

#### 4.5.3 TEST PROCEDURE

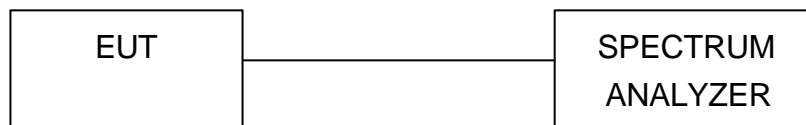
The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.

The sweep time is allowed to be longer than span/3 kHz 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 CONDITION

Same as Item 4.3.6



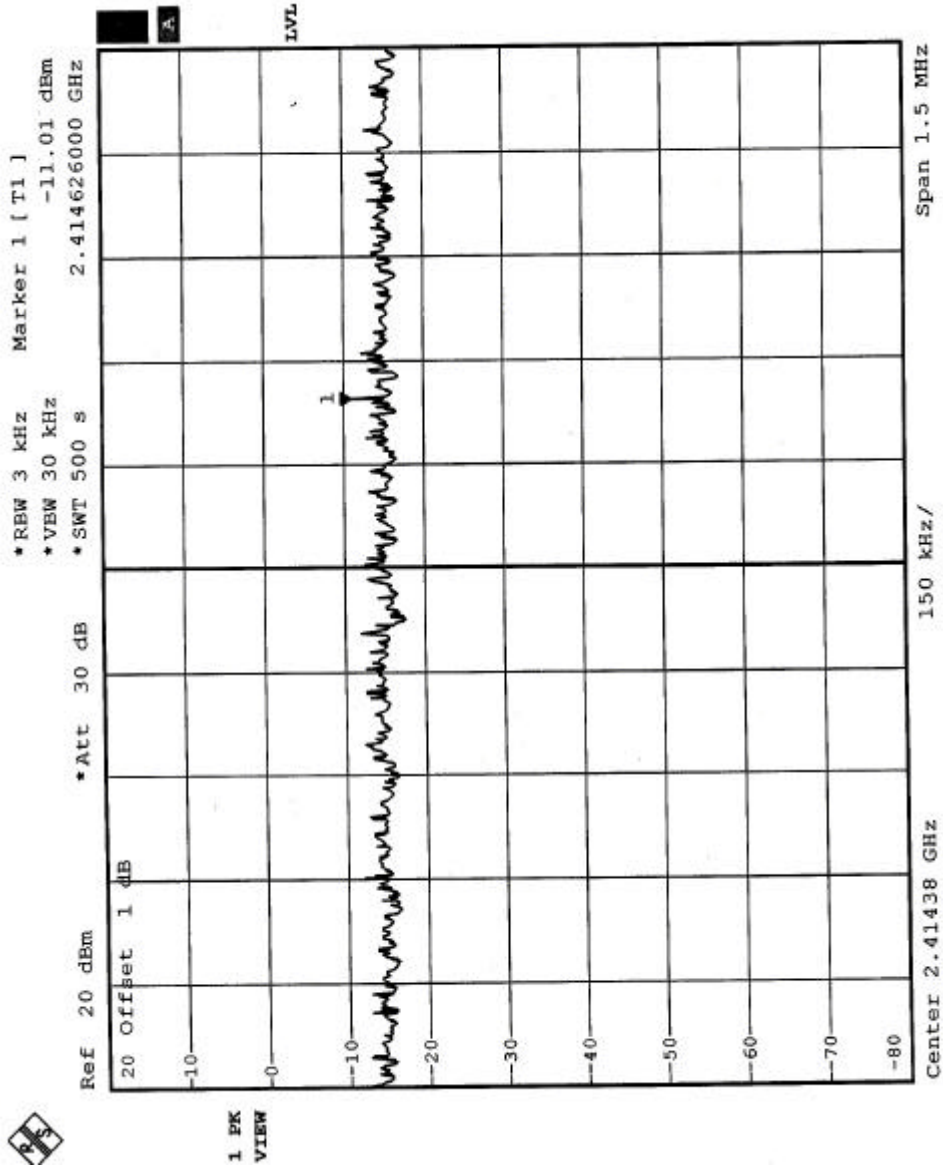
## 4.5.7 TEST RESULTS(A)-DSSS

<b>EUT</b>	Wireless LAN Access Point	<b>MODEL</b>	A300-2
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	21deg. C, 58RH, 976 hPa
<b>TESTED BY</b>	Eric Lee		

<b>CHANNEL NUMBER</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-11.01	8	PASS
6	2437	-11.08	8	PASS
11	2462	-11.28	8	PASS

