

FCC TEST REPORT

REPORT NO.: RF940111H01

MODEL NO.: WMP-G10

RECEIVED: Jan. 11, 2005

TESTED: Jan. 13 to 17, 2005

ISSUED: Jan. 20, 2005

APPLICANT: VIA Networking Technologies, Inc.

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No. 2177-01

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1 CERTIFICATION

PRODUCT : IEEE802.11g Wireless MiniPCI Card
BRAND NAME : ALPHA, VIA Networking Technologies, Ltd.
MODEL NO. : WMP-G10
TESTED: Jan. 13 to 17, 2005
APPLICANT : VIA Networking Technologies, Inc.
TEST ITEM: ENGINEERING SAMPLE
STANDARDS : 47 CFR Part 15, Subpart C (Section 15.247),
ANSI C63.4-2003

The above equipment (Model: WMP-G10) 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:** Jan. 20, 2005
(Carol Liao)

TECHNICAL
ACCEPTANCE : Hank Chung , **DATE:** Jan. 20, 2005
Responsible for RF (Hank Chung)

APPROVED BY : Eric Lin , **DATE:** Jan. 20, 2005
(Eric Lin, Manager)

2 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: 47 CFR Part 15, Subpart C			
Standard Section	Test Type and Limit	Result	REMARK
15.207	AC Power Conducted Emission	PASS	Meet the requirement of limit Minimum passing margin is -23.01 dB at 0.689 MHz
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System Limit: min. 500kHz	PASS	Meet the requirement of limit
15.247(b)	Maximum Peak Output Power Limit: max. 30dBm	PASS	Meet the requirement of limit
15.247(c)	Transmitter Radiated Emissions Limit: Table 15.209	PASS	Meet the requirement of limit Minimum passing margin is -1.50 dB at 2483.50 MHz
15.247(d)	Power Spectral Density Limit: max. 8dBm	PASS	Meet the requirement of limit
15.247(c)	Band Edge Measurement Limit: 20 dB less than the peak value of fundamental frequency	PASS	Meet the requirement of limit

3 GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

PRODUCT	IEEE802.11g Wireless MiniPCI Card
MODEL NO.	WMP-G10
POWER SUPPLY	DC 3.3V from host equipment
MODULATION TYPE	CCK, OFDM
RADIO TECHNOLOGY	DSSS, OFDM
TRANSFER RATE	1/2/5.5/6/9/11/12/18/24/36/48/54Mbps
FREQUENCY RANGE	2412MHz ~ 2462MHz
NUMBER OF CHANNEL	11
OUTPUT POWER	22.13 dBm
ANTENNA TYPE	PIFA antenna and Dipole antenna
DATA CABLE	NA
I/O PORTS	NA
ASSOCIATED DEVICES	NA

NOTE:

1. The EUT operates in the 2.4GHz frequency spectrum with throughput of up to 54Mbps.
2. The EUT complies with IEEE 802.11g draft standards, and backwards compatible with IEEE 802.11b products.
3. There are two types of antenna provided to this EUT, please refer to the following table:

No.	Gain (dBi)	Antenna Type	Antenna Connector
1	-2dBi	PIFA	Hirose UFL
2	2dBi	Dipole	Reverse SMA

4. 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

Eleven channels are provided in this EUT.

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

NOTE:

1. Below 1 GHz, the channel 1, 6, and 11 were pre-tested in chamber. The channel 11, worst case one, was chosen for final test.
2. Above 1 GHz, the channel 1, 6, and 11 were tested individually.
3. Transfer rate, 11Mbps with CCK technique and 6Mbps with OFDM technique, the worst case, were chosen for final test.

3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is an IEEE802.11g Wireless MiniPCI Card. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart C. (15.247)
ANSI C63.4 : 2003

All tests 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 47 CFR Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

3.4 DESCRIPTION OF SUPPORT UNITS

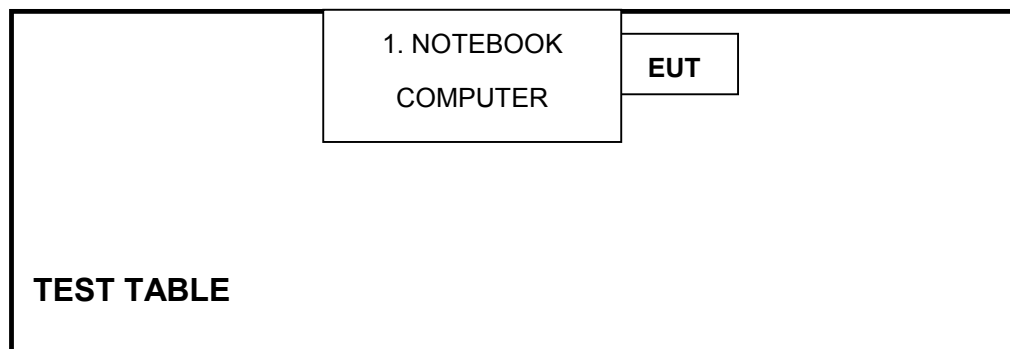
The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Product	Brand	Model No.	Serial No.	FCC ID
1	NOTEBOOK COMPUTER	IBM	2662-GT1	FX-T5394	NA

No.	Signal cable description
1	NA

Note: 1. All power cords of the above support units are unshielded (1.8m).

3.5 CONFIGURATION OF SYSTEM UNDER TEST



NOTE: 1. Please refer to the photos of test configuration in Item 5 also.

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 μ 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. All emanations from a class 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. 23, 2005
RF Cable (JETBAO)	RG233/U	Cable_CA_01	Jul. 02, 2005
Terminator(for KYORITSU)	50	3	May 10, 2005
Software	Cond-V2e	NA	NA

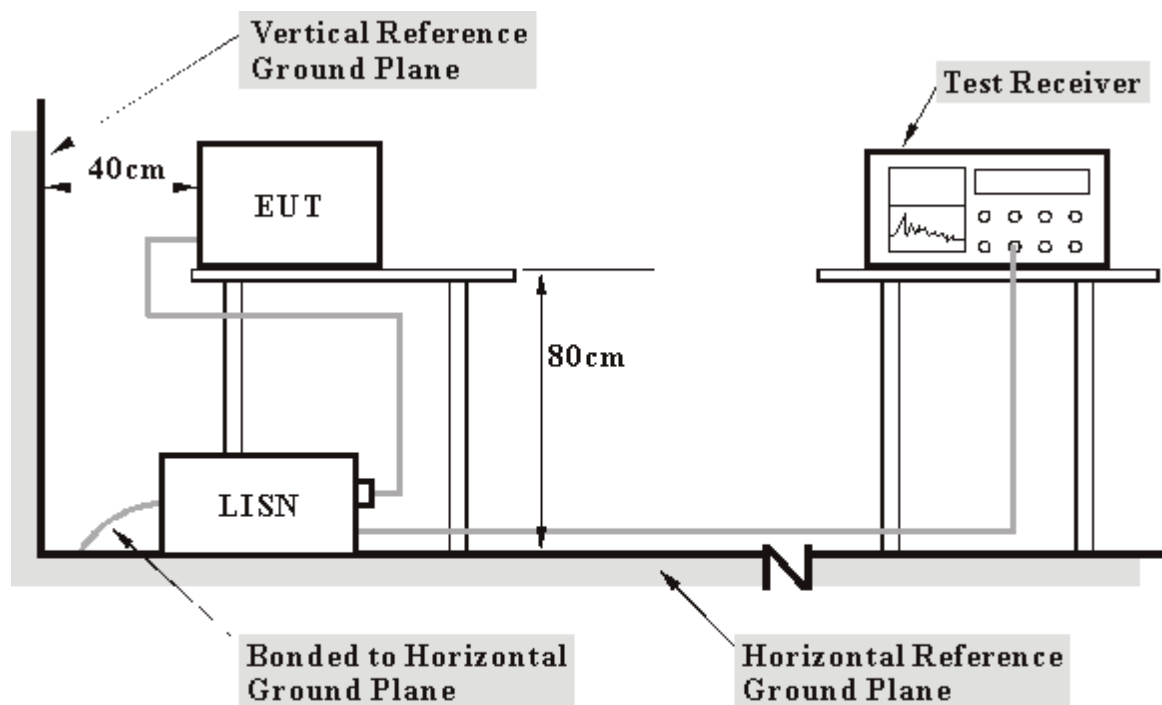
NOTE:

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

4.1.3 TEST PROCEDURES

- The EUT/HOST was placed 0.4 meters from the conducting wall of the shielded room with EUT/HOST 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.
- Both lines of the power mains connected to the EUT/HOST were checked for maximum conducted interference.
- The frequency range from 150 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

4.1.4 TEST SETUP



- Note:**
- Support units were connected to second LISN.
 - 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.



4.1.5 EUT OPERATING CONDITIONS

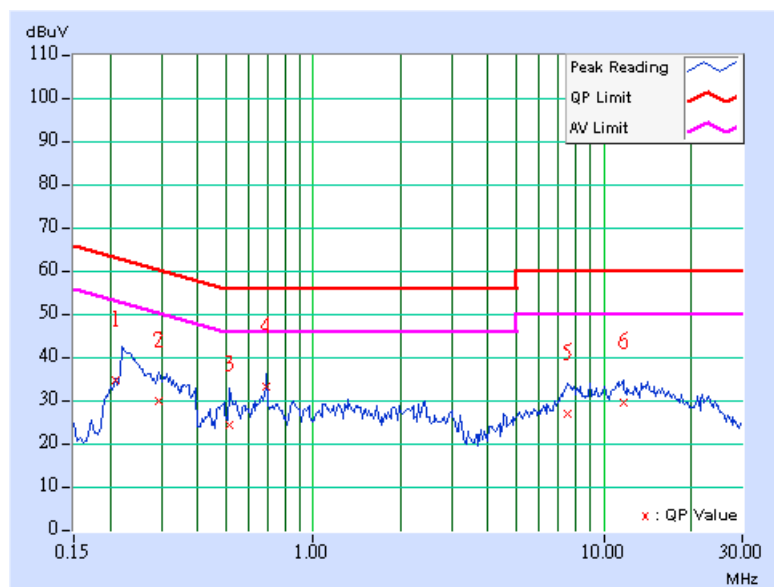
- a. Connect the EUT with the support unit 1 (Notebook computer) which placed on a testing table.
- b. The support unit 1 (Notebook computer) ran a test program “MPTOOL-3253-AIROHA-303OODOA3036” to enable EUT under transmission condition continuously at specific channel frequency.

