AEGIS LABS INC.

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

Pertaining To:

EUT	FCC ID:
Intel PRO/Wireless 2100 Network Connection, MN: WM3B2100	**PD9WM3B2100**

Configuration
802.11b With a set of Yokowo (Mallow) Monopole Antennas (PN: YCE-5008)

MEASUREMENTS PERFORMED IN ACCORDANCE WITH

Regulatory Standard(s)
47 CFR Part 15, Subpart C Section 15.247 Test Method: ANSI C63.4: 2001 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

ACCREDITED
Certificate Number: 1111.01

APPLICANT:

Intel Corporation
EC1-01 13280 Evening Creek Drive
San Diego, California 92128

Contact(s): Mr. Robert Paxman

PREPARED BY:

Aegis Labs, Inc.
22431 Antonio Parkway B160-417
Rancho S. Margarita, CA 92688

Agent(s): Mr. Steve Kuiper
Mr. Rick Candelas
Mr. Johnny Candelas
Test Report #: INTEL-040730F
Test Report Revision: None

	REPORT BODY	APPENDICES	TOTAL PAGES
		A	
PAGES	16	12	28

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1.0 CERTIFICATION OF TEST DATA

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 are furnished through the use of part-time, full-time or consulting engineers with the appropriate qualifications to carry out their duties. The intended purpose of this test report is to describe the measurement procedure and to determine whether the equipment under test "EUT" complies with both the conducted and radiated limits. Limits for emissions testing are described under Subpart C of Part 15 of the FCC rules.

The data, data evaluation and equipment configuration represented herein are a true and accurate representation of the Equipment Under Test (EUT) under the requirements specified in the emissions standard as described below. The test results contained in this report are only representative of the test sample tested as described in Section 3.0 of this report. Certification of the EUT is required as a prerequisite to marketing as defined in Part 2 of the FCC Rules.

Prepared By:

08/20/04

Rick Candelas **Date:**
Staff Engineer
Aegis Labs, Inc.

Report Approved By:

08/20/04

Steve J. Kuiper **Date:**
Quality Assurance Manager
Aegis Labs, Inc.

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2.0 SUMMARY OF TEST RESULTS

The test results provided within this report, indicate that the EUT has been found to be in **COMPLIANCE** with the test specifications based upon the following RF compliance standards:

Pass/Fail determination is based upon the nominal values of the test data.

802.11b Mode (2412-2462 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	Refer to Original Filing
15.247(b)(1)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 16.60 dBm = 45.71 mW 2437 MHz = 16.60 dBm = 45.71 mW 2462 MHz = 16.55 dBm = 45.19 mW
15.247(b)(4)	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	Refer to Original Filing
15.207	AC Conducted Emissions	PASSED	Refer to Original Filing
15.209	Radiated Emissions (30-1000 MHz)	PASSED	Refer to Original Filing

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3.0 ADMINISTRATIVE DATA AND TEST DESCRIPTION

DEVICE TESTED:	ITE Type: Intel PRO/Wireless 2100 Network Connection Model Number(s): WM3B2100 Serial Number: 5580FE203ADC37729001 FCC ID: PD9WM3B2100
TEST DATE(S):	August 2, 2004
DATE EUT RECEIVED:	July 28, 2004
ORIGIN OF TEST SAMPLE(S):	Production Unit
RESPONSIBLE PARTY:	Intel Corporation EC1-01 13280 Evening Creek Drive San Diego, California 92128
CLIENT CONTACT:	Mr. Robert Paxman
MANUFACTURER:	Intel Corporation
TEST LOCATION:	Aegis Labs, Inc. 32231 Trabuco Creek Road Trabuco Canyon, CA 92678 Conducted Site #2 Radiated Site #2
A2LA CERTIFICATE:	1111.01, Valid through February 28, 2006
PURPOSE OF TEST:	To demonstrate compliance with the relevant standards described in Section 2.0 of this report.
TEST(S) PERFORMED:	Refer to Table in Section 2.0 of this report.

