



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	4965AGN

CONFIGURATION

802.11a / 802.11b / 802.11g / 802.11n 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

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Test Report #: INTEL-061116F

Test Report Revision: NONE

	REPORT BODY	APPENDICES		TOTAL PAGES
		A	B	
PAGES	22	220	1	243

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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



2.0 Summary of Test Results (Continued)

802.11n Mode 20MHz Wide (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 = 17.67 MHz 2437 MHz = 17.67 MHz 2462 MHz = 17.83 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 23.55 dBm = 226.44 mW 2437 MHz = 23.37 dBm = 217.25 mW 2462 MHz = 23.28 dBm = 212.79 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 = -3.00 dB 2437 MHz = -2.67 dB 2462 MHz = -3.33 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)

802.11n Mode 20MHz Wide (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 = 17.67 MHz 2437 MHz = 17.67 MHz 2462 MHz = 17.75 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	2412 MHz = 23.27 dBm = 212.30 mW 2437 MHz = 23.39 dBm = 218.25 mW 2462 MHz = 23.19 dBm = 208.43 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 = -8.50 dB 2437 MHz = -8.33 dB 2462 MHz = -8.17 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)

802.11n Mode 20MHz Wide (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 = 17.50 MHz 5785 MHz = 17.58 MHz 5825 MHz = 17.50 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	5745 MHz = 20.11 dBm = 102.56 mW 5785 MHz = 20.91 dBm = 123.30 mW 5825 MHz = 20.41 dBm = 109.89 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 = -3.83 dB 5785 MHz = -4.33 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)

802.11n Mode 20MHz Wide (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 = 17.67 MHz 5785 MHz = 17.58 MHz 5825 MHz = 17.75 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 = 20.61 dBm = 115.07 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 = -9.17 dB 5785 MHz = -8.83 dB 5825 MHz = -9.17 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)

802.11n Mode 40MHz Wide (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	5755 MHz = 35.50 MHz 5795 MHz = 35.70 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	5755 MHz = 18.51 dBm = 70.95 mW 5795 MHz = 18.11 dBm = 64.70 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	5755 MHz = -3.00 dB 5795 MHz = -6.83 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)

802.11n Mode 40MHz Wide (5745-5825 MHz) Chain B

EMISSIONS STANDARD

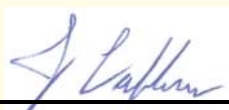
FCC Part 15 Section	Description	Results	Comments
15.247(a)(2)	The minimum 6dB bandwidth shall be at least 500 kHz.	PASSED	5755 MHz = 35.50 MHz 5795 MHz = 35.50 MHz
15.247(b)(3)	The maximum peak output power of the intentional radiator shall not exceed 1 watt.	PASSED	5755 MHz = 18.41 dBm = 69.33 mW 5795 MHz = 18.21 dBm = 66.21 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	5755 MHz = -12.33 dB 5795 MHz = -13.17 dB
15.207	AC Conducted Emissions	PASSED	See Data Sheets
15.209	Radiated Emissions (30-1000 MHz)	PASSED	See Data Sheets

ANALYSIS AND CONCLUSIONS

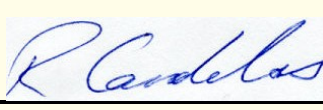
Based upon the measurement results we find that this equipment is within the limits of the global standards listed on the cover page of this test report. All results are based on a test of one sample. If any significant changes are made to the unit, the changes shall be evaluated and a retest may be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

Approval Signatories

Test and Report Completed By:


Johnny Candelas
Test Technician
Aegis Labs, Inc.
11/17/06
Date:

Report Approved By:


Rick Candelas
Quality Assurance Manager
Aegis Labs, Inc.
11/17/06
Date:



3.0 ADMINISTRATIVE DATA AND TEST DESCRIPTION

DEVICE TESTED:	ITE Type: Intel Wireless WiFi Link 4965AGN Model Number(s): 4965AGN Serial Number: 0013E804612B FCC ID: E2K4965AGN
DATE EUT RECEIVED:	August 25 th , 2006
TEST DATE(S):	September 7 th – November 9 th , 2006
ORIGIN OF TEST SAMPLE(S):	Production
EQUIPMENT CLASS:	EUT tested as CLASS B device
RESPONSIBLE PARTY:	Dell Computer Corporation One Dell Way Round Rock, TX 78682
CLIENT CONTACT:	Mr. Jason Limoges
MANUFACTURER:	Dell Computer Corporation
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:	4965AGN
Frequency Range:	802.11a = 5745 – 5825 MHz 802.11b/g = 2412 – 2462MHz 802.11n = 2412 – 2462MHz & 5745 – 5825 MHz
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 Up to 300 Mbps for 802.11n mode
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) = 11 802.11n mode (5725-5850 MHz) = 5 802.11n 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/n 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 300 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, & n 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

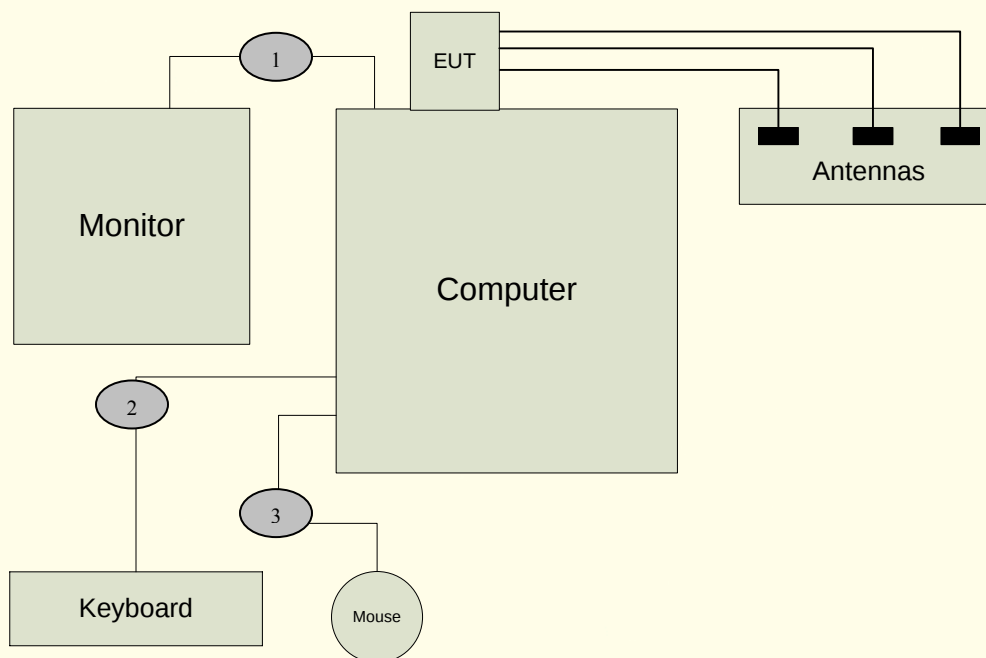
Equipment Under Test			
Manufacturer	Equipment Name	Model or Part Number	Serial Number
Intel Corporation	Intel Wireless WiFi Link 4965AGN	4965AGN	0013E804612B

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

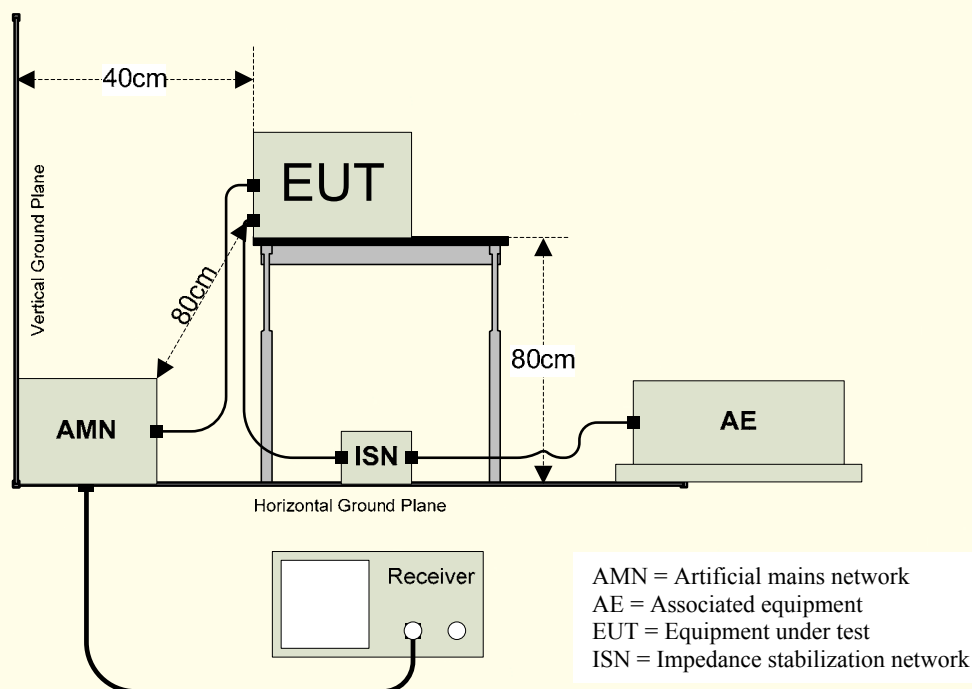
The following was the test configuration.

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.



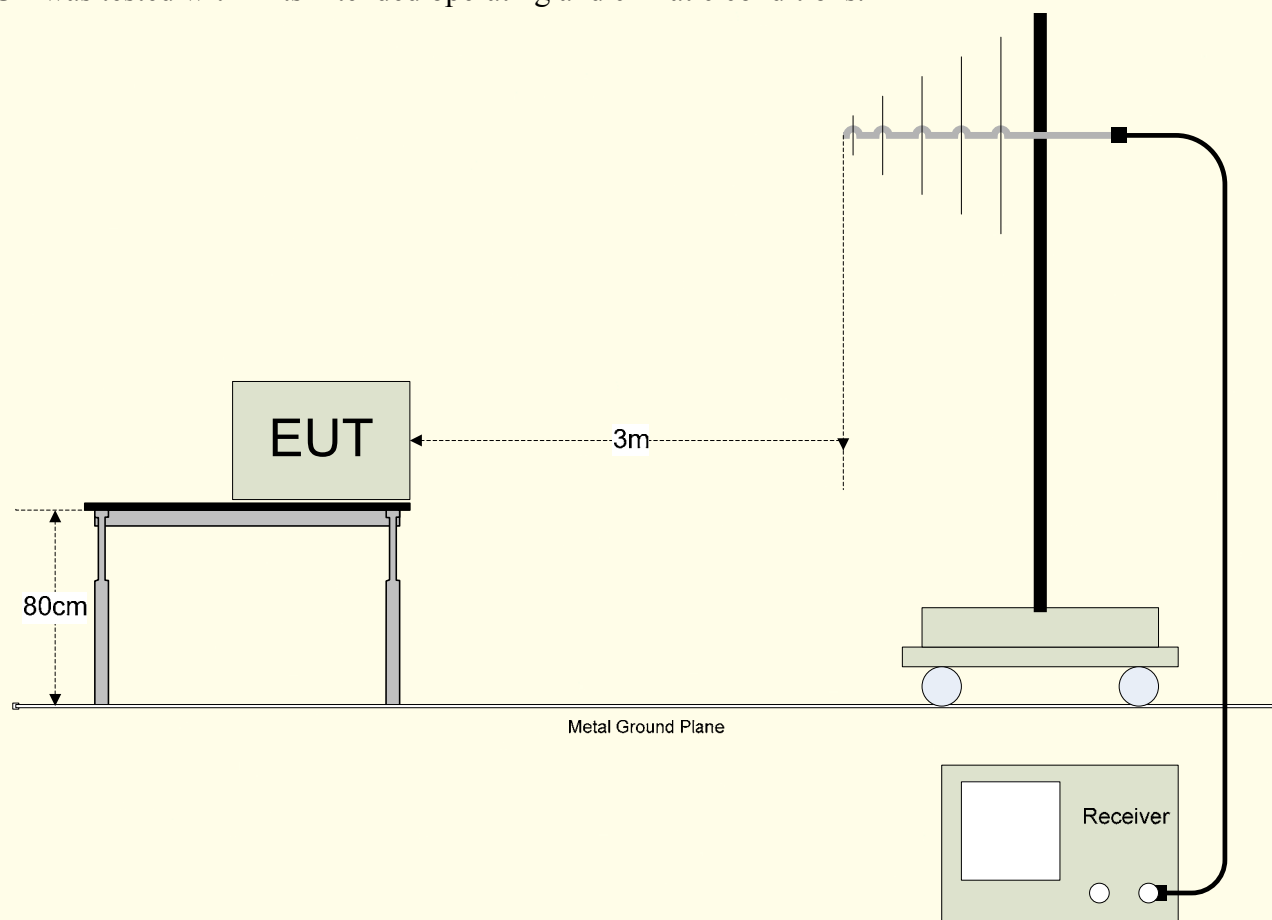
5.3 Radiated Emissions Test Setup

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:	Dell Computer Corporation	DATE:	09/07/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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

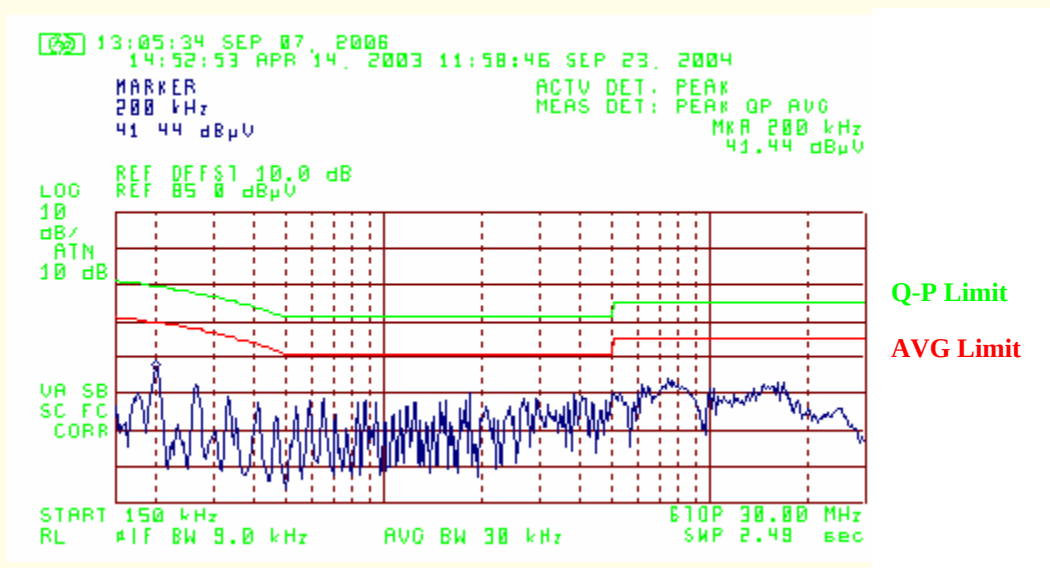


AC Power Port – Conducted Emissions Test Results (Continued)

Continuously Transmitting @ 120VAC/60Hz (INTEL-060907-01)

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



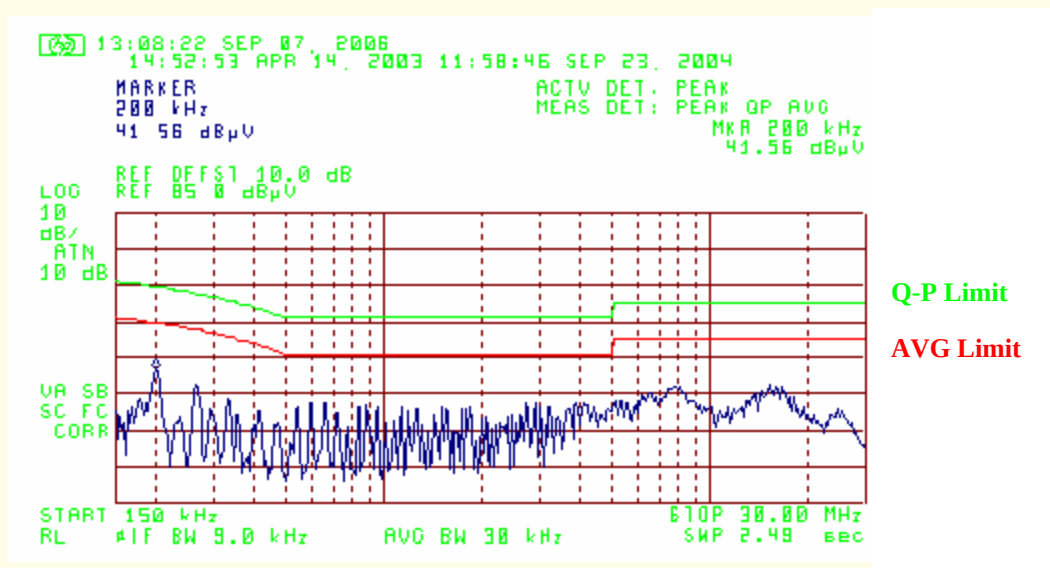


AC Power Port – Conducted Emissions Test Results (Continued)

Continuously Transmitting @ 120VAC/60Hz (INTEL-060907-01)

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:	Dell Computer Corporation	DATE:	09/07/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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-060907-03)

Horizontal Open Field Maximized Data

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Cable Factor (dB)	Cable Factor (dB)	Antenna Factor (dB)	Corrected Reading (dBuV/m)	Limits (dBuV/m)	Diff (dB) +=FAIL
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

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Cable Factor (dB)	Cable Factor (dB)	Antenna Factor (dB)	Corrected Reading (dBuV/m)	Limits (dBuV/m)	Diff (dB) +=FAIL
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:	Dell Computer Corporation	DATE:	09/18/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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-060907-20

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-060907-20

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
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

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
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

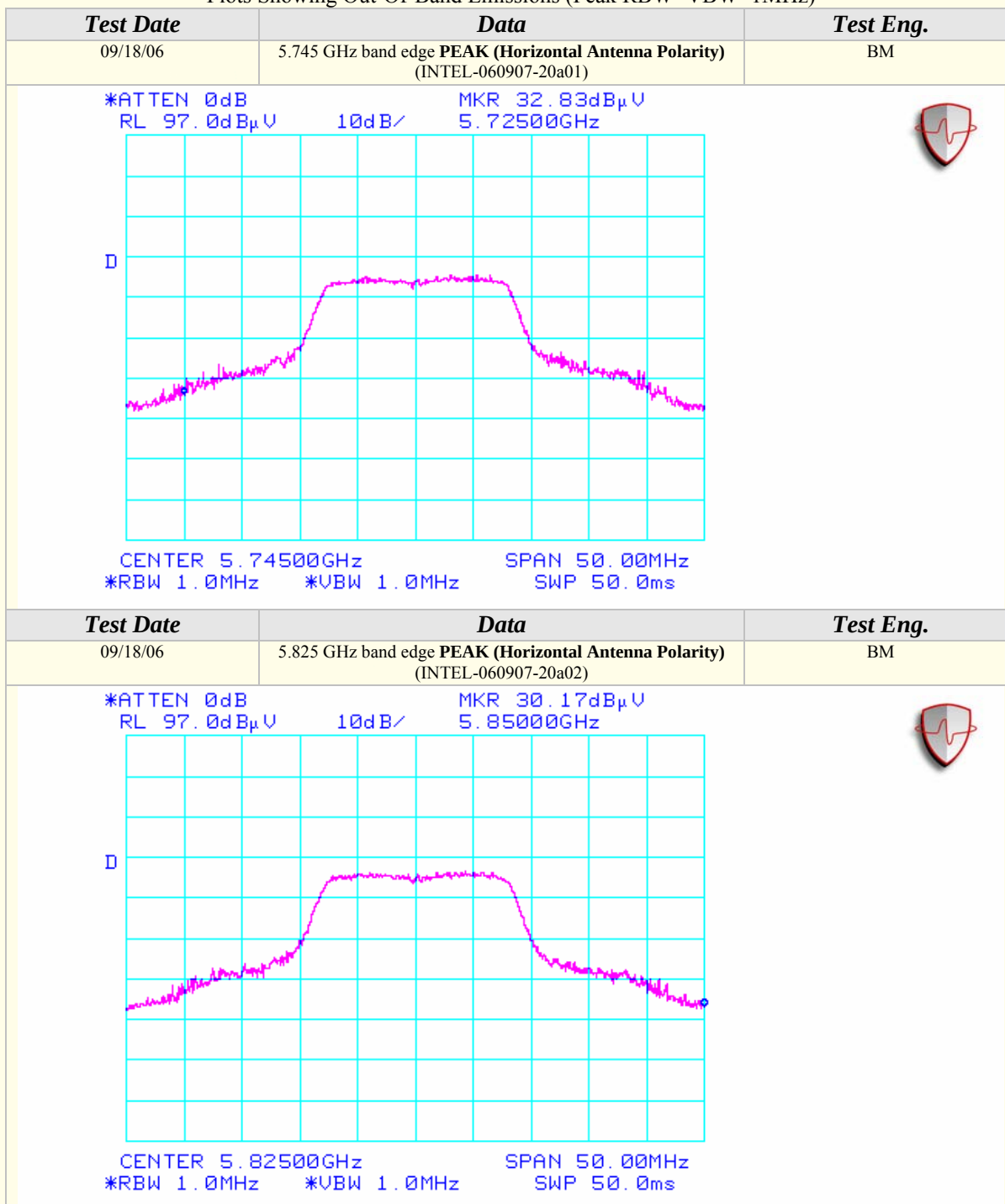
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

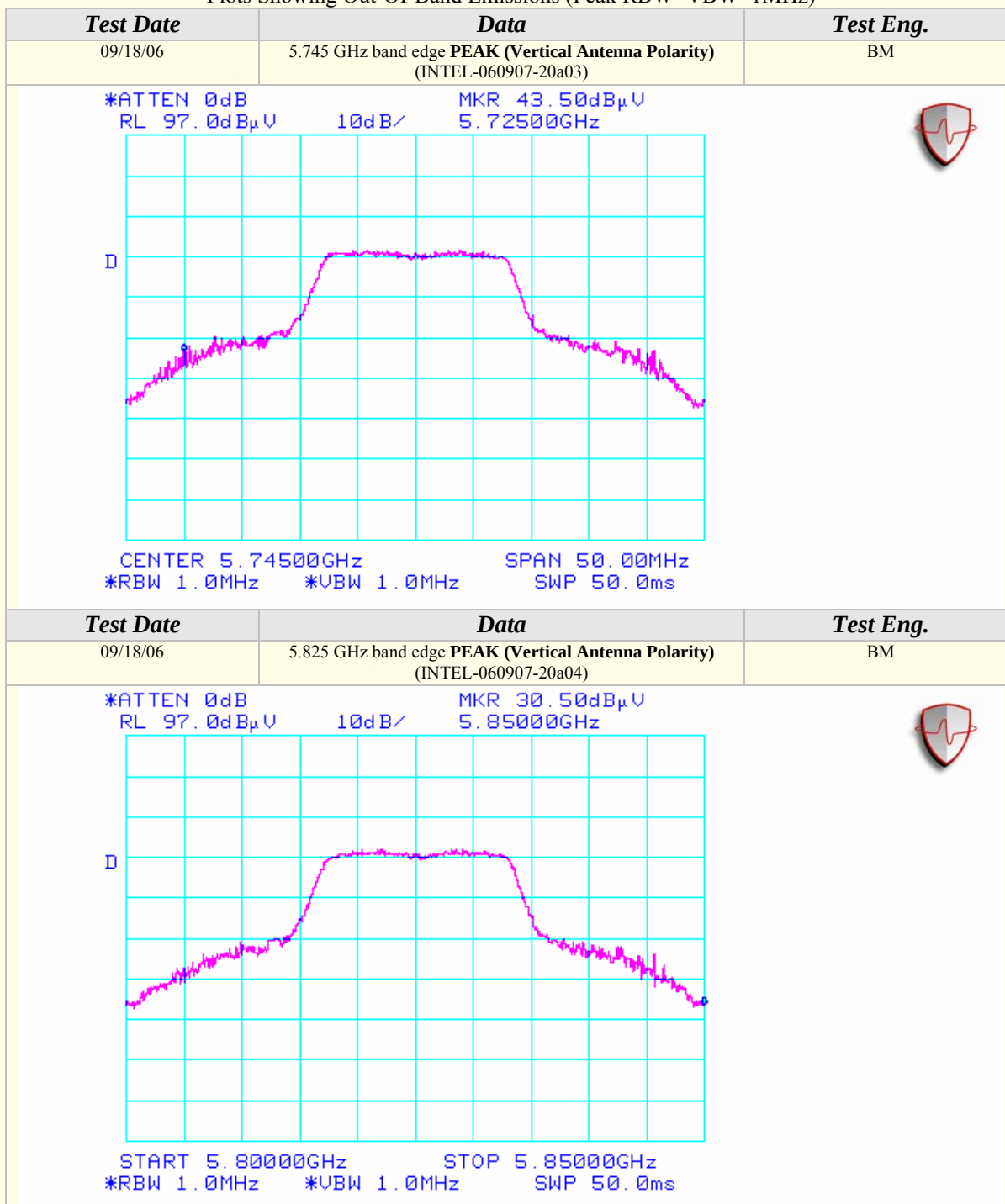
Radiated Emissions Test Results (Continued)

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



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-060907-19

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-060907-19

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-060907-24

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-060907-24

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
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

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
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

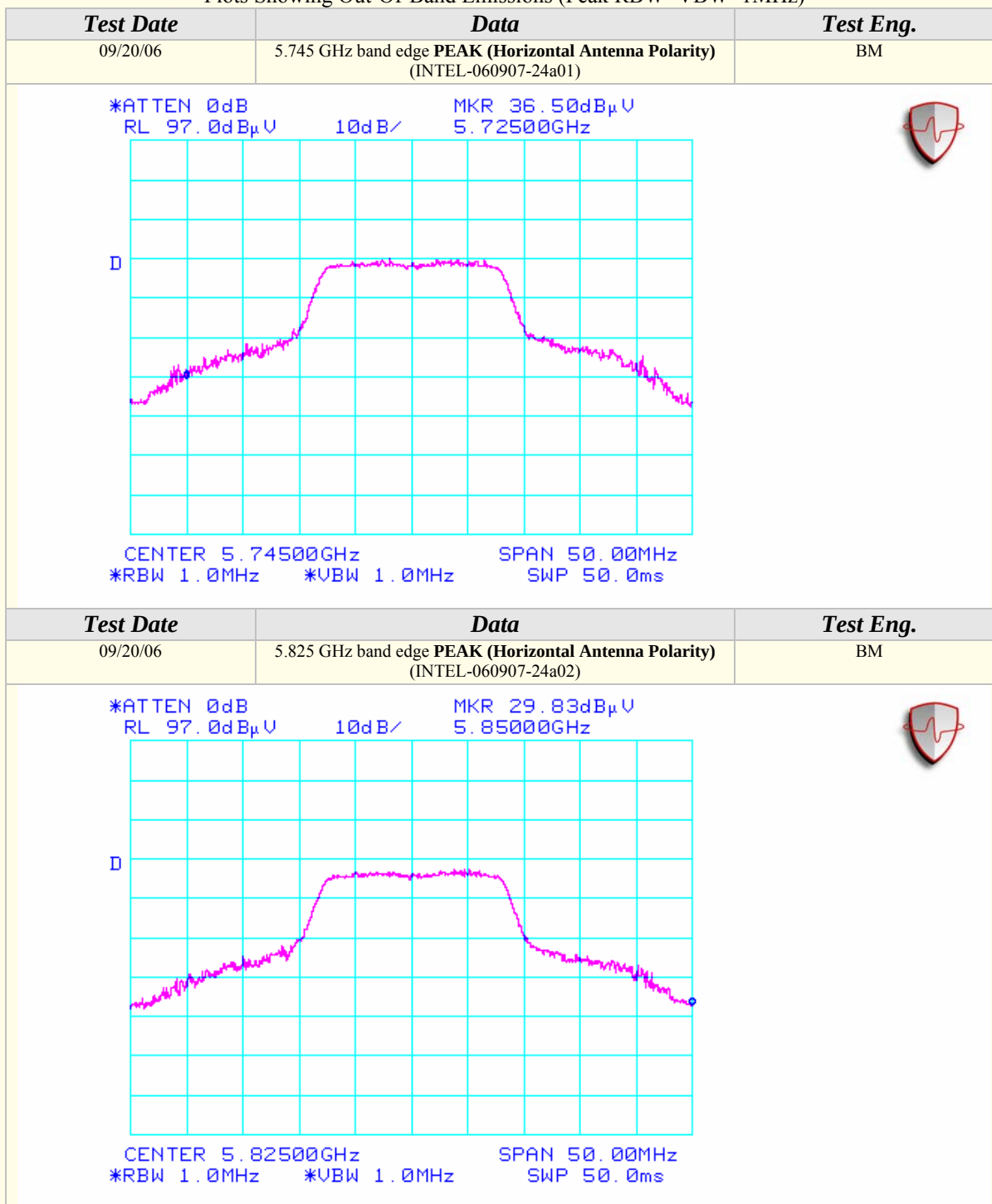
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

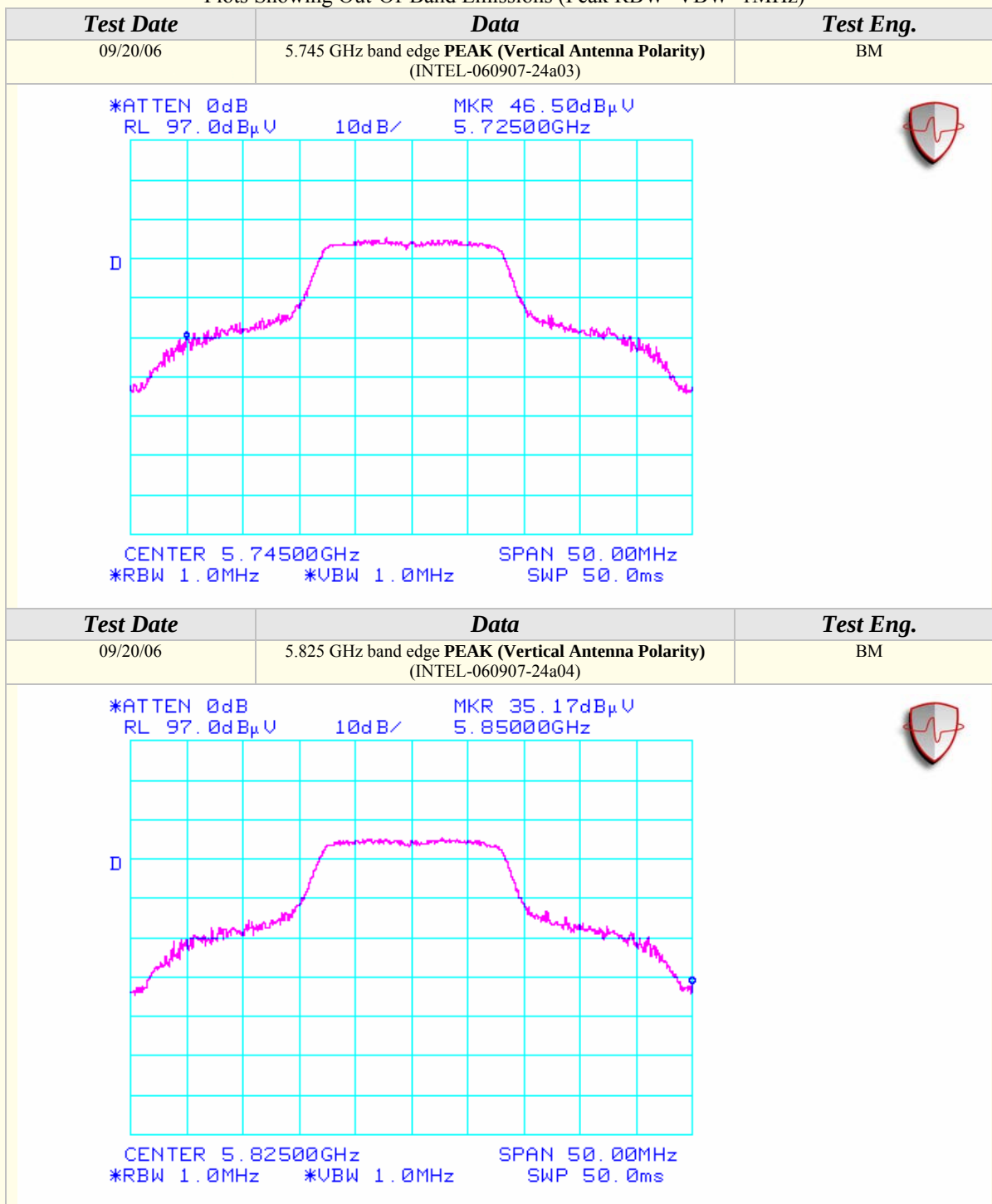
Radiated Emissions Test Results (Continued)

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



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-060907-22

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-060907-22

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:	Dell Computer Corporation	DATE:	09/18/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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-060907-20

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-060907-20

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

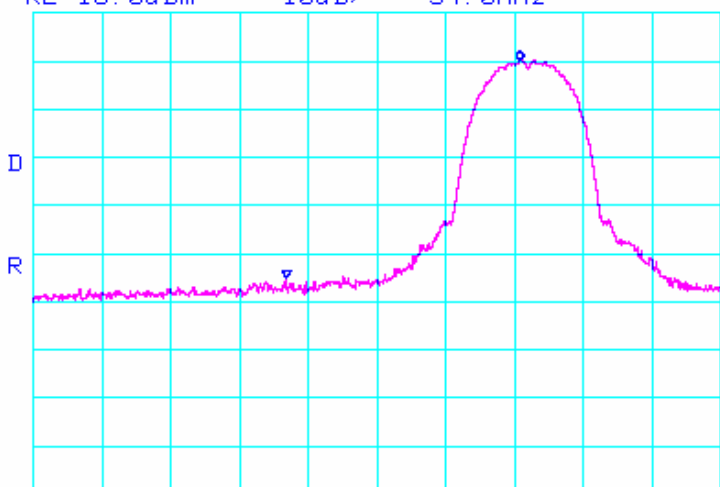
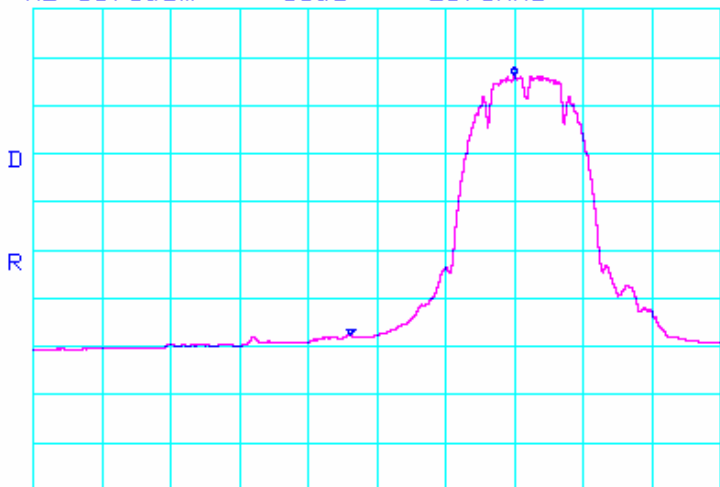
BE = Band Edge Field Strength

F_m = Measured Fundamental (Peak or Average)

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

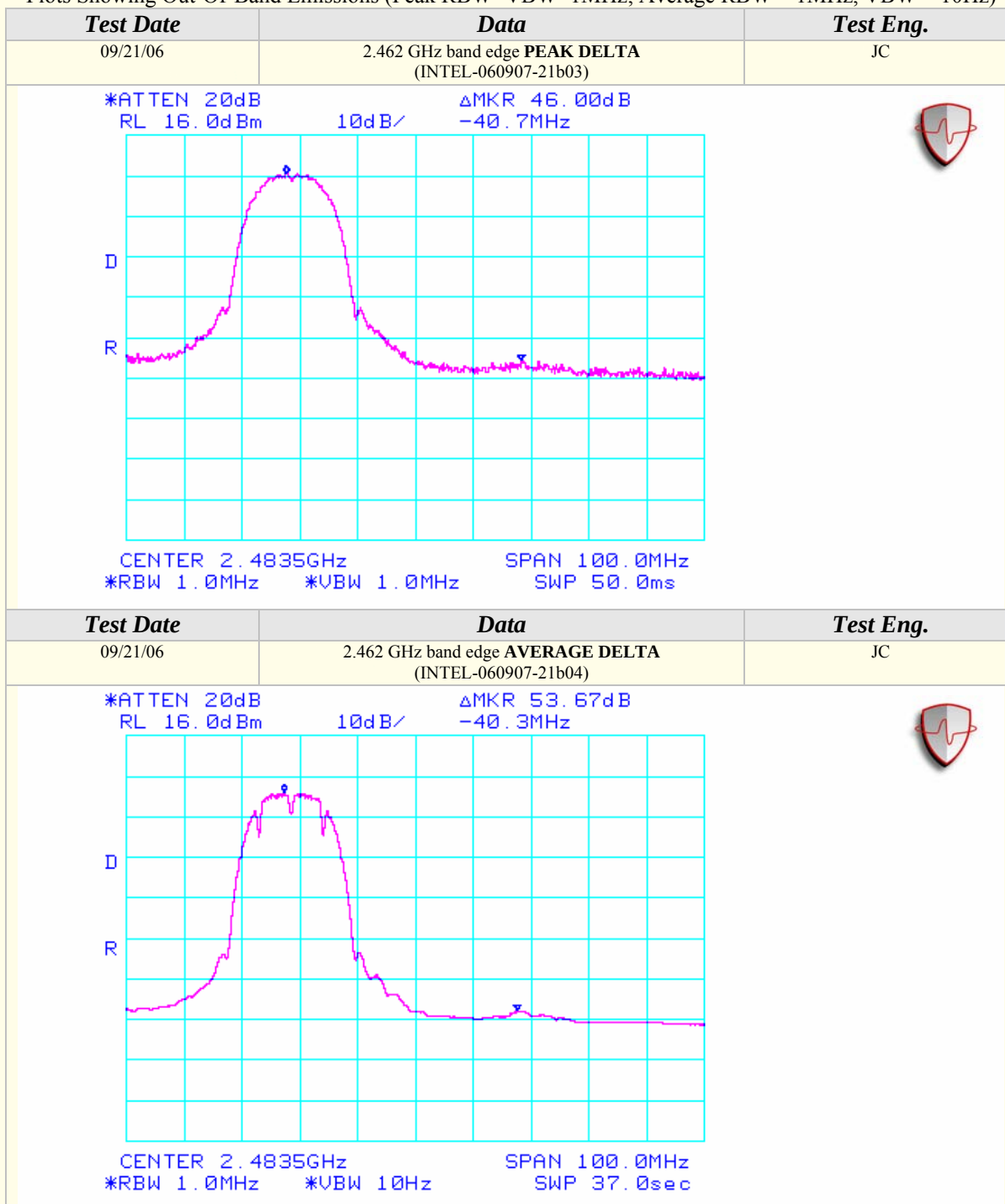
Radiated Emissions Test Results (Continued)

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-060907-21b01)	JC
*ATTEN 20dB RL 16.0dBm 10dB/ ΔMKR 45.17dB 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-060907-21b02)	JC
*ATTEN 20dB RL 16.0dBm 10dB/ ΔMKR 53.84dB 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)





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-060907-19

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-060907-19

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-060907-24

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-060907-24

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

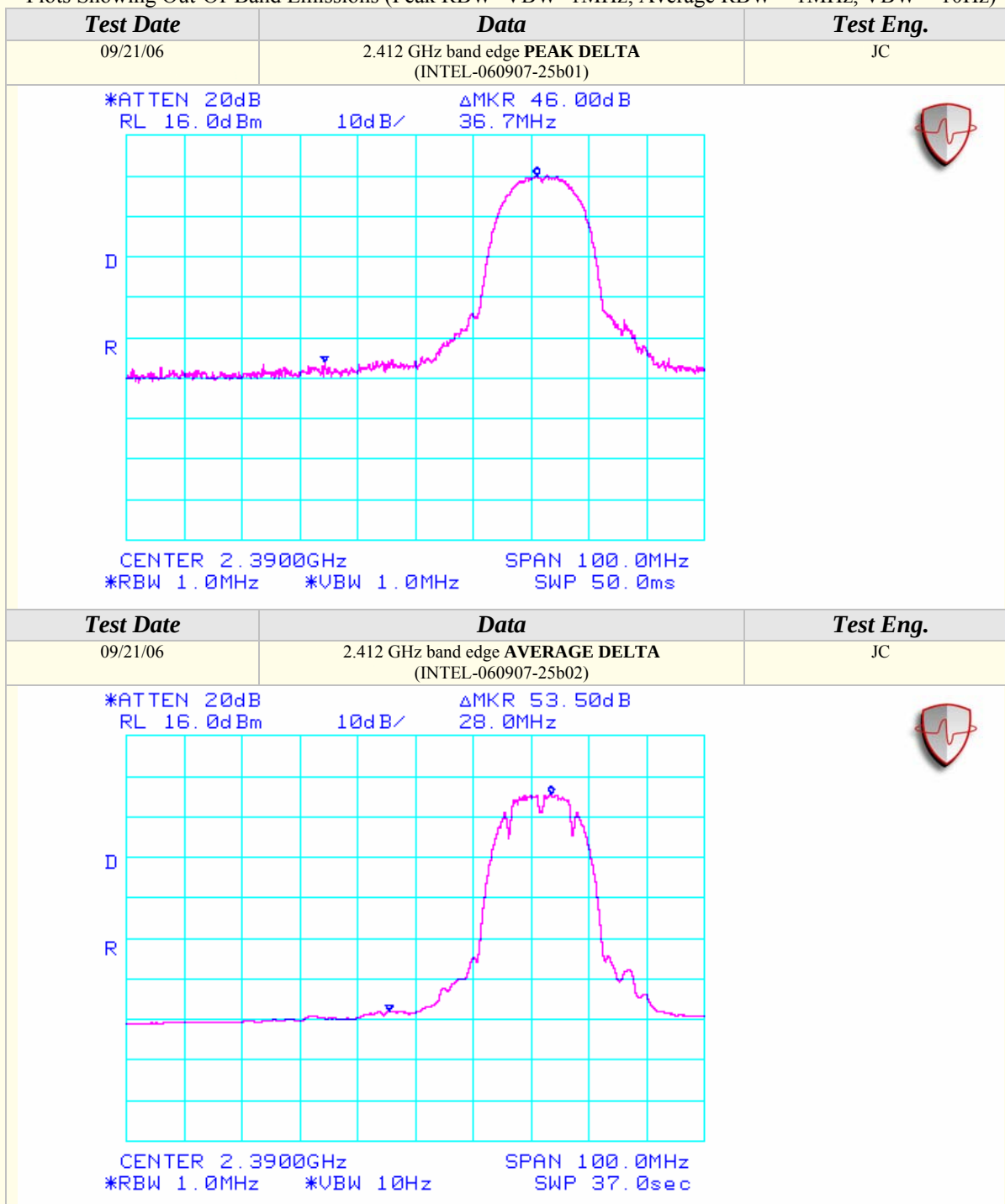
F_m = Measured Fundamental (Peak or Average)

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



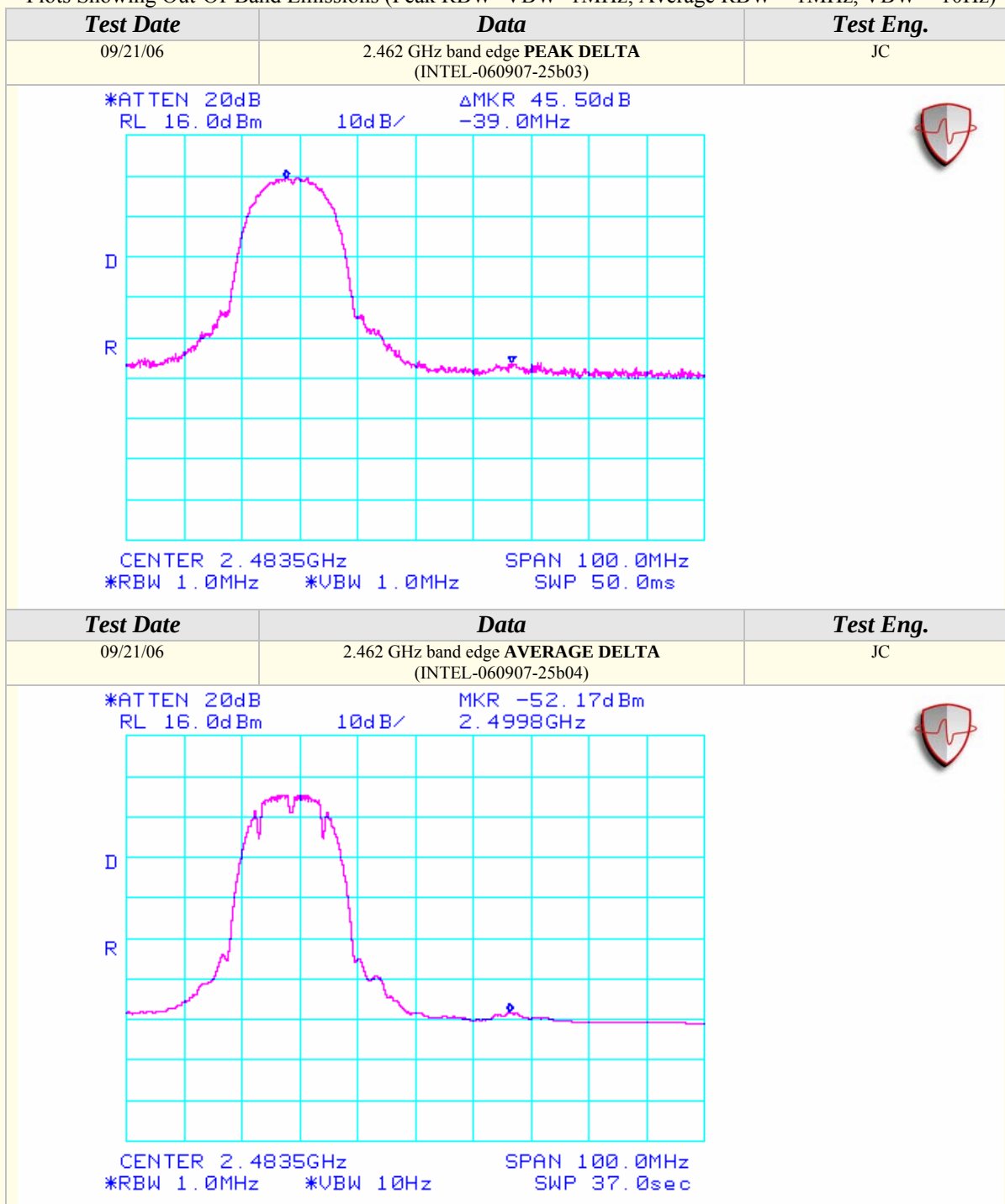
Radiated Emissions Test Results (Continued)

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



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-060907-22

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-060907-22

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:	Dell Computer Corporation	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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-060907-26 & -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-060907-26 & -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
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	

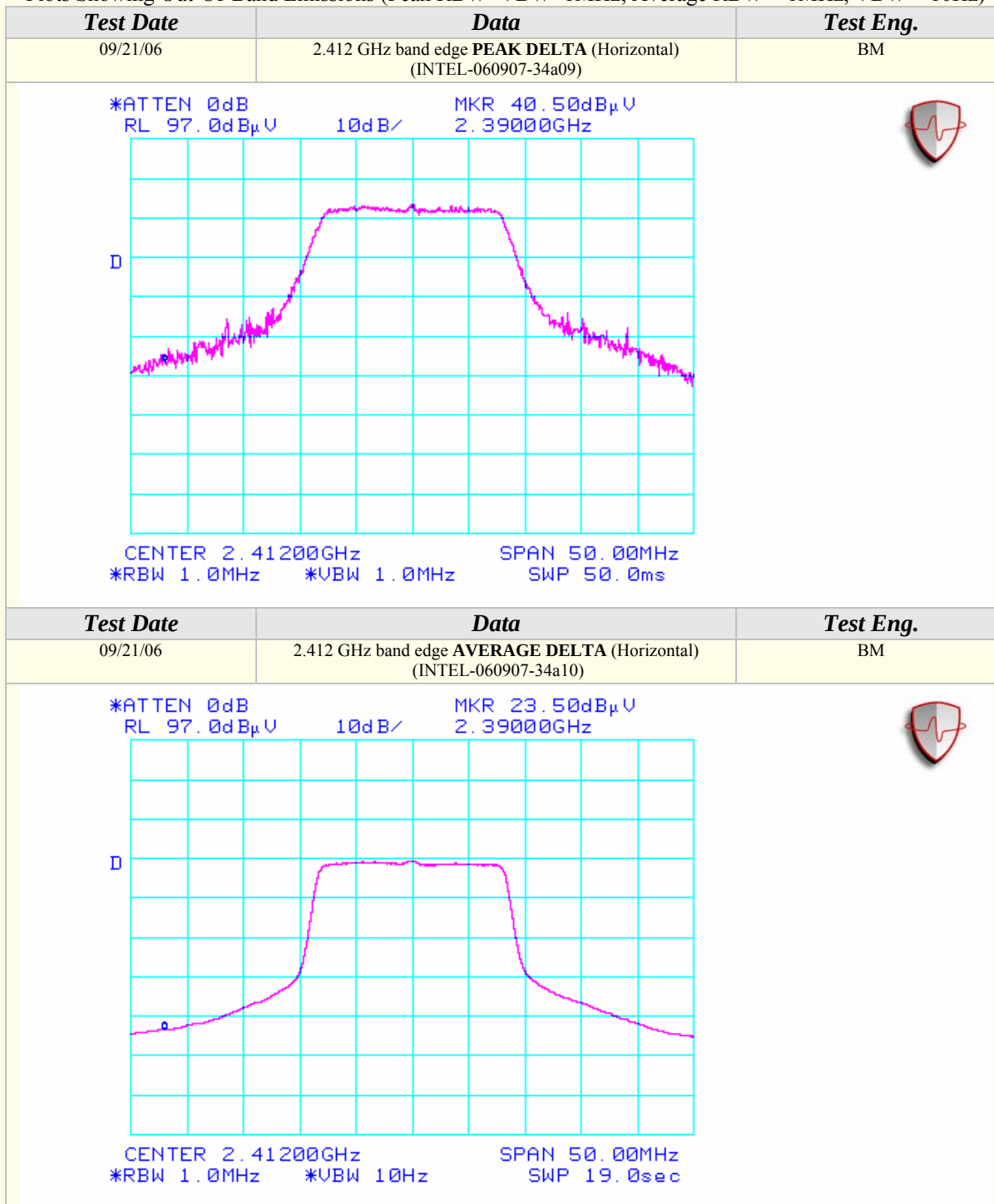
RADIATED EMISSIONS - Vertical Antenna Polarization

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
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.

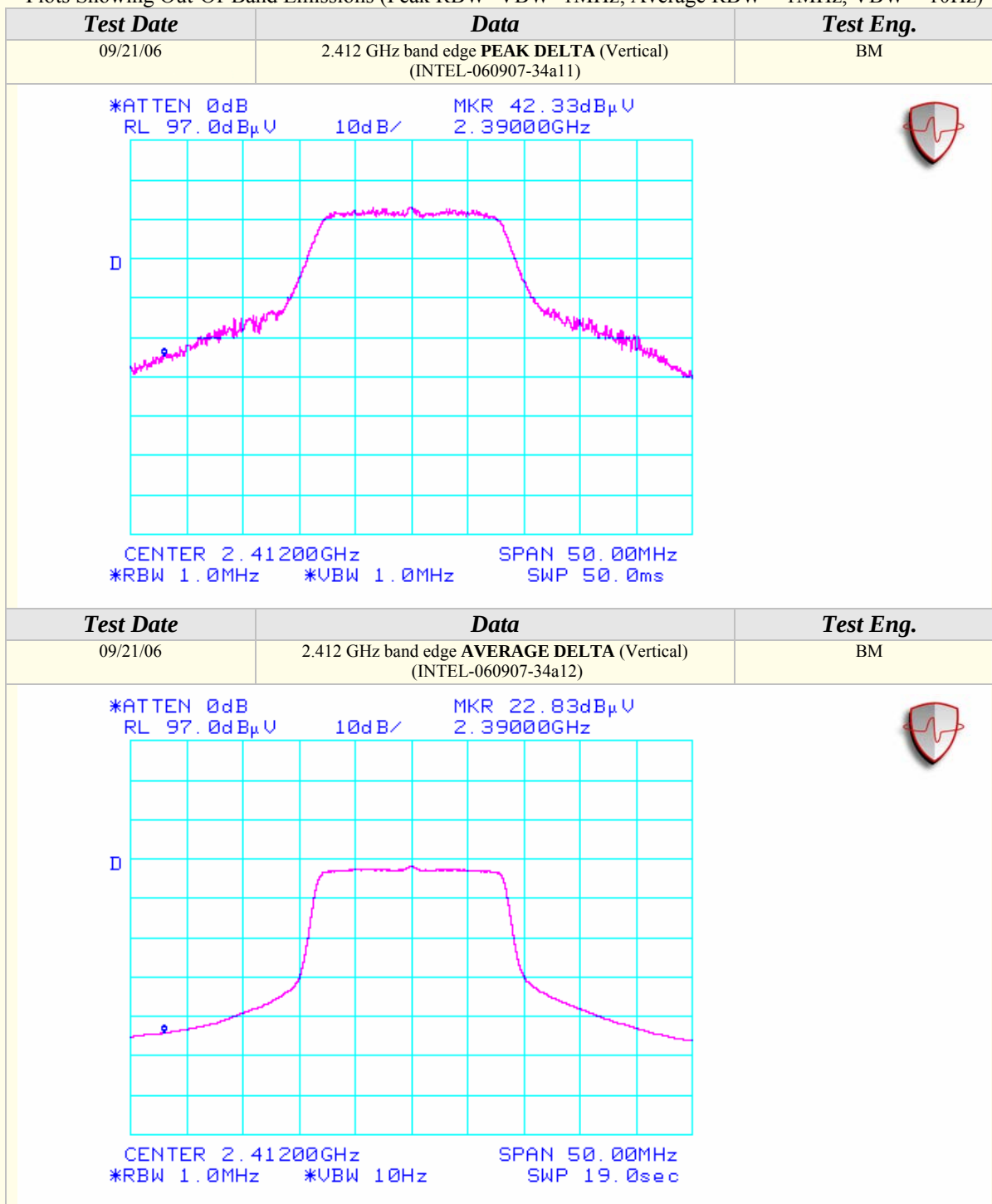
Radiated Emissions Test Results (Continued)

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



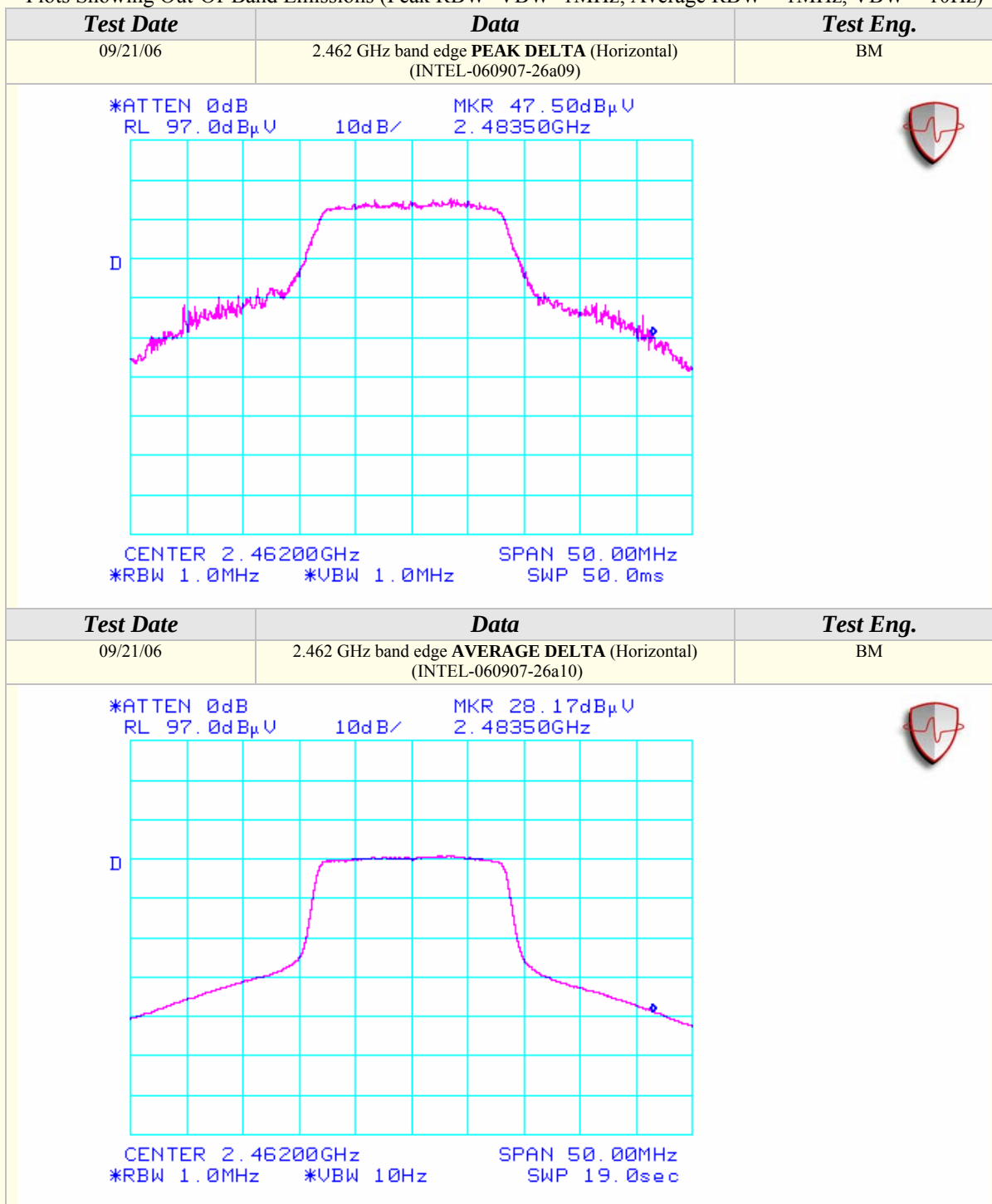
Radiated Emissions Test Results (Continued)

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



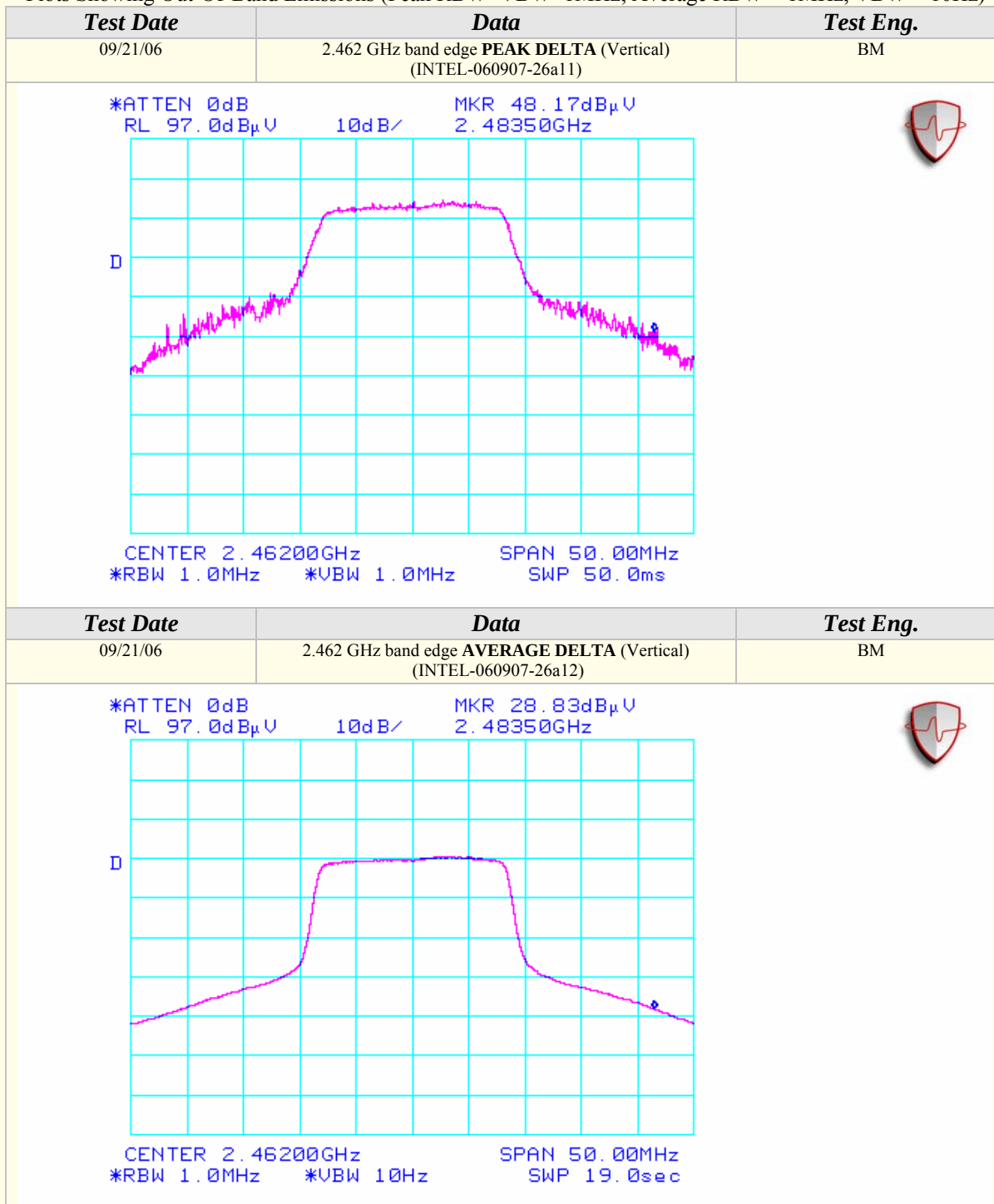
Radiated Emissions Test Results (Continued)

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-060907-35

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

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-060907-26 & -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-060907-26 & -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
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	

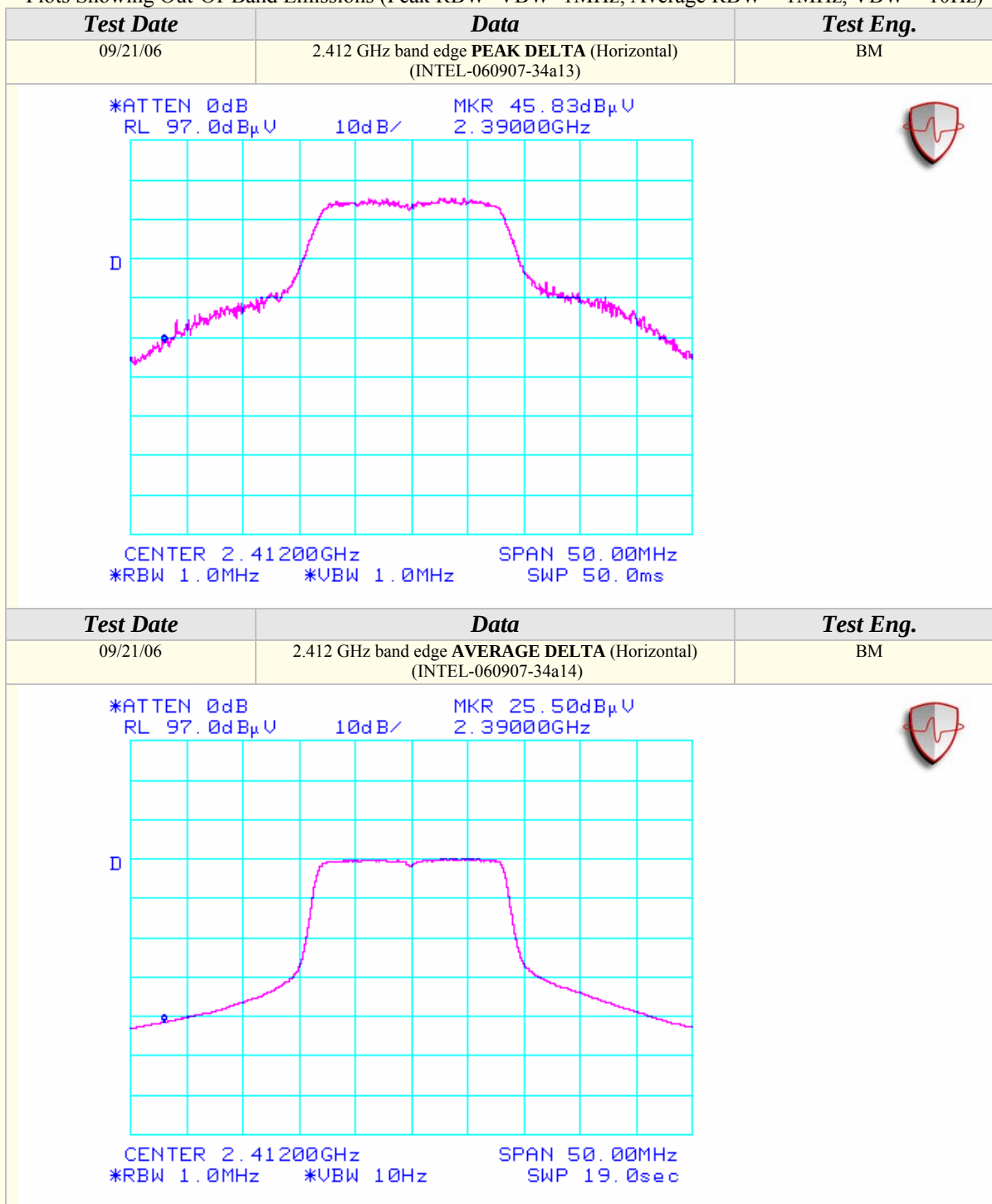
RADIATED EMISSIONS - Vertical Antenna Polarization

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
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.

