



# FCC TEST REPORT (15.407)

**REPORT NO.:** RF940816H03

**MODEL NO.:** AP-5131

**RECEIVED:** Aug. 16, 2005

**TESTED:** Aug. 16 to Sep. 25, 2005

**ISSUED:** Sep. 27, 2005

**APPLICANT:** Symbol Technologies Inc.

**ADDRESS:** One Symbol Plaza, Holtsville, NY 11742- 1300  
U.S.A.

**ISSUED BY:** Advance Data Technology Corporation

**TEST LOCATION:** No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung  
Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien,  
Taiwan, R.O.C.

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0536

ILAC MRA



No. 2177-01



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## 1. CERTIFICATION

**PRODUCT:** Symbol WLAN 802.11abg Access Point  
**BRAND NAME:** Symbol  
**MODEL NO.:** AP-5131  
**PART NO.:** AP-5131-40000-WW  
**TEST SAMPLE:** ENGINEERING SAMPLE  
**TESTED:** Aug. 16 to Sep. 25, 2005  
**APPLICANT:** Symbol Technologies Inc.  
**STANDARDS:** FCC Part 15, Subpart E (Section 15.407)  
ANSI C63.4-2003

The above equipment (Model: AP-5131) 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 :** Carol Liao , **DATE:** Sep. 27, 2005  
( Carol Liao )

**TECHNICAL ACCEPTANCE :** Hank Chung , **DATE:** Sep. 27, 2005  
Responsible for RF ( Hank Chung )

**APPROVED BY :** May Chen , **DATE:** Sep. 27, 2005  
(May Chen, Deputy Manager)

## 2. SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

<b>APPLIED STANDARD: FCC Part 15, Subpart E (Section 15.407)</b>			
<b>Standard Section</b>	<b>Test Type</b>	<b>Result</b>	<b>Remark</b>
15.407(b)(5)	AC Power Conducted Emission	PASS	Meet the requirement of limit. Minimum passing margin is -11.06dB at 0.804MHz
15.407(b/1/2/3) (b)(5)	Electric Field Strength Spurious Emissions, 30MHz ~ 40000MHz	PASS	Meet the requirement of limit. Minimum passing margin is -1.30dB at 5350.00MHz
15.407(a/1/2/3)	Peak Transmit Power	PASS	Meet the requirement of limit.
15.407(a)(6)	Peak Power Excursion	PASS	Meet the requirement of limit.
15.407(a/1/2/3)	Peak Power Spectral Density	PASS	Meet the requirement of limit.
15.407(g)	Frequency Stability	PASS	Meet the requirement of limit.

**NOTE:**

1. The EUT was operating in 2.412 ~ 2.462GHz, 5.150 ~ 5.350GHz and 5.725 ~ 5.850GHz frequencies band. This report was recorded the RF parameters including 5.150 ~ 5.350GHz and 5.725 ~ 5.825GHz. For the 2.412 ~ 2.462GHz and 5.725 ~ 5.850GHz RF parameters was recorded in another test report.



### 3. GENERAL INFORMATION

#### 3.1 GENERAL DESCRIPTION OF EUT

<b>EUT</b>	Symbol WLAN 802.11abg Access Point
<b>MODEL NO.</b>	AP-5131
<b>POWER SUPPLY</b>	DC 48V from power adapter or POE (Power over Ethernet)
<b>MODULATION TYPE</b>	CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM
<b>MODULATION TECHNOLOGY</b>	DSSS, OFDM
<b>TRANSFER RATE</b>	802.11b: 11/5.5/2/1Mbps 802.11g: 54/48/36/24/18/12/9/6Mbps 802.11a: 54/48/36/24/18/12/9/6Mbps
<b>FREQUENCY RANGE</b>	802.11b & 802.11g: 2412 ~ 2462MHz 802.11a: 5.15 ~ 5.35GHz and 5.725 ~ 5.850GHz
<b>NUMBER OF CHANNEL</b>	802.11b & 802.11g: 11 802.11a: 13
<b>CHANNEL SPACING</b>	802.11b & 802.11g: 5MHz 802.11a: 20MHz for Normal mode
<b>OUTPUT POWER</b>	802.11b: 19.78 dBm 802.11g: 22.30 dBm 802.11a: 22.86 dBm (*see note 4)
<b>DATA CABLE</b>	NA
<b>ANTENNA TYPE</b>	Please see note 3 (on next page)
<b>I/O PORTS</b>	Console Port x1, LAN Port x1, WAN Port x1
<b>ASSOCIATED DEVICES</b>	NA

**NOTE:**

1. The EUT operates in both the 5GHz and 2.4GHz Bands and compatibility with 802.11a and 802.11b, 802.11g technology.



2. The EUT was operated with the following power adapter or POE:

ADAPTER	
<b>BRAND:</b>	Symbol
<b>MODEL:</b>	50-24000-050
<b>INPUT:</b>	AC 100-250V, 0.4A max, 47-63Hz 16cm/ shield/ without core
<b>OUTPUT:</b>	DC 48V, 0.25A , 1.5m/ nonshield/ with one core

POE (for test only)	
<b>BRAND:</b>	Symbol
<b>MODEL:</b>	AP-PSBIAS-T-1P-AF
<b>INPUT:</b>	AC100~240V, 0.34~0.17A, 60/50Hz
<b>OUTPUT:</b>	DC 48V

3. There are six antennas provided to this EUT, please refer to the following table:

For 2.4GHz							
No.	Symbol P/N	Gain (dBi)	Cable Loss (dB)	Net Gain (dB)	Antenna Type	Connector	Remark
1	*ML-2452-APA2-01	3.0	0	3.0	Dipole	RP SMA	Omni
2	ML-2499-11PNA2-01	11.2	2.7	8.5	Panel	Reverse BNC	Directional
3	ML-2499-HPA3-01	4.6	1.3	3.3	Dipole	Reverse BNC	Omni
4	**ML-2499-BYGA2-01	14.2	0.3	13.9	Yagi	RP SMA	Directional

For 5GHz							
No.	Symbol P/N	Gain (dBi)	Cable Loss (dB)	Net Gain (dB)	Antenna Type	Connector	Remark
1	*ML-2452-APA2-01	4.0	0	4.0	Dipole	RP SMA	Omni
2	ML-5299-WPNA1-01	14.2	1.2	13.0	Patch	RP SMA	Directional
3	ML-5299-HPA1-01	5.9	0.84	5.0	Omni	RP SMA	Omni

**Note:**

- All of the above antennas are Indoor Antenna except the Symbol P/N: ML-2499-BYGA2-01.
- “\*” is a Dual Band antenna can be used in both 2.4GHz and 5GHz.
- “\*\*” is an Outdoor Antenna it can only be used in point-to-point applications.
- For 2.4GHz Antenna No. 2 and 3 were tested with Extend cable (0.5 dB loss).
- For 2.4GHz Antenna No. 4 was tested with Extend cable (0.5 dB loss) and Arrestor (1.0 dB loss).



## 4. Peak output power (Unit : dBm) :

No.	Symbol P/N (Antenna)	Operating Frequency (MHz)			
		2412~2462	5150~5250	5250~5350	5725~5850
1	ML-2452-APA2-01	22.30	16.21	22.86	18.94
2	ML-2499-11PNA2-01	22.30	NA	NA	NA
3	ML-2499-HPA3-01	22.30	NA	NA	NA
4	ML-2499-BYGA2-01	22.30	NA	NA	NA
5	ML-5299-WPNA1-01	NA	16.21	22.86	18.94
6	ML-5299-HPA1-01	NA	16.21	22.86	18.94

5. The above EUT information was declared by the manufacturer and for more detailed features description, please refer to the manufacturer's specifications or User's Manual.

### 3.2 DESCRIPTION OF TEST MODES

Twelve channels are provided to this EUT for normal mode.

Channel	Frequency
1	5180 MHz
2	5200 MHz
3	5220 MHz
4	5240 MHz
5	5260 MHz
6	5280 MHz
7	5300 MHz
8	5320 MHz
9	5745 MHz
10	5765 MHz
11	5785 MHz
12	5805 MHz



3.2.1 TEST MODE APPLICABILITY AND TESTED CHANNEL DETAIL:

EUT configure mode	Applicable to				Description
	PLC	RE<1G	RE≥1G	APCM	
-	X	X	X	X	NA

Where PLC: Power Line Conducted Emission RE<1G RE: 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)
802.11a	1 to 12	12	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)
802.11a	1 to 12	12	OFDM	BPSK	6

**Radiated Emission Test (Above 1 GHz):**

- Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports (if EUT with antenna diversity architecture).
- Following channel(s) was (were) selected for the final test as listed below.

Mode	Available Channel	Tested Channel	Modulation Technology	Modulation Type	Data Rate (Mbps)
802.11a	1 to 12	1, 4, 5, 8, 9, 12	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)
802.11a	1 to 12	1, 4, 5, 8, 9, 12	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)
802.11a	1 to 12	1, 4, 5, 8, 9, 12	OFDM	BPSK	6



### **3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS**

The EUT is a Symbol WLAN 802.11abg Access Point. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

#### **FCC Part 15, Subpart E (15.407)**

#### **ANSI C63.4-2003**

All test items have been performed and recorded as per the above standards.

**NOTE:** The EUT is also considered as a kind of computer peripheral, because the connection to computer is necessary for typical use. It has been verified to comply with the requirements of FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.



### 3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

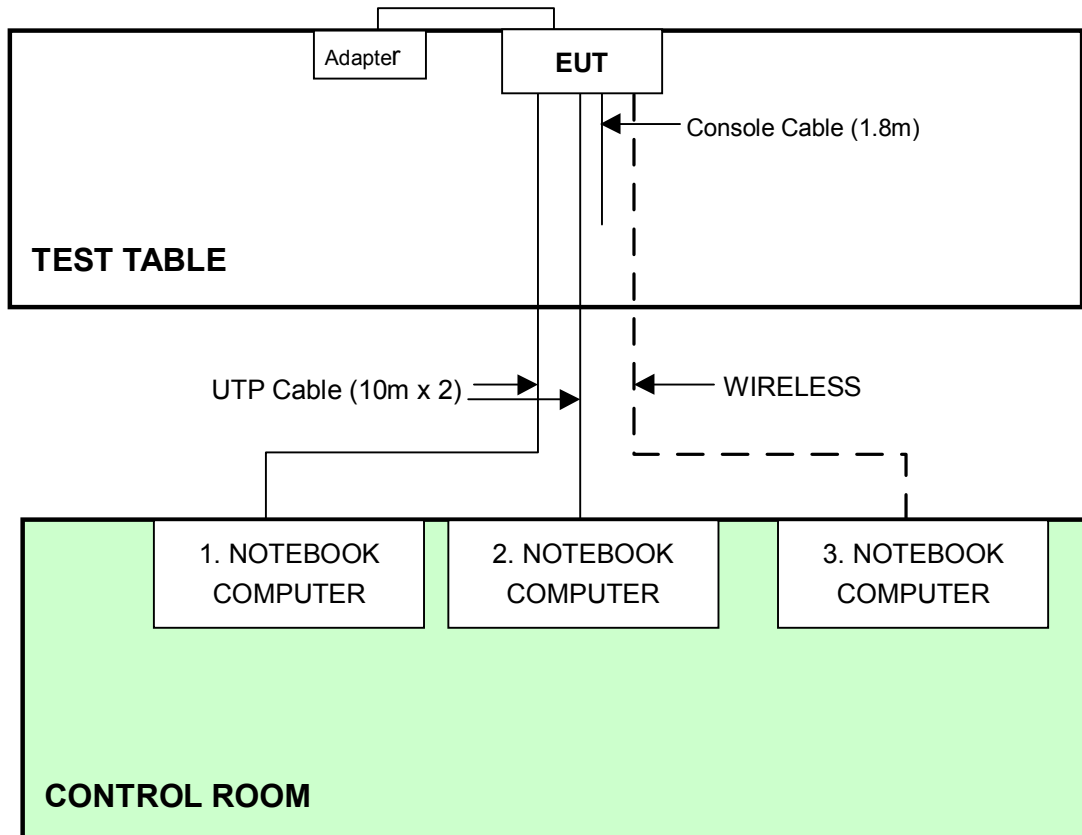
NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	NOTEBOOK COMPUTER	DELL	PP01L	TW-09c748- 12800-165-3171	FCC DoC
2	NOTEBOOK COMPUTER	DELL	PP01L	TW-0791UH- 12800-0CK-3735	FCC DoC
3	NOTEBOOK COMPUTER	DELL	PP05L	CN-04Y212- 48643-38E-0145	NA

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

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

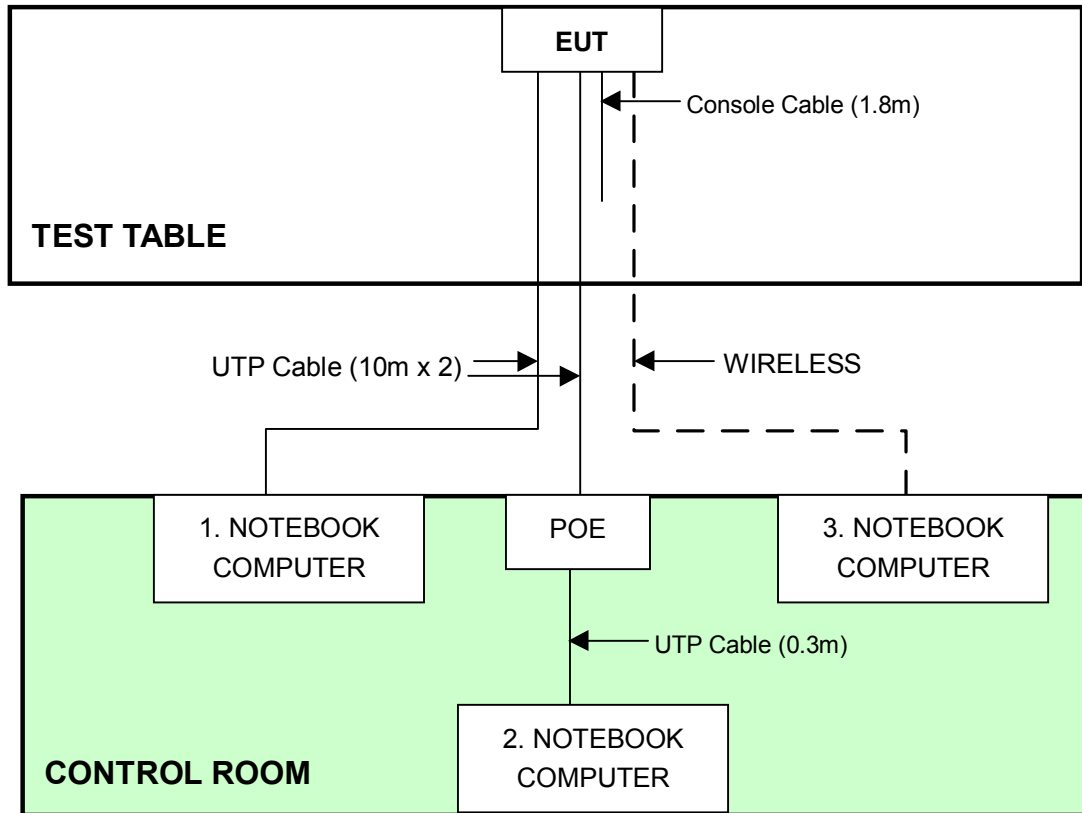
### 3.5 CONFIGURATION OF SYSTEM UNDER TEST

With adapter test mode :



**NOTE:** 1. Support unit 1~3 were kept in the control room during the test.

With POE test mode :



**NOTE:** 1. Support unit 1~3 were kept in the control room during the test.



## 4. TEST TYPES AND RESULTS

### 4.1 CONDUCTED EMISSION MEASUREMENT

#### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

FREQUENCY OF EMISSION (MHz)	CONDUCTED LIMIT (dB $\mu$ 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.