All calibration vendors were responsible for certifying Aegis Labs, Inc. test equipment as per the manufacturer's specifications and that the equipment is calibrated using instruments and standards where the accuracy is traceable to the National Institute of Standards and Technology (NIST). Calibration of all test equipment conforms to ANSI/NCSL Z540-1 and ISO 10012-1 and/or ISO/IEC Guide 17025 compliance (Additionally, other pertinent test equipment will carry MIL-STD-45662A). All calibration documents are on file with Aegis Labs, Inc., with copies provided upon request.

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4.0 DESCRIPTION OF EUT

4.1 EUT Description

Equipment Under Test (EUT)	
Trade Name:	Intel PRO/Wireless 2100 Network Connection
Model Number:	WM3B2100
Frequency Range:	802.11b = 2412 – 2462 MHz
Type of Transmission:	Direct Sequence Spread Spectrum
Transfer Rate:	1/5.5/11 Mbps for 802.11b mode
Number of Channels:	802.11b mode (2412-2462 MHz) = 11
Modulation Type:	DBPSK, DQPSK, CCK
Antenna Type:	Hirose U.FL-R-SMT mates with cable connector U.FL-LP-066
Antenna Gain (See Note 2):	Yokowo (Mallow) Antenna @ 2.4 GHz = 2.48 dBi
Transmit Output Power:	17 dBm (Typical) for 802.11b mode Please see Appendix A (Data Sheets) for actual output power.
Power Supply:	3.3VDC from computer MPCI slot.
Number of External Test Ports Exercised:	2 Antenna Ports (1 Main & 1 Auxiliary)

The Intel PRO/Wireless 2100 Network Connection is an embedded 2.4 GHz Wireless Local Area Network Mini-PCI adapter. The Mini-PCI Type 3B form factor is designed for notebook computer systems where overall thickness must be kept to an absolute minimum and connect to antennas internal to a notebook computer. It is capable of a data rate of up to 11 Mbps in 802.11b mode.

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

NOTE 2: Refer to the antenna specifications for a further description of the antennas. Antennas will be professionally installed inside a laptop computer by the laptop vendor. The antenna gain was subtracted from the antenna cable loss to come up with the total antenna gain.

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4.1.1 Channel Number and Frequencies

802.11b Mode	
Channel	**Frequency (MHz)**
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462

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4.2 EUT Configuration

The EUT was tested installed in the Mini-PCI slot of the Hewlett Packard 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 a set of antennas via its Main and AUX antenna ports. Data for a set of Yokowo (Mallow) antennas can be found in Appendix A (Data Sheets)

The low, middle, and high channels were tested in 802.11b mode. The EUT was placed in either continuous transmit or continuous receive mode by a program provided by the manufacturer (*CRTU II Ver. 1.2.0.3000*).

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4.3 List of EUT, Sub-Assemblies, and Host Equipment

LIST OF EUT AND SUB-ASSEMBLIES			
Equipment Name	**Manufacturer**	**Model Number**	**Serial Number**
Intel PRO/Wireless 2100 Network Connection	Intel Corporation	WM3B2100	5580FE203AD C37729001
EUT Sub-Assemblies			
Main Antenna	Yokowo	YCE-5008	N/A
Aux Antenna	Yokowo	YCE-5008	N/A

HOST EQUIPMENT LIST			
Equipment Name	**Manufacturer**	**Model Number**	**Serial Number**
Computer	Hewlett Packard	Pavillion a300n	MXK3391864
LCD Monitor	Dell	E151FPp	CN-06R644-47804-34R-LATL
Keyboard	Hewlett Packard	5183	BF33339165
Mouse	Hewlett Packard	M042KC	30870136

NOTE: All the power cords of the above support equipment are standard non-shielded, 1.8 meters long.

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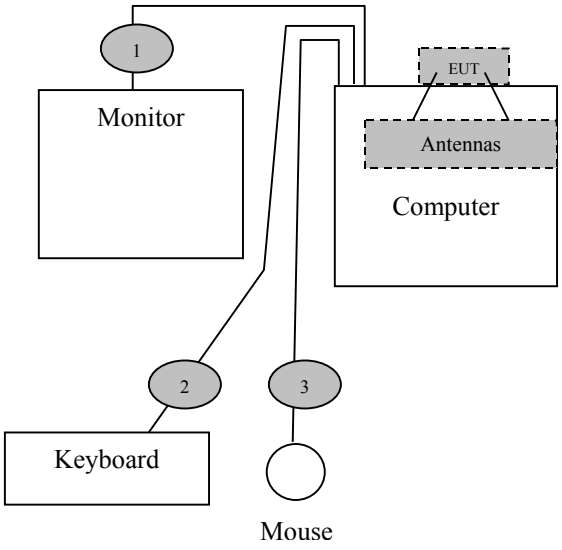
4.4 I/O Cabling Diagram and Description