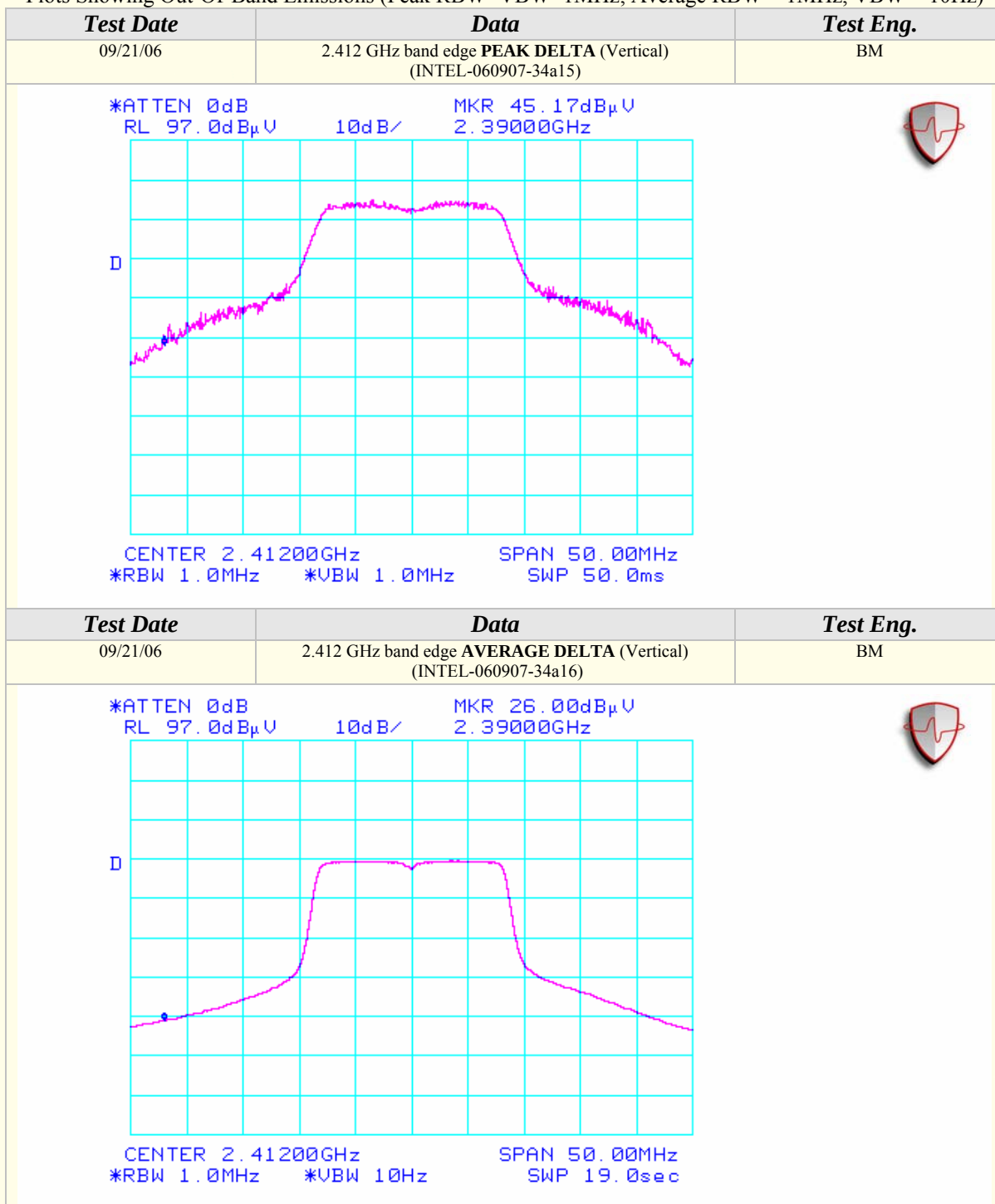
Radiated Emissions Test Results (Continued)

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



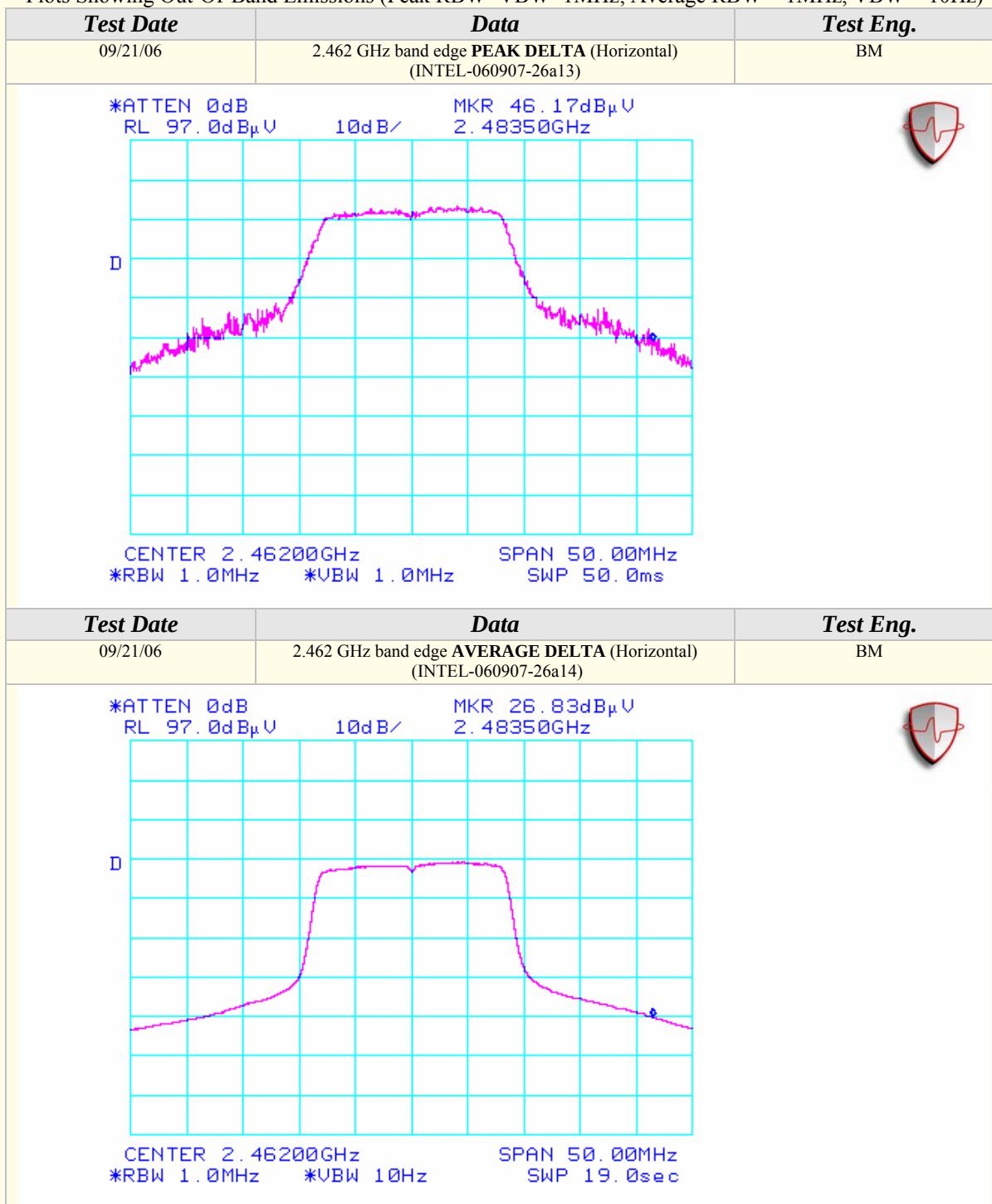
Radiated Emissions Test Results (Continued)

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



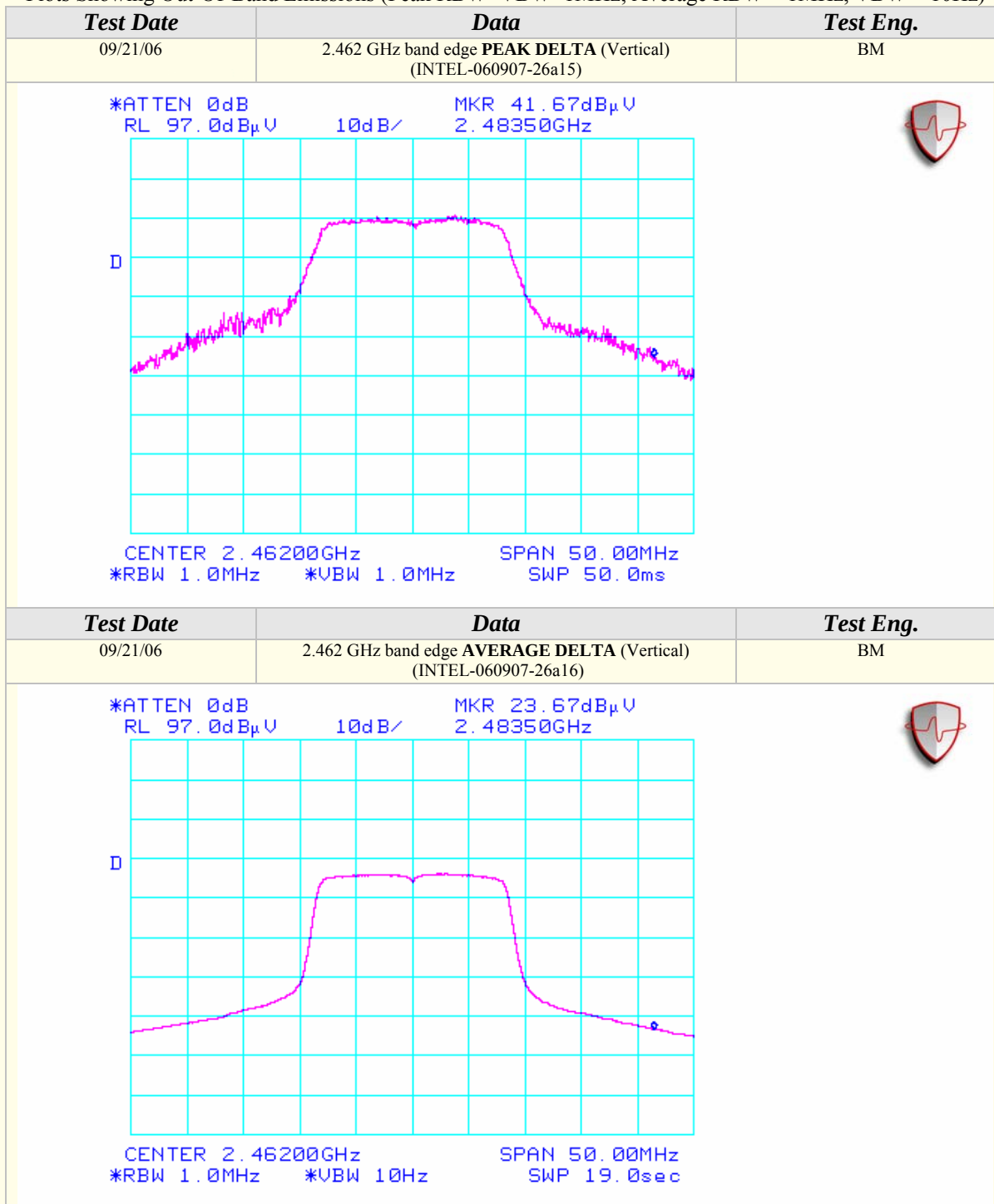
Radiated Emissions Test Results (Continued)

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)





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-060907-36

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



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Dell Computer Corporation	DATE:	10/06/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11n (2400-2483.5 MHz) mode 20MHz Wide with Ethertronics Antennas.	TEMPERATURE:	16 deg. C
		HUMIDITY:	60% RH
		TIME:	4:30 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 802.11n mode 20MHz Wide (2400-2483.5 MHz)

Channels 1, 6, & 11

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-52

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	83.50	100	180			9.54	1.99	29.50	105.45			Ch. 1
2412.00				68.67	A	9.54	1.99	29.50	90.62			
2437.00	84.50	100	135			9.54	2.00	29.59	106.55			Ch. 6
2437.00				69.17	A	9.54	2.00	29.59	91.22			
2462.00	82.17	100	135			9.54	2.01	29.67	104.31			Ch. 11
2462.00				67.00	A	9.54	2.01	29.67	89.14			

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	81.67	100	225			9.54	1.99	29.04	103.16			Ch. 1
2412.00				66.67	A	9.54	1.99	29.04	88.16			
2437.00	83.50	100	135			9.54	2.00	29.11	105.07			Ch. 6
2437.00				68.33	A	9.54	2.00	29.11	89.90			
2462.00	82.00	100	225			9.54	2.01	29.19	103.66			Ch. 11
2462.00				66.83	A	9.54	2.01	29.19	88.49			

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 802.11n mode 20MHz Wide (2400-2483.5 MHz)
Channels 1 & 11
Continuous TX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-52

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
2390.00	46.50	100	180			9.54	1.98	29.43	68.37	74.00	-5.63	Ch. 1
2390.00				25.50	A	9.54	1.98	29.43	47.37	54.00	-6.63	
2400.00	47.83	100	180			9.54	1.98	29.46	69.73	74.00	-4.27	
2483.50	46.33	100	135			9.54	2.02	29.74	68.56	74.00	-5.44	Ch. 11
2483.50				24.50	A	9.54	2.02	29.74	46.73	54.00	-7.27	

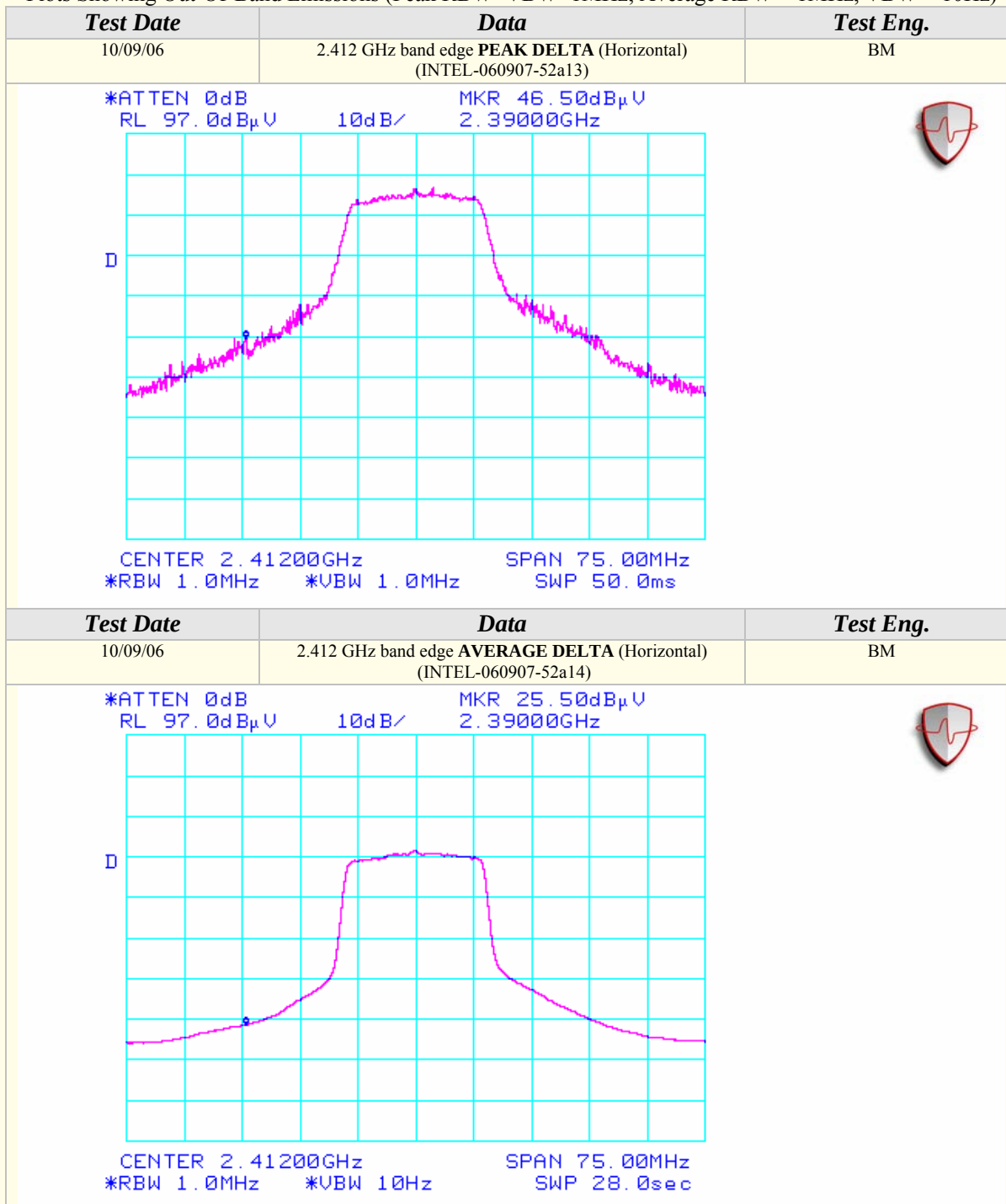
RADIATED EMISSIONS - Vertical Antenna Polarization

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
2390.00	43.00	100	225			9.54	1.98	28.97	64.41	74.00	-9.59	Ch. 1
2390.00				23.83	A	9.54	1.98	28.97	45.24	54.00	-8.76	
2400.00	45.33	100	225			9.54	1.98	29.00	66.77	74.00	-7.23	
2483.50	46.50	100	225			9.54	2.02	29.25	68.23	74.00	-5.77	Ch. 11
2483.50				25.33	A	9.54	2.02	29.25	47.06	54.00	-6.94	

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

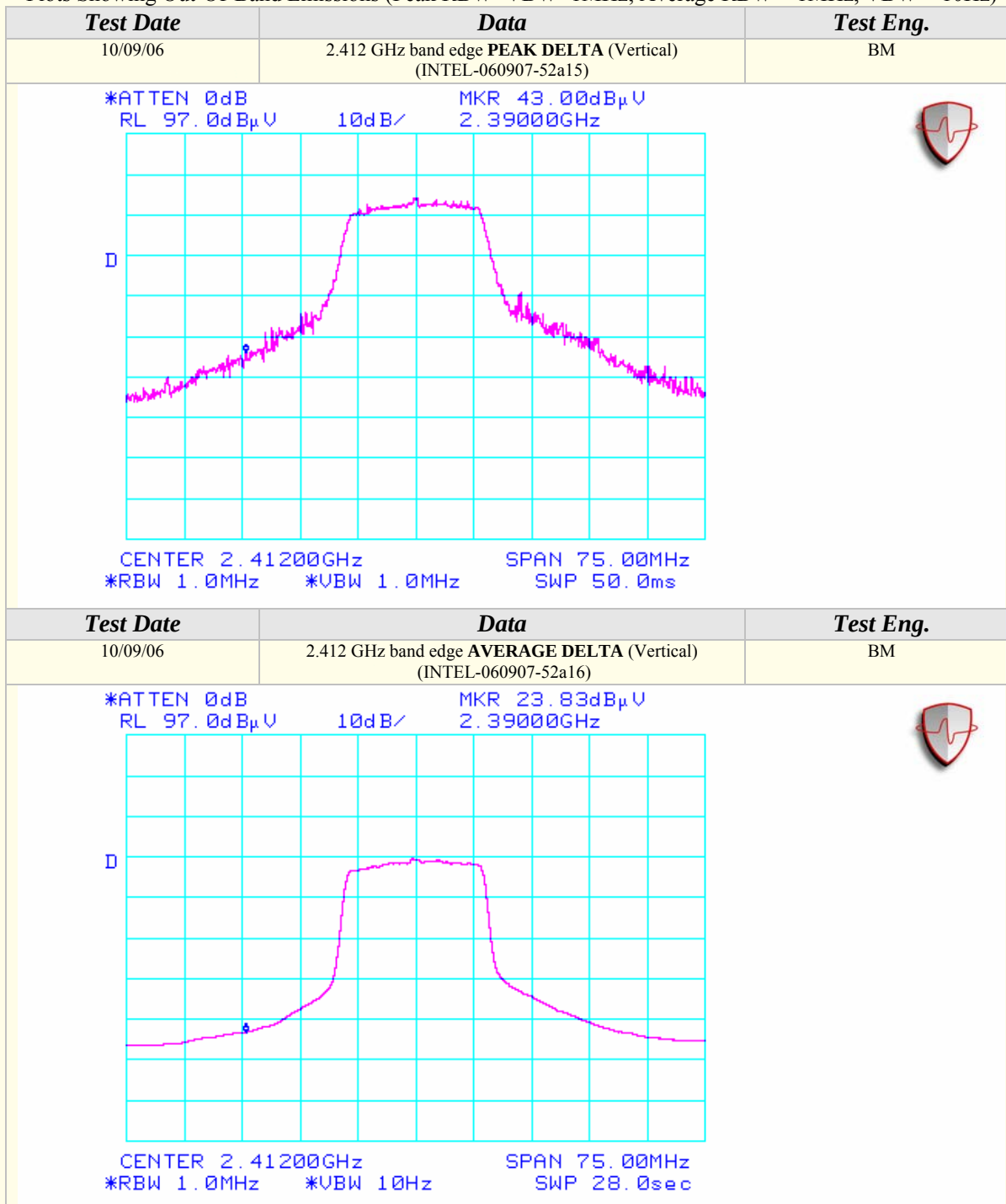
Radiated Emissions Test Results (Continued)

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)

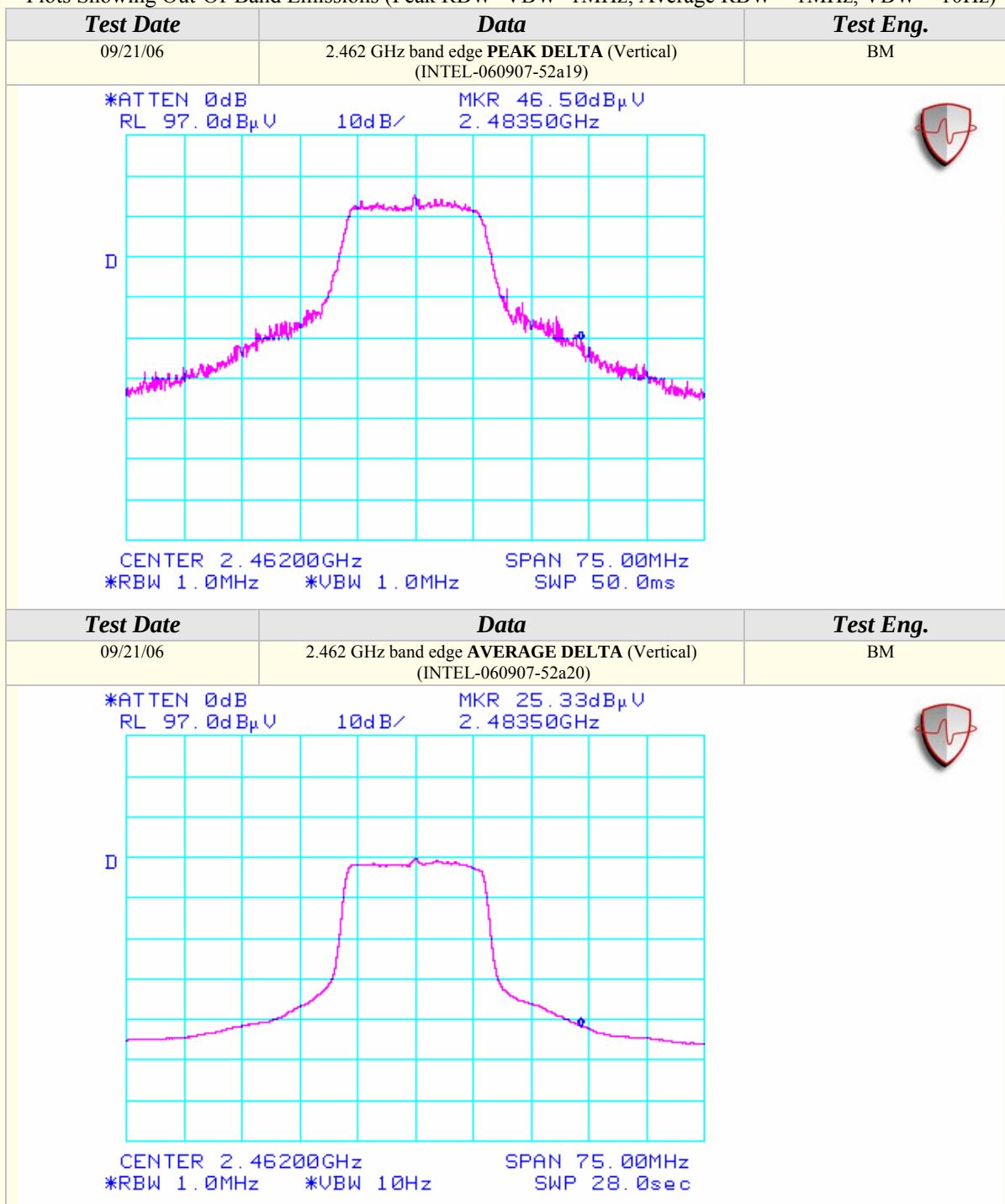
Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)

Test Date	Data	Test Eng.
09/21/06	2.462 GHz band edge PEAK DELTA (Horizontal) (INTEL-060907-52a17)	BM
*ATTEN 0dB RL 97.0dBμV 10dB/ CENTER 2.46200GHz SPAN 75.00MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/21/06	2.462 GHz band edge AVERAGE DELTA (Horizontal) (INTEL-060907-52a18)	BM
*ATTEN 0dB RL 97.0dBμV 10dB/ CENTER 2.46200GHz SPAN 75.00MHz *RBW 1.0MHz *VBW 10Hz SWP 28.0sec		



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 802.11n mode 20MHz Wide (2400-2483.5 MHz)

Channels 1, 6, & 11

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-44

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	57.00	100	225		50.15	6.56	38.12	51.52	85.45	-33.93	Ch. 1
9747.96	55.83	100	180		50.19	6.60	38.20	50.44	86.55	-36.11	Ch. 6
9848.01	57.33	100	180		50.23	6.64	38.28	52.02	84.31	-32.29	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
9647.62	55.33	100	180		50.15	6.56	38.09	49.82	83.16	-33.34	Ch. 1
9747.82	55.00	100	180		50.19	6.60	38.15	49.56	85.07	-35.51	Ch. 6
9848.28	54.50	100	180		50.23	6.64	38.21	49.12	83.66	-34.54	Ch. 11



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 20MHz Wide (2400-2483.5 MHz)

Channels 1, 6, & 11

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-53

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	80.67	100	180			9.54	3.19	29.50	103.82			Ch. 1
2412.00				66.17	A	9.54	3.19	29.50	89.32			
2437.00	85.33	100	135			9.54	3.20	29.59	108.58			Ch. 6
2437.00				70.83	A	9.54	3.20	29.59	94.08			
2462.00	81.17	100	180			9.54	3.22	29.67	104.52			Ch. 11
2462.00				66.33	A	9.54	3.22	29.67	89.68			

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	77.83	100	180			9.54	3.19	29.04	100.51			Ch. 1
2412.00				63.33	A	9.54	3.19	29.04	86.01			
2437.00	81.33	100	180			9.54	3.20	29.11	104.11			Ch. 6
2437.00				67.00	A	9.54	3.20	29.11	89.78			
2462.00	77.17	100	180			9.54	3.22	29.19	100.04			Ch. 11
2462.00				64.00	A	9.54	3.22	29.19	86.87			

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 802.11n mode 20MHz Wide (2400-2483.5 MHz)
Channels 1 & 11

Continuous TX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-53

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
2390.00	44.00	100	180			9.54	3.17	29.43	67.06	74.00	-6.94	Ch. 1
2390.00				25.33	A	9.54	3.17	29.43	48.39	54.00	-5.61	
2400.00	45.83	100	180			9.54	3.18	29.46	68.93	74.00	-5.07	
2483.50	44.50	100	180			9.54	3.24	29.74	67.94	74.00	-6.06	Ch. 11
2483.50				24.67	A	9.54	3.24	29.74	48.11	54.00	-5.89	

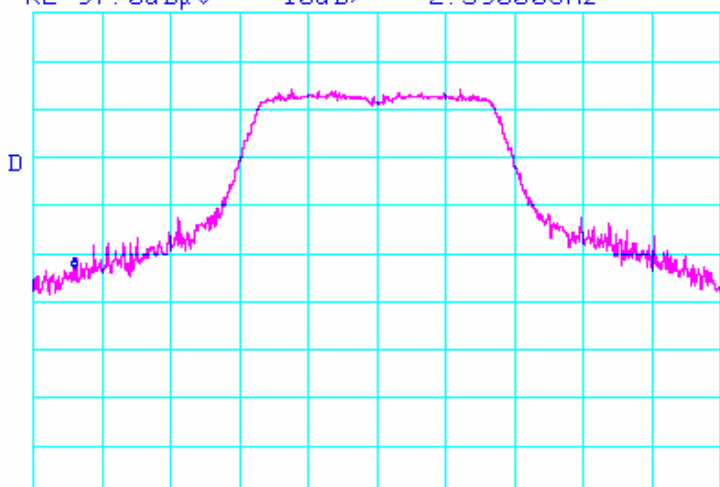
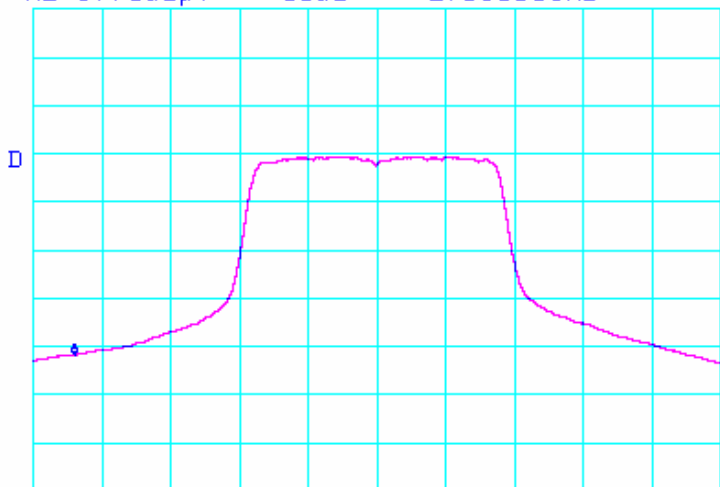
RADIATED EMISSIONS - Vertical Antenna Polarization

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
2390.00	41.50	100	180			9.54	3.17	28.97	64.10	74.00	-9.90	Ch. 1
2390.00				22.33	A	9.54	3.17	28.97	44.93	54.00	-9.07	
2400.00	43.17	100	180			9.54	3.18	29.00	65.81	74.00	-8.19	
2483.50	43.83	100	180			9.54	3.24	29.25	66.78	74.00	-7.22	Ch. 11
2483.50				22.67	A	9.54	3.24	29.25	45.62	54.00	-8.38	

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

Radiated Emissions Test Results (Continued)

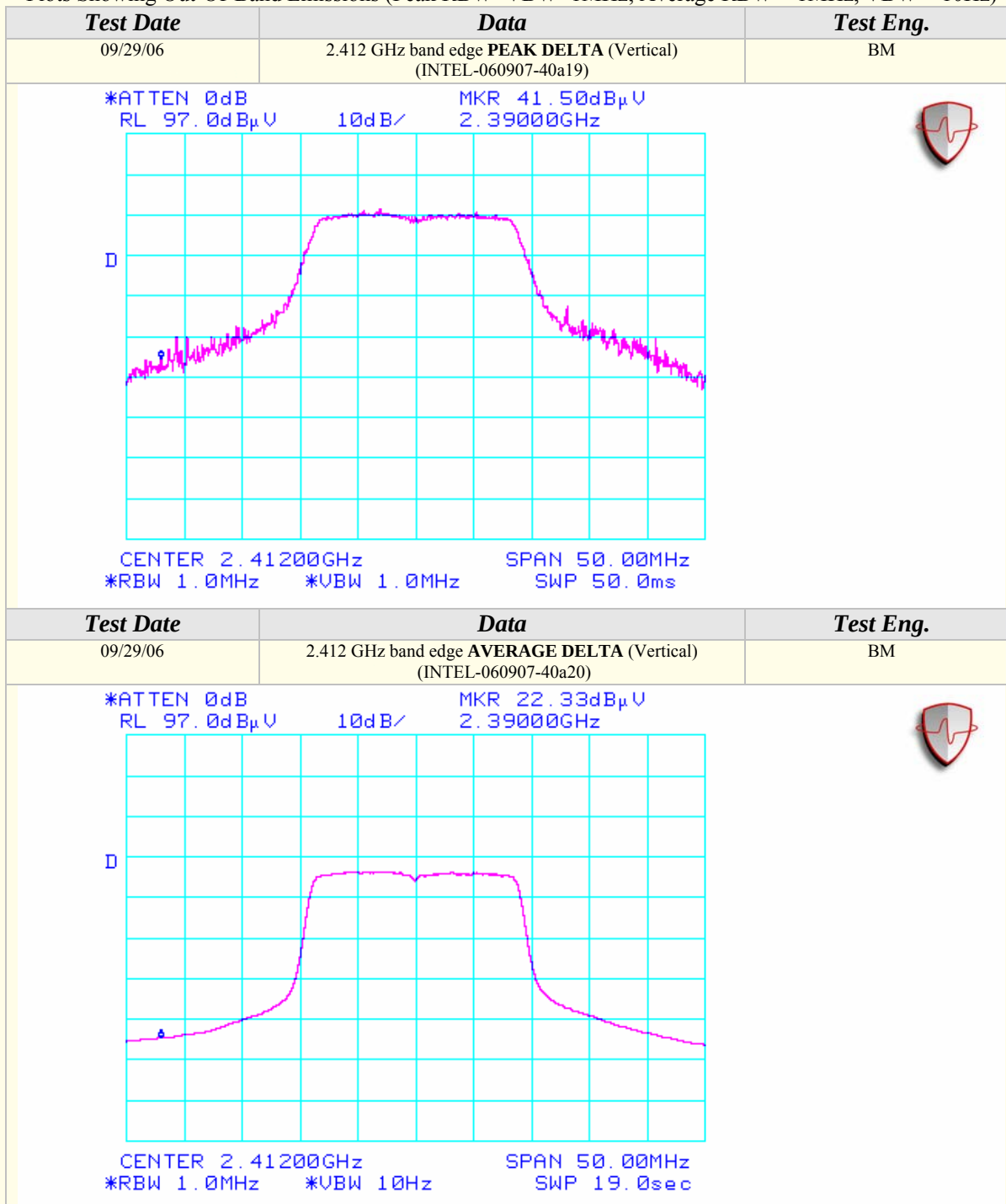
Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz; Average RBW = 1MHz, VBW = 10Hz)

Test Date	Data	Test Eng.
09/29/06	2.412 GHz band edge PEAK DELTA (Horizontal) (INTEL-060907-40a17)	BM
*ATTEN 0dB RL 97.0dBμV 10dB/ MKR 44.00dBμV 2.39000GHz  CENTER 2.41200GHz *RBW 1.0MHz *VBW 1.0MHz SPAN 50.00MHz SWP 50.0ms		
Test Date	Data	Test Eng.
09/29/06	2.412 GHz band edge AVERAGE DELTA (Horizontal) (INTEL-060907-40a18)	BM
*ATTEN 0dB RL 97.0dBμV 10dB/ MKR 25.33dBμV 2.39000GHz  CENTER 2.41200GHz *RBW 1.0MHz *VBW 10Hz SPAN 50.00MHz SWP 19.0sec		



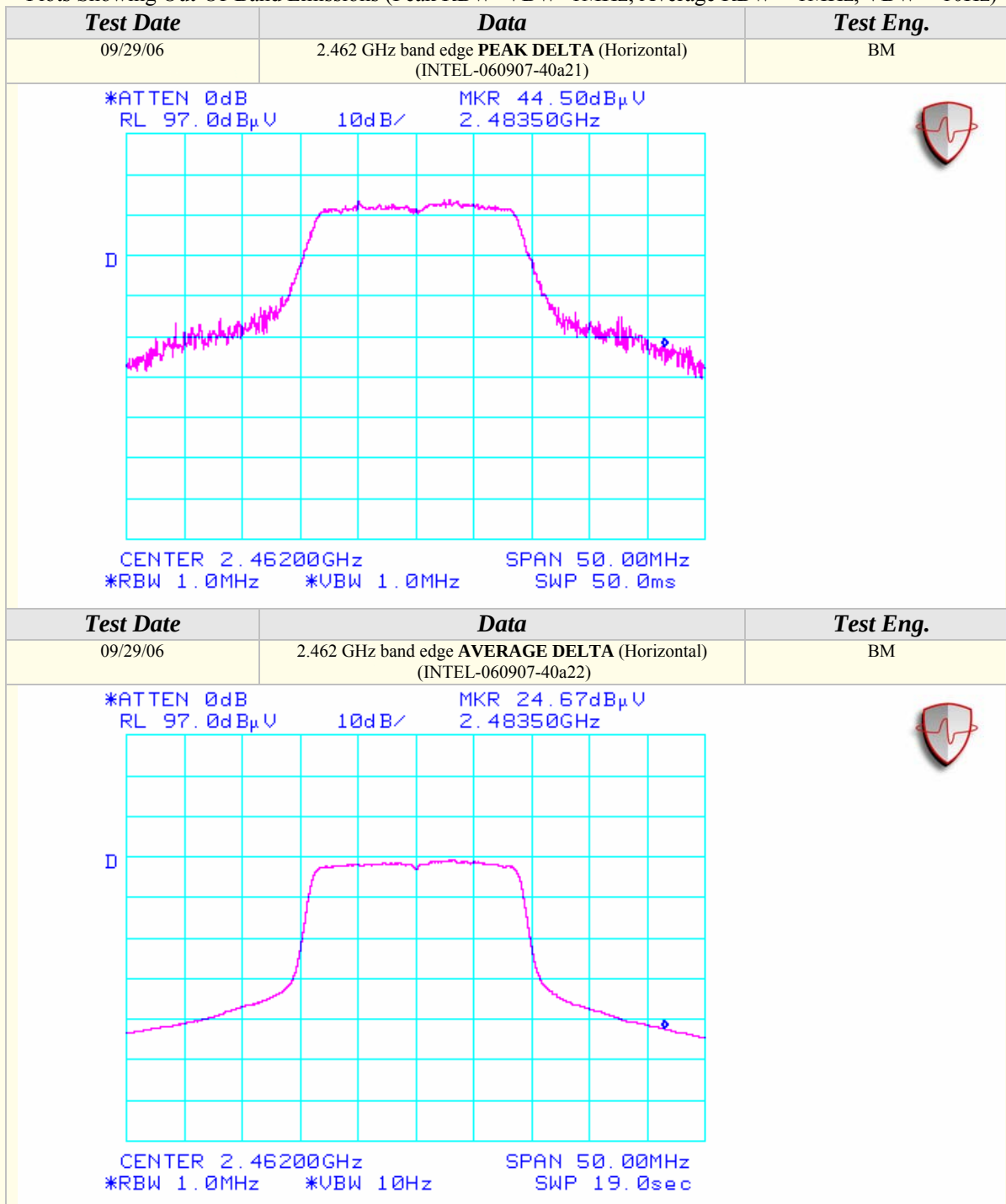
Radiated Emissions Test Results (Continued)

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



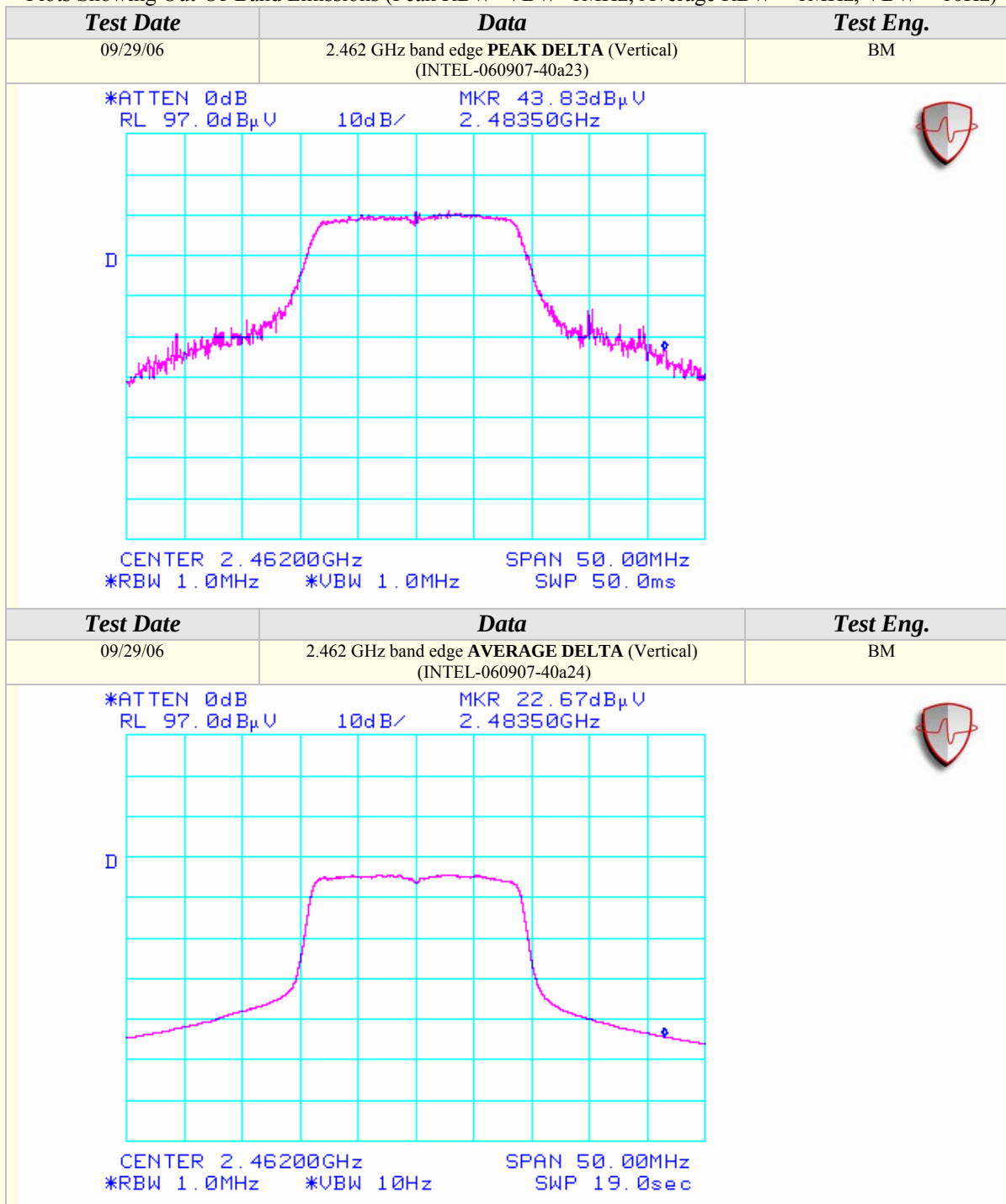
Radiated Emissions Test Results (Continued)

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 B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-43

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	56.83	100	225			50.15	6.56	38.12	51.35	83.82	-32.47	Ch. 1
9747.96	55.50	100	180			50.19	6.60	38.20	50.11	88.58	-38.47	Ch. 6
9848.01	56.67	100	180			50.23	6.64	38.28	51.36	84.52	-33.16	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
9647.62	56.00	100	180		50.15	6.56	38.09	50.49	80.51	-30.02	Ch. 1
9747.82	55.33	100	180		50.19	6.60	38.15	49.89	84.11	-34.22	Ch. 6
9848.28	55.00	100	180		50.23	6.64	38.21	49.62	80.04	-30.42	Ch. 11



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 20MHz Wide (2400-2483.5 MHz)
Channels 1, 6, & 11
Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-54

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	85.67	125	225			9.54	1.99	29.50	107.62			Ch. 1
2412.00				65.83	A	9.54	1.99	29.50	87.78			
2437.00	86.50	100	225			9.54	2.00	29.59	108.55			Ch. 6
2437.00				65.00	A	9.54	2.00	29.59	87.05			
2462.00	86.17	125	225			9.54	2.01	29.67	108.31			Ch. 11
2462.00				66.00	A	9.54	2.01	29.67	88.14			

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	84.83	100	225			9.54	1.99	29.04	106.32			Ch. 1
2412.00				65.00	A	9.54	1.99	29.04	86.49			
2437.00	84.00	100	225			9.54	2.00	29.11	105.57			Ch. 6
2437.00				63.50	A	9.54	2.00	29.11	85.07			
2462.00	83.50	100	225			9.54	2.01	29.19	105.16			Ch. 11
2462.00				63.00	A	9.54	2.01	29.19	84.66			

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 802.11n mode 20MHz Wide (2400-2483.5 MHz)
Channels 1 & 11**

**Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-54**

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
2390.00	47.50	125	225			9.54	1.98	29.43	69.37	74.00	-4.63	Ch. 1
2390.00				28.00	A	9.54	1.98	29.43	49.87	54.00	-4.13	
2400.00	44.17	125	225			9.54	1.98	29.46	66.07	87.62	-21.55	
2483.50	50.50	125	225			9.54	2.02	29.74	72.73	74.00	-1.27	Ch. 11
2483.50				28.83	A	9.54	2.02	29.74	51.06	54.00	-2.94	

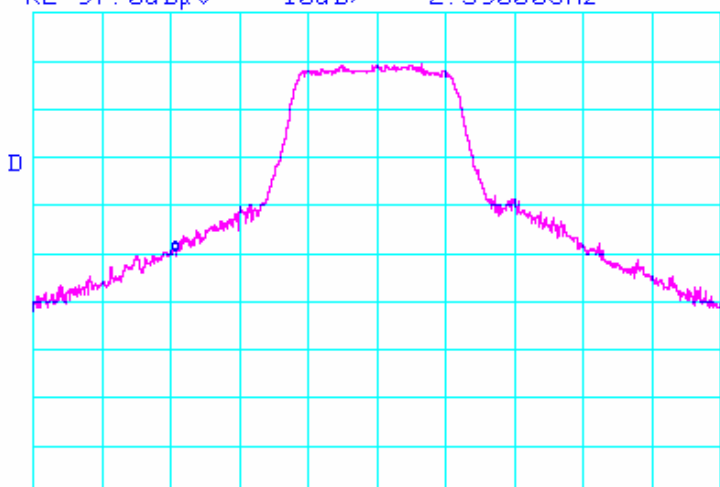
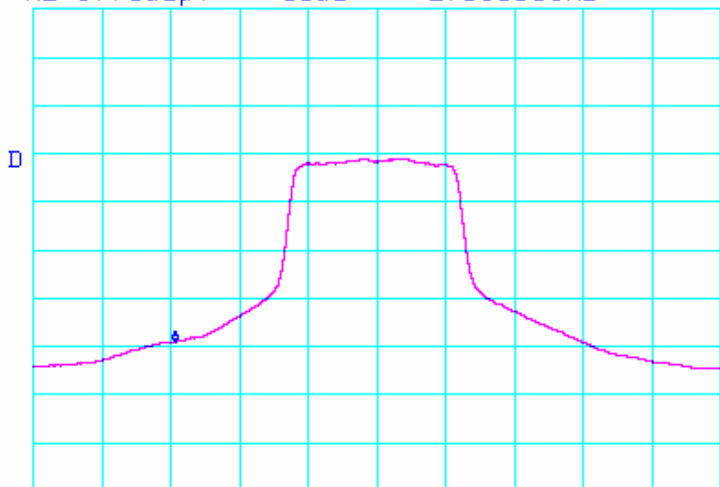
RADIATED EMISSIONS - Vertical Antenna Polarization

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
2390.00	46.50	100	225			9.54	1.98	28.97	67.91	74.00	-6.09	Ch. 1
2390.00				28.00	A	9.54	1.98	28.97	49.41	54.00	-4.59	
2400.00	45.33	100	225			9.54	1.98	29.00	66.77	86.32	-19.54	
2483.50	45.00	100	225			9.54	2.02	29.25	66.73	74.00	-7.27	Ch. 11
2483.50				25.33	A	9.54	2.02	29.25	47.06	54.00	-6.94	

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

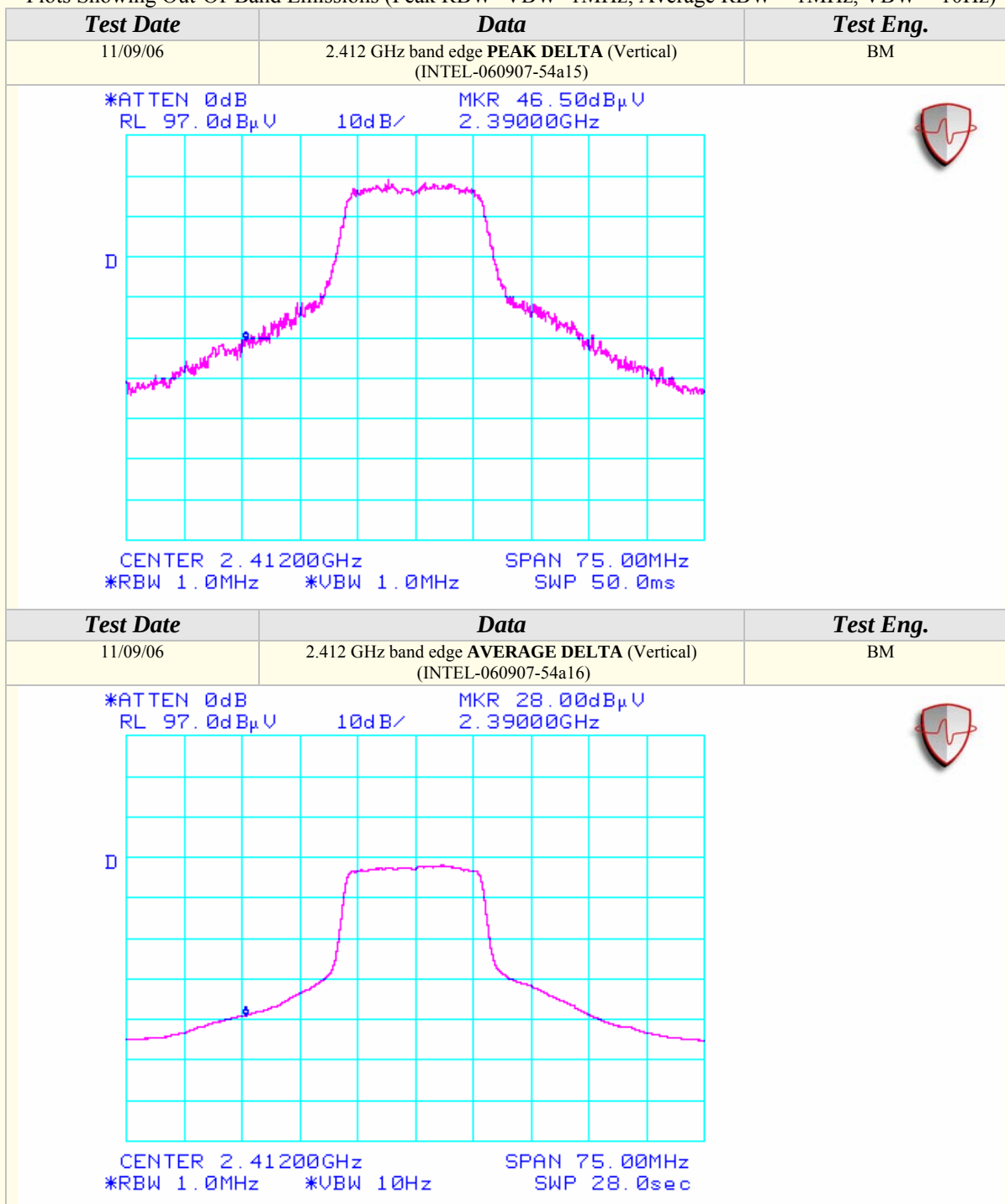
Radiated Emissions Test Results (Continued)

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

Test Date	Data	Test Eng.
11/09/06	2.412 GHz band edge PEAK DELTA (Horizontal) (INTEL-060907-54a13)	BM
*ATTEN 0dB MKR 47.50dBμV RL 97.0dBμV 10dB/ 2.39000GHz  CENTER 2.41200GHz SPAN 75.00MHz *RBW 1.0MHz *VBW 1.0MHz SWP 50.0ms		
Test Date	Data	Test Eng.
11/09/06	2.412 GHz band edge AVERAGE DELTA (Horizontal) (INTEL-060907-54a14)	BM
*ATTEN 0dB MKR 28.00dBμV RL 97.0dBμV 10dB/ 2.39000GHz  CENTER 2.41200GHz SPAN 75.00MHz *RBW 1.0MHz *VBW 10Hz SWP 28.0sec		

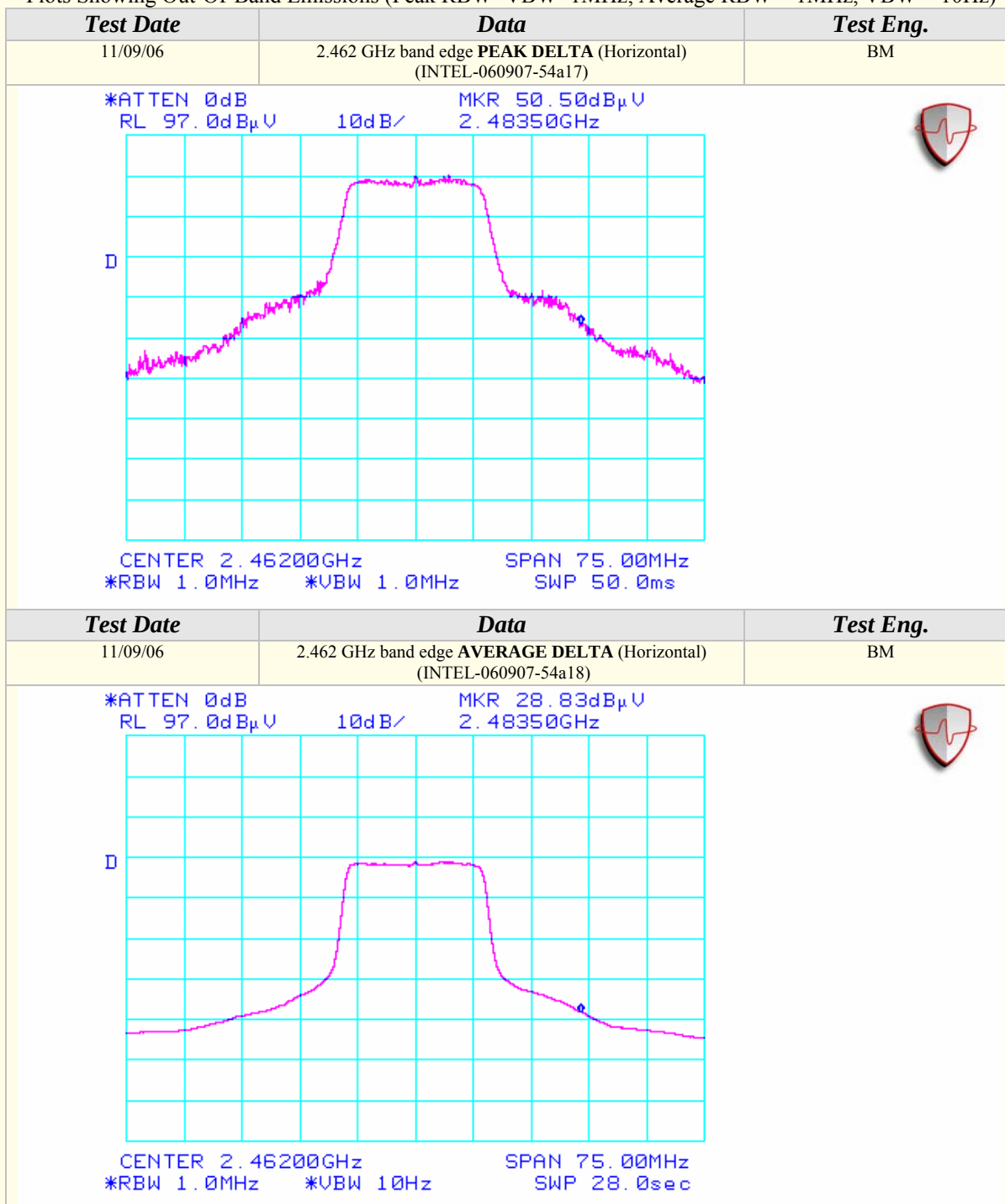
Radiated Emissions Test Results (Continued)

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



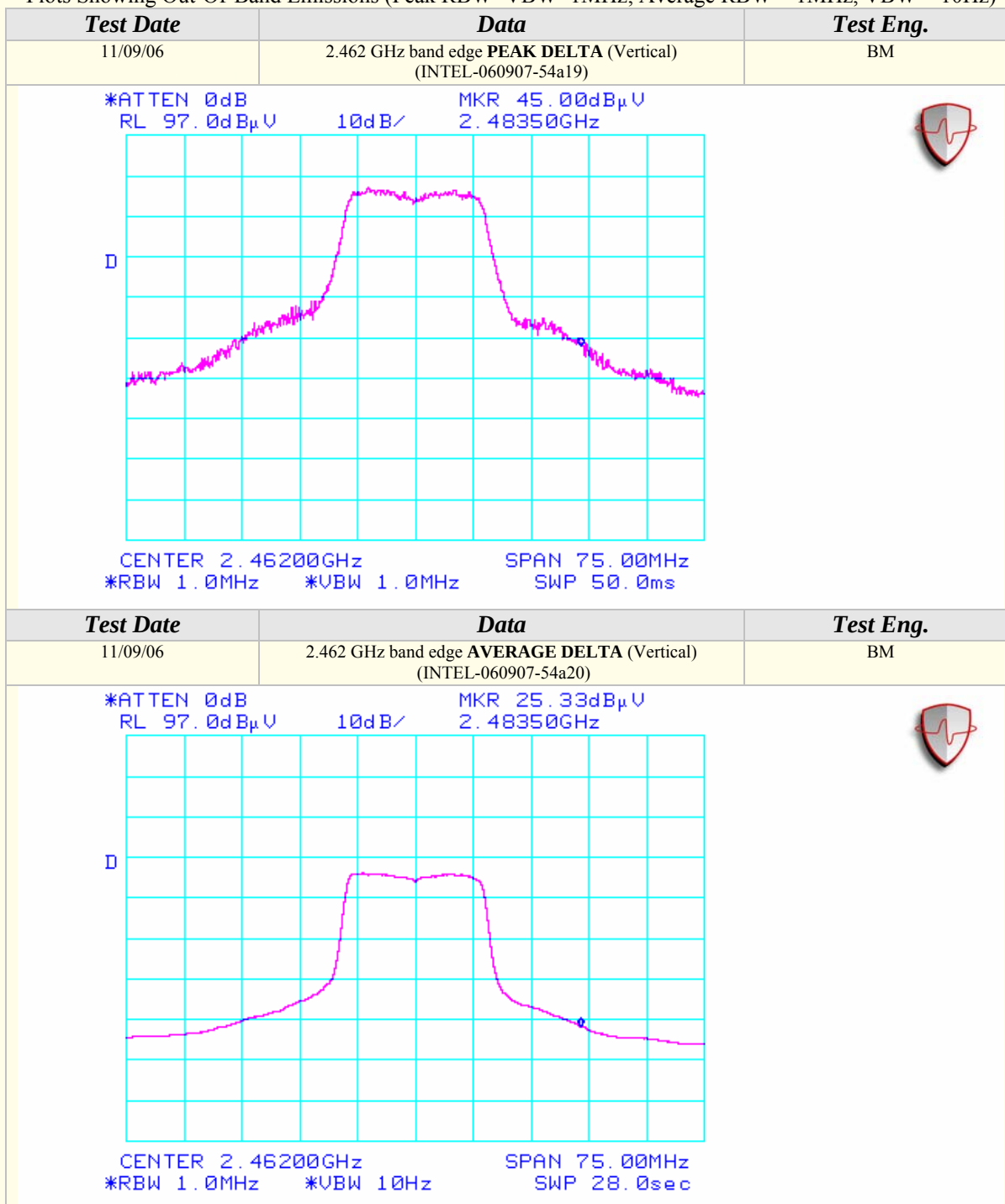
Radiated Emissions Test Results (Continued)

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 802.11n mode 20MHz Wide (2400-2483.5 MHz)

Channels 1, 6, & 11

Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-55

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	56.50	100	225			50.15	6.56	38.12	51.02	87.62	-36.60	Ch. 1
9747.96	56.17	100	180			50.19	6.60	38.20	50.78	88.55	-37.77	Ch. 6
9848.01	58.67	100	225			50.23	6.64	38.28	53.36	88.31	-34.95	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
9647.62	56.17	100	180			50.15	6.56	38.09	50.66	86.32	-35.66	Ch. 1
9747.82	55.83	100	180			50.19	6.60	38.15	50.39	85.57	-35.18	Ch. 6
9848.28	57.00	100	180			50.23	6.64	38.21	51.62	85.16	-33.54	Ch. 11



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Dell Computer Corporation	DATE:	10/06/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11n (5745-5825 MHz) mode 20MHz Wide with Ethertronics Antennas.	TEMPERATURE:	16 deg. C
		HUMIDITY:	60% RH
		TIME:	4:30 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 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149, 157, & 165

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-52

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
5745.00	77.17	100	135			9.54	3.15	35.25	106.03			Ch. 149
5745.00				63.00	A	9.54	3.15	35.25	91.86			
5785.00	71.00	100	135			9.54	3.17	35.26	99.88			Ch. 157
5785.00				57.50	A	9.54	3.17	35.26	86.38			
5825.00	77.33	100	135			9.54	3.18	35.27	106.23			Ch. 165
5825.00				62.50	A	9.54	3.18	35.27	91.40			

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
5745.00	71.50	100	135			9.54	3.15	35.05	100.16			Ch. 149
5745.00				57.50	A	9.54	3.15	35.05	86.16			
5785.00	77.17	100	135			9.54	3.17	35.07	105.87			Ch. 157
5785.00				63.00	A	9.54	3.17	35.07	91.70			
5825.00	74.00	100	180			9.54	3.18	35.10	102.73			Ch. 165
5825.00				59.50	A	9.54	3.18	35.10	88.23			

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 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149 & 165

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-52

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>
5725.00	51.83	100	135		9.54	3.15	35.25	80.68	86.03	-5.35	Ch. 149
5850.00	40.67	100	135		9.54	3.19	35.27	69.59	86.23	-16.65	Ch. 165

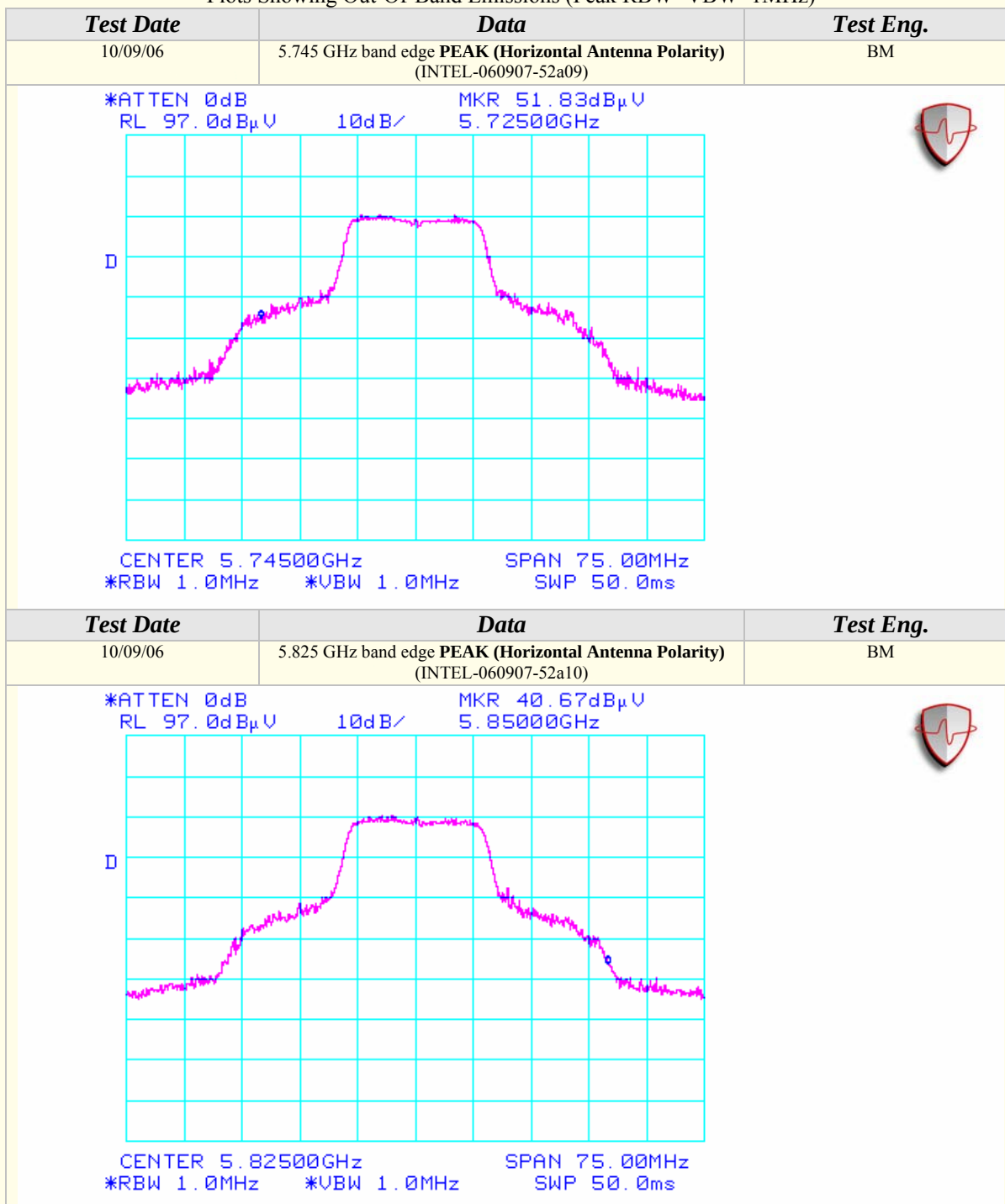
RADIATED EMISSIONS - Vertical Antenna Polarization

<i>Freq. (MHz)</i>	<i>Meter Reading (dBuV)</i>	<i>Antenna Height (cm)</i>	<i>Azimuth (degrees)</i>	<i>Quasi pk or AVG (dBuV)</i>	<i>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>
5725.00	47.00	100	135		9.54	3.15	35.04	75.64	80.16	-4.52	Ch. 149
5850.00	39.17	100	180		9.54	3.19	35.11	67.93	82.73	-14.81	Ch. 165

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

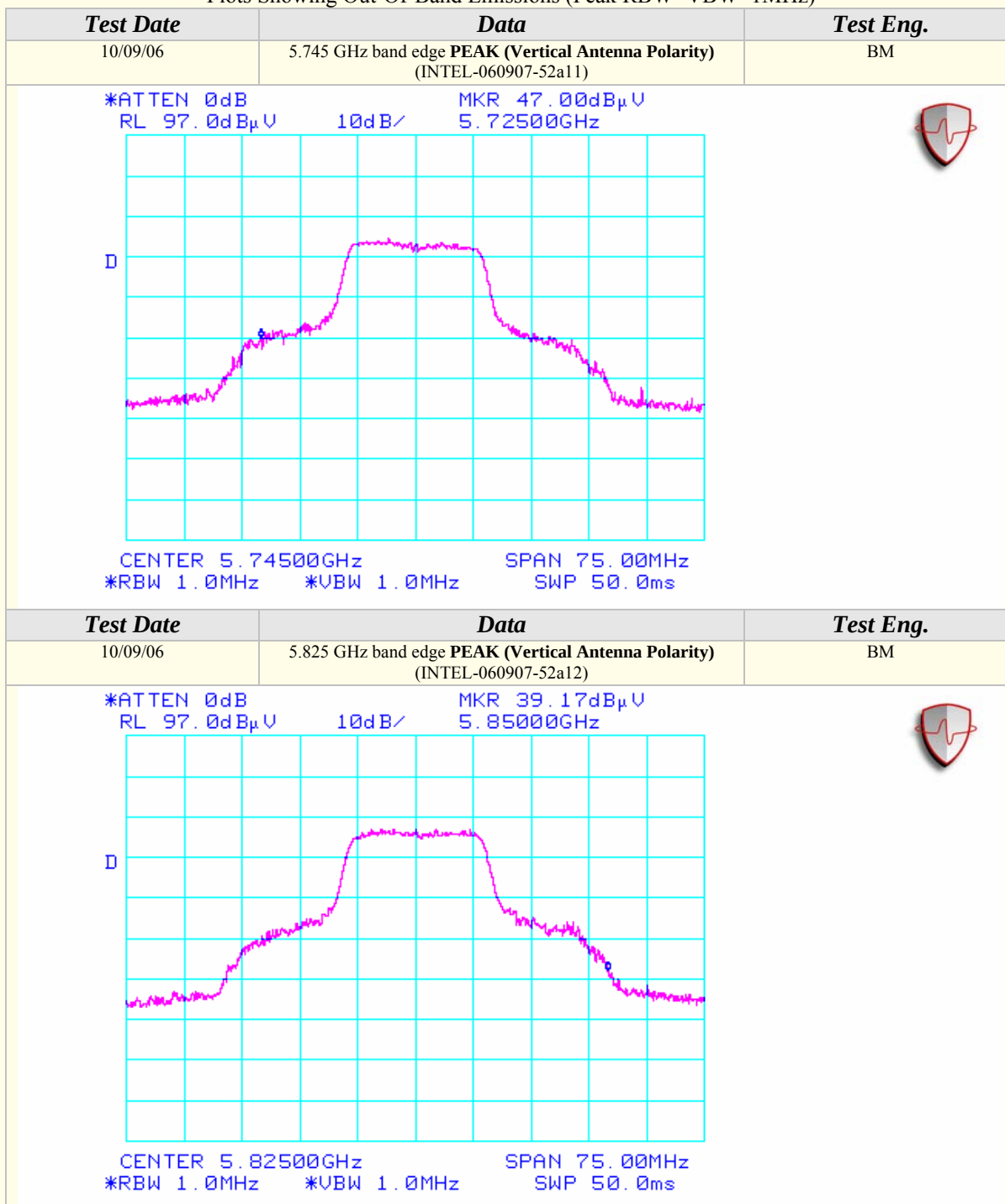
Radiated Emissions Test Results (Continued)