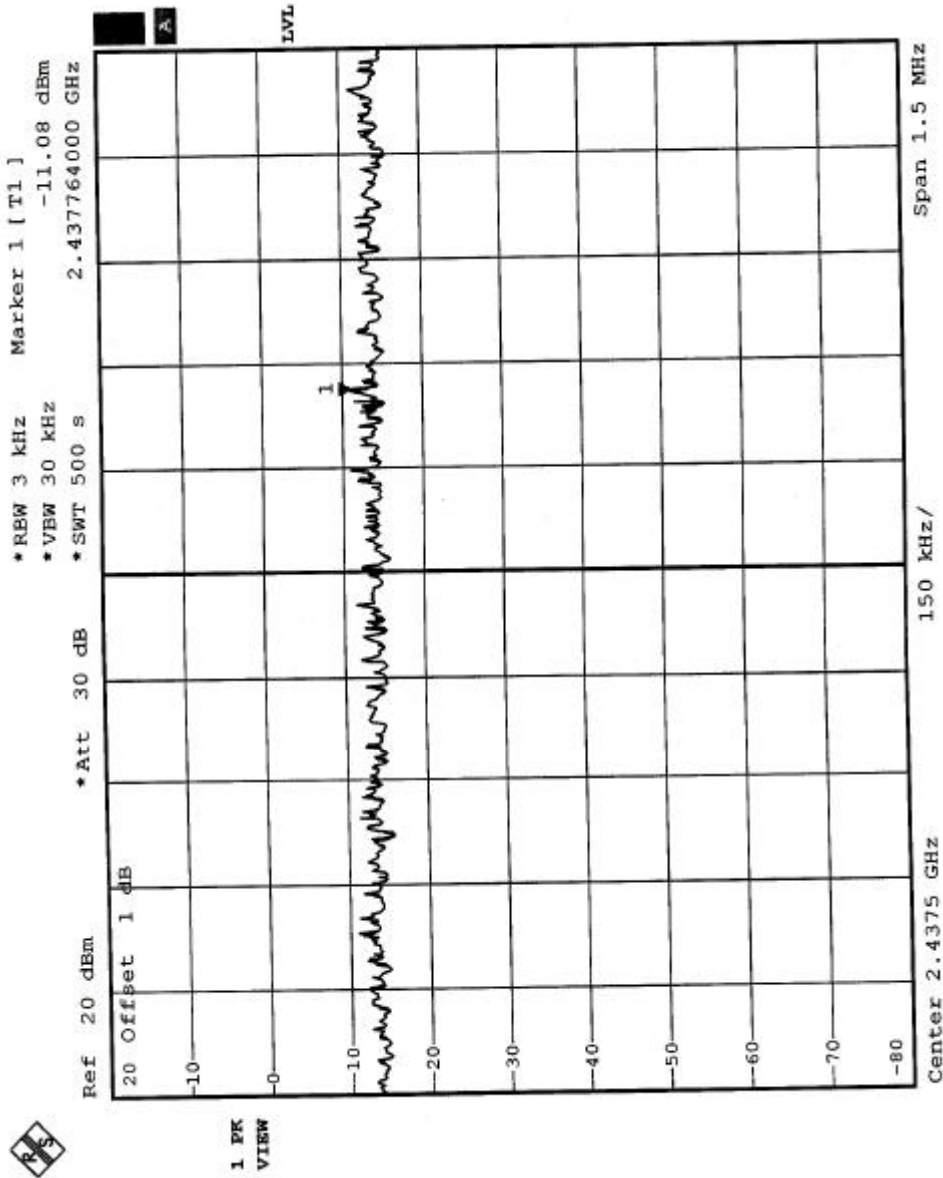


CH1



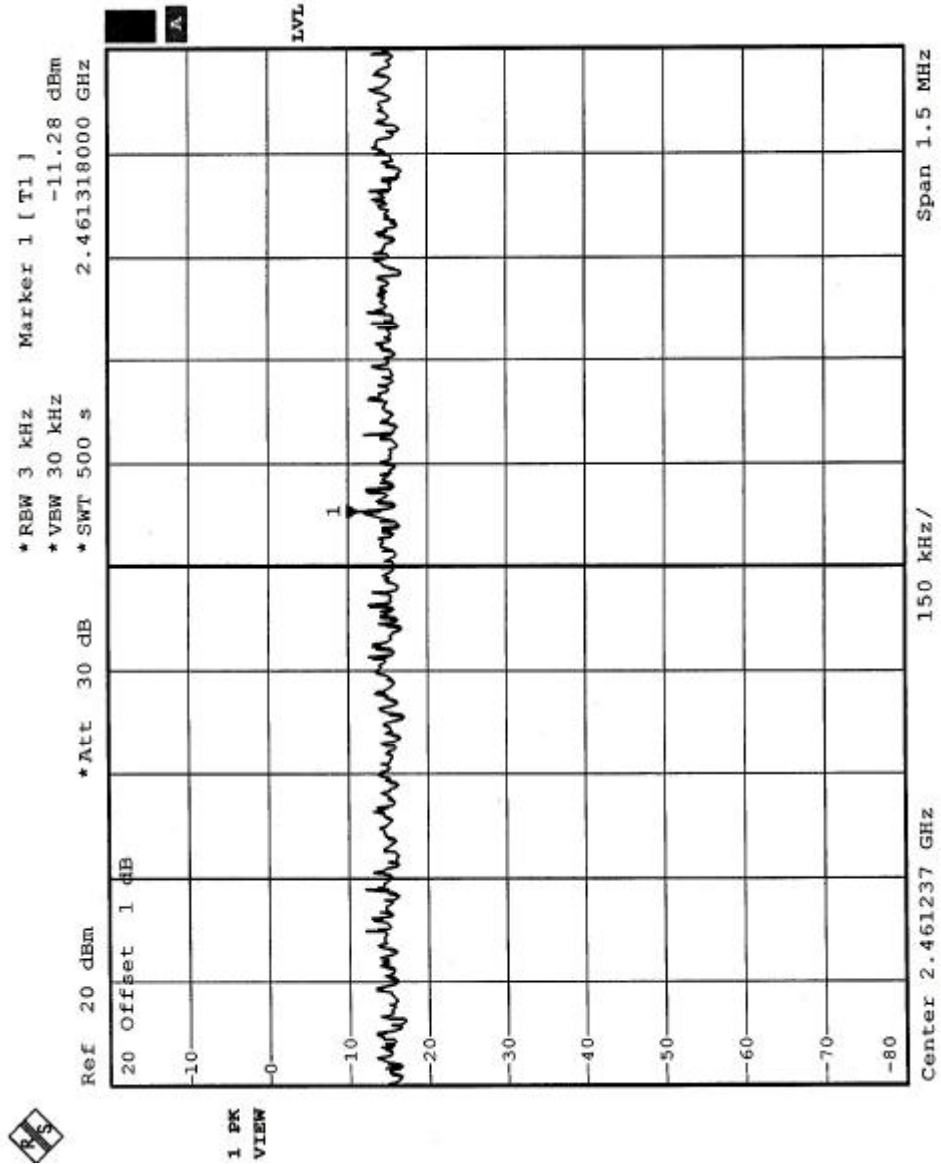


CH6





CH11





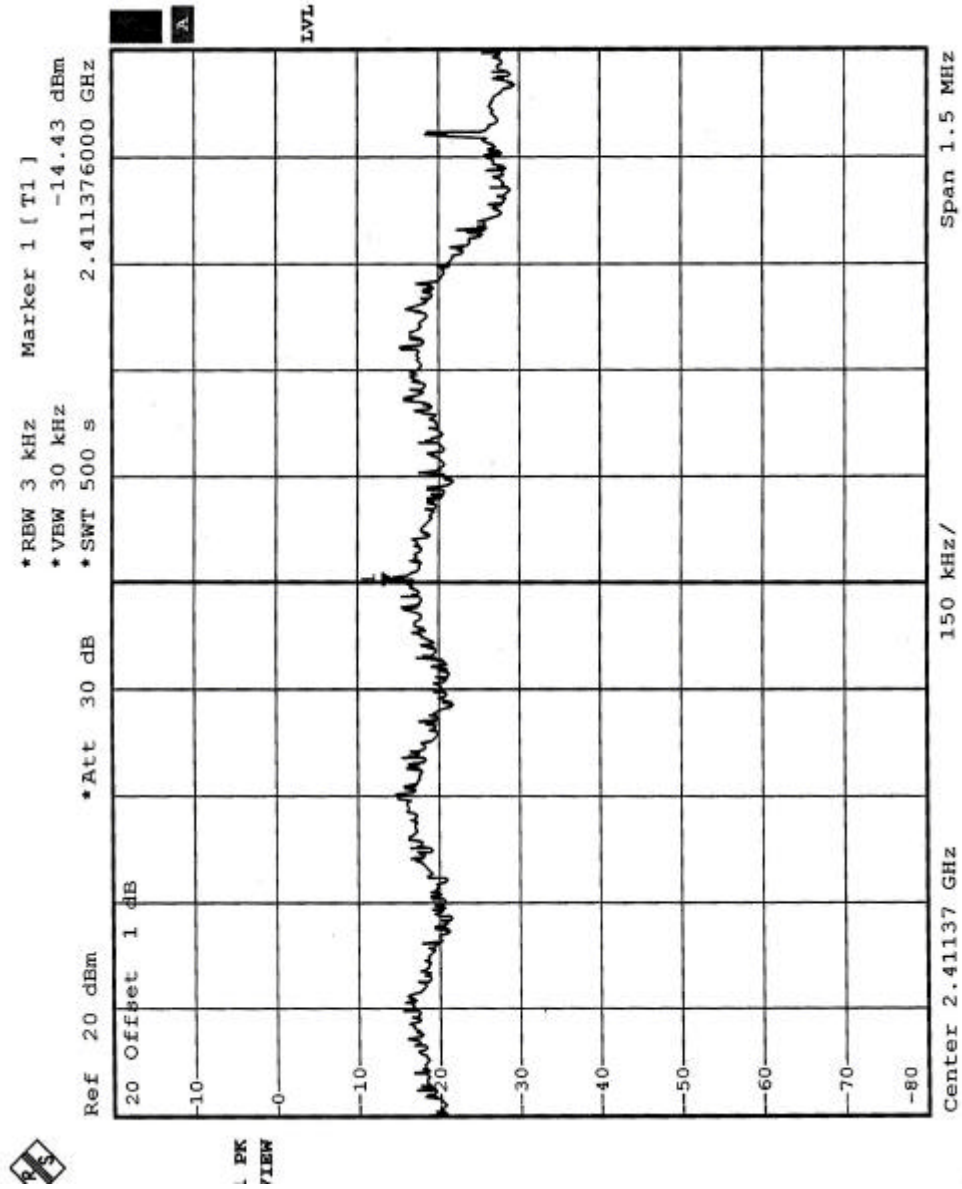
## 4.5.8 TEST RESULTS(A)-OFDM

<b>EUT</b>	Wireless LAN Access Point	<b>MODEL</b>	A300-2
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	21deg. C, 58RH, 976 hPa
<b>TESTED BY</b>	Eric Lee		

<b>CHANNEL NUMBER</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-14.43	8	PASS
6	2437	-14.45	8	PASS
11	2462	-14.59	8	PASS

