



Modular Approval
Test Report
And Application for Grant of Equipment Authorization

TEST REPORT PERTAINING TO:

Equipment Under Test	Model Number(s)
Intel Wireless WiFi Link 4965AGN	4965AG_

CONFIGURATION

802.11a / 802.11b / 802.11g with a set of Ethertronics Antennas

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

PREPARED FOR:

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Test Report #: INTEL-061208F

Test Report Revision: NONE

	REPORT BODY	APPENDICES		TOTAL PAGES
		A	B	
PAGES	16	109	1	126

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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) Chain A

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 = 16.50 MHz 5785 MHz = 16.50 MHz 5825 MHz = 16.50 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	5745 MHz = 19.61 dBm = 91.40 mW 5785 MHz = 19.71 dBm = 93.53 mW 5825 MHz = 19.91 dBm = 97.94 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 = -5.83 dB 5785 MHz = -6.67 dB 5825 MHz = -7.83 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets



2.0 Summary of Test Results (Continued)

802.11a Mode (5745-5825 MHz) Chain B

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 = 16.42 MHz 5785 MHz = 16.50 MHz 5825 MHz = 16.33 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	5745 MHz = 20.21 dBm = 104.94 mW 5785 MHz = 20.31 dBm = 107.39 mW 5825 MHz = 20.31 dBm = 107.39 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 = -4.00 dB 5785 MHz = -3.83 dB 5825 MHz = -6.17 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets



2.0 Summary of Test Results (Continued)

802.11b Mode (2400-2483.5 MHz) Chain A

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 = 12.58 MHz 2437 MHz = 12.67 MHz 2462 MHz = 12.67 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 19.07 dBm = 80.68 mW 2437 MHz = 19.24 dBm = 83.90 mW 2462 MHz = 20.03 dBm = 100.64 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 = -9.00 dB 2437 MHz = -9.00 dB 2462 MHz = -8.67 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets



2.0 Summary of Test Results (Continued)

802.11b Mode (2400-2483.5 MHz) Chain B

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 = 12.08 MHz 2437 MHz = 12.17 MHz 2462 MHz = 13.00 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 18.73 dBm = 74.61 mW 2437 MHz = 18.88 dBm = 77.23 mW 2462 MHz = 19.94 dBm = 98.58 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 = -7.67 dB 2437 MHz = -6.50 dB 2462 MHz = -6.67 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets



2.0 Summary of Test Results (Continued)

802.11g Mode (2400-2483.5 MHz) Chain A

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 = 16.50 MHz 2437 MHz = 16.50 MHz 2462 MHz = 16.50 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 23.80 dBm = 239.86 mW 2437 MHz = 23.83 dBm = 241.52 mW 2462 MHz = 23.48 dBm = 222.82 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 = -6.33 dB 2437 MHz = -7.17 dB 2462 MHz = -8.67 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets



2.0 Summary of Test Results (Continued)

802.11g Mode (2400-2483.5 MHz) Chain B

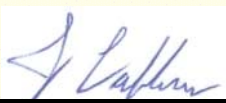
EMISSIONS STANDARD			
FCC Part 15 Section	Description	Results	Comments
15.247(a)(2)	The minimum 6dB bandwidth shall be at least 500 kHz.	PASSED	2412 MHz = 16.42 MHz 2437 MHz = 16.50 MHz 2462 MHz = 16.50 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 23.54 dBm = 225.92 mW 2437 MHz = 23.63 dBm = 230.65 mW 2462 MHz = 23.52 dBm = 224.88 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 = -8.67 dB 2437 MHz = -6.67 dB 2462 MHz = -8.00 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets

ANALYSIS AND CONCLUSIONS

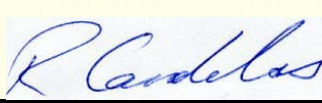
Based upon the measurement results we find that this equipment is within the limits of the global standards listed on the cover page of this test report. All results are based on a test of one sample. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be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

Approval Signatories

Test and Report Completed By:


Johnny Candelas
Test Technician
Aegis Labs, Inc.
12/11/06
Date:

Report Approved By:


Rick Candelas
Quality Assurance Manager
Aegis Labs, Inc.
12/11/06
Date:



3.0 ADMINISTRATIVE DATA AND TEST DESCRIPTION

DEVICE TESTED:	ITE Type: Intel Wireless WiFi Link 4965AGN Model Number(s): 4965AG_ Serial Number: 0013E804612B FCC ID: B944965AG
DATE EUT RECEIVED:	August 25 th , 2006
TEST DATE(S):	September 7 th – October 11 th , 2006
ORIGIN OF TEST SAMPLE(S):	Production
EQUIPMENT CLASS:	EUT tested as CLASS B device
RESPONSIBLE PARTY:	Hewlett-Packard Company 20555 SH 249 Mail Stop 060607 Houston, TX 77070-2698
CLIENT CONTACT:	Mr. Walter Overcash
MANUFACTURER:	Hewlett-Packard Company
TEST LOCATION:	Aegis Labs, Inc. 32231 Trabuco Creek Road Trabuco Canyon, CA 92678 Open Area Test Site #1& #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 Wireless WiFi Link 4965AGN
Model Number:	4965AG_
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:	PIFA (Main/Aux)
Antenna Gain (See Note 2):	Ethertronics Antenna @ 5 GHz = 5.00 dBi Ethertronics Antenna @ 2.4 GHz = 3.00 dBi
Transmit Output Power:	Please see Appendix A (Data Sheets) for actual output power.
Power Supply:	3.3VDC from computer MPCIE slot.
Number of External Test Ports Exercised:	3 Antenna Ports

The Intel Wireless WiFi Link 4965AGN 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 54 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 set of Ethertronics Antennas. (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 a set of antennas via its Chain A, B, & C antenna ports. Data for a set of Ethertronics antennas 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 once transmitting from Chain A antenna port and once transmitting from Chain B antenna port. The EUT was placed in either continuous transmit or continuous receive mode by a program provided by the manufacturer (*CRTU Version 4.1.14.0000*).

4.3 List of EUT, Sub-Assemblies and Host Equipment

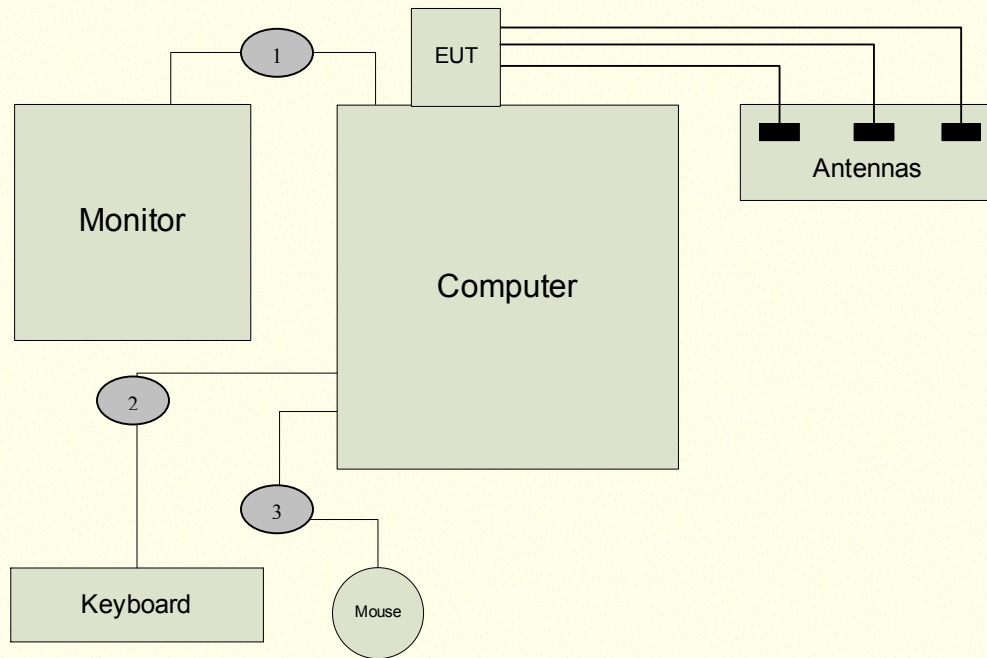
Equipment Under Test			
Manufacturer	Equipment Name	Model or Part Number	Serial Number
Intel Corporation	Intel Wireless WiFi Link 4965AGN	4965AG_	0013E804612B

EUT Sub Assemblies			
Manufacturer	Equipment Name	Model or Part Number	Serial Number
Ethertronics	Chain A (Tx) Antenna	MPCI01001	N/A
Ethertronics	Chain B (Tx) Antenna	MPCI01001	N/A
Ethertronics	Chain C (Rx) Antenna	MPCI01001	N/A

HOST EQUIPMENT LIST			
Manufacturer	Equipment Name	Model or Part Number	Serial Number
GST	Host Computer	GST-8000	G0400295337-015
Sony	Monitor	CPD-200ES	0742818
Logitech	Keyboard	Y-BF37	MCT25200581
Logitech	Mouse	M-BJ58	LNA22802012

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	8565EC	3946A00245	07/24/07	1 Year
Antenna - Horn	EMCO	3115	2230	05/15/07	1 Year
Preamp	Agilent	8449B	3008A01573	12/08/06	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
5.725-5.850 GHz Notch Filter	Microwave Circuits	N0257881	3173-01	04/21/07	2 Years
Antenna - 18-26.5 GHz Pre-amplified Horn	Aegis Labs, Inc.	H042	SLK-35-3W	02/08/07	1 Year
EMI Receiver - RF Section	Hewlett Packard	8546A	3325A00137	04/26/07	1 Year
EMI Receiver - RF Filter Section	Hewlett Packard	85460A	3325A00138	04/26/07	1 Year
10dB Attenuator	Radiall	R412710000	Lot 9624	06/30/07	2 Years
LISN (EUT)	Solar Electronics	9252-50-R-24-BNC	961025	03/30/08	2 Years
LISN (Access)	Solar Electronics	9252-50-R-24-BNC	961024	07/05/07	2 Years
Antenna - Biconical	EMCO	3110B	3383	04/06/07	1 Year
Antenna - Log Periodic	EMCO	3148	47943	06/22/07	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	12/09/06	1.5 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

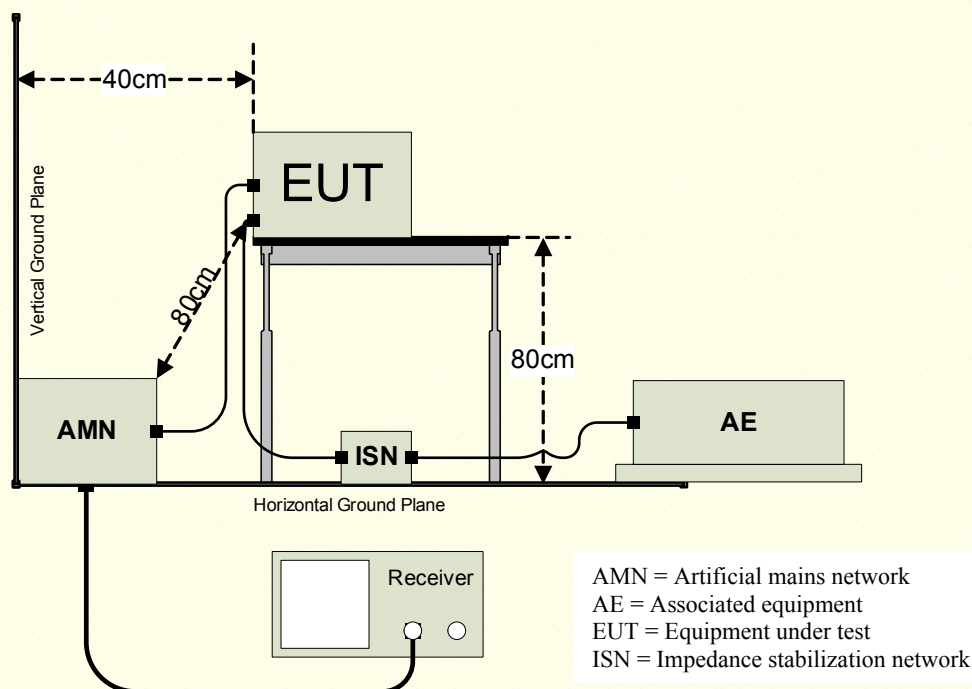
The following was the test configuration.

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.



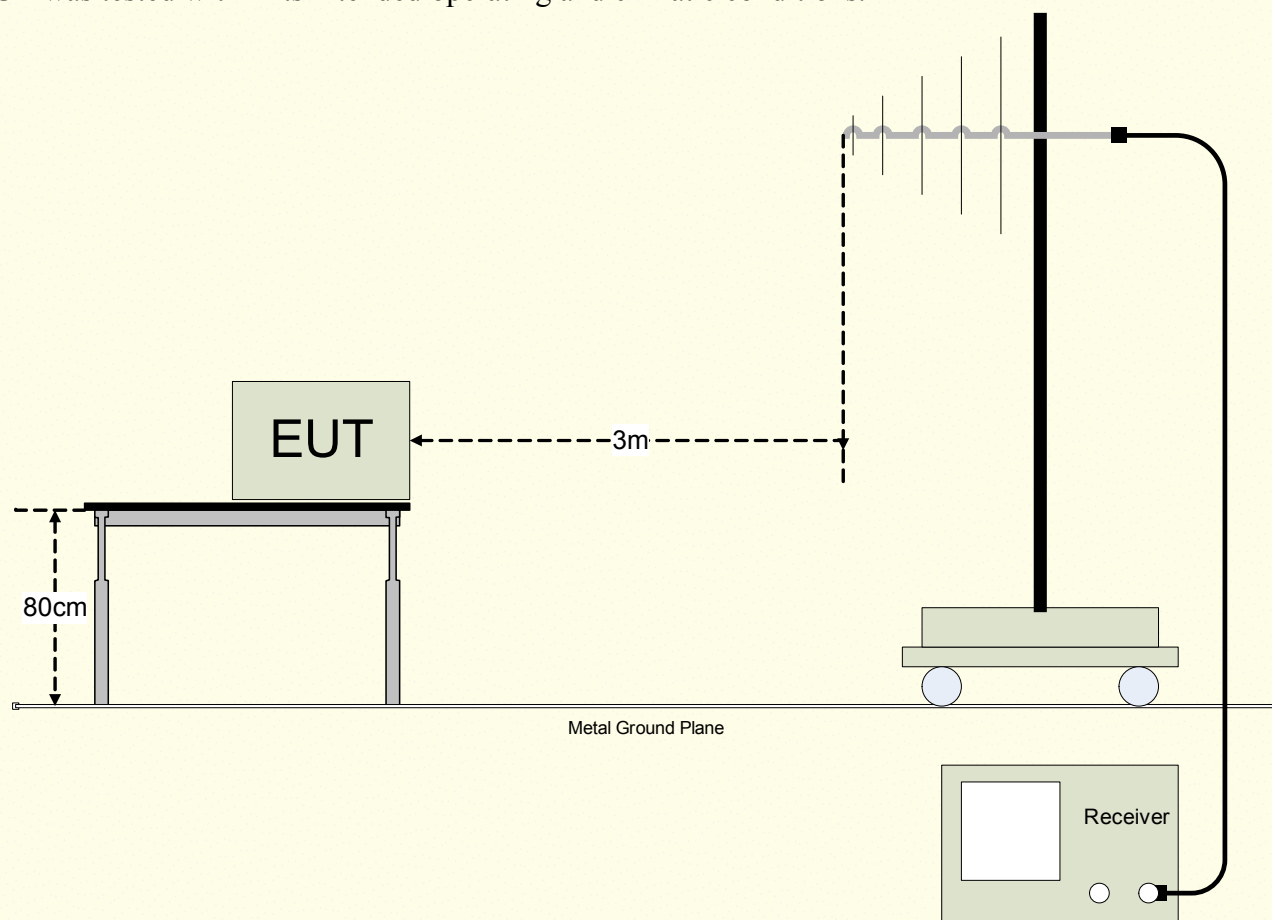
5.3 Radiated Emissions Test Setup

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



AC POWER PORT - CONDUCTED EMISSIONS TEST RESULTS

CLIENT:	Hewlett-Packard Company	DATE:	09/07/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	JC
SERIAL NUMBER:	0013E804612B	SITE #:	1
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	22 deg. C
		HUMIDITY:	49%
		TIME:	2:15 PM

Description:	Conducted Power RF Emissions (150 kHz – 30 MHz)
Results:	PASSED LINE 1 and LINE 2 Limits
Note:	Conducted Emissions Measurements were performed on the EUT with the power supply set at the following voltage and frequency. • 120VAC / 60 Hz

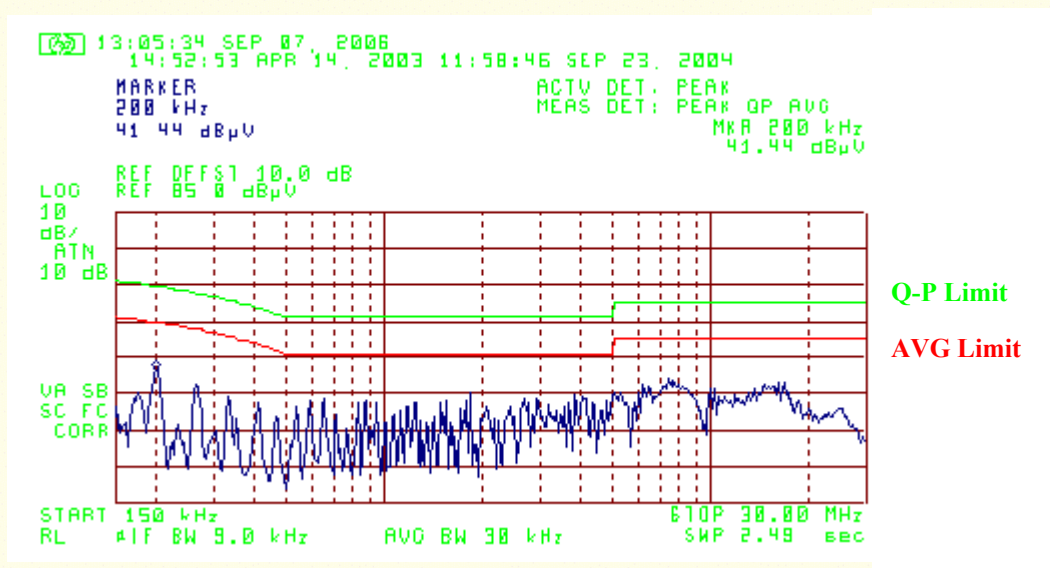


AC Power Port – Conducted Emissions Test Results (Continued)

Continuously Transmitting @ 120VAC/60Hz (INTEL-061107-01)

FCC CLASS B CONDUCTED EMISSIONS – LINE 1

Freq. (MHz)	Meter Reading (dBuV)	Detector (PK/QP/AV)	Average Limit (dBuV)	Average Delta(dB)	Quasi-Peak Limit (dBuV)	Quasi-Peak Delta(dB)
0.2000	41.44	PK	54.57	-13.13	64.57	-23.13
0.2700	37.40	PK	52.57	-15.17	62.57	-25.17
1.8400	35.48	PK	46.00	-10.52	56.00	-20.52
7.3900	38.91	PK	50.00	-11.09	60.00	-21.09
10.0000	36.02	PK	50.00	-13.98	60.00	-23.98
16.1400	38.26	PK	50.00	-11.74	60.00	-21.74



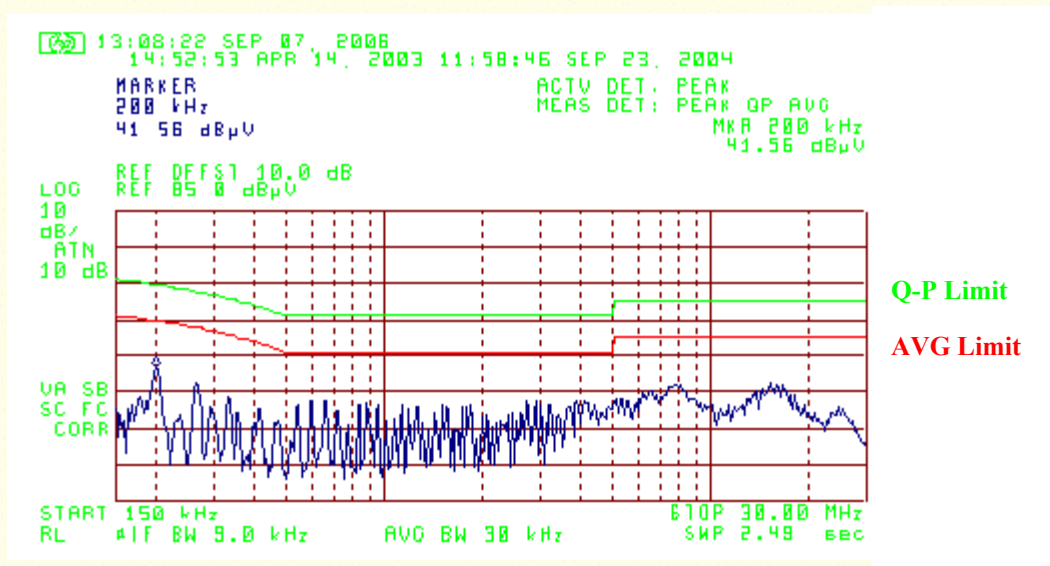


AC Power Port – Conducted Emissions Test Results (Continued)

Continuously Transmitting @ 120VAC/60Hz (INTEL-061107-01)

FCC CLASS B CONDUCTED EMISSIONS - LINE 2

Freq. (MHz)	Meter Reading (dBuV)	Detector (PK/QP/AV)	Average Limit (dBuV)	Average Delta(dB)	Quasi-Peak Limit (dBuV)	Quasi-Peak Delta(dB)
0.2000	41.56	PK	54.57	-13.01	64.57	-23.01
0.2700	37.40	PK	52.57	-15.17	62.57	-25.17
0.3300	33.69	PK	50.86	-17.17	60.86	-27.17
4.1300	32.63	PK	46.00	-13.37	56.00	-23.37
7.6800	36.91	PK	50.00	-13.09	60.00	-23.09
15.2200	37.46	PK	50.00	-12.54	60.00	-22.54





RADIATED EMISSIONS TEST RESULTS

CLIENT:	Hewlett-Packard Company	DATE:	09/07/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	JC
SERIAL NUMBER:	0013E804612B	SITE #:	1
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	22 deg. C
		HUMIDITY:	49%
		TIME:	2:15 PM

Description:	Radiated RF Emissions (30 MHz – 1000 MHz)
Results:	PASSED Horizontal and Vertical Antenna Polarizations Class B Limits
Note:	Radiated Emissions Measurements were performed on the EUT with the power supply set at the following voltage and frequency. • 120VAC / 60 Hz.

Radiated Emissions Sample Calculations

Corrected Meter Reading = 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)

Continuously Transmitting @ 120VAC/60Hz (INTEL-061107-03)

Horizontal Open Field Maximized Data

<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>Cable Factor (dB)</i>	<i>Antenna Factor (dB)</i>	<i>Corrected Reading (dBuV/m)</i>	<i>Limits (dBuV/m)</i>	<i>Diff (dB) +=FAIL</i>
48.02	8.58	400	45			2.65	10.32	10.46	32.01	40.00	-7.99
120.00	14.23	400	90	11.03	Q	2.39	11.20	10.46	35.08	43.50	-8.42
250.01	10.96	350	90			2.91	17.40	10.46	41.73	46.00	-4.27
305.09	11.32	300	270			3.07	14.49	10.46	39.33	46.00	-6.67
375.00	10.53	250	45			3.35	15.10	10.46	39.44	46.00	-6.57
386.00	11.63	225	45			3.39	15.54	10.46	41.02	46.00	-4.98

Vertical Open Field Maximized Data

<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>Cable Factor (dB)</i>	<i>Antenna Factor (dB)</i>	<i>Corrected Reading (dBuV/m)</i>	<i>Limits (dBuV/m)</i>	<i>Diff (dB) +=FAIL</i>
48.01	11.12	100	45			2.65	10.52	10.46	34.75	40.00	-5.25
119.98	18.40	100	90	14.65	Q	2.39	10.80	10.46	38.30	43.50	-5.20
250.03	8.51	100	45			2.91	18.30	10.46	40.18	46.00	-5.82
306.35	13.06	100	45			3.07	14.78	10.46	41.37	46.00	-4.63
358.01	7.94	100	0			3.27	15.44	10.46	37.11	46.00	-8.89
375.05	8.85	100	90			3.35	15.30	10.46	37.96	46.00	-8.04
386.01	15.71	100	180	13.62	Q	3.39	15.61	10.46	43.08	46.00	-2.92



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Hewlett-Packard Company	DATE:	09/18/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11a (5745-5825 MHz) mode with Ethertronics Antennas.	TEMPERATURE:	20 deg. C
		HUMIDITY:	48% RH
		TIME:	9:00 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. 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 Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-20*

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	61.83	100	135			4.99	35.25	102.07			Ch. 149
5745.00				52.19	A	4.99	35.25	92.43			
5785.00	61.33	100	135			5.01	35.26	101.59			Ch. 157
5785.00				52.14	A	5.01	35.26	92.40			
5825.00	62.83	100	135			5.02	35.27	103.12			Ch. 165
5825.00				53.63	A	5.02	35.27	93.92			

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	68.83	100	135			4.99	35.05	108.86			Ch. 149
5745.00				59.29	A	4.99	35.05	99.32			
5785.00	68.83	100	225			5.01	35.07	108.91			Ch. 157
5785.00				59.22	A	5.01	35.07	99.30			
5825.00	69.33	100	225			5.02	35.10	109.45			Ch. 165
5825.00				59.53	A	5.02	35.10	99.65			

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 Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-20

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	32.83	100	135		4.98	35.25	73.05	82.07	-9.01	Ch. 149
5850.00	30.17	100	135		5.03	35.27	70.47	83.12	-12.64	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	43.50	100	135		4.98	35.04	83.51	88.86	-5.35	Ch. 149
5850.00	30.50	100	225		5.03	35.11	70.64	89.45	-18.80	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

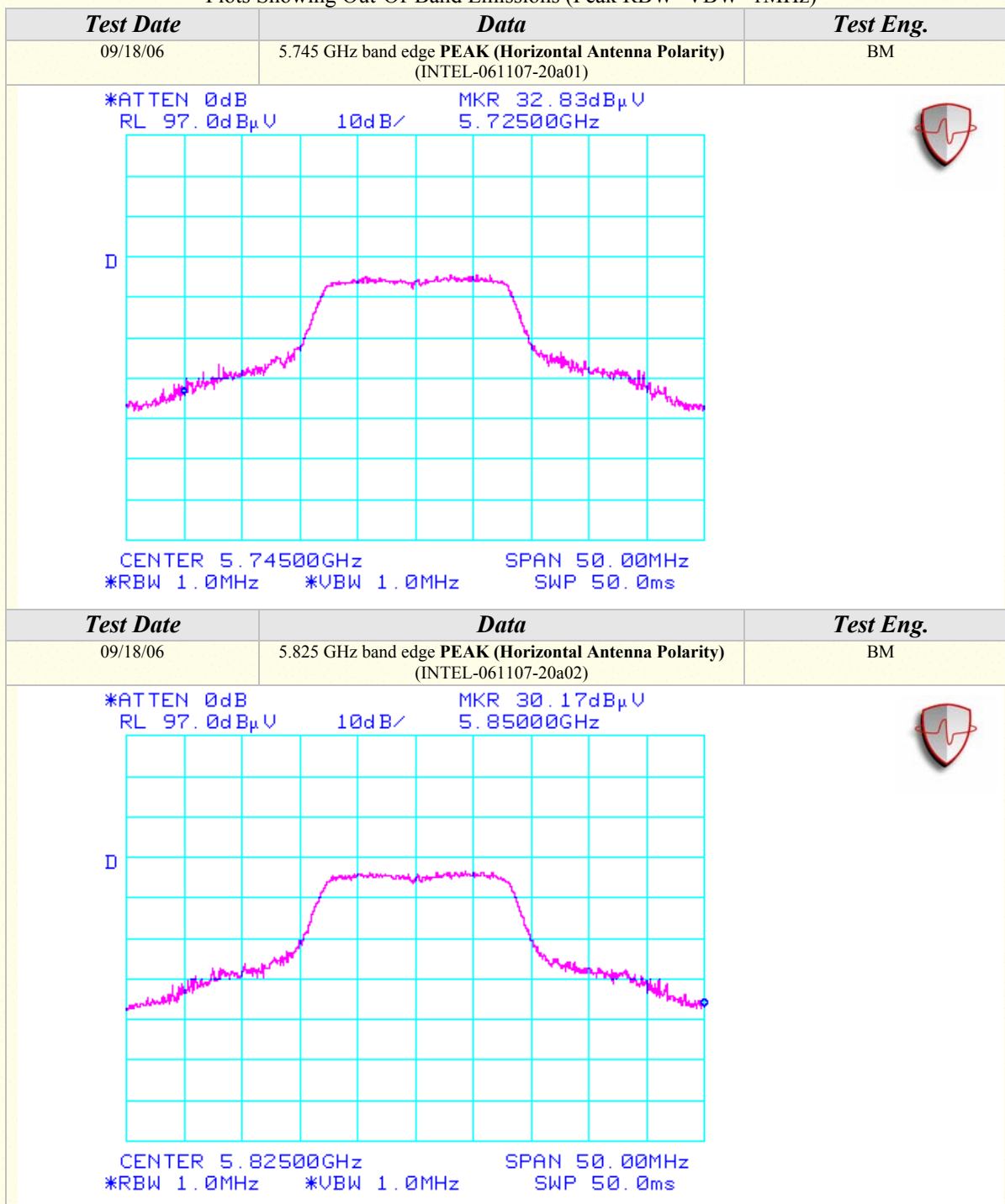
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

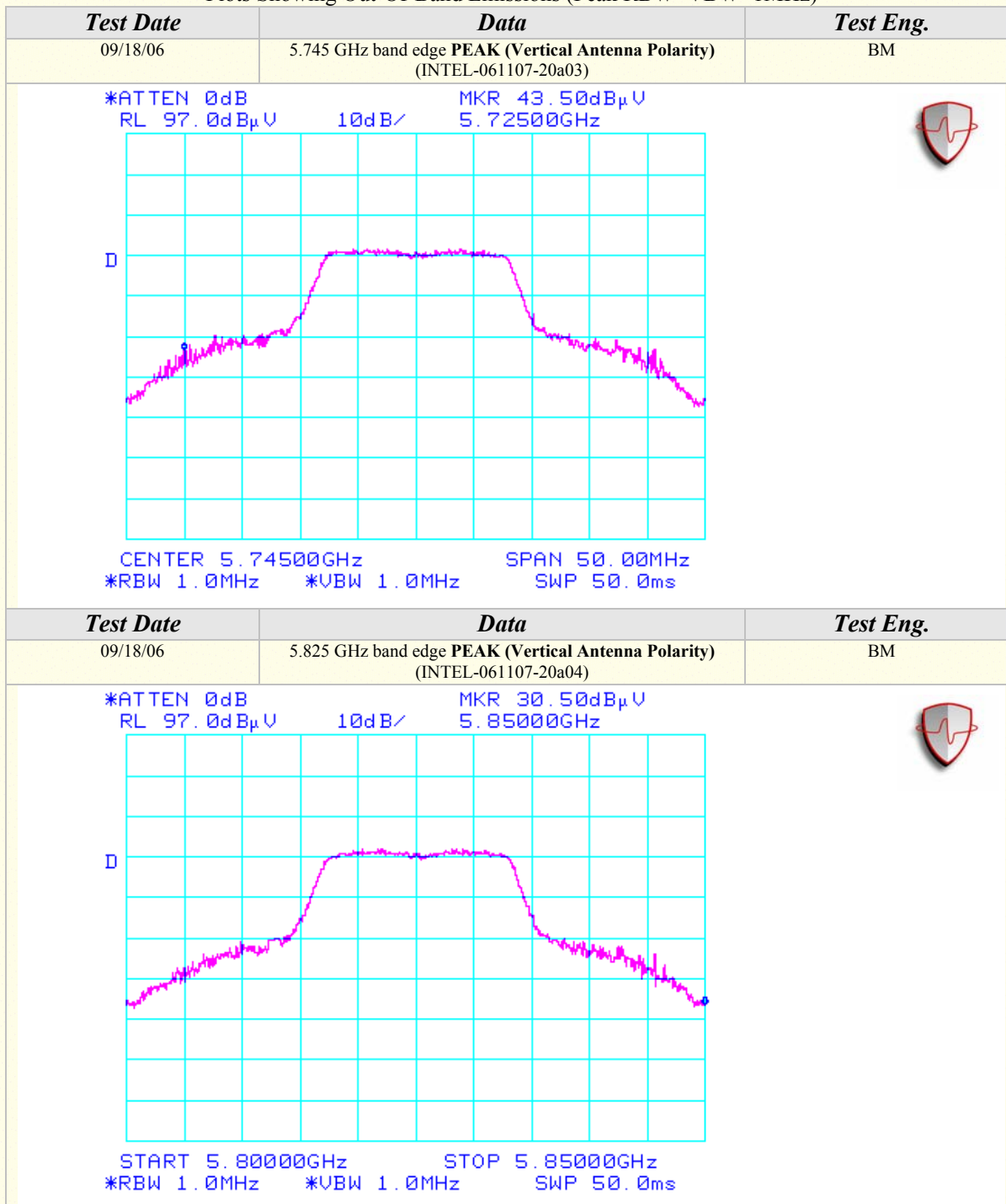
Radiated Emissions Test Results (Continued)

