



5.5 PEAK POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF PEAK POWER SPECTRAL DENSITY MEASUREMENT

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

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ROHDE&SCHWARZ SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

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 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.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITIONS

Same as 5.3.6

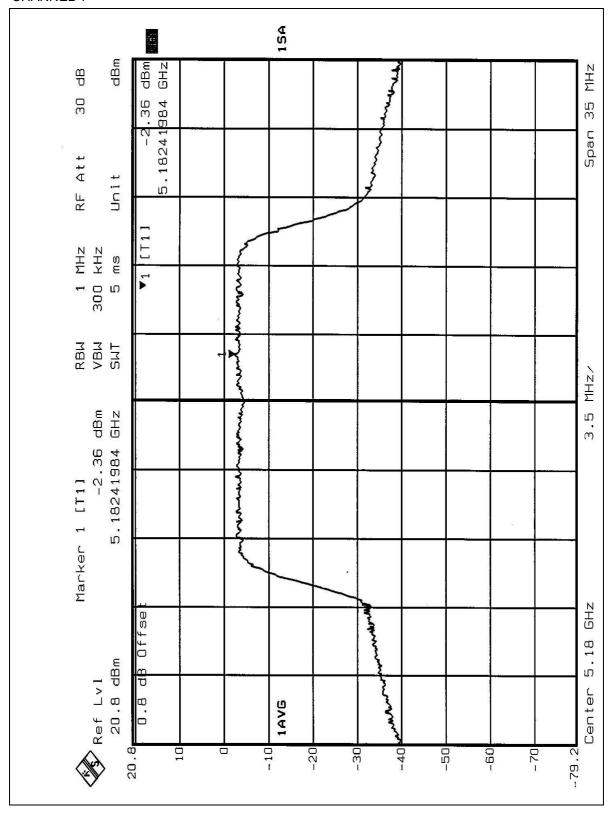


5.5.7 TEST RESULTS

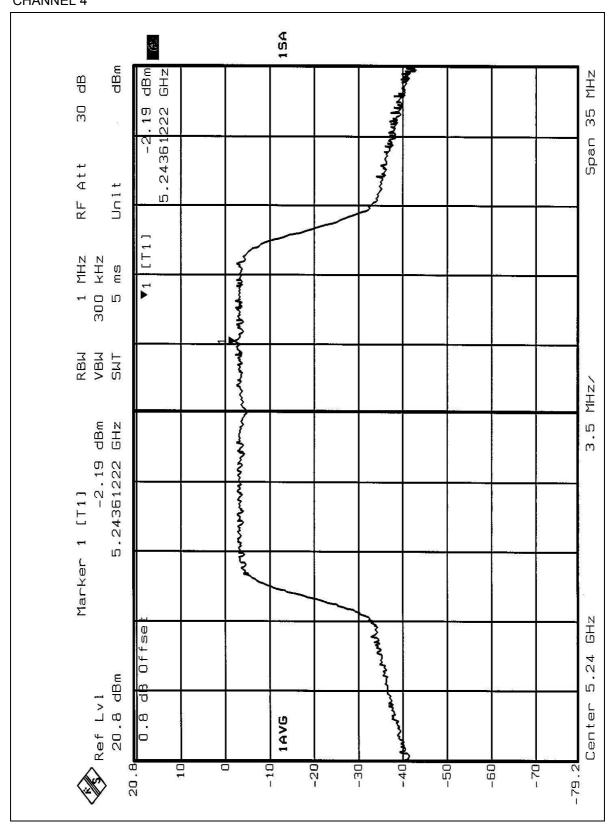
EUT	AirPro Dual-Band Wireless Cardbus Adapter	MODEL	DWL-AG650
ENVIRONMENTAL CONDITIONS	20deg. C, 69%RH, 991 hPa	INPUT POWER (SYSTEM)	120Vac, 60 Hz
TESTED BY	Ansen Lei		