#### 4.1.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ROHDE & SCHWARZ Test Receiver	ESCS 30	847124/029	Dec. 07, 2005
ROHDE & SCHWARZ LISN (for EUT)	ESHS-Z5	848773/004	Nov. 08, 2005
KYORITSU LISN (for peripheral)	KNW-407	8/1395/12	Jul. 19, 2006
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 19, 2006
Terminator(for KYORITSU)	50	3	Oct. 12, 2005
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.
2. The test was performed in ADT Shielded Room No. A.
3. The VCCI Con A Registration No. is C-817.
4. The measurement uncertainty is 2.53 dB, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



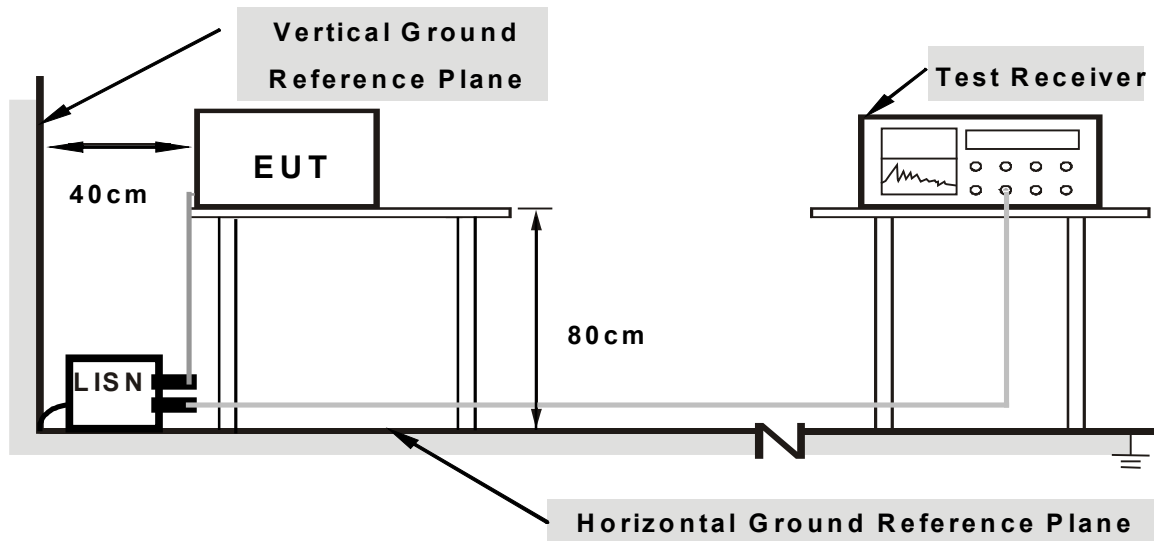
#### 4.1.3 TEST PROCEDURES

- 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 level 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 other computer systems to act as a communication partner and placed them outside of testing area.
- c. The communication partner run test program “Wintrion V00.02” to enable EUT under transmission/receiving condition continuously at specific channel frequency via UTP cable and wireless.



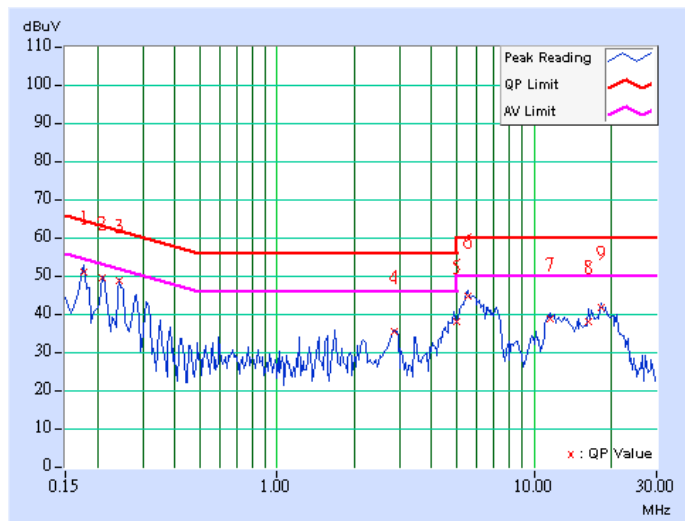
4.1.7 TEST RESULTS

Conducted Worst-Case Data

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With Adapter	<b>6dB BANDWIDTH</b>	9 kHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120VAC, 60 HZ	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	26deg. C, 63%RH, 961hPa	<b>TESTED BY</b>	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.176	0.14	49.83	-	49.97	-	64.67	54.67	-14.70	-
2	0.210	0.15	48.36	-	48.51	-	63.21	53.21	-14.70	-
3	0.244	0.15	47.60	-	47.75	-	61.97	51.97	-14.21	-
4	2.865	0.34	34.44	-	34.78	-	56.00	46.00	-21.22	-
5	5.000	0.50	37.05	-	37.55	-	56.00	46.00	-18.45	-
6	5.521	0.53	43.50	-	44.03	-	60.00	50.00	-15.97	-
7	11.535	0.82	37.58	-	38.40	-	60.00	50.00	-21.60	-
8	16.228	1.07	36.94	-	38.01	-	60.00	50.00	-21.99	-
9	18.245	1.21	40.49	-	41.70	-	60.00	50.00	-18.30	-

- 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.

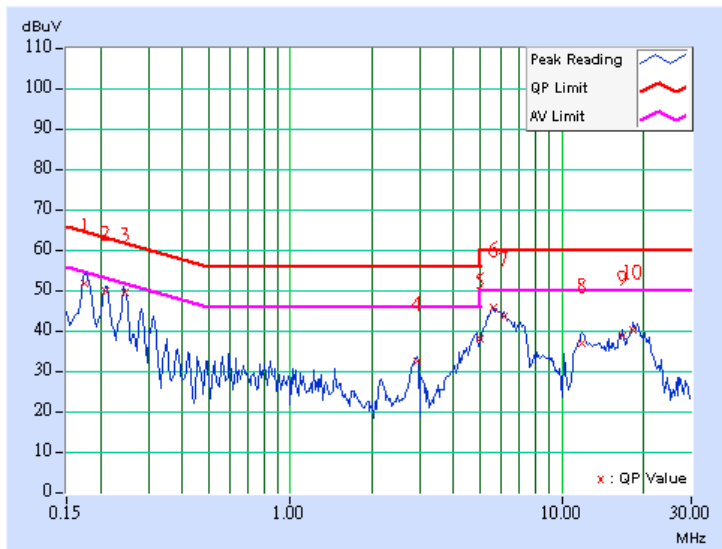




<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With Adapter	<b>6dB BANDWIDTH</b>	9 kHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	26deg. C, 63%RH, 961hPa	<b>TESTED BY</b>	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.175	0.14	50.80	-	50.94	-	64.73	54.73	-13.79	-
2	0.210	0.15	49.02	-	49.17	-	63.21	53.21	-14.04	-
3	0.246	0.15	48.48	-	48.63	-	61.88	51.88	-13.25	-
4	2.935	0.34	31.60	-	31.94	-	56.00	46.00	-24.06	-
5	5.000	0.48	36.93	-	37.41	-	56.00	46.00	-18.59	-
6	5.592	0.50	44.95	-	45.45	-	60.00	50.00	-14.55	-
7	6.152	0.52	42.80	-	43.32	-	60.00	50.00	-16.68	-
8	11.888	0.74	35.81	-	36.55	-	60.00	50.00	-23.45	-
9	16.777	0.98	37.97	-	38.95	-	60.00	50.00	-21.05	-
10	18.247	1.05	39.19	-	40.24	-	60.00	50.00	-19.76	-

- 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.

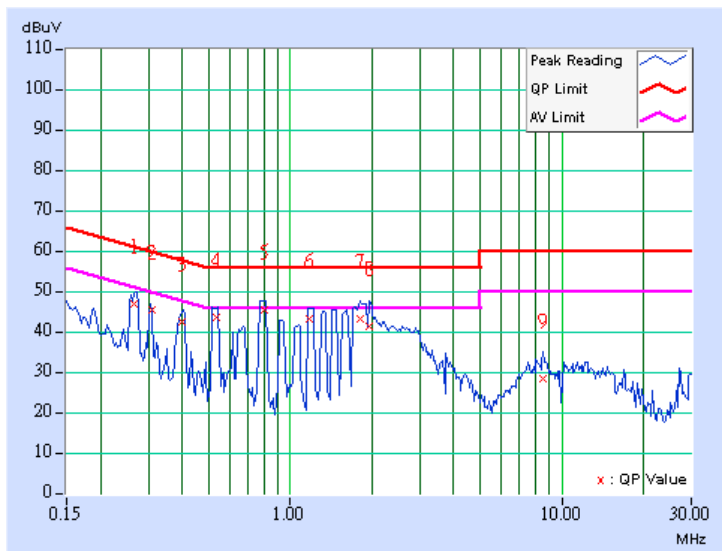




<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With POE	<b>6dB BANDWIDTH</b>	9 kHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120VAC, 60 HZ	<b>PHASE</b>	Line (L)
<b>ENVIRONMENTAL CONDITIONS</b>	26DEG. C, 63%RH, 961hPa	<b>TESTED BY</b>	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value [dB (uV)]		Emission Level [dB (uV)]		Limit [dB (uV)]		Margin (dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
			1	0.267	0.16	46.22	-	46.38	-	61.20
2	0.308	0.16	44.83	-	44.99	-	60.04	50.04	-15.05	-
3	0.398	0.17	41.87	-	42.04	-	57.89	47.89	-15.85	-
4	0.534	0.18	43.17	-	43.35	-	56.00	46.00	-12.65	-
<b>5</b>	<b>0.804</b>	<b>0.19</b>	<b>44.75</b>	-	<b>44.94</b>	-	<b>56.00</b>	<b>46.00</b>	<b>-11.06</b>	-
6	1.173	0.21	42.50	-	42.71	-	56.00	46.00	-13.29	-
7	1.810	0.24	42.79	-	43.03	-	56.00	46.00	-12.97	-
8	1.959	0.25	40.80	-	41.05	-	56.00	46.00	-14.95	-
9	8.525	0.68	27.67	-	28.35	-	60.00	50.00	-31.65	-

- 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.

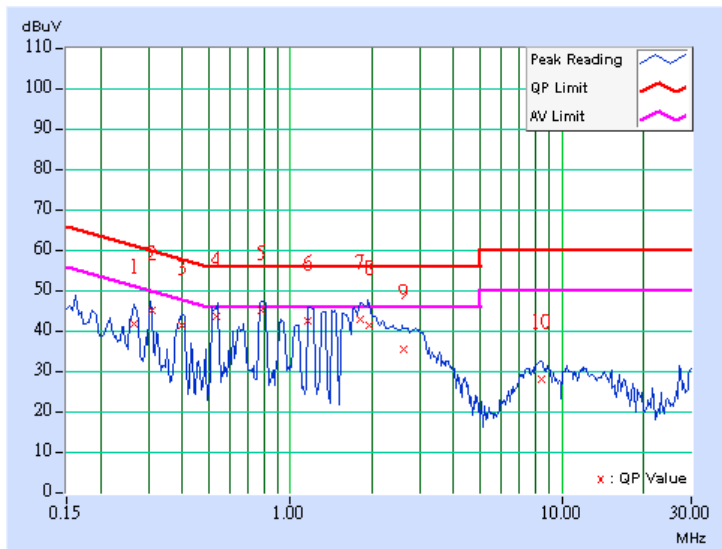




<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With POE	<b>6dB BANDWIDTH</b>	9 kHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>PHASE</b>	Neutral (N)
<b>ENVIRONMENTAL CONDITIONS</b>	26deg. C, 63%RH, 961hPa	<b>TESTED BY</b>	Phoenix Huang

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.266	0.16	41.28	-	41.44	-	61.24	51.24	-19.81	-
2	0.308	0.16	44.77	-	44.93	-	60.04	50.04	-15.11	-
3	0.397	0.17	40.72	-	40.89	-	57.91	47.91	-17.02	-
4	0.533	0.18	42.99	-	43.17	-	56.00	46.00	-12.83	-
5	0.783	0.19	44.61	-	44.80	-	56.00	46.00	-11.20	-
6	1.167	0.21	42.12	-	42.33	-	56.00	46.00	-13.67	-
7	1.809	0.24	42.39	-	42.63	-	56.00	46.00	-13.37	-
8	1.944	0.25	40.83	-	41.08	-	56.00	46.00	-14.92	-
9	2.606	0.31	34.84	-	35.15	-	56.00	46.00	-20.85	-
10	8.399	0.60	27.44	-	28.04	-	60.00	50.00	-31.96	-

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





## 4.2 RADIATED EMISSION MEASUREMENT

### 4.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

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

Frequencies (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F(kHz)	300
0.490-1.705	24000/F(kHz)	30
1.705-30.0	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

**NOTE:**

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





## 4.2.2 LIMITS OF UNWANTED EMISSION OUT OF THE RESTRICTED BANDS

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

**NOTE:**

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

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

## 4.2.3 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
ADVANTEST Spectrum Analyzer	R3271A	85060311	July 07, 2006
HP Pre_Amplifier	8449B	3008A01922	Oct. 13, 2005
ROHDE & SCHWARZ Test Receiver	ESCS30	100287	Dec. 08, 2005
CHASE Broadband Antenna	VULB9168	138	Dec. 21, 2005
Schwarzbeck Horn_Antenna	BBHA9120	D124	Dec. 11, 2005
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170153	Jan. 30, 2006
SCHWARZBECK Biconical Antenna	VHBA9123	459	Jun. 26, 2006
SCHWARZBECK Periodic Antenna	UPA6108	1148	Jun. 26, 2006
RF Switches (ARNITSU)	CS-201	1565157	NA
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Nov. 15. 2005
RF Cable(RICHTEC)	9913-30M	STCCAB-30M- 1GHz-021	Jul. 16, 2006
Software	ADT_Radiated_V 5.14	NA	NA
CHANCE MOST Antenna Tower	AT-100	0203	NA
CHANCE MOST Turn Table	TT-100	0203	NA

- Note: 1. The calibration interval of the above test instruments is 12 months (36 months for Tunable Periodic Antenna)and the calibrations are traceable to NML/ROC and NIST/USA.
2. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.
3. The test was performed in ADT Open Site No. C.
4. The FCC Site Registration No. is 656396.
5. The VCCI Site Registration No. is R-1626.
6. The CANADA Site Registration No. is IC 4824-3.
7. The following table is for the measurement uncertainty, which is calculated as per the document CISPR 16-4. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Measurement	Value
Radiated emissions (30MHz-1GHz)	2.98 dB
Radiated emissions (1GHz ~18GHz)	2.21 dB
Radiated emissions (18GHz ~20GHz)	1.88 dB



#### 4.2.4 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The antenna is a broadband antenna, and its height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
- f. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.