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 Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-19*

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	Comments
7660.00	61.33	100	225			50.15	5.81	37.40	54.39	74.00	-19.61	Ch. 149
7660.00				55.99	A	50.15	5.81	37.40	49.05	54.00	-4.95	
11490.00	63.00	100	225			50.58	7.42	39.23	59.06	74.00	-14.94	
11490.00				48.40	A	50.58	7.42	39.23	44.46	54.00	-9.54	
7713.25	60.67	100	180			50.15	5.81	37.40	53.73	74.00	-20.27	Ch. 157
7713.25				55.24	A	50.15	5.81	37.40	48.30	54.00	-5.70	
11570.00	63.50	100	135			50.58	7.42	39.23	59.56	74.00	-14.44	
11570.00				47.50	A	50.58	7.42	39.23	43.56	54.00	-10.44	
7766.66	60.17	100	180			50.58	7.42	39.23	56.23	74.00	-17.77	Ch.165
7766.66				54.62	A	50.58	7.42	39.23	50.68	54.00	-3.32	

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	Comments
7660.00	62.67	100	180			50.15	5.81	37.26	55.59	74.00	-18.41	Ch. 149
7660.00				57.91	A	50.15	5.81	37.26	50.83	54.00	-3.17	
11490.00	70.33	100	180			50.53	7.41	39.19	66.41	74.00	-7.59	
11490.00				54.90	A	50.53	7.41	39.19	50.98	54.00	-3.02	
7713.42	62.83	100	180			50.14	5.83	37.29	55.80	74.00	-18.20	Ch. 157
7713.42				57.08	A	50.14	5.83	37.29	50.05	54.00	-3.95	
11570.00	71.17	100	180			50.58	7.42	39.23	67.23	74.00	-6.77	
11570.00				54.60	A	50.58	7.42	39.23	50.66	54.00	-3.34	
7766.66	61.17	100	180			50.13	5.85	37.31	54.20	74.00	-19.80	Ch.165
7766.66				56.73	A	50.13	5.85	37.31	49.76	54.00	-4.24	
11650.00	65.83	100	135			50.64	7.42	39.26	61.87	74.00	-12.13	
11650.00				48.86	A	50.64	7.42	39.26	44.90	54.00	-9.10	



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous RX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-19*

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	Comments
3830.00	55.67	100	225			50.78	4.05	33.13	42.07	74.00	-31.93	Ch. 149
3830.00				46.31	A	50.78	4.05	33.13	32.71	54.00	-21.29	
3856.62	56.83	100	225			50.78	4.07	33.18	43.30	74.00	-30.70	Ch. 157
3856.62				47.14	A	50.78	4.07	33.18	33.61	54.00	-20.39	
3883.34	55.00	100	225			50.78	4.08	33.24	41.55	74.00	-32.45	Ch.165
3883.34				45.57	A	50.78	4.08	33.24	32.12	54.00	-21.88	

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	Comments
3830.00	57.00	100	135			50.78	4.05	33.13	43.40	74.00	-30.60	Ch. 149
3830.00				50.58	A	50.78	4.05	33.13	36.98	54.00	-17.02	
3856.65	56.50	100	135			50.78	4.07	32.83	42.62	74.00	-31.38	Ch. 157
3856.65				49.76	A	50.78	4.07	32.83	35.88	54.00	-18.12	
3883.35	55.67	100	135			50.78	4.08	32.90	41.87	74.00	-32.13	Ch.165
3883.35				47.81	A	50.78	4.08	32.90	34.01	54.00	-19.99	



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous TX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-24*

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	66.83	100	135			4.99	35.25	107.07			Ch. 149
5745.00				56.07	A	4.99	35.25	96.31			
5785.00	62.67	100	135			5.01	35.26	102.93			Ch. 157
5785.00				52.68	A	5.01	35.26	92.94			
5825.00	64.17	100	135			5.02	35.27	104.46			Ch. 165
5825.00				54.34	A	5.02	35.27	94.63			

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	71.83	100	180			4.99	35.05	111.86			Ch. 149
5745.00				62.01	A	4.99	35.05	102.04			
5785.00	71.50	100	225			5.01	35.07	111.58			Ch. 157
5785.00				61.73	A	5.01	35.07	101.81			
5825.00	71.50	100	225			5.02	35.10	111.62			Ch. 165
5825.00				62.32	A	5.02	35.10	102.44			

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 Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-24

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	36.50	100	135		4.98	35.25	76.72	87.07	-10.34	Ch. 149
5850.00	29.83	100	135		5.03	35.27	70.13	84.46	-14.32	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	46.50	100	180		4.98	35.04	86.51	91.86	-5.35	Ch. 149
5850.00	33.50	100	225		5.03	35.11	73.64	91.62	-17.97	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

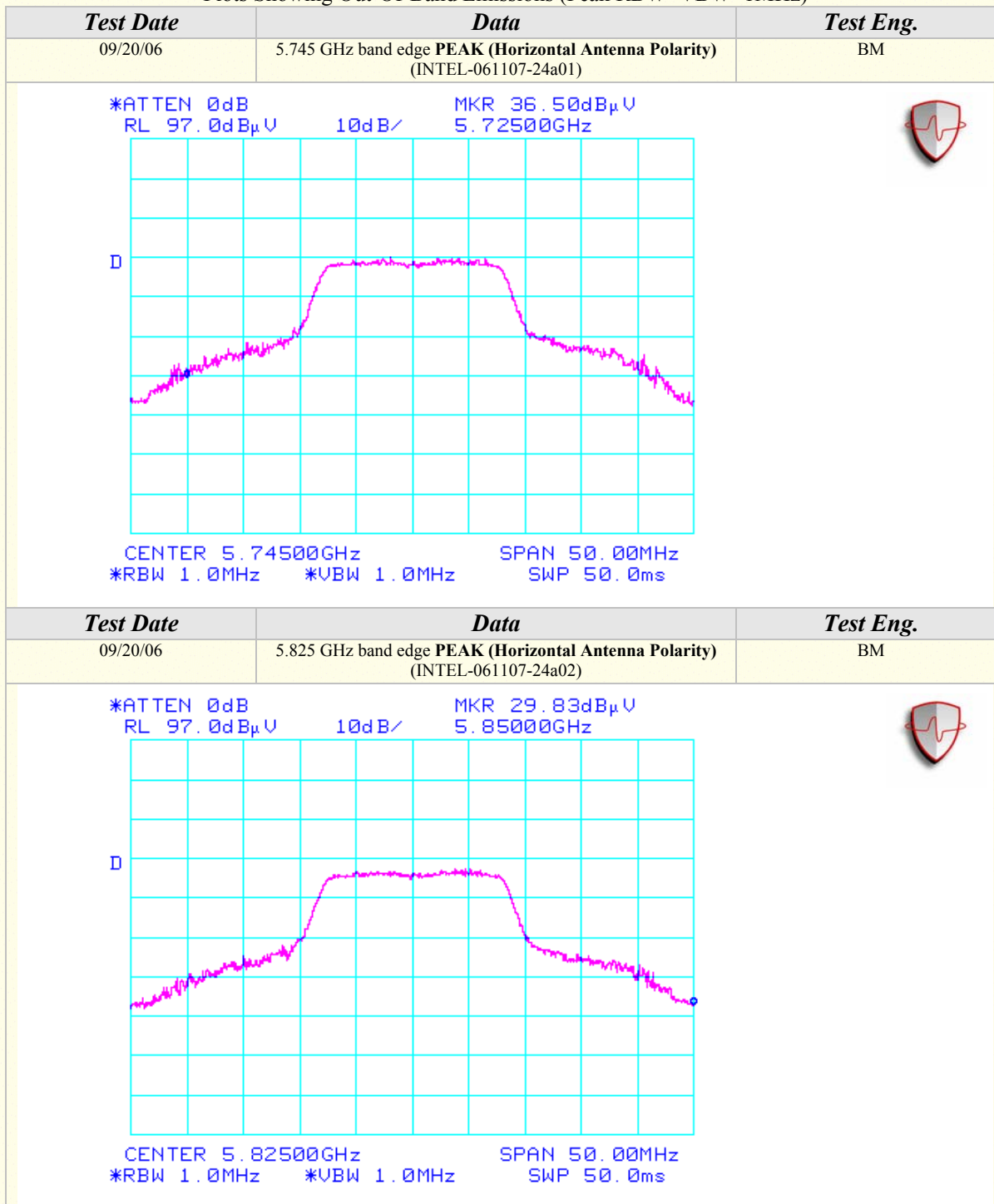
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

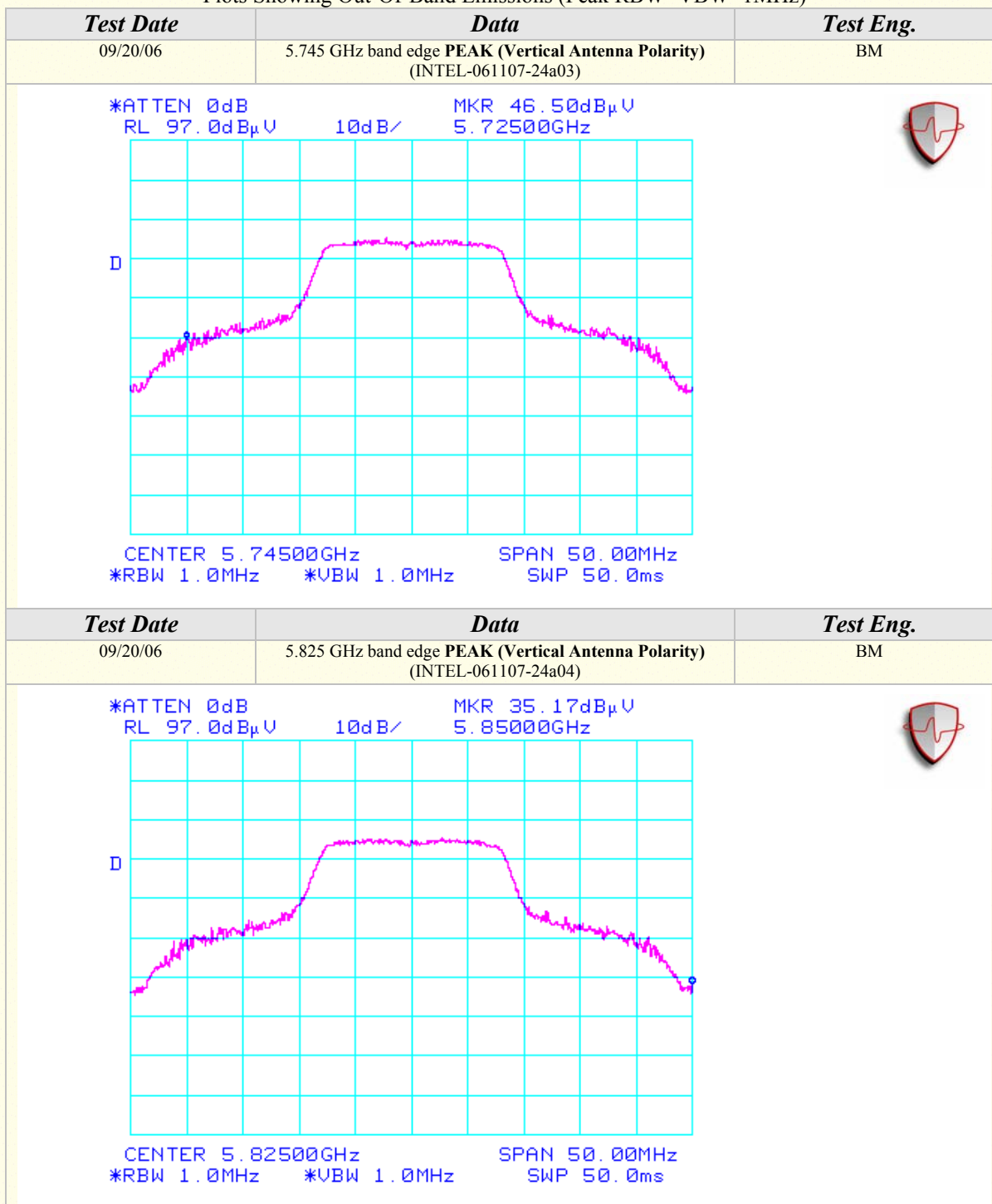
Radiated Emissions Test Results (Continued)

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 Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-22*

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	Comments
11490.00	59.33	100	225			50.53	7.41	39.19	55.41	74.00	-18.59	Ch. 149
11490.00				45.19	A	50.53	7.41	39.19	41.27	54.00	-12.73	
11570.00	61.50	100	135			50.58	7.42	39.23	57.56	74.00	-16.44	Ch. 157
11570.00				45.43	A	50.58	7.42	39.23	41.49	54.00	-12.51	
11650.00	58.00	100	180			50.53	7.41	39.19	54.08	74.00	-19.92	Ch.165
11650.00				41.48	A	50.53	7.41	39.19	37.56	54.00	-16.44	

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	Comments
11490.00	63.00	100	135			50.53	7.41	39.19	59.08	74.00	-14.92	Ch. 149
11490.00				48.32	A	50.53	7.41	39.19	44.40	54.00	-9.60	
11570.00	62.67	100	180			50.58	7.42	39.23	58.73	74.00	-15.27	Ch. 157
11570.00				47.28	A	50.58	7.42	39.23	43.34	54.00	-10.66	
11650.00	62.50	100	180			50.64	7.42	39.26	58.54	74.00	-15.46	Ch.165
11650.00				44.56	A	50.64	7.42	39.26	40.60	54.00	-13.40	



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11a mode (5745-5825 MHz)
Channels 149, 157, & 165
Continuous RX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-22*

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	Comments
3830.00	57.00	100	225			50.78	4.05	33.13	43.40	74.00	-30.60	Ch. 149
3830.00				47.76	A	50.78	4.05	33.13	34.16	54.00	-19.84	
3856.62	57.67	100	225			50.78	4.07	33.18	44.14	74.00	-29.86	Ch. 157
3856.62				49.53	A	50.78	4.07	33.18	36.00	54.00	-18.00	
3883.34	56.83	100	180			50.78	4.08	33.24	43.38	74.00	-30.62	Ch.165
3883.34				47.37	A	50.78	4.08	33.24	33.92	54.00	-20.08	

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	Comments
3830.00	57.17	125	135			50.78	4.05	33.13	43.57	74.00	-30.43	Ch. 149
3830.00				48.82	A	50.78	4.05	33.13	35.22	54.00	-18.78	
3856.65	57.50	125	135			50.78	4.07	32.83	43.62	74.00	-30.38	Ch. 157
3856.65				49.29	A	50.78	4.07	32.83	35.41	54.00	-18.59	
3883.35	57.17	100	225			50.78	4.08	32.90	43.37	74.00	-30.63	Ch.165
3883.35				46.73	A	50.78	4.08	32.90	32.93	54.00	-21.07	



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Hewlett-Packard Company	DATE:	09/18/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11b (2400-2483.5 MHz) mode with Ethertronics Antennas.	TEMPERATURE:	20 deg. C
		HUMIDITY:	48% RH
		TIME:	9:00 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. 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 Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-20*

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	73.83	100	225			3.19	29.50	106.52			Ch. 1
2412.00				70.41	A	3.19	29.50	103.10			
2437.00	73.67	125	225			3.20	29.59	106.46			Ch. 6
2437.00				70.16	A	3.20	29.59	102.95			
2462.00	75.17	125	225			3.22	29.67	108.06			Ch. 11
2462.00				71.70	A	3.22	29.67	104.59			

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	71.67	100	180			3.19	29.04	103.89			Ch. 1
2412.00				68.13	A	3.19	29.04	100.35			
2437.00	71.33	100	180			3.20	29.11	103.65			Ch. 6
2437.00				68.08	A	3.20	29.11	100.40			
2462.00	72.33	125	225			3.22	29.19	104.74			Ch. 11
2462.00				68.67	A	3.22	29.19	101.08			

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 Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-20

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							60.85	74.00	-13.15	Ch. 1
2390.00				A			49.26	54.00	-4.74	
2376.80							61.35	74.00	-12.65	
2368.20				A			49.26	54.00	-4.74	
2400.00	40.83	100	225		3.18	29.46	73.47	86.52	-13.05	
2483.50							61.39	74.00	-12.61	Ch. 11
2483.50				A			50.42	54.00	-3.58	
2501.80							62.06	74.00	-11.94	
2501.20				A			50.92	54.00	-3.08	

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							58.22	74.00	-15.78	Ch. 1
2390.00				A			46.51	54.00	-7.49	
2376.80							58.72	74.00	-15.28	
2368.20				A			46.51	54.00	-7.49	
2400.00	38.33	100	180		3.18	29.00	70.51	83.89	-13.38	
2483.50							58.07	74.00	-15.93	Ch. 11
2483.50				A			46.91	54.00	-7.09	
2501.80							58.74	74.00	-15.26	
2501.20				A			47.41	54.00	-6.59	

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

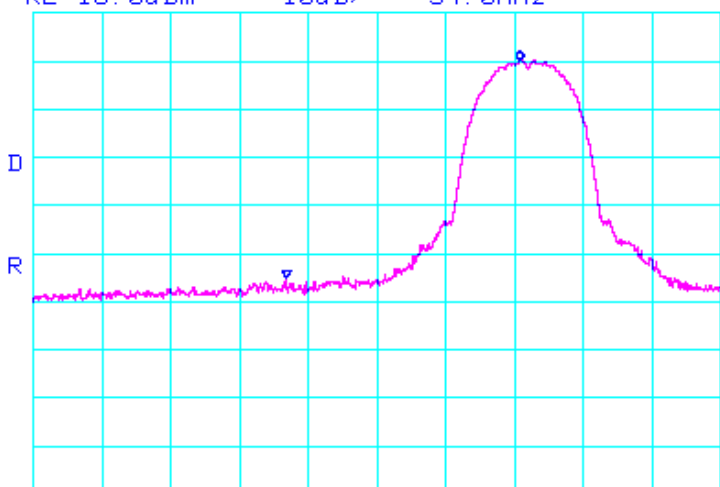
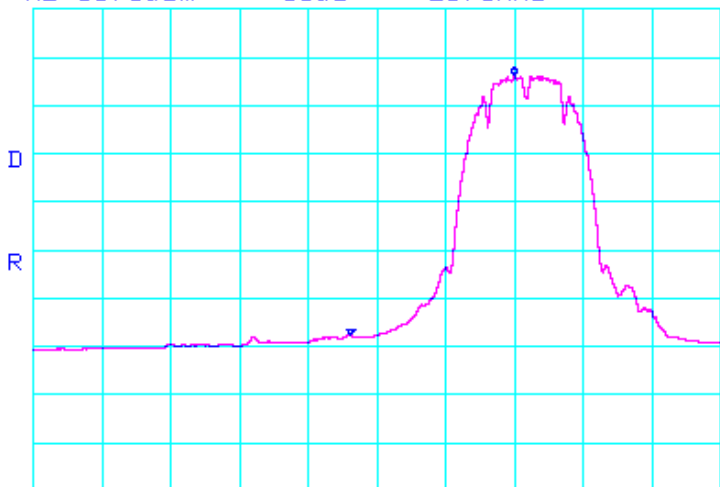
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

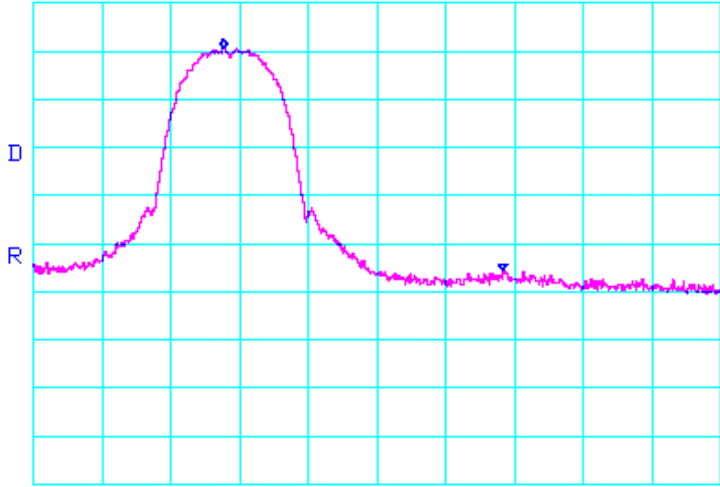
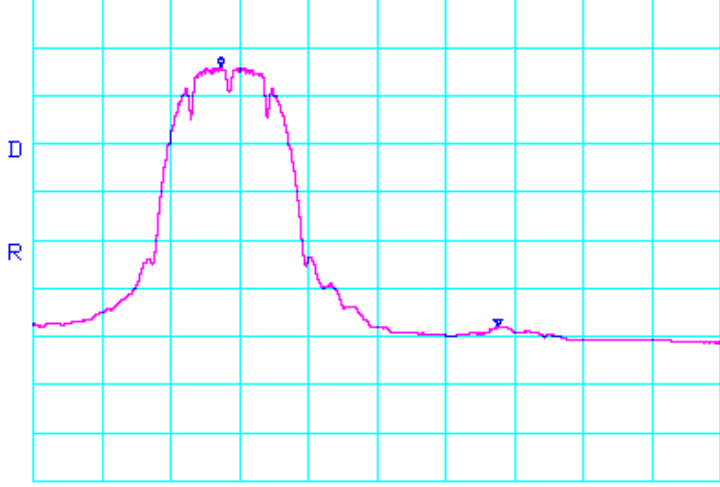
Radiated Emissions Test Results (Continued)

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

Test Date	Data	Test Eng.
09/21/06	2.412 GHz band edge PEAK DELTA (INTEL-061107-21b01)	JC
*ATTEN 20dB ΔMKR 45.17dB RL 16.0dBm 10dB/ 34.0MHz  CENTER 2.3900GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/21/06	2.412 GHz band edge AVERAGE DELTA (INTEL-061107-21b02)	JC
*ATTEN 20dB ΔMKR 53.84dB RL 16.0dBm 10dB/ 23.8MHz  CENTER 2.3900GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 10Hz SWP 37.0sec		

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.
09/21/06	2.462 GHz band edge PEAK DELTA (INTEL-061107-21b03)	JC
*ATTEN 20dB RL 16.0dBm 10dB/ ΔMKR 46.00dB -40.7MHz  CENTER 2.4835GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/21/06	2.462 GHz band edge AVERAGE DELTA (INTEL-061107-21b04)	JC
*ATTEN 20dB RL 16.0dBm 10dB/ ΔMKR 53.67dB -40.3MHz  CENTER 2.4835GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 10Hz SWP 37.0sec		



Spurious Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-19

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	Comments
4824.00	53.67	100	135			51.08	4.57	33.91	41.07	74.00	-32.93	Ch. 1
4824.00				47.38	A	51.08	4.57	33.91	34.78	54.00	-19.22	
9648.01	58.33	100	135			50.15	6.56	38.12	52.85	86.52	-33.67	
14472.02	49.67	100	180			52.10	8.22	42.55	48.34	74.00	-25.66	
14472.02				37.32	A	52.10	8.22	42.55	35.99	54.00	-18.01	
4873.99	55.00	100	135			51.12	4.59	34.02	42.50	74.00	-31.50	Ch. 6
4873.99				49.86	A	51.12	4.59	34.02	37.36	54.00	-16.64	
9747.96	54.50	100	135			50.19	6.60	38.20	49.11	86.46	-37.35	
14622.01	50.67	100	225			52.06	8.27	42.28	49.17	74.00	-24.83	
14622.01				41.54	A	52.06	8.27	42.28	40.04	54.00	-13.96	
4924.00	54.83	100	180			51.15	4.61	34.13	42.42	74.00	-31.58	Ch. 11
4924.00				49.24	A	51.15	4.61	34.13	36.83	54.00	-17.17	
9848.01	56.67	100	180			50.23	6.64	38.28	51.36	88.06	-36.70	
14772.00	48.50	100	135			51.99	8.32	41.89	46.72	74.00	-27.28	
14772.00				37.59	A	51.99	8.32	41.89	35.81	54.00	-18.19	

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	Comments
4824.01	53.00	100	135			51.08	4.57	33.78	40.27	74.00	-33.73	Ch. 1
4824.01				46.79	A	51.08	4.57	33.78	34.06	54.00	-19.94	
9648.01	57.67	100	135			50.15	6.56	38.09	52.16	83.89	-31.73	
14472.02	49.33	100	225			52.10	8.22	42.74	48.18	74.00	-25.82	
14472.02				38.00	A	52.10	8.22	42.74	36.85	54.00	-17.15	
4873.99	54.33	100	135			51.12	4.59	33.87	41.68	74.00	-32.32	Ch. 6
4873.99				48.88	A	51.12	4.59	33.87	36.23	54.00	-17.77	
9747.96	56.00	100	135			50.19	6.60	38.15	50.56	83.65	-33.09	
14622.01	52.67	100	225			52.06	8.27	42.46	51.34	74.00	-22.66	
14622.01				45.35	A	52.06	8.27	42.46	44.02	54.00	-9.98	
4924.05	55.00	100	135			51.15	4.61	33.96	42.42	74.00	-31.58	Ch. 11
4924.05				50.03	A	51.15	4.61	33.96	37.45	54.00	-16.55	
9848.06	57.50	100	135			50.23	6.64	38.21	52.12	84.74	-32.62	
14772.00	49.83	100	225			51.99	8.32	42.04	48.20	74.00	-25.80	
14772.00				39.90	A	51.99	8.32	42.04	38.27	54.00	-15.73	



Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous RX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-19

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	Comments
4824.00	51.17	100	135			51.08	4.57	33.91	38.57	74.00	-35.43	Ch. 1
4824.00				40.29	A	51.08	4.57	33.91	27.69	54.00	-26.31	
4874.00	50.33	100	135			51.12	4.59	34.02	37.83	74.00	-36.17	Ch. 6
4874.00				39.71	A	51.12	4.59	34.02	27.21	54.00	-26.79	
4924.00	50.83	100	135			51.15	4.61	34.13	38.42	74.00	-35.58	Ch. 11
4924.00				40.02	A	51.15	4.61	34.13	27.61	54.00	-26.39	

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	Comments
4824.00	52.00	100	135			51.08	4.57	33.78	39.27	74.00	-34.73	Ch. 1
4824.00				41.10	A	51.08	4.57	33.78	28.37	54.00	-25.63	
4874.00	51.50	100	135			51.12	4.59	33.87	38.85	74.00	-35.15	Ch. 6
4874.00				40.58	A	51.12	4.59	33.87	27.93	54.00	-26.07	
4924.00	50.67	100	135			51.15	4.61	33.96	38.09	74.00	-35.91	Ch. 11
4924.00				39.79	A	51.15	4.61	33.96	27.21	54.00	-26.79	



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11b mode (2400-2483.5 MHz)

Channels 1, 6, & 11

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-24

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	75.50	100	135			3.19	29.50	108.19			Ch. 1
2412.00				72.19	A	3.19	29.50	104.88			
2437.00	75.17	100	135			3.20	29.59	107.96			Ch. 6
2437.00				71.88	A	3.20	29.59	104.67			
2462.00	76.17	100	135			3.22	29.67	109.06			Ch. 11
2462.00				72.68	A	3.22	29.67	105.57			

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	70.67	100	180			3.19	29.04	102.89			Ch. 1
2412.00				67.41	A	3.19	29.04	99.63			
2437.00	70.50	100	180			3.20	29.11	102.82			Ch. 6
2437.00				67.32	A	3.20	29.11	99.64			
2462.00	68.83	100	180			3.22	29.19	101.24			Ch. 11
2462.00				65.46	A	3.22	29.19	97.87			

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 Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-24

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							62.02	74.00	-11.98	Ch. 1
2390.00				A			50.88	54.00	-3.12	
2374.30							62.19	74.00	-11.81	
2385.50				A			51.38	54.00	-2.62	
2400.00	43.33	100	135		3.18	29.46	75.97	88.19	-12.22	
2483.50							62.39	74.00	-11.61	Ch. 11
2483.50				A			51.57	54.00	-2.43	

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							56.72	74.00	-17.28	Ch. 1
2390.00				A			45.63	54.00	-8.37	
2374.30							55.24	74.00	-18.76	
2385.50				A			44.37	54.00	-9.63	
2400.00	38.00	100	180		3.18	29.00	70.18	82.89	-12.71	
2483.50							54.57	74.00	-19.43	Ch. 11
2483.50				A			43.87	54.00	-10.13	

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

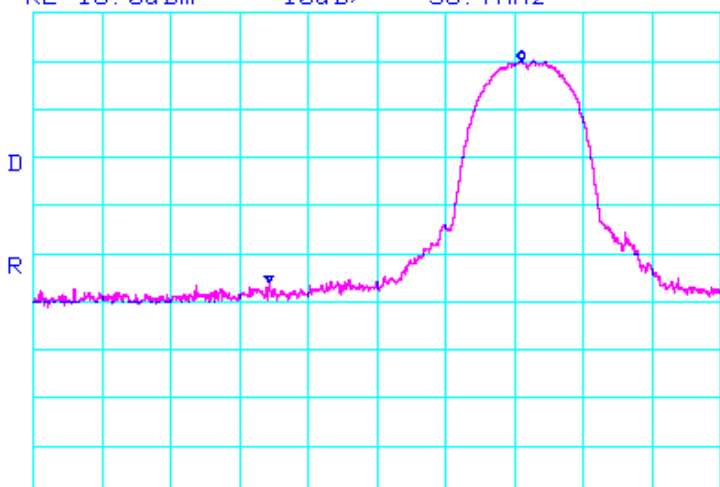
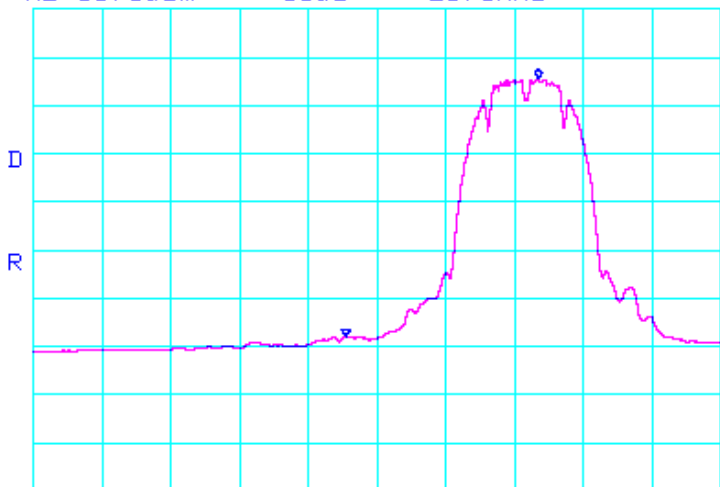
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

