# FCC TEST REPORT

**REPORT NO.:** RF910322R02
**MODEL NO.:** WN3601A
WN3601A-EL
WN3101A
**RECEIVED:** March 22, 2002
**TESTED:** March 11 ~ April 1, 2002

**APPLICANT:** ACCTON TECHNOLOGY CORPORATION
**ADDRESS:** No. 1, Creation Rd., III, Science-Based Industrial Park, Hsinchu, Taiwan, R.O.C.

**ISSUED BY:** Advance Data Technology Corporation
**LAB LOCATION:** 47 14th Lin, Chiapau Tsun, Linko, Taipei, Taiwan, R.O.C.



0528
ILAC MRA

Lab Code: 200102-0

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# 1 CERTIFICATION

| | |
|---|---|
| **PRODUCT :** | Wireless LAN Modem MiniPCI Combo Card |
| **BRAND NAME :** | Accton |
| **MODEL NO. :** | WN3601A, WN3601A-EL, WN3101A |
| **APPLICANT :** | ACCTON TECHNOLOGY CORPORATION |
| **STANDARDS :** | 47 CFR Part 15, Subpart C (Section 15.247), ANSI C63.4-1992, Canada RSS 210, New Zealand RFS 29 |

We, **Advance Data Technology Corporation**, hereby certify that one sample of the designation has been tested in our facility from March 11, 2002 to April 1, 2001, The test record, data evaluation and Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions herein specified.

TESTED BY : Gary Chang , DATE: April 8, 2002
Gary Chang

CHECKED BY : Emily Lu , DATE: April 8, 2002
Emily Lu

APPROVED BY : Alan Lane , DATE: April 8, 2002
Dr. Alan Lane, 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<br>Limit: 48dBuV | PASS | Meet the requirement of limit<br>Minimum passing margin is –10.77dBuV at 10.094MHz |
| 15.247(a)(2) | Spectrum Bandwidth of a Direct Sequence Spread Spectrum System<br>Limit: min. 500kHz | PASS | Meet the requirement of limit |
| 15.247(b) | Maximum Peak Output Power<br>Limit: max. 30dBm | PASS | Meet the requirement of limit |
| 15.247(c) | Transmitter Radiated Emissions<br>Limit: Table 15.209 | PASS | Meet the requirement of limit<br>Minimum passing margin is –2.6dBuV at 396.00MHz |
| 15.247(d) | Power Spectral Density<br>Limit: max. 8dBm | PASS | Meet the requirement of limit |
| 15.247(c) | Band Edge Measurement<br>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** | Wireless LAN Modem MiniPCI Combo Card |
| **MODEL NO.** | WN3601A, WN3601A-EL, WN3101A |
| **POWER SUPPLY** | 3.3VDC from host equipment |
| **MODULATION TYPE** | CCK, DBPSK, DQPSK |
| **RADIO TECHNOLOGY** | DSSS |
| **TRANSFER RATE** | 1/2/5.5/11Mbps |
| **FREQUENCY RANGE** | 2412MHz ~ 2462MHz |
| **NUMBER OF CHANNEL** | 11 |
| **OUTPUT POWER** | 14.3dBm |
| **ANTENNA TYPE** | Printed Antenna and Chip Antenna |
| **DATA CABLE** | NA |
| **I/O PORTS** | NA |
| **ASSOCIATED DEVICES** | NA |

**NOTE:**

1. Model WN3601A and WN3601A-EL are identical except for model no. and the model WN3101A is designed without modem part.
2. Model WN3601A, the worst case, was chosen for the test.
3. There are two antenna types provided to this EUT, printed antenna and chip antenna.
4. For a 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. Test result (A) is for Printed antenna and test result (B) is for Chip antenna.

## 3.3 GENERAL DESCRIPTION OF APPLIED STANDARDS

The EUT is a Wireless LAN Modem MiniPCI Combo Card. According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

**FCC CFR 47 Part 15, Subpart C. (15.247)**
**ANSI C63.4 : 1992**

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 FCC Part 15, Subpart B, Class B (DoC). The test report has been issued separately.

## 3.4 DESCRIPTION OF SUPPORT UNITS

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

| NO. | PRODUCT | BRAND | MODEL NO. | SERIAL NO. | FCC ID |
|---|---|---|---|---|---|
| 1 | PERSONAL COMPUTER | NTI | PII-233T | H9801 | FCC DoC APPROVED |
| 2 | COLOR MONITOR | ADI | CM100 | 026058T10200611A | FCC DoC APPROVED |
| 3 | PS/2 KEYBOARD | FORWARD | FDA-104GA | FDKB8110111 | F4ZDA-104G |
| 4 | PS/2 MOUSE | LOGITECH | M-S43 | LZE00703207 | DZL211106 |
| 5 | PRINTER | HP | 2225C+ | 3123S97230 | DSI6XU2225 |
| 6 | MODEM | ACEEX | 1414 | 980020510 | IFAXDM1414 |

| NO. | SIGNAL CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS |
|---|---|
| 1 | NA |
| 2 | NA |
| 3 | 1.5 m foil shielded wire, terminated with PS/2 connector via metallic frame, w/o core. |
| 4 | 1.8 m foil shielded wire, terminated with PS/2 connector via drain wire, w/o core. |
| 5 | 1.2m braid shielded wire, terminated with DB25 and Centronics connector via metallic frame, w/o core. |
| 6 | 1.2 m braid shielded wire, terminated with DB25 and DB9 connector via metallic frame, w/o core. |

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

# 4 TEST TYPES AND RESULTS

## 4.1 CONDUCTED EMISSION MEASUREMENT

### 4.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

| FREQUENCY (MHz) | Class B (dBuV) | |
|---|---|---|
| | Quasi-peak | Average |
| 0.45 – 30 | 48 | - |

**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 | ESCS30 | 834115/016 | Mar. 3, 2003 |
| ROHDE & SCHWARZ Artificial Mains Network (For EUT) | ESH3-Z5 | 847265/023 | Jan. 10, 2003 |
| * ROHDE & SCHWARZ 4-wire ISN | ENY41 | 838119/028 | Dec. 10, 2002 |
| * ROHDE & SCHWARZ 2-wire ISN | ENY22 | 837497/018 | Dec. 10, 2002 |
| EMCO L.I.S.N. (For peripherals) | 3825/2 | 9504-2359 | July 10, 2002 |
| Software | Cond-V2L | NA | NA |
| RF cable (JYEBAO) | 5D-FB | Cable-C03.01 | July 11, 2002 |
| Terminator (For EMCO LISN) | NA | E1-01-300 | Feb. 20, 2003 |
| Terminator (For EMCO LISN) | NA | E1-01-301 | Feb. 20, 2003 |
| Shielded Room | Site 3 | ADT-C03 | NA |
| VCCI Site Registration No. | Site 3 | C-274 | NA |

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.

3. "*": These equipment are used for conducted telecom port test only (if tested).

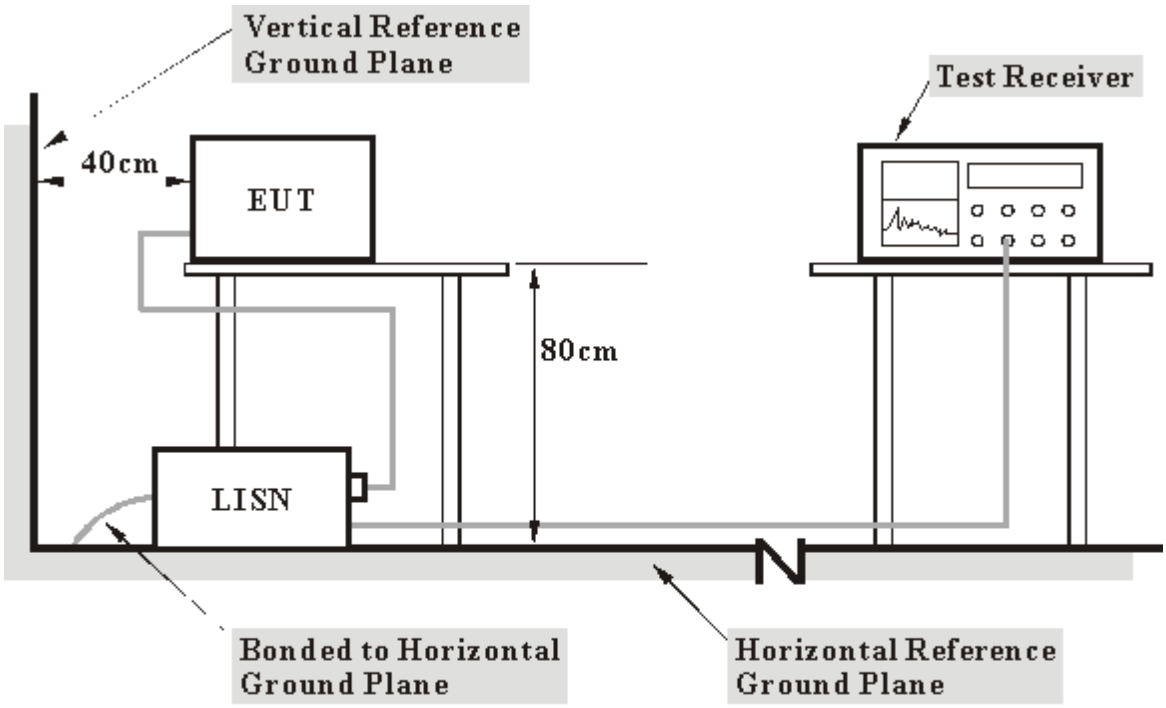
### 4.1.3 TEST PROCEDURES

a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 ohm/ 50uH of coupling impedance for the measuring instrument.

b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.

c. The frequency range from 450 kHz to 30 MHz was searched. Emission levels over 10dB under the prescribed limits could not be reported

### 4.1.4 TEST SETUP




Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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

### 4.1.5 EUT OPERATING CONDITIONS

a. Plug the EUT into the PCI extender which connected to a computer system placed on a testing table.
b. The computer system ran a test program to enable EUT under transmission/receiving condition continuously at specific channel frequency.
c. The computer system sent "H" messages to its screen.
d. The computer system sent “H” messages to modem.
e. The computer system sent "H" messages to printer, and the printer prints them on paper.

