Modular Approval
Test Report
And Application for Grant of Equipment Authorization

*TEST REPORT PERTAINING TO:*

| Equipment Under Test | Model Number(s) |
|---|---|
| Wireless Device Server | PremierWave EN |

| CONFIGURATION |
|---|
| IEEE 802.11a / 802.11b / 802.11g / 802.11n with a<br>Taoglas 5dBi; RP-SMA(M) Hinged 90° Antenna |

*MEASUREMENTS PERFORMED IN ACCORDANCE WITH THE FOLLOWING STANDARD (S)*

| Regulatory Standard(s) |
|---|
| 47 CFR Part 15, Subpart C Section 15.247<br><br>Test Method:<br>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 |

ACCREDITED

Certificate Number: 1111.01

**PREPARED FOR:**
Lantronix, Inc.
167 Technology Drive
Irvine, California 92618

Contact(s): Mr. Daryl Miller

**PREPARED BY:**
Aegis Labs, Inc.
8 Rancho Circle
Lake Forest, CA 92630

Agent(s): Mr. Steve Kuiper
Mr. Johnny Candelas

Test Report #: LANTR-101028F

Test Report Revision: A1

| | REPORT BODY | APPENDICES | | TOTAL PAGES |
|---|---|---|---|---|
| | | ***A*** | ***B*** | |
| PAGES | 20 | 157 | 1 | 178 |

# TABLE OF CONTENTS

# 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) Antenna 1*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11a Mode (5745-5825 MHz) Antenna 2*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11b Mode (2400-2483.5 MHz) Antenna 1*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11b Mode (2400-2483.5 MHz) Antenna 2*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11g Mode (2400-2483.5 MHz) Antenna 1*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11g Mode (2400-2483.5 MHz) Antenna 2*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11n Mode (2400-2483.5 MHz) Antenna 1*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11n Mode (2400-2483.5 MHz) Antenna 2*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

## *802.11n Mode (5745-5825 MHz) Antenna 1*

| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

2.0 Summary of Test Results (Continued)

***802.11n Mode (5745-5825 MHz) Antenna 2***

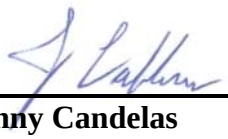
| EMISSIONS STANDARD | | | |
|---|---|---|---|
| **FCC Part 15 Section** | **Description** | **Results** | **Comments** |
| 15.247(a)(2) | The minimum 6dB bandwidth shall be at least 500 kHz. | PASSED | Refer to Plots Section |
| 15.247(b)(3) | The maximum peak output power of the intentional radiator shall not exceed 1 watt. The maximum conducted output power is the highest total transmit power occurring in any mode | PASSED | Refer to Output power Section |
| 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 |
| 15.247(d) | 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 (Appendix A) |
| 15.247(d) | 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 (Appendix A) |
| 15.247(e) | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. | PASSED | Refer to Plots Section |
| 15.207 | AC Conducted Emissions | PASSED | See Data Sheets (Appendix A) |
| 15.209 | Radiated Emissions (30-1000 MHz) | PASSED | |

**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:**



**01/17/11**

**Johnny Candelas** **Date:**
**Test Technician**
**Aegis Labs, Inc.**

**Report Approved By:**

**08/15/11**

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

## 3.0 ADMINISTRATIVE DATA AND TEST DESCRIPTION

| | |
|---|---|
| **DEVICE TESTED:** | ITE Type: Wireless Device Server<br>Model Number(s): PremierWave EN<br>Serial Number: 00:20:44:9D:2E:2F<br>FCC ID: R68PEN |
| | |
| **DATE EUT RECEIVED:** | November 10th, 2010 |
| **TEST DATE(S):** | November 10th – December 30th, 2010 |
| | |
| **ORIGIN OF TEST SAMPLE(S):** | Production |
| | |
| **EQUIPMENT CLASS:** | EUT tested as CLASS B device |
| | |
| **RESPONSIBLE PARTY:** | Lantronix<br>15353 Barranca Parkway<br>Irvine, California 92618 |
| | |
| **CLIENT CONTACT:** | Mr. Daryl Miller |
| **MANUFACTURER:** | Lantronix |
| | |
| **TEST LOCATION:** | Aegis Labs, Inc.<br>32231 Trabuco Creek Road<br>Trabuco Canyon, CA 92678<br>Free Space Open Area Test Site #1 & #2 |
| | |
| **ACCREDITATION CERTIFICATE(s):** | A2LA Certificate Number: 1111.01, Valid Through February 29, 2012 |
| | |
| **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:** | Wireless Device Server | |
| **Model Number:** | PremierWave EN | |
| **Frequency Range:** | 802.11a = 5745 – 5825 MHz<br>802.11b/g = 2412 – 2462MHz<br>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<br>6/36/54 Mbps for 802.11g and 802.11a modes<br>Up to 450 Mbps for 802.11n mode | |
| **Number of Channels:** | 802.11a mode (5725-5850 MHz) = 5<br>802.11b mode (2400-2483.5 MHz) = 11<br>802.11g mode (2400-2483.5 MHz)= 11<br>802.11n mode (5725-5850 MHz) = 5<br>802.11n mode (2400-2483.5 MHz) = 11 | |
| **Modulation Type:** | DBPSK, DQPSK, CCK, OFDM | |
| **Antenna Type:** | Taoglas: Dipole | Ethertronics: Embedded Ceramic |
| **Antenna Gain (See Note 2):** | 5.00dBi @ 5 GHz /<br>5.00dBi @ 2.4 GHz | 3.20dBi @ 5 GHz /<br>1.10dBi @ 2.4 GHz |
| **Transmit Output Power:** | Please see Appendix A (Data Sheets) for actual output power. | |
| **Power Supply:** | 3.3VDC from external source | |
| **Number of External Test Ports Exercised:** | 2 Antenna Ports (Antenna 1 & 2) | |

The Wireless Device Server is an embedded IEEE 802.11a/b/g/n wireless network adapter that operates in the 2.4 GHz and 5.0 GHz spectrum. The adapter is capable of delivering up to 450 Mbps Tx/Rx.

**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 Taoglas & Ethertronics Antennas. (Refer to the antenna information exhibits).

## 4.2 EUT Configuration

The EUT was tested as a standalone device. It was connected to a host PC via its USB port. The EUT was then connected to an antenna via its Antenna 1 & 2 antenna ports. Data for a Taoglas & 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 each chain individually (Antenna 1, then 2). The EUT was placed in continuous transmit mode by a program provided by the manufacturer.

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

| Equipment Under Test | | | |
|---|---|---|---|
| **Manufacturer** | **Equipment Name** | **Model or Part Number** | **Serial Number** |
| Lantronix | Wireless Device Server | PremierWave EN | 00:20:44:9D:2E:2F |

| EUT Sub Assemblies | | | |
|---|---|---|---|
| **Manufacturer** | **Equipment Name** | **Model or Part Number** | **Serial Number** |
| Taoglas | Antenna 1 | GW.71.5153 | N/A |
| Ethertronics | Antenna 2 | M830510 | N/A |

| HOST EQUIPMENT LIST | | | |
|---|---|---|---|
| **Manufacturer** | **Equipment Name** | **Model or Part Number** | **Serial Number** |
| Generic | Host PC | ENG001 | None |
| Logitech | Keyboard | Y-BF37 | MCT25200581 |
| Logitech | Mouse | M-BJ58 | LNA22802012 |
| Dell | Monitor | E550 | MY-07753T-46632-9BR-23D1 |

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: USB Port | Keyboard: Hardwired | N/A | N/A | N/A |
| 2 | 1.5m | Round, Braid & Foil Shielded | Host Computer: USB Port | Mouse: Hardwired | N/A | N/A | N/A |
| 3 | 1.0m | Flat, Braid & Foil Shielded | EUT: USB Port | Host Computer: USB Port | N/A | N/A | N/A |
| 4 | 1.0m | Flat, Braid & Foil Shielded | Monitor: VGA Out | Host Computer: DB9 Port | 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 | 07/24/11 | 1 Year |
| Antenna – Horn | ETS | 3117 | 00057423 | 03/28/12 | 1 Year |
| Preamp | Miteq | JS42-01001800-25-10P | 815980 | 09/21/11 | 1 Year |
| 28 Foot Coax | Semflex | S1L29BFS1348 | 608 | 07/26/11 | 1 Year |
| 2.4 GHz Notch Filter | Micro-Tronics | BRM50702-02 | 003 | NCR | NCR |
| 5.725-5.850 GHz Notch Filter | Microwave Circuits | N0257881 | 3173-01 | NCR | NCR |
| Antenna - 18-26.5 GHz Pre-amplified Horn | Aegis Labs, Inc. | H042 | SLK-35-3W | 02/08/12 | 1 Year |
| Antenna - 26.5-40 GHz Pre-amplified Horn | Aegis Labs, Inc. | H028 | GM1260-10 | 02/08/12 | 1 Year |
| EMI Receiver - RF Section | Hewlett Packard | 8546A | 3325A00137 | 04/26/12 | 1 Year |
| EMI Receiver - RF Filter Section | Hewlett Packard | 85460A | 3330A00138 | 04/26/12 | 1 Year |
| 10 dB Attenuator | Pasternack | PE7014-10 | N/A | 09/05/11 | 1 Year |
| LISN (EUT) | Fisher Custom Communications | FCC-LISN-50-25-2 | 9931 | 03/30/12 | 1 Year |
| LISN (Access) | EMCO | 3825/2 | 9108-1848 | 03/30/12 | 1 Year |
| Antenna - Biconical | EMCO | 3110B | 3383 | 03/20/12 | 1 Year |
| Antenna - Log Periodic | EMCO | 3148 | 47943 | 03/20/12 | 1 Year |
| Power Meter | Anritsu | ML2487A | 6K00001785 | 05/29/12 | 1 Year |
| Wide Bandwidth Sensor | Anritsu | MA2491A | 31193 | 05/29/12 | 1 Year |
| 12dB Attenuator | Narda | 4779-12 | 203 | 06/09/11 | 1 Year |
| Temperature/Humidity Monitor | Dickson | TH550 | 7255185 | 04/13/12 | 1 Year |

NCR – No Calibration Required.

## 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.

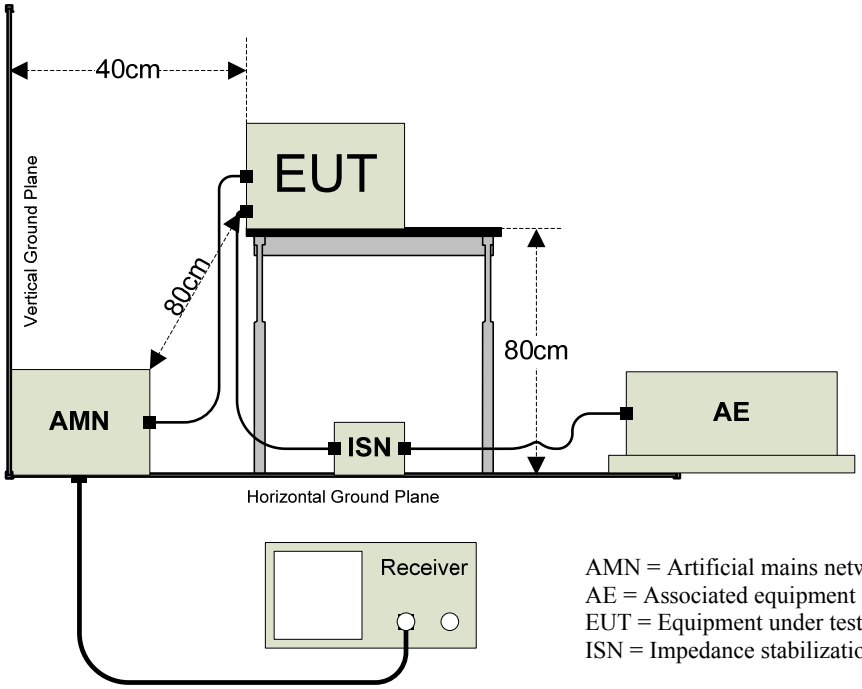
### 5.2 Conducted Emissions Test Setup

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.



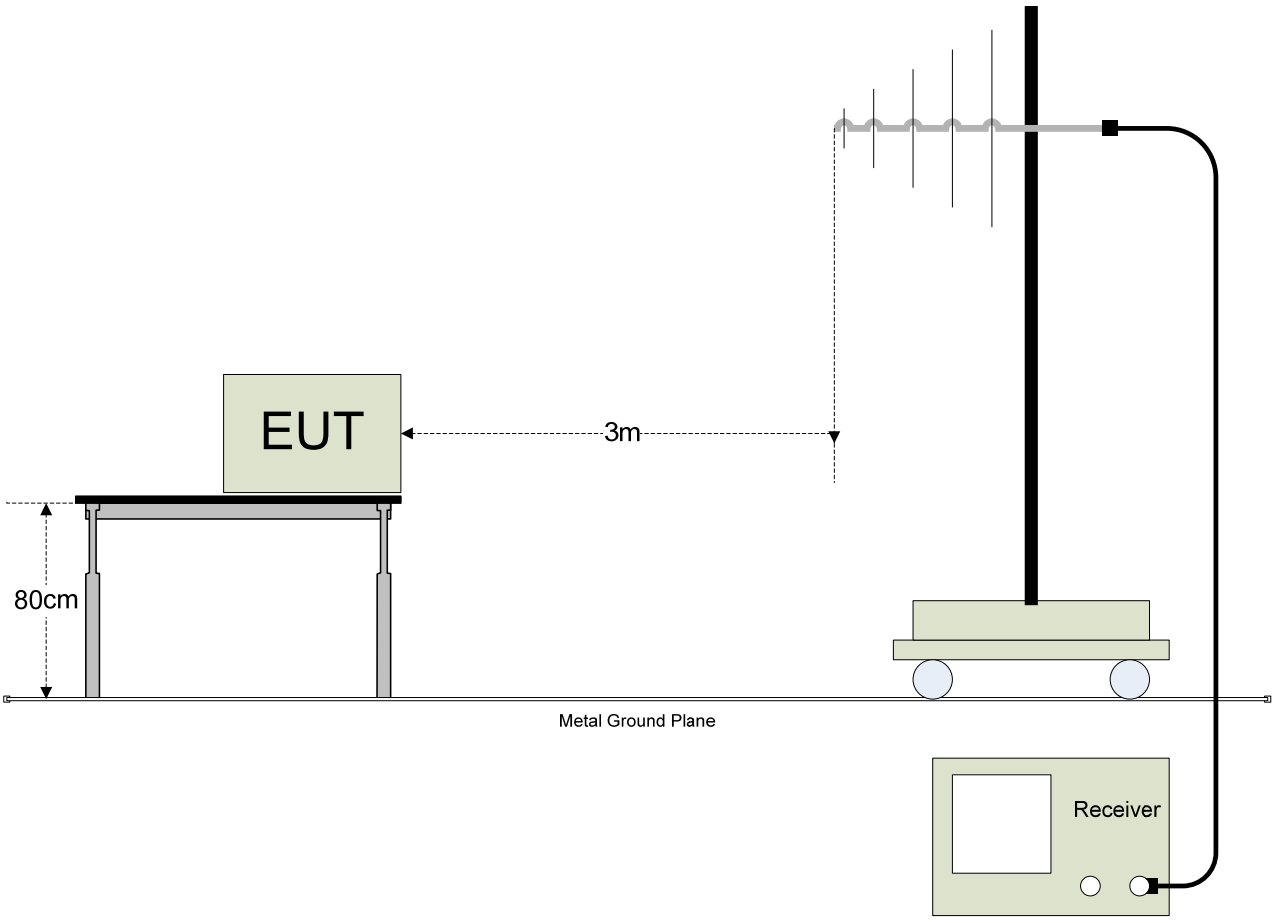

AMN = Artificial mains network
AE = Associated equipment
EUT = Equipment under test
ISN = Impedance stabilization network

## 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 3m 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:** | Lantronix | **DATE:** | 12/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 1 |
| **CONFIGURATION:** | Tested connected to a host PC | **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.<br>• 120VAC / 60 Hz |

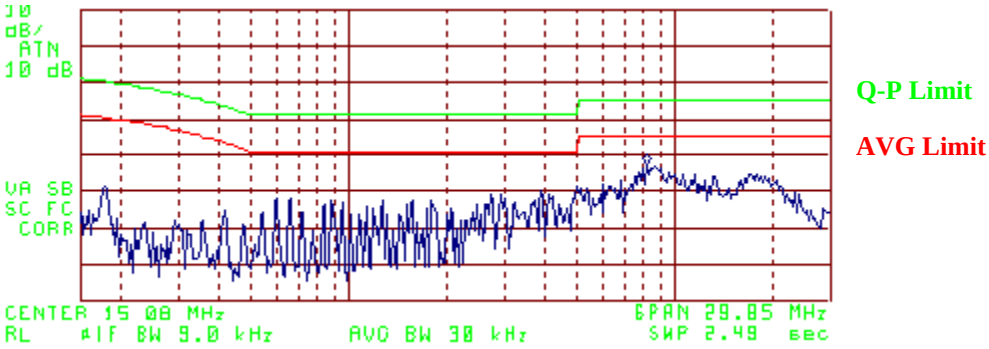
| **Conducted Limits** | | |
|---|---|---|
| **Frequency (MHz)** | **Quasi-Peak Limit (dBuV)** | **Average Limit (dBuV)** |
| 0.15-0.5 | 66 to 56* | 56 to 46* |
| 0.5-5 | 56 | 46 |
| 5-30 | 60 | 50 |

*Decreases with the logarithm of the frequency.

AC Power Port – Conducted Emissions Test Results (Continued)

***Continuously Transmitting @ 120VAC/60Hz (LANTR-101028-10)***

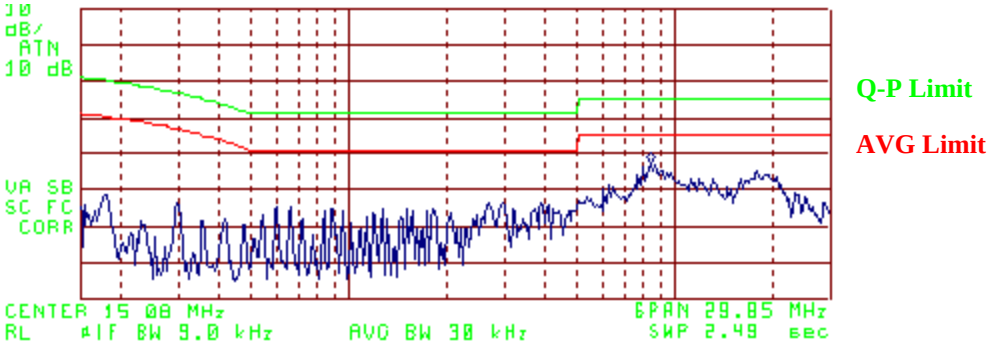
| FCC CLASS B CONDUCTED EMISSIONS – LINE 1 | | | | | | |
|---|---|---|---|---|---|---|
| *Freq. (MHz)* | *Meter Reading (dBuV)* | *Detector (PK/QP/AV)* | *Average Limit (dBuV)* | *Average Delta(dB)* | *Quasi-Peak Limit (dBuV)* | *Quasi-Peak Delta(dB)* |
| 3.9000 | 35.33 | PK | 46.00 | -10.67 | 56.00 | -20.67 |
| 4.1300 | 34.16 | PK | 46.00 | -11.84 | 56.00 | -21.84 |
| 4.9600 | 36.25 | PK | 46.00 | -9.75 | 56.00 | -19.75 |
| 8.1800 | 42.32 | PK | 50.00 | -7.68 | 60.00 | -17.68 |
| 13.0000 | 39.30 | PK | 50.00 | -10.70 | 60.00 | -20.70 |
| 16.6200 | 39.65 | PK | 50.00 | -10.35 | 60.00 | -20.35 |



AC Power Port – Conducted Emissions Test Results (Continued)

***Continuously Transmitting @ 120VAC/60Hz (LANTR-101028-10)***

| 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)* |
| 2.6600 | 30.92 | PK | 46.00 | -15.08 | 56.00 | -25.08 |
| 2.9700 | 31.51 | PK | 46.00 | -14.49 | 56.00 | -24.49 |
| 3.9000 | 31.39 | PK | 46.00 | -14.61 | 56.00 | -24.61 |
| 8.4300 | 42.36 | PK | 50.00 | -7.64 | 60.00 | -17.64 |
| 17.8300 | 40.07 | PK | 50.00 | -9.93 | 60.00 | -19.93 |
| 23.1500 | 34.23 | PK | 50.00 | -15.77 | 60.00 | -25.77 |



## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/10/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to a host PC | **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.<br>• 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:

CML = Specification Limit - F - C + D

Radiated Emissions Test Results (Continued)

***Continuously Transmitting @ 120VAC/60Hz (LANTR-101028-64)***

| Horizontal Open Field Maximized Data | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Freq. (MHz)* | *Meter Reading (dBuV)* | *Antenna Height (cm)* | *Azimuth (degrees)* | *Quasi pk or AVG (dBuV)* | | *Cable Factor (dB)* | *Antenna Factor (dB)* | *Corrected Reading (dBuV/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* |
| 55.87 | 52.00 | 400 | 90 | 45.20 | Q | -34.81 | 9.91 | 20.30 | 30.00 | -9.70 |
| 69.05 | 50.50 | 400 | 180 | | | -34.92 | 9.61 | 25.19 | 30.00 | -4.81 |
| 125.03 | 52.10 | 400 | 180 | 46.60 | Q | -34.20 | 11.35 | 23.75 | 30.00 | -6.25 |
| 160.02 | 52.60 | 400 | 135 | 46.20 | Q | -34.11 | 12.70 | 24.79 | 30.00 | -5.21 |
| 200.01 | 53.40 | 400 | 90 | 45.60 | Q | -33.21 | 15.10 | 27.49 | 30.00 | -2.51 |
| 244.04 | 47.90 | 400 | 315 | | | -33.10 | 17.09 | 31.89 | 37.00 | -5.11 |
| 263.78 | 47.30 | 400 | 45 | | | -33.01 | 18.28 | 32.57 | 37.00 | -4.43 |
| 300.01 | 55.60 | 300 | 45 | 52.00 | Q | -32.69 | 14.10 | 33.41 | 37.00 | -3.59 |
| 350.02 | 52.20 | 300 | 135 | 48.60 | Q | -32.36 | 15.60 | 31.84 | 37.00 | -5.16 |
| 375.04 | 58.40 | 200 | 180 | 51.40 | Q | -32.26 | 15.10 | 34.24 | 37.00 | -2.76 |
| 400.01 | 53.10 | 250 | 180 | 49.80 | Q | -32.80 | 15.60 | 32.60 | 37.00 | -4.40 |
| 500.03 | 52.30 | 175 | 90 | 46.20 | Q | -31.09 | 18.60 | 33.71 | 37.00 | -3.29 |
| 600.01 | 49.10 | 100 | 45 | 44.80 | Q | -31.22 | 19.40 | 32.98 | 37.00 | -4.02 |

| Vertical Open Field Maximized Data | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| *Freq. (MHz)* | *Meter Reading (dBuV)* | *Antenna Height (cm)* | *Azimuth (degrees)* | *Quasi pk or AVG (dBuV)* | | *Cable Factor (dB)* | *Antenna Factor (dB)* | *Corrected Reading (dBuV/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* |
| 53.82 | 59.40 | 100 | 135 | 51.70 | Q | -34.71 | 10.17 | 27.16 | 30.00 | -2.84 |
| 69.98 | 64.10 | 100 | 315 | 52.60 | Q | -34.91 | 9.10 | 26.79 | 30.00 | -3.21 |
| 125.02 | 57.20 | 100 | 180 | 50.70 | Q | -34.20 | 10.90 | 27.40 | 30.00 | -2.60 |
| 160.07 | 55.10 | 100 | 135 | 46.20 | Q | -34.11 | 13.60 | 25.69 | 30.00 | -4.31 |
| 199.99 | 49.10 | 100 | 225 | 40.10 | Q | -33.21 | 16.60 | 23.49 | 30.00 | -6.51 |
| 244.20 | 47.60 | 150 | 45 | | | -33.10 | 18.32 | 32.82 | 37.00 | -4.18 |
| 266.68 | 45.30 | 100 | 315 | | | -32.99 | 19.33 | 31.64 | 37.00 | -5.36 |
| 300.02 | 49.30 | 100 | 135 | | | -32.69 | 14.90 | 31.51 | 37.00 | -5.49 |
| 350.01 | 48.90 | 100 | 225 | | | -32.36 | 15.60 | 32.14 | 37.00 | -4.86 |
| 375.03 | 56.50 | 100 | 270 | 51.20 | Q | -32.26 | 15.30 | 34.25 | 37.00 | -2.75 |
| 400.02 | 48.00 | 100 | 225 | | | -32.80 | 16.50 | 31.70 | 37.00 | -5.30 |
| 500.01 | 53.10 | 100 | 135 | 47.10 | Q | -31.09 | 18.10 | 34.11 | 37.00 | -2.89 |
| 625.03 | 52.50 | 100 | 45 | 45.30 | Q | -31.07 | 19.70 | 33.93 | 37.00 | -3.07 |

## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to the host PC in **802.11a (5745-5825 MHz) mode.** | **TEMPERATURE:** | 22° C |
| | | **HUMIDITY:** | 39% RH |
| | | **TIME:** | 8:00 AM |

| | |
|---|---|
| **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.<br>• 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)<br>74.00 (Peak) | < -20 dBc |

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:

CML = 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5745.00 | 62.33 | 100 | 90 | | | 3.98 | 35.09 | 101.41 | | | **Ch. 149** |
| 5745.00 | | | | 52.33 | A | 3.98 | 35.09 | 91.41 | | | |
| 5785.00 | 62.50 | 100 | 90 | | | 4.00 | 35.16 | 101.65 | | | **Ch. 157** |
| 5785.00 | | | | 52.33 | A | 4.00 | 35.16 | 91.48 | | | |
| 5825.00 | 63.17 | 100 | 90 | | | 4.01 | 35.22 | 102.40 | | | **Ch. 165** |
| 5825.00 | | | | 52.50 | A | 4.01 | 35.22 | 91.73 | | | |

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5745.00 | 68.50 | 100 | 225 | | | 3.98 | 34.94 | 107.42 | | | **Ch. 149** |
| 5745.00 | | | | 57.83 | A | 3.98 | 34.94 | 96.75 | | | |
| 5785.00 | 66.00 | 100 | 225 | | | 4.00 | 35.01 | 105.01 | | | **Ch. 157** |
| 5785.00 | | | | 56.33 | A | 4.00 | 35.01 | 95.34 | | | |
| 5825.00 | 64.00 | 100 | 180 | | | 4.01 | 35.09 | 103.10 | | | **Ch. 165** |
| 5825.00 | | | | 54.50 | A | 4.01 | 35.09 | 93.60 | | | |