Cable 1: This is a 6-foot braid and foil shielded round cable connecting the Hewlett Packard host computer with the Dell LCD monitor. It has metallic DB-15 type connector at the computer end and is hardwired to the monitor. The cable is bundled to a length of one meter and the shield of the cable is grounded to the chassis of both devices via the connector shells.

Cable 2: This is a 6-foot braid and foil shielded round cable connecting the Hewlett Packard host computer to the Hewlett Packard keyboard. It has a metallic 6-pin mini din type connector at the computer end and is hardwired to the keyboard. The shield of the cable is grounded to the chassis of the computer via the connector shell.

Cable 3: This is a 6-foot braid and foil shielded round cable connecting the Hewlett Packard host computer to the Hewlett Packard mouse. It has a metallic 6-pin mini din type connector at the computer end and is hardwired to the mouse. The shield of the cable is grounded to the chassis of the computer via the connector shell.

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5.0 TEST EQUIPMENT AND TEST SETUPS

The test equipment settings and functions are selected using the guidance of ANSI C63.4-2001. All test equipment setups and operations during conducted and radiated emissions testing are in accordance with this reference document.

5.1 AC Power Line Conducted Emissions

During conducted emissions measurements, a spectrum analyzer was used as the measuring instrument along with a preselector and quasi-peak detector. A 10 dB attenuation pad was used for the protection of the spectrum analyzer input stage. The conducted emissions from the EUT in the frequency range from 150 kHz to 30 MHz were captured for graphical display through the use of automated LABVIEW EMI measurement software. All graphical readings were measured in the "Peak" mode only to reduce testing time. Upon completion of the graphical scan, the test lab personnel performed the conducted measurement scan manually using the spectrum analyzer front panel keys. All peak measurements coming within 3 dB of the limit line were "Averaged" and/or "Quasi-Peaked" and denoted appropriately in the EXCEL spreadsheet.

The Equipment Under Test (EUT) was configured as a system with peripherals connected, so that at least one interface port of each type is connected to one external peripheral when tested for conducted emissions according to ANSI C63.4: 1992. Excess power cord length was wrapped in a bundle 30 to 40 centimeters in length near the center of the cord. The EUT was tested in a tabletop configuration.

The emission readings for Line 1 and Line 2 are highlighted on the data sheets in Appendix A. The graphical scans only reflects peak readings while the tabulated data sheets reflect peak, average, and/or quasi-peak readings which ever applies.

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5.2 Spurious Radiated Emissions

A spectrum analyzer was used as the measuring instrumentation along with a preselector and quasi-peak-detector. The pre-amplifiers were used to increase the sensitivity of the instrument. The spectrum analyzer was used in the peak detector mode with the "max-hold" feature activated and in Positive Peak mode. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps. The quasi-peak detector was used only for those readings, which are marked accordingly in the data sheet. The effective measurement bandwidth used for the radiated emissions test was 120 kHz for (30 MHz- 1000 MHz). The spectrum analyzer operated such that the modulation of the signal was filtered out to set the analyzer in linear mode. For testing beyond 1000 MHz a spectrum analyzer capable of taking reading above 1000 MHz was connected to the high frequency amplifier, where these measurement readings were taken with the transducer placed at a 3-meter test distance from the EUT.

The Open Area Test Sites (OATS) was used for radiated emission testing. These test sites are designed according to ANSI C63.4: 1992 and ANSI C63.7: 1992 guidelines. The Measurements were conducted in accordance with ANSI C63.4: 1992 and ANSI C63.7: 1992 requirements.

Broadband biconical, log periodic, and horn antennas were used as transducers during the measurement reading phase. The frequency spans were wide (30 MHz-88 MHz, 88 MHz- 216 MHz, 216 MHz- 300 MHz, and 300 MHz- 1000 MHz). After 1000 MHz the horn antenna was used to measure emissions. The emission readings in both horizontal and vertical polarities are highlighted on the data sheets in Appendix A.