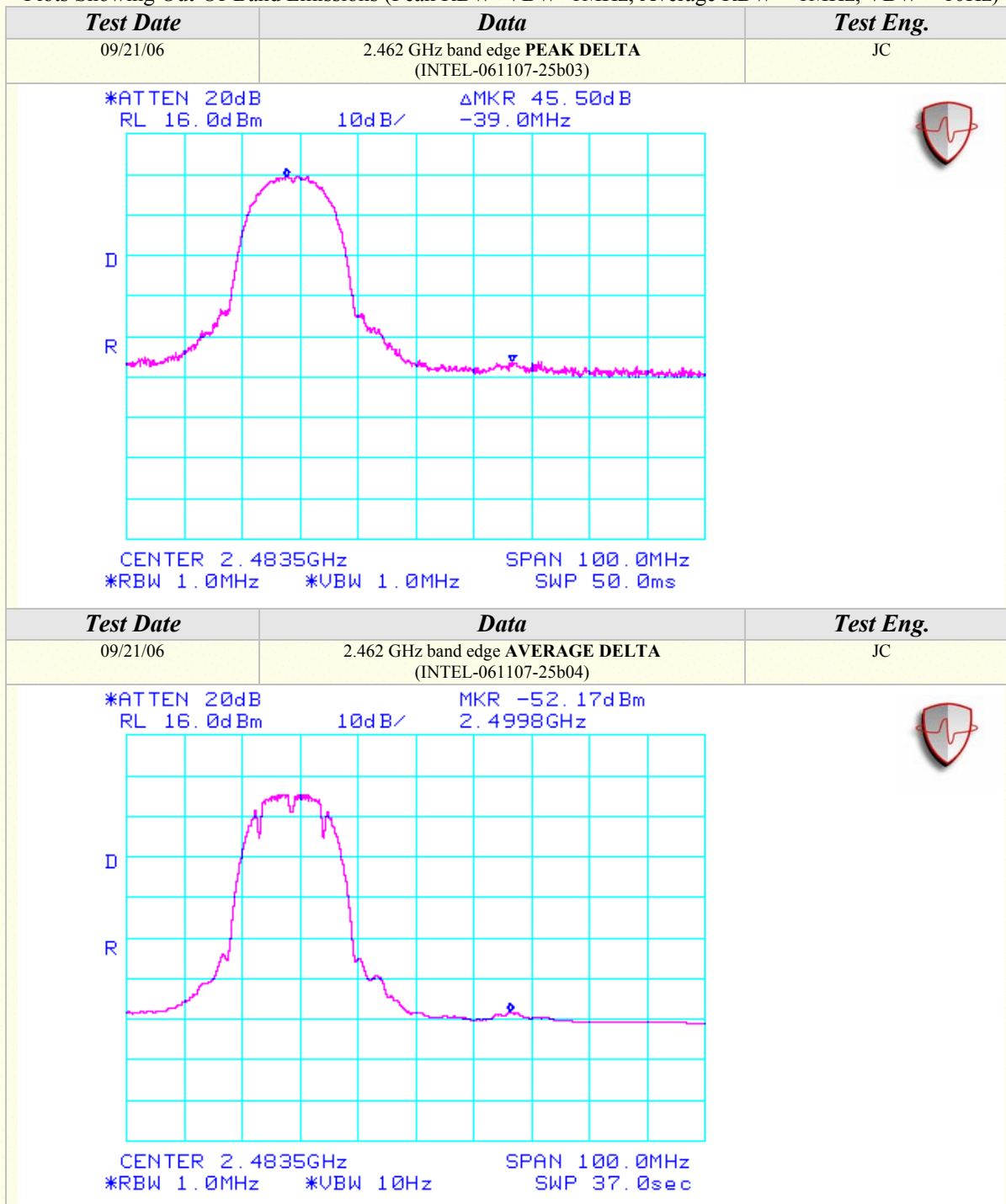
Radiated Emissions Test Results (Continued)

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

Test Date	Data	Test Eng.
09/21/06	2.412 GHz band edge PEAK DELTA (INTEL-061107-25b01)	JC
*ATTEN 20dB ΔMKR 46.00dB RL 16.0dBm 10dB/ 36.7MHz  CENTER 2.3900GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/21/06	2.412 GHz band edge AVERAGE DELTA (INTEL-061107-25b02)	JC
*ATTEN 20dB ΔMKR 53.50dB RL 16.0dBm 10dB/ 28.0MHz  CENTER 2.3900GHz SPAN 100.0MHz *RBW 1.0MHz *VBW 10Hz SWP 37.0sec		

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 Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-22

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	Comments
14472.02	57.67	100	135			52.10	8.22	42.55	56.34	74.00	-17.66	Ch. 1
14472.02				48.78	A	52.10	8.22	42.55	47.45	54.00	-6.55	
14622.01	57.83	100	225			52.06	8.27	42.28	56.33	74.00	-17.67	Ch. 6
14622.01				47.63	A	52.06	8.27	42.28	46.13	54.00	-7.87	
14772.00	56.33	100	135			51.99	8.32	41.89	54.55	74.00	-19.45	Ch. 11
14772.00				44.30	A	51.99	8.32	41.89	42.52	54.00	-11.48	

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	Comments
14472.02	59.00	150	225			52.10	8.22	42.74	57.85	74.00	-16.15	Ch. 1
14472.02				51.71	A	52.10	8.22	42.74	50.56	54.00	-3.44	
14622.01	58.83	150	225			52.06	8.27	42.46	57.50	74.00	-16.50	Ch. 6
14622.01				50.19	A	52.06	8.27	42.46	48.86	54.00	-5.14	
14772.00	57.33	150	225			51.99	8.32	42.04	55.70	74.00	-18.30	Ch. 11
14772.00				48.67	A	51.99	8.32	42.04	47.04	54.00	-6.96	



Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11b mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous RX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-22

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	Comments
4824.00	55.50	100	135			51.08	4.57	33.91	42.90	74.00	-31.10	Ch. 1
4824.00				43.28	A	51.08	4.57	33.91	30.68	54.00	-23.32	
4874.00	55.33	100	135			51.12	4.59	34.02	42.83	74.00	-31.17	Ch. 6
4874.00				42.46	A	51.12	4.59	34.02	29.96	54.00	-24.04	
4924.00	54.83	100	135			51.15	4.61	34.13	42.42	74.00	-31.58	Ch. 11
4924.00				42.82	A	51.15	4.61	34.13	30.41	54.00	-23.59	

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	Comments
4824.00	55.50	100	135			51.08	4.57	33.78	42.77	74.00	-31.23	Ch. 1
4824.00				42.99	A	51.08	4.57	33.78	30.26	54.00	-23.74	
4874.00	54.67	100	135			51.12	4.59	33.87	42.02	74.00	-31.98	Ch. 6
4874.00				42.12	A	51.12	4.59	33.87	29.47	54.00	-24.53	
4924.00	55.17	100	135			51.15	4.61	33.96	42.59	74.00	-31.41	Ch. 11
4924.00				42.54	A	51.15	4.61	33.96	29.96	54.00	-24.04	



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Hewlett-Packard Company	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11g (2400-2483.5 MHz) mode with Ethertronics Antennas.	TEMPERATURE:	22 deg. C
		HUMIDITY:	33% RH
		TIME:	6:00 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. 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 Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-26 & -34*

RADIATED EMISSIONS - Horizontal Antenna Polarization

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Distance Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +=FAIL	Comments
2412.00	80.83	100	225			9.54	3.19	29.50	103.98			Ch. 1
2412.00				66.50	A	9.54	3.19	29.50	89.65			
2437.00	81.33	100	225			9.54	3.20	29.59	104.58			Ch. 6
2437.00				66.78	A	9.54	3.20	29.59	90.03			
2462.00	82.17	100	225			9.54	3.22	29.67	105.52			Ch. 11
2462.00				67.67	A	9.54	3.22	29.67	91.02			

RADIATED EMISSIONS - Vertical Antenna Polarization

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Distance Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +=FAIL	Comments
2412.00	80.00	100	180			9.54	3.19	29.04	102.68			Ch. 1
2412.00				65.00	A	9.54	3.19	29.04	87.68			
2437.00	79.17	100	180			9.54	3.20	29.11	101.95			Ch. 6
2437.00				64.67	A	9.54	3.20	29.11	87.45			
2462.00	81.67	125	225			9.54	3.22	29.19	104.54			Ch. 11
2462.00				67.50	A	9.54	3.22	29.19	90.37			

NOTE: Fundamental signals measured at 1 meter and extrapolated to 3 meters to calculate the radiated band edge field strengths.



Radiated Emissions Test Results (Continued)

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

Channels 1 & 11

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-26 & -34

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>Distance 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>	<i>Comments</i>
2390.00	40.50	100	225			9.54	3.17	29.43	63.56	74.00	-10.44	Ch. 1
2390.00				23.50	A	9.54	3.17	29.43	46.56	54.00	-7.44	
2400.00	43.50	100	225			9.54	3.18	29.46	66.60	74.00	-7.40	
2483.50	47.50	100	225			9.54	3.24	29.74	70.94	74.00	-3.06	Ch. 11
2483.50				28.17	A	9.54	3.24	29.74	51.61	54.00	-2.39	

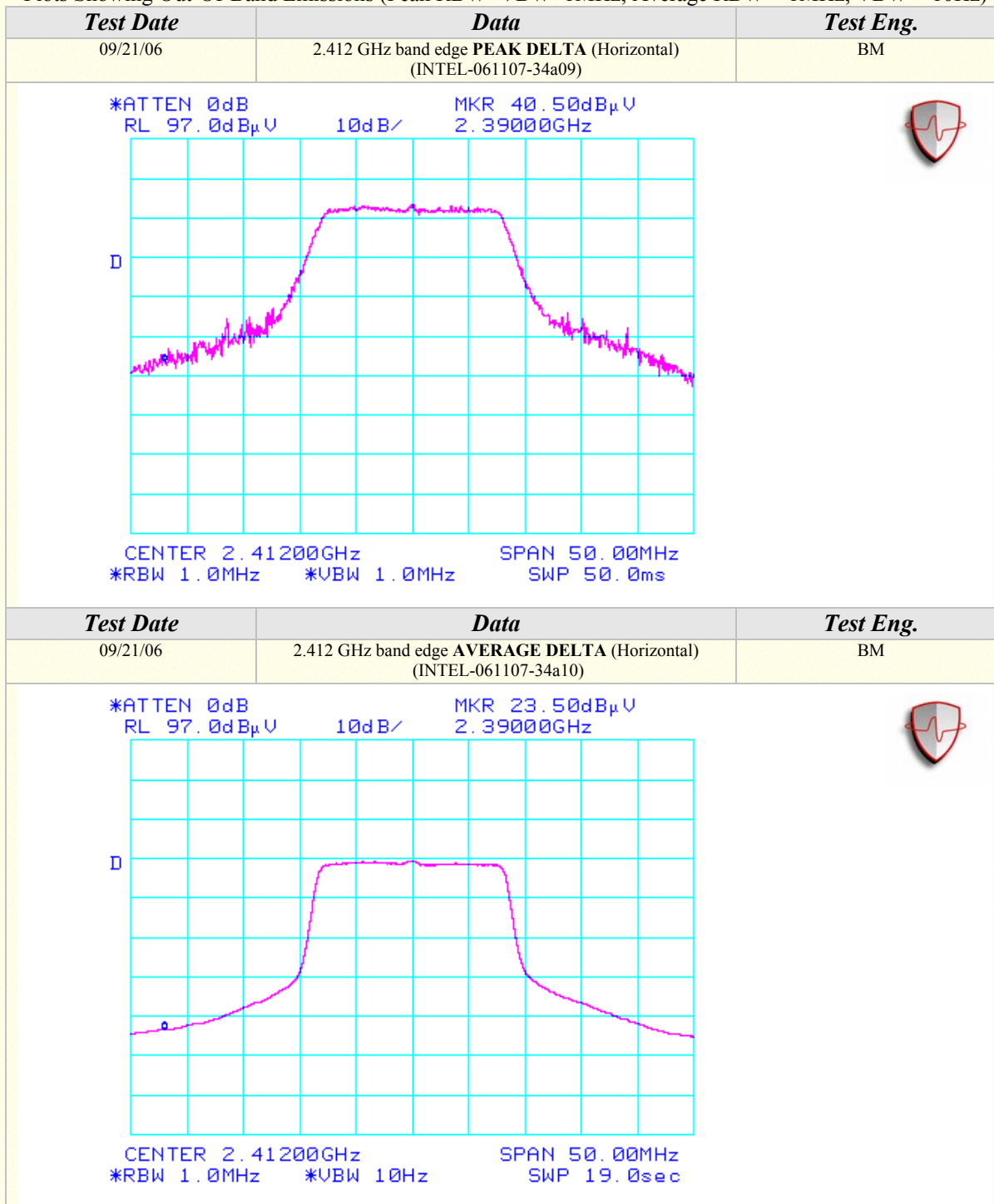
RADIATED EMISSIONS - Vertical Antenna Polarization

<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>Distance 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>	<i>Comments</i>
2390.00	42.33	100	180			9.54	3.17	28.97	64.93	74.00	-9.07	Ch. 1
2390.00				22.83	A	9.54	3.17	28.97	45.43	54.00	-8.57	
2400.00	45.17	100	180			9.54	3.18	29.00	67.81	74.00	-6.19	
2483.50	48.17	125	225			9.54	3.24	29.25	71.12	74.00	-2.88	Ch. 11
2483.50				28.83	A	9.54	3.24	29.25	51.78	54.00	-2.22	

NOTE: The "Band Edge Field Strength" was calculated using the "Radiated Fundamental" measurements.

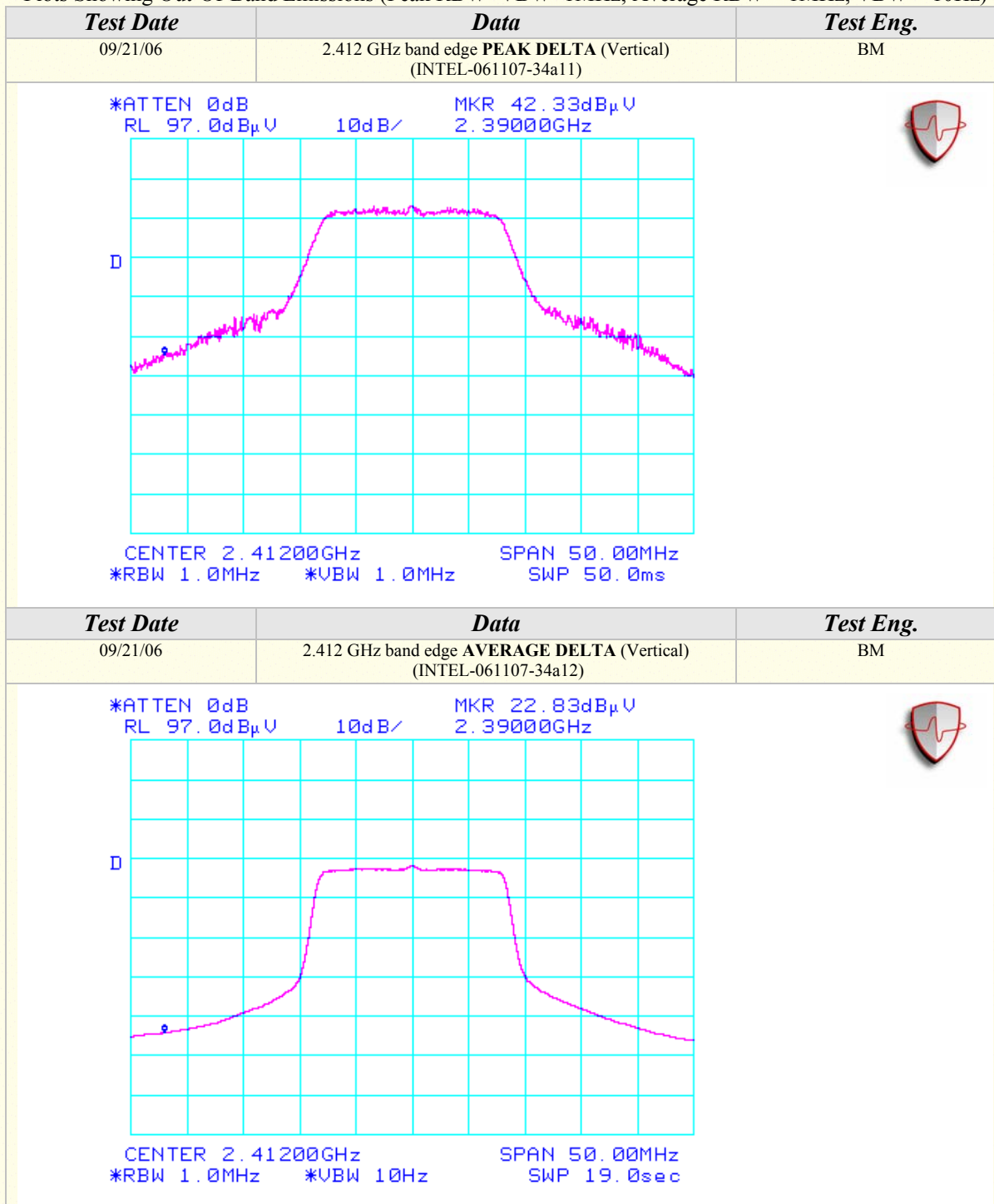
Radiated Emissions Test Results (Continued)

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



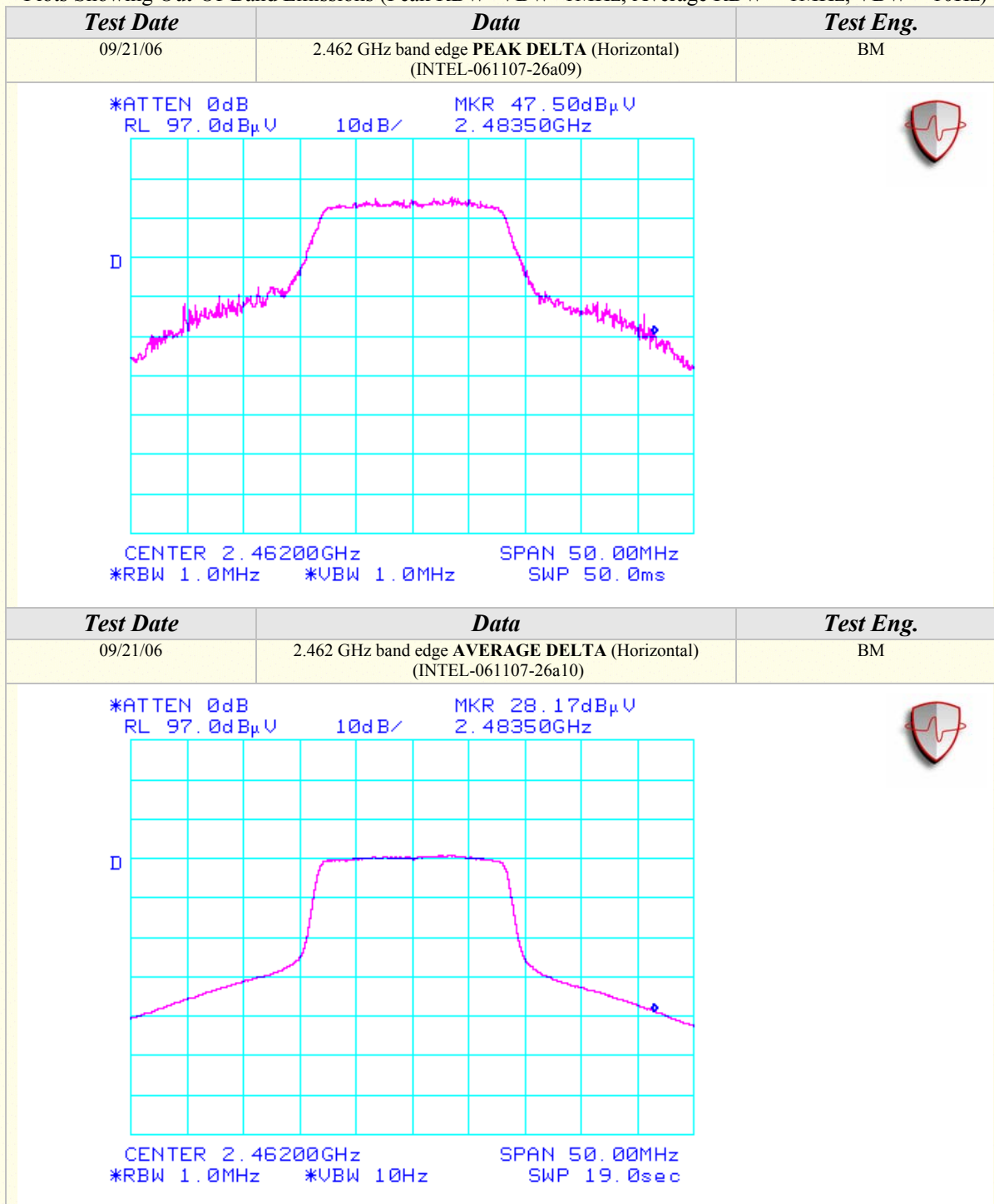
Radiated Emissions Test Results (Continued)

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



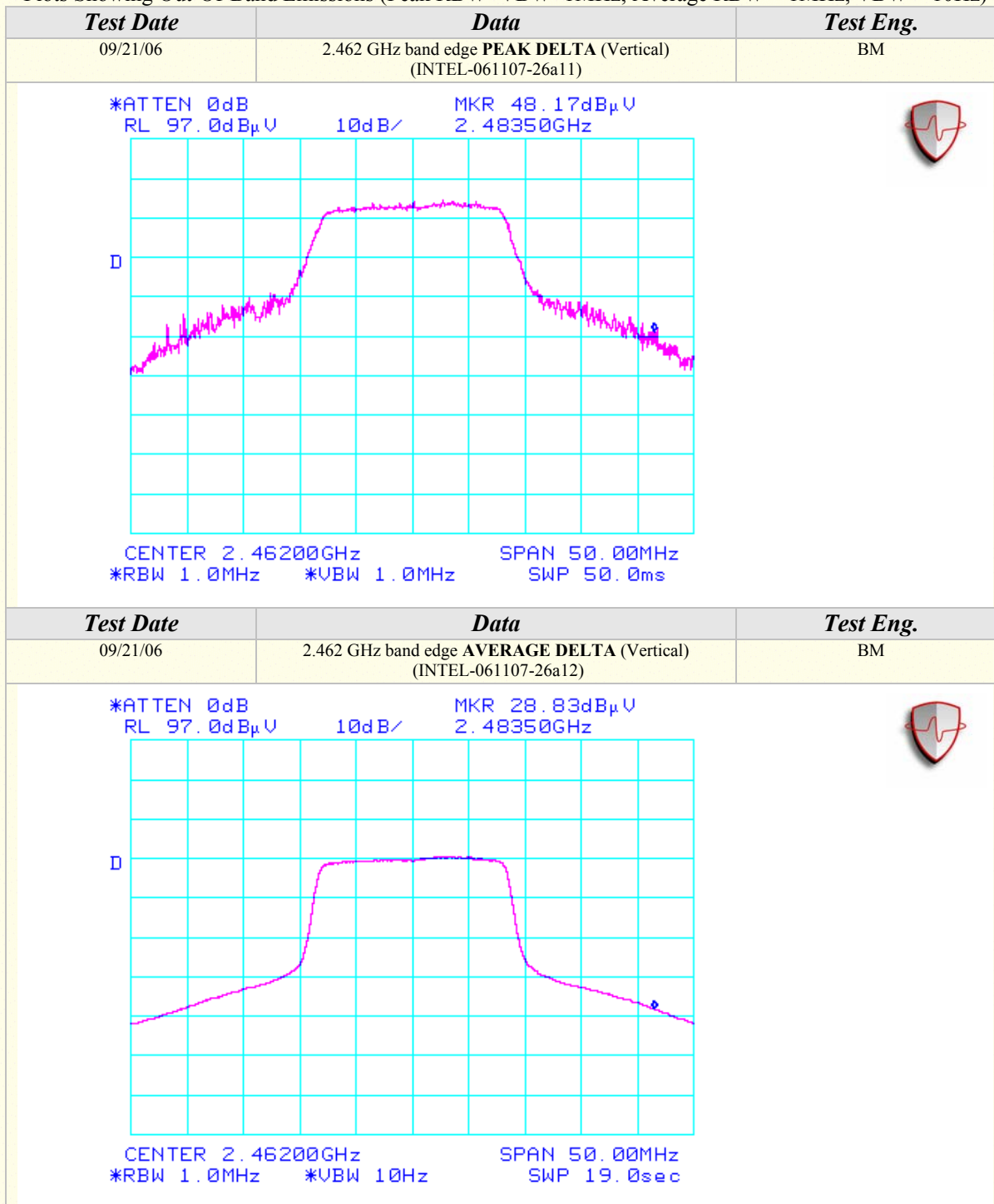
Radiated Emissions Test Results (Continued)

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)





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-35

RADIATED EMISSIONS - Horizontal Antenna Polarization

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	Comments
9648.00	54.33	100	225			50.15	6.56	38.12	48.85	83.98	-35.13	Ch. 1
9747.96	53.50	100	180			50.19	6.60	38.20	48.11	84.58	-36.47	Ch. 6
9848.01	53.50	100	180			50.23	6.64	38.28	48.19	85.52	-37.33	Ch. 11

RADIATED EMISSIONS - Vertical Antenna Polarization

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	Comments
9647.62	55.00	100	180			50.15	6.56	38.09	49.49	82.68	-33.19	Ch. 1
9747.82	54.83	100	180			50.19	6.60	38.15	49.39	81.95	-32.56	Ch. 6
9848.28	56.00	100	135			50.23	6.64	38.21	50.62	84.54	-33.92	Ch. 11



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-26 & -34*

RADIATED EMISSIONS - Horizontal Antenna Polarization

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Distance Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +=FAIL	Comments
2412.00	82.67	100	180			9.54	3.19	29.50	105.82			Ch. 1
2412.00				67.00	A	9.54	3.19	29.50	90.15			
2437.00	81.50	100	180			9.54	3.20	29.59	104.75			Ch. 6
2437.00				66.15	A	9.54	3.20	29.59	89.40			
2462.00	80.50	100	180			9.54	3.22	29.67	103.85			Ch. 11
2462.00				66.17	A	9.54	3.22	29.67	89.52			

RADIATED EMISSIONS - Vertical Antenna Polarization

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Distance Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +=FAIL	Comments
2412.00	81.50	100	180			9.54	3.19	29.04	104.18			Ch. 1
2412.00				66.67	A	9.54	3.19	29.04	89.35			
2437.00	78.33	100	180			9.54	3.20	29.11	101.11			Ch. 6
2437.00				64.32	A	9.54	3.20	29.11	87.10			
2462.00	78.00	100	180			9.54	3.22	29.19	100.87			Ch. 11
2462.00				63.17	A	9.54	3.22	29.19	86.04			

NOTE: Fundamental signals measured at 1 meter and extrapolated to 3 meters to calculate the radiated band edge field strengths.



Radiated Emissions Test Results (Continued)

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

Channels 1 & 11

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-061107-26 & -34

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>Distance 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>	<i>Comments</i>
2390.00	45.83	100	180			9.54	3.17	29.43	68.89	74.00	-5.11	Ch. 1
2390.00				25.50	A	9.54	3.17	29.43	48.56	54.00	-5.44	
2400.00	44.17	100	180			9.54	3.18	29.46	67.27	74.00	-6.73	
2483.50	46.17	100	180			9.54	3.24	29.74	69.61	74.00	-4.39	Ch. 11
2483.50				26.83	A	9.54	3.24	29.74	50.27	54.00	-3.73	

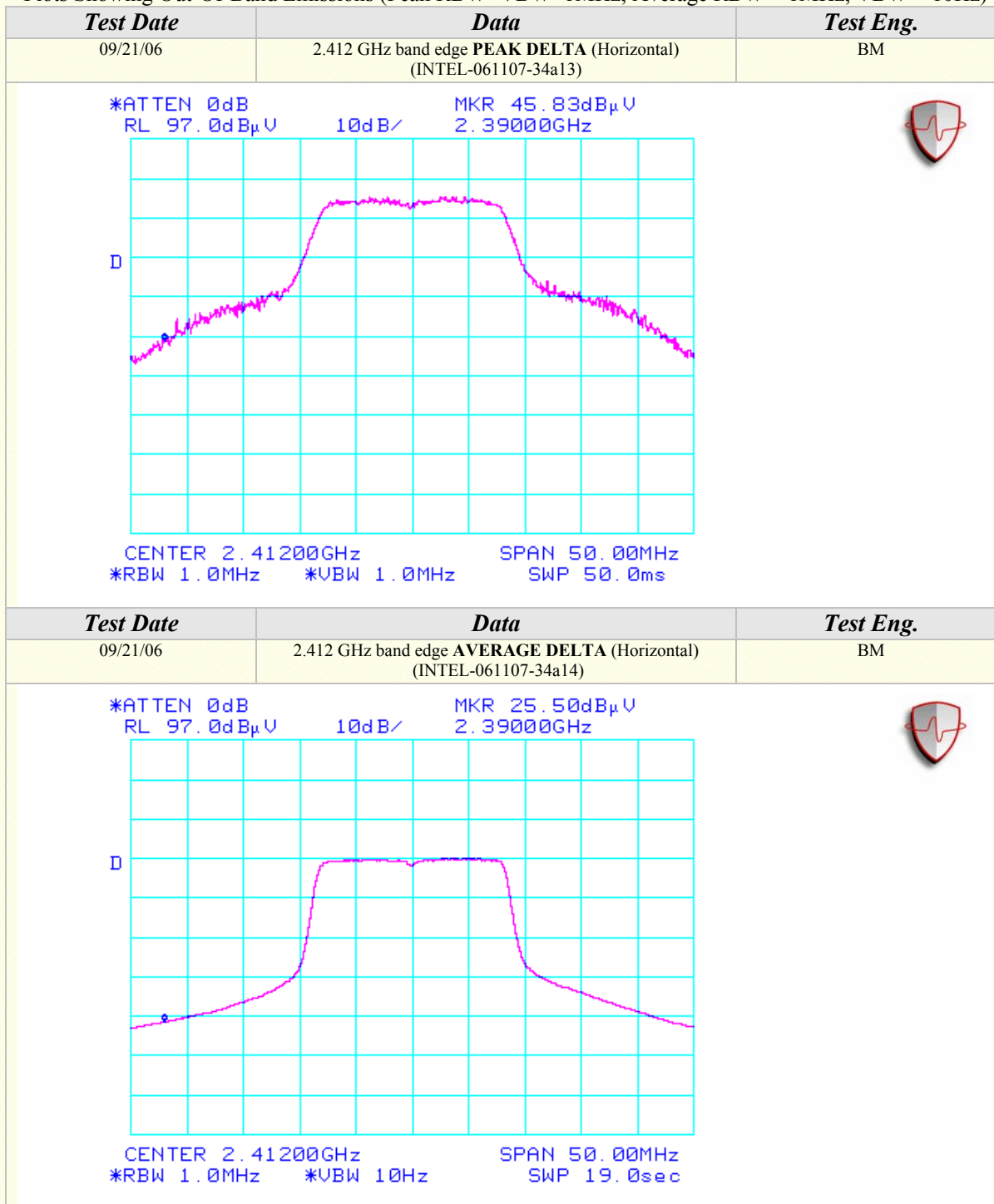
RADIATED EMISSIONS - Vertical Antenna Polarization

<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>Distance 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>	<i>Comments</i>
2390.00	45.17	100	180			9.54	3.17	28.97	67.77	74.00	-6.23	Ch. 1
2390.00				26.00	A	9.54	3.17	28.97	48.60	54.00	-5.40	
2400.00	46.00	100	180			9.54	3.18	29.00	68.64	74.00	-5.36	
2483.50	41.67	100	180			9.54	3.24	29.25	64.62	74.00	-9.38	Ch. 11
2483.50				23.67	A	9.54	3.24	29.25	46.62	54.00	-7.38	

NOTE: The "Band Edge Field Strength" was calculated using the "Radiated Fundamental" measurements.