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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5725.00 | 32.67 | 100 | 90 | | 3.98 | 35.06 | 71.71 | 81.41 | -9.70 | **Ch. 149** |
| 5850.00 | 31.33 | 100 | 90 | | 4.02 | 35.26 | 70.61 | 82.40 | -11.79 | **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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5725.00 | 36.33 | 100 | 225 | | 3.98 | 34.91 | 75.21 | 87.42 | -12.21 | **Ch. 149** |
| 5850.00 | 31.83 | 100 | 180 | | 4.02 | 35.13 | 70.98 | 83.10 | -12.12 | **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:

$BE = Fm - \Delta m$

Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11a mode (5745-5825 MHz)***
*Channels 149, 157, & 165*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5745.00 | 63.83 | 100 | 135 | | | 3.98 | 35.09 | 102.91 | | | **Ch. 149** |
| 5745.00 | | | | 53.50 | A | 3.98 | 35.09 | 92.58 | | | |
| 5785.00 | 62.83 | 100 | 135 | | | 4.00 | 35.16 | 101.98 | | | **Ch. 157** |
| 5785.00 | | | | 53.00 | A | 4.00 | 35.16 | 92.15 | | | |
| 5825.00 | 62.67 | 100 | 135 | | | 4.01 | 35.22 | 101.90 | | | **Ch. 165** |
| 5825.00 | | | | 52.50 | A | 4.01 | 35.22 | 91.73 | | | |

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5745.00 | 70.00 | 100 | 225 | | | 3.98 | 34.94 | 108.92 | | | **Ch. 149** |
| 5745.00 | | | | 59.50 | A | 3.98 | 34.94 | 98.42 | | | |
| 5785.00 | 69.17 | 100 | 225 | | | 4.00 | 35.01 | 108.18 | | | **Ch. 157** |
| 5785.00 | | | | 59.00 | A | 4.00 | 35.01 | 98.01 | | | |
| 5825.00 | 67.67 | 100 | 225 | | | 4.01 | 35.09 | 106.77 | | | **Ch. 165** |
| 5825.00 | | | | 57.17 | A | 4.01 | 35.09 | 96.27 | | | |

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 **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5725.00 | 31.83 | 100 | 135 | | 3.98 | 35.06 | 70.87 | 82.91 | -12.04 | **Ch. 149** |
| 5850.00 | 30.83 | 100 | 135 | | 4.02 | 35.26 | 70.11 | 81.90 | -11.79 | **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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 5725.00 | 35.00 | 100 | 225 | | 3.98 | 34.91 | 73.88 | 88.92 | -15.04 | **Ch. 149** |
| 5850.00 | 32.00 | 100 | 225 | | 4.02 | 35.13 | 71.15 | 86.77 | -15.62 | **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:

$BE = Fm - \Delta m$

Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11a mode (5745-5825 MHz)***
*Channels 149, 157, & 165*
***Continuous TX** at **Antenna 1 & 2** ports with **Taoglas & Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-45*

| 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* | *Channel/ Chain Tested* |
| 3856.66 | 64.33 | 100 | 135 | | | 46.44 | 3.22 | 33.23 | 54.34 | 74.00 | -19.66 | **Ch. 157/** |
| 3856.66 | | | | 51.59 | A | 46.44 | 3.22 | 33.23 | 41.60 | 54.00 | -12.40 | **1** |
| 7713.29 | 60.33 | 100 | 135 | | | 44.79 | 4.67 | 36.04 | 56.25 | 74.00 | -17.75 | |
| 7713.29 | | | | 45.50 | A | 44.79 | 4.67 | 36.04 | 41.42 | 54.00 | -12.58 | |
| 11570.00 | 59.00 | 100 | 135 | | | 44.73 | 5.93 | 38.73 | 58.92 | 74.00 | -15.08 | |
| 11570.00 | | | | 44.71 | A | 44.73 | 5.93 | 38.73 | 44.63 | 54.00 | -9.37 | |
| 3856.66 | 60.67 | 100 | 135 | | | 46.44 | 3.22 | 33.23 | 50.68 | 74.00 | -23.32 | **Ch. 157/** |
| 3856.66 | | | | 46.10 | A | 46.44 | 3.22 | 33.23 | 36.11 | 54.00 | -17.89 | **2** |
| 7713.29 | 57.17 | 100 | 90 | | | 44.79 | 4.67 | 36.04 | 53.09 | 74.00 | -20.91 | |
| 7713.29 | | | | 44.30 | A | 44.79 | 4.67 | 36.04 | 40.22 | 54.00 | -13.78 | |
| 11570.00 | 60.00 | 100 | 135 | | | 44.73 | 5.93 | 38.73 | 59.92 | 74.00 | -14.08 | |
| 11570.00 | | | | 45.29 | A | 44.73 | 5.93 | 38.73 | 45.21 | 54.00 | -8.79 | |
| | | | | | | | | | | | | |
| 3830.00 | 53.50 | 100 | 135 | | | 46.47 | 3.23 | 33.20 | 43.46 | 74.00 | -30.54 | **Ch. 149/** |
| 3830.00 | | | | 43.73 | A | 46.47 | 3.23 | 33.20 | 33.69 | 54.00 | -20.31 | **2** |
| 7660.00 | 53.33 | 100 | 135 | | | 44.85 | 4.65 | 36.03 | 49.17 | 74.00 | -24.83 | |
| 7660.00 | | | | 45.30 | A | 44.85 | 4.65 | 36.03 | 41.14 | 54.00 | -12.86 | |
| 11490.00 | 52.50 | 100 | 180 | | | 44.61 | 5.90 | 38.68 | 52.48 | 74.00 | -21.52 | |
| 11490.00 | | | | 40.25 | A | 44.61 | 5.90 | 38.68 | 40.23 | 54.00 | -13.77 | |
| 3883.33 | 53.17 | 100 | 135 | | | 46.42 | 3.22 | 33.26 | 43.23 | 74.00 | -30.77 | **Ch.165/** |
| 3883.33 | | | | 43.38 | A | 46.42 | 3.22 | 33.26 | 33.44 | 54.00 | -20.56 | **2** |
| 7766.66 | 52.83 | 100 | 135 | | | 44.73 | 4.68 | 36.05 | 48.83 | 74.00 | -25.17 | |
| 7766.66 | | | | 41.77 | A | 44.73 | 4.68 | 36.05 | 37.77 | 54.00 | -16.23 | |
| 11650.00 | 52.33 | 100 | 135 | | | 44.88 | 5.95 | 38.76 | 52.15 | 74.00 | -21.85 | |
| 11650.00 | | | | 40.00 | A | 44.88 | 5.95 | 38.76 | 39.82 | 54.00 | -14.18 | |

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* | *Channel/ Chain Tested* |
| 3856.66 | 53.00 | 100 | 90 | | | 46.44 | 3.22 | 33.26 | 43.04 | 74.00 | -30.96 | **Ch. 157/** |
| 3856.66 | | | | 42.99 | A | 46.44 | 3.22 | 33.26 | 33.03 | 54.00 | -20.97 | **1** |
| 7713.32 | 53.17 | 100 | 45 | | | 44.79 | 4.67 | 36.14 | 49.19 | 74.00 | -24.81 | |
| 7713.32 | | | | 45.64 | A | 44.79 | 4.67 | 36.14 | 41.66 | 54.00 | -12.34 | |
| 11570.00 | 53.67 | 100 | 135 | | | 44.73 | 5.93 | 38.50 | 53.36 | 74.00 | -20.64 | |
| 11570.00 | | | | 41.04 | A | 44.73 | 5.93 | 38.50 | 40.73 | 54.00 | -13.27 | |
| 3856.66 | 53.67 | 100 | 90 | | | 46.44 | 3.22 | 33.26 | 43.71 | 74.00 | -30.29 | **Ch. 157/** |
| 3856.66 | | | | 46.08 | A | 46.44 | 3.22 | 33.26 | 36.12 | 54.00 | -17.88 | **2** |
| 7713.32 | 53.00 | 100 | 45 | | | 44.79 | 4.67 | 36.14 | 49.02 | 74.00 | -24.98 | |
| 7713.32 | | | | 44.62 | A | 44.79 | 4.67 | 36.14 | 40.64 | 54.00 | -13.36 | |
| 11570.00 | 58.33 | 100 | 135 | | | 44.73 | 5.93 | 38.50 | 58.02 | 74.00 | -15.98 | |
| 11570.00 | | | | 45.06 | A | 44.73 | 5.93 | 38.50 | 44.75 | 54.00 | -9.25 | |
| | | | | | | | | | | | | |
| 3830.00 | 54.17 | 100 | 135 | | | 46.47 | 3.23 | 33.23 | 44.16 | 74.00 | -29.84 | **Ch. 149/** |
| 3830.00 | | | | 44.84 | A | 46.47 | 3.23 | 33.23 | 34.83 | 54.00 | -19.17 | **2** |
| 7660.00 | 55.50 | 100 | 225 | | | 44.85 | 4.65 | 36.13 | 51.44 | 74.00 | -22.56 | |
| 7660.00 | | | | 49.46 | A | 44.85 | 4.65 | 36.13 | 45.40 | 54.00 | -8.60 | |
| 11490.00 | 53.17 | 100 | 135 | | | 44.61 | 5.90 | 38.39 | 52.85 | 74.00 | -21.15 | |
| 11490.00 | | | | 40.89 | A | 44.61 | 5.90 | 38.39 | 40.57 | 54.00 | -13.43 | |
| 3883.33 | 53.50 | 100 | 135 | | | 46.42 | 3.22 | 33.28 | 43.58 | 74.00 | -30.42 | **Ch.165/** |
| 3883.33 | | | | 43.10 | A | 46.42 | 3.22 | 33.28 | 33.18 | 54.00 | -20.82 | **2** |
| 7766.66 | 56.17 | 100 | 225 | | | 44.73 | 4.68 | 36.15 | 52.27 | 74.00 | -21.73 | |
| 7766.66 | | | | 50.63 | A | 44.73 | 4.68 | 36.15 | 46.73 | 54.00 | -7.27 | |
| 11650.00 | 58.33 | 100 | 135 | | | 44.88 | 5.95 | 38.61 | 58.00 | 74.00 | -16.00 | |
| 11650.00 | | | | 45.19 | A | 44.88 | 5.95 | 38.61 | 44.86 | 54.00 | -9.14 | |

## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to the host PC in **802.11b (2400-2483.5 MHz) mode.** | **TEMPERATURE:** | 22° C |
| | | **HUMIDITY:** | 39% RH |
| | | **TIME:** | 8:00 AM |

| | |
|---|---|
| **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.<br>• 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)<br>74.00 (Peak) | < -20 dBc |

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:

CML = 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 2412.00 | 69.67 | 100 | 135 | | | 2.53 | 32.19 | 104.39 | | | **Ch. 1** |
| 2412.00 | | | | 66.67 | A | 2.53 | 32.19 | 101.39 | | | |
| 2437.00 | 71.33 | 100 | 45 | | | 2.54 | 32.22 | 106.09 | | | **Ch. 6** |
| 2437.00 | | | | 68.00 | A | 2.54 | 32.22 | 102.76 | | | |
| 2462.00 | 70.67 | 100 | 45 | | | 2.55 | 32.25 | 105.48 | | | **Ch. 11** |
| 2462.00 | | | | 67.67 | A | 2.55 | 32.25 | 102.48 | | | |

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 2412.00 | 70.83 | 100 | 180 | | | 2.53 | 31.92 | 105.28 | | | **Ch. 1** |
| 2412.00 | | | | 67.33 | A | 2.53 | 31.92 | 101.78 | | | |
| 2437.00 | 70.50 | 100 | 180 | | | 2.54 | 31.97 | 105.01 | | | **Ch. 6** |
| 2437.00 | | | | 67.33 | A | 2.54 | 31.97 | 101.84 | | | |
| 2462.00 | 69.67 | 100 | 45 | | | 2.55 | 32.02 | 104.25 | | | **Ch. 11** |
| 2462.00 | | | | 66.50 | A | 2.55 | 32.02 | 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 2390.00 | | | | | | | | 48.89 | 74.00 | -25.11 | **Ch. 1** |
| 2390.00 | | | | | A | | | 38.55 | 54.00 | -15.45 | |
| 2400.00 | 35.50 | 100 | 135 | | | 2.52 | 32.18 | 70.20 | 84.39 | -14.19 | |
| 2483.50 | | | | | | | | 50.14 | 74.00 | -23.86 | **Ch. 11** |
| 2483.50 | | | | | A | | | 39.82 | 54.00 | -14.18 | |

| 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/m)* | *Limits (dBuV/m)* | *Diff (dB) +=FAIL* | *Comments* |
| 2390.00 | | | | | | | | 49.78 | 74.00 | -24.22 | **Ch. 1** |
| 2390.00 | | | | | A | | | 38.94 | 54.00 | -15.06 | |
| 2400.00 | 32.33 | 100 | 45 | | | 2.52 | 31.90 | 66.75 | 85.28 | -18.53 | |
| 2483.50 | | | | | | | | 48.91 | 74.00 | -25.10 | **Ch. 11** |
| 2483.50 | | | | | A | | | 38.42 | 54.00 | -15.59 | |

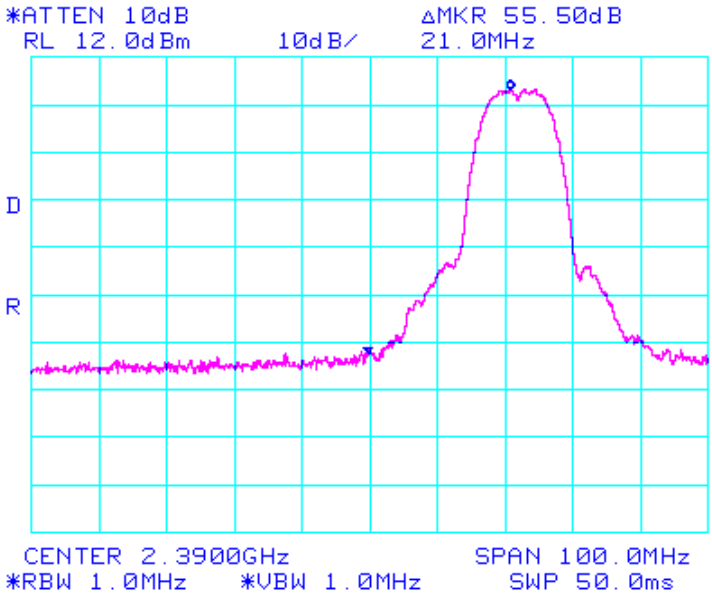
NOTE: The “Band Edge Field Strength” was calculated using the “Fundamental” and “Conducted Band Edge” measurements per the “Marker-Delta Method” with the following formula:

BE = Fm – Δm

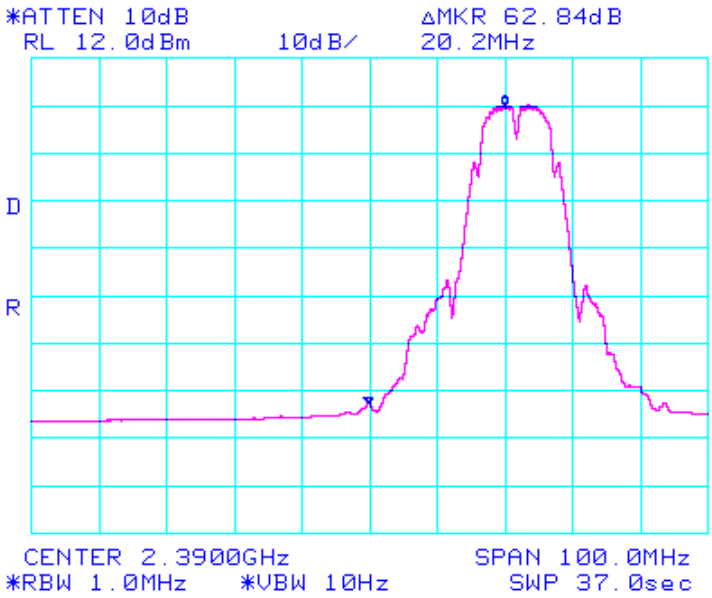
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-01a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

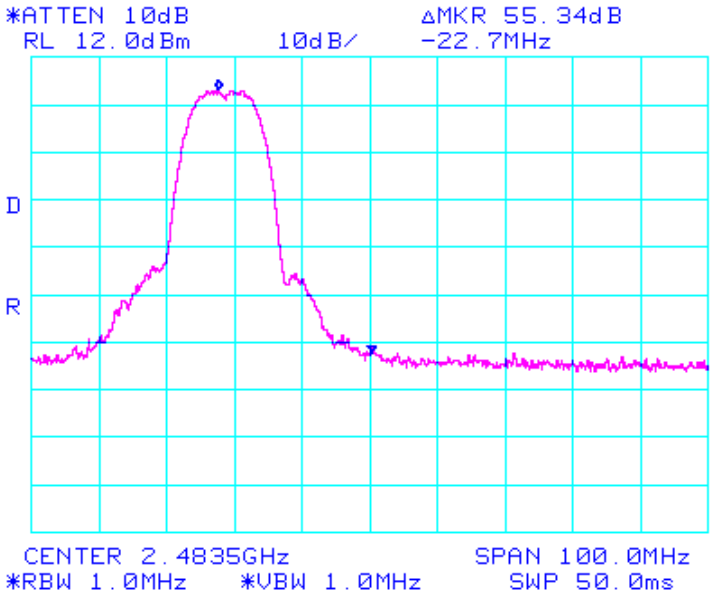



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-01b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

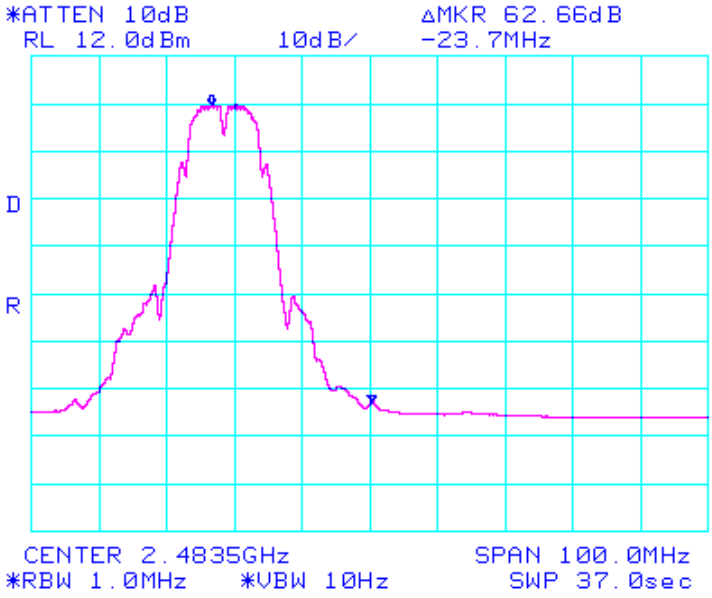


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-01c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-01d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11b mode (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | 69.67 | 100 | 135 | | | 2.53 | 32.19 | 104.39 | | | **Ch. 1** |
| 2412.00 | | | | 66.67 | A | 2.53 | 32.19 | 101.39 | | | |
| 2437.00 | 71.33 | 100 | 45 | | | 2.54 | 32.22 | 106.09 | | | **Ch. 6** |
| 2437.00 | | | | 68.00 | A | 2.54 | 32.22 | 102.76 | | | |
| 2462.00 | 70.67 | 100 | 45 | | | 2.55 | 32.25 | 105.48 | | | **Ch. 11** |
| 2462.00 | | | | 67.67 | A | 2.55 | 32.25 | 102.48 | | | |

| 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 | 70.83 | 100 | 180 | | | 2.53 | 31.92 | 105.28 | | | **Ch. 1** |
| 2412.00 | | | | 67.33 | A | 2.53 | 31.92 | 101.78 | | | |
| 2437.00 | 70.50 | 100 | 180 | | | 2.54 | 31.97 | 105.01 | | | **Ch. 6** |
| 2437.00 | | | | 67.33 | A | 2.54 | 31.97 | 101.84 | | | |
| 2462.00 | 69.67 | 100 | 45 | | | 2.55 | 32.02 | 104.25 | | | **Ch. 11** |
| 2462.00 | | | | 66.50 | A | 2.55 | 32.02 | 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 **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | | | | | | | | 49.23 | 74.00 | -24.77 | **Ch. 1** |
| 2390.00 | | | | | A | | | 38.89 | 54.00 | -15.11 | |
| 2400.00 | 35.50 | 100 | 135 | | | 2.52 | 32.18 | 70.20 | 84.39 | -14.19 | |
| 2483.50 | | | | | | | | 50.64 | 74.00 | -23.36 | **Ch. 11** |
| 2483.50 | | | | | A | | | 39.65 | 54.00 | -14.35 | |

| 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 | | | | | | | | 50.12 | 74.00 | -23.88 | **Ch. 1** |
| 2390.00 | | | | | A | | | 39.28 | 54.00 | -14.72 | |
| 2400.00 | 32.33 | 100 | 45 | | | 2.52 | 31.90 | 66.75 | 85.28 | -18.53 | |
| 2483.50 | | | | | | | | 49.41 | 74.00 | -24.60 | **Ch. 11** |
| 2483.50 | | | | | A | | | 38.25 | 54.00 | -15.76 | |

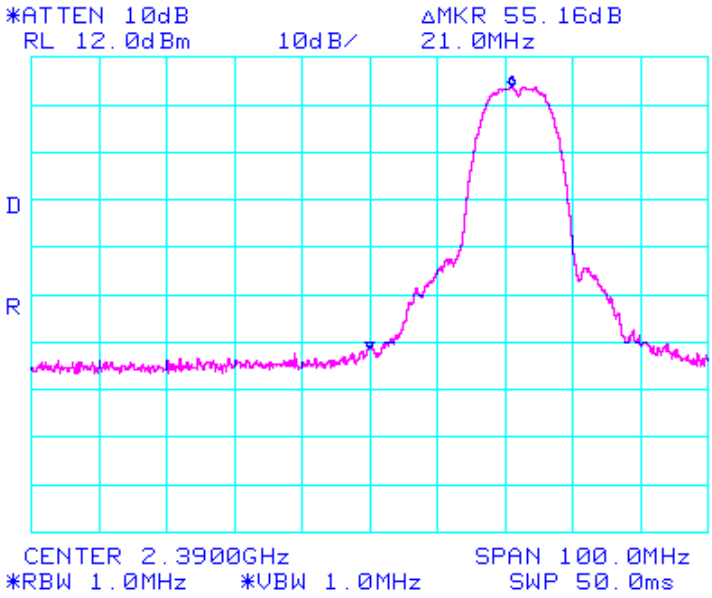
NOTE: The "Band Edge Field Strength" was calculated using the "Fundamental" and "Conducted Band Edge" measurements per the "Marker-Delta Method" with the following formula:

BE = Fm – Δm

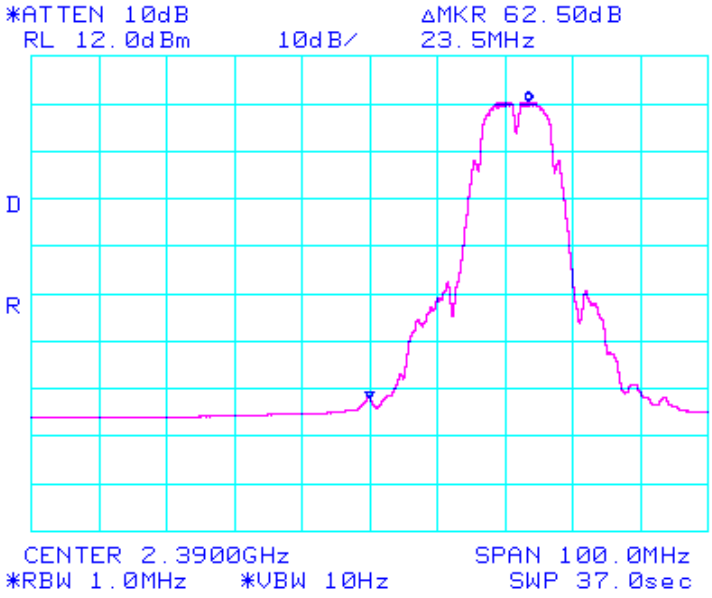
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-06a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

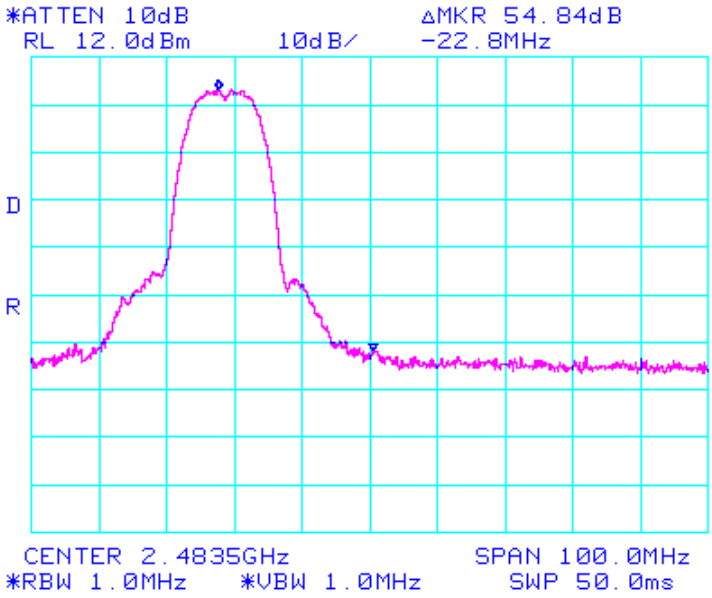



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-06b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