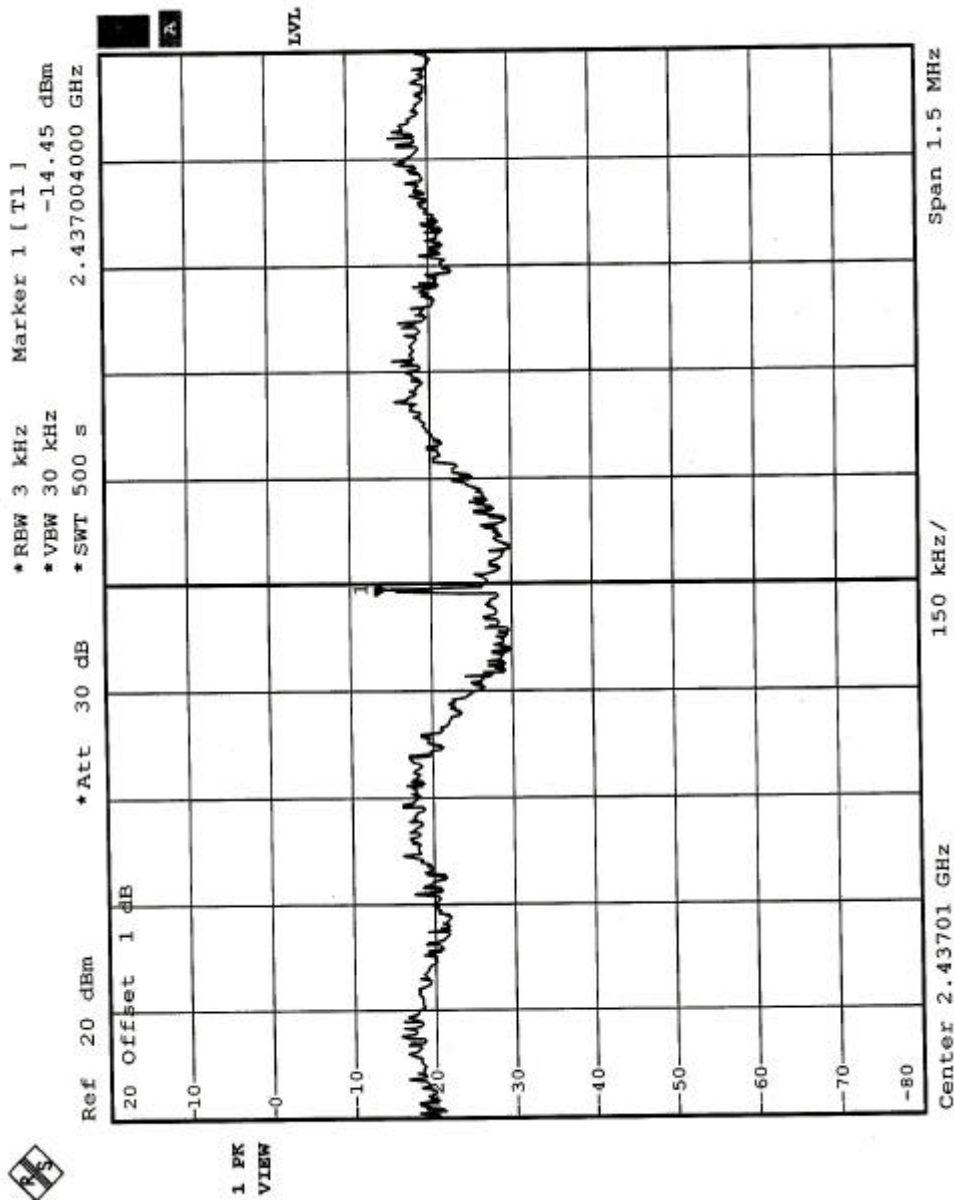


CH1





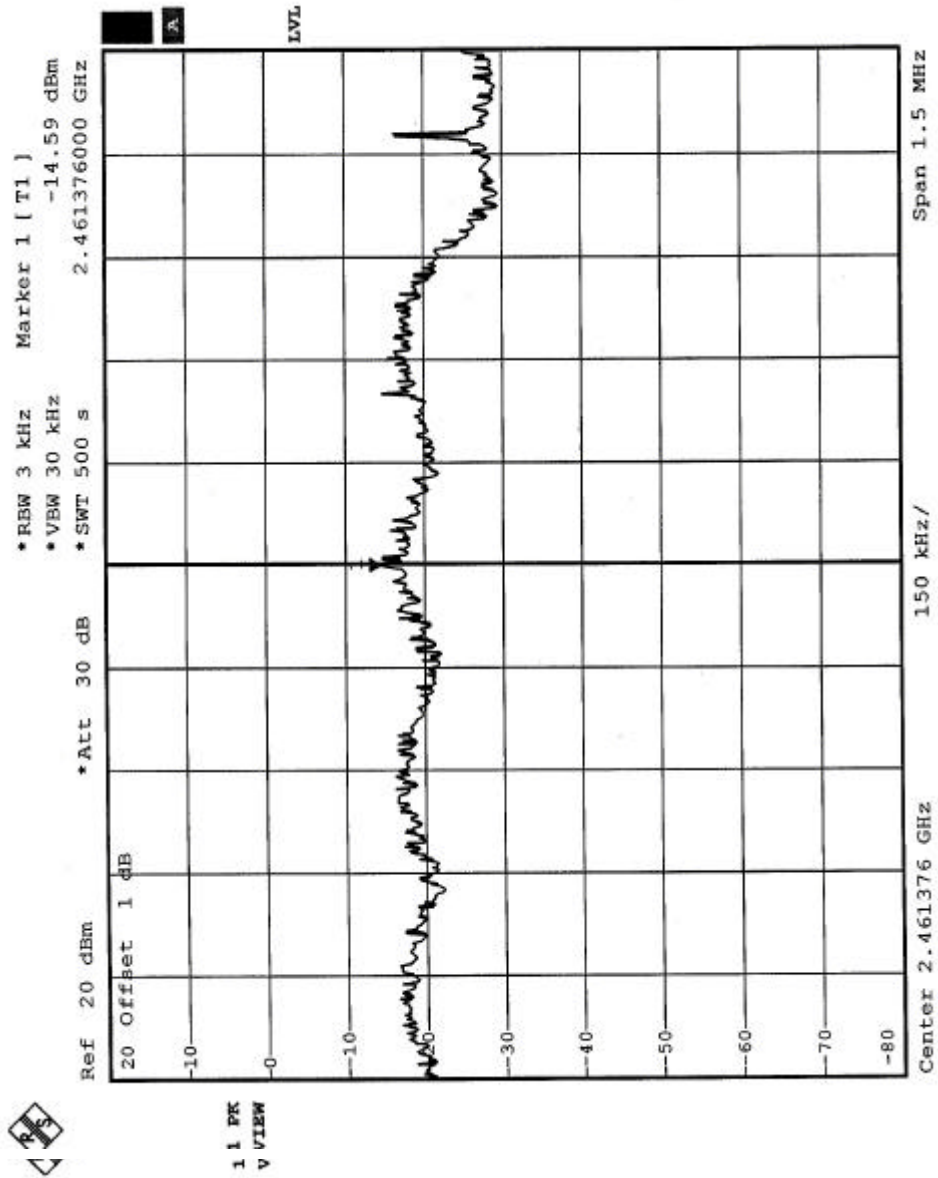
CH6







CH11





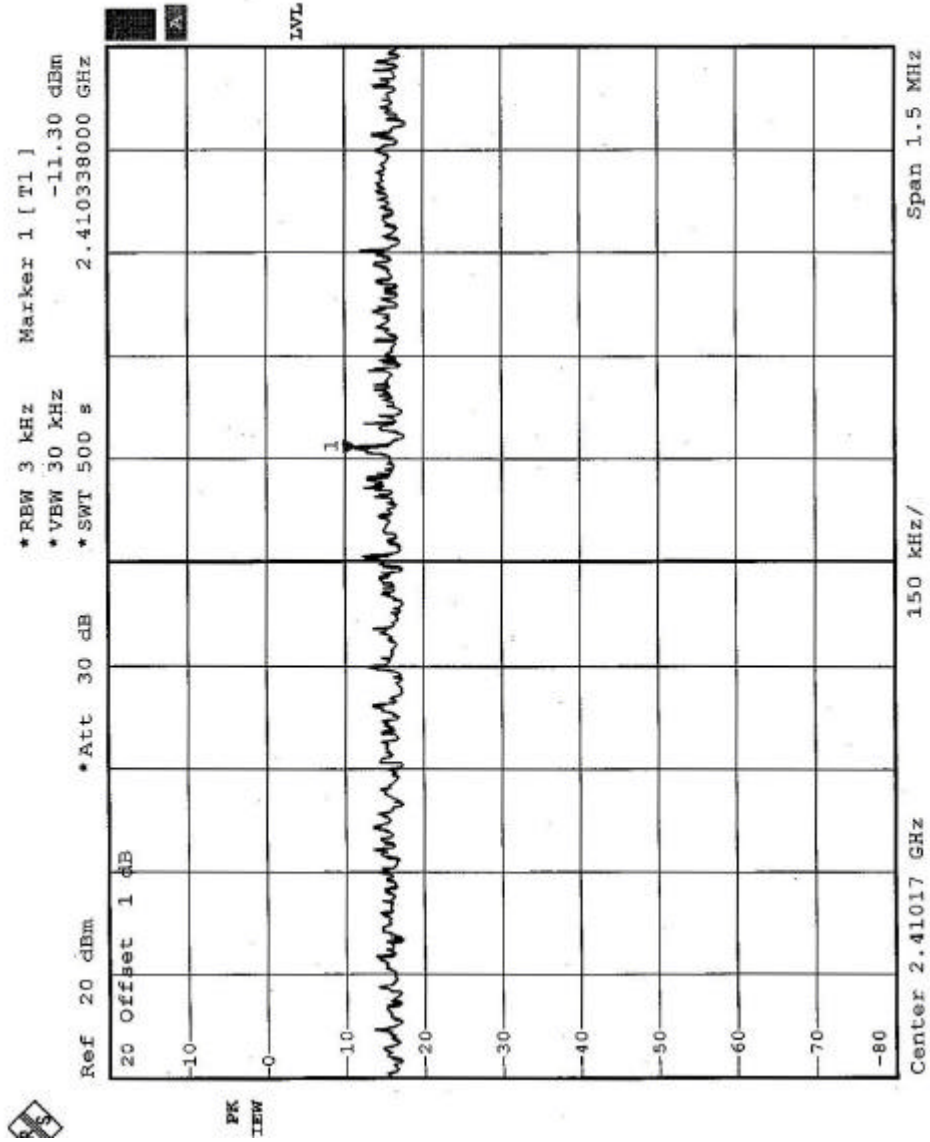
## 4.5.9 TEST RESULTS(B)-DSSS

<b>EUT</b>	Wireless LAN Access Point	<b>MODEL</b>	A300-2
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	21deg. C, 58RH, 976 hPa
<b>TESTED BY</b>	Eric Lee		

<b>CHANNEL NUMBER</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-11.30	8	PASS
6	2437	-12.44	8	PASS
11	2462	-12.55	8	PASS

