



Test Report

Product Name : Wireless LAN Card

Model No. : WLL013



FCC ID.: H8N-WLL013

Applicant : ASKEY COMPUTER CORP.

Address : RM 220, BLDG.53, 195-69 SEC. 4, CHUNG HSING
RD., CHUTUNG, HSINCHU, TAIWAN 310, R.O.C

Date of Receipt : June 29, 2001

Date of Test : July 31, 2001

Report No. : 017H011FI

The Test Results relate only to the samples tested.

The test report shall not be reproduced except in full without the written approval of Quietek Corporation.

This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Test Date : July 31, 2001

Report No. : 017H011FI



Accredited by NIST (NVLAP)

NVLAP Lab Code: 200347-0

Product Name : Wireless LAN Card
Applicant : ASKEY COMPUTER CORP.
Address : RM 220, BLDG.53, 195-69 SEC. 4, CHUNG HSING
RD., CHUTUNG, HSINCHU, TAIWAN 310, R.O.C
Manufacturer : ASKEY COMPUTER CORP.
Model No. : WLL013
FCC ID. : H8N-WLL013
Rated Voltage : DC 5V
Trade Name : ASKEY
Measurement Standard : FCC Part 15 Subpart C Paragraph 15.247
Measurement Procedure : ANSI C63.4:1992
Test Result : Complied

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(Gene Chang)

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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

| | | |
|---------------------------|-----------------------------------|-----------------------|
| Product Name | : Wireless LAN Card | |
| Trade Name | : ASKEY | |
| FCC ID. | : H8N-WLL013 | |
| Model No. | : WLL013 | |
| Frequency Range | : 2400MHz to 2483.5MHz | |
| Channel Number | : 11 | |
| Frequency of Each Channel | : Channel 01: 2412MHz | : Channel 07: 2442MHz |
| (Working Frequency) | : Channel 02: 2417 MHz | : Channel 08: 2447MHz |
| | : Channel 03: 2422 MHz | : Channel 09: 2452MHz |
| | : Channel 04: 2427MHz | : Channel 10: 2457MHz |
| | : Channel 05: 2432MHz | : Channel 11: 2462MHz |
| | : Channel 06: 2437MHz | |
| Type of Modulation | : Direct Sequence Spread Spectrum | |
| Selection of | | |
| Operating Frequency | : By software | |
| Antenna type | : Internal permanently on board. | |

Note:

1. This device is a 2.4GHz Wireless LAN Card with USB interface included a 2.4GHz receiving function, a 2.4GHz transmitting function.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.247 for spread spectrum devices.
3. This device is a composite device in accordance with Part 15 regulations. The function receiving was measured and made a test report that the report number is 017H012F under Verification.

1.2. EUT Description

EUT is an USB 1.1 interface 2.4GHz wireless LAN with 11 channels. The spreading code of EUT is 11 chip barker sequence. The antenna is soldered on the PCB directly. CCK, DQSK modulation scheme are used to modulate signal. The USB port provides the connection to PC for data transmission.

Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

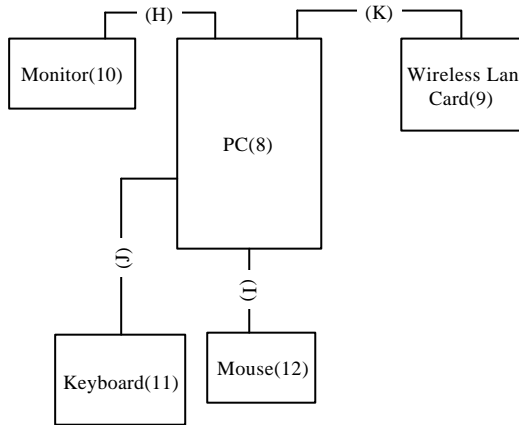
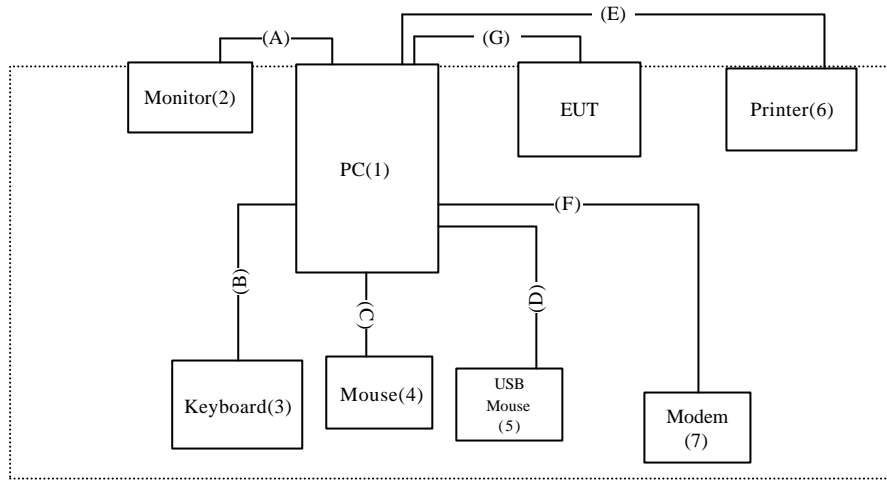
| | Product | Manufacturer | Model No. | Serial No. | FCC ID |
|------|-------------------|--------------|-------------|-------------|---------------|
| (1) | PC | IBM | 6563-86V | 96H6471 | DoC |
| (2) | Monitor | HITACHI | CM752ET-311 | T8D003312 | DoC |
| (3) | Keyboard | IBM | KB-9930 | 0073450 | DoC |
| (4) | Mouse | ACER | M-S34 | LZA81451691 | DZL211029 |
| (5) | USB Mouse | Logitech | M-UE55 | LTC93800397 | DoC |
| (6) | Printer | HP | C2642A | MY75L1D2XN | B94C2642X |
| (7) | Modem | ACEEX | 2814 | 960018054 | IFAXDM2814 |
| (8) | PC | IBM | 16W | BNL6767 | DoC |
| (9) | Wireless Lan Card | ASKEY | WLL013 | N/A | DoC |
| (10) | Monitor | NEC | 15R128 | AWI16600 | HSUTRLDH-1570 |
| (11) | Keyboard | IBM | KB-9930 | 0073438 | DoC |
| (12) | Mouse | IBM | M-SAU-IBM6 | 23-029334 | JNZ211220 |

Note:

1. The power cord of The device. (2) is Shielded power cord.
2. The power cord of The device. (1),(6),(8),(10) are Non-shielded power cord.

| | Signal Cable Type | Signal Cable Description |
|----|-------------------|---|
| A. | VGA Cable | Shielded, 1.8m, two ferrite cores bonded. |
| B. | Keyboard Cable | Shielded, 1.8m |
| C. | Mouse Cable | Shielded, 1.8m |
| D. | USB Mouse Cable | Shielded, 1.2m |
| E. | Printer Cable | Shielded, 1.6m |
| F. | Modem Cable | Shielded, 1.6m |
| G. | USB Cable (EUT) | Shielded, 1.8m |
| H. | VGA Cable | Shielded, 1.8m, two ferrite cores bonded. |
| I. | Keyboard Cable | Shielded, 1.8m |
| J. | Mouse Cable | Shielded, 1.8m |
| K. | USB Cable | Shielded, 1.8m |

1.3. Configuration of tested System



1.4. EUT Exercise Software

- 1.4.1 Setup the EUT and simulators as shown on 1.3.
- 1.4.2 Turn on the power of all equipment.
- 1.4.3 Personal Computer reads data from disk.
- 1.4.4 Data will be transmitted through EUT.
- 1.4.5 The transmission status will be shown on the monitor.
- 1.4.6 Repeat the above procedure 1.4.4 to 1.4.5

1.5. Test Facility

Ambient conditions in the laboratory:

| Items | Required (IEC 68-1) | Actual |
|----------------------------|---------------------|----------|
| Temperature (°C) | 15-35 | 20-35 |
| Humidity (%RH) | 25-75 | 50-65 |
| Barometric pressure (mbar) | 860-1060 | 950-1000 |

Site Description: November 3, 1998 File on
 Federal Communications Commission
 FCC Engineering Laboratory
 7435 Oakland Mills Road
 Columbia, MD 21046
 Reference 31040/SIT1300F2
 September 30, 1998 Accreditation on NVLAP
 NVLAP Lab Code: 200347-0



Site Name: Quietek Corporation

Site Address: N0.75-1, Wang-Yeh Valley, Yung-Hsing,
 Chung-Lin, Hsin-Chu County,
 Taiwa, R.O.C.

