



Class II Permissive Change
Test Report
And Application for Grant of Equipment Authorization

TEST REPORT PERTAINING TO:

| Equipment Under Test | Model Number(s) |
|---|-----------------|
| Intel PRO/Wireless 3945ABG Network Connection | WM3945ABG |

CONFIGURATION

802.11a / 802.11b / 802.11g with a Universal Antenna Module (i-UAM61)

MEASUREMENTS PERFORMED IN ACCORDANCE WITH THE FOLLOWING STANDARD (S)

Regulatory Standard(s)

47 CFR Part 15, Subpart C Section 15.247

Test Method:

ANSI C63.4: 2003 American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz



Certificate Number: 1111.01

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Test Report #: INTEL-060626F

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| | REPORT BODY | APPENDICES | | TOTAL PAGES |
|-------|-------------|------------|----------|-------------|
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1.0 REGULATORY COMPLIANCE GUIDELINES

Aegis Labs, Inc. operates as both a Nevada and California Corporation with no organizational or financial relationship with any company, institution, or private individual. Testing and engineering functions provided by Aegis Labs were furnished by RF technicians and engineers with accredited qualifications and training credentials to carry out their duties.

The object of this report was to publish verifiable test results of an EUT subjected to the tests outlined in the standard listed on the cover page of this report.

1.1 Guidelines For Testing To Emissions Standards

This standard for EMC emission requirements apply to electrical equipment for Information Technology Equipment (ITE). Compliance to these standards and in combination with the other standards listed in this test report can be used to demonstrate presumption of compliance with the protection requirements of the appropriate agency standard.

The purpose of this standard is to specify minimum requirements for emissions regarding electromagnetic compatibility (EMC) and protect the radio frequency spectrum 9 kHz. – 400 GHz. from unwanted interference generated from electrical/digital systems that intentionally or unintentionally generated RF energy. The emissions standards, normative documents and/or publications were used to conduct all tests performed on the equipment herein referred to as “Equipment Under Test”.



2.0 SUMMARY OF TEST RESULTS

802.11a Mode (5745-5825 MHz)

EMISSIONS STANDARD

| FCC Part 15 Section | Description | Results | Comments |
|----------------------------|--|----------------|---|
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | 5745 MHz = 16.58 MHz 5785 MHz = 16.67 MHz 5825 MHz = 16.67 MHz <i>Per Original Filing</i> |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. | PASSED | 5745 MHz = 19.50 dBm = 89.13 mW 5785 MHz = 19.90 dBm = 97.72 mW 5825 MHz = 19.80 dBm = 95.50 mW |
| 15.247(b)(5) | The intentional radiator shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the FCC guidelines per Section 1.1307(b)(1). | PASSED | Refer to MPE Calculations Exhibit |
| 15.247(c) | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. | PASSED | See Data Sheets |
| 15.247(c) | Radiated emissions, which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a). All others must be < -20dBc. | PASSED | See Data Sheets |
| 15.247(d) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | 5745 MHz = -8.50 dB 5785 MHz = -9.50 dB 5825 MHz = -9.83 dB <i>Per Original Filing</i> |
| 15.207 | AC Conducted Emissions | PASSED | <i>See Original Filing</i> |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | <i>See Original Filing</i> |



2.0 Summary of Test Results (Continued)

802.11b Mode (2400-2483.5 MHz)

EMISSIONS STANDARD

| FCC Part 15 Section | Description | Results | Comments |
|----------------------------|--|----------------|---|
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | 2412 MHz = 8.33 MHz 2437 MHz = 8.83 MHz 2462 MHz = 9.17 MHz <i>Per Original Filing</i> |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. | PASSED | 2412 MHz = 19.89 dBm = 97.50 mW 2437 MHz = 20.42 dBm = 110.15 mW 2462 MHz = 20.58 dBm = 114.29 mW |
| 15.247(b)(5) | The intentional radiator shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the FCC guidelines per Section 1.1307(b)(1). | PASSED | Refer to MPE Calculations Exhibit |
| 15.247(c) | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. | PASSED | See Data Sheets |
| 15.247(c) | Radiated emissions, which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a). All others must be < -20dBc. | PASSED | See Data Sheets |
| 15.247(d) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | 2412 MHz = -10.33 dB 2437 MHz = -7.83 dB 2462 MHz = -8.83 dB <i>Per Original Filing</i> |
| 15.207 | AC Conducted Emissions | PASSED | <i>See Original Filing</i> |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | <i>See Original Filing</i> |



2.0 Summary of Test Results (Continued)

802.11g Mode (2400-2483.5 MHz)

EMISSIONS STANDARD

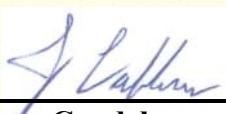
| FCC Part 15 Section | Description | Results | Comments |
|---------------------|--|---------|--|
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | 2412 MHz = 16.58 MHz 2437 MHz = 16.67 MHz 2462 MHz = 16.67 MHz <i>Per Original Filing</i> |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. | PASSED | 2412 MHz = 24.28 dBm = 267.92 mW 2437 MHz = 24.83 dBm = 304.09 mW 2462 MHz = 24.14 dBm = 259.42 mW |
| 15.247(b)(5) | The intentional radiator shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the FCC guidelines per Section 1.1307(b)(1). | PASSED | Refer to MPE Calculations Exhibit |
| 15.247(c) | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. | PASSED | See Data Sheets |
| 15.247(c) | Radiated emissions, which fall in the restricted bands, as defined in Sec. 15.205(a), must also comply with the radiated emission limits specified in Sec. 15.209(a). All others must be < -20dBc. | PASSED | See Data Sheets |
| 15.247(d) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | 2412 MHz = -9.17 dB 2437 MHz = -8.17 dB 2462 MHz = -9.17 dB <i>Per Original Filing</i> |
| 15.207 | AC Conducted Emissions | PASSED | <i>See Original Filing</i> |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | <i>See Original Filing</i> |

ANALYSIS AND CONCLUSIONS

Based upon the measurement results we find that this equipment is within the limits of the global standards listed on the cover page of this test report. All results are based on a test of one sample. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be required.

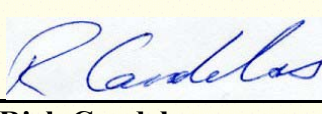
Approval Signatories

Test and Report Completed By:


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07/05/06
Date:

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07/05/06
Date:



3.0 ADMINISTRATIVE DATA AND TEST DESCRIPTION

| | |
|--------------------------------------|--|
| DEVICE TESTED: | ITE Type: Intel PRO/Wireless 3945ABG Network Connection Model Number(s): WM3945ABG Serial Number: 00B11A295CVD26965002 FCC ID: PD9WM3945ABG |
| DATE EUT RECEIVED: | June 15 th , 2006 |
| TEST DATE(S): | June 26 th – 30 th , 2006 |
| ORIGIN OF TEST SAMPLE(S): | Production |
| EQUIPMENT CLASS: | EUT tested as CLASS B device |
| RESPONSIBLE PARTY: | Intel Corporation 2111 NE 25 th Avenue Hillsboro, Oregon 97124 |
| CLIENT CONTACT: | Mr. Robert Paxman |
| MANUFACTURER: | Intel Corporation |
| TEST LOCATION: | Aegis Labs, Inc. 32231 Trabuco Creek Road Trabuco Canyon, CA 92678 Open Area Test Site #2 |
| ACCREDITATION CERTIFICATE(S): | A2LA Certificate Number: 1111.01, Valid through February 28, 2008 |
| PURPOSE OF TEST: | To demonstrate compliance with the standards as described in Sections 1.0 & 2.0 of this report. |
| UNCERTAINTY BUDGET: | Proficiency Testing and Uncertainty Calculations for all tests indicated in this report have been conducted in accordance with ISO 17025: 2005 requirements Section 5.4.6, and 5.9. Uncertainty Budgets and Proficiency Test results available upon request. |
| STATEMENT OF CALIBRATION: | All accredited equipment calibrations were performed by Liberty Labs, Inc. and World Cal. with typical calibration uncertainty estimates derived from ISO Guide to the determination of uncertainties with a Coverage Factor of k=2 for 95% level of confidence. |



4.0 DESCRIPTION OF EUT CONFIGURATION

4.1 EUT Description

| Equipment Under Test (EUT) | |
|--|---|
| Trade Name: | Intel PRO/Wireless 3945ABG Network Connection |
| Model Number: | WM3945ABG |
| Frequency Range: | 802.11a = 5745 – 5825 MHz 802.11b/g = 2412 – 2462MHz |
| Type of Transmission: | Direct Sequence Spread Spectrum |
| Transfer Rate: | 1/5.5/11 Mbps for 802.11b mode 6/36/54 Mbps for 802.11g and 802.11a modes |
| Number of Channels: | 802.11a mode (5725-5850 MHz) = 5 802.11b mode (2400-2483.5 MHz) = 11 802.11g mode (2400-2483.5 MHz)= 11 |
| Modulation Type: | DBPSK, DQPSK, CCK, OFDM |
| Antenna Type: | Universal Antenna Module |
| Antenna Gain (See Note 2): | -0.12 dBi @ 5 GHz / -1.10 dBi @ 2.4 GHz |
| Transmit Output Power: | 18-20 dBm (Typical) for 802.11a mode 20 dBm (Typical) for 802.11b mode 24-25 dBm (Typical) for 802.11g mode Please see Appendix A (Data Sheets) for actual output power. |
| Power Supply: | 3.3VDC from computer MPCPI slot. |
| Number of External Test Ports Exercised: | 2 Antenna Ports (1 Main & 1 Auxiliary) |

The Intel PRO/Wireless 3945ABG Network Connection is an embedded 802.11a/b/g network adapter operating in the 2.4 GHz and 5 GHz spectrum. The EUT is based on the Mini Card form factor designed to meet the space and size requirements for thin and light notebook PCs. It is capable of a data rate of up to 52 Mbps.

NOTE 1: For a more detailed description, please refer to the manufacture's specifications or User's Manual.

NOTE 2: The EUT was tested with a Universal Antenna Module (i-UAM61). (Refer to the antenna specifications exhibits).



4.2 EUT Configuration

The EUT was tested installed in the Mini PCI-E slot of the host computer as a modular device using a PCI extender board to extend the EUT outside the computer chassis. The EUT was then connected to an antenna via its Main antenna ports. Data for a Universal Antenna Module (i-UAM61) can be found in Appendix A (Data Sheets)

The low, middle, and high channels were tested in 802.11a, b, & g modes. Also, the EUT was tested transmitting from the MAIN antenna port. The EUT was placed in either continuous transmit or continuous receive mode by a program provided by the manufacturer (GRTT *Version 1.1.1*).



4.3 List of EUT, Sub-Assemblies and Host Equipment

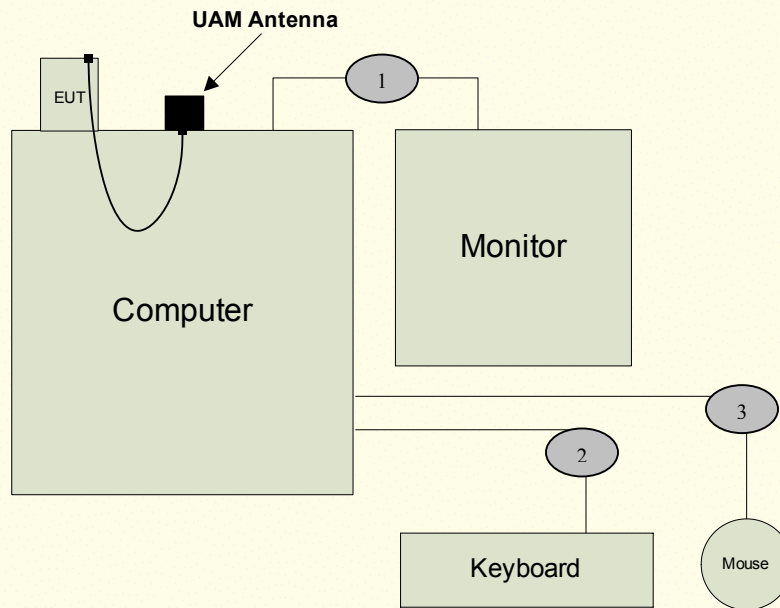
| Equipment Under Test | | | |
|----------------------|---|----------------------|----------------------|
| Manufacturer | Equipment Name | Model or Part Number | Serial Number |
| Intel Corporation | Intel PRO/Wireless 3945ABG Network Connection | WM3945ABG | 00B11A295CVD26965002 |

| EUT Sub Assemblies | | | |
|--------------------|--------------------------|----------------------|---------------|
| Manufacturer | Equipment Name | Model or Part Number | Serial Number |
| Tyco Electronics | Universal Antenna Module | i-UAM61 | N/A |

| HOST EQUIPMENT LIST | | | |
|---------------------|----------------|----------------------|---------------|
| Manufacturer | Equipment Name | Model or Part Number | Serial Number |
| Computer | Intel | Generic | IZTGVV4312035 |
| Monitor | Compaq | 473A | 545AF16AD243 |
| Keyboard | Logitech | Y-BF37 | MCTZ5200581 |
| Mouse | Logitech | M-BJ58 | LZE14759424 |

NOTE: All the power cords of the above support equipment are standard and non-shielded.