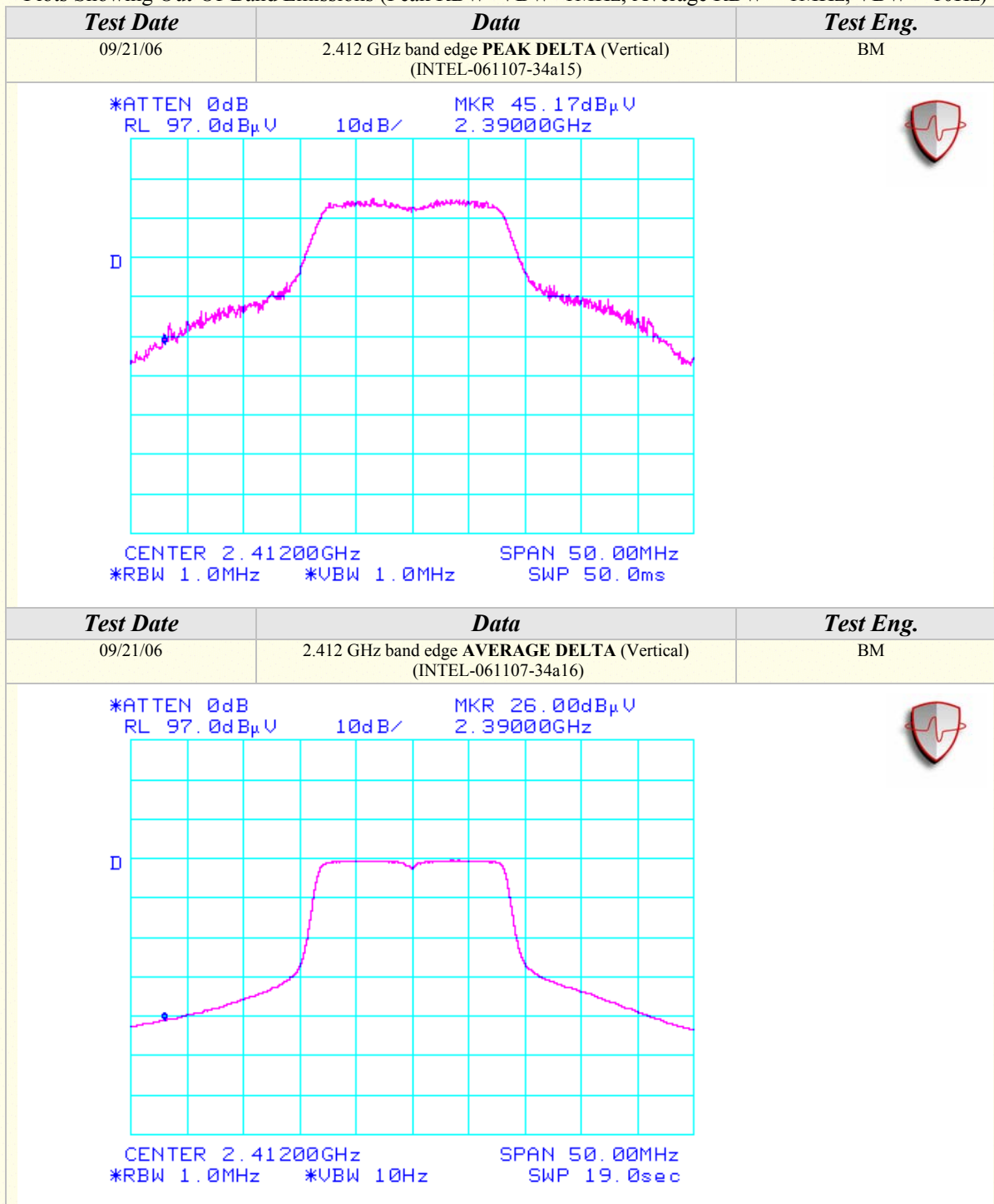
Radiated Emissions Test Results (Continued)

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



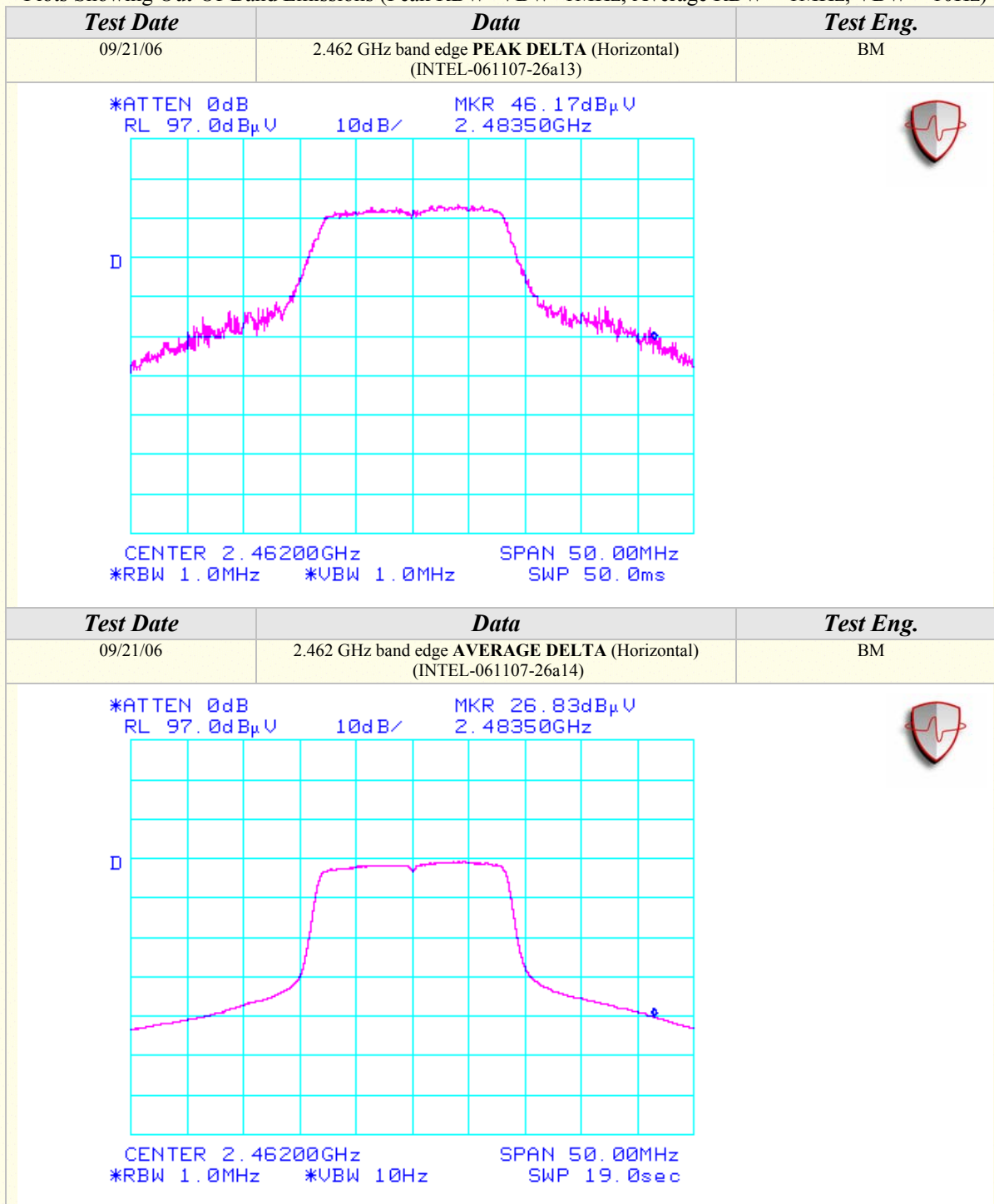
Radiated Emissions Test Results (Continued)

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



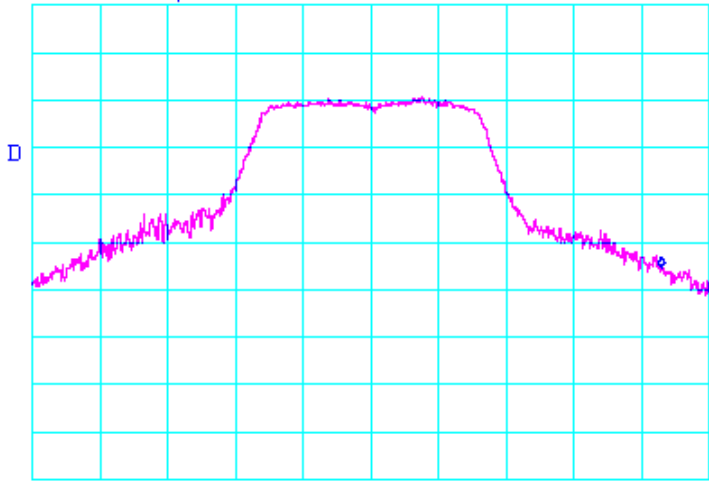
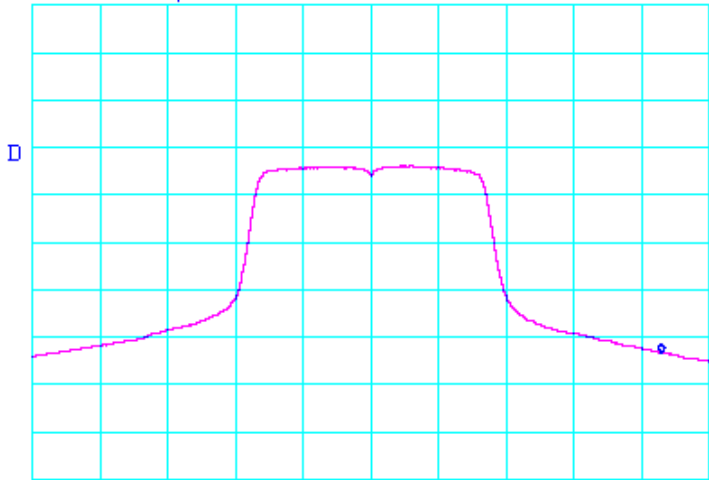
Radiated Emissions Test Results (Continued)

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)

Test Date	Data	Test Eng.
09/21/06	2.462 GHz band edge PEAK DELTA (Vertical) (INTEL-061107-26a15)	BM
*ATTEN 0dB MKR 41.67dBμV RL 97.0dBμV 10dB/ 2.48350GHz  CENTER 2.46200GHz SPAN 50.00MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/21/06	2.462 GHz band edge AVERAGE DELTA (Vertical) (INTEL-061107-26a16)	BM
*ATTEN 0dB MKR 23.67dBμV RL 97.0dBμV 10dB/ 2.48350GHz  CENTER 2.46200GHz SPAN 50.00MHz *RBW 1.0MHz *VBW 10Hz SWP 19.0sec		



Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11g mode (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-061107-36

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	Comments
3215.76	54.67	100	225		50.88	3.71	31.72	39.21	85.82	-46.61	Ch. 1
9748.12	54.50	100	180		50.19	6.60	38.20	49.11	84.75	-35.64	Ch. 6
9848.01	53.50	100	180		50.23	6.64	38.28	48.19	83.85	-35.66	Ch. 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	Comments
3216.03	55.17	100	180		50.88	3.71	31.28	39.27	84.18	-44.91	Ch. 1
9747.96	55.17	100	180		50.19	6.60	38.15	49.73	81.11	-31.38	Ch. 6
9848.28	54.33	100	180		50.23	6.64	38.21	48.95	80.87	-31.92	Ch. 11



PEAK TRANSMIT POWER

CLIENT:	Hewlett-Packard Company	DATE:	09/29/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	22 deg. C
		HUMIDITY:	36% RH
		TIME:	5:00 PM

Description:	The maximum peak output power of the intentional radiator shall not exceed 1 watt.
Results:	Passed (See Data Sheet)
Note:	Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. • 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)	Chain	Data Rate (Mbps)	Average Power (dBm)	Average Power (mW)	Peak Power (dBm)	Peak Power (mW)
802.11a	149	5745	A	6	17.55	56.88	19.61	91.40
802.11a	157	5785	A	6	17.43	55.33	19.71	93.53
802.11a	165	5825	A	6	17.56	57.01	19.91	97.94
802.11a	149	5745	B	6	17.48	55.97	20.21	104.94
802.11a	157	5785	B	6	17.57	57.14	20.31	107.39
802.11a	165	5825	B	6	17.46	55.71	20.31	107.39
802.11b	1	2412	A	1	15.44	34.98	19.07	80.68
802.11b	6	2437	A	1	15.59	36.21	19.24	83.90
802.11b	11	2462	A	1	16.61	45.79	20.03	100.64
802.11b	1	2412	B	1	15.40	34.66	18.73	74.61
802.11b	6	2437	B	1	15.57	36.04	18.88	77.23
802.11b	11	2462	B	1	16.63	46.00	19.94	98.58
802.11g	1	2412	A	6	16.40	43.65	23.80	239.86
802.11g	6	2437	A	6	17.60	57.54	23.83	241.52
802.11g	11	2462	A	6	16.58	45.49	23.48	222.82
802.11g	1	2412	B	6	16.47	44.36	23.54	225.92
802.11g	6	2437	B	6	17.45	55.59	23.63	230.65
802.11g	11	2462	B	6	16.56	45.29	23.52	224.88

NOTE: The output power measurement is conducted.



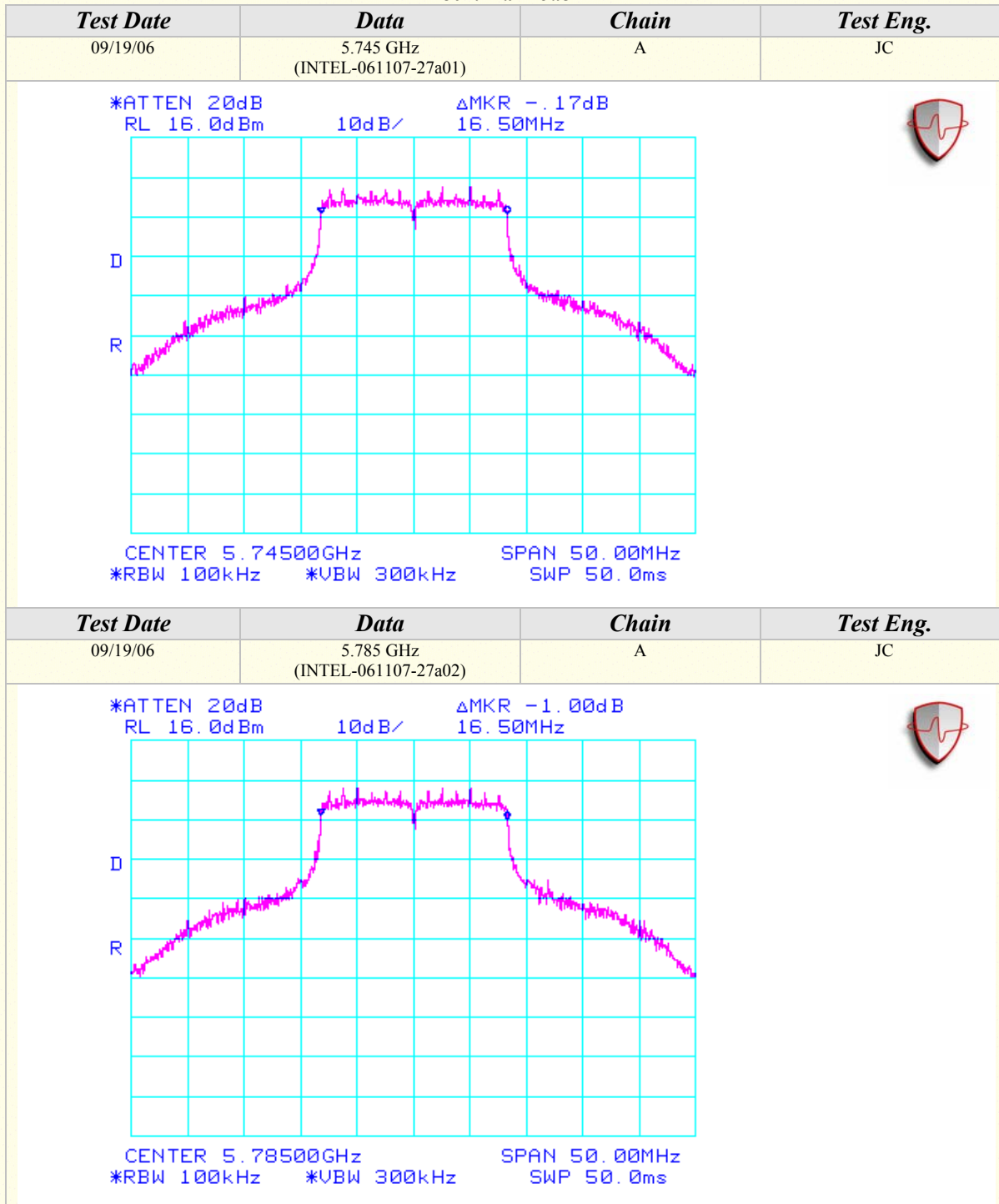
6dB EMISSIONS BANDWIDTH

CLIENT:	Hewlett-Packard Company	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	21 deg. C
		HUMIDITY:	29% RH
		TIME:	9:50 AM

Description:	The minimum 6dB bandwidth shall be at least 500 kHz.
Results:	See Data Sheet
Note:	Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. • 120VAC / 60 Hz.

6dB Emissions Bandwidth (Continued)

802.11a Mode

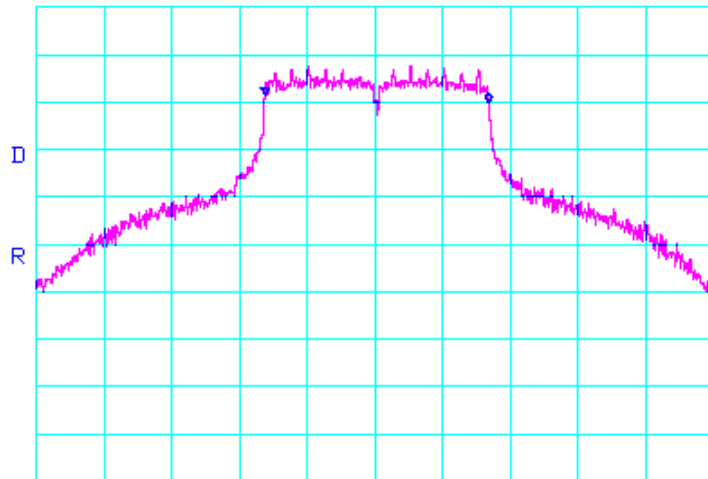


6dB Emissions Bandwidth (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27a03)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -1.67dB
16.50MHz

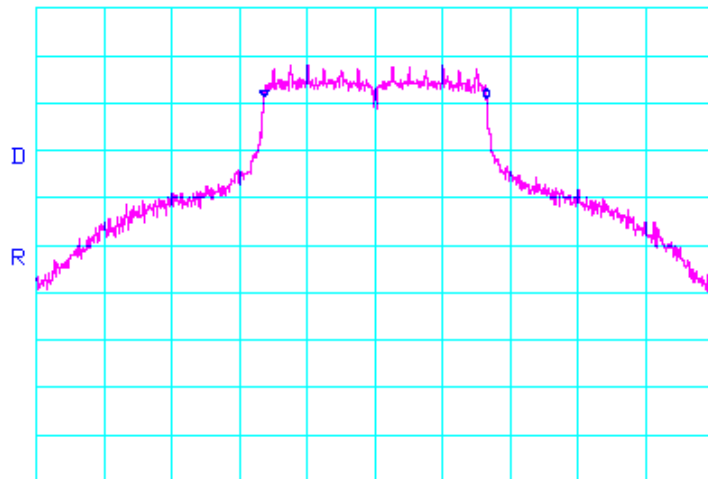


CENTER 5.82500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27a04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.33dB
16.42MHz



CENTER 5.74500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

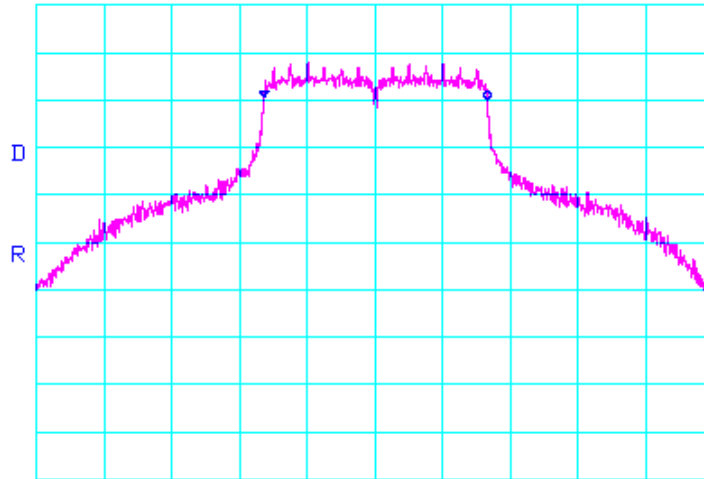


6dB Emissions Bandwidth (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27a05)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 16.50MHz
 Δ MKR -.67dB

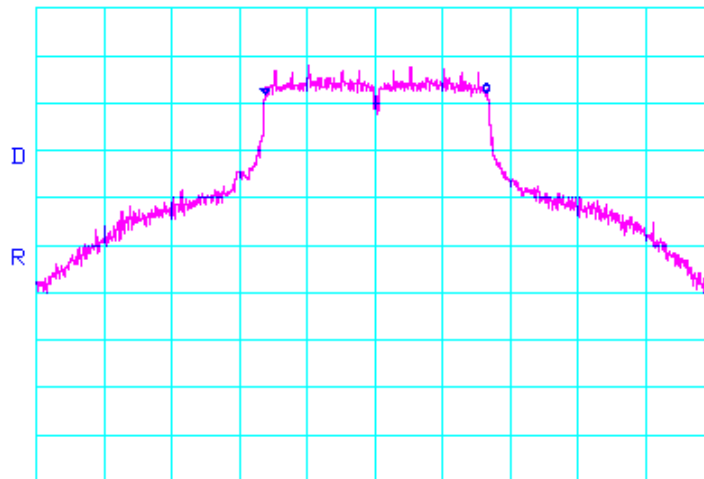


CENTER 5.78500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27a06)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 16.33MHz
 Δ MKR .34dB



CENTER 5.82500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

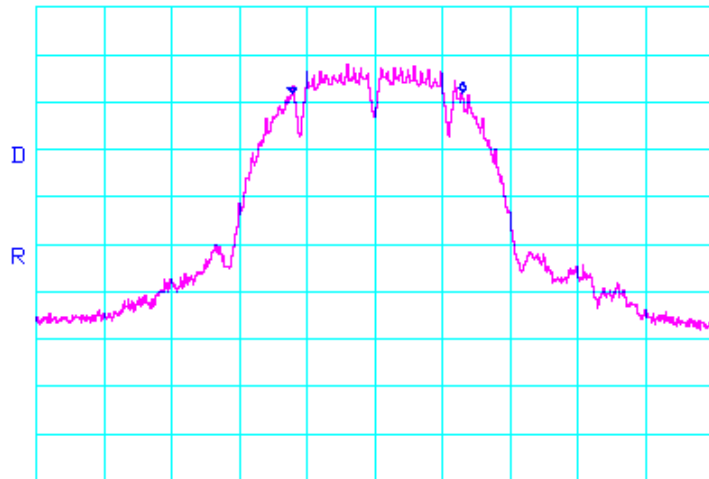


6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28b01)	A	JC

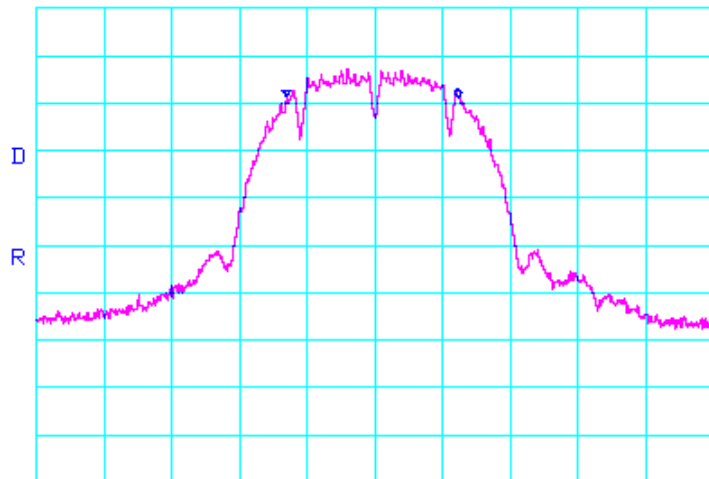
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .17dB
12.58MHz



CENTER 2.41200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28b02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.33dB
12.67MHz



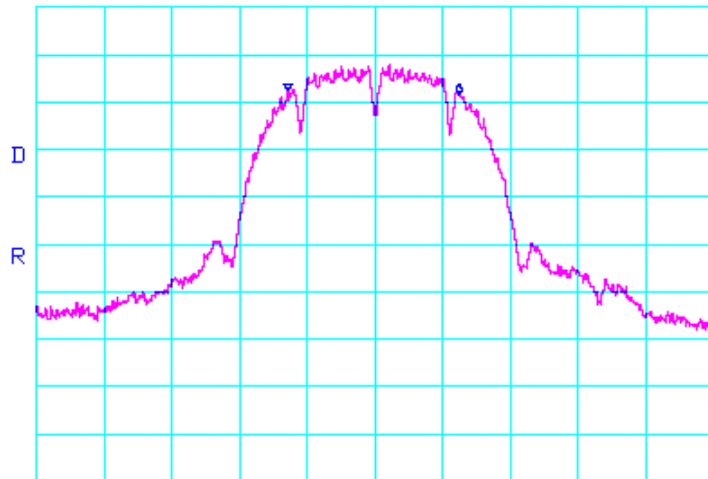
CENTER 2.43700GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28b03)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 12.67MHz
 Δ MKR -.83dB

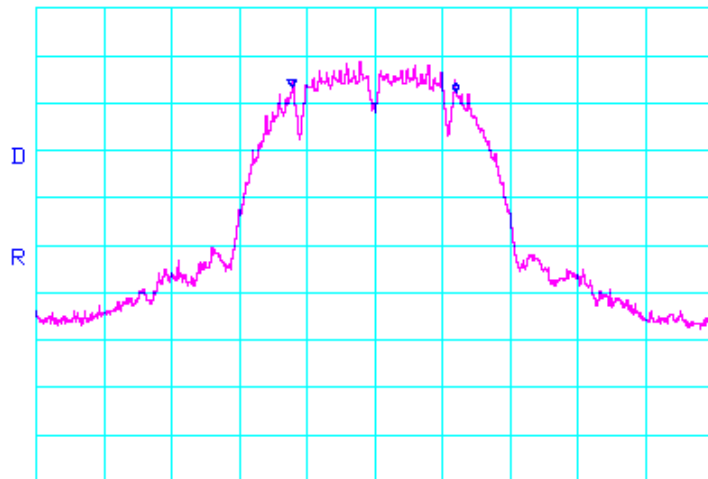


CENTER 2.46200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28b04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 12.08MHz
 Δ MKR -1.17dB



CENTER 2.41200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

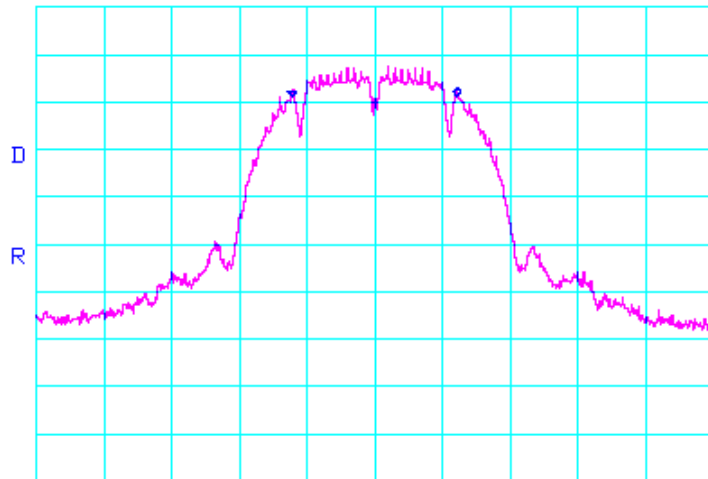


6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28b05)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .17dB
12.17MHz

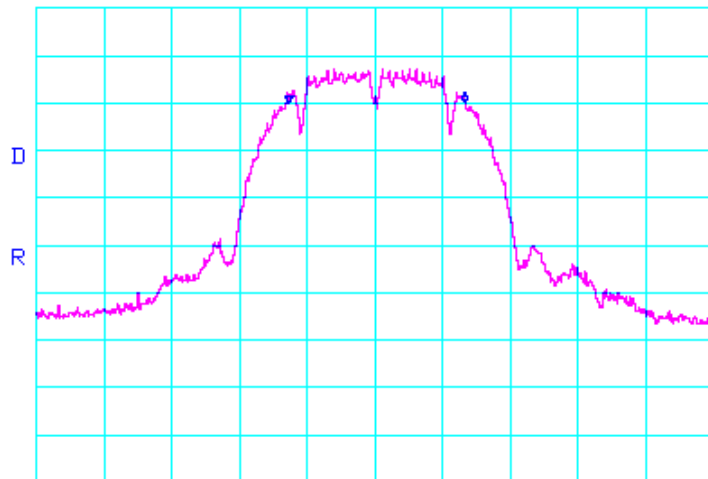


CENTER 2.43700GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28b06)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR 0dB
13.00MHz

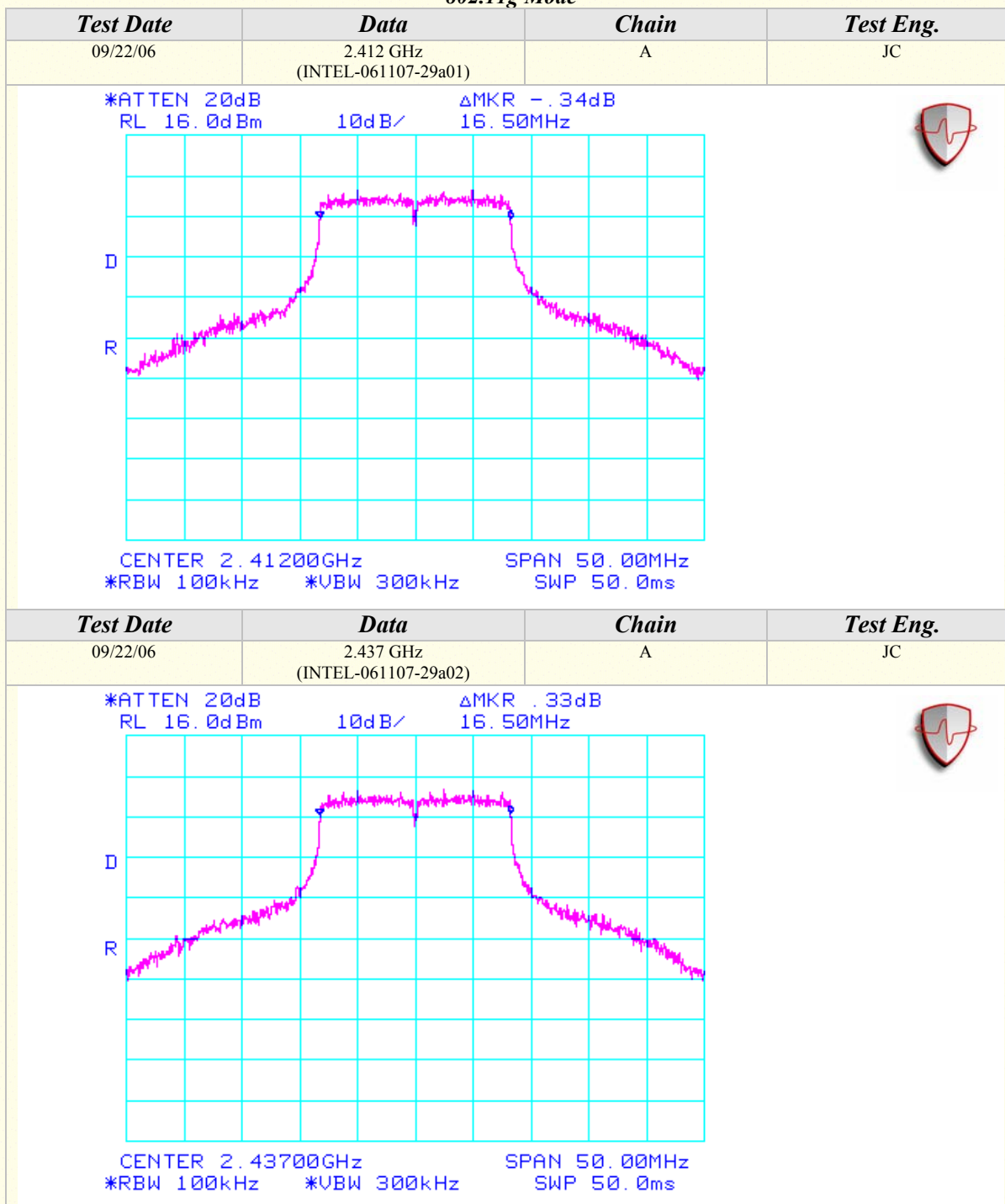


CENTER 2.46200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



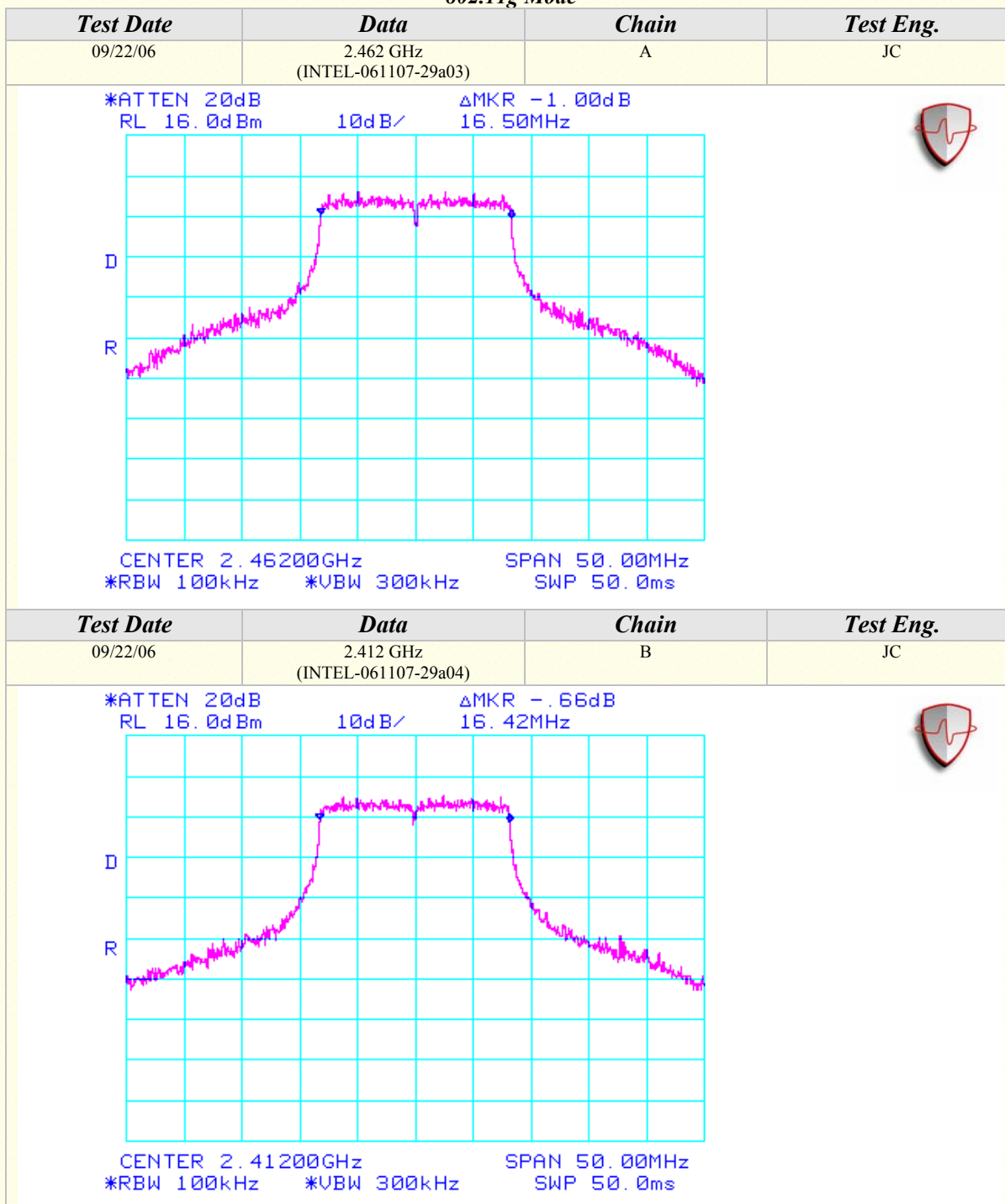
6dB Emissions Bandwidth (Continued)