2. Conducted Emission

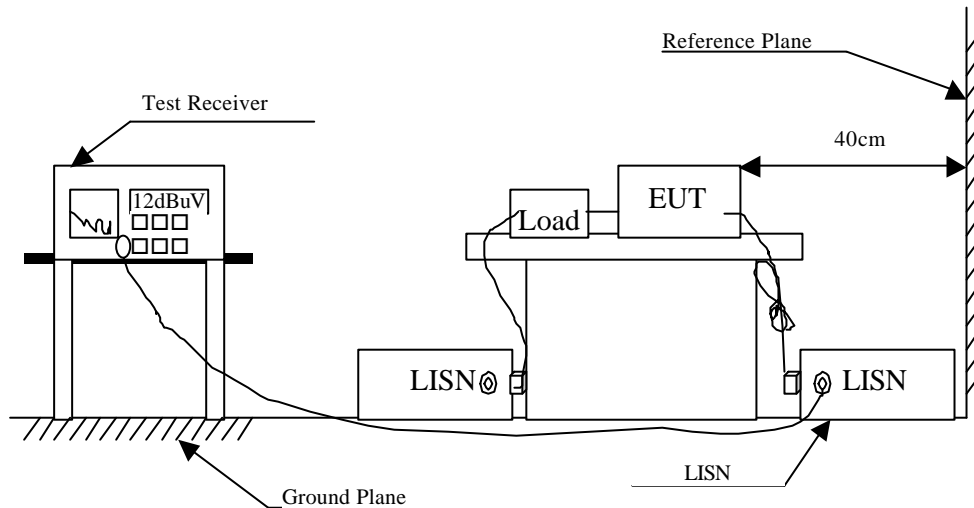
2.1. Test Equipment List

The following test equipment are used during the conducted emission test:

| Item | Instrument | Manufacturer | Type No./Serial No | Last Cal. | Remark |
|------|--------------------|--------------|--------------------|-----------|-------------|
| 1 | Test Receiver | R & S | ESCS 30/825442/17 | May, 2001 | |
| 2 | L.I.S.N. | R & S | ESH3-Z5/825016/6 | May, 2001 | EUT |
| 3 | L.I.S.N. | Kyoritsu | KNW-407/8-1420-3 | May, 2001 | Peripherals |
| 4 | Pulse Limiter | R & S | ESH3-Z2 | N/A | |
| 5 | N0.2 Shielded Room | | | N/A | |

Note: All equipment upon which need to calibrated are with calibration period of 1 year.

2.2. Test Setup



2.3. Limits

| FCC Part 15 Paragraph 15.207 (dBuV) | | |
|-------------------------------------|--------|------|
| Frequency MHz | Limits | |
| | uV | dBuV |
| 0.45 - 30 | 250 | 48.0 |

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4:1992 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.45MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Test Result of Conducted Emission

Product : Wireless LAN Card
 Test Item : Conducted Emission Test
 Test Mode : Normal Operation (1Mbps)

| Frequency | Cable | LISN | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
| MHz | Loss | Factor | dBuV | dBuV | dBuV |
| | dB | dB | | | |

Line 1

Quasi-Peak:

| | | | | | |
|---------|------|------|-------|-------|-------|
| * 0.567 | 0.07 | 0.10 | 37.20 | 37.37 | 48.00 |
| 0.662 | 0.08 | 0.10 | 36.90 | 37.08 | 48.00 |
| 1.041 | 0.10 | 0.10 | 37.00 | 37.20 | 48.00 |
| 1.326 | 0.12 | 0.11 | 34.60 | 34.83 | 48.00 |
| 1.798 | 0.14 | 0.13 | 35.80 | 36.06 | 48.00 |
| 22.431 | 0.37 | 0.49 | 29.10 | 29.96 | 48.00 |

Line 2

Quasi-Peak:

| | | | | | |
|---------|------|------|-------|-------|-------|
| * 0.567 | 0.07 | 0.10 | 36.60 | 36.77 | 48.00 |
| 0.662 | 0.08 | 0.10 | 35.40 | 35.58 | 48.00 |
| 1.039 | 0.10 | 0.10 | 34.40 | 34.60 | 48.00 |
| 1.419 | 0.12 | 0.12 | 34.30 | 34.54 | 48.00 |
| 1.891 | 0.14 | 0.13 | 33.90 | 34.17 | 48.00 |
| 21.759 | 0.36 | 0.48 | 30.90 | 31.75 | 48.00 |

Remarks :

1. “ * ” means that this data is the worst emission level.
2. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Conducted Emission Test
 Test Mode : Normal Operation (11Mbps)

| Frequency | Cable | LISN | Reading Level | Measurement Level | Limits |
|-----------|-------|--------|---------------|-------------------|--------|
| MHz | Loss | Factor | dBuV | dBuV | dBuV |
| | dB | dB | | | |

Line 1

Quasi-Peak:

| | | | | | |
|---------|------|------|-------|-------|-------|
| * 0.567 | 0.07 | 0.10 | 37.30 | 37.47 | 48.00 |
| 0.663 | 0.08 | 0.10 | 36.90 | 37.08 | 48.00 |
| 1.041 | 0.10 | 0.10 | 36.90 | 37.10 | 48.00 |
| 1.136 | 0.11 | 0.11 | 35.00 | 35.21 | 48.00 |
| 1.798 | 0.14 | 0.13 | 35.60 | 35.86 | 48.00 |
| 22.048 | 0.37 | 0.49 | 27.90 | 28.75 | 48.00 |

Line 2

Quasi-Peak:

| | | | | | |
|---------|------|------|-------|-------|-------|
| * 0.568 | 0.07 | 0.10 | 36.90 | 37.07 | 48.00 |
| 0.664 | 0.08 | 0.10 | 35.70 | 35.88 | 48.00 |
| 1.039 | 0.10 | 0.10 | 34.30 | 34.50 | 48.00 |
| 1.799 | 0.14 | 0.13 | 33.80 | 34.06 | 48.00 |
| 9.899 | 0.28 | 0.20 | 29.90 | 30.38 | 48.00 |
| 21.962 | 0.37 | 0.49 | 32.80 | 33.65 | 48.00 |

Remarks :

- 1.“ * ” means that this data is the worst emission level.
2. The average measurement was not performed when the peak measured data under the limit of average detection.

3. Peak Power Output

3.1. Test Equipment

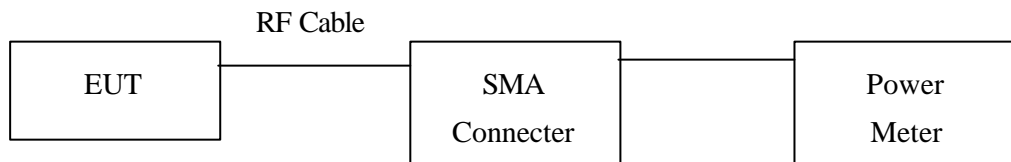
The following test equipments are used during the radiated emission tests:

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|-----------|
| X | Spectrum Analyzer | Advantest | R3272 / 72421194 | May, 2001 |
| X | Power Meter | HP | EPM-441A | May, 2001 |

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark “X” test instruments are used to measure the final test results.

3.2. Test Setup

Conduction Power Measurement



3.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

3.4. Minimum Standard

The maximum peak power shall be less 1 Watt.

3.5. Test Result of Peak Power Output

Product : Wireless LAN Card
 Test Item : Peak Power Output Data
 Test Site : No.1 OATS
 Test Mode : Normal Operation

Data Speed: 1Mbps

| Channel No. | Frequency(MHz) | Measurement | Required Limit | Result |
|-------------|----------------|-------------|----------------|--------|
| 1 | 2413 | 8.83 dBm | 1Watt= 30 dBm | Pass |
| 6 | 2438 | 7.38 dBm | 1Watt= 30 dBm | Pass |
| 11 | 2463 | 6.61 dBm | 1Watt= 30 dBm | Pass |

Data Speed: 11Mbps

| Channel No. | Frequency(MHz) | Measurement | Required Limit | Result |
|-------------|----------------|-------------|----------------|--------|
| 1 | 2413 | 8.54 dBm | 1Watt= 30 dBm | Pass |
| 6 | 2438 | 7.30dBm | 1Watt= 30 dBm | Pass |
| 11 | 2463 | 6.42 dBm | 1Watt= 30 dBm | Pass |

4. RF Exposure Evaluation

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

| Frequency Range (MHz) | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm ²) | Average Time (Minutes) |
|---|-------------------------------|-------------------------------|-------------------------------------|------------------------|
| (A) Limits for Occupational/ Control Exposures | | | | |
| 300-1500 | -- | -- | F/300 | 6 |
| 1500-100,000 | -- | -- | 5 | 6 |
| (B) Limits for General Population/ Uncontrolled Exposures | | | | |
| 300-1500 | -- | -- | F/1500 | 6 |
| 1500-100,000 | -- | -- | 1 | 30 |

F= Frequency in MHz

4.1. Friis Formula

Friis transmission formula: $P_d = (P_{out} * G) / (4 * \pi * r^2)$

Where

P_d = power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d is the limit of MPE, 1 mW/cm². If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

4.2. EUT Operation condition

A software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel individually.

