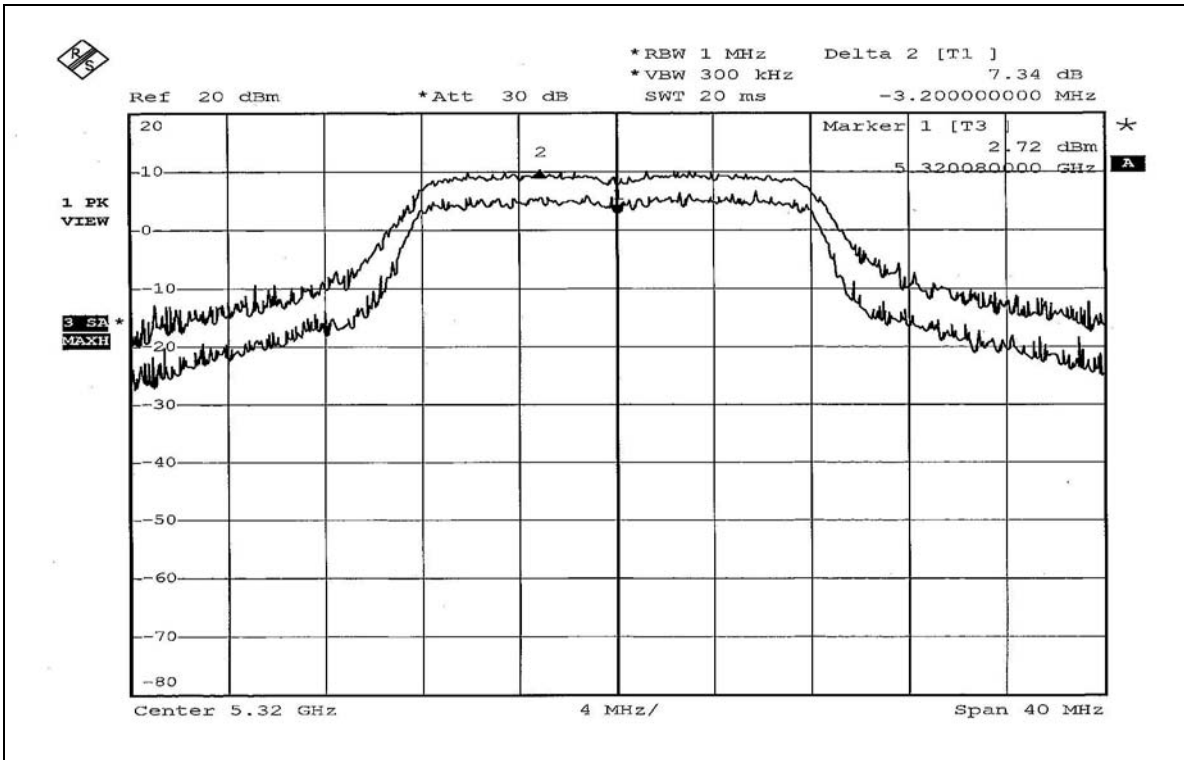




CH5



CH8



**802.11a Turbo OFDM modulation**

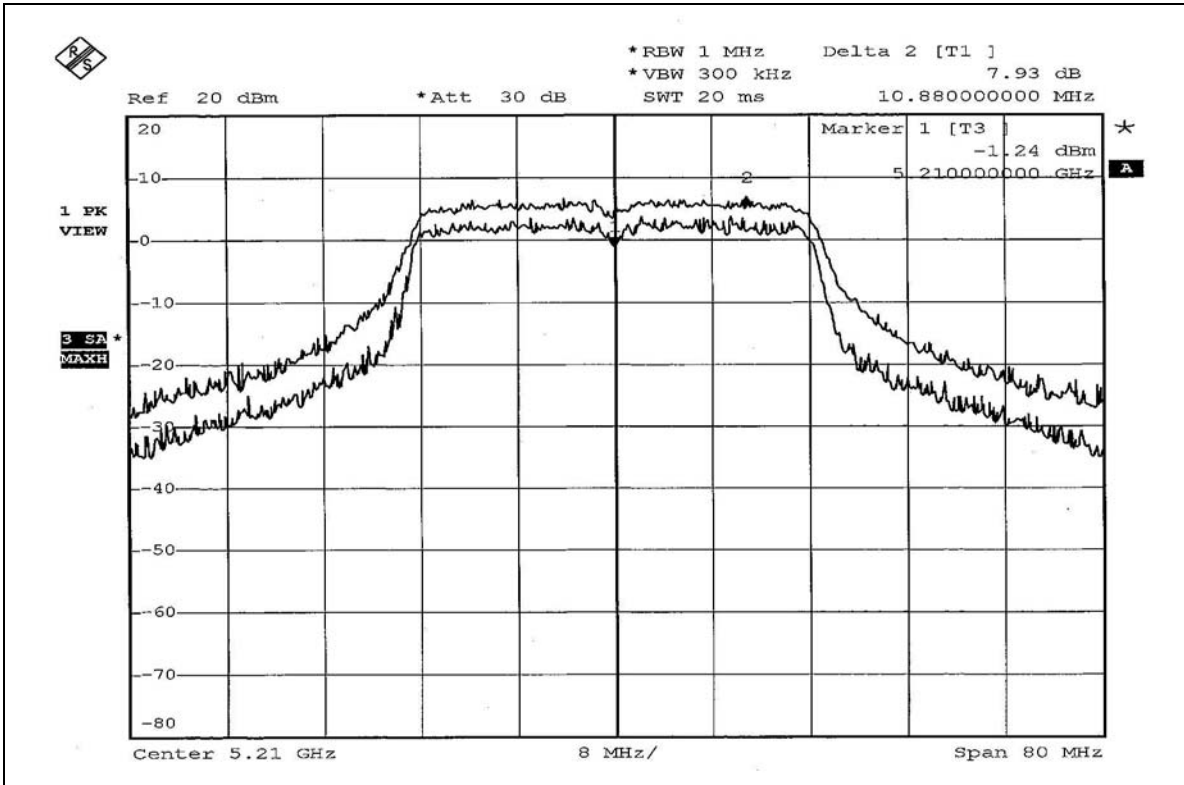
EUT	WLAN 802.11a/b/g PCI Adapter	MODEL	WL-760A
MODULATION TYPE	BPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg.C, 55%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER EXCURSION (dB)	PEAK to AVERAGE EXCURSION LIMIT (dB)	PASS/FAIL
1	5210	7.93	13	PASS
2	5250	8.15	13	PASS
3	5290	7.66	13	PASS

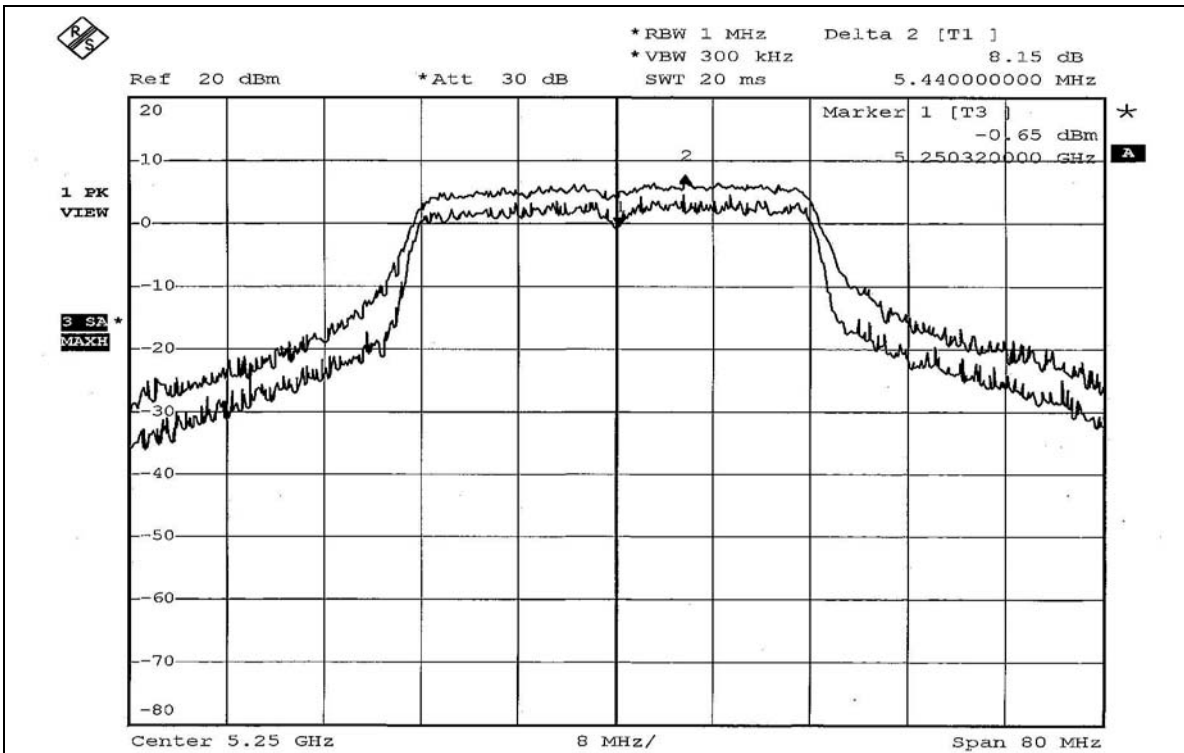
*(The test data is in accordance with ADT Report No.: RF940321L05.)