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 1 MHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5180	-2.36	4	PASS
4	5240	-2.19	4	PASS
5	5260	-0.65	11	PASS
8	5320	-0.27	11	PASS
9	5745	-2.69	17	PASS
12	5805	-1.64	17	PASS

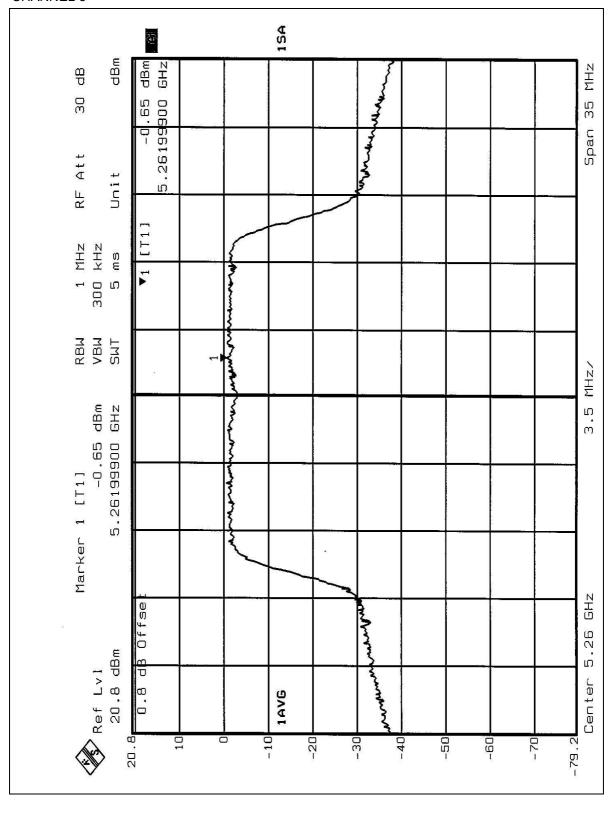




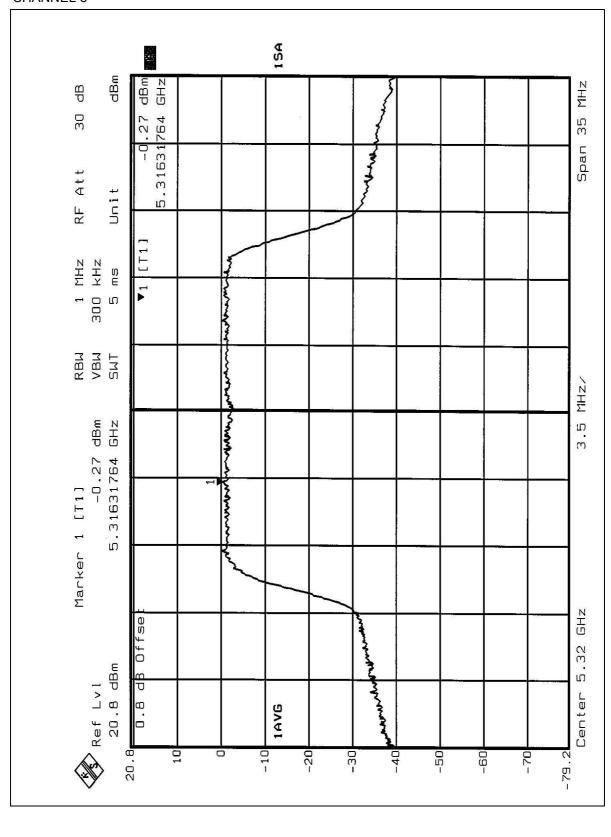




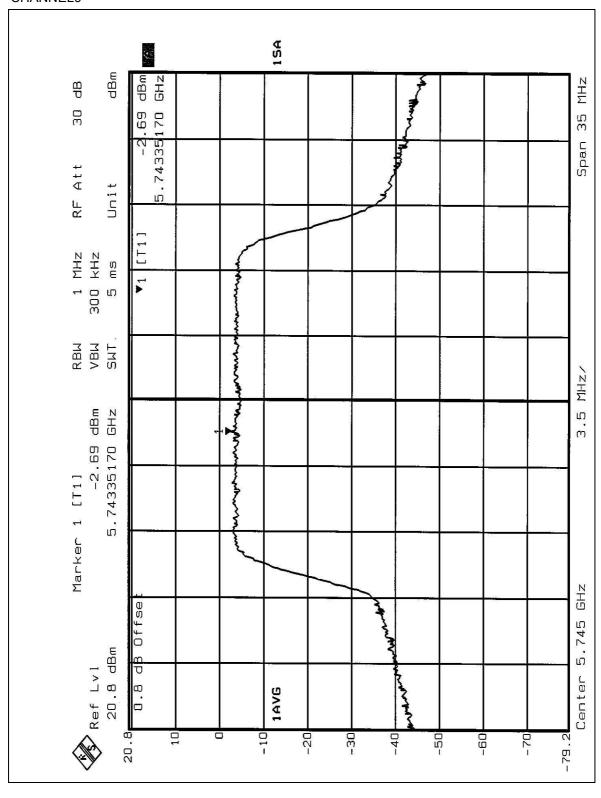




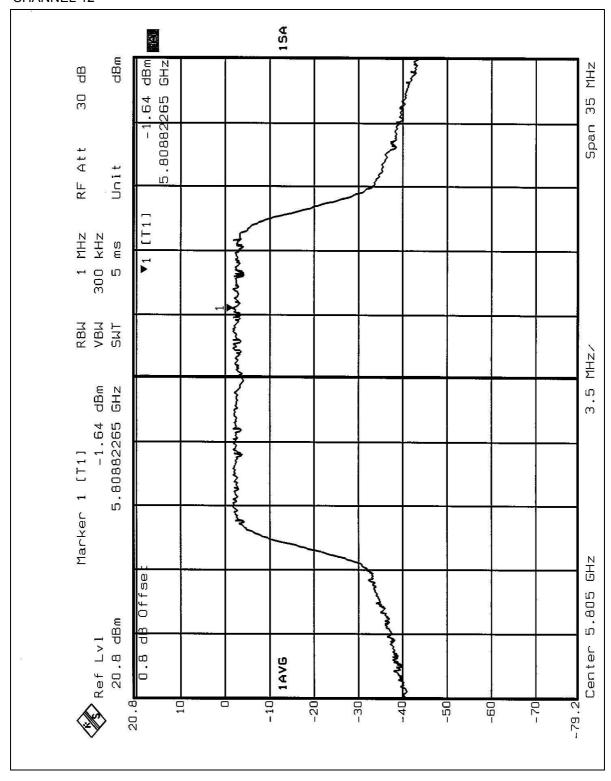














5.6 FREQUENCY STABILITY

5.6.1 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.

5.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
ANRITSU SPECTRUM ANALYZER	MS2667C	M10281	Mar. 15, 2003
WIT STANDARD TEMPERATURE AND HUMIDITY CHAMBER	TH-4S-C	W901030	Jun. 24, 2003

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

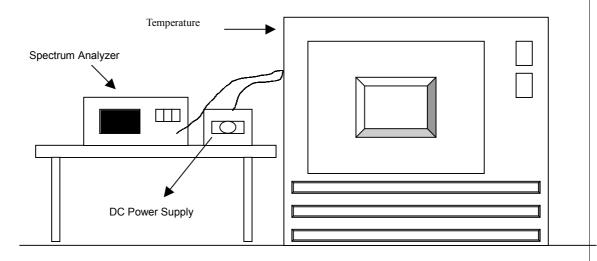
- 1. The EUT was placed inside the environmental test chamber and powered by nominal DC voltage.
- 2. Turn the EUT on and couple its output to a spectrum analyzer.
- 3. Turn the EUT off and set the chamber to the highest temperature specified.
- 4. Allow sufficient time (approximately 30 min) for the 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.