4.3. Test Result of RF Exposure Evaluation

Product : Wireless LAN Card
 Test Item : RF Exposure Evaluation Data
 Test Site : No.1 OATS
 Test Mode : Normal Operation

4.3.1 Antenna Gain

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 1.6dBi or 1.45in linear scale.

4.3.2 Output Power Into Antenna & RF Exposure Evaluation Distance

| Channel | Channel Frequency (MHz) | Output Power to Antenna (dBm) | Minimum Allowable Distance @From Skin(cm) |
|-------------|-------------------------|-------------------------------|---|
| 1 (1Mbps) | 2413 | 8.83 | 1.10 |
| 1 (11Mbps) | 2413 | 8.54 | 1.13 |
| 6 (1Mbps) | 2438 | 7.38 | 0.90 |
| 6 (11Mbps) | 2438 | 7.30 | 0.90 |
| 11 (1Mbps) | 2463 | 6.61 | 0.81 |
| 11 (11Mbps) | 2463 | 6.42 | 0.80 |

The distance r (4th column) calculated from the Friis transmission formula is far shorter than 20 cm separation requirement. So, RF exposure limit warning or SAR test are not required.

5. Radiated Emission

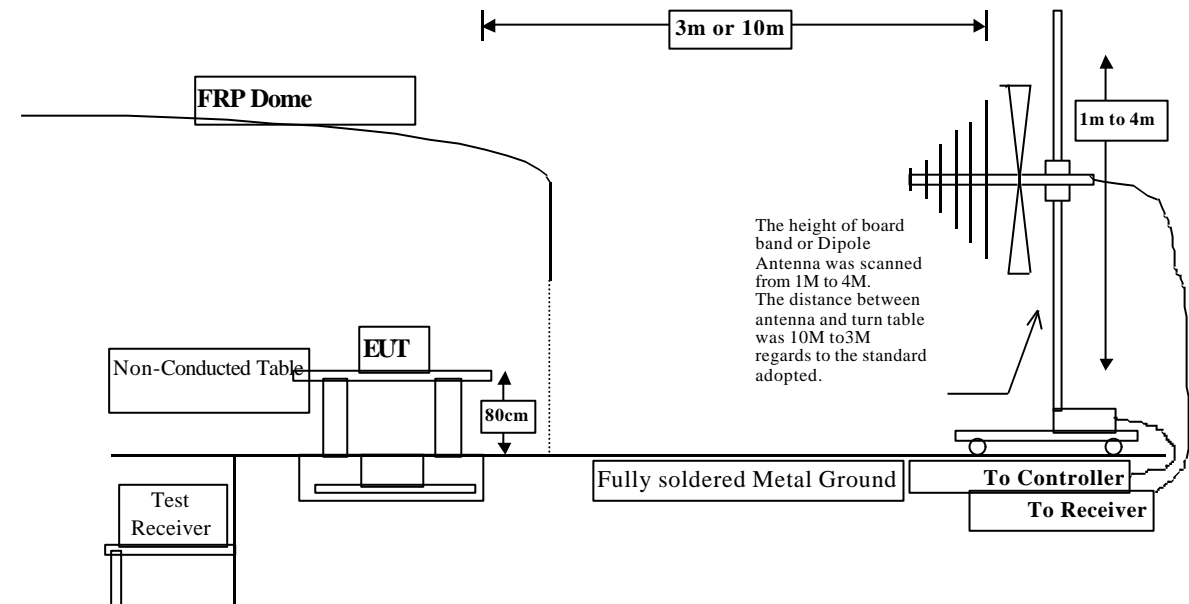
5.1. Test Equipment

The following test equipment are used during the radiated emission test:

| Test Site | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|-----------|-------------------|--------------|----------------------|------------|
| Site # 1 | X Test Receiver | R & S | ESCS 30 / 825442/14 | May, 2001 |
| | Spectrum Analyzer | Advantest | R3261C / 71720140 | May, 2001 |
| | Pre-Amplifier | HP | 8447D/3307A01812 | May, 2001 |
| | X Bilog Antenna | Chase | CBL6112B / 12452 | Sep., 2000 |
| Site # 2 | X Horn Antenna | EM | EM6917 / 103325 | May, 2001 |
| | X Test Receiver | R & S | ESCS 30 / 825442/17 | May, 2001 |
| Site # 2 | Spectrum Analyzer | Advantest | R3261C / 71720609 | May, 2001 |
| | Pre-Amplifier | HP | 8447D/3307A01814 | May, 2001 |
| | X Bilog Antenna | Chase | CBL6112B / 2455 | Sep., 2000 |
| | X Horn Antenna | EM | EM6917 / 103325 | May, 2001 |

- Note:
1. All equipments that need to calibrate are with calibration period of 1 year.
 2. Mark "X" test instruments are used to measure the final test results.

5.2. Test Setup



Spurious Emissions
(Band Edge Antenna Radiated)

5.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

5.4. Limits

➤ General Radiated Emission Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

| Frequency MHz | 50dB below of the fundamental (dBuV/m @3m) | 15.209 Limits (dBuV/m @3m) | General Radiated Limits (dBuV/m @3m) |
|------------------|---|-------------------------------|---|
| 30-88 | 40 | 40 | 40 |
| 88-216 | 43.5 | 43.5 | 43.5 |
| 216-960 | 44 | 46 | 46 |
| Above 960 | 44 | 54 | 54 |

- Remarks :
1. RF Line Voltage (dBuV) = 20 log RF Line Voltage (uV)
 2. In the Above Table, the tighter limit applies at the band edges.
 3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

5.5. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.

Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4:1992 on radiated measurement.

The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter (R&S Test Receiver ESCS 30)is 120 kHz, above 1GHz are 1 MHz.

The frequency range from **30MHz to 10th harmonics** is checked.