CH1

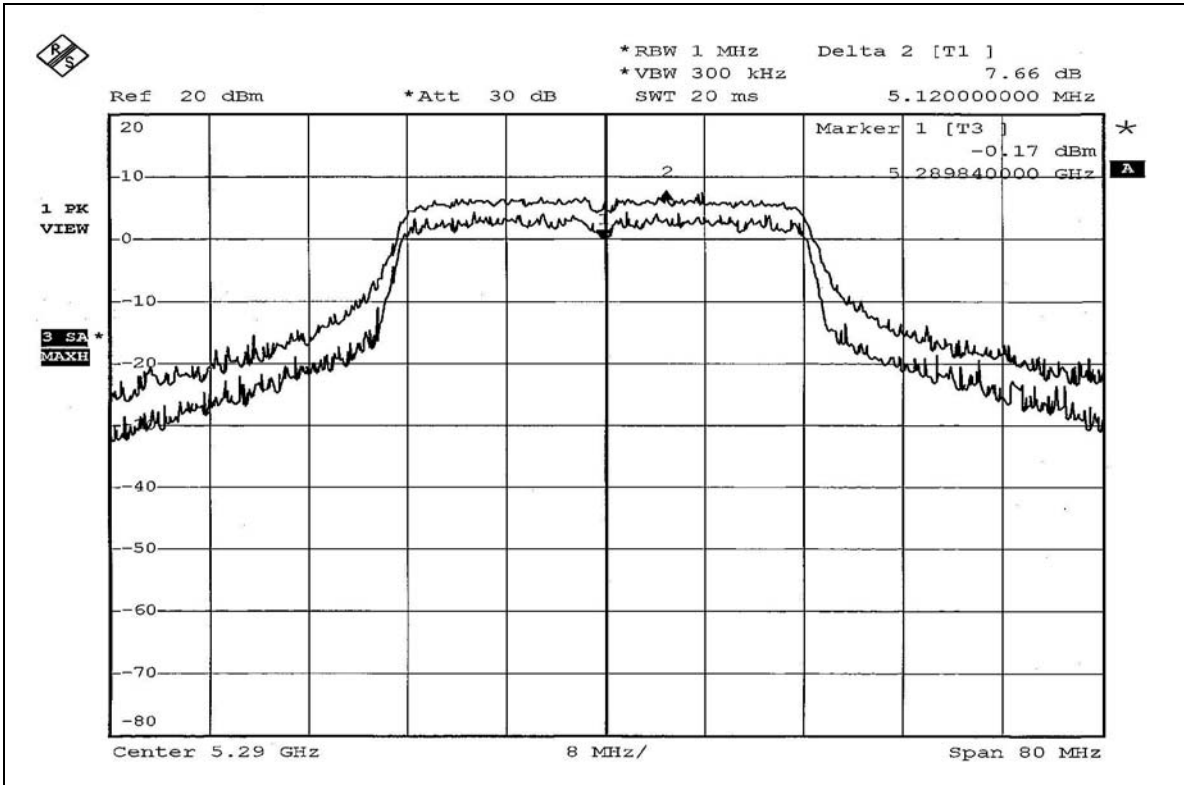


CH2





CH3



4.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

4.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	Aug. 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 PROCEDURES

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

4.5.4 DEVIATION FROM TEST STANDARD

No deviation

4.5.5 TEST SETUP



4.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6

4.5.7 TEST RESULTS

802.11a OFDM modulation

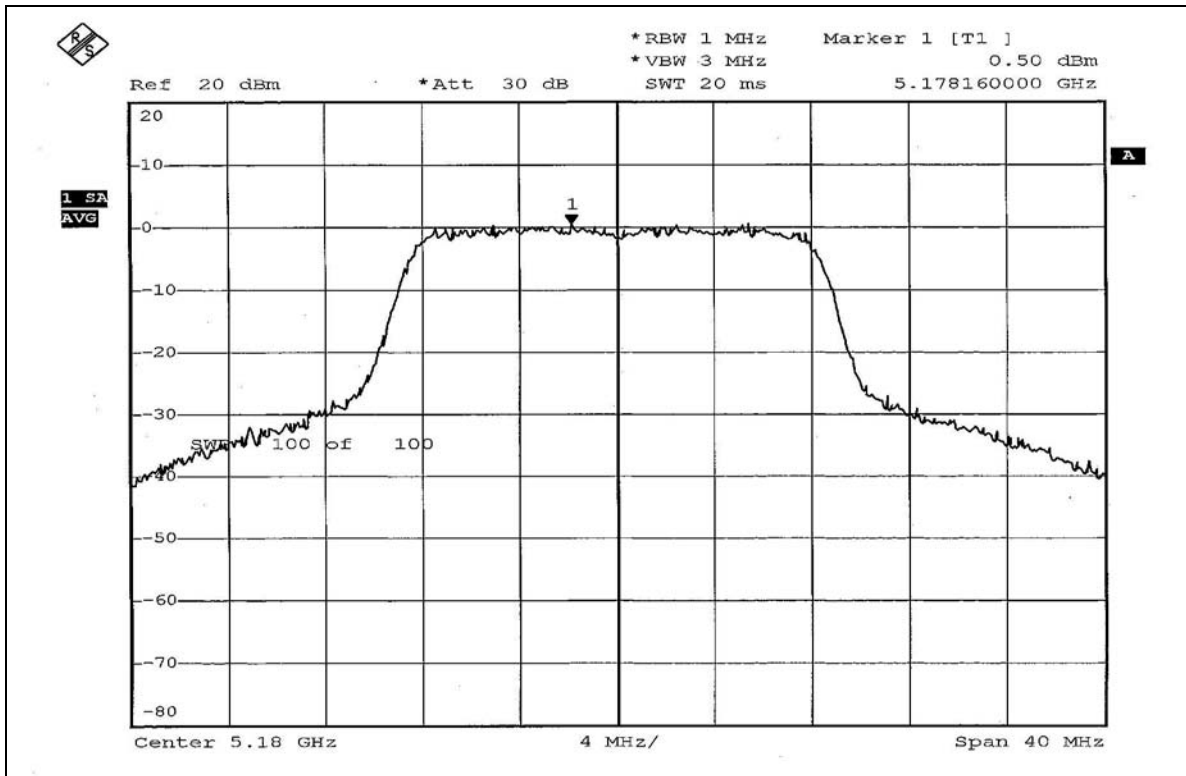
EUT	WLAN 802.11a/b/g PCI Adapter	MODEL	WL-760A
MODULATION TYPE	BPSK	TRANSFER RATE	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg.C, 55%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	0.50	4	PASS
4	5240	0.46	4	PASS
5	5260	0.47	11	PASS
8	5320	0.44	11	PASS

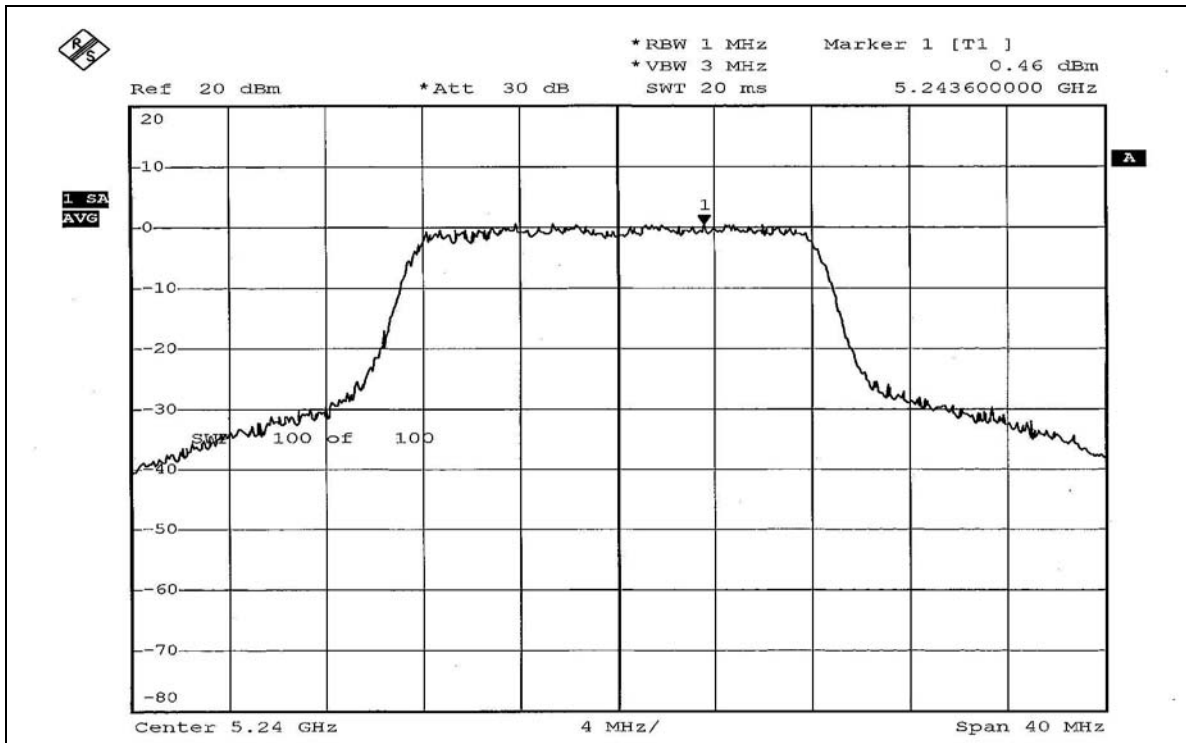
*(The test data is in accordance with ADT Report No.: RF940321L05.)