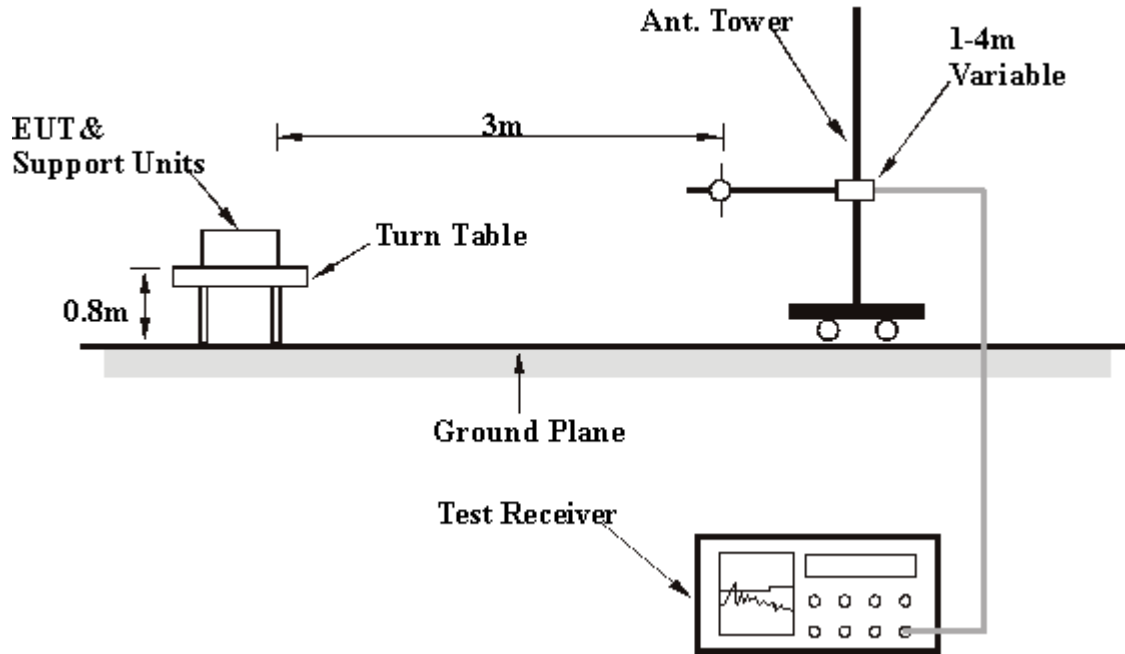
**NOTE:**

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120kHz for Peak detection (PK) and Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz for Peak detection at frequency above 1GHz.
3. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 10 Hz for Average detection (AV) at frequency above 1GHz.

#### 4.2.5 DEVIATION FROM TEST STANDARD

No deviation

#### 4.2.6 TEST SETUP



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

#### 4.2.7 EUT OPERATING CONDITION

Same as 4.1.6

## 4.2.8 TEST RESULTS (ANTENNA 1)

**Below 1GHz Worst-Case Data**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With Adapter	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

**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	51.90	26.70 QP	40.00	-13.30	1.78 H	103	16.80	9.90
2	168.90	31.30 QP	43.50	-12.20	1.73 H	144	20.30	11.00
3	289.65	30.60 QP	46.00	-15.40	1.66 H	191	14.60	15.90
4	364.31	33.10 QP	46.00	-12.90	1.59 H	123	15.20	17.80
5	410.19	34.40 QP	46.00	-11.60	1.48 H	196	15.00	19.50
6	589.19	33.00 QP	46.00	-13.00	1.37 H	243	9.70	23.30
7	631.27	34.90 QP	46.00	-11.10	1.23 H	282	10.90	23.90
8	775.65	36.80 QP	46.00	-9.20	1.09 H	315	10.40	26.40
9	808.41	35.00 QP	46.00	-11.00	1.00 H	255	8.30	26.70
10	965.84	41.20 QP	54.00	-12.80	1.00 H	190	12.00	29.20

**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	123.24	29.90 QP	43.50	-13.60	1.00 V	163	17.60	12.30
2	176.85	26.80 QP	43.50	-16.70	1.03 V	89	16.30	10.60
3	226.89	30.70 QP	46.00	-15.30	1.08 V	156	18.00	12.70
4	366.51	35.30 QP	46.00	-10.70	1.00 V	251	17.40	17.90
5	419.48	34.50 QP	46.00	-11.50	1.00 V	205	14.90	19.50
6	519.79	36.00 QP	46.00	-10.00	1.78 V	78	14.10	21.90
7	607.27	33.60 QP	46.00	-12.40	1.63 V	151	10.00	23.60
8	743.99	31.80 QP	46.00	-14.20	1.49 V	211	5.60	26.20
9	825.71	36.40 QP	46.00	-9.60	1.38 V	281	9.10	27.30
10	917.87	35.80 QP	46.00	-10.20	1.29 V	229	7.40	28.40

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



### Below 1GHz Worst-Case Data

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With POE	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

### 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	144.26	27.60 QP	43.50	-15.90	1.82 H	151	14.60	12.90
2	194.15	33.40 QP	43.50	-10.10	1.70 H	233	22.50	10.80
3	287.01	31.40 QP	46.00	-14.60	1.57 H	166	15.50	15.80
4	367.65	34.50 QP	46.00	-11.50	1.46 H	103	16.50	18.00
5	418.21	33.40 QP	46.00	-12.60	1.35 H	26	13.90	19.50
6	582.56	35.00 QP	46.00	-11.00	1.24 H	96	11.80	23.20
7	666.52	32.70 QP	46.00	-13.30	1.11 H	201	8.50	24.20
8	720.87	35.50 QP	46.00	-10.50	1.19 H	242	10.40	25.20
9	819.51	33.90 QP	46.00	-12.10	1.11 H	292	6.80	27.10
10	933.35	36.30 QP	46.00	-9.70	1.00 H	158	7.40	28.90

### 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	146.29	28.90 QP	43.50	-14.60	1.06 V	211	16.10	12.70
2	188.81	29.40 QP	43.50	-14.10	1.00 V	270	18.70	10.70
3	219.86	34.90 QP	46.00	-11.10	1.00 V	229	22.60	12.30
4	310.05	32.80 QP	46.00	-13.20	1.00 V	169	16.40	16.40
5	412.62	33.90 QP	46.00	-12.10	1.09 V	180	14.40	19.50
6	529.51	33.70 QP	46.00	-12.30	1.60 V	128	11.60	22.10
7	601.08	31.90 QP	46.00	-14.10	1.54 V	199	8.40	23.50
8	742.52	32.20 QP	46.00	-13.80	1.42 V	286	6.10	26.10
9	888.50	35.30 QP	46.00	-10.70	1.29 V	185	7.50	27.80
10	942.58	35.60 QP	46.00	-10.40	1.21 V	134	6.30	29.30

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



### 802.11a OFDM modulation

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	#5144.00	45.90 PK	74.00	-28.10	1.02 H	233	10.10	35.80
1	#5144.00	32.20 AV	54.00	-21.80	1.02 H	233	-3.60	35.80
2	#5150.00	45.50 PK	74.00	-28.50	1.02 H	233	9.70	35.80
2	#5150.00	31.40 AV	54.00	-22.60	1.02 H	233	-4.40	35.80
3	*5180.00	94.20 PK			1.02 H	233	58.40	35.80
3	*5180.00	83.10 AV			1.02 H	233	47.30	35.80
4	10360.00	53.10 PK	68.30	-15.20	1.24 H	103	8.90	44.10

#### 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	#5144.00	59.80 PK	74.00	-14.20	1.14 V	5	24.00	35.80
1	#5144.00	46.10 AV	54.00	-7.90	1.14 V	5	10.30	35.80
2	#5150.00	57.20 PK	74.00	-16.80	1.14 V	5	21.40	35.80
2	#5150.00	45.30 AV	54.00	-8.70	1.14 V	5	9.50	35.80
3	*5180.00	105.90 PK			1.14 V	5	70.10	35.80
3	*5180.00	97.00 AV			1.14 V	5	61.20	35.80
4	10360.00	53.90 PK	68.30	-14.40	1.00 V	77	9.70	44.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 4	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	*5240.00	92.10 PK			1.52 H	232	56.30	35.80
1	*5240.00	84.10 AV			1.52 H	232	48.30	35.80
2	10480.00	52.90 PK	68.30	-15.40	1.23 H	100	8.40	44.40

**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	*5240.00	105.90 PK			1.32 V	277	70.10	35.80
1	*5240.00	97.10 AV			1.32 V	277	61.30	35.80
2	10480.00	55.10 PK	68.30	-13.20	1.01 V	93	10.60	44.40

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 5	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	*5260.00	99.10 PK			2.01 H	270	63.30	35.80
1	*5260.00	90.20 AV			2.01 H	270	54.40	35.80
2	10520.00	60.90 PK	68.30	-7.40	1.50 H	46	16.20	44.70

**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	*5260.00	112.90 PK			1.33 V	130	77.10	35.80
1	*5260.00	104.10 AV			1.33 V	130	68.30	35.80
2	10520.00	61.40 PK	68.30	-6.90	1.00 V	8	16.70	44.70

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 8	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5320.00	98.10 PK			1.48 H	233	62.30	35.80
1	*5320.00	89.60 AV			1.48 H	233	53.80	35.80
2	#5350.00	52.00 PK	74.00	-22.00	1.48 H	233	16.30	35.80
2	#5350.00	40.10 AV	54.00	-13.90	1.48 H	233	4.30	35.80
3	#10640.00	59.70 PK	74.00	-14.30	1.55 H	102	13.80	45.90
3	#10640.00	49.30 AV	54.00	-4.70	1.55 H	102	3.40	45.90

#### 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	*5320.00	109.80 PK			1.28 V	97	74.00	35.80
1	*5320.00	101.00 AV			1.28 V	97	65.20	35.80
2	#5350.00	63.70 PK	74.00	-10.30	1.28 V	97	28.00	35.80
2	#5350.00	51.50 AV	54.00	-2.50	1.28 V	97	15.70	35.80
3	#10640.00	59.80 PK	74.00	-14.20	1.47 V	96	13.90	45.90
3	#10640.00	49.30 AV	54.00	-4.70	1.47 V	96	3.40	45.90

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 9	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	5715.00	63.60 PK	68.30	-4.70	1.64 H	313	27.30	36.30
2	5725.00	69.90 PK	78.30	-8.40	1.61 H	311	33.60	36.30
3	*5745.00	97.70 PK			1.62 H	314	61.30	36.40
3	*5745.00	88.80 AV			1.62 H	314	52.40	36.40
4	#11490.00	57.70 PK	74.00	-16.30	1.45 H	257	6.60	51.10
4	#11490.00	47.00 AV	54.00	-7.00	1.45 H	257	-4.10	51.10

**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	5715.00	64.10 PK	68.30	-4.20	1.25 V	46	27.80	36.30
2	5725.00	74.60 PK	78.30	-3.70	1.25 V	47	38.30	36.30
3	*5745.00	108.00 PK			1.37 V	49	71.60	36.40
3	*5745.00	99.10 AV			1.37 V	49	62.70	36.40
4	#11490.00	58.40 PK	74.00	-15.60	1.49 V	248	7.30	51.10
4	#11490.00	47.80 AV	54.00	-6.20	1.49 V	248	-3.30	51.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 12	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5805.00	98.00 PK			1.67 H	323	61.40	36.60
1	*5805.00	89.20 AV			1.67 H	323	52.60	36.60
2	5825.00	70.40 PK	78.30	-7.90	1.68 H	331	33.80	36.60
3	5835.00	64.00 PK	68.30	-4.30	1.66 H	332	27.40	36.60
4	#11610.00	57.70 PK	74.00	-16.30	1.42 H	237	7.00	50.80
4	#11610.00	47.10 AV	54.00	-6.90	1.42 H	237	-3.60	50.80

#### 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	*5805.00	108.40 PK			1.26 V	305	71.80	36.60
1	*5805.00	99.50 AV			1.26 V	305	62.90	36.60
2	5825.00	74.40 PK	78.30	-3.90	1.24 V	281	37.80	36.60
3	5835.00	64.40 PK	68.30	-3.90	1.25 V	283	27.80	36.60
4	#11610.00	58.30 PK	74.00	-15.70	1.54 V	262	7.60	50.80
4	#11610.00	47.60 AV	54.00	-6.40	1.54 V	262	-3.10	50.80

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

## 4.2.9 TEST RESULTS (ANTENNA 2)

**Below 1GHz Worst-Case Data**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With Adapter	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

**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	118.30	31.40 QP	43.50	-12.10	2.16 H	99	19.30	12.00
2	173.38	30.10 QP	43.50	-13.40	2.07 H	175	19.40	10.80
3	217.08	33.20 QP	46.00	-12.80	1.82 H	257	21.10	12.10
4	310.70	36.10 QP	46.00	-9.90	1.64 H	347	19.70	16.40
5	419.05	35.70 QP	46.00	-10.30	1.58 H	312	16.20	19.50
6	580.05	32.50 QP	46.00	-13.50	1.38 H	211	9.40	23.10
7	646.75	35.00 QP	46.00	-11.00	1.17 H	243	10.80	24.20
8	731.83	33.90 QP	46.00	-12.10	1.00 H	335	8.20	25.60
9	830.35	33.60 QP	46.00	-12.40	1.00 H	244	6.10	27.50
10	927.22	37.60 QP	46.00	-8.40	1.00 H	140	8.90	28.70

**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	126.03	31.50 QP	43.50	-12.00	1.00 V	82	19.10	12.50
2	223.10	32.50 QP	46.00	-13.50	1.00 V	13	20.00	12.50
3	345.38	36.40 QP	46.00	-9.60	1.00 V	90	19.20	17.10
4	423.13	35.20 QP	46.00	-10.80	1.00 V	162	15.70	19.60
5	507.80	33.30 QP	46.00	-12.70	1.72 V	237	11.70	21.60
6	594.98	35.50 QP	46.00	-10.50	1.61 V	231	12.20	23.40
7	630.33	34.10 QP	46.00	-11.90	1.53 V	320	10.20	23.90
8	774.30	36.60 QP	46.00	-9.40	1.40 V	229	10.20	26.40
9	872.52	34.50 QP	46.00	-11.50	1.32 V	130	6.50	28.00
10	904.95	35.40 QP	46.00	-10.60	1.19 V	101	7.50	27.90

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



### Below 1GHz Worst-Case Data

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With POE	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

### 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	112.95	31.70 QP	43.50	-11.80	1.97 H	71	19.90	11.90
2	188.68	33.10 QP	43.50	-10.40	1.89 H	179	22.50	10.70
3	249.00	35.00 QP	46.00	-11.00	1.82 H	195	20.80	14.10
4	329.55	33.50 QP	46.00	-12.50	1.67 H	90	16.70	16.80
5	427.13	34.10 QP	46.00	-11.90	1.47 H	27	14.50	19.60
6	553.15	35.90 QP	46.00	-10.10	1.35 H	120	13.20	22.60
7	685.35	33.10 QP	46.00	-12.90	1.15 H	147	8.90	24.20
8	766.23	36.80 QP	46.00	-9.20	1.00 H	38	10.30	26.40
9	821.80	35.40 QP	46.00	-10.60	1.00 H	143	8.20	27.20
10	919.72	37.00 QP	46.00	-9.00	1.00 H	208	8.50	28.40

### 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	166.13	28.60 QP	43.50	-14.90	1.00 V	236	17.50	11.20
2	288.70	35.30 QP	46.00	-10.70	1.00 V	144	19.40	15.90
3	363.28	33.70 QP	46.00	-12.30	1.00 V	85	15.90	17.80
4	483.08	34.30 QP	46.00	-11.70	1.07 V	151	13.40	20.90
5	525.98	35.00 QP	46.00	-11.00	2.12 V	248	12.90	22.00
6	637.45	33.10 QP	46.00	-12.90	1.89 V	351	9.10	24.00
7	668.50	33.30 QP	46.00	-12.70	1.45 V	243	9.10	24.20
8	719.93	37.60 QP	46.00	-8.40	1.66 V	213	12.50	25.10
9	806.92	34.80 QP	46.00	-11.20	1.31 V	147	8.10	26.60
10	909.75	36.80 QP	46.00	-9.20	1.20 V	194	8.70	28.10