4.4 I/O Cabling Diagram and Description



Signal Line Cable Description

| Cable | Length | Construction | Source Connector | Destination Connector | Bundled Length | Ferrite Attached | Note |
|-------|--------|------------------------------|--|-----------------------|----------------|------------------|------|
| 1 | 1.5m | Round, Braid & Foil Shielded | Host Computer: Metallic DB-15 | Monitor: Hardwired | N/A | N/A | N/A |
| 2 | 1.5m | Round, Braid & Foil Shielded | Host Computer: Metallic 8-pin Mini DIN | Keyboard: Hardwired | N/A | N/A | N/A |
| 3 | 1.5m | Round, Braid & Foil Shielded | Host Computer: Metallic 8-pin Mini DIN | Mouse: Hardwired | N/A | N/A | N/A |



4.5 EMC Test Hardware and Software Measurement Equipment

| TEST EQUIPMENT LIST - Emissions | | | | | |
|--|--------------------|----------------------|---------------|----------------------|-------------------------------|
| Equipment Name | Manufacturer | Model Number | Serial Number | Calibration Due Date | Maintenance Calibration Cycle |
| Spectrum Analyzer | Agilent | 8564EC | 4046A00387 | 08/15/06 | 1 Year |
| Antenna - Horn | EMCO | 3115 | 2230 | 05/15/07 | 1 Year |
| Preamp | Miteq | JS42-01001800-25-10P | 815980 | 07/21/06 | 1 Year |
| 18 Foot Coax | Semflex | X116BFSX10216 | 546 | 12/14/06 | 1 Year |
| 2.4 GHz Notch Filter | Micro-Tronics | BRM50702-02 | 003 | 10/21/06 | 1.5 Years |
| 5.15-5.35 GHz Notch Filter | Microwave Circuits | N0452502 | 3173-01 | 10/21/06 | 1.5 Years |
| 5.725-5.850 GHz Notch Filter | Microwave Circuits | N0257881 | 3173-01 | 10/21/06 | 1.5 Years |
| Antenna - 18-26.5 GHz Pre-amplified Horn | Aegis Labs, Inc. | H042 | SLK-35-3W | 02/08/07 | 1 Year |
| Power Meter | Anritsu | ML2487A | 6K00001785 | 05/30/07 | 1 Year |
| Wide Bandwidth Sensor | Anritsu | MA2491A | 31193 | 05/30/07 | 1 Year |
| 12dB Attenuator | Narda | 4779-12 | 203 | 07/09/06 | 1 Year |
| Temperature/Humidity Monitor | Dickson | TH550 | 7255185 | 03/24/07 | 1 Year |

5.0 CONDITIONS DURING EMISSIONS MEASUREMENTS

5.1 General

All measurements were made according to the procedures defined in or referred to by the standard listed on the cover page of this report. The measurements were made in the operating mode producing the largest emissions consistent with normal operation and connected to the minimum configuration of auxiliary devices.

5.2 Conducted Emissions Test Setup

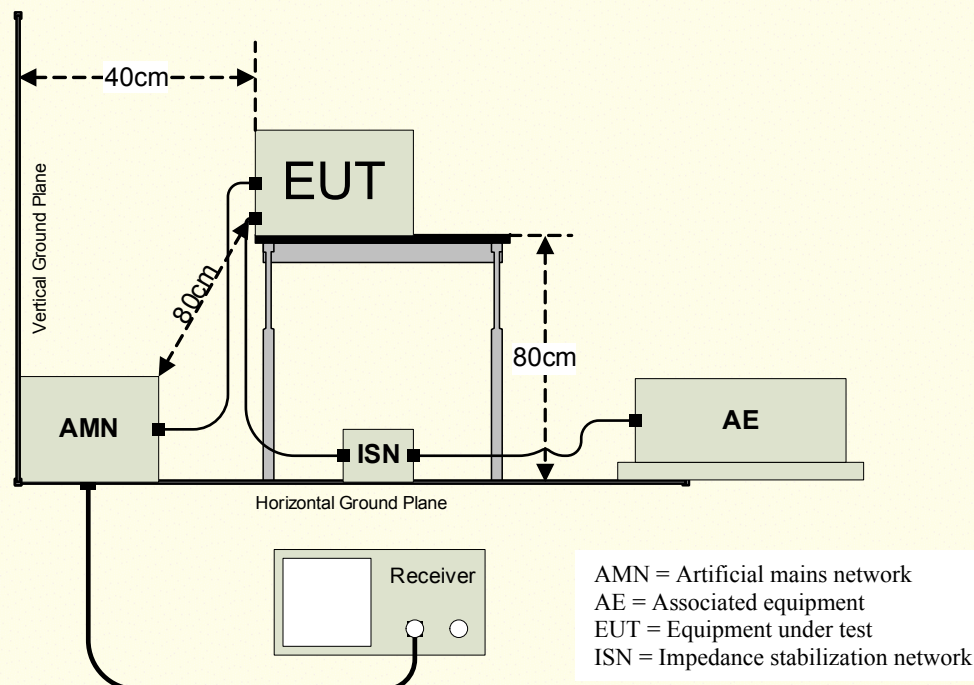
The following was the test configuration.

EUT signal cables that hung closer than 40 cm to the horizontal metal ground plane were folded back and forth forming a bundle 30 cm to 40 cm long. The power cord of the EUT was also bundled in the center and plugged into one of the artificial mains network (AMN). All peripheral equipment was powered from a second AMN via a multiple outlet strip placed at a distance on 10cm from each other. The AMN and ISN were positioned 80cm from the EUT. Signal cables that were not connected to an AE were terminated using the correct termination. If applicable, the current probe was placed at 0.1 m from the ISN.

Peak, quasi-peak and/or average detectors were used for testing performed between 150 kHz and 30 MHz. A swept frequency scan was performed for both Line 1 and Line 2. The six highest readings were compared against the limit and recorded in the data sheet along with a snapshot image of the sweep scan. The graphical scans in Appendix A only reflect peak readings while the tabulated data sheets reflect peak, average, and/or quasi-peak measurements.

Climatic Conditions:

The EUT was tested within its intended operating and climatic conditions.



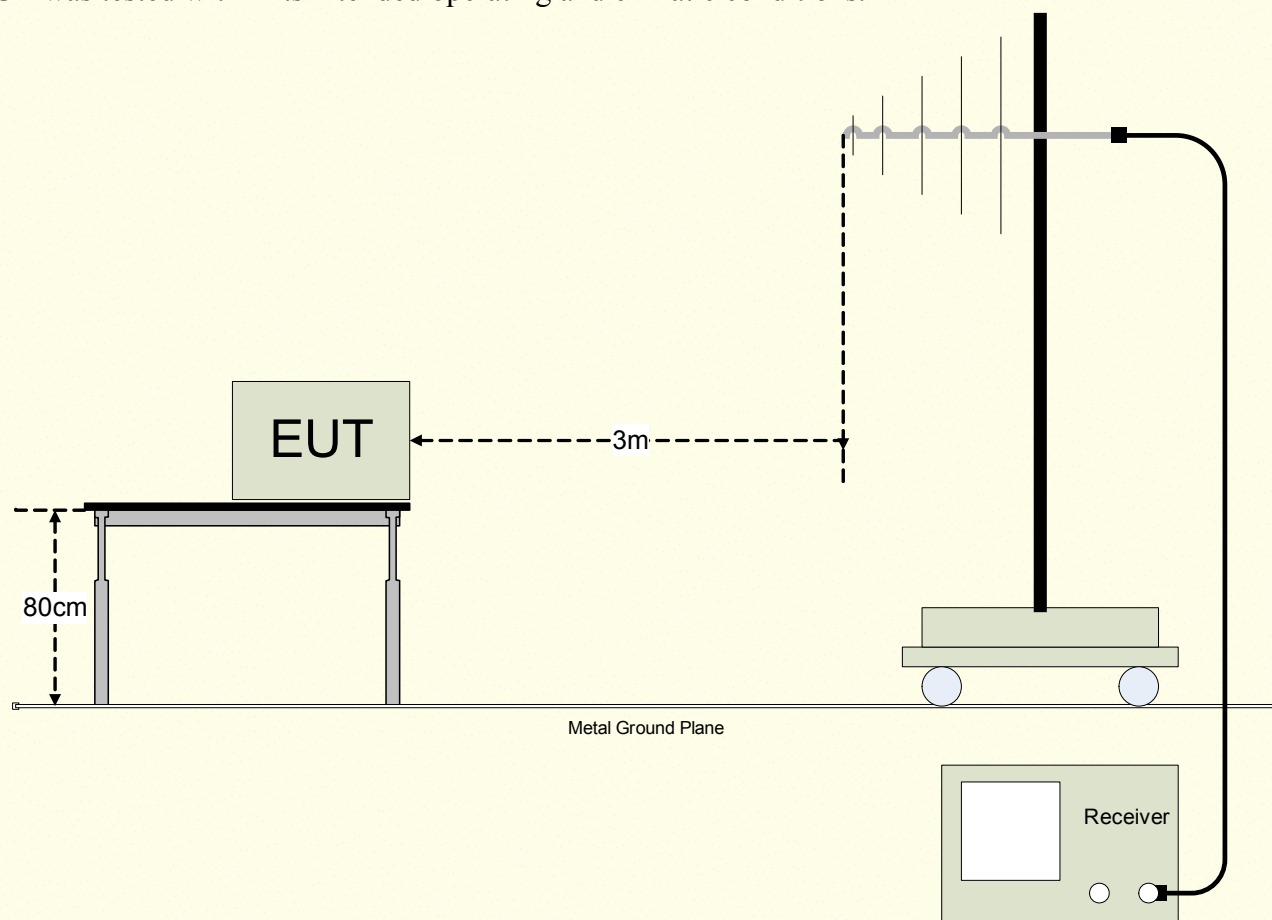
5.3 Radiated Emissions Test Setup

The Open Area Test Site (OATS) was used for radiated emission testing. The receiving (Rx) antenna(s) was placed 10m from the nearest side of the EUT facing the Rx antenna. The EUT (if floor-standing) was placed directly on the flush-mounted 360 degree rotating turntable. The EUT (if table-top) was placed directly on an 80cm high non-metallic table, and the table was placed on the rotating turntable. During the initial EMI scan, all the suspect frequencies, i.e.; harmonics, broadband signals were checked with the Rx broadband antennas in both vertical and horizontal polarities. The biconical Rx, log periodic Rx, and horn Rx antennas were used from 30MHz – 299.99MHz, 300MHz – 1000MHz, and 1GHz – 18GHz respectively.