CH1

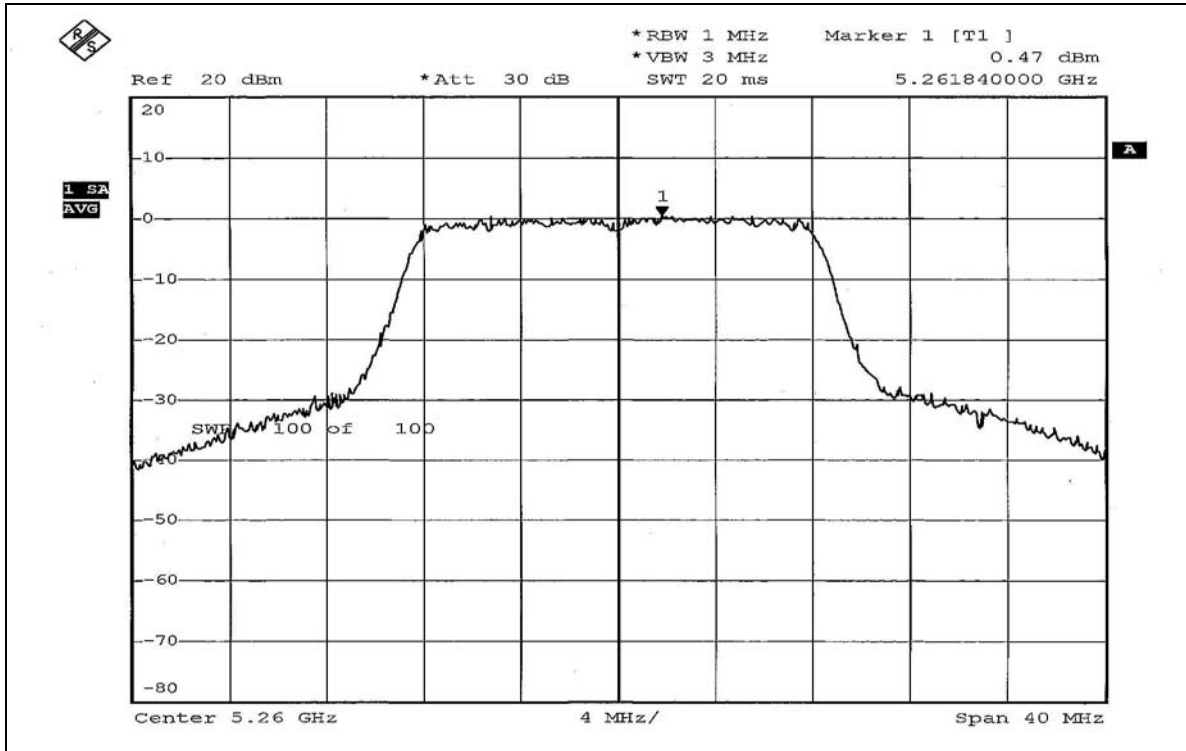


CH4

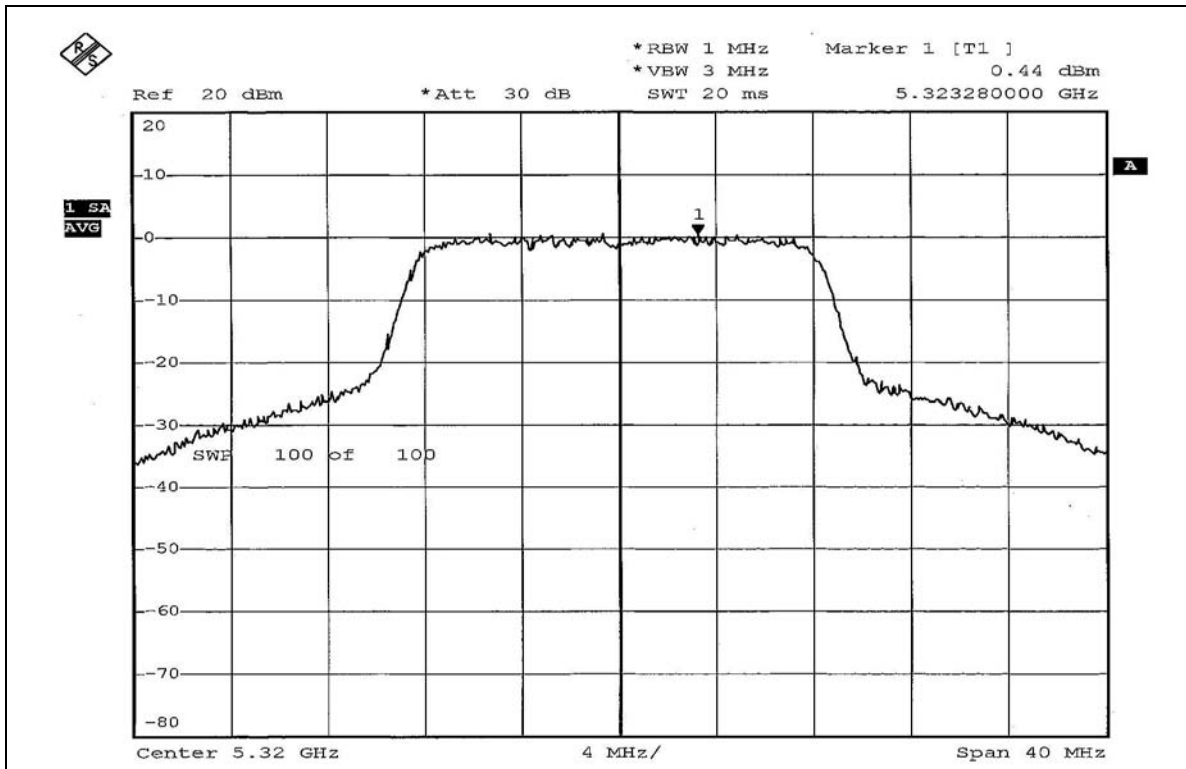




CH5



CH8



**802.11a Turbo OFDM modulation**

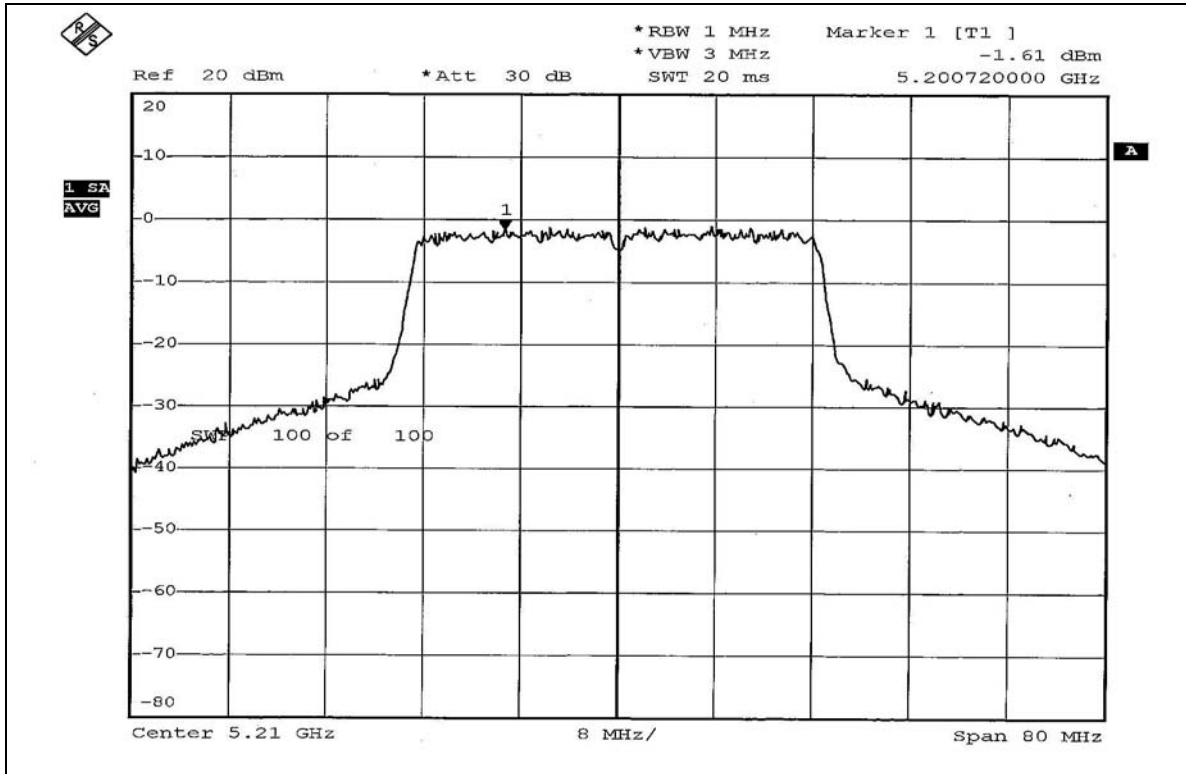
EUT	WLAN 802.11a/b/g PCI Adapter	MODEL	WL-760A
MODULATION TYPE	BPSK	TRANSFER RATE	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	ENVIRONMENTAL CONDITIONS	22deg.C, 55%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5210	-1.61	4	PASS
2	5250	-1.60	4	PASS
3	5290	-1.53	11	PASS

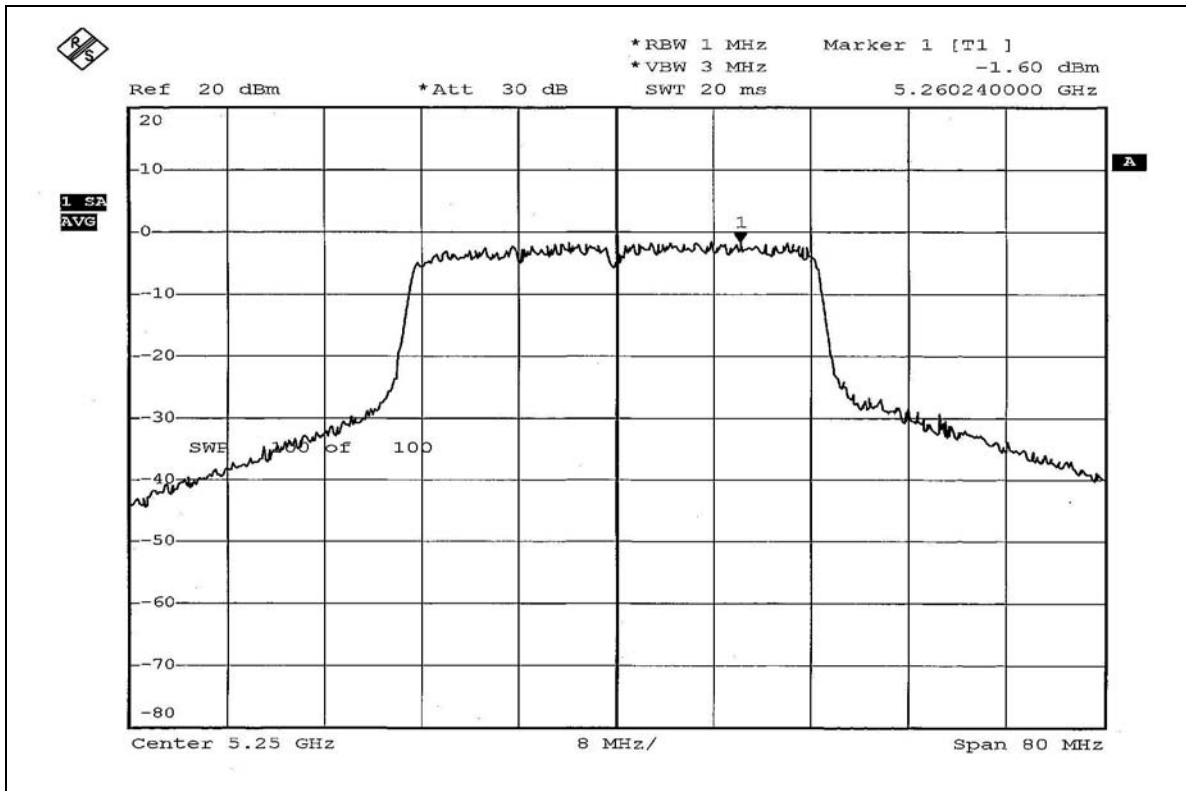
*(The test data is in accordance with ADT Report No.: RF940321L05.)