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

**802.11a OFDM modulation**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	#5150.00	49.20 PK	74.00	-24.80	1.10 H	345	13.40	35.80
1	#5150.00	36.90 AV	54.00	-17.10	1.10 H	345	1.10	35.80
2	*5180.00	90.70 PK			1.10 H	345	54.90	35.80
2	*5180.00	82.40 AV			1.10 H	345	46.60	35.80
3	10360.00	51.00 PK	68.30	-17.30	1.25 H	13	6.80	44.10

**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	#5150.00	63.50 PK	74.00	-10.50	1.22 V	0	27.70	35.80
1	#5150.00	50.40 AV	54.00	-3.60	1.22 V	0	14.60	35.80
2	*5180.00	105.00 PK			1.22 V	0	69.20	35.80
2	*5180.00	95.90 AV			1.22 V	0	60.10	35.80
3	10360.00	51.50 PK	68.30	-16.80	1.17 V	3	7.40	44.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 4	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5240.00	91.60 PK			1.10 H	348	55.80	35.80
1	*5240.00	83.10 AV			1.10 H	348	47.30	35.80
2	10480.00	52.40 PK	68.30	-15.90	1.18 H	8	7.90	44.40

#### 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	*5240.00	104.80 PK			1.23 V	3	69.00	35.80
1	*5240.00	95.80 AV			1.23 V	3	60.00	35.80
2	10480.00	51.00 PK	68.30	-17.30	1.74 V	68	6.50	44.40

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 5	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	*5260.00	99.70 PK			1.00 H	347	63.90	35.80
1	*5260.00	90.90 AV			1.00 H	347	55.10	35.80
2	10520.00	52.20 PK	68.30	-16.10	1.34 H	43	7.50	44.70

**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	*5260.00	112.10 PK			1.34 V	0	76.30	35.80
1	*5260.00	103.30 AV			1.34 V	0	67.50	35.80
2	10520.00	54.30 PK	68.30	-14.00	1.08 V	21	9.60	44.70

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 8	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5320.00	94.60 PK			1.06 H	348	58.80	35.80
1	*5320.00	86.10 AV			1.06 H	348	50.30	35.80
2	#5350.00	52.60 PK	74.00	-21.40	1.06 H	348	16.80	35.80
2	#5350.00	41.00 AV	54.00	-13.00	1.06 H	348	5.20	35.80
3	#10640.00	53.90 PK	74.00	-20.10	1.18 H	37	8.00	45.90
3	#10640.00	43.20 AV	54.00	-10.80	1.18 H	37	-2.70	45.90

#### 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	*5320.00	107.10 PK			1.18 V	3	71.30	35.80
1	*5320.00	97.80 AV			1.18 V	3	62.00	35.80
2	#5350.00	65.10 PK	74.00	-8.90	1.18 V	3	29.30	35.80
<b>2</b>	<b>#5350.00</b>	<b>52.70 AV</b>	<b>54.00</b>	<b>-1.30</b>	<b>1.18 V</b>	<b>3</b>	<b>16.90</b>	<b>35.80</b>
3	#10640.00	53.80 PK	74.00	-20.20	1.09 V	20	7.90	45.90
3	#10640.00	43.10 AV	54.00	-10.90	1.09 V	20	-2.80	45.90

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 9	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	5715.00	64.50 PK	68.30	-3.80	1.20 H	352	28.20	36.30
2	5725.00	66.70 PK	78.30	-11.60	1.21 H	354	30.40	36.30
3	*5745.00	99.20 PK			1.20 H	354	62.80	36.40
3	*5745.00	90.50 AV			1.20 H	354	54.10	36.40
4	#11490.00	57.90 PK	74.00	-16.10	1.32 H	47	6.80	51.10
4	#11490.00	46.70 AV	54.00	-7.30	1.32 H	47	-4.40	51.10

#### 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	5715.00	64.60 PK	68.30	-3.70	1.21 V	2	28.30	36.30
2	5725.00	74.70 PK	78.30	-3.60	1.21 V	1	38.40	36.30
3	*5745.00	112.30 PK			1.19 V	359	75.90	36.40
3	*5745.00	103.70 AV			1.19 V	359	67.30	36.40
4	#11490.00	58.70 PK	74.00	-15.30	1.34 V	34	7.60	51.10
4	#11490.00	47.40 AV	54.00	-6.60	1.34 V	34	-3.70	51.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 12	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	*5805.00	99.80 PK			1.20 H	353	63.20	36.60
1	*5805.00	91.00 AV			1.20 H	353	54.40	36.60
2	5825.00	66.10 PK	78.30	-12.20	1.20 H	353	29.50	36.60
3	5835.00	64.90 PK	68.30	-3.40	1.20 H	353	28.30	36.60
4	#11610.00	57.30 PK	74.00	-16.70	1.36 H	52	6.60	50.80
4	#11610.00	46.10 AV	54.00	-7.90	1.36 H	52	-4.60	50.80

**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	*5805.00	113.10 PK			1.21 V	357	76.50	36.60
1	*5805.00	104.40 AV			1.21 V	357	67.80	36.60
2	5825.00	75.40 PK	78.30	-2.90	1.20 V	358	38.80	36.60
3	5835.00	65.20 PK	68.30	-3.10	1.21 V	358	28.60	36.60
4	#11610.00	57.90 PK	74.00	-16.10	1.37 V	42	7.20	50.80
4	#11610.00	46.80 AV	54.00	-7.20	1.37 V	42	-3.90	50.80

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

## 4.2.10 TEST RESULTS (ANTENNA 3)

**Below 1GHz Worst-Case Data**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With Adapter	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

**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	127.75	32.80 QP	43.50	-10.70	1.73 H	37	20.20	12.60
2	242.55	36.90 QP	46.00	-9.10	1.69 H	142	23.20	13.70
3	308.75	33.20 QP	46.00	-12.80	1.66 H	240	16.80	16.40
4	395.63	34.70 QP	46.00	-11.30	1.53 H	187	15.50	19.20
5	430.30	33.80 QP	46.00	-12.20	1.47 H	199	14.20	19.60
6	557.30	37.00 QP	46.00	-9.00	1.34 H	109	14.20	22.70
7	638.80	32.10 QP	46.00	-13.90	1.16 H	220	8.10	24.00
8	729.00	33.70 QP	46.00	-12.30	1.00 H	320	8.10	25.50
9	862.35	37.00 QP	46.00	-9.00	1.00 H	17	8.90	28.10
10	944.10	37.10 QP	46.00	-8.90	1.00 H	85	7.80	29.30

**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	63.13	25.20 QP	40.00	-14.80	1.00 V	120	17.50	7.60
2	149.13	33.20 QP	43.50	-10.30	1.00 V	211	20.70	12.50
3	258.70	33.00 QP	46.00	-13.00	1.00 V	297	17.60	15.40
4	334.88	35.40 QP	46.00	-10.60	1.00 V	215	18.40	16.90
5	424.23	32.70 QP	46.00	-13.30	1.00 V	121	13.10	19.60
6	540.10	35.80 QP	46.00	-10.20	1.65 V	118	13.40	22.40
7	682.20	34.30 QP	46.00	-11.70	1.42 V	115	10.10	24.20
8	708.05	32.40 QP	46.00	-13.60	1.28 V	184	7.70	24.60
9	837.52	36.30 QP	46.00	-9.70	1.14 V	214	8.60	27.70
10	922.77	35.10 QP	46.00	-10.90	1.10 V	144	6.60	28.50

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

**Below 1GHz Worst-Case Data**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>TEST MODE</b>	With POE	<b>FREQUENCY RANGE</b>	Below 1000MHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Quasi-Peak
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 70%RH, 961hPa	<b>TESTED BY</b>	Jerry Fan

**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	116.50	27.80 QP	43.50	-15.70	1.96 H	174	15.80	12.00
2	167.38	34.00 QP	43.50	-9.50	1.91 H	86	22.90	11.10
3	277.18	35.70 QP	46.00	-10.30	1.85 H	10	20.20	15.50
4	384.70	33.90 QP	46.00	-12.10	1.76 H	111	15.10	18.70
5	466.93	35.80 QP	46.00	-10.20	1.65 H	143	15.50	20.30
6	521.48	32.50 QP	46.00	-13.50	1.48 H	241	10.50	21.90
7	628.20	33.10 QP	46.00	-12.90	1.14 H	226	9.20	23.90
8	721.48	35.10 QP	46.00	-10.90	1.07 H	137	10.00	25.20
9	829.57	36.80 QP	46.00	-9.20	1.00 H	50	9.40	27.40
10	936.10	35.00 QP	46.00	-11.00	1.00 H	136	6.00	29.00

**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	116.45	29.90 QP	43.50	-13.60	1.00 V	103	17.90	12.00
2	226.75	30.80 QP	46.00	-15.20	1.00 V	175	18.10	12.70
3	368.18	32.60 QP	46.00	-13.40	1.00 V	117	14.60	18.00
4	451.48	35.60 QP	46.00	-10.40	1.00 V	45	15.80	19.80
5	566.60	34.00 QP	46.00	-12.00	1.87 V	221	11.10	22.90
6	641.15	36.50 QP	46.00	-9.50	1.71 V	192	12.50	24.10
7	690.00	34.20 QP	46.00	-11.80	1.69 V	314	9.90	24.20
8	713.78	35.00 QP	46.00	-11.00	1.57 V	217	10.20	24.90
9	836.25	35.10 QP	46.00	-10.90	1.22 V	88	7.50	27.70
10	919.27	36.90 QP	46.00	-9.10	1.06 V	6	8.50	28.40

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

**802.11a OFDM modulation**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 1	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	#5144.00	44.90 PK	74.00	-29.10	1.02 H	183	9.10	35.80
1	#5144.00	32.00 AV	54.00	-22.00	1.02 H	183	-3.80	35.80
2	#5150.00	42.60 PK	74.00	-31.40	1.02 H	183	6.80	35.80
2	#5150.00	31.20 AV	54.00	-22.80	1.02 H	183	-4.60	35.80
3	*5180.00	91.30 PK			1.02 H	183	55.50	35.80
3	*5180.00	82.90 AV			1.02 H	183	47.10	35.80
4	10360.00	48.00 PK	68.30	-20.30	1.15 H	5	3.90	44.10

**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	#5144.00	60.00 PK	74.00	-14.00	1.01 V	136	24.20	35.80
1	#5144.00	46.40 AV	54.00	-7.60	1.01 V	136	10.60	35.80
2	#5150.00	57.40 PK	74.00	-16.60	1.01 V	136	21.60	35.80
2	#5150.00	45.60 AV	54.00	-8.40	1.01 V	136	9.80	35.80
3	*5180.00	106.10 PK			1.01 V	136	70.30	35.80
3	*5180.00	97.30 AV			1.01 V	136	61.50	35.80
4	10360.00	48.80 PK	68.30	-19.50	1.19 V	6	4.70	44.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 4	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5240.00	93.60 PK			1.00 H	236	57.80	35.80
1	*5240.00	85.10 AV			1.00 H	236	49.30	35.80
2	10480.00	48.50 PK	68.30	-19.80	1.31 H	43	4.10	44.40

#### 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	*5240.00	107.00 PK			1.00 V	135	71.20	35.80
1	*5240.00	98.10 AV			1.00 V	135	62.30	35.80
2	10480.00	49.40 PK	68.30	-18.90	1.40 V	308	4.90	44.40

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 5	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

**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	*5260.00	72.50 PK			1.00 H	241	36.70	35.80
1	*5260.00	91.00 AV			1.00 H	241	55.20	35.80
2	10520.00	55.40 PK	68.30	-12.90	1.59 H	163	10.70	44.70

**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	*5260.00	113.60 PK			1.00 V	33	77.80	35.80
1	*5260.00	104.50 AV			1.00 V	33	68.70	35.80
2	10520.00	56.20 PK	68.30	-12.10	1.70 V	37	11.50	44.70

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 8	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5320.00	96.40 PK			1.26 H	5	60.60	35.80
1	*5320.00	88.20 AV			1.26 H	5	52.40	35.80
2	#5350.00	48.70 PK	74.00	-25.30	1.26 H	5	12.90	35.80
2	#5350.00	37.70 AV	54.00	-16.30	1.26 H	5	1.90	35.80
3	#5356.00	47.80 PK	74.00	-26.20	1.26 H	5	12.00	35.80
3	#5356.00	37.70 AV	54.00	-16.30	1.26 H	5	1.90	35.80
4	#10640.00	52.60 PK	74.00	-21.40	1.68 H	89	6.70	45.90
4	#10640.00	42.50 AV	54.00	-11.50	1.68 H	89	-3.30	45.90

#### 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	*5320.00	111.20 PK			1.00 V	36	75.40	35.80
1	*5320.00	102.30 AV			1.00 V	36	66.50	35.80
2	#5350.00	63.50 PK	74.00	-10.50	1.00 V	36	27.70	35.80
2	#5350.00	51.80 AV	54.00	-2.20	1.00 V	36	16.00	35.80
3	#5356.00	62.60 PK	74.00	-11.40	1.00 V	36	26.80	35.80
3	#5356.00	51.80 AV	54.00	-2.20	1.00 V	36	16.00	35.80
4	#10640.00	54.60 PK	74.00	-19.40	1.51 V	94	8.80	45.90
4	#10640.00	43.70 AV	54.00	-10.30	1.51 V	94	-2.20	45.90

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 9	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	5715.00	63.60 PK	68.30	-4.70	1.20 H	209	27.30	36.30
2	5725.00	68.20 PK	78.30	-10.10	1.22 H	206	31.90	36.30
3	*5745.00	96.70 PK			1.21 H	213	60.30	36.40
3	*5745.00	89.10 AV			1.21 H	213	52.70	36.40
4	#11490.00	57.50 PK	74.00	-16.50	1.14 H	33	6.40	51.10
4	#11490.00	46.20 AV	54.00	-7.80	1.14 H	33	-4.90	51.10

#### 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	5715.00	64.20 PK	68.30	-4.10	1.08 V	277	27.90	36.30
2	5725.00	75.10 PK	78.30	-3.20	1.07 V	275	38.80	36.30
3	*5745.00	108.30 PK			1.07 V	274	71.90	36.40
3	*5745.00	99.90 AV			1.07 V	274	63.50	36.40
4	#11490.00	58.30 PK	74.00	-15.70	1.32 V	163	7.20	51.10
4	#11490.00	46.70 AV	54.00	-7.30	1.32 V	163	-4.40	51.10

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



<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>CHANNEL</b>	Channel 12	<b>FREQUENCY RANGE</b>	1 ~ 40 GHz
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>DETECTOR FUNCTION</b>	Peak(PK) Average (AV)
<b>ENVIRONMENTAL CONDITIONS</b>	27deg. C, 53%RH, 961hPa	<b>TESTED BY</b>	Tony Chen

#### 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	*5805.00	97.20 PK			1.23 H	252	60.60	36.60
1	*5805.00	89.50 AV			1.23 H	252	52.90	36.60
2	5825.00	68.70 PK	78.30	-9.60	1.23 H	249	32.10	36.60
3	5835.00	64.00 PK	68.30	-4.30	1.25 H	248	27.40	36.60
4	#11610.00	57.30 PK	74.00	-16.70	1.13 H	42	6.60	50.80
4	#11610.00	46.00 AV	54.00	-8.00	1.13 H	42	-4.70	50.80

#### 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	*5805.00	108.70 PK			1.08 V	281	72.10	36.60
1	*5805.00	100.20 AV			1.08 V	281	63.60	36.60
2	5825.00	75.80 PK	78.30	-2.50	1.09 V	283	39.20	36.60
3	5835.00	64.40 PK	68.30	-3.90	1.09 V	287	27.80	36.60
4	#11610.00	58.00 PK	74.00	-16.00	1.35 V	204	7.30	50.80
4	#11610.00	46.50 AV	54.00	-7.50	1.35 V	204	-4.20	50.80

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



### 4.3 PEAK TRANSMIT POWER MEASUREMENT

#### 4.3.1 LIMITS OF PEAK TRANSMIT POWER MEASUREMENT

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

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

#### 4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2005

**NOTE:**

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

#### 4.3.3 TEST PROCEDURE

1. The transmitter output was connected to the spectrum analyzer.
2. Set span to encompass the entire emission bandwidth of the signal.
3. Set RBW to 1MHz, VBW to 300kHz.
4. Using the spectrum analyzer's channel power measurement function to measure the output power.