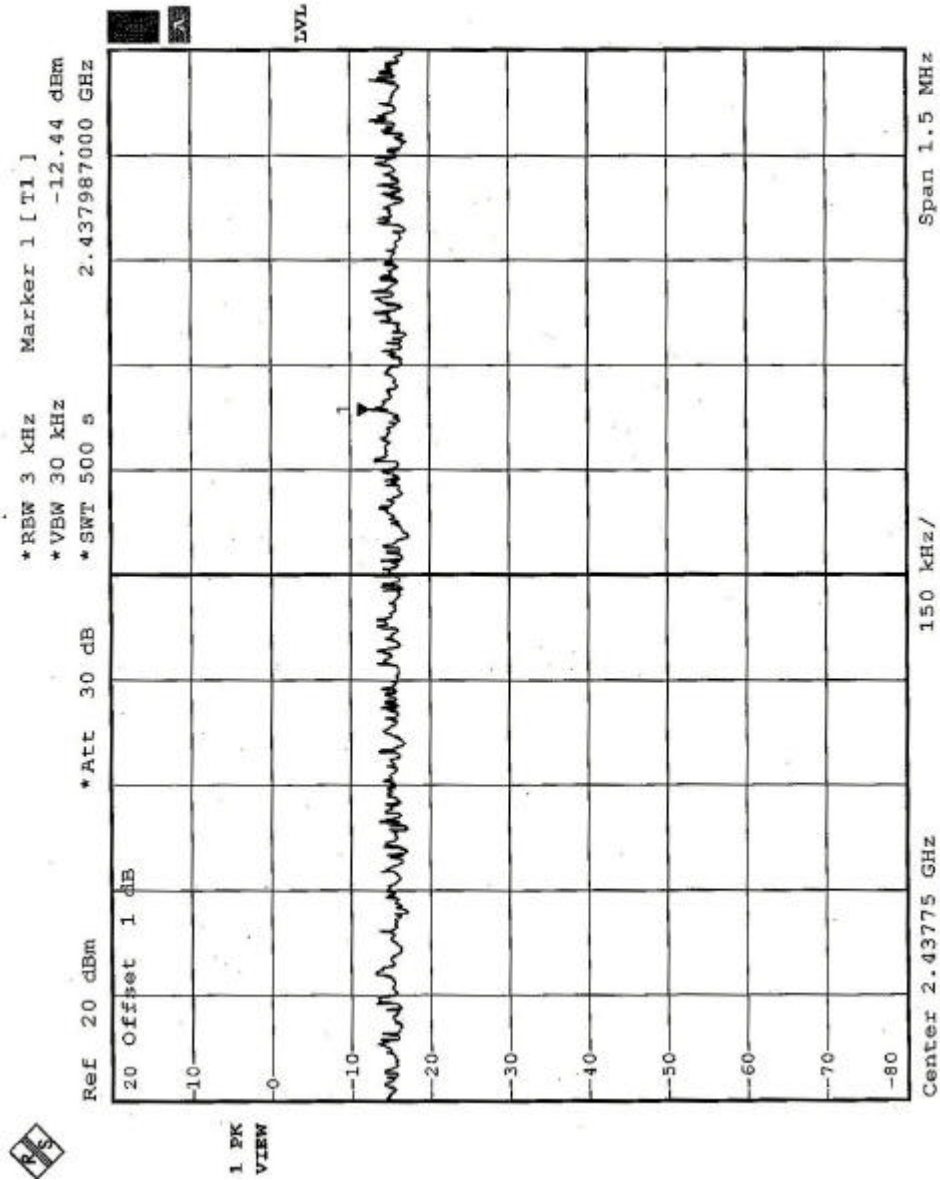


CH1



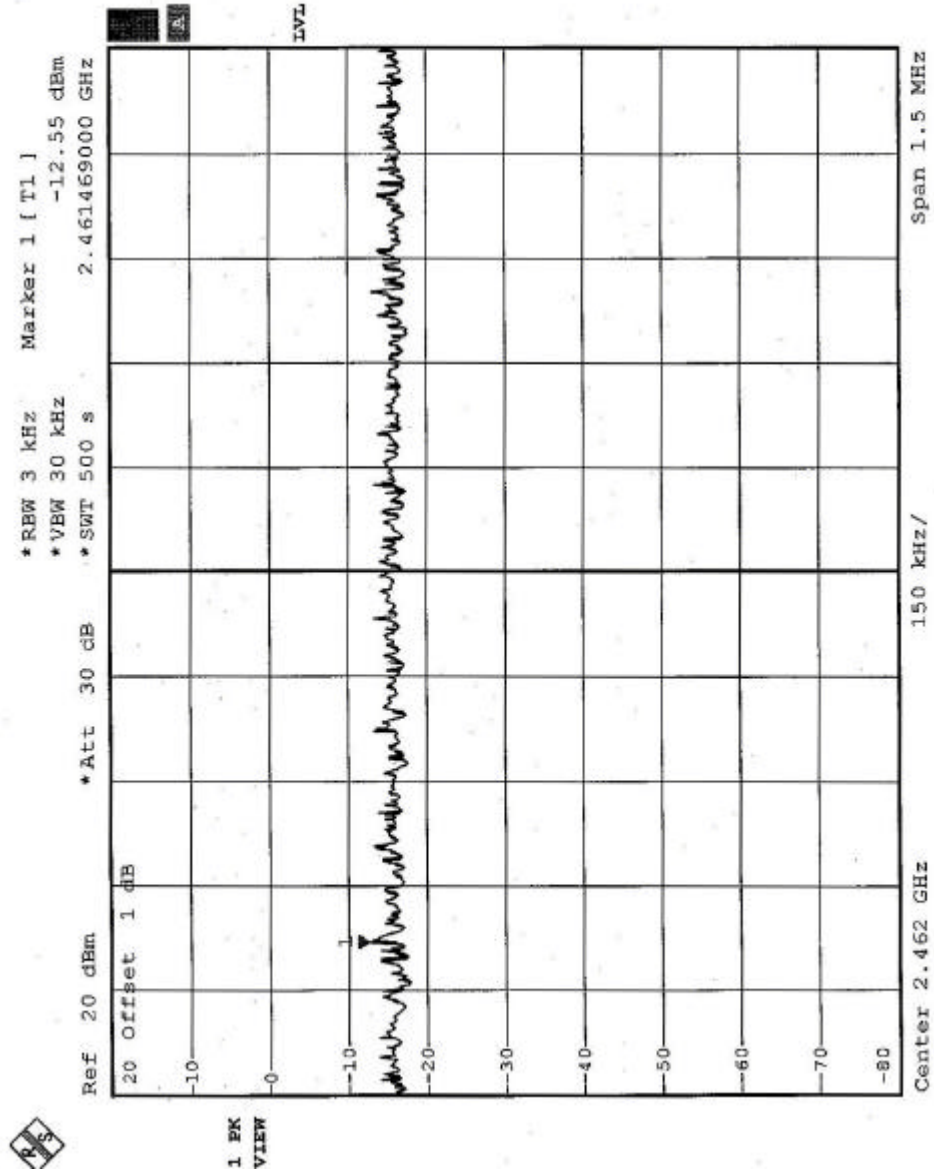


CH6





CH11





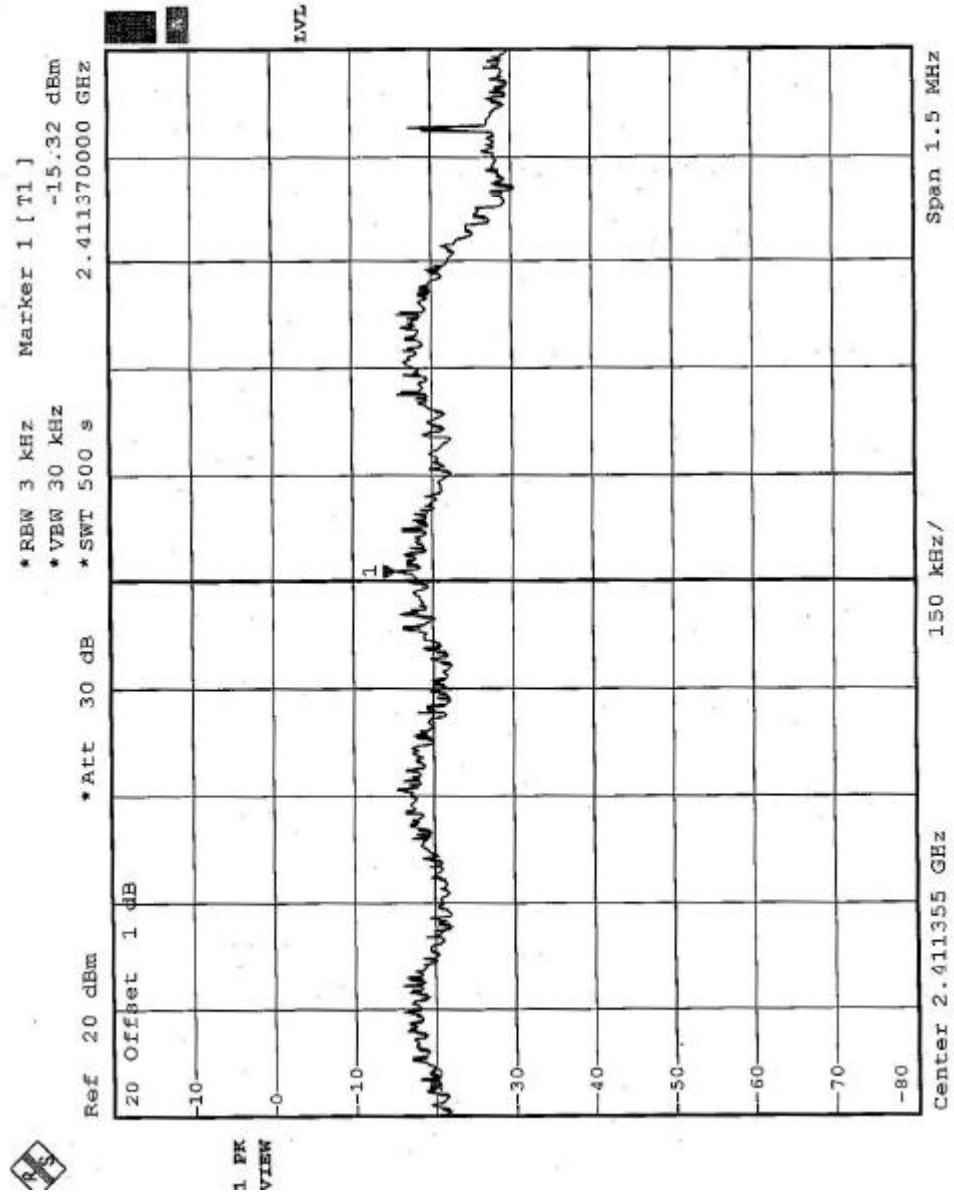
## 4.5.10 TEST RESULTS(B)-OFDM

<b>EUT</b>	Wireless LAN Access Point	<b>MODEL</b>	A300-2
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60Hz	<b>ENVIRONMENTAL CONDITIONS</b>	21deg. C, 58RH, 976 hPa
<b>TESTED BY</b>	Eric Lee		

<b>CHANNEL NUMBER</b>	<b>CHANNEL FREQUENCY (MHz )</b>	<b>RF POWER LEVEL IN 3 kHz BW (dBm)</b>	<b>MAXIMUM LIMIT (dBm)</b>	<b>PASS/FAIL</b>
1	2412	-15.32	8	PASS
6	2437	-15.77	8	PASS
11	2462	-15.48	8	PASS