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



Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149, 157, & 165

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-44

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
3830.04	38.50	100	180			50.78	4.05	33.13	24.90	74.00	-49.10	Ch. 149
3830.04				51.62	A	50.78	4.05	33.13	38.02	54.00	-15.98	
7659.98	60.33	100	180			50.15	5.81	37.40	53.39	74.00	-20.61	
7659.98				55.35	A	50.15	5.81	37.40	48.41	54.00	-5.59	
11490.00	68.52	100	225			50.53	7.41	39.19	64.60	74.00	-9.40	
11490.00				54.33	A	50.53	7.41	39.19	50.41	54.00	-3.59	
3856.44	59.17	180	135			50.78	4.07	33.18	45.64	74.00	-28.36	Ch. 157
3856.44				53.15	A	50.78	4.07	33.18	39.62	54.00	-14.38	
7713.41	58.67	100	225			50.14	5.83	37.43	51.79	74.00	-22.21	
7713.41				52.44	A	50.14	5.83	37.43	45.56	54.00	-8.44	
11570.06	66.17	100	180			50.58	7.42	39.23	62.23	74.00	-11.77	
11570.06				50.22	A	50.58	7.42	39.23	46.28	54.00	-7.72	
3883.18	59.33	100	225			50.78	4.08	33.24	45.87	74.00	-28.13	Ch.165
3883.18				53.01	A	50.78	4.08	33.24	39.55	54.00	-14.45	
7766.65	58.50	100	225			50.13	5.85	37.46	51.68	74.00	-22.32	
7766.65				52.09	A	50.13	5.85	37.46	45.27	54.00	-8.73	

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
3830.04	60.00	150	135			50.78	4.05	32.76	46.03	74.00	-27.97	Ch. 149
3830.04				54.27	A	50.78	4.05	32.76	40.30	54.00	-13.70	
7659.85	58.33	100	225			50.15	5.81	37.26	51.25	74.00	-22.75	
7659.85				51.57	A	50.15	5.81	37.26	44.49	54.00	-9.51	
11490.00	68.17	100	225			50.53	7.41	39.19	64.25	74.00	-9.75	
11490.00				53.63	A	50.53	7.41	39.19	49.71	54.00	-4.29	
3856.44	59.83	100	135			50.78	4.07	32.83	45.94	74.00	-28.06	Ch. 157
3856.44				53.78	A	50.78	4.07	32.83	39.89	54.00	-14.11	
7713.43	61.17	100	180			50.14	5.83	37.29	54.14	74.00	-19.86	
7713.43				55.73	A	50.14	5.83	37.29	48.70	54.00	-5.30	
11569.89	70.67	100	225			50.58	7.42	39.23	66.73	74.00	-7.27	
11569.89				54.20	A	50.58	7.42	39.23	50.26	54.00	-3.74	
3883.32	63.00	100	180			50.78	4.08	32.90	49.20	74.00	-24.80	Ch.165
3883.32				59.08	A	50.78	4.08	32.90	45.28	54.00	-8.72	
7766.74	60.67	100	180			50.13	5.85	37.31	53.70	74.00	-20.30	
7766.74				55.57	A	50.13	5.85	37.31	48.60	54.00	-5.40	
11649.61	64.67	100	225			50.64	7.42	39.26	60.71	74.00	-13.29	
11649.61				47.06	A	50.64	7.42	39.26	43.10	54.00	-10.90	



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149, 157, & 165

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-53

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
5745.00	69.33	100	135			9.54	4.99	35.25	100.03			Ch. 149
5745.00				56.00	A	9.54	4.99	35.25	86.70			
5785.00	69.50	100	135			9.54	5.01	35.26	100.22			Ch. 157
5785.00				56.17	A	9.54	5.01	35.26	86.89			
5825.00	70.17	100	135			9.54	5.02	35.27	100.92			Ch. 165
5825.00				56.67	A	9.54	5.02	35.27	87.42			

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
5745.00	77.50	100	180			9.54	4.99	35.05	107.99			Ch. 149
5745.00				62.50	A	9.54	4.99	35.05	92.99			
5785.00	76.67	100	225			9.54	5.01	35.07	107.21			Ch. 157
5785.00				61.33	A	9.54	5.01	35.07	91.87			
5825.00	75.17	125	225			9.54	5.02	35.10	105.75			Ch. 165
5825.00				61.17	A	9.54	5.02	35.10	91.75			

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 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149 & 165

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-53

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>
5725.00	42.00	100	135		9.54	4.98	35.25	72.68	80.03	-7.34	Ch. 149
5850.00	35.00	100	135		9.54	5.03	35.27	65.76	80.92	-15.15	Ch. 165

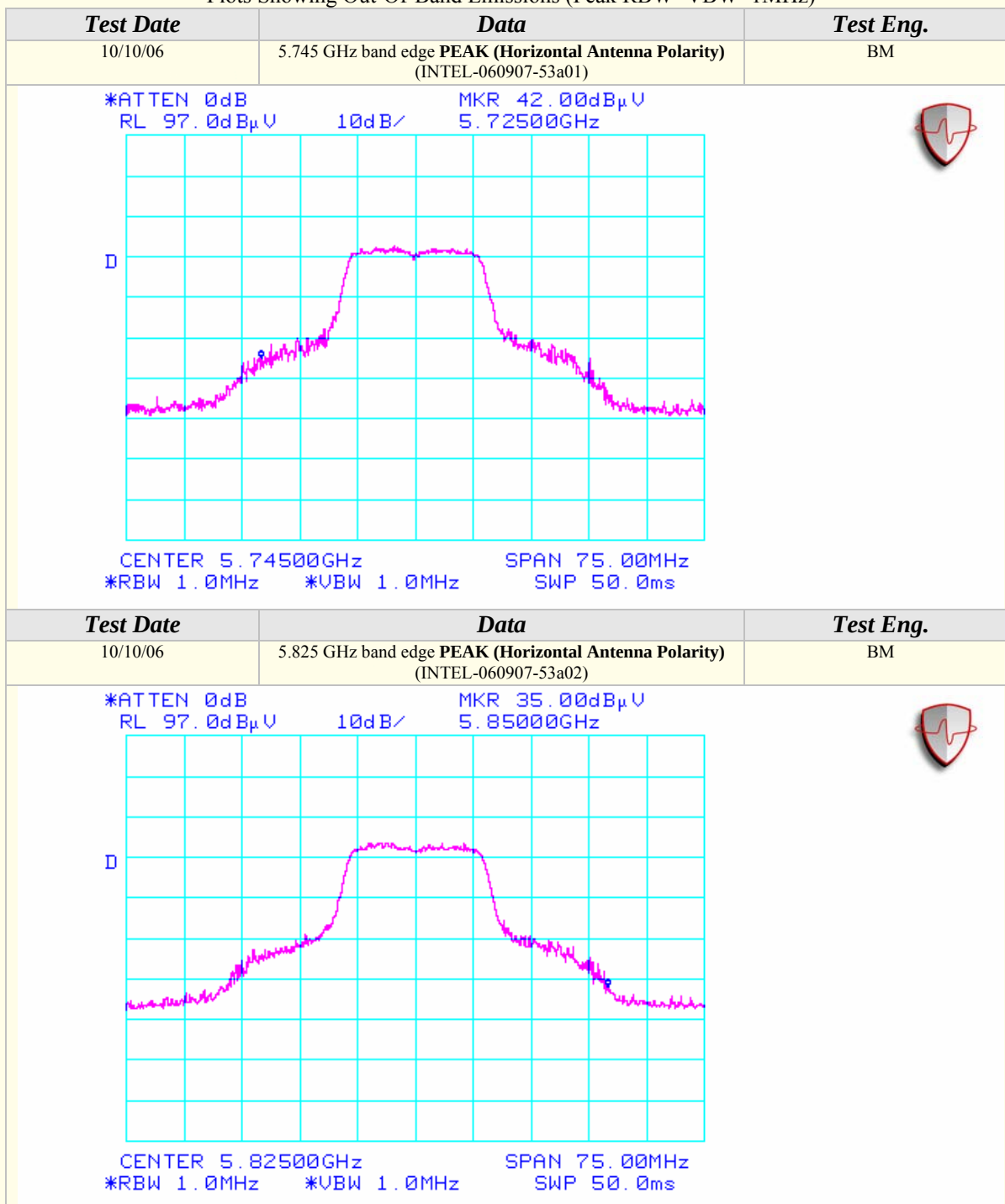
RADIATED EMISSIONS - Vertical Antenna Polarization

<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>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>
5725.00	49.83	100	180		9.54	4.98	35.04	80.30	87.99	-7.69	Ch. 149
5850.00	38.83	125	225		9.54	5.03	35.11	69.43	85.75	-16.31	Ch. 165

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

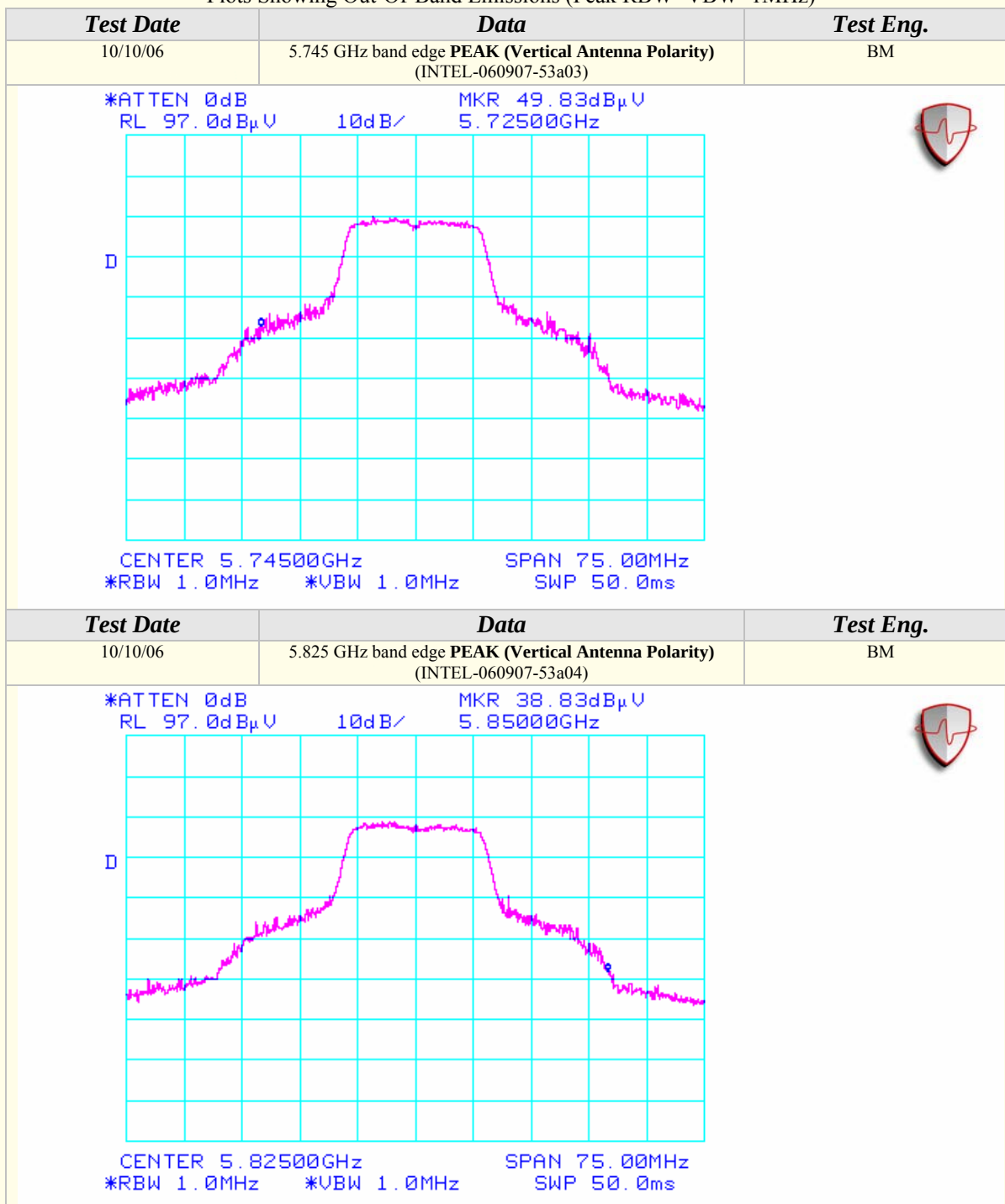
Radiated Emissions Test Results (Continued)

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



Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149, 157, & 165

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-43

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
3830.04	57.17	100	180			50.78	4.05	33.13	43.57	74.00	-30.43	Ch. 149
3830.04				49.25	A	50.78	4.05	33.13	35.65	54.00	-18.35	
11490.00	60.17	100	180			50.53	7.41	39.19	56.25	74.00	-17.75	
11490.00				45.76	A	50.53	7.41	39.19	41.84	54.00	-12.16	
3856.44	56.33	100	180			50.78	4.07	33.18	42.80	74.00	-31.20	Ch. 157
3856.44				47.59	A	50.78	4.07	33.18	34.06	54.00	-19.94	
11570.06	56.50	100	225			50.58	7.42	39.23	52.56	74.00	-21.44	
11570.06				44.35	A	50.58	7.42	39.23	40.41	54.00	-13.59	
3883.18	57.00	100	225			50.78	4.08	33.24	43.54	74.00	-30.46	Ch.165
3883.18				47.75	A	50.78	4.08	33.24	34.29	54.00	-19.71	
11650.00	56.50	100	180			50.64	7.42	39.26	52.54	74.00	-21.46	
11650.00				44.46	A	50.64	7.42	39.26	40.50	54.00	-13.50	

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
3830.04	57.17	100	225			50.78	4.05	32.76	43.20	74.00	-30.80	Ch. 149
3830.04				48.59	A	50.78	4.05	32.76	34.62	54.00	-19.38	
11490.00	61.50	100	225			50.53	7.41	39.19	57.58	74.00	-16.42	
11490.00				48.98	A	50.53	7.41	39.19	45.06	54.00	-8.94	
3856.44	56.50	100	225			50.78	4.07	32.83	42.61	74.00	-31.39	Ch. 157
3856.44				47.47	A	50.78	4.07	32.83	33.58	54.00	-20.42	
11569.89	58.33	100	180			50.58	7.42	39.23	54.39	74.00	-19.61	
11569.89				45.82	A	50.58	7.42	39.23	41.88	54.00	-12.12	
3883.32	56.83	100	225			50.78	4.08	32.90	43.03	74.00	-30.97	Ch.165
3883.32				48.03	A	50.78	4.08	32.90	34.23	54.00	-19.77	
11649.61	57.17	100	180			50.64	7.42	39.26	53.21	74.00	-20.79	
11649.61				43.91	A	50.64	7.42	39.26	39.95	54.00	-14.05	



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 20MHz Wide (5745-5825 MHz)
Channels 149, 157, & 165
Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-54

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
5745.00	73.17	100	225			9.54	3.15	35.25	102.03			Ch. 149
5745.00				54.83	A	9.54	3.15	35.25	83.69			
5785.00	73.83	100	225			9.54	3.17	35.26	102.71			Ch. 157
5785.00				54.83	A	9.54	3.17	35.26	83.71			
5825.00	74.17	100	225			9.54	3.18	35.27	103.07			Ch. 165
5825.00				55.17	A	9.54	3.18	35.27	84.07			

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
5745.00	80.67	100	225			9.54	3.15	35.05	109.33			Ch. 149
5745.00				60.83	A	9.54	3.15	35.05	89.49			
5785.00	82.00	100	225			9.54	3.17	35.07	110.70			Ch. 157
5785.00				60.83	A	9.54	3.17	35.07	89.53			
5825.00	80.33	100	225			9.54	3.18	35.10	109.06			Ch. 165
5825.00				60.83	A	9.54	3.18	35.10	89.56			

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 802.11n mode 20MHz Wide (5745-5825 MHz)
Channels 149 & 165
Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-54

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
5725.00	41.33	100	225		9.54	3.15	35.25	70.18	82.03	-11.85	Ch. 149
5850.00	32.83	100	225		9.54	3.19	35.27	61.75	83.07	-21.33	Ch. 165

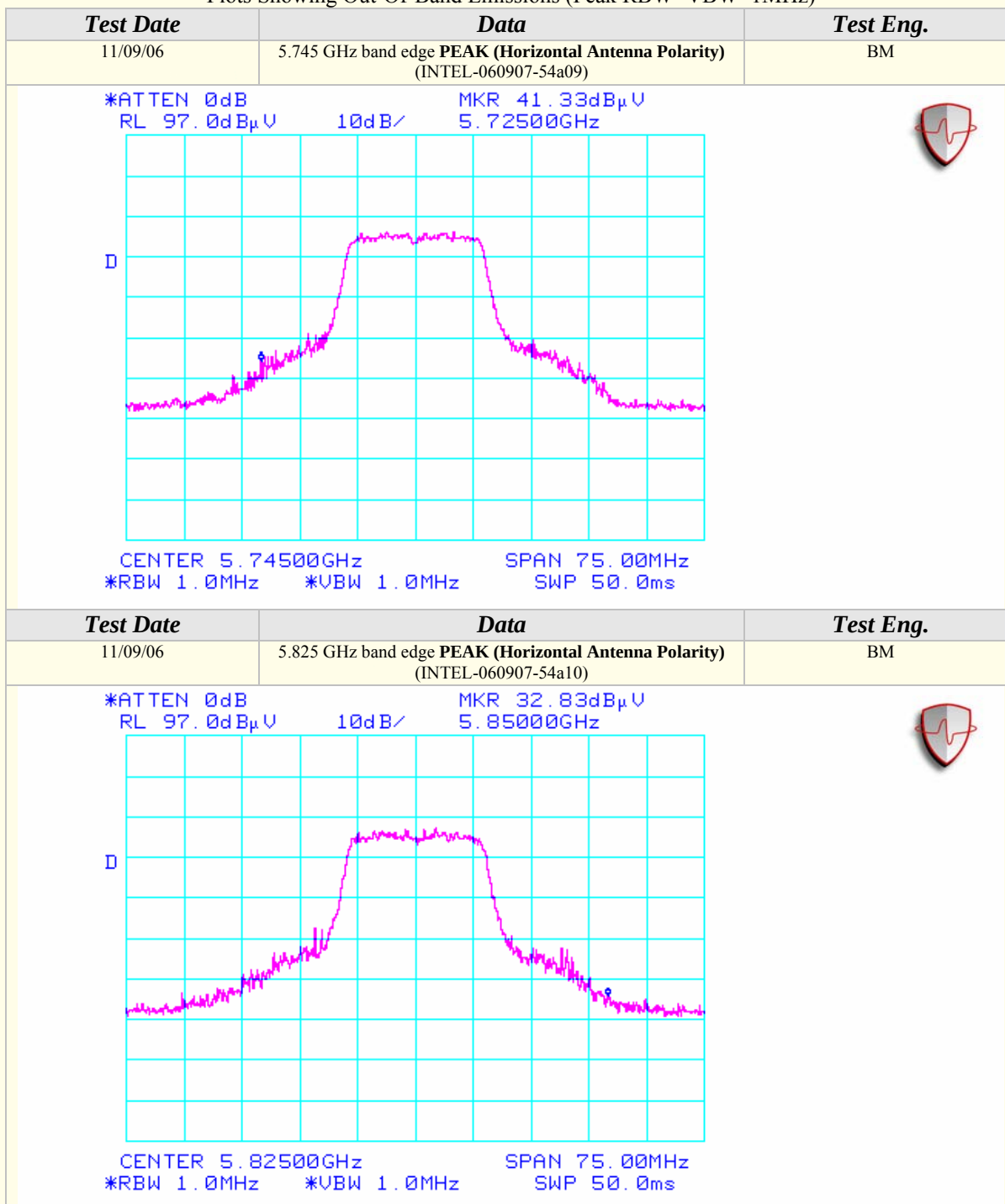
RADIATED EMISSIONS - Vertical Antenna Polarization

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
5725.00	44.83	100	225		9.54	3.15	35.04	73.47	89.33	-15.86	Ch. 149
5850.00	38.33	100	225		9.54	3.19	35.11	67.09	89.06	-21.98	Ch. 165

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

Radiated Emissions Test Results (Continued)

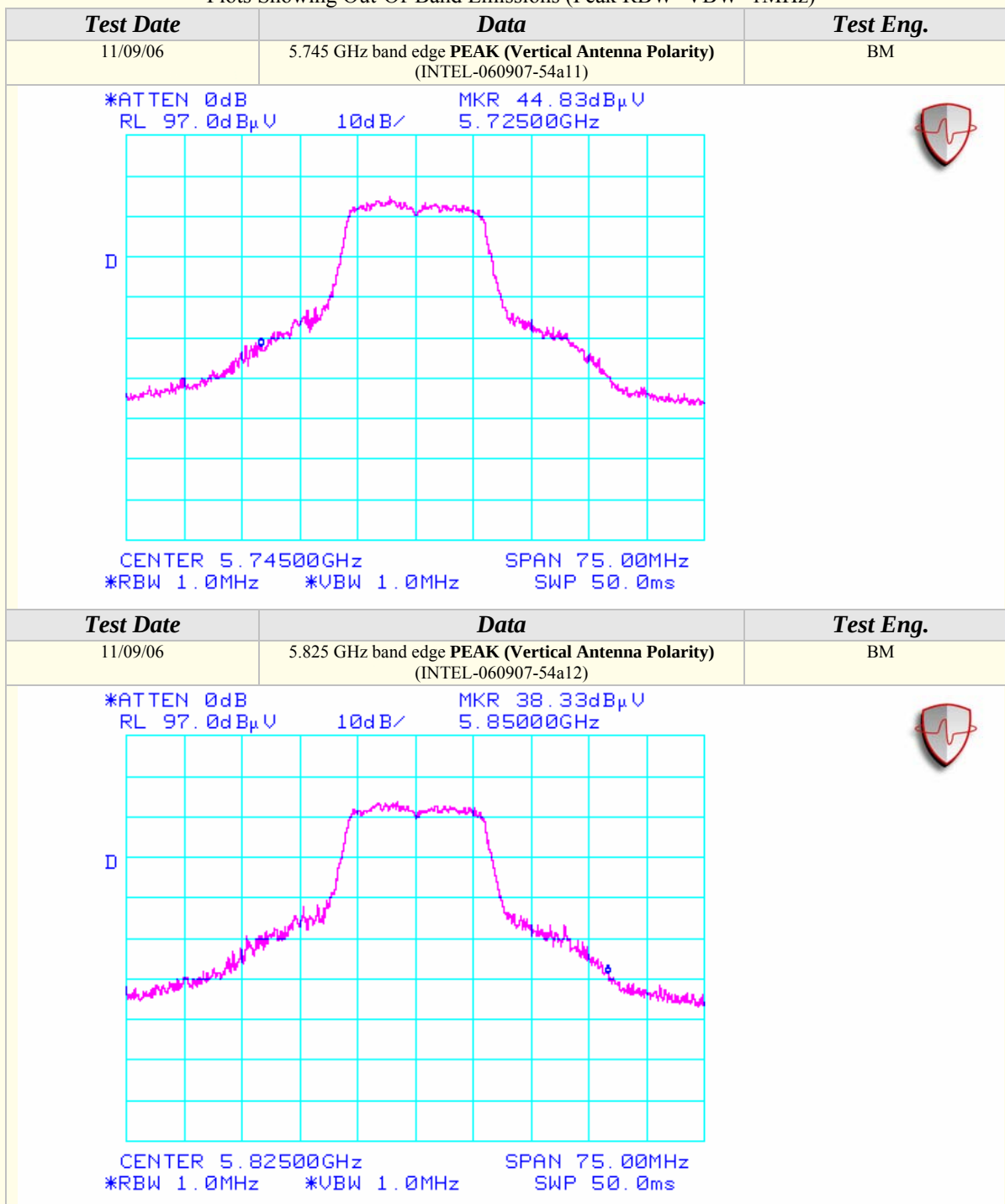
Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz)





Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 20MHz Wide (5745-5825 MHz)

Channels 149, 157, & 165

Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-55

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
3830.01	57.17	100	225			50.78	4.05	33.13	43.57	74.00	-30.43	Ch. 149
3830.01				47.68	A	50.78	4.05	33.13	34.08	54.00	-19.92	
7659.98	60.50	125	270			50.15	5.81	37.40	53.56	74.00	-20.44	
7659.98				54.46	A	50.15	5.81	37.40	47.52	54.00	-6.48	
11490.00	59.67	100	225			50.53	7.41	39.19	55.75	74.00	-18.25	
11490.00				47.12	A	50.53	7.41	39.19	43.20	54.00	-10.80	
3856.44	57.67	100	225			50.78	4.07	33.18	44.14	74.00	-29.86	Ch. 157
3856.44				48.93	A	50.78	4.07	33.18	35.40	54.00	-18.60	
7713.41	60.67	150	270			50.14	5.83	37.43	53.79	74.00	-20.21	
7713.41				54.55	A	50.14	5.83	37.43	47.67	54.00	-6.33	
11570.06	58.17	100	180			50.58	7.42	39.23	54.23	74.00	-19.77	
11570.06				45.04	A	50.58	7.42	39.23	41.10	54.00	-12.90	
3883.18	59.33	100	225			50.78	4.08	33.24	45.87	74.00	-28.13	Ch.165
3883.18				51.76	A	50.78	4.08	33.24	38.30	54.00	-15.70	
7766.65	59.67	150	270			50.13	5.85	37.46	52.85	74.00	-21.15	
7766.65				52.91	A	50.13	5.85	37.46	46.09	54.00	-7.91	
11650.02	57.83	100	225			50.64	7.42	39.26	53.87	74.00	-20.13	
11650.02				44.46	A	50.64	7.42	39.26	40.50	54.00	-13.50	



Radiated Emissions Test Results (Continued)

RADIATED EMISSIONS - Vertical Antenna Polarization												
Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Preamp Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +=FAIL	Comments
3830.04	59.83	100	180			50.78	4.05	32.76	45.86	74.00	-28.14	Ch. 149
3830.04				53.59	A	50.78	4.05	32.76	39.62	54.00	-14.38	
7659.85	59.00	100	180			50.15	5.81	37.26	51.92	74.00	-22.08	
7659.85				51.13	A	50.15	5.81	37.26	44.05	54.00	-9.95	
11490.00	67.50	100	180			50.53	7.41	39.19	63.58	74.00	-10.42	
11490.00				53.36	A	50.53	7.41	39.19	49.44	54.00	-4.56	
3856.44	60.17	100	135			50.78	4.07	32.83	46.28	74.00	-27.72	Ch. 157
3856.44				53.22	A	50.78	4.07	32.83	39.33	54.00	-14.67	
7713.43	60.00	100	180			50.14	5.83	37.29	52.97	74.00	-21.03	
7713.43				52.87	A	50.14	5.83	37.29	45.84	54.00	-8.16	
11569.89	67.17	100	180			50.58	7.42	39.23	63.23	74.00	-10.77	
11569.89				49.82	A	50.58	7.42	39.23	45.88	54.00	-8.12	
3883.32	60.67	125	135			50.78	4.08	32.90	46.87	74.00	-27.13	Ch.165
3883.32				55.01	A	50.78	4.08	32.90	41.21	54.00	-12.79	
7766.74	59.00	100	315			50.13	5.85	37.31	52.03	74.00	-21.97	
7766.74				51.87	A	50.13	5.85	37.31	44.90	54.00	-9.10	
11649.61	63.17	100	180			50.64	7.42	39.26	59.21	74.00	-14.79	
11649.61				46.39	A	50.64	7.42	39.26	42.43	54.00	-11.57	



RADIATED EMISSIONS TEST RESULTS

CLIENT:	Dell Computer Corporation	DATE:	10/06/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	TEST ENGINEER:	BM/JC
SERIAL NUMBER:	0013E804612B	SITE #:	2
CONFIGURATION:	Tested installed in the host computer's mini PCI slot in 802.11n (5745-5825 MHz) mode 40MHz Wide with Ethertronics Antennas.	TEMPERATURE:	16 deg. C
		HUMIDITY:	60% RH
		TIME:	4:30 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 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-52

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
5755.00	68.17	100	135			9.54	3.16	35.25	97.04			Ch. 151
5755.00				51.83	A	9.54	3.16	35.25	80.70			
5795.00	69.00	100	135			9.54	3.17	35.26	97.89			Ch. 159
5795.00				52.33	A	9.54	3.17	35.26	81.22			

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
5755.00	75.50	100	135			9.54	3.16	35.05	104.17			Ch. 151
5755.00				57.00	A	9.54	3.16	35.05	85.67			
5795.00	73.67	100	180			9.54	3.17	35.08	102.38			Ch. 159
5795.00				56.17	A	9.54	3.17	35.08	84.88			

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 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-52

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>
5725.00	42.83	100	135		9.54	3.15	35.25	71.68	77.04	-5.36	Ch. 151
5850.00	32.67	100	135		9.54	3.19	35.27	61.59	77.89	-16.30	Ch. 159

RADIATED EMISSIONS - Vertical Antenna Polarization

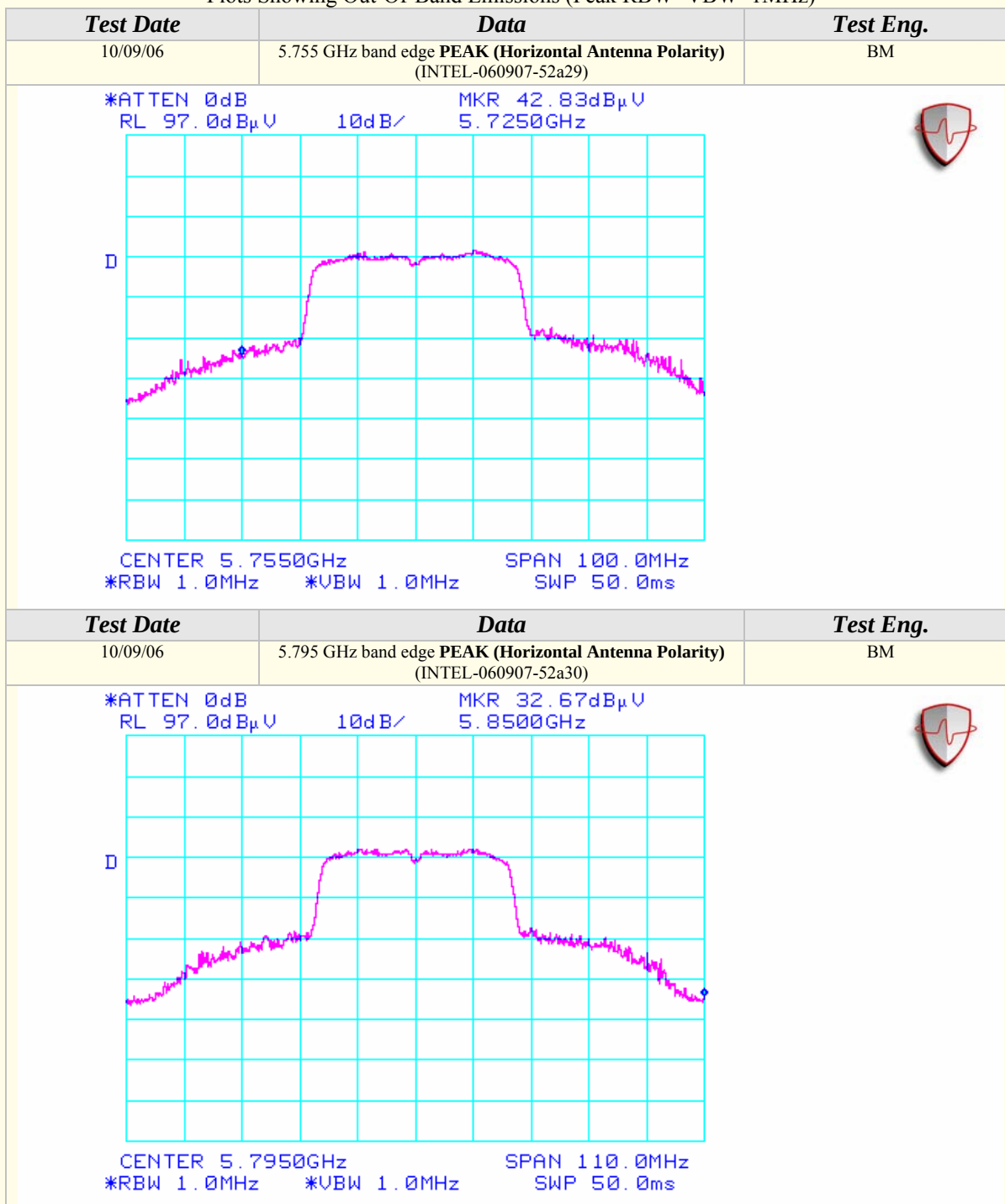
<i>Freq. (MHz)</i>	<i>Meter Reading (dBuV)</i>	<i>Antenna Height (cm)</i>	<i>Azimuth (degrees)</i>	<i>Quasi pk or AVG (dBuV)</i>	<i>Distance Factor (dB)</i>	<i>Cable Factor (dB)</i>	<i>Ant. Factor (dB)</i>	<i>Corrected Reading (dBuV)</i>	<i>Limits (dBuV)</i>	<i>Diff (dB) +=FAIL</i>	<i>Comments</i>
5725.00	51.33	100	135		9.54	3.15	35.04	79.97	84.17	-4.20	Ch. 151
5850.00	34.00	100	180		9.54	3.19	35.11	62.76	82.38	-19.62	Ch. 159

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



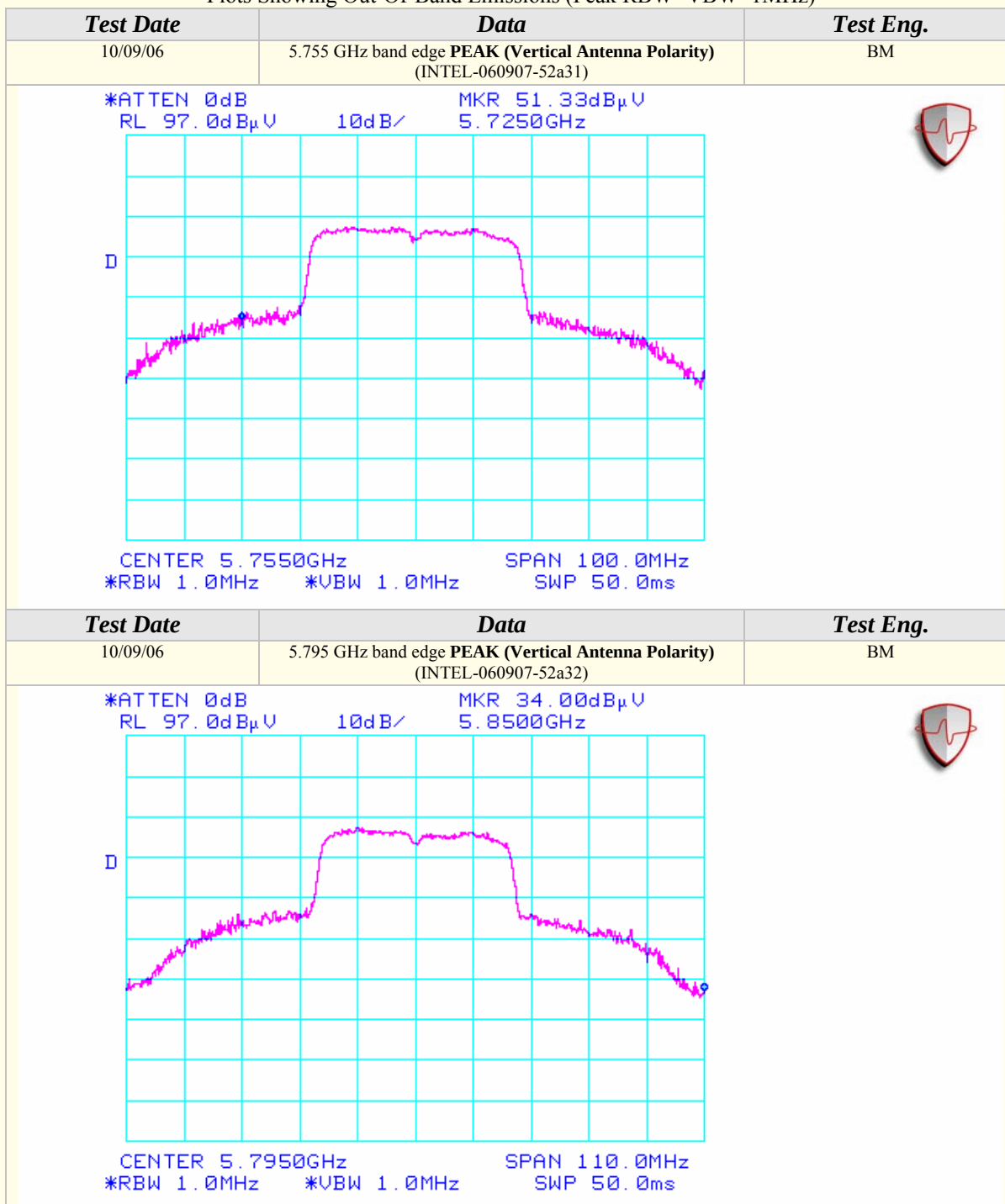
Radiated Emissions Test Results (Continued)

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



Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain A Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-44

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
3836.78	57.50	125	225			50.78	4.06	33.14	43.92	74.00	-30.08	Ch. 151
3836.78				51.54	A	50.78	4.06	33.14	37.96	54.00	-16.04	
7673.38	59.50	100	180			50.15	5.82	37.40	52.57	74.00	-21.43	
7673.38				53.01	A	50.15	5.82	37.40	46.08	54.00	-7.92	
11509.71	62.00	100	180			50.54	7.42	39.20	58.09	74.00	-15.91	
11509.71				47.71	A	50.54	7.42	39.20	43.80	54.00	-10.20	
3863.46	59.67	100	225			50.78	4.07	33.20	46.16	74.00	-27.84	Ch.159
3863.46				54.23	A	50.78	4.07	33.20	40.72	54.00	-13.28	
7726.79	60.00	100	180			50.14	5.84	37.44	53.13	74.00	-20.87	
7726.79				53.41	A	50.14	5.84	37.44	46.54	54.00	-7.46	
11589.56	60.50	100	180			50.60	7.42	39.24	56.56	74.00	-17.44	
11589.56				45.33	A	50.60	7.42	39.24	41.39	54.00	-12.61	

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
3836.81	58.50	125	180			50.78	4.06	32.78	44.55	74.00	-29.45	Ch. 151
3836.81				52.61	A	50.78	4.06	32.78	38.66	54.00	-15.34	
7673.41	61.00	100	180			50.15	5.82	37.27	53.94	74.00	-20.06	
7673.41				55.47	A	50.15	5.82	37.27	48.41	54.00	-5.59	
11509.66	66.67	100	180			50.54	7.42	39.20	62.76	74.00	-11.24	
11509.66				52.06	A	50.54	7.42	39.20	48.15	54.00	-5.85	
3863.44	60.67	100	180			50.78	4.07	32.84	46.81	74.00	-27.19	Ch.159
3863.44				55.45	A	50.78	4.07	32.84	41.59	54.00	-12.41	
7726.73	60.67	100	180			50.14	5.84	37.29	53.66	74.00	-20.34	
7726.73				55.01	A	50.14	5.84	37.29	48.00	54.00	-6.00	
11590.07	65.67	100	180			50.60	7.42	39.24	61.73	74.00	-12.27	
11590.07				50.28	A	50.60	7.42	39.24	46.34	54.00	-7.66	



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)
Channels 151 & 159
Continuous RX at Chain A Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-44*

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
3836.66	57.17	100	225			50.78	4.06	33.14	43.59	74.00	-30.41	Ch. 151
3836.66				48.12	A	50.78	4.06	33.14	34.54	54.00	-19.46	
3863.33	58.00	100	225			50.78	4.07	33.20	44.49	74.00	-29.51	Ch.159
3863.33				49.67	A	50.78	4.07	33.20	36.16	54.00	-17.84	

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
3836.66	56.83	125	225			50.78	4.06	33.14	43.25	74.00	-30.75	Ch. 151
3836.66				46.76	A	50.78	4.06	33.14	33.18	54.00	-20.82	
3863.33	57.17	100	180			50.78	4.07	32.84	43.31	74.00	-30.69	Ch.159
3863.33				47.39	A	50.78	4.07	32.84	33.53	54.00	-20.47	



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-53

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
5755.00	67.83	100	135			9.54	4.99	35.25	98.53			Ch. 151
5755.00				51.17	A	9.54	4.99	35.25	81.87			
5795.00	67.33	100	135			9.54	5.01	35.26	98.06			Ch. 159
5795.00				50.83	A	9.54	5.01	35.26	81.56			

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
5755.00	74.17	100	225			9.54	4.99	35.05	104.68			Ch. 151
5755.00				56.83	A	9.54	4.99	35.05	87.34			
5795.00	73.00	100	180			9.54	5.01	35.08	103.55			Ch. 159
5795.00				55.33	A	9.54	5.01	35.08	85.88			

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 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-53

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>
5725.00	40.00	100	135		9.54	4.98	35.25	70.68	78.53	-7.85	Ch. 151
5850.00	30.17	100	135		9.54	5.03	35.27	60.93	78.06	-17.12	Ch. 159

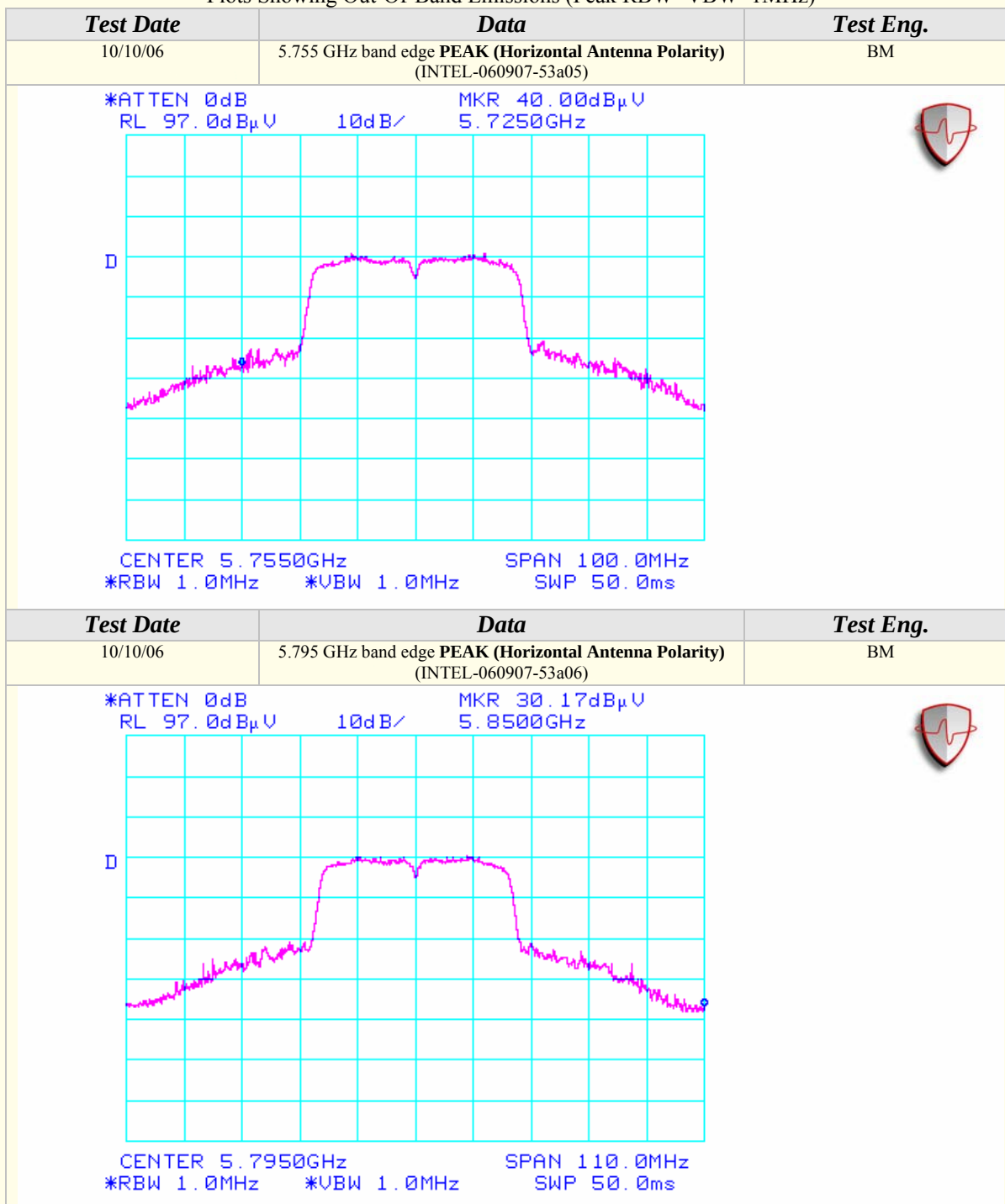
RADIATED EMISSIONS - Vertical Antenna Polarization

<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>
5725.00	47.17	100	225		9.54	4.98	35.04	77.64	84.68	-7.03	Ch. 151
5850.00	31.83	100	180		9.54	5.03	35.11	62.43	83.55	-21.11	Ch. 159

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

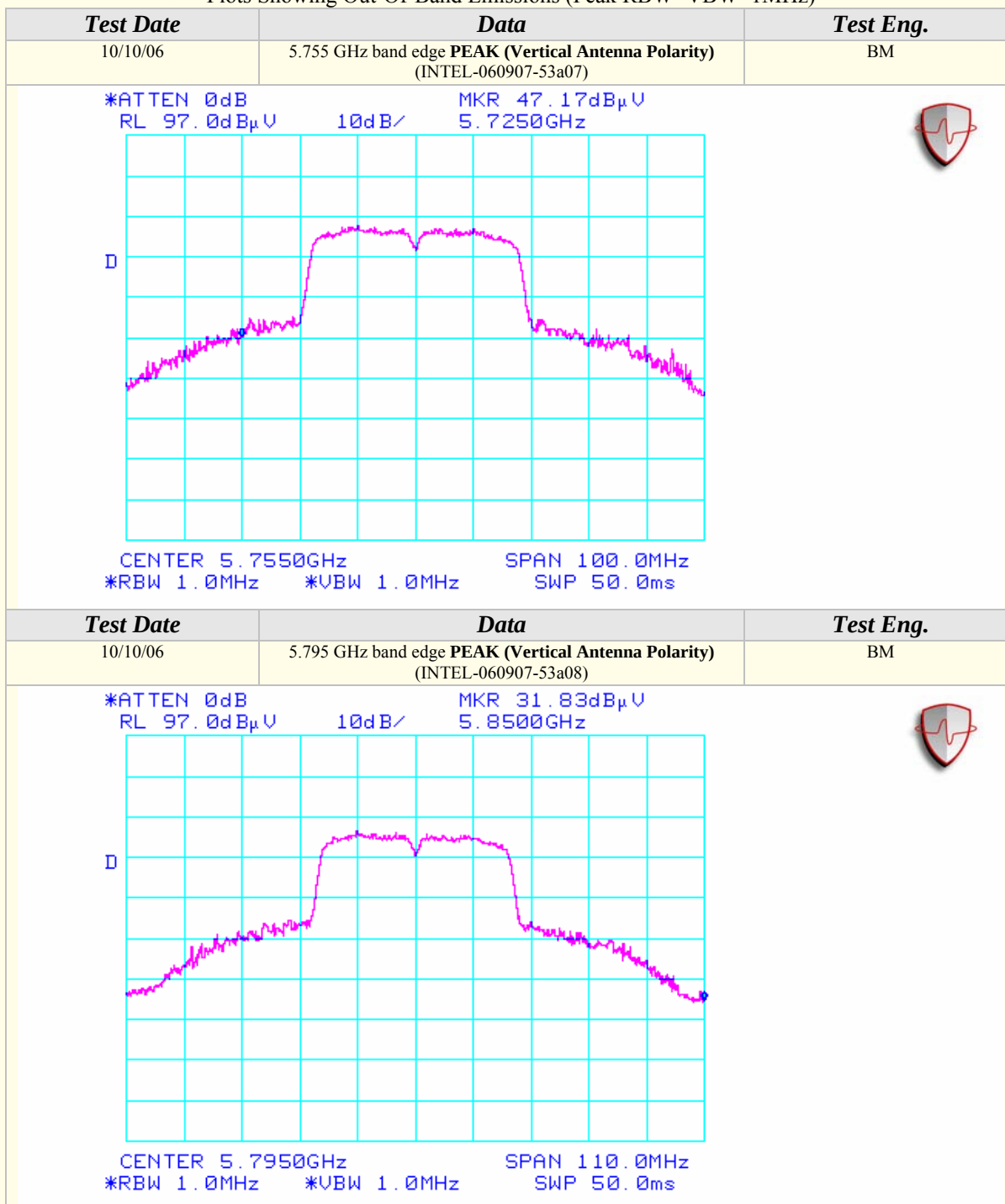
Radiated Emissions Test Results (Continued)

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



Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Chain B Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-43

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
3836.78	59.50	100	225			50.78	4.06	33.14	45.92	74.00	-28.08	Ch. 151
3836.78				50.32	A	50.78	4.06	33.14	36.74	54.00	-17.26	
7673.38	55.17	100	180			50.15	5.82	37.40	48.24	74.00	-25.76	
7673.38				43.43	A	50.15	5.82	37.40	36.50	54.00	-17.50	
11509.71	59.33	100	225			50.54	7.42	39.20	55.42	74.00	-18.58	
11509.71				45.54	A	50.54	7.42	39.20	41.63	54.00	-12.37	
3863.46	58.00	100	225			50.78	4.07	33.20	44.49	74.00	-29.51	Ch.159
3863.46				49.96	A	50.78	4.07	33.20	36.45	54.00	-17.55	
7726.79	56.67	100	180			50.14	5.84	37.44	49.80	74.00	-24.20	
7726.79				44.37	A	50.14	5.84	37.44	37.50	54.00	-16.50	
11589.56	56.00	100	225			50.60	7.42	39.24	52.06	74.00	-21.94	
11589.56				43.69	A	50.60	7.42	39.24	39.75	54.00	-14.25	

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
3836.78	57.33	100	225			50.78	4.06	32.78	43.38	74.00	-30.62	Ch. 151
3836.78				49.32	A	50.78	4.06	32.78	35.37	54.00	-18.63	
7673.38	55.67	100	180			50.15	5.82	37.27	48.61	74.00	-25.39	
7673.38				44.28	A	50.15	5.82	37.27	37.22	54.00	-16.78	
11509.71	60.00	125	225			50.54	7.42	39.20	56.09	74.00	-17.91	
11509.71				46.75	A	50.54	7.42	39.20	42.84	54.00	-11.16	
3863.46	57.00	100	225			50.78	4.07	32.84	43.14	74.00	-30.86	Ch.159
3863.46				47.80	A	50.78	4.07	32.84	33.94	54.00	-20.06	
7726.79	54.83	100	180			50.14	5.84	37.29	47.82	74.00	-26.18	
7726.79				44.12	A	50.14	5.84	37.29	37.11	54.00	-16.89	
11589.56	57.00	100	180			50.60	7.42	39.24	53.06	74.00	-20.94	
11589.56				44.73	A	50.60	7.42	39.24	40.79	54.00	-13.21	



Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)
Channels 151 & 159

Continuous RX at Chain B Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-43

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
3836.82	56.50	100	225			50.78	4.06	33.14	42.92	74.00	-31.08	Ch. 151
3836.82				46.25	A	50.78	4.06	33.14	32.67	54.00	-21.33	
3863.32	57.67	100	225			50.78	4.07	33.20	44.16	74.00	-29.84	Ch.159
3863.32				47.06	A	50.78	4.07	33.20	33.55	54.00	-20.45	

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
3836.78	56.00	125	135			50.78	4.06	33.14	42.42	74.00	-31.58	Ch. 151
3836.78				45.76	A	50.78	4.06	33.14	32.18	54.00	-21.82	
3863.44	56.83	100	135			50.78	4.07	32.84	42.97	74.00	-31.03	Ch.159
3863.44				46.59	A	50.78	4.07	32.84	32.73	54.00	-21.27	



Radiated Emissions Test Results (Continued)

Fundamental Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)
Channels 151 & 159
Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas
Aegis Labs, Inc. File #: INTEL-060907-54

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
5755.00	70.17	100	225			9.54	3.16	35.25	99.04			Ch. 151
5755.00				46.50	A	9.54	3.16	35.25	75.37			
5795.00	69.33	100	225			9.54	3.17	35.26	98.22			Ch. 159
5795.00				46.50	A	9.54	3.17	35.26	75.39			

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
5755.00	76.67	100	225			9.54	3.16	35.05	105.34			Ch. 151
5755.00				51.83	A	9.54	3.16	35.05	80.50			
5795.00	75.00	100	225			9.54	3.17	35.08	103.71			Ch. 159
5795.00				50.83	A	9.54	3.17	35.08	79.54			

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 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-54

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>
5725.00	31.33	100	225		9.54	3.15	35.25	60.18	79.04	-18.86	Ch. 151
5850.00	30.33	100	225		9.54	3.19	35.27	59.25	78.22	-18.97	Ch. 159

RADIATED EMISSIONS - Vertical Antenna Polarization

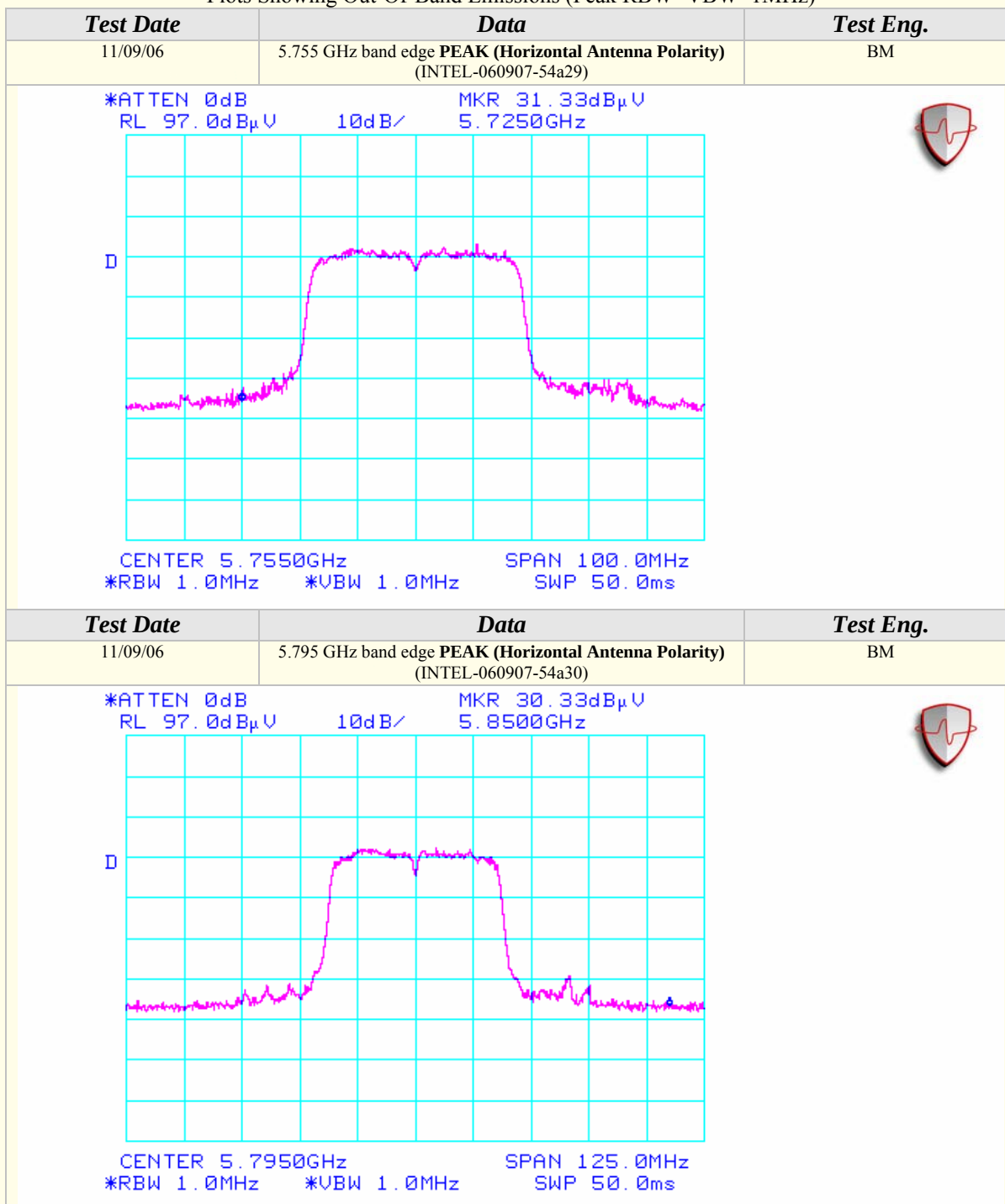
<i>Freq. (MHz)</i>	<i>Meter Reading (dBuV)</i>	<i>Antenna Height (cm)</i>	<i>Azimuth (degrees)</i>	<i>Quasi pk or AVG (dBuV)</i>	<i>Distance Factor (dB)</i>	<i>Cable Factor (dB)</i>	<i>Ant. Factor (dB)</i>	<i>Corrected Reading (dBuV)</i>	<i>Limits (dBuV)</i>	<i>Diff (dB) +=FAIL</i>	<i>Comments</i>
5725.00	40.33	100	225		9.54	3.15	35.04	68.97	85.34	-16.37	Ch. 151
5850.00	30.00	100	225		9.54	3.19	35.11	58.76	83.71	-24.95	Ch. 159

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



Radiated Emissions Test Results (Continued)

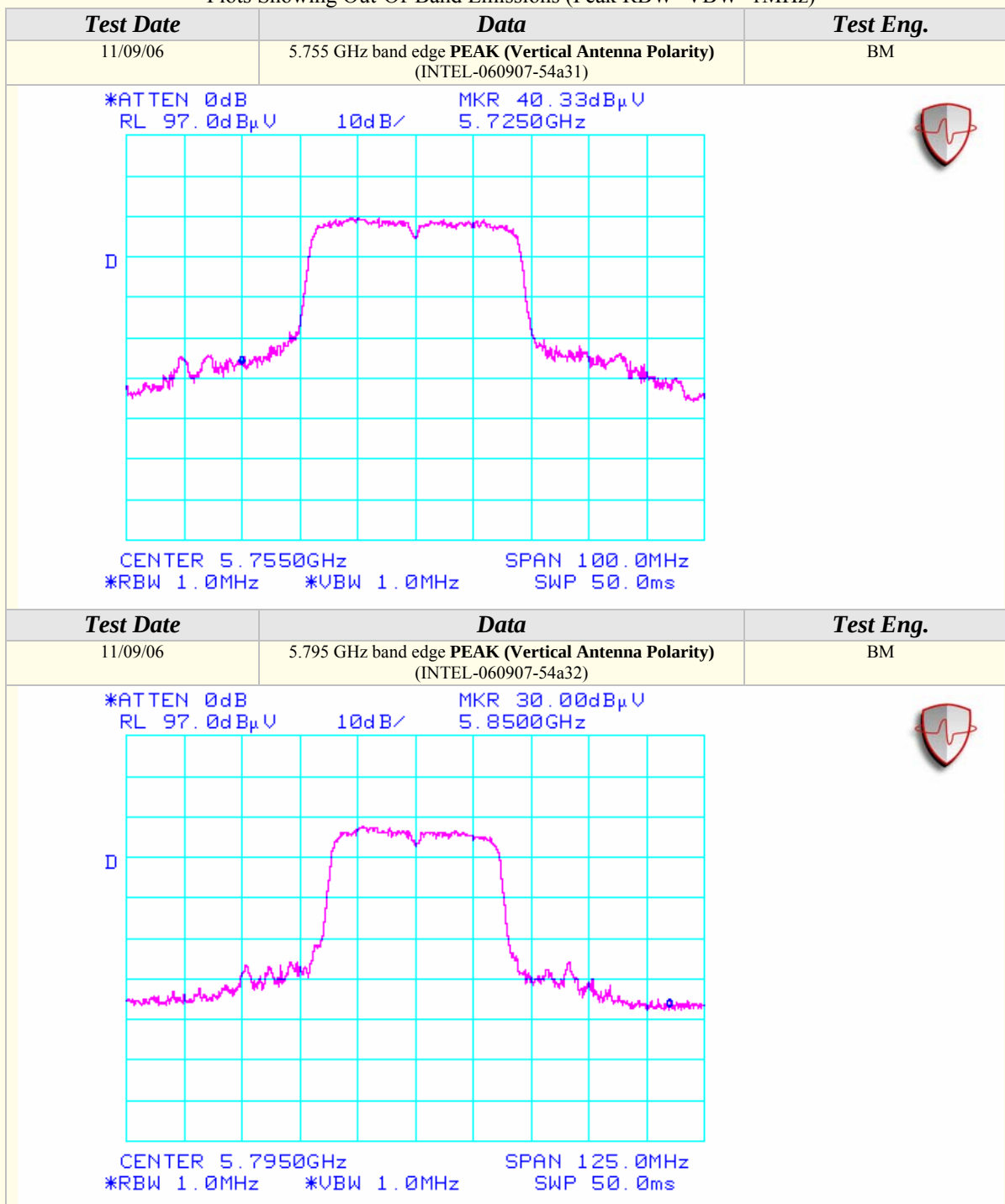
Plots Showing Out-Of-Band Emissions (Peak RBW=VBW=1MHz)





Radiated Emissions Test Results (Continued)

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





Radiated Emissions Test Results (Continued)

Spurious Emissions Measurements in 802.11n mode 40MHz Wide (5745-5825 MHz)

Channels 151 & 159

Continuous TX at Dual Chain AB Antenna port with Ethertronics Antennas

Aegis Labs, Inc. File #: INTEL-060907-55

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
3836.78	57.50	100	225			50.78	4.06	33.14	43.92	74.00	-30.08	Ch. 151
3836.78				48.93	A	50.78	4.06	33.14	35.35	54.00	-18.65	
7673.38	59.67	100	225			50.15	5.82	37.40	52.74	74.00	-21.26	
7673.38				51.62	A	50.15	5.82	37.40	44.69	54.00	-9.31	
3863.26	59.33	100	225			50.78	4.07	33.20	45.82	74.00	-28.18	Ch.159
3863.26				51.23	A	50.78	4.07	33.20	37.72	54.00	-16.28	
7726.79	59.00	100	225			50.14	5.84	37.44	52.13	74.00	-21.87	
7726.79				50.07	A	50.14	5.84	37.44	43.20	54.00	-10.80	

RADIATED EMISSIONS - Vertical Antenna Polarization

Freq. (MHz)	Meter Reading (dBuV)	Antenna Height (cm)	Azimuth (degrees)	Quasi pk or AVG (dBuV)		Preamp Factor (dB)	Cable Factor (dB)	Ant. Factor (dB)	Corrected Reading (dBuV)	Limits (dBuV)	Diff (dB) +/-FAIL	Comments
3836.67	60.50	100	135			50.78	4.06	32.78	46.55	74.00	-27.45	Ch. 151
3836.67				52.94	A	50.78	4.06	32.78	38.99	54.00	-15.01	
7673.39	60.33	100	180			50.15	5.82	37.27	53.27	74.00	-20.73	
7673.39				52.37	A	50.15	5.82	37.27	45.31	54.00	-8.69	
11509.66	60.33	100	180			50.54	7.42	39.20	56.42	74.00	-17.58	
11509.66				46.89	A	50.54	7.42	39.20	42.98	54.00	-11.02	
3863.38	60.83	100	135			50.78	4.07	32.84	46.97	74.00	-27.03	Ch.159
3863.38				53.30	A	50.78	4.07	32.84	39.44	54.00	-14.56	
7726.70	60.17	100	180			50.14	5.84	37.29	53.16	74.00	-20.84	
7726.70				52.49	A	50.14	5.84	37.29	45.48	54.00	-8.52	



PEAK TRANSMIT POWER

CLIENT:	Dell Computer Corporation	DATE:	09/29/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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
802.11n	149	5745	A	HT0	17.63	57.94	20.11	102.56
802.11n	157	5785	A	HT0	17.43	55.33	20.91	123.30
802.11n	165	5825	A	HT0	17.52	56.49	20.41	109.89
802.11n	149	5745	B	HT0	17.51	56.36	20.21	104.94
802.11n	157	5785	B	HT0	17.38	54.70	20.61	115.07
802.11n	165	5825	B	HT0	17.45	55.59	20.31	107.39
802.11n	1	2412	A	HT0	15.61	36.39	23.55	226.44
802.11n	6	2437	A	HT0	15.52	35.64	23.37	217.25
802.11n	11	2462	A	HT0	15.57	36.05	23.28	212.79
802.11n	1	2412	B	HT0	15.48	35.31	23.27	212.30
802.11n	6	2437	B	HT0	15.53	35.72	23.39	218.25
802.11n	11	2462	B	HT0	15.51	35.56	23.19	208.43
802.11n (40MHz)	151(F)	5755	A	HT0	17.28	53.45	18.51	70.95
802.11n (40MHz)	159(F)	5795	A	HT0	17.49	56.09	18.11	64.70
802.11n (40MHz)	151(F)	5755	B	HT0	17.38	54.69	18.41	69.33
802.11n (40MHz)	159(F)	5795	B	HT0	17.46	55.71	18.21	66.21

NOTE: The output power measurement is conducted.



Peak Transmit Power (Continued)

Mode	Channel	Freq. (MHz)	Data Rate (Mbps)	Avg. Power (dBm) Ch. A	Avg. Power (mW) Ch. A	Peak Power (dBm) Ch. A	Peak Power (mW) Ch. A	Avg. Power (dBm) Ch. B	Avg. Power (mW) Ch. B	Peak Power (dBm) Ch. B	Peak Power (mW) Ch. B
802.11n (20MHz)	1	2412	HT 8	14.55	28.49	23.70	234.28	14.39	27.46	23.53	225.29
802.11n (20MHz)	6	2437	HT 8	14.41	27.59	23.62	230.01	14.37	27.34	23.60	228.95
802.11n (20MHz)	11	2462	HT 8	14.57	28.62	23.66	232.14	14.29	26.84	23.64	231.07
802.11n (20MHz)	149	5745	HT 8	14.48	28.04	19.79	95.22	14.29	26.84	20.39	109.33
802.11n (20MHz)	157	5785	HT 8	14.50	28.17	20.59	114.48	14.36	27.27	21.49	140.85
802.11n (20MHz)	165	5825	HT 8	14.43	27.72	21.49	140.85	14.36	27.27	22.09	161.71
802.11n (40MHz)	151(F)	5755	HT 8	14.62	28.98	19.24	83.97	14.65	29.18	19.66	92.50
802.11n (40MHz)	159 (F)	5795	HT 8	14.58	28.72	19.34	85.93	14.45	27.87	20.04	100.95

Mode	Channel	Freq. (MHz)	Data Rate (Mbps)	Aggregate Avg. Output Power (dBm) Ch. A + B	Aggregate Avg. Output Power (mW) Ch. A + B	Aggregate Peak Output Power (dBm) Ch. A + B	Aggregate Peak Output Power (mW) Ch. A + B
802.11n (20MHz)	1	2412	HT 8	17.48	55.96	26.62	459.57
802.11n (20MHz)	6	2437	HT 8	17.40	54.93	26.62	458.96
802.11n (20MHz)	11	2462	HT 8	17.44	55.46	26.66	463.20
802.11n (20MHz)	149	5745	HT 8	17.39	54.88	23.11	204.55
802.11n (20MHz)	157	5785	HT 8	17.44	55.44	24.07	255.33
802.11n (20MHz)	165	5825	HT 8	17.40	54.99	24.81	302.56
802.11n (40MHz)	151(F)	5755	HT 8	17.65	58.16	22.47	176.47
802.11n (40MHz)	159 (F)	5795	HT 8	17.53	56.59	22.72	186.88

(F) = Fat Channel



6dB EMISSIONS BANDWIDTH

CLIENT:	Dell Computer Corporation	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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.