Upon completion of all harmonic and broadband measurements, the balance of any remaining frequencies was checked between 30MHz – 18GHz. Any signals appearing within 20 dB of the classification limit was measured. Each signal was maximized by first rotating the turntable at least 360 degrees and recording the azimuth in the data sheet. Lastly, the Rx antenna was raised and/or lowered to maximize the signal elevation. If the measured signal was obtained using the peak detector and that signal appeared within 3 dB of the regulatory limit line, then the same signal was re-measured using the quasi-peak detector on the EMI receiver. Both meter readings if necessary were recorded on the data sheet.

Climatic Conditions:

The EUT was tested within its intended operating and climatic conditions.





APPENDIX A

TEST DATA



RADIATED EMISSIONS TEST RESULTS

| | | | |
|-----------------------|---|------------------------|--------------|
| CLIENT: | Intel Corporation | DATE: | 06/27/06 |
| EUT: | Intel PRO/Wireless 3945ABG Network Connection | PROJECT NUMBER: | INTEL-060626 |
| MODEL NUMBER: | WM3945ABG | TEST ENGINEER: | RJ |
| SERIAL NUMBER: | 00B11A295CVD26965002 | SITE #: | 2 |
| CONFIGURATION: | Tested installed in the host computer's mini PCI slot in 802.11a (5745-5825 MHz) mode with a Universal Antenna Module. | TEMPERATURE: | 29 deg. C |
| | | HUMIDITY: | 44% RH |
| | | TIME: | 1:25 PM |

| | |
|---------------------|---|
| Description: | Radiated RF Emissions (1 GHz – 18 GHz) |
| Results: | PASSED Horizontal and Vertical Antenna Polarizations Class B Limits |
| Note: | Radiated Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. <ul style="list-style-type: none">120VAC / 60 Hz. |

| Unwanted Spurious Emissions Limits | | | |
|------------------------------------|-----------------------|--|--|
| Frequency (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) (Emissions in the restricted bands) | Field Strength (dBm/MHz) (Emissions outside the restricted bands) |
| Above 960 | 500 | 54.00 (Average) 74.00 (Peak) | < -20 dBc |

Radiated Emissions Sample Calculations

$$\text{Corrected Meter Reading} = \text{Meter Reading} + F + C - D$$

Where, F = Antenna Factor

C = Cable Factor

G = Amplifier Gain

D = Distance Factor (if applicable)

Therefore, the equation for determining the Corrected Meter Reading Limit (CML) is:

$$\text{CML} = \text{Specification Limit} - F - C + D$$



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-02*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|----------------|
| 5745.00 | 70.67 | 100 | 135 | | | 4.99 | 35.25 | 110.91 | | | Ch. 149 |
| 5745.00 | | | | 61.88 | A | 4.99 | 35.25 | 102.12 | | | |
| 5785.00 | 68.83 | 100 | 135 | | | 5.01 | 35.26 | 109.09 | | | Ch. 157 |
| 5785.00 | | | | 60.15 | A | 5.01 | 35.26 | 100.41 | | | |
| 5825.00 | 67.67 | 100 | 135 | | | 5.02 | 35.27 | 107.96 | | | Ch. 165 |
| 5825.00 | | | | 59.04 | A | 5.02 | 35.27 | 99.33 | | | |

RADIATED EMISSIONS – Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|----------------|
| 5745.00 | 68.67 | 100 | 135 | | | 4.99 | 35.05 | 108.70 | | | Ch. 149 |
| 5745.00 | | | | 60.00 | A | 4.99 | 35.05 | 100.03 | | | |
| 5785.00 | 66.16 | 100 | 135 | | | 5.01 | 35.07 | 106.24 | | | Ch. 157 |
| 5785.00 | | | | 56.46 | A | 5.01 | 35.07 | 96.54 | | | |
| 5825.00 | 66.00 | 100 | 135 | | | 5.02 | 35.10 | 106.12 | | | Ch. 165 |
| 5825.00 | | | | 56.67 | A | 5.02 | 35.10 | 96.79 | | | |

NOTE: Fundamental signals measured to calculate the band edge field strengths using the “Marker Delta Method”.



Radiated Emissions Test Results (Continued)

Band Edge Field Strength Measurements in 802.11a mode (5745-5825 MHz)

Channels 149 & 165

Continuous TX at MAIN Antenna port with Universal Antenna Module

Aegis Labs, Inc. File #: INTEL-060626-02

RADIATED EMISSIONS - Horizontal Antenna Polarization

| <i>Freq. (MHz)</i> | <i>Meter Reading (dBuV)</i> | <i>Antenna Height (cm)</i> | <i>Azimuth (degrees)</i> | <i>Quasi pk or AVG (dBuV)</i> | <i>Cable Factor (dB)</i> | <i>Ant. Factor (dB)</i> | <i>Corrected Reading (dBuV)</i> | <i>Limits (dBuV)</i> | <i>Diff (dB) +=FAIL</i> | <i>Comments</i> |
|------------------------|-------------------------------------|------------------------------------|------------------------------|-----------------------------------|----------------------------------|---------------------------------|---|--------------------------|-----------------------------|-----------------|
| 5725.00 | 37.50 | 100 | 135 | | 4.98 | 35.25 | 77.72 | 90.91 | -13.18 | Ch. 149 |
| 5850.00 | 31.00 | 100 | 135 | | 5.03 | 35.27 | 71.30 | 87.96 | -16.65 | Ch. 165 |

RADIATED EMISSIONS – Vertical Antenna Polarization

| <i>Freq. (MHz)</i> | <i>Meter Reading (dBuV)</i> | <i>Antenna Height (cm)</i> | <i>Azimuth (degrees)</i> | <i>Quasi pk or AVG (dBuV)</i> | <i>Cable Factor (dB)</i> | <i>Ant. Factor (dB)</i> | <i>Corrected Reading (dBuV)</i> | <i>Limits (dBuV)</i> | <i>Diff (dB) +=FAIL</i> | <i>Comments</i> |
|------------------------|-------------------------------------|------------------------------------|------------------------------|-----------------------------------|----------------------------------|---------------------------------|---|--------------------------|-----------------------------|-----------------|
| 5725.00 | 35.33 | 100 | 135 | | 4.98 | 35.04 | 75.34 | 88.70 | -13.36 | Ch. 149 |
| 5850.00 | 30.50 | 100 | 135 | | 5.03 | 35.11 | 70.64 | 86.12 | -15.47 | Ch. 165 |

NOTE: The “Band Edge Field Strength” was calculated using the “Fundamental” and “Conducted Band Edge” measurements per the “Marker-Delta Method” with the following formula:

$$BE = F_m - \Delta m$$

Where

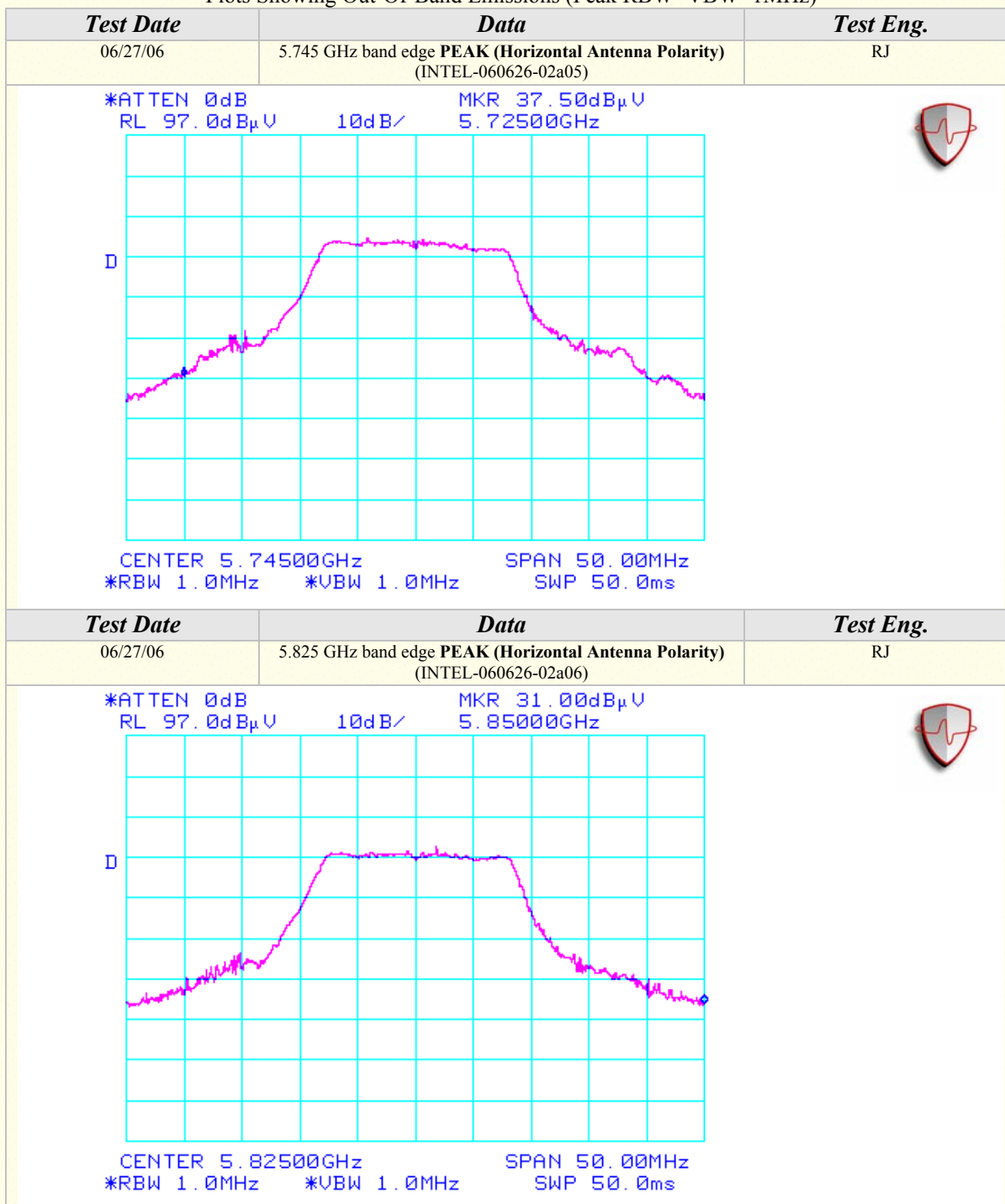
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

Δm = Measured Conducted Band Edge Delta (Peak or Average)