5.6. Test Result of Radiated Emission

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 1(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4826.450 | 6.27 | 33.50 | 0.00 | 19.79 | 59.56 | 14.44 | 74.00 |
| 7238.700 | 8.32 | 36.24 | 0.00 | 18.54 | < 63.10 | 10.90 | 74.00 |
| 9651.640 | 10.18 | 37.43 | 0.00 | 18.35 | < 65.96 | 8.04 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4824.050 | 6.27 | 33.50 | 0.00 | 7.29 | 47.06 | 6.94 | 54.00 |
| 7241.650 | 8.32 | 36.24 | 0.00 | 5.26 | < 49.82 | 4.18 | 54.00 |
| 9651.140 | 10.18 | 37.43 | 0.00 | 5.36 | < 52.97 | 1.03 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4824.020 | 6.27 | 33.50 | 0.00 | 20.03 | 59.80 | 14.20 | 74.00 |
| 7237.120 | 8.32 | 36.24 | 0.00 | 18.76 | < 63.32 | 10.68 | 74.00 |
| 9649.800 | 10.18 | 37.43 | 0.00 | 18.62 | < 66.23 | 7.77 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4823.870 | 6.27 | 33.50 | 0.00 | 8.77 | 48.54 | 5.46 | 54.00 |
| 7237.100 | 8.32 | 36.24 | 0.00 | 5.07 | < 49.63 | 4.37 | 54.00 |
| 9649.800 | 10.18 | 37.43 | 0.00 | 5.29 | < 52.90 | 1.10 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 6(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4874.340 | 6.32 | 33.56 | 0.00 | 19.65 | 59.53 | 14.47 | 74.00 |
| 7312.340 | 8.38 | 36.31 | 0.00 | 19.14 | < 63.82 | 10.18 | 74.00 |
| 9751.400 | 10.25 | 37.45 | 0.00 | 18.53 | < 66.23 | 7.77 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4874.340 | 6.32 | 33.56 | 0.00 | 6.62 | 46.50 | 7.50 | 54.00 |
| 7313.340 | 8.39 | 36.32 | 0.00 | 5.10 | < 49.82 | 4.18 | 54.00 |
| 9753.150 | 10.25 | 37.45 | 0.00 | 5.52 | < 52.22 | 1.78 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4873.800 | 6.32 | 33.56 | 0.00 | 19.60 | 59.48 | 14.52 | 74.00 |
| 7311.100 | 8.38 | 36.31 | 0.00 | 18.56 | < 63.24 | 10.76 | 74.00 |
| 9749.900 | 10.25 | 37.45 | 0.00 | 18.17 | < 65.87 | 8.13 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4873.900 | 6.32 | 33.56 | 0.00 | 6.83 | 46.71 | 7.29 | 54.00 |
| 7310.520 | 8.38 | 36.31 | 0.00 | 5.27 | < 49.95 | 4.05 | 54.00 |
| 9750.200 | 10.25 | 37.45 | 0.00 | 5.52 | < 52.22 | 1.78 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 11(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4924.550 | 6.37 | 33.62 | 0.00 | 19.63 | 59.62 | 14.38 | 74.00 |
| 7386.050 | 8.43 | 36.37 | 0.00 | 18.15 | < 62.96 | 11.04 | 74.00 |
| 9874.740 | 10.34 | 37.47 | 0.00 | 18.82 | < 66.64 | 7.36 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4923.940 | 6.37 | 33.62 | 0.00 | 6.52 | 46.51 | 7.49 | 54.00 |
| 7386.350 | 8.43 | 36.37 | 0.00 | 5.26 | < 50.07 | 3.93 | 54.00 |
| 9849.350 | 10.33 | 37.47 | 0.00 | 5.78 | < 52.58 | 1.42 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4924.020 | 6.37 | 33.62 | 0.00 | 20.46 | 60.45 | 13.55 | 74.00 |
| 7386.400 | 8.43 | 36.37 | 0.00 | 18.55 | < 63.36 | 10.64 | 74.00 |
| 9849.700 | 10.33 | 37.47 | 0.00 | 18.71 | < 66.51 | 7.49 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4924.120 | 6.37 | 33.62 | 0.00 | 6.58 | 46.57 | 7.43 | 54.00 |
| 7386.900 | 8.43 | 36.37 | 0.00 | 5.26 | < 50.07 | 3.93 | 54.00 |
| 9849.520 | 10.33 | 37.47 | 0.00 | 5.83 | < 52.63 | 1.37 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 1(11Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4825.250 | 6.27 | 33.50 | 0.00 | 19.64 | 59.41 | 14.59 | 74.00 |
| 7237.250 | 8.32 | 36.24 | 0.00 | 18.54 | < 63.10 | 10.90 | 74.00 |
| 9649.250 | 10.18 | 37.43 | 0.00 | 18.28 | < 65.89 | 8.11 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4824.600 | 6.27 | 33.50 | 0.00 | 6.61 | 46.38 | 7.62 | 54.00 |
| 7236.840 | 8.32 | 36.24 | 0.00 | 5.11 | < 49.67 | 4.33 | 54.00 |
| 9648.540 | 10.18 | 37.43 | 0.00 | 5.27 | < 52.88 | 1.12 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4826.250 | 6.27 | 33.50 | 0.00 | 19.56 | 59.33 | 14.67 | 74.00 |
| 7238.600 | 8.32 | 36.24 | 0.00 | 18.45 | < 63.01 | 10.99 | 74.00 |
| 9651.600 | 10.18 | 37.43 | 0.00 | 18.09 | < 65.70 | 8.30 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4825.340 | 6.27 | 33.50 | 0.00 | 6.79 | 46.56 | 7.44 | 54.00 |
| 7240.650 | 8.32 | 36.24 | 0.00 | 5.26 | < 49.82 | 4.18 | 54.00 |
| 9651.640 | 10.18 | 37.43 | 0.00 | 5.40 | < 52.01 | 1.99 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 6(11Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4874.700 | 6.32 | 33.56 | 0.00 | 19.87 | 59.75 | 14.25 | 74.00 |
| 7311.840 | 8.38 | 36.31 | 0.00 | 18.34 | < 63.02 | 10.98 | 74.00 |
| 9750.240 | 10.25 | 37.45 | 0.00 | 18.08 | < 65.78 | 8.22 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4875.850 | 6.32 | 33.56 | 0.00 | 6.58 | 46.46 | 7.54 | 54.00 |
| 7310.240 | 8.38 | 36.31 | 0.00 | 5.25 | < 49.93 | 4.07 | 54.00 |
| 9750.150 | 10.25 | 37.45 | 0.00 | 5.53 | < 52.23 | 1.77 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4874.540 | 6.32 | 33.56 | 0.00 | 19.59 | 59.47 | 14.53 | 74.00 |
| 7311.840 | 8.38 | 36.31 | 0.00 | 18.43 | < 63.11 | 10.89 | 74.00 |
| 9750.540 | 10.25 | 37.45 | 0.00 | 18.00 | < 65.70 | 8.30 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4874.540 | 6.32 | 33.56 | 0.00 | 6.54 | 46.42 | 7.58 | 54.00 |
| 7312.540 | 8.38 | 36.31 | 0.00 | 5.15 | < 49.83 | 4.17 | 54.00 |
| 9750.750 | 10.25 | 37.45 | 0.00 | 5.25 | < 52.95 | 1.05 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : Harmonic Radiated Emission Data
 Test Mode : Channel 11(11Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Peak Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4924.350 | 6.37 | 33.62 | 0.00 | 19.75 | 59.74 | 14.26 | 74.00 |
| 7384.500 | 8.43 | 36.37 | 0.00 | 18.79 | < 63.60 | 10.40 | 74.00 |
| 9848.750 | 10.33 | 37.47 | 0.00 | 18.36 | < 66.16 | 7.84 | 74.00 |

Average Detector (Horizontal)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4923.840 | 6.37 | 33.62 | 0.00 | 6.55 | 46.54 | 7.46 | 54.00 |
| 7386.350 | 8.43 | 36.37 | 0.00 | 5.33 | < 50.14 | 3.86 | 54.00 |
| 9849.450 | 10.33 | 37.47 | 0.00 | 5.81 | < 52.61 | 1.39 | 54.00 |

Peak Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|-------|---------|-------|-------|
| 4923.690 | 6.37 | 33.62 | 0.00 | 20.12 | 60.11 | 13.89 | 74.00 |
| 7389.900 | 8.45 | 36.39 | 0.00 | 18.80 | < 63.64 | 10.36 | 74.00 |
| 9851.790 | 10.33 | 37.47 | 0.00 | 19.01 | < 66.81 | 7.19 | 74.00 |

Average Detector (Vertical)

| | | | | | | | |
|----------|-------|-------|------|------|---------|------|-------|
| 4923.690 | 6.37 | 33.62 | 0.00 | 6.27 | 46.26 | 7.74 | 54.00 |
| 7389.800 | 8.45 | 36.39 | 0.00 | 5.31 | < 50.15 | 3.85 | 54.00 |
| 9852.800 | 10.33 | 37.47 | 0.00 | 5.82 | < 52.62 | 1.38 | 54.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier
3. The average measurement was not performed when the peak measured data under the limit of average detection.

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Mode : Channel 1(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Horizontal:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 197.810 | 1.70 | 12.10 | 26.91 | 46.20 | 33.09 | 10.41 | 43.50 |
| 483.960 | 2.88 | 16.93 | 26.66 | 40.20 | 33.35 | 12.65 | 46.00 |
| 498.510 | 2.94 | 17.26 | 26.64 | 39.20 | 32.77 | 13.23 | 46.00 |
| 614.910 | 3.42 | 19.06 | 26.45 | 40.40 | 36.43 | 9.57 | 46.00 |
| *701.240 | 3.77 | 20.63 | 26.32 | 39.20 | 37.28 | 8.72 | 46.00 |
| 745.860 | 3.96 | 21.24 | 26.25 | 36.20 | 35.15 | 10.85 | 46.00 |

Vertical:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 198.780 | 1.71 | 12.06 | 26.91 | 46.80 | 33.65 | 9.85 | 43.50 |
| 395.690 | 2.52 | 14.91 | 26.80 | 38.40 | 29.03 | 16.97 | 46.00 |
| 525.670 | 3.05 | 17.69 | 26.59 | 38.80 | 32.95 | 13.05 | 46.00 |
| *614.910 | 3.42 | 19.06 | 26.45 | 42.20 | 38.23 | 7.77 | 46.00 |
| 744.890 | 3.95 | 21.23 | 26.25 | 37.80 | 36.73 | 9.27 | 46.00 |
| 832.190 | 4.31 | 22.42 | 26.11 | 37.60 | 38.22 | 7.78 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Mode : Channel 6(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Horizontal:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 198.780 | 1.71 | 12.06 | 26.91 | 44.40 | 31.25 | 12.25 | 43.50 |
| 482.020 | 2.87 | 16.88 | 26.66 | 39.80 | 32.89 | 13.11 | 46.00 |
| 497.540 | 2.94 | 17.24 | 26.64 | 37.40 | 30.94 | 15.06 | 46.00 |
| *613.940 | 3.42 | 19.05 | 26.46 | 42.20 | 38.21 | 7.79 | 46.00 |
| 717.730 | 3.84 | 20.85 | 26.29 | 38.40 | 36.79 | 9.21 | 46.00 |
| 833.160 | 4.32 | 22.43 | 26.11 | 37.00 | 37.64 | 8.36 | 46.00 |