5.3 Conducted Emissions at the Antenna Port

A spectrum analyzer or power meter was used as the measuring instrumentation along with an attenuator and/or filter connected to the EUT antenna port. The attenuator and filters are used to ensure that the front end of the measurement instrument is not overloaded by the fundamental transmission. . The instruments recorded the measured readings with the bandwidths (video and resolution) set in accordance with the FCC Rules and regulations.

For the power out measurements in 802.11b and 802.11g modes a peak power meter was used along with a peak power sensor with a wide enough bandwidth to capture the entire fundamental transmission.

The measured readings are on the data sheets in Appendix A.

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5.4 Test and Measurement Equipment Used

TEST EQUIPMENT USED					
Equipment Name	**Manufacturer**	**Model Number**	**Serial Number**	**Calibration Due Date**	**Calibration Cycle**
EMI Receiver - RF Section	Hewlett Packard	85462A	3325A00137	03/29/05	1 Year
EMI Receiver – RF Filter Section	Hewlett Packard	85460A	3330A00138	03/29/05	1 Year
Attenuator - 5W-10dB	Pasternack	PE7014-10	N/A	11/03/04	1 Year
LISN (EUT)	FCC	FCC-LISN-50-25-2	9931	02/06/05	1 Year
LISN (Access)	Com-Power	LI-200	12019	01/25/05	1 Year
LISN (Access)	Com-Power	LI-200	12018	01/25/05	1 Year
Spectrum Analyzer	Agilent	8564EC	4046A00387	02/06/06	2 Years
Preamplifier	Miteq	JS42-01001800-25-10P	815980 & 884968 & 885090	12/09/04	2 Years
2412-2462 MHz Notch Filter	Micro-Tronics	BRM50702-02	003	04/21/06	2 Years
Antenna - Biconical	EMCO	3110	9108-1421	02/11/05	1 Year
Antenna - Log Periodic	EMCO	3148	4947	02/11/05	1 Year
1-18 GHz Antenna - Horn	Com-Power	AH-118	10069	12/09/04	2 Years
18-26.5 GHz Preamplified Antenna – Horn	Custom Microwave	H042	001	11/04/04	1 Year
Power Meter	Anritsu	ML2487A	6K00001785	04/05/05	2 Years
Wide Bandwidth Sensor	Anritsu	MA2491A	31193	04/05/05	2 Years

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6.0 SAMPLE CALCULATIONS

If a preamplifier is used during the Radiated Emissions Testing, it is required that the amplifier gain be subtracted from the Spectrum Analyzer (Meter) Reading. In addition, a correction factor for the antenna, cable and a distance factor, if any, must be applied to the Meter Reading before a true field strength reading can be obtained. In the Automatic Mode of A.R.M.S. measurements, these considerations are automatically presented as a part of the printout. In the case of manual measurements and for greater efficiency and convenience, usage of the calibration correction factors in the Appendices is necessary to calculate the Corrected Meter Reading. These correlation factors for each meter reading, shall be modified to reflect these correlation factors at each frequency value so that the meter readings can be compared directly to the modified specification limit. This modified specification limit is referred to as the "Corrected Meter Reading Limit" (CML).

The equation shall be derived in the following manner:

Corrected Meter Reading = Meter Reading + F +C –G - D

Where, F = Antenna Factor
C = Cable Factor
G = Amplifier Gain
D = Distance Factor

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

CML = Specification Limit - F - C + G + D

For the manual mode of measurement, a table of corrected meter reading limits shall be used to permit immediate comparison of the meter reading to determine if the measured emission amplitude exceeded the specification limit at that specific frequency. There shall be two calculation sheets done, one for three meter and one for ten-meter measurement distances, where applicable. The correction factors for the antenna and the amplifier gain are attached in the Appendices.

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6.0 Sample Calculations (Continued)

Peak Transmit Power Output:

A correction factor for the cable must be applied to the Conducted Power before a true power reading can be obtained. This is referred to as the "Corrected Power" (CP).