4.1.6 TEST RESULTS

EUT	IEEE802.11g Wireless MiniPCI Card		
MODE	Channel 11	MODEL	WMP-G10
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	14 deg. C, 54%RH, 977 hPa	PHASE	Line (L)
TESTED BY	Wen Yu		

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	0.209	9.21	25.27	-	34.48	-	63.25	53.25	-28.77	-
2	0.295	9.20	20.52	-	29.72	-	60.40	50.40	-30.67	-
3	0.517	9.19	15.06	-	24.25	-	56.00	46.00	-31.75	-
4	0.689	9.20	23.79	-	32.99	-	56.00	46.00	-23.01	-
5	7.473	9.48	17.62	-	27.10	-	60.00	50.00	-32.90	-
6	11.684	9.56	20.05	-	29.61	-	60.00	50.00	-30.39	-

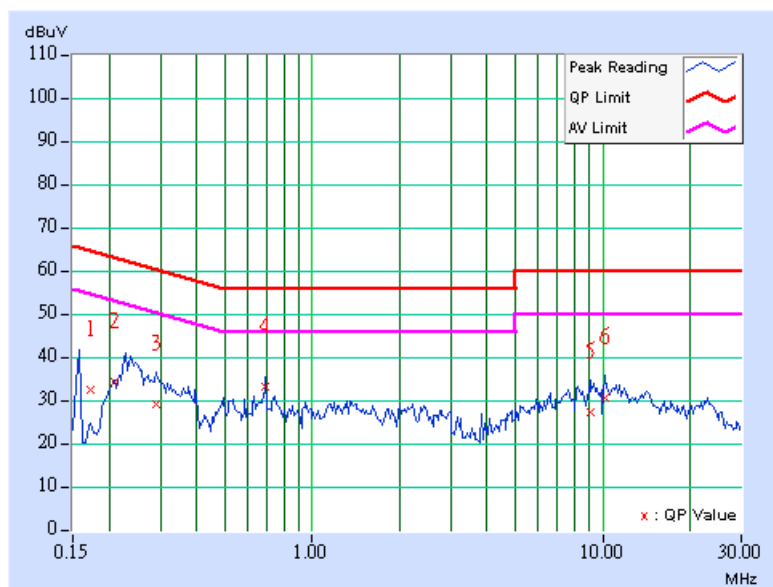
- REMARKS:** 1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. The emission levels of other frequencies were very low against the limit.
4. Margin value =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



EUT	IEEE802.11g Wireless MiniPCI Card		
MODE	Channel 11	MODEL	WMP-G10
INPUT POWER (SYSTEM)	120Vac, 60 Hz	6dB BANDWIDTH	9 kHz
ENVIRONMENTAL CONDITIONS	14 deg. C, 54%RH, 977 hPa	PHASE	Neutral (N)
TESTED BY	Wen Yu		

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	0.173	9.19	23.03	-	32.22	-	64.82	54.82	-32.60	-
2	0.208	9.19	24.80	-	33.99	-	63.29	53.29	-29.29	-
3	0.291	9.21	19.51	-	28.72	-	60.51	50.51	-31.79	-
4	0.689	9.20	23.70	-	32.90	-	56.00	46.00	-23.10	-
5	9.063	9.55	17.93	-	27.48	-	60.00	50.00	-32.52	-
6	10.180	9.59	21.00	-	30.59	-	60.00	50.00	-29.41	-

- 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

Field strength limits are at the distance of 3 meters, emissions radiated outside of the specified bands, shall be according to the general radiated limits in 15.209 as following:

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

NOTE:

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

4.2.2 TEST INSTRUMENTS

DESCRIPTION & MANUFACTURER	MODEL NO.	SERIAL NO.	CALIBRATED UNTIL
HP Spectrum Analyzer	8594E	3710A04861	Sep. 23, 2005
ADVANTEST Spectrum Analyzer	R3271A	85060311	Jun. 29, 2005
CHASE RF Pre_Amplifier	CPA9232	1057	Aug 06, 2005
HP Pre_Amplifier	8449B	3008A01922	Oct. 13, 2005
ROHDE & SCHWARZ Test Receiver	ESCS30	100287	Dec. 08, 2005
CHASE Broadband Antenna	VULB9168	138	May 22, 2005
Schwarzbeck Horn_Antenna	BBHA9120	D124	Jun. 16, 2005
Schwarzbeck Horn_Antenna	BBHA 9170	BBHA9170192	Feb. 16, 2005
SCHWARZBECK Tunable Dipole Antenna	UHAP	897	Mar. 07, 2005
SCHWARZBECK Tunable Dipole Antenna	VHAP	880	Mar. 07, 2005
RF Switches (ARNITSU)	CS-201	1565157	Jul. 15, 2005
RF CABLE (Chaintek) 1GHz-20GHz	SF102	22054-2	Feb. 10, 2005
RF Cable(RICHTEC)	9913-30M	STCCAB-30M-1GHz-021	Jul. 15, 2005
Software	AS60P8	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 Dipole 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.

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

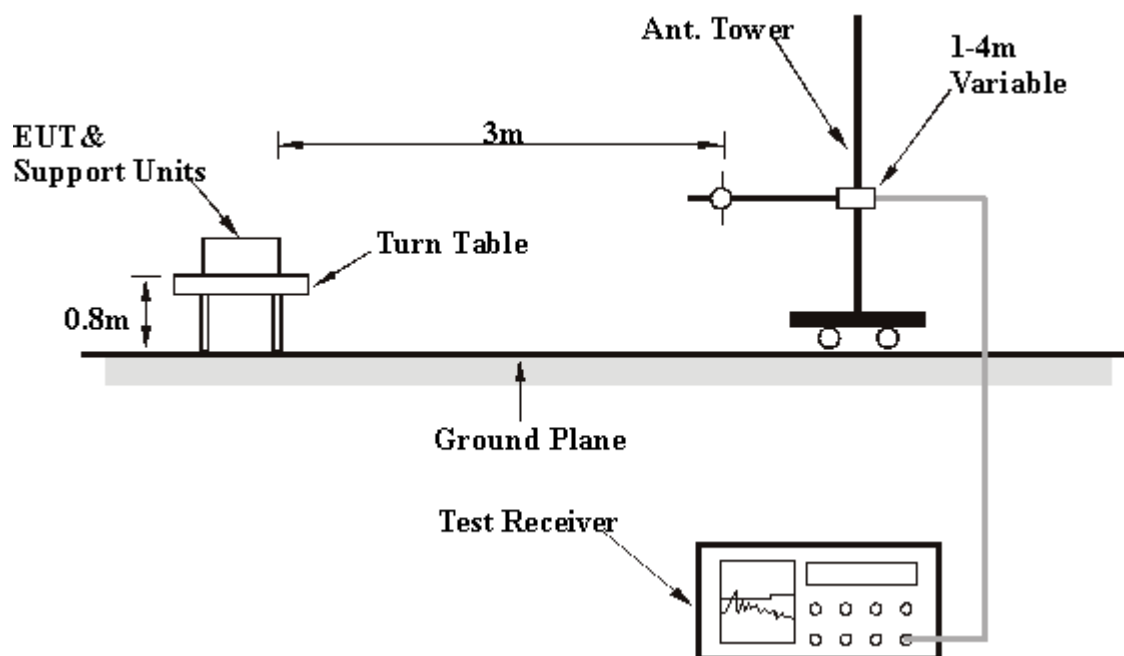
4.2.3 TEST PROCEDURES

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 10 meter open area test site. 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 10 dB 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 10 dB 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 300 Hz for Average detection (AV) at frequency above 1GHz.

4.2.4 TEST SETUP



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

4.2.5 EUT OPERATING CONDITIONS

Same as 4.1.5.

4.2.6 TEST RESULTS (ANTENNA 1)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	80.00	27.90 QP	40.00	-12.10	1.65 H	3	18.00	9.90
2	122.55	25.70 QP	43.50	-17.80	1.68 H	241	14.00	11.70
3	200.00	31.50 QP	43.50	-12.00	2.00 H	42	20.30	11.20
4	240.03	34.30 QP	46.00	-11.70	1.05 H	1	21.50	12.90
5	300.00	29.60 QP	46.00	-16.40	1.62 H	28	13.30	16.30
6	400.00	18.70 QP	46.00	-27.30	2.09 H	343	0.30	18.40
7	440.01	20.90 QP	46.00	-25.10	1.72 H	334	1.50	19.40
8	480.06	23.90 QP	46.00	-22.10	1.74 H	310	3.50	20.40
9	600.05	22.90 QP	46.00	-23.10	1.21 H	311	-0.60	23.50
10	800.00	23.30 QP	46.00	-22.70	1.23 H	129	-3.40	26.60

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	80.00	28.10 QP	40.00	-11.90	1.00 V	59	18.20	9.90
2	120.00	31.10 QP	43.50	-12.40	1.00 V	164	19.60	11.50
3	159.99	21.80 QP	43.50	-21.70	1.21 V	284	8.00	13.80
4	199.99	32.20 QP	43.50	-11.30	1.00 V	70	21.00	11.20
5	240.04	24.60 QP	46.00	-21.40	1.58 V	285	11.70	12.90
6	299.99	25.30 QP	46.00	-20.70	1.02 V	330	9.00	16.30
7	399.99	26.20 QP	46.00	-19.80	1.00 V	14	7.80	18.40
8	499.99	24.70 QP	46.00	-21.30	1.09 V	200	3.80	20.90
9	599.99	20.90 QP	46.00	-25.10	1.37 V	229	-2.70	23.50
10	800.00	24.90 QP	46.00	-21.10	1.56 V	78	-1.70	26.60

- 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.