Vertical:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 198.780 | 1.71 | 12.06 | 26.91 | 42.80 | 29.65 | 13.85 | 43.50 |
| 495.600 | 2.93 | 17.20 | 26.64 | 39.60 | 33.08 | 12.92 | 46.00 |
| 525.670 | 3.05 | 17.69 | 26.59 | 40.00 | 34.15 | 11.85 | 46.00 |
| *700.270 | 3.77 | 20.61 | 26.32 | 41.60 | 39.66 | 6.34 | 46.00 |
| 744.890 | 3.95 | 21.23 | 26.25 | 38.80 | 37.73 | 8.27 | 46.00 |
| 833.160 | 4.32 | 22.43 | 26.11 | 38.20 | 38.84 | 7.16 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Mode : Channel 11(1Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Horizontal:

| | | | | | | | |
|-----------|------|-------|-------|-------|-------|-------|-------|
| 200.720 | 1.72 | 12.01 | 26.91 | 43.60 | 30.41 | 13.09 | 43.50 |
| 482.990 | 2.88 | 16.91 | 26.66 | 39.00 | 32.12 | 13.88 | 46.00 |
| 524.700 | 3.05 | 17.68 | 26.60 | 36.40 | 30.53 | 15.47 | 46.00 |
| * 612.970 | 3.41 | 19.03 | 26.46 | 40.80 | 36.78 | 9.22 | 46.00 |
| 715.790 | 3.83 | 20.83 | 26.30 | 37.60 | 35.97 | 10.03 | 46.00 |
| 788.540 | 4.13 | 21.84 | 26.18 | 34.40 | 34.19 | 11.81 | 46.00 |

Vertical:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 199.750 | 1.71 | 12.00 | 26.91 | 43.00 | 29.80 | 13.70 | 43.50 |
| 395.690 | 2.52 | 14.91 | 26.80 | 39.40 | 30.03 | 15.97 | 46.00 |
| 525.670 | 3.05 | 17.69 | 26.59 | 39.40 | 33.55 | 12.45 | 46.00 |
| *613.940 | 3.42 | 19.05 | 26.46 | 41.80 | 37.81 | 8.19 | 46.00 |
| 744.890 | 3.95 | 21.23 | 26.25 | 38.00 | 36.93 | 9.07 | 46.00 |
| 875.840 | 4.49 | 22.99 | 26.04 | 33.40 | 34.84 | 11.16 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Site : Chamber
 Test Mode : Channel 1(11Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Horizontal:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 69.770 | 1.18 | 7.49 | 26.86 | 42.80 | 24.61 | 15.39 | 40.00 |
| 175.500 | 1.61 | 13.13 | 26.90 | 35.60 | 23.44 | 20.06 | 43.50 |
| 198.780 | 1.71 | 12.06 | 26.91 | 43.80 | 30.65 | 12.85 | 43.50 |
| 497.540 | 2.94 | 17.24 | 26.64 | 36.60 | 30.14 | 15.86 | 46.00 |
| 717.730 | 3.84 | 20.85 | 26.29 | 35.80 | 34.19 | 11.81 | 46.00 |
| *745.860 | 3.96 | 21.24 | 26.25 | 39.40 | 38.35 | 7.65 | 46.00 |

Vertical:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 73.650 | 1.20 | 7.61 | 26.87 | 47.40 | 29.34 | 10.66 | 40.00 |
| 198.780 | 1.71 | 12.06 | 26.91 | 44.20 | 31.05 | 12.45 | 43.50 |
| 240.490 | 1.88 | 12.37 | 26.93 | 38.80 | 26.12 | 19.88 | 46.00 |
| 495.600 | 2.93 | 17.20 | 26.64 | 36.80 | 30.28 | 15.72 | 46.00 |
| 716.760 | 3.84 | 20.83 | 26.29 | 36.40 | 34.77 | 11.23 | 46.00 |
| *745.860 | 3.96 | 21.24 | 26.25 | 38.80 | 37.75 | 8.25 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Site : Chamber
 Test Mode : Channel 6(11Mbps)

| Freq. | Cable Loss | Probe Factor | PreAMP | Reading Level | Measurement | Margin | Limit |
|-------|------------|--------------|--------|---------------|-------------|--------|--------|
| MHz | dB | dB/m | dB | dBuV | dBuV/m | dB | dBuV/m |

Horizontal:

| | | | | | | | |
|----------|------|-------|-------|-------|-------|-------|-------|
| 74.620 | 1.20 | 7.64 | 26.87 | 41.60 | 23.57 | 16.43 | 40.00 |
| 145.430 | 1.49 | 13.80 | 26.89 | 35.60 | 24.00 | 19.50 | 43.50 |
| 199.750 | 1.71 | 12.00 | 26.91 | 44.60 | 31.40 | 12.10 | 43.50 |
| 496.570 | 2.93 | 17.22 | 26.64 | 38.00 | 31.51 | 14.49 | 46.00 |
| 574.170 | 3.25 | 18.41 | 26.52 | 33.20 | 28.34 | 17.66 | 46.00 |
| *745.860 | 3.96 | 21.24 | 26.25 | 39.40 | 38.35 | 7.65 | 46.00 |

Vertical:

| | | | | | | | |
|-----------|------|-------|-------|-------|-------|-------|-------|
| 68.800 | 1.18 | 7.46 | 26.86 | 46.40 | 28.17 | 11.83 | 40.00 |
| 145.430 | 1.49 | 13.80 | 26.89 | 35.60 | 24.00 | 19.50 | 43.50 |
| 200.720 | 1.72 | 12.01 | 26.91 | 44.20 | 31.01 | 12.49 | 43.50 |
| 496.570 | 2.93 | 17.22 | 26.64 | 36.80 | 30.31 | 15.69 | 46.00 |
| 695.420 | 3.75 | 20.52 | 26.33 | 34.00 | 31.94 | 14.06 | 46.00 |
| * 745.860 | 3.96 | 21.24 | 26.25 | 37.80 | 36.75 | 9.25 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

Product : Wireless LAN Card
 Test Item : General Radiated Emission Data
 Test Site : Chamber
 Test Mode : Channel 11(11Mbps)

| Freq. | Cable | Probe | PreAMP | Reading | Measurement | Margin | Limit |
|-------|-------|--------|--------|---------|-------------|--------|--------|
| MHz | Loss | Factor | Level | dBuV | dBuV/m | dB | dBuV/m |
| | dB | dB/m | dB | | | | |

Horizontal:

| | | | | | | | |
|-----------|------|-------|-------|-------|-------|-------|-------|
| 75.590 | 1.20 | 7.67 | 26.87 | 43.40 | 25.41 | 14.59 | 40.00 |
| 145.430 | 1.49 | 13.80 | 26.89 | 36.40 | 24.80 | 18.70 | 43.50 |
| 199.750 | 1.71 | 12.00 | 26.91 | 45.80 | 32.60 | 10.90 | 43.50 |
| 696.390 | 3.75 | 20.54 | 26.33 | 34.80 | 32.76 | 13.24 | 46.00 |
| 715.790 | 3.83 | 20.83 | 26.30 | 35.60 | 33.97 | 12.03 | 46.00 |
| * 744.890 | 3.95 | 21.23 | 26.25 | 39.40 | 38.33 | 7.67 | 46.00 |

Vertical:

| | | | | | | | |
|-----------|------|-------|-------|-------|-------|-------|-------|
| 75.590 | 1.20 | 7.67 | 26.87 | 47.20 | 29.21 | 10.79 | 40.00 |
| 198.780 | 1.71 | 12.06 | 26.91 | 41.60 | 28.45 | 15.05 | 43.50 |
| 495.600 | 2.93 | 17.20 | 26.64 | 37.20 | 30.68 | 15.32 | 46.00 |
| 695.420 | 3.75 | 20.52 | 26.33 | 33.80 | 31.74 | 14.26 | 46.00 |
| 715.790 | 3.83 | 20.83 | 26.30 | 36.00 | 34.37 | 11.63 | 46.00 |
| * 744.890 | 3.95 | 21.23 | 26.25 | 36.40 | 35.33 | 10.67 | 46.00 |

Note:

1. All Readings below 1GHz are Quasi-Peak, above are average value.
2. “ * ”, means this data is the worst emission level-Amplifier.
3. Measurement = Reading Level + Probe Factor + Cable loss-Amplifier

5.7. Test Result of Band Edge

Product : Wireless LAN Card
 Test Item : Band Edge Data
 Test Site : No.1 OATS
 Test Mode : Channel 1

| Channel No. | Frequency (MHz) | Required Limit (dBc) | Result |
|-------------|-----------------|----------------------|--------|
| 1 (1Mbps) | <2400 | >20 | Pass |
| 1 (11Mbps) | <2400 | >20 | Pass |