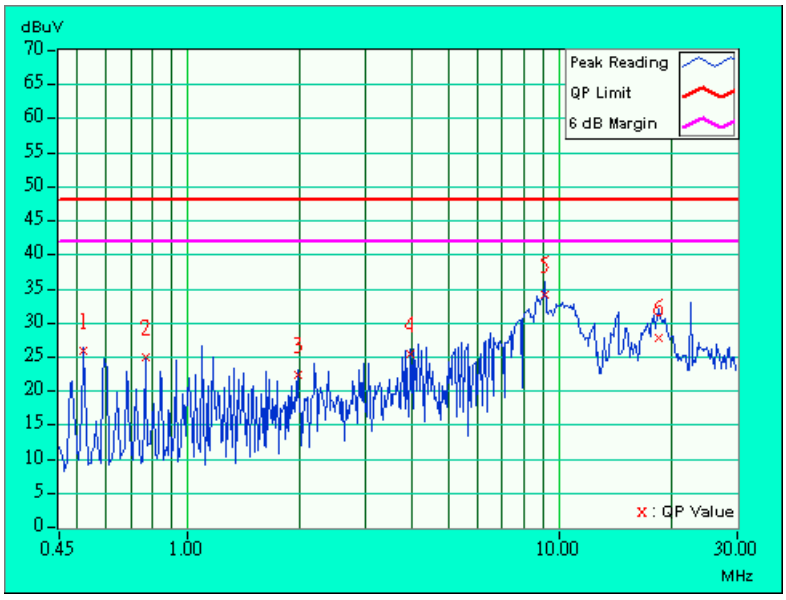
## 4.1.6 TEST RESULTS (A)

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 25.01 | - | 25.11 | - | 48.00 | - | -22.89 | - |
| 2 | 0.766 | 0.10 | 24.01 | - | 24.11 | - | 48.00 | - | -23.89 | - |
| 3 | 1.977 | 0.10 | 21.47 | - | 21.57 | - | 48.00 | - | -26.43 | - |
| 4 | 3.957 | 0.30 | 24.65 | - | 24.95 | - | 48.00 | - | -23.05 | - |
| 5 | 9.105 | 0.47 | 33.28 | - | 33.75 | - | 48.00 | - | -14.25 | - |
| 6 | 18.535 | 0.87 | 26.90 | - | 27.77 | - | 48.00 | - | -20.23 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

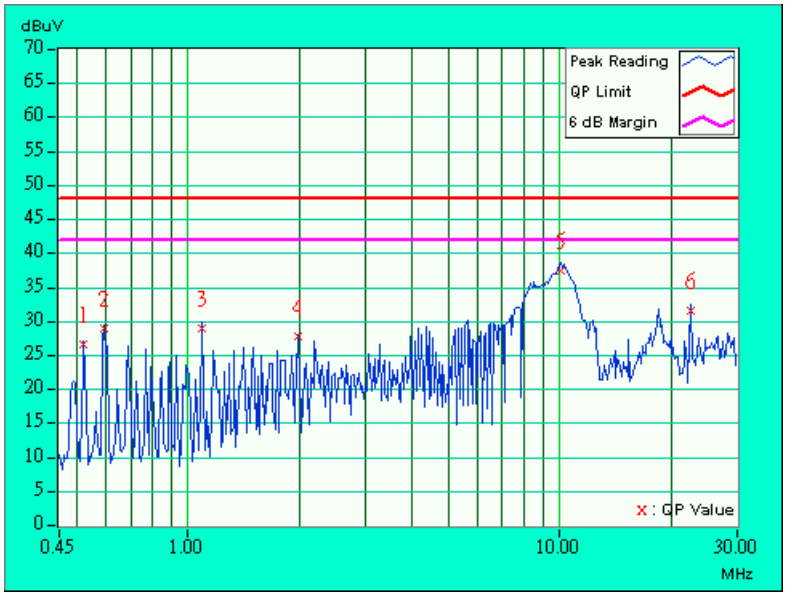


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Neutral (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 25.86 | - | 25.96 | - | 48.00 | - | -22.04 | - |
| 2 | 0.595 | 0.10 | 28.29 | - | 28.39 | - | 48.00 | - | -19.61 | - |
| 3 | 1.090 | 0.10 | 28.35 | - | 28.45 | - | 48.00 | - | -19.55 | - |
| 4 | 1.977 | 0.10 | 26.99 | - | 27.09 | - | 48.00 | - | -20.91 | - |
| 5 | 10.094 | 0.40 | 36.83 | - | 37.23 | - | 48.00 | - | -10.77 | - |
| 6 | 22.570 | 0.75 | 30.72 | - | 31.47 | - | 48.00 | - | -16.53 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

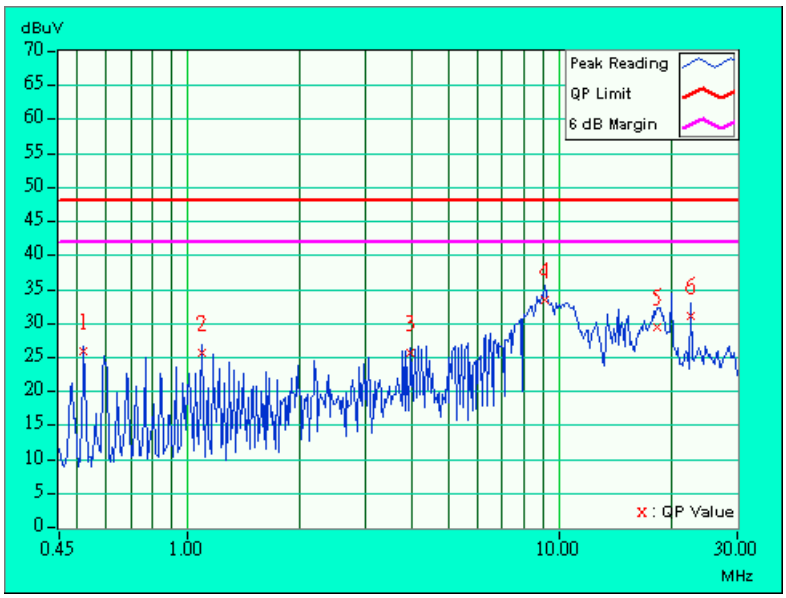


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 24.97 | - | 25.07 | - | 48.00 | - | -22.93 | - |
| 2 | 1.086 | 0.10 | 24.70 | - | 24.80 | - | 48.00 | - | -23.20 | - |
| 3 | 3.957 | 0.30 | 24.67 | - | 24.97 | - | 48.00 | - | -23.03 | - |
| 4 | 9.105 | 0.47 | 32.35 | - | 32.82 | - | 48.00 | - | -15.18 | - |
| 5 | 18.219 | 0.86 | 28.49 | - | 29.35 | - | 48.00 | - | -18.65 | - |
| 6 | 22.570 | 1.00 | 30.18 | - | 31.18 | - | 48.00 | - | -16.82 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

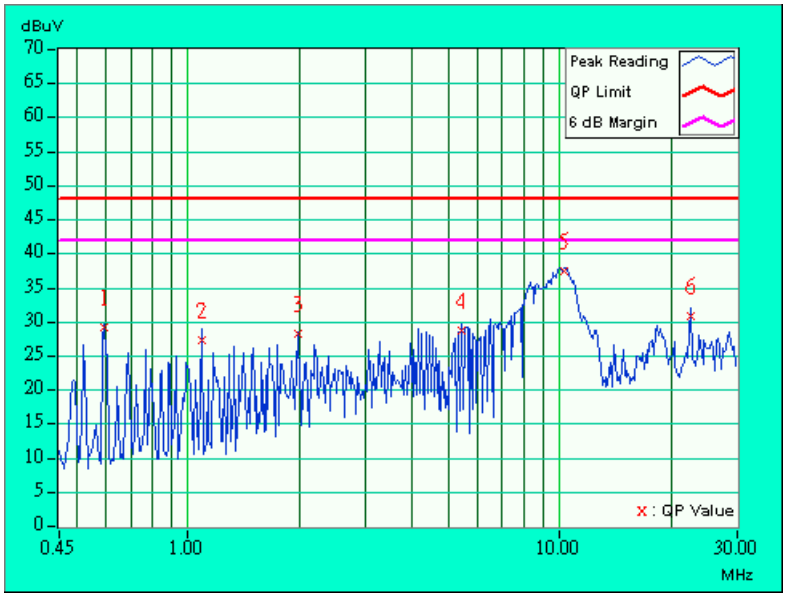


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Neutral (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (Uv)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 28.39 | - | 28.49 | - | 48.00 | - | -19.51 | - |
| 2 | 1.086 | 0.10 | 26.64 | - | 26.74 | - | 48.00 | - | -21.26 | - |
| 3 | 1.977 | 0.10 | 27.54 | - | 27.64 | - | 48.00 | - | -20.36 | - |
| 4 | 5.441 | 0.32 | 27.91 | - | 28.23 | - | 48.00 | - | -19.77 | - |
| 5 | 10.289 | 0.41 | 36.65 | - | 37.06 | - | 48.00 | - | -10.94 | - |
| 6 | 22.570 | 0.75 | 30.14 | - | 30.89 | - | 48.00 | - | -17.11 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

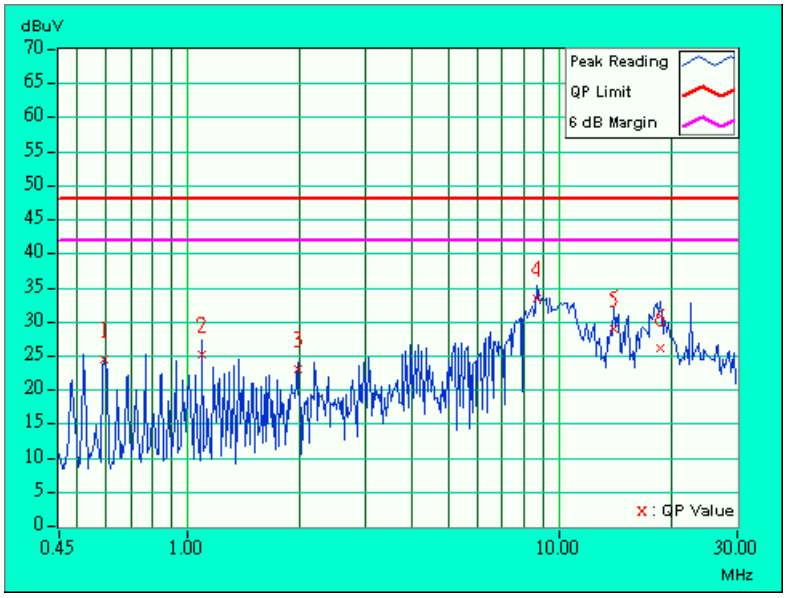


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 23.54 | - | 23.64 | - | 48.00 | - | -24.36 | - |
| 2 | 1.086 | 0.10 | 24.43 | - | 24.53 | - | 48.00 | - | -23.47 | - |
| 3 | 1.977 | 0.10 | 22.22 | - | 22.32 | - | 48.00 | - | -25.68 | - |
| 4 | 8.707 | 0.46 | 32.67 | - | 33.13 | - | 48.00 | - | -14.87 | - |
| 5 | 13.949 | 0.74 | 28.14 | - | 28.88 | - | 48.00 | - | -19.12 | - |
| 6 | 18.703 | 0.87 | 25.34 | - | 26.21 | - | 48.00 | - | -21.79 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

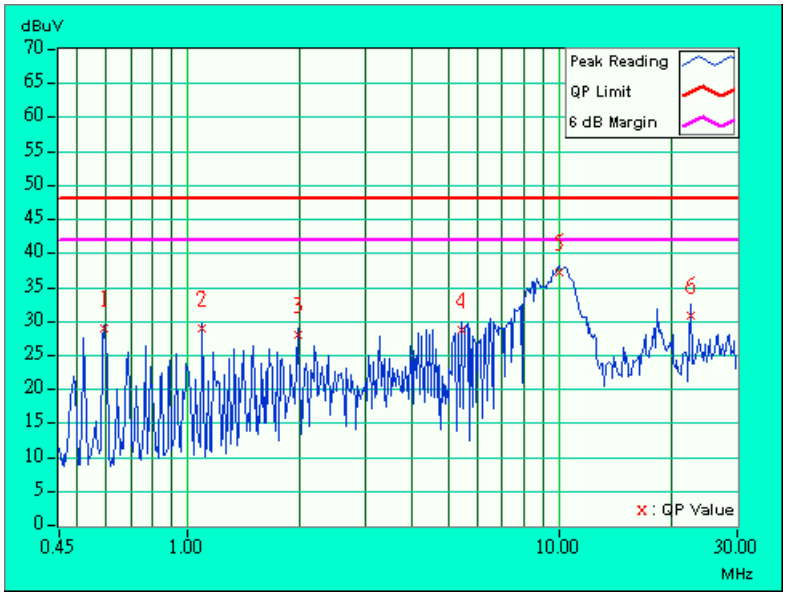


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Netural (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 28.35 | - | 28.45 | - | 48.00 | - | -19.55 | - |
| 2 | 1.090 | 0.10 | 28.23 | - | 28.33 | - | 48.00 | - | -19.67 | - |
| 3 | 1.977 | 0.10 | 27.21 | - | 27.31 | - | 48.00 | - | -20.69 | - |
| 4 | 5.441 | 0.32 | 27.99 | - | 28.31 | - | 48.00 | - | -19.69 | - |
| 5 | 9.992 | 0.40 | 36.49 | - | 36.89 | - | 48.00 | - | -11.11 | - |
| 6 | 22.570 | 0.75 | 30.15 | - | 30.90 | - | 48.00 | - | -17.10 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