CH1

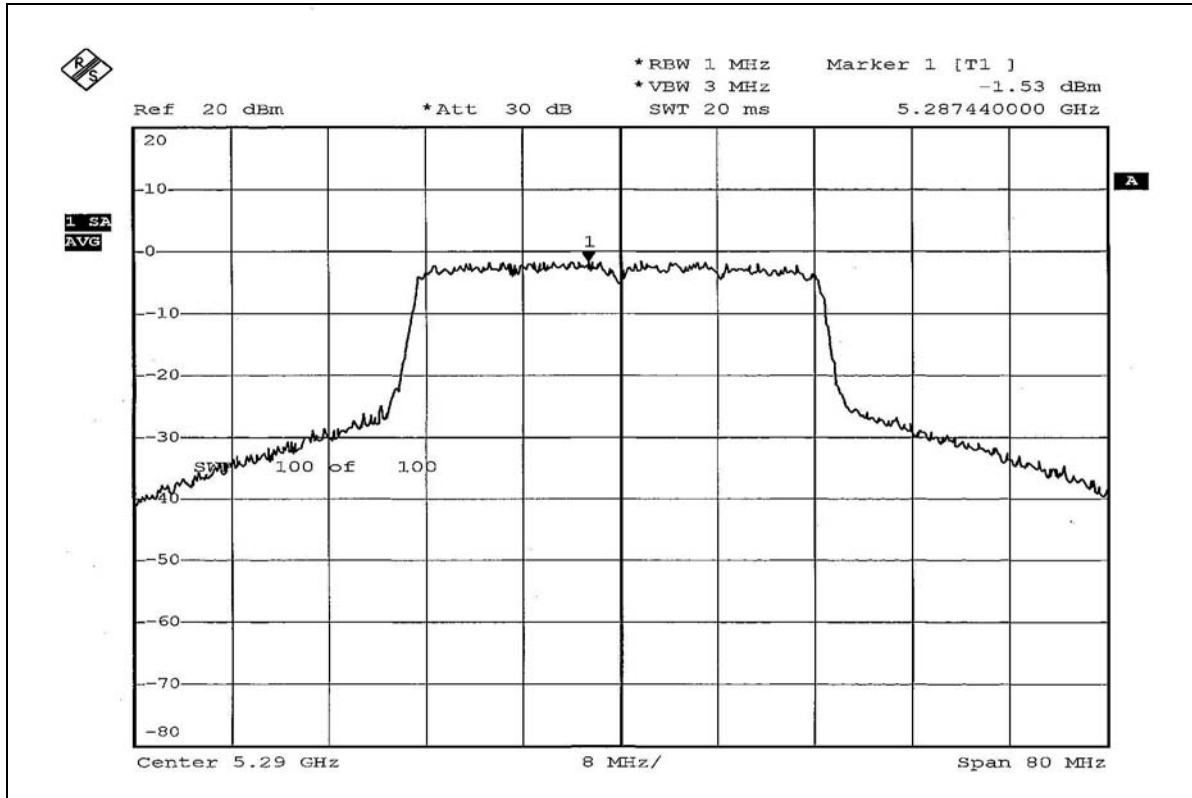


CH2





CH3





4.6 FREQUENCY STABILITY

4.6.1 LIMITS OF FREQUENCY STABILITY MEASUREMENT

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

4.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Feb. 09, 2006
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W981030	Jul. 18, 2005

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

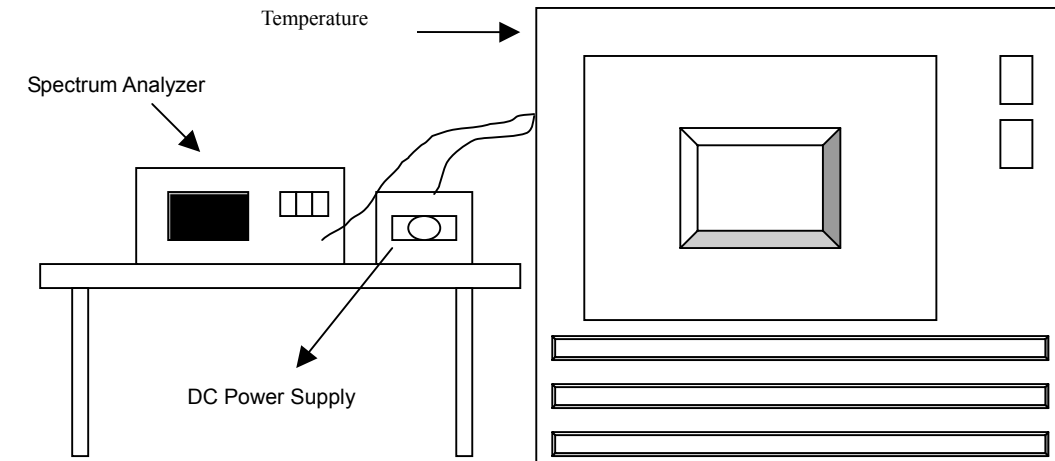
4.6.3 TEST PROCEDURE

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

4.6.4 DEVIATION FROM TEST STANDARD

No deviation

4.6.5 TEST SETUP



4.6.6 EUT OPERATING CONDITION

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



4.6.7 TEST RESULTS

		Operating frequency: 5320MHz				Limit : ± 0.015%			
Temp. (°C)	Power supply (Vac)	0 minute		2 minute		5 minute		10 minute	
		(MHz)	(%)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
50	138	5319.9920	-0.0001504	5319.9927	-0.0001372	5319.9925	-0.0001410	5319.9923	-0.0001447
	120	5319.9925	-0.0001410	5319.9926	-0.0001391	5319.9925	-0.0001410	5319.9926	-0.0001391
	102	5319.9930	-0.0001316	5319.9925	-0.0001410	5319.9927	-0.0001372	5319.9927	-0.0001372
40	138	5320.0012	0.0000226	5320.0009	0.0000169	5320.0005	0.0000094	5320.0012	0.0000226
	120	5320.0008	0.0000150	5320.0012	0.0000226	5320.0010	0.0000188	5320.0010	0.0000188
	102	5320.0010	0.0000188	5320.0010	0.0000188	5320.0009	0.0000169	5320.0007	0.0000132
30	138	5320.0013	0.0000244	5320.0019	0.0000357	5320.0018	0.0000338	5320.0015	0.0000282
	120	5320.0015	0.0000282	5320.0016	0.0000301	5320.0016	0.0000301	5320.0011	0.0000207
	102	5320.0017	0.0000320	5320.0015	0.0000282	5320.0015	0.0000282	5320.0014	0.0000263
20	138	5320.0208	0.0003910	5320.0214	0.0004023	5320.0208	0.0003910	5320.0211	0.0003966
	120	5320.0211	0.0003966	5320.0212	0.0003985	5320.0213	0.0004004	5320.0214	0.0004023
	102	5320.0213	0.0004004	5320.0209	0.0003929	5320.0215	0.0004041	5320.0215	0.0004041
10	138	5320.0196	0.0003684	5320.0195	0.0003665	5320.0193	0.0003628	5320.0191	0.0003590
	120	5320.0197	0.0003703	5320.0197	0.0003703	5320.0192	0.0003609	5320.0194	0.0003647
	102	5320.0193	0.0003628	5320.0194	0.0003647	5320.0190	0.0003571	5320.0192	0.0003609
0	138	5320.0168	0.0003158	5320.0162	0.0003045	5320.0161	0.0003026	5320.0158	0.0002970
	120	5320.0165	0.0003102	5320.0165	0.0003102	5320.0160	0.0003008	5320.0155	0.0002914
	102	5320.0164	0.0003083	5320.0163	0.0003064	5320.0164	0.0003083	5320.0153	0.0002876
-10	138	5320.0242	0.0004549	5320.0245	0.0004605	5320.0246	0.0004624	5320.0249	0.0004680
	120	5320.0240	0.0004511	5320.0241	0.0004530	5320.0247	0.0004643	5320.0246	0.0004624
	102	5320.0541	0.0010169	5320.0243	0.0004568	5320.0248	0.0004662	5320.0244	0.0004586
-20	138	5320.0321	0.0006034	5320.0332	0.0006241	5320.0328	0.0006165	5320.0332	0.0006241
	120	5320.0325	0.0006109	5320.0330	0.0006203	5320.0334	0.0006278	5320.0335	0.0006297
	102	5320.0326	0.0006128	5320.0331	0.0006222	5320.0331	0.0006222	5320.0336	0.0006316
-30	138	5320.0480	0.0009023	5320.0479	0.0009004	5320.0475	0.0008929	5320.0475	0.0008929
	120	5320.0478	0.0008985	5320.0478	0.0008985	5320.0477	0.0008966	5320.0475	0.0008929
	102	5320.0476	0.0008947	5320.0476	0.0008947	5320.0474	0.0008910	5320.0477	0.0008966

*(The test data is in accordance with ADT Report No.: RF940321L05.)

4.7 BAND EDGES MEASUREMENT

4.7.1 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.

4.7.2 TEST PROCEDURE

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

4.7.3 EUT OPERATING CONDITION

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

4.7.4 TEST RESULTS

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

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

**802.11a OFDM modulation****Channel 1 (5180MHz)**

The band edge emission plot on the page 64 shows 47.84dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 112.23dBuV/m (Peak), so the maximum field strength in restrict band is $112.23-47.84=64.39$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the page 64 shows 54.68dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 101.71dBuV/m (Average), so the maximum field strength in restrict band is $101.71-54.68=47.03$ dBuV/m which is under 54dBuV/m limit.

Channel 8 (5320MHz)

The band edge emission plot on the page 65 shows 41.37dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 112.36dBuV/m (Peak), so the maximum field strength in restrict band is $112.36-41.37=70.99$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the page 66 shows 48.24dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 8 is 100.68dBuV/m (Average), so the maximum field strength in restrict band is $100.68-48.24=52.44$ dBuV/m which is under 54dBuV/m limit.

*(The test data is in accordance with ADT Report No.: RF940321L05.)

**802.11a Turbo OFDM modulation**

Channel 1 (5210MHz)

The band edge emission plot on the page 67 shows 44.33dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 110.27dBuV/m (Peak), so the maximum field strength in restrict band is $110.27 - 44.33 = 65.94$ dBuV/m which is under 74dBuV/m limit.

The band edge emission plot on the page 67 shows 50.59dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 1 is 100.57dBuV/m (Average), so the maximum field strength in restrict band is $100.57 - 50.59 = 49.98$ dBuV/m which is under 54dBuV/m limit.