Figure Channel 1: 1Mbps

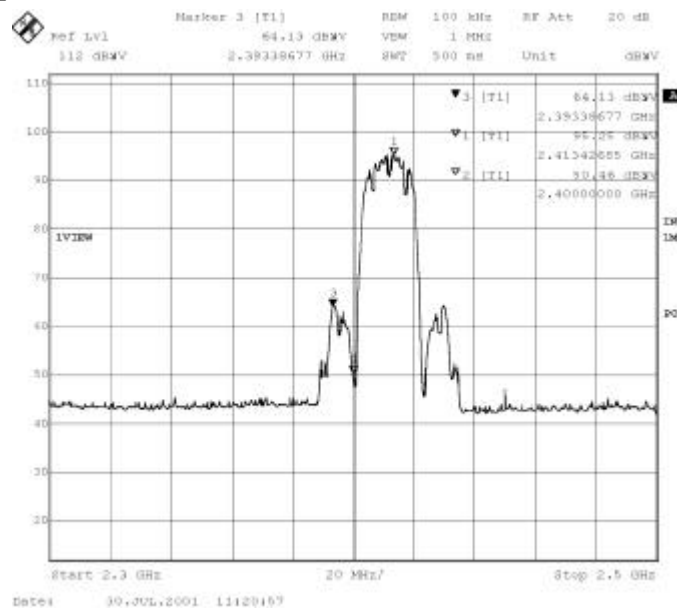
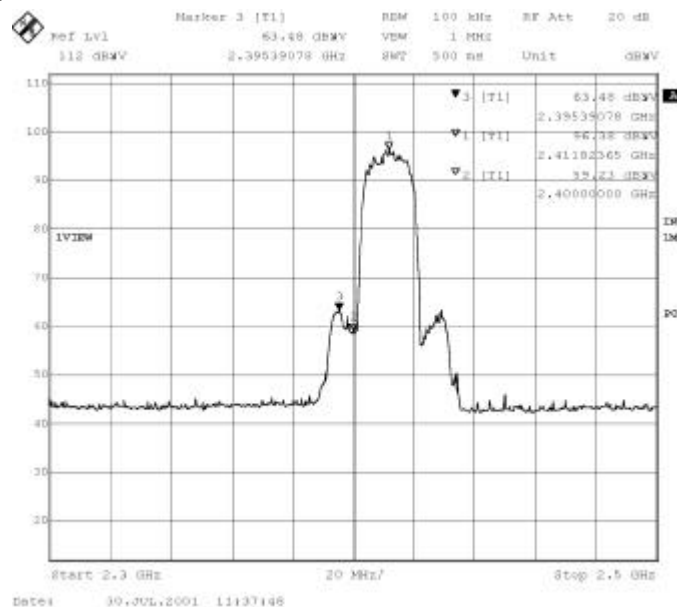


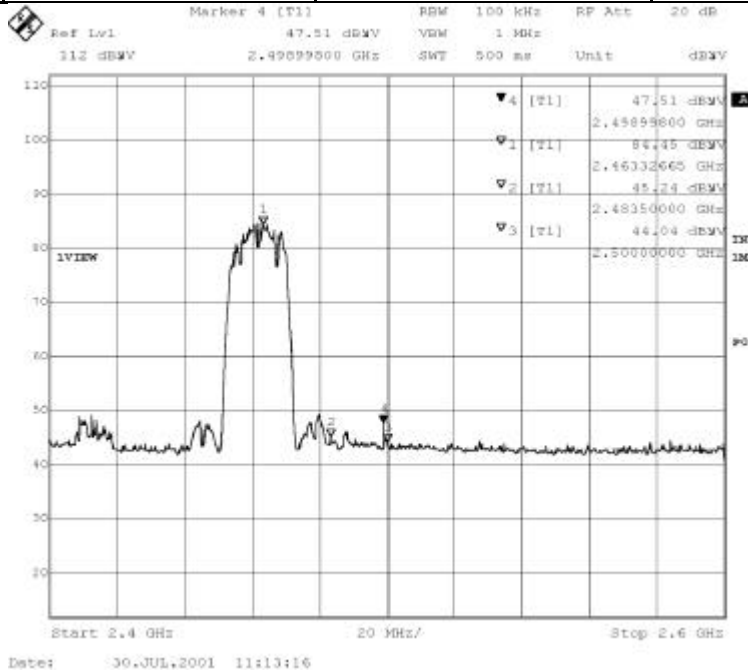
Figure Channel 1:11Mbps



Product : Wireless LAN Card
 Test Item : Band Edge Data
 Test Site : No.1 OATS
 Test Mode : Channel 11

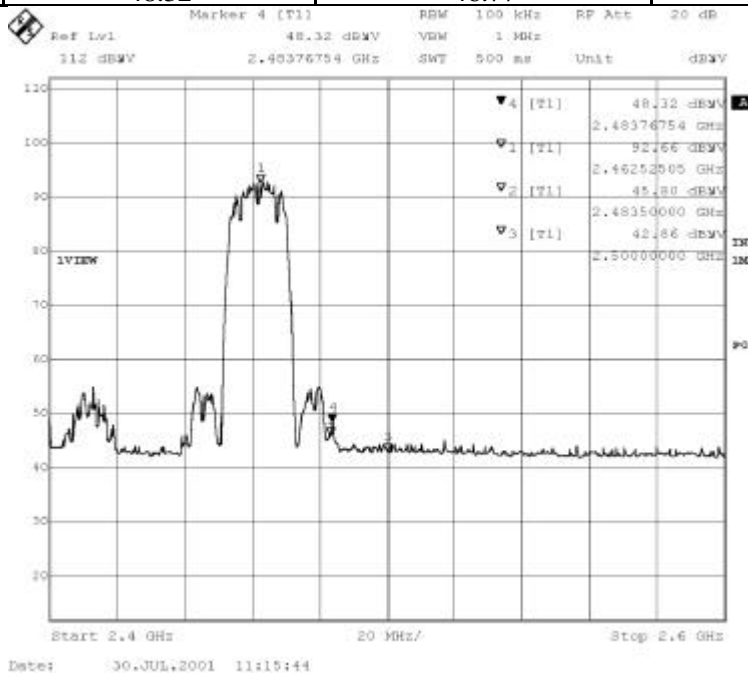
Band Edge-1 Mbps (Horizontal)

| Frequency (MHz). | Reading (dBuV) | Measure (dBuV/m) | Result |
|------------------|----------------|------------------|--------|
| 2498.998 | 47.51 | 46.02 | Pass |



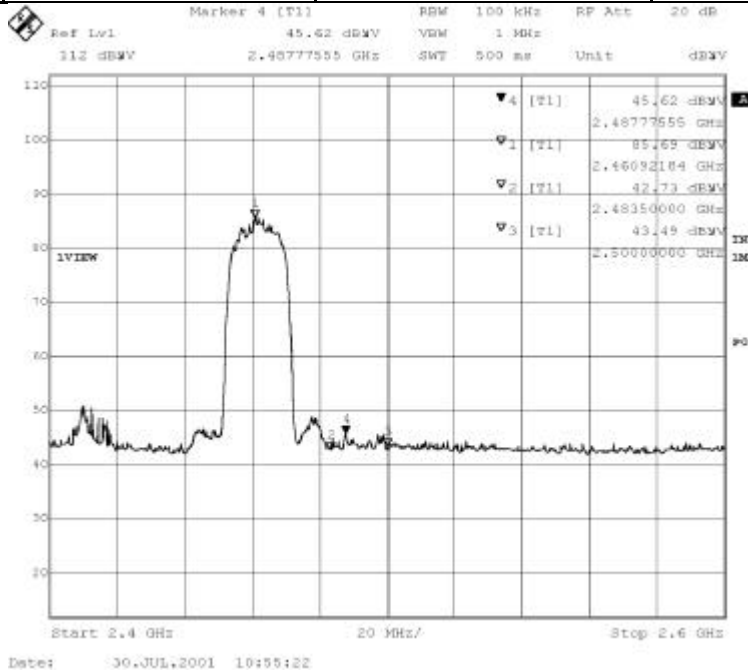
Band Edge-1 Mbps (Vertical)

| Frequency (MHz). | Reading (dBuV) | Measure (dBuV/m) | Result |
|------------------|----------------|------------------|--------|
| 2483.767 | 48.32 | 46.77 | Pass |