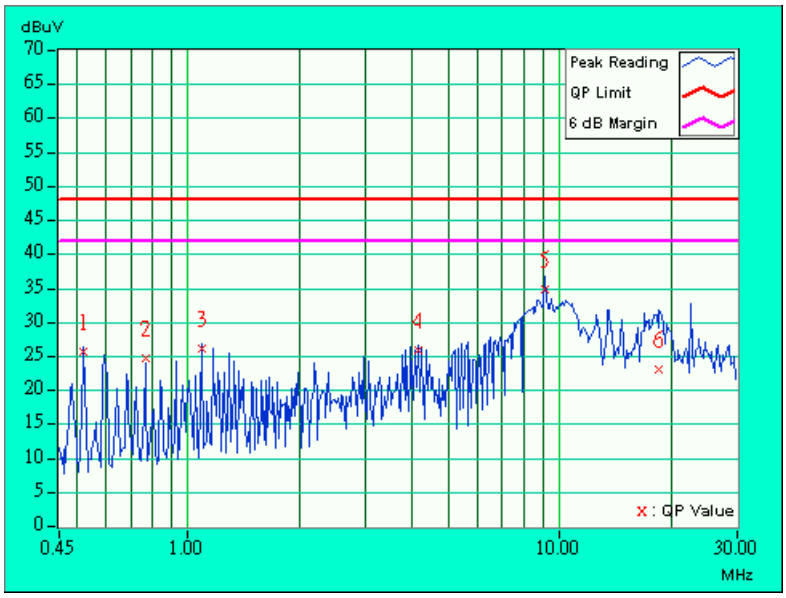
## 4.1.7 TEST RESULTS (B)

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 24.93 | - | 25.03 | - | 48.00 | - | -22.97 | - |
| 2 | 0.766 | 0.10 | 23.95 | - | 24.05 | - | 48.00 | - | -23.95 | - |
| 3 | 1.086 | 0.10 | 25.27 | - | 25.37 | - | 48.00 | - | -22.63 | - |
| 4 | 4.156 | 0.31 | 25.08 | - | 25.39 | - | 48.00 | - | -22.61 | - |
| 5 | 9.105 | 0.47 | 33.98 | - | 34.45 | - | 48.00 | - | -13.55 | - |
| 6 | 18.527 | 0.87 | 22.33 | - | 23.20 | - | 48.00 | - | -24.80 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

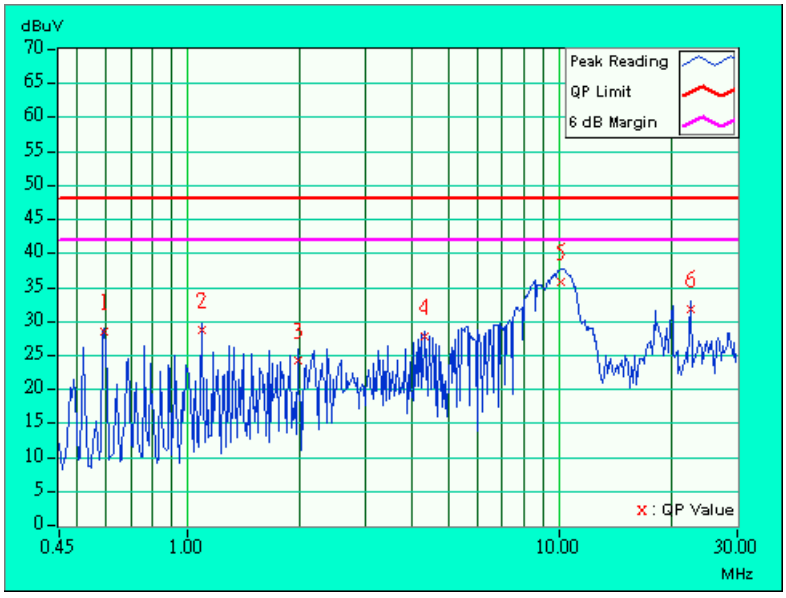


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Neutral (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 27.78 | - | 27.88 | - | 48.00 | - | -20.12 | - |
| 2 | 1.086 | 0.10 | 28.06 | - | 28.16 | - | 48.00 | - | -19.84 | - |
| 3 | 1.973 | 0.10 | 23.57 | - | 23.67 | - | 48.00 | - | -24.33 | - |
| 4 | 4.348 | 0.31 | 26.99 | - | 27.30 | - | 48.00 | - | -20.70 | - |
| 5 | 10.078 | 0.40 | 35.14 | - | 35.54 | - | 48.00 | - | -12.46 | - |
| 6 | 22.570 | 0.75 | 31.13 | - | 31.88 | - | 48.00 | - | -16.12 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

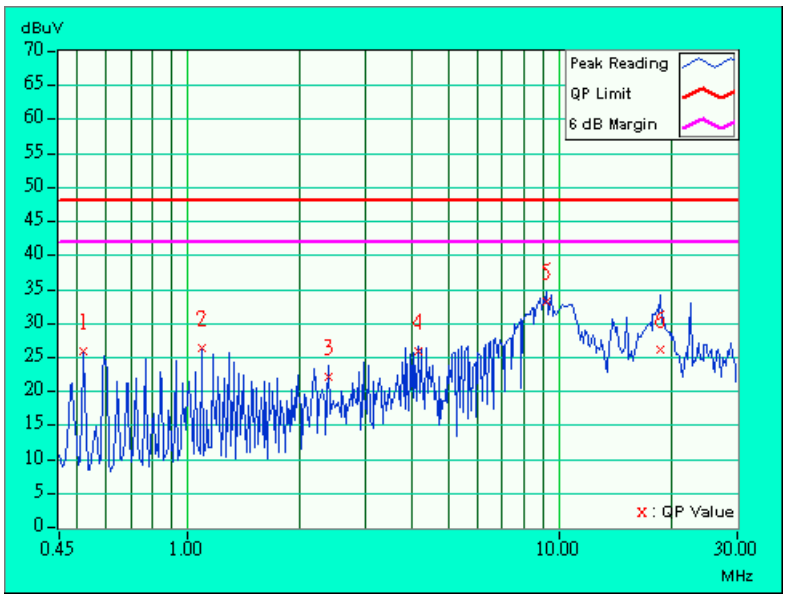


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 25.03 | - | 25.13 | - | 48.00 | - | -22.87 | - |
| 2 | 1.086 | 0.10 | 25.49 | - | 25.59 | - | 48.00 | - | -22.41 | - |
| 3 | 2.375 | 0.14 | 21.18 | - | 21.32 | - | 48.00 | - | -26.68 | - |
| 4 | 4.156 | 0.31 | 25.06 | - | 25.37 | - | 48.00 | - | -22.63 | - |
| 5 | 9.203 | 0.47 | 32.27 | - | 32.74 | - | 48.00 | - | -15.26 | - |
| 6 | 18.602 | 0.87 | 25.25 | - | 26.12 | - | 48.00 | - | -21.88 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

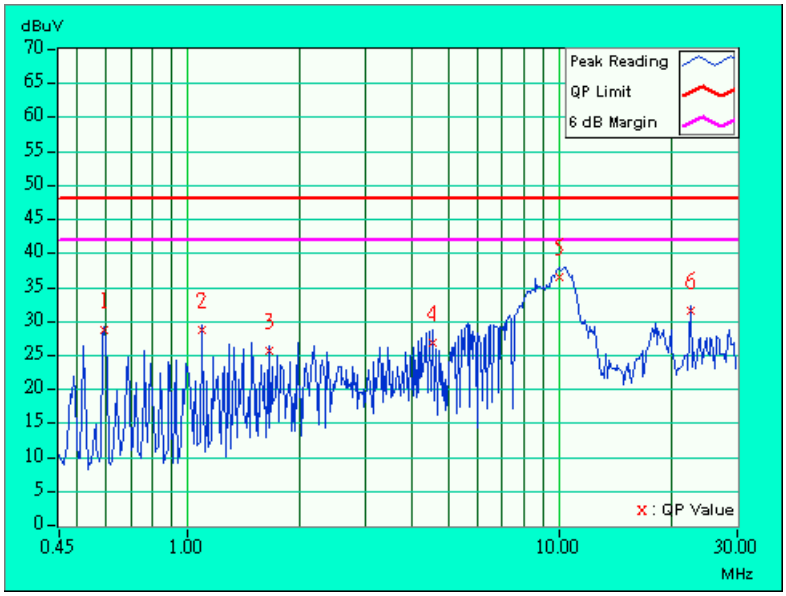


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Neutral (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (Uv)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 28.10 | - | 28.20 | - | 48.00 | - | -19.80 | - |
| 2 | 1.086 | 0.10 | 28.12 | - | 28.22 | - | 48.00 | - | -19.78 | - |
| 3 | 1.648 | 0.10 | 24.92 | - | 25.02 | - | 48.00 | - | -22.98 | - |
| 4 | 4.547 | 0.31 | 26.18 | - | 26.49 | - | 48.00 | - | -21.51 | - |
| 5 | 9.984 | 0.40 | 35.68 | - | 36.08 | - | 48.00 | - | -11.92 | - |
| 6 | 22.570 | 0.75 | 30.79 | - | 31.54 | - | 48.00 | - | -16.46 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

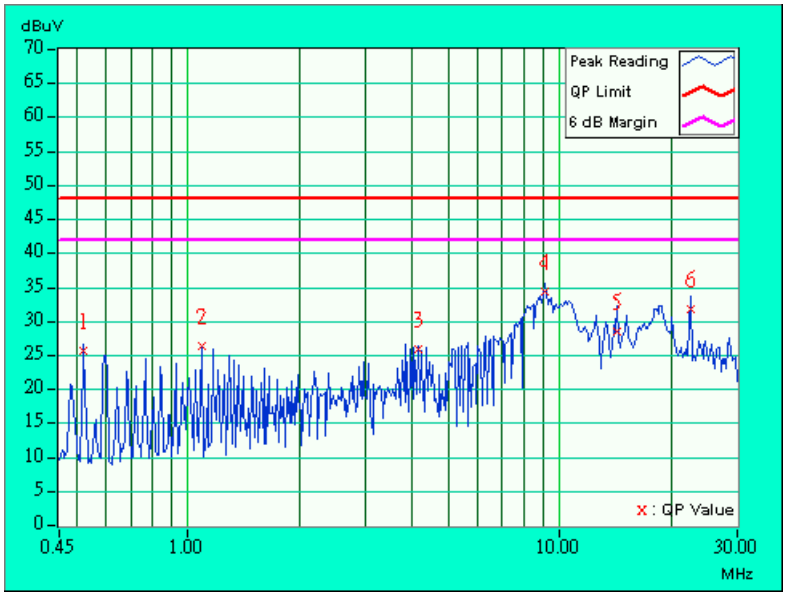


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Line (L) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.524 | 0.10 | 24.77 | - | 24.87 | - | 48.00 | - | -23.13 | - |
| 2 | 1.086 | 0.10 | 25.51 | - | 25.61 | - | 48.00 | - | -22.39 | - |
| 3 | 4.156 | 0.31 | 25.00 | - | 25.31 | - | 48.00 | - | -22.69 | - |
| 4 | 9.102 | 0.47 | 33.52 | - | 33.99 | - | 48.00 | - | -14.01 | - |
| 5 | 14.246 | 0.75 | 27.43 | - | 28.18 | - | 48.00 | - | -19.82 | - |
| 6 | 22.570 | 1.00 | 30.87 | - | 31.87 | - | 48.00 | - | -16.13 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.