5.6.4 DEVIATION FROM TEST STANDARD

No deviation

5.6.5 TEST SETUP



5.6.6 EUT OPERATING CONDITION

Same as Item 4.1.6



5.6.7 TEST RESULTS

Operating frequency: 5320MHz				Limit : ± 0.02%			
Temp.	mp. Power 2 minute		5 minute		10 minute		
(℃)	supply (VDC)	(MHz)	(%)	(MHz)	(%)	(MHz)	(%)
	126.5	5320.0335	0.000630	5320.0331	0.000622	5320.0332	0.000624
50	110.0	5320.0337	0.000633	5320.0333	0.000626	5320.0330	0.000620
	93.5	5320.0338	0.000635	5320.0333	0.000626	5320.0330	0.000620
	126.5	5320.0365	0.000686	5320.0361	0.000679	5320.0365	0.000686
40	110.0	5320.0363	0.000682	5320.0360	0.000677	5320.0362	0.000680
	93.5	5320.0367	0.000690	5320.0366	0.000688	5320.0363	0.000682
	126.5	5320.0485	0.000912	5320.0493	0.000927	5320.0495	0.000930
30	110.0	5320.0483	0.000908	5320.0490	0.000921	5320.0497	0.000934
	93.5	5320.0486	0.000914	5320.0490	0.000921	5320.0499	0.000938
	126.5	5320.0633	0.001190	5320.0628	0.001180	5320.0626	0.001177
20	110.0	5320.0633	0.001190	5320.0623	0.001171	5320.0627	0.001179
	93.5	5320.0635	0.001194	5320.0624	0.001173	5320.0628	0.001180
	126.5	5320.0927	0.001742	5320.0925	0.001739	5320.0924	0.001737
10	110.0	5320.0930	0.001748	5320.0927	0.001742	5320.0923	0.001735
	93.5	5320.0931	0.001750	5320.0928	0.001744	5320.0925	0.001739
	126.5	5320.0810	0.001523	5320.0807	0.001517	5320.0811	0.001524
0	110.0	5320.0810	0.001523	5320.0807	0.001517	5320.0813	0.001528
	93.5	5320.0812	0.001526	5320.0809	0.001521	5320.0813	0.001528
	126.5	5320.0865	0.001626	5320.0860	0.001617	5320.0858	0.001613
-10	110.0	5320.0867	0.001630	5320.0860	0.001617	5320.0857	0.001611
	93.5	5320.0867	0.001630	5320.0862	0.001620	5320.0858	0.001613
-20	126.5	5320.0845	0.001588	5320.0843	0.001585	5320.0841	0.001581
	110.0	5320.0847	0.001592	5320.0843	0.001585	5320.0840	0.001579
	93.5	5320.0849	0.001596	5320.0844	0.001586	5320.0842	0.001583
	126.5	5320.0733	0.001378	5320.0738	0.001387	5320.0729	0.001370
-30	110.0	5320.0733	0.001378	5320.0738	0.001387	5320.0730	0.001372
	93.5	5320.0734	0.001380	5320.0738	0.001387	5320.0733	0.001378



5.7 BAND EDGES MEASUREMENT

5.7.1 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
SPECTRUM ANALYZER	FSEK30	100049	July 24, 2003

NOTE:

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

5.7.2 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.