802.11g Mode



6dB Emissions Bandwidth (Continued)

802.11g Mode

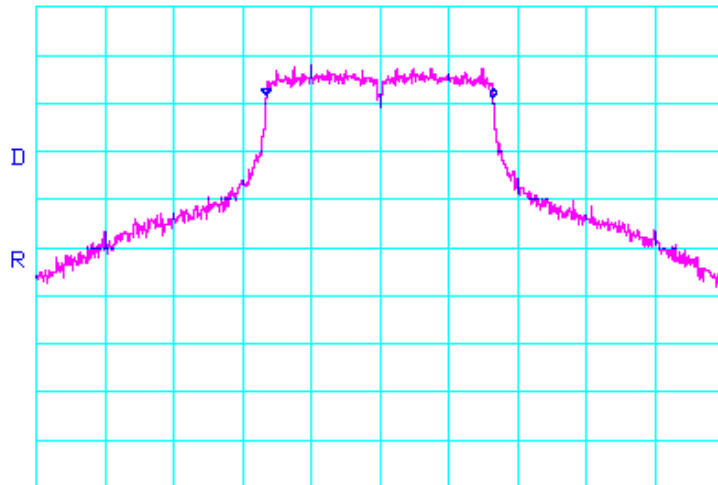


6dB Emissions Bandwidth (Continued)

802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-061107-29a05)	B	JC

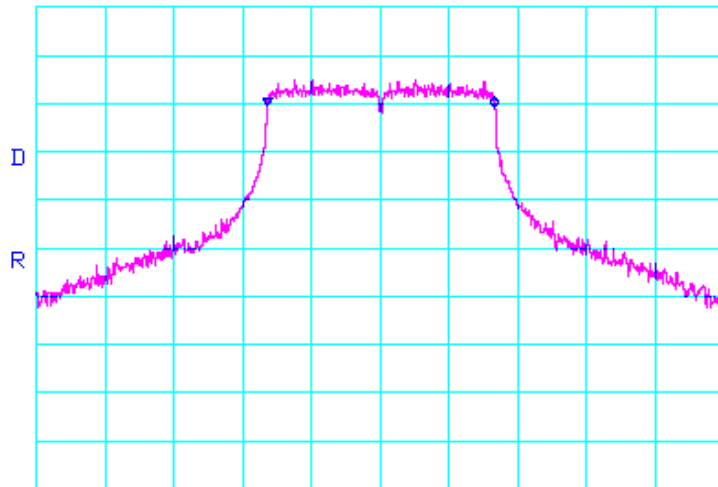
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.50dB
16.50MHz



CENTER 2.43700GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-061107-29a06)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.34dB
16.50MHz



CENTER 2.46200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



PEAK POWER SPECTRAL DENSITY

CLIENT:	Hewlett-Packard Company	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	21 deg. C
		HUMIDITY:	29% RH
		TIME:	9:50 AM

Description:	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.
Results:	See Data Sheet
Note:	Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. • 120VAC / 60 Hz.

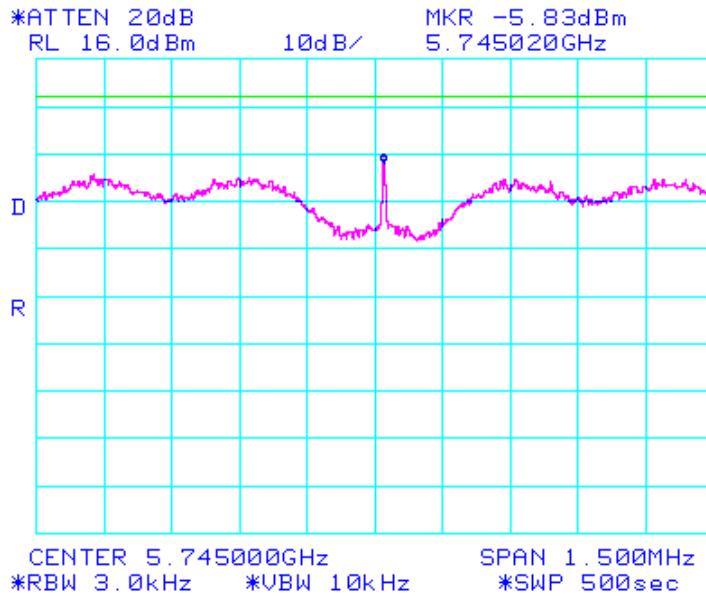
Peak Power Spectral Density Limits	
Frequency (MHz)	Limit (dBm)
5725-5850	8
2412-2462	8



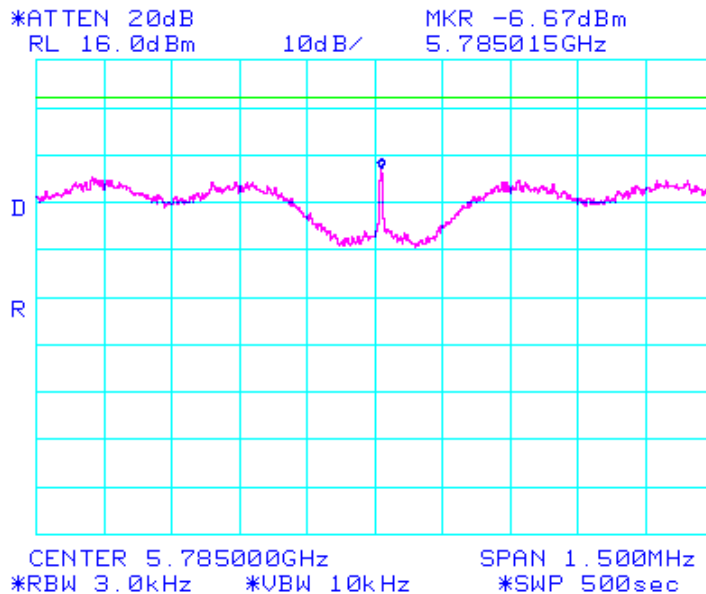
Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27c01)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27c02)	A	JC

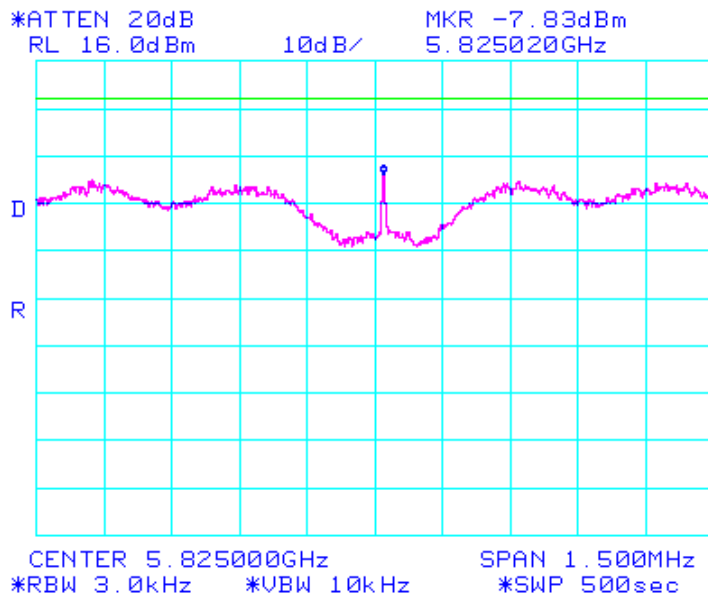




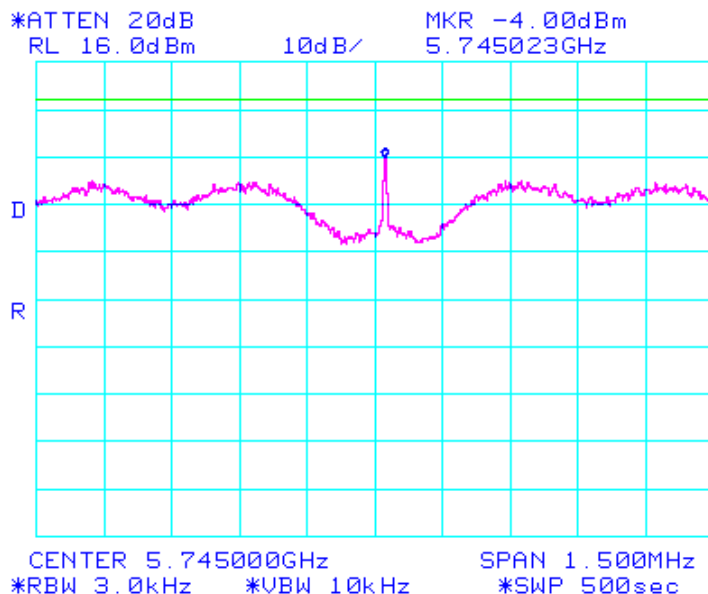
Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27c03)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27c04)	B	JC

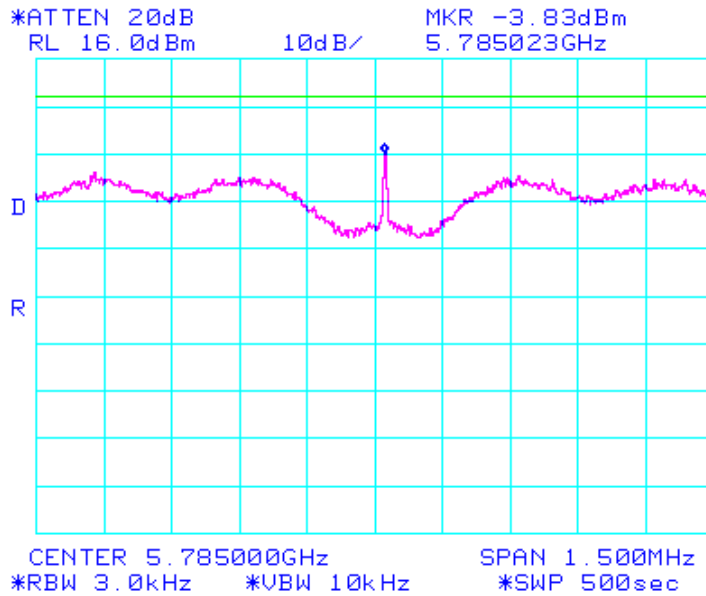




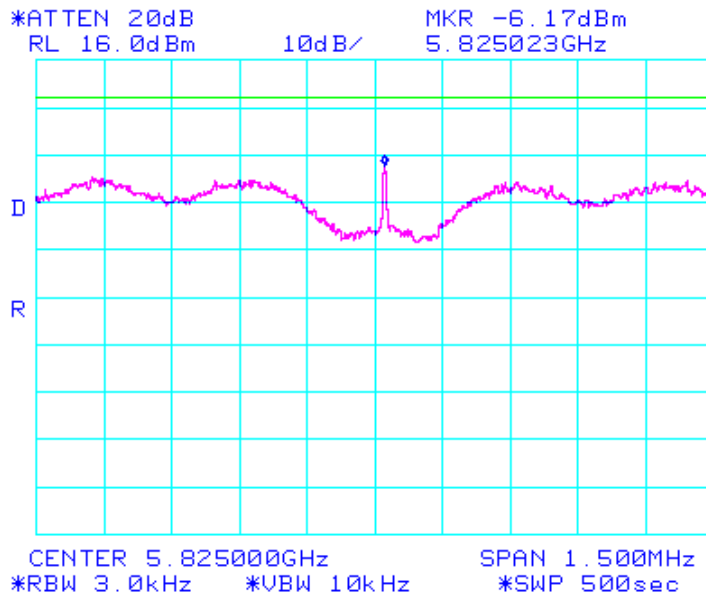
Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27c05)	B	JC



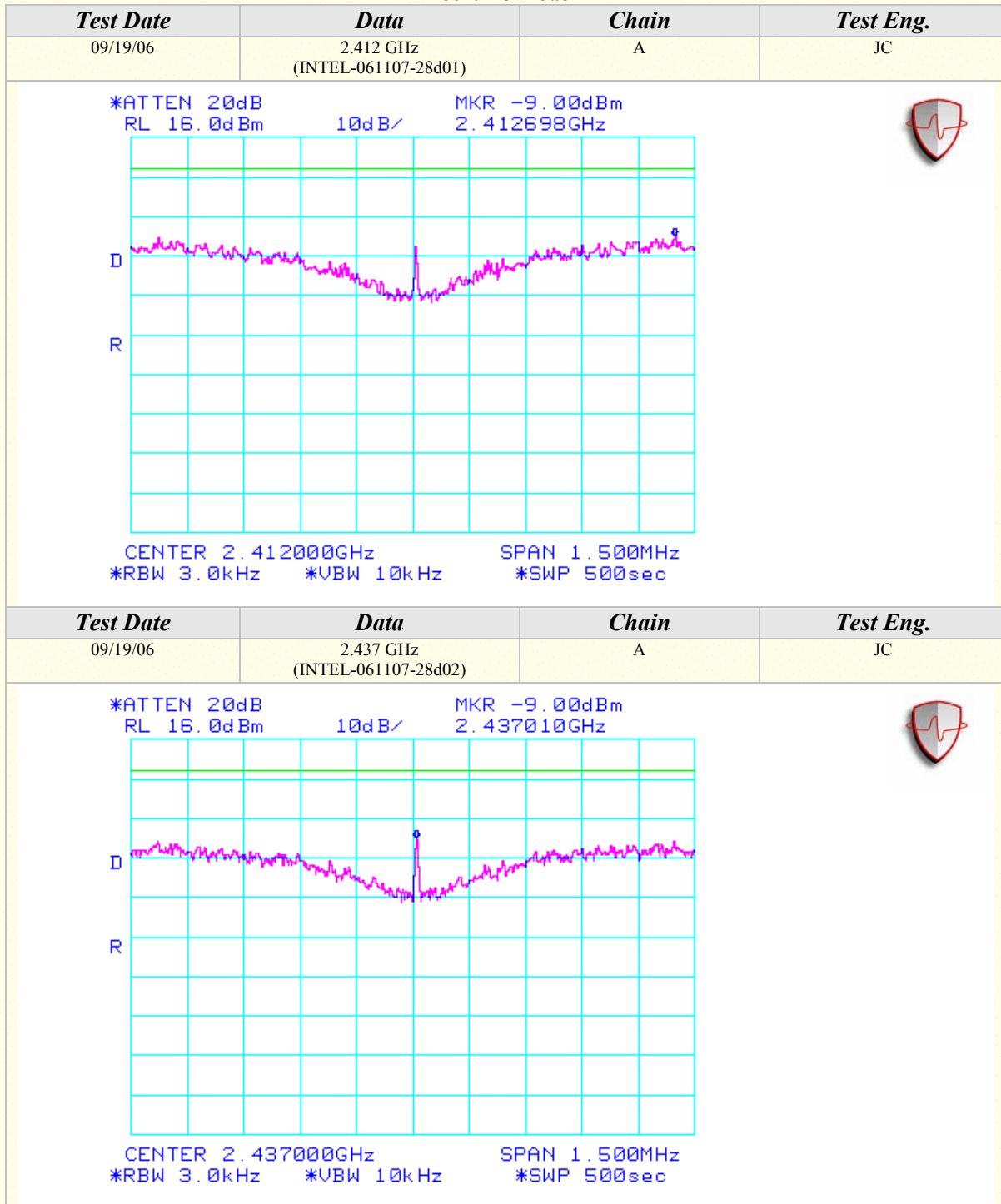
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27c06)	B	JC





Peak Power Spectral Density (Continued)

802.11b Mode





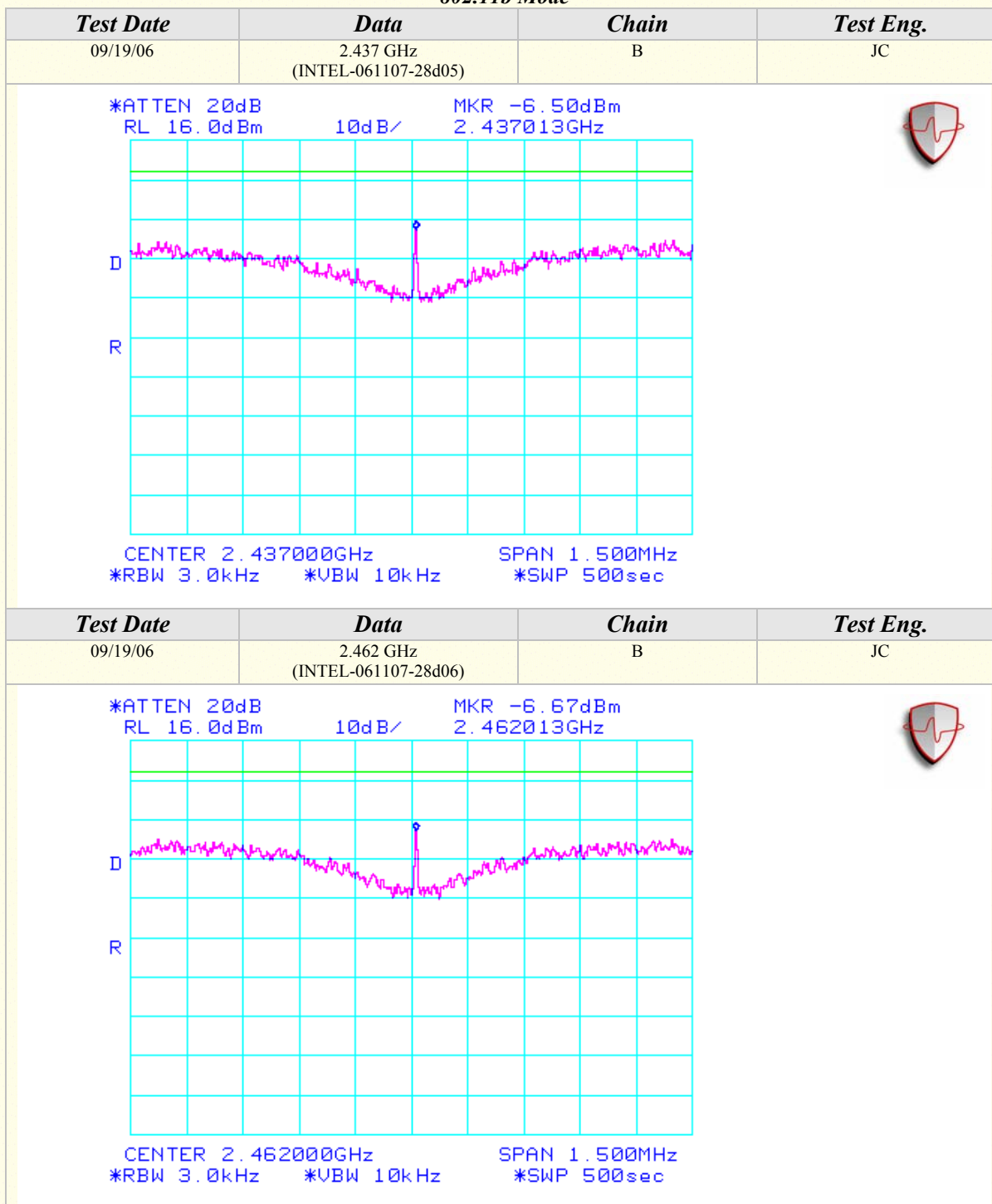
Peak Power Spectral Density (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28d03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -8.67dBm 2.461323GHz CENTER 2.462000GHz SPAN 1.500MHz *RBW 3.0kHz *VBW 10kHz *SWP 500sec			
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28d04)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -7.67dBm 2.412008GHz CENTER 2.412000GHz SPAN 1.500MHz *RBW 3.0kHz *VBW 10kHz *SWP 500sec			

Peak Power Spectral Density (Continued)

802.11b Mode





Peak Power Spectral Density (Continued)

802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-061107-29c01)	A	JC
*ATTEN 20dB RL 16.0dBm10dB/ MR -6.33dBm 2.412010GHz CENTER 2.412000GHzSPAN 1.500MHz *RBW 3.0kHz*VBW 10kHz*SWP 500sec			
Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-061107-29c02)	A	JC
*ATTEN 20dB RL 16.0dBm10dB/ MR -7.17dBm 2.437008GHz CENTER 2.437000GHzSPAN 1.500MHz *RBW 3.0kHz*VBW 10kHz*SWP 500sec			



Peak Power Spectral Density (Continued)

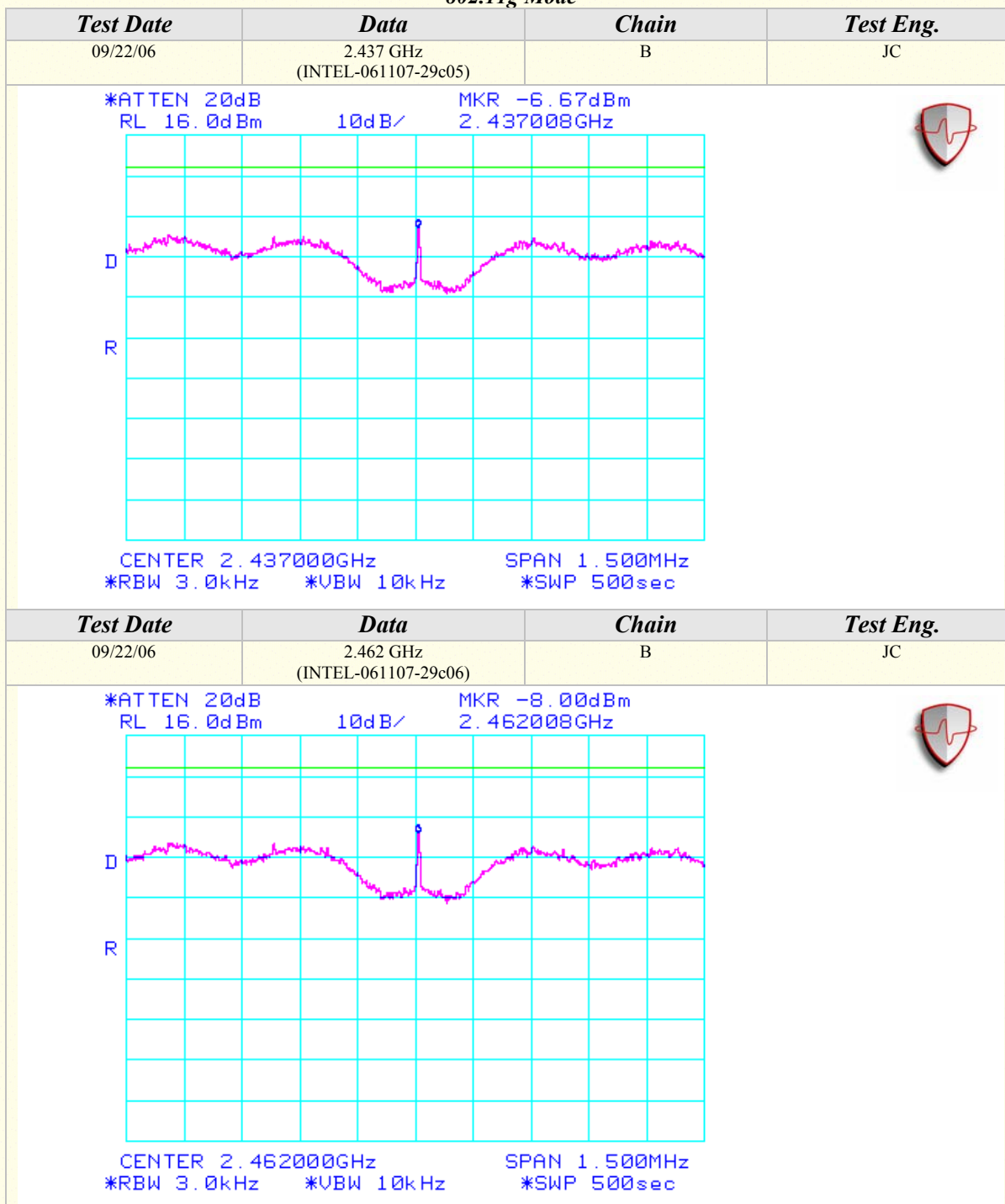
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-061107-29c03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -8.67dBm 2.461368GHz CENTER 2.462000GHz *RBW 3.0kHz *VBW 10kHz *SWP 500sec SPAN 1.500MHz			
Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-061107-29c04)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -8.67dBm 2.412010GHz CENTER 2.412000GHz *RBW 3.0kHz *VBW 10kHz *SWP 500sec SPAN 1.500MHz			



Peak Power Spectral Density (Continued)

802.11g Mode





CONDUCTED OUT OF BAND EMISSIONS

CLIENT:	Hewlett-Packard Company	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-061107
MODEL NUMBER:	4965AG_	TEST ENGINEER:	JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot.	TEMPERATURE:	21 deg. C
		HUMIDITY:	29% RH
		TIME:	9:50 AM

Description:	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.
Results:	See Data Sheet
Note:	Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency. • 120VAC / 60 Hz.



Conducted Out Of Band Emissions (Continued)

802.11a Mode

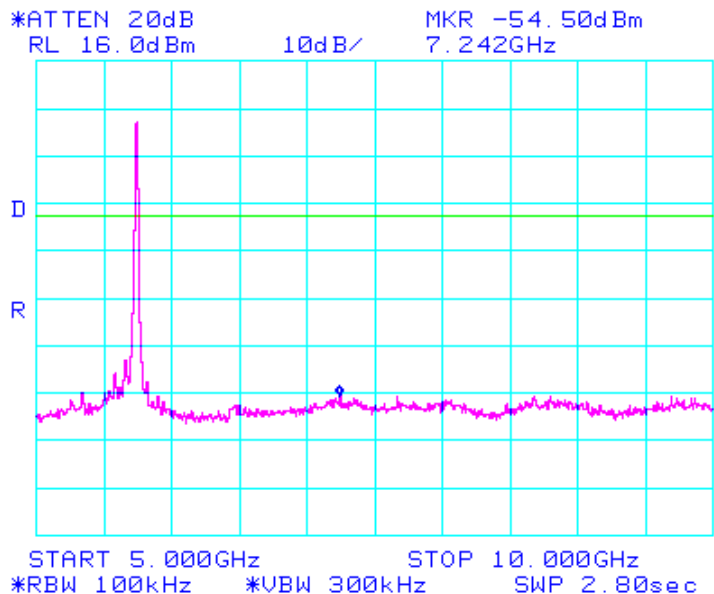
Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d01)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.17dBm 1.0000GHz			
Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d02)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -55.83dBm 3.827GHz			



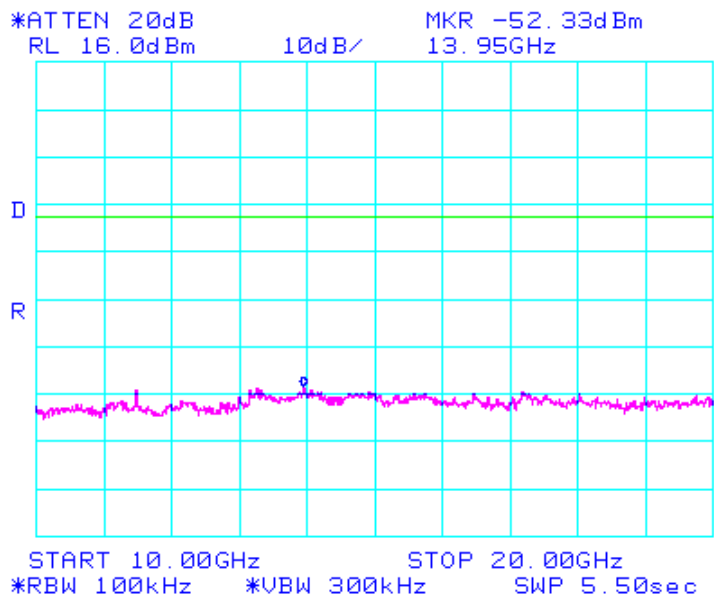
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d03)	A	JC

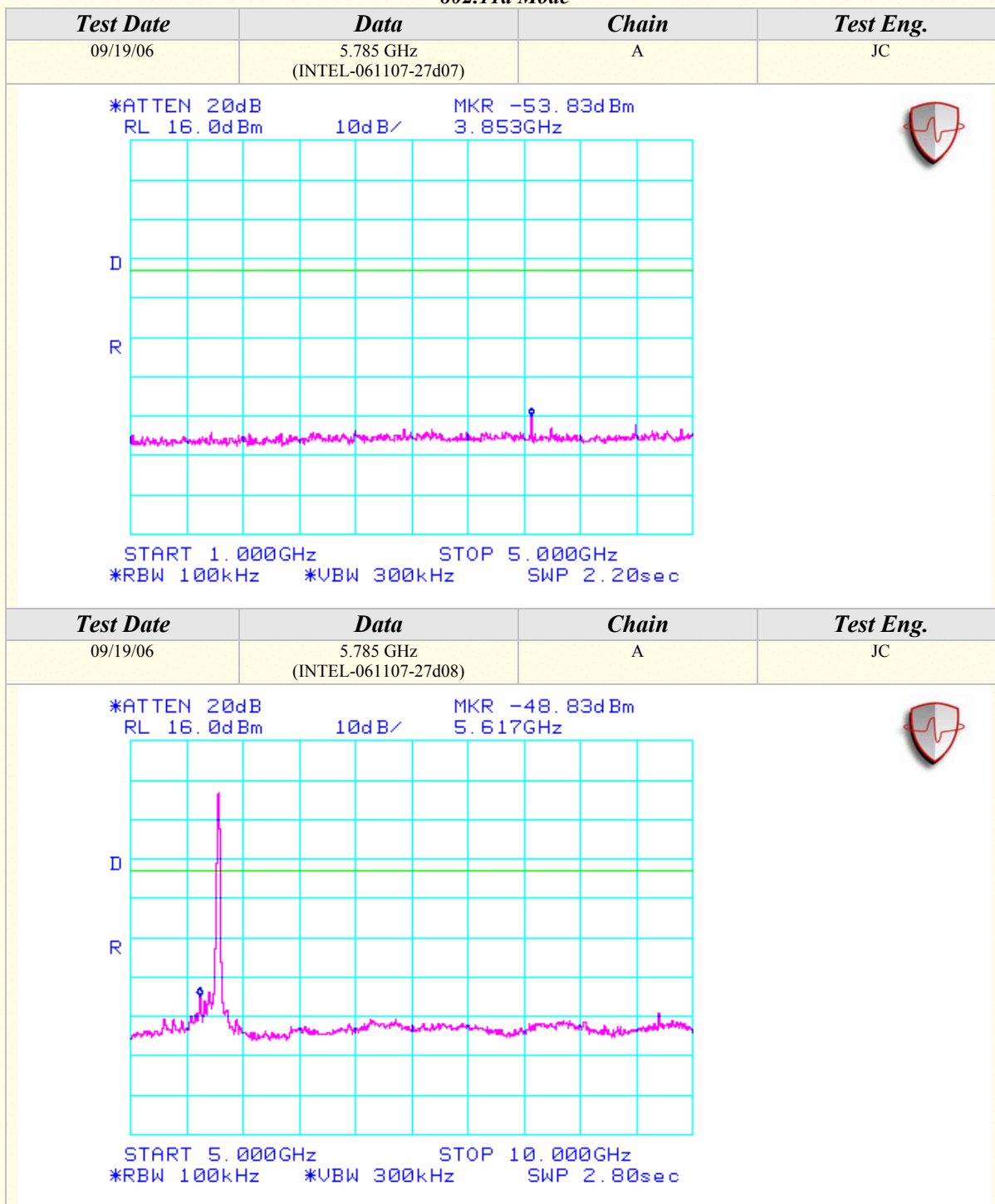


Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d04)	A	JC



Conducted Out Of Band Emissions (Continued)