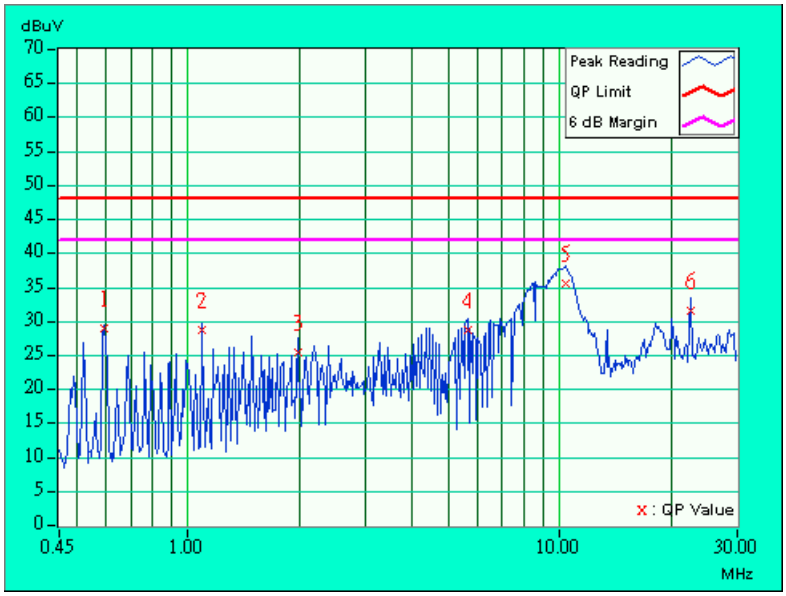


| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **6dB BANDWIDTH** | 10 kHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **PHASE** | Netural (N) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 60%RH, 1005 hPa | **TESTED BY**: Bruce Shiau | |

| No | Freq. | Corr. Factor | Reading Value [dB (uV)] | | Emission Level [dB (uV)] | | Limit [dB (uV)] | | Margin (dB) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | [MHz] | (dB) | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. | Q.P. | AV. |
| 1 | 0.595 | 0.10 | 28.25 | - | 28.35 | - | 48.00 | - | -19.65 | - |
| 2 | 1.086 | 0.10 | 27.96 | - | 28.06 | - | 48.00 | - | -19.94 | - |
| 3 | 1.973 | 0.10 | 24.79 | - | 24.89 | - | 48.00 | - | -23.11 | - |
| 4 | 5.637 | 0.33 | 27.97 | - | 28.30 | - | 48.00 | - | -19.70 | - |
| 5 | 10.383 | 0.42 | 34.78 | - | 35.20 | - | 48.00 | - | -12.80 | - |
| 6 | 22.570 | 0.75 | 30.81 | - | 31.56 | - | 48.00 | - | -16.44 | - |

**NOTE:**

1. QP. and AV. are abbreviations of quasi-peak and average individually.
2. "-": NA
3. The emission levels of other frequencies were very low against the limit.
4. Margin value = Emission level - Limit value
5. Emission Level = Reading Value + Correction Factor.



## 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 of Fundamental | |
|---|---|---|
| | uV/m | dBuV/m |
| 30-88 | 100 | 40.0 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46.0 |
| Above 960 | 500 | 54.0 |

**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 | 8590L | 3544A01176 | May 7, 2002 |
| * HP Preamplifier | 8447D | 2944A08485 | May 7, 2002 |
| * HP Preamplifier | 8449B | 3008A01201 | Dec. 06, 2002 |
| * HP Preamplifier | 8449B | 3008A01292 | Aug. 21, 2002 |
| * ROHDE & SCHWARZ TEST RECEIVER | ESMI | 839013/007<br>839379/002 | Jan. 27, 2003 |
| SCHWARZBECK Tunable Dipole Antenna | VHA 9103<br>UHA 9105 | E101051<br>E101055 | Nov. 23, 2002 |
| * CHASE BILOG Antenna | CBL6112A | 2221 | Aug. 2, 2002 |
| * SCHWARZBECK Horn Antenna | BBHA9120-D1 | D130 | July 6, 2002 |
| * EMCO Horn Antenna | 3115 | 9312-4192 | April 15, 2002 |
| * EMCO Turn Table | 1060 | 1115 | NA |
| * SHOSHIN Tower | AP-4701 | A6Y005 | NA |
| * Software | AS61D4 | NA | NA |
| * ANRITSU RF Switches | MP59B | M35046 | Aug. 2, 2002 |
| * TIMES RF cable | LMR-600 | CABLE-ST5-01 | Aug. 2, 2002 |
| Antenna (Horn) | BBHA9120-D | D130 | July 10, 2002 |
| Open Field Test Site | Site 5 | ADT-R05 | July 28, 2002 |
| VCCI Site Registration No. | Site 5 | R-1039 | NA |
| Site Registration No. | FCC: 90422<br>Canada IC: IC 3789<br>VCCI : R-1039 | | |

**NOTE:** 1. The measurement uncertainty is less than +/- 3.0dB, 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.

3. "*" = These equipment are used for the final measurement.

4. The horn antenna and HP preamplifier (model: 8449B) are used only for the measurement of emission frequency above 1GHz if tested.

### 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.

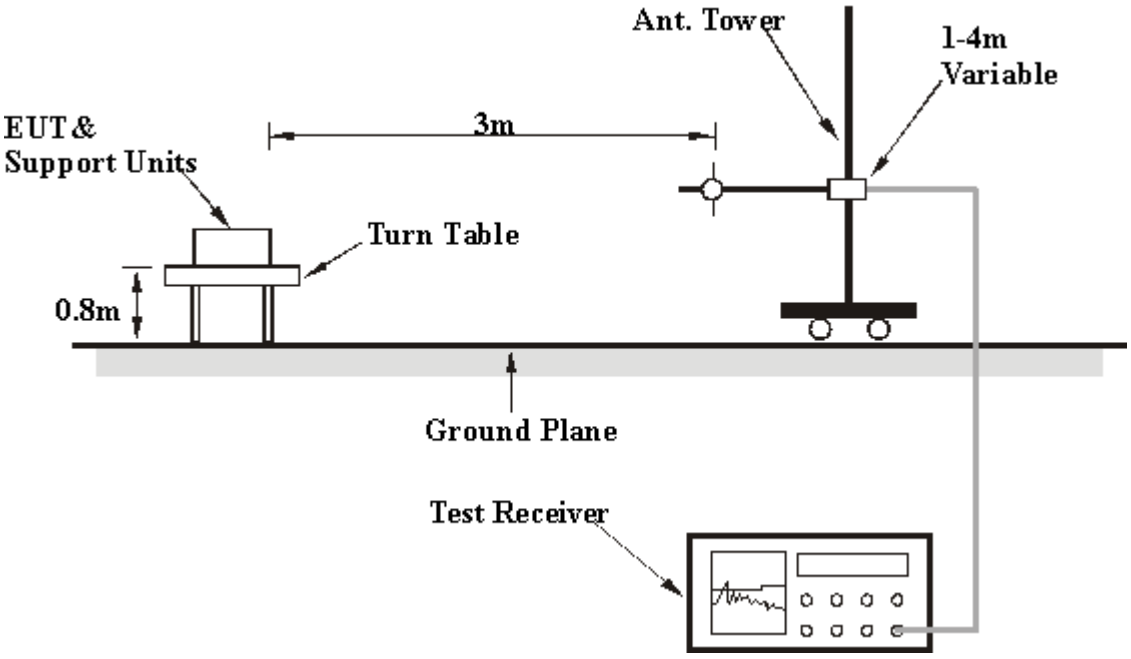
e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

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 (A)