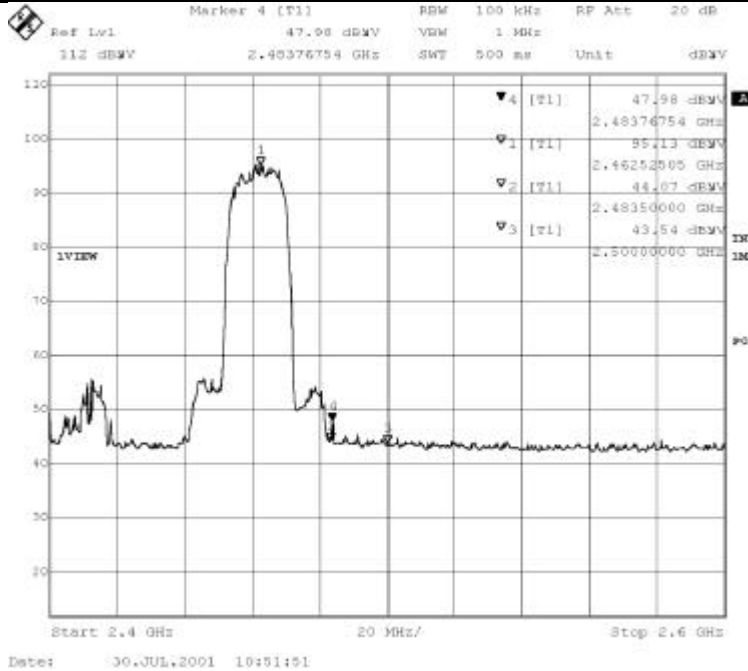
Band Edge-11 Mbps (Horizontal)

| Frequency (MHz). | Reading (dBuV) | Measure (dBuV/m) | Result |
|------------------|----------------|------------------|--------|
| 2487.775 | 45.62 | 44.13 | Pass |



Band Edge-11 Mbps (Vertical)

| Frequency (MHz). | Reading (dBuV) | Measure (dBuV/m) | Result |
|------------------|----------------|------------------|--------|
| 2483.767 | 47.98 | 46.43 | Pass |



6. Occupied Bandwidth

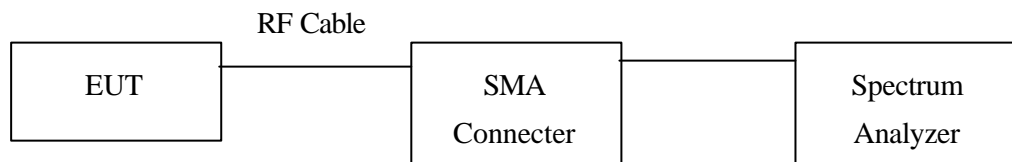
6.1. Test Equipment

The following test equipments are used during the radiated emission tests:

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|-----------|
| X | Spectrum Analyzer | Advantest | R3272 / 72421194 | May, 2001 |
| X | Horn Antenna | EM | EM6917 / 103325 | May, 2001 |

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark “X” test instruments are used to measure the final test results.

6.2. Test Setup



6.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

6.4. Standard Requirement

The minimum bandwidth shall be at least 500kHz.

6.5. Test Result of Occupied Bandwidth

Product : Wireless LAN Card
 Test Item : Occupied Bandwidth Data
 Test Site : No.1 OATS
 Test Mode : Channel 1

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 1 (1Mbps) | 2412 | 15360 | >500 | Pass |
| 1 (11Mbps) | 2411 | 14240 | >500 | Pass |

Figure Channel 1: 1Mbps

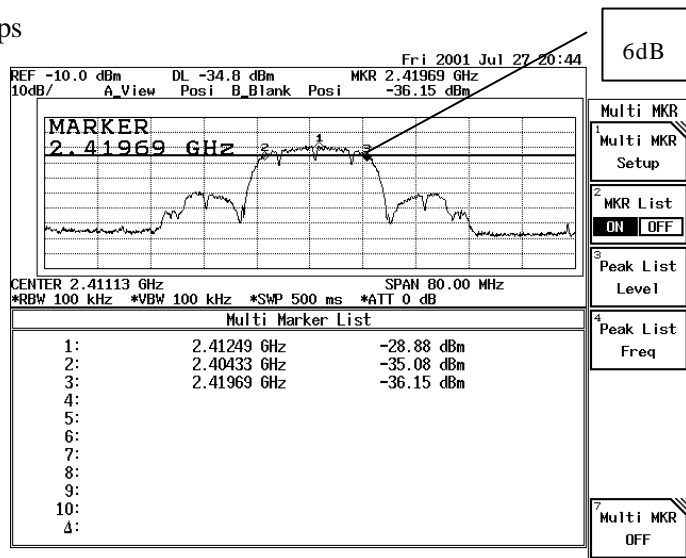
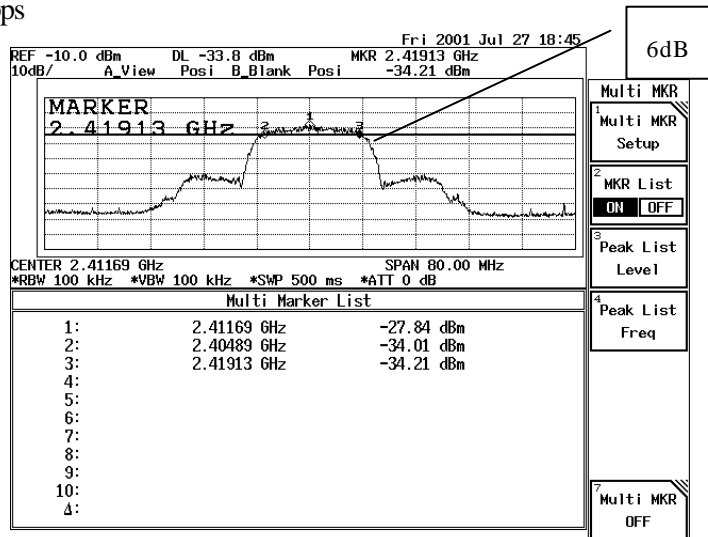


Figure Channel 1: 11Mbps



Product : Wireless LAN Card
 Test Item : Occupied Bandwidth Data
 Test Site : No.1 OATS
 Test Mode : Channel 6

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (1Mbps) | 2437 | 15680 | >500 | Pass |
| 6 (11Mbps) | 2437 | 14720 | >500 | Pass |

Figure Channel 6: 1Mbps

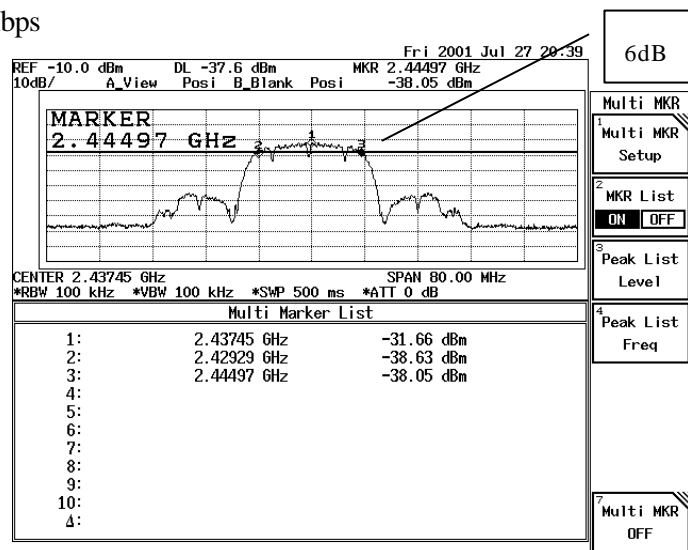
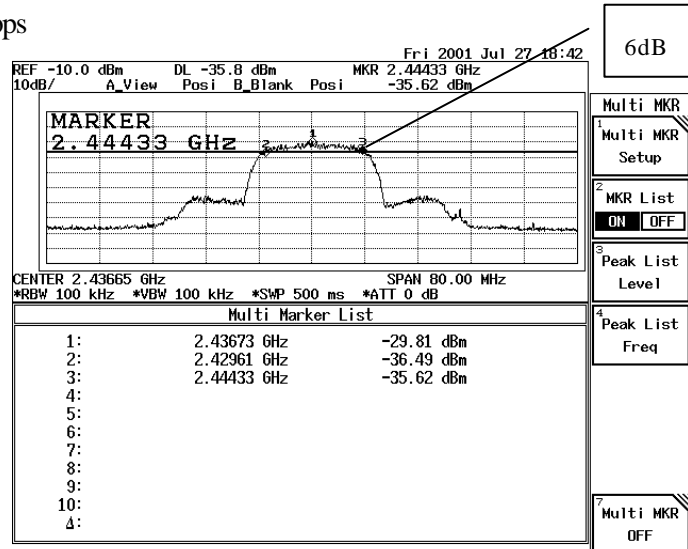