**NOTE:**

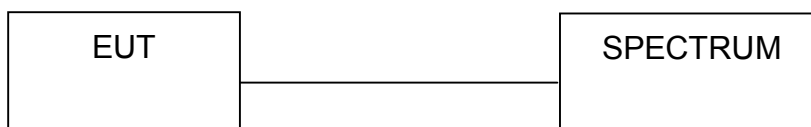
The test is performed in accordance with FCC Public Notice: APPENDIX A Guidelines for Assessing Unlicensed National Information Infrastructure (U-NII) Devices – Part 15, Subpart E, August 2002.

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

#### 4.3.4 DEVIATION FROM TEST STANDARD

No deviation

#### 4.3.5 TEST SETUP



#### 4.3.6 EUT OPERATING CONDITIONS

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

## 4.3.7 TEST RESULTS (ANTENNA 1)

**802.11a OFDM modulation**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	27deg.C, 53%RH, 961hPa
<b>TESTED BY</b>	Rex Huang		

## Antenna 1 (Gain : 4.0 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	15.86	17	19.075	PASS
4	5240	16.21	17	19.075	PASS
5	5260	22.86	24	34.44	PASS
8	5320	21.34	24	21.60	PASS
9	5745	18.47	30	20.56	PASS
12	5805	18.61	30	21.20	PASS

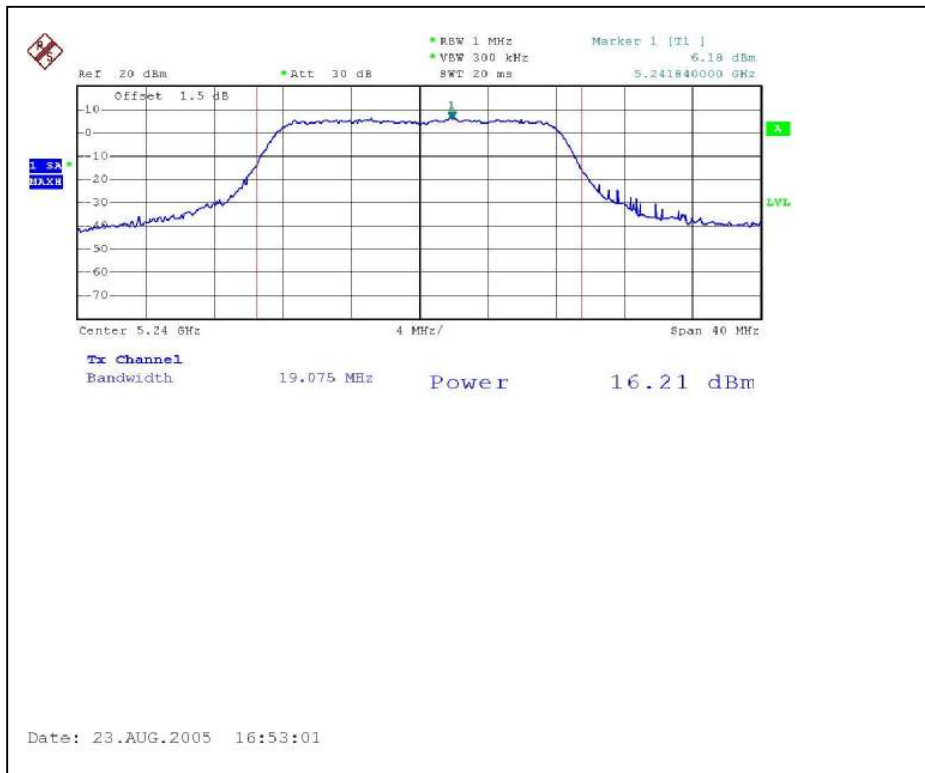
**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.