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **FREQUENCY RANGE** | 30-1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Quasi-Peak |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 220.00 | 31.6 QP | 46.00 | -14.40 | 1.14H | 178 | 20.00 | 10.12 | 1.51 | 0.00 | -11.63 |
| 2 | 264.00 | 41.4 QP | 46.00 | -4.60 | 1.17H | 230 | 26.80 | 12.89 | 1.70 | 0.00 | -14.58 |
| 3 | 308.00 | 33.3 QP | 46.00 | -12.70 | 1.10H | 274 | 18.00 | 13.38 | 1.91 | 0.00 | -15.29 |
| 4 | 352.00 | 37.4 QP | 46.00 | -8.60 | 1.06H | 330 | 21.00 | 14.31 | 2.05 | 0.00 | -16.37 |
| 5 | 396.00 | 41.2 QP | 46.00 | -4.80 | 1.02H | 253 | 23.00 | 15.96 | 2.22 | 0.00 | -18.19 |
| 6 | 440.00 | 34.7 QP | 46.00 | -11.30 | 1.05H | 160 | 16.00 | 16.32 | 2.38 | 0.00 | -18.69 |
| 7 | 528.00 | 35.2 QP | 46.00 | -10.80 | 1.10H | 67 | 15.00 | 17.62 | 2.60 | 0.00 | -20.23 |
| 8 | 660.00 | 36.3 QP | 46.00 | -9.70 | 1.07H | 30 | 14.00 | 19.25 | 3.05 | 0.00 | -22.29 |
| 9 | 748.00 | 35.4 QP | 46.00 | -10.60 | 1.03H | 81 | 12.00 | 20.14 | 3.26 | 0.00 | -23.41 |
| 10 | 792.00 | 34.9 QP | 46.00 | -11.10 | 1.05H | 125 | 11.00 | 20.60 | 3.31 | 0.00 | -23.91 |
| 11 | 924.00 | 35.1 QP | 46.00 | -10.90 | 1.08H | 132 | 10.40 | 21.00 | 3.68 | 0.00 | -24.69 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 264.00 | 37.6 QP | 46.00 | -8.40 | 2.44V | 184 | 23.00 | 12.89 | 1.70 | 0.00 | -14.58 |
| 2 | 308.00 | 32.3 QP | 46.00 | -13.70 | 1.53V | 66 | 17.00 | 13.38 | 1.91 | 0.00 | -15.29 |
| 3 | 352.00 | 34.4 QP | 46.00 | -11.60 | 2.37V | 248 | 18.00 | 14.31 | 2.05 | 0.00 | -16.36 |
| 4 | 396.00 | 40.2 QP | 46.00 | -5.80 | 1.21V | 28 | 22.00 | 15.96 | 2.22 | 0.00 | -18.18 |
| 5 | 440.00 | 34.7 QP | 46.00 | -11.30 | 1.19V | 308 | 16.00 | 16.32 | 2.38 | 0.00 | -18.69 |
| 6 | 528.00 | 35.2 QP | 46.00 | -10.80 | 1.21V | 319 | 15.00 | 17.62 | 2.60 | 0.00 | -20.22 |
| 7 | 572.00 | 36.2 QP | 46.00 | -9.80 | 1.45V | 92 | 15.20 | 18.25 | 2.75 | 0.00 | -21.00 |
| 8 | 704.00 | 36.5 QP | 46.00 | -9.50 | 1.48V | 286 | 14.00 | 19.38 | 3.16 | 0.00 | -22.54 |
| 9 | 748.00 | 36.4 QP | 46.00 | -9.60 | 1.34V | 49 | 13.00 | 20.14 | 3.26 | 0.00 | -23.40 |
| 10 | 792.00 | 35.9 QP | 46.00 | -10.10 | 1.52V | 330 | 12.00 | 20.60 | 3.31 | 0.00 | -23.91 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2038.00 | 50.2 PK | 74.00 | -23.80 | 1.49H | 88 | 55.00 | 25.20 | 4.86 | 34.90 | 4.84 |
| 2 | *2413.00 | 99.2 PK | - | - | 1.67H | 286 | 67.00 | 27.11 | 5.10 | 0.00 | -32.21 |
| 3 | *2413.00 | 92.6 AV | - | - | 1.67H | 286 | 60.40 | 27.11 | 5.10 | 0.00 | -32.21 |
| 4 | 4076.00 | 46.4 PK | 74.00 | -27.60 | 1.19H | 31 | 44.00 | 30.13 | 6.78 | 34.52 | -2.39 |
| 5 | 4824.00 | 49.0 PK | 74.00 | -25.00 | 1.52H | 250 | 45.00 | 31.43 | 7.23 | 34.63 | -4.02 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2038.00 | 46.2 PK | 74.00 | -27.80 | 1.11V | 355 | 51.00 | 25.20 | 4.86 | 34.90 | 4.84 |
| 2 | *2463.00 | 96.2 PK | - | - | 2.10V | 13 | 63.80 | 27.33 | 5.08 | 0.00 | -32.41 |
| 3 | *2463.00 | 89.4 AV | - | - | 2.10V | 13 | 57.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 4 | 4076.00 | 49.4 PK | 74.00 | -24.60 | 1.45V | 27 | 47.00 | 30.13 | 6.78 | 34.52 | -2.39 |
| 5 | 4824.00 | 49.5 PK | 74.00 | -24.50 | 1.41V | 349 | 45.50 | 31.43 | 7.23 | 34.63 | -4.02 |
| 6 | 6113.00 | 49.8 PK | 74.00 | -24.20 | 1.48V | 259 | 43.40 | 32.80 | 8.23 | 34.60 | -6.43 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2063.00 | 46.7 PK | 74.00 | -27.30 | 1.50H | 43 | 51.20 | 25.41 | 4.96 | 34.90 | 4.53 |
| 2 | *2437.00 | 95.8 PK | - | - | 1.59H | 300 | 63.40 | 27.33 | 5.08 | 0.00 | -32.40 |
| 3 | *2437.00 | 89.9 AV | - | - | 1.59H | 300 | 57.50 | 27.33 | 5.08 | 0.00 | -32.40 |
| 4 | 4126.00 | 49.3 PK | 74.00 | -24.70 | 1.04H | 263 | 46.80 | 30.32 | 6.70 | 34.56 | -2.46 |
| 5 | 4874.00 | 49.3 PK | 74.00 | -24.70 | 1.60H | 112 | 45.20 | 31.47 | 7.21 | 34.63 | -4.05 |
| 6 | 6188.00 | 49.0 PK | 74.00 | -25.00 | 1.49H | 70 | 42.50 | 33.14 | 8.01 | 34.60 | -6.55 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2063.00 | 48.5 PK | 74.00 | -25.50 | 1.64V | 357 | 53.00 | 25.41 | 4.96 | 34.90 | 4.53 |
| 2 | *2437.00 | 96.4 PK | - | - | 1.46V | 9 | 64.00 | 27.33 | 5.08 | 0.00 | -32.40. |
| 3 | *2437.00 | 90.4 AV | - | - | 1.46V | 9 | 58.00 | 27.33 | 5.08 | 0.00 | -32.40. |
| 4 | 4126.00 | 48.5 PK | 74.00 | -25.50 | 1.53V | 11 | 46.00 | 30.32 | 6.70 | 34.56 | -2.46 |
| 5 | 4924.00 | 49.1 PK | 74.00 | -24.90 | 1.15V | 357 | 45.00 | 31.51 | 7.21 | 34.62 | -4.10 |
| 6 | 6188.00 | 48.5 PK | 74.00 | -25.50 | 1.26V | 337 | 42.00 | 33.14 | 8.01 | 34.60 | -6.55 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2088.00 | 46.7 PK | 74.00 | -27.30 | 1.39H | 320 | 51.00 | 25.62 | 5.02 | 34.90 | 4.26 |
| 2 | *2463.00 | 100.4 PK | - | - | 1.00H | 114 | 68.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 3 | *2463.00 | 94.4 AV | - | - | 1.00H | 114 | 62.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 4 | 2486.40 | 46.7 PK | 74.00 | -27.30 | 1.27H | 106 | 49.00 | 27.54 | 5.06 | 34.90 | 2.31 |
| 5 | 4176.00 | 46.5 PK | 74.00 | -27.50 | 1.35H | 186 | 44.00 | 30.41 | 6.68 | 34.58 | -2.51 |
| 6 | 4924.00 | 49.1 PK | 74.00 | -24.90 | 1.38H | 136 | 45.00 | 31.51 | 7.21 | 34.62 | -4.10 |
| 7 | 6263.00 | 49.4 PK | 74.00 | -24.60 | 1.16H | 351 | 42.40 | 33.48 | 8.13 | 34.60 | -7.01 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2088.00 | 46.7 PK | 74.00 | -27.30 | 1.18V | 139 | 51.00 | 25.62 | 5.02 | 34.90 | 4.26 |
| 2 | *2463.00 | 99.4 PK | - | - | 1.90V | 248 | 67.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 3 | *2463.00 | 93.4 AV | - | - | 1.90V | 248 | 61.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 4 | 2491.00 | 47.7 PK | 74.00 | -26.30 | 1.45V | 3 | 50.00 | 27.54 | 5.06 | 34.90 | 2.31 |
| 5 | 4176.00 | 48.5 PK | 74.00 | -25.50 | 1.33V | 142 | 46.00 | 30.41 | 6.68 | 34.58 | -2.51 |
| 6 | 4924.00 | 49.1 PK | 74.00 | -24.90 | 1.39V | 78 | 45.00 | 31.51 | 7.21 | 34.62 | -4.10 |
| 7 | 6263.00 | 50.0 PK | 74.00 | -24.00 | 1.31V | 295 | 43.00 | 33.48 | 8.13 | 34.60 | -7.01 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