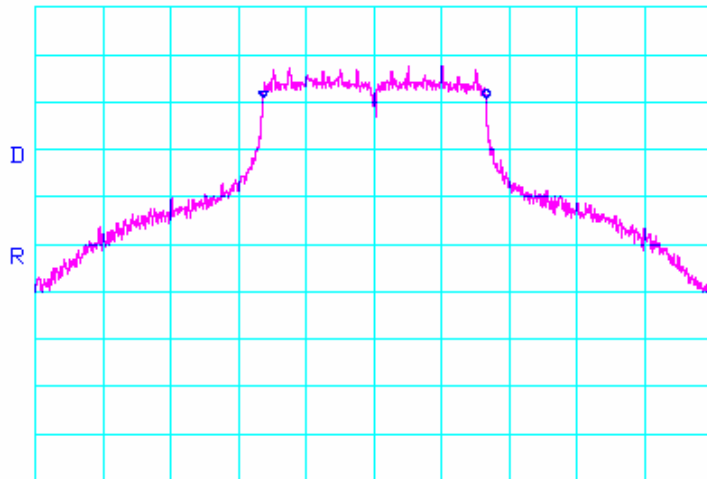


6dB Emissions Bandwidth (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27a01)	A	JC

*ATTEN 20dB
RL 16.0dBm
10dB/
 Δ MKR -.17dB
16.50MHz

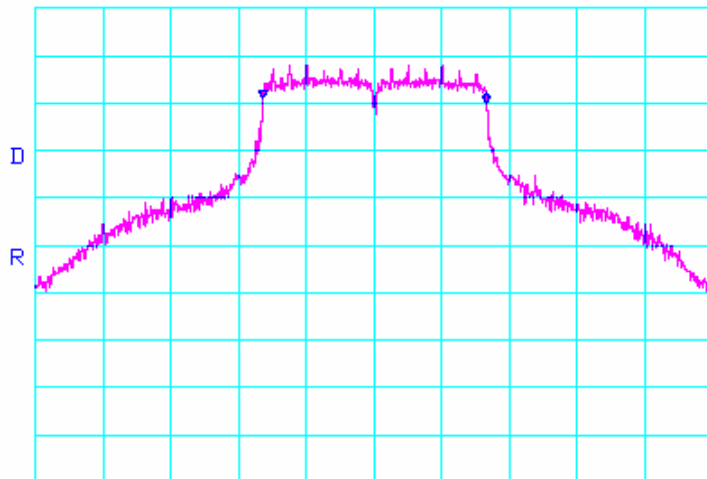


CENTER 5.74500GHz
*RBW 100kHz *VBW 300kHz
SPAN 50.00MHz
SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27a02)	A	JC

*ATTEN 20dB
RL 16.0dBm
10dB/
 Δ MKR -1.00dB
16.50MHz



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

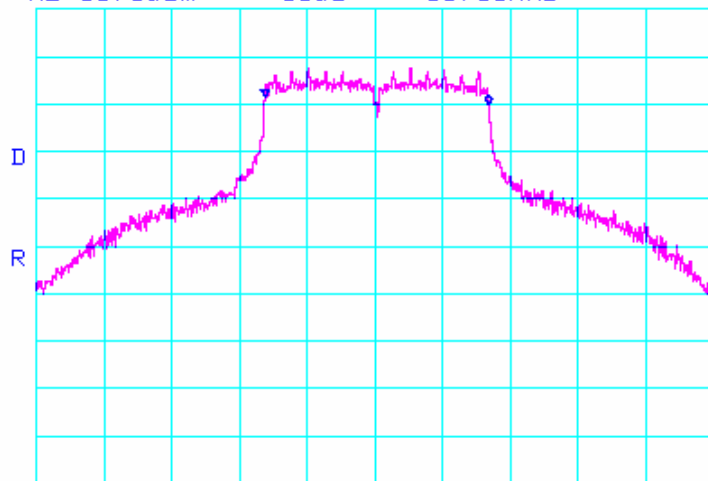


6dB Emissions Bandwidth (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27a03)	A	JC

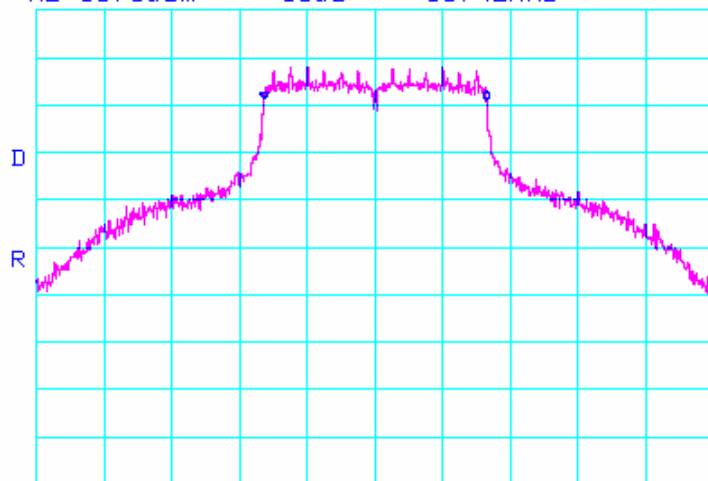
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -1.67dB
16.50MHz



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-060907-27a04)	B	JC

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



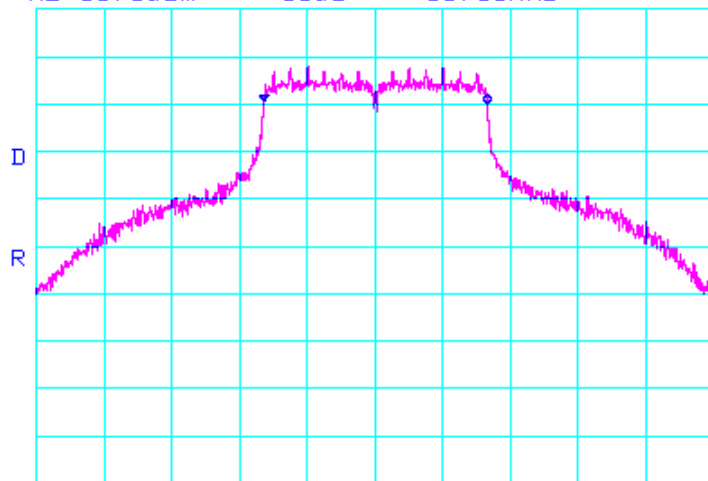
CENTER 5.74500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms

6dB Emissions Bandwidth (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27a05)	B	JC

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

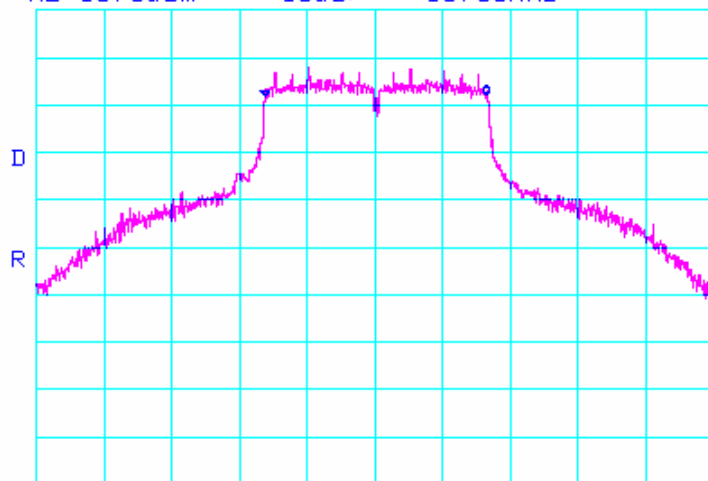


CENTER 5.78500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27a06)	B	JC

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



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

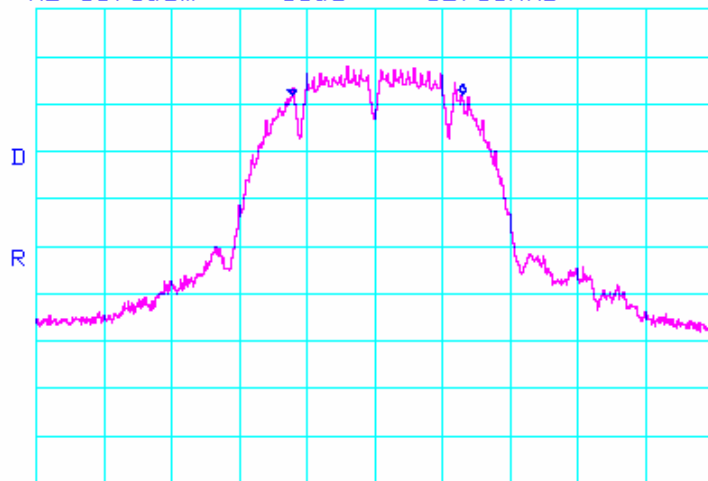


6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28b01)	A	JC

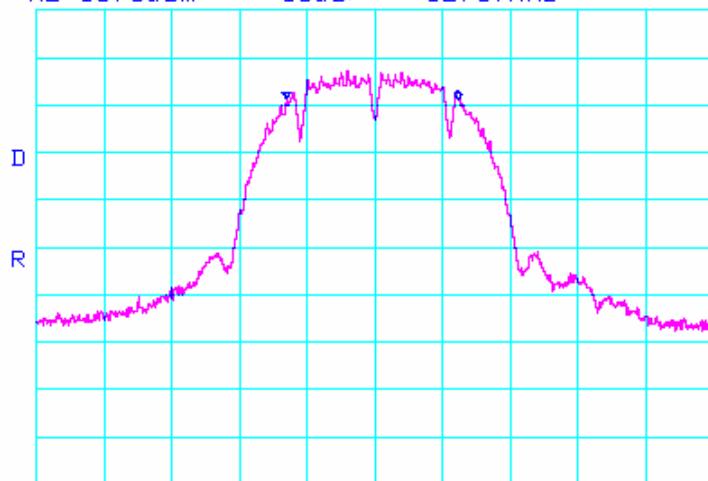
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .17dB
12.58MHz



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-060907-28b02)	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

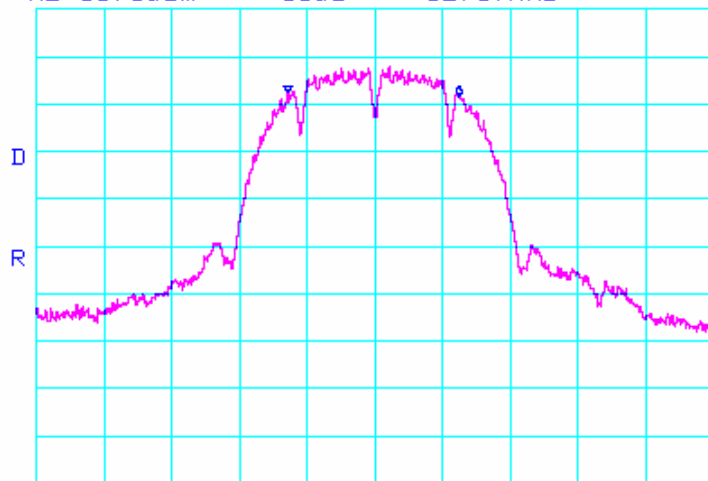


6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-060907-28b03)	A	JC

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

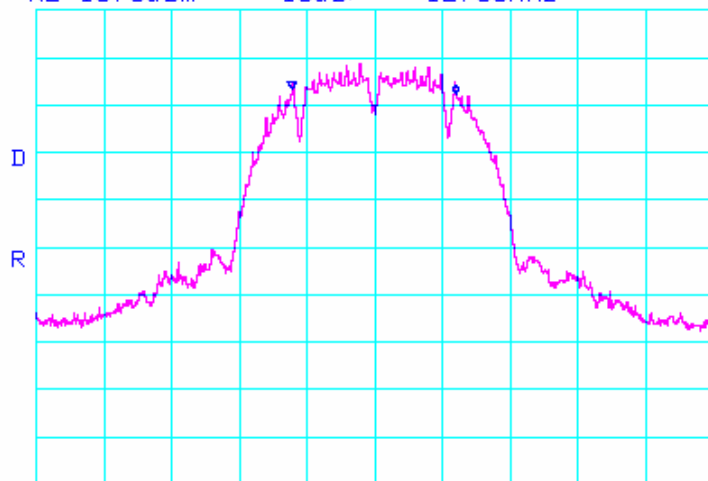


CENTER 2.46200GHz
*RBW 100kHz *VBW 300kHz
SPAN 50.00MHz
SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28b04)	B	JC

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



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

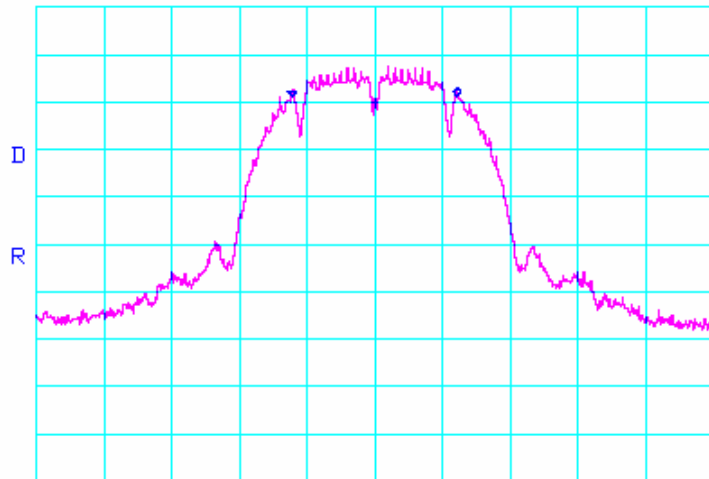


6dB Emissions Bandwidth (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28b05)	B	JC

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

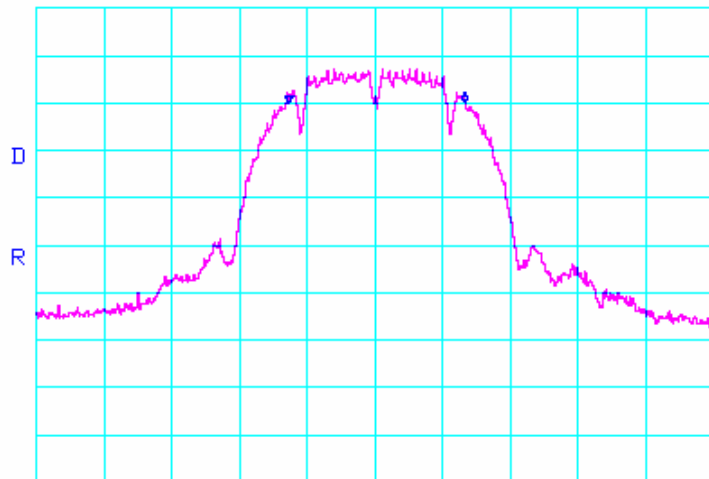


CENTER 2.43700GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-060907-28b06)	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



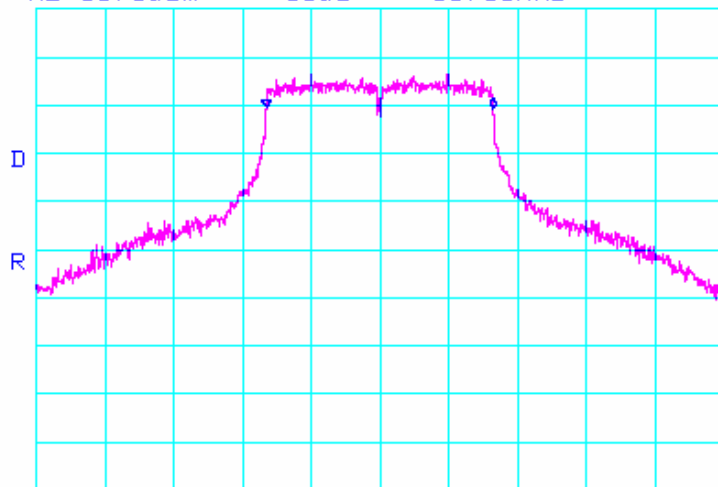


6dB Emissions Bandwidth (Continued)

802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-060907-29a01)	A	JC

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

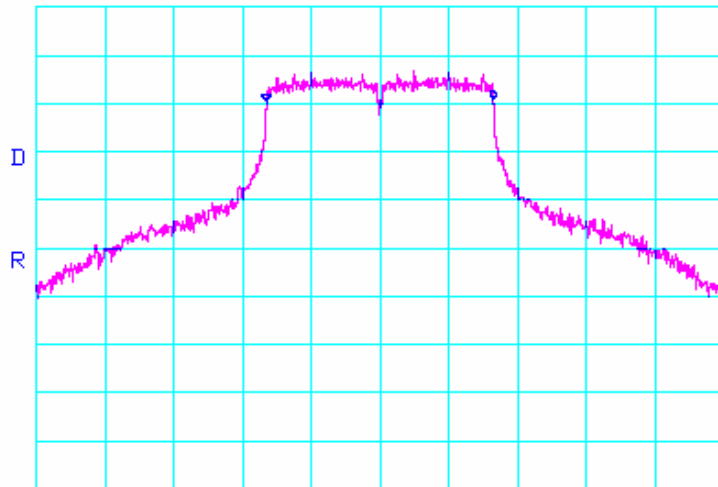


CENTER 2.41200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-060907-29a02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 16.50MHz
 Δ MKR .33dB

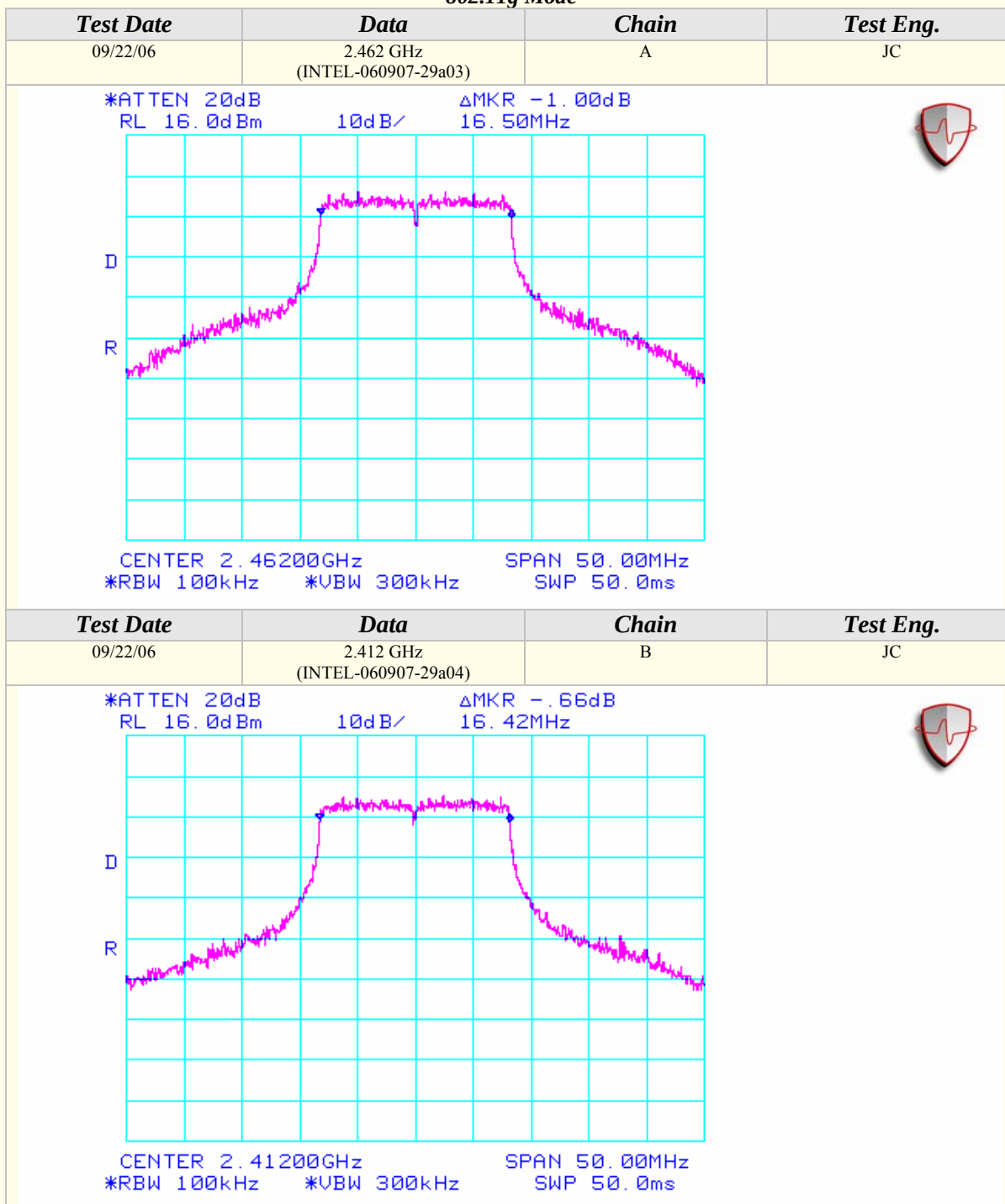


CENTER 2.43700GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



6dB Emissions Bandwidth (Continued)

802.11g Mode



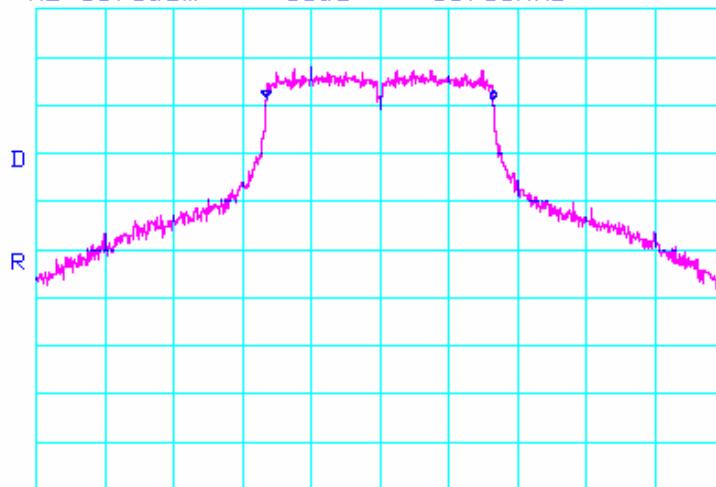


6dB Emissions Bandwidth (Continued)

802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-060907-29a05)	B	JC

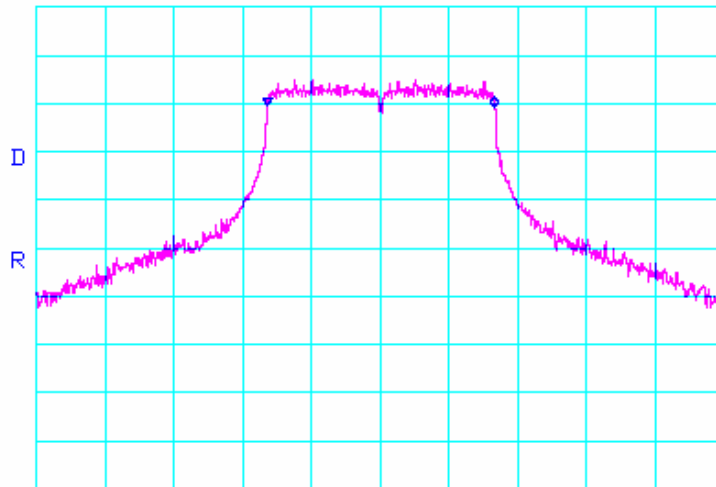
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.50dB
16.50MHz



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-060907-29a06)	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

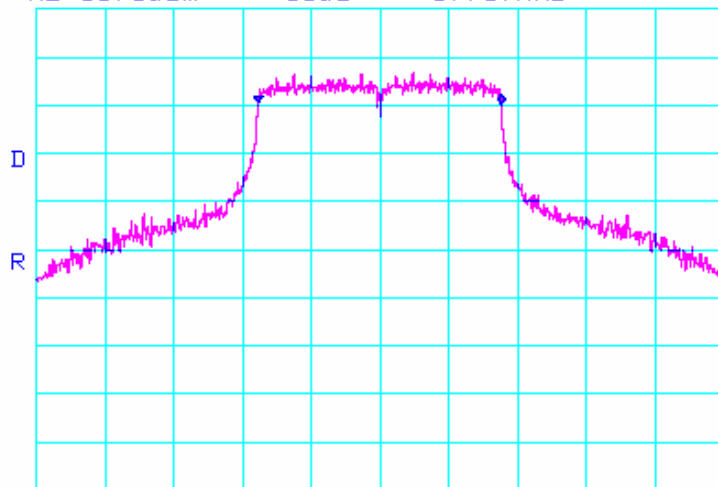


6dB Emissions Bandwidth (Continued)

802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.412 GHz (INTEL-060907-45a01)	A	JC

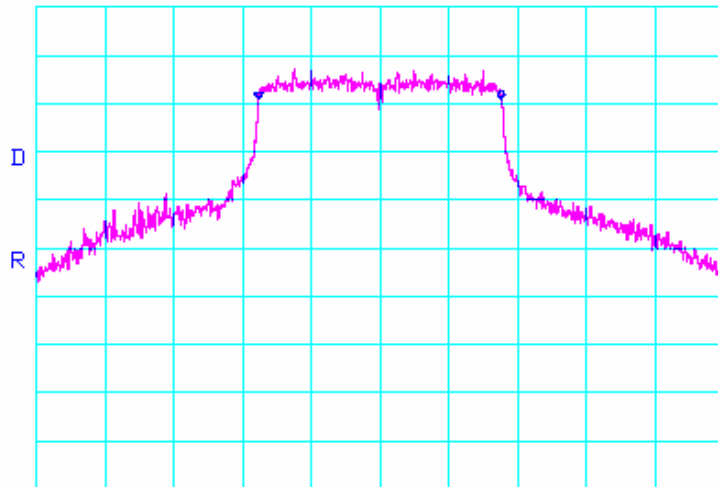
*ATTEN 20dB
RL 16.0dBm 10dB/ 17.67MHz
 Δ MKR -.50dB



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

Test Date	Data	Chain	Test Eng.
10/02/06	2.437 GHz (INTEL-060907-45a02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 17.67MHz
 Δ MKR -.17dB



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

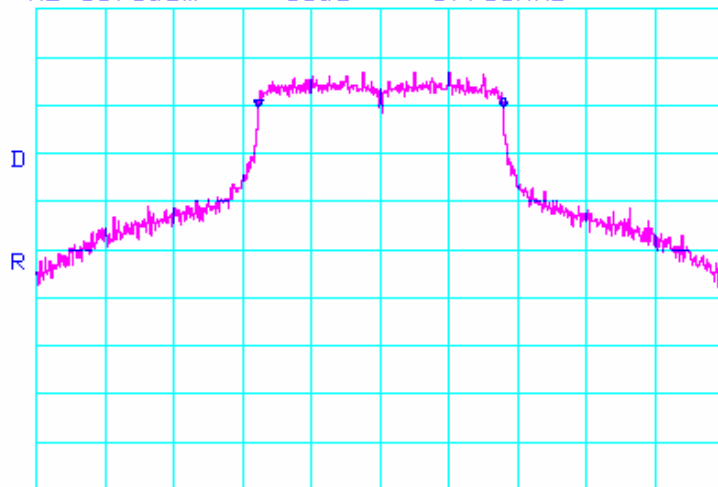


6dB Emissions Bandwidth (Continued)

802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.462 GHz (INTEL-060907-45a03)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 17.83MHz
 Δ MKR -.17dB

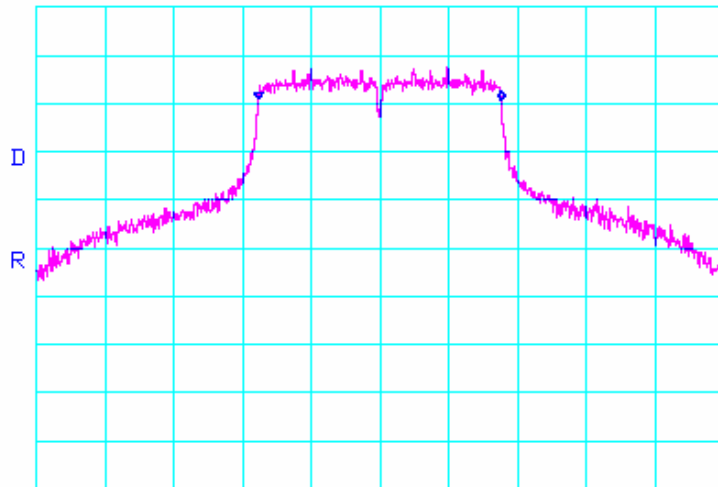


CENTER 2.46200GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
10/02/06	2.412 GHz (INTEL-060907-45a04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 17.67MHz
 Δ MKR -.33dB



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

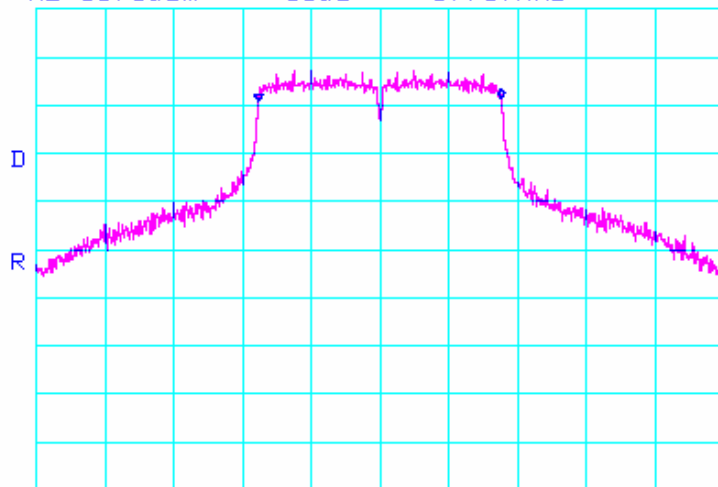


6dB Emissions Bandwidth (Continued)

802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.437 GHz (INTEL-060907-45a05)	B	JC

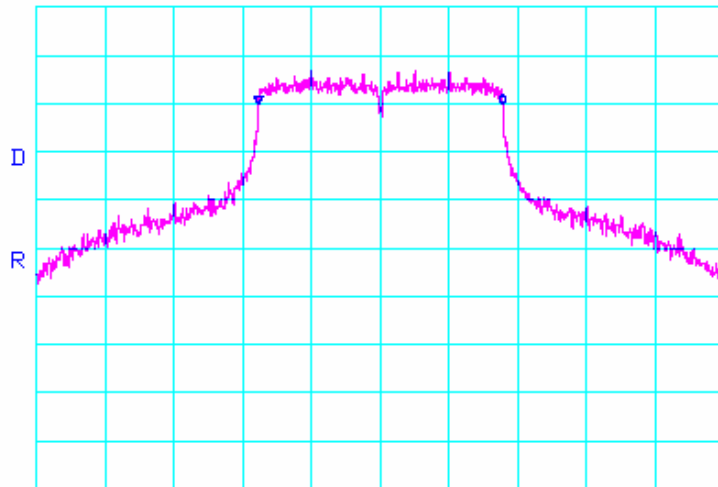
*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .67dB
17.67MHz



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

Test Date	Data	Chain	Test Eng.
10/02/06	2.462 GHz (INTEL-060907-45a06)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR -.17dB
17.75MHz



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

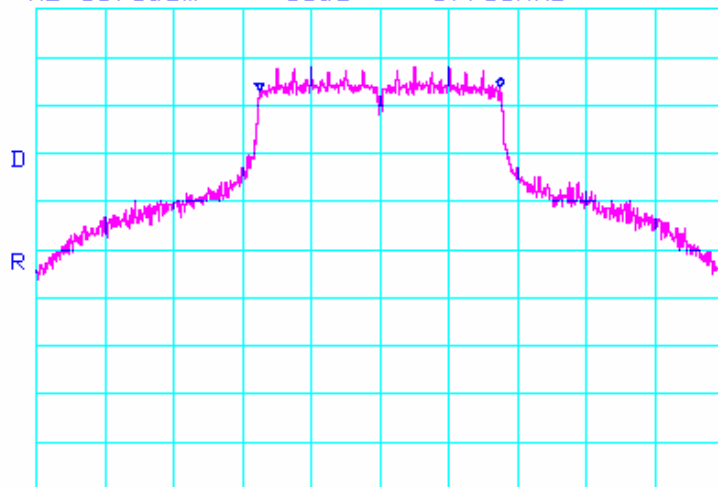


6dB Emissions Bandwidth (Continued)

802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48a01)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .66dB
17.50MHz

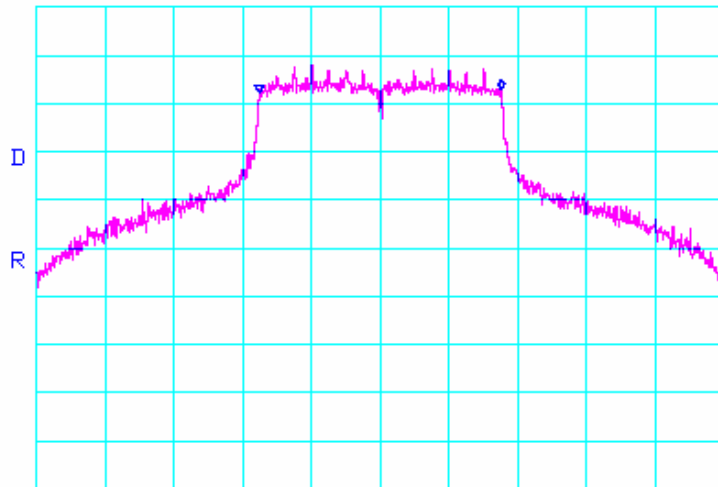


CENTER 5.74500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48a02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .67dB
17.58MHz



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

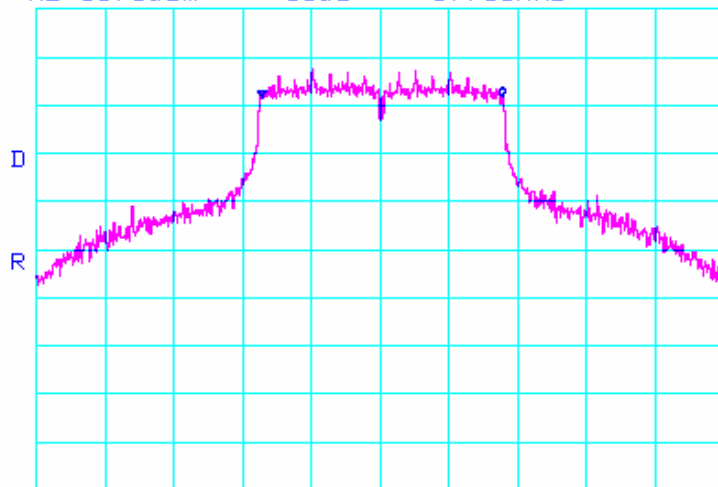


6dB Emissions Bandwidth (Continued)

802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48a03)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .16dB
17.50MHz

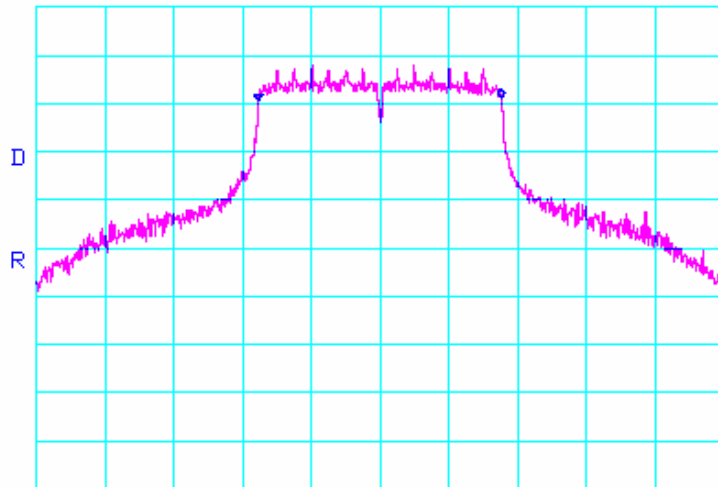


CENTER 5.82500GHz SPAN 50.00MHz
*RBW 100kHz *VBW 300kHz SWP 50.0ms



Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48a04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ ΔMKR .50dB
17.67MHz



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



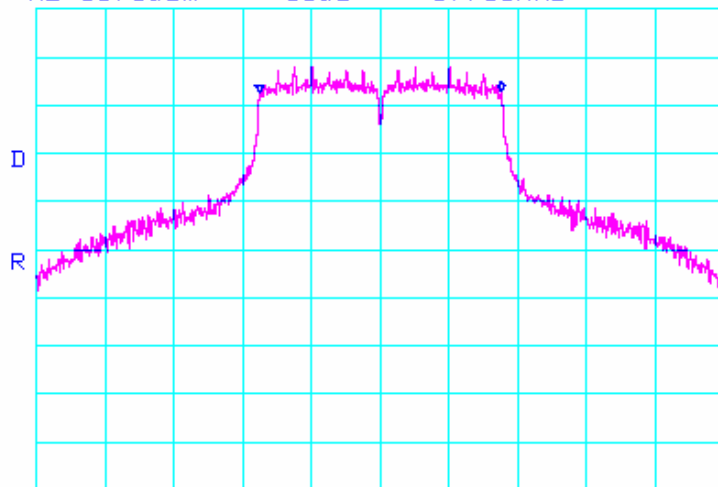


6dB Emissions Bandwidth (Continued)

802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48a05)	B	JC

*ATTEN 20dB
RL 16.0dBm
10dB/
 Δ MKR .17dB
17.58MHz

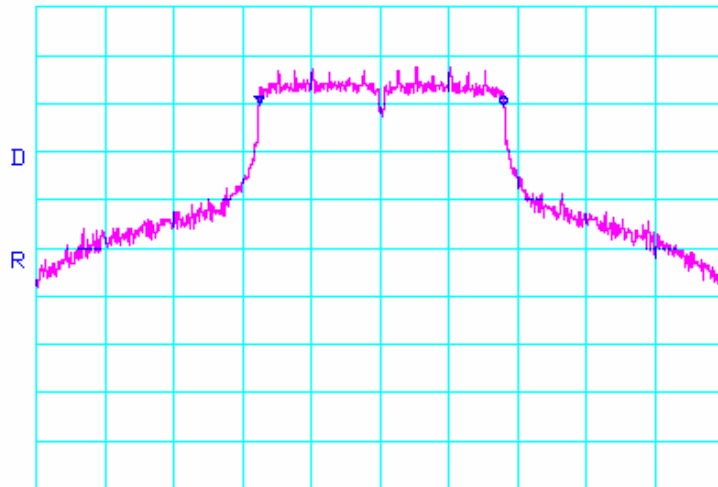


CENTER 5.78500GHz
*RBW 100kHz *VBW 300kHz
SPAN 50.00MHz
SWP 50.0ms



Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48a06)	B	JC

*ATTEN 20dB
RL 16.0dBm
10dB/
 Δ MKR -.50dB
17.75MHz



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



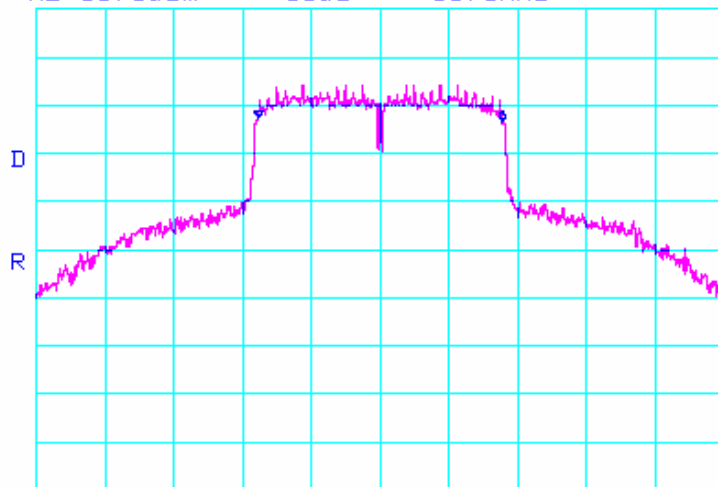


6dB Emissions Bandwidth (Continued)

802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51a01)	A	JC

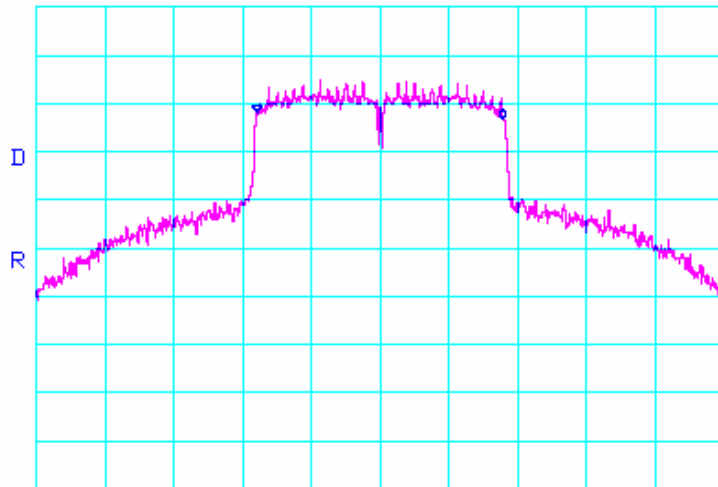
*ATTEN 20dB
RL 16.0dBm 10dB/ 35.5MHz
 Δ MKR -.83dB



CENTER 5.7550GHz SPAN 100.0MHz
*RBW 100kHz *VBW 300kHz SWP 55.0ms

Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51a02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 35.7MHz
 Δ MKR -1.34dB



CENTER 5.7950GHz SPAN 100.0MHz
*RBW 100kHz *VBW 300kHz SWP 55.0ms

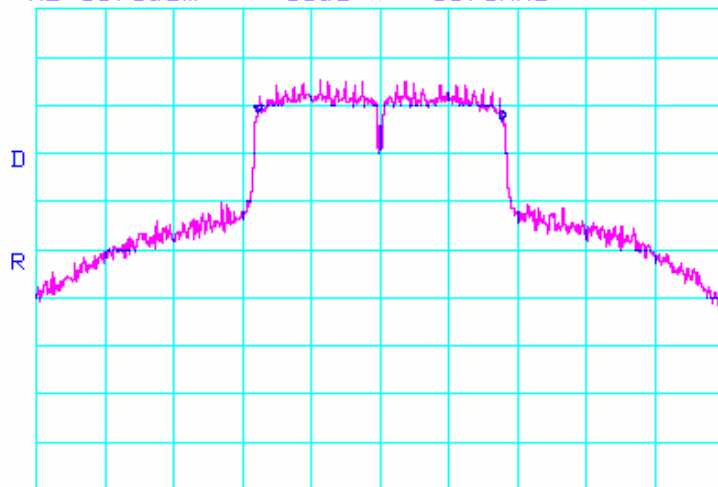


6dB Emissions Bandwidth (Continued)

802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51a03)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 35.5MHz
 Δ MKR -1.50dB

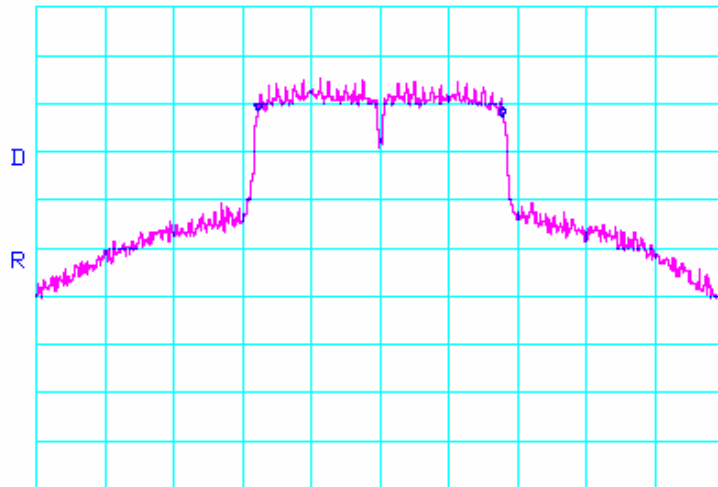


CENTER 5.7550GHz SPAN 100.0MHz
*RBW 100kHz *VBW 300kHz SWP 55.0ms



Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51a04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ 35.5MHz
 Δ MKR -1.17dB



CENTER 5.7950GHz SPAN 100.0MHz
*RBW 100kHz *VBW 300kHz SWP 55.0ms





PEAK POWER SPECTRAL DENSITY

CLIENT:	Dell Computer Corporation	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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

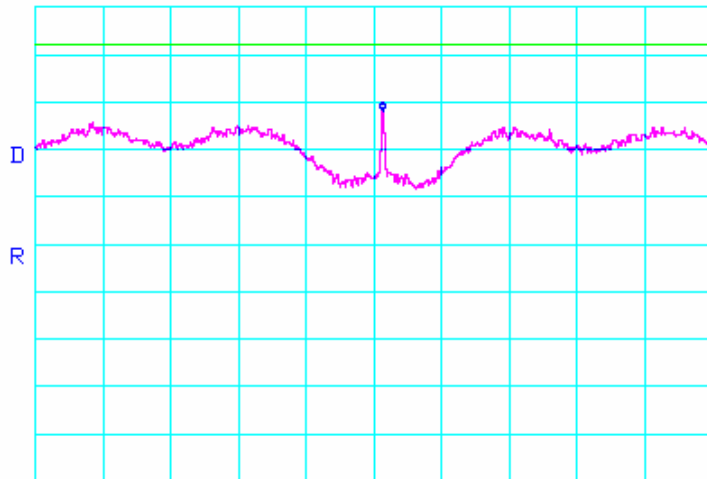


Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27c01)	A	JC

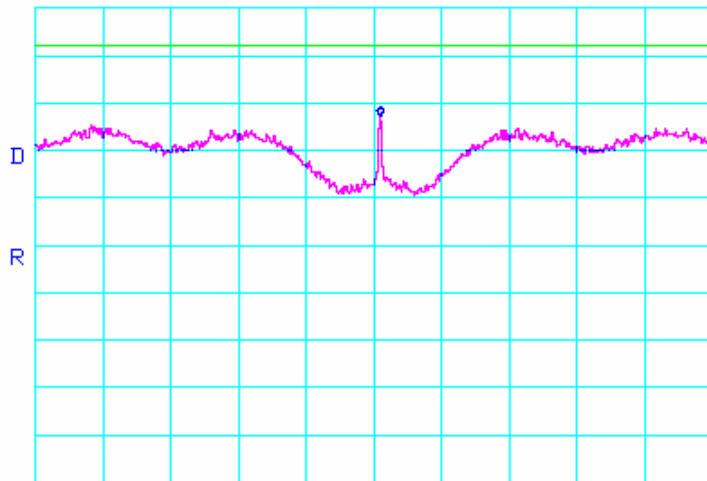
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -5.83dBm
5.745020GHz



CENTER 5.745000GHz SPAN 1.500MHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27c02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -6.67dBm
5.785015GHz



CENTER 5.785000GHz SPAN 1.500MHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec

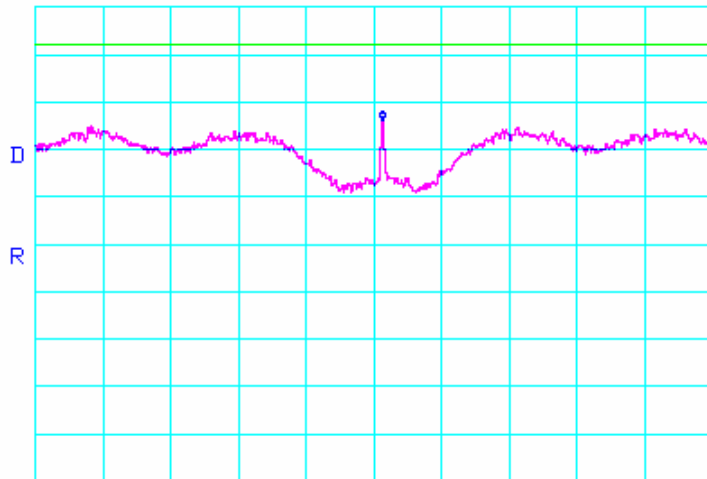


Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27c03)	A	JC

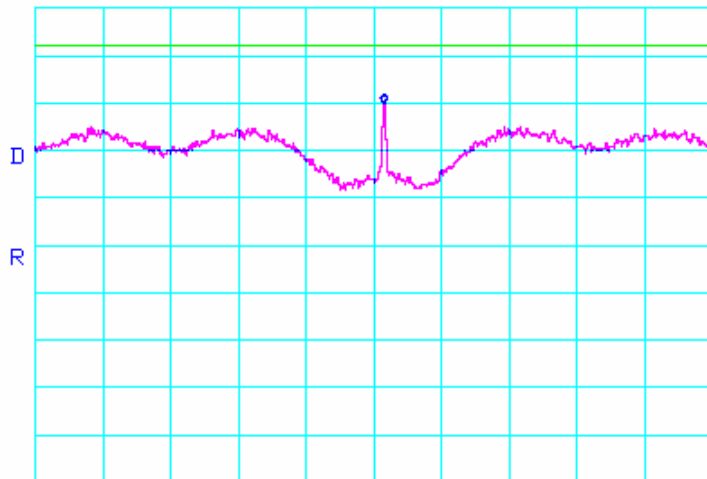
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -7.83dBm
5.825020GHz



CENTER 5.825000GHz SPAN 1.500MHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27c04)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -4.00dBm
5.745023GHz



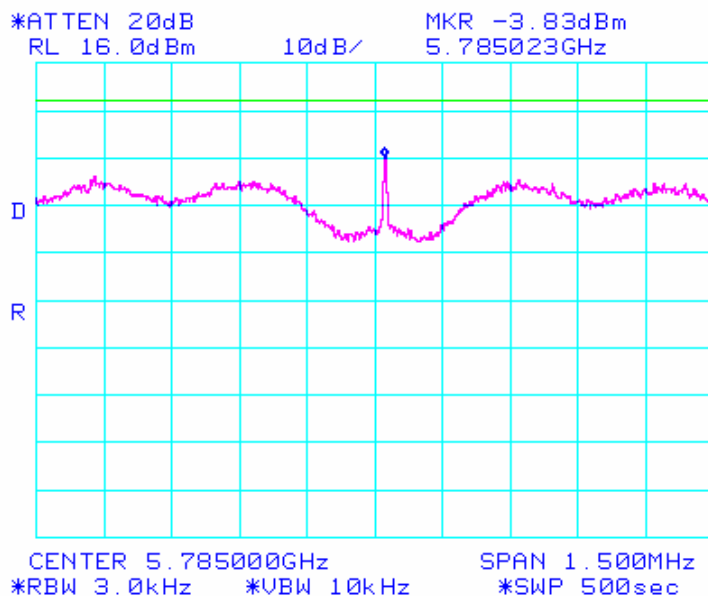
CENTER 5.745000GHz SPAN 1.500MHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec



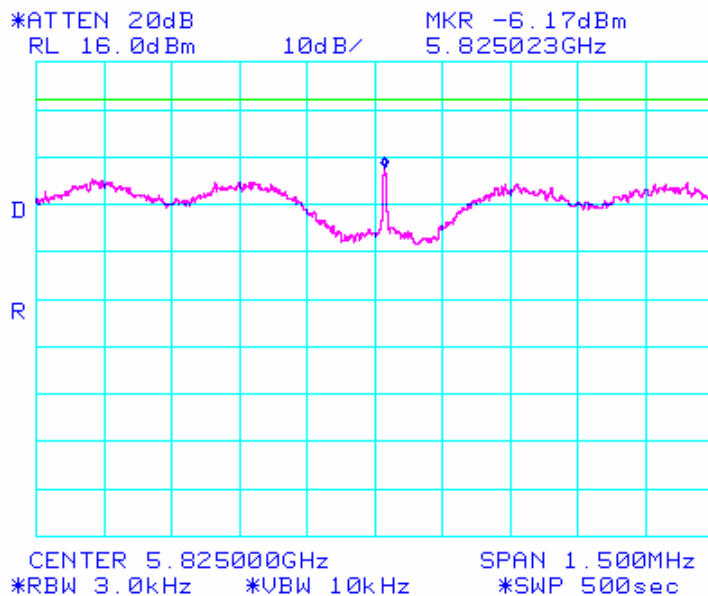
Peak Power Spectral Density (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27c05)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27c06)	B	JC



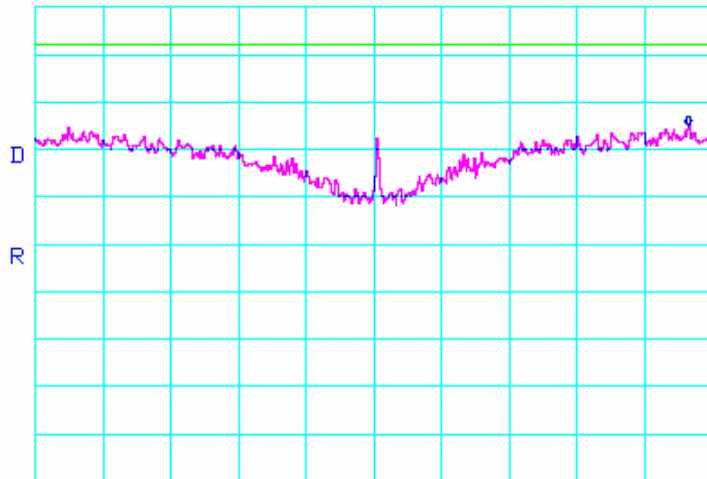


Peak Power Spectral Density (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28d01)	A	JC

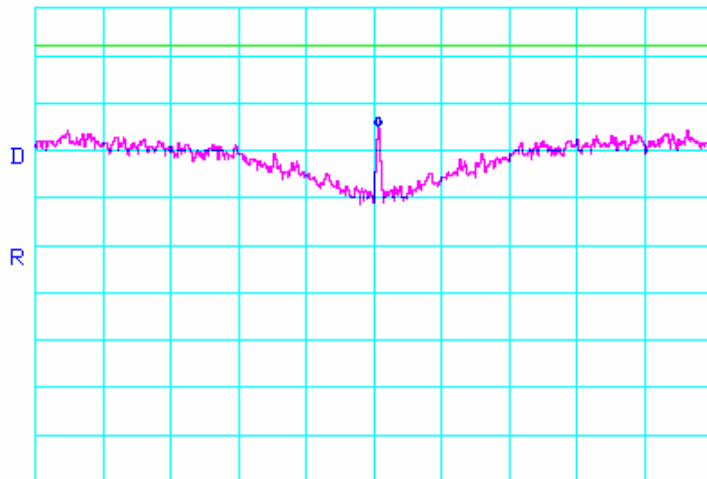
*ATTEN 20dB
RL 16.0dBm
10dB/
MKR -9.00dBm
2.412698GHz



CENTER 2.412000GHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec
SPAN 1.500MHz

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28d02)	A	JC

*ATTEN 20dB
RL 16.0dBm
10dB/
MKR -9.00dBm
2.437010GHz

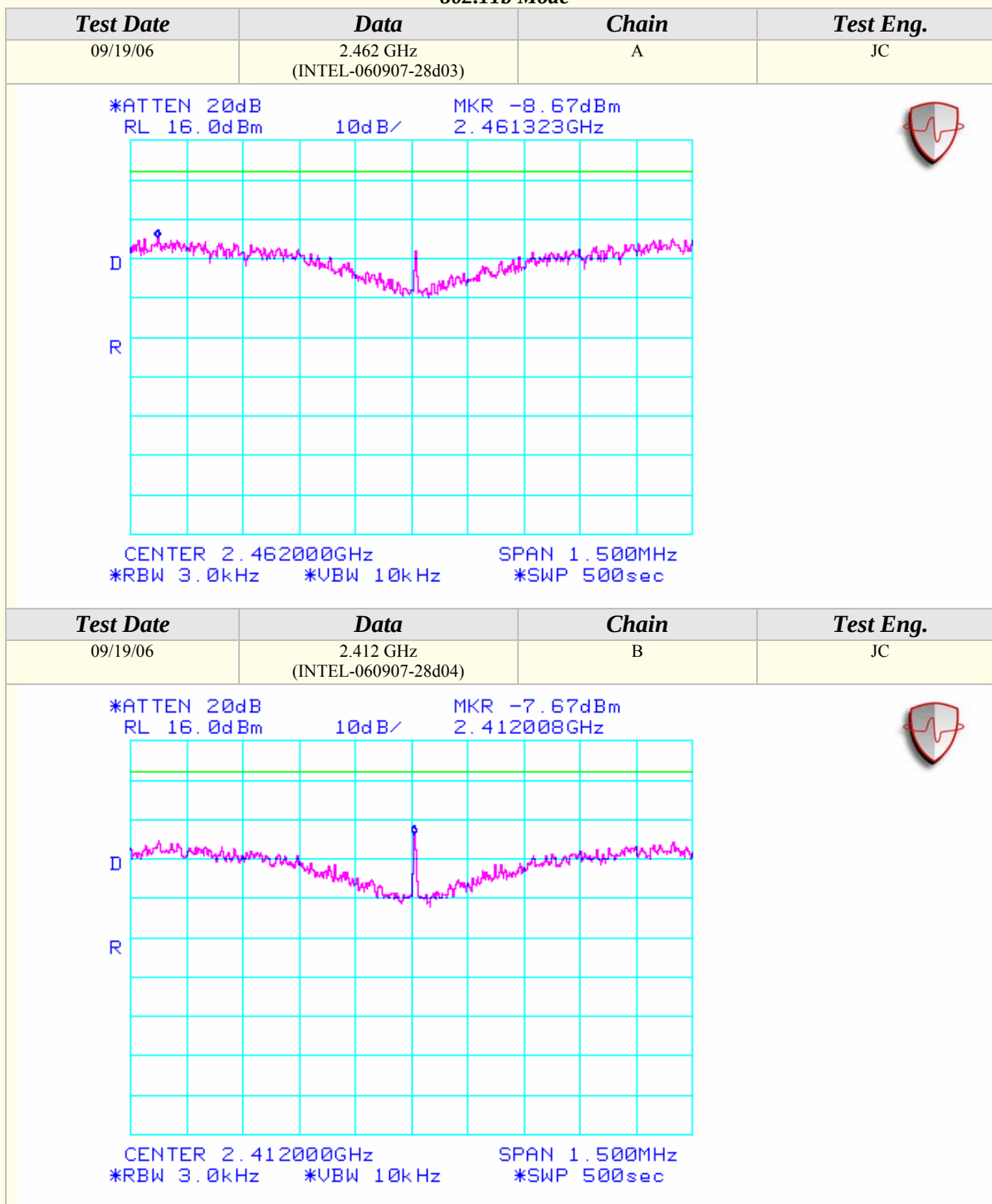


CENTER 2.437000GHz
*RBW 3.0kHz *VBW 10kHz *SWP 500sec
SPAN 1.500MHz



Peak Power Spectral Density (Continued)

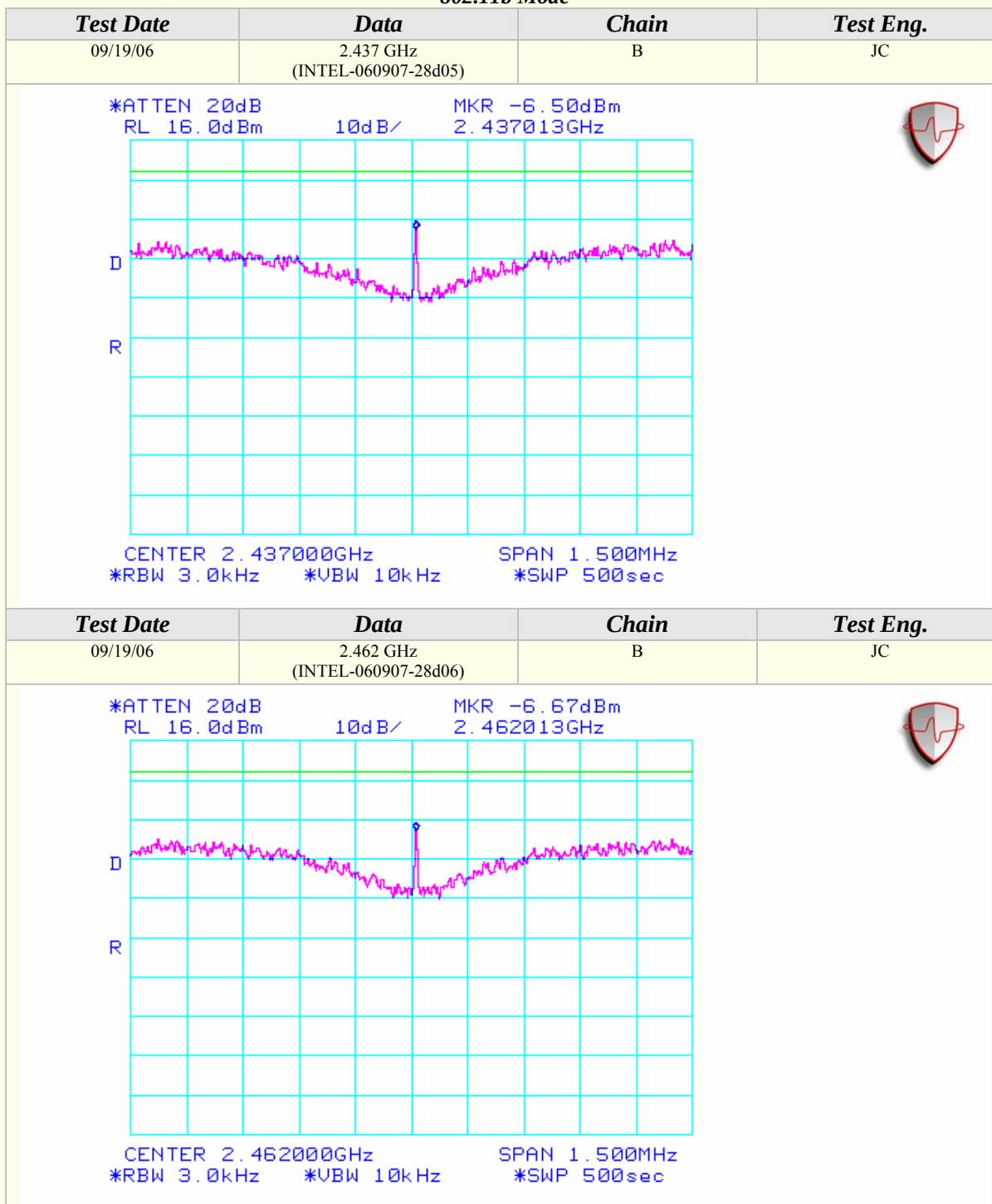
802.11b Mode





Peak Power Spectral Density (Continued)

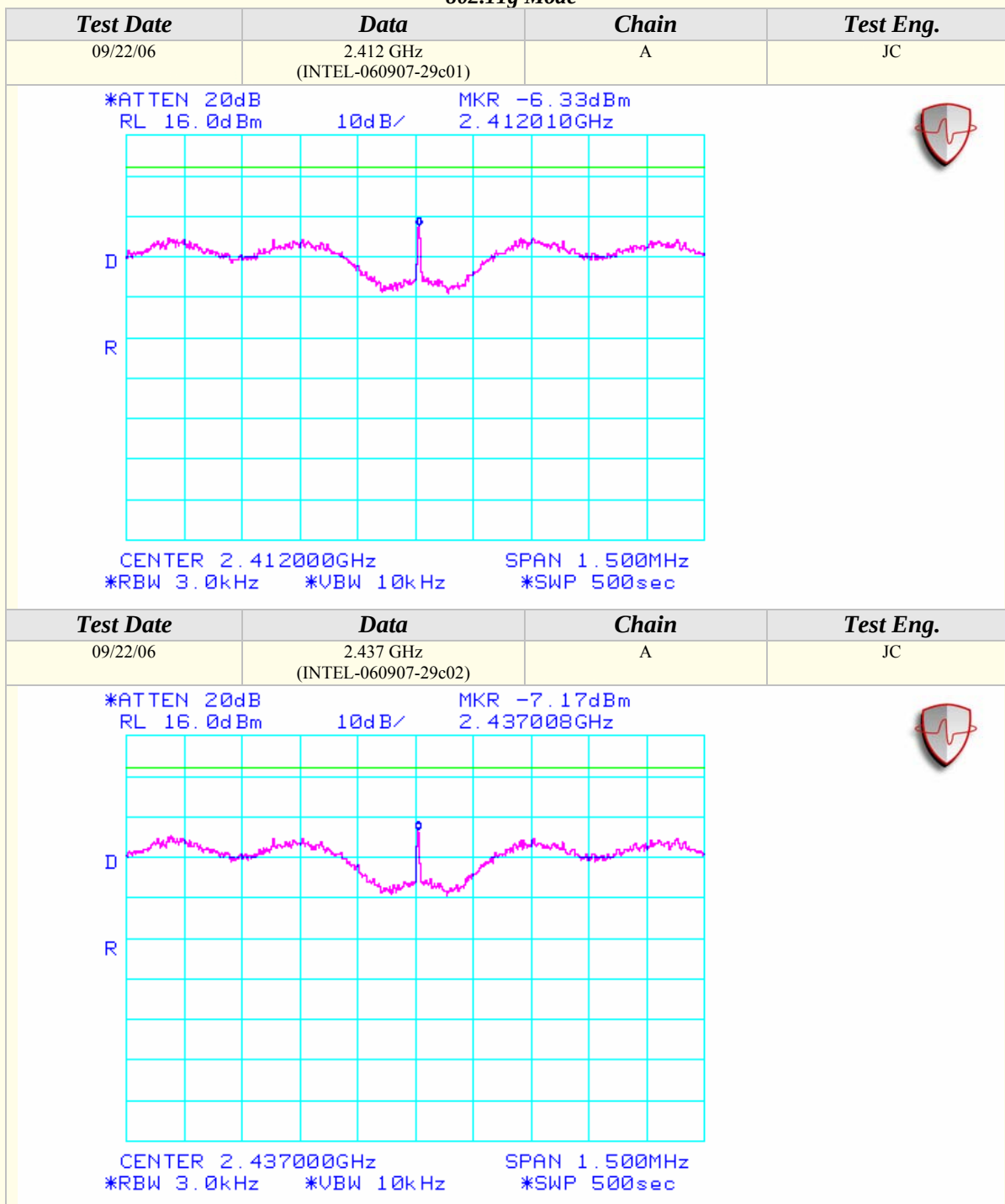
802.11b Mode





Peak Power Spectral Density (Continued)