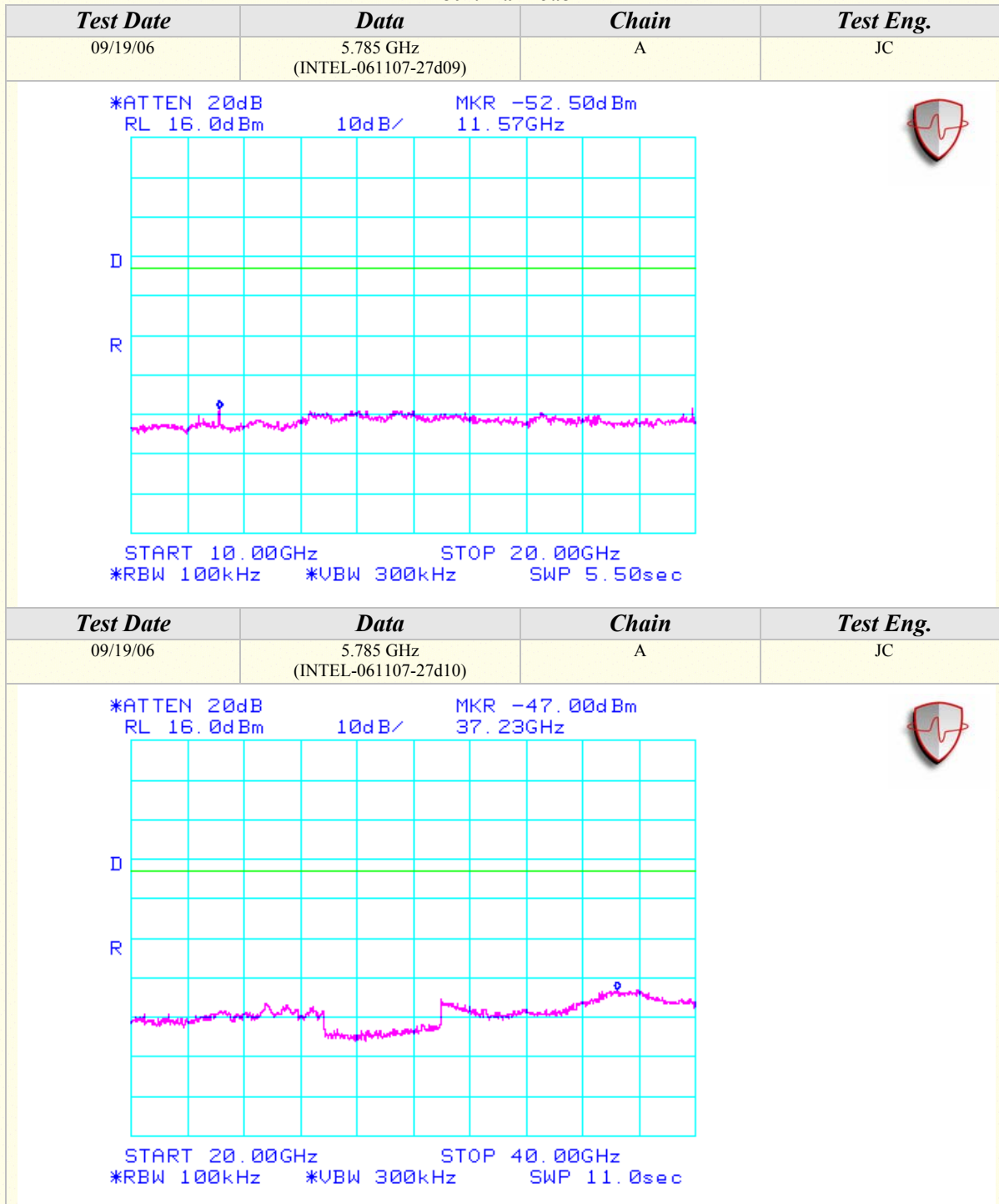
802.11a Mode





Conducted Out Of Band Emissions (Continued)

802.11a Mode





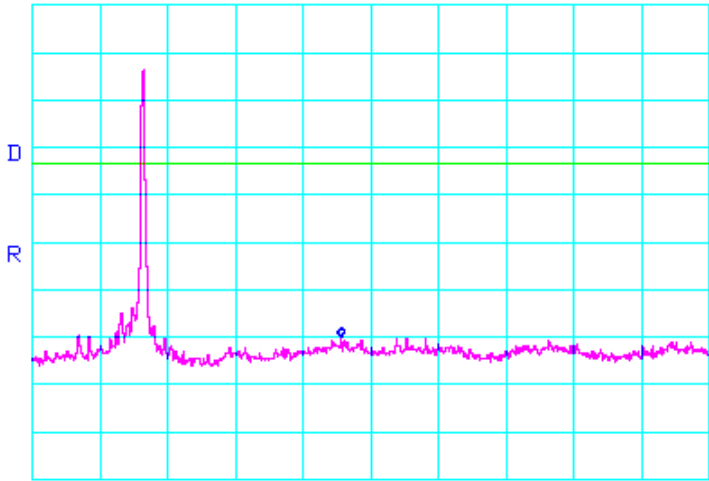
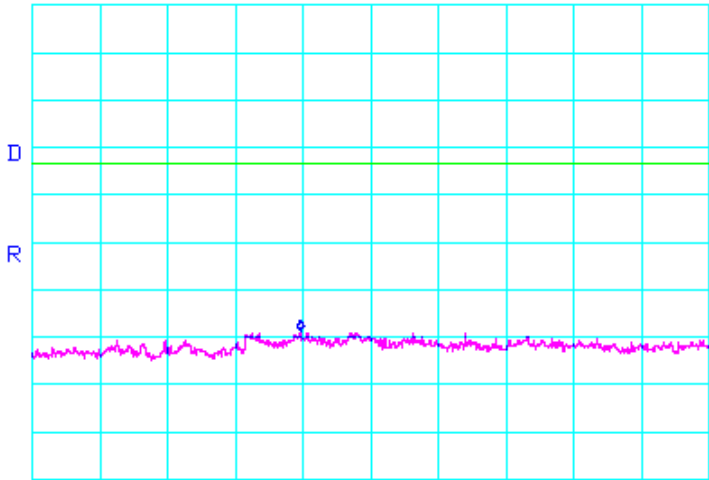
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d11)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.50dBm 875.5MHz START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d12)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.00dBm 3.880GHz START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec			

Conducted Out Of Band Emissions (Continued)

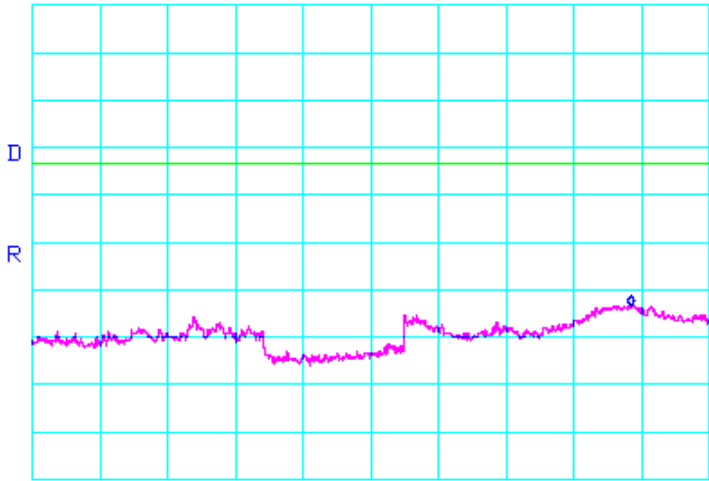
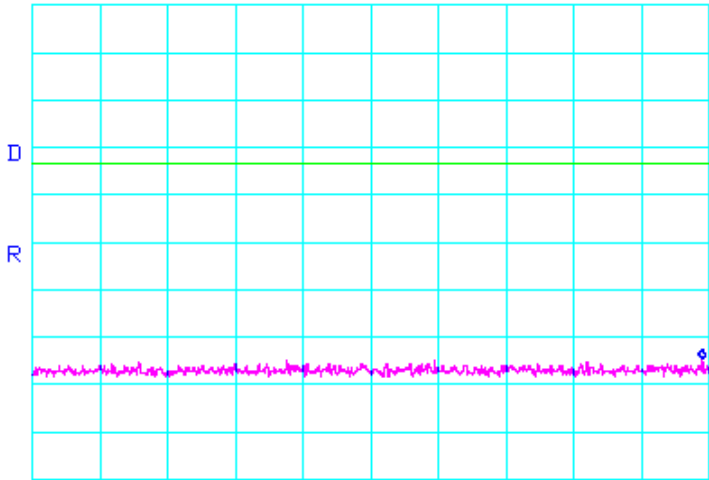
802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d13)	A	JC
*ATTEN 20dB MKR -54.00dBm RL 16.0dBm 10dB/ 7.283GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d14)	A	JC
*ATTEN 20dB MKR -52.67dBm RL 16.0dBm 10dB/ 13.97GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



Conducted Out Of Band Emissions (Continued)

802.11a Mode

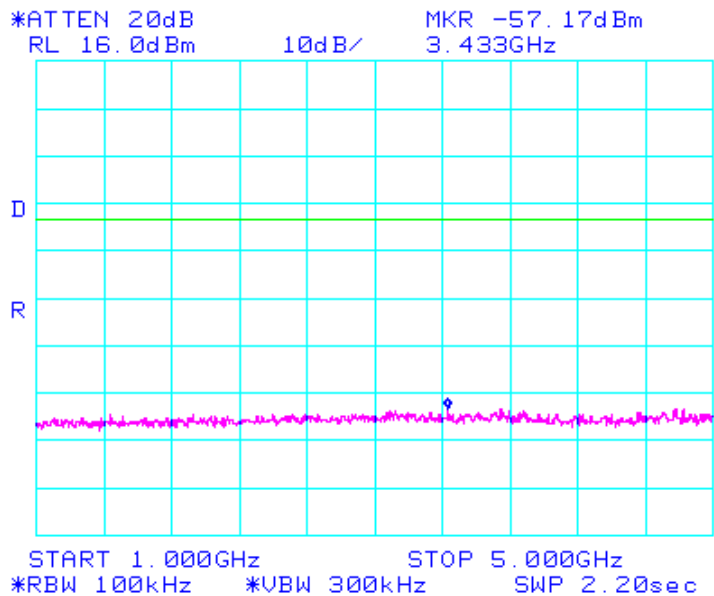
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d15)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -47.33dBm 37.70GHz  START 20.00GHz STOP 40.00GHz *RBW 100kHz *VBW 300kHz SWP 11.0sec			
Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d16)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.67dBm 990.3MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			



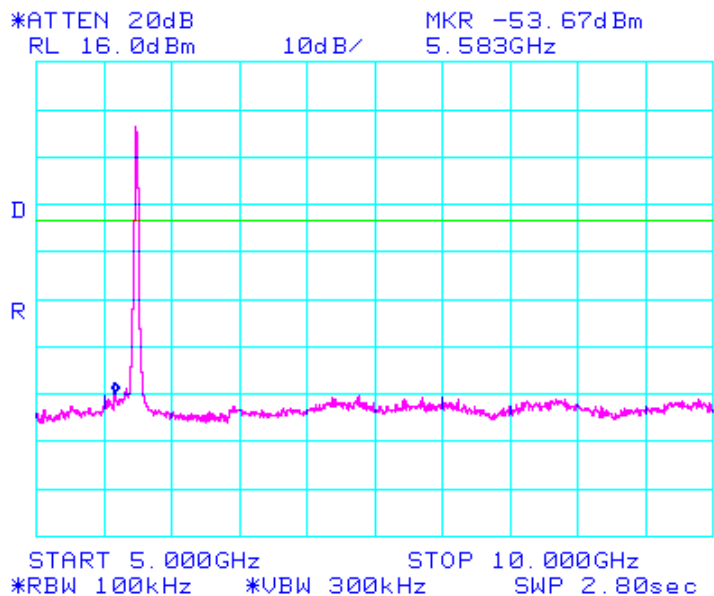
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d17)	B	JC



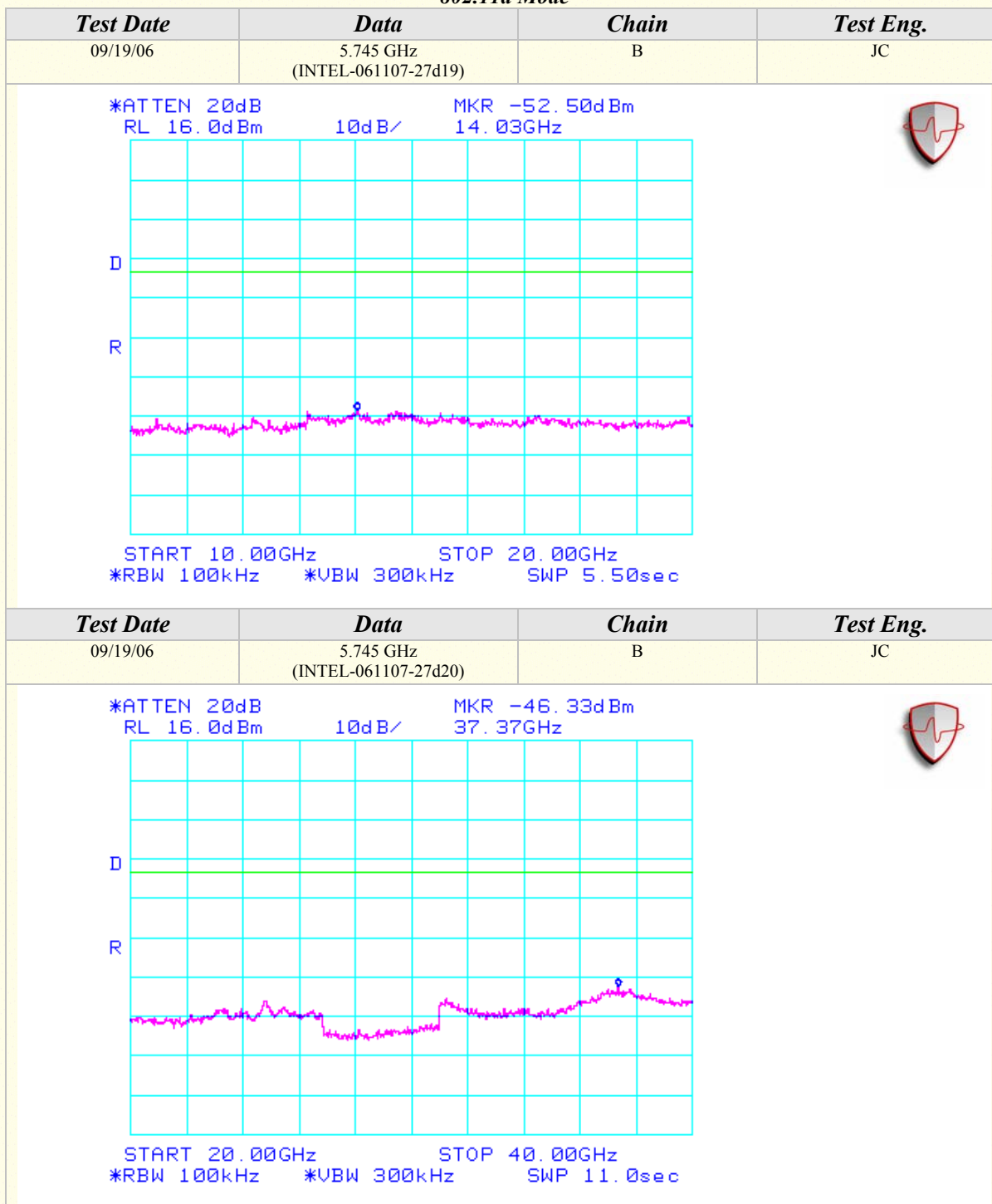
Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-061107-27d18)	B	JC





Conducted Out Of Band Emissions (Continued)

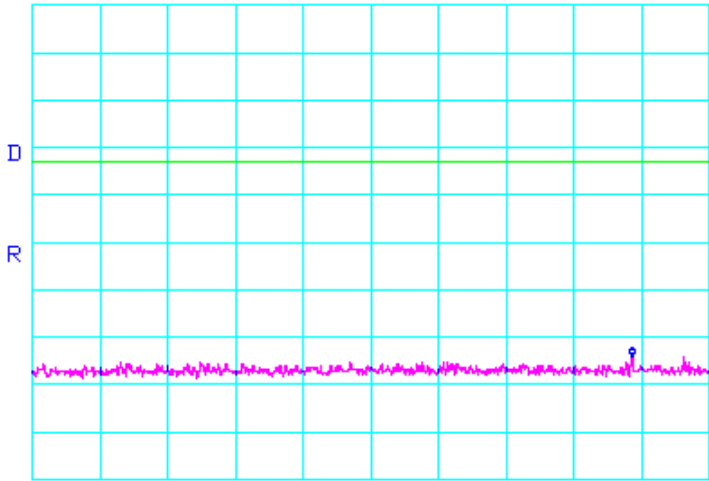
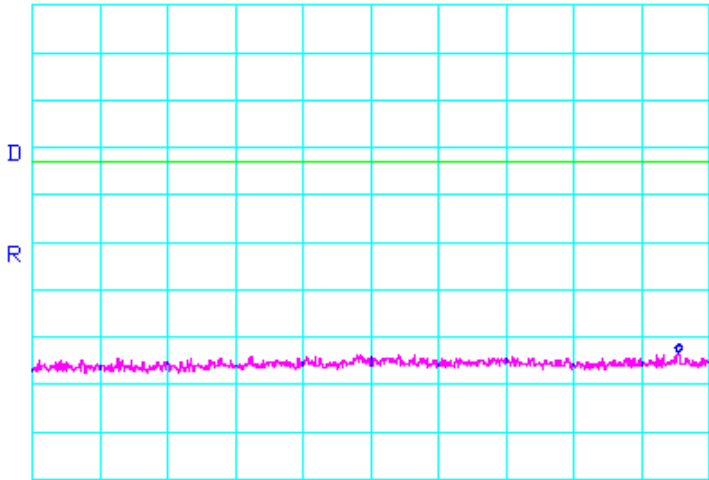
802.11a Mode





Conducted Out Of Band Emissions (Continued)

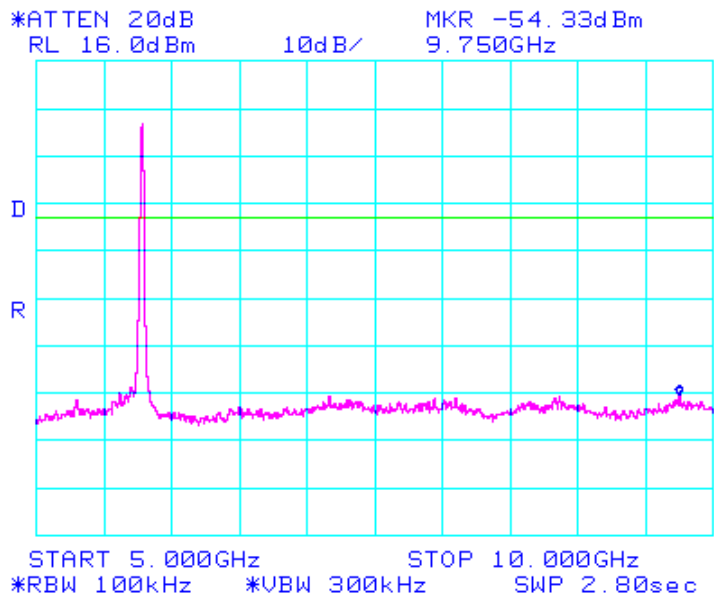
802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27d21)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.17dBm 890.1MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			
Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27d22)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -57.33dBm 4.820GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec			

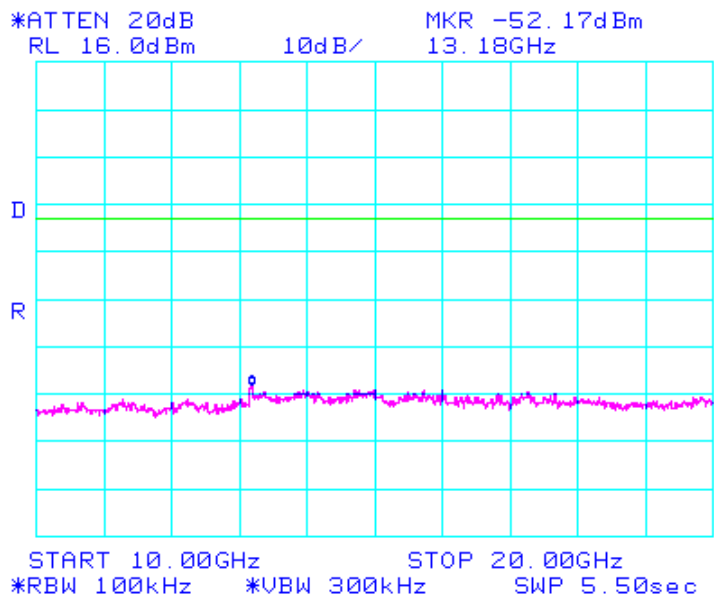
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27d23)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27d24)	B	JC

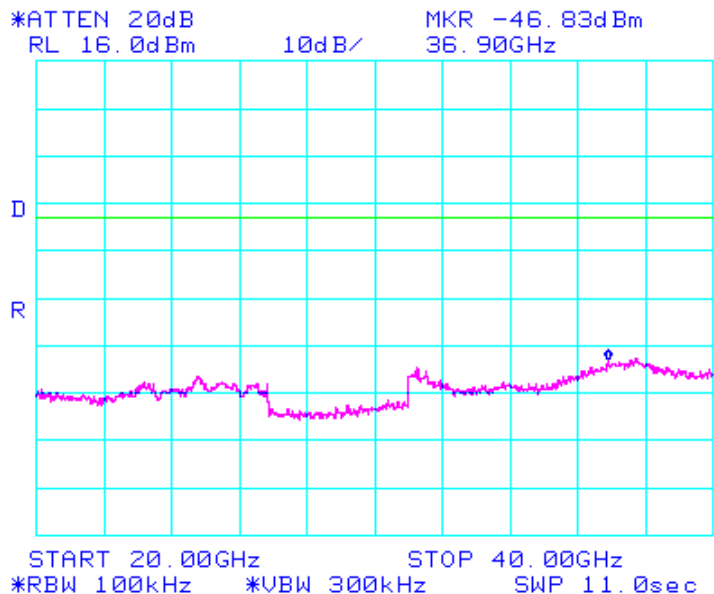




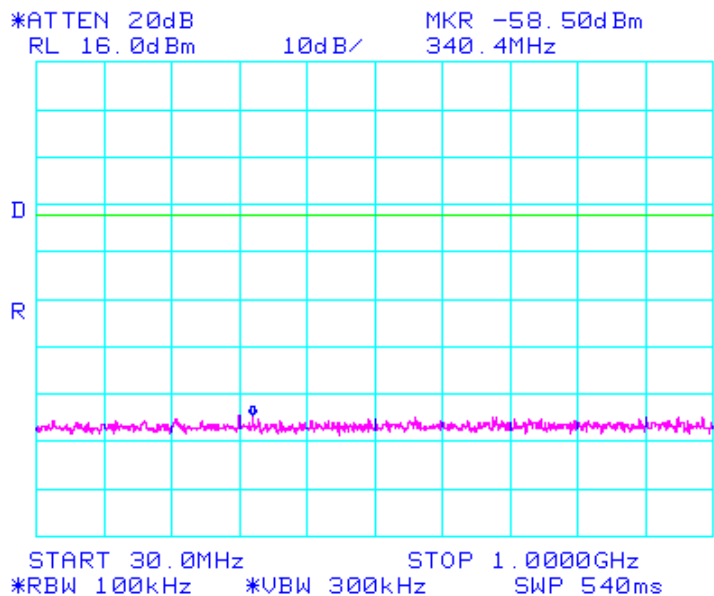
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-061107-27d25)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d26)	B	JC

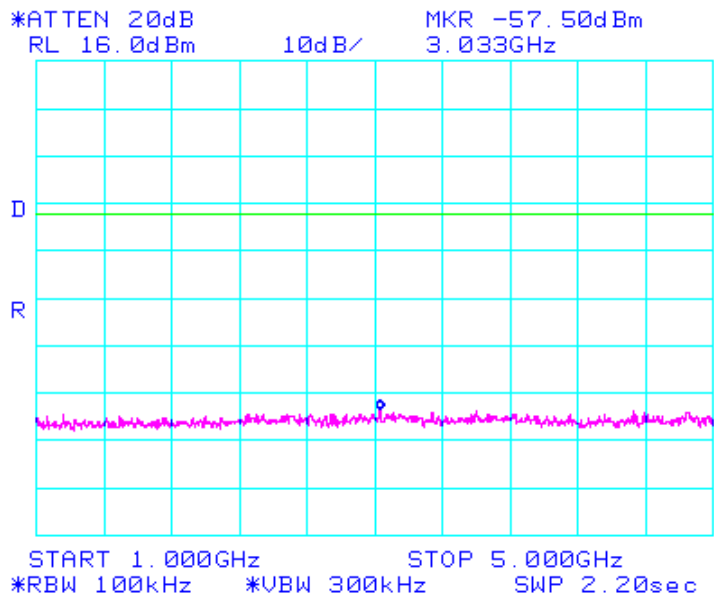




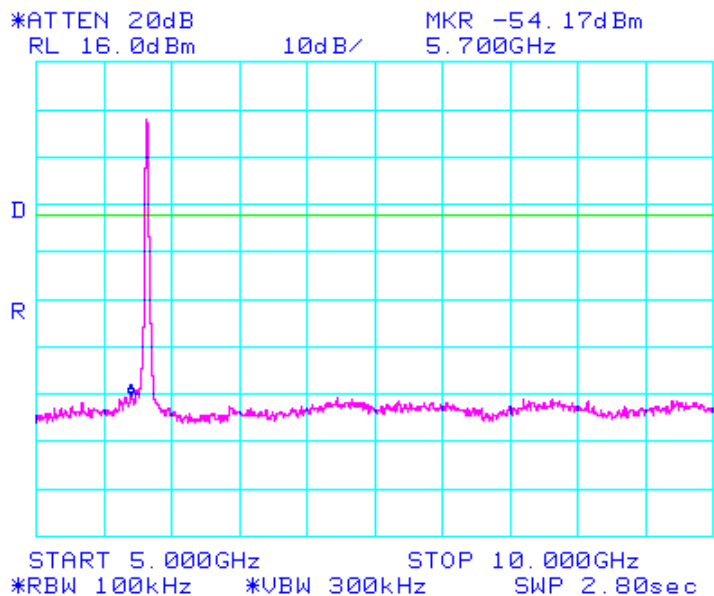
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d27)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d28)	B	JC

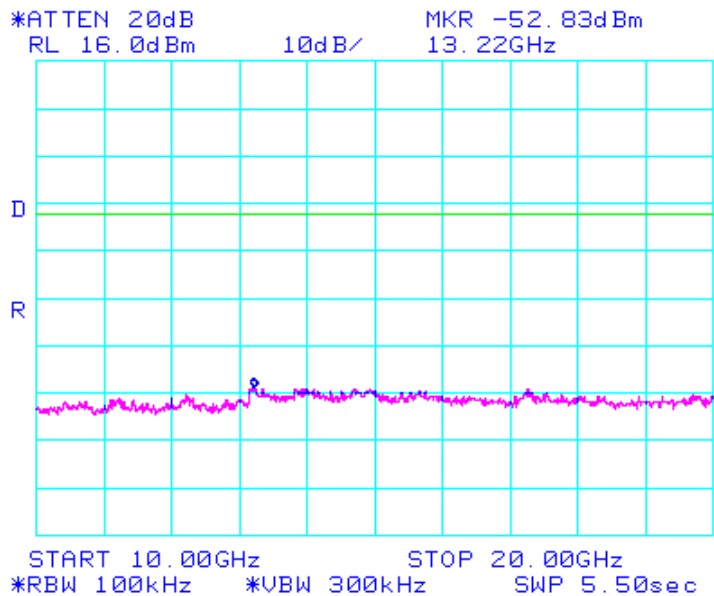




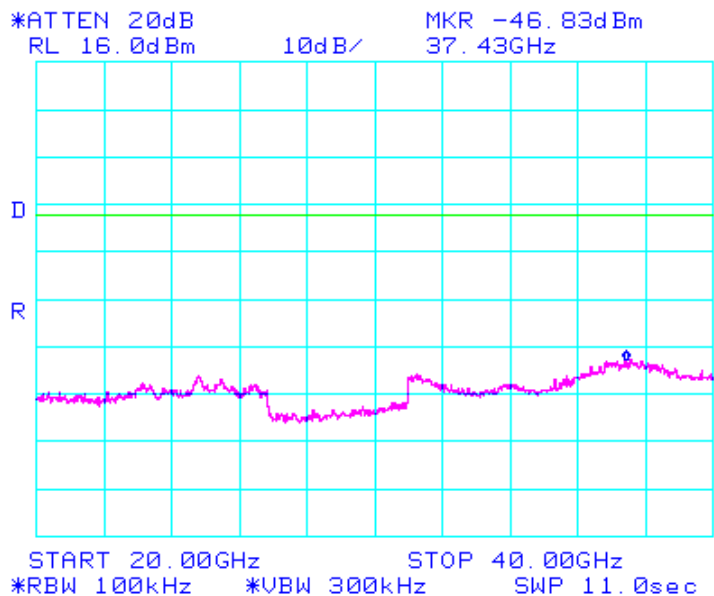
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d29)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-061107-27d30)	B	JC





Conducted Out Of Band Emissions (Continued)

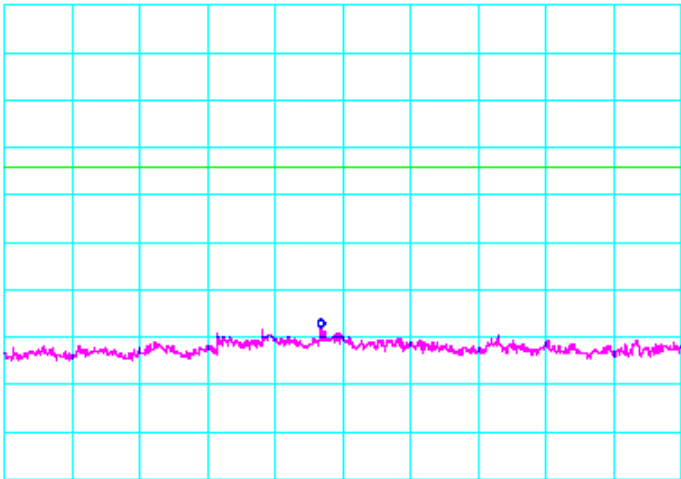
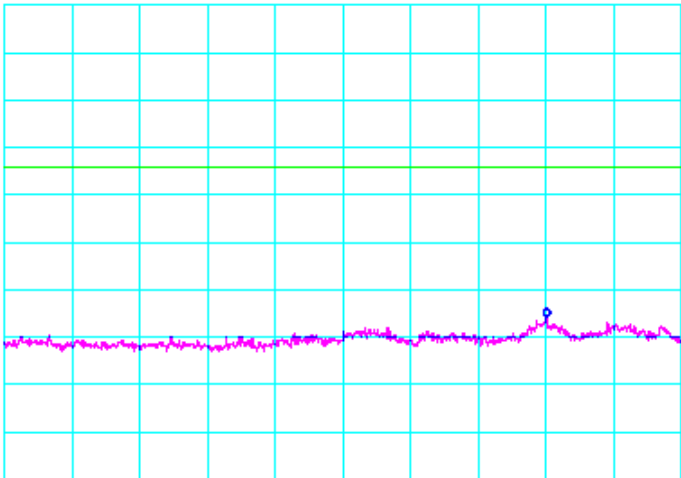
802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e01)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 457MHz MKR -54.00dBm			
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e02)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 2.040GHz MKR -35.50dBm			