Peak Power Output:  
CH1



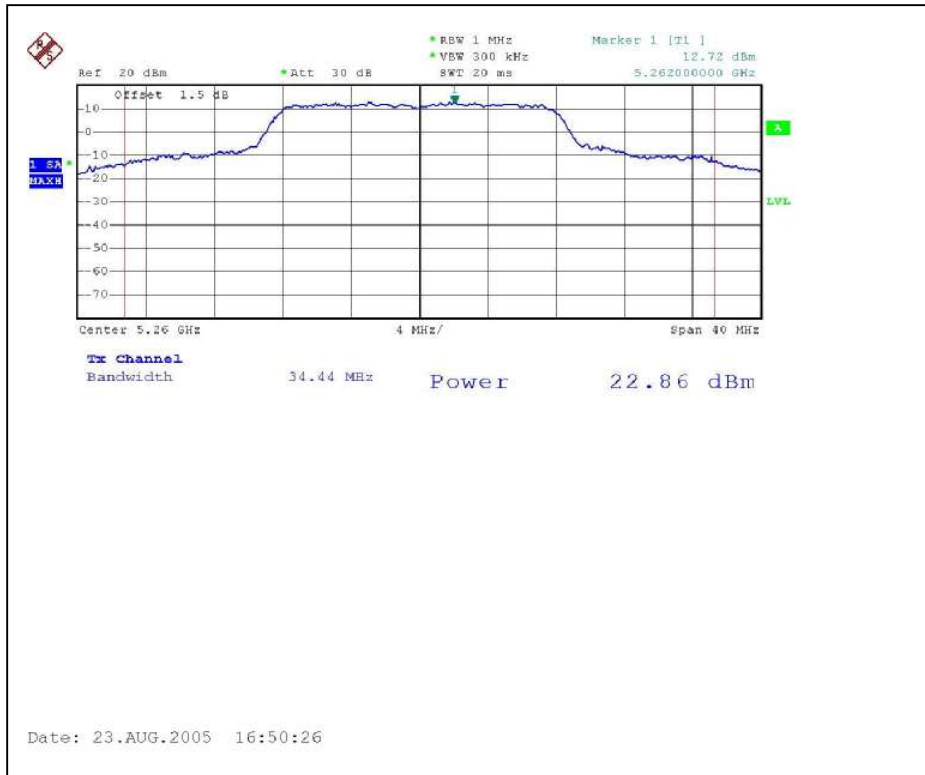
CH4







CH5

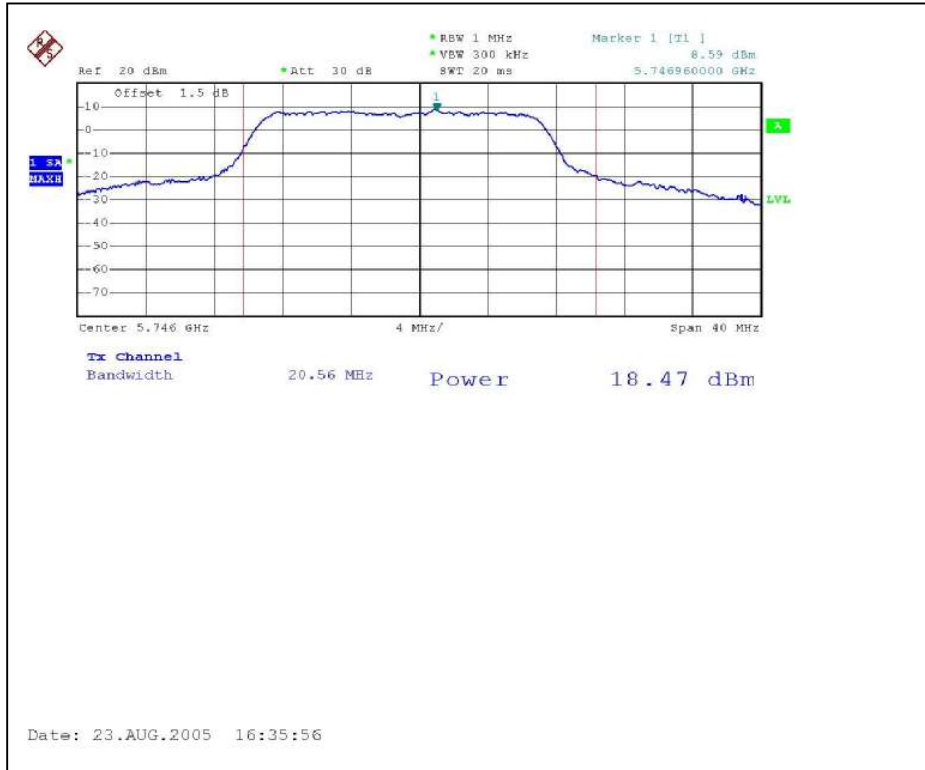


CH8





CH9

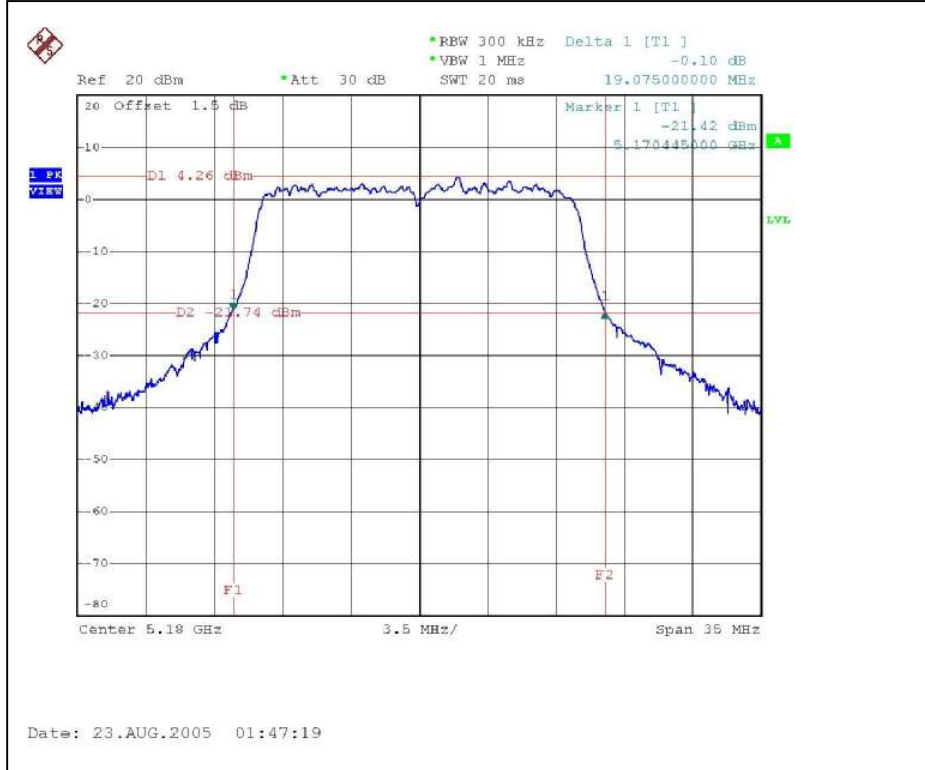


CH12

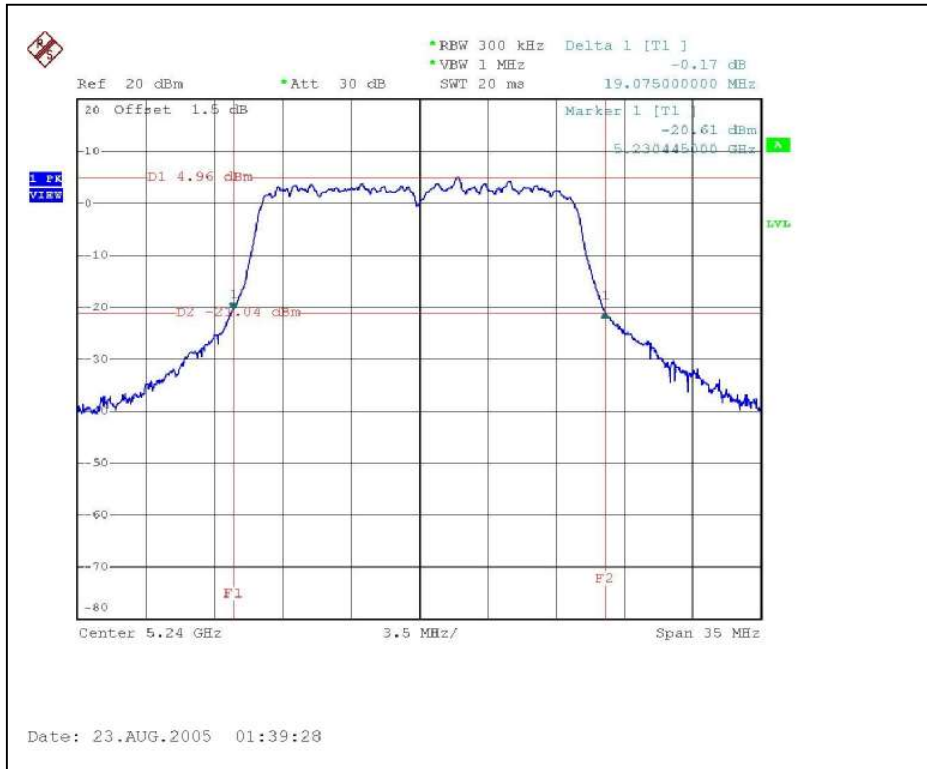




26dB Occupied Bandwidth:  
CH1

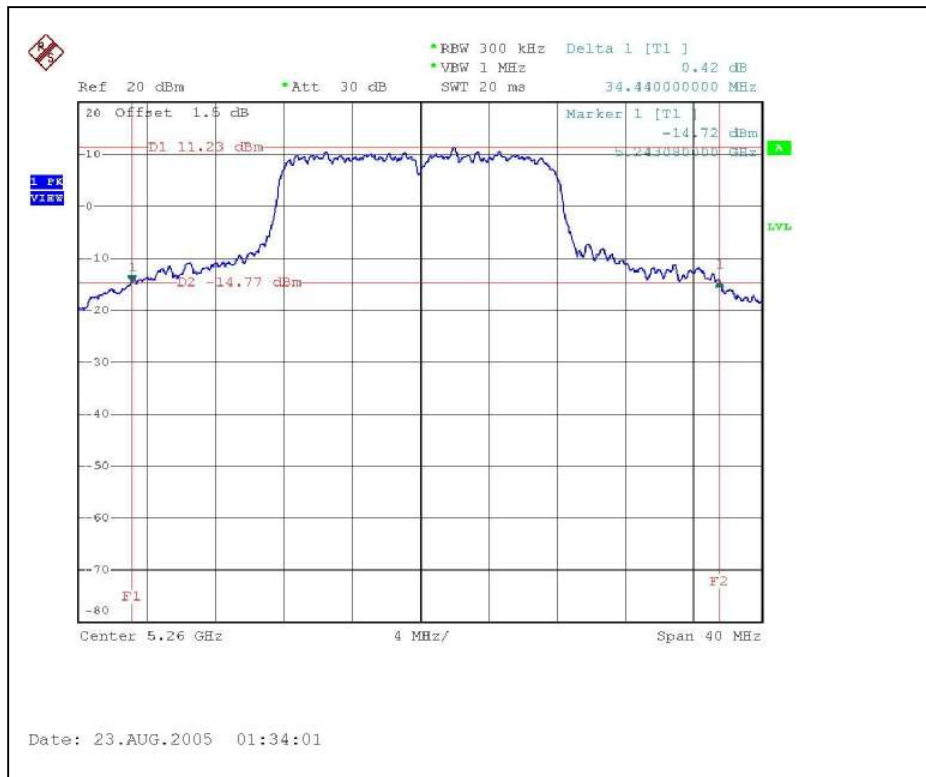


CH4

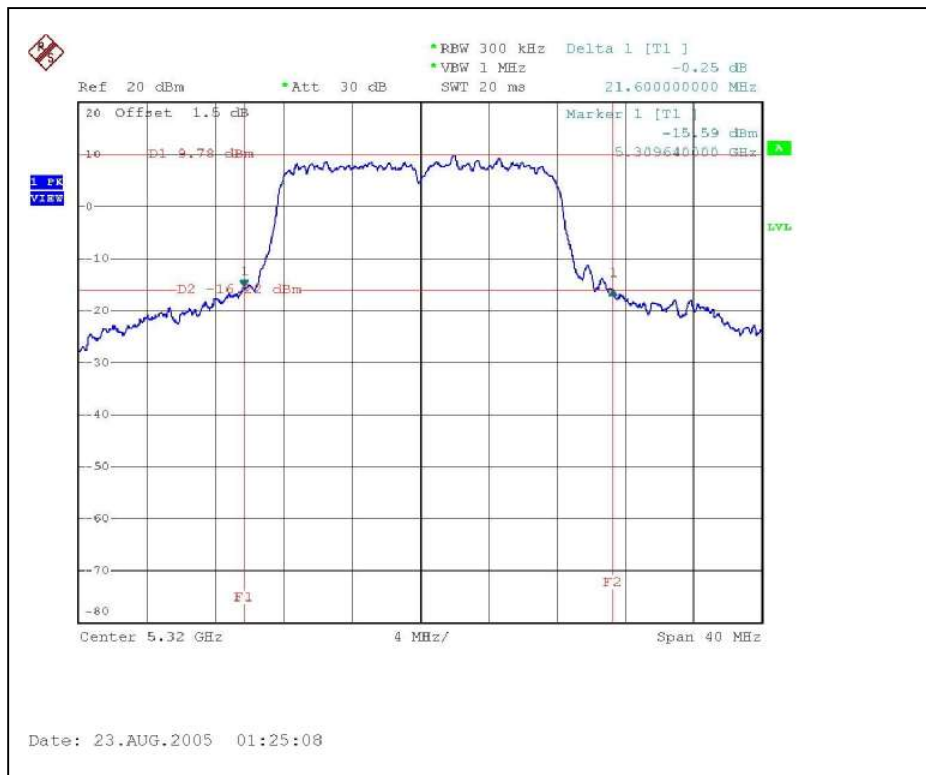




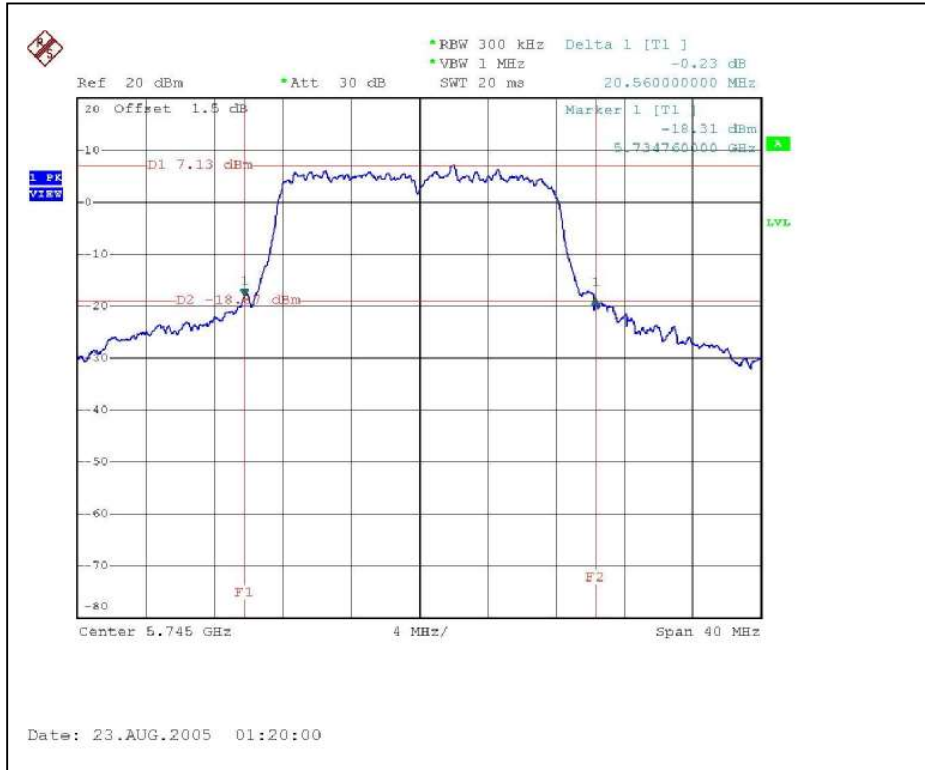
CH5



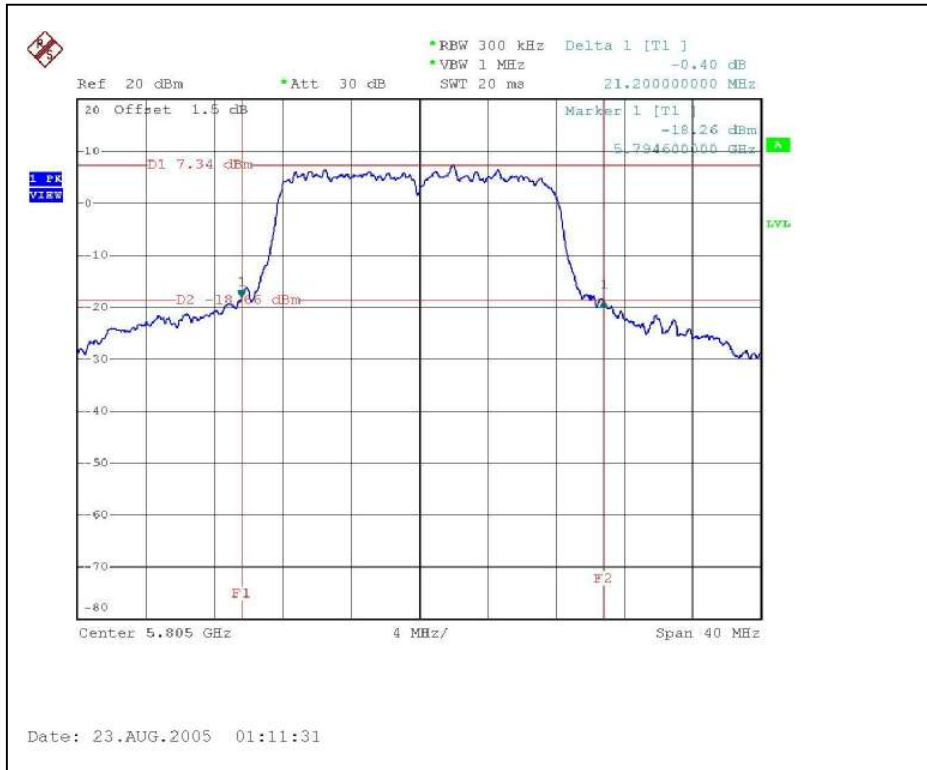
CH8



CH9



CH12



## 4.3.8 TEST RESULTS (ANTENNA 2)

**802.11a OFDM modulation**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	27deg.C, 53%RH, 961hPa
<b>TESTED BY</b>	Rex Huang		

Antenna 2 (Gain : 14.2 dBi) +Cable loss (1.2dB)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	8.87	10	19.145	PASS
4	5240	9.03	10	19.145	PASS
5	5260	16.32	17	19.075	PASS
8	5320	11.19	17	19.11	PASS
9	5745	17.31	23	19.92	PASS
12	5805	17.54	23	19.60	PASS

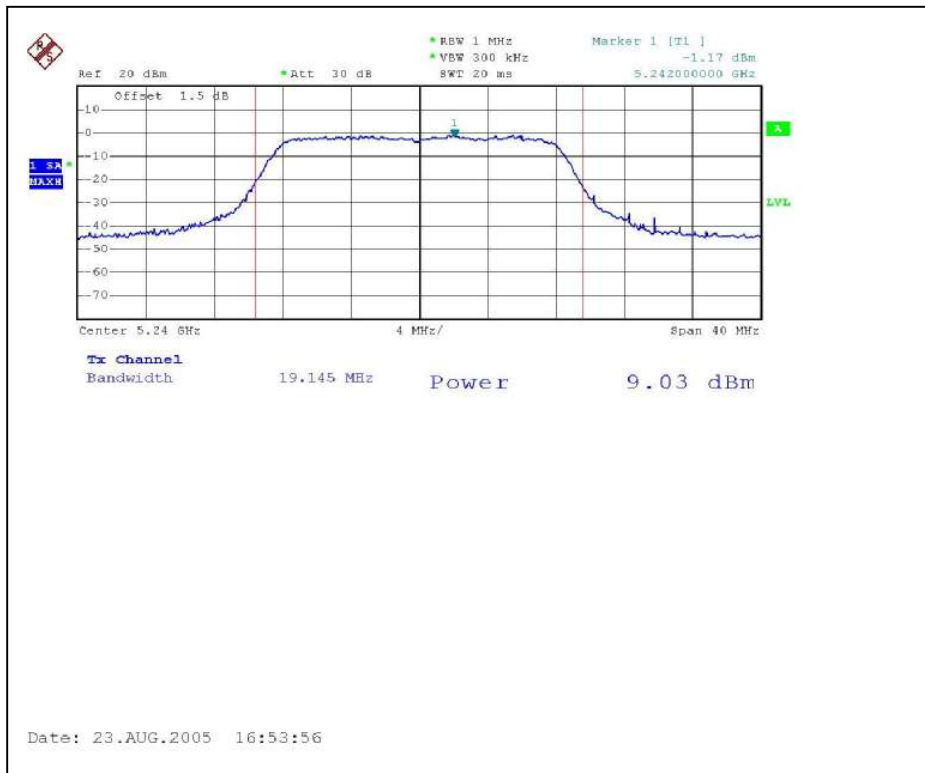
**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.