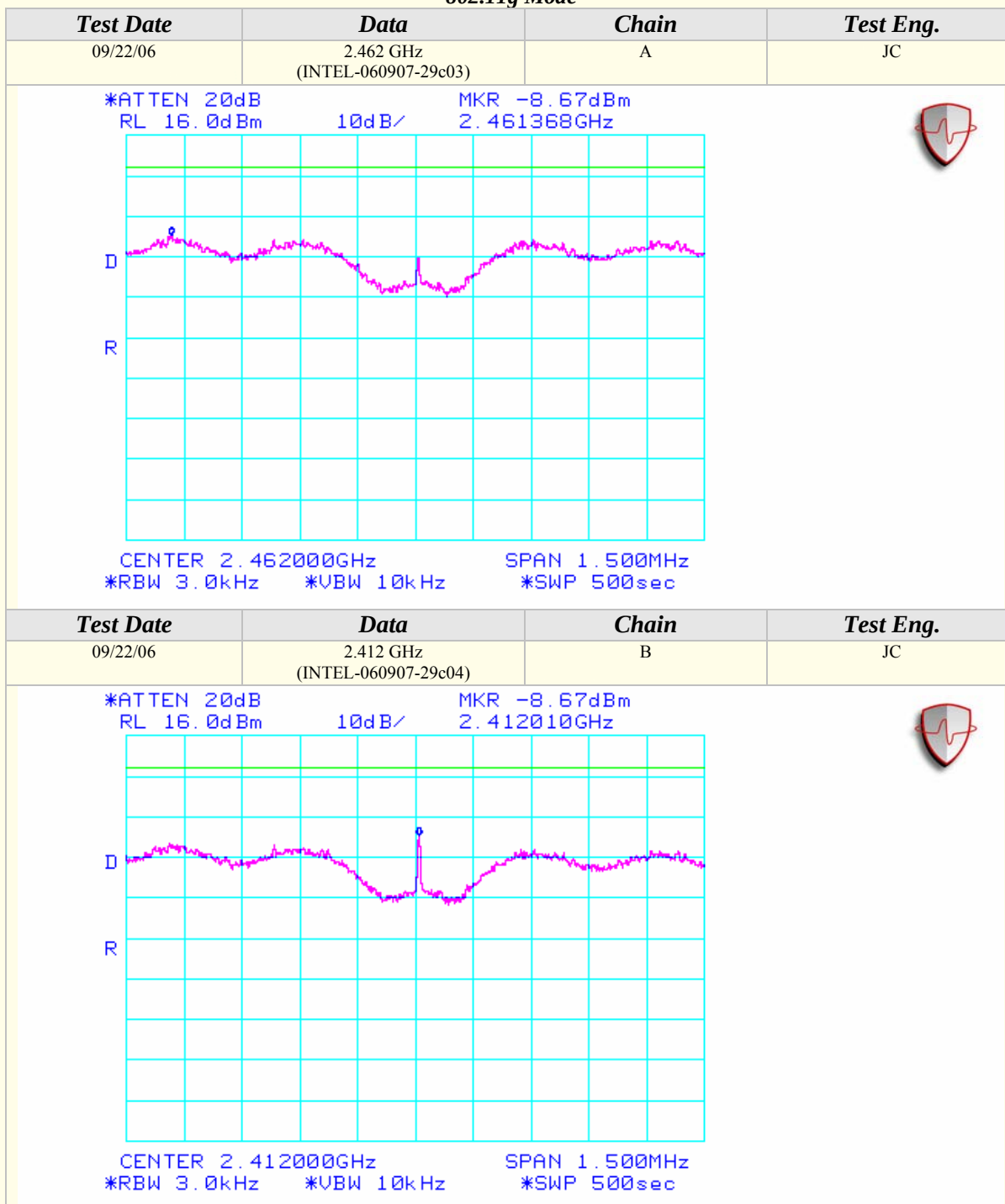
802.11g Mode





Peak Power Spectral Density (Continued)

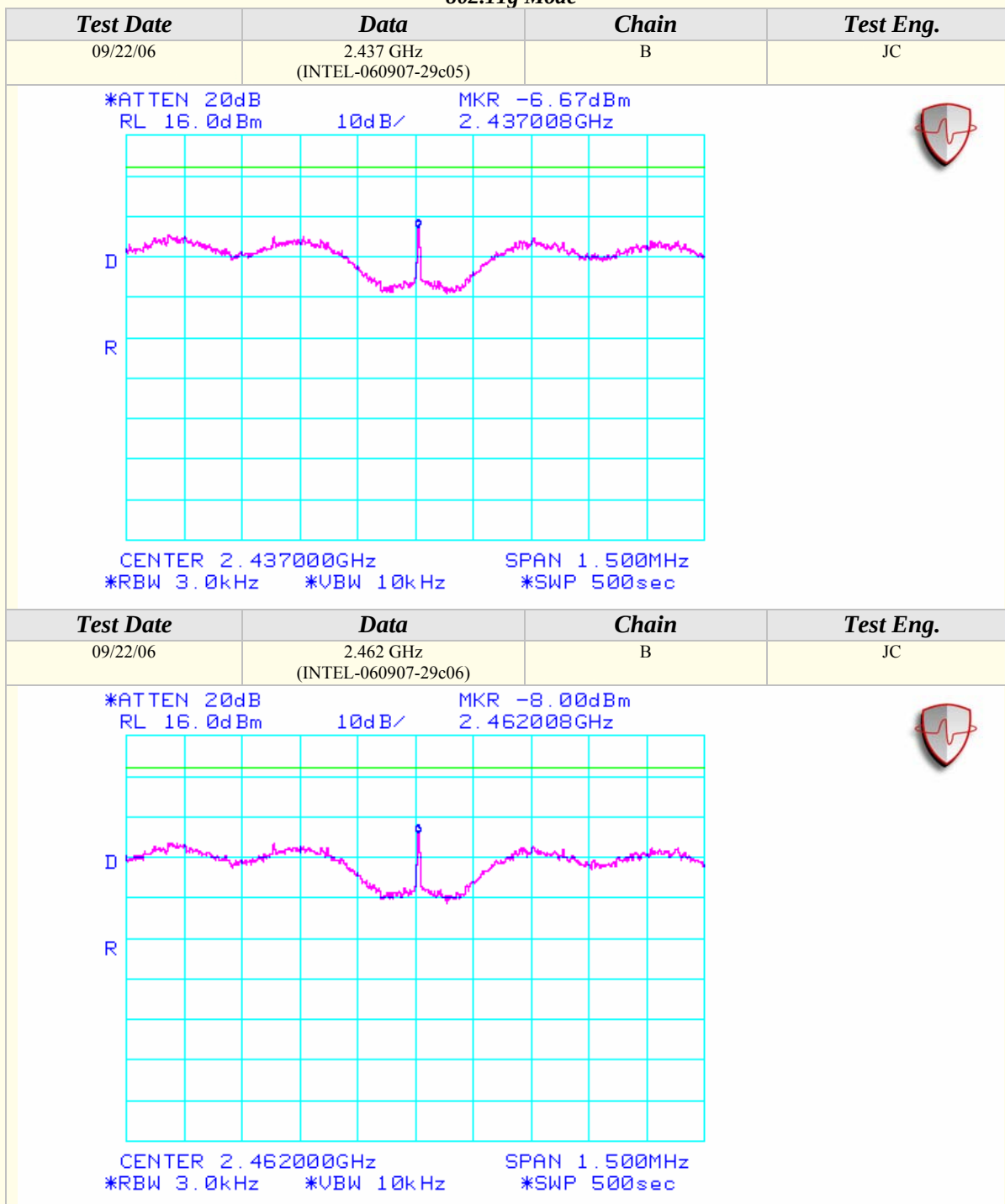
802.11g Mode





Peak Power Spectral Density (Continued)

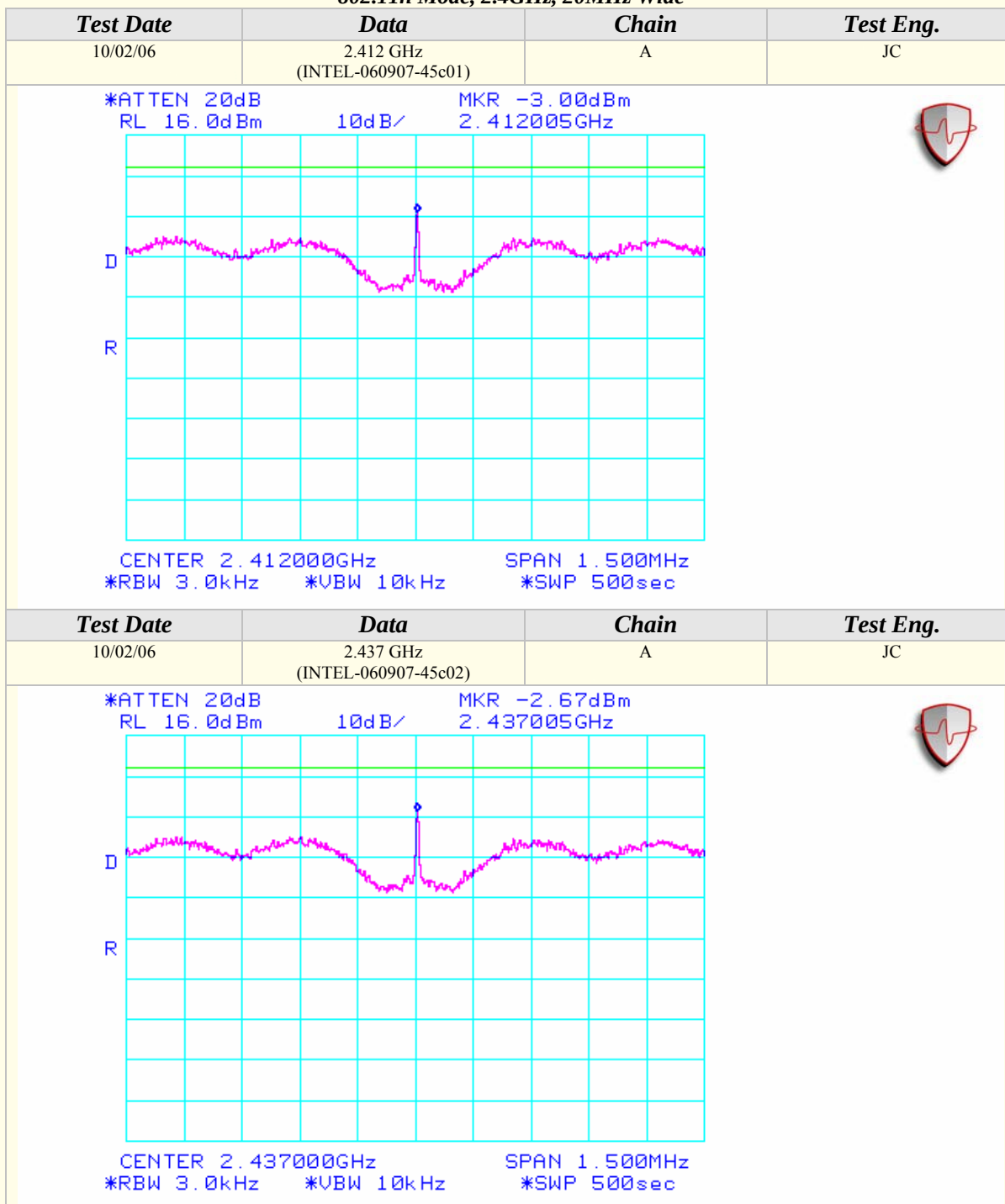
802.11g Mode





Peak Power Spectral Density (Continued)

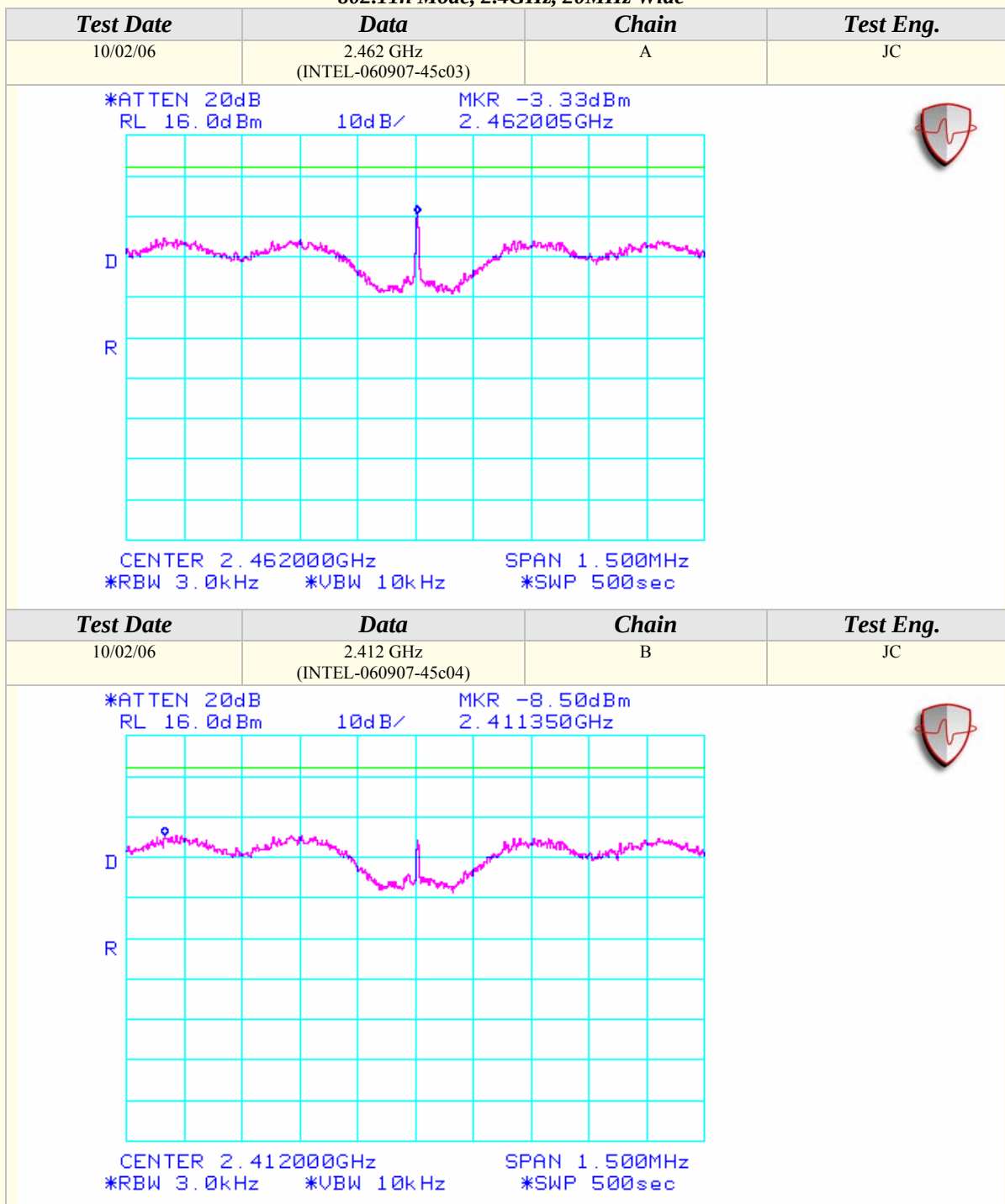
802.11n Mode, 2.4GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

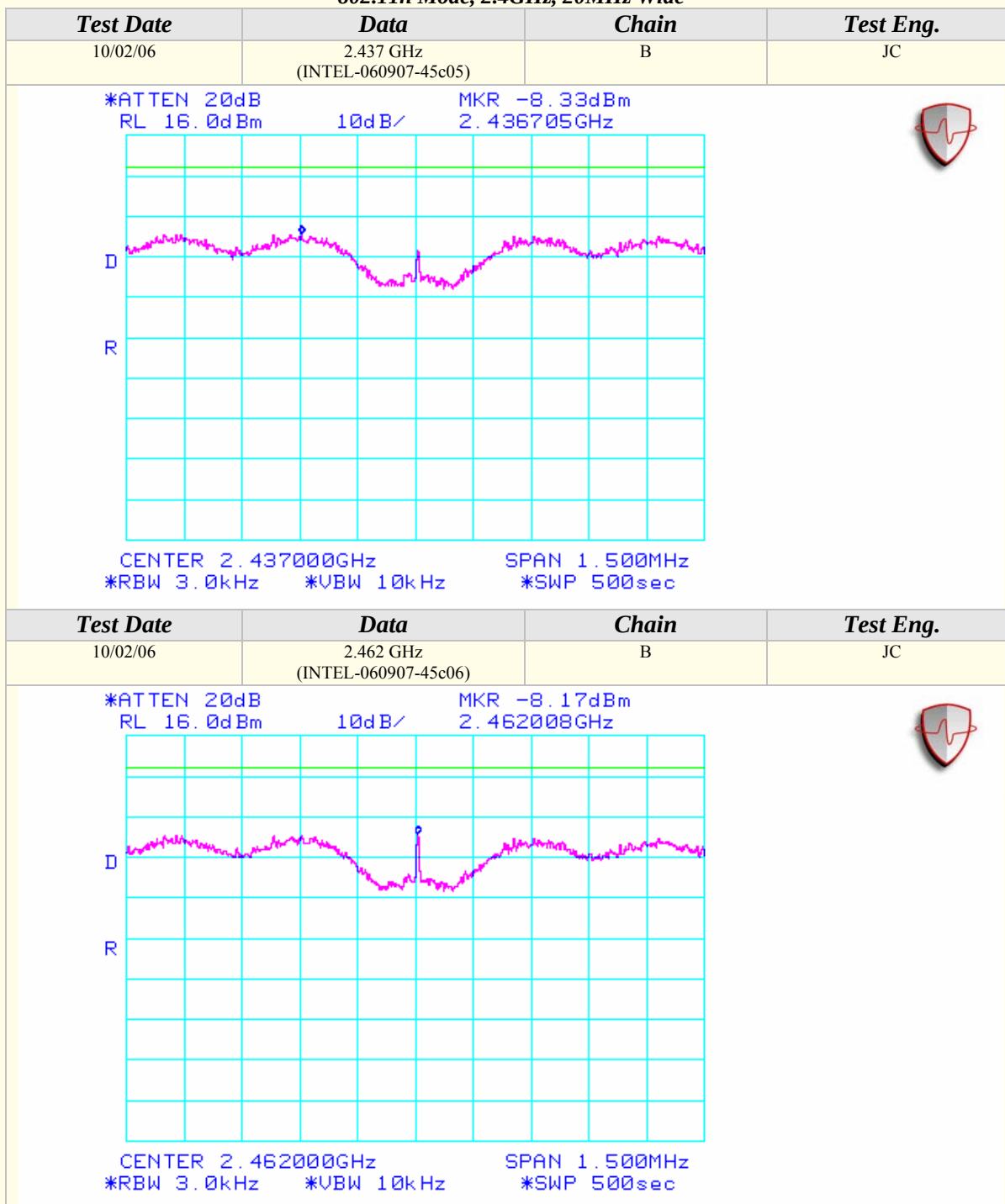
802.11n Mode, 2.4GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

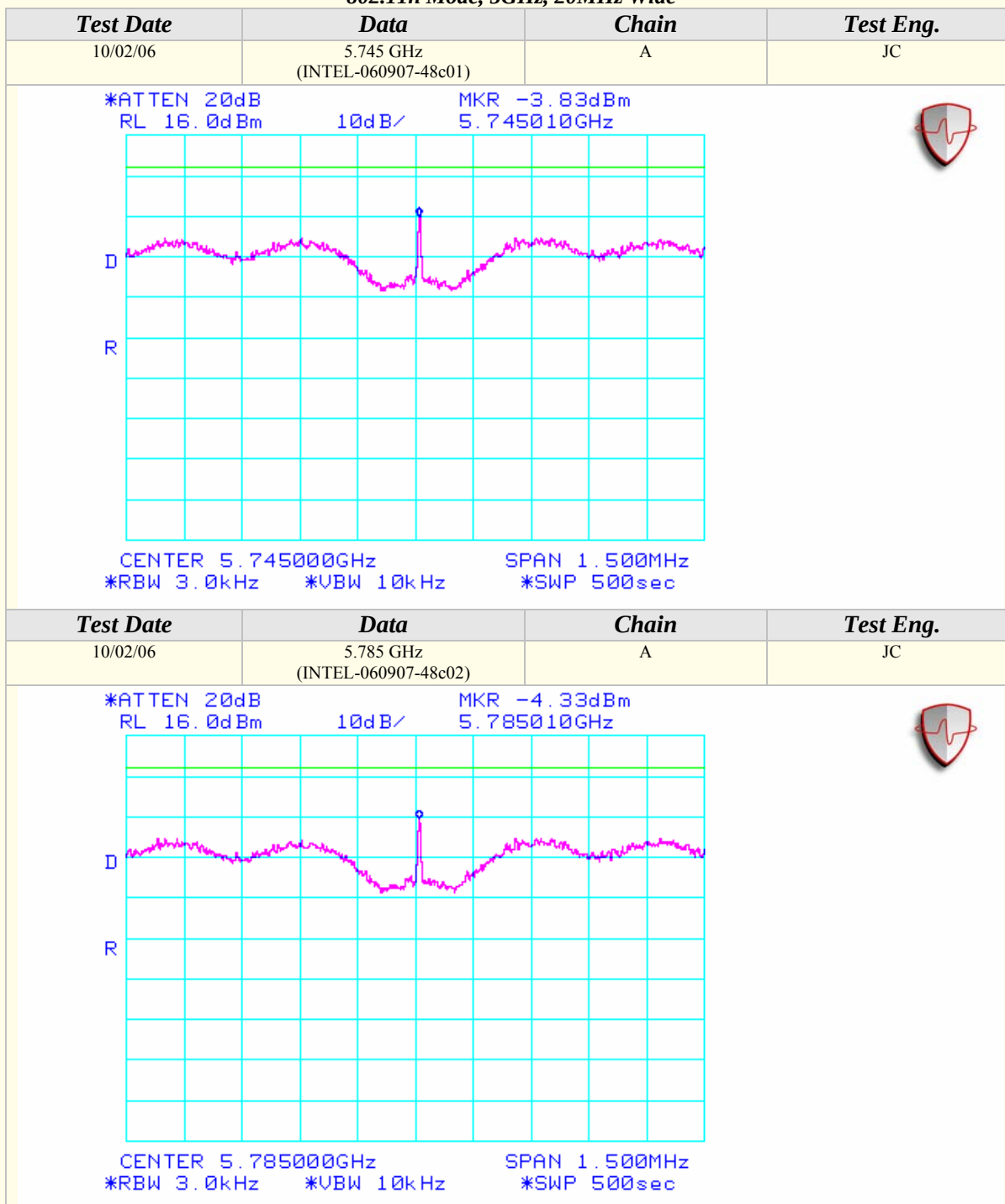
802.11n Mode, 2.4GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

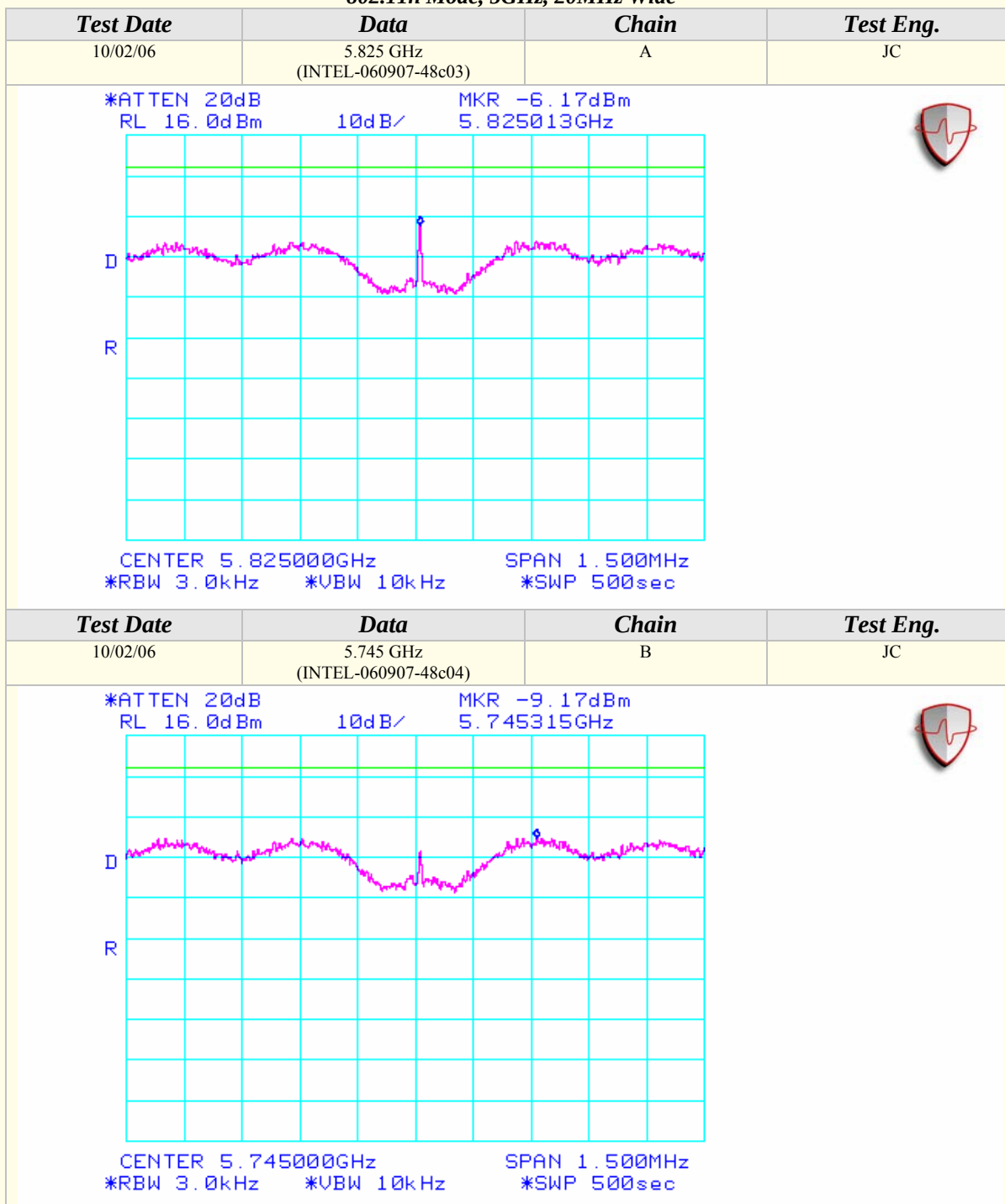
802.11n Mode, 5GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

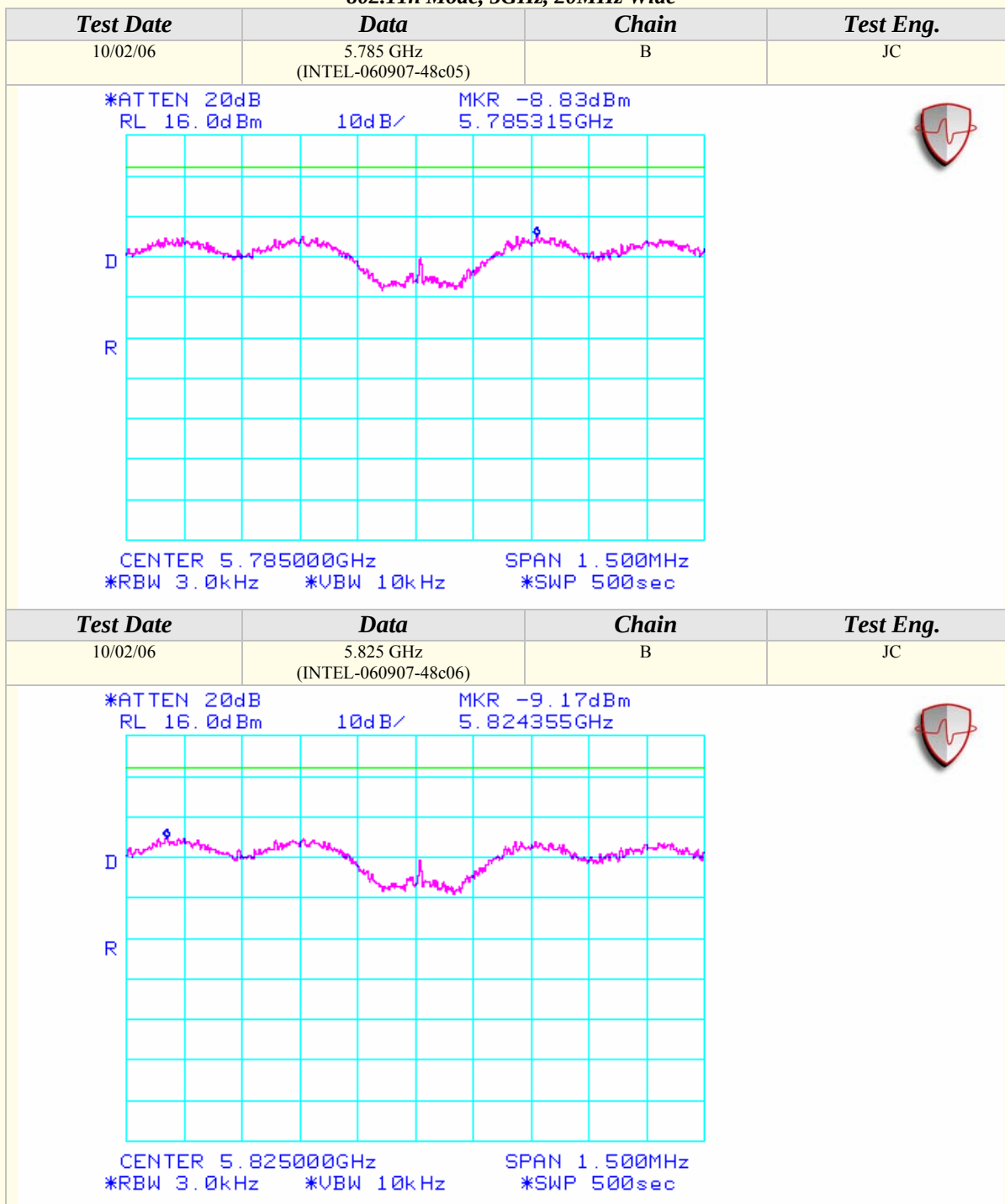
802.11n Mode, 5GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

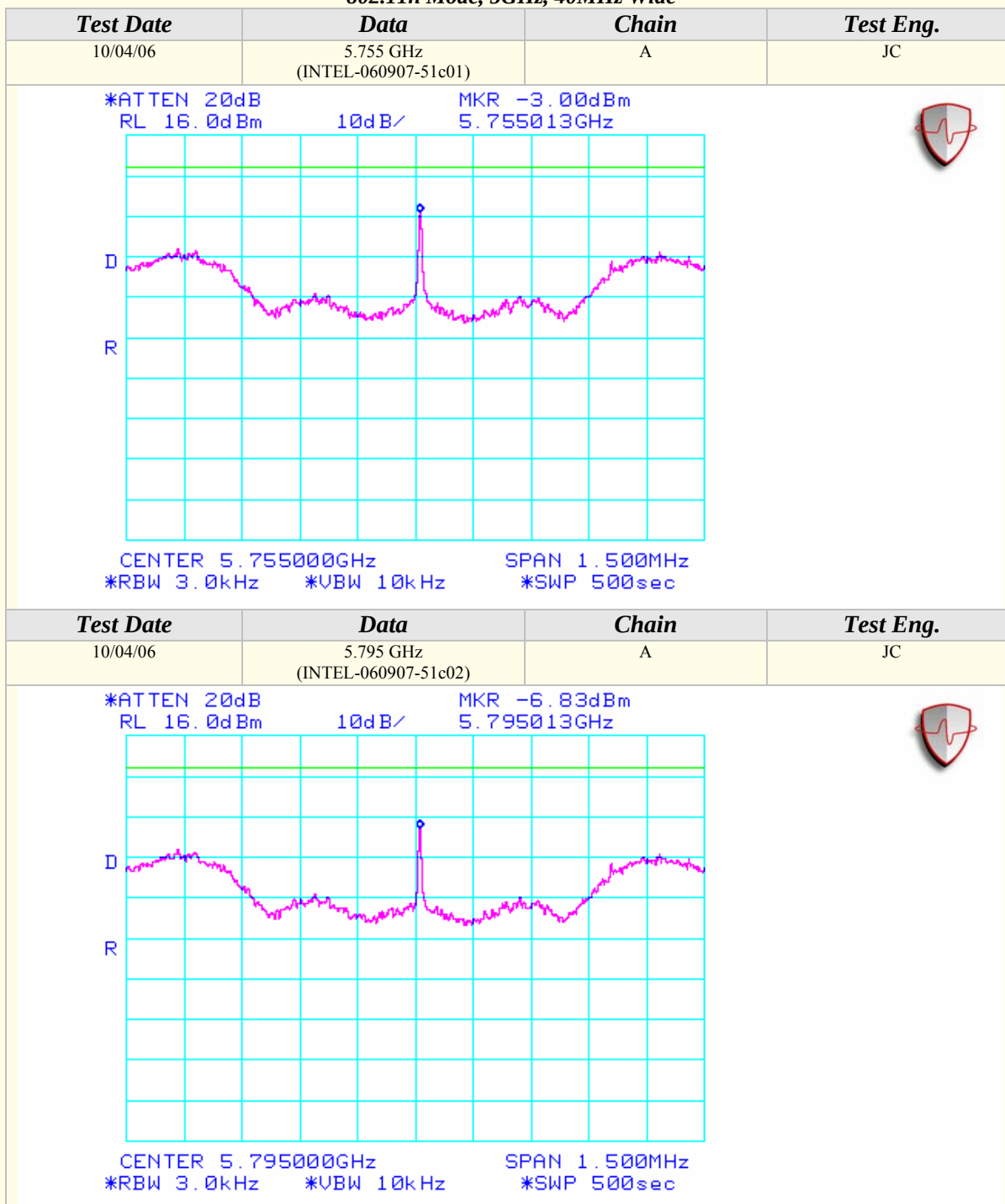
802.11n Mode, 5GHz, 20MHz Wide





Peak Power Spectral Density (Continued)

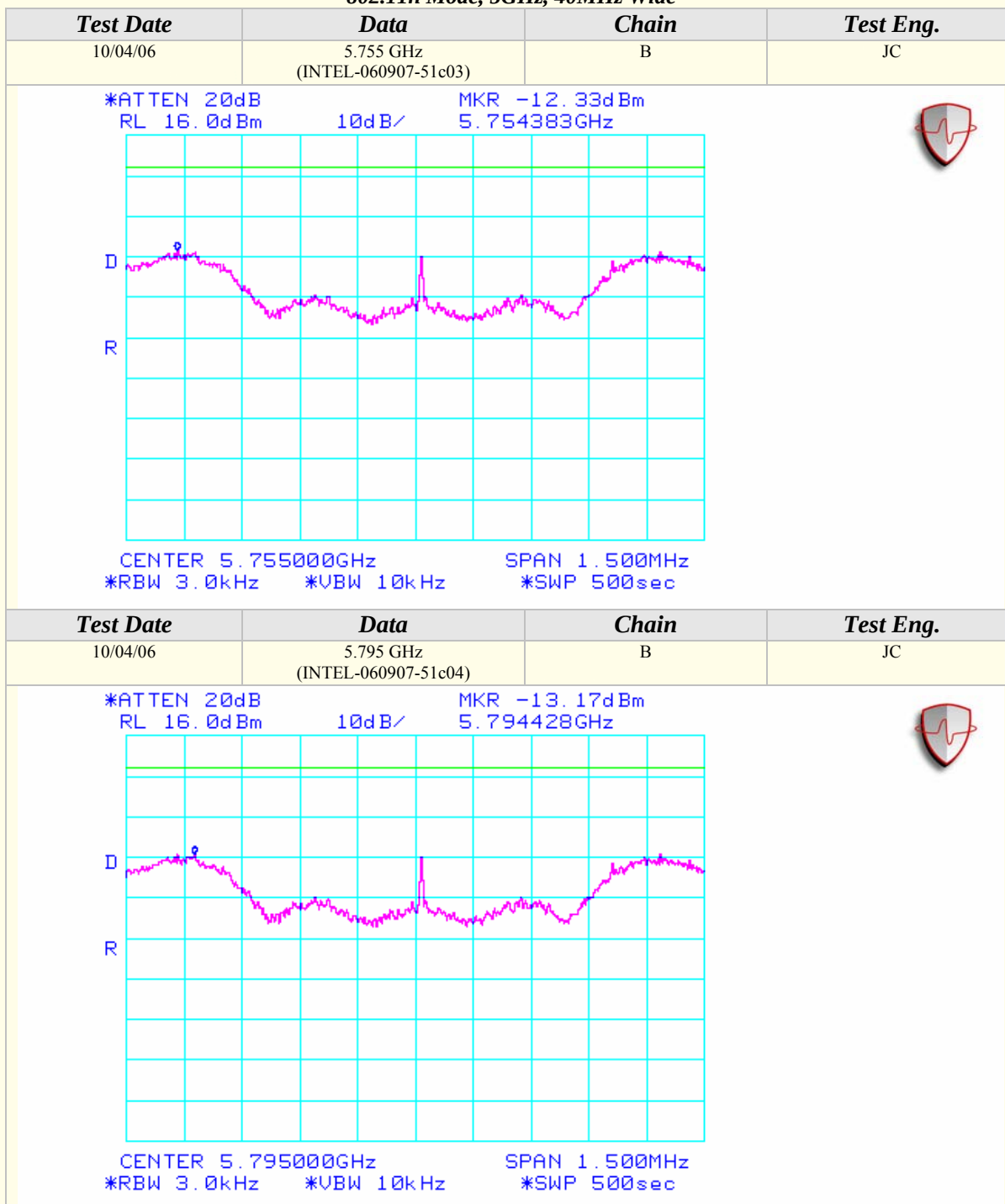
802.11n Mode, 5GHz, 40MHz Wide





Peak Power Spectral Density (Continued)

802.11n Mode, 5GHz, 40MHz Wide





CONDUCTED OUT OF BAND EMISSIONS

CLIENT:	Dell Computer Corporation	DATE:	09/19/06
EUT:	Intel Wireless WiFi Link 4965AGN	PROJECT NUMBER:	INTEL-060907
MODEL NUMBER:	4965AGN	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.

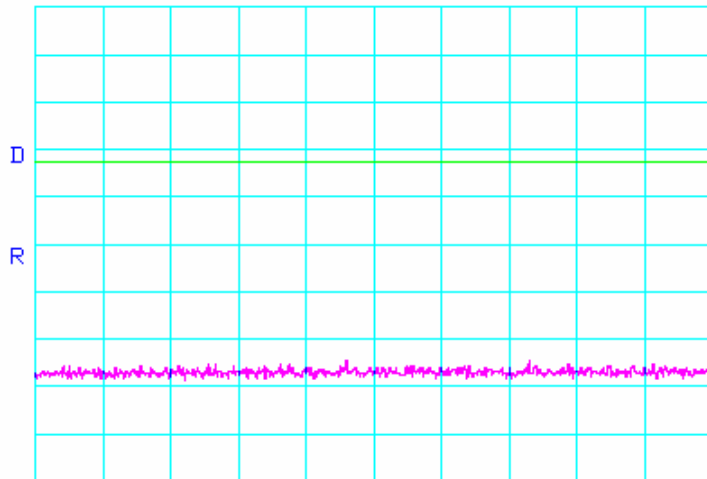


Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d01)	A	JC

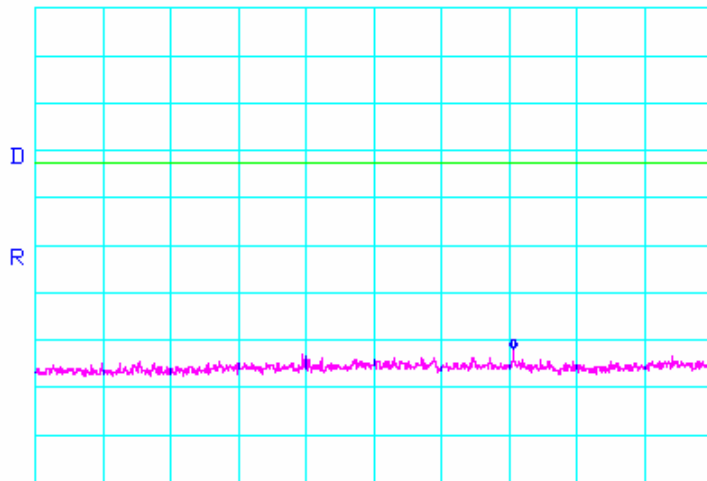
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -58.17dBm
1.0000GHz



START 30.0MHz STOP 1.0000GHz
*RBW 100kHz *VBW 300kHz SWP 540ms

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d02)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -55.83dBm
3.827GHz



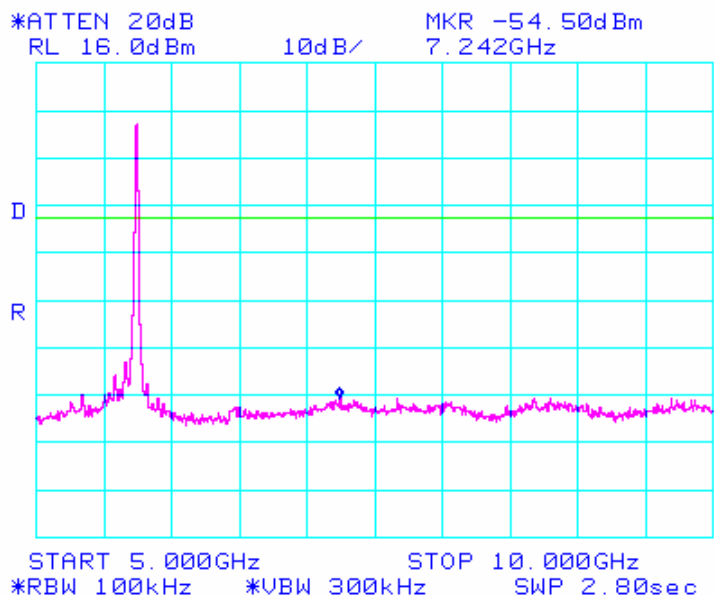
START 1.000GHz STOP 5.000GHz
*RBW 100kHz *VBW 300kHz SWP 2.20sec



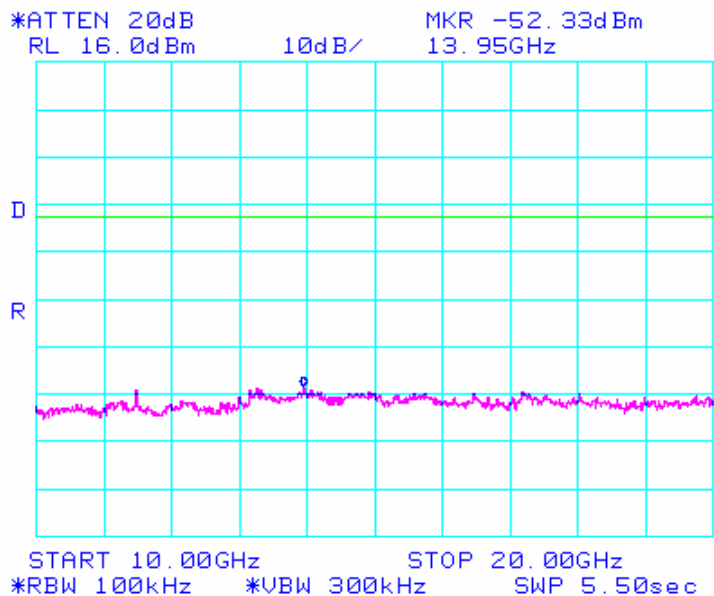
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d03)	A	JC



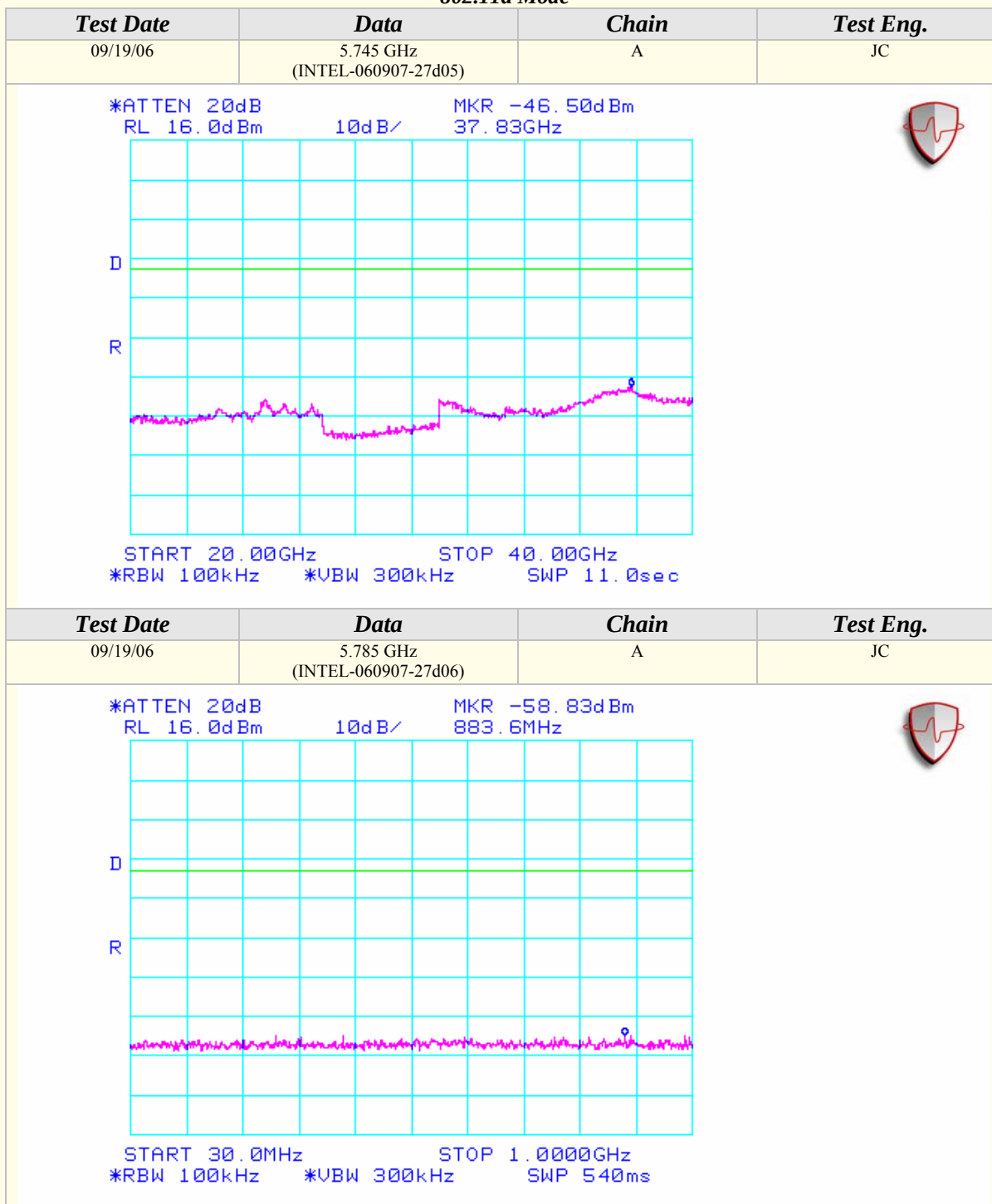
Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d04)	A	JC





Conducted Out Of Band Emissions (Continued)

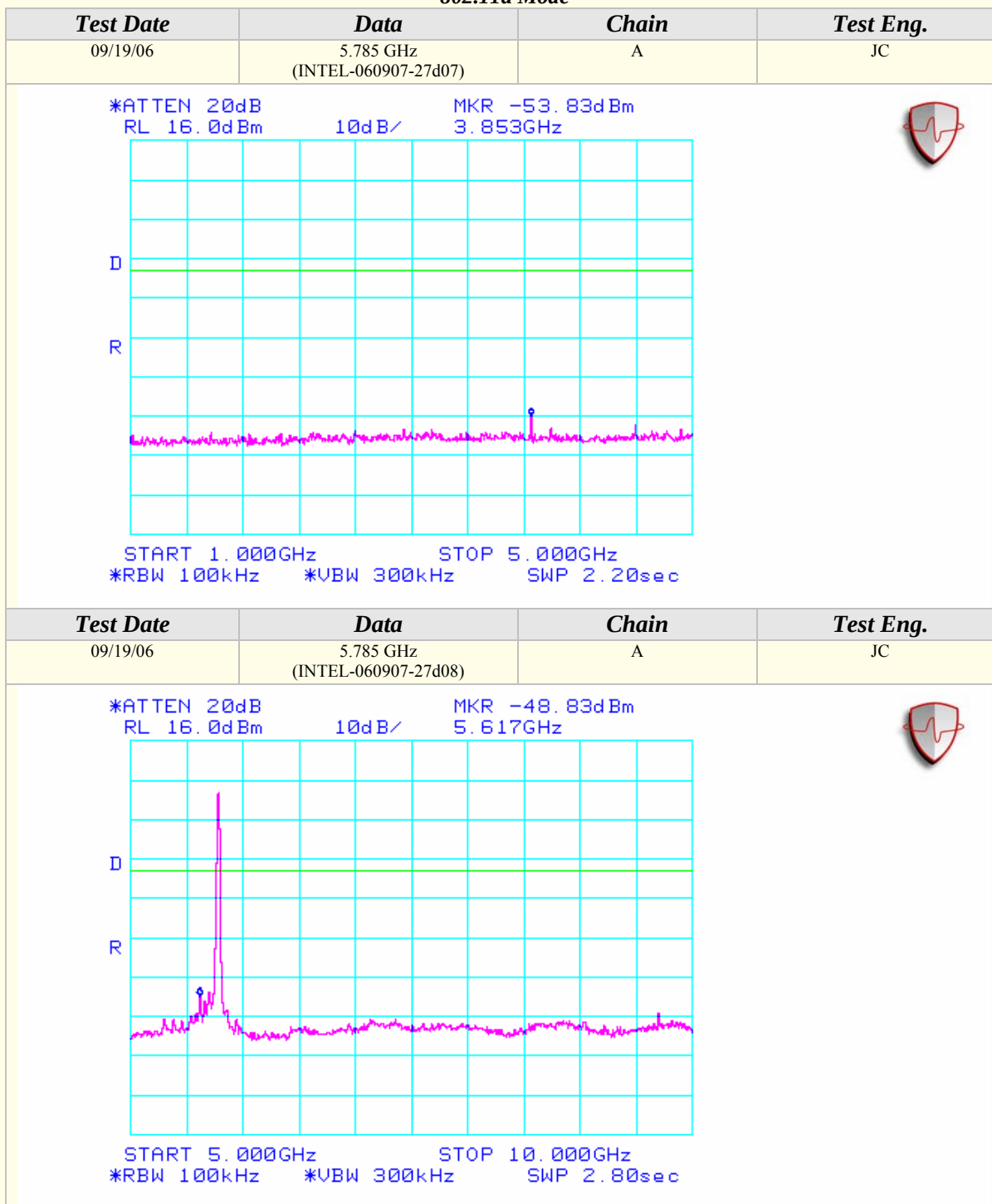
802.11a Mode





Conducted Out Of Band Emissions (Continued)

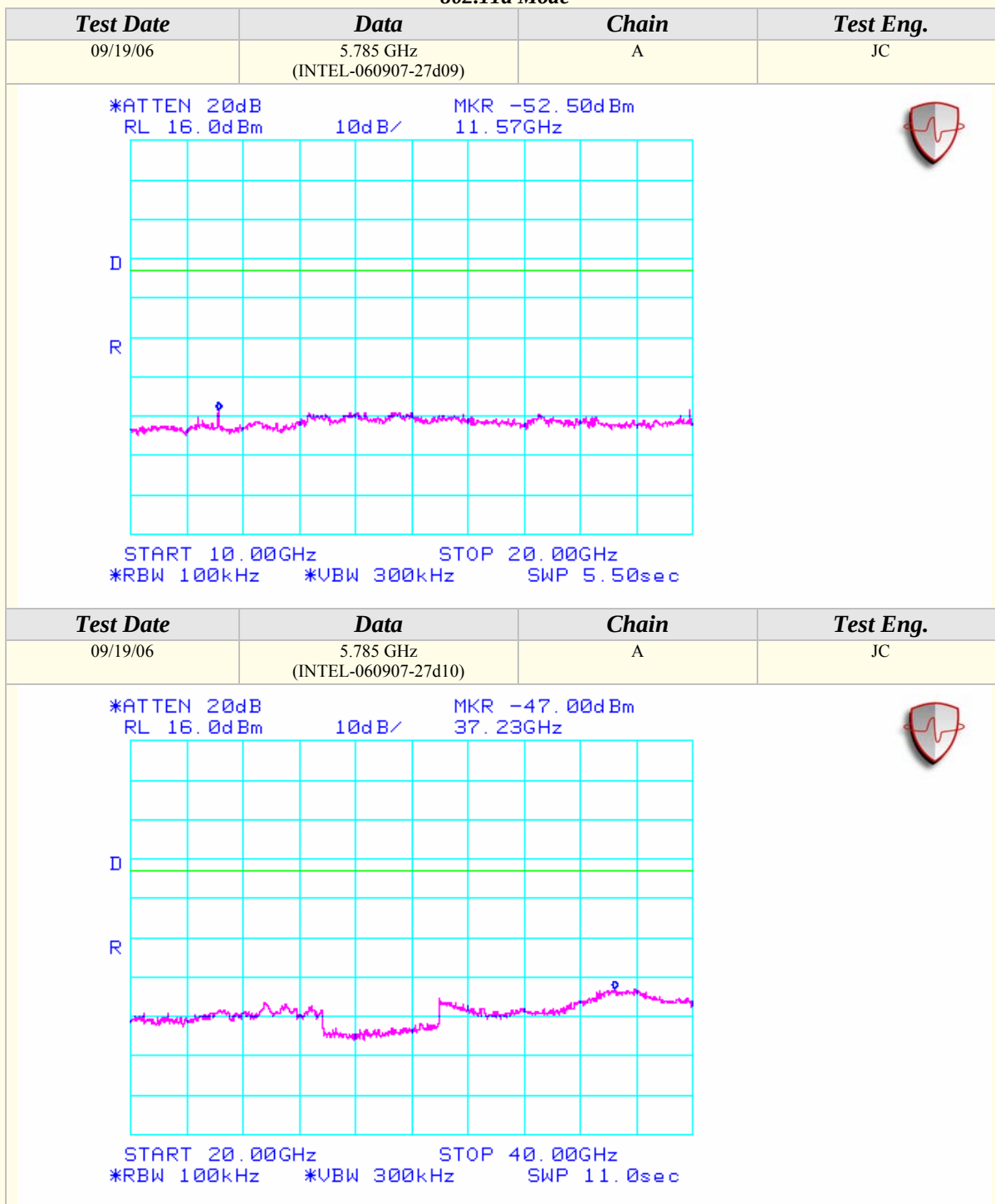
802.11a Mode





Conducted Out Of Band Emissions (Continued)

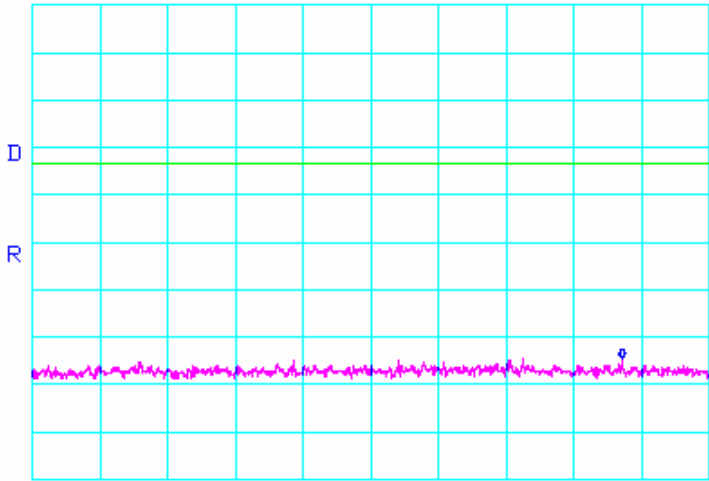
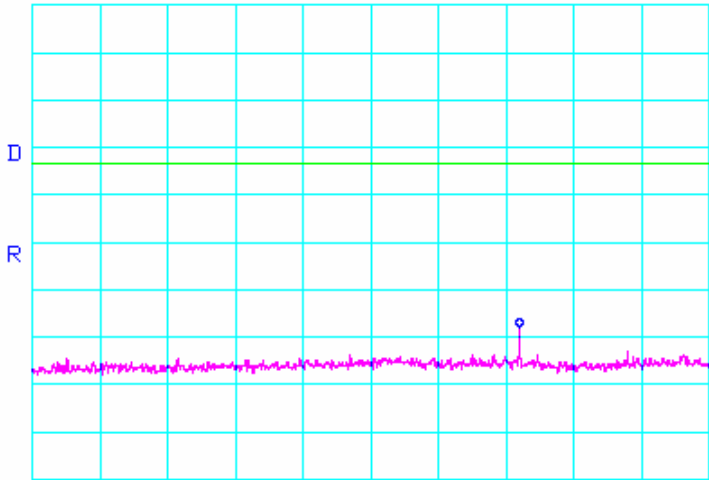
802.11a Mode





Conducted Out Of Band Emissions (Continued)

802.11a Mode

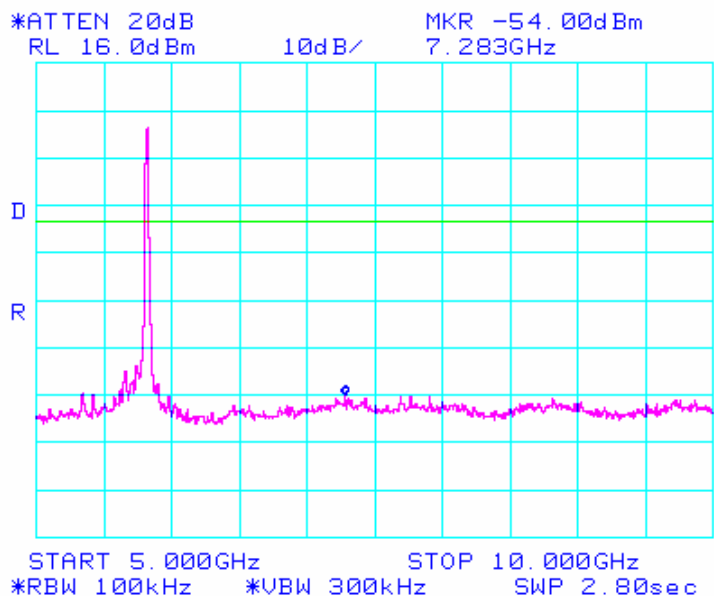
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d11)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.50dBm 875.5MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d12)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.00dBm 3.880GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec			



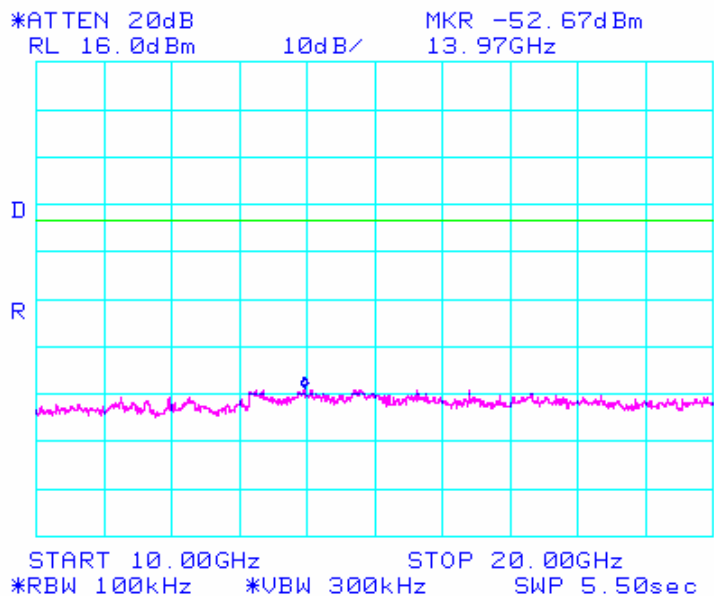
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d13)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d14)	A	JC



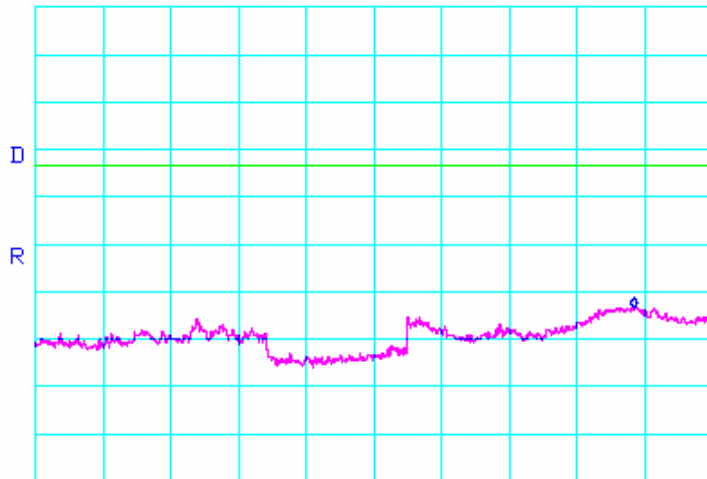


Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d15)	A	JC

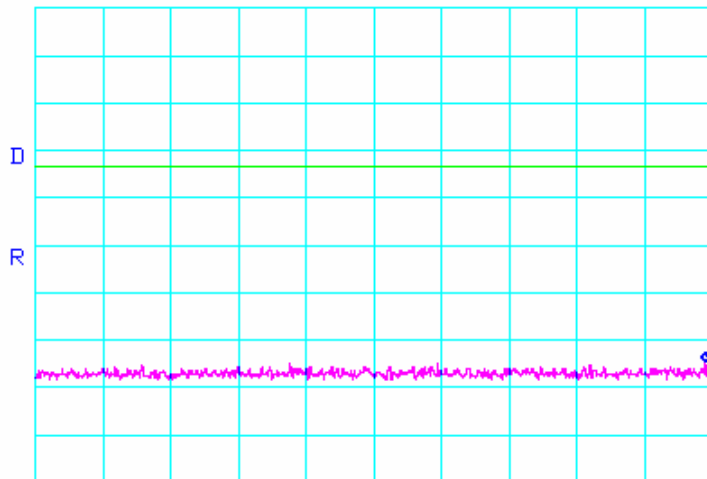
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -47.33dBm
37.70GHz



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-060907-27d16)	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

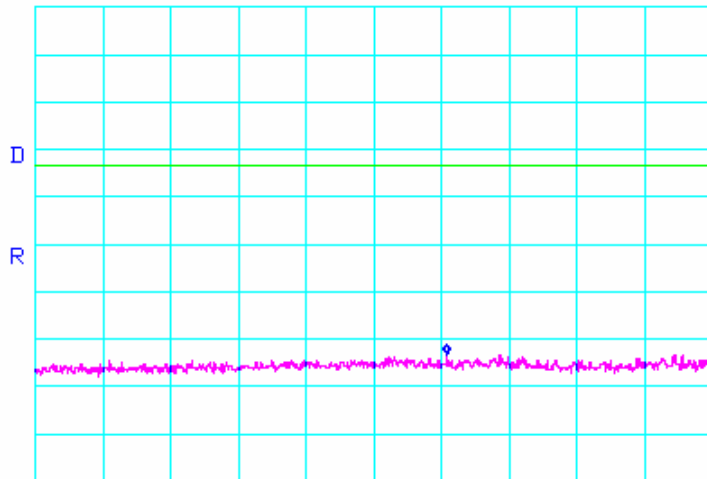


Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d17)	B	JC

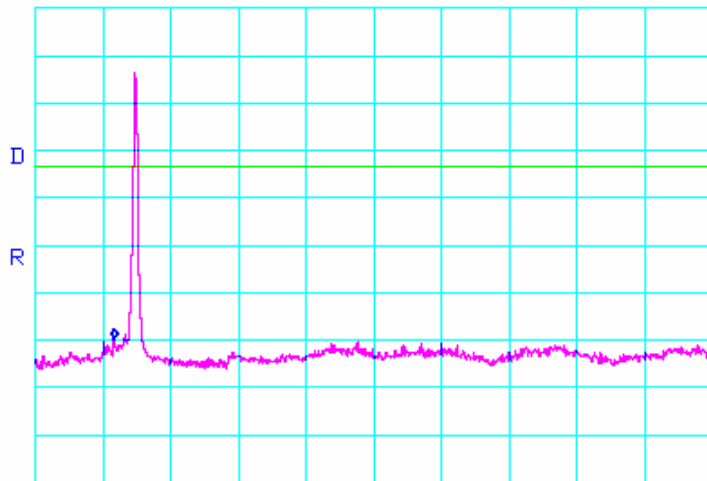
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -57.17dBm
3.433GHz



START 1.000GHz STOP 5.000GHz
*RBW 100kHz *VBW 300kHz SWP 2.20sec

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d18)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -53.67dBm
5.583GHz



START 5.000GHz STOP 10.000GHz
*RBW 100kHz *VBW 300kHz SWP 2.80sec

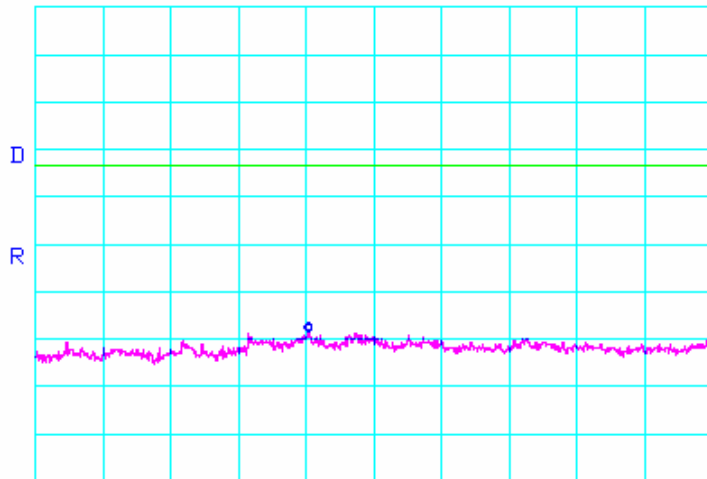


Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d19)	B	JC

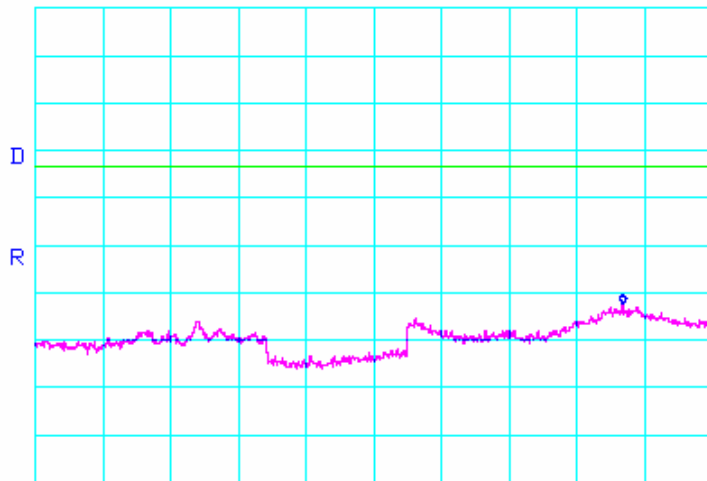
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -52.50dBm
14.03GHz



START 10.00GHz STOP 20.00GHz
*RBW 100kHz *VBW 300kHz SWP 5.50sec

Test Date	Data	Chain	Test Eng.
09/19/06	5.745 GHz (INTEL-060907-27d20)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -46.33dBm
37.37GHz