5.7.3 EUT OPERATING CONDITION

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



5.7.4 TEST RESULTS

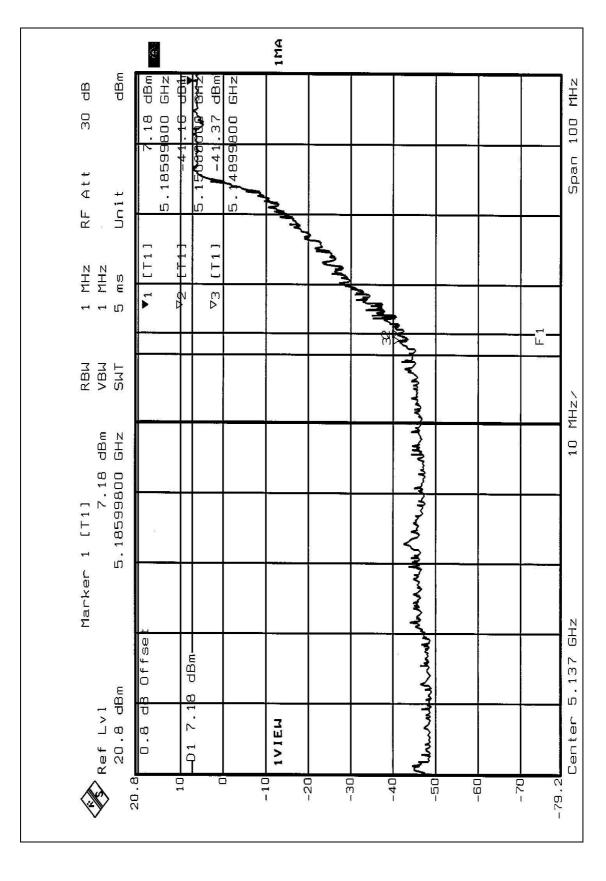
For signals in the restricted bands above and below the 5.15 to 5.35 GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal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

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=300Hz) are attached on the following 8 pages.

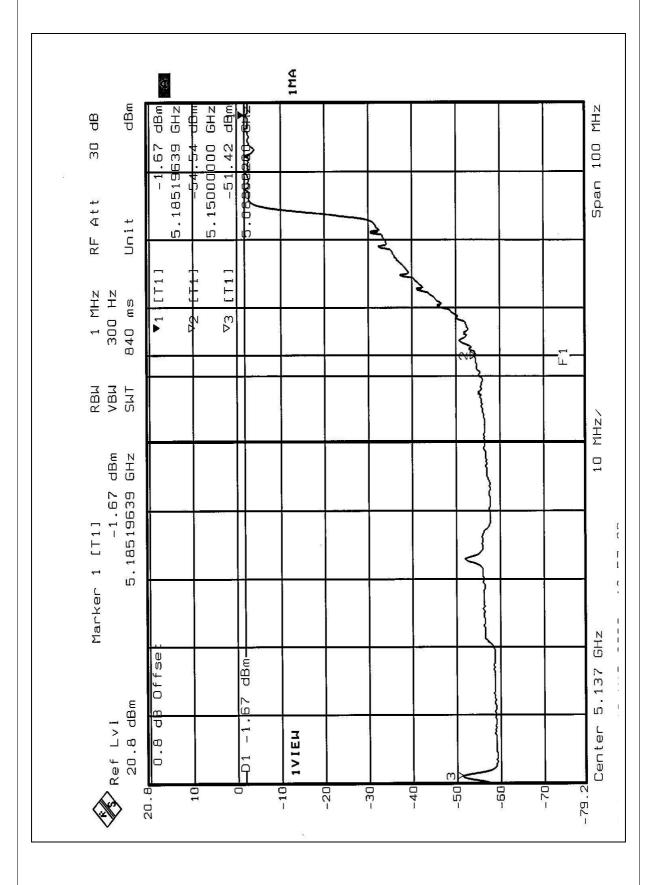
Normal Mode: Channel 1 (5180 MHz)

The band edge emission plot on the following 2 pages shows 48.34dBc (Peak) / 49.75dBc (Average) 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 94.8dBuV/m, so the maximum field strength in restrict band is 94.8- 49.75=45.05dBuV/m which is under 54dBuV/m limit.