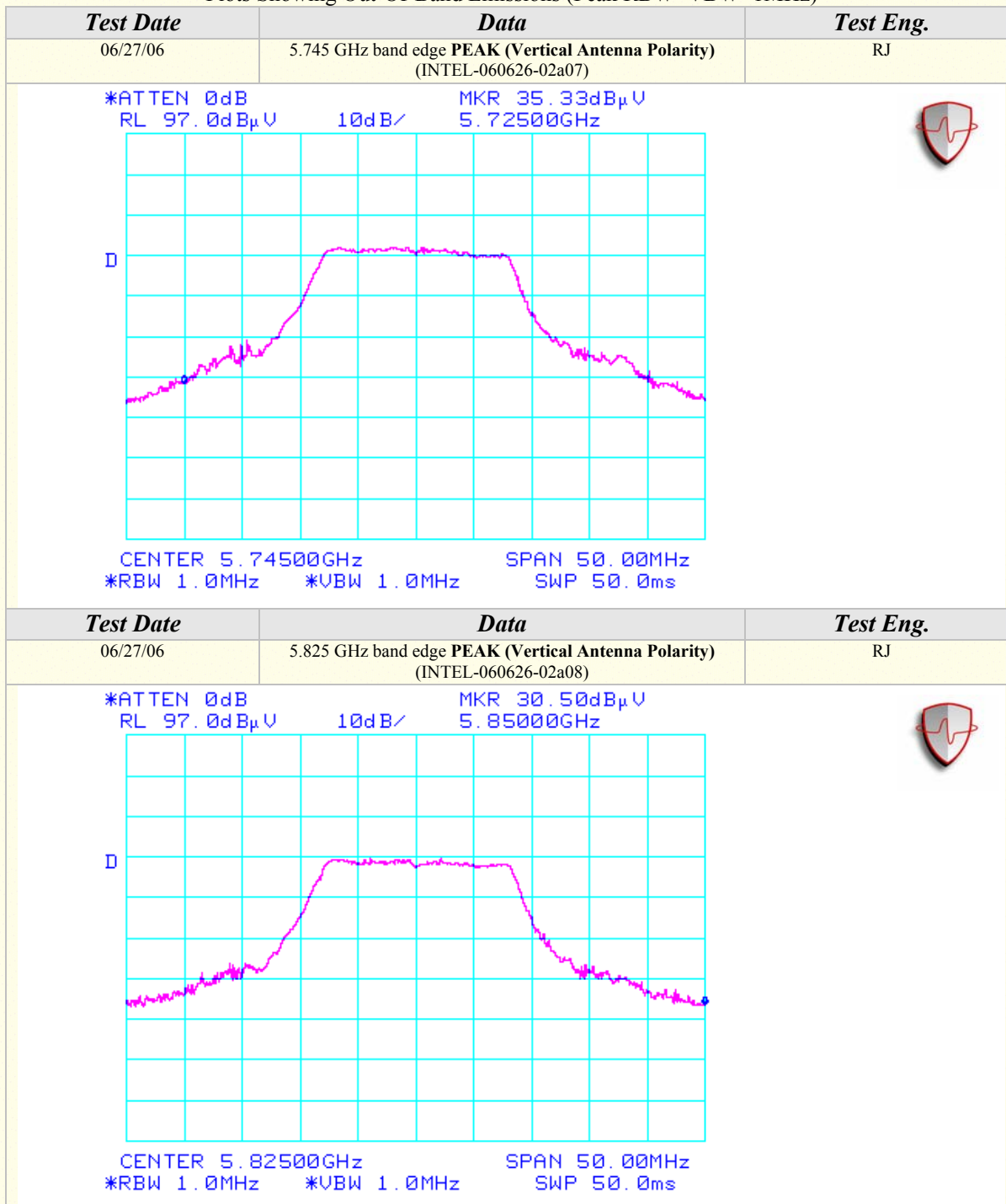
Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz)



Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz)





Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

| RADIATED EMISSIONS - Horizontal Antenna Polarization | | | | | | | | | | | |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|--------|
| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | |
| EUT in Continuous Transmit Mode on Channel 149 (5.745 GHz) | | | | | | | | | | | |
| 3830.00 | 51.50 | 100 | 135 | | | 46.75 | 4.05 | 33.13 | 41.93 | 74.00 | -32.07 |
| 3830.00 | | | | 39.50 | A | 46.75 | 4.05 | 33.13 | 29.93 | 54.00 | -24.07 |
| 11490.00 | 58.00 | 100 | 135 | | | 44.97 | 7.41 | 39.19 | 59.64 | 74.00 | -14.36 |
| 11490.00 | | | | 42.39 | A | 44.97 | 7.41 | 39.19 | 44.03 | 54.00 | -9.97 |
| 17235.00 | 52.50 | 100 | 180 | | | 43.94 | 9.09 | 42.48 | 60.13 | 90.91 | -30.78 |
| EUT in Continuous Transmit Mode on Channel 157 (5.785 GHz) | | | | | | | | | | | |
| 3856.66 | 52.83 | 100 | 225 | | | 46.74 | 4.07 | 33.18 | 43.34 | 74.00 | -30.66 |
| 3856.66 | | | | 40.13 | A | 46.74 | 4.07 | 33.18 | 30.64 | 54.00 | -23.36 |
| 11570.00 | 57.17 | 100 | 135 | | | 44.97 | 7.42 | 39.23 | 58.85 | 74.00 | -15.15 |
| 11570.00 | | | | 41.57 | A | 44.97 | 7.42 | 39.23 | 43.25 | 54.00 | -10.75 |
| 17355.00 | 52.17 | 100 | 135 | | | 43.88 | 9.11 | 43.08 | 60.47 | 89.09 | -28.62 |
| EUT in Continuous Transmit Mode on Channel 165 (5.825 GHz) | | | | | | | | | | | |
| 3883.33 | 54.50 | 100 | 225 | | | 46.74 | 4.08 | 33.24 | 45.09 | 74.00 | -28.91 |
| 3883.33 | | | | 41.15 | A | 46.74 | 4.08 | 33.24 | 31.74 | 54.00 | -22.26 |
| 11650.00 | 56.50 | 100 | 135 | | | 44.96 | 7.42 | 39.26 | 58.21 | 74.00 | -15.79 |
| 11650.00 | | | | 43.26 | A | 44.96 | 7.42 | 39.26 | 44.97 | 54.00 | -9.03 |
| 17355.00 | 48.17 | 100 | 135 | | | 43.88 | 9.11 | 43.08 | 56.47 | 87.96 | -31.49 |



Radiated Emissions Test Results (Continued)

| RADIATED EMISSIONS - Vertical Antenna Polarization | | | | | | | | | | | |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|--------|
| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | |
| EUT in Continuous Transmit Mode on Channel 149 (5.745 GHz) | | | | | | | | | | | |
| 3830.00 | 51.83 | 100 | 135 | | | 46.75 | 4.05 | 32.76 | 41.89 | 74.00 | -32.11 |
| 3830.00 | | | | 39.29 | A | 46.75 | 4.05 | 32.76 | 29.35 | 54.00 | -24.65 |
| 11490.00 | 55.50 | 100 | 135 | | | 44.97 | 7.41 | 39.19 | 57.14 | 74.00 | -16.86 |
| 11490.00 | | | | 41.23 | A | 44.97 | 7.41 | 39.19 | 42.87 | 54.00 | -11.13 |
| 17235.00 | 52.33 | 100 | 135 | | | 43.94 | 9.09 | 42.58 | 60.06 | 88.70 | -28.64 |
| EUT in Continuous Transmit Mode on Channel 157 (5.785 GHz) | | | | | | | | | | | |
| 3856.66 | 53.00 | 100 | 135 | | | 46.74 | 4.07 | 32.83 | 43.15 | 74.00 | -30.85 |
| 3856.66 | | | | 40.28 | A | 46.74 | 4.07 | 32.83 | 30.43 | 54.00 | -23.57 |
| 11570.00 | 53.50 | 100 | 135 | | | 44.97 | 7.42 | 39.23 | 55.18 | 74.00 | -18.82 |
| 11570.00 | | | | 40.32 | A | 44.97 | 7.42 | 39.23 | 42.00 | 54.00 | -12.00 |
| 17355.00 | 49.00 | 100 | 135 | | | 43.88 | 9.11 | 43.18 | 57.40 | 86.24 | -28.84 |
| EUT in Continuous Transmit Mode on Channel 165 (5.825 GHz) | | | | | | | | | | | |
| 3883.33 | 53.17 | 100 | 135 | | | 46.74 | 4.08 | 32.90 | 43.42 | 74.00 | -30.58 |
| 3883.33 | | | | 40.71 | A | 46.74 | 4.08 | 32.90 | 30.96 | 54.00 | -23.04 |
| 11650.00 | 55.67 | 100 | 135 | | | 44.96 | 7.42 | 39.26 | 57.38 | 74.00 | -16.62 |
| 11650.00 | | | | 43.48 | A | 44.96 | 7.42 | 39.26 | 45.19 | 54.00 | -8.81 |
| 17475.00 | 52.17 | 100 | 135 | | | 43.81 | 9.12 | 43.78 | 61.25 | 86.12 | -24.87 |



Spurious Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-05*

| RADIATED EMISSIONS - Horizontal Antenna Polarization | | | | | | | | | | |
|---|----------------------------|---------------------------|----------------------|---------------------------|----------------------|-----------------------------------|----------------------------------|--------------------|---------------------|--------|
| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Antenna/ Preamp Factor (dB) | Corrected Reading (dBuV/m) | Limits (dBuV/m) | Diff (dB) +=FAIL | |
| EUT in Continuous Transmit Mode on Channel 149 (5745 MHz) | | | | | | | | | | |
| 22980.00 | 49.83 | 100 | 225 | | | 10.62 | -5.02 | 55.43 | 74.00 | -18.57 |
| 22980.00 | | | | 36.40 | A | 10.62 | -5.02 | 42.00 | 54.00 | -12.00 |
| EUT in Continuous Transmit Mode on Channel 157 (5785 MHz) | | | | | | | | | | |
| 23140.00 | 46.50 | 100 | 225 | | | 10.66 | -5.12 | 52.05 | 89.09 | -37.04 |
| EUT in Continuous Transmit Mode on Channel 165 (5825 MHz) | | | | | | | | | | |
| 23300.00 | 48.17 | 100 | 225 | | | 10.71 | -5.20 | 53.68 | 87.96 | -34.28 |

| RADIATED EMISSIONS - Vertical Antenna Polarization | | | | | | | | | | |
|---|----------------------------|---------------------------|----------------------|---------------------------|----------------------|-----------------------------------|----------------------------------|--------------------|---------------------|--------|
| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Antenna/ Preamp Factor (dB) | Corrected Reading (dBuV/m) | Limits (dBuV/m) | Diff (dB) +=FAIL | |
| EUT in Continuous Transmit Mode on Channel 149 (5745 MHz) | | | | | | | | | | |
| 22980.00 | 50.17 | 100 | 225 | | | 10.62 | -4.99 | 55.80 | 74.00 | -18.21 |
| 22980.00 | | | | 36.55 | A | 10.62 | -4.99 | 42.18 | 54.00 | -11.83 |
| EUT in Continuous Transmit Mode on Channel 157 (5785 MHz) | | | | | | | | | | |
| 23140.00 | 46.00 | 100 | 225 | | | 10.66 | -5.09 | 51.57 | 86.24 | -34.67 |
| EUT in Continuous Transmit Mode on Channel 165 (5825 MHz) | | | | | | | | | | |
| 23300.00 | 48.50 | 100 | 225 | | | 10.71 | -5.16 | 54.04 | 86.12 | -32.08 |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous RX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 149 (5.745 GHz) | | | | | | | | | | |
| 3830.00 | 53.67 | 100 | 135 | | 46.75 | 4.05 | 33.13 | 44.10 | 74.00 | -29.90 |
| 3830.00 | | | | 41.29 | A | 46.75 | 4.05 | 31.72 | 54.00 | -22.28 |
| 7660.00 | 51.67 | 100 | 135 | | 45.56 | 5.81 | 37.40 | 49.32 | 74.00 | -24.68 |
| 7660.00 | | | | 39.97 | A | 45.56 | 5.81 | 37.62 | 54.00 | -16.38 |
| EUT in Continuous Receive Mode on Channel 157 (5.785 GHz) | | | | | | | | | | |
| 3856.62 | 53.50 | 100 | 135 | | 46.74 | 4.07 | 33.18 | 44.01 | 74.00 | -29.99 |
| 3856.62 | | | | 41.67 | A | 46.74 | 4.07 | 32.18 | 54.00 | -21.82 |
| 7713.32 | 52.50 | 100 | 135 | | 45.52 | 5.83 | 37.43 | 50.24 | 74.00 | -23.76 |
| 7713.32 | | | | 41.01 | A | 45.52 | 5.83 | 38.75 | 54.00 | -15.25 |
| EUT in Continuous Receive Mode on Channel 165 (5.825 GHz) | | | | | | | | | | |
| 3883.34 | 54.00 | 100 | 135 | | 46.73 | 4.08 | 33.24 | 44.59 | 74.00 | -29.41 |
| 3883.34 | | | | 41.46 | A | 46.73 | 4.08 | 32.05 | 54.00 | -21.95 |
| 7766.62 | 52.50 | 100 | 135 | | 45.48 | 5.85 | 37.46 | 50.33 | 74.00 | -23.67 |
| 7766.62 | | | | 41.57 | A | 45.48 | 5.85 | 39.40 | 54.00 | -14.60 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 149 (5.745 GHz) | | | | | | | | | | |
| 3830.00 | 52.33 | 100 | 135 | | 46.75 | 4.05 | 33.13 | 42.76 | 74.00 | -31.24 |
| 3830.00 | | | | 40.47 | A | 46.75 | 4.05 | 30.90 | 54.00 | -23.10 |
| 7660.00 | 51.00 | 100 | 135 | | 45.56 | 5.81 | 37.40 | 48.65 | 74.00 | -25.35 |
| 7660.00 | | | | 38.89 | A | 45.56 | 5.81 | 36.54 | 54.00 | -17.46 |
| EUT in Continuous Receive Mode on Channel 157 (5.785 GHz) | | | | | | | | | | |
| 3856.65 | 54.50 | 100 | 135 | | 46.74 | 4.07 | 32.83 | 44.65 | 74.00 | -29.35 |
| 3856.65 | | | | 41.01 | A | 46.74 | 4.07 | 31.16 | 54.00 | -22.84 |
| 7713.29 | 51.17 | 100 | 135 | | 45.52 | 5.83 | 37.29 | 48.76 | 74.00 | -25.24 |
| 7713.29 | | | | 38.89 | A | 45.52 | 5.83 | 36.48 | 54.00 | -17.52 |
| EUT in Continuous Receive Mode on Channel 165 (5.825 GHz) | | | | | | | | | | |
| 3883.35 | 54.50 | 100 | 135 | | 46.73 | 4.08 | 32.90 | 44.75 | 74.00 | -29.25 |
| 3883.35 | | | | 41.35 | A | 46.73 | 4.08 | 31.60 | 54.00 | -22.40 |
| 7766.63 | 52.00 | 100 | 135 | | 45.48 | 5.85 | 37.31 | 49.68 | 74.00 | -24.32 |
| 7766.63 | | | | 39.90 | A | 45.48 | 5.85 | 37.58 | 54.00 | -16.42 |