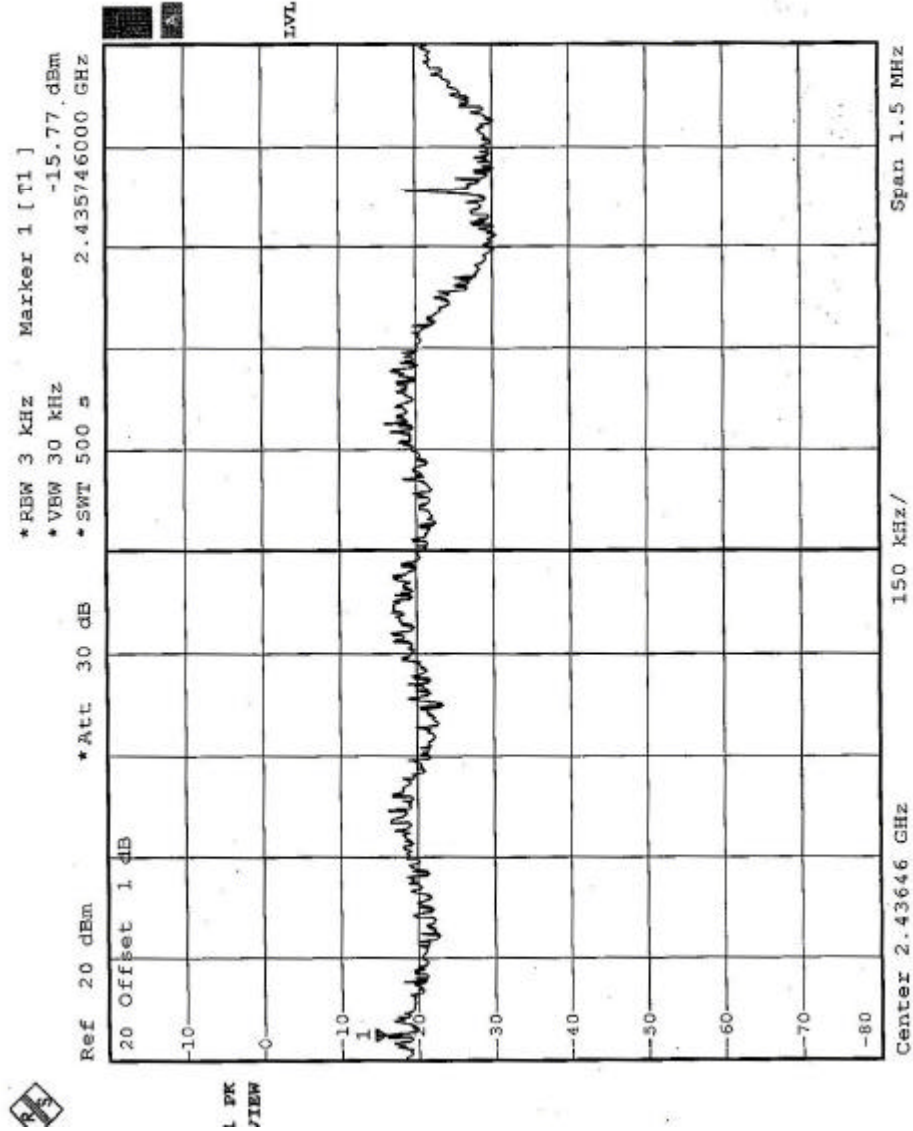


CH1





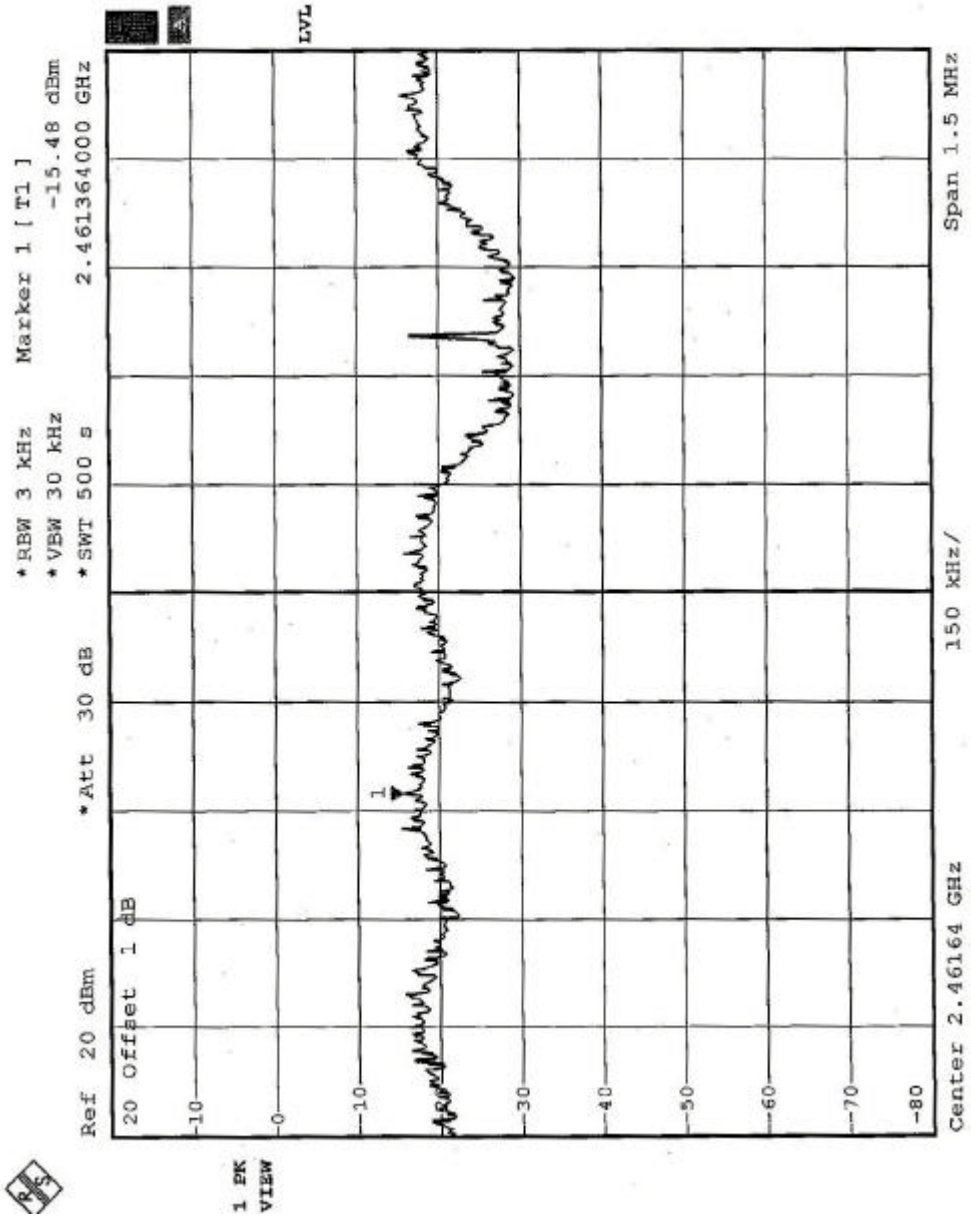
CH6







CH11





## 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
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2003

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.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 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