The equation shall be derived in the following manner:

Corrected Power Reading = Conducted Power Reading + C

Where, C = Cable Factor

The conducted power is taken in units of dBm. To obtain units of mW the following equation is used:

$mW = 10^{(dBm/10)}$

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7.0 MODIFICATIONS AND RECOMMENDATIONS

No modifications were made to the EUT.

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APPENDIX A

TEST DATA

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PEAK TRANSMIT POWER

CLIENT:	Intel Corporation	**DATE:**	08/02/04
EUT:	Intel PRO/Wireless 2100 Network Connection	**PROJECT NUMBER:**	INTEL-040730-01
MODEL NUMBER:	WM3B2100	**TEST ENGINEER:**	JC
SERIAL NUMBER:	5580FE203ADC37729001	**SITE #:**	2
CONFIGURATION:	Tested installed in the Hewlett Packard host computer's mini PCI slot.	**TEMPERATURE:**	17 C
		HUMIDITY:	67% RH
		TIME:	8:00 AM

Standard:	FCC CFR 47, Part 15.247(b)(1)
Description:	The maximum peak output power of the intentional radiator shall not exceed 1 watt.
Results:	See Data Sheet

Peak Transmit Power Limits	
Frequency (MHz)	**Output Power (W)**
2412-2462	1

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Peak Transmit Power (Continued)

Mode	Channel	Frequency (MHz)	Rate (Mbps)	Average Power (dBm)	Average Power (mW)	Peak Power (dBm)	Peak Power (mW)
802.11b	1	2412	1	13.80	23.99	16.60	45.71
802.11b	1	2412	5.5	13.25	21.13	16.30	42.66
802.11b	1	2412	11	13.45	22.13	16.45	44.16
802.11b	6	2437	1	13.90	24.55	16.60	45.71
802.11b	6	2437	5.5	13.50	22.39	16.45	44.16
802.11b	6	2437	11	13.45	22.13	16.45	44.16
802.11b	11	2462	1	13.70	23.44	16.50	44.67
802.11b	11	2462	5.5	13.40	21.88	16.40	43.65
802.11b	11	2462	11	13.55	22.65	16.55	45.19

NOTE: The output power measurement is conducted.

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SPURIOUS RADIATED EMISSIONS TEST RESULTS

CLIENT:	Intel Corporation	**DATE:**	08/02/04
EUT:	Intel PRO/Wireless 2100 Network Connection	**PROJECT NUMBER:**	INTEL-040730
MODEL NUMBER:	WM3B2100	**TEST ENGINEER:**	JC
SERIAL NUMBER:	5580FE203ADC37729001	**SITE #:**	2
CONFIGURATION:	Tested installed in the Hewlett Packard host computer's mini PCI slot in **802.11b mode (2412-2462 MHz with the Yokowo (Mallow) antennas.**	**TEMPERATURE:**	19 C
		HUMIDITY:	59% RH
		TIME:	9:00 AM

Standard:	FCC CFR 47, Part 15.247(c)
Description:	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.
Results:	Passes (See Data Sheets)

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

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Spurious Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11b mode (2412-2462 MHz)***
Channels 1, 6, & 11
Continuous TX** at MAIN Antenna port with **Yokowo (Mallow) Antennas
Aegis Labs, Inc. File #: INTEL-040730-02

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*
2412.00	70.00	100	135				3.30	31.11	104.41		
2412.00				66.49	A		3.30	31.11	100.90		
2437.00	70.50	100	135				3.32	31.05	104.87		
2437.00				67.24	A		3.32	31.05	101.61		
2462.00	70.00	100	135				3.34	30.99	104.33		
2462.00				66.89	A		3.34	30.99	101.22		

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*
2412.00	71.33	200	270				3.30	31.24	105.87		
2412.00				67.71	A		3.30	31.24	102.25		
2437.00	71.17	200	270				3.32	31.20	105.69		
2437.00				67.84	A		3.32	31.20	102.36		
2462.00	71.33	200	270				3.34	31.16	105.83		
2462.00				68.13	A		3.34	31.16	102.63		

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Spurious Radiated Emissions Test Results (Continued)

*Band Edge Field Strength Measurements in **802.11b mode (2412-2462 MHz)***
Channels 1, 6, & 11
Continuous TX** at MAIN Antenna port with **Yokowo (Mallow) Antennas
Aegis Labs, Inc. File #: INTEL-040730-02