START 20.00GHz STOP 40.00GHz
*RBW 100kHz *VBW 300kHz SWP 11.0sec

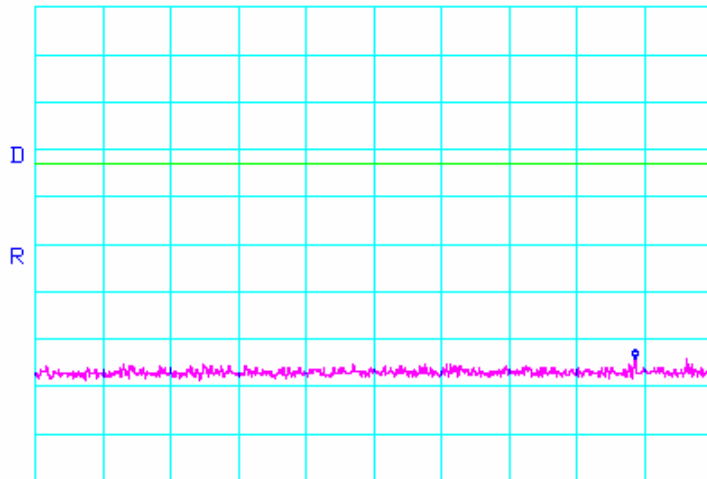


Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27d21)	B	JC

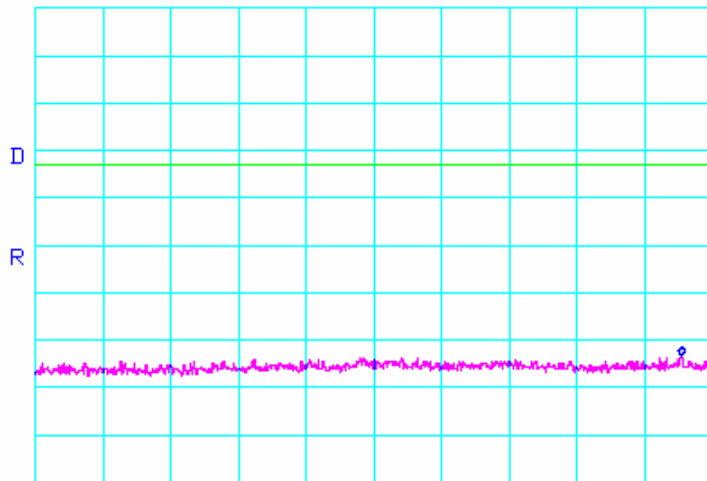
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -58.17dBm
890.1MHz



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-060907-27d22)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -57.33dBm
4.820GHz

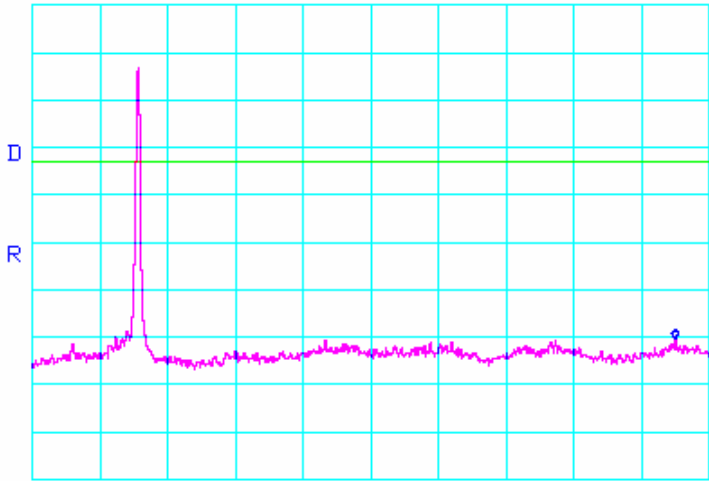
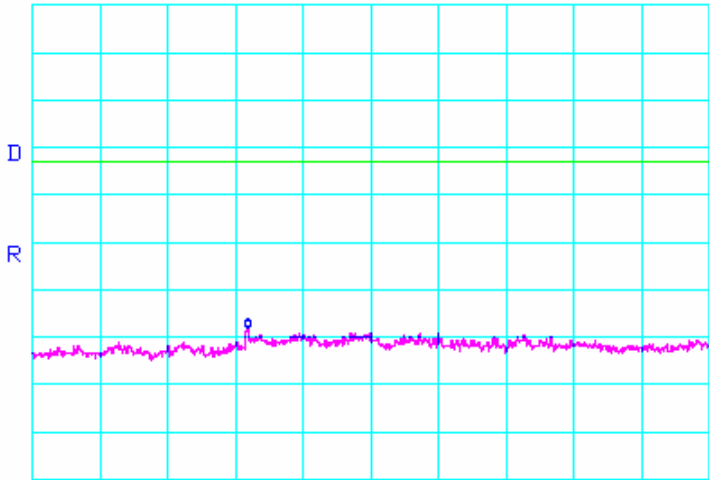


START 1.000GHz STOP 5.000GHz
*RBW 100kHz *VBW 300kHz SWP 2.20sec



Conducted Out Of Band Emissions (Continued)

802.11a Mode

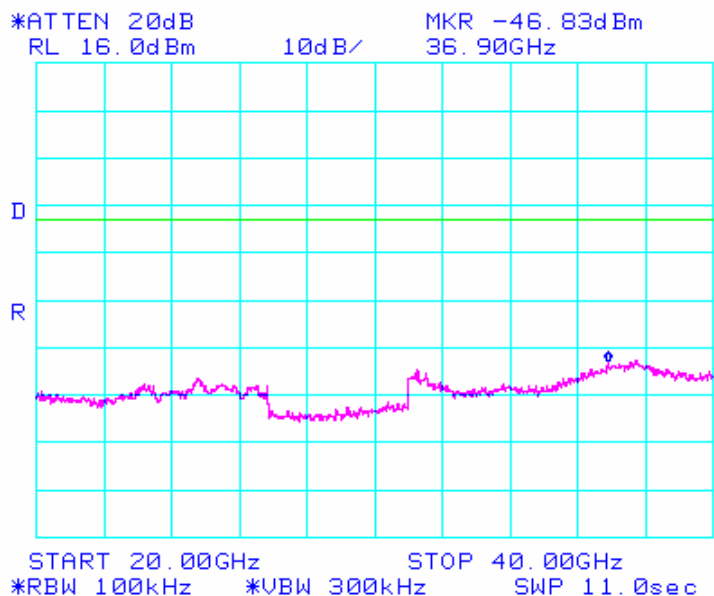
Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27d23)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -54.33dBm 9.750GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27d24)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 13.18GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



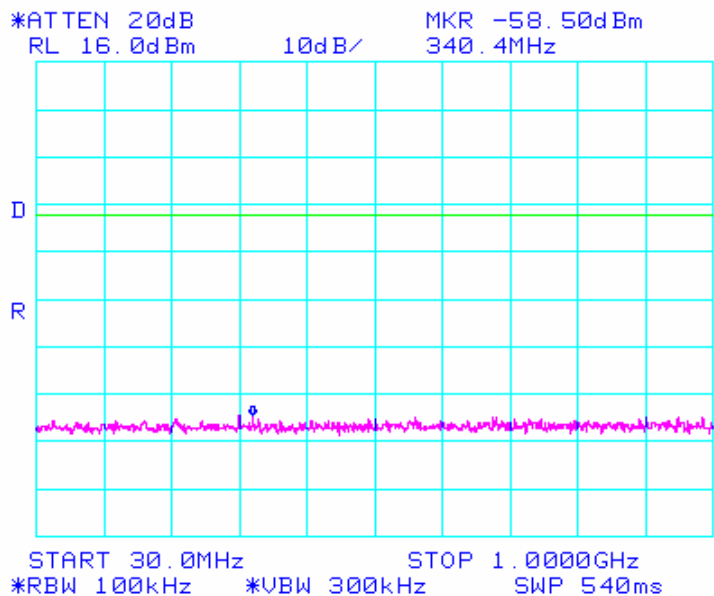
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.785 GHz (INTEL-060907-27d25)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d26)	B	JC

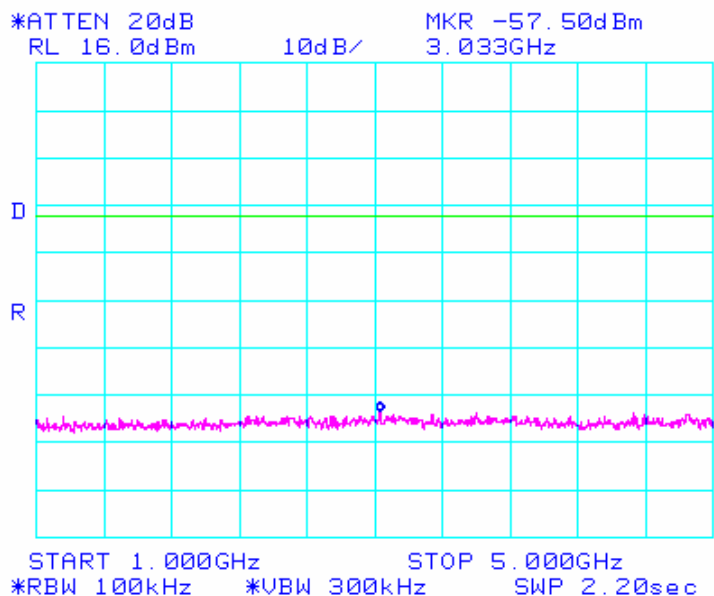




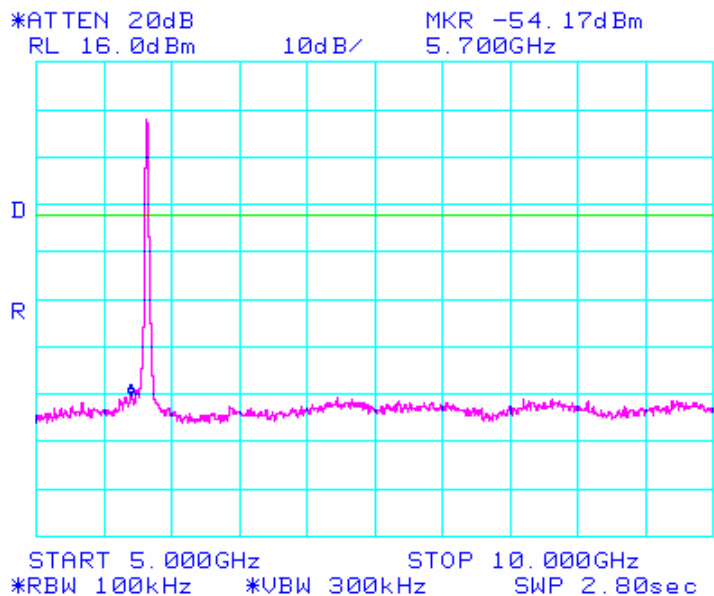
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d27)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d28)	B	JC

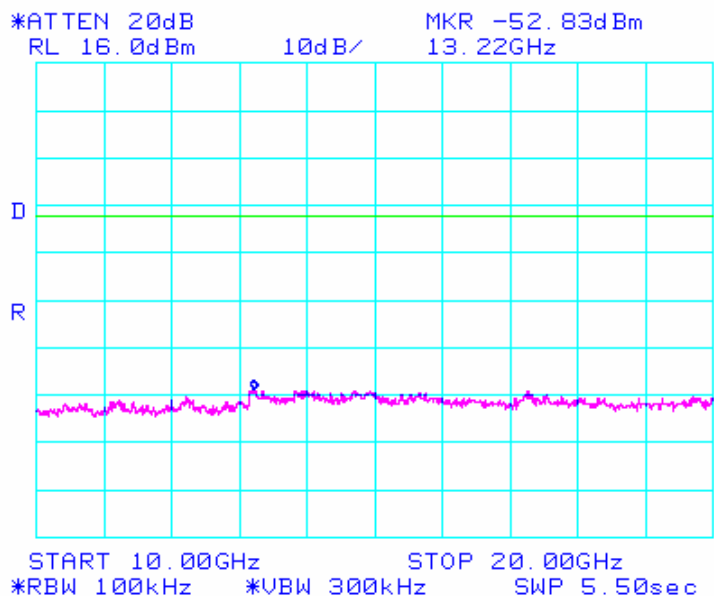




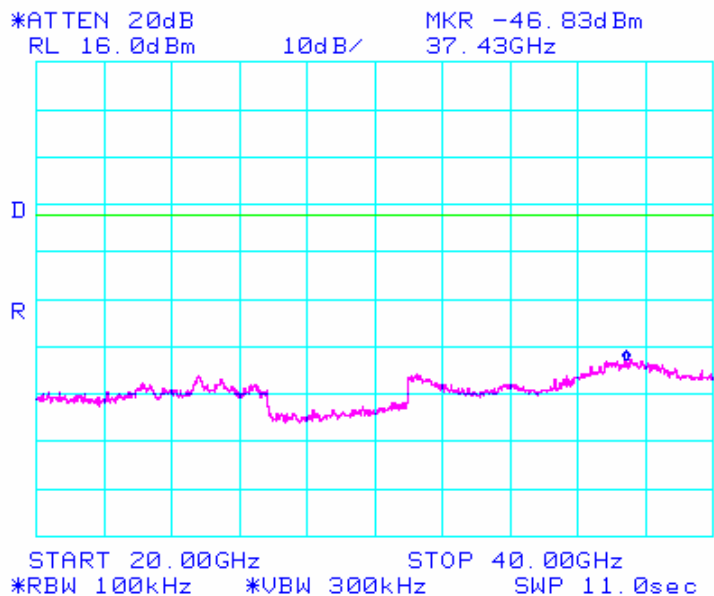
Conducted Out Of Band Emissions (Continued)

802.11a Mode

Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d29)	B	JC



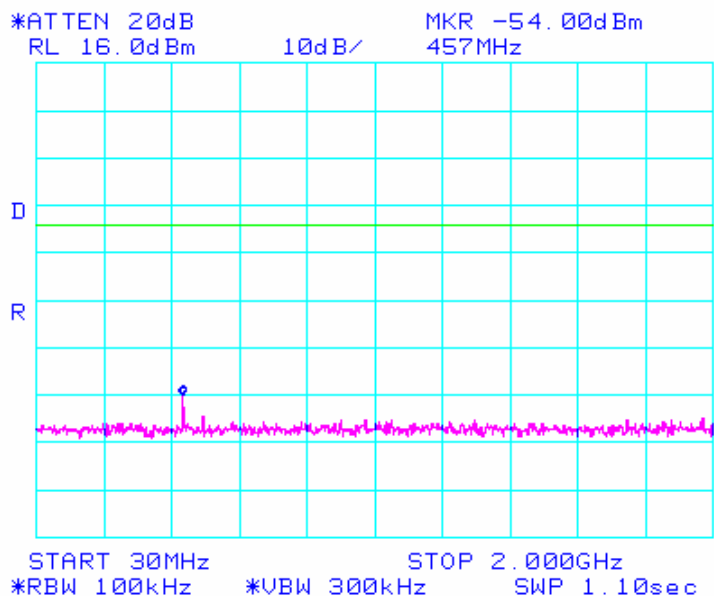
Test Date	Data	Chain	Test Eng.
09/19/06	5.825 GHz (INTEL-060907-27d30)	B	JC



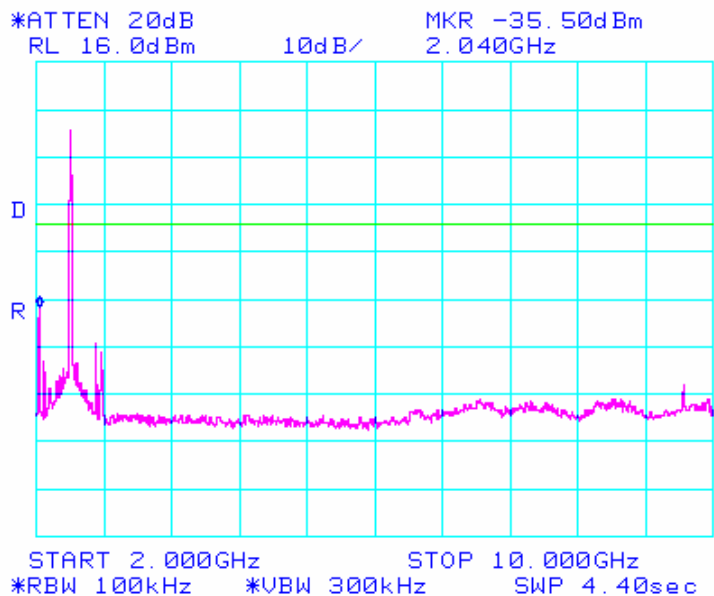
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28e01)	A	JC



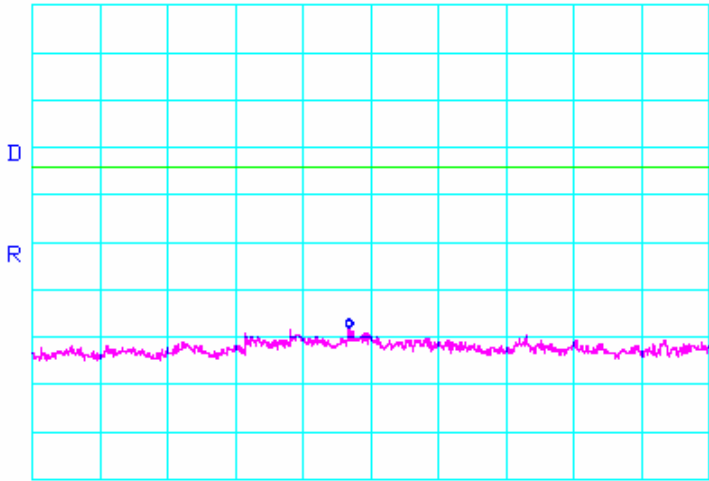
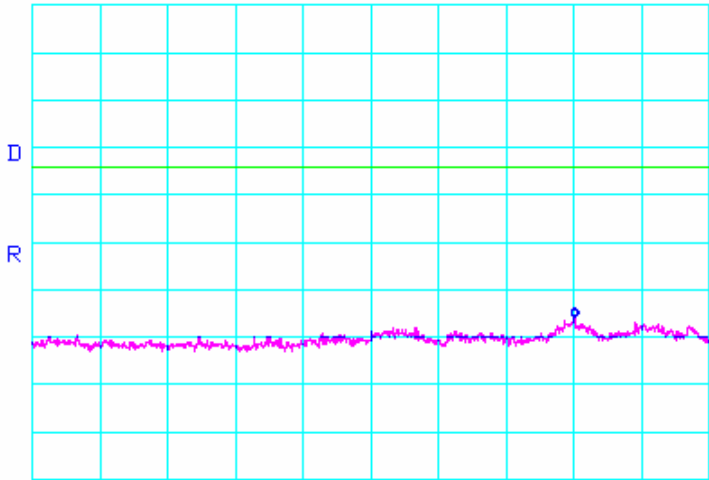
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28e02)	A	JC





Conducted Out Of Band Emissions (Continued)

802.11b Mode

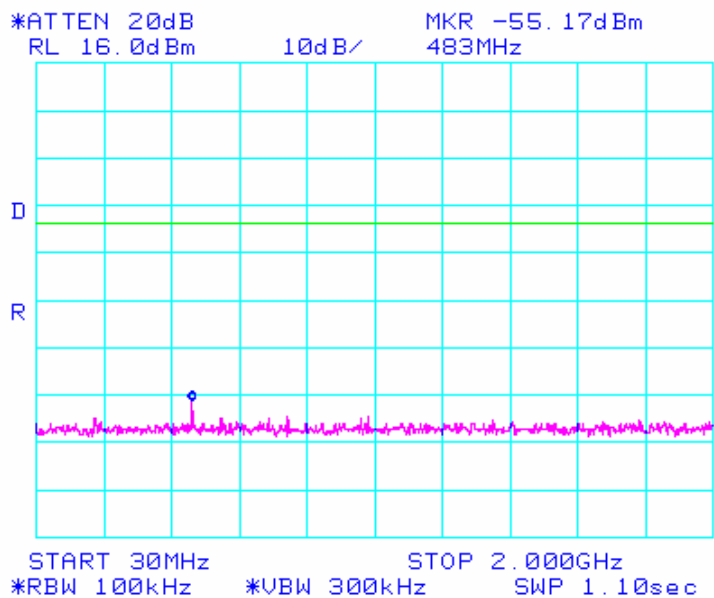
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28e03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 14.68GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28e04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.810GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



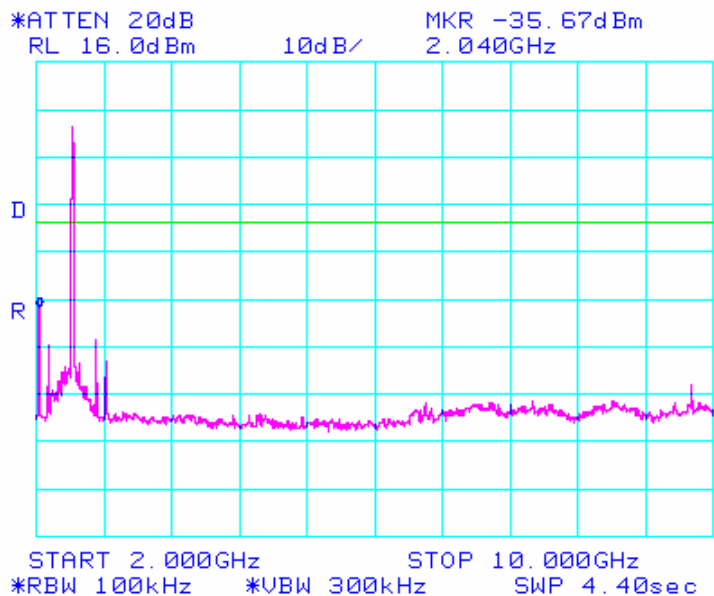
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e05)	A	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e06)	A	JC

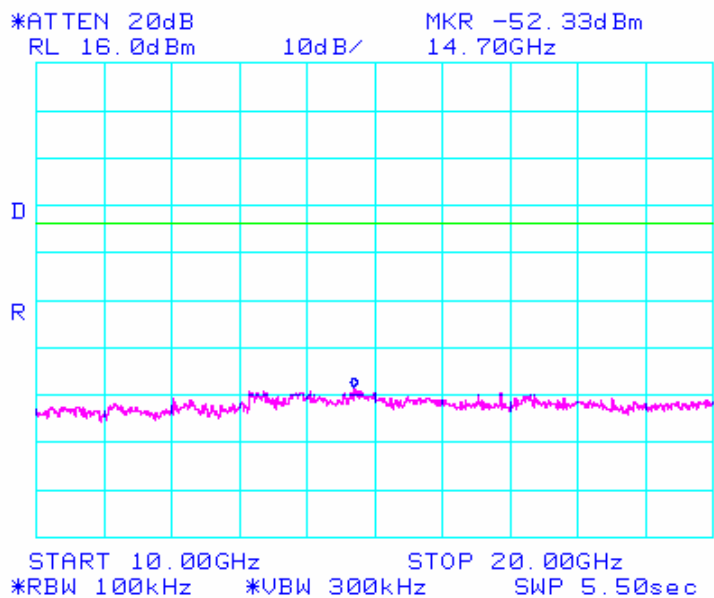




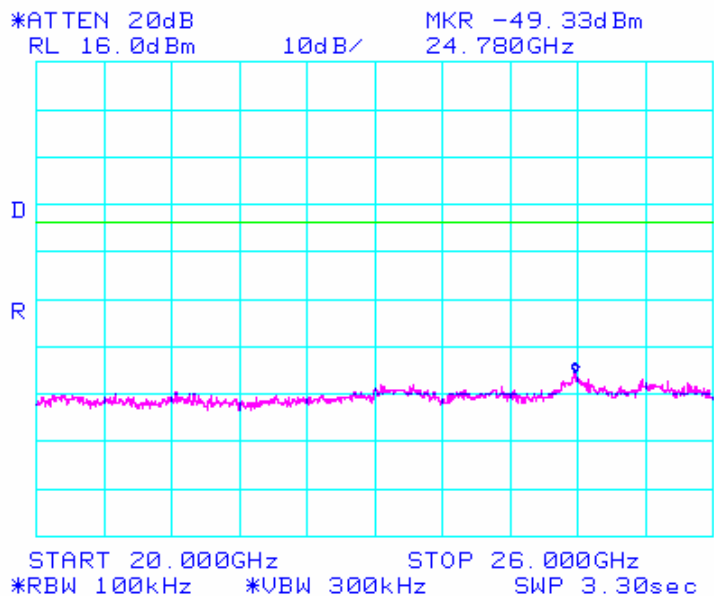
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e07)	A	JC



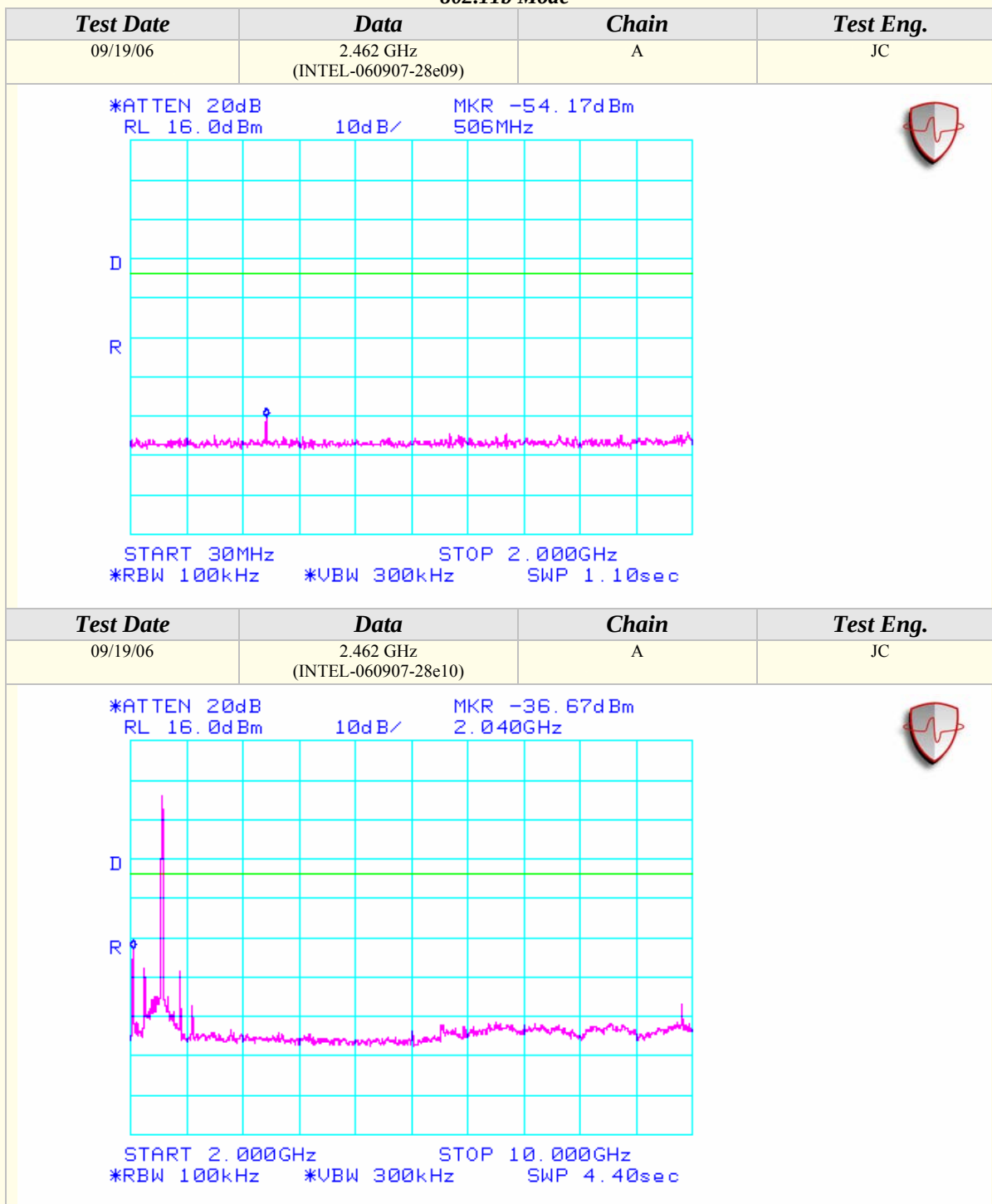
Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e08)	A	JC





Conducted Out Of Band Emissions (Continued)

802.11b Mode



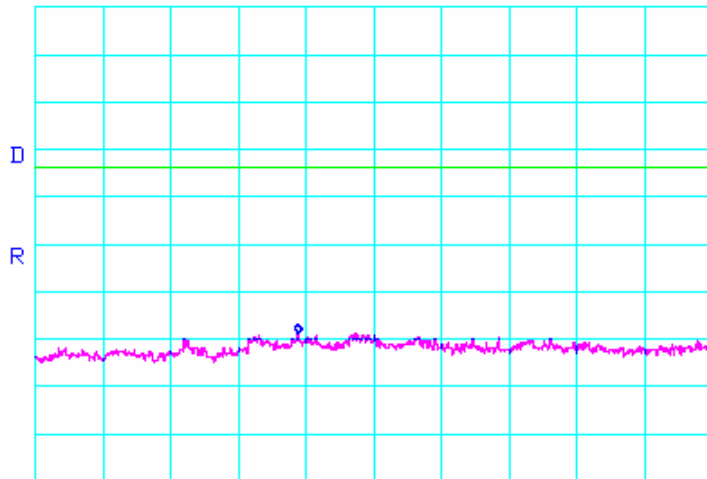


Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-060907-28e11)	A	JC

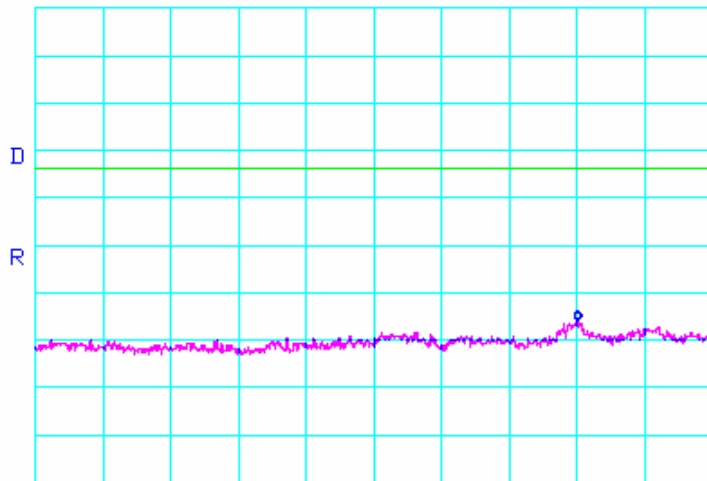
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -52.83dBm
13.88GHz



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-060907-28e12)	A	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -49.83dBm
24.810GHz

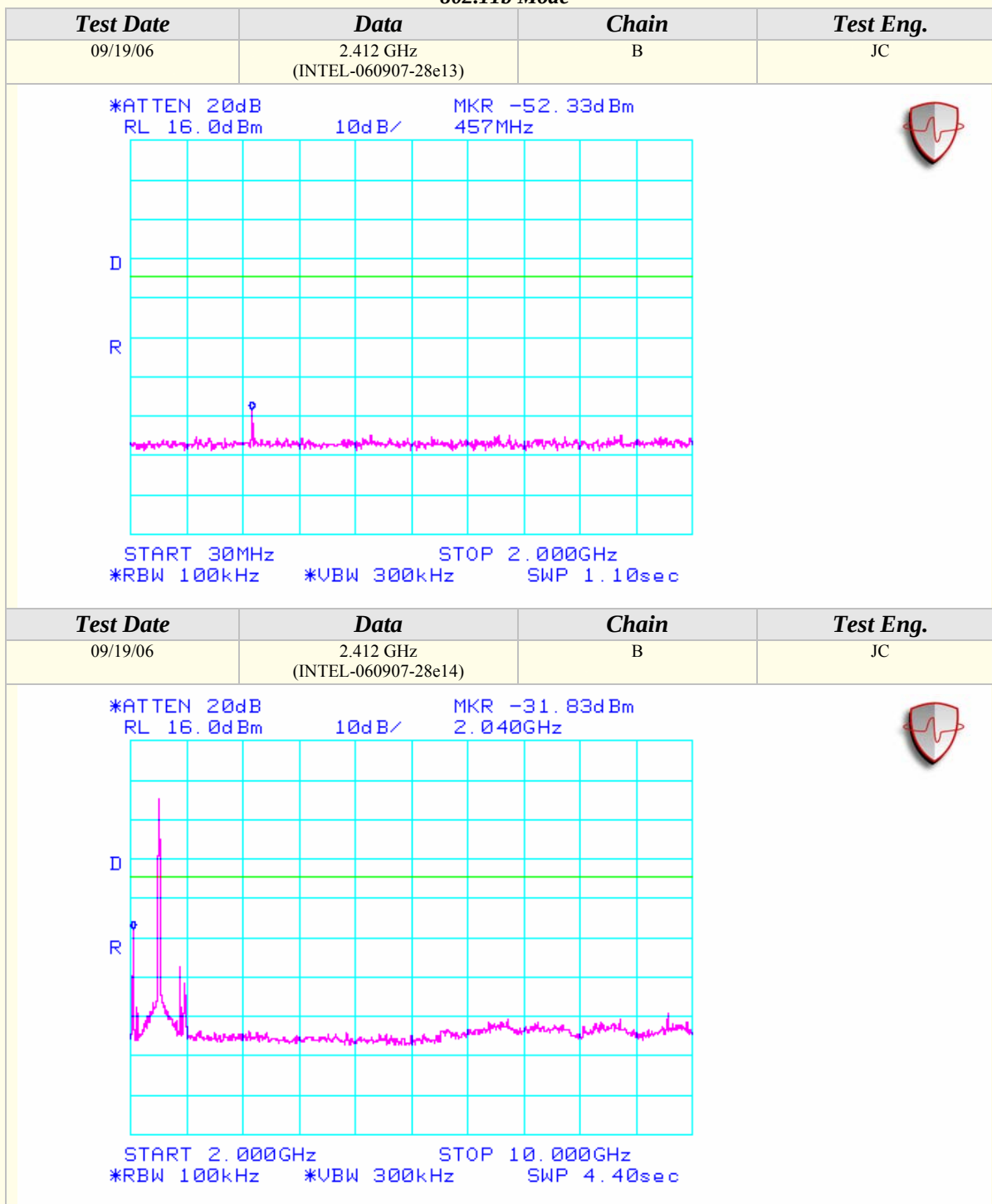


START 20.000GHz STOP 26.000GHz
*RBW 100kHz *VBW 300kHz SWP 3.30sec



Conducted Out Of Band Emissions (Continued)

802.11b Mode



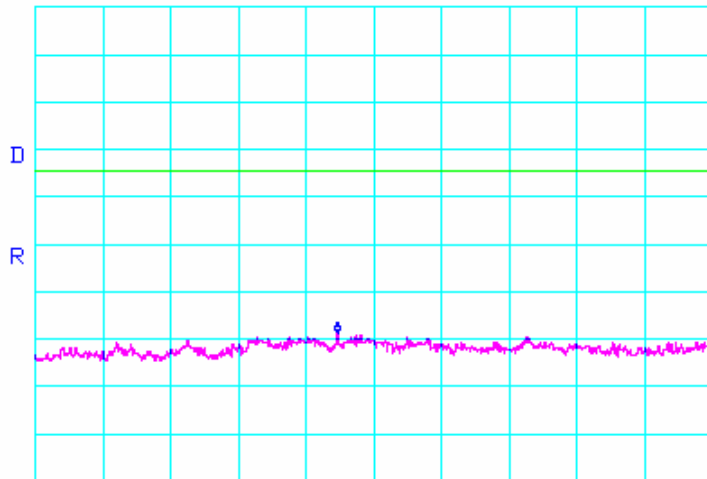


Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.412 GHz (INTEL-060907-28e15)	B	JC

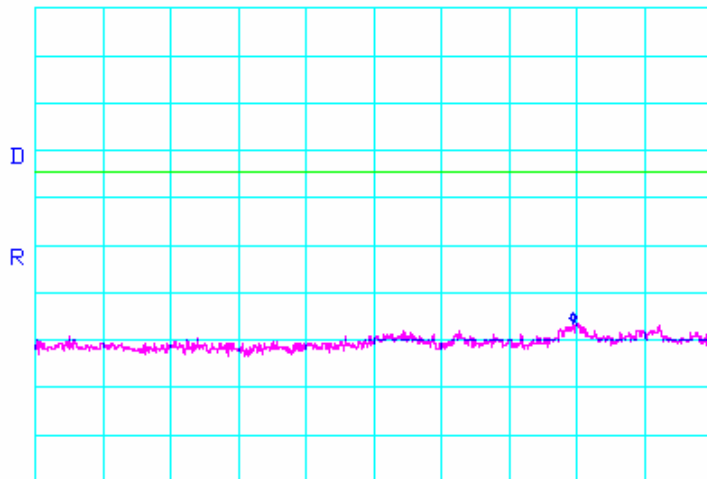
*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -52.67dBm
14.47GHz



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-060907-28e16)	B	JC

*ATTEN 20dB
RL 16.0dBm 10dB/ MKR -50.33dBm
24.770GHz



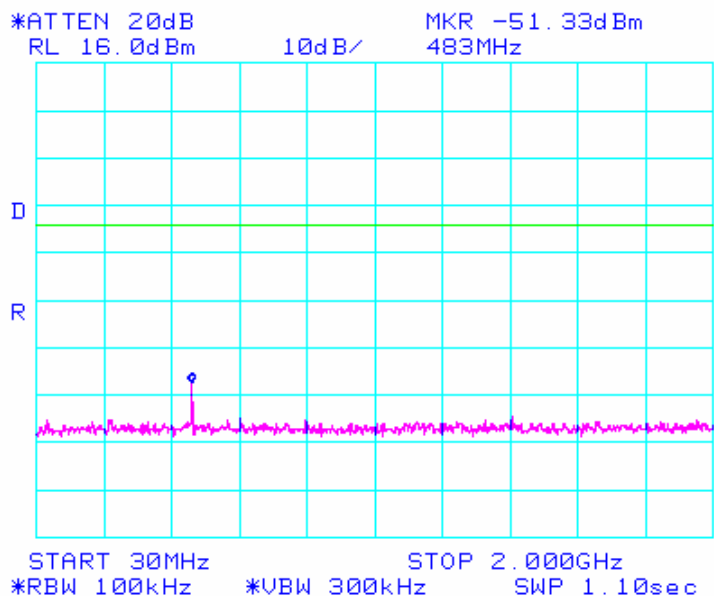
START 20.000GHz STOP 26.000GHz
*RBW 100kHz *VBW 300kHz SWP 3.30sec



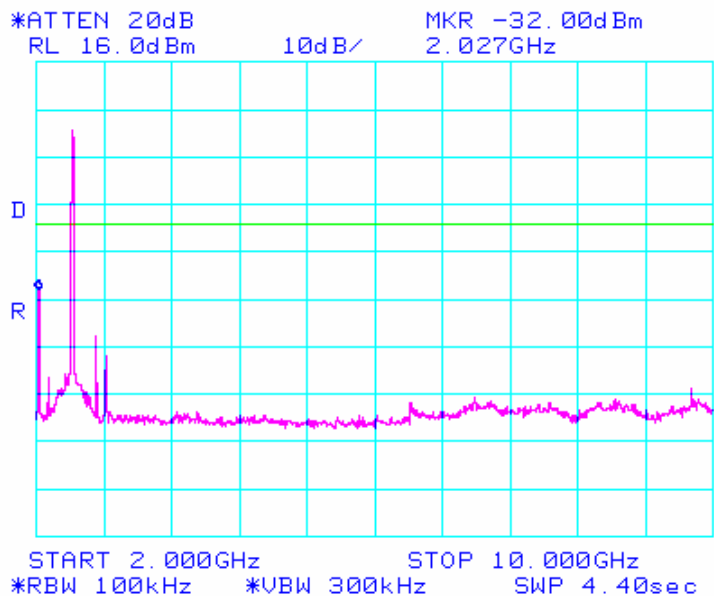
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e17)	B	JC



Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e18)	B	JC

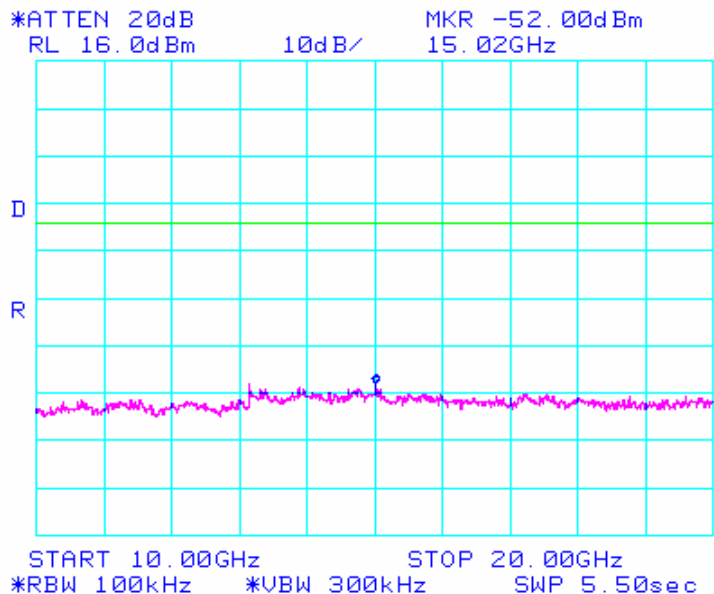




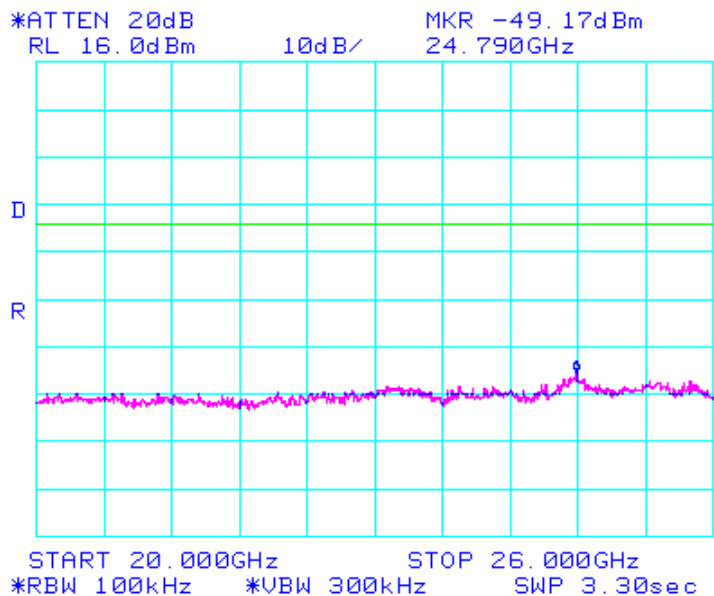
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e19)	B	JC



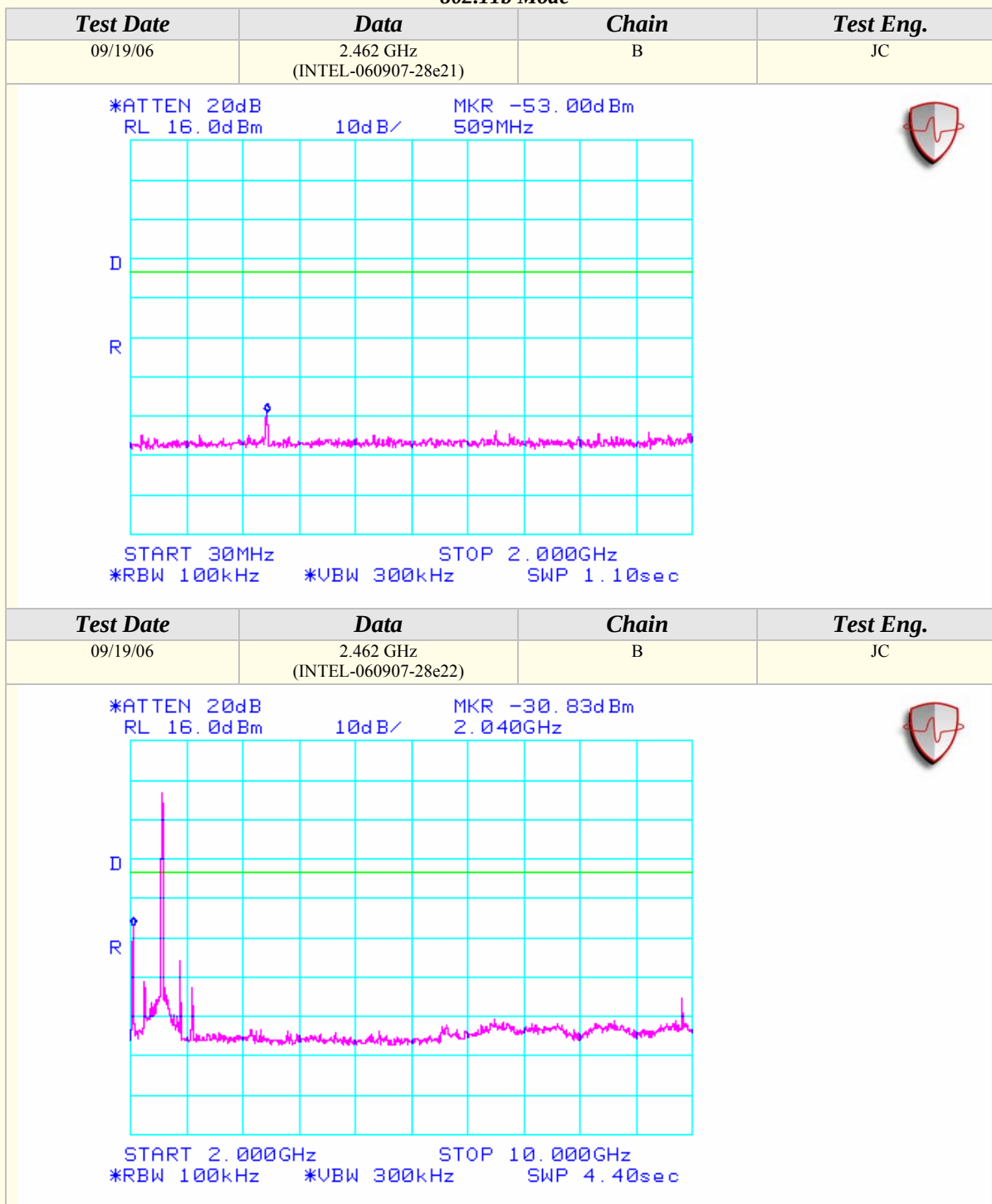
Test Date	Data	Chain	Test Eng.
09/19/06	2.437 GHz (INTEL-060907-28e20)	B	JC





Conducted Out Of Band Emissions (Continued)

802.11b Mode

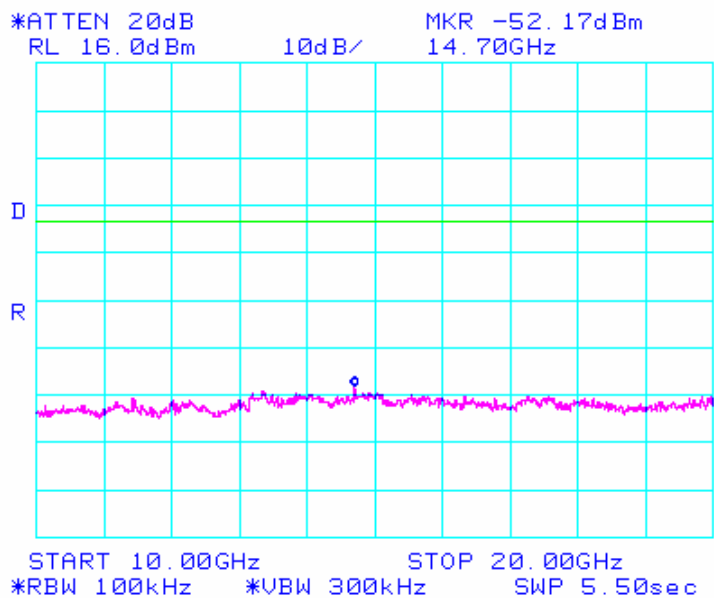




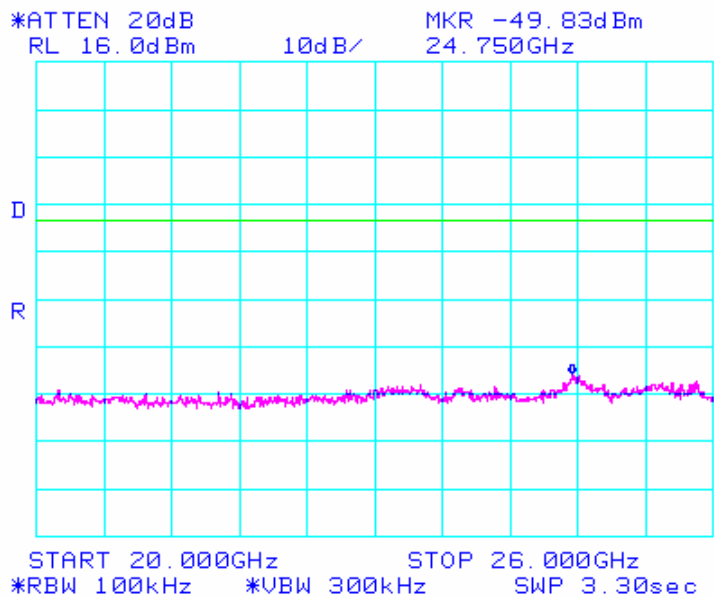
Conducted Out Of Band Emissions (Continued)

802.11b Mode

Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-060907-28e23)	B	JC



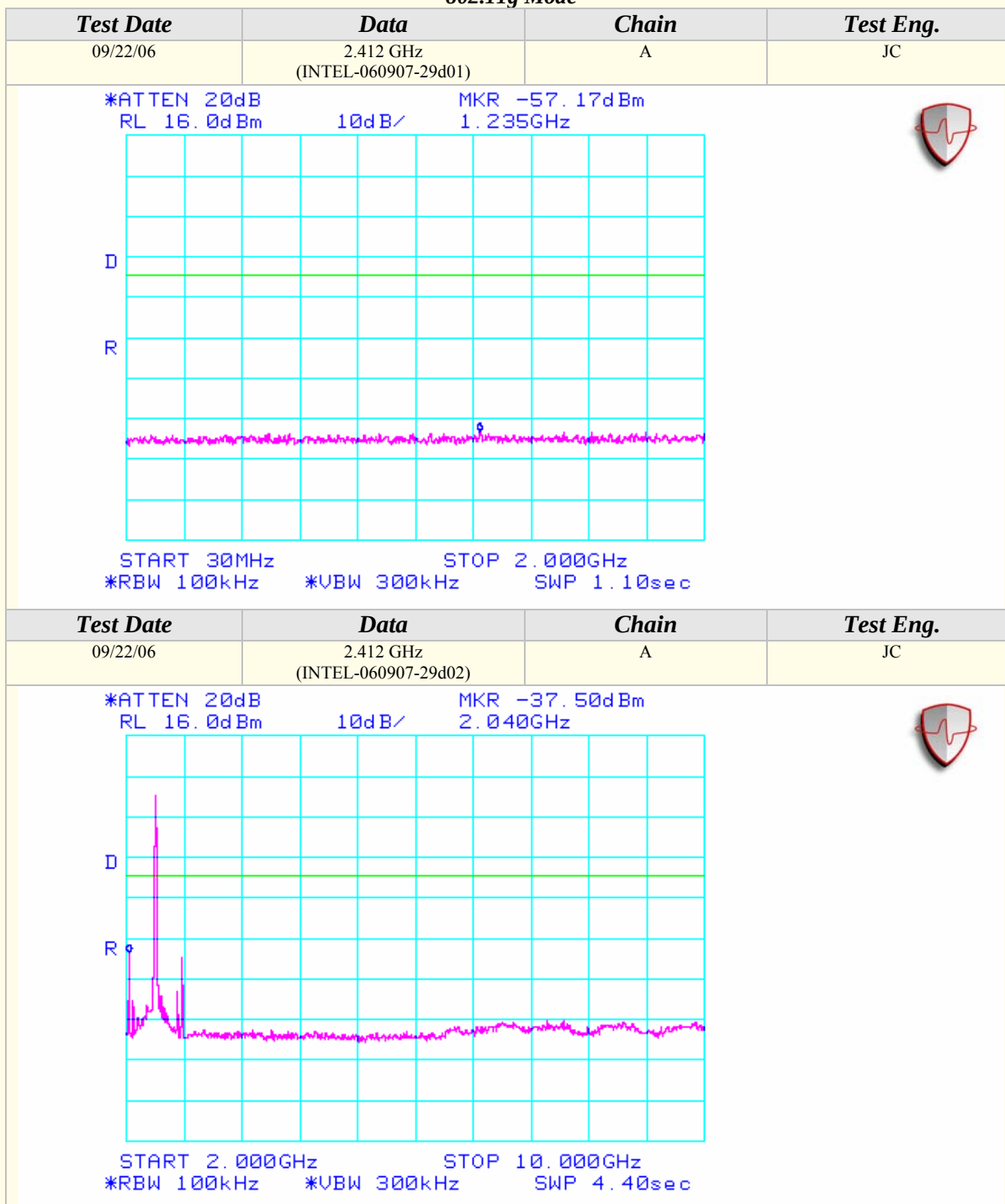
Test Date	Data	Chain	Test Eng.
09/19/06	2.462 GHz (INTEL-060907-28e24)	B	JC





Conducted Out Of Band Emissions (Continued)

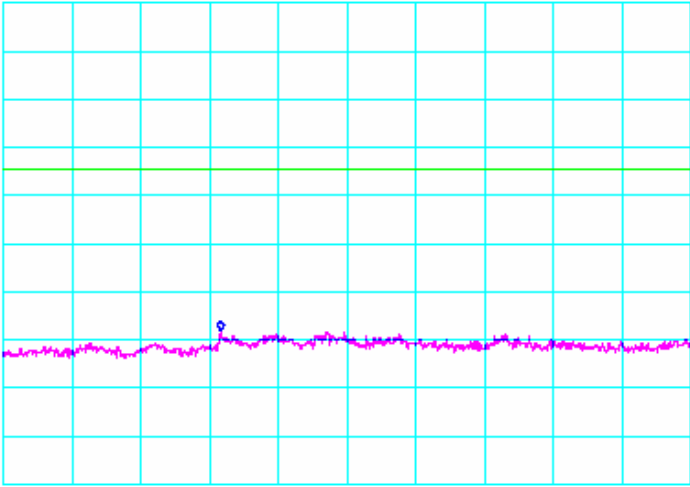
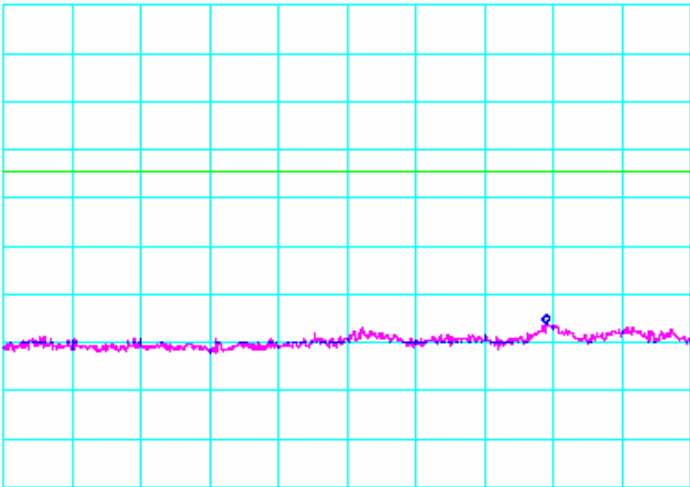
802.11g Mode





Conducted Out Of Band Emissions (Continued)

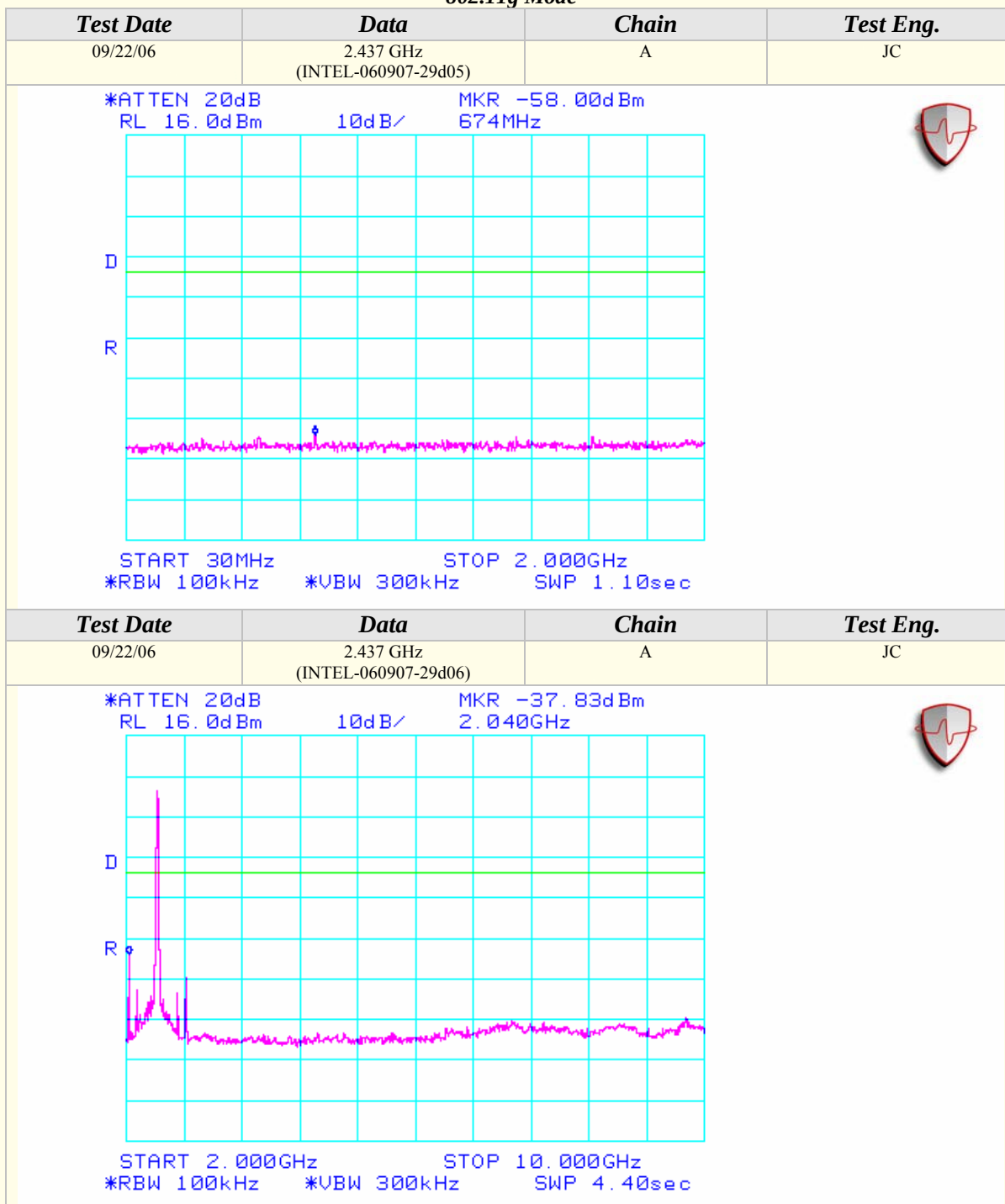
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.412 GHz (INTEL-060907-29d03)	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-060907-29d04)	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)

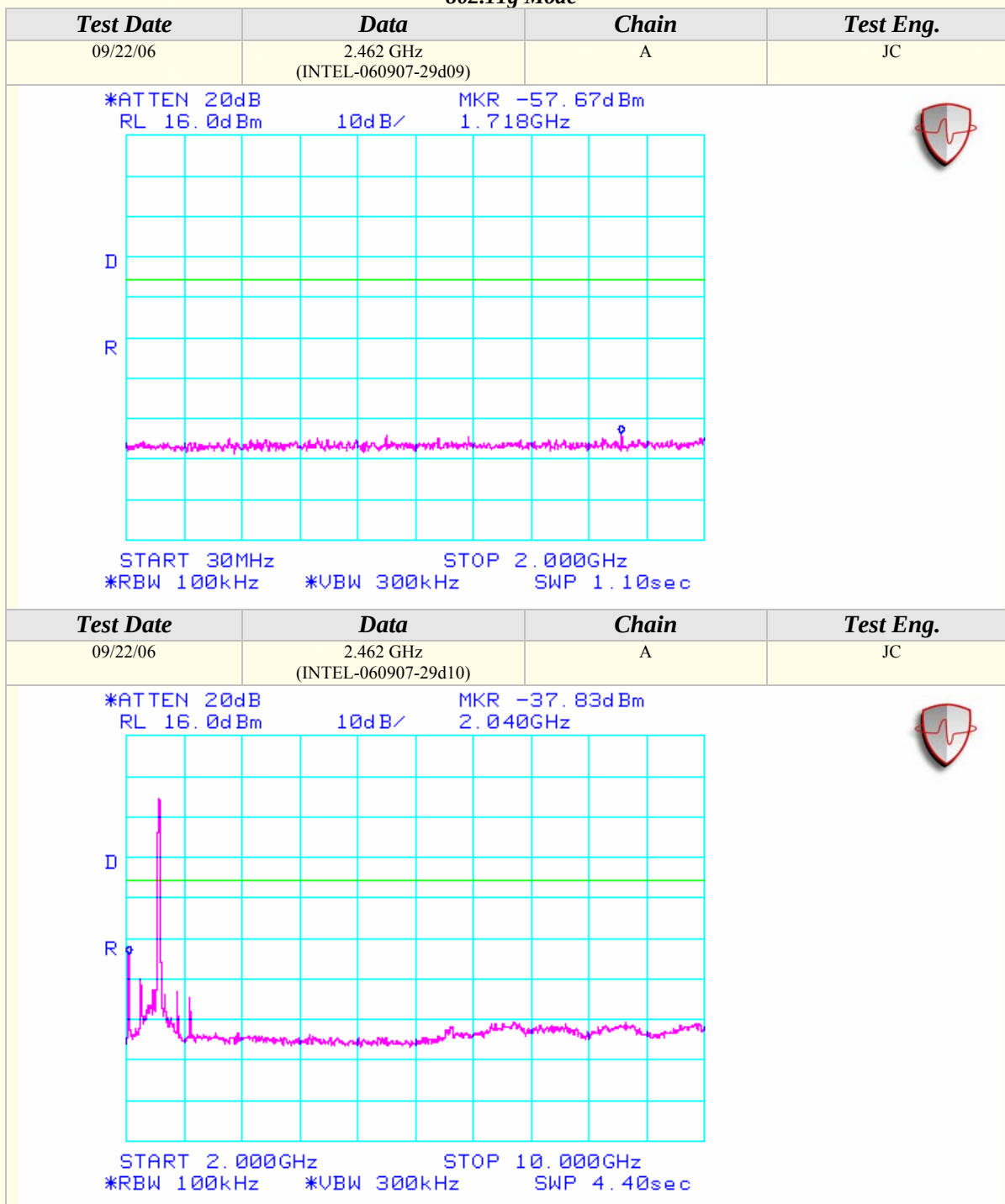
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-060907-29d07)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.00dBm 14.95GHz			
Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-060907-29d08)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.50dBm 24.800GHz			



Conducted Out Of Band Emissions (Continued)

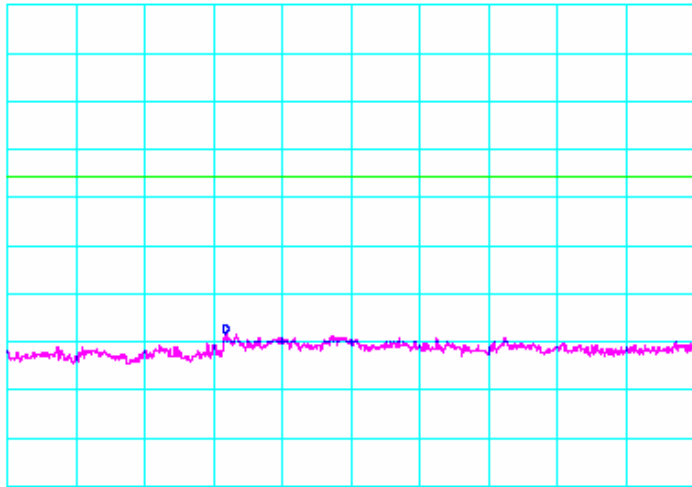
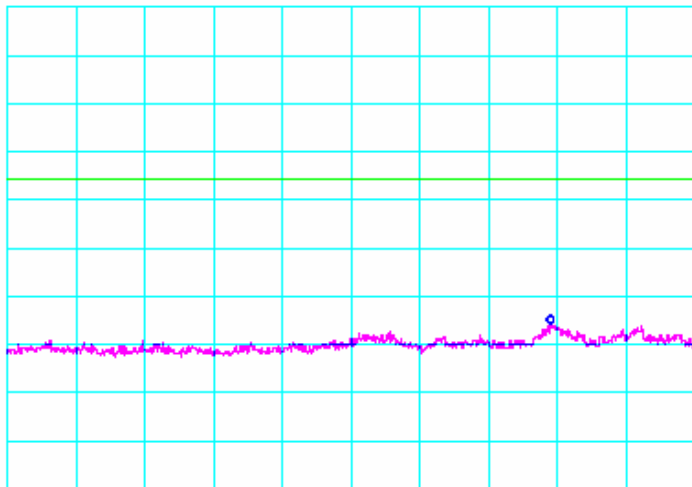
802.11g Mode





Conducted Out Of Band Emissions (Continued)

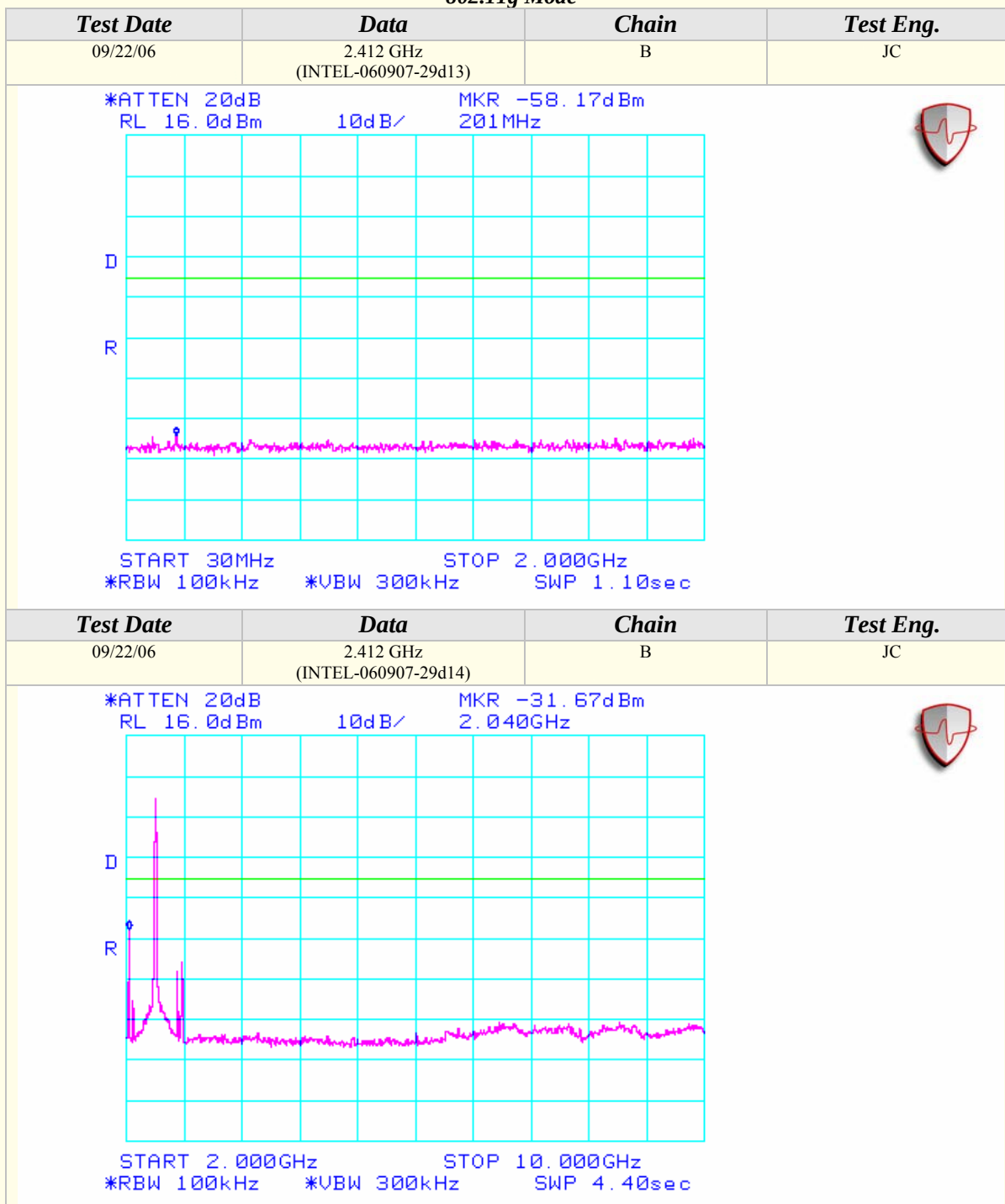
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-060907-29d11)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.33dBm 13.18GHz  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-060907-29d12)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.740GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