Peak Power Output:  
CH1

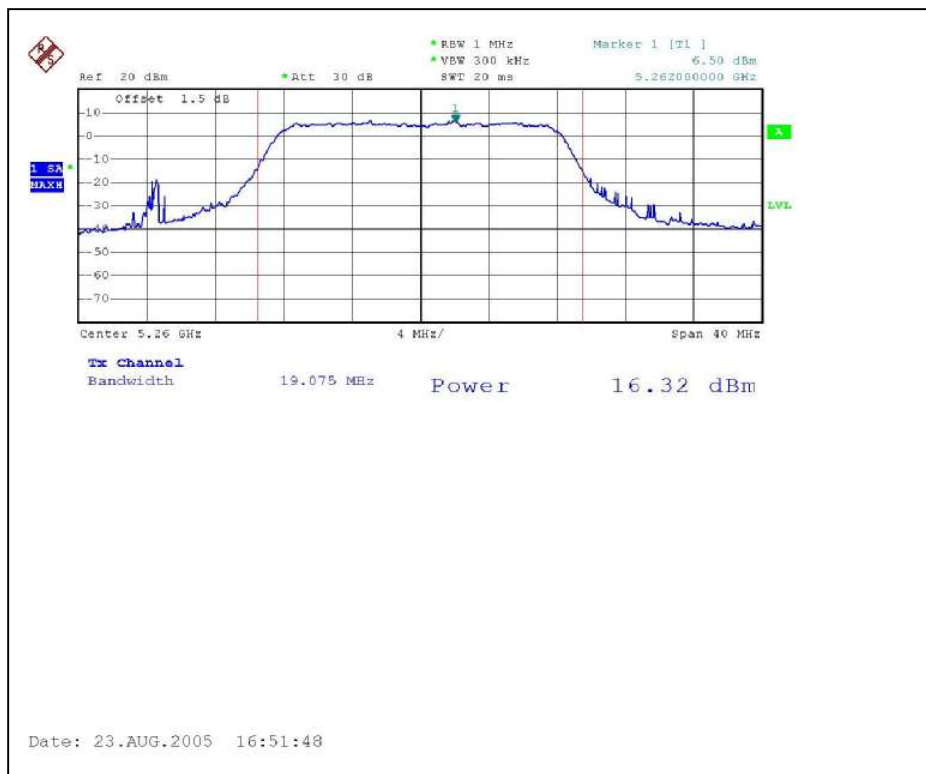


CH4





CH5



CH8



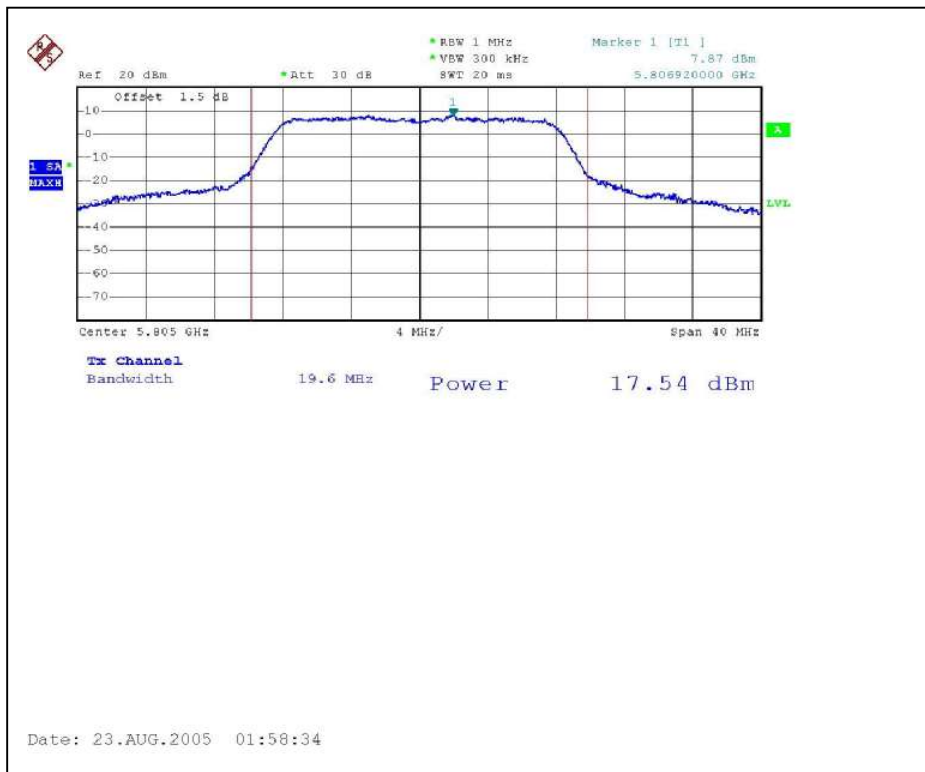




CH9

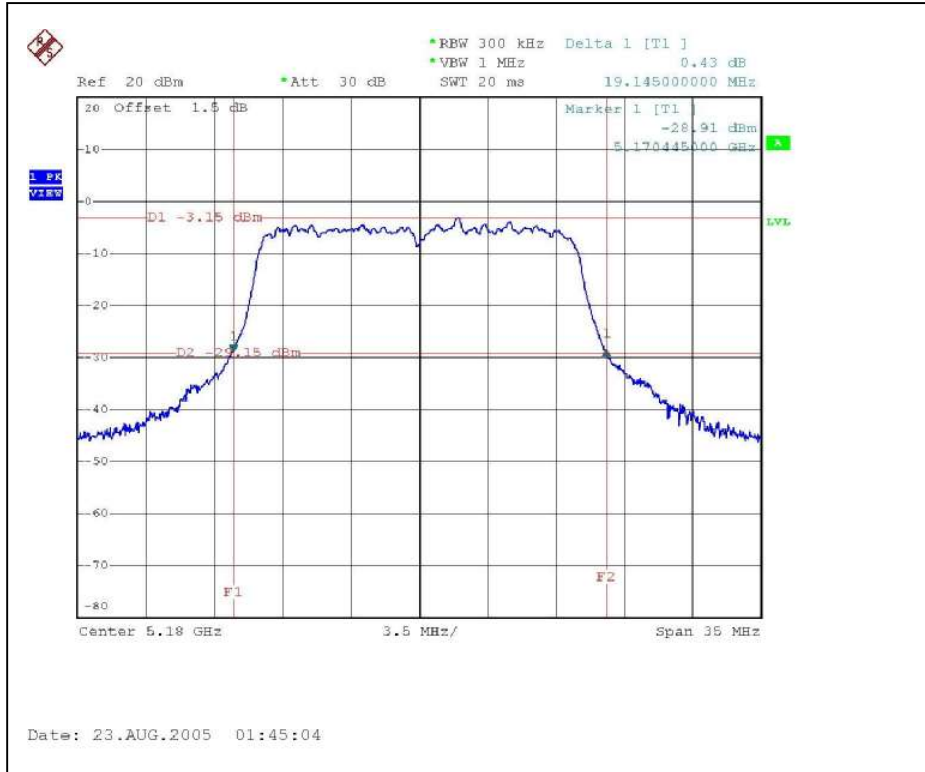


CH12

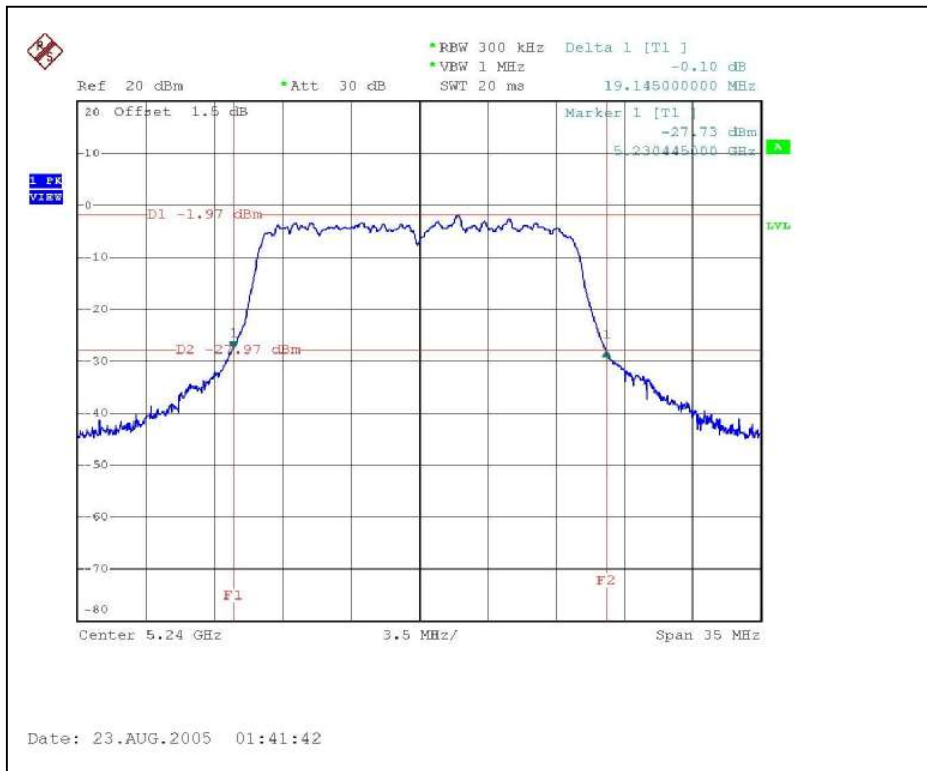




26dB Occupied Bandwidth:  
CH1

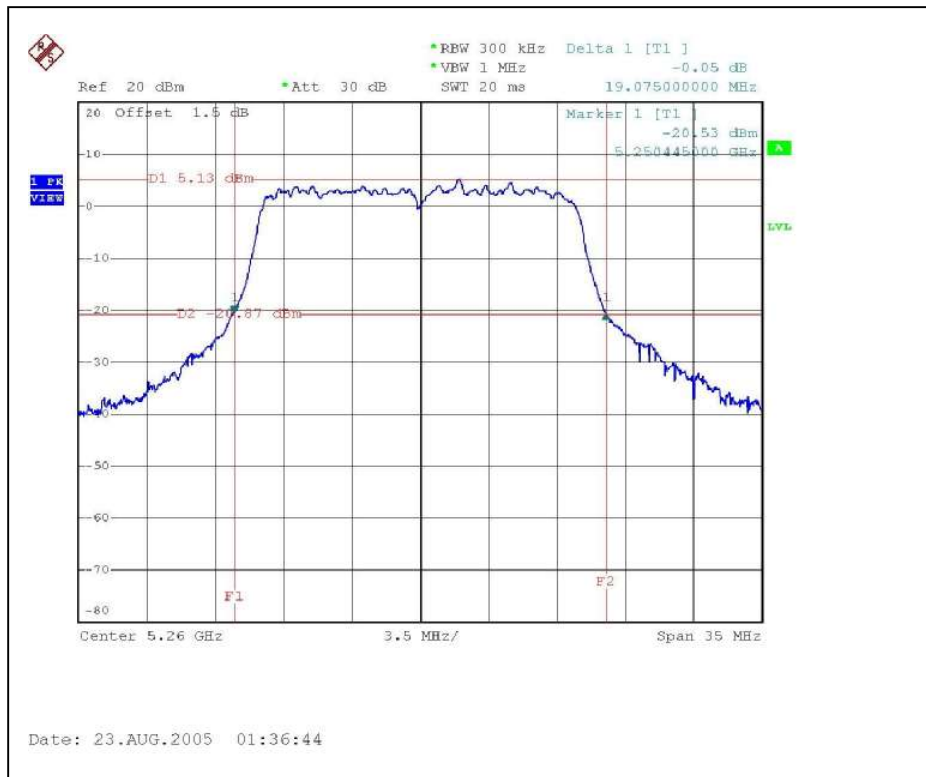


CH4

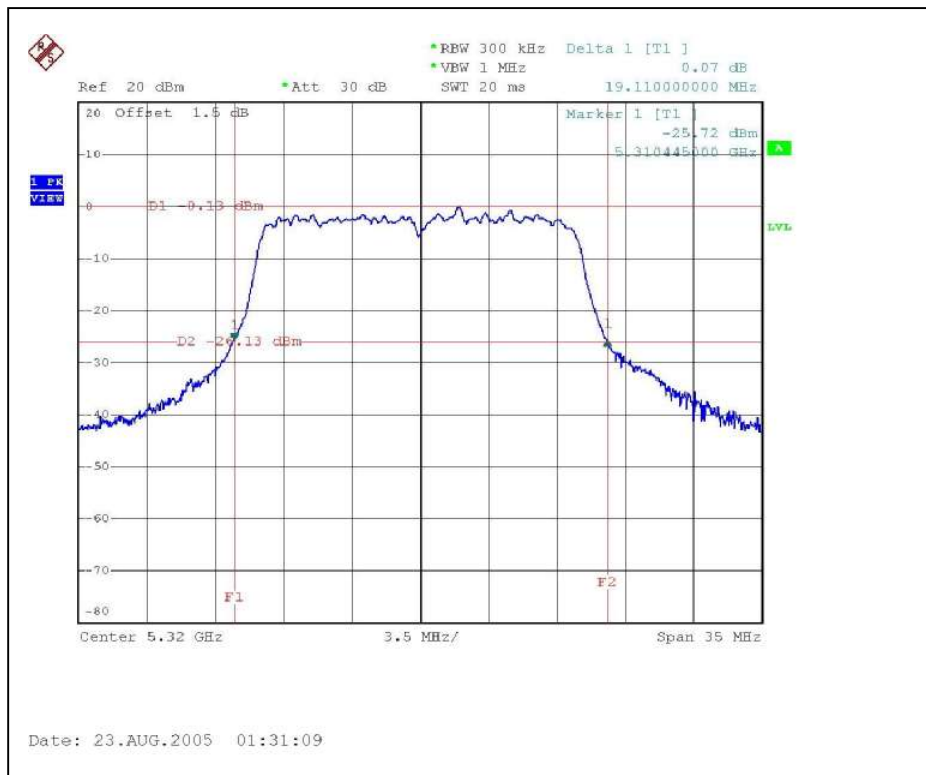




CH5

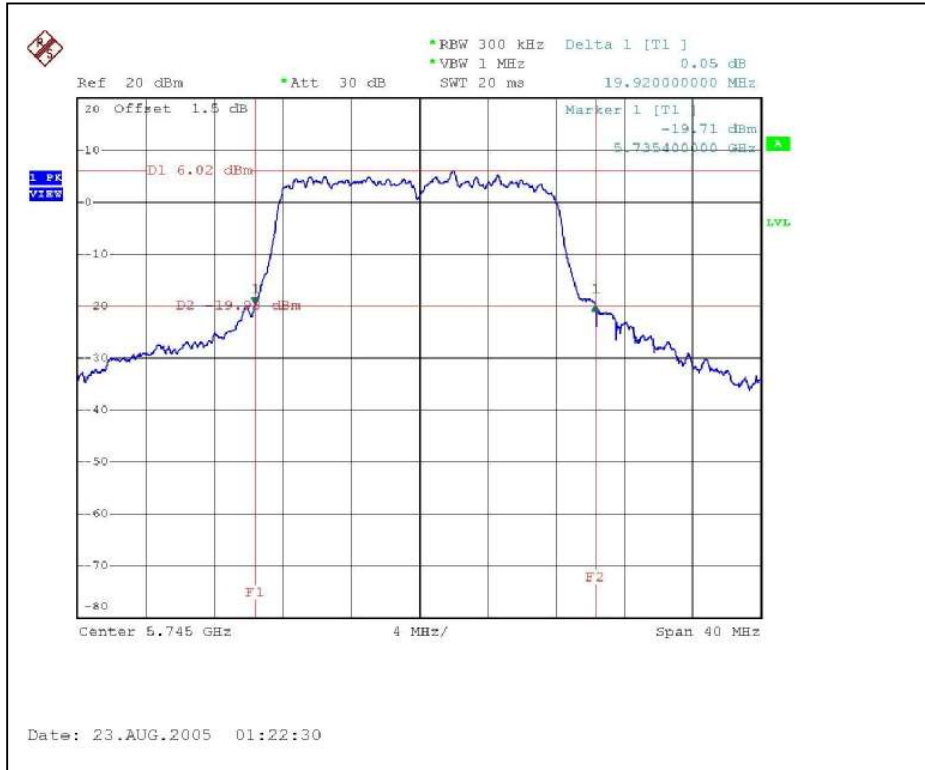


CH8

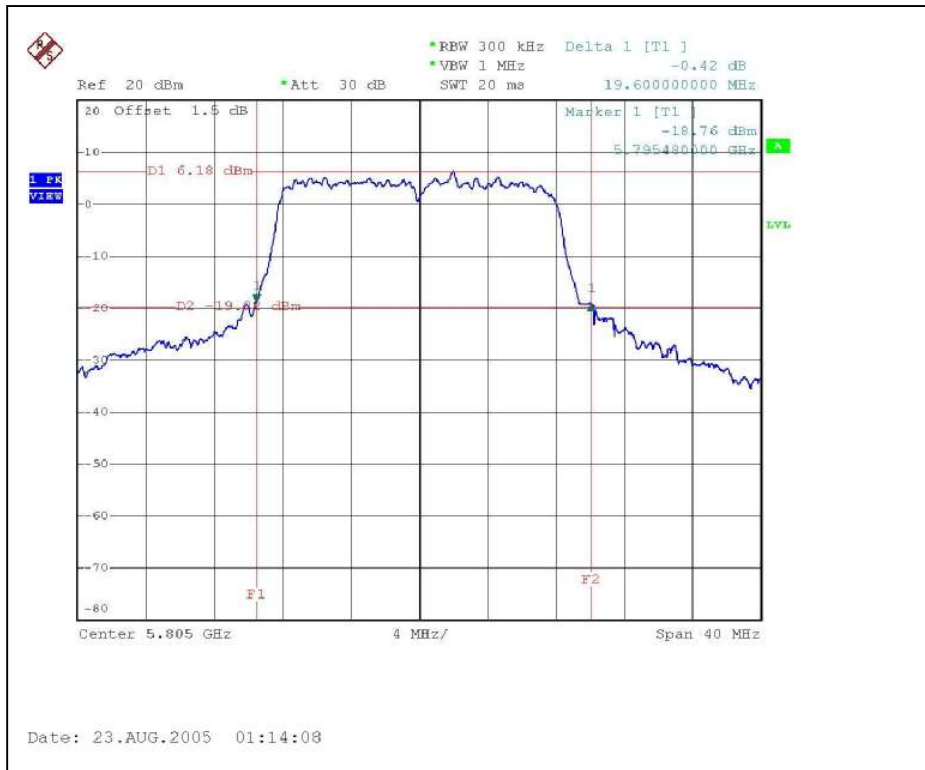




CH9



CH12



## 4.3.9 TEST RESULTS (ANTENNA 3)

**802.11a OFDM modulation**

<b>EUT</b>	Symbol WLAN 802.11abg Access Point	<b>MODEL</b>	AP-5131
<b>MODULATION TYPE</b>	BPSK	<b>TRANSFER RATE</b>	6Mbps
<b>INPUT POWER (SYSTEM)</b>	120Vac, 60 Hz	<b>ENVIRONMENTAL CONDITIONS</b>	27deg.C, 53%RH, 961hPa
<b>TESTED BY</b>	Rex Huang		

Antenna 3 (Gain : 5.9 dBi) +Cable loss (0.84dB)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	26dBc Occupied Bandwidth (MHz)	PASS/FAIL
1	5180	15.86	17	19.075	PASS
4	5240	16.21	17	19.075	PASS
5	5260	22.86	24	34.44	PASS
8	5320	20.23	24	19.64	PASS
9	5745	18.47	30	20.56	PASS
12	5805	18.61	30	21.20	PASS

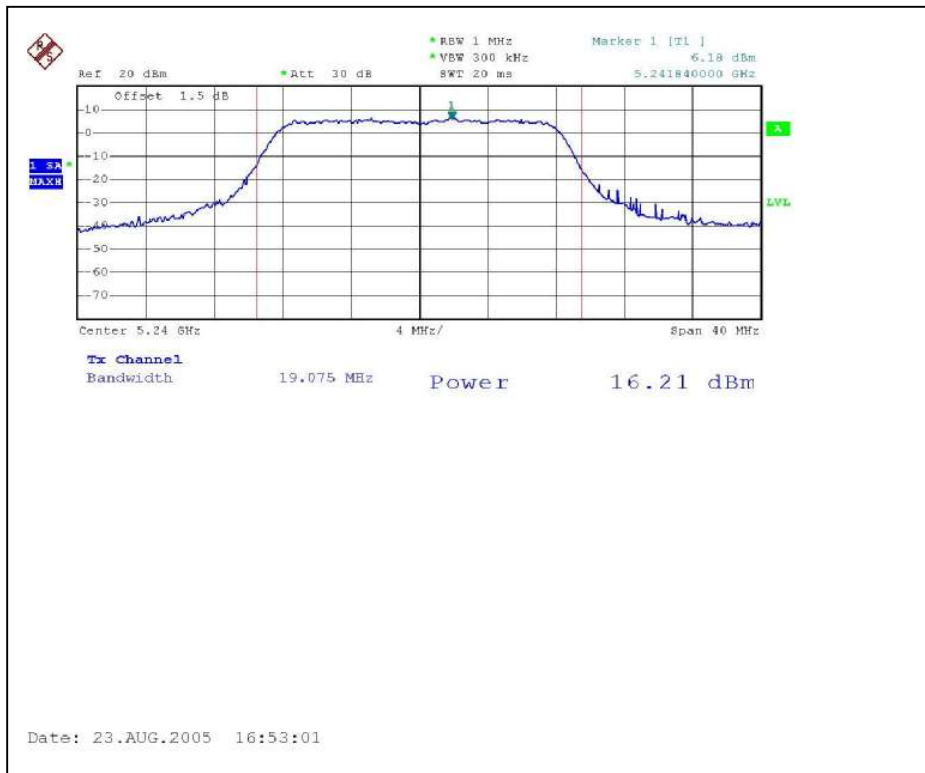
**NOTE:** The 26dBc Occupied Bandwidth plot, please refer to the following pages.