Conducted Out Of Band Emissions (Continued)

802.11b Mode

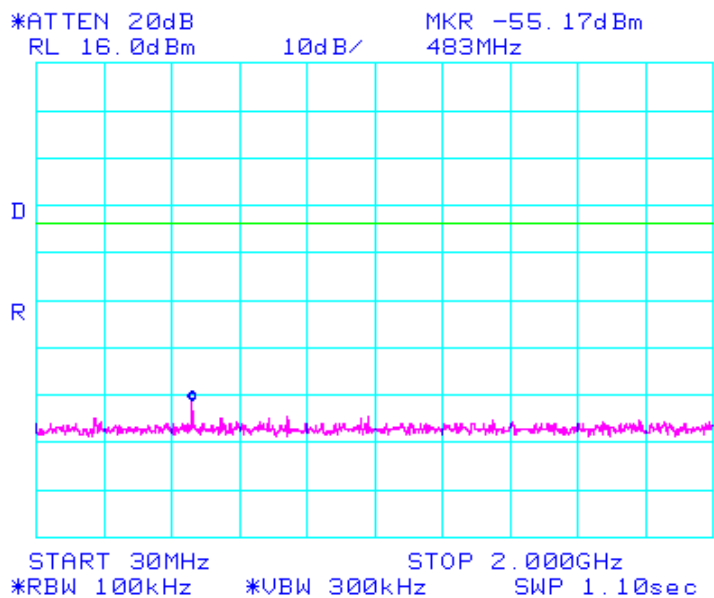
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 14.68GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.810GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



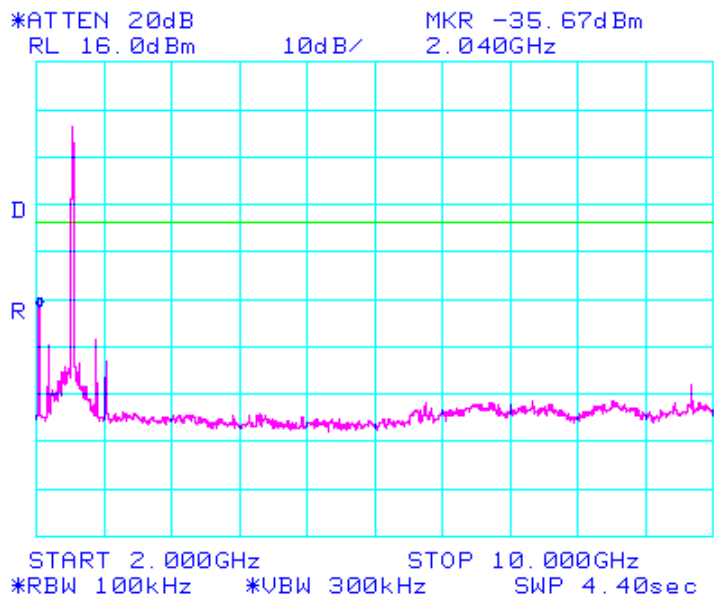
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e05)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e06)	A	JC

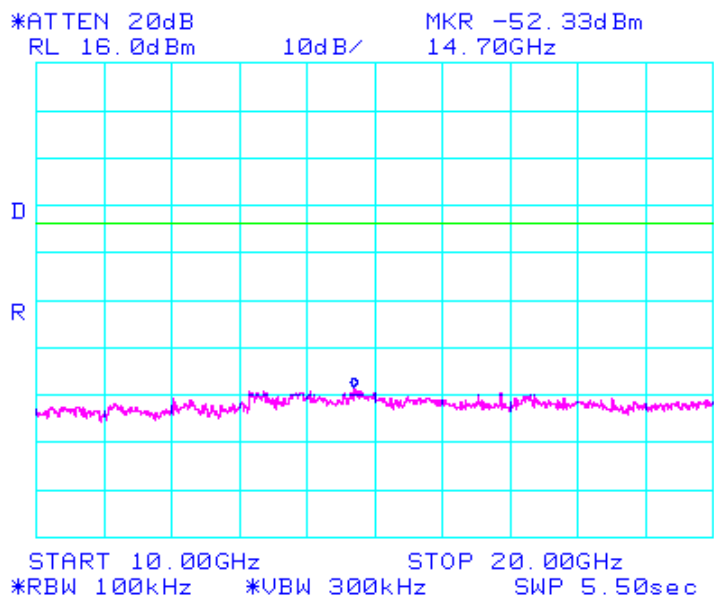




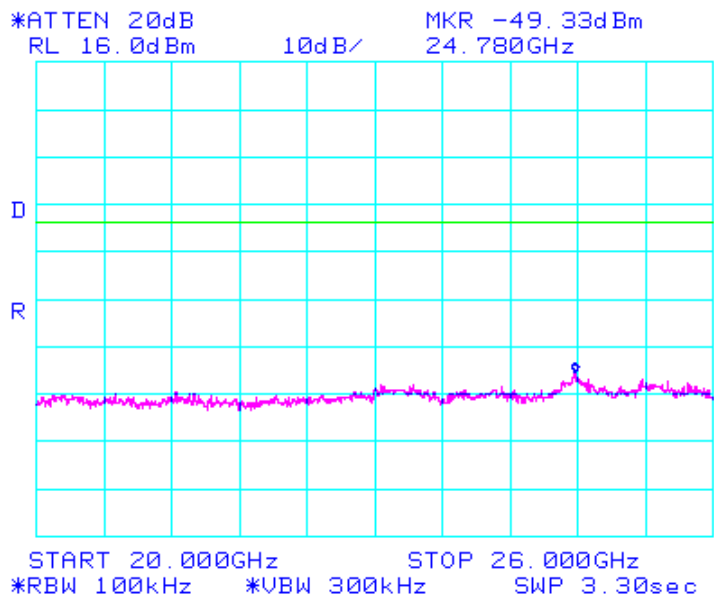
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e07)	A	JC



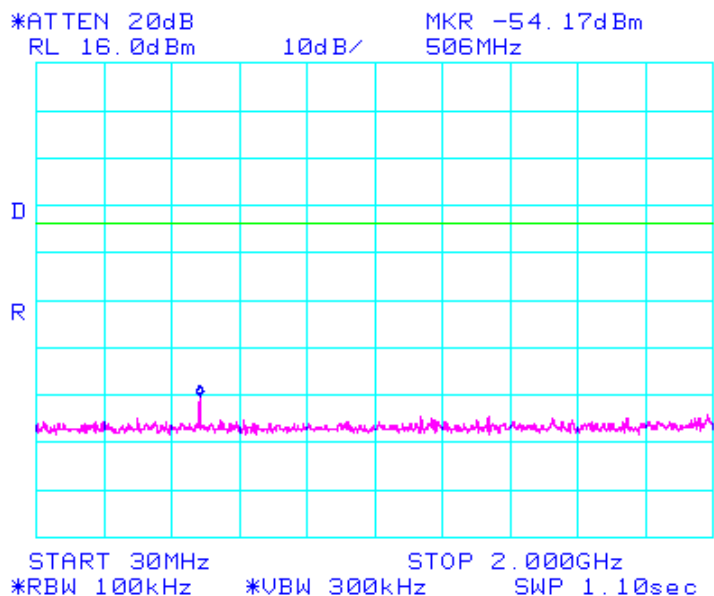
Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e08)	A	JC



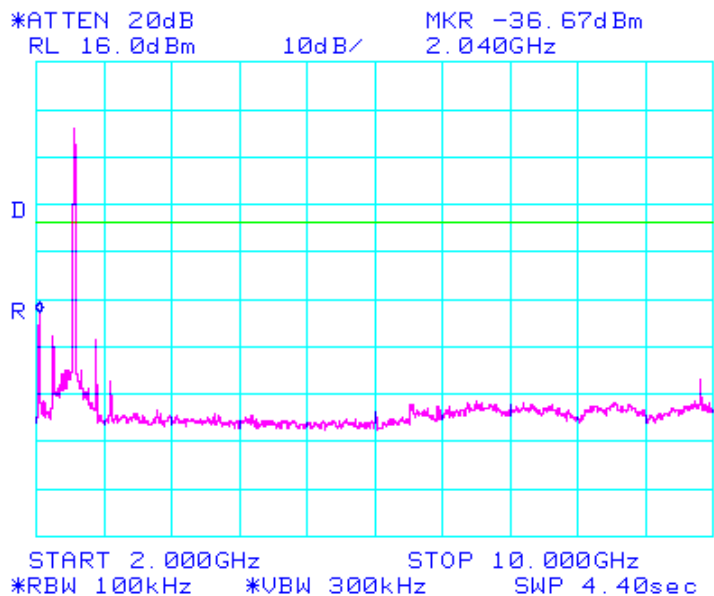
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e09)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e10)	A	JC

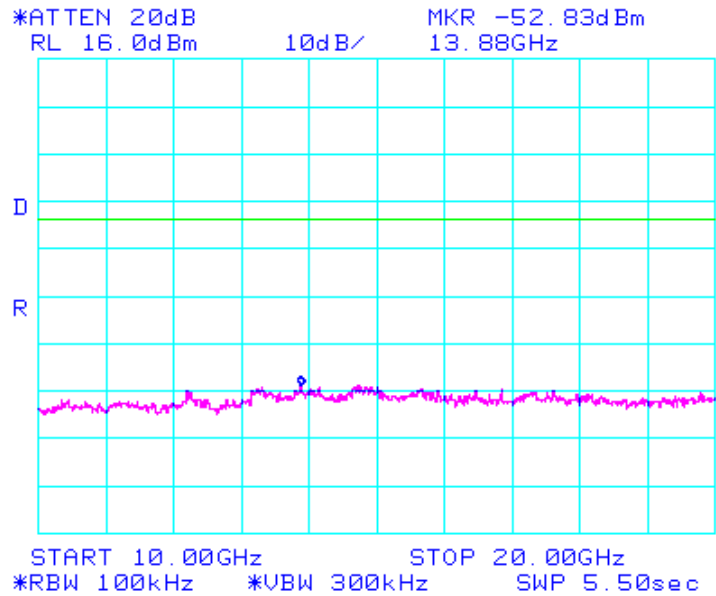




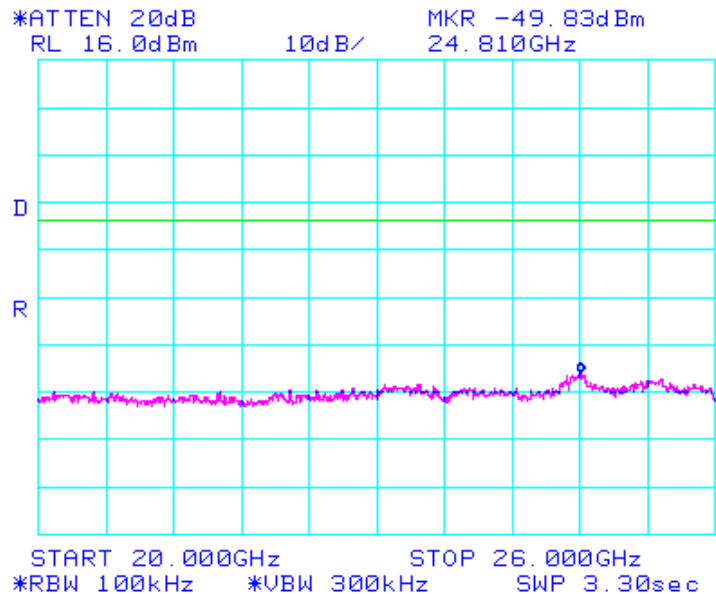
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e11)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e12)	A	JC





Conducted Out Of Band Emissions (Continued)

802.11b Mode

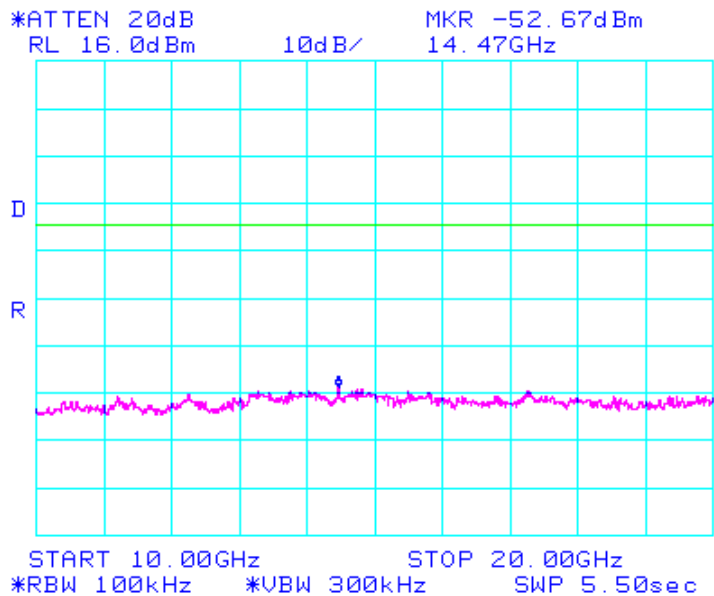
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e13)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 457MHz MRK -52.33dBm			
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e14)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 2.040GHz MRK -31.83dBm			



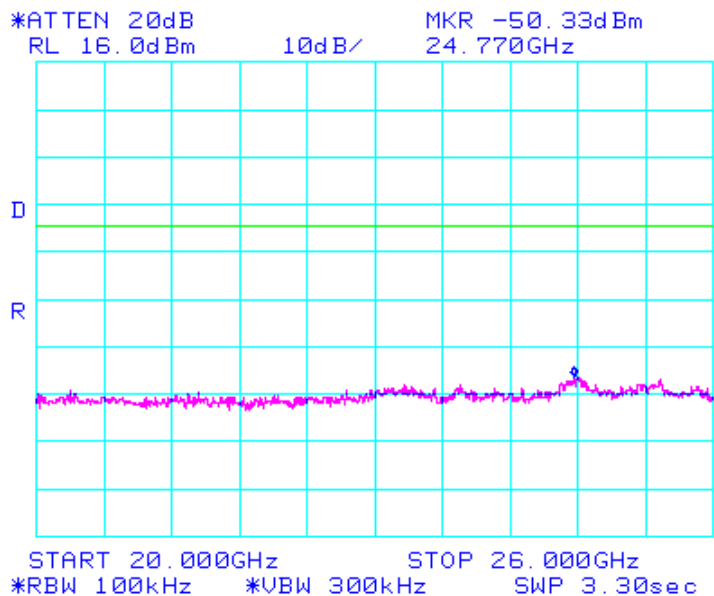
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e15)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-061107-28e16)	B	JC





Conducted Out Of Band Emissions (Continued)

802.11b Mode

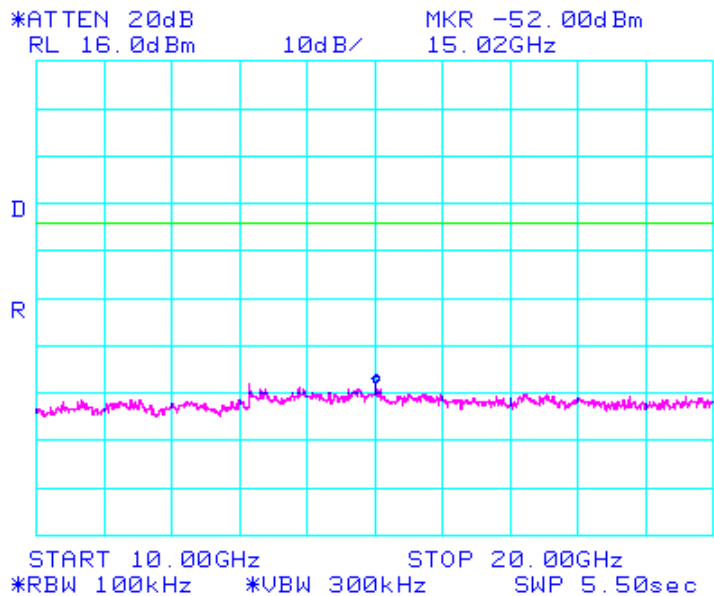
Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e17)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 483MHz MR -51.33dBm			
Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e18)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ 2.027GHz MR -32.00dBm			



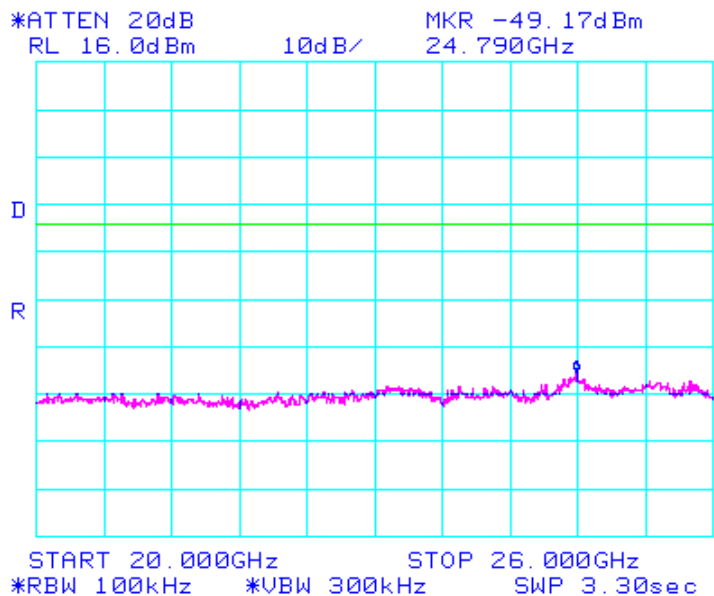
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e19)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-061107-28e20)	B	JC

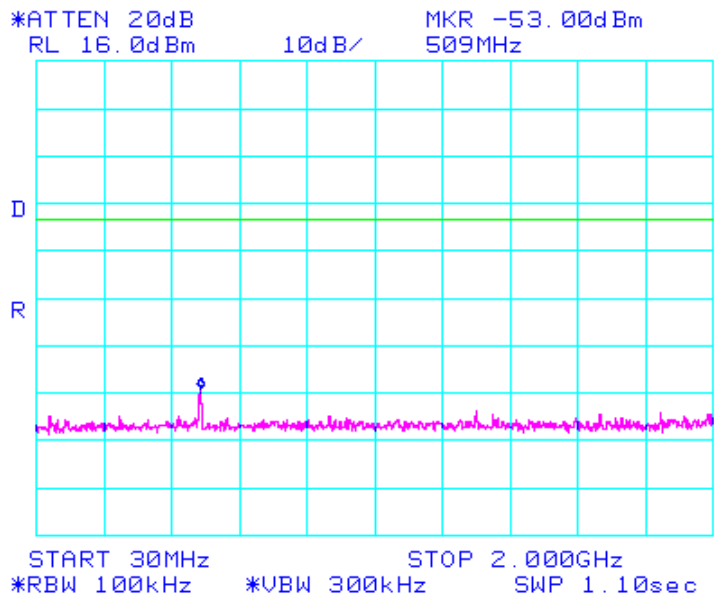




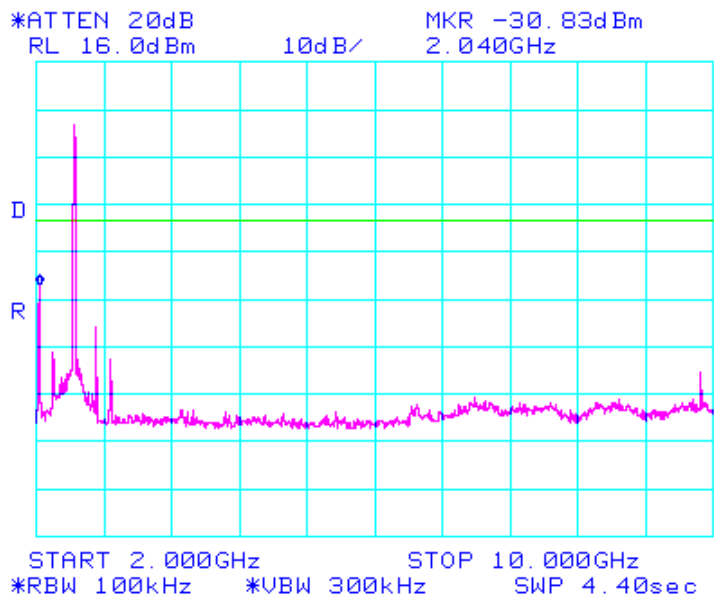
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e21)	B	JC



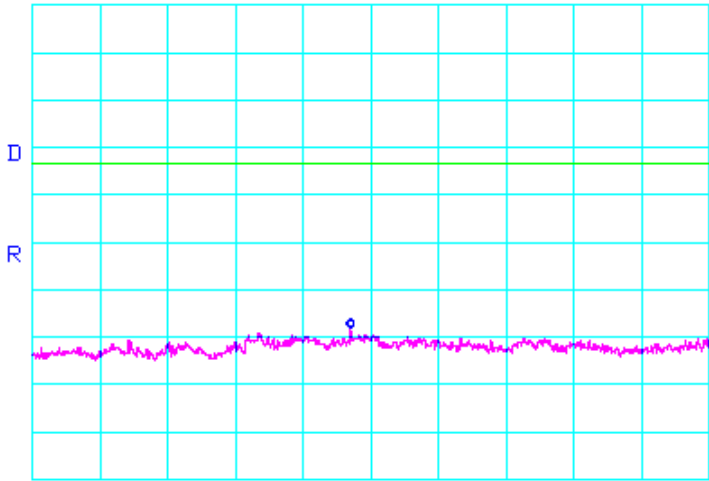
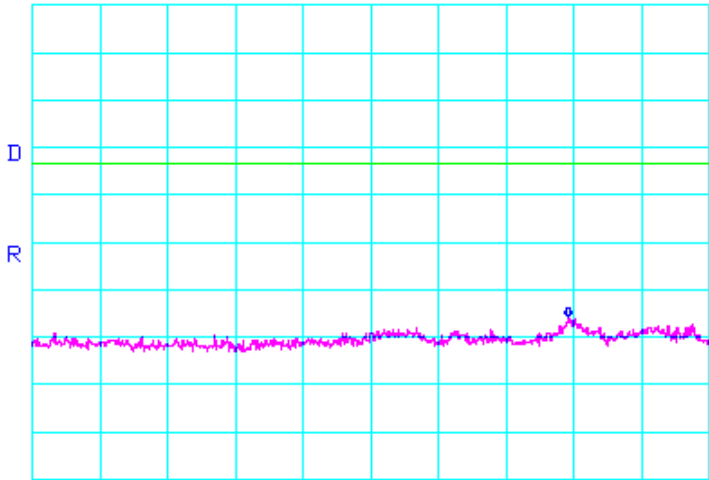
Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e22)	B	JC





Conducted Out Of Band Emissions (Continued)

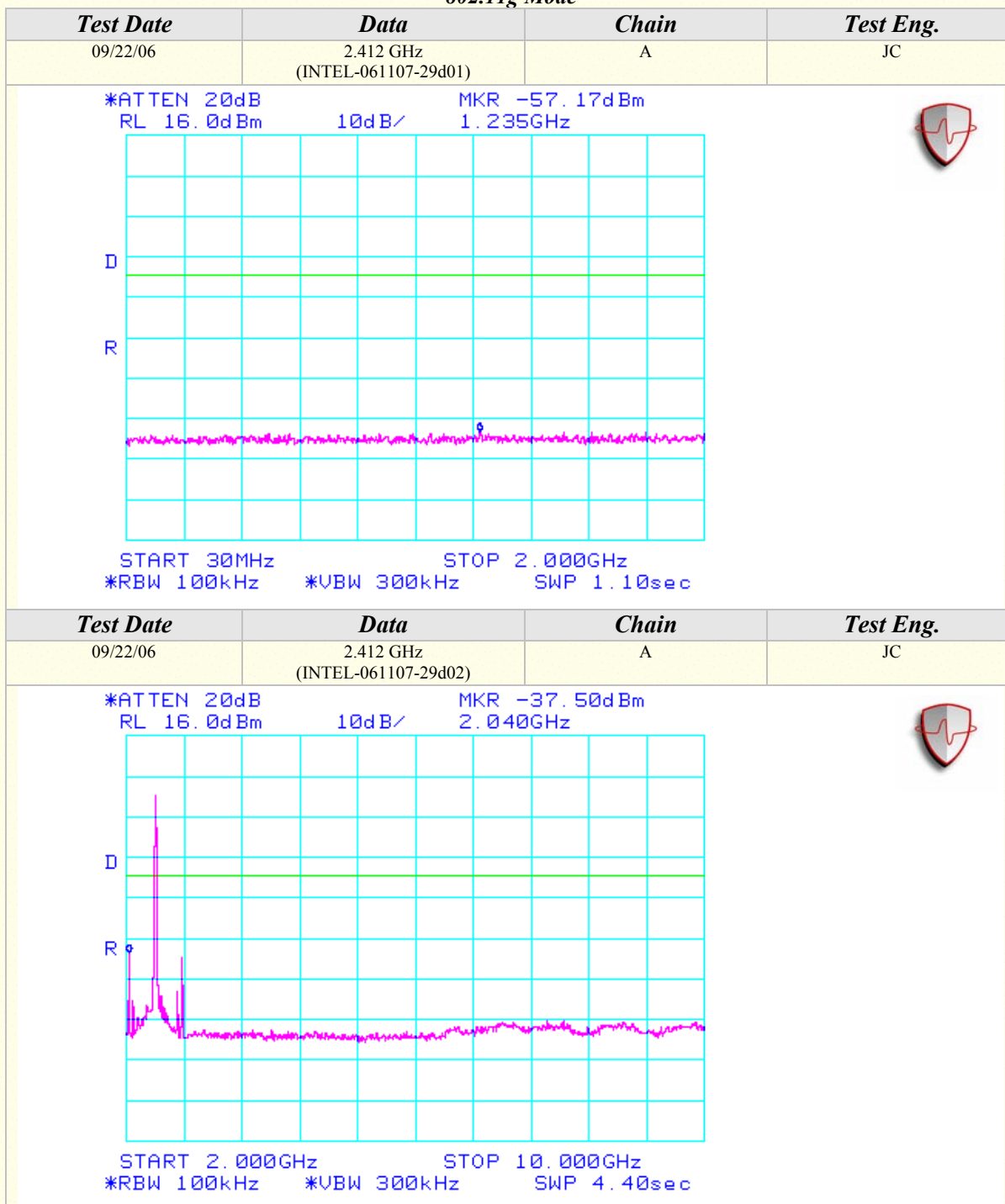
802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e23)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 14.70GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-061107-28e24)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.750GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

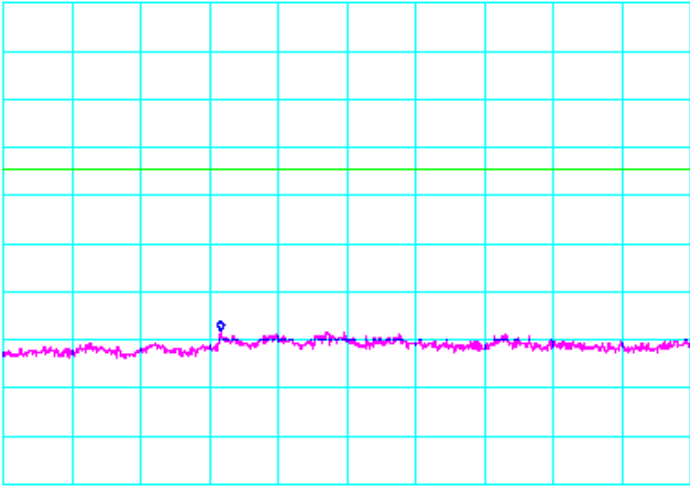
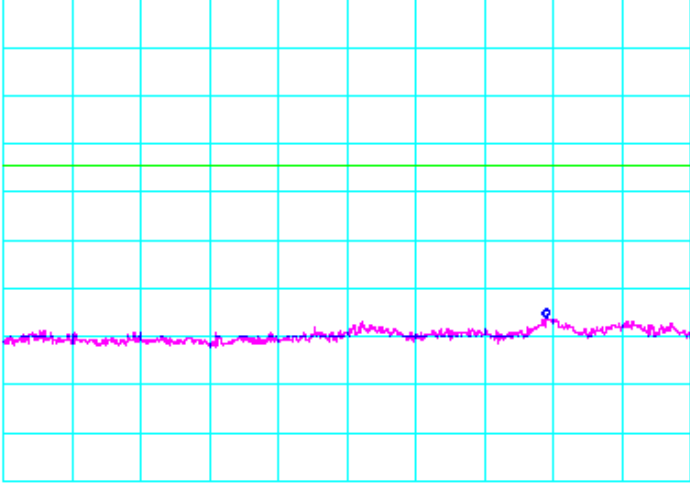
802.11g Mode





Conducted Out Of Band Emissions (Continued)

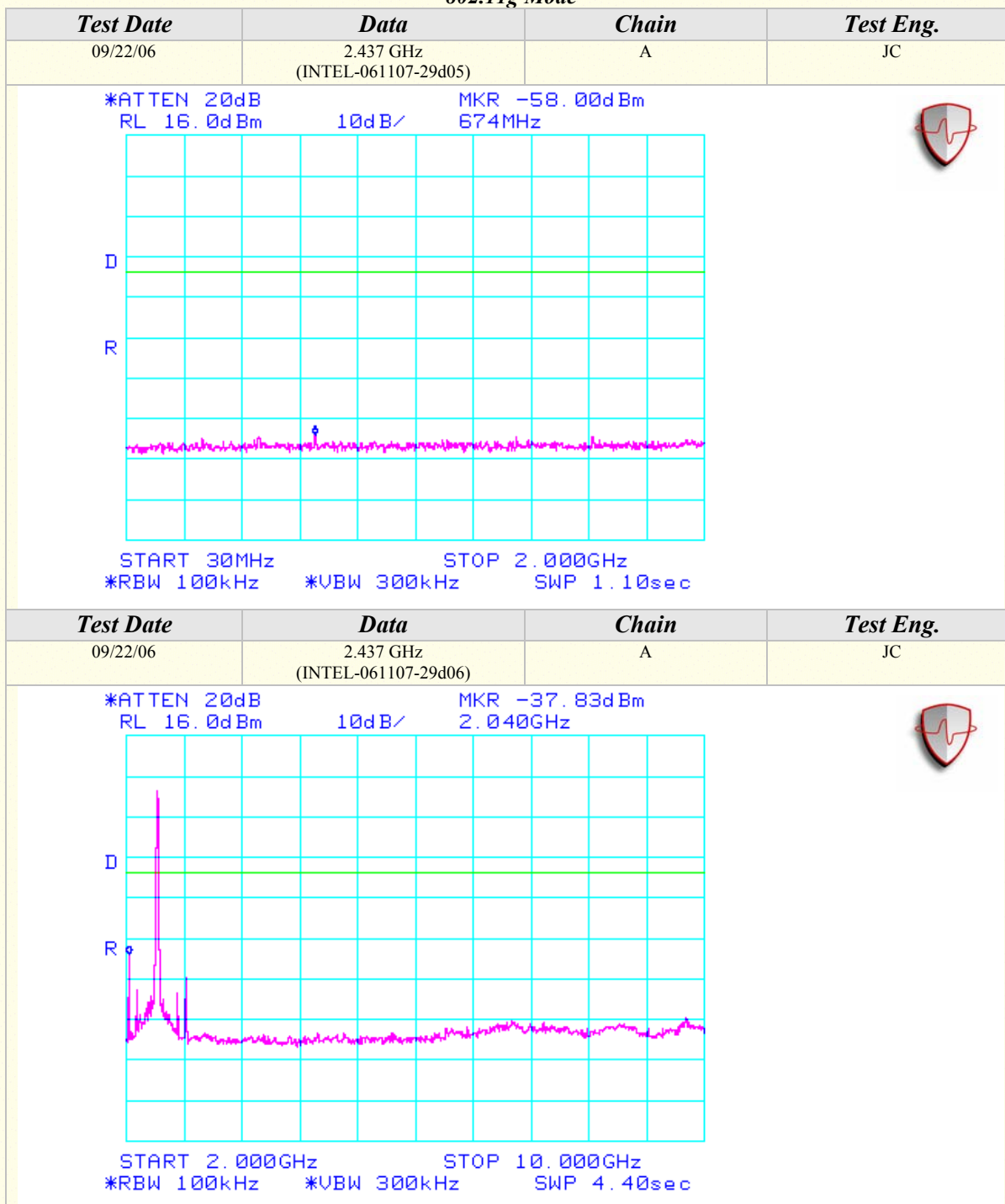
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-061107-29d03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.00dBm 13.17GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-061107-29d04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -50.17dBm 24.740GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