4.2.7 TEST RESULTS (ANTENNA 2)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	30-1000 MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	120.00	22.50 QP	43.50	-21.00	1.62 H	32	11.00	11.50
2	200.00	33.30 QP	43.50	-10.20	1.82 H	233	22.10	11.20
3	240.03	34.20 QP	46.00	-11.80	1.12 H	354	21.30	12.90
4	299.99	32.30 QP	46.00	-13.70	1.05 H	307	16.00	16.30
5	360.00	27.40 QP	46.00	-18.60	1.00 H	1	10.30	17.10
6	400.02	22.60 QP	46.00	-23.40	1.41 H	126	4.30	18.40
7	480.00	20.40 QP	46.00	-25.60	1.52 H	182	0.00	20.40
8	499.99	21.10 QP	46.00	-24.90	1.17 H	9	0.20	20.90
9	600.02	20.30 QP	46.00	-25.70	1.33 H	318	-3.20	23.50
10	800.01	20.10 QP	46.00	-25.90	1.62 H	317	-6.60	26.60

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	120.00	27.10 QP	43.50	-16.40	1.00 V	286	15.60	11.50
2	160.00	29.50 QP	43.50	-14.00	1.00 V	88	15.70	13.80
3	200.00	31.60 QP	43.50	-11.90	1.00 V	290	20.40	11.20
4	240.04	28.70 QP	46.00	-17.30	1.07 V	21	15.90	12.90
5	299.99	30.30 QP	46.00	-15.70	1.15 V	274	14.00	16.30
6	359.99	24.10 QP	46.00	-21.90	1.00 V	56	7.00	17.10
7	399.99	27.90 QP	46.00	-18.10	1.21 V	337	9.50	18.40
8	499.99	22.40 QP	46.00	-23.60	1.42 V	30	1.50	20.90
9	599.99	18.90 QP	46.00	-27.10	1.02 V	326	-4.60	23.50
10	800.00	19.40 QP	46.00	-26.60	1.43 V	41	-7.30	26.60

- 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.

4.2.8 TEST RESULTS (ANTENNA 1 – DSSS)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	2390.00	49.90 PK	74.00	-24.10	1.45 H	125	16.10	33.80
1	2390.00	43.10 AV	54.00	-10.90	1.45 H	125	9.30	33.80
2	*2412.00	109.70 PK			1.45 H	125	79.80	29.90
2	*2412.00	103.00 AV			1.45 H	125	73.10	29.90
3	4824.00	39.60 PK	74.00	-34.40	1.68 H	288	3.40	36.20
3	4824.00	51.10 AV	54.00	-2.90	1.68 H	288	14.90	36.20
4	7236.00	39.80 PK	74.00	-34.20	1.47 H	81	-1.90	41.70
4	7236.00	51.00 AV	54.00	-3.00	1.47 H	81	9.30	41.70

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	2390.00	42.90 PK	74.00	-31.10	1.07 V	263	9.10	33.80
1	2390.00	36.10 AV	54.00	-17.90	1.07 V	263	2.30	33.80
2	*2412.00	102.70 PK			1.07 V	263	72.80	29.90
2	*2412.00	95.90 AV			1.07 V	263	66.00	29.90
3	4824.00	47.60 PK	74.00	-26.40	1.14 V	88	11.40	36.20
3	4824.00	40.40 AV	54.00	-13.60	1.14 V	88	4.20	36.20
4	7236.00	49.80 PK	74.00	-24.20	1.81 V	194	8.20	41.70
4	7236.00	38.80 AV	54.00	-15.20	1.81 V	194	-2.80	41.70

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2437.00	110.90 PK			1.39 H	122	80.90	30.00
1	*2437.00	104.10 AV			1.39 H	122	74.10	30.00
2	4874.00	38.60 PK	74.00	-35.40	1.52 H	293	2.10	36.50
2	4874.00	51.10 AV	54.00	-2.90	1.52 H	293	14.60	36.50
3	7311.00	40.70 PK	74.00	-33.30	1.48 H	87	-1.10	41.80
3	7311.00	51.60 AV	54.00	-2.40	1.48 H	87	9.80	41.80

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	*2437.00	104.70 PK			1.05 V	264	74.70	30.00
1	*2437.00	97.80 AV			1.05 V	264	67.80	30.00
2	4874.00	47.20 PK	74.00	-26.80	1.12 V	91	10.80	36.50
2	4874.00	40.20 AV	54.00	-13.80	1.12 V	91	3.70	36.50
3	7311.00	50.20 PK	74.00	-23.80	1.84 V	193	8.40	41.80
3	7311.00	39.40 AV	54.00	-14.60	1.84 V	193	-2.30	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2462.00	110.90 PK			1.39 H	111	80.90	30.10
1	*2462.00	103.90 AV			1.39 H	111	73.80	30.10
2	2483.50	57.50 PK	74.00	-16.50	1.39 H	111	27.30	30.10
2	2483.50	50.40 AV	54.00	-3.60	1.39 H	111	20.30	30.10
3	2484.60	58.00 PK	74.00	-16.00	1.39 H	111	27.80	30.10
3	2484.60	50.90 AV	54.00	-3.10	1.39 H	111	20.80	30.10
4	4924.00	38.10 PK	74.00	-35.90	1.45 H	300	1.40	36.70
4	4924.00	51.20 AV	54.00	-2.80	1.45 H	300	14.50	36.70
5	7386.00	41.30 PK	74.00	-32.70	1.46 H	79	-0.50	41.80
5	7386.00	52.30 AV	54.00	-1.70	1.46 H	79	10.50	41.80

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	*2462.00	103.50 PK			1.04 V	263	73.50	30.10
1	*2462.00	97.00 AV			1.04 V	263	66.90	30.10
2	2483.50	50.00 PK	74.00	-24.00	1.04 V	263	19.90	30.10
2	2483.50	43.50 AV	54.00	-10.50	1.04 V	263	13.40	30.10
3	2484.60	50.60 PK	74.00	-23.40	1.04 V	263	20.40	30.10
3	2484.60	44.00 AV	54.00	-10.00	1.04 V	263	13.90	30.10
4	4924.00	50.70 PK	74.00	-23.30	1.10 V	89	14.00	36.70
4	4924.00	43.20 AV	54.00	-10.80	1.10 V	89	6.50	36.70
5	7386.00	50.40 PK	74.00	-23.60	1.76 V	196	8.60	41.80
5	7386.00	39.40 AV	54.00	-14.60	1.76 V	196	-2.50	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

4.2.9 TEST RESULTS (ANTENNA 2 – DSSS)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	2390.00	47.30 PK	74.00	-26.70	1.68 H	104	13.50	33.80
1	2390.00	40.60 AV	54.00	-13.40	1.68 H	104	6.80	33.80
2	*2412.00	107.10 PK			1.68 H	104	77.20	29.90
2	*2412.00	100.40 AV			1.68 H	104	70.50	29.90
3	4824.00	47.00 PK	74.00	-27.00	1.00 H	34	10.70	36.20
3	4824.00	35.50 AV	54.00	-18.50	1.00 H	34	-0.70	36.20
4	7236.00	49.40 PK	74.00	-24.60	1.12 H	137	7.70	41.70
4	7236.00	37.50 AV	54.00	-16.50	1.12 H	137	-4.20	41.70

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	2390.00	49.30 PK	74.00	-24.70	1.25 V	240	15.50	33.80
1	2390.00	42.90 AV	54.00	-11.10	1.25 V	240	9.10	33.80
2	*2412.00	109.10 PK			1.25 V	240	79.20	29.90
2	*2412.00	102.70 AV			1.25 V	240	72.80	29.90
3	4824.00	49.90 PK	74.00	-24.10	1.25 V	347	13.70	36.20
3	4824.00	38.80 AV	54.00	-15.20	1.25 V	347	2.60	36.20
4	7236.00	48.90 PK	74.00	-25.10	1.66 V	164	7.30	41.70
4	7236.00	37.80 AV	54.00	-16.20	1.66 V	164	-3.90	41.70

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2437.00	107.30 PK			1.69 H	101	77.30	30.00
1	*2437.00	100.30 AV			1.69 H	101	70.30	30.00
2	4874.00	44.60 PK	74.00	-29.40	1.52 H	127	8.10	36.50
2	4874.00	36.00 AV	54.00	-18.00	1.52 H	127	-0.50	36.50
3	7311.00	49.60 PK	74.00	-24.40	1.21 H	110	7.80	41.80
3	7311.00	37.90 AV	54.00	-16.10	1.21 H	110	-3.90	41.80

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	*2437.00	110.30 PK			1.26 V	241	80.30	30.00
1	*2437.00	103.50 AV			1.26 V	241	73.50	30.00
2	4874.00	50.00 PK	74.00	-24.00	1.11 V	88	13.50	36.50
2	4874.00	39.80 AV	54.00	-14.20	1.11 V	88	3.40	36.50
3	7311.00	48.60 PK	74.00	-25.40	1.23 V	225	6.90	41.80
3	7311.00	37.90 AV	54.00	-16.10	1.23 V	225	-3.90	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2462.00	106.30 PK			1.60 H	98	76.20	30.10
1	*2462.00	99.50 AV			1.60 H	98	69.40	30.10
2	2483.50	52.80 PK	74.00	-21.20	1.60 H	98	22.70	30.10
2	2483.50	46.00 AV	54.00	-8.00	1.60 H	98	15.90	30.10
3	4924.00	44.50 PK	74.00	-29.50	1.14 H	112	7.80	36.70
3	4924.00	36.00 AV	54.00	-18.00	1.14 H	112	-0.70	36.70
4	7386.00	48.00 PK	74.00	-26.00	1.08 H	56	6.20	41.80
4	7386.00	37.80 AV	54.00	-16.20	1.08 H	56	-4.10	41.80

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	*2462.00	109.80 PK			1.53 V	235	79.80	30.10
1	*2462.00	103.40 AV			1.53 V	235	73.30	30.10
2	2483.50	56.30 PK	74.00	-17.70	1.53 V	235	26.20	30.10
2	2483.50	49.90 AV	54.00	-4.10	1.53 V	235	19.80	30.10
3	4924.00	49.20 PK	74.00	-24.80	1.00 V	64	12.50	36.70
3	4924.00	42.00 AV	54.00	-12.00	1.00 V	64	5.30	36.70
4	7386.00	48.30 PK	74.00	-25.70	1.22 V	95	6.40	41.80
4	7386.00	38.20 AV	54.00	-15.80	1.22 V	95	-3.60	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

4.2.10 TEST RESULTS (ANTENNA 1 –OFDM)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	2390.00	61.80 PK	74.00	-12.20	1.37 H	99	28.00	33.80
1	2390.00	52.40 AV	54.00	-1.60	1.37 H	99	18.60	33.80
2	*2412.00	108.70 PK			1.37 H	99	78.80	29.90
2	*2412.00	99.30 AV			1.37 H	99	69.40	29.90
3	4824.00	49.80 PK	74.00	-24.20	1.43 H	41	13.60	36.20
3	4824.00	39.30 AV	54.00	-14.70	1.43 H	41	3.10	36.20
4	7236.00	56.60 PK	74.00	-17.40	1.49 H	131	14.90	41.70
4	7236.00	42.10 AV	54.00	-11.90	1.49 H	131	0.40	41.70