RADIATED EMISSIONS TEST RESULTS

| | | | |
|-----------------------|---|------------------------|--------------|
| CLIENT: | Intel Corporation | DATE: | 06/27/06 |
| EUT: | Intel PRO/Wireless 3945ABG Network Connection | PROJECT NUMBER: | INTEL-060626 |
| MODEL NUMBER: | WM3945ABG | TEST ENGINEER: | RJ |
| SERIAL NUMBER: | 00B11A295CVD26965002 | SITE #: | 2 |
| CONFIGURATION: | Tested installed in the host computer's mini PCI slot in 802.11b (2400-2483.5 MHz) mode with a Universal Antenna Module. | TEMPERATURE: | 29 deg. C |
| | | HUMIDITY: | 44% RH |
| | | TIME: | 1:25 PM |

| | |
|---------------------|---|
| Description: | Radiated RF Emissions (1 GHz – 18 GHz) |
| Results: | PASSED Horizontal and Vertical Antenna Polarizations Class B Limits |
| Note: | Radiated Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. <ul style="list-style-type: none">120VAC / 60 Hz. |

| Unwanted Spurious Emissions Limits | | | |
|------------------------------------|-----------------------|--|--|
| Frequency (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) (Emissions in the restricted bands) | Field Strength (dBm/MHz) (Emissions outside the restricted bands) |
| Above 960 | 500 | 54.00 (Average) 74.00 (Peak) | < -20 dBc |

Radiated Emissions Sample Calculations

$$\text{Corrected Meter Reading} = \text{Meter Reading} + F + C - D$$

Where, F = Antenna Factor

C = Cable Factor

G = Amplifier Gain

D = Distance Factor (if applicable)

Therefore, the equation for determining the Corrected Meter Reading Limit (CML) is:

$$\text{CML} = \text{Specification Limit} - F - C + D$$



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-02

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2412.00 | 71.67 | 100 | 135 | | | 3.19 | 29.50 | 104.36 | | | Ch. 1 |
| 2412.00 | | | | 68.13 | A | 3.19 | 29.50 | 100.82 | | | |
| 2437.00 | 73.00 | 100 | 135 | | | 3.20 | 29.59 | 105.79 | | | Ch. 6 |
| 2437.00 | | | | 69.67 | A | 3.20 | 29.59 | 102.46 | | | |
| 2462.00 | 75.17 | 100 | 135 | | | 3.22 | 29.67 | 108.06 | | | Ch. 11 |
| 2462.00 | | | | 71.40 | A | 3.22 | 29.67 | 104.29 | | | |

RADIATED EMISSIONS – Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2412.00 | 68.17 | 100 | 135 | | | 3.19 | 29.04 | 100.39 | | | Ch. 1 |
| 2412.00 | | | | 64.56 | A | 3.19 | 29.04 | 96.78 | | | |
| 2437.00 | 67.17 | 100 | 135 | | | 3.20 | 29.11 | 99.49 | | | Ch. 6 |
| 2437.00 | | | | 63.65 | A | 3.20 | 29.11 | 95.97 | | | |
| 2462.00 | 66.83 | 100 | 135 | | | 3.22 | 29.19 | 99.24 | | | Ch. 11 |
| 2462.00 | | | | 63.30 | A | 3.22 | 29.19 | 95.71 | | | |

NOTE: Fundamental signals measured to calculate the band edge field strengths using the “Marker Delta Method”.



Radiated Emissions Test Results (Continued)

Band Edge Field Strength Measurements in 802.11b mode (2400-2483.5 MHz)

Channels 1 & 11

Continuous TX at MAIN Antenna port with Universal Antenna Module

Aegis Labs, Inc. File #: INTEL-060626-02

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|-------------|----------------------|---------------------|-------------------|------------------------|-------------------|------------------|--------------------------|---------------|------------------|---------------|
| 2390.00 | | | | | | | 50.03 | 74.00 | -23.97 | Ch. 1 |
| 2390.00 | | | | A | | | 38.65 | 54.00 | -15.35 | |
| 2400.00 | 30.33 | 100 | 135 | | 3.18 | 29.46 | 62.97 | 84.36 | -21.39 | |
| 2483.50 | | | | | | | 53.73 | 74.00 | -20.27 | Ch. 11 |
| 2483.50 | | | | A | | | 42.79 | 54.00 | -11.21 | |
| 2487.00 | | | | | | | 54.56 | 74.00 | -19.44 | |
| 2487.00 | | | | A | | | 42.95 | 54.00 | -11.05 | |

RADIATED EMISSIONS – Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|-------------|----------------------|---------------------|-------------------|------------------------|-------------------|------------------|--------------------------|---------------|------------------|---------------|
| 2390.00 | | | | | | | 46.06 | 74.00 | -27.94 | Ch. 1 |
| 2390.00 | | | | A | | | 34.61 | 54.00 | -19.39 | |
| 2400.00 | 31.17 | 100 | 135 | | 3.18 | 29.00 | 63.35 | 80.39 | -17.04 | |
| 2483.50 | | | | | | | 44.91 | 74.00 | -29.09 | Ch. 11 |
| 2483.50 | | | | A | | | 34.21 | 54.00 | -19.79 | |
| 2487.00 | | | | | | | 45.74 | 74.00 | -28.26 | |
| 2487.00 | | | | A | | | 34.37 | 54.00 | -19.63 | |

NOTE: The “Band Edge Field Strength” was calculated using the “Fundamental” and “Conducted Band Edge” measurements per the “Marker-Delta Method” with the following formula:

$$BE = F_m - \Delta m$$

Where

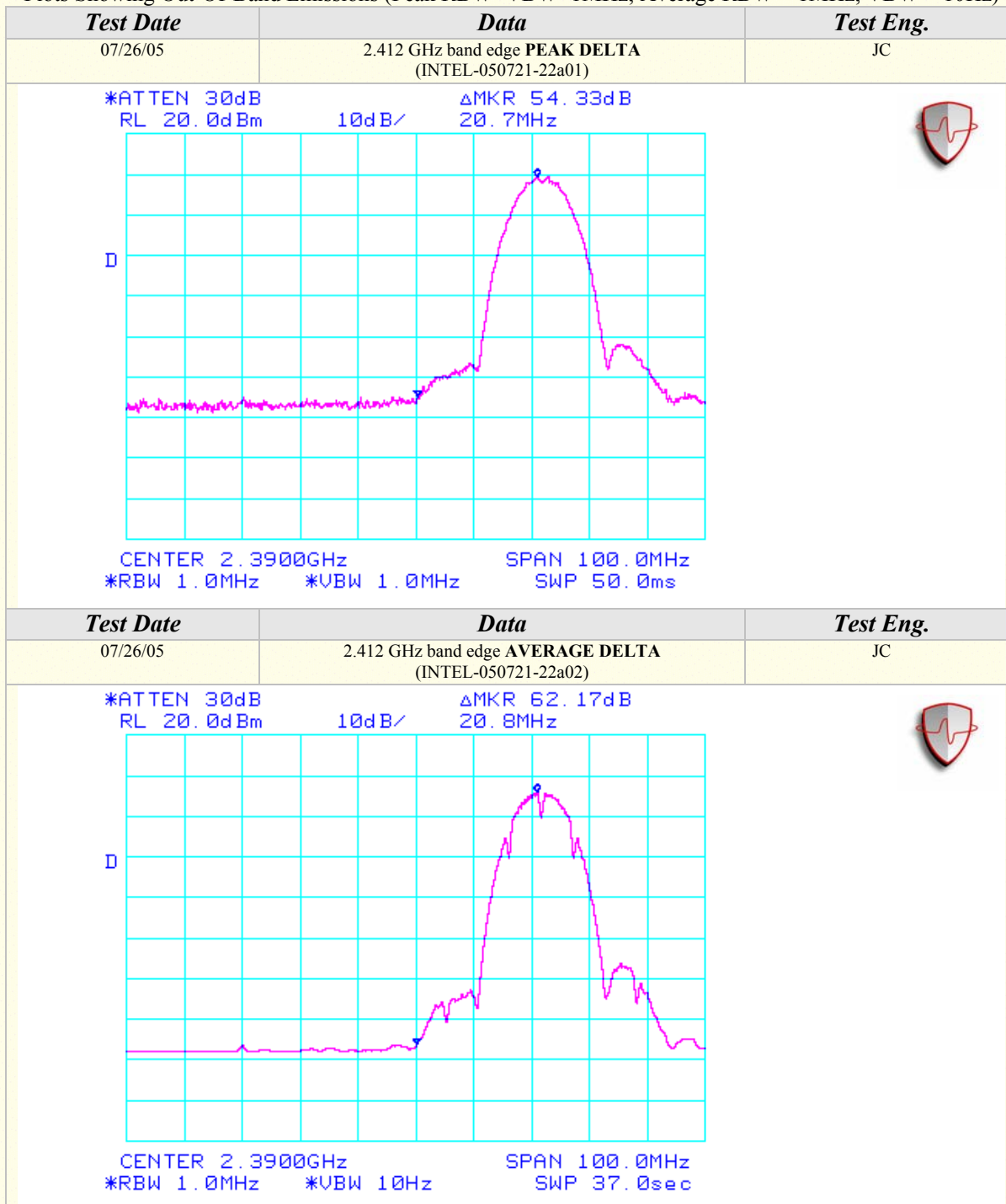
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

Δ_m = Measured Conducted Band Edge Delta (Peak or Average)