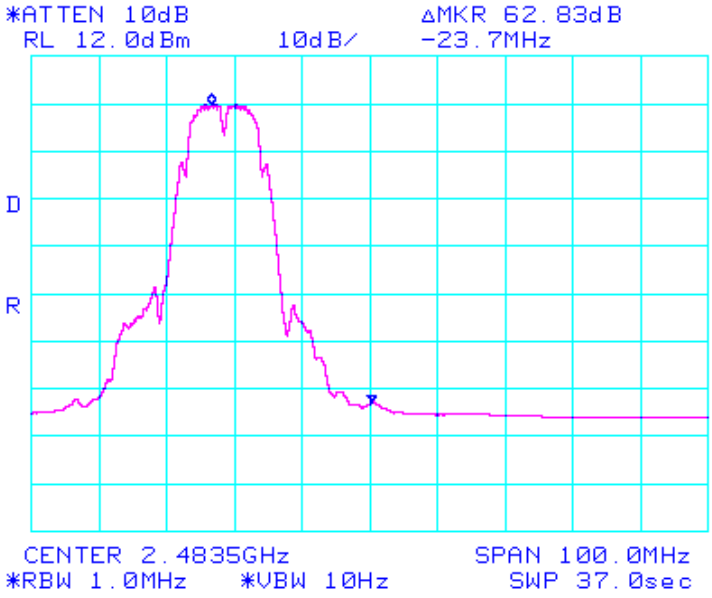


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-06c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-06d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11b mode (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 1 & 2** ports with **Taoglas & Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-45*

| 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* | *Channel/ Chain Tested* |
| 3249.32 | 53.50 | 100 | 180 | | | 46.49 | 2.94 | 32.70 | 42.65 | 74.00 | -31.35 | **Ch. 6/** |
| 4874.00 | 56.50 | 100 | 225 | | | 44.35 | 3.64 | 34.18 | 49.96 | 74.00 | -24.04 | **1** |
| 4874.00 | | | | 51.18 | A | 44.35 | 3.64 | 34.18 | 44.64 | 54.00 | -9.36 | |
| 6498.84 | 53.33 | 100 | 225 | | | 44.49 | 4.22 | 35.60 | 48.65 | 74.00 | -25.35 | |
| 9747.96 | 51.33 | 100 | 135 | | | 45.67 | 5.31 | 36.90 | 47.87 | 74.00 | -26.13 | |
| 3249.32 | 53.00 | 100 | 135 | | | 46.49 | 2.94 | 32.70 | 42.15 | 74.00 | -31.85 | **Ch. 6/** |
| 4874.00 | 59.50 | 100 | 135 | | | 44.35 | 3.64 | 34.18 | 52.96 | 74.00 | -21.04 | **2** |
| 4874.00 | | | | 55.95 | A | 44.35 | 3.64 | 34.18 | 49.41 | 54.00 | -4.59 | |
| 6498.64 | 51.83 | 100 | 135 | | | 44.49 | 4.22 | 35.60 | 47.15 | 74.00 | -26.85 | |
| 9747.96 | 51.17 | 100 | 180 | | | 45.67 | 5.31 | 36.90 | 47.71 | 74.00 | -26.29 | |
| | | | | | | | | | | | | |
| 3216.00 | 53.67 | 100 | 180 | | | 46.46 | 2.91 | 32.69 | 42.81 | 74.00 | -31.19 | **Ch. 1/** |
| 4824.00 | 54.67 | 100 | 225 | | | 44.70 | 3.59 | 34.21 | 47.77 | 74.00 | -26.23 | **1** |
| 4824.00 | | | | 47.10 | A | 44.70 | 3.59 | 34.21 | 40.20 | 54.00 | -13.80 | |
| 6498.64 | 52.67 | 100 | 180 | | | 44.49 | 4.22 | 35.60 | 47.99 | 74.00 | -26.01 | |
| 3282.66 | 53.83 | 100 | 135 | | | 46.52 | 2.97 | 32.71 | 42.99 | 86.68 | -43.69 | **Ch. 11/** |
| 4924.00 | 56.67 | 100 | 225 | | | 44.17 | 3.67 | 34.15 | 50.32 | 74.00 | -23.68 | **1** |
| 4924.00 | | | | 53.56 | A | 44.17 | 3.67 | 34.15 | 47.21 | 54.00 | -6.79 | |

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* | *Channel/ Chain Tested* |
| 3249.32 | 53.00 | 100 | 270 | | | 46.49 | 2.94 | 32.75 | 42.20 | 74.00 | -31.80 | **Ch. 6/** |
| 4873.99 | 56.67 | 100 | 180 | | | 44.35 | 3.64 | 34.23 | 50.18 | 74.00 | -23.82 | **1** |
| 4873.99 | | | | 50.32 | A | 44.35 | 3.64 | 34.23 | 43.83 | 54.00 | -10.17 | |
| 6498.64 | 54.83 | 100 | 180 | | | 44.49 | 4.22 | 35.60 | 50.15 | 74.00 | -23.85 | |
| 9748.00 | 52.00 | 100 | 180 | | | 45.67 | 5.31 | 36.90 | 48.54 | 74.00 | -25.46 | |
| 3249.32 | 54.33 | 100 | 180 | | | 46.49 | 2.94 | 32.75 | 43.53 | 74.00 | -30.47 | **Ch. 6/** |
| 4873.99 | 59.50 | 100 | 135 | | | | 3.64 | 34.23 | 53.01 | 74.00 | -20.99 | **2** |
| 4873.99 | | | | 55.94 | A | 44.35 | 3.64 | 34.23 | 49.45 | 54.00 | -4.55 | |
| 6498.64 | 54.50 | 100 | 225 | | | 44.49 | 4.22 | 35.60 | 49.82 | 74.00 | -24.18 | |
| 9748.00 | 52.33 | 100 | 0 | | | 45.67 | 5.31 | 36.90 | 48.87 | 74.00 | -25.13 | |
| | | | | | | | | | | | | |
| 3216.00 | 52.33 | 100 | 225 | | | 46.46 | 2.91 | 32.73 | 41.51 | 85.86 | -44.35 | **Ch. 1/** |
| 4824.01 | 53.17 | 100 | 225 | | | 44.70 | 3.59 | 34.24 | 46.30 | 74.00 | -27.70 | **1** |
| 4824.01 | | | | 43.37 | A | 44.70 | 3.59 | 34.24 | 36.50 | 54.00 | -17.50 | |
| 6432.00 | 52.17 | 100 | 135 | | | 44.48 | 4.20 | 35.57 | 47.46 | 74.00 | -26.54 | |
| 9648.00 | 52.17 | 100 | 45 | | | 45.70 | 5.27 | 36.78 | 48.52 | 74.00 | -25.48 | |
| 3282.66 | 53.00 | 100 | 135 | | | 46.52 | 2.97 | 32.77 | 42.21 | 88.03 | -45.82 | **Ch. 11/** |
| 4924.00 | 55.83 | 100 | 180 | | | 44.17 | 3.67 | 34.22 | 49.55 | 74.00 | -24.45 | **1** |
| 4924.00 | | | | 49.74 | A | 44.17 | 3.67 | 34.22 | 43.46 | 54.00 | -10.54 | |
| 6565.32 | 50.50 | 100 | 180 | | | 44.58 | 4.25 | 35.60 | 45.77 | 74.00 | -28.23 | |

## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to the host PC in **802.11g (2400-2483.5 MHz) mode.** | **TEMPERATURE:** | 22° C |
| | | **HUMIDITY:** | 39% RH |
| | | **TIME:** | 8:00 AM |

| | |
|---|---|
| **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.<br>• 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)<br>74.00 (Peak) | < -20 dBc |

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:

CML = 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | 73.50 | 100 | 315 | | | 2.53 | 32.19 | 108.22 | | | **Ch. 1** |
| 2412.00 | | | | 63.37 | A | 2.53 | 32.19 | 98.09 | | | |
| 2437.00 | 74.33 | 100 | 135 | | | 2.54 | 32.22 | 109.09 | | | **Ch. 6** |
| 2437.00 | | | | 63.33 | A | 2.54 | 32.22 | 98.09 | | | |
| 2462.00 | 74.33 | 125 | 225 | | | 2.55 | 32.25 | 109.14 | | | **Ch. 11** |
| 2462.00 | | | | 64.10 | A | 2.55 | 32.25 | 98.91 | | | |

| 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 | 73.33 | 100 | 225 | | | 2.53 | 31.92 | 107.78 | | | **Ch. 1** |
| 2412.00 | | | | 63.82 | A | 2.53 | 31.92 | 98.27 | | | |
| 2437.00 | 74.17 | 100 | 180 | | | 2.54 | 31.97 | 108.68 | | | **Ch. 6** |
| 2437.00 | | | | 64.33 | A | 2.54 | 31.97 | 98.84 | | | |
| 2462.00 | 73.00 | 145 | 225 | | | 2.55 | 32.02 | 107.58 | | | **Ch. 11** |
| 2462.00 | | | | 64.04 | A | 2.55 | 32.02 | 98.62 | | | |

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

Radiated Emissions Test Results (Continued)

*Band Edge Field Strength Measurements in **802.11g mode (2400-2483.5 MHz)***
*Channels 1 & 11*
***Continuous TX** at **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | | | | | | | | 60.89 | 74.00 | -13.11 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.43 | 54.00 | -8.57 | |
| 2400.00 | 47.97 | 100 | 225 | | | 2.52 | 32.18 | 82.67 | 88.22 | -5.55 | |
| 2483.50 | | | | | | | | 61.14 | 74.00 | -12.86 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.74 | 54.00 | -9.26 | |

| 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 | | | | | | | | 60.45 | 74.00 | -13.55 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.61 | 54.00 | -8.39 | |
| 2400.00 | 38.83 | 100 | 180 | | | 2.52 | 31.90 | 73.25 | 87.78 | -14.53 | |
| 2483.50 | | | | | | | | 59.58 | 74.00 | -14.43 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.45 | 54.00 | -9.55 | |

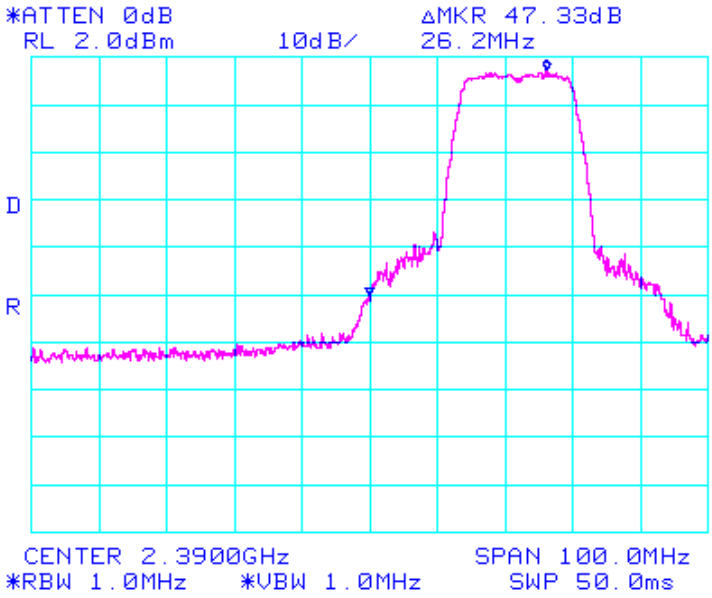
NOTE: The "Band Edge Field Strength" was calculated using the "Fundamental" and "Conducted Band Edge" measurements per the "Marker-Delta Method" with the following formula:

$BE = Fm - \Delta m$

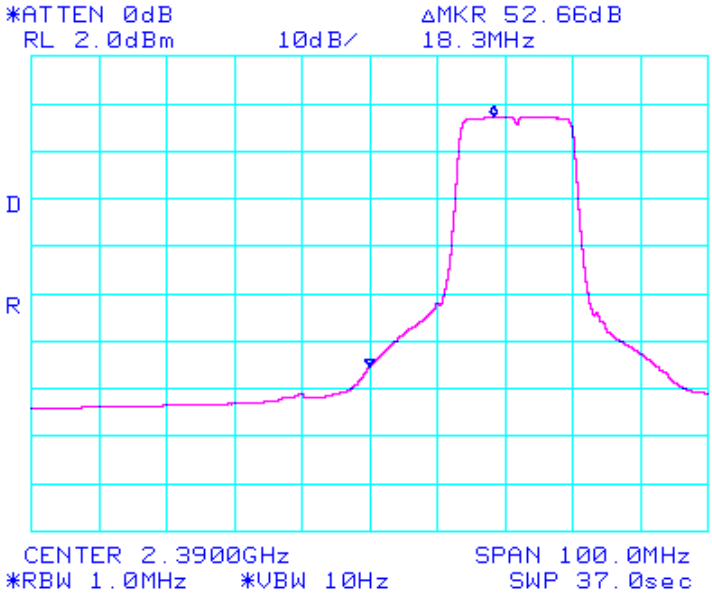
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-02a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

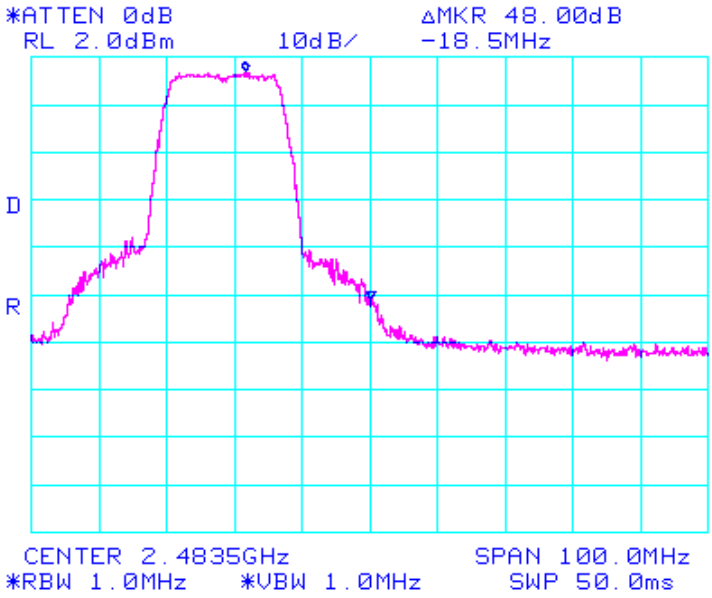



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-02b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

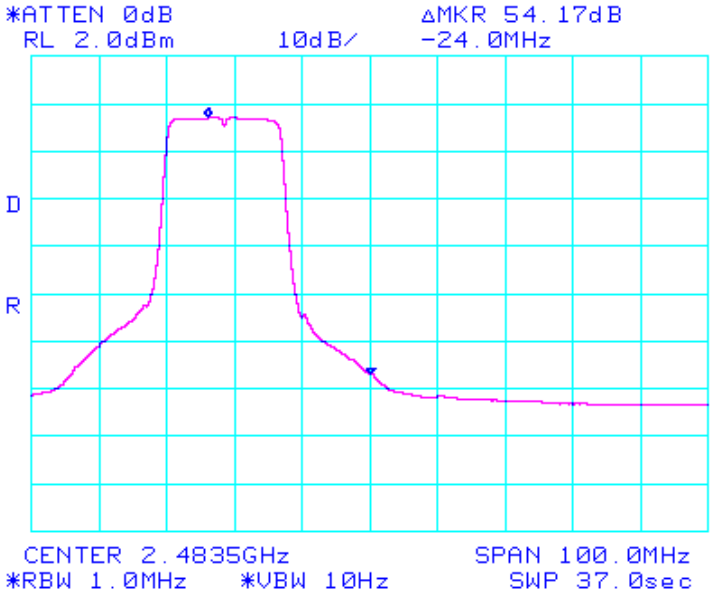


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-02c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-02d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11g mode (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | 73.50 | 100 | 315 | | | 2.53 | 32.19 | 108.22 | | | **Ch. 1** |
| 2412.00 | | | | 63.37 | A | 2.53 | 32.19 | 98.09 | | | |
| 2437.00 | 74.33 | 100 | 135 | | | 2.54 | 32.22 | 109.09 | | | **Ch. 6** |
| 2437.00 | | | | 63.33 | A | 2.54 | 32.22 | 98.09 | | | |
| 2462.00 | 74.33 | 125 | 225 | | | 2.55 | 32.25 | 109.14 | | | **Ch. 11** |
| 2462.00 | | | | 64.10 | A | 2.55 | 32.25 | 98.91 | | | |

| 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 | 73.33 | 100 | 225 | | | 2.53 | 31.92 | 107.78 | | | **Ch. 1** |
| 2412.00 | | | | 63.82 | A | 2.53 | 31.92 | 98.27 | | | |
| 2437.00 | 74.17 | 100 | 180 | | | 2.54 | 31.97 | 108.68 | | | **Ch. 6** |
| 2437.00 | | | | 64.33 | A | 2.54 | 31.97 | 98.84 | | | |
| 2462.00 | 73.00 | 145 | 225 | | | 2.55 | 32.02 | 107.58 | | | **Ch. 11** |
| 2462.00 | | | | 64.04 | A | 2.55 | 32.02 | 98.62 | | | |

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

Radiated Emissions Test Results (Continued)

*Band Edge Field Strength Measurements in **802.11g mode (2400-2483.5 MHz)***
*Channels 1 & 11*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | | | | | | | | 61.72 | 74.00 | -12.28 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.42 | 54.00 | -8.58 | |
| 2400.00 | 47.97 | 100 | 225 | | | 2.52 | 32.18 | 82.67 | 88.22 | -5.55 | |
| 2483.50 | | | | | | | | 61.14 | 74.00 | -12.86 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.74 | 54.00 | -9.26 | |

| 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 | | | | | | | | 61.28 | 74.00 | -12.72 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.60 | 54.00 | -8.40 | |
| 2400.00 | 38.83 | 100 | 180 | | | 2.52 | 31.90 | 73.25 | 87.78 | -14.53 | |
| 2483.50 | | | | | | | | 59.58 | 74.00 | -14.43 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.45 | 54.00 | -9.55 | |

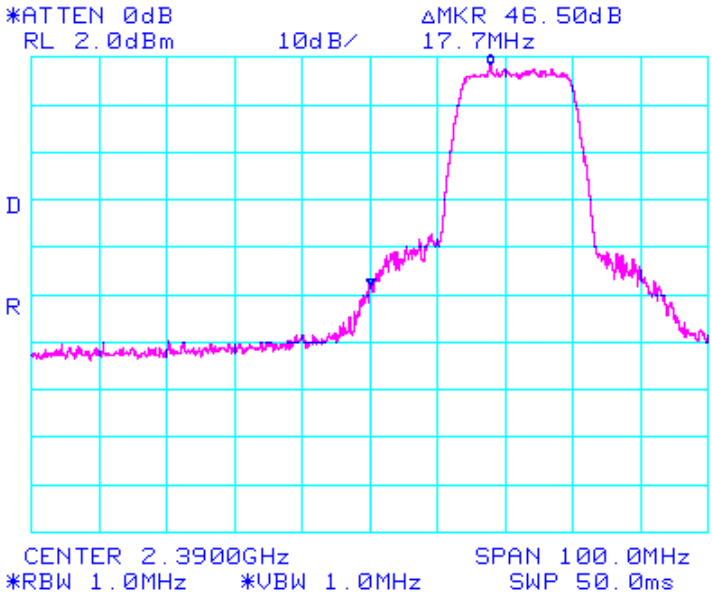
NOTE: The "Band Edge Field Strength" was calculated using the "Fundamental" and "Conducted Band Edge" measurements per the "Marker-Delta Method" with the following formula:

$BE = Fm - \Delta m$

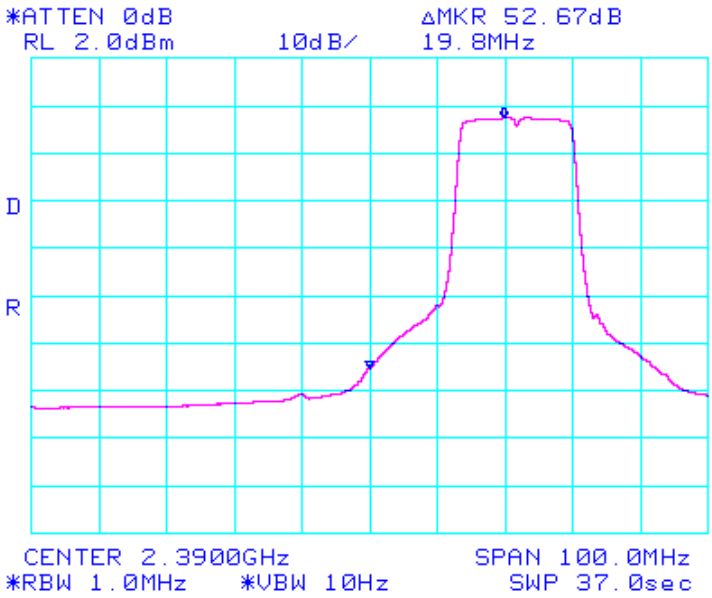
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-07a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

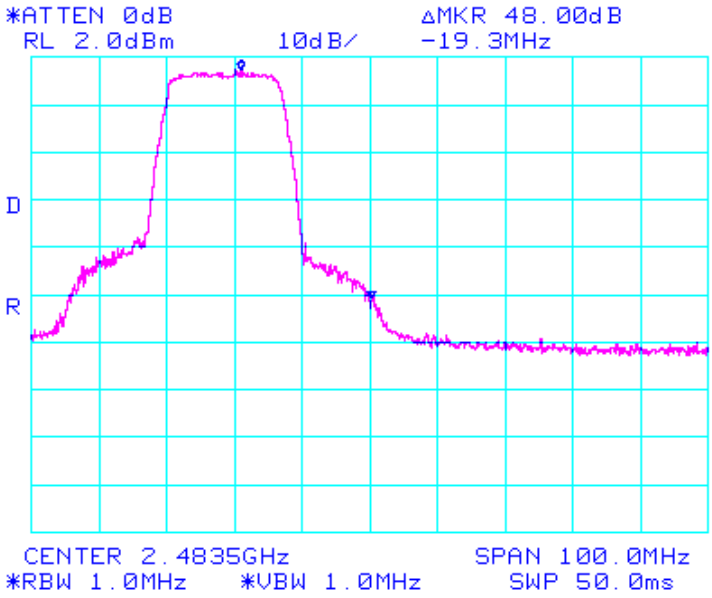



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-07b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

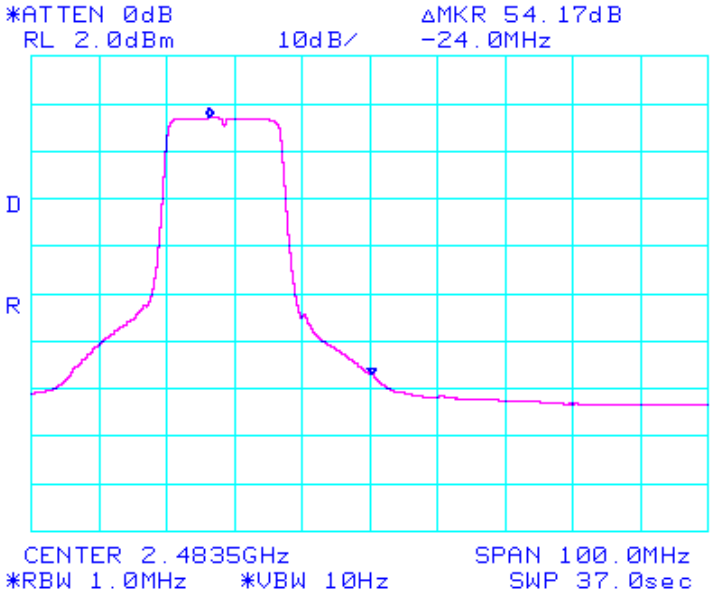


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-07c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-07d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11g mode (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 1 & 2** ports with **Taoglas & Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-45*

| 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* | *Channel/ Chain Tested* |
| 3249.32 | 55.00 | 100 | 135 | | | 46.61 | 2.34 | 31.80 | 42.52 | 74.00 | -31.48 | **Ch. 6/** |
| 4874.00 | 58.17 | 100 | 225 | | | 46.31 | 2.89 | 34.02 | 48.77 | 74.00 | -25.23 | **1** |
| 4874.00 | | | | 53.19 | A | 46.31 | 2.89 | 34.02 | 43.79 | 54.00 | -10.21 | |
| 3249.32 | 53.50 | 100 | 135 | | | 46.61 | 2.34 | 31.80 | 41.02 | 74.00 | -32.98 | **Ch. 6/** |
| 4874.00 | 55.33 | 100 | 225 | | | 46.31 | 2.89 | 34.02 | 45.93 | 74.00 | -28.07 | **2** |
| 4874.00 | | | | 52.14 | A | 46.31 | 2.89 | 34.02 | 42.74 | 54.00 | -11.26 | |
| | | | | | | | | | | | | |
| 3216.00 | 53.67 | 100 | 180 | | | 46.62 | 2.32 | 31.72 | 41.10 | 74.00 | -32.90 | **Ch. 1/** |
| 4824.00 | 54.67 | 100 | 225 | | | 46.31 | 2.87 | 33.91 | 45.15 | 74.00 | -28.85 | **1** |
| 4824.00 | | | | 47.10 | A | 46.31 | 2.87 | 33.91 | 37.58 | 54.00 | -16.42 | |
| 3282.66 | 53.83 | 100 | 135 | | | 46.61 | 2.35 | 31.88 | 41.45 | 86.68 | -45.23 | **Ch. 11/** |
| 4924.00 | 56.67 | 100 | 225 | | | 46.31 | 2.90 | 34.13 | 47.39 | 74.00 | -26.61 | **1** |
| 4924.00 | | | | 53.56 | A | 46.31 | 2.90 | 34.13 | 44.28 | 54.00 | -9.72 | |

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* | *Channel/ Chain Tested* |
| 3249.32 | 53.33 | 100 | 135 | | | 46.61 | 2.34 | 31.35 | 40.40 | 74.00 | -33.60 | **Ch. 6/** |
| 4873.99 | 56.50 | 100 | 225 | | | 46.31 | 2.89 | 33.87 | 46.95 | 74.00 | -27.05 | **1** |
| 4873.99 | | | | 49.80 | A | 46.31 | 2.89 | 33.87 | 40.25 | 54.00 | -13.75 | |
| 9748.00 | 54.00 | 100 | 315 | | | 44.53 | 4.18 | 38.15 | 51.80 | 74.00 | -22.20 | |
| 3249.32 | 53.83 | 100 | 315 | | | 46.61 | 2.34 | 31.35 | 40.90 | 74.00 | -33.10 | **Ch. 6/** |
| 4873.99 | 55.00 | 100 | 135 | | | 46.31 | 2.89 | 33.87 | 45.45 | 74.00 | -28.55 | **2** |
| 4873.99 | | | | 48.44 | A | 46.31 | 2.89 | 33.87 | 38.89 | 54.00 | -15.11 | |
| 9748.00 | 50.17 | 100 | 180 | | | 44.53 | 4.18 | 38.15 | 47.97 | 74.00 | -26.03 | |
| | | | | | | | | | | | | |
| 3216.00 | 52.33 | 100 | 225 | | | 46.62 | 2.32 | 31.28 | 39.31 | 85.86 | -46.55 | **Ch. 1/** |
| 4824.01 | 53.17 | 100 | 225 | | | 46.31 | 2.87 | 33.78 | 43.52 | 74.00 | -30.48 | **1** |
| 4824.01 | | | | 43.37 | A | 46.31 | 2.87 | 33.78 | 33.72 | 54.00 | -20.28 | |
| 9648.00 | 52.17 | 100 | 45 | | | 44.57 | 4.15 | 38.09 | 49.83 | 74.00 | -24.17 | |
| 3282.66 | 53.00 | 100 | 135 | | | 46.61 | 2.35 | 31.42 | 40.16 | 88.03 | -47.87 | **Ch. 11/** |
| 4924.00 | 55.83 | 100 | 180 | | | 46.31 | 2.90 | 33.96 | 46.38 | 74.00 | -27.62 | **1** |
| 4924.00 | | | | 49.74 | A | 46.31 | 2.90 | 33.96 | 40.29 | 54.00 | -13.71 | |
| 6565.32 | 50.50 | 100 | 180 | | | 45.74 | 3.37 | 35.55 | 43.67 | 74.00 | -30.33 | |

## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to the host PC in **802.11n (2400-2483.5 MHz) mode.** | **TEMPERATURE:** | 22° C |
| | | **HUMIDITY:** | 39% RH |
| | | **TIME:** | 8:00 AM |

| | |
|---|---|
| **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.<br>• 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)<br>74.00 (Peak) | < -20 dBc |

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:

CML = 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | 74.17 | 100 | 180 | | | 2.53 | 32.19 | 108.89 | | | **Ch. 1** |
| 2412.00 | | | | 64.46 | A | 2.53 | 32.19 | 99.18 | | | |
| 2437.00 | 75.83 | 100 | 135 | | | 2.54 | 32.22 | 110.59 | | | **Ch. 6** |
| 2437.00 | | | | 65.00 | A | 2.54 | 32.22 | 99.76 | | | |
| 2462.00 | 74.33 | 100 | 225 | | | 2.55 | 32.25 | 109.14 | | | **Ch. 11** |
| 2462.00 | | | | 64.20 | A | 2.55 | 32.25 | 99.01 | | | |

| 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 | 73.17 | 100 | 225 | | | 2.53 | 31.92 | 107.62 | | | **Ch. 1** |
| 2412.00 | | | | 63.46 | A | 2.53 | 31.92 | 97.91 | | | |
| 2437.00 | 74.50 | 100 | 180 | | | 2.54 | 31.97 | 109.01 | | | **Ch. 6** |
| 2437.00 | | | | 64.83 | A | 2.54 | 31.97 | 99.34 | | | |
| 2462.00 | 73.67 | 145 | 225 | | | 2.55 | 32.02 | 108.25 | | | **Ch. 11** |
| 2462.00 | | | | 61.67 | A | 2.01 | 29.19 | 92.87 | | | |

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 **802.11n mode 20MHz Wide (2400-2483.5 MHz)***
*Channels 1 & 11*
***Continuous TX** at **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | | | | | | | | 61.39 | 74.00 | -12.61 | **Ch. 1** |
| 2390.00 | | | | | A | | | 46.35 | 54.00 | -7.65 | |
| 2400.00 | 39.50 | 100 | 135 | | | 2.52 | 32.18 | 74.20 | 88.89 | -14.69 | |
| 2483.50 | | | | | | | | 60.64 | 74.00 | -13.36 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.84 | 54.00 | -9.16 | |

| 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 | | | | | | | | 60.12 | 74.00 | -13.88 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.08 | 54.00 | -8.92 | |
| 2400.00 | 40.00 | 100 | 180 | | | 2.52 | 31.90 | 74.42 | 87.62 | -13.20 | |
| 2483.50 | | | | | | | | 59.75 | 74.00 | -14.26 | **Ch. 11** |
| 2483.50 | | | | | A | | | 42.75 | 54.00 | -11.26 | |

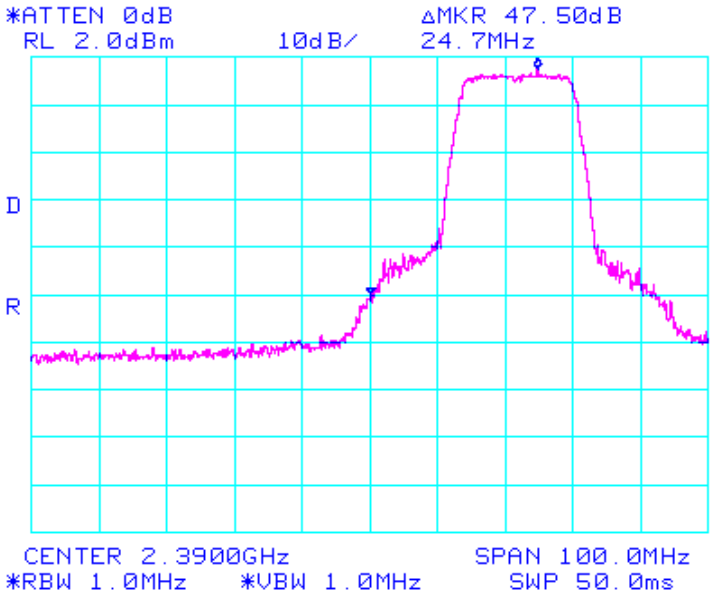
NOTE: The "Band Edge Field Strength" was calculated using the "Fundamental" and "Conducted Band Edge" measurements per the "Marker-Delta Method" with the following formula:

$BE = Fm - \Delta m$

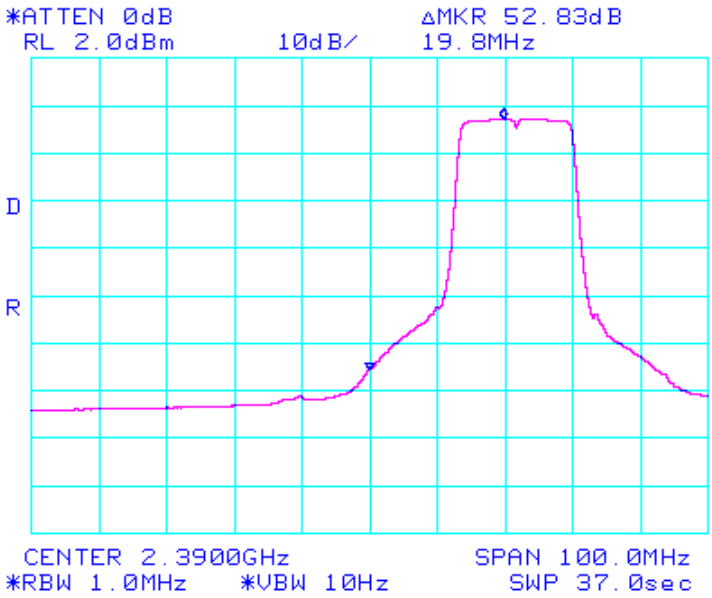
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-03a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

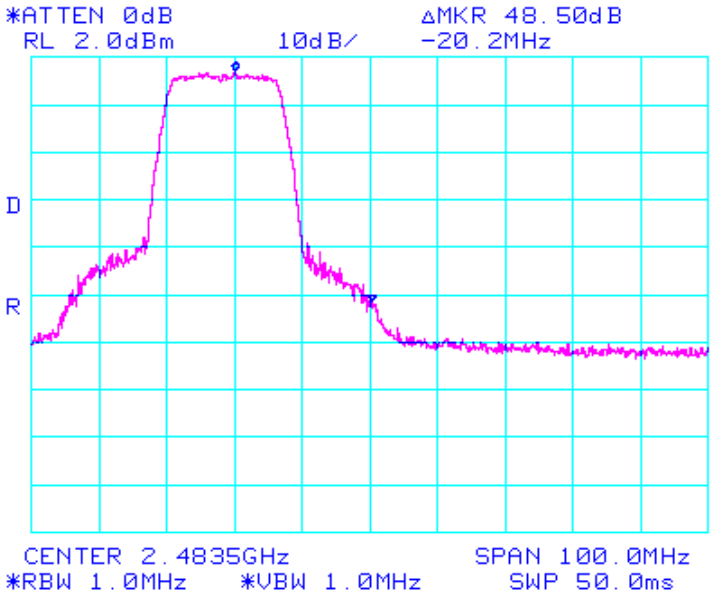



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-03b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

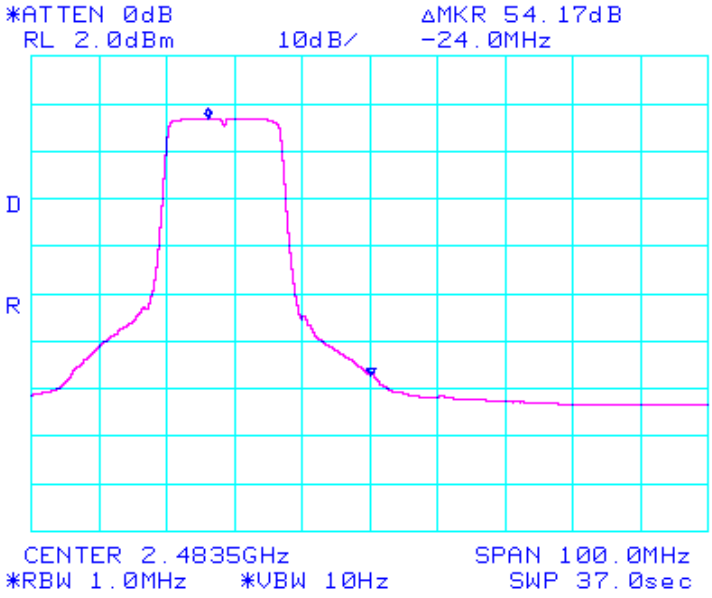


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-03c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-03d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11n mode 20MHz Wide (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | 72.33 | 100 | 225 | | | 2.53 | 32.19 | 107.05 | | | **Ch. 1** |
| 2412.00 | | | | 65.33 | A | 2.53 | 32.19 | 100.05 | | | |
| 2437.00 | 74.00 | 100 | 135 | | | 2.54 | 32.22 | 108.76 | | | **Ch. 6** |
| 2437.00 | | | | 64.33 | A | 2.54 | 32.22 | 99.09 | | | |
| 2462.00 | 72.67 | 100 | 225 | | | 2.55 | 32.25 | 107.48 | | | **Ch. 11** |
| 2462.00 | | | | 64.93 | A | 2.55 | 32.25 | 99.74 | | | |

| 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 | 72.00 | 100 | 45 | | | 2.53 | 31.92 | 106.45 | | | **Ch. 1** |
| 2412.00 | | | | 62.65 | A | 2.53 | 31.92 | 97.10 | | | |
| 2437.00 | 73.50 | 100 | 180 | | | 2.54 | 31.97 | 108.01 | | | **Ch. 6** |
| 2437.00 | | | | 74.67 | A | 2.54 | 31.97 | 109.18 | | | |
| 2462.00 | 72.17 | 150 | 45 | | | 2.55 | 32.02 | 106.75 | | | **Ch. 11** |
| 2462.00 | | | | 62.46 | A | 2.55 | 32.02 | 97.04 | | | |

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* ***802.11n mode 20MHz Wide (2400-2483.5 MHz)***
*Channels 1 & 11*
***Continuous TX*** *at* ***Antenna 2*** *port with* ***Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | | | | | | | | 63.72 | 74.00 | -10.28 | **Ch. 1** |
| 2390.00 | | | | | A | | | 46.68 | 54.00 | -7.32 | |
| 2400.00 | 39.50 | 100 | 135 | | | 2.52 | 32.18 | 74.20 | 88.89 | -14.69 | |
| 2483.50 | | | | | | | | 61.14 | 74.00 | -12.86 | **Ch. 11** |
| 2483.50 | | | | | A | | | 44.85 | 54.00 | -9.15 | |

| RADIATED EMISSIONS - Vertical Antenna Polarization | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| *Freq. (MHz)* | *Meter Reading (dBuV)* | *Antenna Height (cm)* | *Azimuth (degrees)* | *Quasi pk or AVG (dBuV)* | | *Cable Factor (dB)* | *Ant. Factor (dB)* | *Corrected Reading (dBuV)* | *Limits (dBuV)* | *Diff (dB) +=FAIL* | *Comments* |
| 2390.00 | | | | | | | | 62.45 | 74.00 | -11.55 | **Ch. 1** |
| 2390.00 | | | | | A | | | 45.41 | 54.00 | -8.59 | |
| 2400.00 | 40.00 | 100 | 180 | | | 2.52 | 31.90 | 74.42 | 87.62 | -13.20 | |
| 2483.50 | | | | | | | | 60.25 | 74.00 | -13.76 | **Ch. 11** |
| 2483.50 | | | | | A | | | 42.76 | 54.00 | -11.25 | |

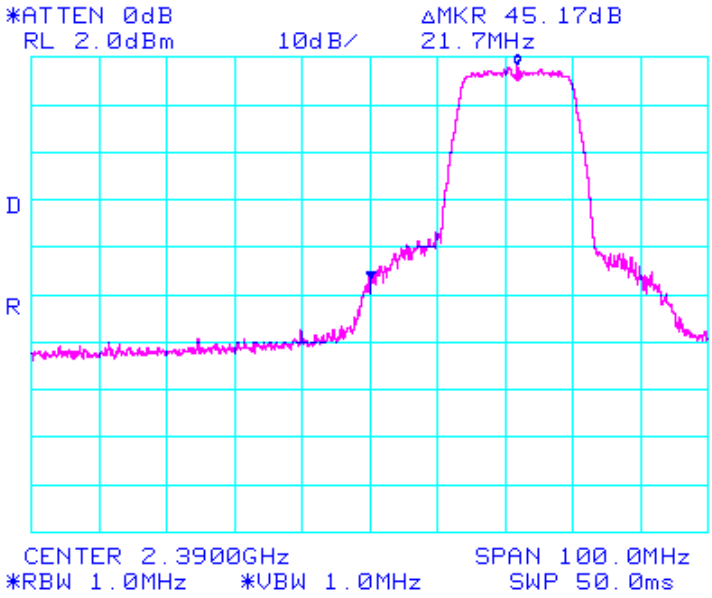
NOTE: The "Band Edge Field Strength" was calculated using the "Fundamental" and "Conducted Band Edge" measurements per the "Marker-Delta Method" with the following formula:

$BE = Fm - \Delta m$

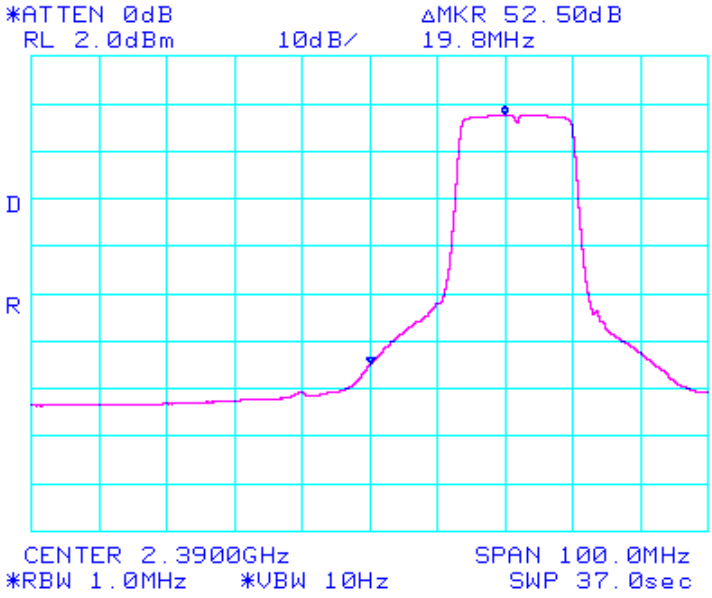
Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-08a | Cond BE, Ch. 1, PK (1MHz/1MHz) | JC |

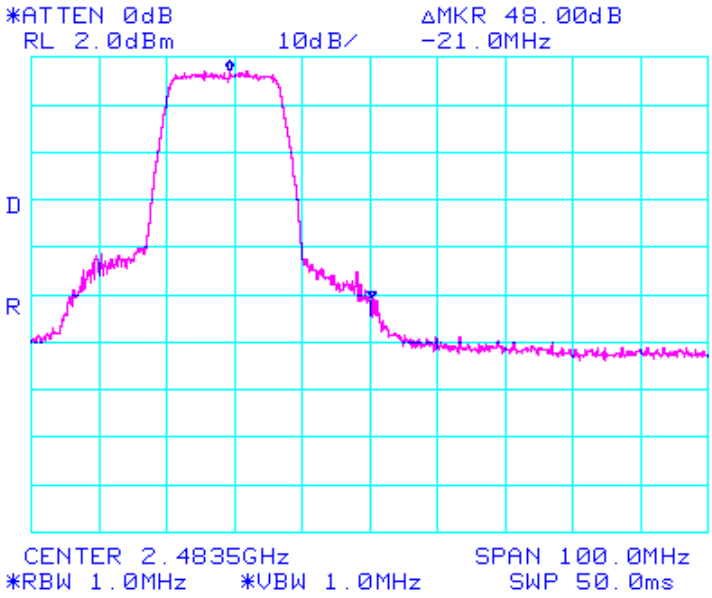



| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-08b | Cond BE, Ch. 1, AV (1MHz/10Hz) | JC |

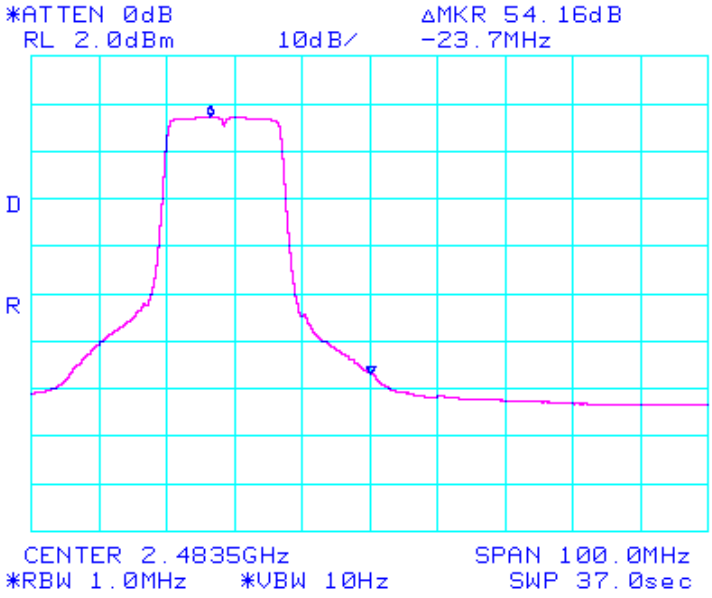


Band-Edge Plots (Continued)

| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-08c | Cond BE, Ch. 11, PK (1MHz/1MHz) | JC |




| *Plot File Name* | *Description (RBW/VBW)* | *Test Eng.* |
|---|---|---|
| LANTR-101028-08d | Cond BE, Ch. 11, AV (1MHz/10Hz) | JC |



Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in **802.11n mode (2400-2483.5 MHz)***
*Channels 1, 6, & 11*
***Continuous TX** at **Antenna 1 & 2** ports with **Taoglas & Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-46*

| 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* | *Channel/ Chain Tested* |
| 3249.32 | 53.17 | 100 | 135 | | | 50.79 | 2.94 | 32.70 | 38.02 | 74.00 | -35.98 | **Ch. 6/** |
| 4873.99 | 52.50 | 100 | 135 | | | 51.15 | 3.64 | 34.18 | 39.16 | 74.00 | -34.84 | **1** |
| 4873.99 | | | | 40.74 | A | 51.15 | 3.64 | 34.18 | 27.40 | 54.00 | -26.60 | |
| 6498.64 | 51.83 | 100 | 225 | | | 50.83 | 4.22 | 35.60 | 40.82 | 74.00 | -33.18 | |
| 3249.32 | 52.50 | 100 | 90 | | | 50.79 | 2.94 | 32.70 | 37.35 | 74.00 | -36.65 | **Ch. 6/** |
| 4873.99 | 55.67 | 100 | 135 | | | 51.15 | 3.64 | 34.18 | 42.33 | 74.00 | -31.67 | **2** |
| 4873.99 | | | | 43.43 | A | 51.15 | 3.64 | 34.18 | 30.09 | 54.00 | -23.91 | |
| 6498.64 | 54.00 | 100 | 180 | | | 50.83 | 4.22 | 35.60 | 42.99 | 74.00 | -31.01 | |
| | | | | | | | | | | | | |
| 3216.00 | 52.50 | 100 | 135 | | | 50.80 | 2.91 | 32.69 | 37.30 | 74.00 | -36.70 | **Ch. 1/** |
| 4824.00 | 53.00 | 100 | 135 | | | 51.18 | 3.59 | 34.21 | 39.62 | 74.00 | -34.38 | **1** |
| 4824.00 | | | | 41.35 | A | 51.18 | 3.59 | 34.21 | 27.97 | 54.00 | -26.03 | |
| 6498.64 | 52.17 | 100 | 180 | | | 50.83 | 4.22 | 35.60 | 41.16 | 74.00 | -32.84 | |
| 3282.66 | 52.67 | 100 | 135 | | | 50.77 | 2.97 | 32.71 | 37.58 | 74.00 | -36.42 | **Ch. 11/** |
| | | | | | | | | | | | | **1** |

| 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* | *Channel/ Chain Tested* |
| 3249.32 | 53.33 | 100 | 135 | | | 50.79 | 2.94 | 32.75 | 38.23 | 74.00 | -35.77 | **Ch. 6/** |
| 4873.99 | 54.67 | 100 | 90 | | | 51.15 | 3.64 | 34.23 | 41.38 | 74.00 | -32.62 | **1** |
| 4873.99 | | | | 42.68 | A | 51.15 | 3.64 | 34.23 | 29.39 | 54.00 | -24.61 | |
| 6498.64 | 53.17 | 100 | 135 | | | 50.83 | 4.22 | 35.60 | 42.16 | 74.00 | -31.84 | |
| 3249.32 | 52.67 | 100 | 45 | | | 50.79 | 2.94 | 32.75 | 37.57 | 74.00 | -36.43 | **Ch. 6/** |
| 4873.99 | 56.00 | 100 | 135 | | | 51.15 | 3.64 | 34.23 | 42.71 | 74.00 | -31.29 | **2** |
| 4873.99 | | | | 42.89 | A | 51.15 | 3.64 | 34.23 | 29.60 | 54.00 | -24.40 | |
| 6498.64 | 53.33 | 100 | 135 | | | 50.83 | 4.22 | 35.60 | 42.32 | 74.00 | -31.68 | |
| | | | | | | | | | | | | |
| 3216.00 | 52.17 | 100 | 135 | | | 50.80 | 2.91 | 32.73 | 37.01 | 74.00 | -36.99 | **Ch. 1/** |
| 4824.01 | 52.17 | 100 | 180 | | | 51.18 | 3.59 | 34.24 | 38.82 | 74.00 | -35.18 | **1** |
| 4824.01 | | | | 40.71 | A | 51.18 | 3.59 | 34.24 | 27.36 | 54.00 | -26.64 | |
| 6432.00 | 53.00 | 100 | 225 | | | 50.90 | 4.20 | 35.57 | 41.87 | 74.00 | -32.13 | |
| 3282.66 | 52.83 | 100 | 0 | | | 50.77 | 2.97 | 32.77 | 37.80 | 74.00 | -36.20 | **Ch. 11/** |
| 4924.00 | 52.50 | 100 | 180 | | | 51.16 | 3.67 | 34.22 | 39.23 | 74.00 | -34.77 | **1** |
| 4924.00 | | | | 41.88 | A | 51.16 | 3.67 | 34.22 | 28.61 | 54.00 | -25.39 | |

## RADIATED EMISSIONS TEST RESULTS

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 2 |
| **CONFIGURATION:** | Tested connected to the host PC in **802.11n (5745-5825 MHz) mode.** | **TEMPERATURE:** | 22° C |
| | | **HUMIDITY:** | 39% RH |
| | | **TIME:** | 8:00 AM |

| | |
|---|---|
| **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.<br>• 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)<br>74.00 (Peak) | < -20 dBc |

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:

CML = 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 **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | 61.33 | 100 | 135 | | | 3.98 | 35.09 | 100.41 | | | **Ch. 149** |
| 5745.00 | | | | 51.33 | A | 3.98 | 35.09 | 90.41 | | | |
| 5785.00 | 62.17 | 100 | 135 | | | 4.00 | 35.16 | 101.32 | | | **Ch. 157** |
| 5785.00 | | | | 51.67 | A | 4.00 | 35.16 | 90.82 | | | |
| 5825.00 | 62.00 | 100 | 135 | | | 4.01 | 35.22 | 101.23 | | | **Ch. 165** |
| 5825.00 | | | | 51.83 | A | 4.01 | 35.22 | 91.06 | | | |

| 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 | 65.83 | 100 | 225 | | | 3.98 | 34.94 | 104.75 | | | **Ch. 149** |
| 5745.00 | | | | 55.83 | A | 3.98 | 34.94 | 94.75 | | | |
| 5785.00 | 65.00 | 100 | 225 | | | 4.00 | 35.01 | 104.01 | | | **Ch. 157** |
| 5785.00 | | | | 54.33 | A | 4.00 | 35.01 | 93.34 | | | |
| 5825.00 | 63.50 | 100 | 225 | | | 4.01 | 35.09 | 102.60 | | | **Ch. 165** |
| 5825.00 | | | | 53.17 | A | 4.01 | 35.09 | 92.27 | | | |

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 **802.11n mode 20MHz Wide (5745-5825 MHz)***
*Channels 149 & 165*
***Continuous TX** at **Antenna 1** port with **Taoglas Antenna***
*Aegis Labs, Inc. File #: LANTR-101028-07*

| 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 | 31.50 | 100 | 135 | | 3.98 | 35.06 | 70.54 | 80.41 | -9.87 | **Ch. 149** |
| 5850.00 | 32.33 | 100 | 135 | | 4.02 | 35.26 | 71.61 | 81.23 | -9.62 | **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 | 34.17 | 100 | 225 | | 3.98 | 34.91 | 73.05 | 84.75 | -11.70 | **Ch. 149** |
| 5850.00 | 30.67 | 100 | 225 | | 4.02 | 35.13 | 69.82 | 82.60 | -12.78 | **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:

$BE = Fm - \Delta m$

Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Radiated Emissions Test Results (Continued)