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	2390.00	54.30 PK	74.00	-19.70	1.05 V	262	20.50	33.80
1	2390.00	45.30 AV	54.00	-8.70	1.05 V	262	11.50	33.80
2	*2412.00	101.20 PK			1.05 V	262	71.30	29.90
2	*2412.00	92.20 AV			1.05 V	262	62.30	29.90
3	4824.00	46.80 PK	74.00	-27.20	1.18 V	20	10.60	36.20
3	4824.00	38.90 AV	54.00	-15.10	1.18 V	20	2.70	36.20
4	7236.00	51.90 PK	74.00	-22.10	1.76 V	190	10.20	41.70
4	7236.00	39.60 AV	54.00	-14.40	1.76 V	190	-2.00	41.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2437.00	109.70 PK			1.38 H	123	79.70	30.00
1	*2437.00	99.80 AV			1.38 H	123	69.80	30.00
2	4874.00	50.30 PK	74.00	-23.70	1.45 H	62	13.80	36.50
2	4874.00	39.90 AV	54.00	-14.10	1.45 H	62	3.40	36.50
3	7311.00	56.90 PK	74.00	-17.10	1.51 H	219	15.10	41.80
3	7311.00	42.30 AV	54.00	-11.70	1.51 H	219	0.50	41.80

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	*2437.00	102.40 PK			1.05 V	263	72.40	30.00
1	*2437.00	93.40 AV			1.05 V	263	63.40	30.00
2	4874.00	50.10 PK	74.00	-23.90	1.19 V	28	13.60	36.50
2	4874.00	39.40 AV	54.00	-14.60	1.19 V	28	2.90	36.50
3	7311.00	51.20 PK	74.00	-22.80	1.74 V	192	9.50	41.80
3	7311.00	39.10 AV	54.00	-14.90	1.74 V	192	-2.60	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2462.00	106.90 PK			1.38 H	112	76.90	30.10
1	*2462.00	97.50 AV			1.38 H	112	67.40	30.10
2	2483.50	61.90 PK	74.00	-12.10	1.38 H	112	31.80	30.10
2	2483.50	52.50 AV	54.00	-1.50	1.38 H	112	22.30	30.10
3	4924.00	49.80 PK	74.00	-24.20	1.36 H	83	13.10	36.70
3	4924.00	39.40 AV	54.00	-14.60	1.36 H	83	2.70	36.70
4	7386.00	56.40 PK	74.00	-17.60	1.58 H	172	14.60	41.80
4	7386.00	41.90 AV	54.00	-12.10	1.58 H	172	0.10	41.80

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	*2462.00	99.50 PK			1.04 V	263	69.40	30.10
1	*2462.00	90.20 AV			1.04 V	263	60.20	30.10
2	2483.50	54.40 PK	74.00	-19.60	1.04 V	263	24.30	30.10
2	2483.50	45.20 AV	54.00	-8.80	1.04 V	263	15.10	30.10
3	4924.00	49.90 PK	74.00	-24.10	1.17 V	16	13.20	36.70
3	4924.00	40.40 AV	54.00	-13.60	1.17 V	16	3.70	36.70
4	7386.00	52.60 PK	74.00	-21.40	1.77 V	189	10.70	41.80
4	7386.00	40.30 AV	54.00	-13.70	1.77 V	189	-1.60	41.80

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

4.2.11 TEST RESULTS (ANTENNA 2 –OFDM)

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 1	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	2390.00	55.40 PK	74.00	-18.60	1.45 H	91	21.60	33.80
1	2390.00	46.70 AV	54.00	-7.30	1.45 H	91	12.90	33.80
2	*2412.00	103.10 PK			1.45 H	91	73.20	29.90
2	*2412.00	94.40 AV			1.45 H	91	64.50	29.90
3	4824.00	45.30 PK	74.00	-28.70	1.46 H	52	9.10	36.20
3	4824.00	34.80 AV	54.00	-19.20	1.46 H	52	-1.40	36.20
4	7236.00	49.10 PK	74.00	-24.90	1.30 H	84	7.50	41.70
4	7236.00	37.50 AV	54.00	-16.50	1.30 H	84	-4.20	41.70

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	2390.00	61.20 PK	74.00	-12.80	1.07 V	21	27.40	33.80
1	2390.00	51.50 AV	54.00	-2.50	1.07 V	21	17.70	33.80
2	*2412.00	109.00 PK			1.07 V	21	79.10	29.90
2	*2412.00	99.20 AV			1.07 V	21	69.30	29.90
3	4824.00	49.70 PK	74.00	-24.30	1.30 V	334	13.40	36.20
3	4824.00	37.70 AV	54.00	-16.30	1.30 V	334	1.50	36.20
4	7236.00	51.10 PK	74.00	-22.90	1.28 V	334	9.40	41.70
4	7236.00	38.70 AV	54.00	-15.30	1.28 V	334	-3.00	41.70

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 6	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2437.00	103.60 PK			1.26 H	76	73.70	30.00
1	*2437.00	94.20 AV			1.26 H	76	64.20	30.00
2	4874.00	46.50 PK	74.00	-27.50	1.08 H	82	10.00	36.50
2	4874.00	35.80 AV	54.00	-18.20	1.08 H	82	-0.70	36.50
3	7311.00	49.60 PK	74.00	-24.40	1.11 H	102	7.80	41.80
3	7311.00	37.90 AV	54.00	-16.10	1.11 H	102	-3.90	41.80

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	*2437.00	110.80 PK			1.06 V	348	80.80	30.00
1	*2437.00	100.70 AV			1.06 V	348	70.70	30.00
2	4874.00	48.30 PK	74.00	-25.70	1.01 V	133	11.90	36.50
2	4874.00	41.10 AV	54.00	-12.90	1.01 V	133	4.70	36.50
3	7311.00	53.10 PK	74.00	-20.90	1.25 V	334	11.30	41.80
3	7311.00	39.60 AV	54.00	-14.40	1.25 V	334	-2.10	41.80

- REMARKS:**
1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
 2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
 3. The other emission levels were very low against the limit.
 4. Margin value = Emission level – Limit value.
 5. The limit value is defined as per 15.247
 6. “ * ” : Fundamental frequency

EUT	IEEE802.11g Wireless MiniPCI Card	MODEL	WMP-G10
MODE	Channel 11	FREQUENCY RANGE	1000~25000MHz
INPUT POWER (SYSTEM)	120Vac, 60 Hz	DETECTOR FUNCTION & BANDWIDTH	Peak (PK) Average (AV) 1 MHz
ENVIRONMENTAL CONDITIONS	30 deg. C, 60%RH, 977 hPa	TESTED BY	Sky Liao

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	*2462.00	99.40 PK			1.49 H	76	69.40	30.10
1	*2462.00	90.10 AV			1.49 H	76	60.00	30.10
2	2483.50	53.10 PK	74.00	-20.90	1.49 H	76	22.90	30.10
2	2483.50	43.70 AV	54.00	-10.30	1.49 H	76	13.60	30.10
3	4924.00	45.10 PK	74.00	-28.90	1.79 H	78	8.40	36.70
3	4924.00	36.80 AV	54.00	-17.20	1.79 H	78	0.10	36.70
4	7386.00	48.90 PK	74.00	-25.10	1.59 H	124	7.10	41.80
4	7386.00	37.50 AV	54.00	-16.50	1.59 H	124	-4.30	41.80

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	*2462.00	107.50 PK			1.54 V	350	77.40	30.10
1	*2462.00	98.00 AV			1.54 V	350	67.90	30.10
2	2483.50	61.10 PK	74.00	-12.90	1.54 V	350	31.00	30.10
2	2483.50	51.60 AV	54.00	-2.40	1.54 V	350	21.50	30.10
3	4924.00	47.80 PK	74.00	-26.20	1.39 V	331	11.10	36.70
3	4924.00	37.60 AV	54.00	-16.40	1.39 V	331	0.90	36.70
4	7386.00	50.90 PK	74.00	-23.10	1.28 V	336	9.10	41.80
4	7386.00	38.80 AV	54.00	-15.20	1.28 V	336	-3.10	41.80

REMARKS:

1. Emission level(dBuV/m)=Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor (dB/m) + Cable Factor (dB)
3. The other emission levels were very low against the limit.
4. Margin value = Emission level – Limit value.
5. The limit value is defined as per 15.247
6. " * " : Fundamental frequency

4.3 6dB BANDWIDTH MEASUREMENT

4.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

4.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
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.
- 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