## 4.2.7 TEST RESULTS (B)

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **FREQUENCY RANGE** | 30-1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Quasi-Peak |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 132.00 | 33.2 QP | 43.50 | -10.20 | 2.19H | 262 | 20.96 | 11.16 | 1.13 | 0.00 | -12.29 |
| 2 | 176.00 | 32.0 QP | 43.50 | -11.50 | 1.91H | 235 | 21.59 | 9.08 | 1.33 | 0.00 | -10.42 |
| 3 | 264.00 | 34.2 pk | 46.00 | -11.80 | 2.17H | 355 | 46.61 | 12.89 | 1.70 | 27.00 | 12.42 |
| 4 | 308.00 | 32.3 QP | 46.00 | -13.70 | 1.56H | 66 | 17.00 | 13.38 | 1.91 | 0.00 | -15.29 |
| 5 | 352.00 | 34.4 QP | 46.00 | -11.60 | 1.13H | 354 | 18.00 | 14.31 | 2.05 | 0.00 | -16.36 |
| 6 | 396.00 | 40.2 QP | 46.00 | -5.80 | 1.28H | 6 | 22.00 | 15.96 | 2.22 | 0.00 | -18.18. |
| 7 | 440.00 | 35.6 QP | 46.00 | -10.40 | 1.00H | 200 | 16.93 | 16.32 | 2.38 | 0.00 | -18.69 |
| 8 | 484.00 | 40.2 QP | 46.00 | -5.80 | 1.03H | 352 | 20.77 | 16.96 | 2.47 | 0.00 | -19.44 |
| 9 | 528.00 | 37.2 QP | 46.00 | -8.80 | 1.06H | 95 | 16.95 | 17.62 | 2.60 | 0.00 | -20.22 |
| 10 | 572.00 | 31.3 QP | 46.00 | -14.70 | 1.32H | 172 | 10.33 | 18.25 | 2.75 | 0.00 | -21.00 |
| 11 | 704.00 | 32.2 QP | 46.00 | -13.80 | 1.09H | 182 | 9.68 | 19.38 | 3.16 | 0.00 | -22.54 |
| 12 | 748.00 | 32.6 QP | 46.00 | -13.40 | 1.62H | 91 | 9.24 | 20.14 | 3.26 | 0.00 | -23.40 |
| 13 | 792.00 | 32.5 QP | 46.00 | -13.50 | 1.68H | 262 | 8.62 | 20.60 | 3.31 | 0.00 | -23.91 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 132.00 | 31.3 QP | 43.50 | -12.20 | 1.26V | 343 | 19.00 | 11.16 | 1.13 | 0.00 | -12.29 |
| 2 | 176.00 | 31.4 QP | 43.50 | -12.10 | 1.28V | 2 | 21.00 | 9.08 | 1.33 | 0.00 | -10.41. |
| 3 | 264.00 | 33.6 QP | 46.00 | -12.40 | 1.65V | 353 | 19.00 | 12.89 | 1.70 | 0.00 | -14.58 |
| 4 | 352.00 | 32.4 QP | 46.00 | -13.60 | 2.16V | 213 | 16.00 | 14.31 | 2.05 | 0.00 | -16.36 |
| 5 | 396.00 | 43.4 QP | 46.00 | -2.60 | 1.20V | 151 | 25.20 | 15.96 | 2.22 | 0.00 | -18.19 |
| 6 | 440.00 | 35.7 QP | 46.00 | -10.30 | 1.71V | 356 | 17.00 | 16.32 | 2.38 | 0.00 | -18.69 |
| 7 | 484.00 | 39.4 QP | 46.00 | -6.60 | 1.32V | 53 | 20.00 | 16.96 | 2.47 | 0.00 | -19.44 |
| 8 | 528.00 | 34.2 QP | 46.00 | -11.80 | 1.44V | 300 | 14.00 | 17.62 | 2.60 | 0.00 | -20.22 |
| 9 | 572.00 | 36.0 QP | 46.00 | -10.00 | 1.32V | 87 | 15.00 | 18.25 | 2.75 | 0.00 | -21.00 |
| 10 | 704.00 | 36.5 QP | 46.00 | -9.50 | 1.48V | 350 | 14.00 | 19.38 | 3.16 | 0.00 | -22.54 |
| 11 | 748.00 | 35.4 QP | 46.00 | -10.60 | 1.05V | 5 | 12.00 | 20.14 | 3.26 | 0.00 | -23.40 |
| 12 | 792.00 | 34.9 QP | 46.00 | -11.10 | 1.07V | 267 | 11.00 | 20.60 | 3.31 | 0.00 | -23.91 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 1 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2038.00 | 44.2 PK | 74.00 | -29.80 | 1.38H | 267 | 49.00 | 25.20 | 4.86 | 34.90 | 4.84 |
| 2 | *2413.00 | 95.7 PK | - | - | 1.68H | 112 | 63.50 | 27.11 | 5.10 | 0.00 | -32.21 |
| 3 | *2413.00 | 90.2 AV | - | - | 1.68H | 112 | 58.00 | 27.11 | 5.10 | 0.00 | -32.21 |
| 4 | 4076.00 | 49.4 PK | 74.00 | -24.60 | 1.17H | 303 | 47.00 | 30.13 | 6.78 | 34.52 | -2.39 |
| 5 | 4824.00 | 49.0 PK | 74.00 | -25.00 | 1.35H | 4 | 45.00 | 31.43 | 7.23 | 34.63 | -4.02 |
| 6 | 6115.00 | 49.6 PK | 74.00 | -24.40 | 1.33H | 168 | 43.20 | 32.80 | 8.23 | 34.60 | -6.43 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2038.00 | 46.2 PK | 74.00 | -27.80 | 1.11V | 355 | 51.00 | 25.20 | 4.86 | 34.90 | 4.84 |
| 2 | *2463.00 | 96.2 PK | - | - | 2.10V | 13 | 63.80 | 27.33 | 5.08 | 0.00 | -32.41 |
| 3 | *2463.00 | 89.4 AV | - | - | 2.10V | 13 | 57.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 4 | 4076.00 | 49.4 PK | 74.00 | -24.60 | 1.45V | 27 | 47.00 | 30.13 | 6.78 | 34.52 | -2.39 |
| 5 | 4824.00 | 49.5 PK | 74.00 | -24.50 | 1.41V | 349 | 45.50 | 31.43 | 7.23 | 34.63 | -4.02 |
| 6 | 6113.00 | 49.8 PK | 74.00 | -24.20 | 1.48V | 259 | 43.40 | 32.80 | 8.23 | 34.60 | -6.43 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 6 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2063.00 | 46.5 PK | 74.00 | -27.50 | 1.23H | 99 | 51.00 | 25.41 | 4.96 | 34.90 | 4.53 |
| 2 | *2436.00 | 94.2 PK | - | - | 1.62H | 353 | 61.78 | 27.33 | 5.08 | 0.00 | -32.40 |
| 3 | *2436.00 | 89.4 AV | - | - | 1.62H | 353 | 57.00 | 27.33 | 5.08 | 0.00 | -32.40 |
| 4 | 4126.00 | 48.5 PK | 74.00 | -25.50 | 1.23H | 307 | 46.00 | 30.32 | 6.70 | 34.56 | -2.46 |
| 5 | 4874.00 | 49.1 PK | 74.00 | -24.90 | 1.36H | 6 | 45.00 | 31.47 | 7.21 | 34.63 | -4.05 |
| 6 | 6188.00 | 49.5 PK | 74.00 | -24.50 | 1.18H | 73 | 43.00 | 33.14 | 8.01 | 34.60 | -6.56 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2063.00 | 45.5 PK | 74.00 | -28.50 | 1.85V | 4 | 50.00 | 25.41 | 4.96 | 34.90 | 4.53 |
| 2 | *2463.00 | 97.2 PK | - | - | 1.12V | 320 | 64.75 | 27.33 | 5.08 | 0.00 | -32.40 |
| 3 | *2463.00 | 90.4 AV | - | - | 1.12V | 320 | 58.00 | 27.33 | 5.08 | 0.00 | -32.40 |
| 4 | 4126.00 | 50.5 PK | 74.00 | -23.50 | 1.35V | 10 | 48.00 | 30.32 | 6.70 | 34.56 | -2.46 |
| 5 | 4874.00 | 48.1 PK | 74.00 | -25.90 | 1.36V | 250 | 44.00 | 31.47 | 7.21 | 34.63 | -4.05 |
| 6 | 6188.00 | 49.5 PK | 74.00 | -24.50 | 1.42V | 5 | 43.00 | 33.14 | 8.01 | 34.60 | -6.55 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **MODE** | Channel 11 | **FREQUENCY RANGE** | Above 1000 MHz |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **DETECTOR FUNCTION** | Peak(PK)<br>Average (AV) |
| **ENVIRONMENTAL CONDITIONS** | 20 deg. C, 70%RH, 1050 hPa | **TESTED BY**: Gary Chang | |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2088.00 | 46.7 PK | 74.00 | -27.30 | 1.74H | 11 | 51.00 | 25.62 | 5.02 | 34.90 | 4.26 |
| 2 | *2463.00 | 91.4 PK | - | - | 1.83H | 7 | 59.00 | 27.33 | 5.08 | 0.00 | -32.40 |
| 3 | *2463.00 | 86.4 AV | - | - | 1.83H | 7 | 54.00 | 27.33 | 5.08 | 0.00 | -32.40 |
| 4 | 2491.00 | 45.7 PK | 74.00 | -28.30 | 1.76H | 344 | 48.00 | 27.54 | 5.06 | 34.90 | 2.31 |
| 5 | 4176.00 | 48.5 PK | 74.00 | -25.50 | 1.42H | 255 | 46.00 | 30.41 | 6.68 | 34.58 | -2.51 |
| 6 | 4924.00 | 49.3 PK | 74.00 | -24.70 | 1.22H | 59 | 45.20 | 31.51 | 7.21 | 34.62 | -4.10 |
| 7 | 6263.00 | 50.0 PK | 74.00 | -24.00 | 1.41H | 5 | 43.00 | 33.48 | 8.13 | 34.60 | -7.01 |

**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) | Antenna Factor (dB) | Cable Factor (dB) | Pre-Amp. Factor (dB) | Correction Factor (dB) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2088.00 | 45.7 PK | 74.00 | -28.30 | 1.22V | 316 | 50.00 | 25.62 | 5.02 | 34.90 | 4.26 |
| 2 | *2463.00 | 92.4 PK | - | - | 1.26V | 299 | 60.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 3 | *2463.00 | 87.4 AV | - | - | 1.26V | 299 | 55.00 | 27.33 | 5.08 | 0.00 | -32.41 |
| 4 | 2485.00 | 46.7 PK | 74.00 | -27.30 | 1.27V | 330 | 49.00 | 27.54 | 5.06 | 34.90 | 2.31 |
| 5 | 4176.00 | 52.5 PK | 74.00 | -21.50 | 1.56V | 27 | 50.00 | 30.41 | 6.68 | 34.58 | -2.51 |
| 6 | 4924.00 | 48.1 PK | 74.00 | -25.90 | 1.53V | 353 | 44.00 | 31.51 | 7.21 | 34.62 | -4.10 |
| 7 | 6263.00 | 49.0 PK | 74.00 | -25.00 | 1.67V | 323 | 42.00 | 33.48 | 8.13 | 34.60 | -7.01 |

**NOTE:**

1. Emission level = Raw value - Correction Factor
2. Correction Factor = Pre-Amp. Factor - Ant. Factor - Cable loss
   (Pre-Amp. Factor = 0, when a Pre-Amplifier is not used for the test.)
3. Margin value = Emission level - Limit value
4. " * " : Fundamental frequency
5. The other emission levels were very low against the limit.

## 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 | FSEK30 | 100049 | July 17, 2002 |

**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

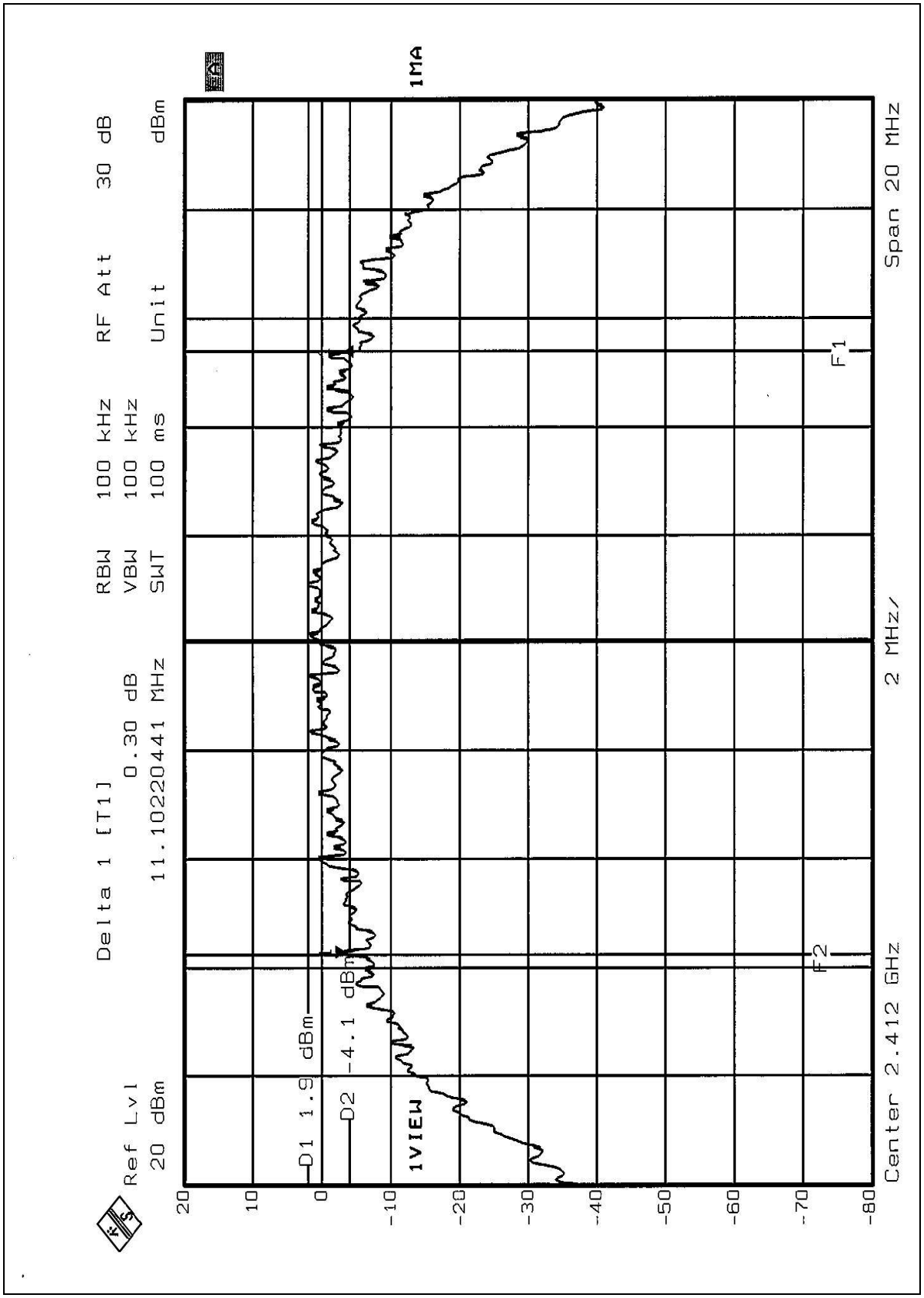
The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

## 4.3.6 TEST RESULTS

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **ENVIRONMENTAL CONDITIONS** | 25 deg. C, 50%RH, 1005 hPa |
| **TESTED BY**: Bunny Yao | | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | 6 dB BANDWIDTH (MHz) | MINIMUM LIMIT (MHz) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | 11.102 | 0.5 | PASS |
| 6 | 2437 | 11.142 | 0.5 | PASS |
| 11 | 2462 | 11.703 | 0.5 | PASS |