Channel 3 (5290MHz)

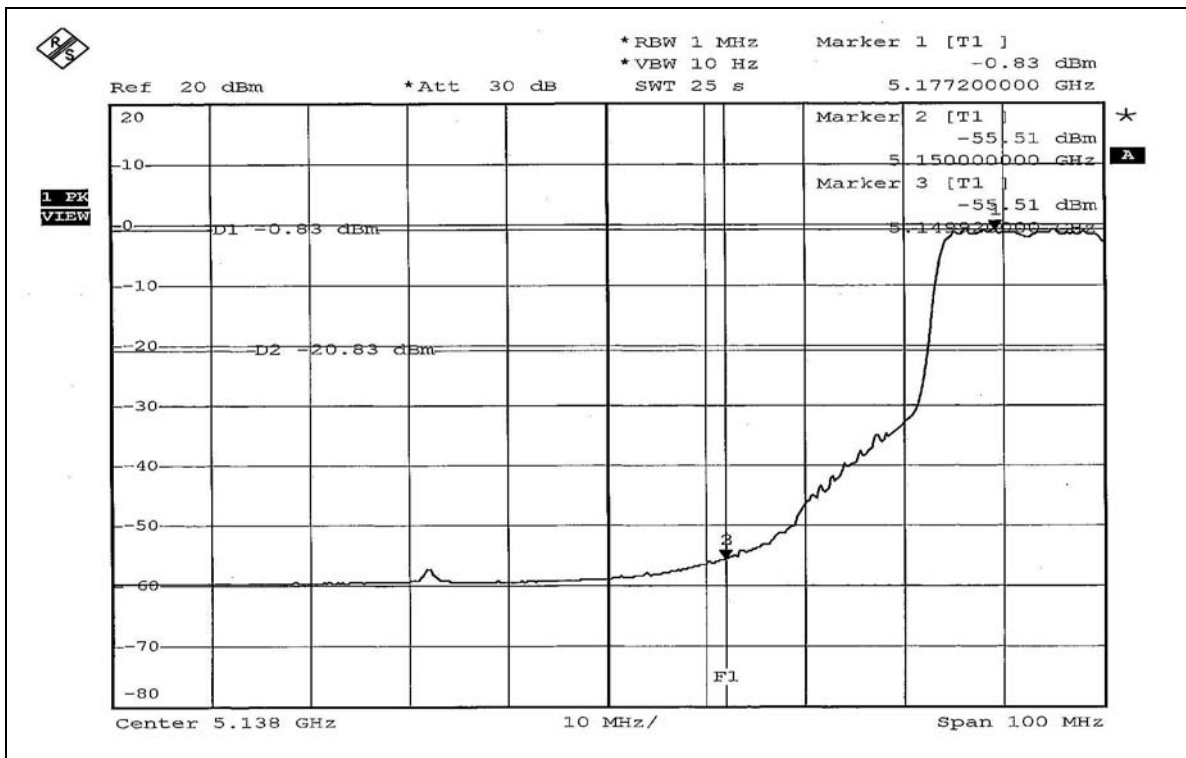
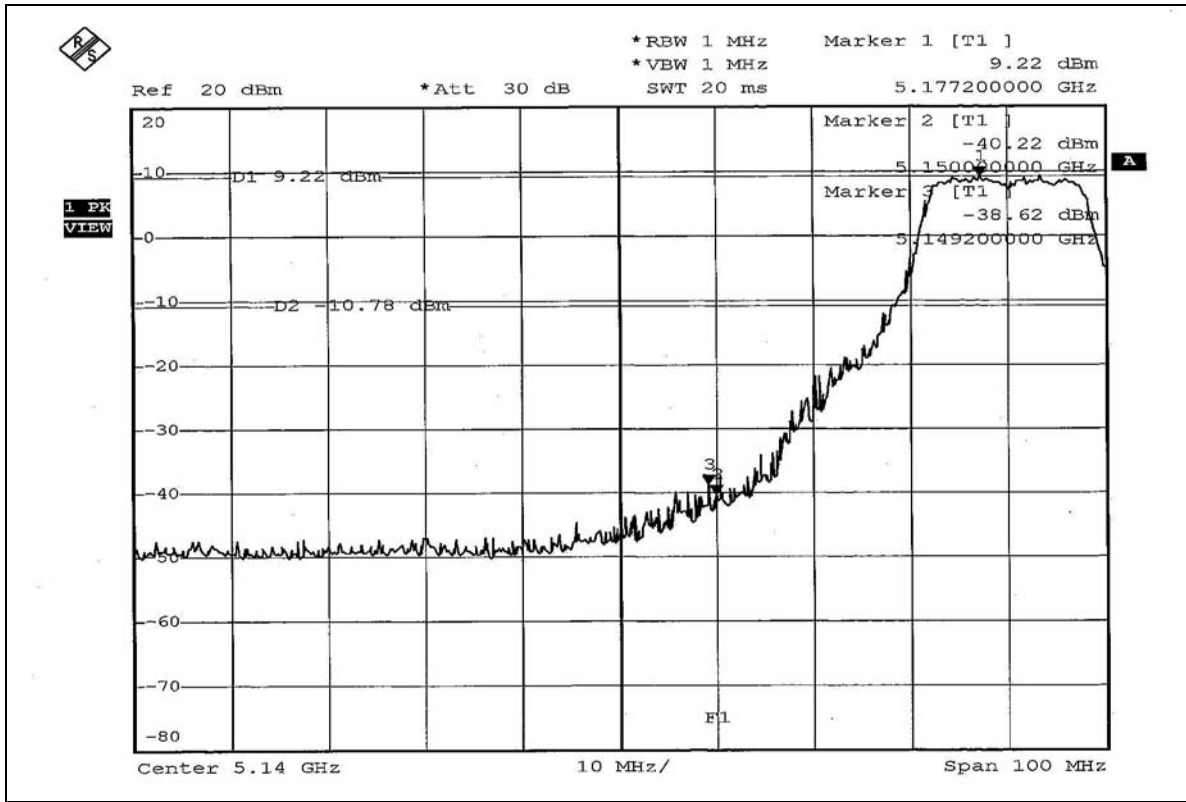
The band edge emission plot on the page 68 shows 43.03dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 109.50dBuV/m (Peak), so the maximum field strength in restrict band is $109.50 - 43.03 = 66.47$ dBuV/m which is under 74dBuV/m limit.

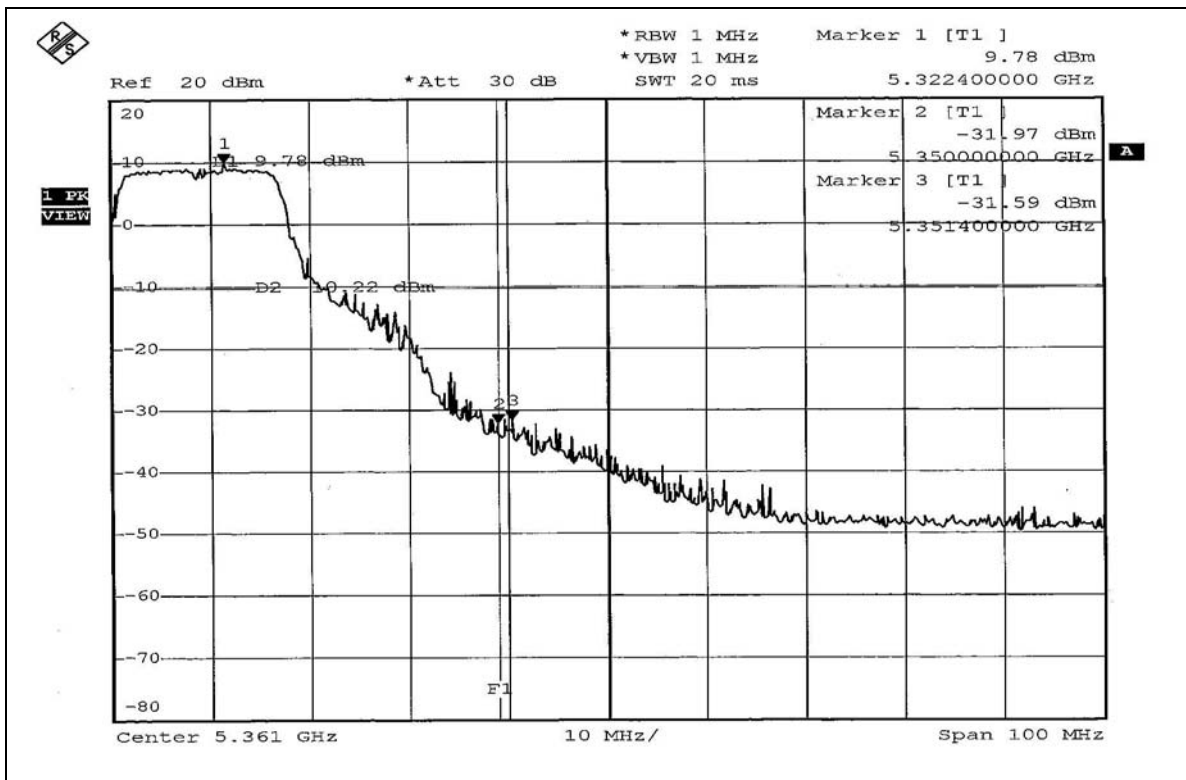
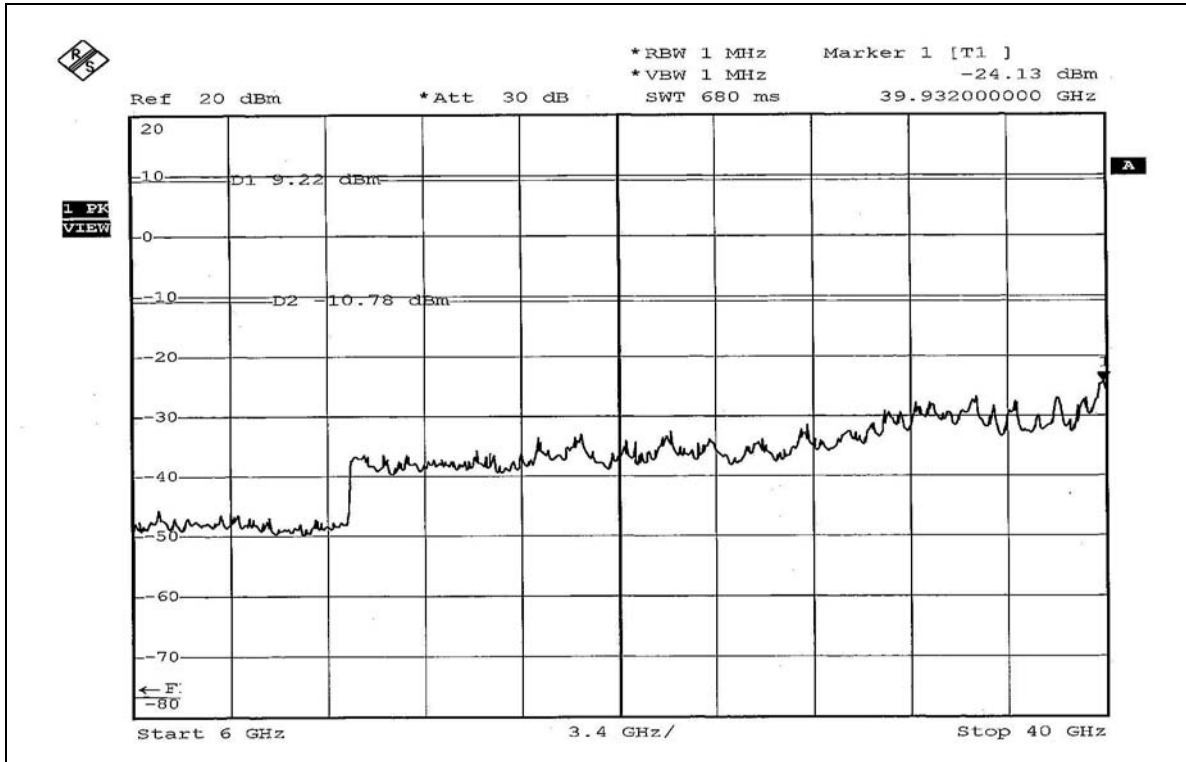
The band edge emission plot on the page 69 shows 47.47dBc between carrier maximum power and local maximum emission in restrict band. The emission of carrier strength list in the test result of channel 3 is 99.60dBuV/m (Average), so the maximum field strength in restrict band is $99.60 - 47.47 = 52.13$ dBuV/m which is under 54dBuV/m limit.