*Fundamental Measurements in **802.11n mode 20MHz Wide (5745-5825 MHz)***
*Channels 149, 157, & 165*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | 62.00 | 100 | 135 | | | 3.98 | 35.09 | 101.08 | | | **Ch. 149** |
| 5745.00 | | | | 52.00 | A | 3.98 | 35.09 | 91.08 | | | |
| 5785.00 | 61.83 | 100 | 135 | | | 4.00 | 35.16 | 100.98 | | | **Ch. 157** |
| 5785.00 | | | | 51.50 | A | 4.00 | 35.16 | 90.65 | | | |
| 5825.00 | 62.17 | 100 | 135 | | | 4.01 | 35.22 | 101.40 | | | **Ch. 165** |
| 5825.00 | | | | 57.17 | A | 4.01 | 35.22 | 96.40 | | | |

| 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 | 70.00 | 100 | 225 | | | 3.98 | 34.94 | 108.92 | | | **Ch. 149** |
| 5745.00 | | | | 59.50 | A | 3.98 | 34.94 | 98.42 | | | |
| 5785.00 | 68.00 | 100 | 225 | | | 4.00 | 35.01 | 107.01 | | | **Ch. 157** |
| 5785.00 | | | | 58.17 | A | 4.00 | 35.01 | 97.18 | | | |
| 5825.00 | 67.33 | 100 | 225 | | | 4.01 | 35.09 | 106.43 | | | **Ch. 165** |
| 5825.00 | | | | 57.17 | A | 4.01 | 35.09 | 96.27 | | | |

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 **802.11n mode 20MHz Wide (5745-5825 MHz)***
*Channels 149 & 165*
***Continuous TX** at **Antenna 2** port with **Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-08*

| 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 | 31.50 | 100 | 135 | | 3.98 | 35.06 | 70.54 | 80.41 | -9.87 | **Ch. 149** |
| 5850.00 | 32.33 | 100 | 135 | | 4.02 | 35.26 | 71.61 | 81.23 | -9.62 | **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 | 34.17 | 100 | 225 | | 3.98 | 34.91 | 73.05 | 84.75 | -11.70 | **Ch. 149** |
| 5850.00 | 30.67 | 100 | 225 | | 4.02 | 35.13 | 69.82 | 82.60 | -12.78 | **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:

$BE = Fm - \Delta m$

Where
BE = Band Edge Field Strength
Fm = Measured Fundamental (Peak or Average)
Δm = Measured Conducted Band Edge Delta (Peak or Average)

Radiated Emissions Test Results (Continued)

*Spurious Emissions Measurements in* ***802.11n mode 20MHz Wide (5745-5825 MHz)***
*Channels 149, 157, & 165*
***Continuous TX*** *at* ***Antenna 1 & 2*** *ports with* ***Taoglas & Ethertronics Antennas***
*Aegis Labs, Inc. File #: LANTR-101028-46*

| 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* | *Channel/ Chain Tested* |
| 3856.66 | 52.00 | 100 | 270 | | | 50.79 | 3.22 | 33.23 | 37.66 | 74.00 | -36.34 | **Ch. 157/** |
| 3856.66 | | | | 40.10 | A | 50.79 | 3.22 | 33.23 | 25.76 | 54.00 | -28.24 | **1** |
| 7713.29 | 51.83 | 100 | 135 | | | 50.14 | 4.67 | 36.04 | 42.40 | 74.00 | -31.60 | |
| 7713.29 | | | | 39.29 | A | 50.14 | 4.67 | 36.04 | 29.86 | 54.00 | -24.14 | |
| 3856.66 | 51.67 | 100 | 270 | | | 50.79 | 3.22 | 33.23 | 37.33 | 74.00 | -36.67 | **Ch. 157/** |
| 3856.66 | | | | 40.98 | A | 50.79 | 3.22 | 33.23 | 26.64 | 54.00 | -27.36 | **2** |
| 7713.29 | 51.17 | 100 | 180 | | | 50.14 | 4.67 | 36.04 | 41.74 | 74.00 | -32.26 | |
| 7713.29 | | | | 39.93 | A | 50.14 | 4.67 | 36.04 | 30.50 | 54.00 | -23.50 | |
| 11569.85 | 54.50 | 100 | 225 | | | 50.58 | 5.93 | 38.73 | 48.57 | 74.00 | -25.43 | |
| 11569.85 | | | | 41.21 | A | 50.58 | 5.93 | 38.73 | 35.28 | 54.00 | -18.72 | |
| | | | | | | | | | | | | |
| 3830.00 | 53.17 | 100 | 135 | | | 50.74 | 3.23 | 33.20 | 38.86 | 74.00 | -35.14 | **Ch. 149/** |
| 3830.00 | | | | 42.39 | A | 50.74 | 3.23 | 33.20 | 28.08 | 54.00 | -25.92 | **2** |
| 7660.00 | 52.83 | 100 | 135 | | | 50.15 | 4.65 | 36.03 | 43.36 | 74.00 | -30.64 | |
| 7660.00 | | | | 42.19 | A | 50.15 | 4.65 | 36.03 | 32.72 | 54.00 | -21.28 | |
| 3883.33 | 52.50 | 100 | 135 | | | 50.85 | 3.22 | 33.26 | 38.13 | 74.00 | -35.87 | **Ch.165/** |
| 3883.33 | | | | 41.32 | A | 50.85 | 3.22 | 33.26 | 26.95 | 54.00 | -27.05 | **2** |
| 7766.66 | 52.33 | 100 | 135 | | | 50.13 | 4.68 | 36.05 | 42.93 | 74.00 | -31.07 | |
| 7766.66 | | | | 41.81 | A | 50.13 | 4.68 | 36.05 | 32.41 | 54.00 | -21.59 | |

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* | *Channel/ Chain Tested* |
| 3856.66 | 52.17 | 100 | 90 | | | 50.79 | 3.22 | 33.26 | 37.86 | 74.00 | -36.14 | **Ch. 157/** |
| 3856.66 | | | | 42.68 | A | 50.79 | 3.22 | 33.26 | 28.37 | 54.00 | -25.63 | **1** |
| 7713.32 | 53.00 | 100 | 45 | | | 50.14 | 4.67 | 36.14 | 43.67 | 74.00 | -30.33 | |
| 7713.32 | | | | 44.95 | A | 50.14 | 4.67 | 36.14 | 35.62 | 54.00 | -18.38 | |
| 11569.88 | 53.17 | 100 | 135 | | | 50.58 | 5.93 | 38.50 | 47.01 | 74.00 | -26.99 | |
| 11569.88 | | | | 40.68 | A | 50.58 | 5.93 | 38.50 | 34.52 | 54.00 | -19.48 | |
| 3856.66 | 53.83 | 100 | 90 | | | 50.79 | 3.22 | 33.26 | 39.52 | 74.00 | -34.48 | **Ch. 157/** |
| 3856.66 | | | | 45.71 | A | 50.79 | 3.22 | 33.26 | 31.40 | 54.00 | -22.60 | **2** |
| 7713.32 | 52.83 | 100 | 90 | | | 50.14 | 4.67 | 36.14 | 43.50 | 74.00 | -30.50 | |
| 7713.32 | | | | 43.98 | A | 50.14 | 4.67 | 36.14 | 34.65 | 54.00 | -19.35 | |
| 11569.88 | 56.83 | 100 | 135 | | | 50.58 | 5.93 | 38.50 | 50.67 | 74.00 | -23.33 | |
| 11569.88 | | | | 43.69 | A | 50.58 | 5.93 | 38.50 | 37.53 | 54.00 | -16.47 | |
| | | | | | | | | | | | | |
| 3830.00 | 55.00 | 100 | 225 | | | 50.74 | 3.23 | 33.23 | 40.72 | 74.00 | -33.28 | **Ch. 149/** |
| 3830.00 | | | | 47.59 | A | 50.74 | 3.23 | 33.23 | 33.31 | 54.00 | -20.69 | **1** |
| 7660.00 | 55.17 | 100 | 180 | | | 50.15 | 4.65 | 36.13 | 45.80 | 74.00 | -28.20 | |
| 7660.00 | | | | 49.00 | A | 50.15 | 4.65 | 36.13 | 39.63 | 54.00 | -14.37 | |
| 3883.33 | 52.67 | 100 | 180 | | | 50.85 | 3.22 | 33.28 | 38.32 | 74.00 | -35.68 | **Ch.165/** |
| 3883.33 | | | | 43.73 | A | 50.85 | 3.22 | 33.28 | 29.38 | 54.00 | -24.62 | **1** |
| 7766.66 | 53.50 | 100 | 180 | | | 50.13 | 4.68 | 36.15 | 44.20 | 74.00 | -29.80 | |
| 7766.66 | | | | 43.71 | A | 50.13 | 4.68 | 36.15 | 34.41 | 54.00 | -19.59 | |

## PEAK TRANSMIT POWER

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/11/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 1 |
| **CONFIGURATION:** | Tested connected to a host PC | **TEMPERATURE:** | 25 deg. C |
| | | **HUMIDITY:** | 29% RH |
| | | **TIME:** | 9:00 AM |

| | |
|---|---|
| **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.<br>• 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) | Antenna Port | Data Rate (Mbps) | Average Power (dBm) | Average Power (mW) | Peak Power (dBm) | Peak Power (mW) |
|---|---|---|---|---|---|---|---|---|
| **802.11a** | 149 | 5745 | 1 | 6 | 3.21 | **2.10** | 11.99 | **15.83** |
| **802.11a** | 157 | 5785 | 1 | 6 | 3.85 | **2.43** | 12.14 | **16.38** |
| **802.11a** | 165 | 5825 | 1 | 6 | 3.76 | **2.38** | 12.02 | **15.94** |
| **802.11a** | 149 | 5745 | 2 | 6 | 4.26 | **2.67** | 11.93 | **15.61** |
| **802.11a** | 157 | 5785 | 2 | 6 | 4.39 | **2.75** | 11.80 | **15.15** |
| **802.11a** | 165 | 5825 | 2 | 6 | 4.06 | **2.55** | 11.73 | **14.91** |
| | | | | | | | | |
| **802.11b** | 1 | 2412 | 1 | 1 | 13.71 | **23.52** | 17.19 | **52.40** |
| **802.11b** | 6 | 2437 | 1 | 1 | 13.78 | **23.90** | 17.26 | **53.26** |
| **802.11b** | 11 | 2462 | 1 | 1 | 13.72 | **23.57** | 17.25 | **53.13** |
| **802.11b** | 1 | 2412 | 2 | 1 | 13.50 | **22.41** | 17.19 | **52.40** |
| **802.11b** | 6 | 2437 | 2 | 1 | 13.41 | **21.95** | 17.12 | **51.57** |
| **802.11b** | 11 | 2462 | 2 | 1 | 13.26 | **21.20** | 16.97 | **49.82** |
| | | | | | | | | |
| **802.11g** | 1 | 2412 | 1 | 6 | 5.42 | **3.49** | 15.20 | **33.14** |
| **802.11g** | 6 | 2437 | 1 | 6 | 5.49 | **3.54** | 15.08 | **32.24** |
| **802.11g** | 11 | 2462 | 1 | 6 | 5.45 | **3.51** | 15.17 | **32.91** |
| **802.11g** | 1 | 2412 | 2 | 6 | 5.63 | **3.66** | 15.43 | **34.94** |
| **802.11g** | 6 | 2437 | 2 | 6 | 5.48 | **3.53** | 15.26 | **33.60** |
| **802.11g** | 11 | 2462 | 2 | 6 | 5.23 | **3.34** | 15.22 | **33.29** |
| | | | | | | | | |
| **802.11n** | 1 | 2412 | 1 | 6 | 5.50 | **3.55** | 15.27 | **33.68** |
| **802.11n** | 6 | 2437 | 1 | 6 | 5.47 | **3.53** | 15.24 | **33.45** |
| **802.11n** | 11 | 2462 | 1 | 6 | 5.54 | **3.58** | 15.38 | **34.54** |
| **802.11n** | 1 | 2412 | 2 | 6 | 5.59 | **3.63** | 15.28 | **33.76** |
| **802.11n** | 6 | 2437 | 2 | 6 | 5.46 | **3.52** | 15.15 | **32.76** |
| **802.11n** | 11 | 2462 | 2 | 6 | 5.25 | **3.35** | 15.07 | **32.16** |
| | | | | | | | | |
| **802.11n** | 149 | 5745 | 1 | 6 | 3.59 | **2.29** | 12.28 | **16.92** |
| **802.11n** | 157 | 5785 | 1 | 6 | 3.94 | **2.48** | 12.23 | **16.72** |
| **802.11n** | 165 | 5825 | 1 | 6 | 3.81 | **2.41** | 12.09 | **16.19** |
| **802.11n** | 149 | 5745 | 2 | 6 | 4.95 | **3.13** | 11.93 | **15.61** |
| **802.11n** | 157 | 5785 | 2 | 6 | 4.49 | **2.81** | 11.80 | **15.15** |
| **802.11n** | 165 | 5825 | 2 | 6 | 4.41 | **2.76** | 11.70 | **14.80** |

## 6dB EMISSIONS BANDWIDTH

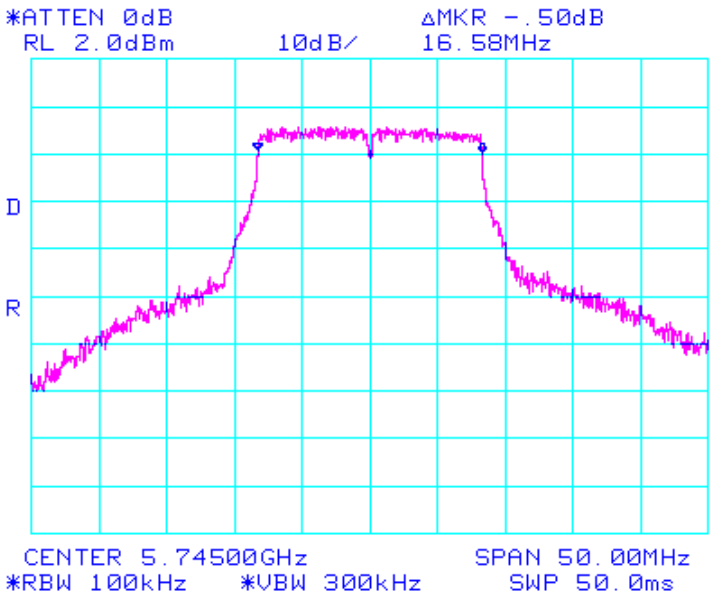
| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 1 |
| **CONFIGURATION:** | Tested installed in an evaluation board connected to the host PC via USB port | **TEMPERATURE:** | 24 deg. C |
| | | **HUMIDITY:** | 38% RH |
| | | **TIME:** | 2:30 PM |

| | |
|---|---|
| **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.<br>• 120VAC / 60 Hz. |

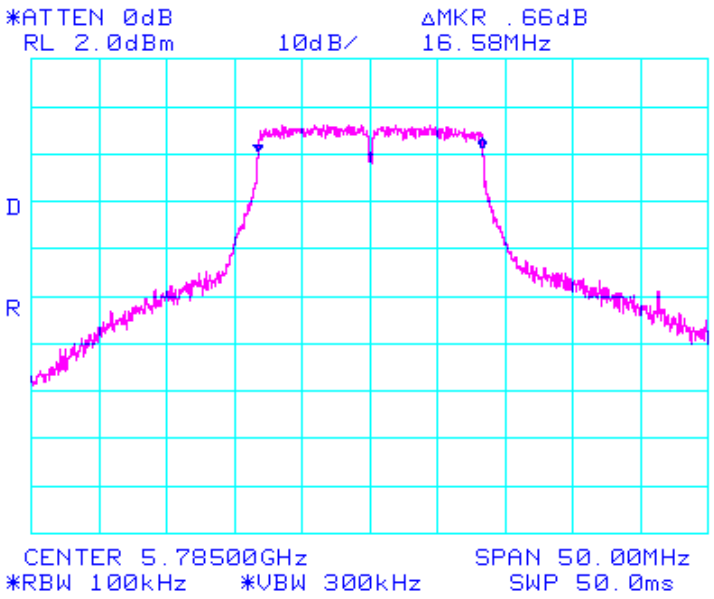
6dB Emissions Bandwidth (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



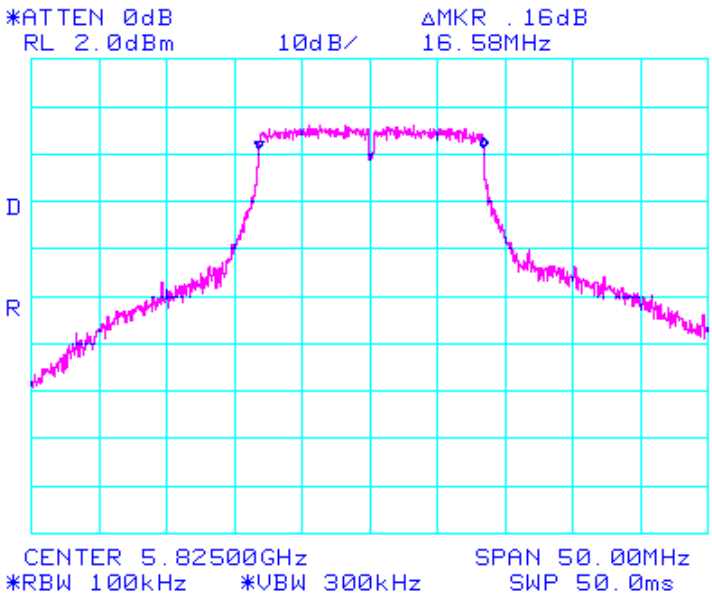

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



6dB Emissions Bandwidth (Continued)

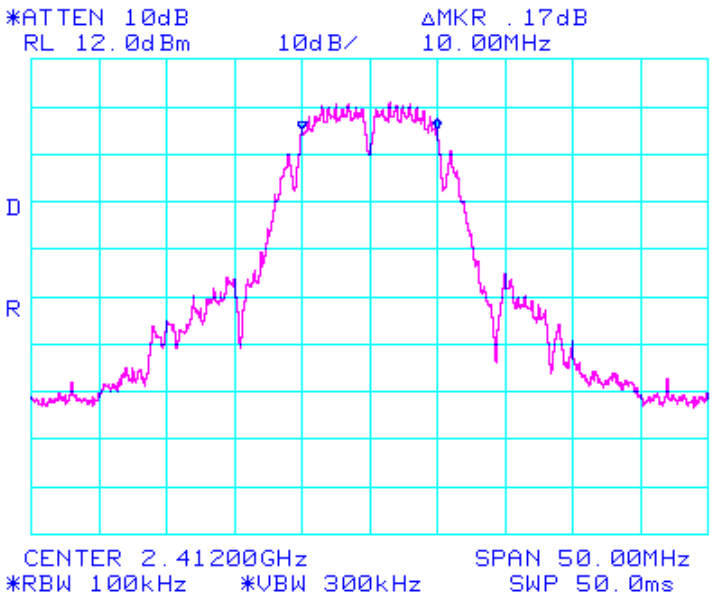
***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |




***802.11b Mode***

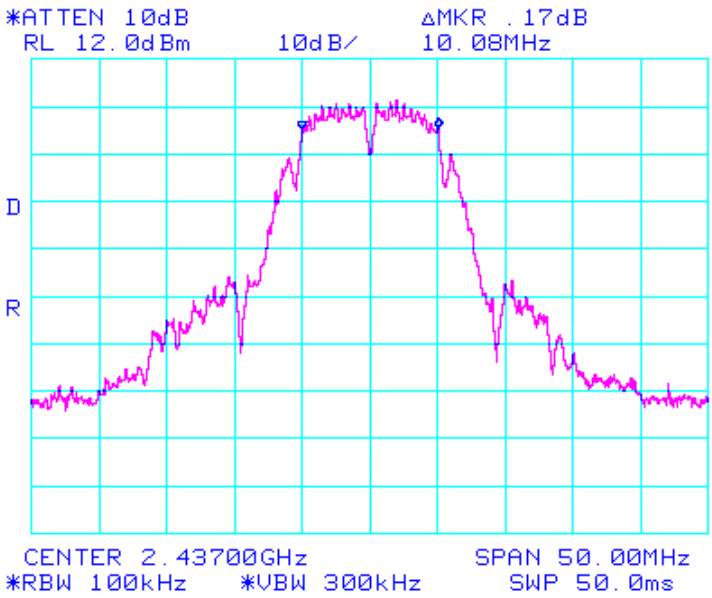
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



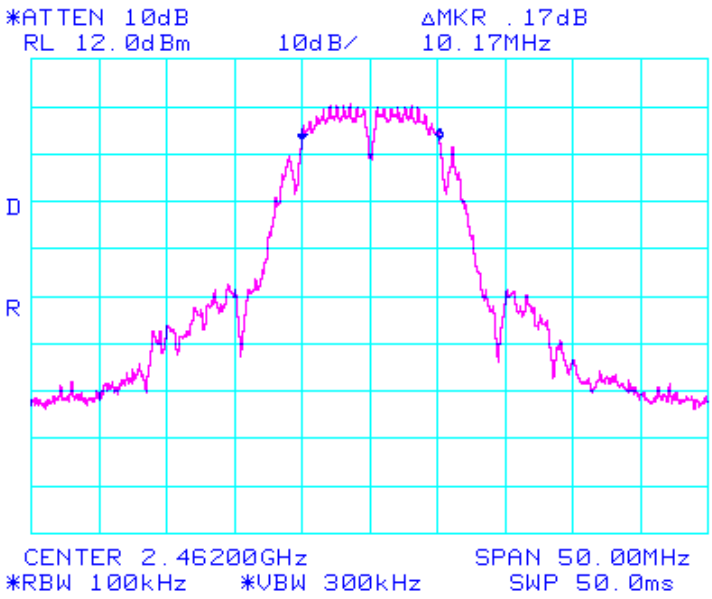
6dB Emissions Bandwidth (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



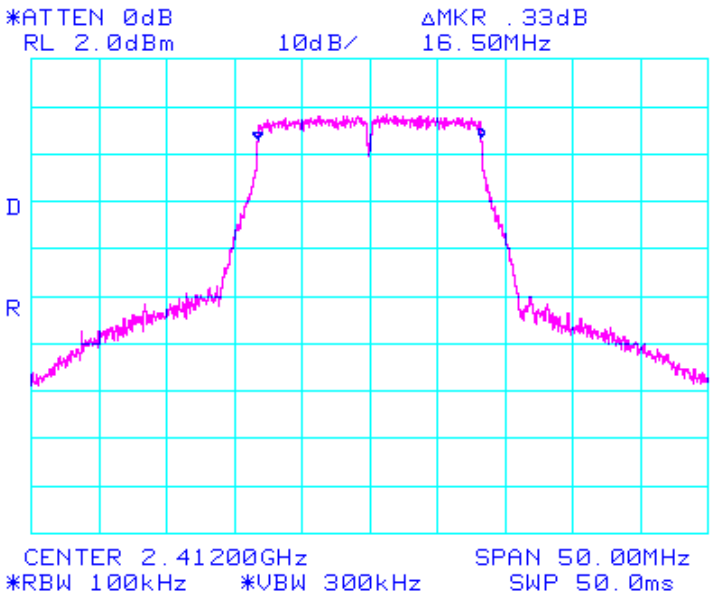

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



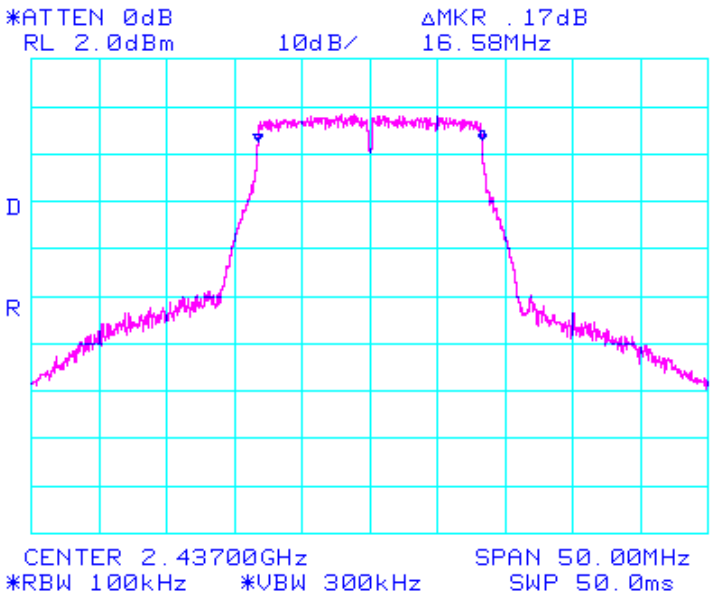
6dB Emissions Bandwidth (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



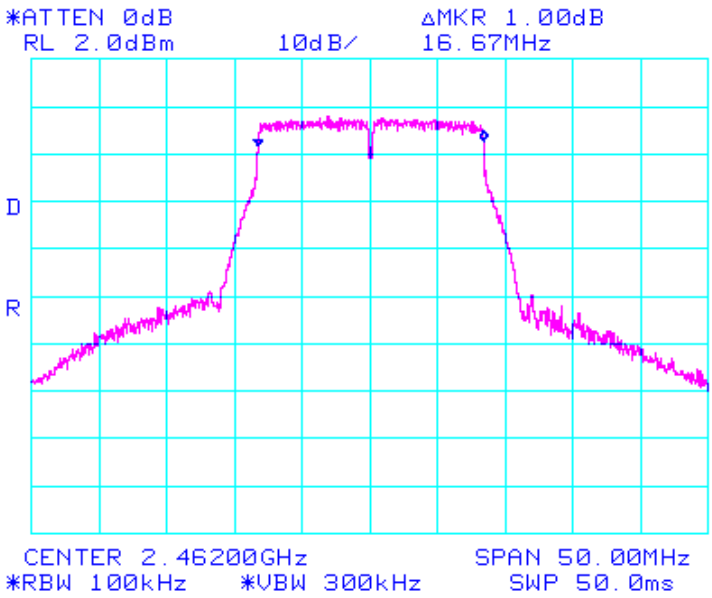

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



6dB Emissions Bandwidth (Continued)

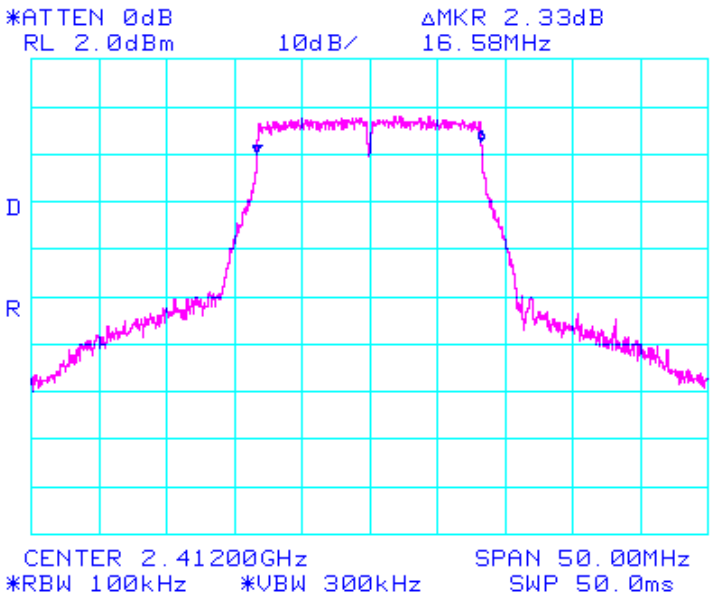
***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |




***802.11n Mode, 2.4GHz***

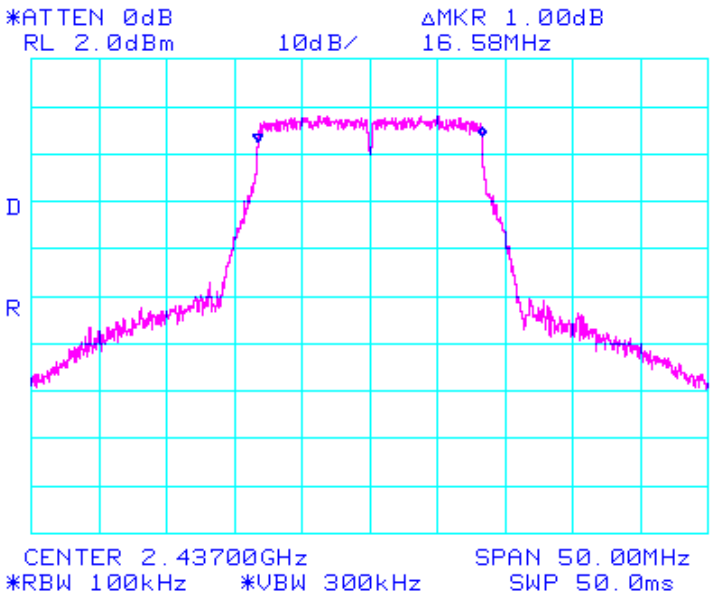
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



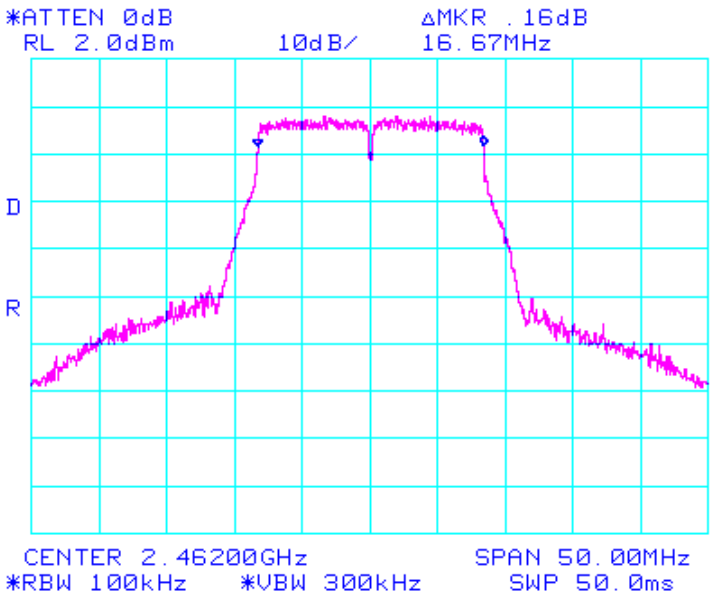
6dB Emissions Bandwidth (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



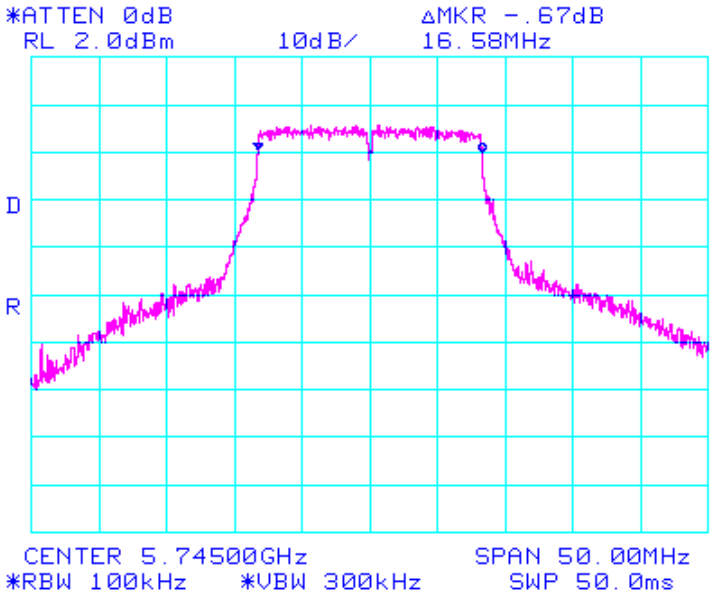

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



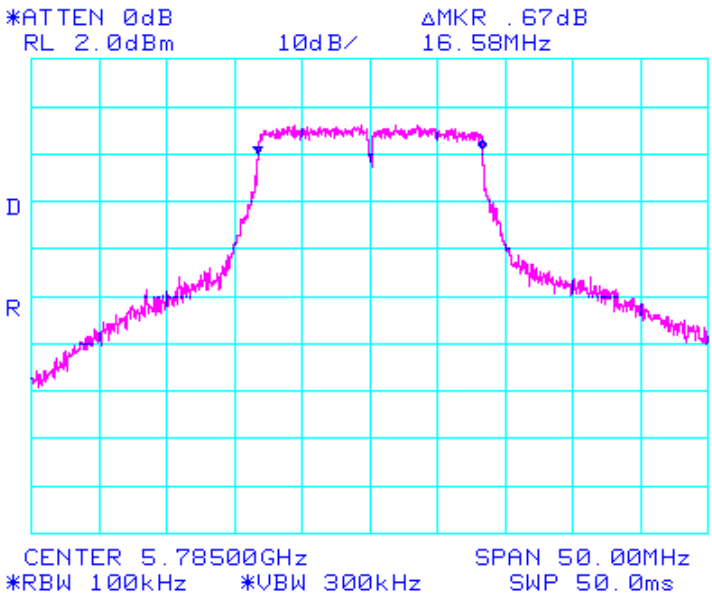
6dB Emissions Bandwidth (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



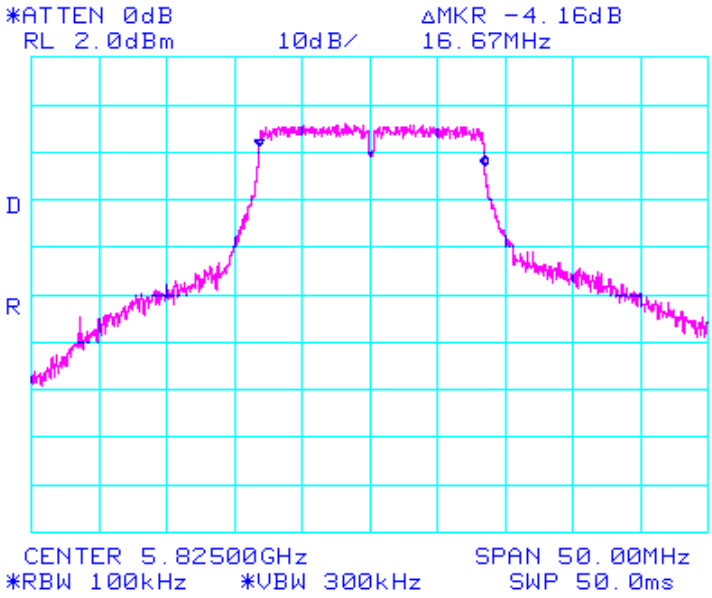

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



6dB Emissions Bandwidth (Continued)

***802.11n Mode, 5GHz***

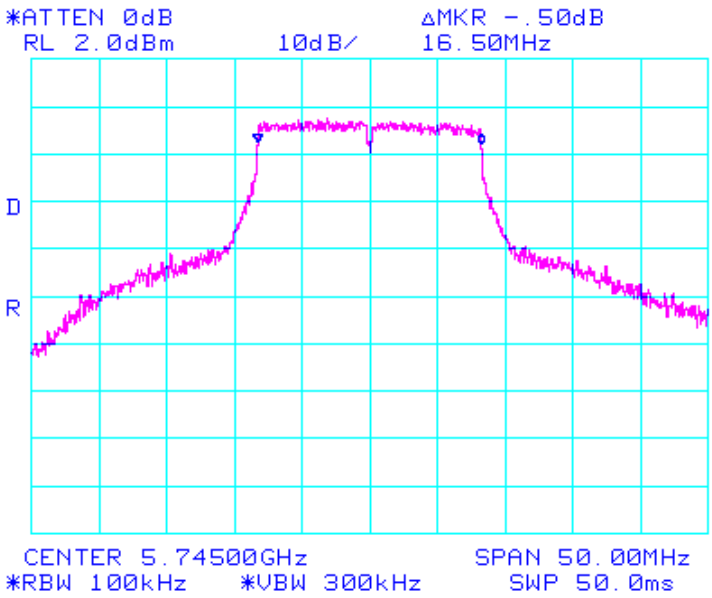
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



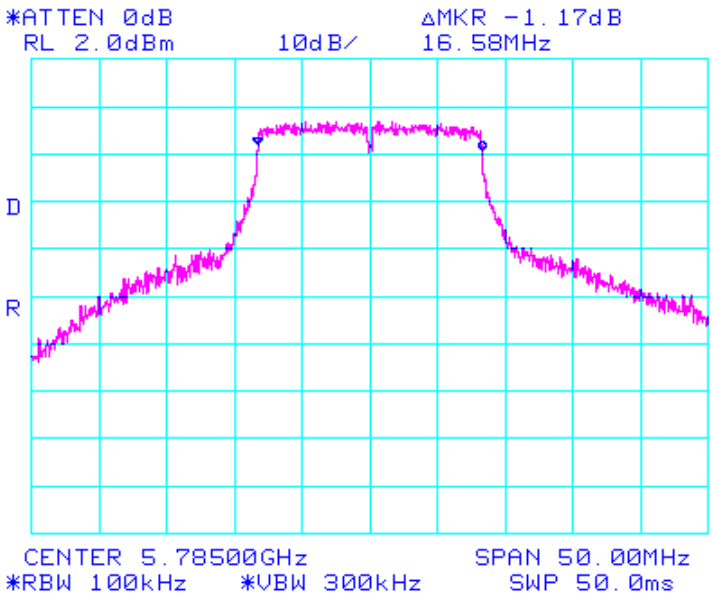
6dB Emissions Bandwidth (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



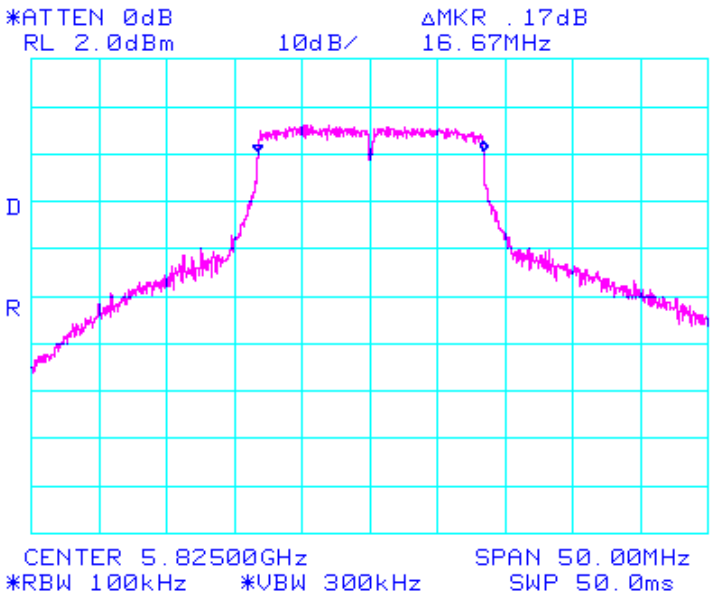

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



6dB Emissions Bandwidth (Continued)

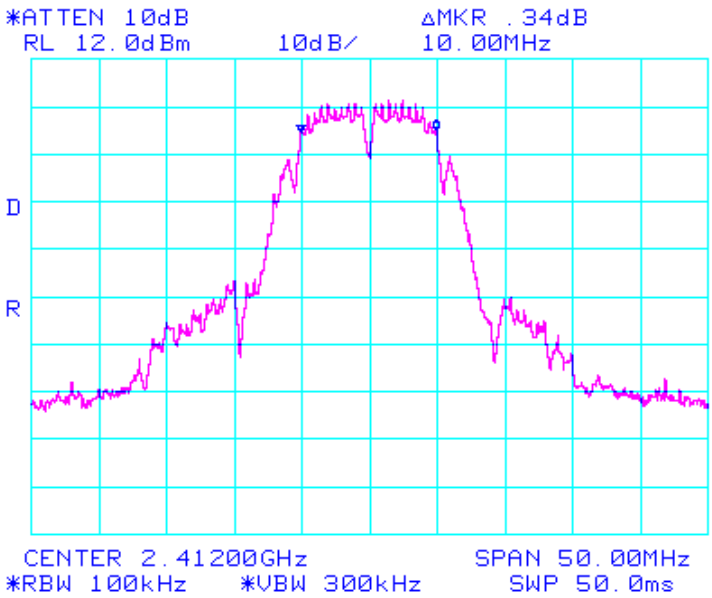
***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |




***802.11b Mode***

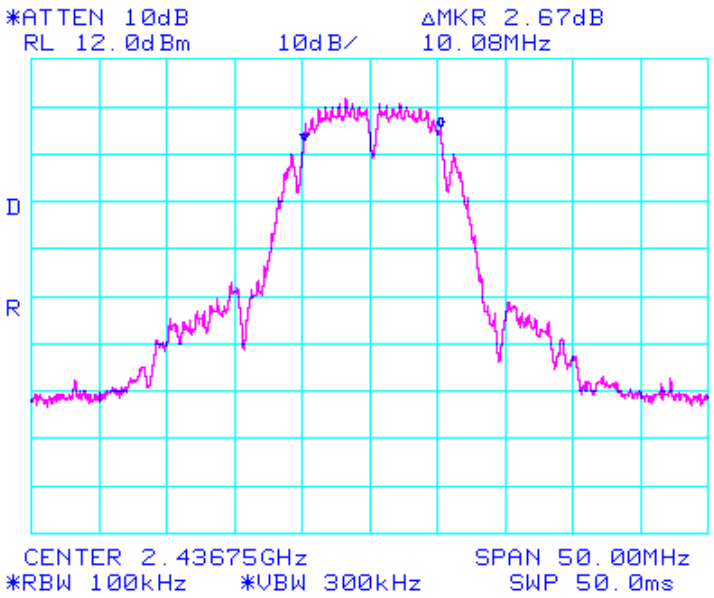
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



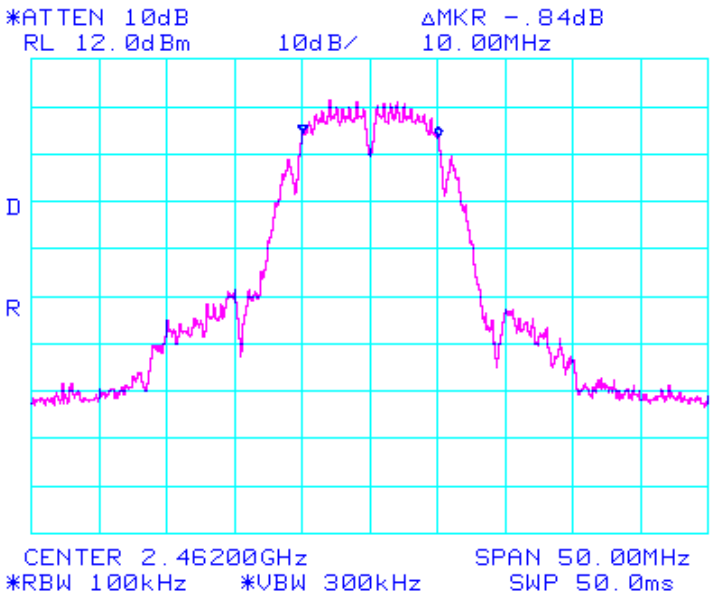
6dB Emissions Bandwidth (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



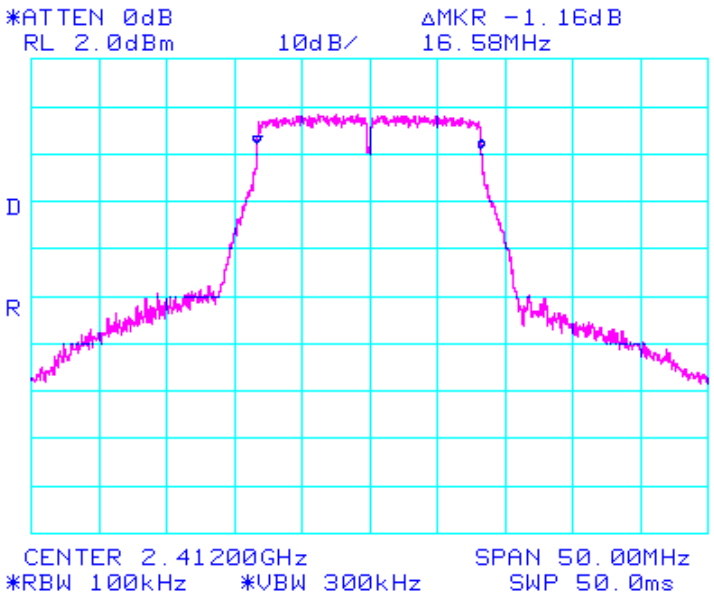

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



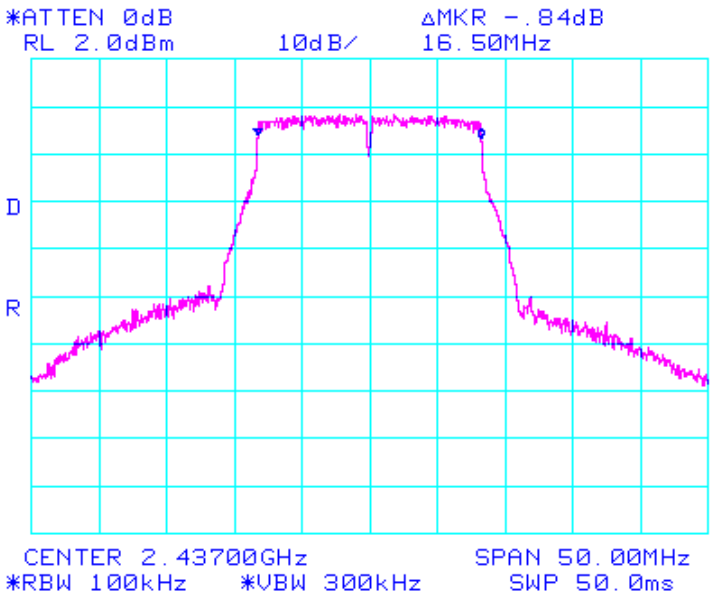
6dB Emissions Bandwidth (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



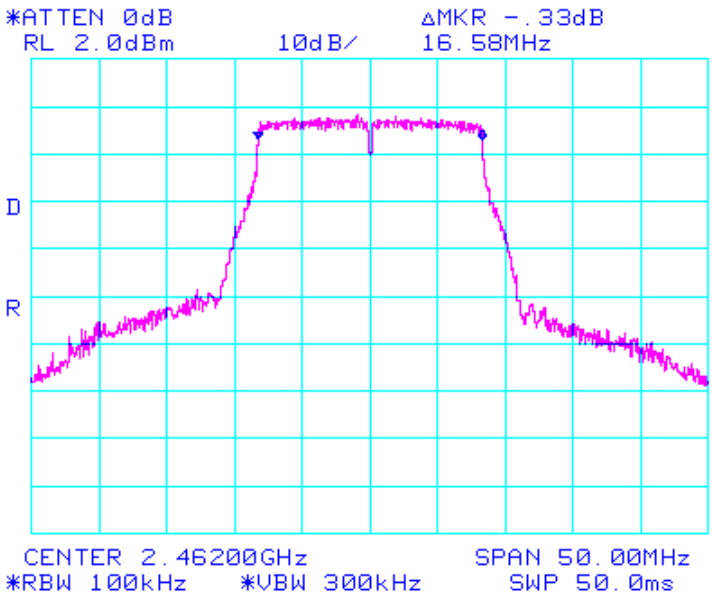

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



6dB Emissions Bandwidth (Continued)

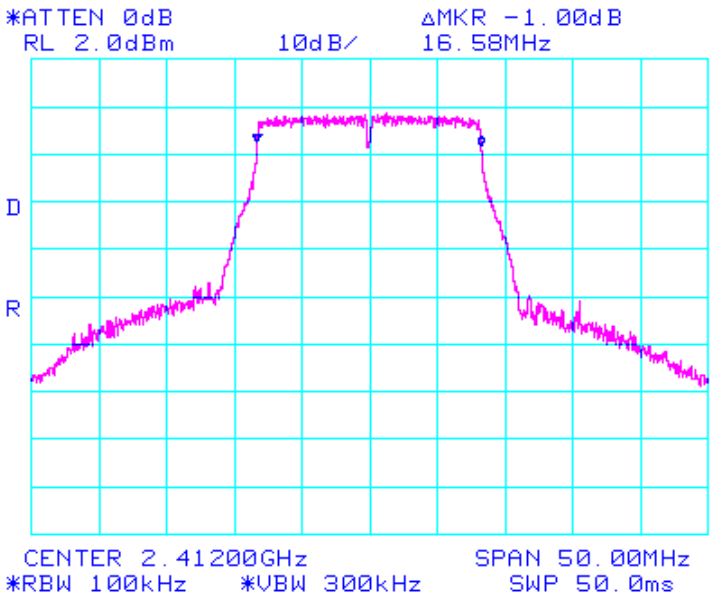
***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |




***802.11n Mode, 2.4GH***

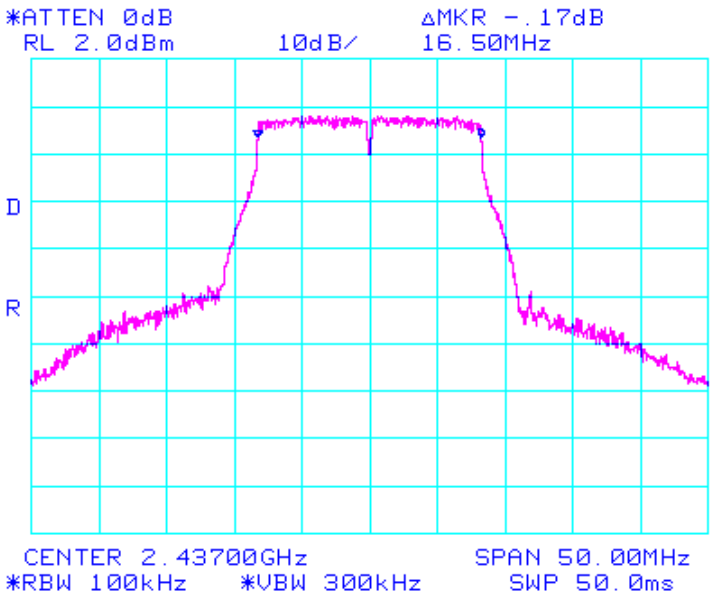
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



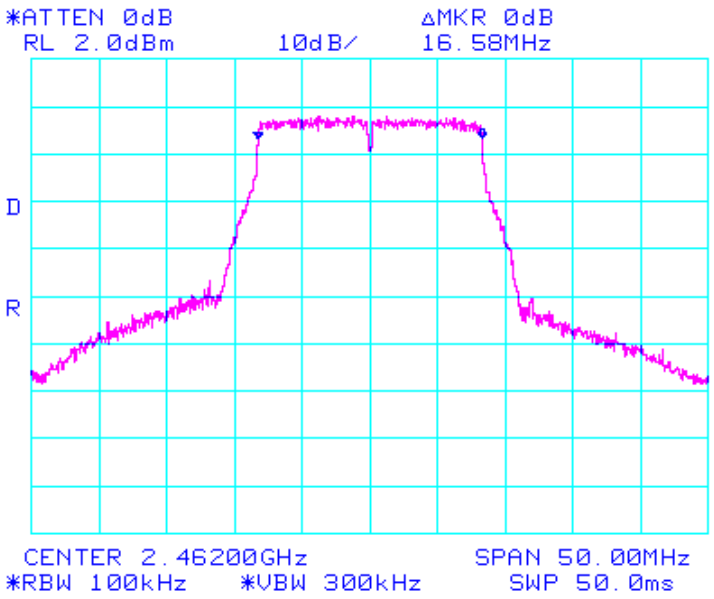
6dB Emissions Bandwidth (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



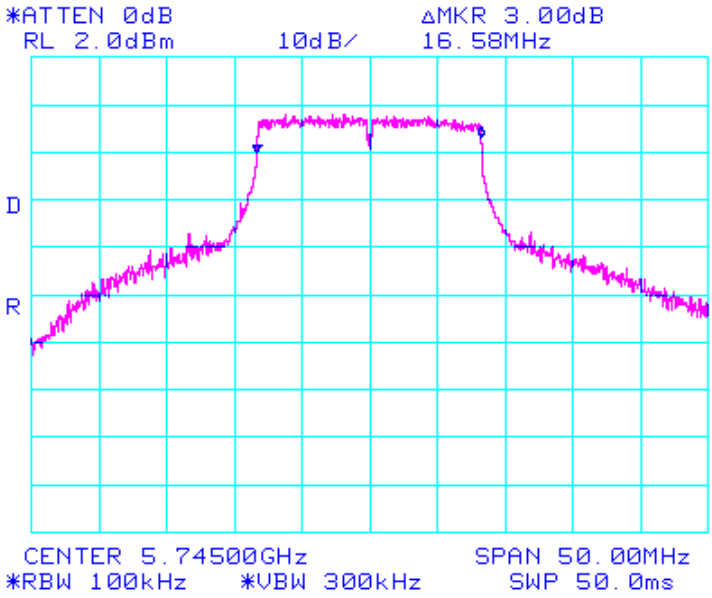

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



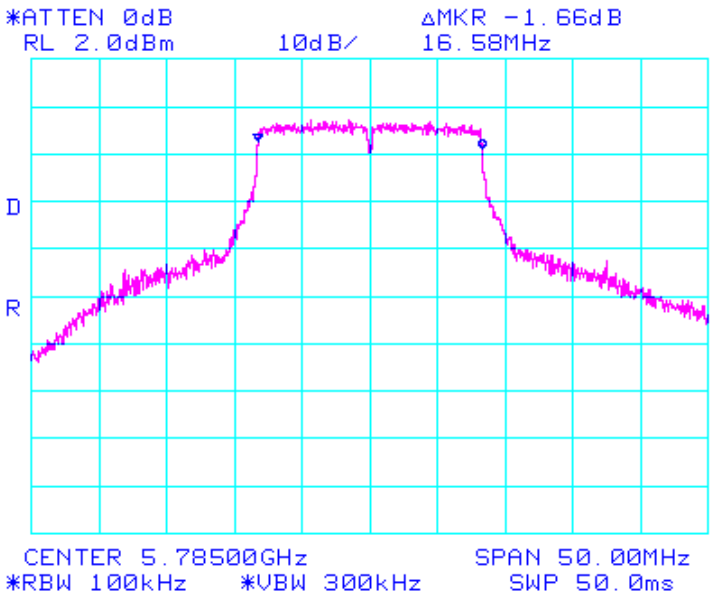
6dB Emissions Bandwidth (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