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

4.3.4 TEST SETUP



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

4.3.5 EUT OPERATING CONDITIONS

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

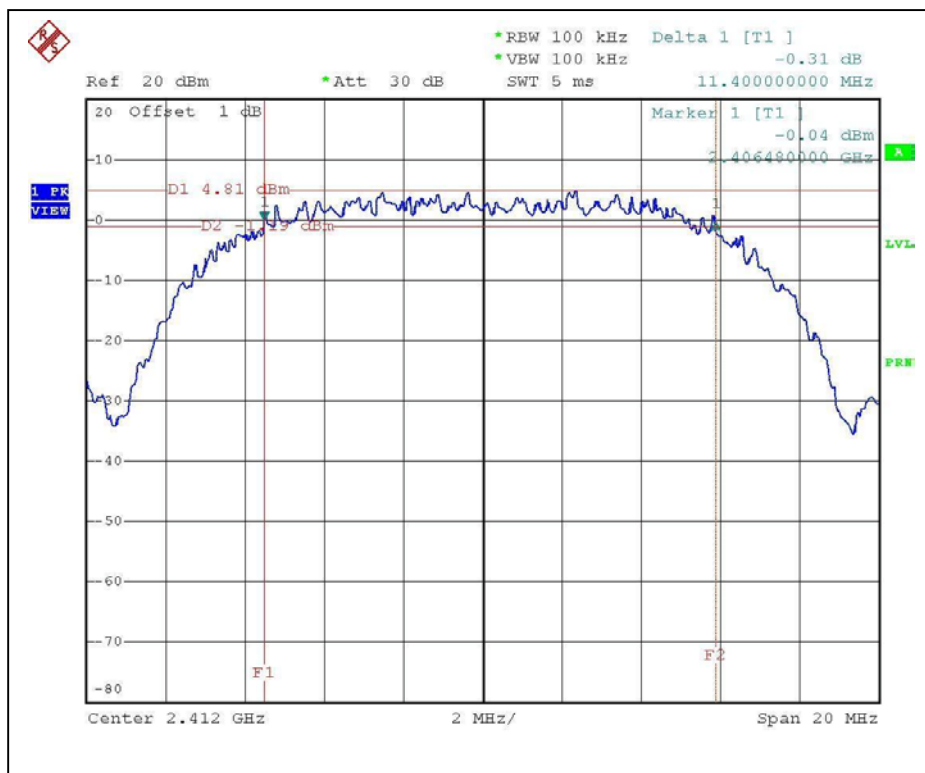


4.3.6 TEST RESULTS (ANTENNA 1, 2 – DSSS)

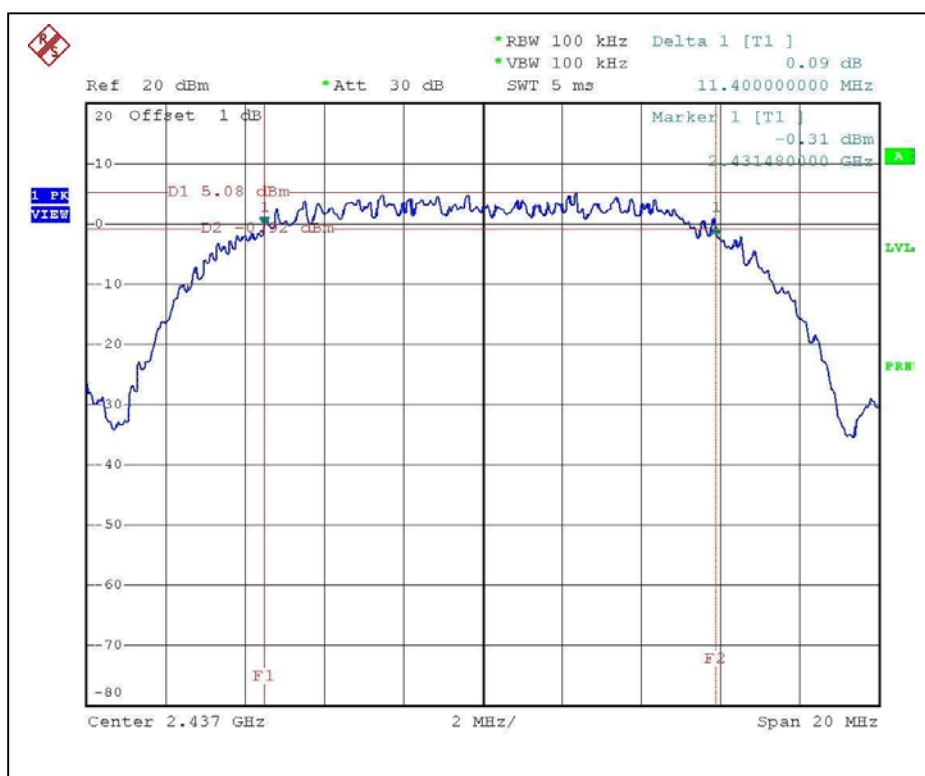
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	11.40	0.5	PASS
6	2437	11.40	0.5	PASS
11	2462	11.44	0.5	PASS

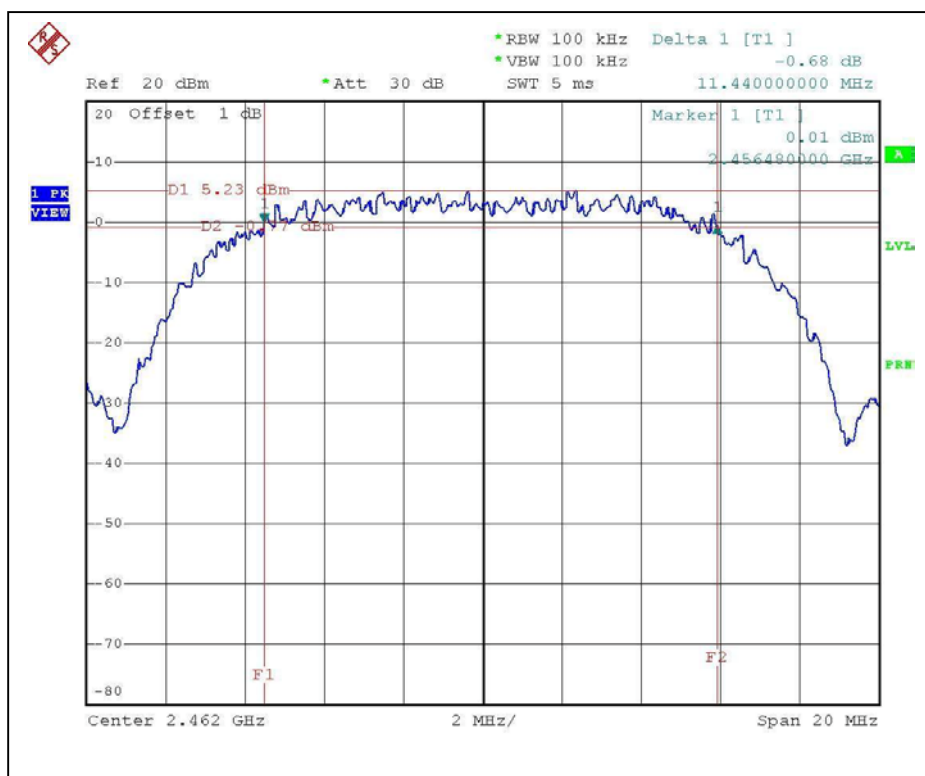
CH1



CH6



CH11

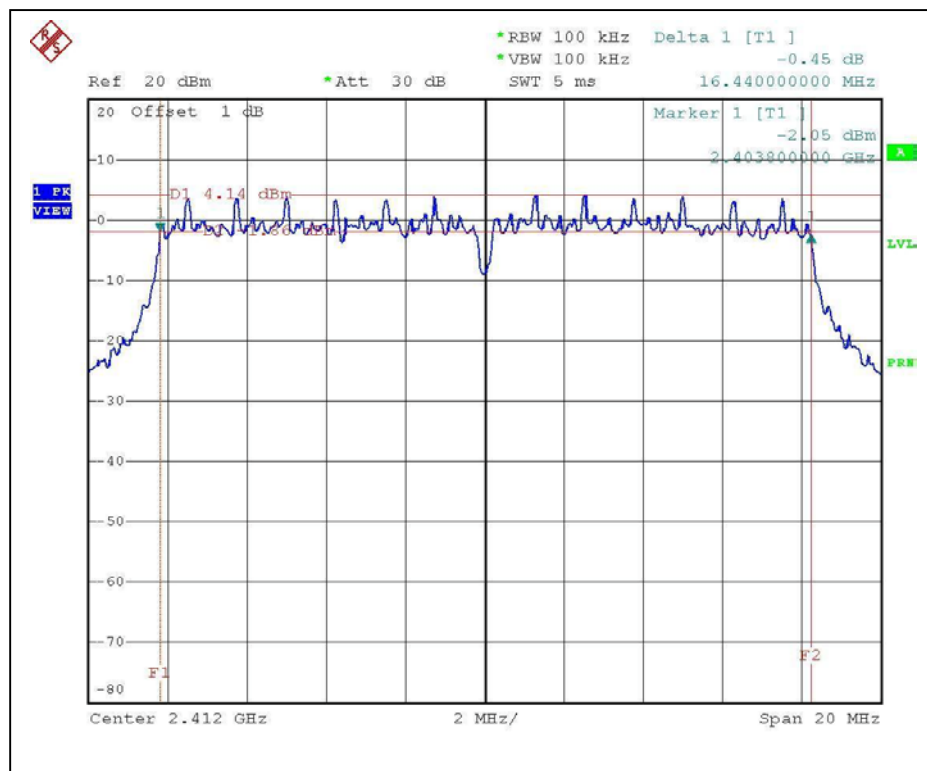


4.3.7 TEST RESULTS (ANTENNA 1 – OFDM)

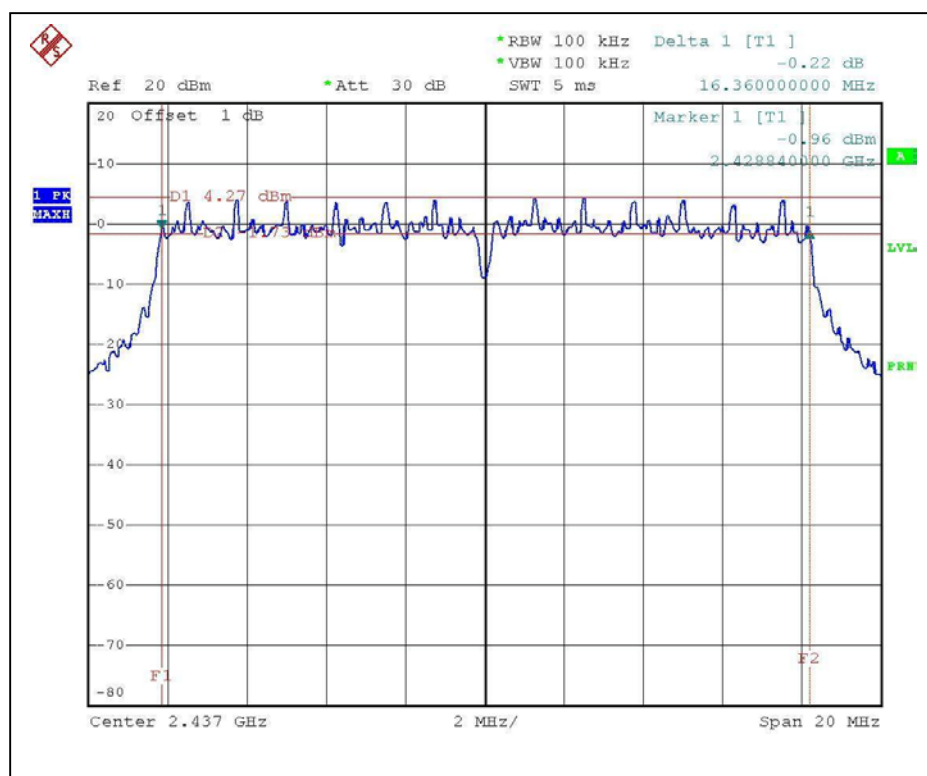
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.44	0.5	PASS
6	2437	16.36	0.5	PASS
11	2462	16.40	0.5	PASS