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*
2390.00									55.41	74.00	-18.59
2390.00									44.56	54.00	-9.44
2387.20									56.57	74.00	-17.43
2387.20									46.23	54.00	-7.77
2400.00	32.83	100	135				3.29	31.14	67.26	84.41	-17.15
2483.50									54.33	74.00	-19.67
2483.50									44.56	54.00	-9.44
2486.00									55.83	74.00	-18.17
2486.00									45.56	54.00	-8.44

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*
2390.00									56.87	74.00	-17.13
2390.00									45.91	54.00	-8.09
2387.20									58.03	74.00	-15.97
2387.20									47.58	54.00	-6.42
2400.00	31.67	200	315				3.29	31.26	66.22	85.87	-19.65
2483.50									55.83	74.00	-18.17
2483.50									45.97	54.00	-8.03
2486.00									57.33	74.00	-16.67
2486.00									46.97	54.00	-7.03

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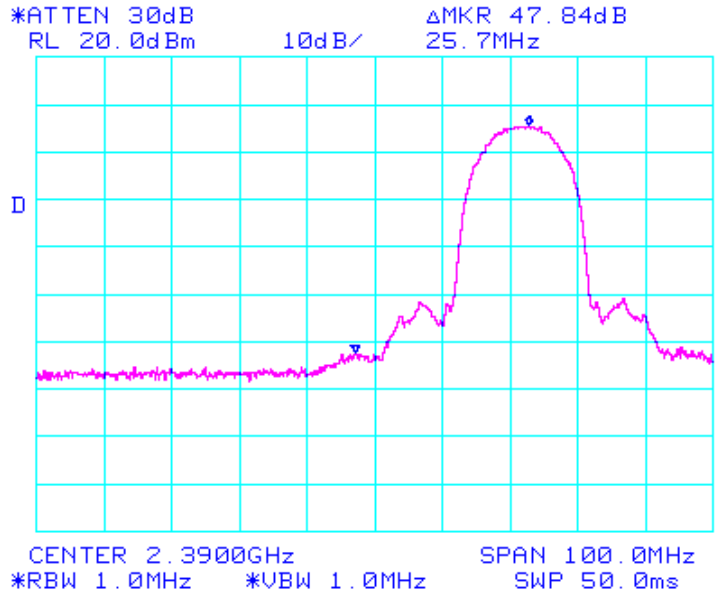
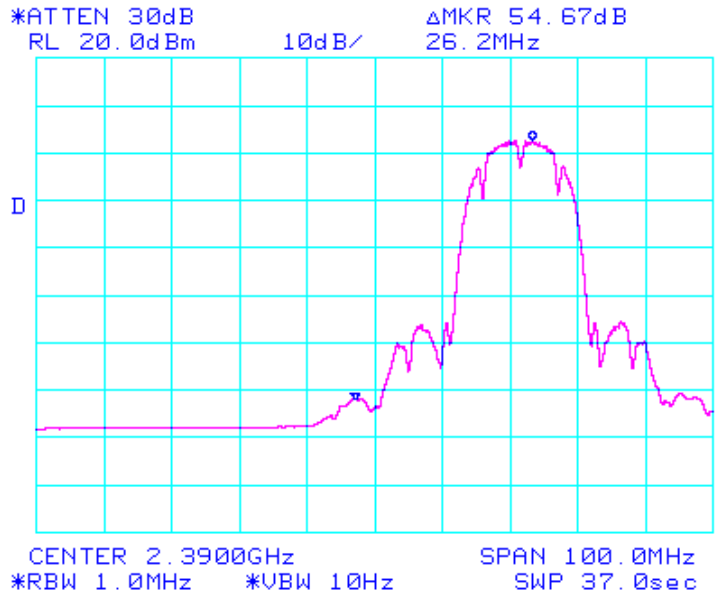
Spurious Radiated Emissions Test Results (Continued)

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

Test Date	*Data*	*Test Eng.*
08/02/04	2.412 GHz band edge **PEAK DELTA** (INTEL-040730-02b01)	JC



Test Date	*Data*	*Test Eng.*
08/02/04	2.412 GHz band edge **AVERAGE DELTA** (INTEL-040730-02b02)	JC