Peak Power Output:  
CH1



CH4

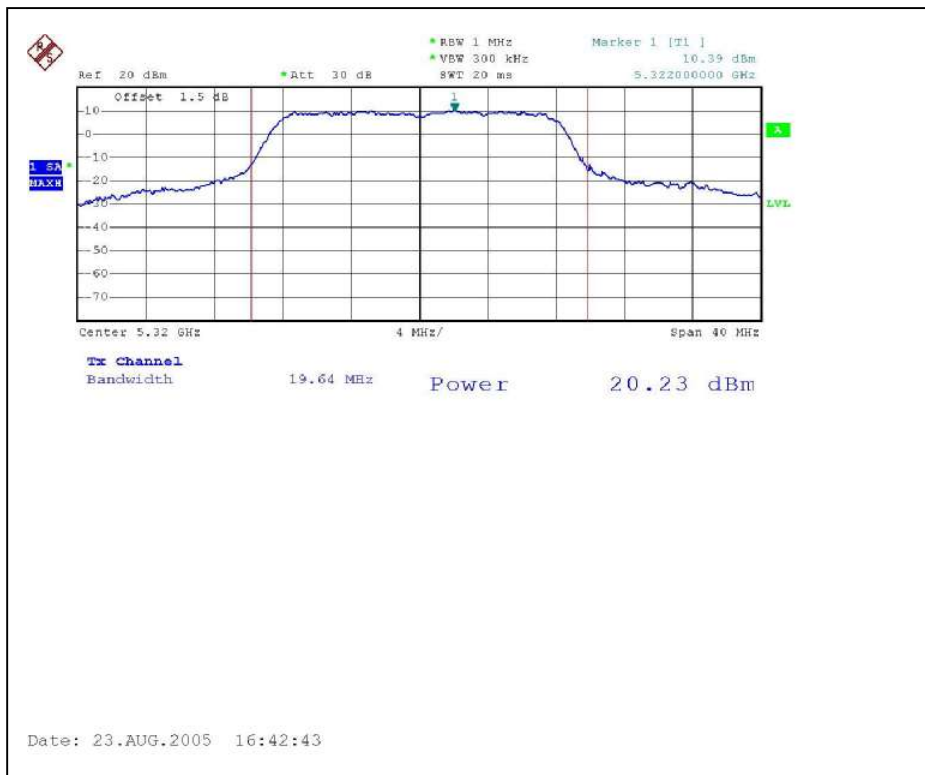




CH5

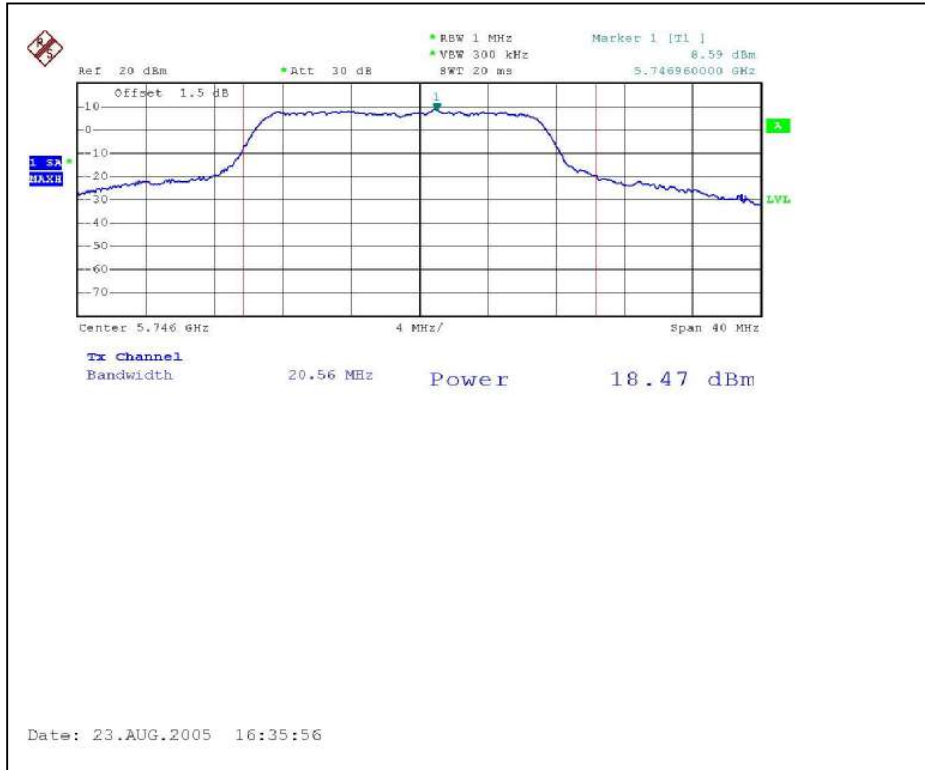


CH8





CH9



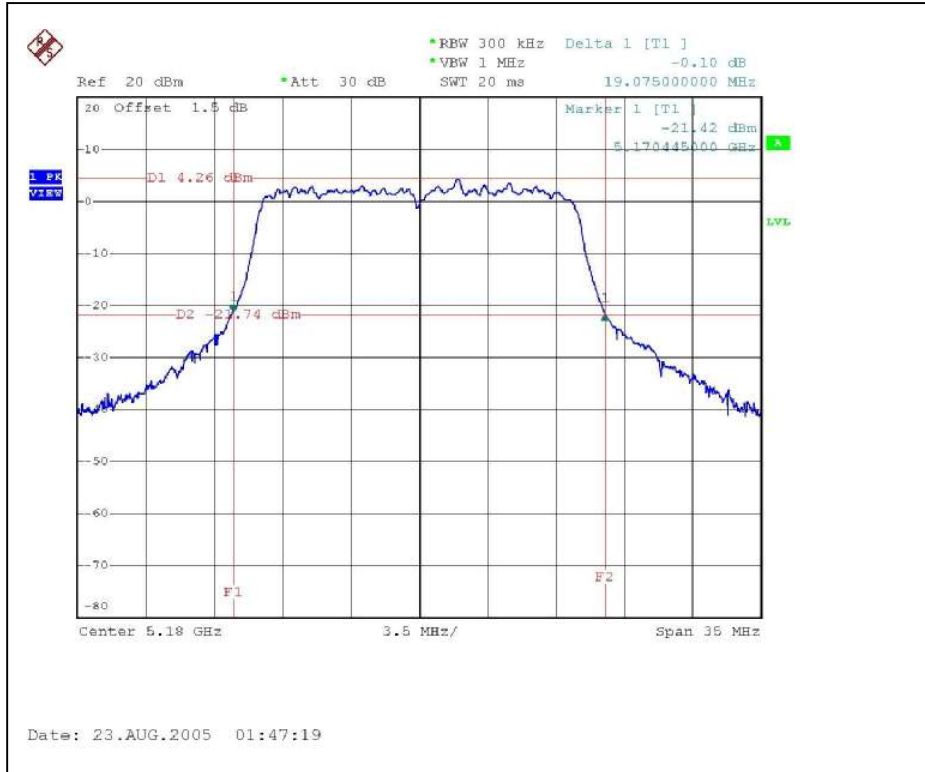
CH12



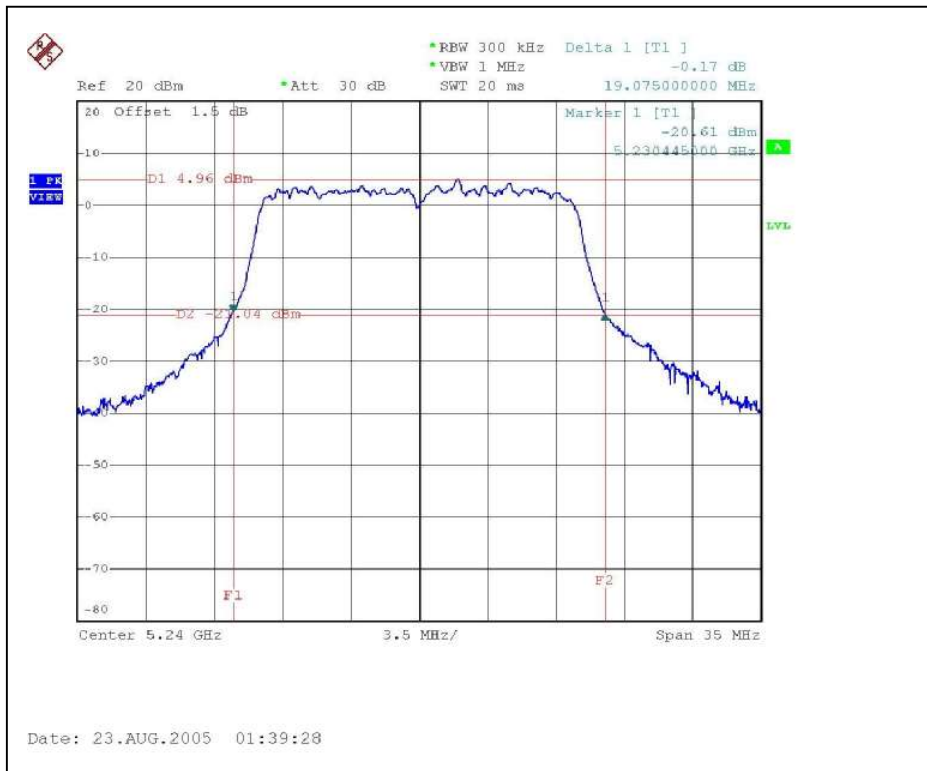




26dB Occupied Bandwidth:  
CH1

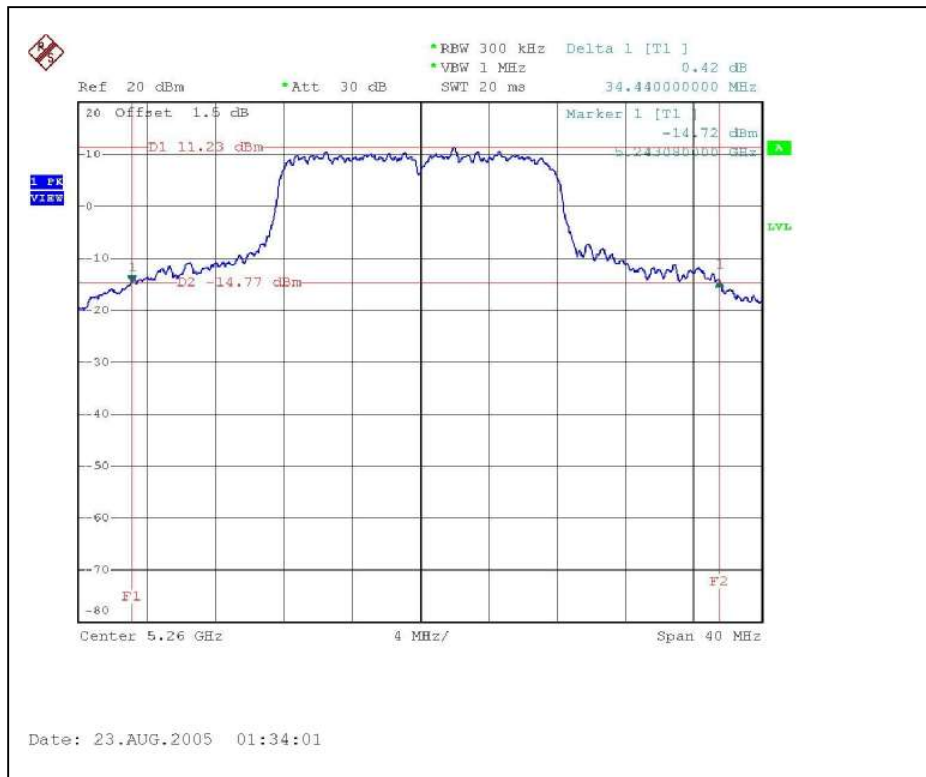


CH4

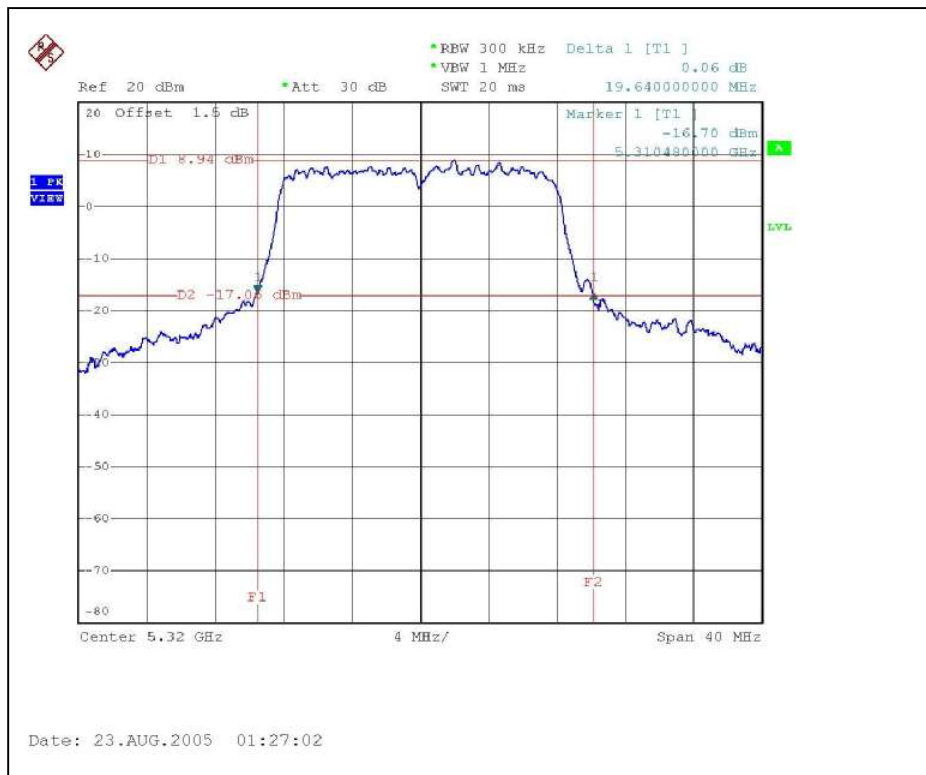




CH5



CH8





CH9



CH12