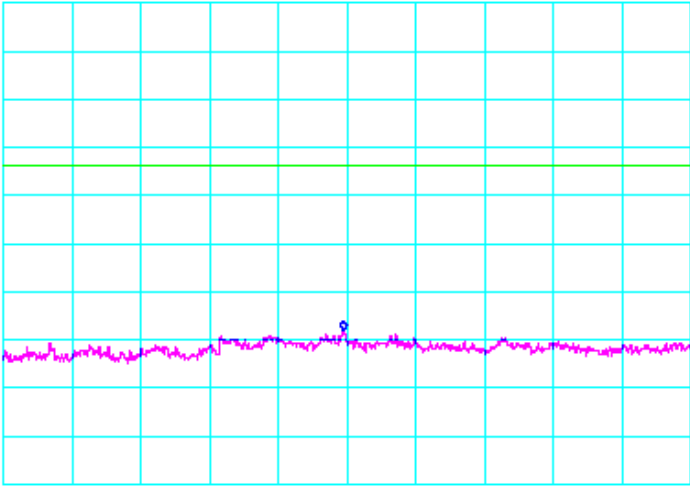
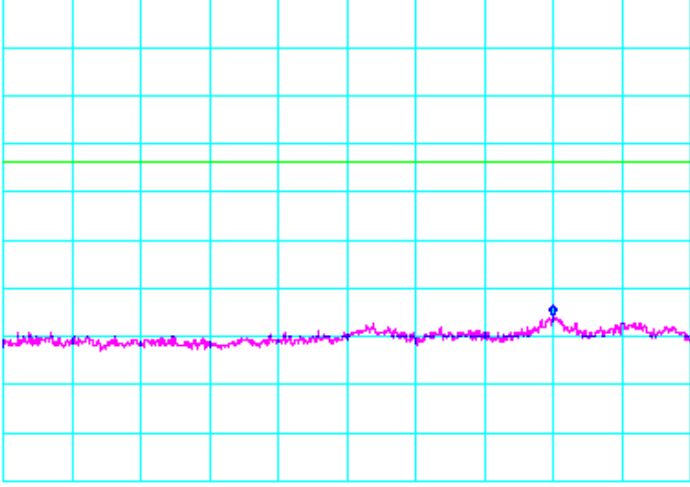
802.11g Mode





Conducted Out Of Band Emissions (Continued)

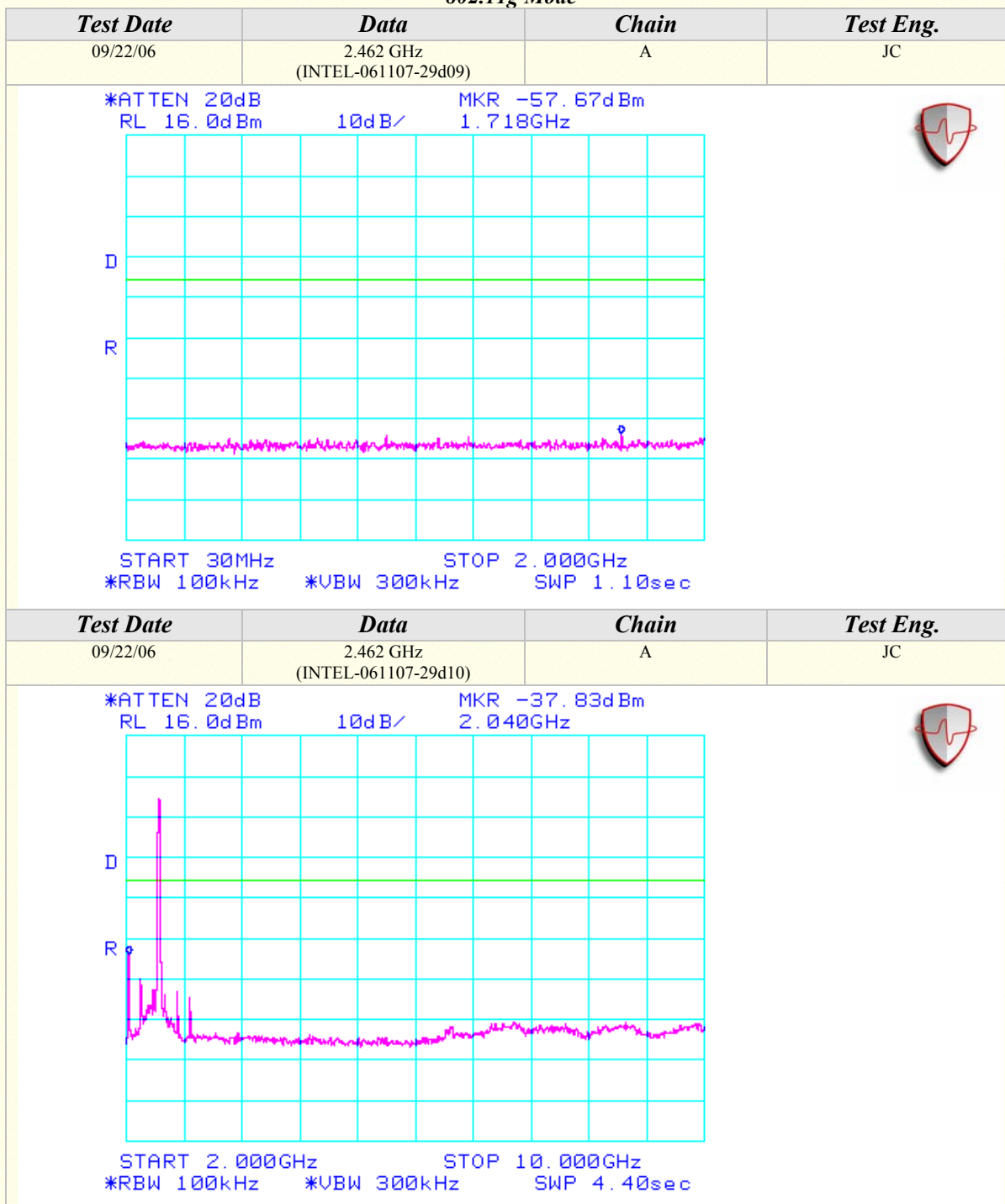
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-061107-29d07)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.00dBm 14.95GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec 			
Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-061107-29d08)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.50dBm 24.800GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec 			



Conducted Out Of Band Emissions (Continued)

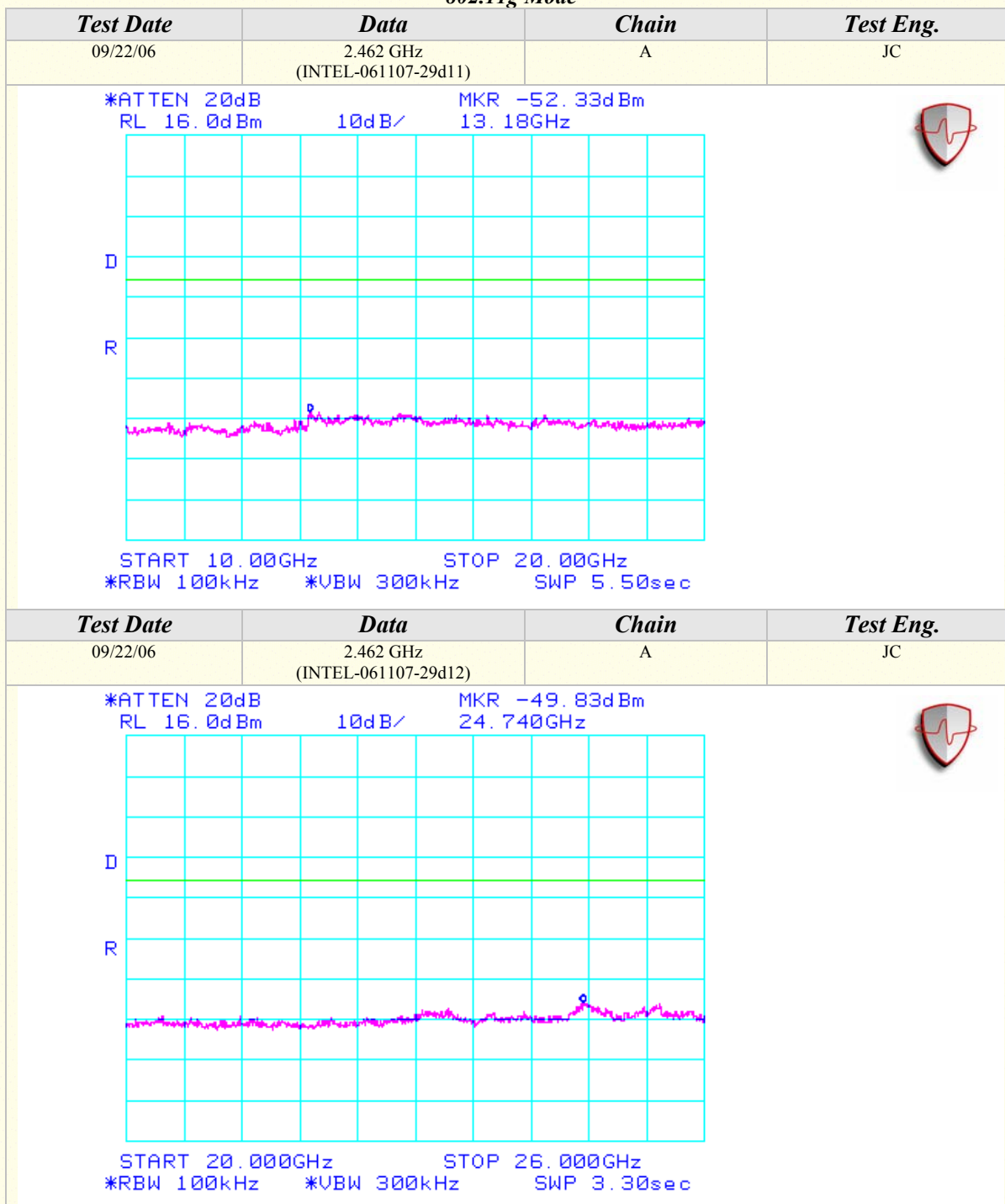
802.11g Mode





Conducted Out Of Band Emissions (Continued)

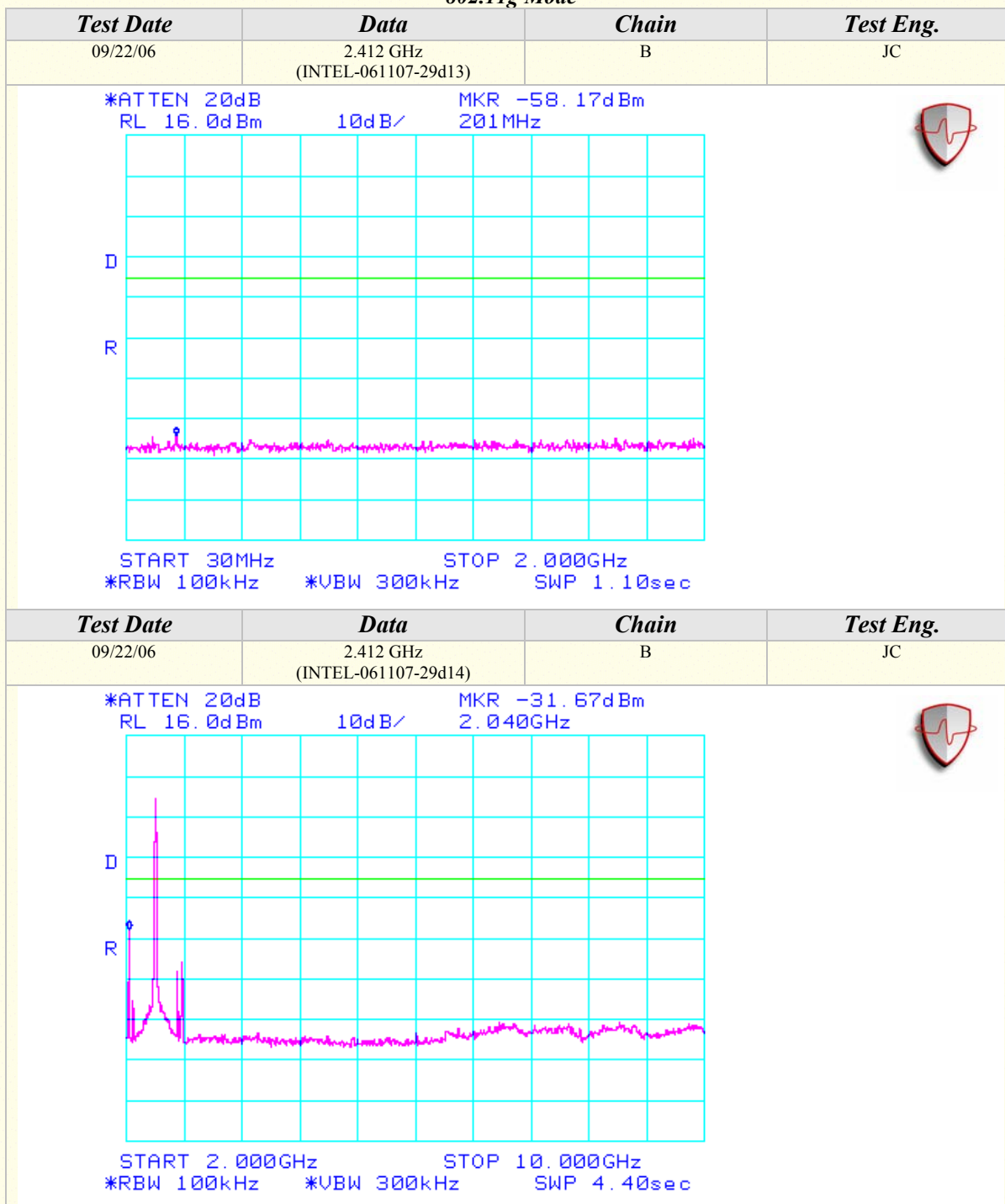
802.11g Mode





Conducted Out Of Band Emissions (Continued)

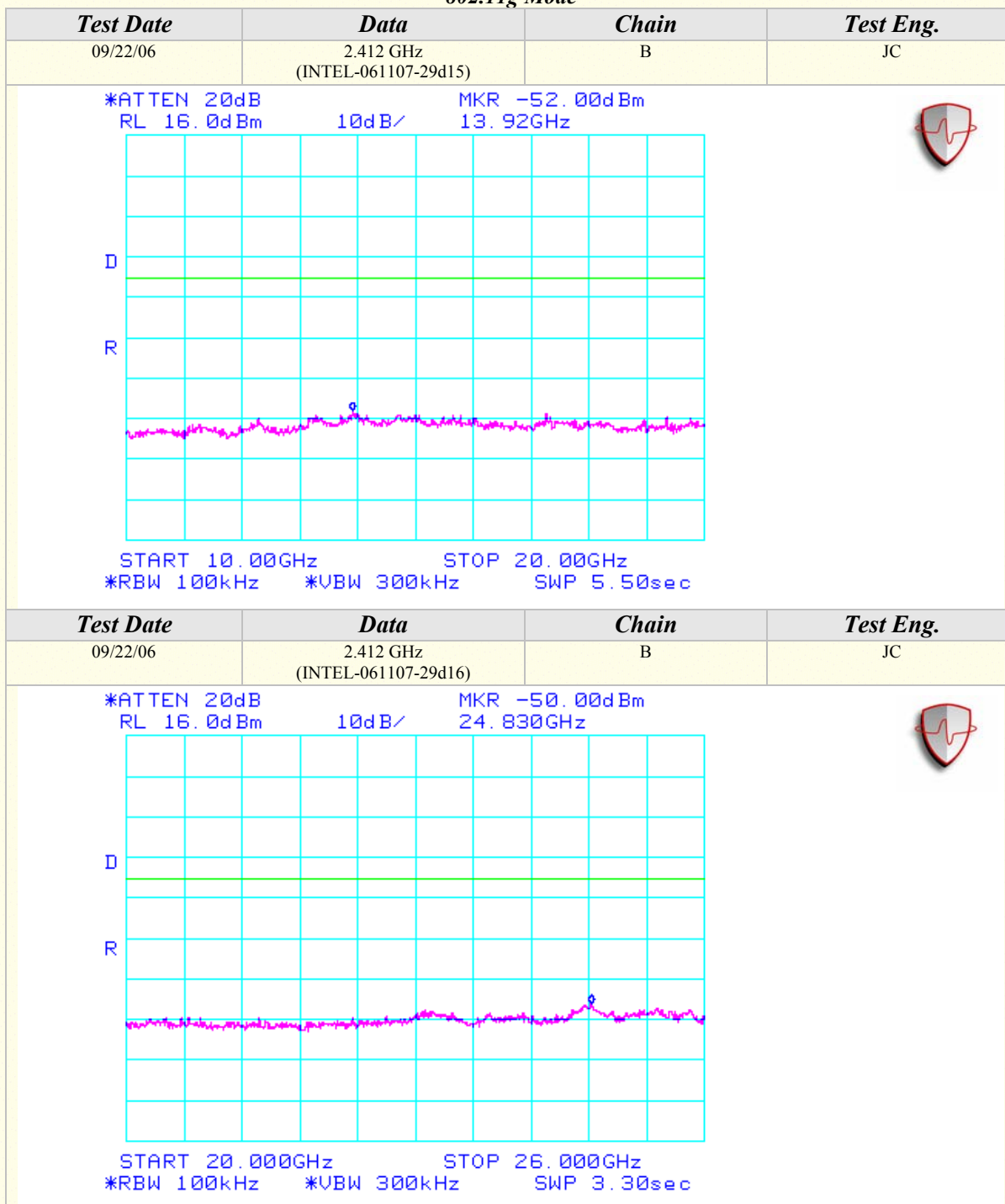
802.11g Mode





Conducted Out Of Band Emissions (Continued)

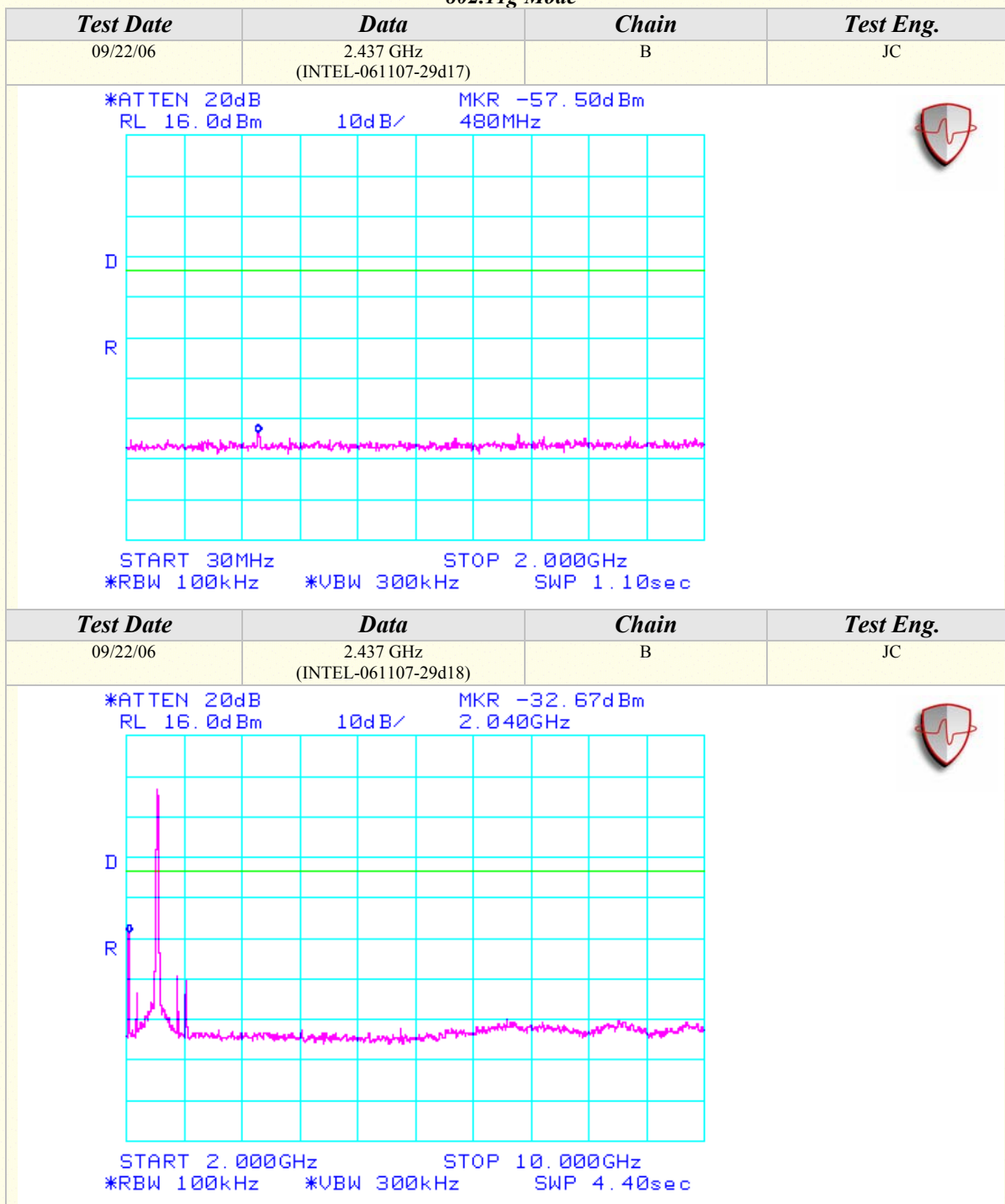
802.11g Mode





Conducted Out Of Band Emissions (Continued)

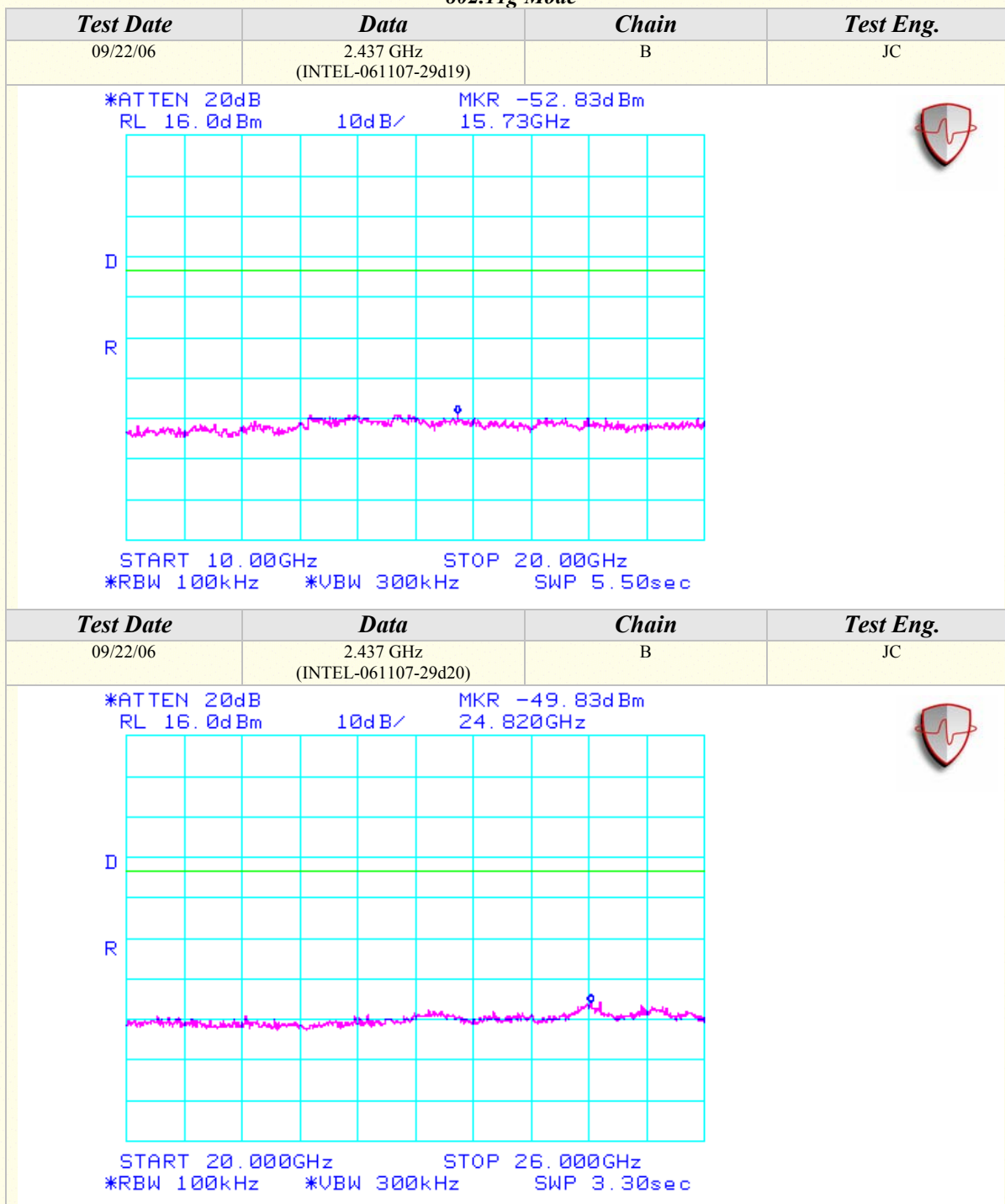
802.11g Mode





Conducted Out Of Band Emissions (Continued)

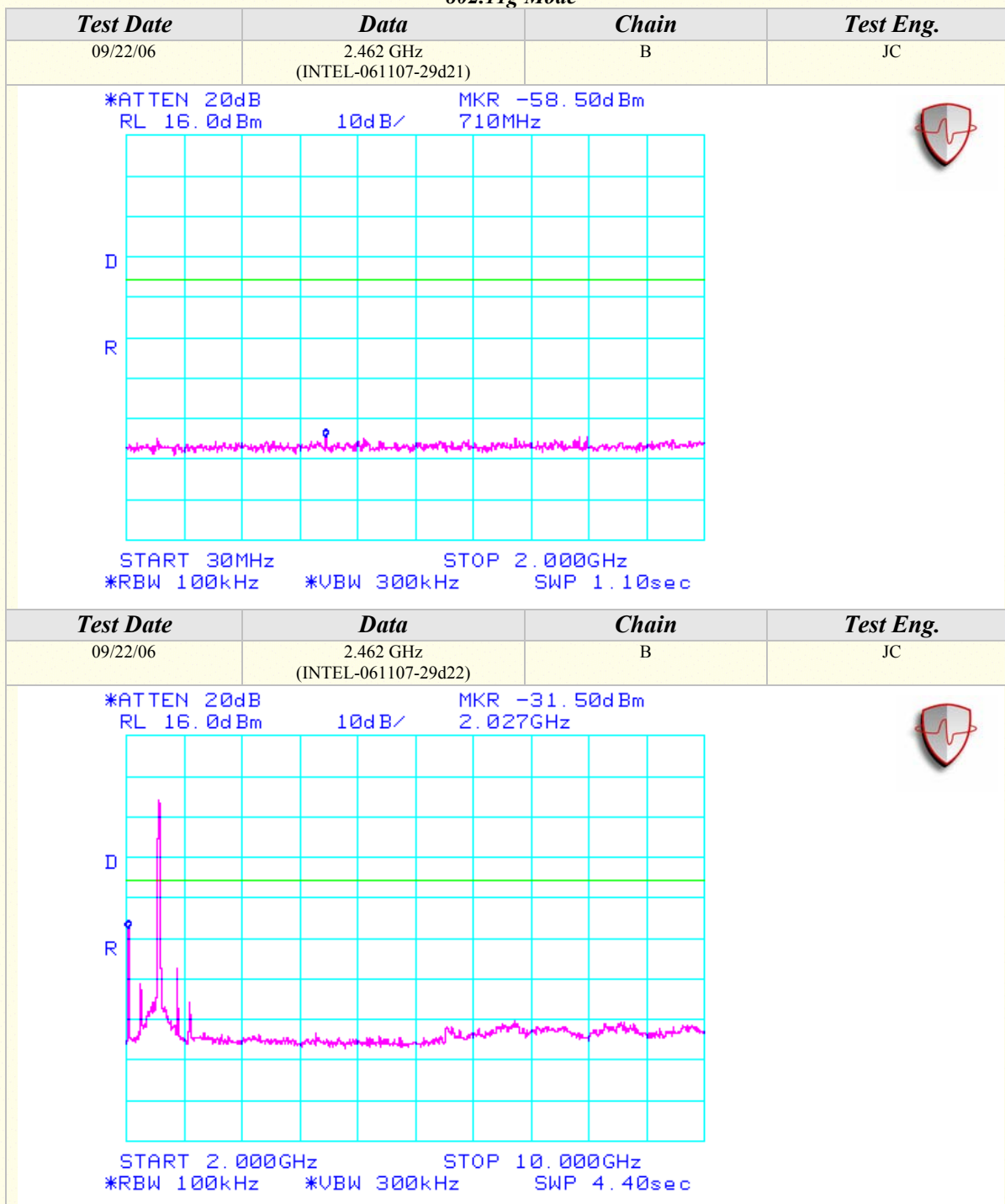
802.11g Mode





Conducted Out Of Band Emissions (Continued)

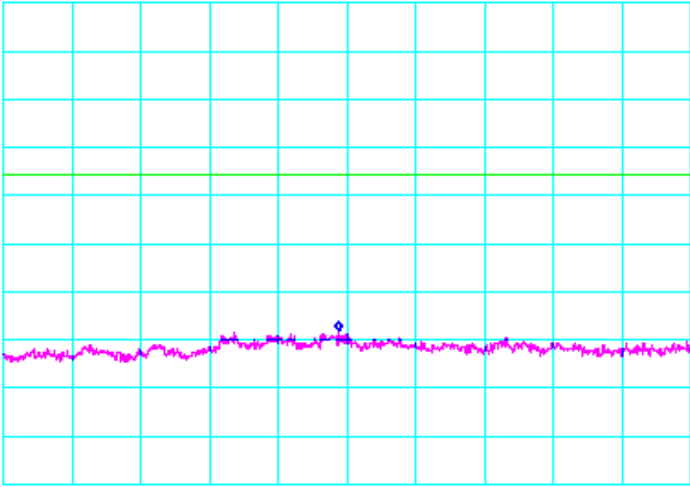
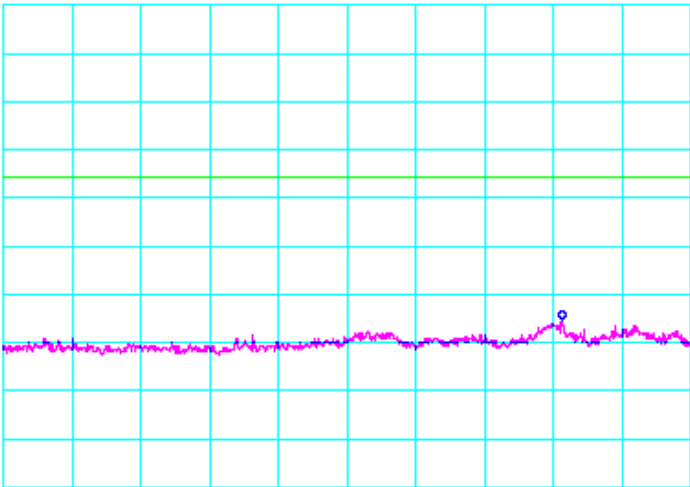
802.11g Mode





Conducted Out Of Band Emissions (Continued)

802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-061107-29d23)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 14.88GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-061107-29d24)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.33dBm 24.880GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



APPENDIX B

MODIFICATIONS AND RECOMMENDATIONS

1.0	NONE