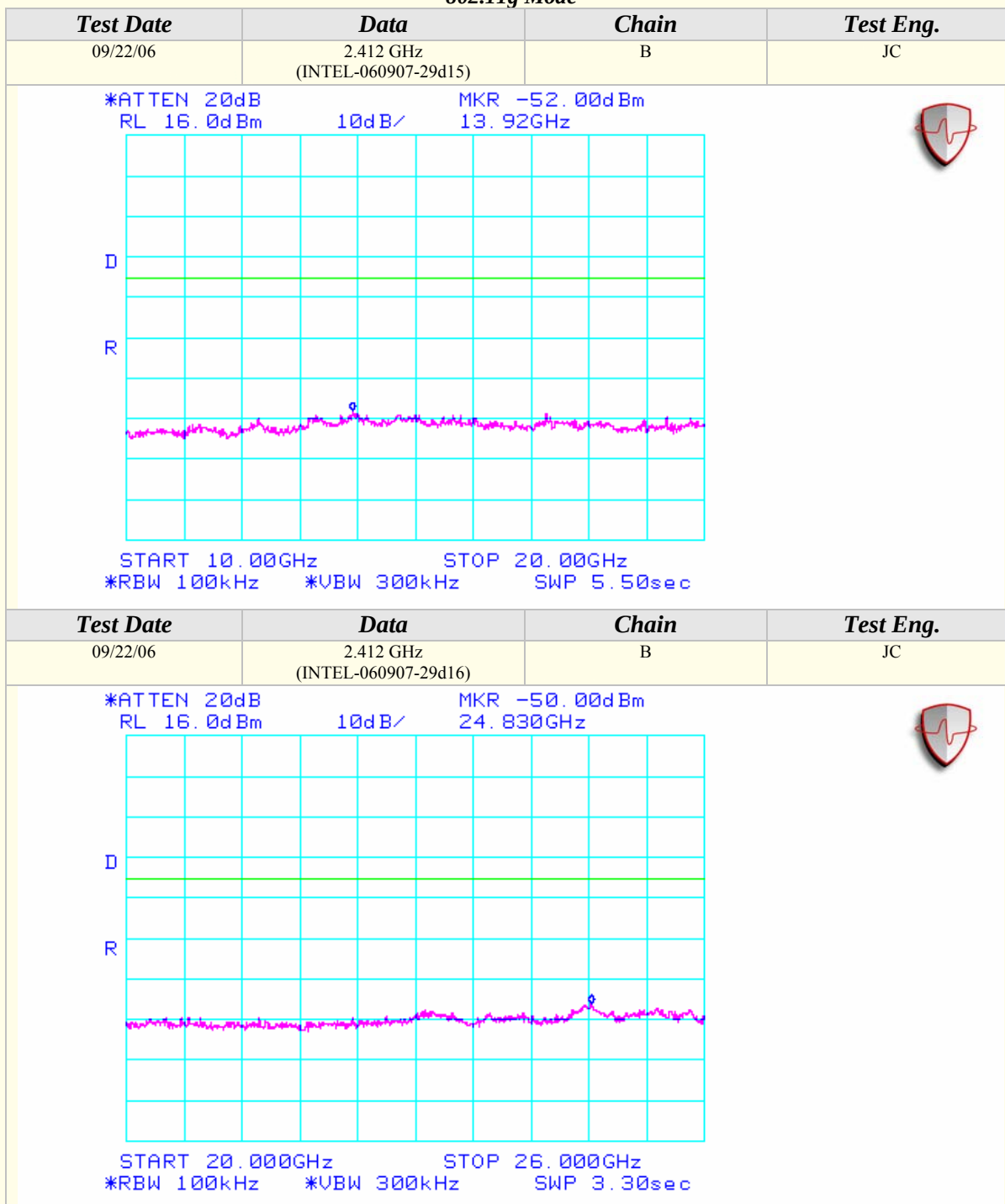
802.11g Mode





Conducted Out Of Band Emissions (Continued)

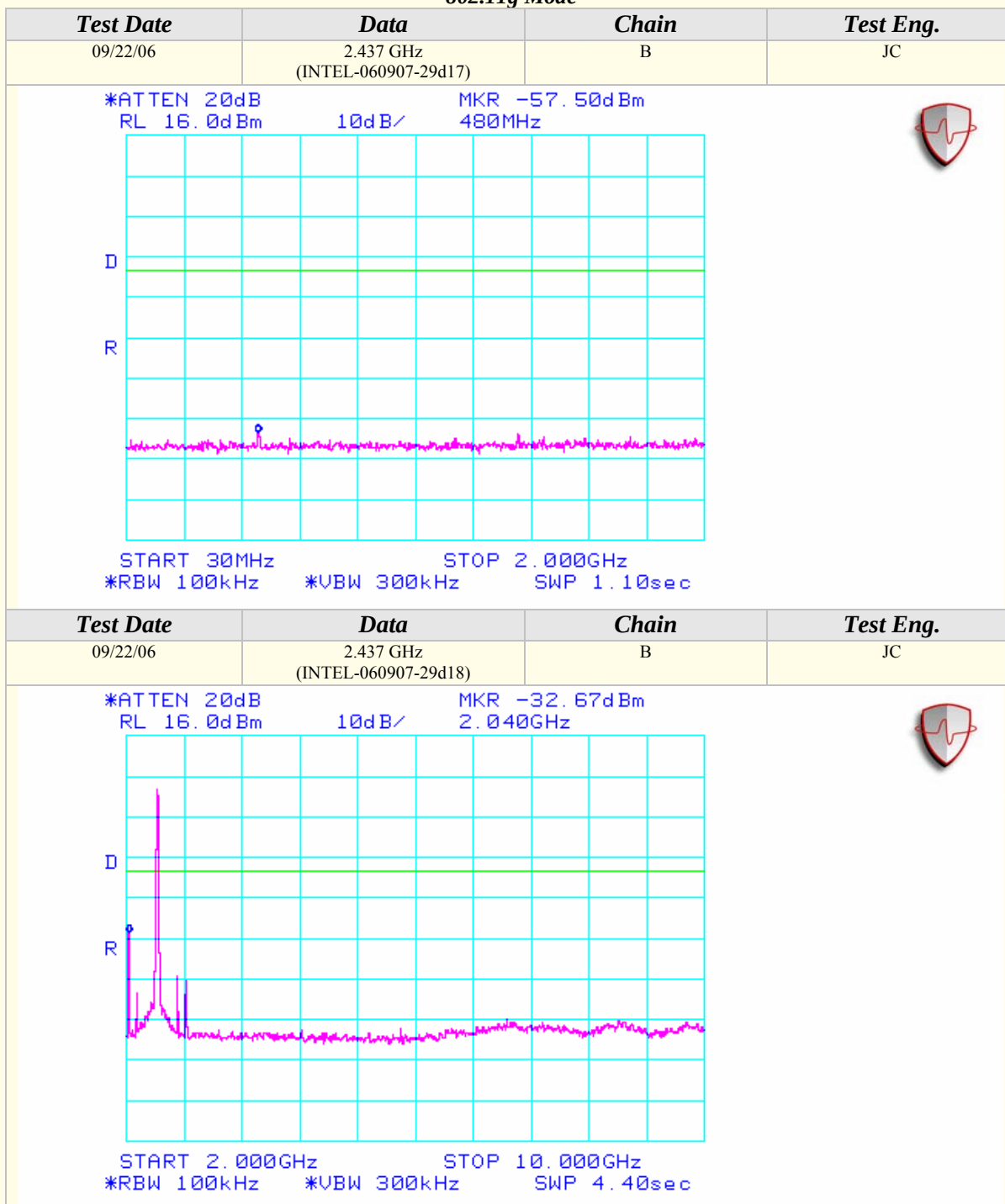
802.11g Mode





Conducted Out Of Band Emissions (Continued)

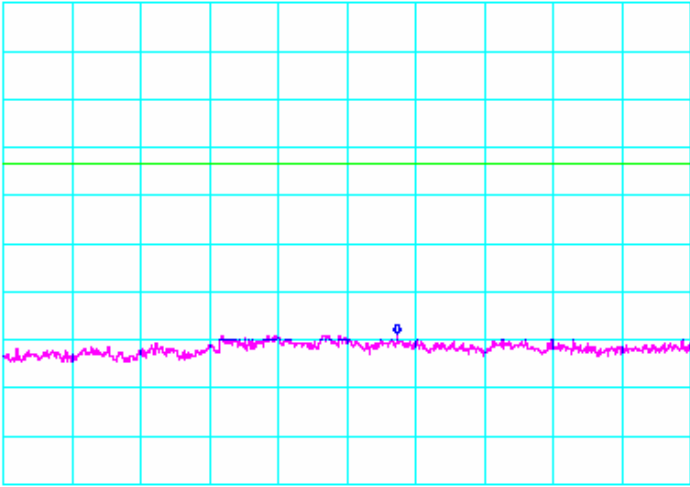
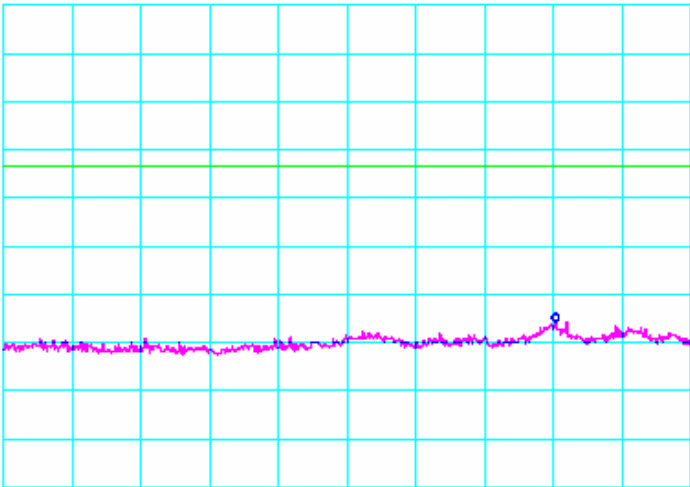
802.11g Mode





Conducted Out Of Band Emissions (Continued)

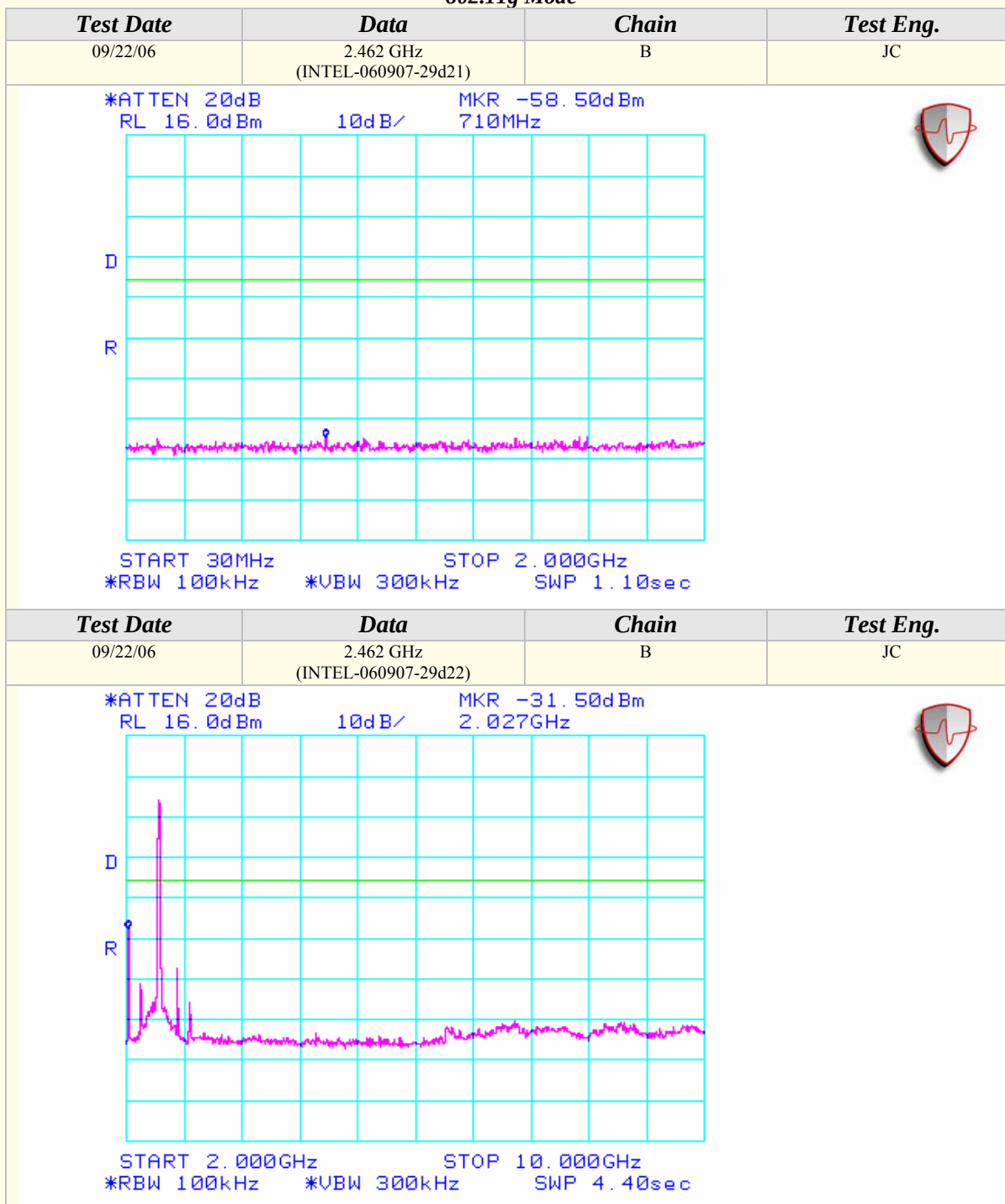
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.437 GHz (INTEL-060907-29d19)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.83dBm 15.73GHz  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-060907-29d20)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.820GHz  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)

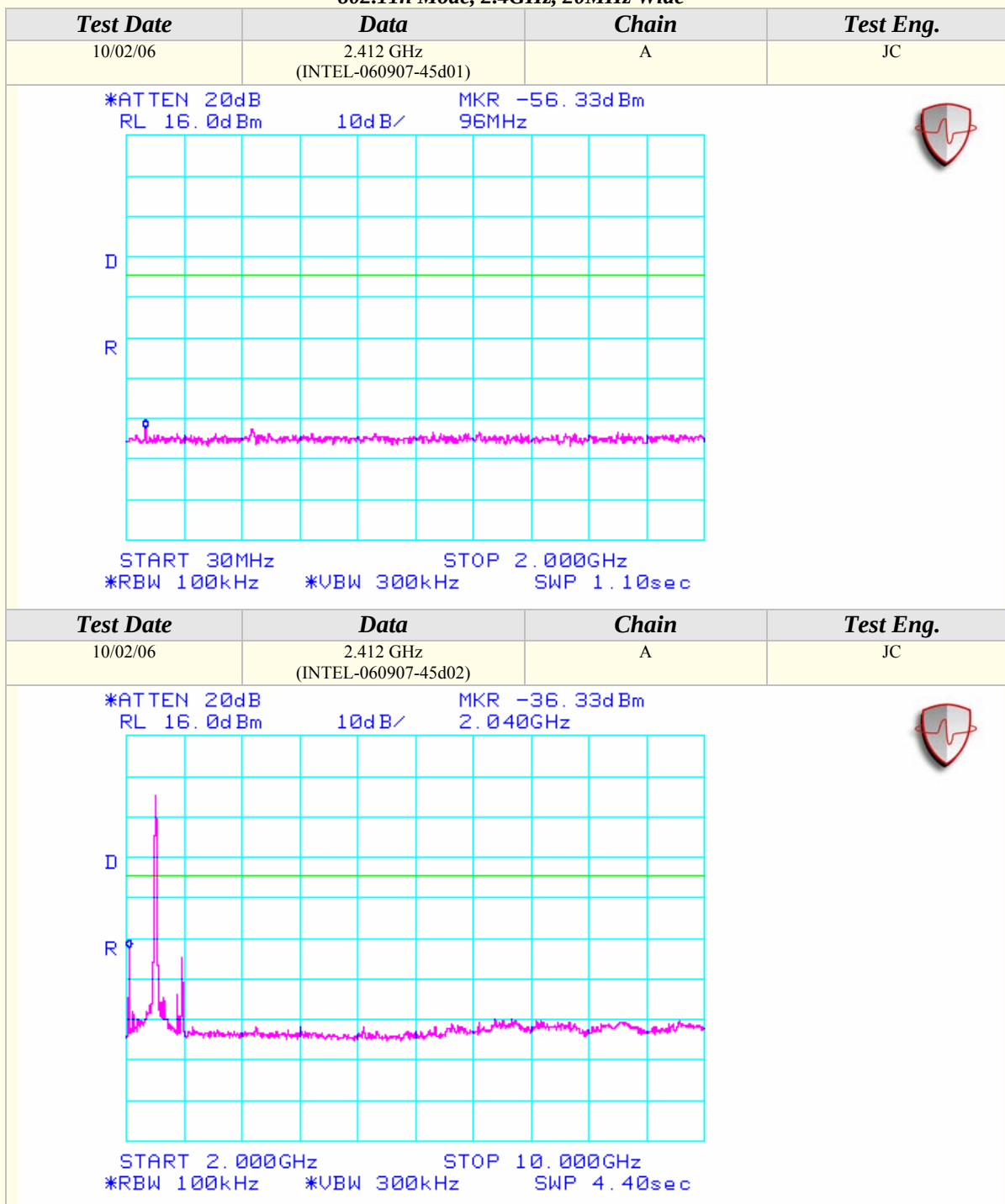
802.11g Mode

Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-060907-29d23)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.17dBm 14.88GHz			
Test Date	Data	Chain	Test Eng.
09/22/06	2.462 GHz (INTEL-060907-29d24)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.33dBm 24.880GHz			



Conducted Out Of Band Emissions (Continued)

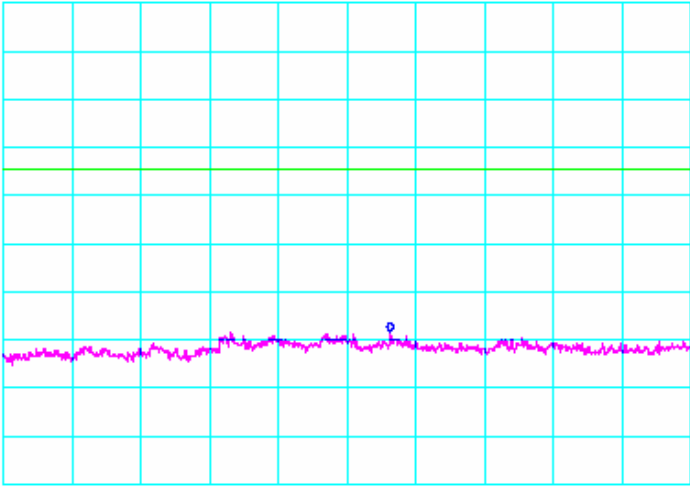
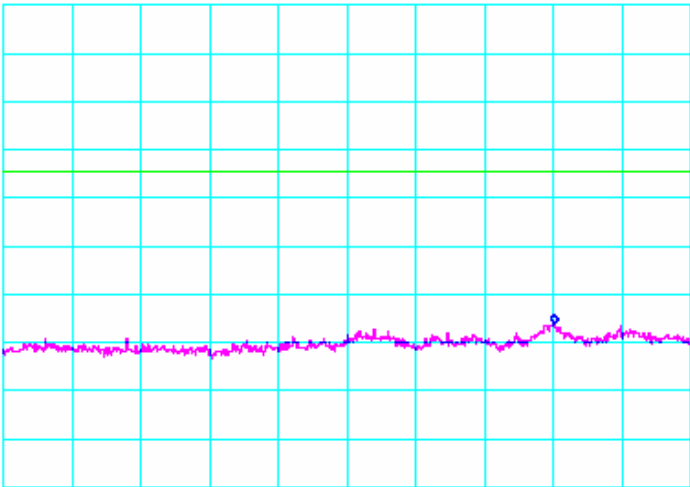
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

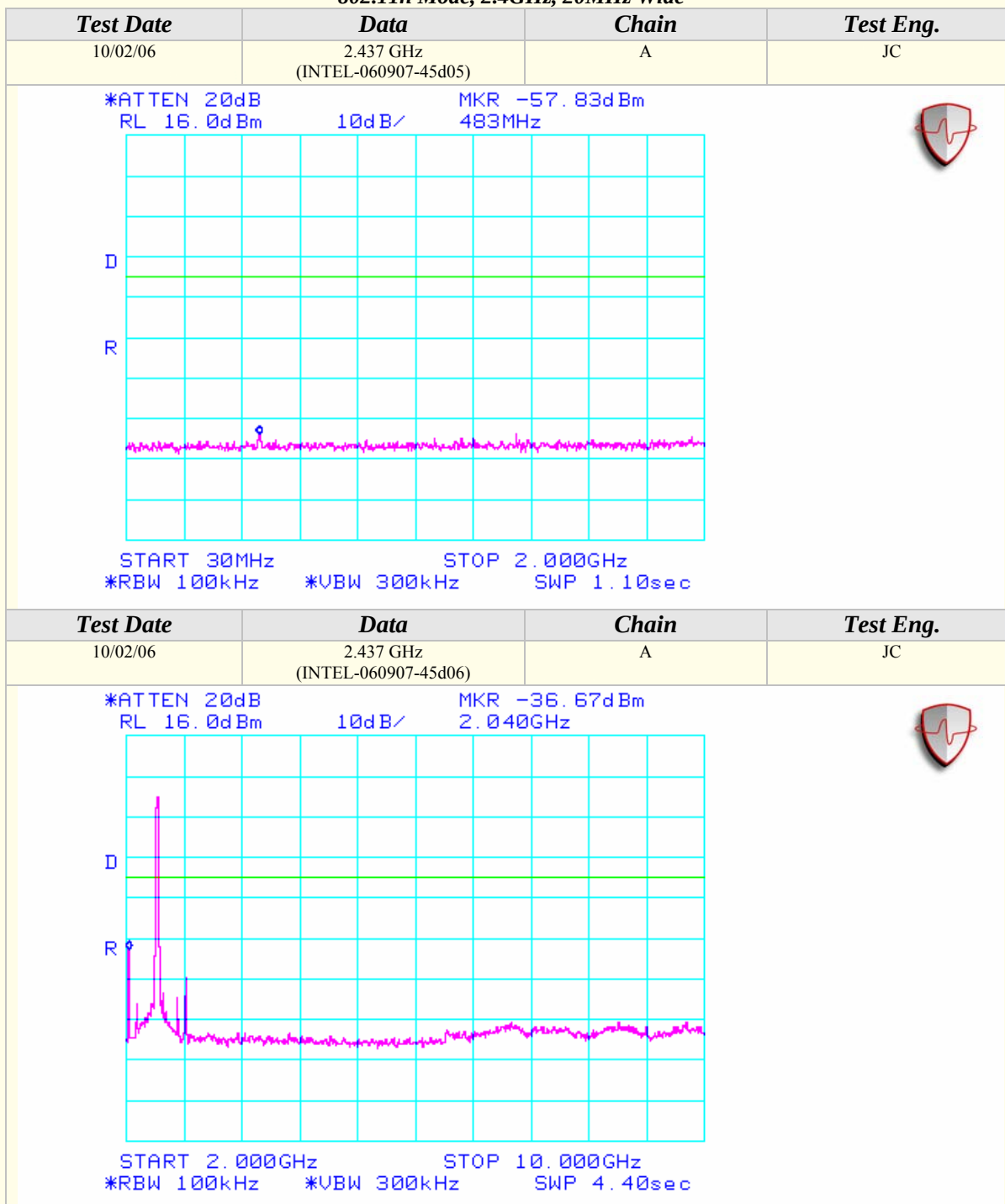
802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.412 GHz (INTEL-060907-45d03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.33dBm 15.63GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
10/02/06	2.412 GHz (INTEL-060907-45d04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -50.17dBm 24.810GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

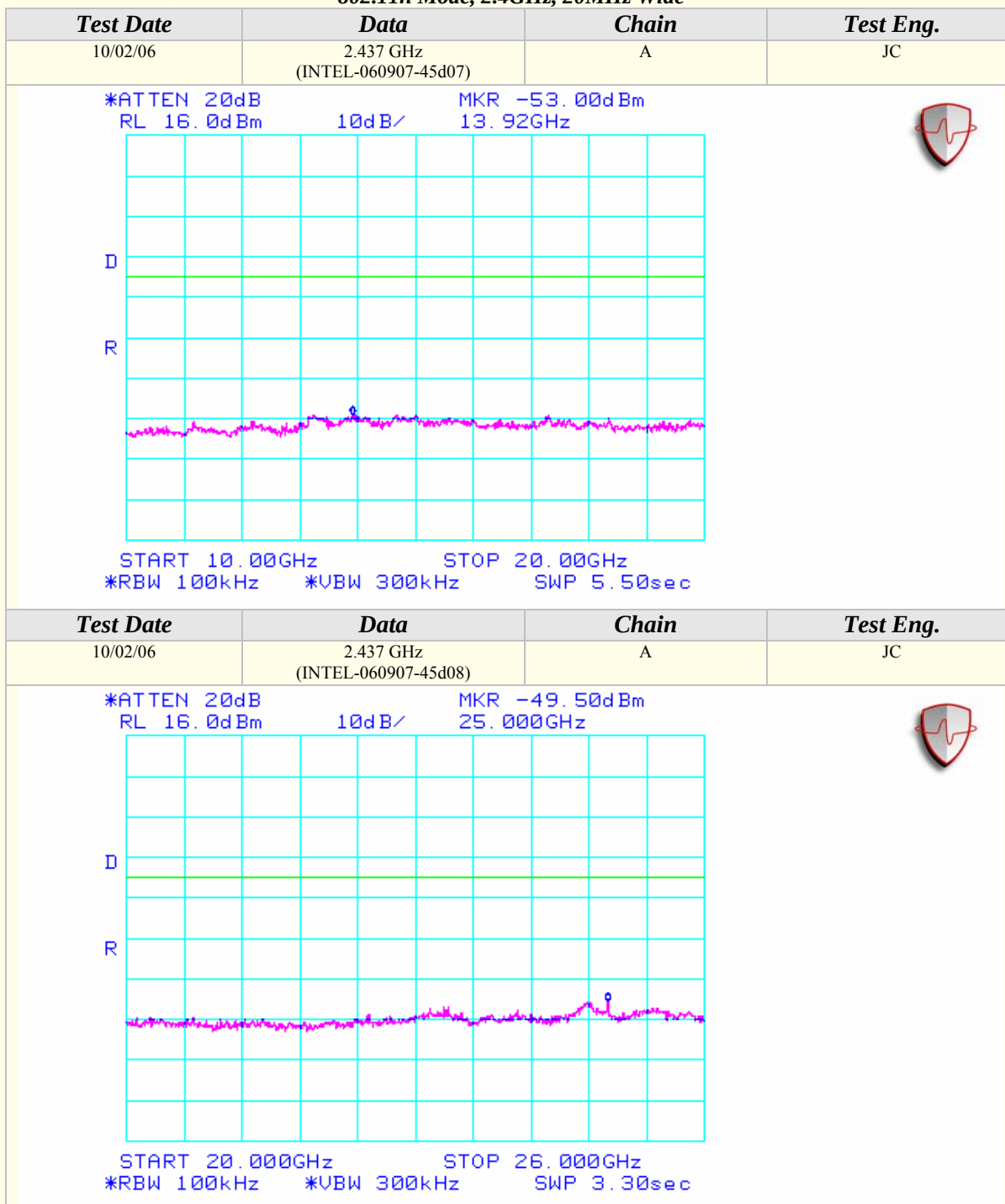
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

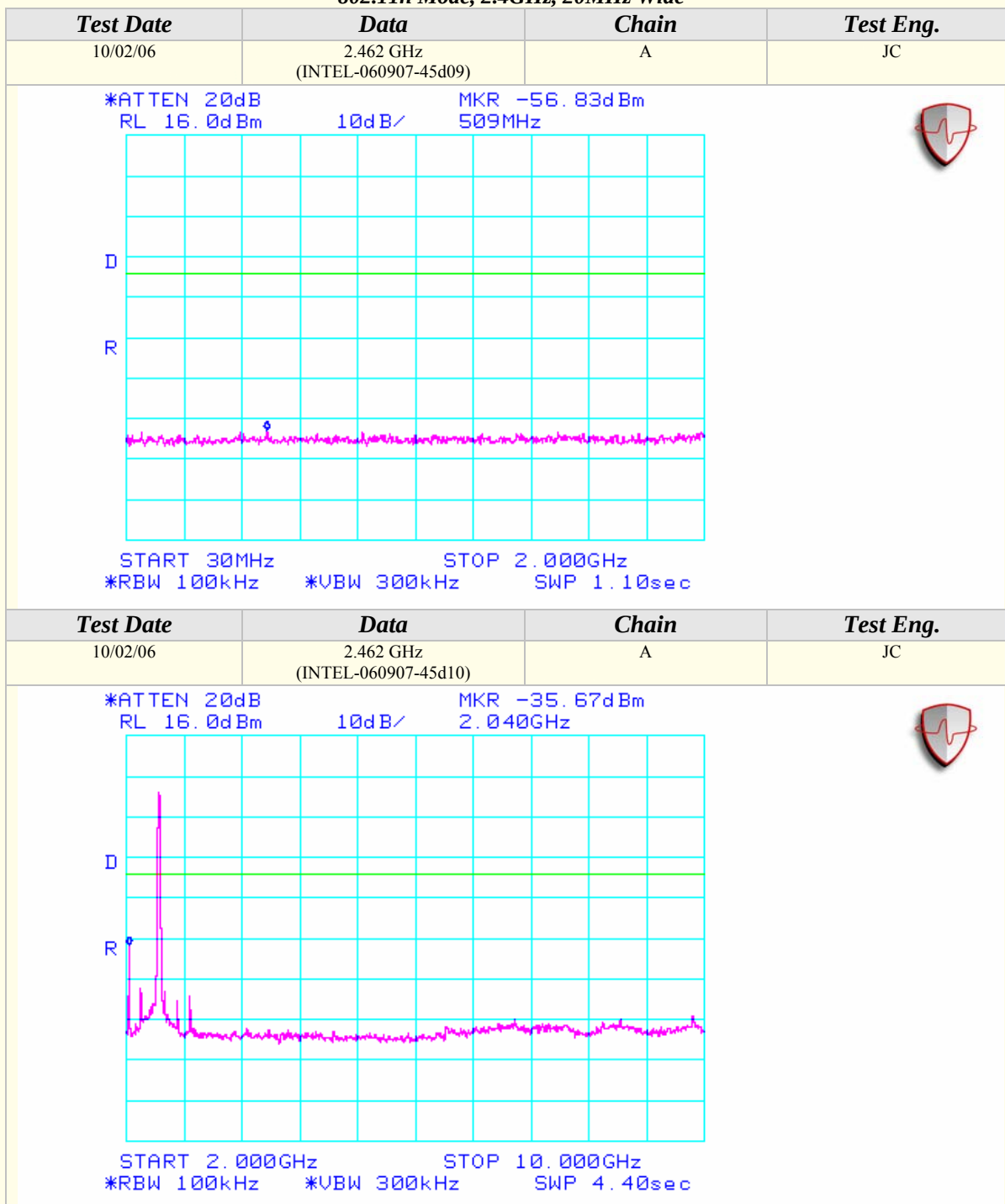
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

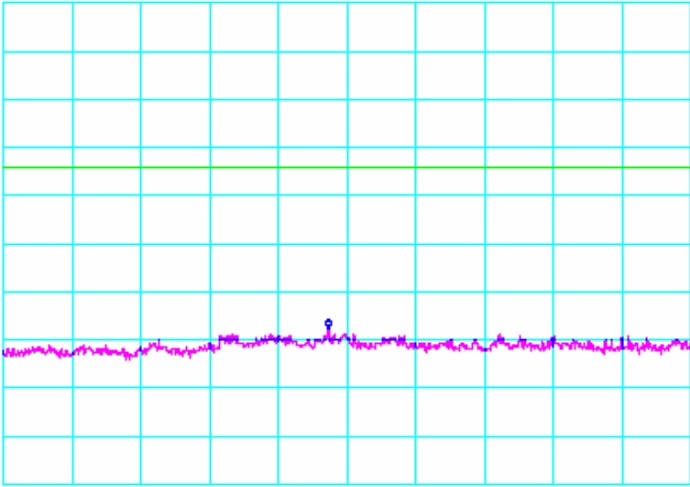
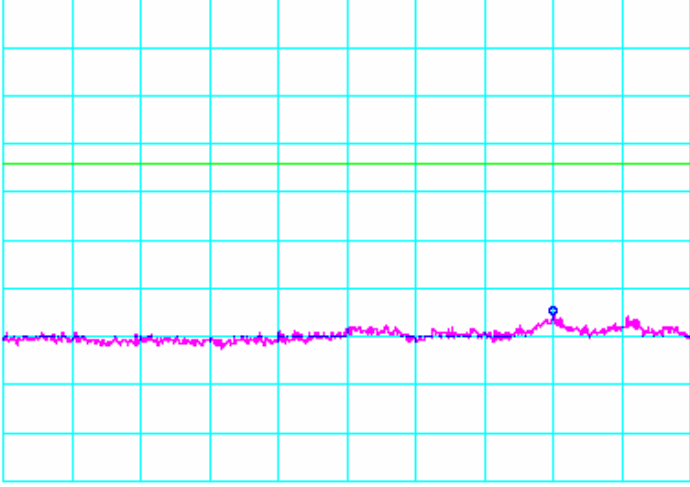
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

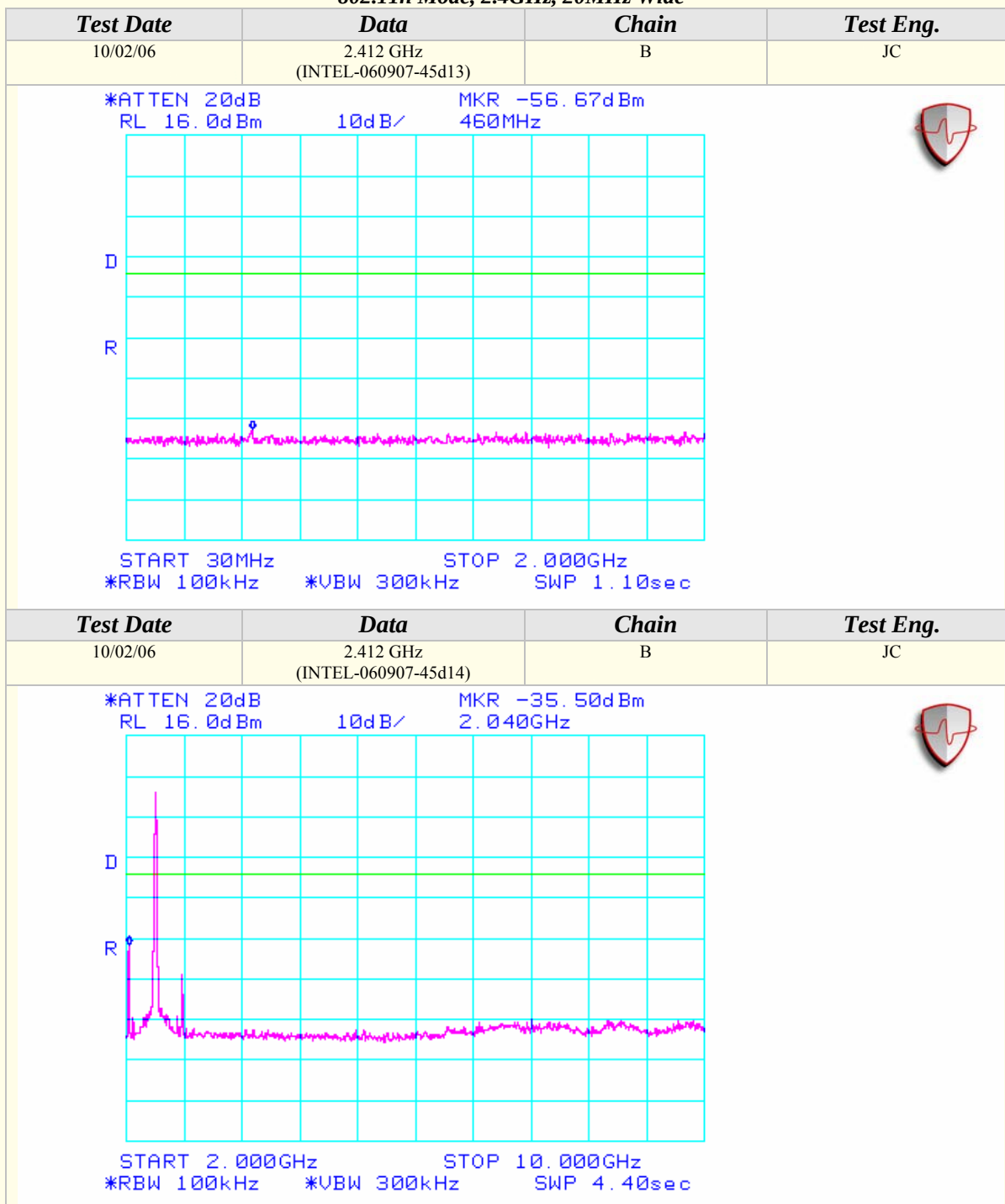
802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.462 GHz (INTEL-060907-45d11)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -51.67dBm 14.73GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
10/02/06	2.462 GHz (INTEL-060907-45d12)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.67dBm 24.800GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

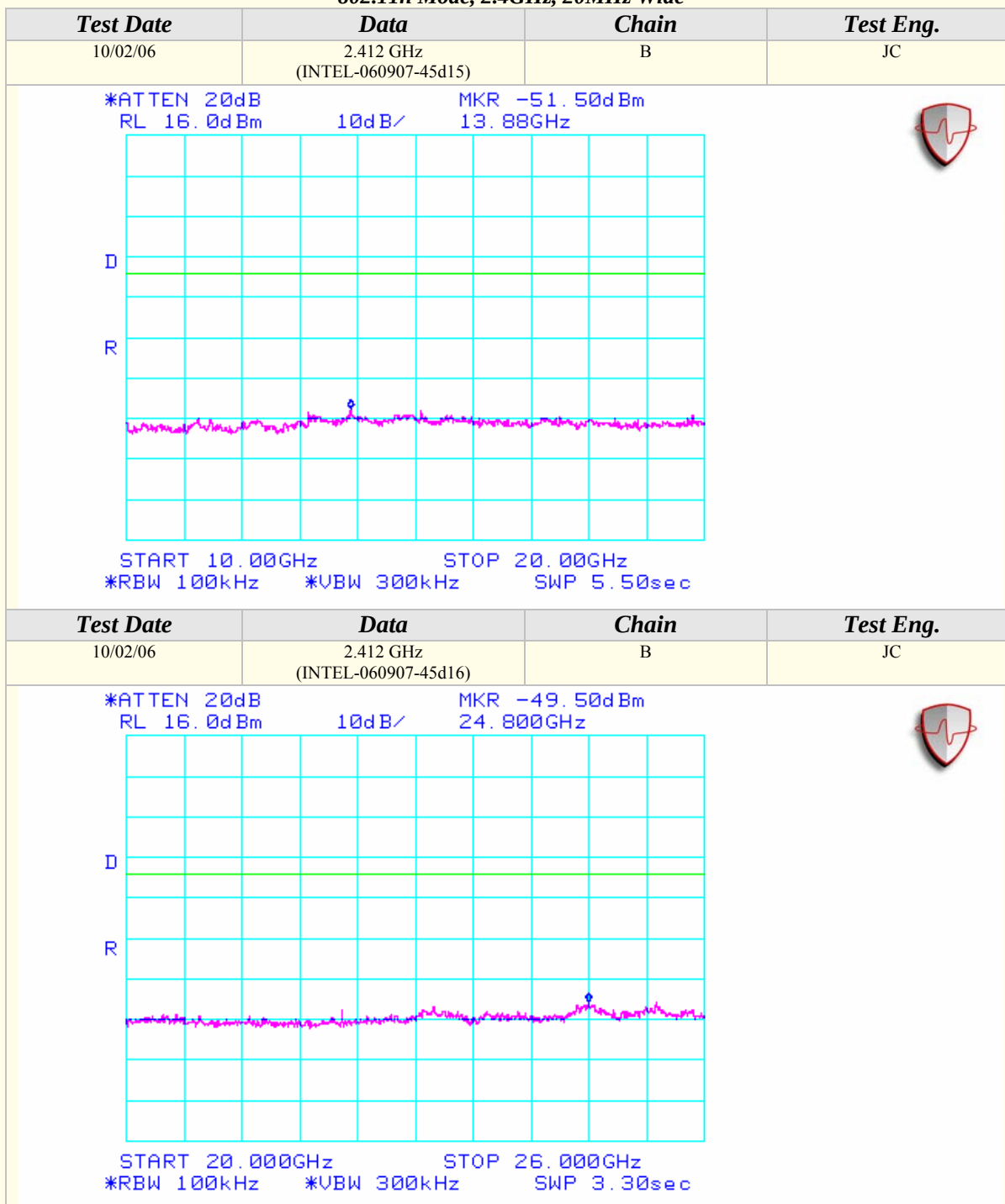
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

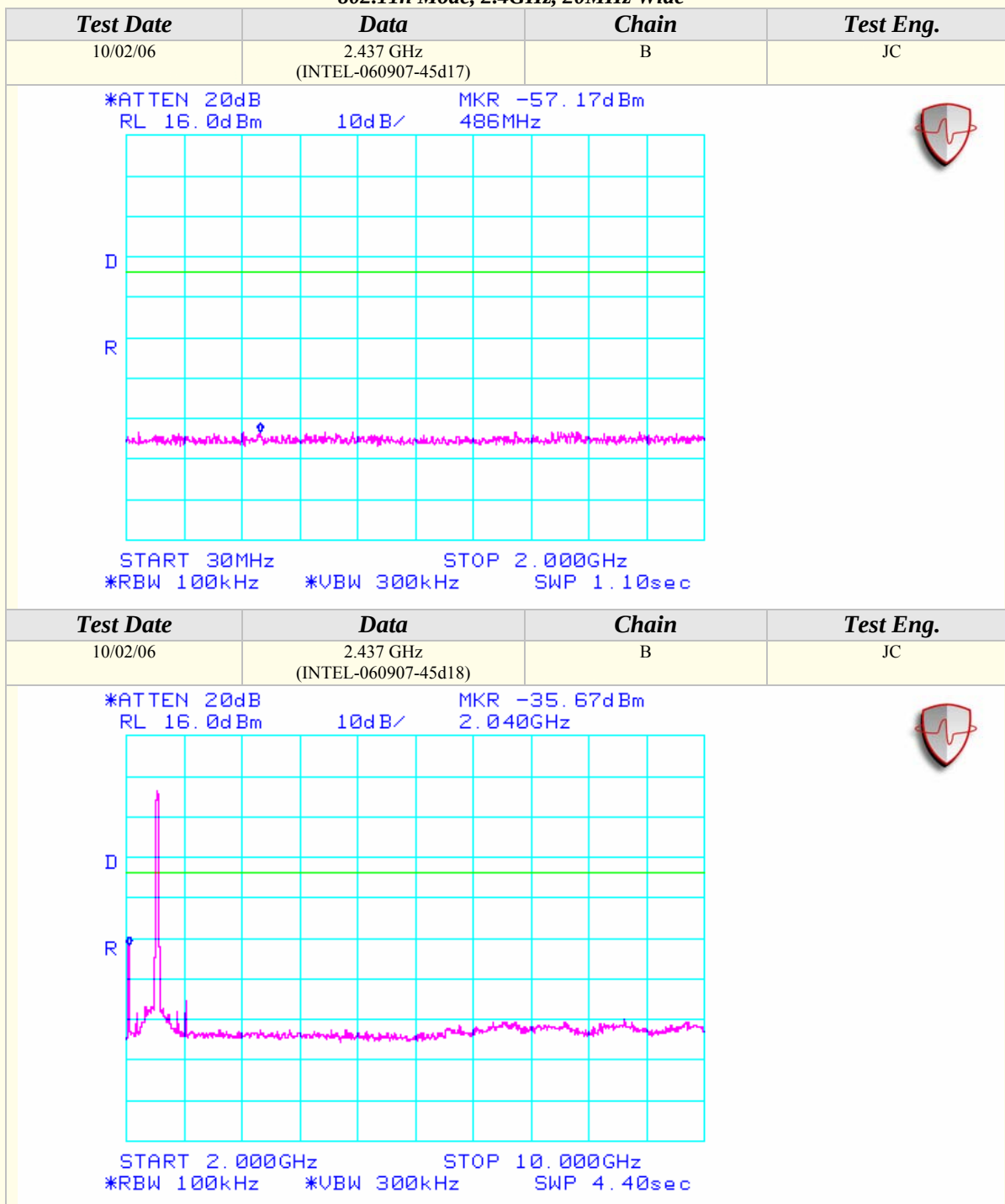
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

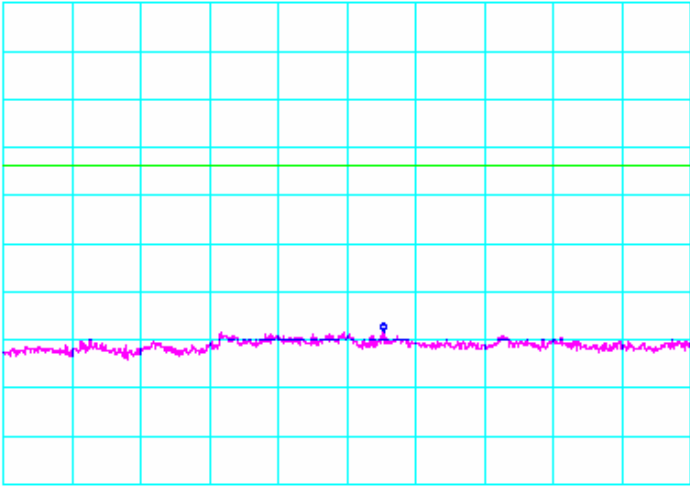
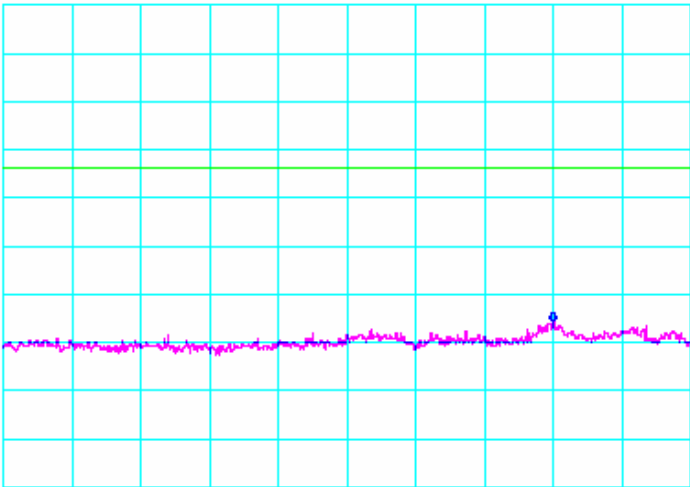
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

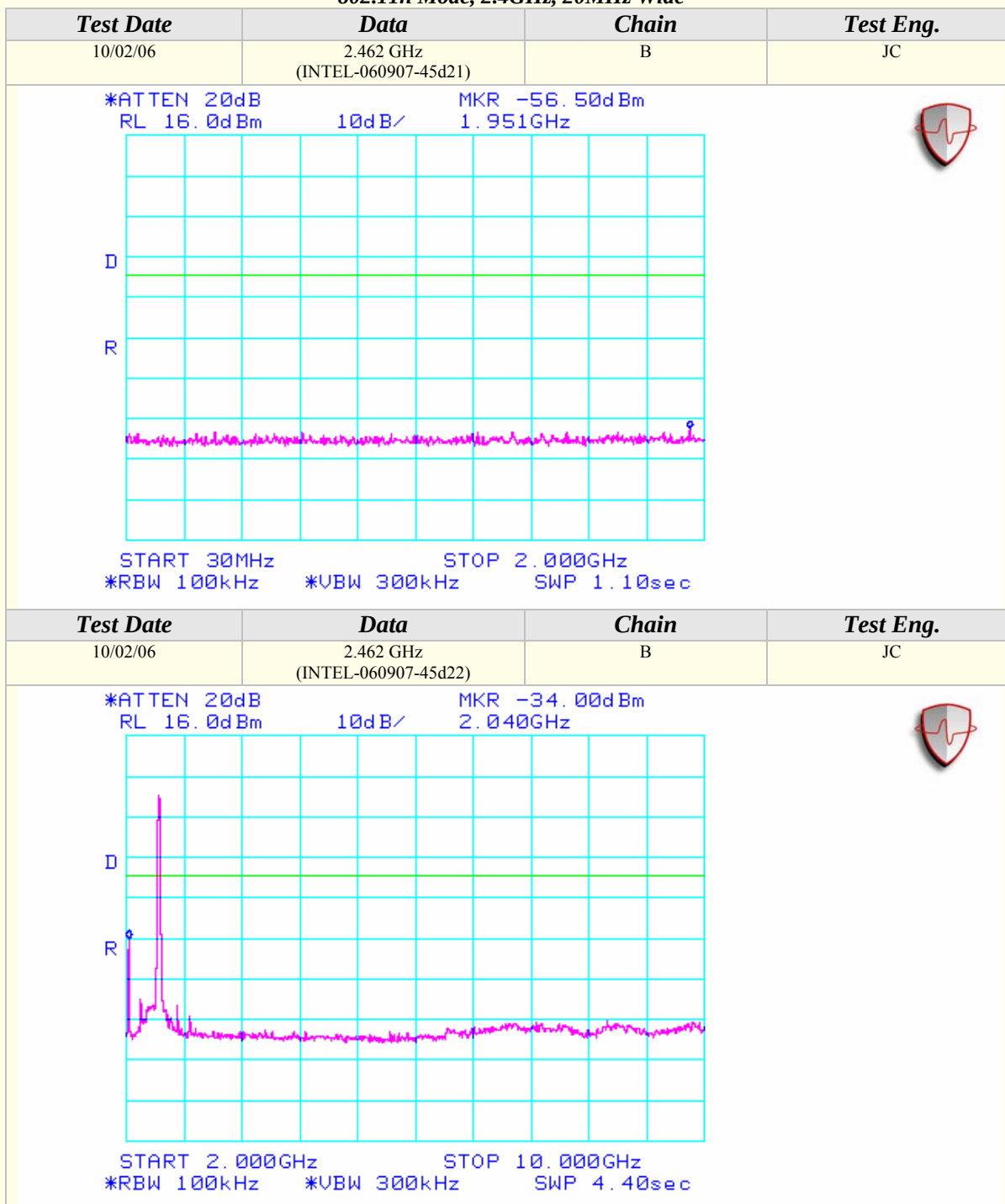
802.11n Mode, 2.4GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	2.437 GHz (INTEL-060907-45d19)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.33dBm 15.53GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			
Test Date	Data	Chain	Test Eng.
10/02/06	2.437 GHz (INTEL-060907-45d20)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.83dBm 24.800GHz  START 20.000GHz STOP 26.000GHz *RBW 100kHz *VBW 300kHz SWP 3.30sec			



Conducted Out Of Band Emissions (Continued)

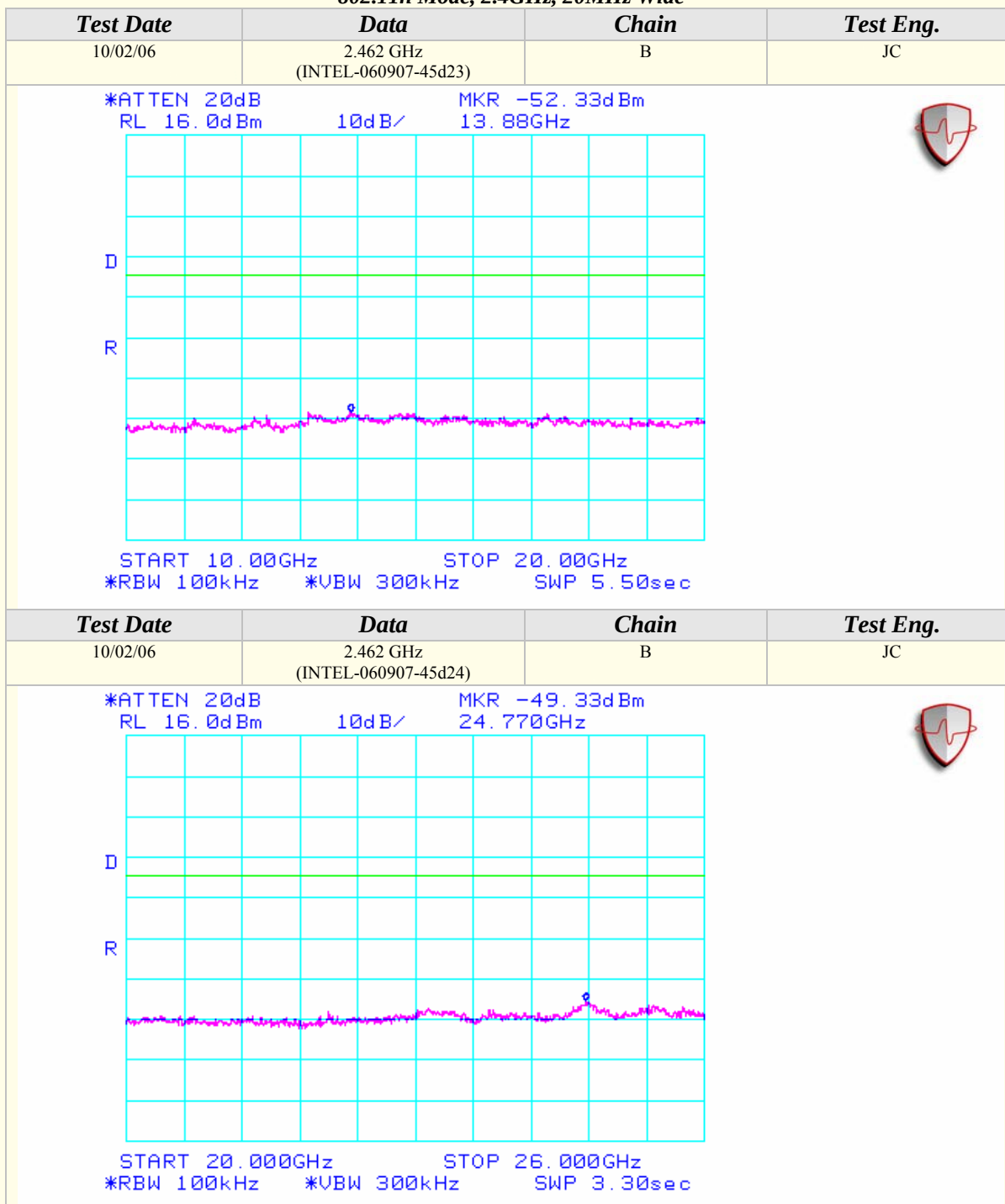
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

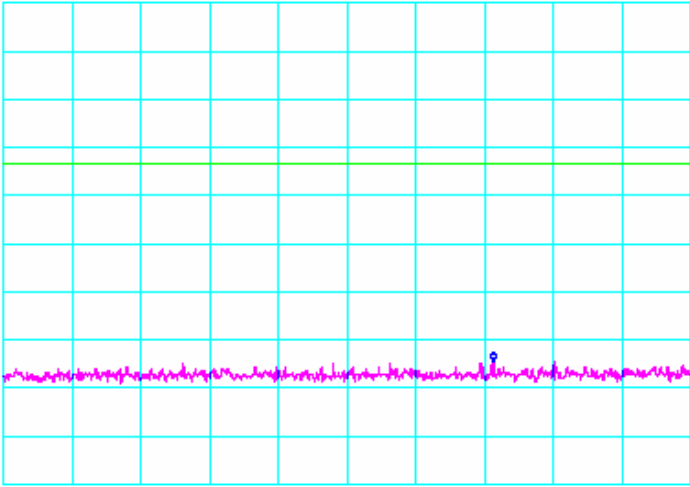
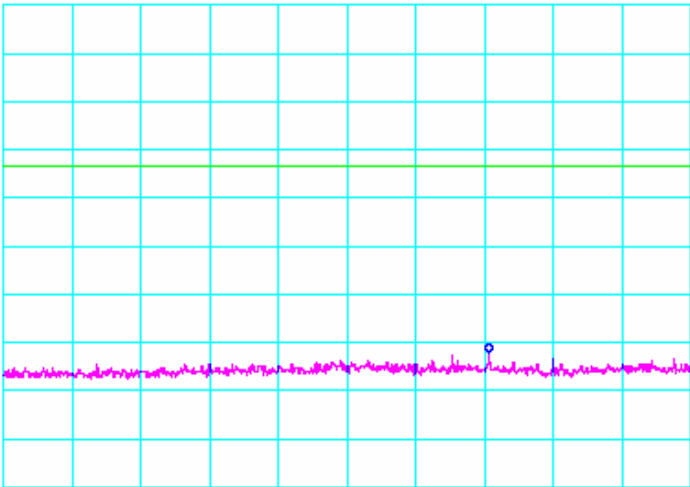
802.11n Mode, 2.4GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

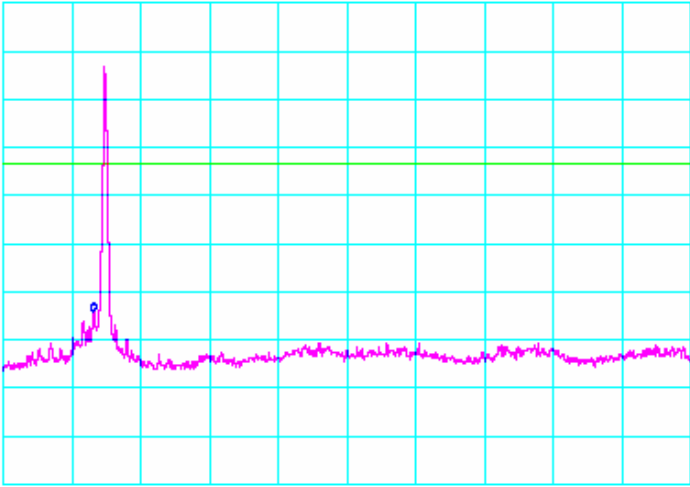
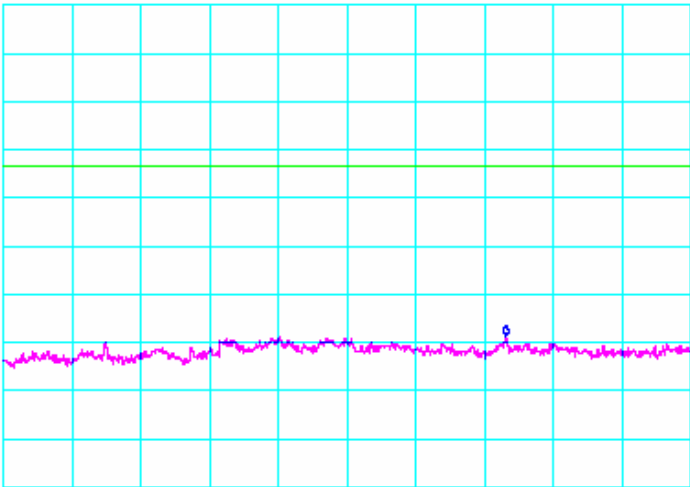
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48d01)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -58.50dBm 721.9MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms 			
Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48d02)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -56.17dBm 3.827GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec 			



Conducted Out Of Band Emissions (Continued)

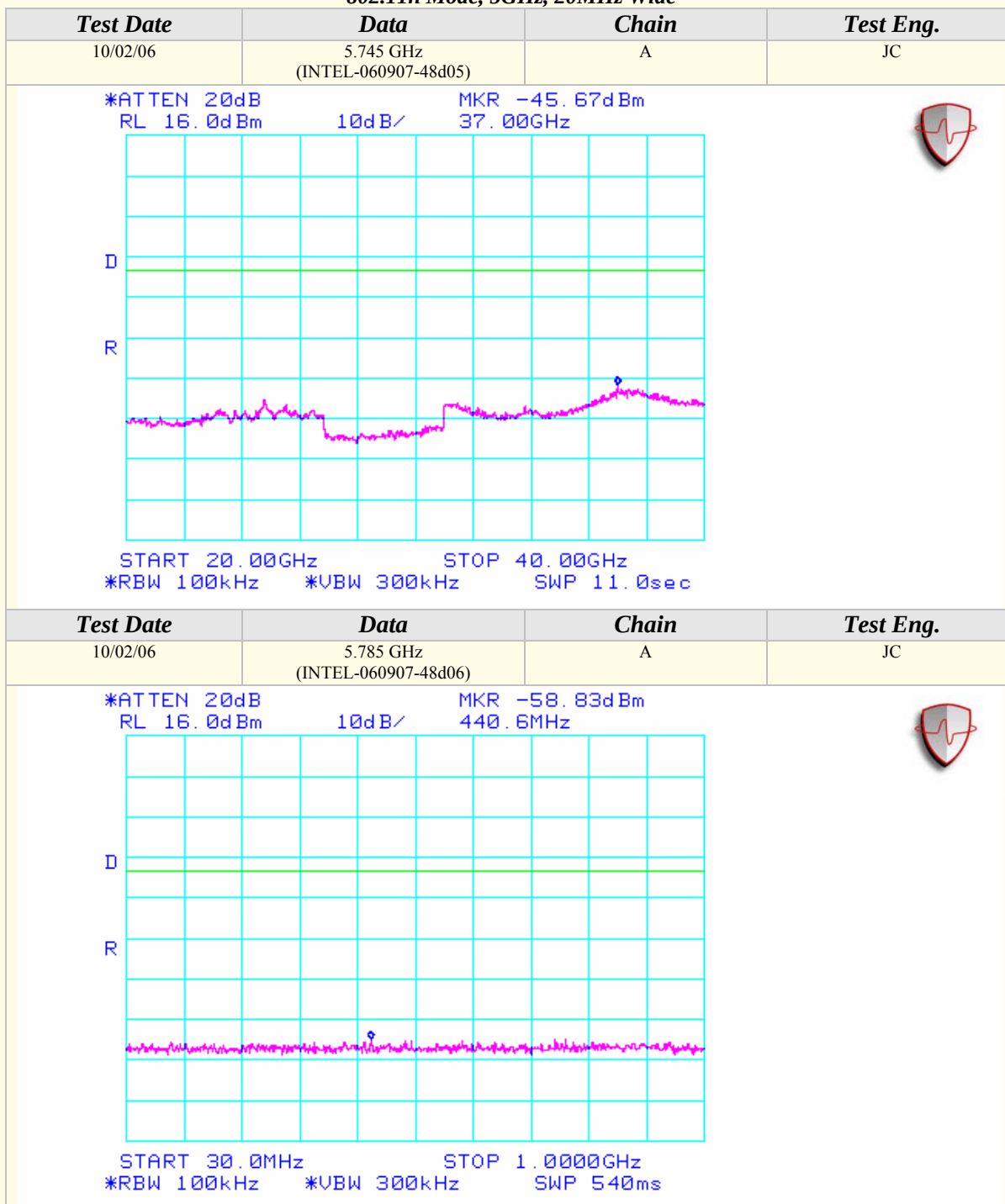
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48d03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -48.17dBm 5.658GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48d04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.67dBm 17.32GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



Conducted Out Of Band Emissions (Continued)

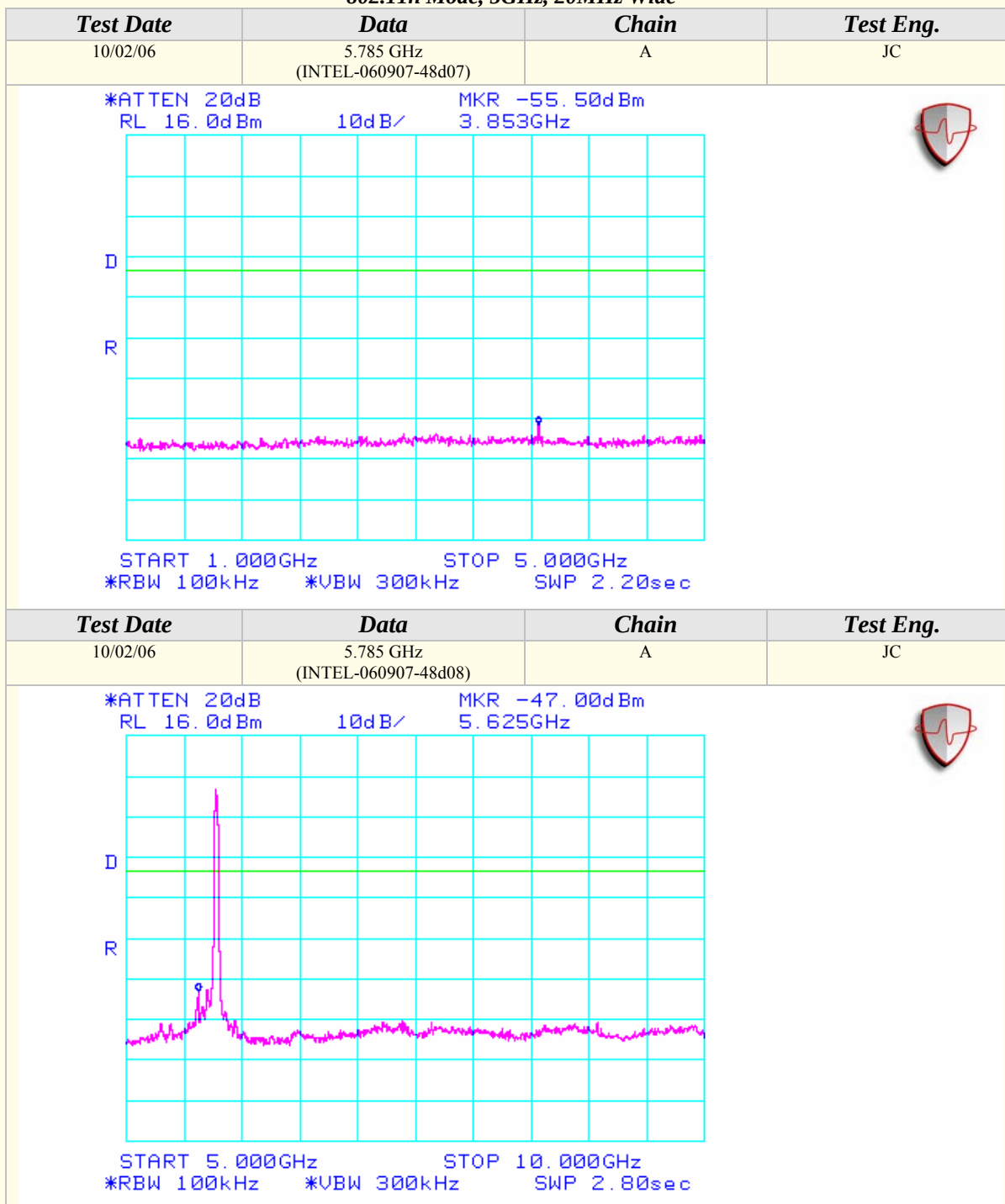
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