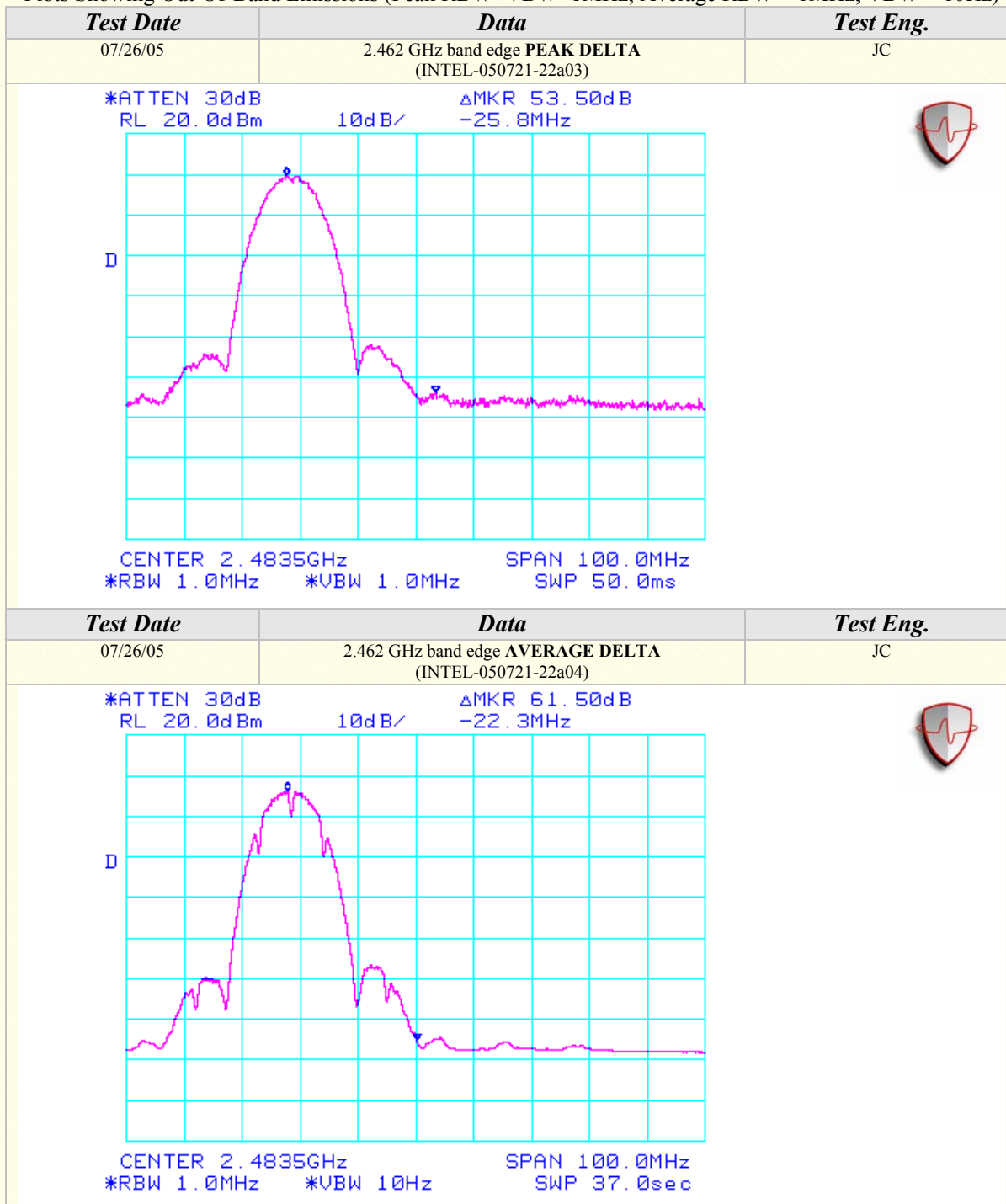
Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)



Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)





Spurious Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-03

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | 1 Meter Distance Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------|---------------------|-------------------|------------------------|------------------------------|-------------------|------------------|--------------------------|---------------|------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 2312.00 | 32.67 | 100 | 135 | | | 9.54 | 3.11 | 29.16 | 55.41 | 74.00 -18.59 |
| 2312.00 | | | | 19.00 | A | 9.54 | 3.11 | 29.16 | 41.74 | 54.00 -12.26 |
| 2360.00 | 31.33 | 100 | 135 | | | 9.54 | 3.15 | 29.32 | 54.26 | 74.00 -19.74 |
| 2360.00 | | | | 14.90 | A | 9.54 | 3.15 | 29.32 | 37.83 | 54.00 -16.17 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 2336.00 | 31.33 | 100 | 135 | | | 9.54 | 3.13 | 29.24 | 54.16 | 74.00 -19.84 |
| 2336.00 | | | | 14.65 | A | 9.54 | 3.13 | 29.24 | 37.48 | 54.00 -16.52 |
| 2360.00 | 32.00 | 100 | 135 | | | 9.54 | 3.15 | 29.32 | 54.93 | 74.00 -19.07 |
| 2360.00 | | | | 13.88 | A | 9.54 | 3.15 | 29.32 | 36.81 | 54.00 -17.19 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 2358.66 | 31.33 | 100 | 135 | | | 9.54 | 3.15 | 29.32 | 54.26 | 74.00 -19.74 |
| 2358.66 | | | | 13.94 | A | 9.54 | 3.15 | 29.32 | 36.87 | 54.00 -17.13 |
| 2360.00 | 34.83 | 100 | 135 | | | 9.54 | 3.15 | 29.32 | 57.76 | 74.00 -16.24 |
| 2360.00 | | | | 13.74 | A | 9.54 | 3.15 | 29.32 | 36.67 | 54.00 -17.33 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | 1 Meter Distance Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------|---------------------|-------------------|------------------------|------------------------------|-------------------|------------------|--------------------------|---------------|------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 2312.00 | 31.83 | 100 | 225 | | | 9.54 | 3.11 | 28.74 | 54.14 | 74.00 -19.86 |
| 2312.00 | | | | 15.10 | A | 9.54 | 3.11 | 28.74 | 37.41 | 54.00 -16.59 |
| 2360.00 | 31.00 | 100 | 225 | | | 9.54 | 3.15 | 28.88 | 53.49 | 74.00 -20.51 |
| 2360.00 | | | | 15.13 | A | 9.54 | 3.15 | 28.88 | 37.62 | 54.00 -16.38 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 2336.00 | 30.67 | 100 | 180 | | | 9.54 | 3.13 | 28.81 | 53.07 | 74.00 -20.93 |
| 2336.00 | | | | 13.90 | A | 9.54 | 3.13 | 28.81 | 36.30 | 54.00 -17.70 |
| 2360.00 | 30.67 | 100 | 135 | | | 9.54 | 3.15 | 28.88 | 53.16 | 74.00 -20.84 |
| 2360.00 | | | | 13.84 | A | 9.54 | 3.15 | 28.88 | 36.33 | 54.00 -17.67 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 2358.66 | 30.83 | 100 | 135 | | | 9.54 | 3.15 | 28.88 | 53.31 | 74.00 -20.69 |
| 2358.66 | | | | 13.71 | A | 9.54 | 3.15 | 28.88 | 36.19 | 54.00 -17.81 |
| 2360.00 | 31.50 | 100 | 135 | | | 9.54 | 3.15 | 28.88 | 53.99 | 74.00 -20.01 |
| 2360.00 | | | | 13.65 | A | 9.54 | 3.15 | 28.88 | 36.14 | 54.00 -17.86 |

NOTE: These spurious emissions measurements were taken without a preamp at a distance on 1 meter to avoid saturating the preamp and analyzer because the signals were close to the fundamental frequency. The readings were extrapolated to 3 meters.



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

| RADIATED EMISSIONS - Horizontal Antenna Polarization | | | | | | | | | | | |
|--|----------------------------|---------------------------|----------------------|---------------------------|---|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | | |
| 3216.00 | 52.83 | 100 | 135 | | | 46.82 | 3.71 | 31.72 | 41.44 | 84.36 | -42.92 |
| 4824.00 | 55.00 | 100 | 135 | | | 46.57 | 4.57 | 33.91 | 46.91 | 74.00 | -27.09 |
| 4824.00 | | | | 45.66 | A | 46.57 | 4.57 | 33.91 | 37.57 | 54.00 | -16.43 |
| 9648.01 | 54.00 | 100 | 135 | | | 44.78 | 6.56 | 38.12 | 53.90 | 84.36 | -30.46 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | | |
| 3249.32 | 53.83 | 100 | 135 | | | 46.82 | 3.72 | 31.80 | 42.53 | 85.79 | -43.26 |
| 4873.99 | 60.00 | 100 | 135 | | | 46.57 | 4.59 | 34.02 | 52.04 | 74.00 | -21.96 |
| 4873.99 | | | | 54.86 | A | 46.57 | 4.59 | 34.02 | 46.90 | 54.00 | -7.10 |
| 9747.96 | 61.33 | 100 | 135 | | | 44.80 | 6.60 | 38.20 | 61.32 | 85.79 | -24.47 |
| 12185.00 | 52.50 | 100 | 135 | | | 44.96 | 7.48 | 39.22 | 54.23 | 74.00 | -19.77 |
| 12185.00 | | | | 40.50 | A | 44.96 | 7.48 | 39.22 | 42.23 | 54.00 | -11.77 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | | |
| 3282.66 | 54.17 | 100 | 135 | | | 46.82 | 3.74 | 31.88 | 42.97 | 88.06 | -45.09 |
| 4924.00 | 55.67 | 100 | 135 | | | 46.58 | 4.61 | 34.13 | 47.84 | 74.00 | -26.16 |
| 4924.00 | | | | 47.41 | A | 46.58 | 4.61 | 34.13 | 39.58 | 54.00 | -14.42 |
| 9848.01 | 55.00 | 100 | 135 | | | 44.83 | 6.64 | 38.28 | 55.09 | 88.06 | -32.97 |
| 12310.00 | 50.83 | 100 | 180 | | | 44.97 | 7.53 | 39.09 | 52.48 | 74.00 | -21.52 |
| 12310.00 | | | | 38.67 | A | 44.97 | 7.53 | 39.09 | 40.32 | 54.00 | -13.68 |



Radiated Emissions Test Results (Continued)

| RADIATED EMISSIONS - Vertical Antenna Polarization | | | | | | | | | | | |
|--|-------------------------------------|------------------------------------|------------------------------|-----------------------------------|---|-----------------------------------|----------------------------------|---------------------------------|---|--------------------------|-----------------------------|
| <i>Freq. (MHz)</i> | <i>Meter Reading (dBuV)</i> | <i>Antenna Height (cm)</i> | <i>Azimuth (degrees)</i> | <i>Quasi pk or AVG (dBuV)</i> | | <i>Preamp Factor (dB)</i> | <i>Cable Factor (dB)</i> | <i>Ant. Factor (dB)</i> | <i>Corrected Reading (dBuV)</i> | <i>Limits (dBuV)</i> | <i>Diff (dB) +=FAIL</i> |
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | | |
| 3216.00 | 53.17 | 100 | 135 | | | 46.82 | 3.71 | 31.28 | 41.33 | 80.39 | -39.06 |
| 4824.01 | 54.33 | 100 | 135 | | | 46.57 | 4.57 | 33.78 | 46.11 | 74.00 | -27.89 |
| 4824.01 | | | | 43.73 | A | 46.57 | 4.57 | 33.78 | 35.51 | 54.00 | -18.49 |
| 9648.01 | 53.67 | 100 | 135 | | | 44.78 | 6.56 | 38.09 | 53.54 | 80.39 | -26.85 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | | |
| 3249.32 | 55.00 | 100 | 135 | | | 46.82 | 3.72 | 31.35 | 43.25 | 79.49 | -36.24 |
| 4873.99 | 61.50 | 100 | 135 | | | 46.57 | 4.59 | 33.87 | 53.39 | 74.00 | -20.61 |
| 4873.99 | | | | 55.47 | A | 46.57 | 4.59 | 33.87 | 47.36 | 54.00 | -6.64 |
| 9747.96 | 57.83 | 100 | 135 | | | 44.80 | 6.60 | 38.15 | 57.77 | 79.49 | -21.72 |
| 12185.00 | 51.67 | 100 | 135 | | | 44.96 | 7.48 | 39.22 | 53.40 | 74.00 | -20.60 |
| 12185.00 | | | | 40.62 | A | 44.96 | 7.48 | 39.22 | 42.35 | 54.00 | -11.65 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | | |
| 3282.66 | 53.50 | 100 | 135 | | | 46.82 | 3.74 | 31.42 | 41.84 | 79.24 | -37.40 |
| 4924.00 | 54.50 | 100 | 135 | | | 46.58 | 4.61 | 33.96 | 46.50 | 74.00 | -27.50 |
| 4924.00 | | | | 45.08 | A | 46.58 | 4.61 | 33.96 | 37.08 | 54.00 | -16.92 |
| 9848.01 | 61.67 | 100 | 135 | | | 44.83 | 6.64 | 38.21 | 61.69 | 79.24 | -17.55 |
| 12310.00 | 53.17 | 100 | 135 | | | 44.97 | 7.53 | 39.09 | 54.82 | 74.00 | -19.18 |
| 12310.00 | | | | 42.37 | A | 44.97 | 7.53 | 39.09 | 44.02 | 54.00 | -9.98 |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous RX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|---|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.02 | 52.83 | 100 | 225 | | | 46.82 | 3.71 | 31.72 | 41.44 | 74.00 -32.56 |
| 3216.02 | | | | 41.37 | A | 46.82 | 3.71 | 31.72 | 29.98 | 54.00 -24.02 |
| EUT in Continuous Receive Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.32 | 53.50 | 100 | 225 | | | 46.82 | 3.72 | 31.80 | 42.20 | 74.00 -31.80 |
| 3249.32 | | | | 40.98 | A | 46.82 | 3.72 | 31.80 | 29.68 | 54.00 -24.32 |
| EUT in Continuous Receive Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.66 | 53.00 | 100 | 135 | | | 46.82 | 3.74 | 31.88 | 41.80 | 74.00 -32.20 |
| 3282.66 | | | | 41.09 | A | 46.82 | 3.74 | 31.88 | 29.89 | 54.00 -24.11 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|---|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.00 | 53.83 | 100 | 135 | | | 46.82 | 3.71 | 31.28 | 41.99 | 74.00 -32.01 |
| 3216.00 | | | | 43.65 | A | 46.82 | 3.71 | 31.28 | 31.81 | 54.00 -22.19 |
| EUT in Continuous Receive Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.32 | 54.67 | 100 | 135 | | | 46.82 | 3.72 | 31.35 | 42.92 | 74.00 -31.08 |
| 3249.32 | | | | 44.75 | A | 46.82 | 3.72 | 31.35 | 33.00 | 54.00 -21.00 |
| EUT in Continuous Receive Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.67 | 54.50 | 100 | 135 | | | 46.82 | 3.74 | 31.42 | 42.84 | 74.00 -31.16 |
| 3282.67 | | | | 43.94 | A | 46.82 | 3.74 | 31.42 | 32.28 | 54.00 -21.72 |