### 4.6.4 DEVIATION FROM TEST STANDARD

No deviation



#### 4.6.5 EUT OPERATING CONDITION

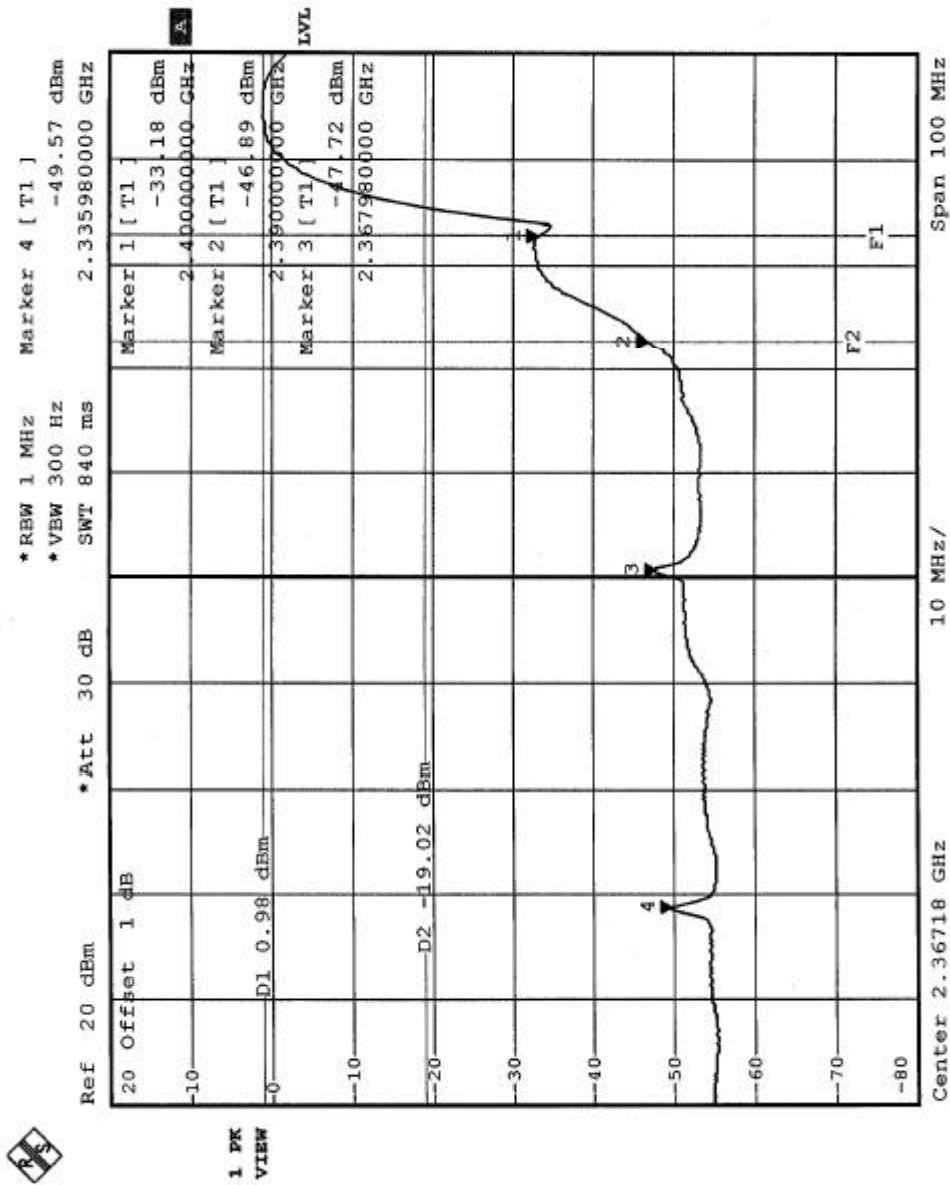
Same as Item 4.3.6

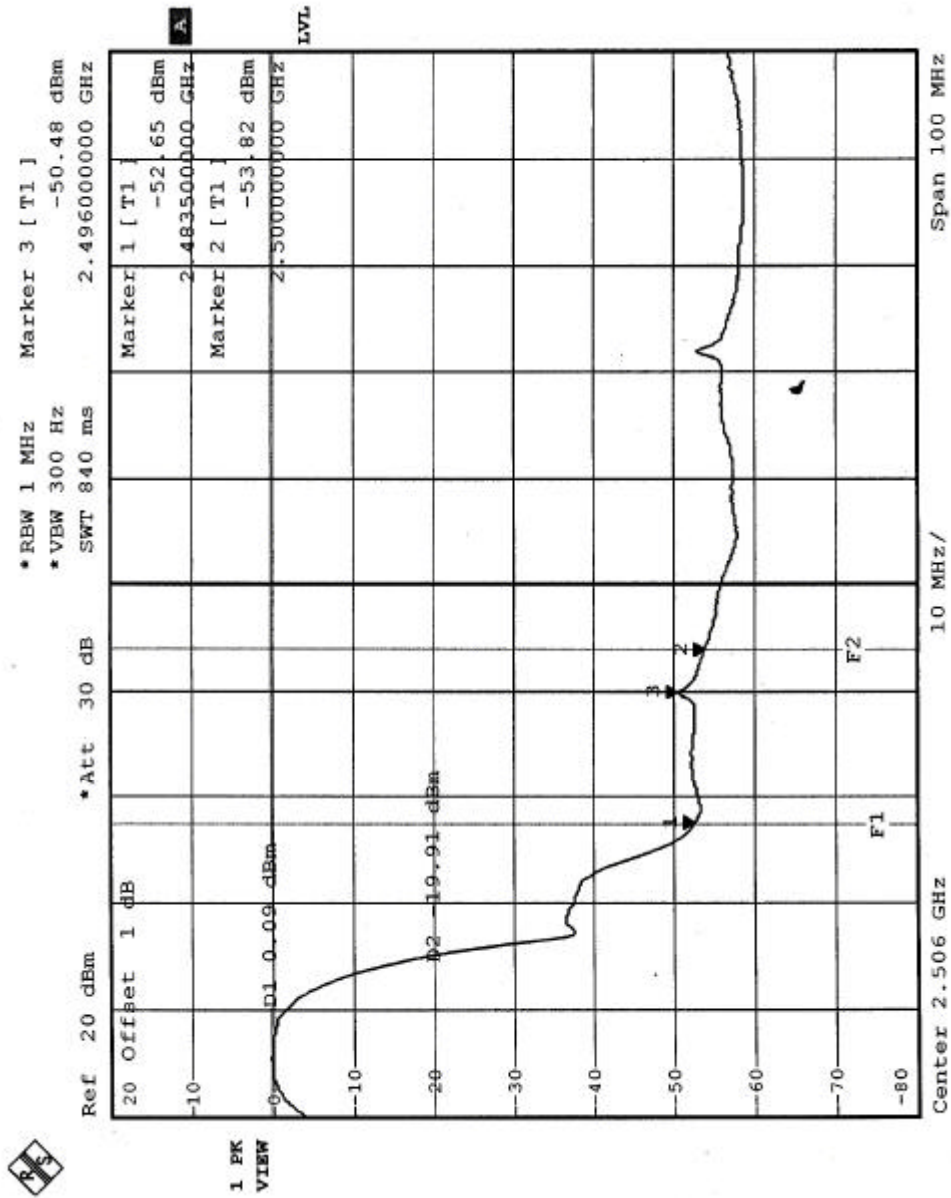
#### 4.6.6 TEST RESULTS (A)-DSSS

The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

**NOTE (1):** The band edge emission plot on the following first page shows 47.87dB delta 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 is 100.8dBuV/m, so the maximum field strength in restrict band is  $100.8-47.87=52.93$ dBuV/m which is under 54 dBuV/m limit.

**NOTE (2):** The band edge emission plot on the following second page shows 50.57 dB delta between carrier maximum power and local maximum emission in restrict band (2.496GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2 is 101.0dBuV/m, so the maximum field strength in restrict band is  $101.0-50.57=50.43$ dBuV/m which is under 54 dBuV/m limit.





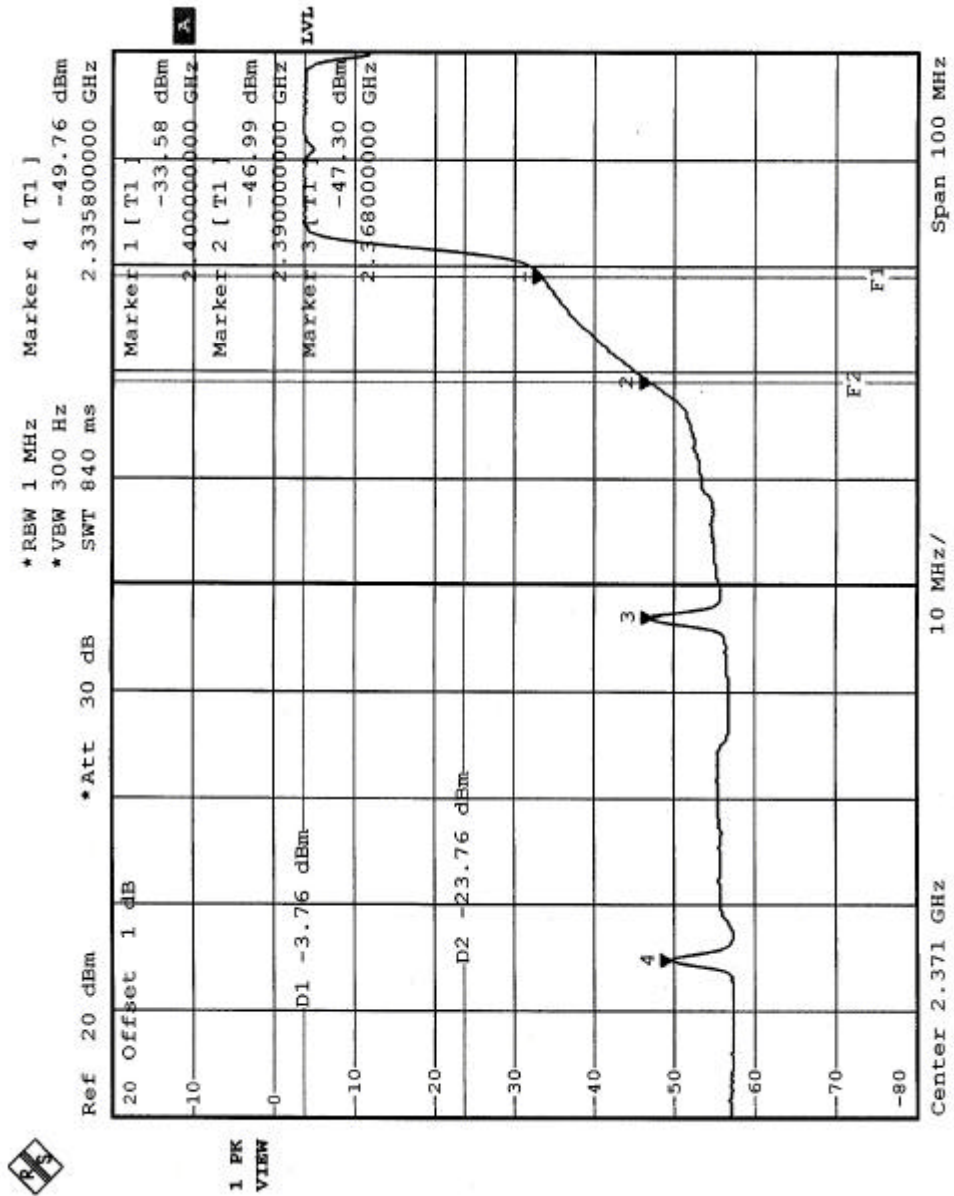


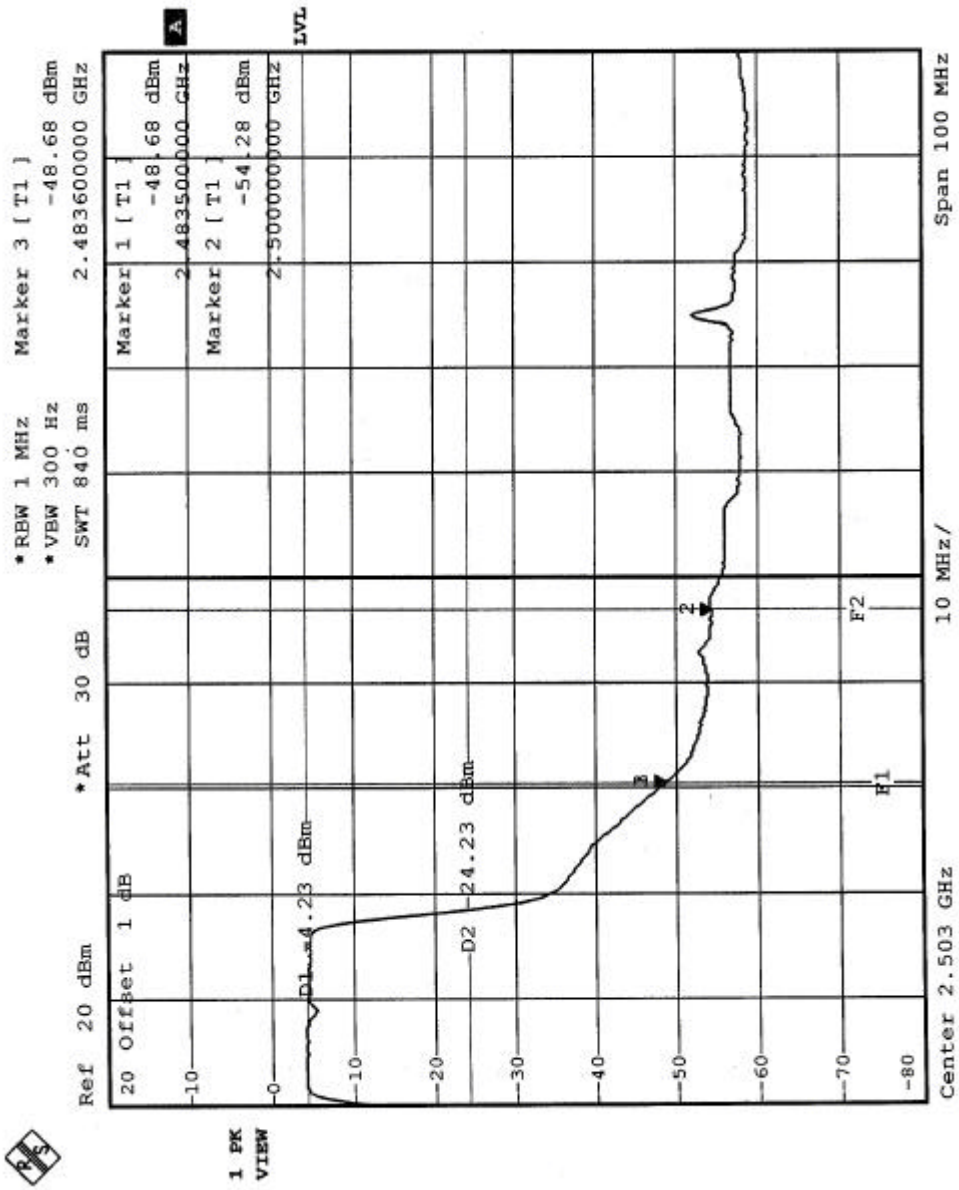
#### 4.6.7 TEST RESULTS (A)-OFDM

The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

**NOTE (1):** The band edge emission plot on the following first page shows 43.23dB delta between carrier maximum power and local maximum emission in restrict band (2.390GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2 is 93.8dBuV/m, so the maximum field strength in restrict band is  $93.8-43.23=50.57$ dBuV/m which is under 54 dBuV/m limit.

**NOTE (2):** The band edge emission plot on the following second page shows 44.45 dB delta between carrier maximum power and local maximum emission in restrict band (2.4836GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2 is 94.1dBuV/m, so the maximum field strength in restrict band is  $94.1-44.45=49.65$  dBuV/m which is under 54 dBuV/m limit.