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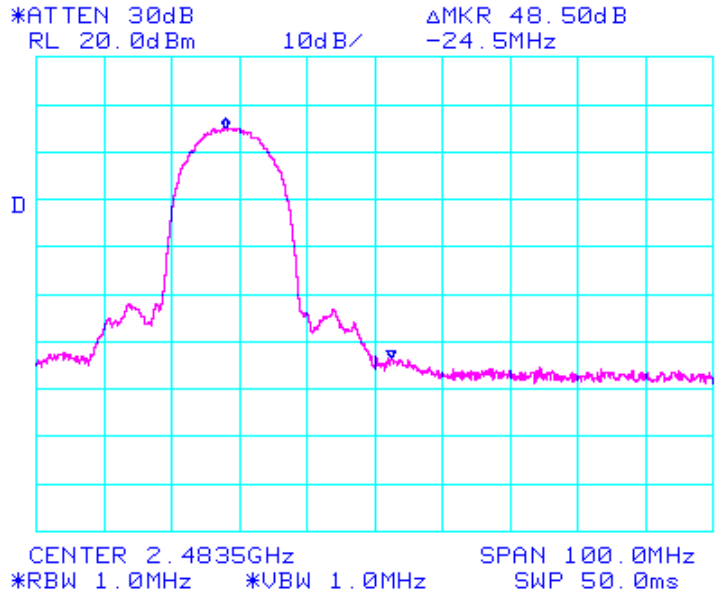
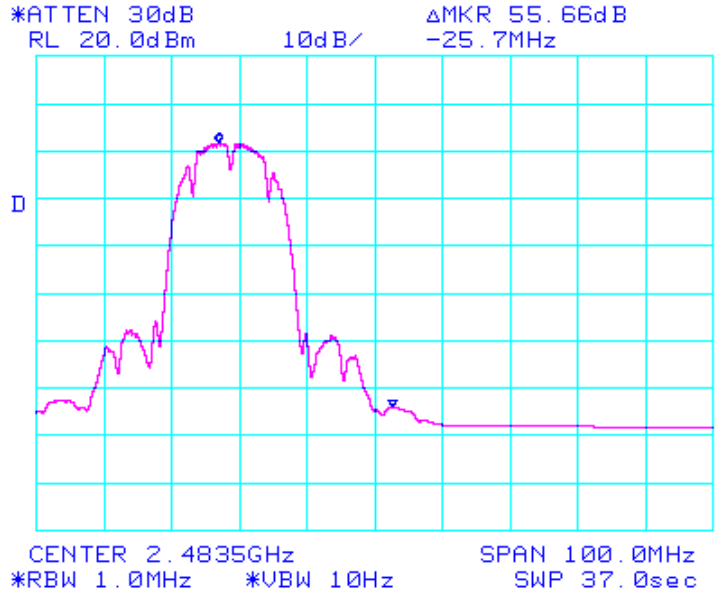
Spurious Radiated Emissions Test Results (Continued)

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

Test Date	*Data*	*Test Eng.*
08/02/04	2.462 GHz band edge **PEAK DELTA** (INTEL-040730-02b03)	JC



Test Date	*Data*	*Test Eng.*
08/02/04	2.462 GHz band edge **AVERAGE DELTA** (INTEL-040730-02b04)	JC



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Spurious Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11b mode (2412-2462 MHz)***
Channels 1, 6, & 11
Continuous TX** at MAIN Antenna port with **Yokowo (Mallow) Antennas
Aegis Labs, Inc. File #: INTEL-040730-03

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)											
4824.00	50.83	100	135			43.27	4.73	34.53	46.82	74.00	-27.18
4824.00				42.36	A	43.27	4.73	34.53	38.35	54.00	-15.65
9648.01	50.50	100	135			43.22	6.95	38.88	53.11	84.41	-31.30
EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz)											
4873.99	49.83	100	135			43.29	4.77	34.72	46.03	74.00	-27.97
4873.99				39.89	A	43.29	4.77	34.72	36.09	54.00	-17.91
9747.96	49.67	100	135			43.25	6.99	39.00	52.40	84.87	-32.47
EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz)											
4924.00	50.00	100	135			43.30	4.81	34.91	46.41	74.00	-27.59
4924.00				39.69	A	43.30	4.81	34.91	36.10	54.00	-17.90
9848.01	50.17	100	135			43.29	7.03	39.12	53.03	84.33	-31.30