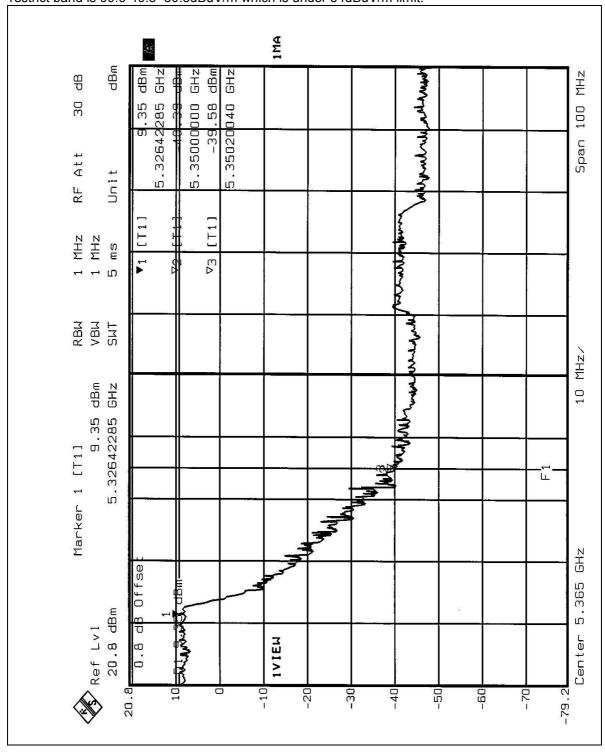




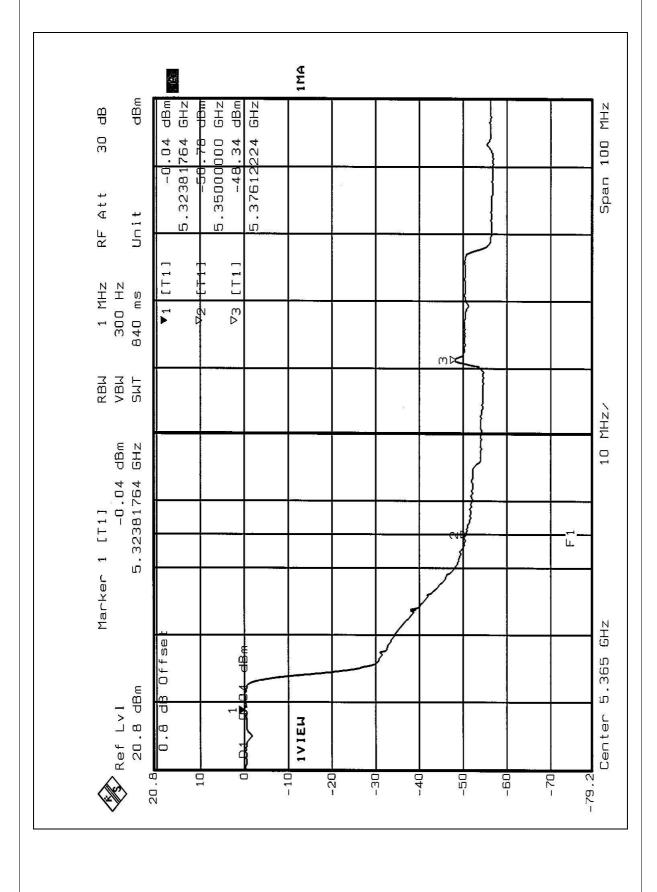


Normal Mode: Channel 8 (5320 MHz)

The band edge emission plot on the following 2 pages shows 48.93dBc (Peak) / 49.3dBc (Average) 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 99.6dBuV/m, so the maximum field strength in restrict band is 99.6-49.3=50.3dBuV/m which is under 54dBuV/m limit.









5.8 ANTENNA REQUIREMENT

5.8.1 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.

5.8.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Printed Patch antenna without connector. The maximum Gain of the antenna is 1.5dBi



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 and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025, Guide 25 or EN 45001:

USA FCC, NVLAP, UL TUV Rheinland

Japan VCCI
New Zealand MoC
Norway NEMKO

R.O.C. BSMI, DGT, CNLA

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