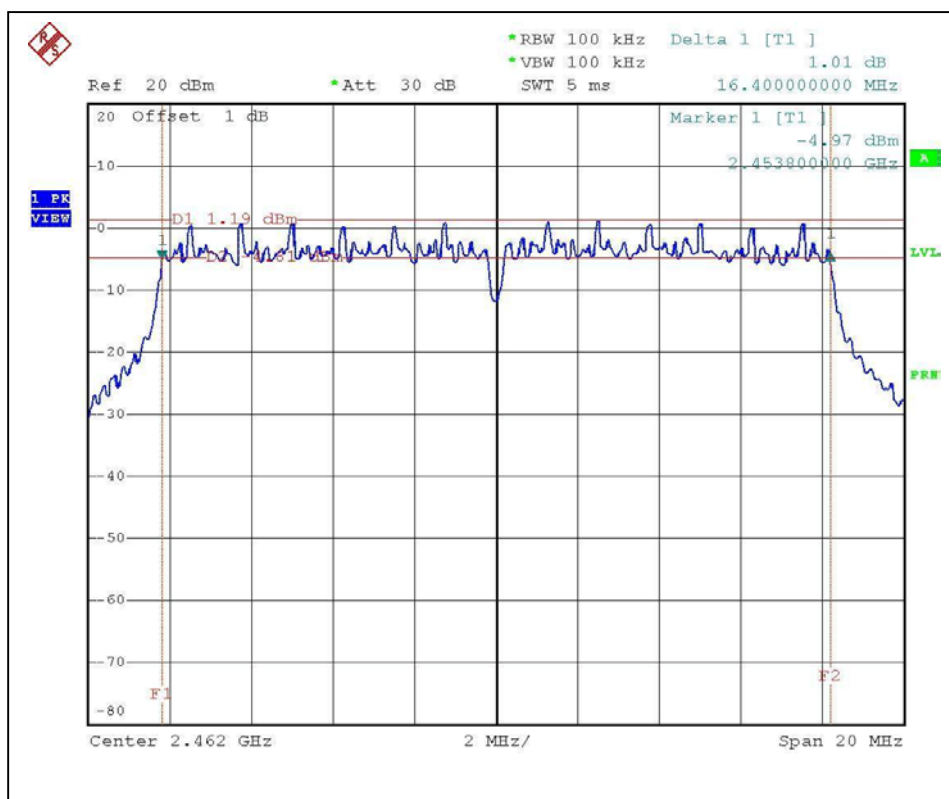
CH1



CH6



CH11

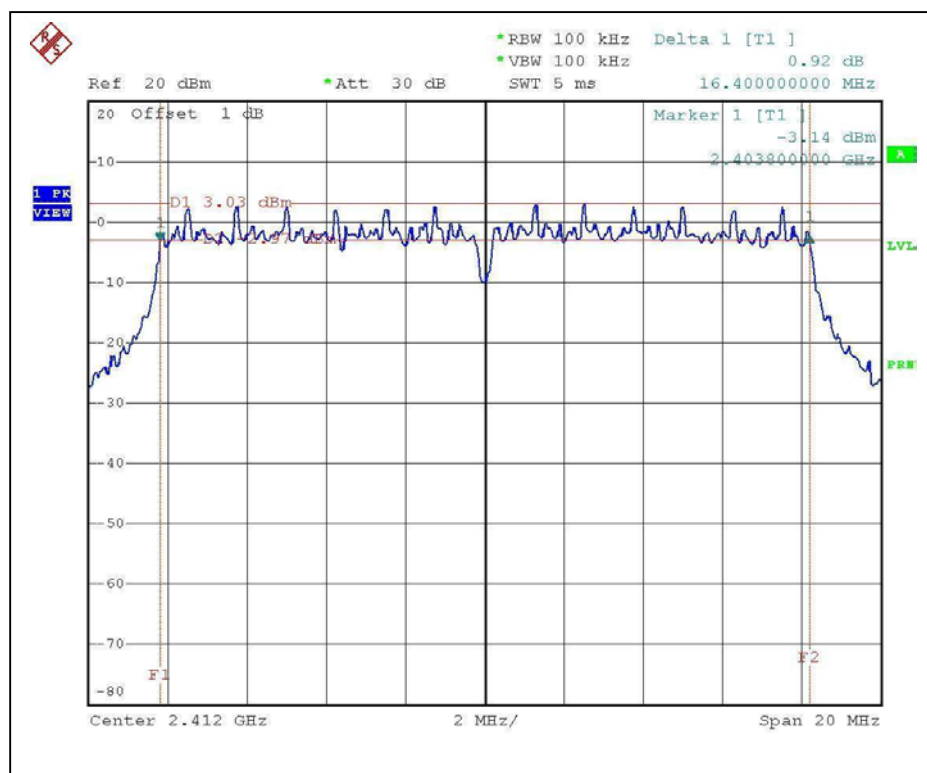


4.3.8 TEST RESULTS (ANTENNA 2 – OFDM)

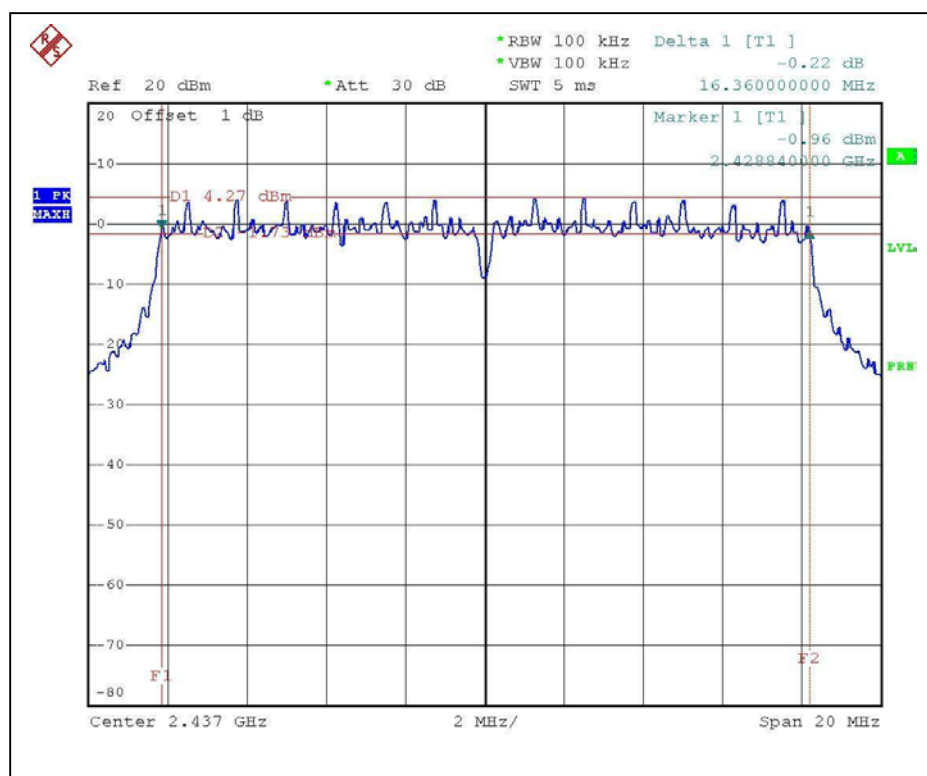
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL	CHANNEL FREQUENCY (MHz)	6 dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	2412	16.40	0.5	PASS
6	2437	16.36	0.5	PASS
11	2462	16.40	0.5	PASS

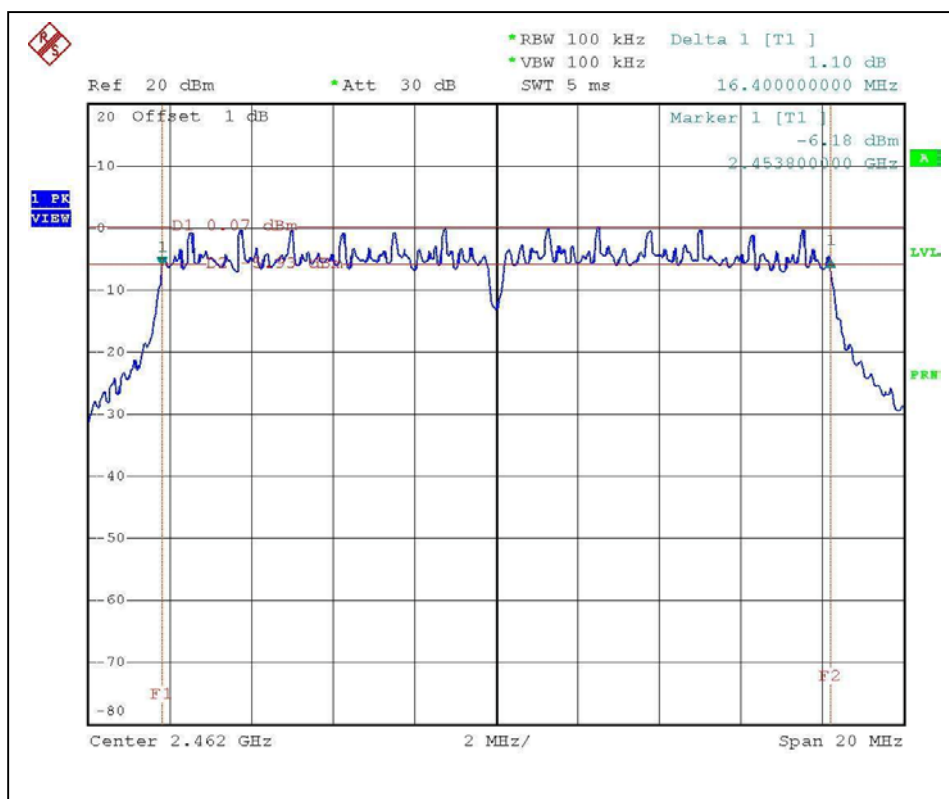
CH1



CH6



CH11



4.4 MAXIMUM PEAK OUTPUT POWER

4.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

4.4.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP40	100036	Nov. 23, 2005
Agilent SIGNAL GENERATOR	E8257C	MY43321031	May. 06, 2005
TEKTRONIX OSCILLOSCOPE	TDS 220	B027241	Jun. 30, 2005
NARDA DETECTOR	4503A	FSCM99899	NA

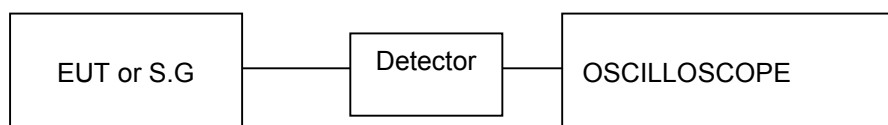
NOTE:

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

4.4.3 TEST PROCEDURES

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

4.4.4 TEST SETUP



4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

4.4.6 TEST RESULTS - DSSS

EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

Antenna 1 (Gain -2.0 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.62	30	PASS
6	2437	18.71	30	PASS
11	2462	18.85	30	PASS

Antenna 2 (Gain 2.0 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	18.62	30	PASS
6	2437	18.71	30	PASS
11	2462	18.85	30	PASS

4.4.7 TEST RESULTS - OFDM

EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

Antenna 1 (Gain -2.0 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	22.00	30	PASS
6	2437	22.13	30	PASS
11	2462	19.12	30	PASS

Antenna 2 (Gain 2.0 dBi)

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	2412	21.25	30	PASS
6	2437	22.13	30	PASS
11	2462	17.88	30	PASS

4.5 POWER SPECTRAL DENSITY MEASUREMENT

4.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

4.5.2 TEST INSTRUMENTS

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

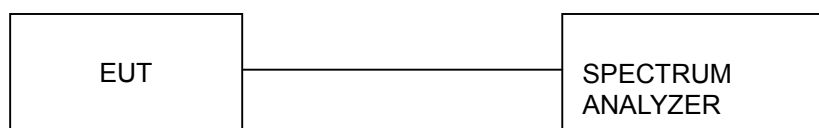
NOTE:

- 1.The measurement uncertainty is less than +/- 2.6dB, which is calculated as per the NAMAS document NIS81.
- 2.The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

4.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time=span/3kHz. The power spectral density was measured and recorded. The sweep time is allowed to be longer than span/3KHz for a full response of the mixer in the spectrum analyzer.