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Spurious 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 1 (2.412 GHz)											
4823.96	50.17	100	225			43.27	4.73	34.53	46.16	74.00	-27.84
4823.96				40.49	A	43.27	4.73	34.53	36.48	54.00	-17.52
9647.97	50.33	100	135			43.22	6.95	38.97	53.03	85.87	-32.84
EUT in Continuous Transmit Mode on Channel 6 (2.437 GHz)											
4874.01	49.33	100	225			43.29	4.77	34.72	45.53	74.00	-28.47
4874.01				38.86	A	43.29	4.77	34.72	35.06	54.00	-18.94
9748.04	49.67	100	135			43.25	6.99	39.15	52.55	85.69	-33.14
EUT in Continuous Transmit Mode on Channel 11 (2.462 GHz)											
4924.00	49.83	100	225			43.30	4.81	34.91	46.24	74.00	-27.76
4924.00				39.98	A	43.30	4.81	34.91	36.39	54.00	-17.61
9847.96	50.17	100	135			43.29	7.03	39.33	53.24	85.83	-32.59

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Spurious Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11b mode (2412-2462 MHz)***
Channels 1, 6, & 11
Continuous RX** at MAIN Antenna port with **Yokowo (Mallow) Antennas
Aegis Labs, Inc. File #: INTEL-040730-04

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)											
1608.01	49.67	100	225			42.54	2.71	29.36	39.20	80.00	-40.80
1608.01				37.12	A	42.54	2.71	29.36	26.65	60.00	-33.35
9648.03	50.00	100	135			43.22	6.95	38.88	52.61	80.00	-27.39
9648.03				37.97	A	43.22	6.95	38.88	40.58	60.00	-19.42
EUT in Continuous Receive Mode on Channel 6 (2.437 GHz)											
1624.03	49.00	100	225			42.54	2.72	29.47	38.65	80.00	-41.35
1624.03				36.76	A	42.54	2.72	29.47	26.41	60.00	-33.59
9747.98	50.33	100	135			43.25	6.99	39.00	53.06	80.00	-26.94
9747.98				38.10	A	43.25	6.99	39.00	40.83	60.00	-19.17
EUT in Continuous Receive Mode on Channel 11 (2.462 GHz)											
1641.35	49.67	100	225			42.55	2.74	29.59	39.45	80.00	-40.55
1641.35				37.56	A	42.55	2.74	29.59	27.34	60.00	-32.66
9848.01	50.00	100	135			43.29	7.03	39.12	52.86	80.00	-27.14
9848.01				37.89	A	43.29	7.03	39.12	40.75	60.00	-19.25

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Spurious 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 Receive Mode on Channel 1 (2.412 GHz)											
1608.00	49.17	100	135			42.54	2.71	29.39	38.74	80.00	-41.26
1608.00				37.01	A	42.54	2.71	29.39	26.58	60.00	-33.42
9648.02	50.17	100	135			43.22	6.95	38.97	52.87	80.00	-27.13
9648.02				37.89	A	43.22	6.95	38.97	40.59	60.00	-19.41
EUT in Continuous Receive Mode on Channel 6 (2.437 GHz)											
1624.68	49.00	100	135			42.54	2.72	29.50	38.68	80.00	-41.32
1624.68				36.96	A	42.54	2.72	29.50	26.64	60.00	-33.36
9747.96	49.67	100	135			43.25	6.99	39.15	52.55	80.00	-27.45
9747.96				37.23	A	43.25	6.99	39.15	40.11	60.00	-19.89
EUT in Continuous Receive Mode on Channel 11 (2.462 GHz)											
1641.32	49.83	100	135			42.55	2.74	29.60	39.62	80.00	-40.38
1641.32				37.38	A	42.55	2.74	29.60	27.17	60.00	-32.83
9847.98	50.33	100	135			43.29	7.03	39.33	53.40	80.00	-26.60
9847.98				38.02	A	43.29	7.03	39.33	41.09	60.00	-18.91

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