CH1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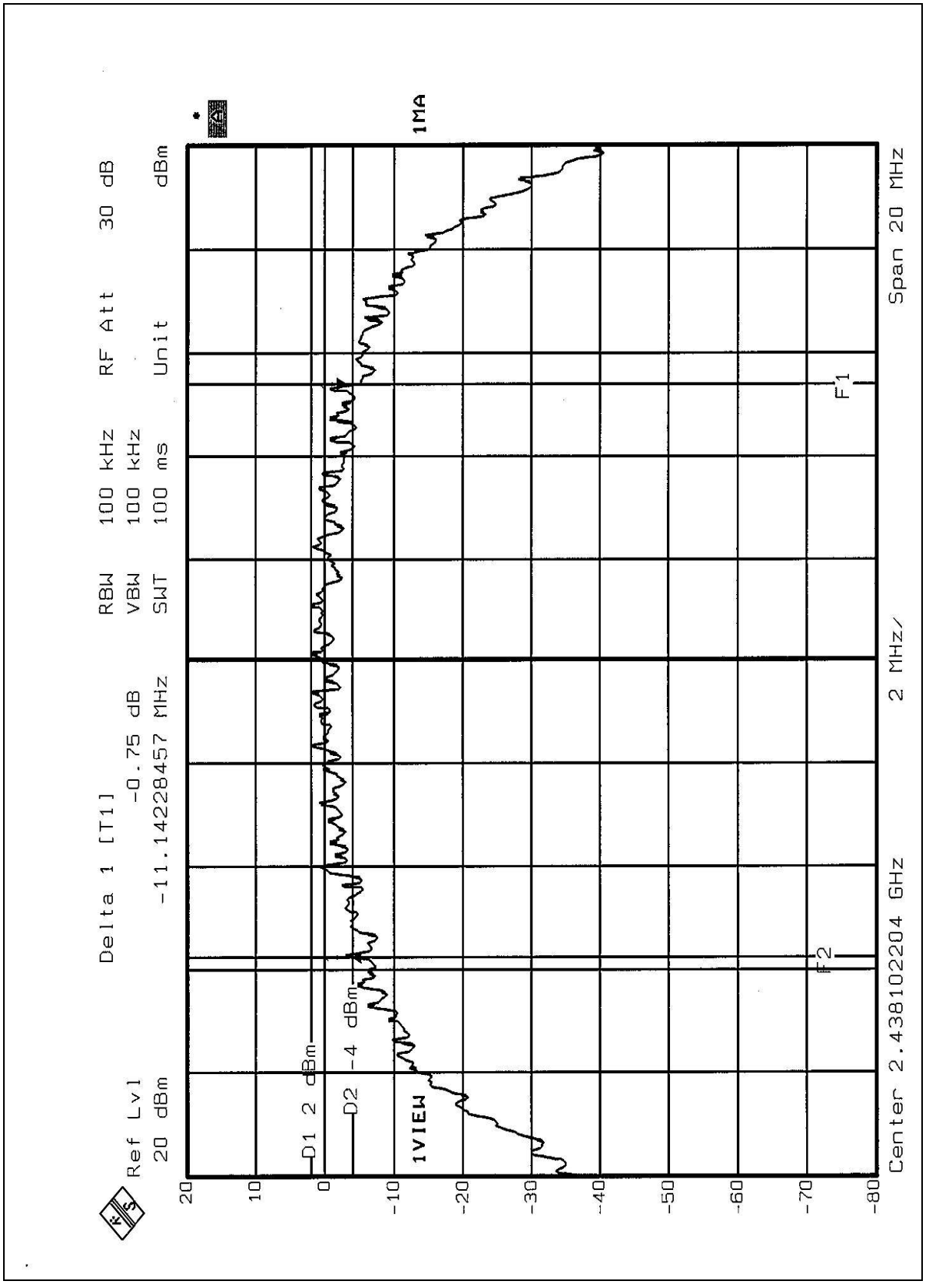
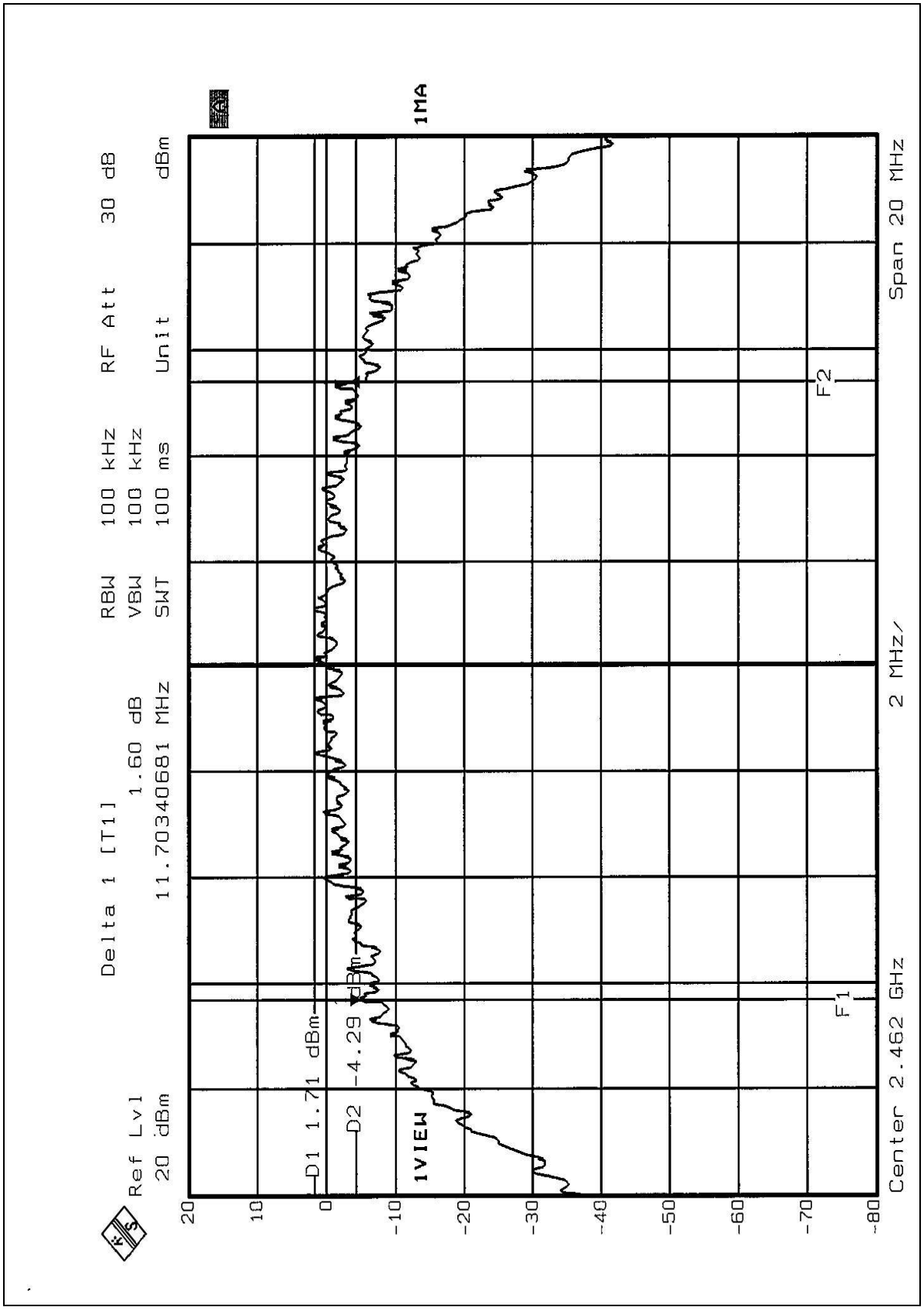
20 dBm
Delta 1 [T1]
0.30 dB
11.10220441 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 1.9 dBm
D2 -4.1 dBm
F1
F2
Center 2.412 GHz
2 MHz/
Span 20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH6


Delta 1 [T1]
-0.75 dB
-11.14228457 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
Ref Lvl
20 dBm
1MA
1VIEW
D1 2 dBm
D2 -4 dBm
F1
F2
Center 2.438102204 GHz
2 MHz/
Span 20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH11


Ref Lvl
20 dBm
Delta 1 [T1]
1.60 dB
11.70340681 MHz
RBW 100 kHz
VBW 100 kHz
SWT 100 ms
RF Att 30 dB
Unit dBm
1MA
1VIEW
D1 1.71 dBm
D2 -4.29 dBm
F1
F2
Center 2.462 GHz
2 MHz/
Span 20 MHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

## 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 |
|---|---|---|---|
| PEAK POWER SENSOR | NRV-Z32 | 100013 | Feb. 21, 2003 |
| POWER METER | NRVS | 100026 | Feb. 21, 2003 |

**NOTE:**

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

### 4.4.3 TEST PROCEDURES

The transmitter output was connected to the peak power meter.

### 4.4.4 TEST SETUP


### 4.4.5 EUT OPERATING CONDITIONS

Same as Item 4.3.5

## 4.4.6 TEST RESULTS

| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **ENVIRONMENTAL CONDITIONS** | 25 deg. C, 50%RH, 1005 hPa |
| **TESTED BY**: Bunny Yao | | | |

| CHANNEL | CHANNEL FREQUENCY (MHz) | PEAK POWER OUTPUT (dBm) | PEAK POWER LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | 14.33 | 30 | PASS |
| 6 | 2437 | 14.30 | 30 | PASS |
| 11 | 2462 | 14.00 | 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 | FSEK30 | 100049 | July 17, 2002 |