4.5.4 TEST SETUP



4.5.5 EUT OPERATING CONDITIONS

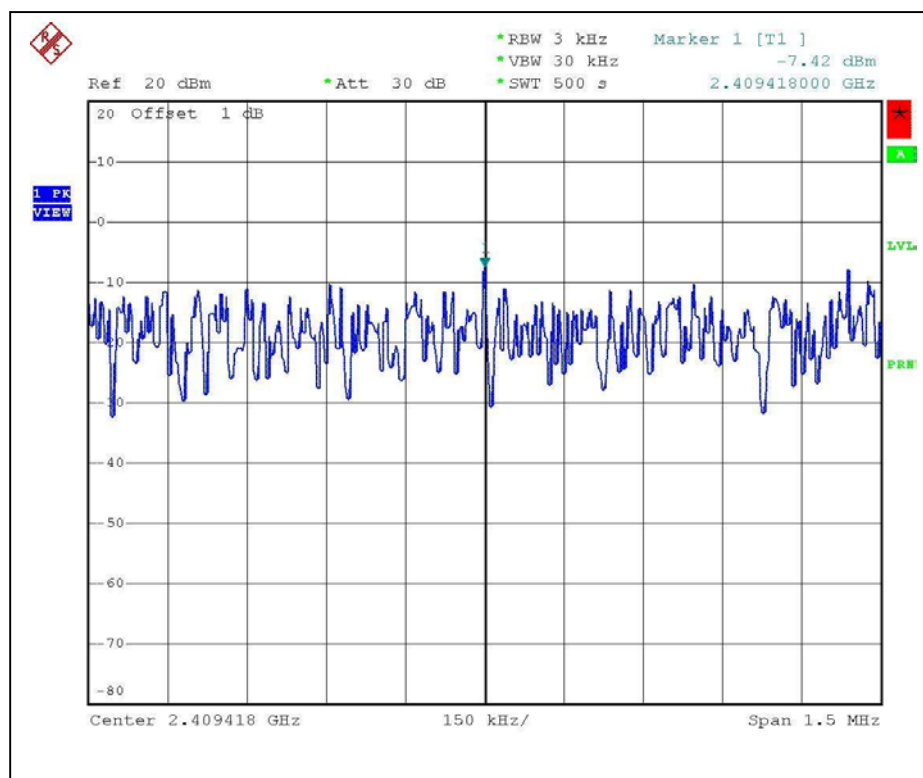
Same as 4.3.5

4.5.6 TEST RESULTS (ANTENNA 1, 2 – DSSS)

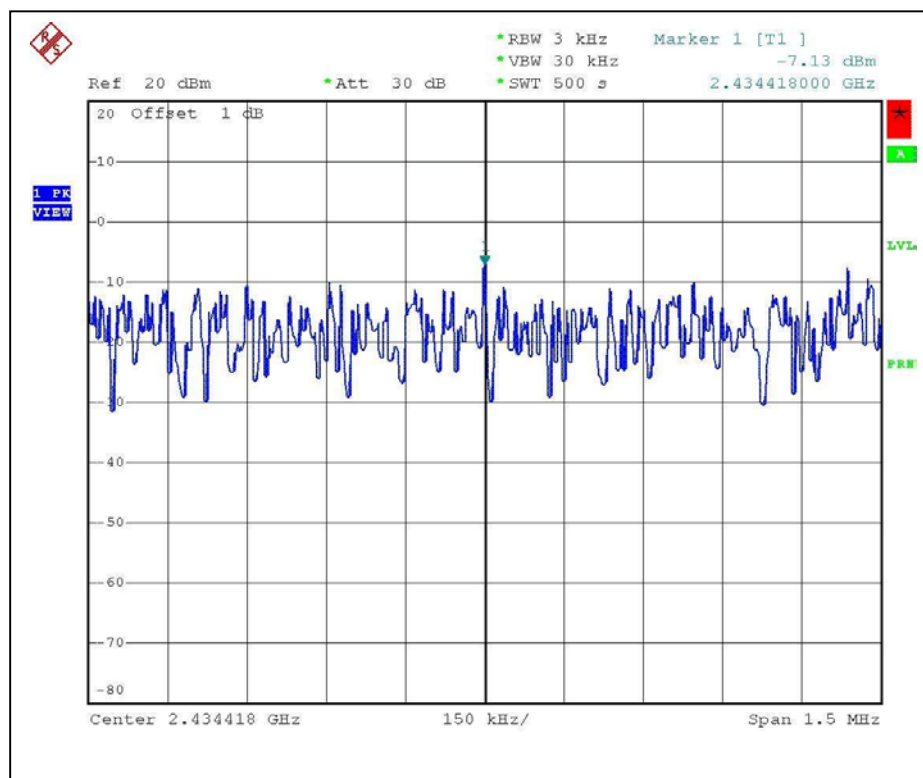
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-7.42	8	PASS
6	2437	-7.13	8	PASS
11	2462	-7.01	8	PASS