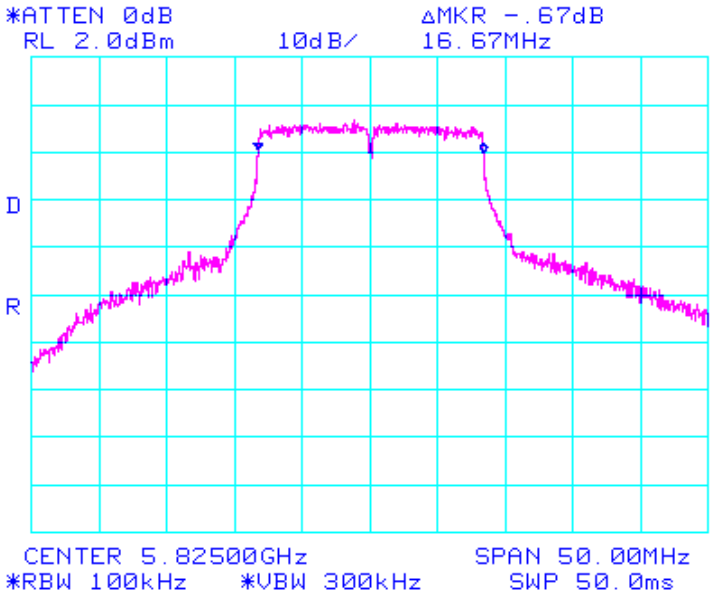

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



6dB Emissions Bandwidth (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



## PEAK POWER SPECTRAL DENSITY

| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 1 |
| **CONFIGURATION:** | Tested installed in an evaluation board connected to the host PC via USB port | **TEMPERATURE:** | 24 deg. C |
| | | **HUMIDITY:** | 38% RH |
| | | **TIME:** | 3:00 PM |

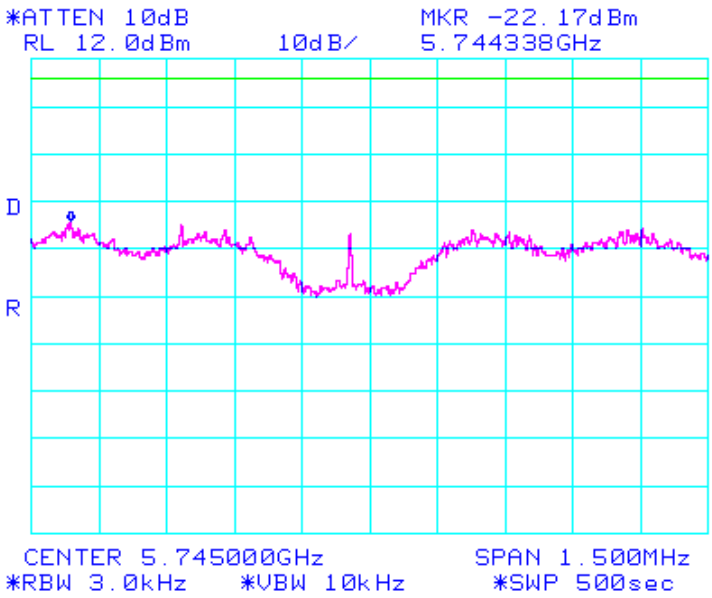
| | |
|---|---|
| **Description:** | The peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. |
| **Results:** | See Data Sheet |
| **Note:** | Conducted Emissions Measurements were performed on the EUT with power supply set at the following voltage and frequency.<br>• 120VAC / 60 Hz. |

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

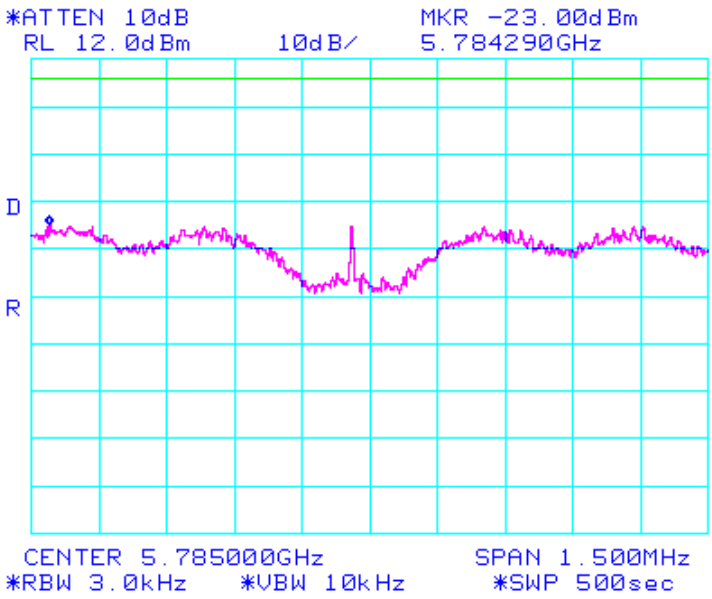
Peak Power Spectral Density (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



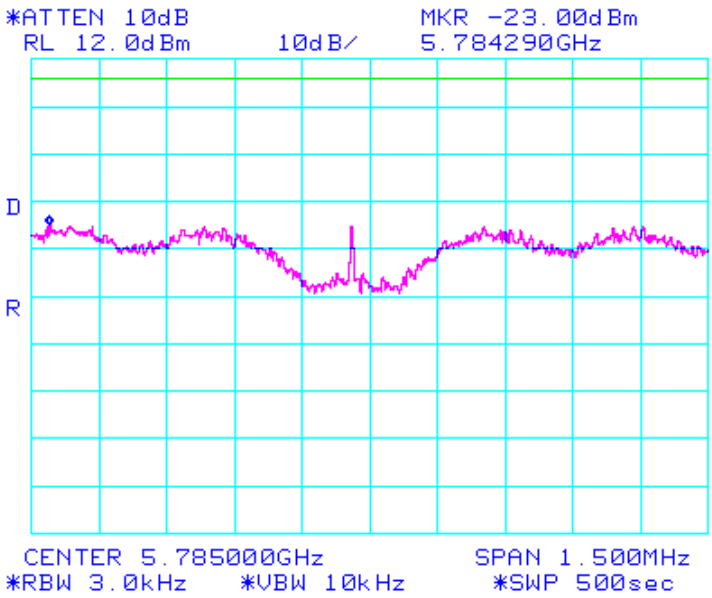

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



Peak Power Spectral Density (Continued)

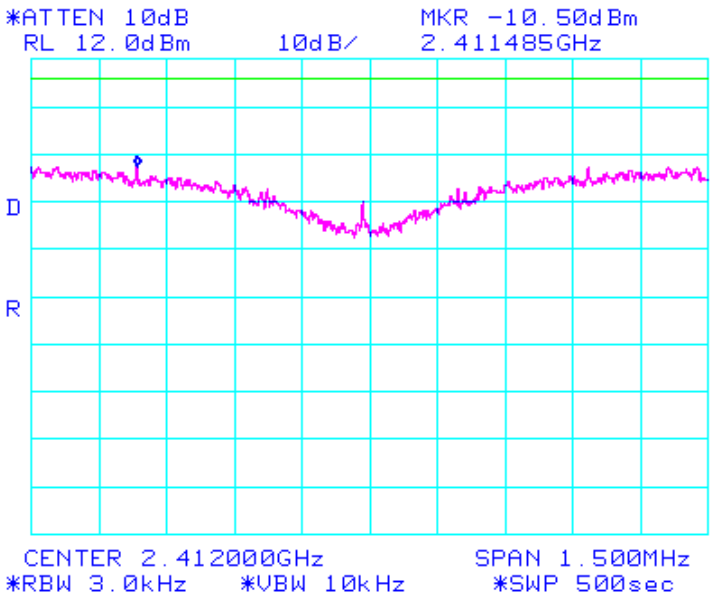
***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |




***802.11b Mode***

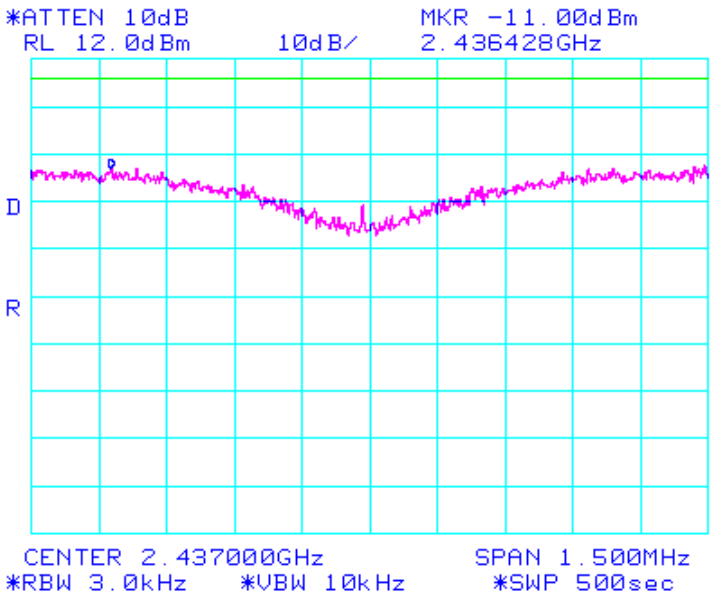
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



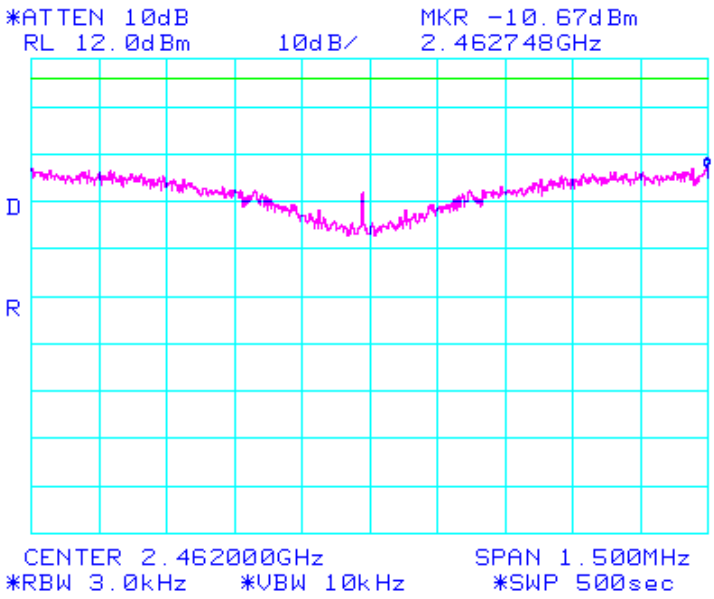
Peak Power Spectral Density (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



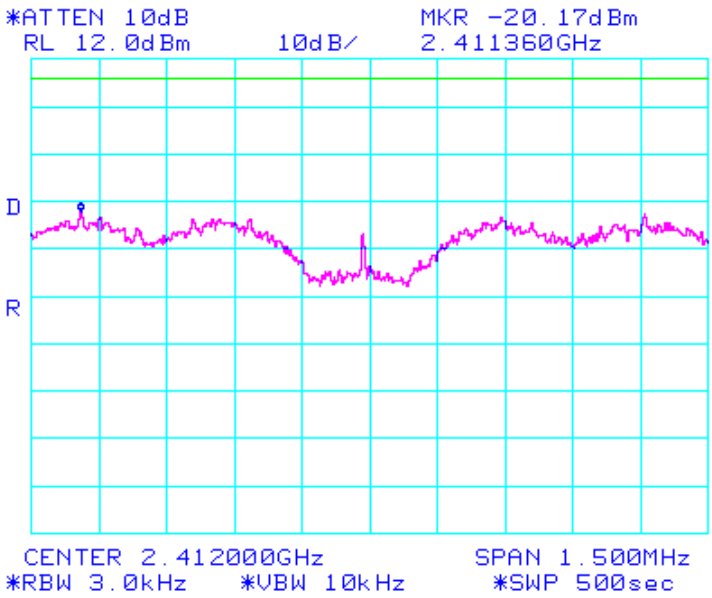

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



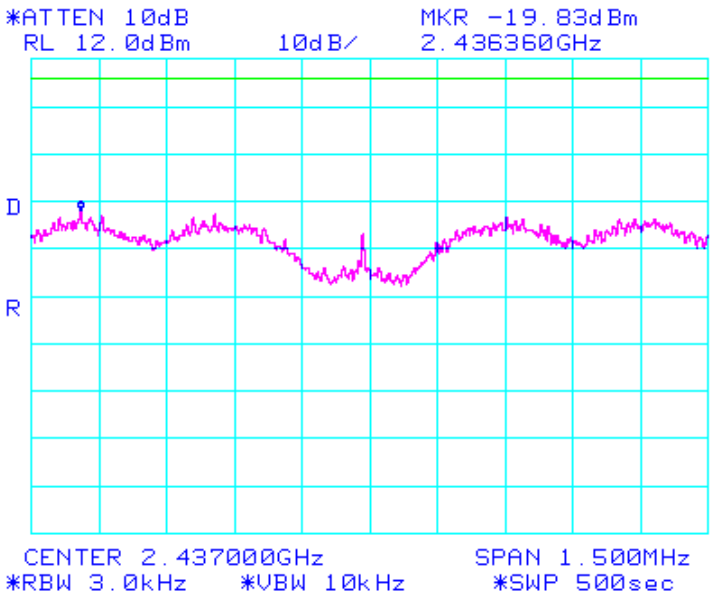
Peak Power Spectral Density (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



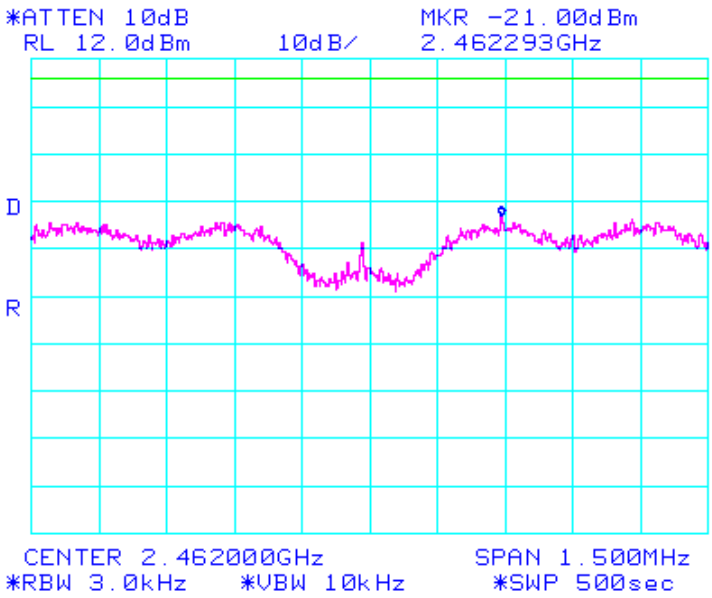

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



Peak Power Spectral Density (Continued)

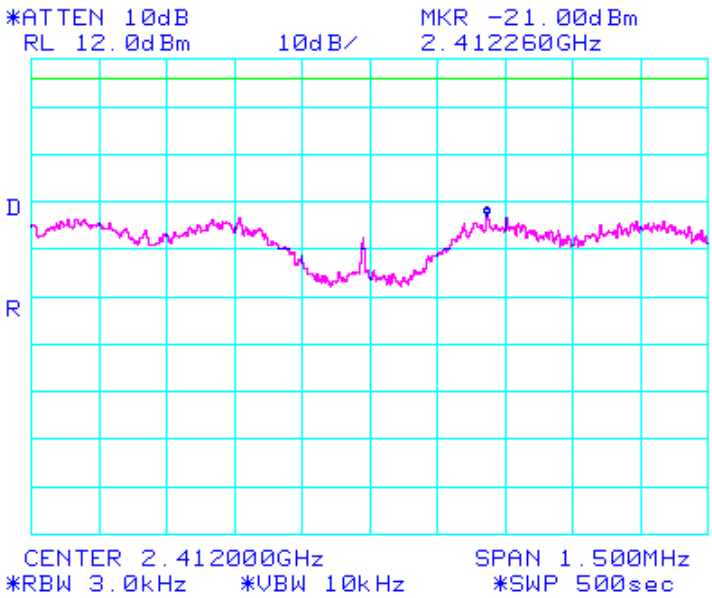
***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |




***802.11n Mode, 2.4GHz***

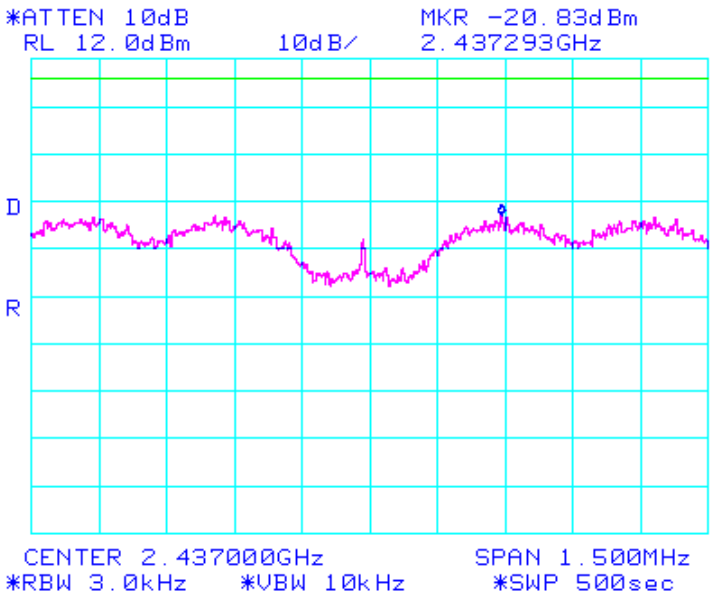
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



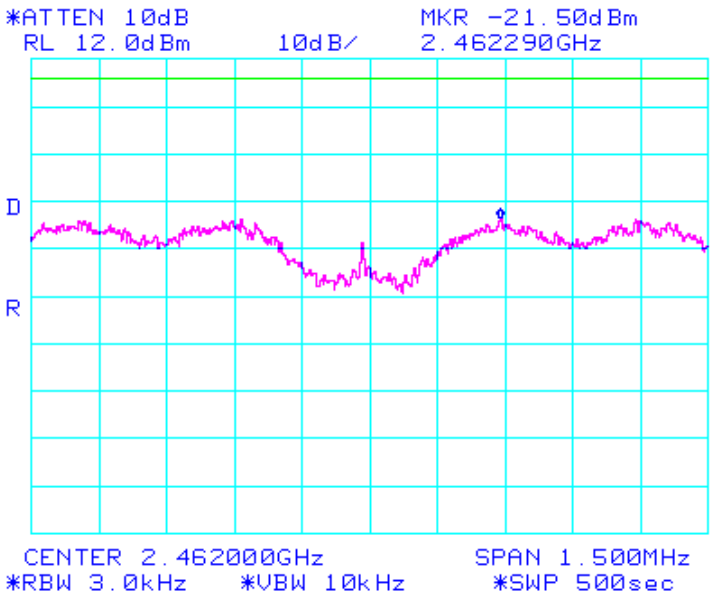
Peak Power Spectral Density (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



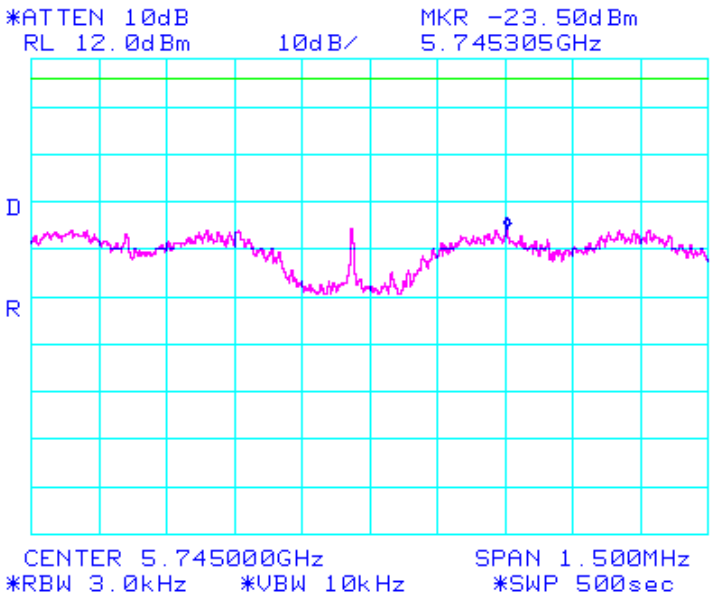

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



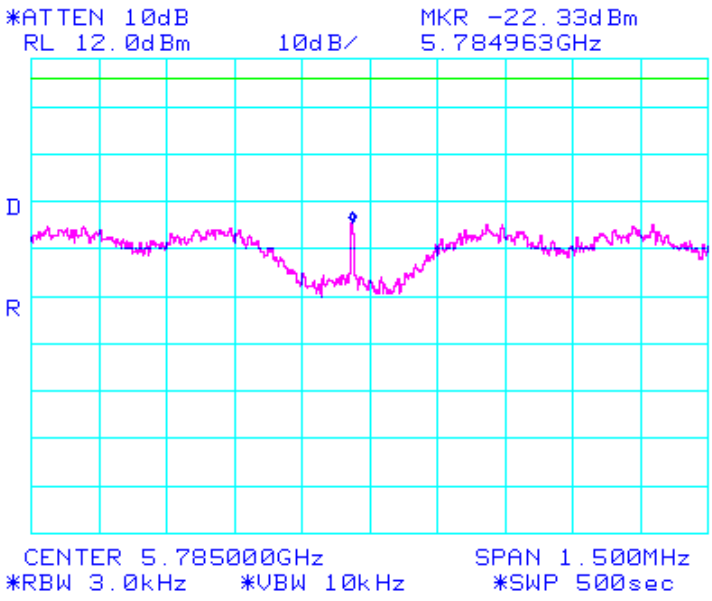
Peak Power Spectral Density (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



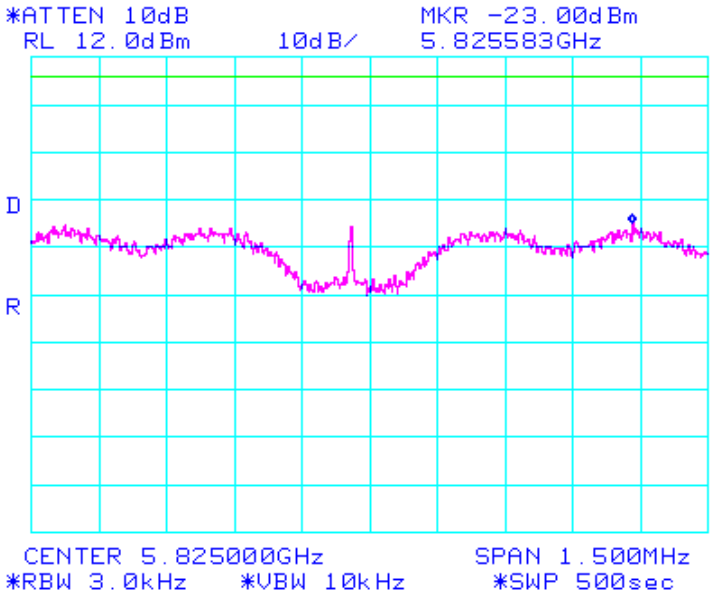

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



Peak Power Spectral Density (Continued)

***802.11n Mode, 5GHz***

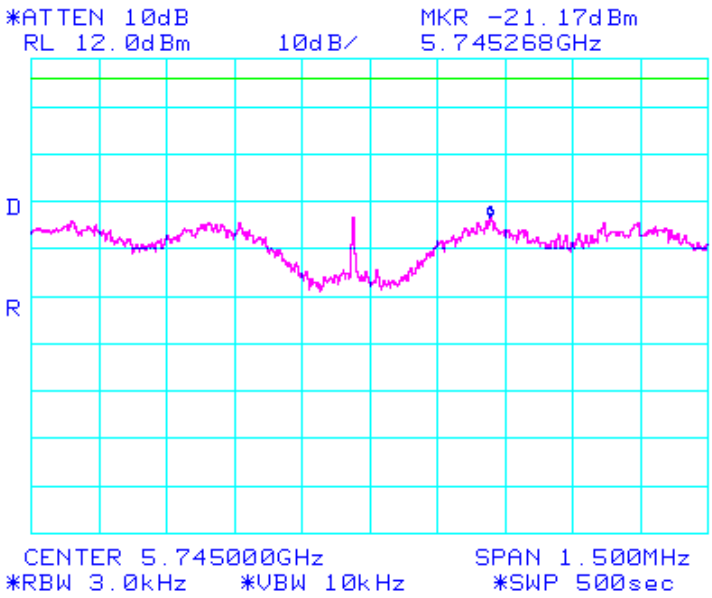
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



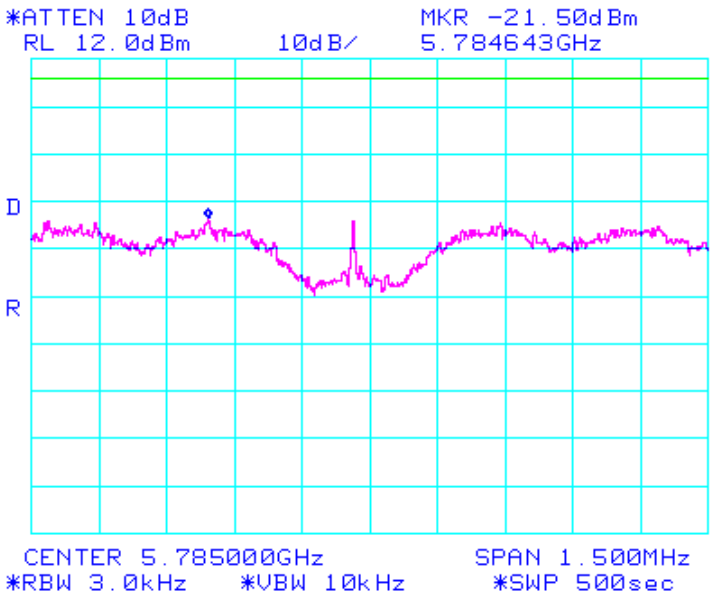
Peak Power Spectral Density (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