RADIATED EMISSIONS TEST RESULTS

| | | | |
|-----------------------|---|------------------------|--------------|
| CLIENT: | Intel Corporation | DATE: | 06/27/06 |
| EUT: | Intel PRO/Wireless 3945ABG Network Connection | PROJECT NUMBER: | INTEL-060626 |
| MODEL NUMBER: | WM3945ABG | TEST ENGINEER: | RJ |
| SERIAL NUMBER: | 00B11A295CVD26965002 | SITE #: | 2 |
| CONFIGURATION: | Tested installed in the host computer's mini PCI slot in 802.11g (2400-2483.5 MHz) mode with a Universal Antenna Module. | TEMPERATURE: | 29 deg. C |
| | | HUMIDITY: | 44% RH |
| | | TIME: | 1:25 PM |

| | |
|---------------------|---|
| Description: | Radiated RF Emissions (1 GHz – 18 GHz) |
| Results: | PASSED Horizontal and Vertical Antenna Polarizations Class B Limits |
| Note: | Radiated Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. <ul style="list-style-type: none">• 120VAC / 60 Hz. |

| Unwanted Spurious Emissions Limits | | | |
|------------------------------------|-----------------------|--|--|
| Frequency (MHz) | Field Strength (uV/m) | Field Strength (dBuV/m) (Emissions in the restricted bands) | Field Strength (dBm/MHz) (Emissions outside the restricted bands) |
| Above 960 | 500 | 54.00 (Average) 74.00 (Peak) | < -20 dBc |

Radiated Emissions Sample Calculations

$$\text{Corrected Meter Reading} = \text{Meter Reading} + F + C - D$$

Where, F = Antenna Factor

C = Cable Factor

G = Amplifier Gain

D = Distance Factor (if applicable)

Therefore, the equation for determining the Corrected Meter Reading Limit (CML) is:

$$\text{CML} = \text{Specification Limit} - F - C + D$$



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-02*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2412.00 | 71.50 | 100 | 135 | | | 3.19 | 29.50 | 104.19 | | | Ch. 1 |
| 2412.00 | | | | 62.87 | A | 3.19 | 29.50 | 95.56 | | | |
| 2437.00 | 73.00 | 100 | 135 | | | 3.20 | 29.59 | 105.79 | | | Ch. 6 |
| 2437.00 | | | | 65.01 | A | 3.20 | 29.59 | 97.80 | | | |
| 2462.00 | 71.83 | 100 | 180 | | | 3.22 | 29.67 | 104.72 | | | Ch. 11 |
| 2462.00 | | | | 62.75 | A | 3.22 | 29.67 | 95.64 | | | |

RADIATED EMISSIONS – Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|---|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2412.00 | 66.83 | 100 | 135 | | | 3.19 | 29.04 | 99.05 | | | Ch. 1 |
| 2412.00 | | | | 58.89 | A | 3.19 | 29.04 | 91.11 | | | |
| 2437.00 | 67.67 | 100 | 135 | | | 3.20 | 29.11 | 99.99 | | | Ch. 6 |
| 2437.00 | | | | 59.43 | A | 3.20 | 29.11 | 91.75 | | | |
| 2462.00 | 63.83 | 100 | 135 | | | 3.22 | 29.19 | 96.24 | | | Ch. 11 |
| 2462.00 | | | | 55.20 | A | 3.22 | 29.19 | 87.61 | | | |

NOTE: Fundamental signals measured to calculate the band edge field strengths using the “Marker Delta Method”.



Radiated Emissions Test Results (Continued)

Band Edge Field Strength Measurements in 802.11g mode (2400-2483.5 MHz)

Channels 1 & 11

Continuous TX at MAIN Antenna port with Universal Antenna Module

Aegis Labs, Inc. File #: INTEL-060626-02

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2390.00 | | | | | | | 67.36 | 74.00 | -6.64 | Ch. 1 |
| 2390.00 | | | | A | | | 48.73 | 54.00 | -5.27 | |
| 2400.00 | 44.50 | 100 | 135 | | 3.18 | 29.46 | 77.14 | 84.19 | -7.05 | |
| 2483.50 | | | | | | | 64.55 | 74.00 | -9.45 | Ch. 11 |
| 2483.50 | | | | A | | | 46.14 | 54.00 | -7.86 | |

RADIATED EMISSIONS – Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL | Comments |
|----------------|----------------------------|---------------------------|----------------------|---------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|---------------|
| 2390.00 | | | | | | | 62.22 | 74.00 | -11.78 | Ch. 1 |
| 2390.00 | | | | A | | | 44.28 | 54.00 | -9.72 | |
| 2400.00 | 41.33 | 100 | 135 | | 3.18 | 29.00 | 73.51 | 79.05 | -5.54 | |
| 2483.50 | | | | | | | 56.07 | 74.00 | -17.93 | Ch. 11 |
| 2483.50 | | | | A | | | 38.11 | 54.00 | -15.89 | |

NOTE: The “Band Edge Field Strength” was calculated using the “Fundamental” and “Conducted Band Edge” measurements per the “Marker-Delta Method” with the following formula:

$$BE = F_m - \Delta_m$$

Where

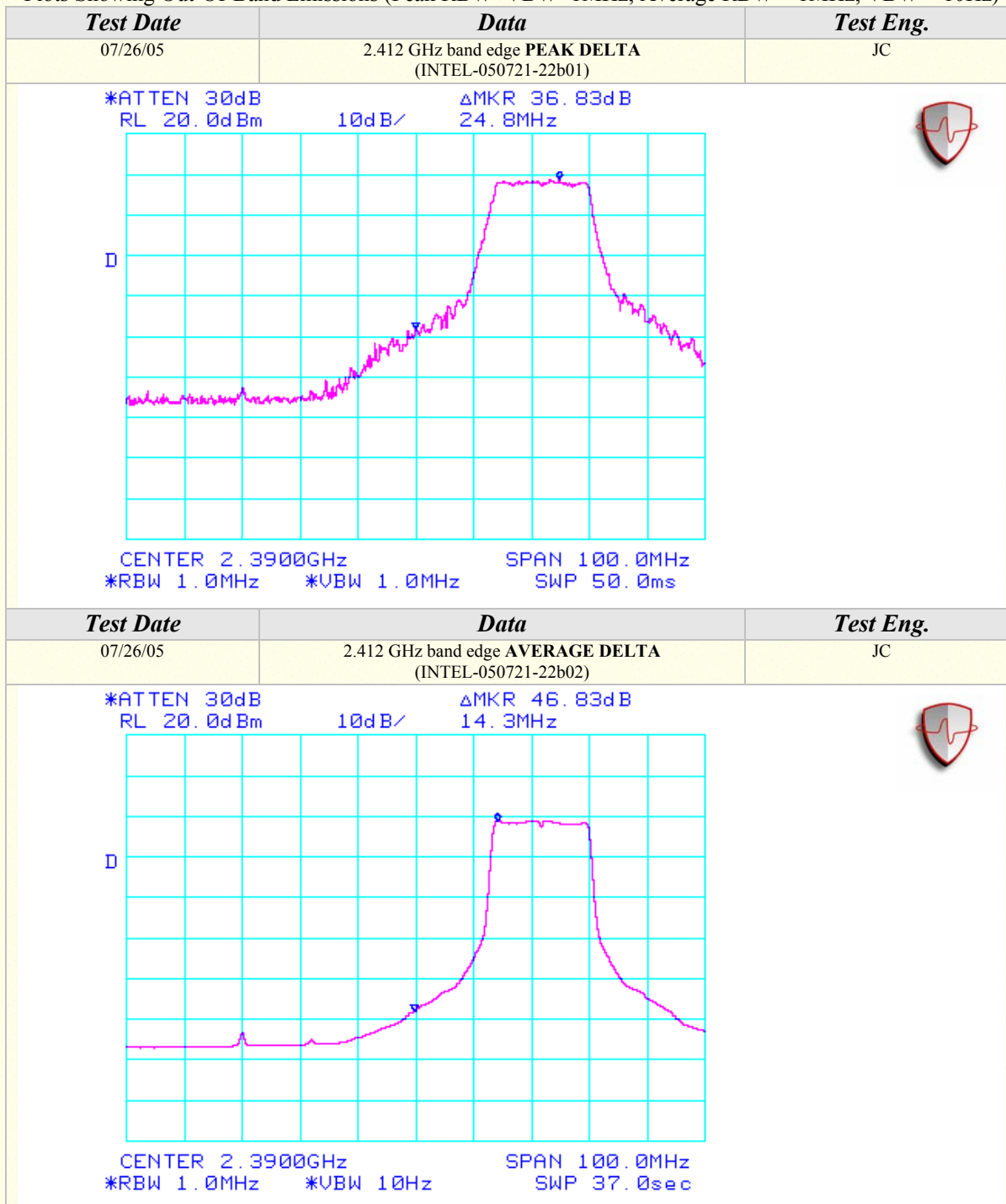
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

Δ_m = Measured Conducted Band Edge Delta (Peak or Average)