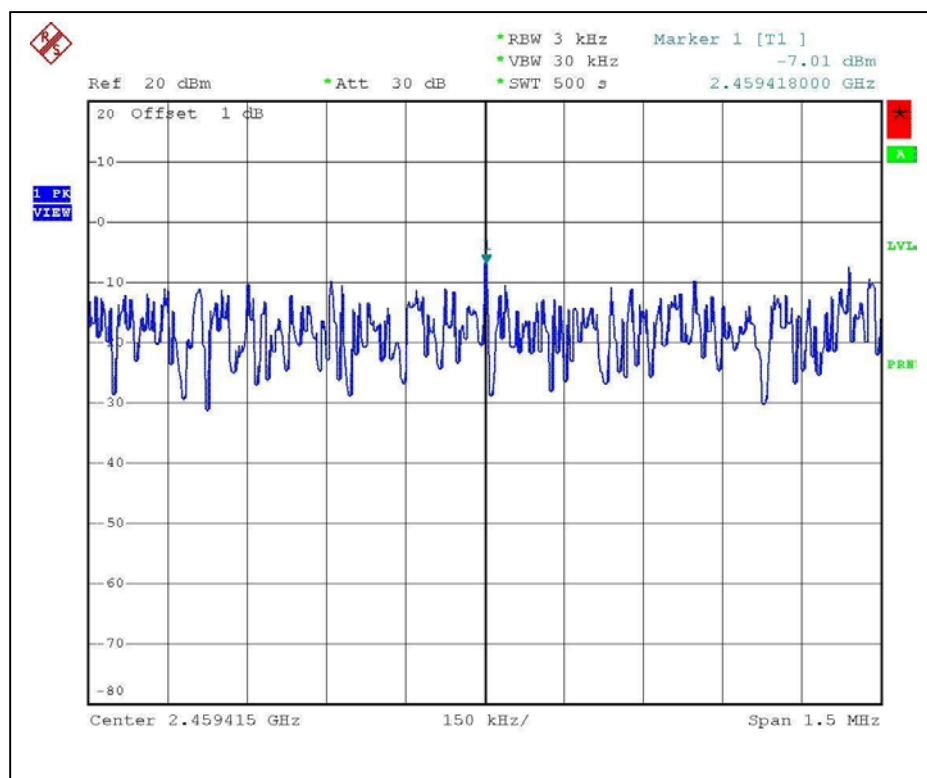
CH1



CH6



CH11

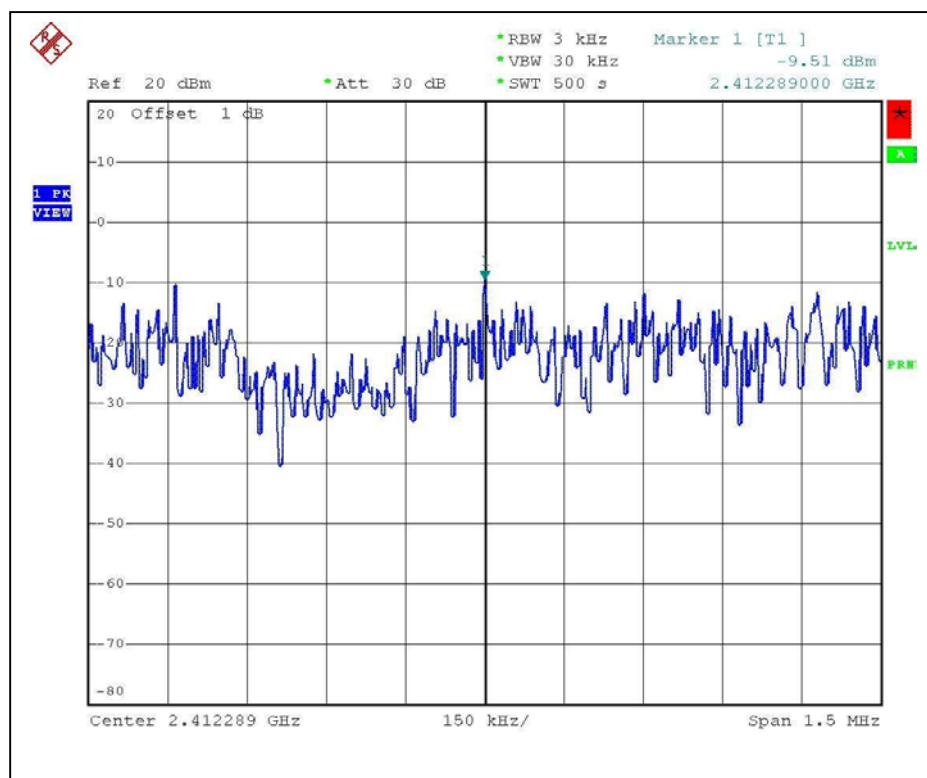


4.5.7 TEST RESULTS (ANTENNA 1 – OFDM)

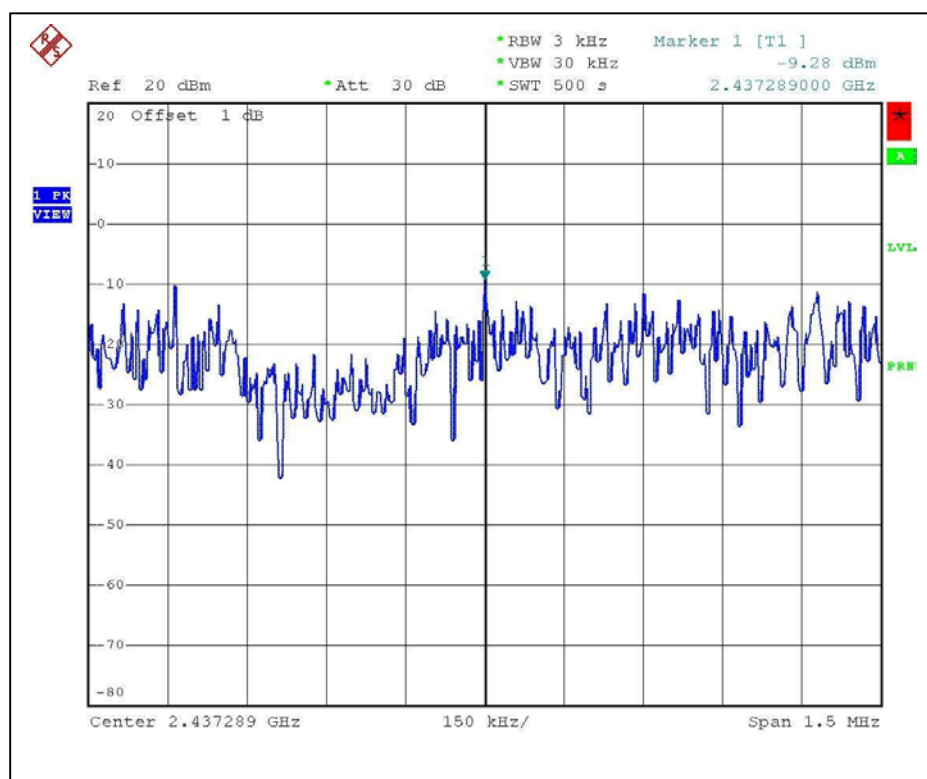
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-9.51	8	PASS
6	2437	-9.28	8	PASS
11	2462	-12.19	8	PASS

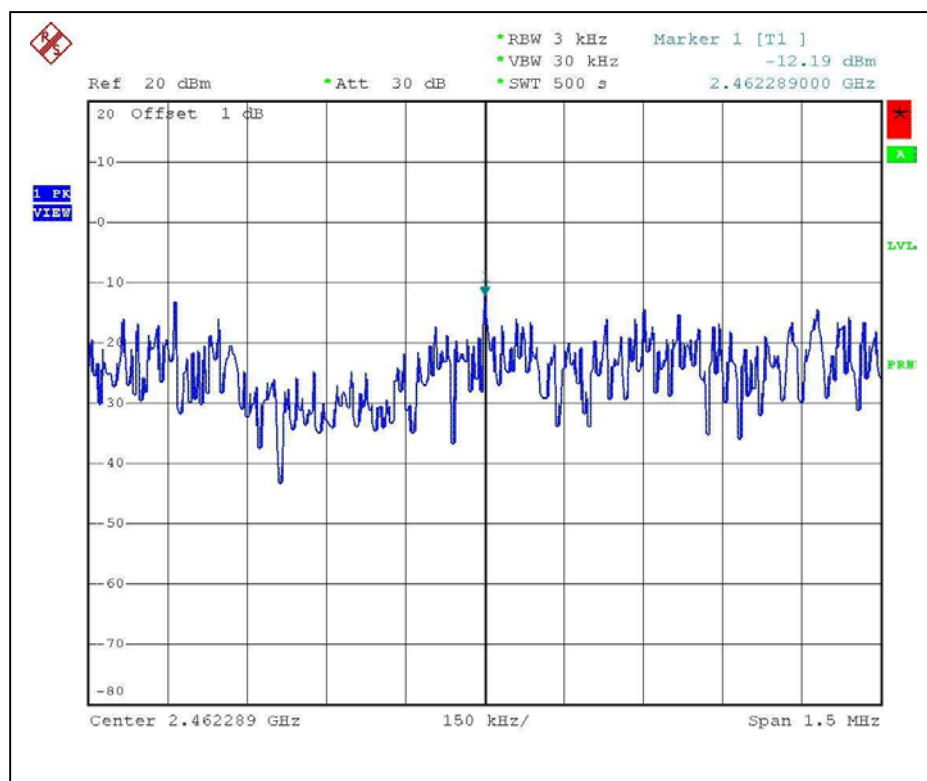
CH1



CH6



CH11

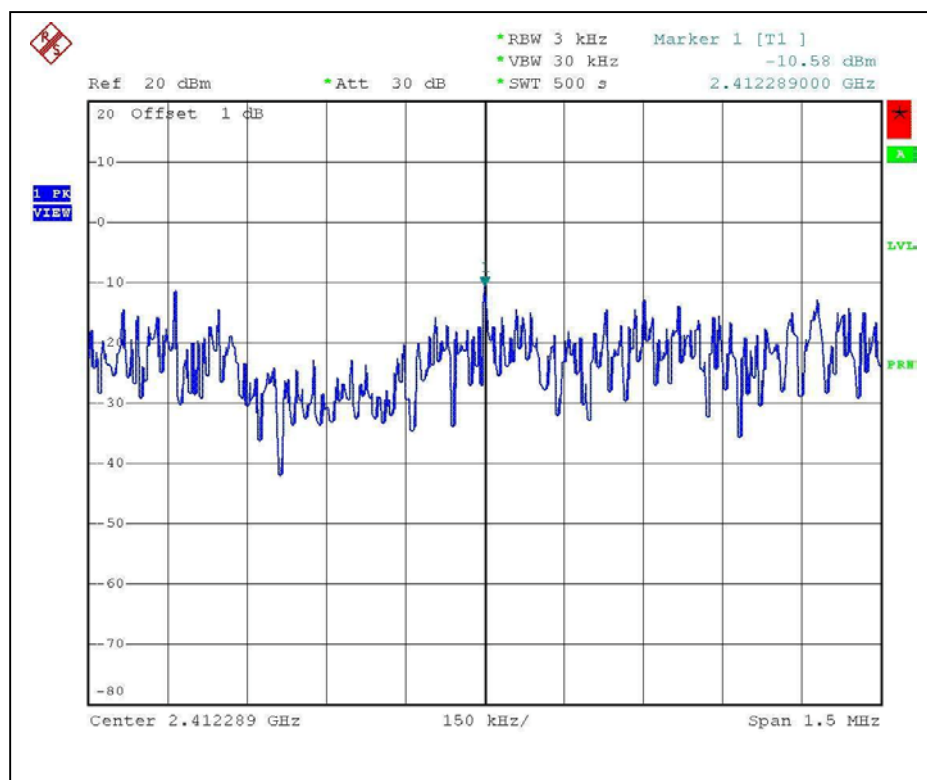


4.5.8 TEST RESULTS (ANTENNA 2 – OFDM)

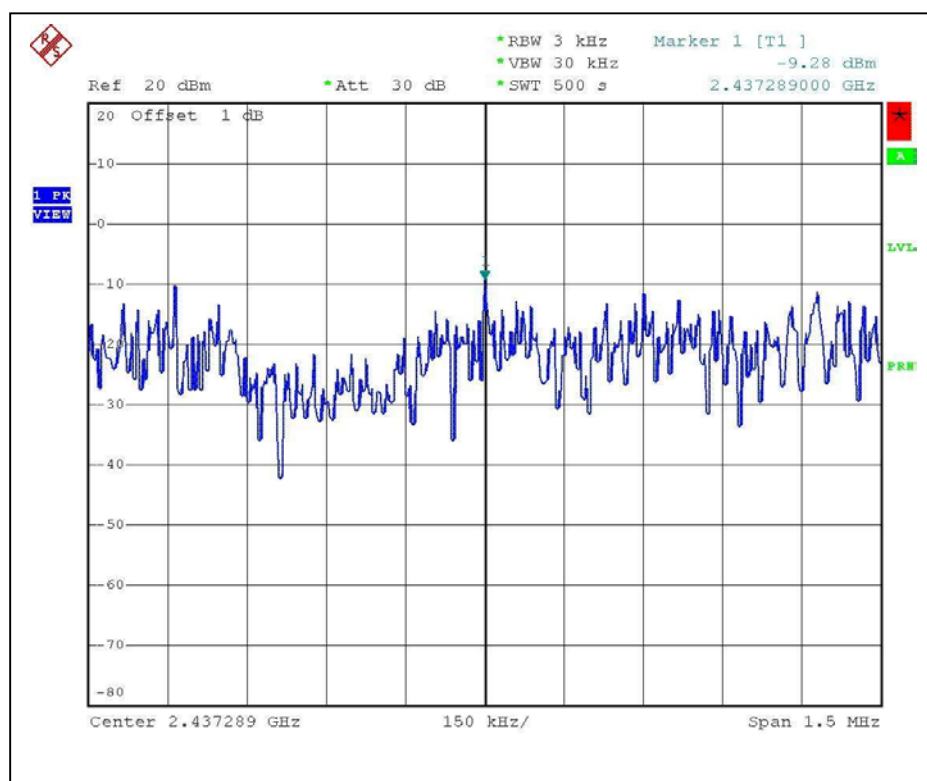
EUT	IEEE802.11g Wireless MiniPCI Card		
MODEL	WMP-G10	ENVIRONMENTAL CONDITIONS	22 deg. C, 60%RH, 977 hPa
INPUT POWER (SYSTEM)	120Vac, 60 Hz	TESTED BY	Sky Liao

CHANNEL NUMBER	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 KHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	2412	-10.58	8	PASS
6	2437	-9.28	8	PASS
11	2462	-12.73	8	PASS

CH1



CH6



CH11