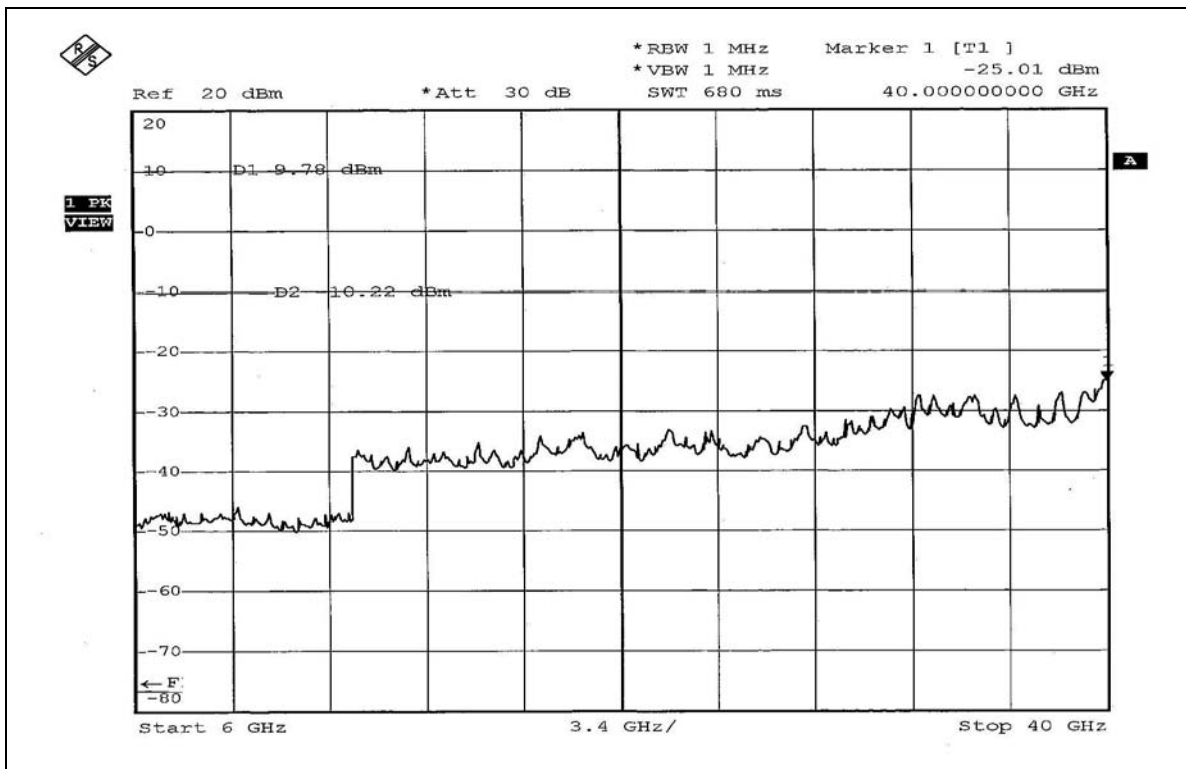
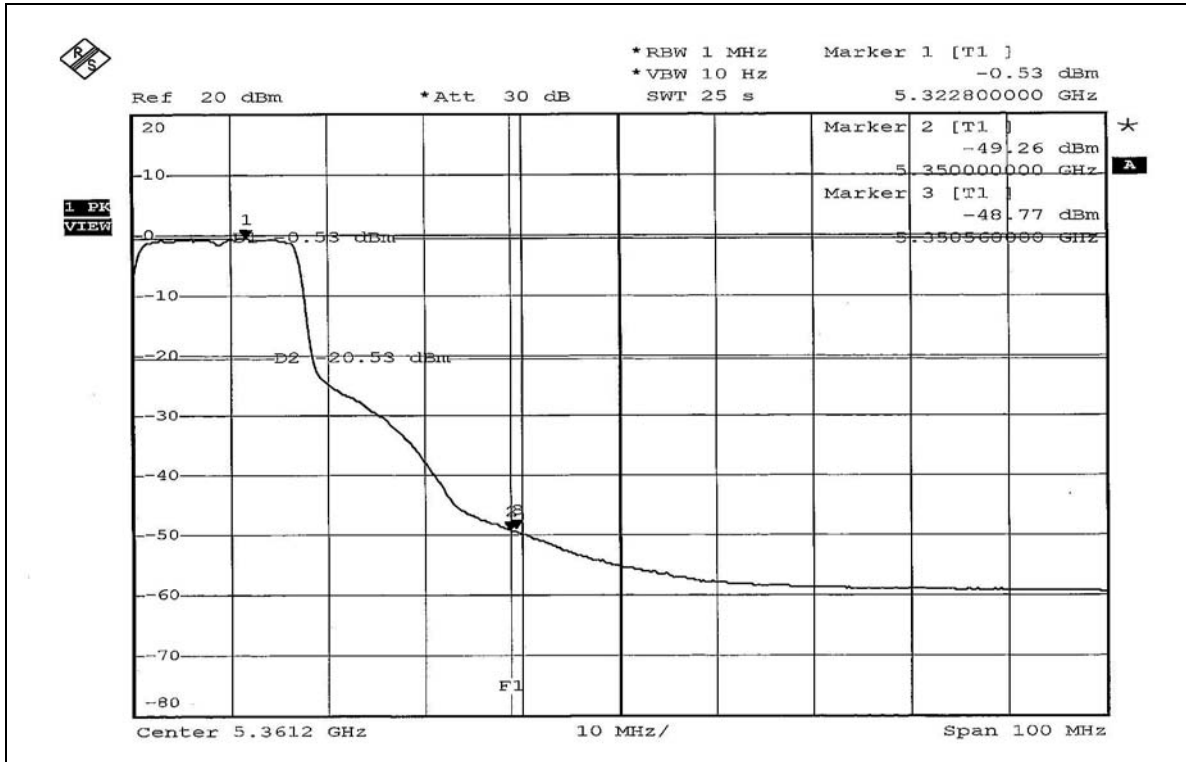
*(The test data is in accordance with ADT Report No.: RF940321L05.)