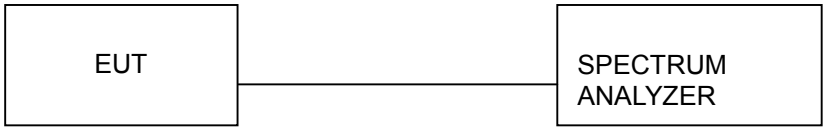
**NOTE:**

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

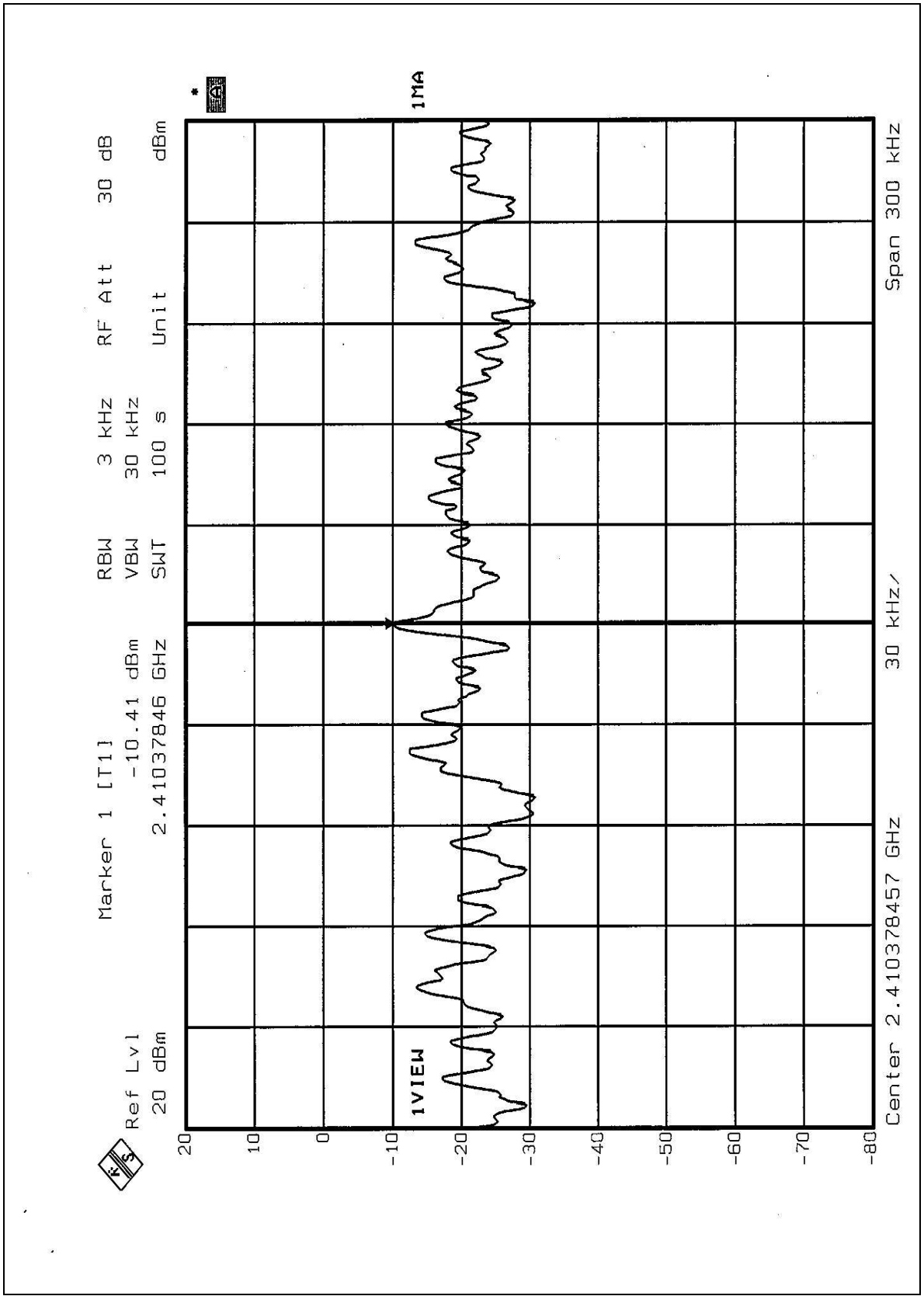
Same as 4.3.5

## 4.5.6 TEST RESULTS

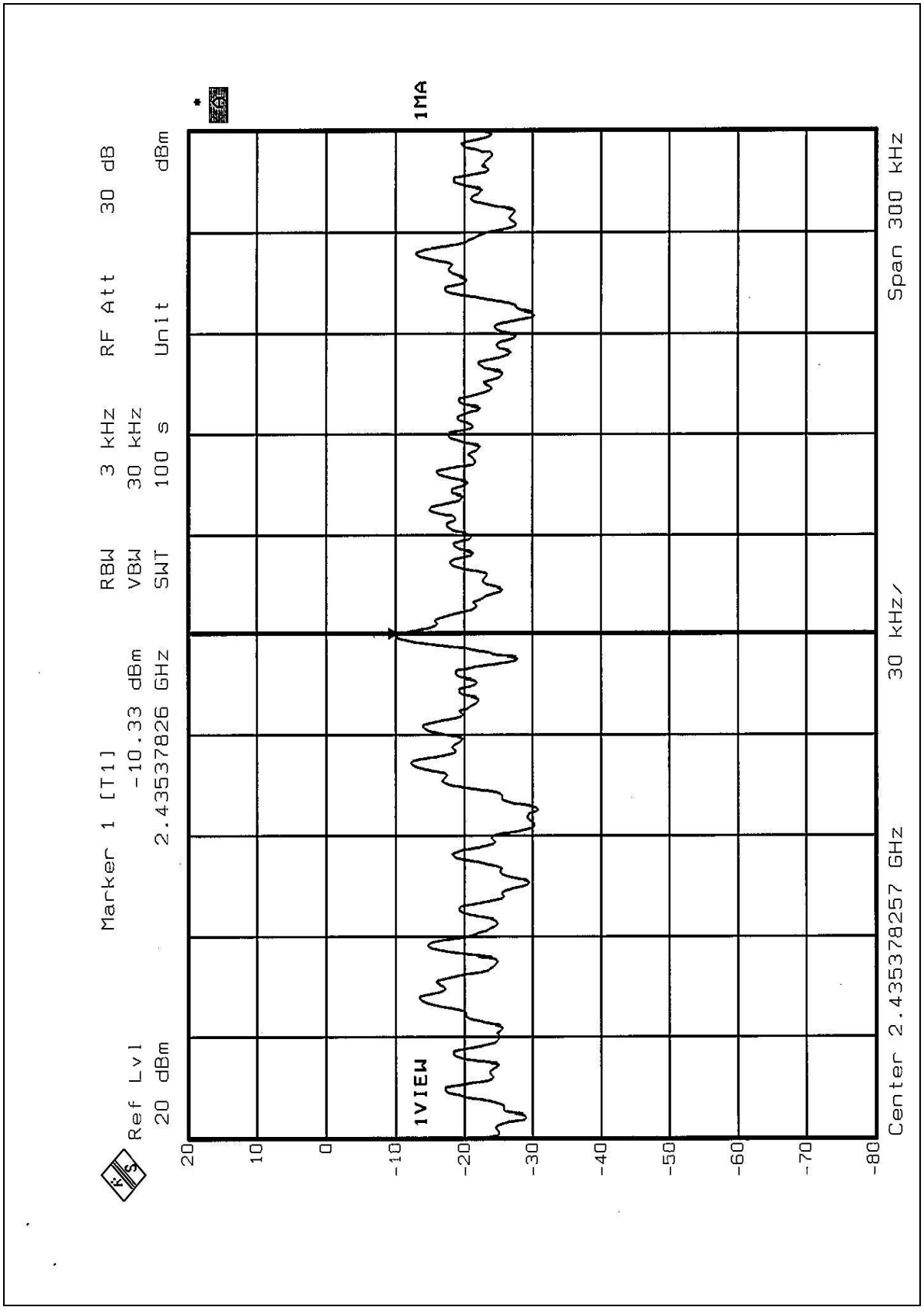
| | | | |
|---|---|---|---|
| **EUT** | Wireless LAN Modem MiniPCI Combo Card | **MODEL** | WN3601A |
| **INPUT POWER (SYSTEM)** | 120Vac, 60 Hz | **ENVIRONMENTAL CONDITIONS** | 25 deg. C, 50%RH, 1005 hPa |
| **TESTED BY**: Bunny Yao | | | |

| CHANNEL NUMBER | CHANNEL FREQUENCY (MHz ) | RF POWER LEVEL IN 3 KHz BW (dBm) | MAXIMUM LIMIT (dBm) | PASS/FAIL |
|---|---|---|---|---|
| 1 | 2412 | -10.41 | 8 | PASS |
| 6 | 2437 | -10.33 | 8 | PASS |
| 11 | 2462 | -10.62 | 8 | PASS |

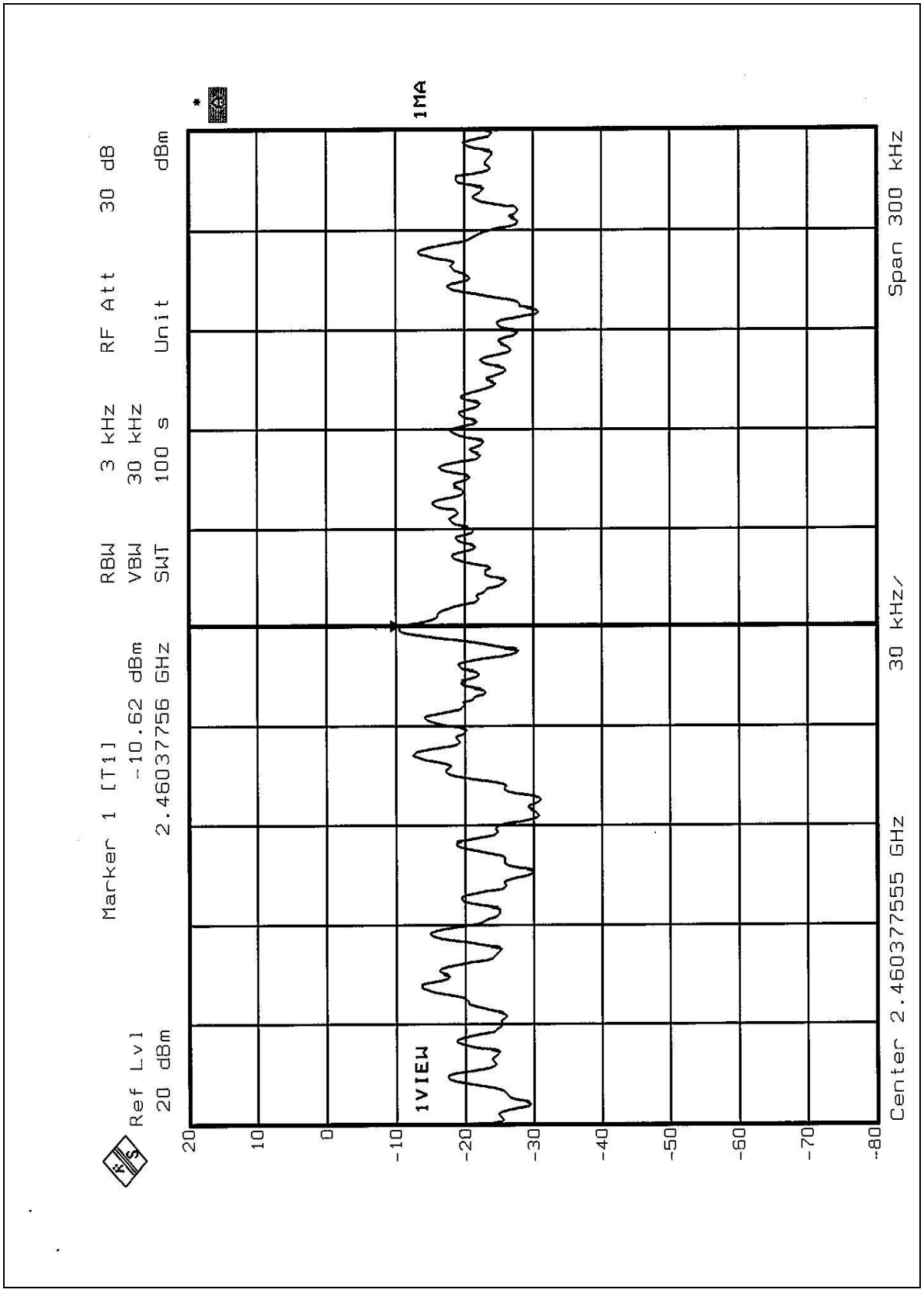
CH1


Ref Lvl
20 dBm
Marker 1 [T1]
-10.41 dBm
2.41037846 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
Center 2.410378457 GHz
30 kHz/
Span 300 kHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH6


Ref Lvl
20 dBm
Marker 1 [T1]
-10.33 dBm
2.43537826 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
Center 2.435378257 GHz
30 kHz/
Span 300 kHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80

CH11


Ref Lvl
20 dBm
Marker 1 [T1]
-10.62 dBm
2.46037756 GHz
RBW 3 kHz
VBW 30 kHz
SWT 100 s
RF Att 30 dB
Unit dBm
1MA
1VIEW
Center 2.460377555 GHz
30 kHz/
Span 300 kHz
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80