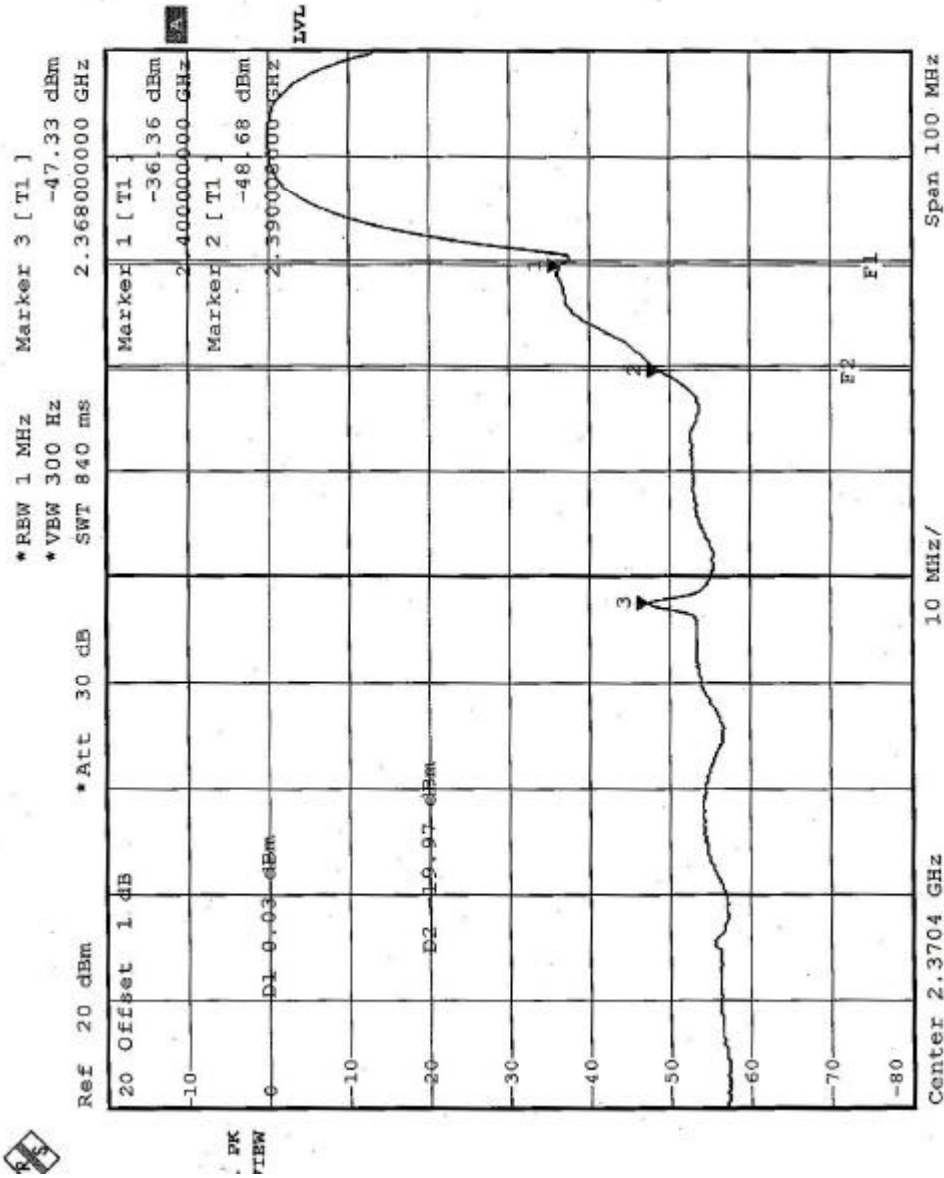


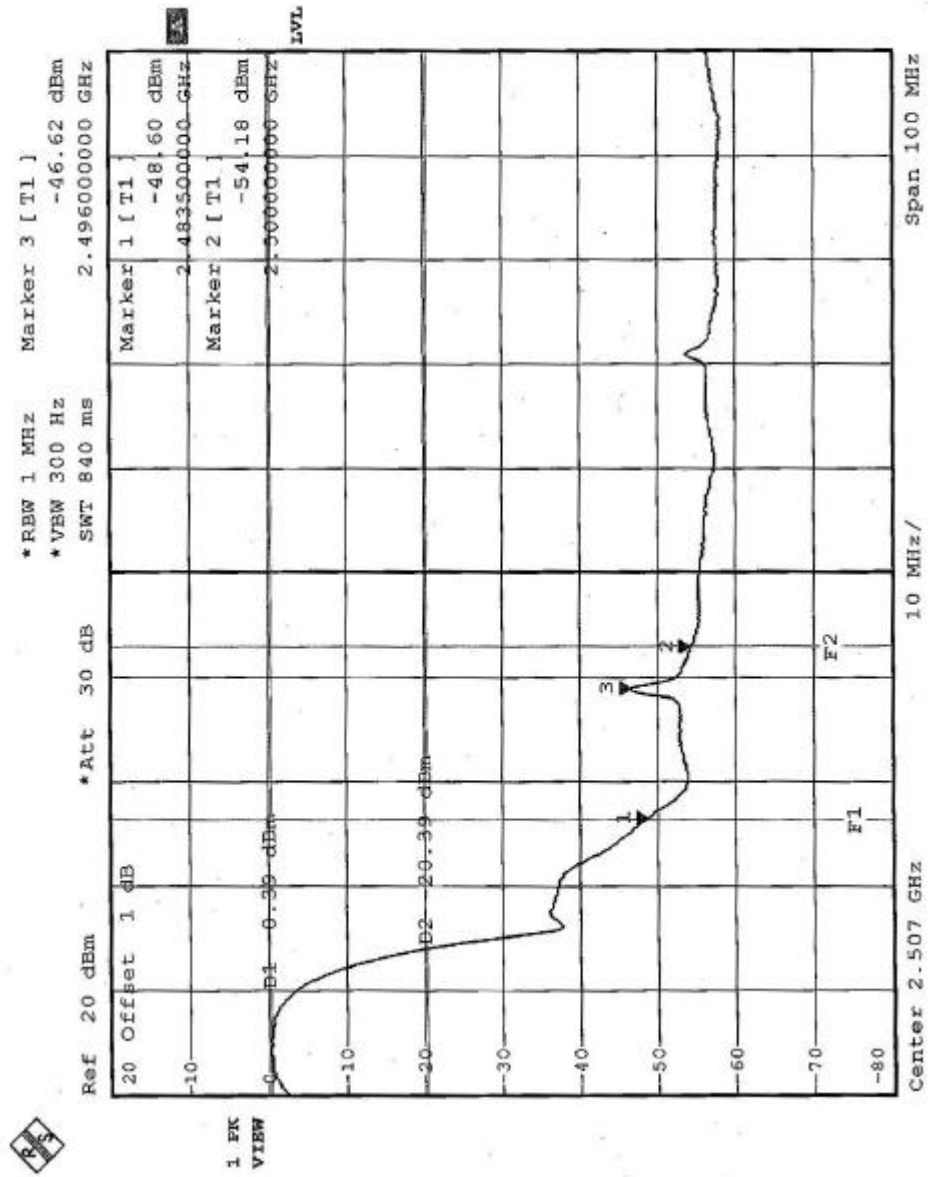
#### 4.6.8 TEST RESULTS (B)-DSSS

The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D1. It shows compliance with the requirement in part 15.247(C).

**NOTE (1):** The band edge emission plot on the following first page shows 47.36dB delta between carrier maximum power and local maximum emission in restrict band (2.368GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2 is 99.2dBuV/m, so the maximum field strength in restrict band is  $99.2-47.36=51.84$ dBuV/m which is under 54 dBuV/m limit.

**NOTE (2):** The band edge emission plot on the following second page shows 46.23 dB delta between carrier maximum power and local maximum emission in restrict band (2.496GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2 is 98.5dBuV/m, so the maximum field strength in restrict band is  $98.5-46.23=52.27$ dBuV/m which is under 54 dBuV/m limit.