802.11a OFDM modulation

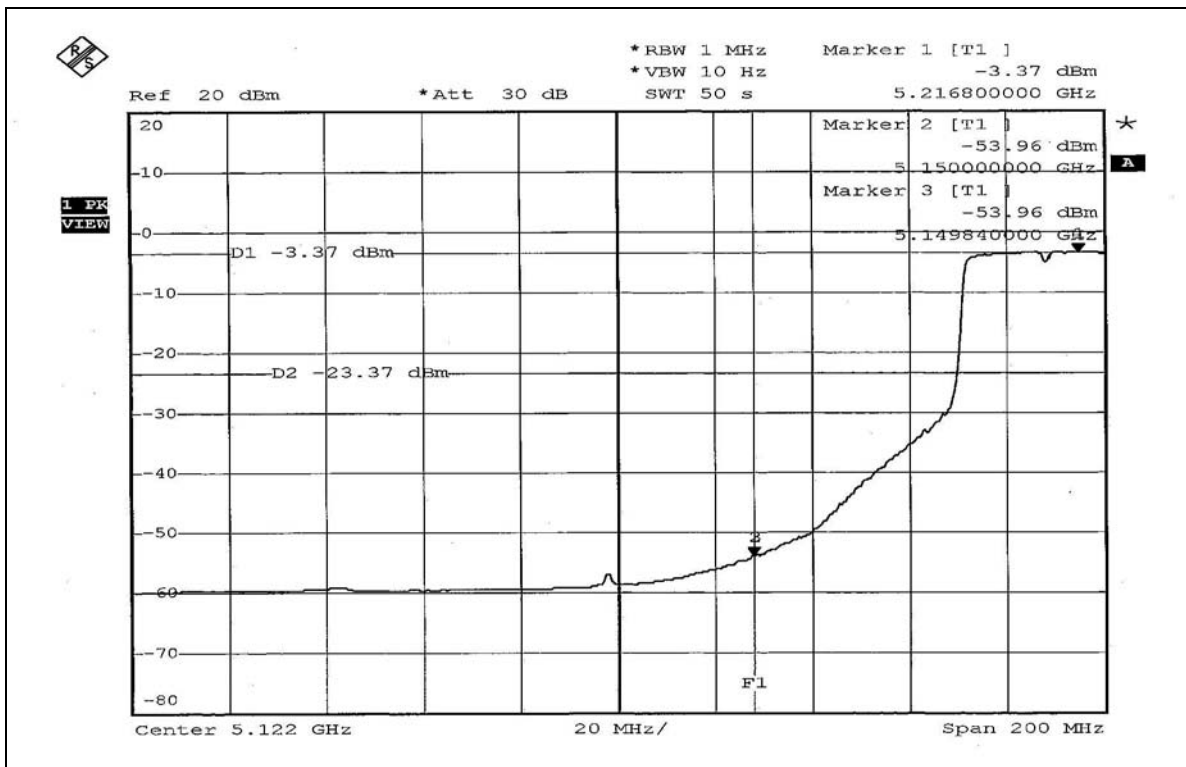
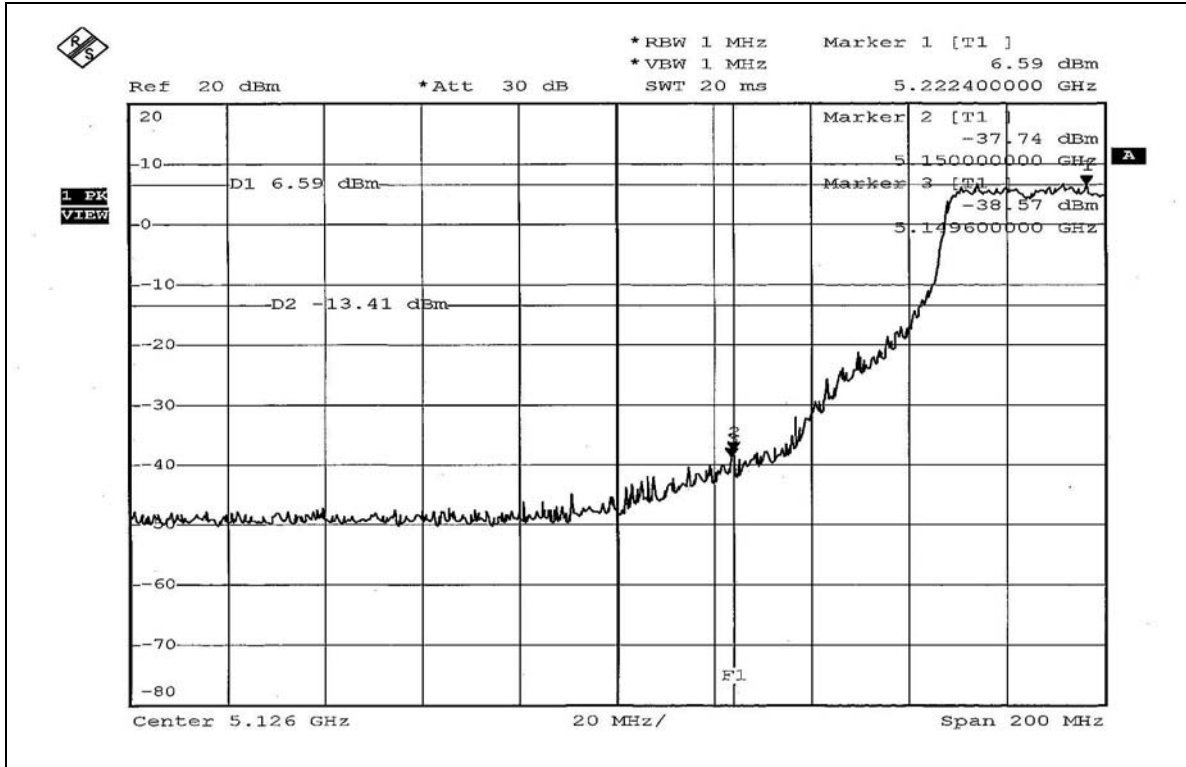


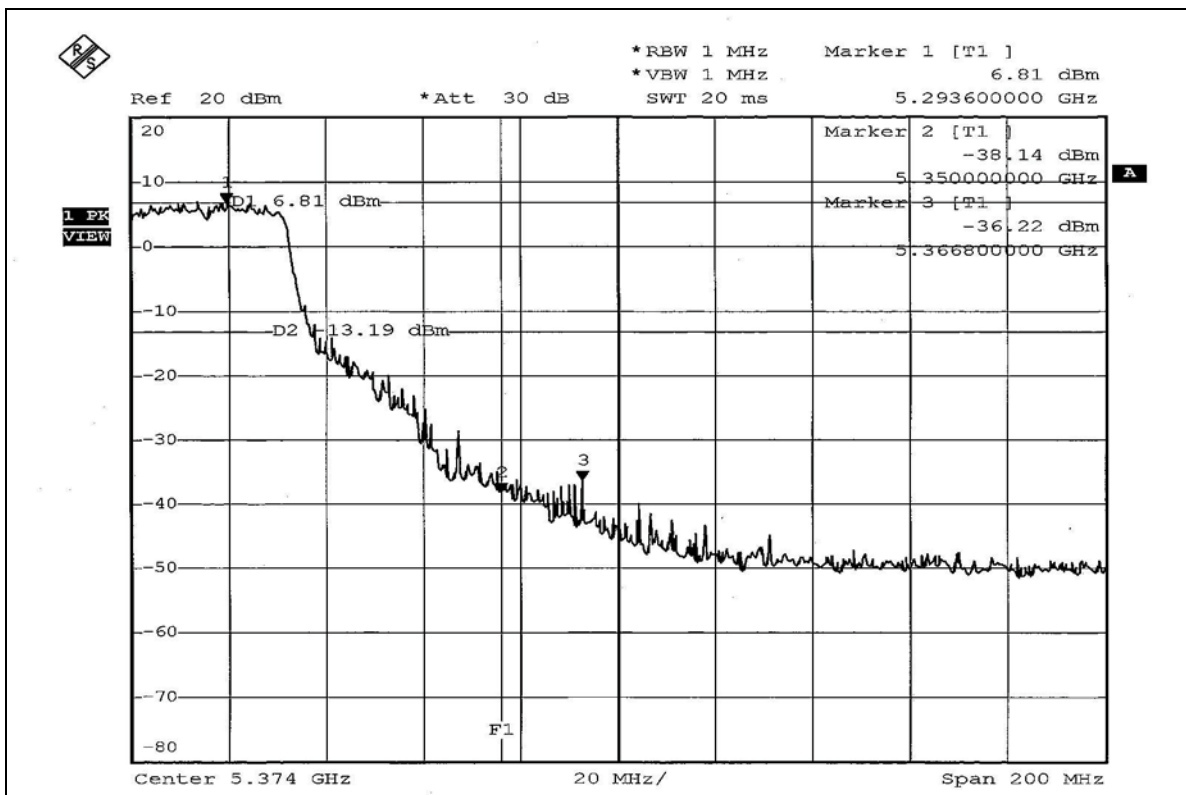
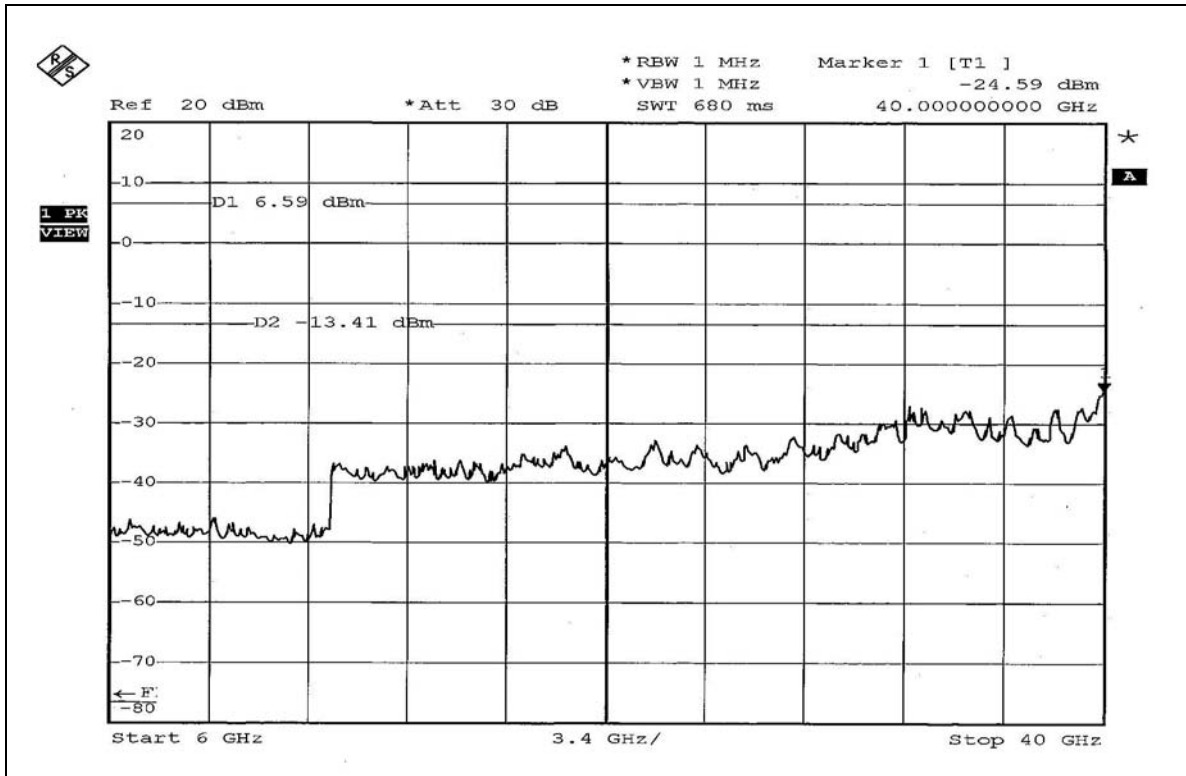