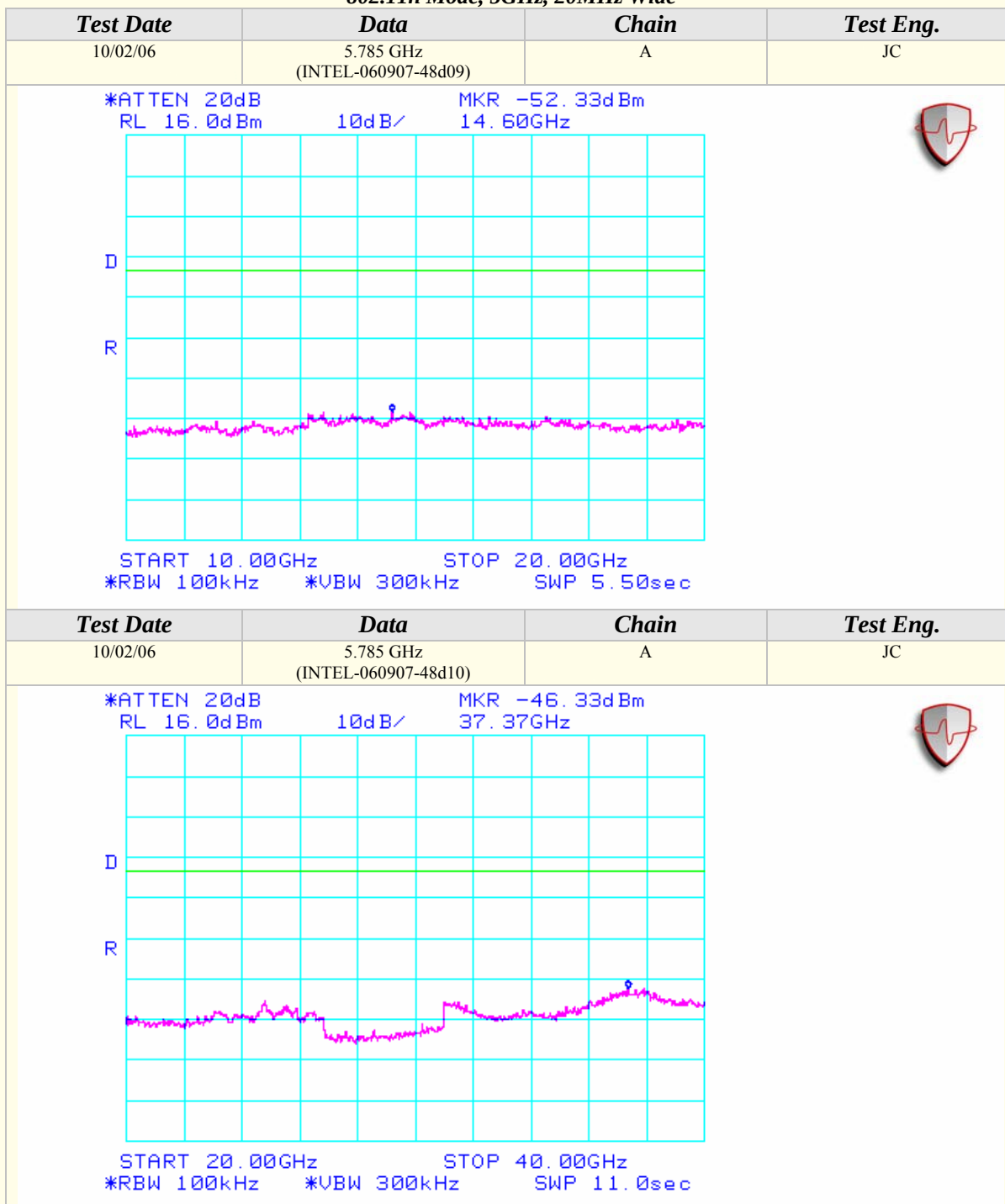
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

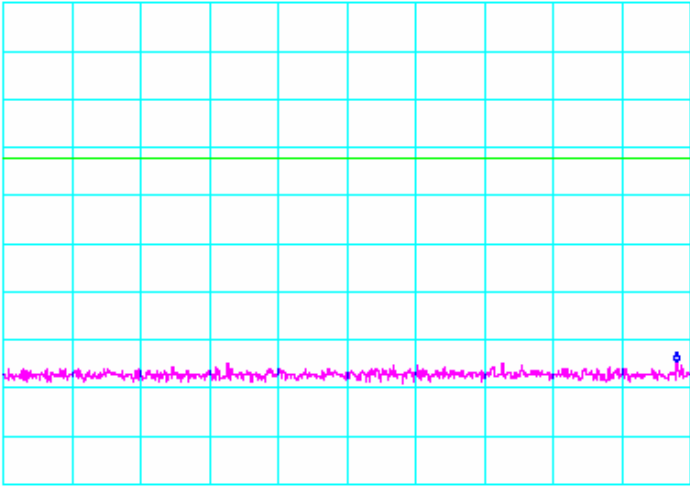
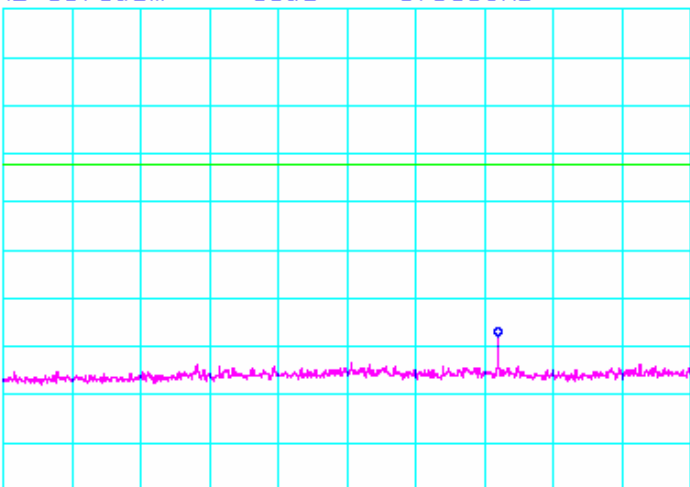
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

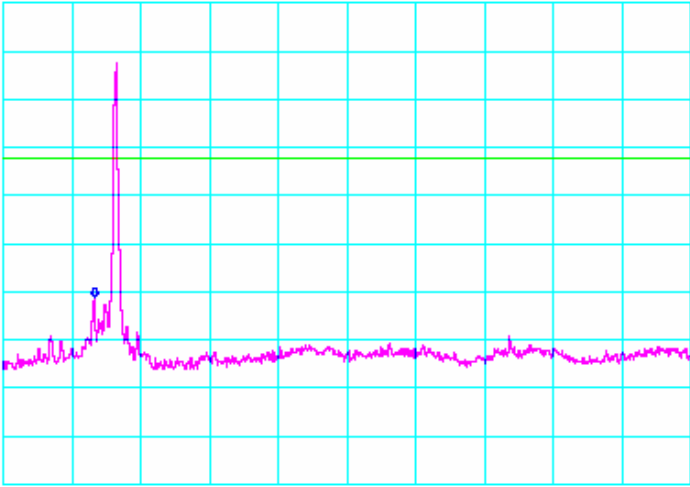
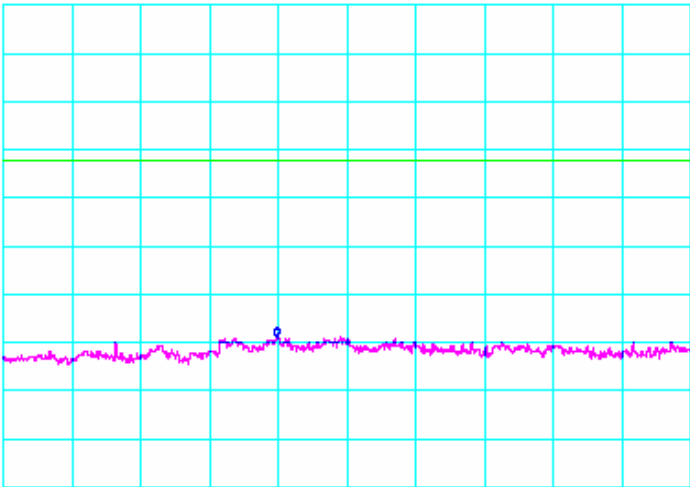
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d11)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.67dBm 980.6MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms 			
Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d12)	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)

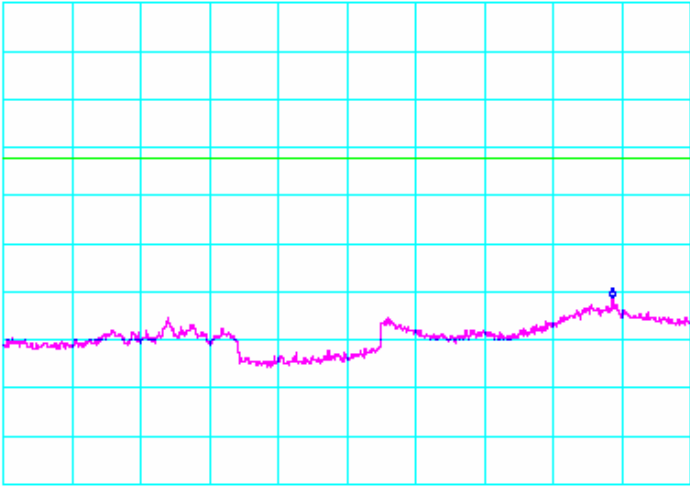
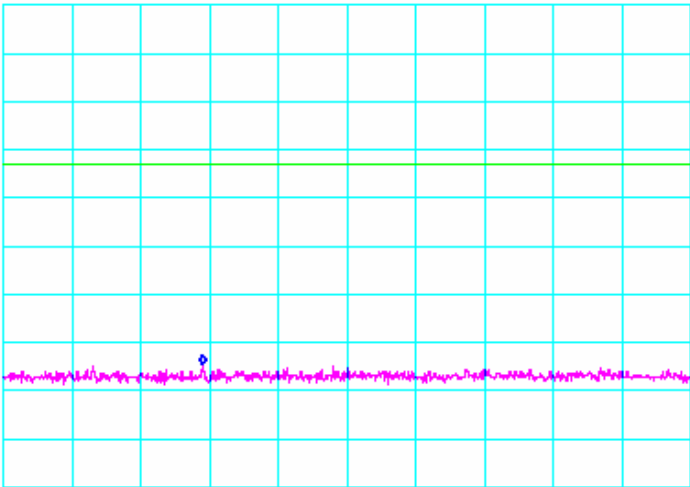
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d13)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -45.17dBm 5.667GHz  START 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d14)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.83dBm 13.98GHz  START 10.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



Conducted Out Of Band Emissions (Continued)

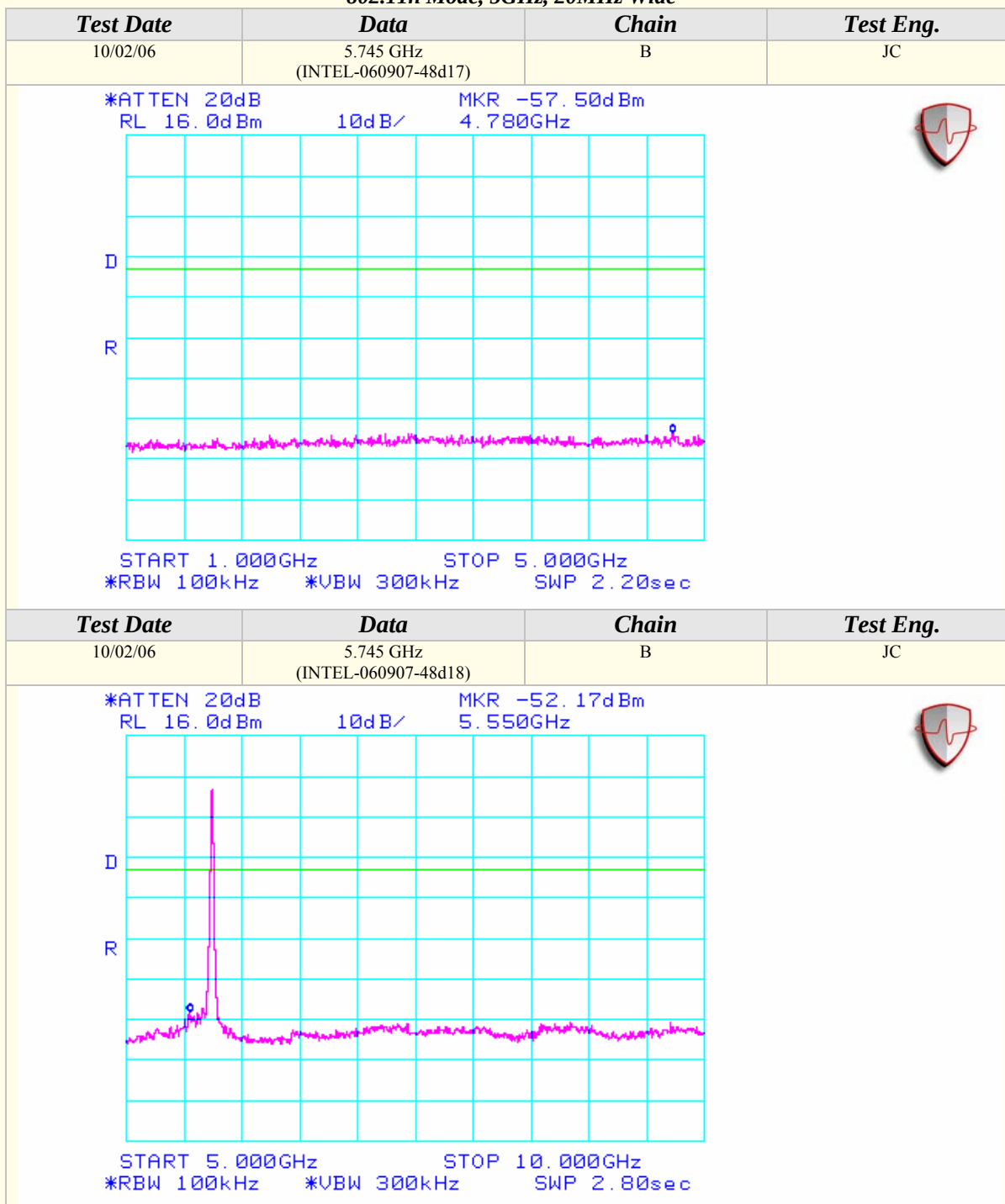
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d15)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -45.33dBm 37.73GHz  START 20.00GHz STOP 40.00GHz *RBW 100kHz *VBW 300kHz SWP 11.0sec			
Test Date	Data	Chain	Test Eng.
10/02/06	5.745 GHz (INTEL-060907-48d16)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.67dBm 311.3MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			



Conducted Out Of Band Emissions (Continued)

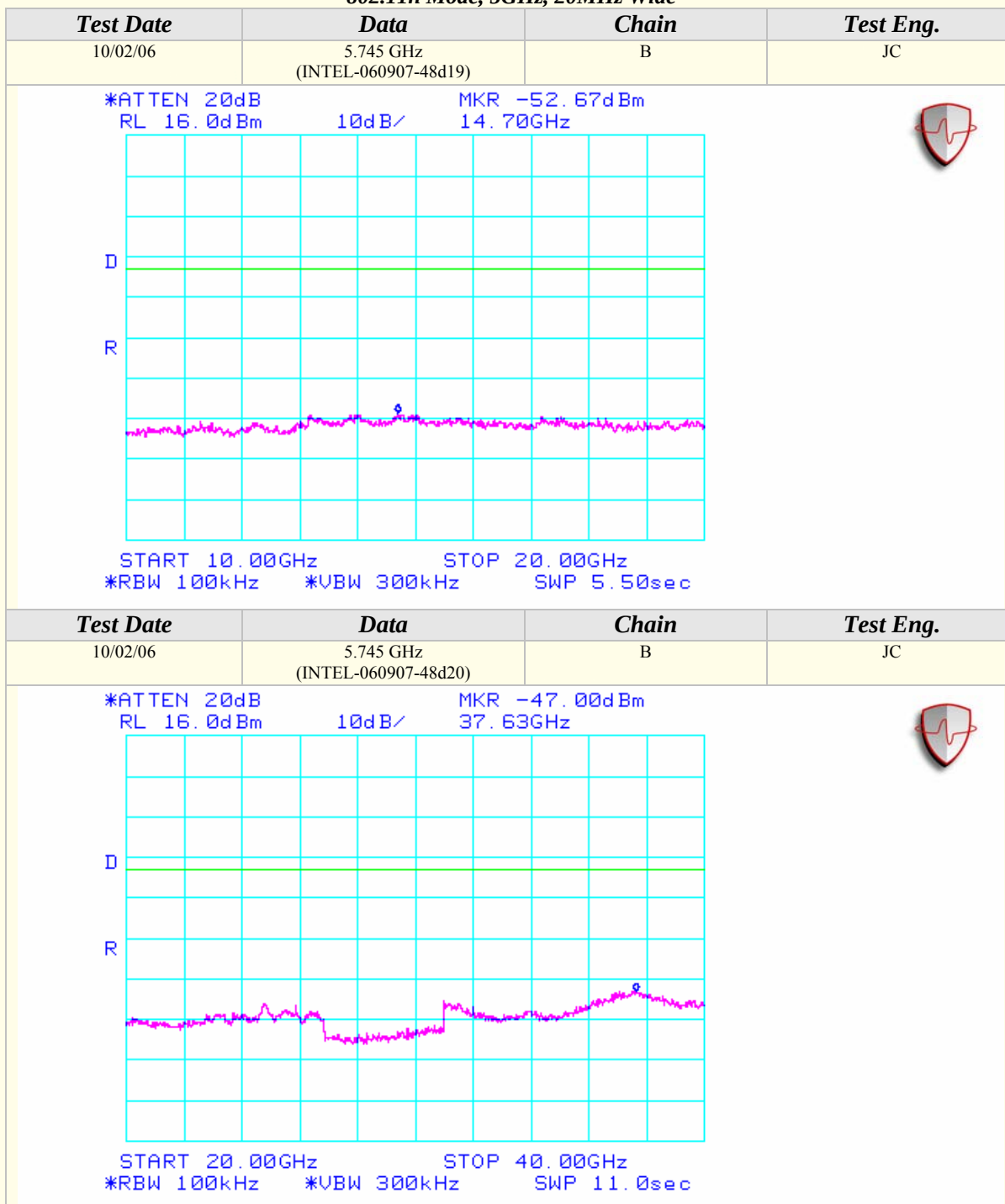
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

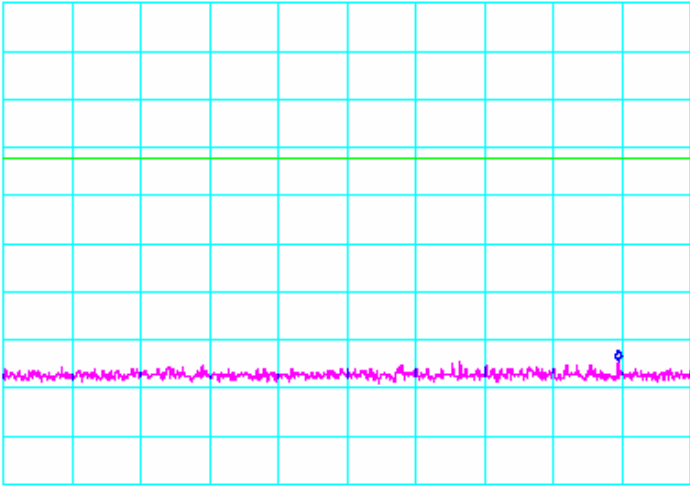
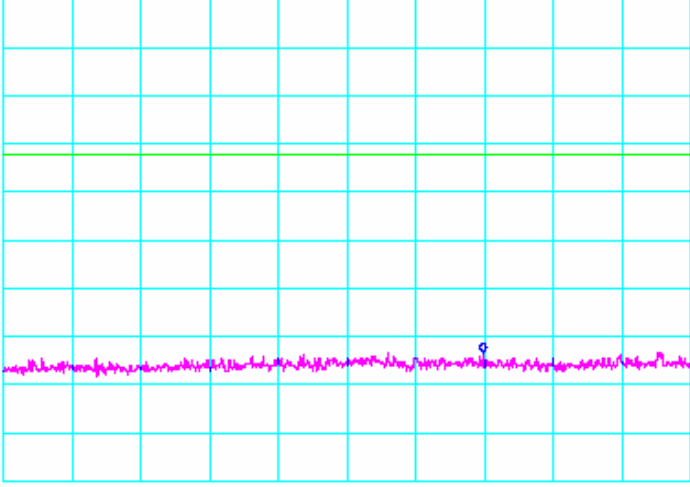
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

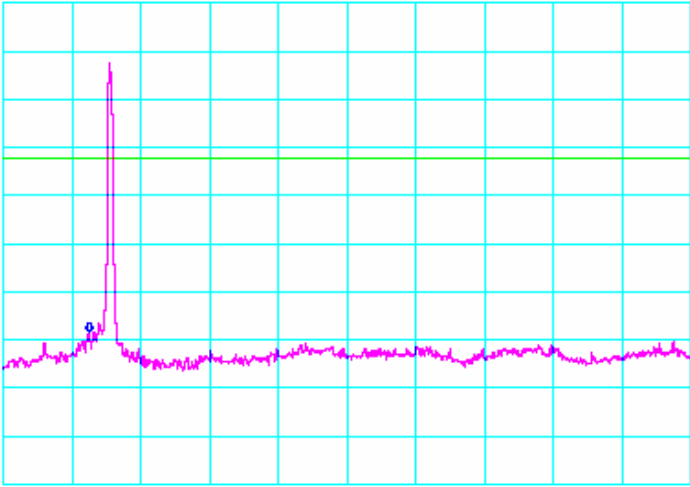
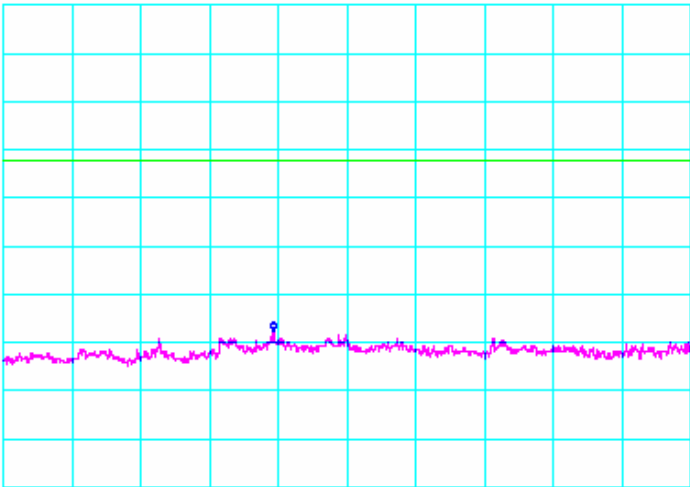
802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48d21)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -58.33dBm 898.2MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms 			
Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48d22)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MR -57.33dBm 3.793GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec 			



Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 20MHz Wide

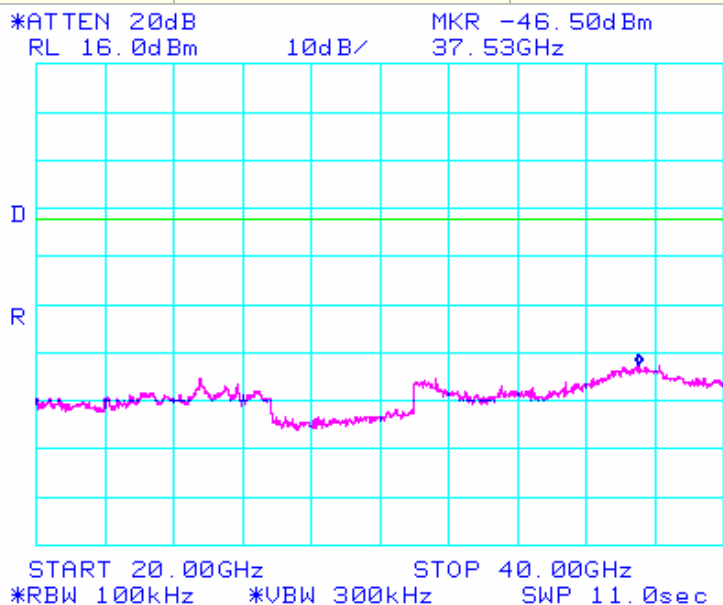
Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48d23)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.50dBm 5.625GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48d24)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -51.67dBm 13.93GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



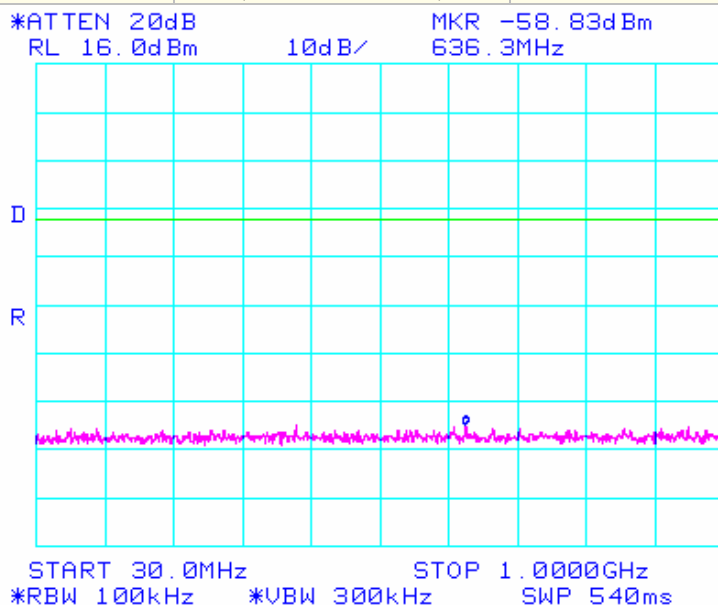
Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 20MHz Wide

Test Date	Data	Chain	Test Eng.
10/02/06	5.785 GHz (INTEL-060907-48d25)	B	JC



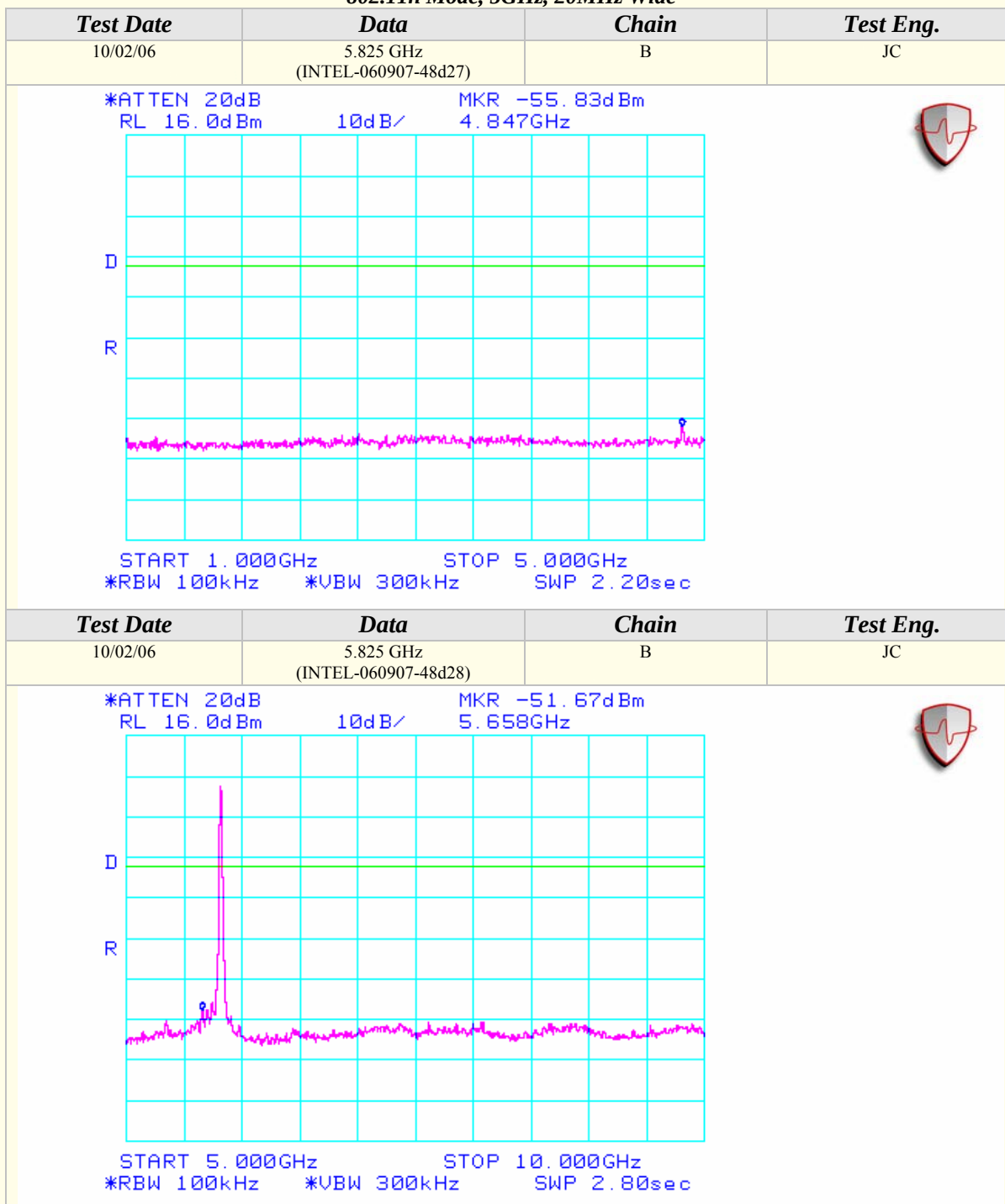
Test Date	Data	Chain	Test Eng.
10/02/06	5.825 GHz (INTEL-060907-48d26)	B	JC





Conducted Out Of Band Emissions (Continued)

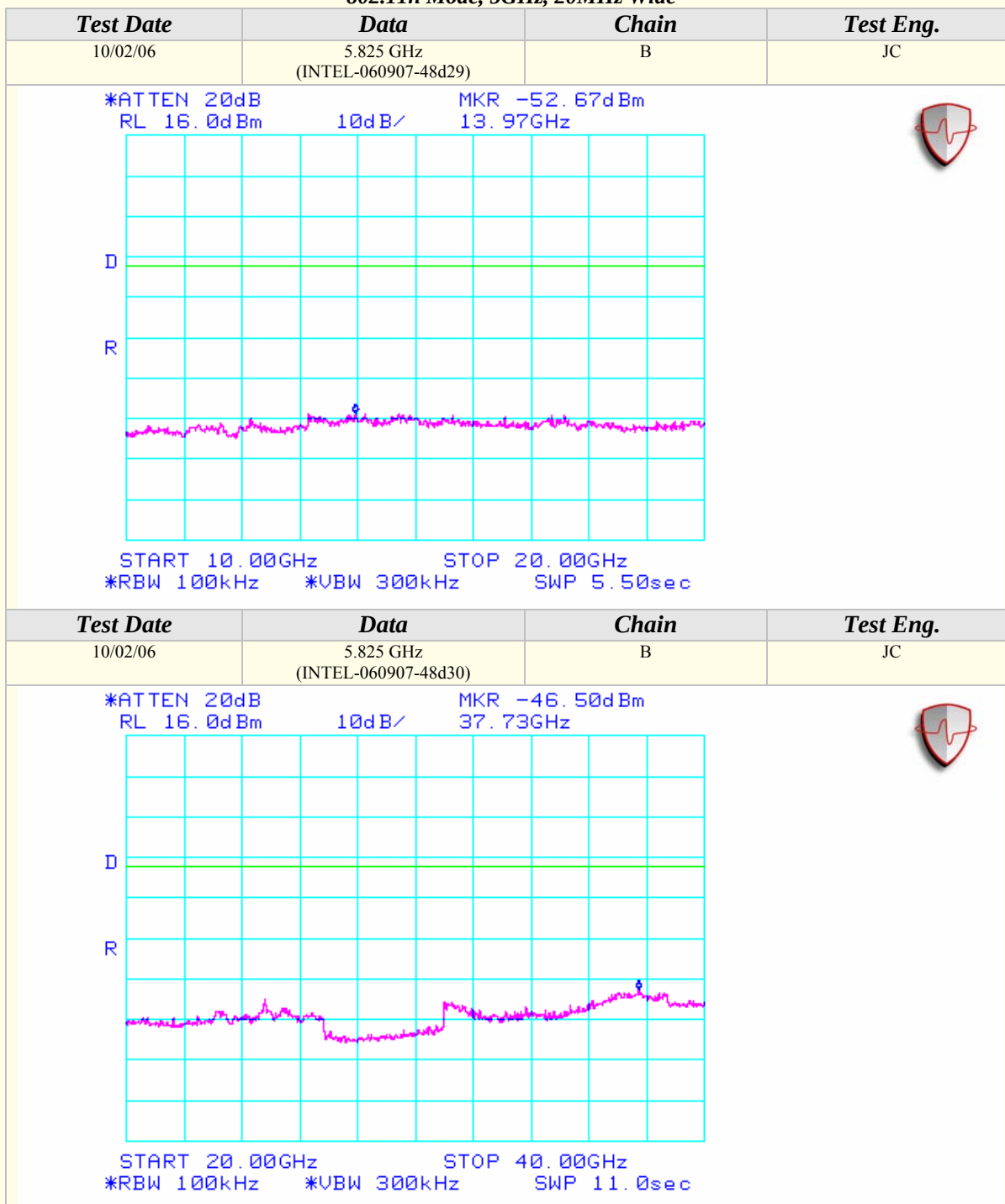
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

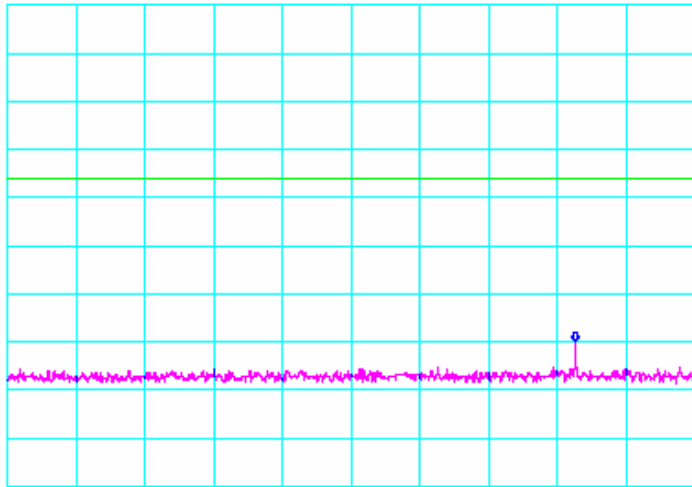
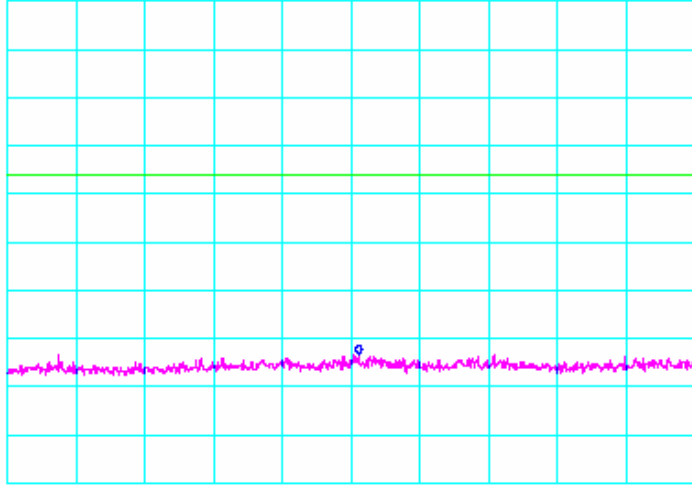
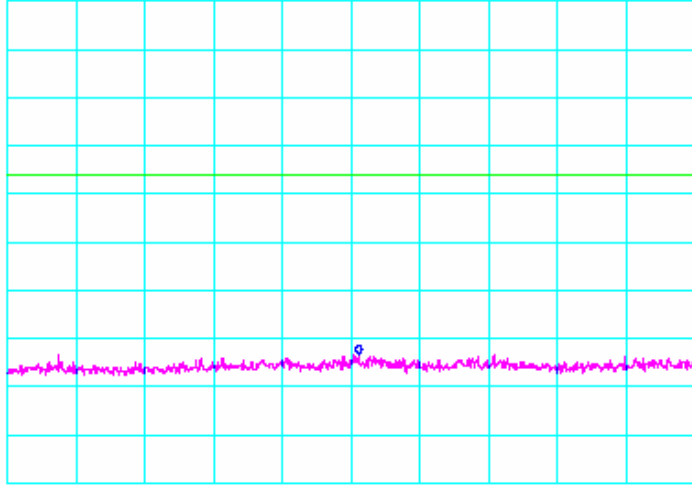
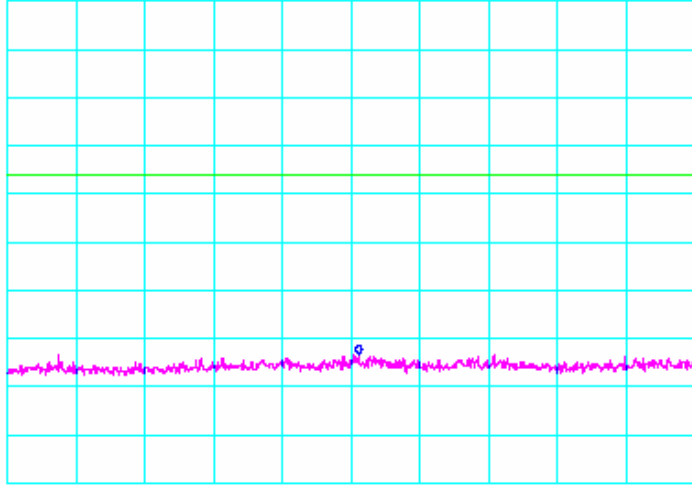
802.11n Mode, 5GHz, 20MHz Wide





Conducted Out Of Band Emissions (Continued)

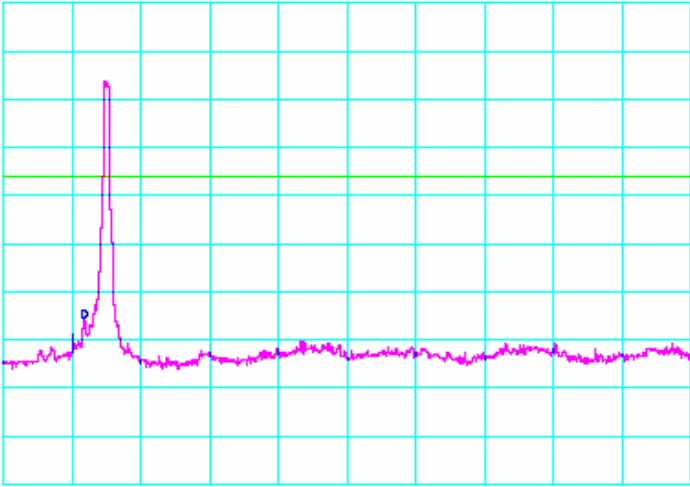
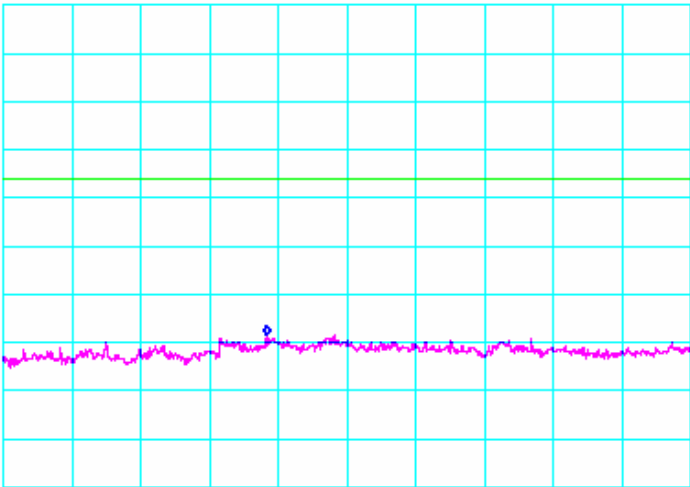
802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.								
10/04/06	5.755 GHz (INTEL-060907-51d01)	A	JC								
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -54.00dBm 831.9MHz  START 30.0MHz *RBW 100kHz STOP 1.0000GHz *VBW 300kHz SWP 540ms Test Date Data Chain Test Eng. <tr><td>10/04/06</td><td>5.755 GHz (INTEL-060907-51d02)</td><td>A</td><td>JC</td></tr> <tr><td colspan="4"> *ATTEN 20dB RL 16.0dBm 10dB/ MKR -57.33dBm 3.047GHz  START 1.000GHz *RBW 100kHz STOP 5.000GHz *VBW 300kHz SWP 2.20sec Test Date Data Chain Test Eng. </td></tr>				10/04/06	5.755 GHz (INTEL-060907-51d02)	A	JC	*ATTEN 20dB RL 16.0dBm 10dB/ MKR -57.33dBm 3.047GHz  START 1.000GHz *RBW 100kHz STOP 5.000GHz *VBW 300kHz SWP 2.20sec Test Date Data Chain Test Eng.			
10/04/06	5.755 GHz (INTEL-060907-51d02)	A	JC								
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -57.33dBm 3.047GHz  START 1.000GHz *RBW 100kHz STOP 5.000GHz *VBW 300kHz SWP 2.20sec Test Date Data Chain Test Eng.											



Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 40MHz Wide

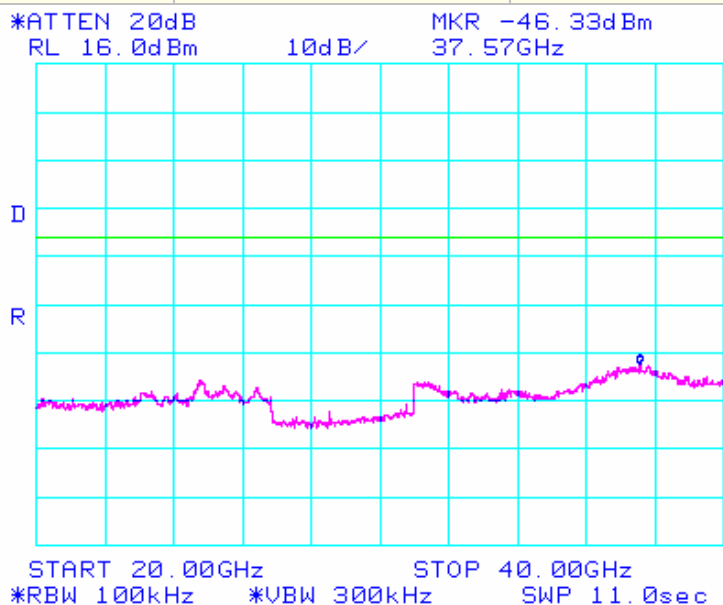
Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d03)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -49.67dBm 5.592GHz  START 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			
Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d04)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -52.50dBm 13.83GHz  START 10.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec			



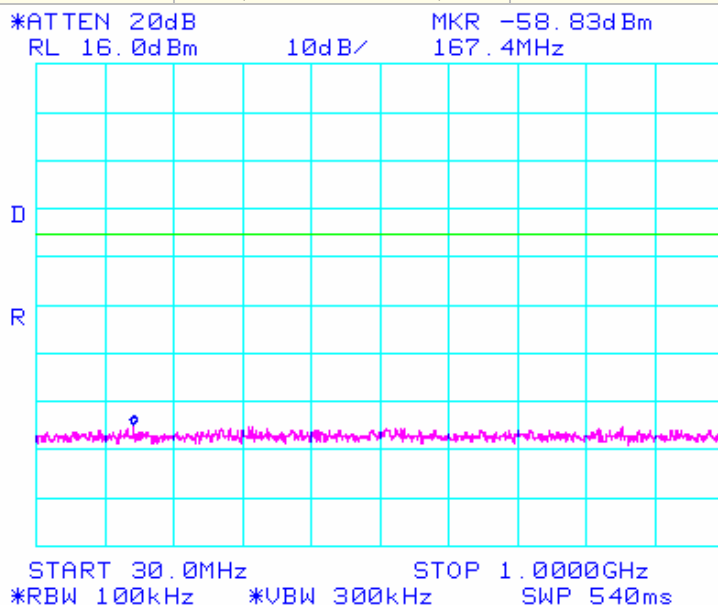
Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d05)	A	JC



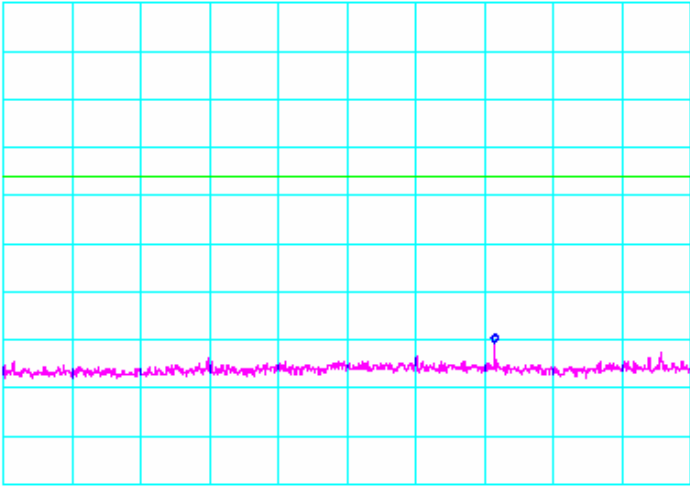
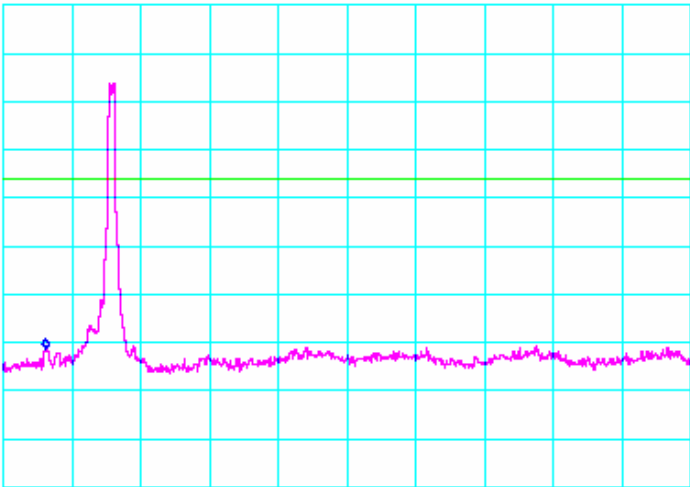
Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51d06)	A	JC





Conducted Out Of Band Emissions (Continued)

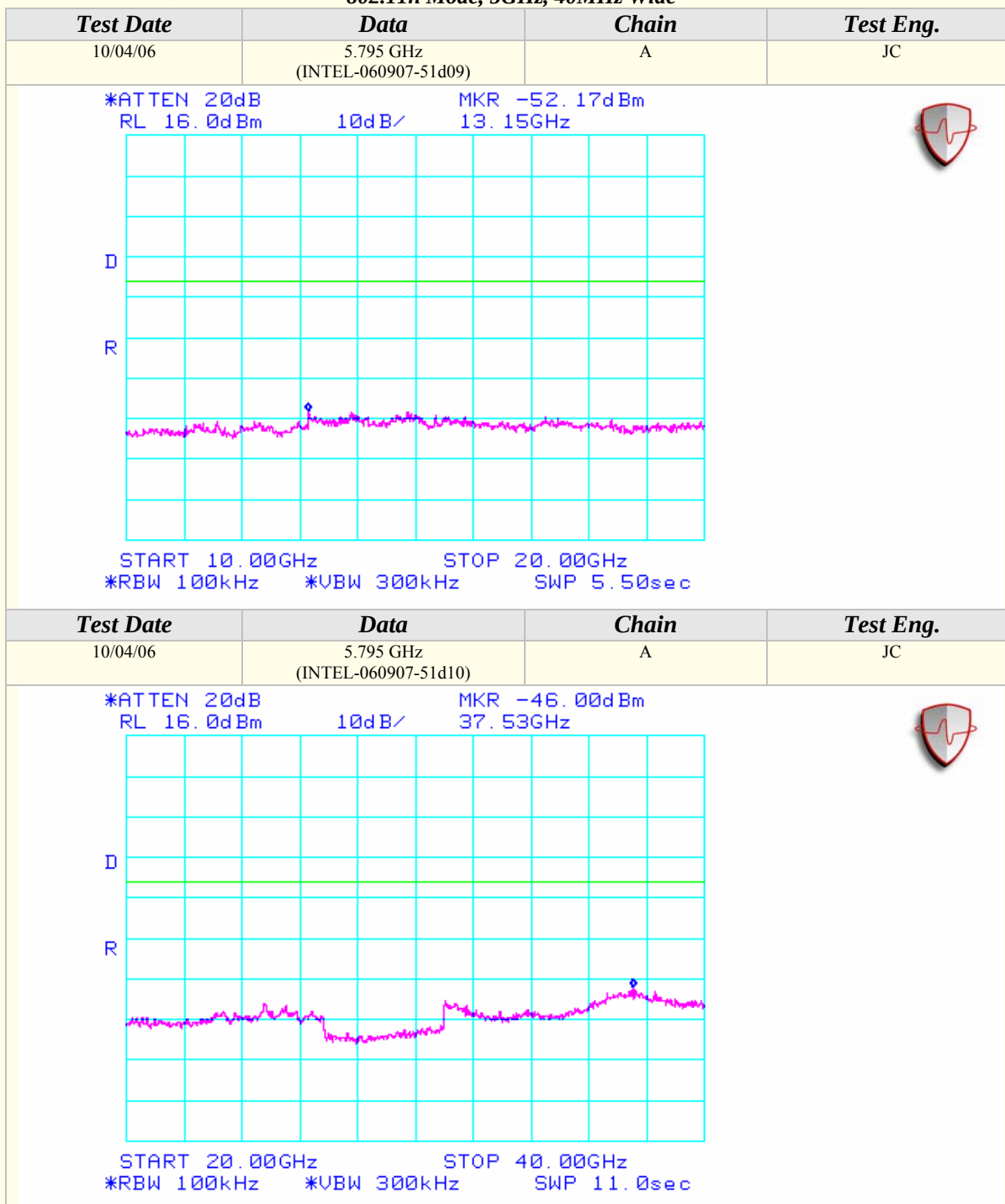
802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51d07)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -54.67dBm 3.860GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec			
Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51d08)	A	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -55.33dBm 5.308GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec			



Conducted Out Of Band Emissions (Continued)

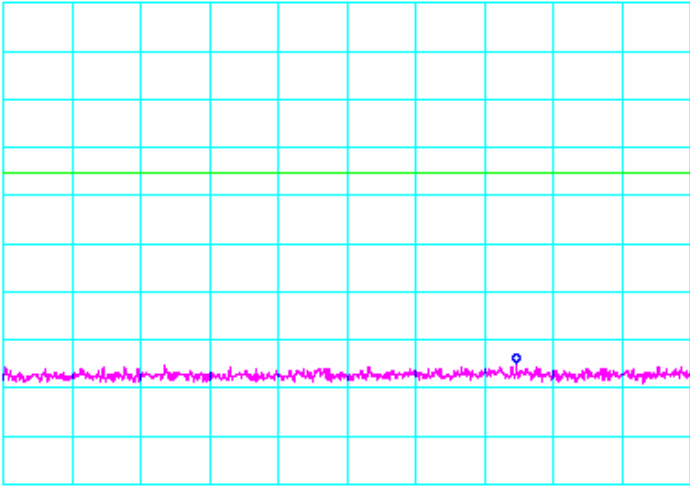
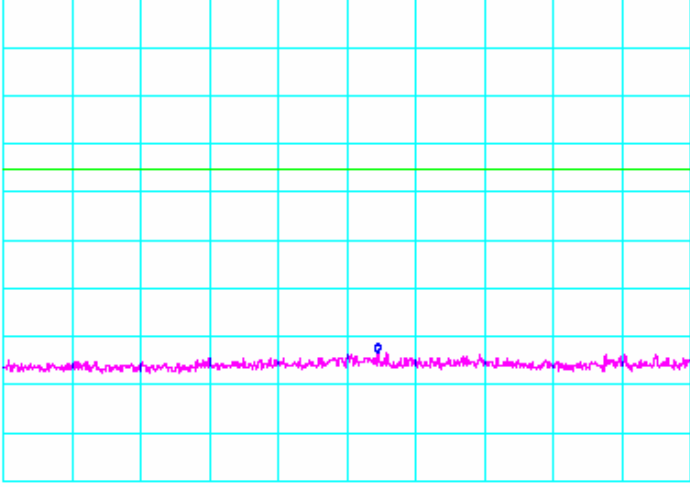
802.11n Mode, 5GHz, 40MHz Wide





Conducted Out Of Band Emissions (Continued)

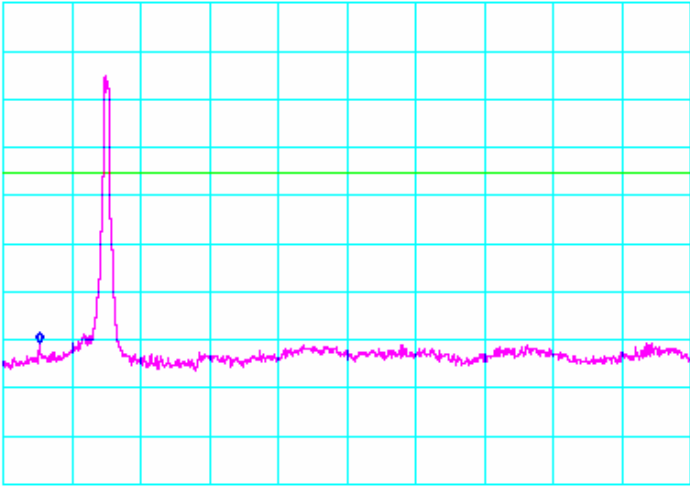
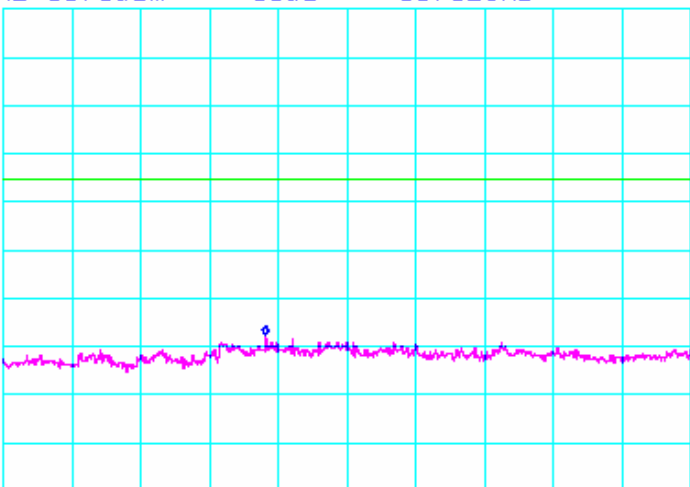
802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d11)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -58.83dBm 754.3MHz  START 30.0MHz STOP 1.0000GHz *RBW 100kHz *VBW 300kHz SWP 540ms			
Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d12)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -57.33dBm 3.180GHz  START 1.000GHz STOP 5.000GHz *RBW 100kHz *VBW 300kHz SWP 2.20sec			



Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 40MHz Wide

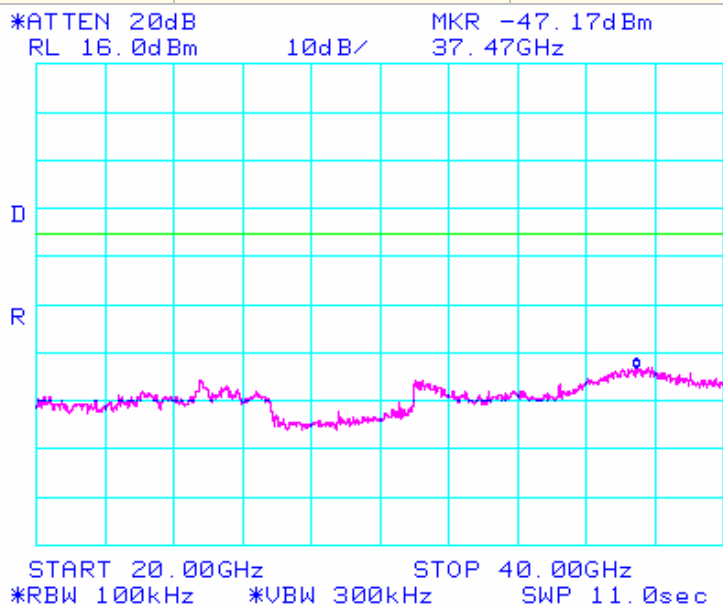
Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d13)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -54.50dBm 5.267GHz  START 5.000GHz STOP 10.000GHz *RBW 100kHz *VBW 300kHz SWP 2.80sec 			
Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d14)	B	JC
*ATTEN 20dB RL 16.0dBm 10dB/ MKR -51.67dBm 13.82GHz  START 10.00GHz STOP 20.00GHz *RBW 100kHz *VBW 300kHz SWP 5.50sec 			



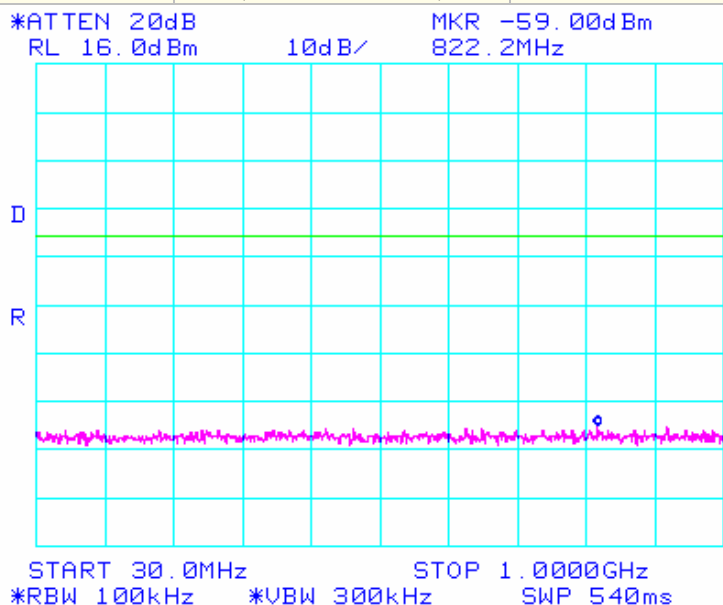
Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 40MHz Wide

Test Date	Data	Chain	Test Eng.
10/04/06	5.755 GHz (INTEL-060907-51d15)	B	JC



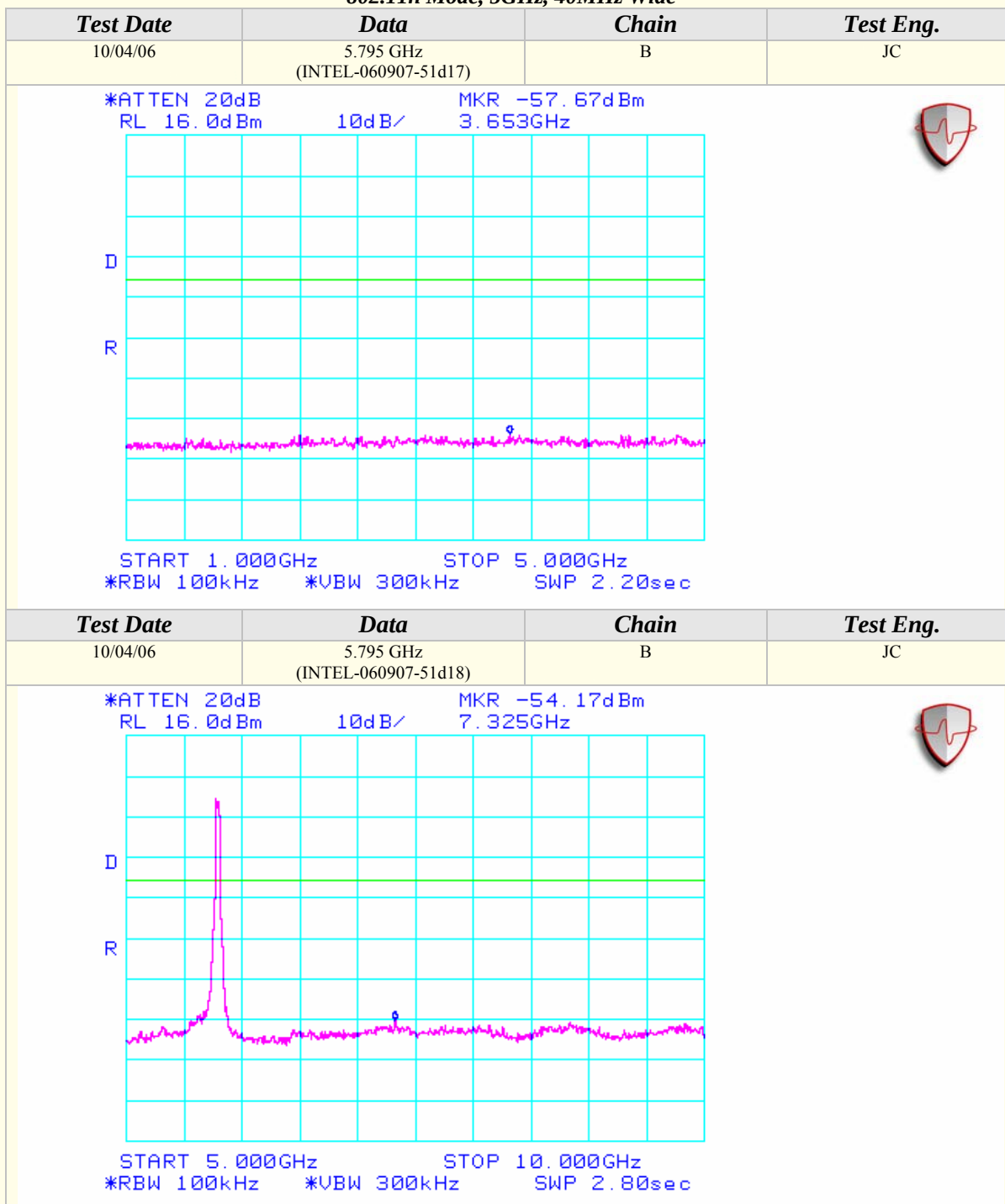
Test Date	Data	Chain	Test Eng.
10/04/06	5.795 GHz (INTEL-060907-51d16)	B	JC





Conducted Out Of Band Emissions (Continued)

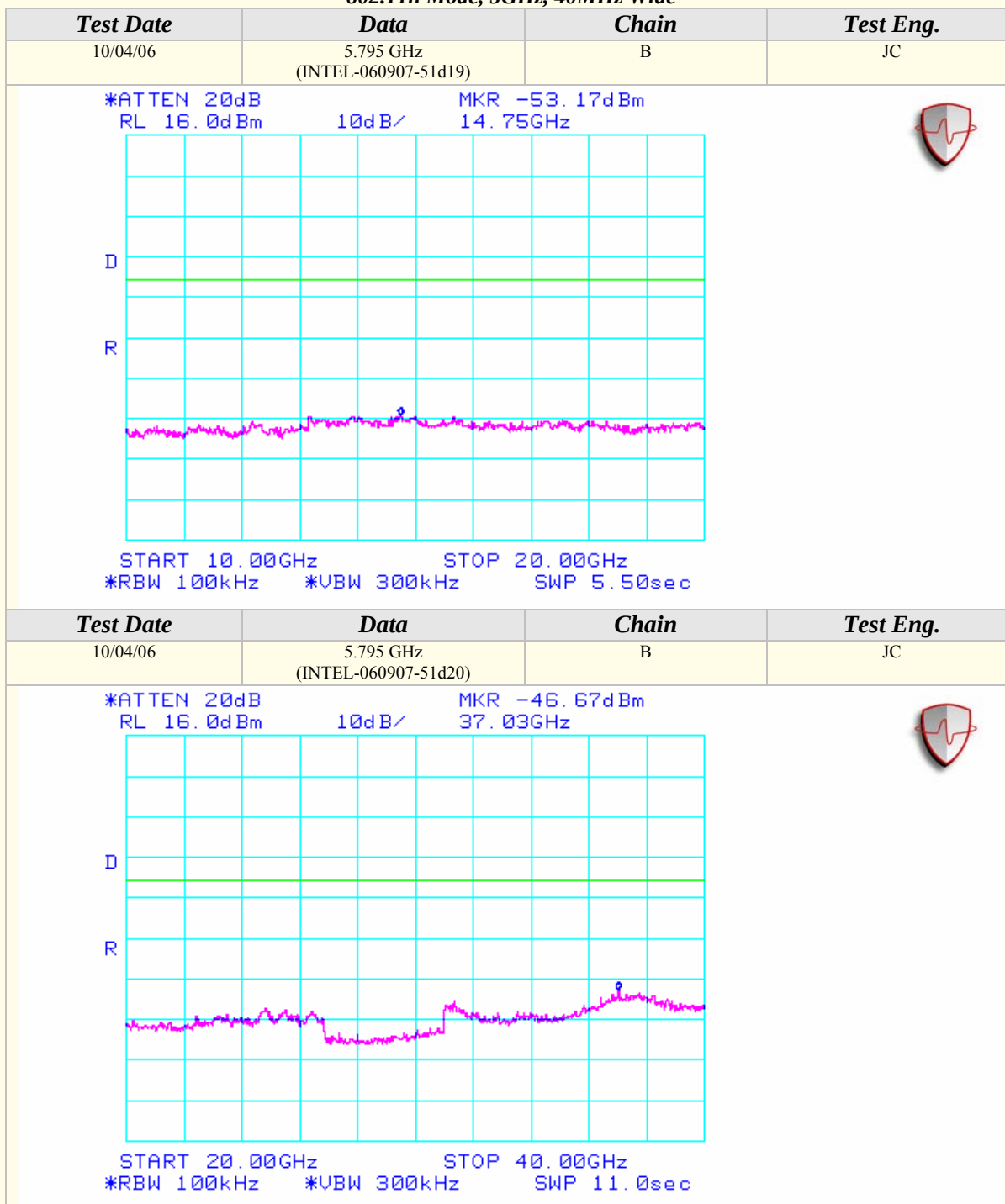
802.11n Mode, 5GHz, 40MHz Wide





Conducted Out Of Band Emissions (Continued)

802.11n Mode, 5GHz, 40MHz Wide





APPENDIX B

MODIFICATIONS AND RECOMMENDATIONS

1.0	NONE