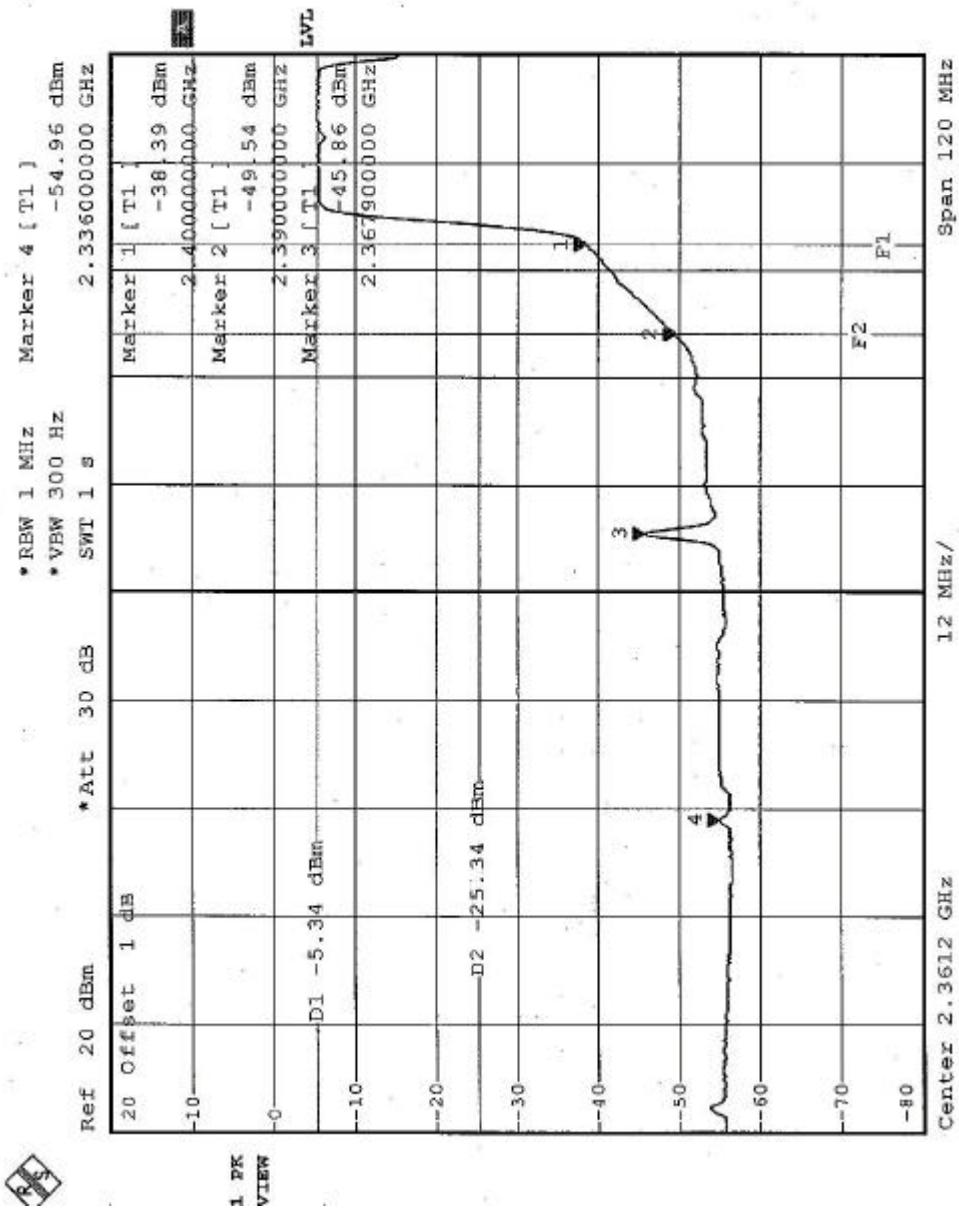


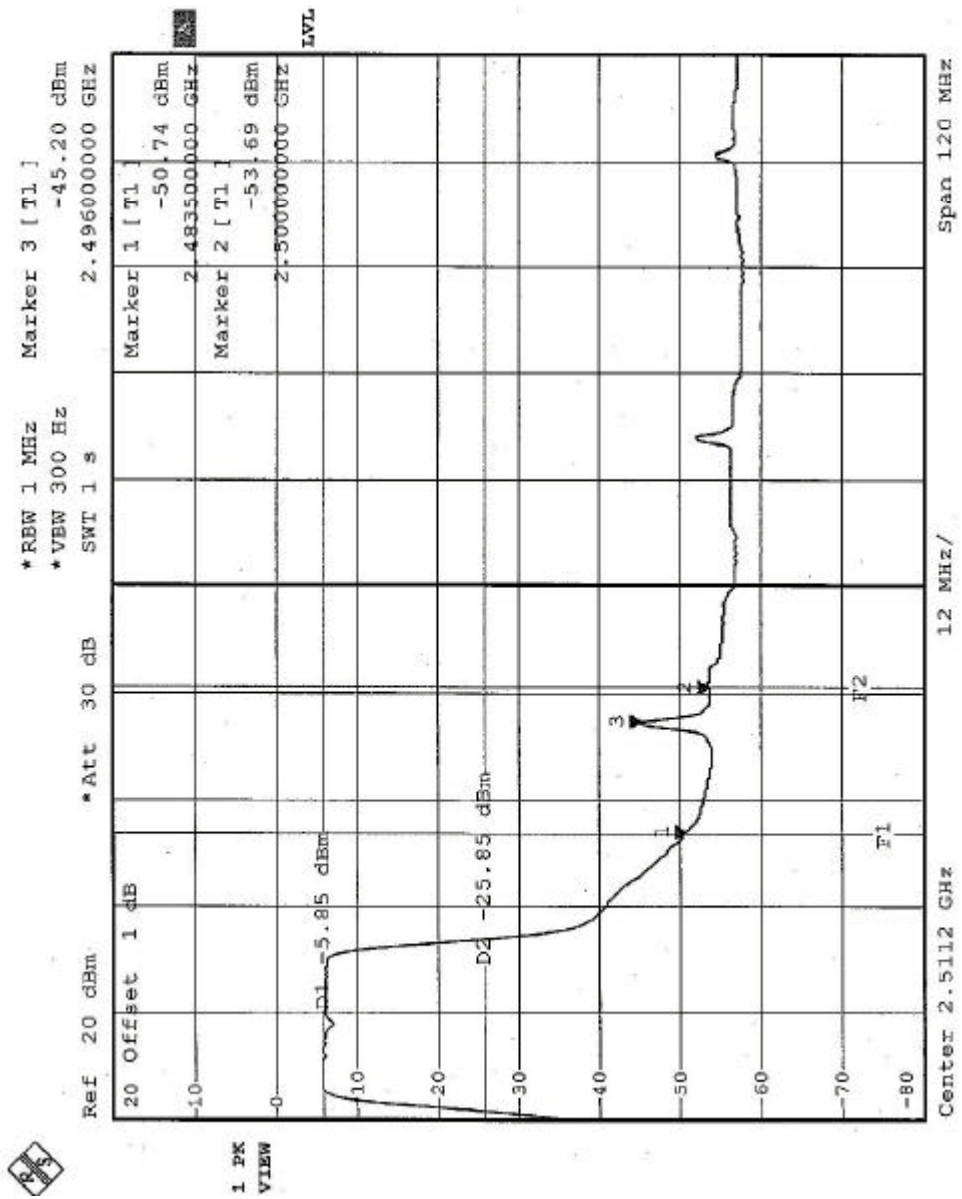
#### 4.6.9 TEST RESULTS (B)-OFDM

The spectrum plots are attached on the following 2 pages. D1 line indicates the highest level, and D2 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(C).

**NOTE (1):** The band edge emission plot on the following first page shows 40.52dB delta between carrier maximum power and local maximum emission in restrict band (2.3679GHz). The emission of carrier strength list in the test result of channel 1 at the item 4.2 is 92.5dBuV/m, so the maximum field strength in restrict band is  $92.5 - 40.52 = 51.98$  dBuV/m which is under 54 dBuV/m limit.

**NOTE (2):** The band edge emission plot on the following second page shows 39.35 dB delta between carrier maximum power and local maximum emission in restrict band (2.4960GHz). The emission of carrier strength list in the test result of channel 11 at the item 4.2 is 92.6dBuV/m, so the maximum field strength in restrict band is  $92.6 - 39.35 = 53.25$  dBuV/m which is under 54 dBuV/m limit.







## **4.7 ANTENNA REQUIREMENT**

### **4.7.1 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.

### **4.7.2 ANTENNA CONNECTED CONSTRUCTION**

The antenna used in this product is Dual-Band Omni-Directional Antenna with HRS U.FL-LP-066 connector and Dual Mode Antenna with RP TNC connector. The maximum Gain of the antenna is 6dBi.



## 5. TEST TYPES AND RESULTS (FOR PART 802.11a)

### 5.1 CONDUCTED EMISSION MEASUREMENT

#### 5.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ V)	
	Quasi-peak	Average
0.15-0.5	66 to 56	56 to 46
0.5-5	56	46
5-30	60	50

- NOTE:**
1. The lower limit shall apply at the transition frequencies.
  2. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
  3. All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

#### 5.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Nov. 17, 2003
ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 13, 2003
KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 23, 2004
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 03, 2004
Terminator(for KYORITSU)	50	3	Apr. 11, 2004
Software	Cond-V2e	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.
3. The test was performed in ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.





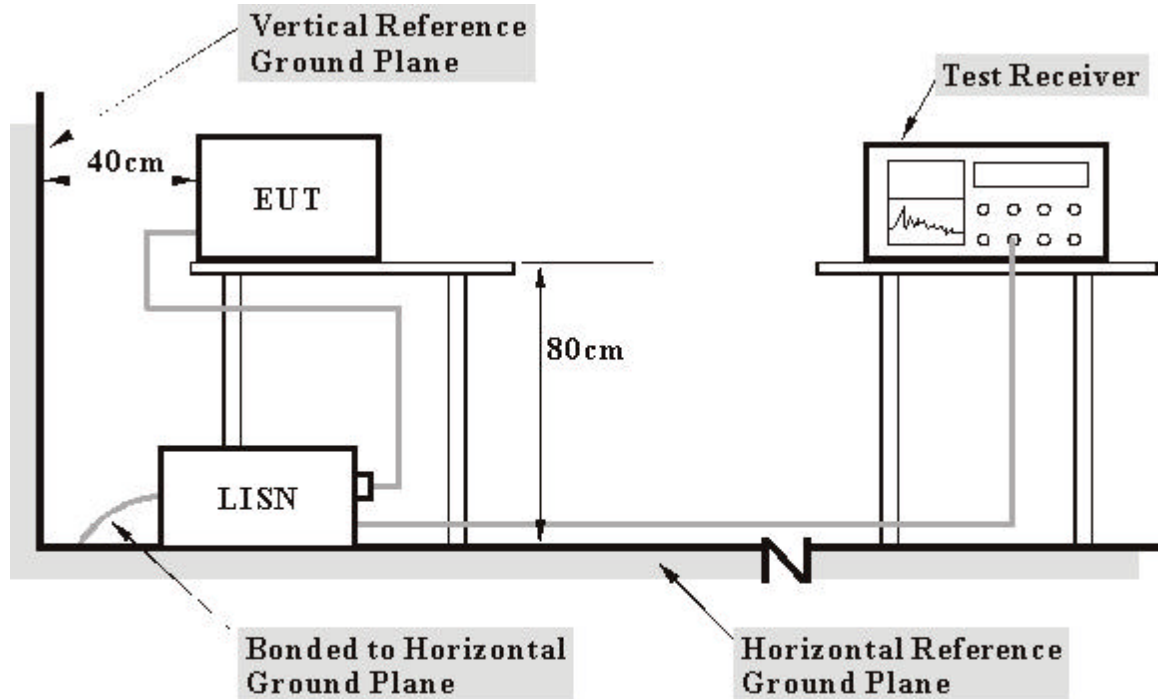
### 5.1.3 TEST PROCEDURES

- 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 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

### 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) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

### 5.1.6 EUT OPERATING CONDITIONS

Same as 4.1.6.



5.1.7 TEST RESULTS

<b>EUT</b>	Wireless LAN Access Point		
<b>MODEL</b>	A300-2	<b>6dB BANDWIDTH</b>	9 kHz
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 69RH, 976 hPa	<b>TESTED BY</b>	Larry Peng
<b>TEST MODE</b>	802.11a		

No	Freq. [MHz]	Corr.	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
		Factor (dB)	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.197	0.20	39.93	-	40.13	-	63.74	53.74	-23.61	-
2	0.400	0.20	36.84	-	37.04	-	57.85	47.85	-20.81	-
3	0.677	0.25	40.03	-	40.28	-	56.00	46.00	-15.72	-
4	1.017	0.30	42.40	-	42.70	-	56.00	46.00	-13.30	-
5	1.353	0.30	38.48	-	38.78	-	56.00	46.00	-17.22	-
6	9.695	0.78	31.63	-	32.41	-	60.00	50.00	-27.59	-

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