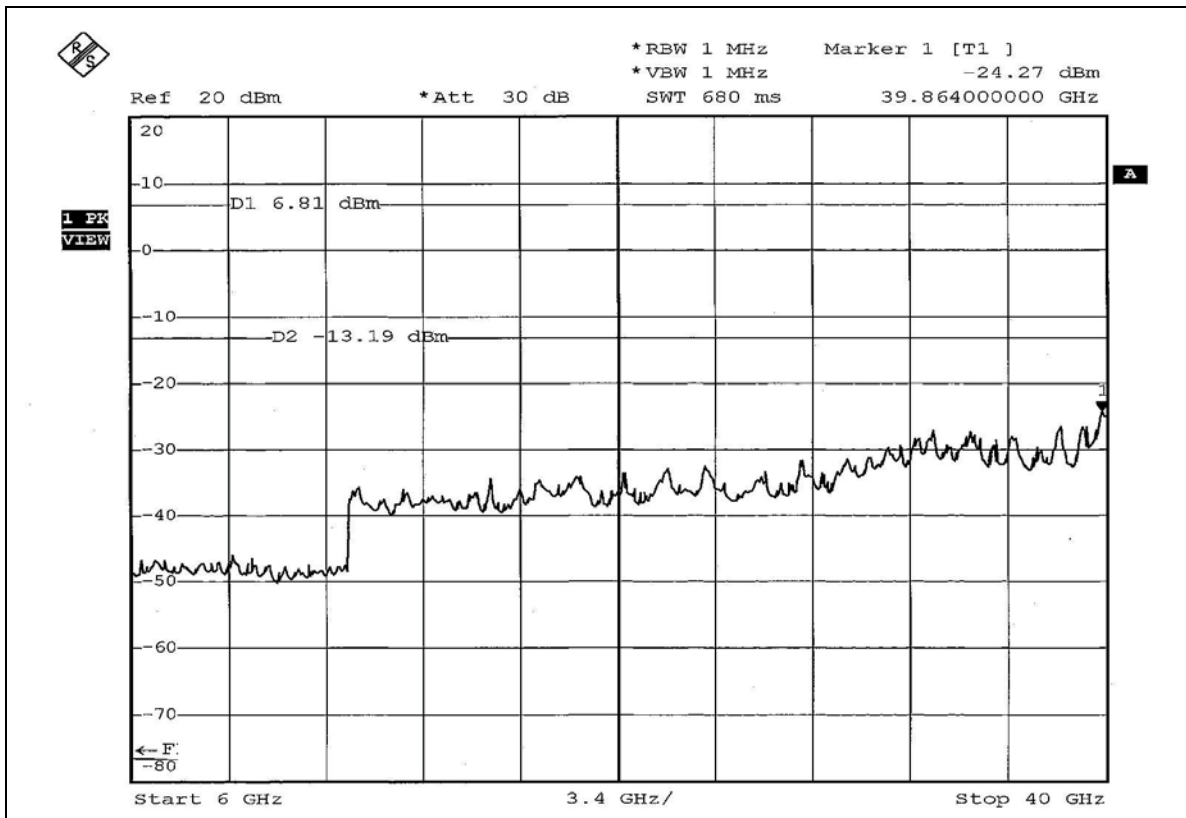
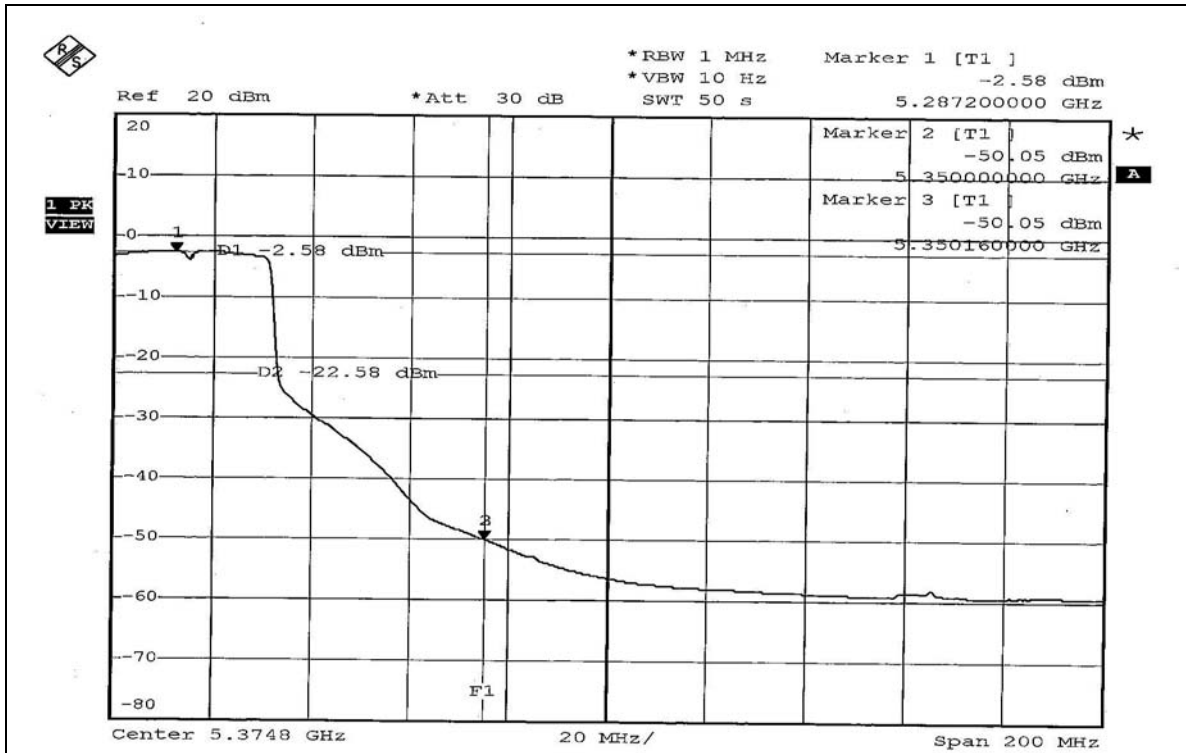




802.11a Turbo OFDM modulation









4.8 ANTENNA REQUIREMENT

4.8.1 STANDARD APPLICABLE

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

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

4.8.2 ANTENNA CONNECTED CONSTRUCTION

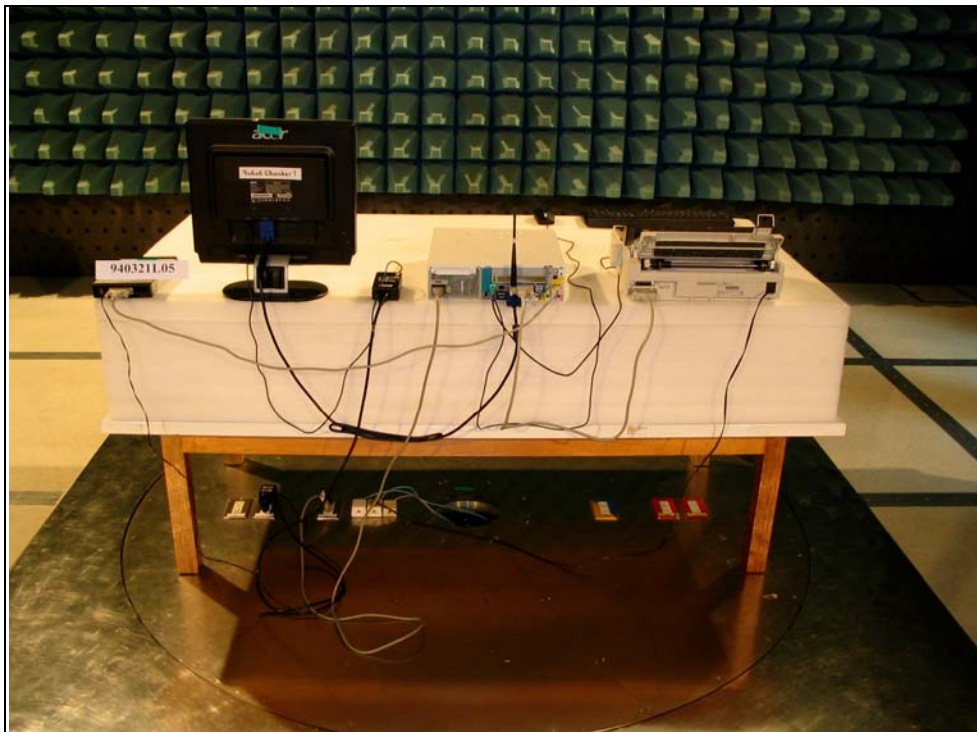
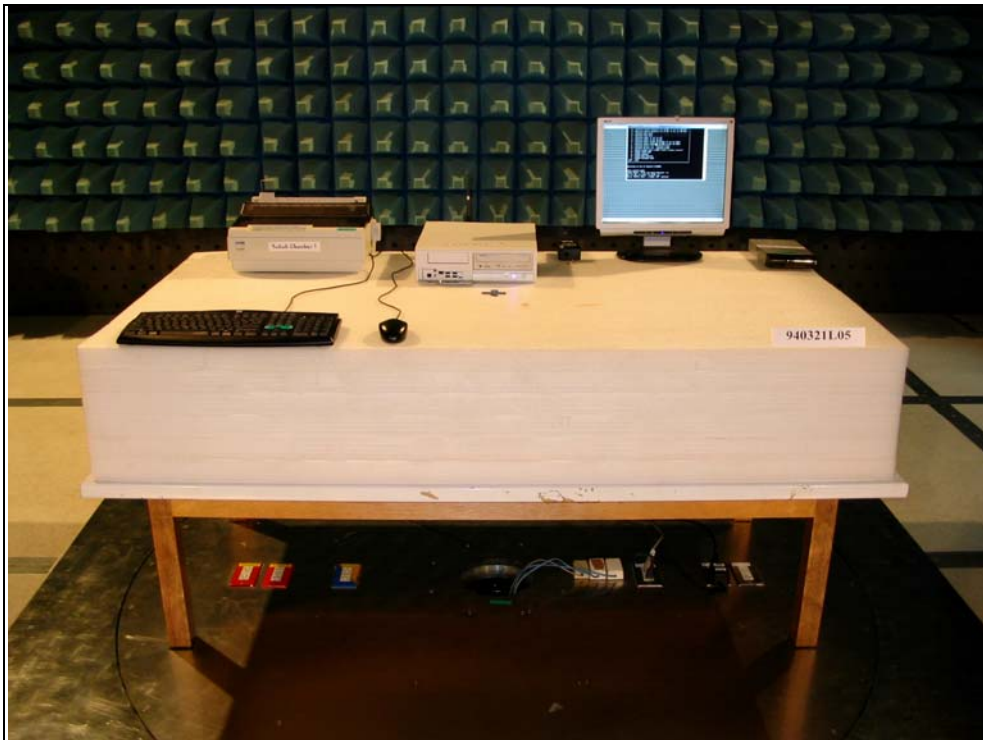
The antenna used in this product is Dipole antenna with Reverse SMA antenna connector. The maximum Gain of the antenna is 2dBi.

5. PHOTOGRAPHS OF THE TEST CONFIGURATION

CONDUCTED EMISSION TEST



RADIATED EMISSION TEST





6. INFORMATION ON THE TESTING LABORATORIES

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

USA	FCC, 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:

Linko EMC/RF Lab:

Tel: 886-2-26052180

Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:

Tel: 886-3-5935343

Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:

Tel: 886-3-3183232

Fax: 886-3-3185050

Linko RF Lab.

Tel: 886-3-3270910

Fax: 886-3-3270892

Web Site: www.adt.com.tw

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