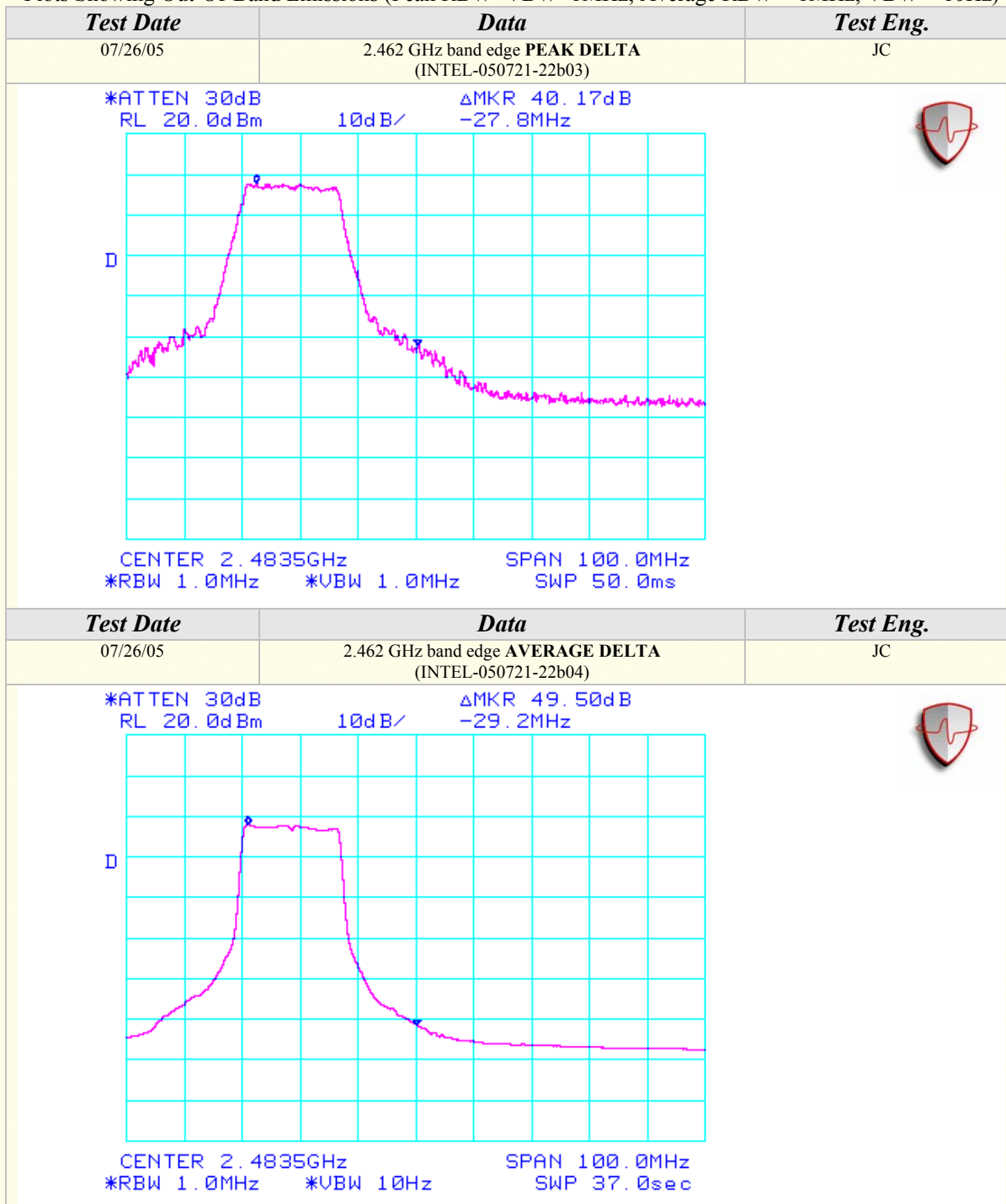
Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)



Radiated Emissions Test Results (Continued)

Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)





Spurious Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-03*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | 1 Meter Distance Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|---------------------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 2312.00 | 31.50 | 100 | 135 | | | 9.54 | 3.11 | 29.16 | 54.24 | -19.76 |
| 2312.00 | | | | 26.12 | A | 9.54 | 3.11 | 29.16 | 48.86 | -5.14 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 2336.00 | 32.50 | 100 | 135 | | | 9.54 | 3.13 | 29.24 | 55.33 | -18.67 |
| 2336.00 | | | | 19.97 | A | 9.54 | 3.13 | 29.24 | 42.80 | -11.20 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 2358.66 | 32.00 | 100 | 135 | | | 9.54 | 3.15 | 29.32 | 54.93 | -19.07 |
| 2358.66 | | | | 16.43 | A | 9.54 | 3.15 | 29.32 | 39.36 | -14.64 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | 1 Meter Distance Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|---------------------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 2312.00 | 31.50 | 100 | 135 | | | 9.54 | 3.11 | 28.74 | 53.81 | -20.19 |
| 2312.00 | | | | 15.64 | A | 9.54 | 3.11 | 28.74 | 37.95 | -16.05 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 2336.00 | 32.33 | 100 | 180 | | | 9.54 | 3.13 | 28.81 | 54.73 | -19.27 |
| 2336.00 | | | | 16.66 | A | 9.54 | 3.13 | 28.81 | 39.06 | -14.94 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 2358.66 | 32.00 | 100 | 135 | | | 9.54 | 3.15 | 28.88 | 54.48 | -19.52 |
| 2358.66 | | | | 15.50 | A | 9.54 | 3.15 | 28.88 | 37.98 | -16.02 |

NOTE: These spurious emissions measurements were taken without a preamp at a distance on 1 meter to avoid saturating the preamp and analyzer because the signals were close to the fundamental frequency. The readings were extrapolated to 3 meters.



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.00 | 52.33 | 100 | 135 | | 46.82 | 3.71 | 31.72 | 40.94 | 84.19 | -43.25 |
| 9648.00 | 51.50 | 100 | 135 | | 44.78 | 6.56 | 38.12 | 51.40 | 84.19 | -32.79 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.32 | 53.67 | 100 | 135 | | 46.82 | 3.72 | 31.80 | 42.37 | 85.79 | -43.42 |
| 9747.96 | 57.50 | 100 | 135 | | 44.80 | 6.60 | 38.20 | 57.49 | 85.79 | -28.30 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.66 | 53.83 | 100 | 135 | | 46.82 | 3.74 | 31.88 | 42.63 | 84.72 | -42.09 |
| 9848.01 | 52.83 | 100 | 135 | | 44.83 | 6.64 | 38.28 | 52.92 | 84.72 | -31.80 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|--|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Transmit Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.00 | 52.17 | 100 | 135 | | 46.82 | 3.71 | 31.28 | 40.33 | 79.05 | -38.72 |
| 9648.00 | 50.67 | 100 | 135 | | 44.78 | 6.56 | 38.09 | 50.54 | 79.05 | -28.51 |
| EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.32 | 54.50 | 100 | 135 | | 46.82 | 3.72 | 31.35 | 42.75 | 79.99 | -37.24 |
| 9747.96 | 55.17 | 100 | 135 | | 44.80 | 6.60 | 38.15 | 55.11 | 79.99 | -24.88 |
| EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.66 | 54.33 | 100 | 135 | | 46.82 | 3.74 | 31.42 | 42.67 | 76.24 | -33.57 |
| 9848.01 | 51.50 | 100 | 135 | | 44.83 | 6.64 | 38.21 | 51.52 | 76.24 | -24.72 |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous RX at MAIN Antenna port with Universal Antenna Module
Aegis Labs, Inc. File #: INTEL-060626-04*

RADIATED EMISSIONS - Horizontal Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|---|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.00 | 53.33 | 100 | 225 | | | 46.82 | 3.71 | 31.72 | 41.94 | 74.00 -32.06 |
| 3216.00 | | | | 41.23 | A | 46.82 | 3.71 | 31.72 | 29.84 | 54.00 -24.16 |
| EUT in Continuous Receive Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.32 | 53.67 | 100 | 225 | | | 46.82 | 3.72 | 31.80 | 42.37 | 74.00 -31.63 |
| 3249.32 | | | | 41.18 | A | 46.82 | 3.72 | 31.80 | 29.88 | 54.00 -24.12 |
| EUT in Continuous Receive Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.66 | 53.17 | 100 | 225 | | | 46.82 | 3.74 | 31.88 | 41.97 | 74.00 -32.03 |
| 3282.66 | | | | 41.12 | A | 46.82 | 3.74 | 31.88 | 29.92 | 54.00 -24.08 |

RADIATED EMISSIONS - Vertical Antenna Polarization

| Freq. (MHz) | Meter Reading (dBuV) | Antenna Height (cm) | Azimuth (degrees) | Quasi pk or AVG (dBuV) | Preamp Factor (dB) | Cable Factor (dB) | Ant. Factor (dB) | Corrected Reading (dBuV) | Limits (dBuV) | Diff (dB) +=FAIL |
|---|----------------------------|---------------------------|----------------------|---------------------------|--------------------------|-------------------------|------------------------|--------------------------------|------------------|---------------------|
| EUT in Continuous Receive Mode on Channel 1 (2.412 GHz) | | | | | | | | | | |
| 3216.00 | 53.67 | 100 | 135 | | | 46.82 | 3.71 | 31.28 | 41.83 | 74.00 -32.17 |
| 3216.00 | | | | 43.56 | A | 46.82 | 3.71 | 31.28 | 31.72 | 54.00 -22.28 |
| EUT in Continuous Receive Mode on Channel 6 (2.437 GHz) | | | | | | | | | | |
| 3249.33 | 54.83 | 100 | 135 | | | 46.82 | 3.72 | 31.35 | 43.08 | 74.00 -30.92 |
| 3249.33 | | | | 44.67 | A | 46.82 | 3.72 | 31.35 | 32.92 | 54.00 -21.08 |
| EUT in Continuous Receive Mode on Channel 11 (2.462 GHz) | | | | | | | | | | |
| 3282.67 | 54.00 | 100 | 135 | | | 46.82 | 3.74 | 31.42 | 42.34 | 74.00 -31.66 |
| 3282.67 | | | | 43.71 | A | 46.82 | 3.74 | 31.42 | 32.05 | 54.00 -21.95 |



PEAK TRANSMIT POWER

| | | | |
|-----------------------|--|------------------------|--------------|
| CLIENT: | Intel Corporation | DATE: | 06/27/06 |
| EUT: | Intel PRO/Wireless 3945ABG Network Connection | PROJECT NUMBER: | INTEL-060626 |
| MODEL NUMBER: | WM3945ABG | TEST ENGINEER: | RJ |
| SERIAL NUMBER: | 00B11A295CVD26965002 | SITE #: | 2 |
| CONFIGURATION: | Tested installed in the host computer's mini PCI slot with a Universal Antenna Module. | TEMPERATURE: | 24 deg. C |
| | | HUMIDITY: | 59% RH |
| | | TIME: | 12:00 PM |

| | |
|---------------------|--|
| Description: | The maximum peak output power of the intentional radiator shall not exceed 1 watt. |
| Results: | See Data Sheet |
| Note: | Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. <ul style="list-style-type: none">• 120VAC / 60 Hz. |

| Peak Transmit Power Limits | |
|----------------------------|------------------|
| Frequency (MHz) | Output Power (W) |
| 5745-5825 | 1 |
| 2412-2462 | 1 |



Peak Transmit Power (Continued)

| Mode | Channel | Frequency (MHz) | Rate (Mbps) | Average Power (dBm) | Average Power (mW) | Peak Power (dBm) | Peak Power (mW) |
|---------|---------|-----------------|-------------|---------------------|--------------------|------------------|-----------------|
| 802.11a | 149 | 5745 | 6 | 17.13 | 51.64 | 19.50 | 89.13 |
| 802.11a | 157 | 5785 | 6 | 16.87 | 48.64 | 19.90 | 97.72 |
| 802.11a | 165 | 5825 | 6 | 17.05 | 50.70 | 19.80 | 95.50 |
| | | | | | | | |
| 802.11b | 1 | 2412 | 1 | 17.23 | 52.84 | 19.89 | 97.50 |
| 802.11b | 6 | 2437 | 1 | 17.91 | 61.80 | 20.42 | 110.15 |
| 802.11b | 11 | 2462 | 1 | 18.16 | 65.46 | 20.58 | 114.29 |
| | | | | | | | |
| 802.11g | 1 | 2412 | 6 | 16.07 | 40.46 | 24.28 | 267.92 |
| 802.11g | 6 | 2437 | 6 | 17.11 | 51.40 | 24.83 | 304.09 |
| 802.11g | 11 | 2462 | 6 | 15.23 | 33.34 | 24.14 | 259.42 |

NOTE: The output power measurement is conducted.



APPENDIX B

MODIFICATIONS AND RECOMMENDATIONS

| | |
|-----|------|
| 1.0 | NONE |
| | |