Figure Channel 6: 11Mbps



Product : Wireless LAN Card
 Test Item : Occupied Bandwidth Data
 Test Site : No.1 OATS
 Test Mode : Channel 11

| Channel No. | Frequency (MHz) | Measurement Level (kHz) | Required Limit (kHz) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 11 (1Mbps) | 2462 | 15520 | >500 | Pass |
| 11 (11Mbps) | 2462 | 15120 | >500 | Pass |

Figure Channel 11: 1Mbps

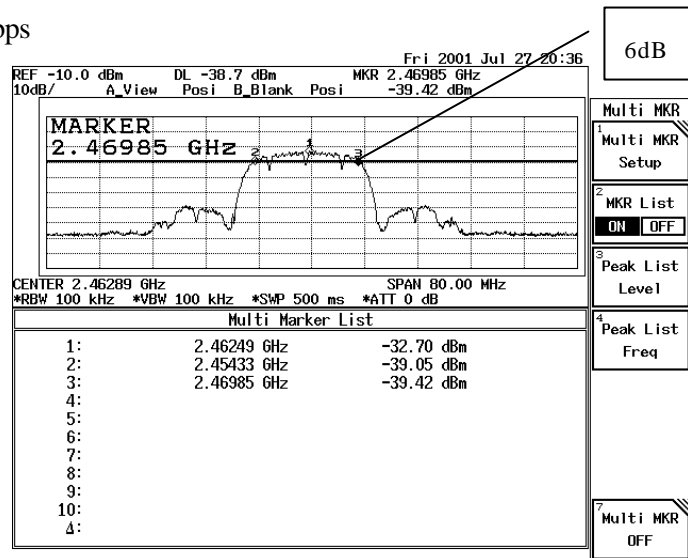
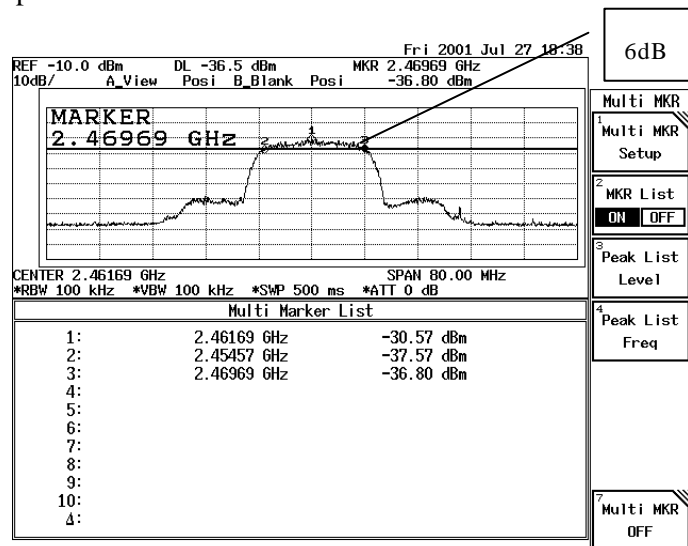


Figure Channel 11: 11Mbps



7. Transmitter Power Density

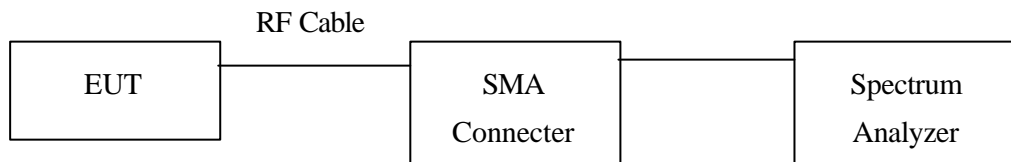
7.1. Test Equipment

The following test equipments are used during the radiated emission tests:

| | Equipment | Manufacturer | Model No./Serial No. | Last Cal. |
|---|-------------------|--------------|----------------------|-----------|
| X | Spectrum Analyzer | Advantest | R3272 / 72421194 | May, 2001 |
| X | Attenuator | HP | | May, 2001 |
| X | Horn Antenna | EM | EM6917 / 103325 | May, 2001 |

Note: 1. All equipment upon which need to calibrated are with calibration period of 1 year.
 2. Mark “X” test instruments are used to measure the final test results.

7.2. Test Setup



7.3. Test Condition

Standard Temperature and Humidity, Standard Test Voltage

7.4. Standard Requirement

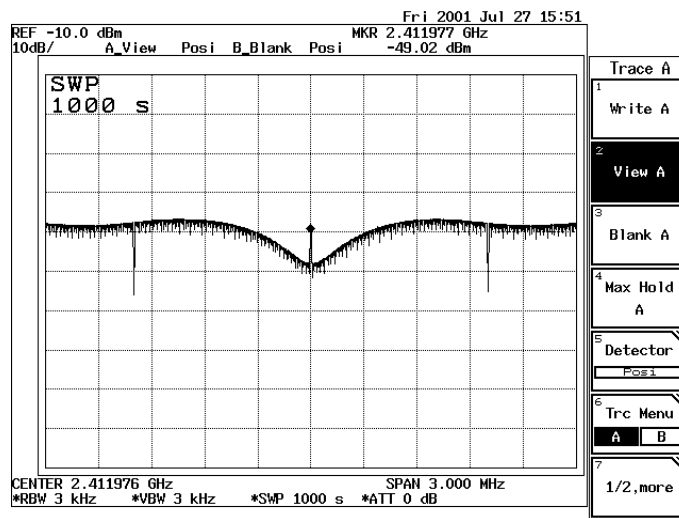
The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

7.5. Test Result of Transmitter Power Density

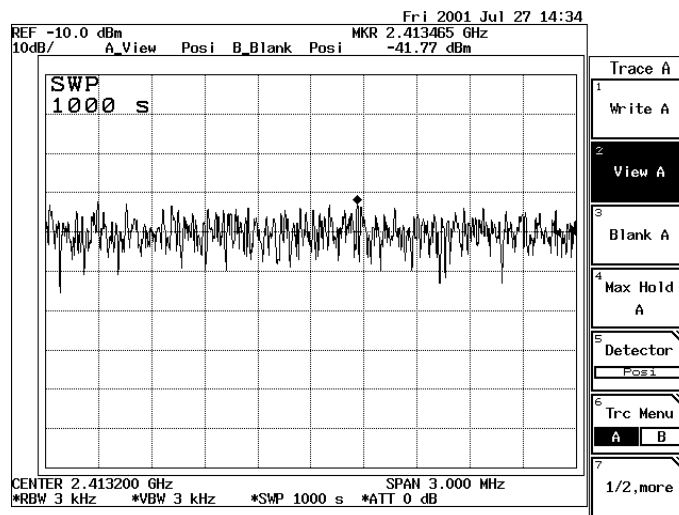
Product : Wireless LAN Card
 Test Item : Transmitter Power Density Data
 Test Site : No.1 OATS
 Test Mode : Normal Operation

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 1 (1Mbps) | 2411.977 | -49.02dBm | < 8dBm | Pass |
| 1 (11Mbps) | 2413.465 | -41.77dBm | < 8dBm | Pass |

1Mbps



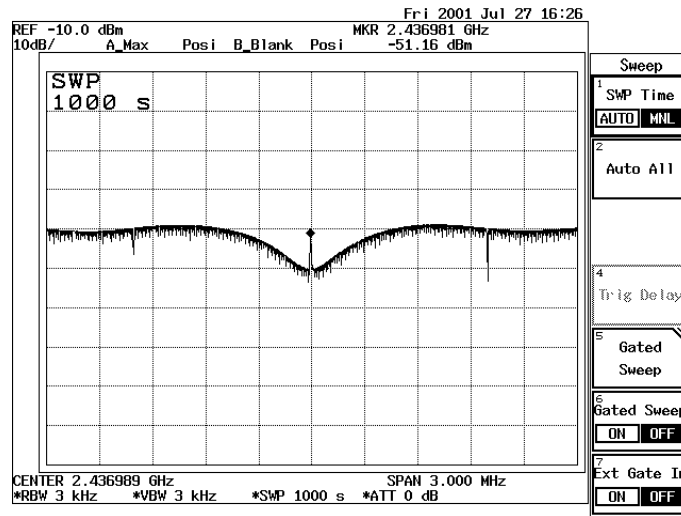
11Mbps



Product : Wireless LAN Card
 Test Item : Transmitter Power Density Data
 Test Site : No.1 OATS
 Test Mode : Normal Operation

| Channel No. | Frequency (MHz) | Measurement Level (dBm) | Required Limit (dBm) | Result |
|-------------|-----------------|-------------------------|----------------------|--------|
| 6 (1Mbps) | 2436.981 | -51.16dBm | < 8dBm | Pass |
| 6 (11Mbps) | 2435.709 | -43.14dBm | < 8dBm | Pass |

1Mbps



11Mbps