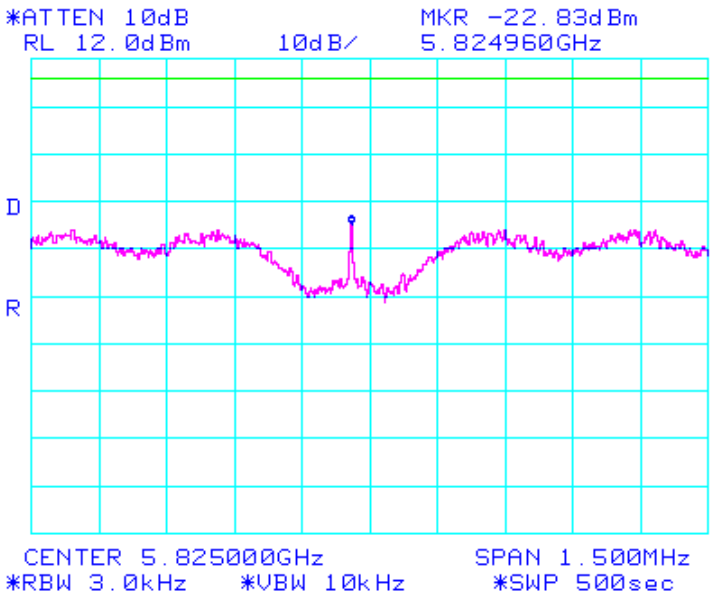

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



Peak Power Spectral Density (Continued)

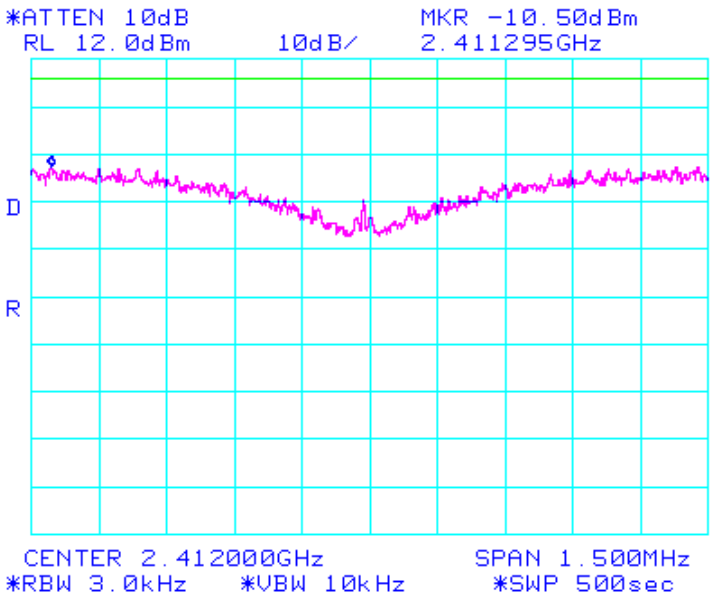
***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |




***802.11b Mode***

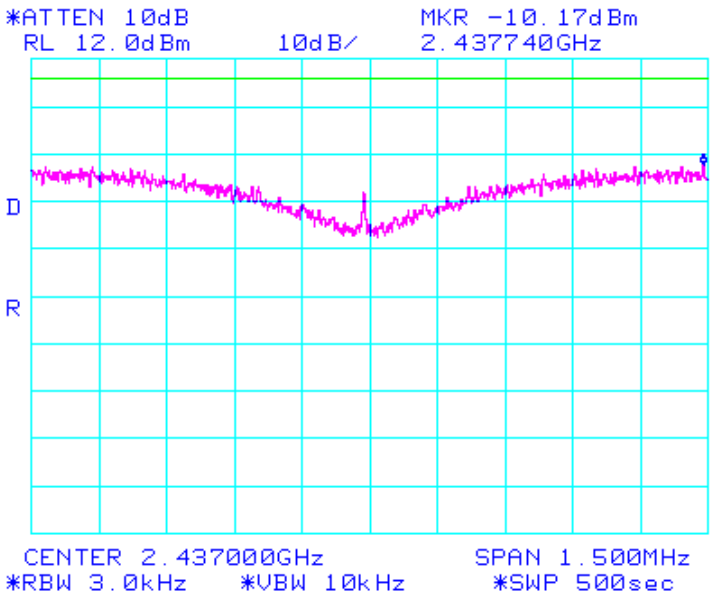
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



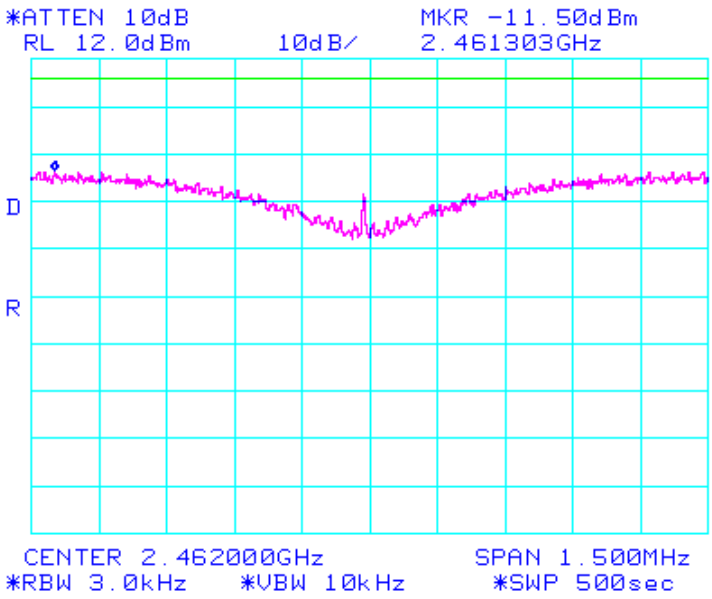
Peak Power Spectral Density (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



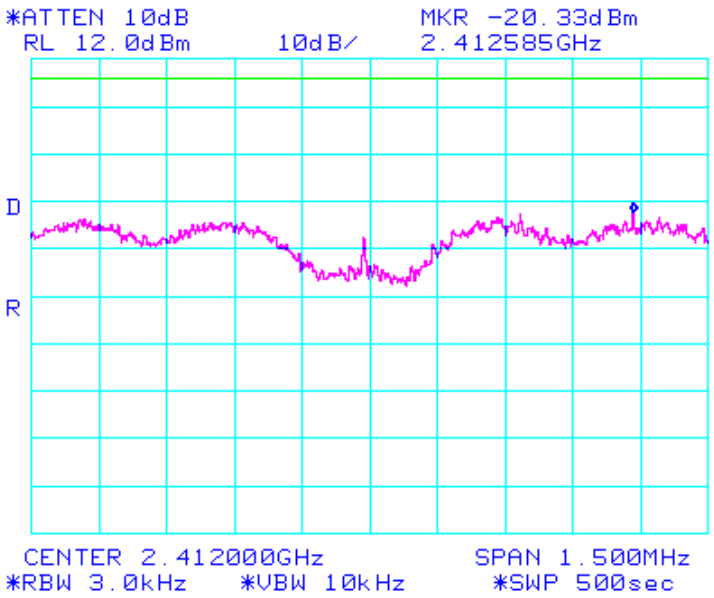

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



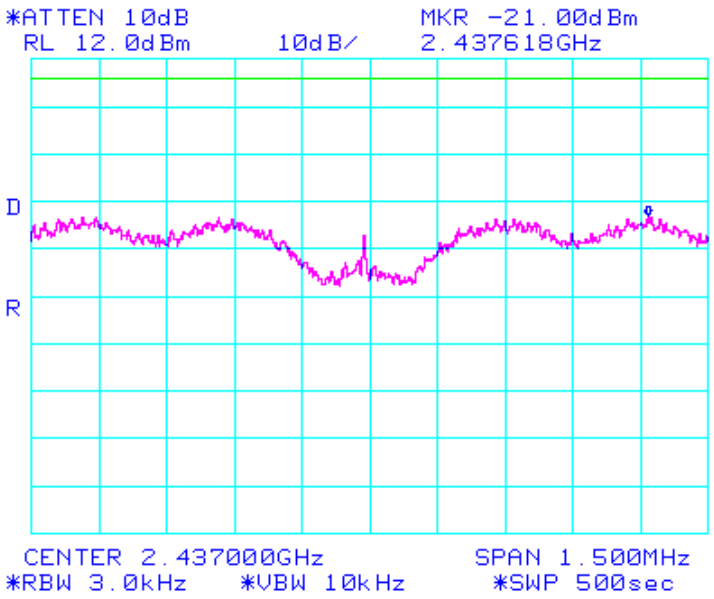
Peak Power Spectral Density (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



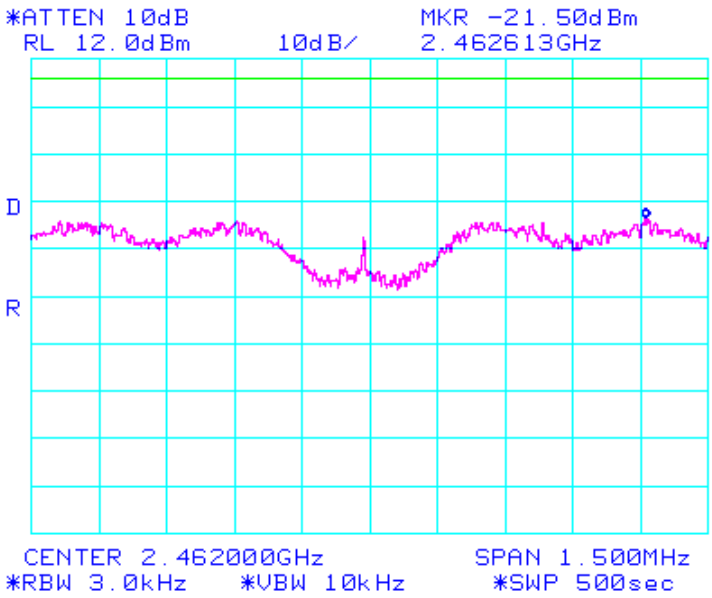

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



Peak Power Spectral Density (Continued)

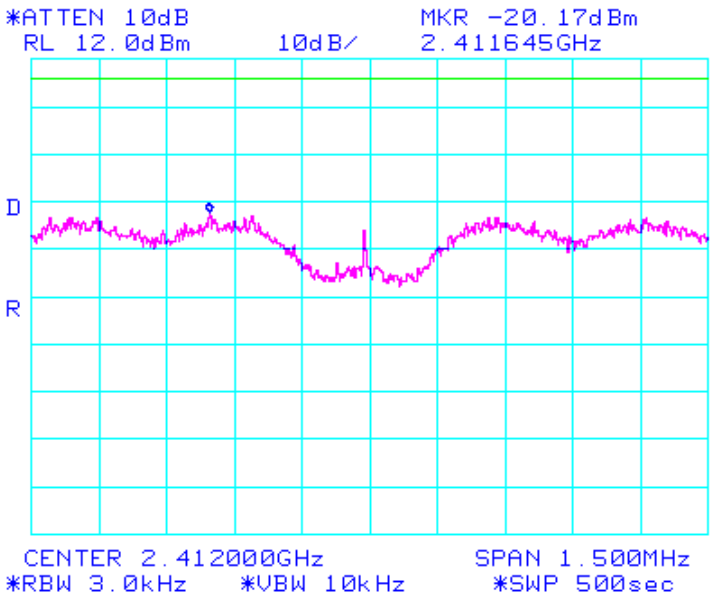
***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |




***802.11n Mode, 2.4GHz***

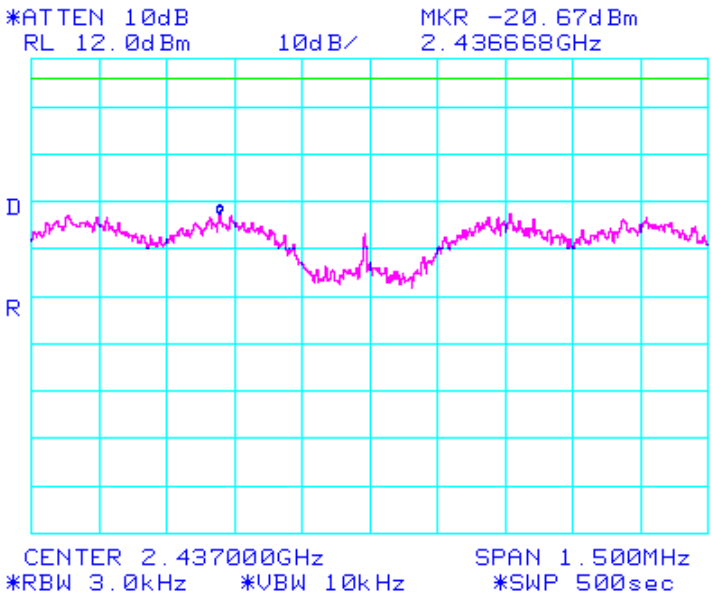
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



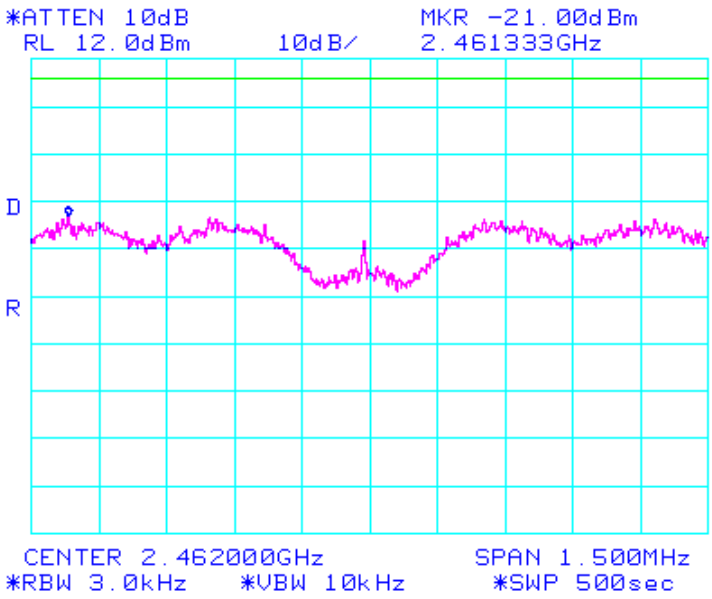
Peak Power Spectral Density (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



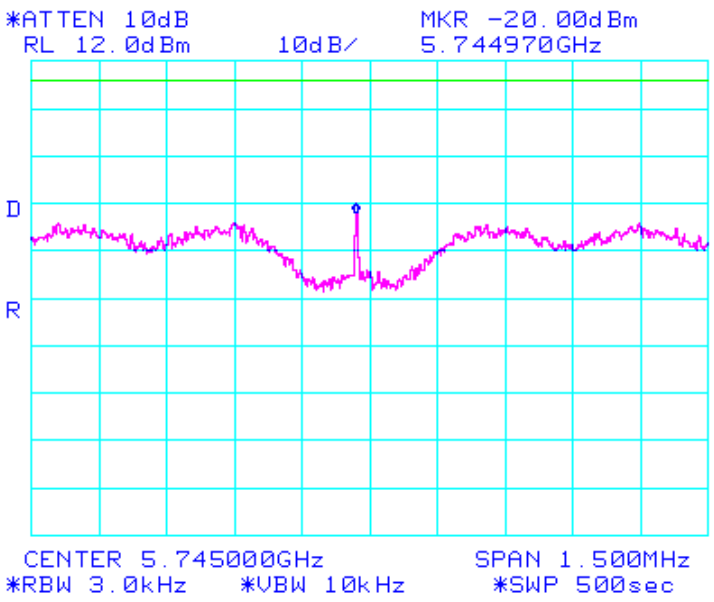

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



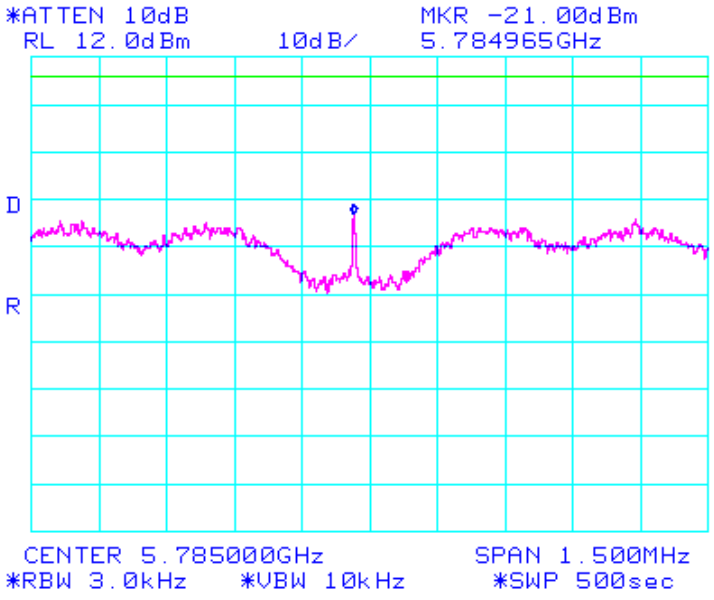
Peak Power Spectral Density (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



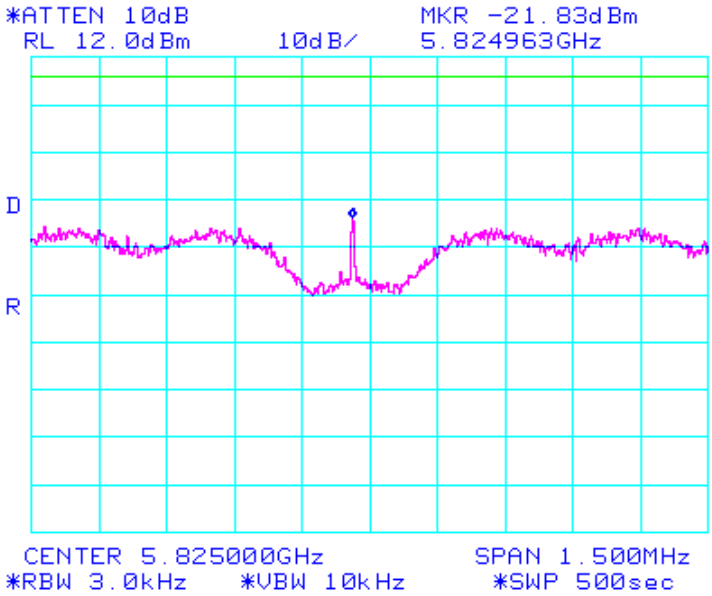

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



Peak Power Spectral Density (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



## CONDUCTED OUT OF BAND EMISSIONS

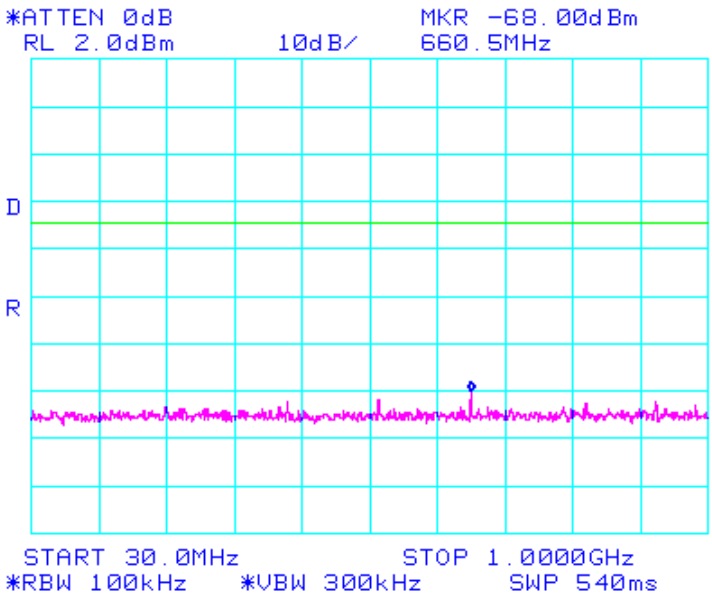
| | | | |
|---|---|---|---|
| **CLIENT:** | Lantronix | **DATE:** | 11/17/10 |
| **EUT:** | Wireless Device Server | **PROJECT NUMBER:** | LANTR-101028 |
| **MODEL NUMBER:** | PremierWave EN | **TEST ENGINEER:** | JC |
| **SERIAL NUMBER:** | 00:20:44:9D:2E:2F | **SITE #:** | 1 |
| **CONFIGURATION:** | Tested installed in an evaluation board connected to the host PC via USB port | **TEMPERATURE:** | 24 deg. C |
| | | **HUMIDITY:** | 38% RH |
| | | **TIME:** | 4:15 PM |

| | |
|---|---|
| **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.<br>• 120VAC / 60 Hz. |

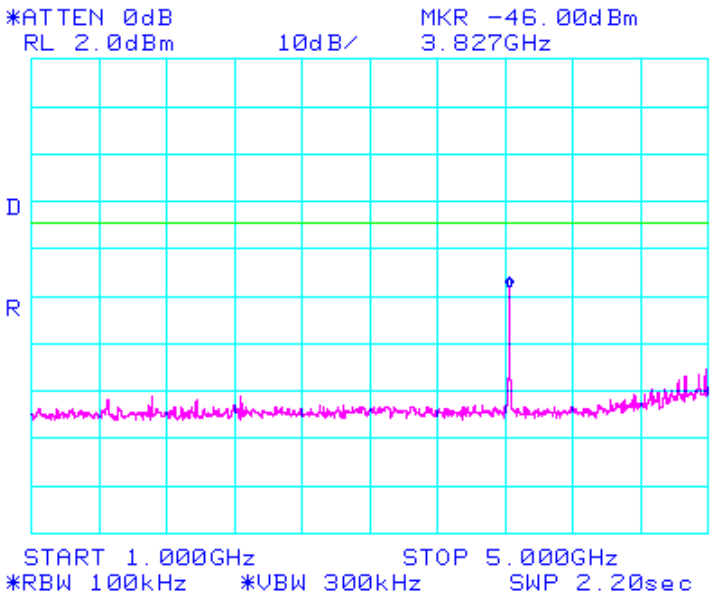
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



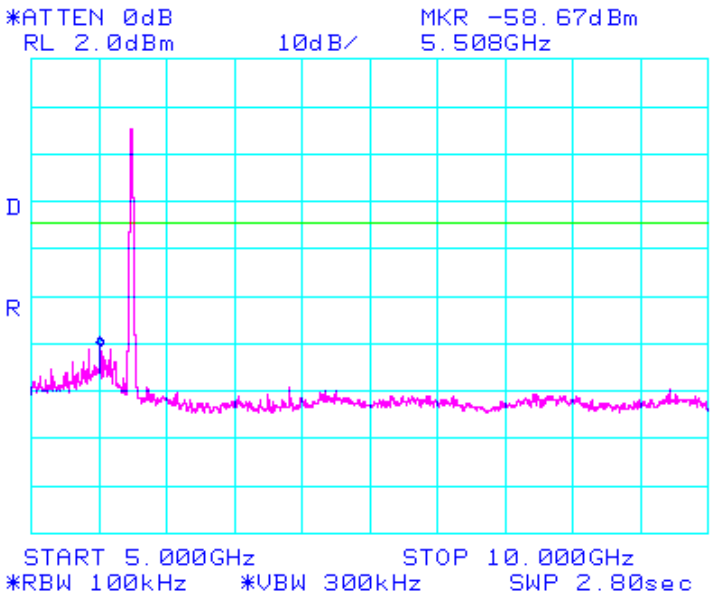

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



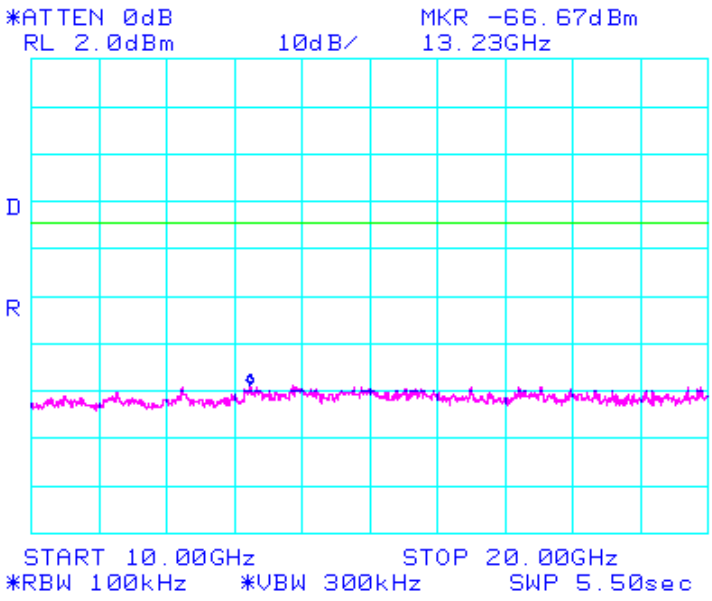
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



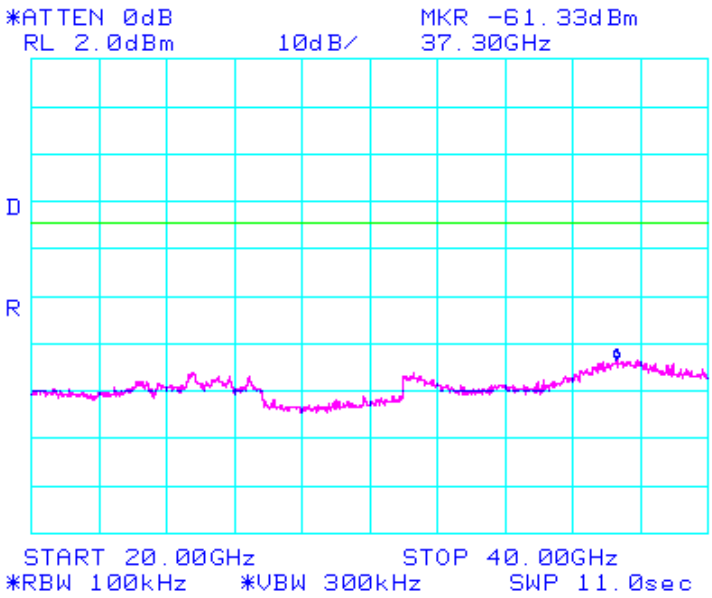

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



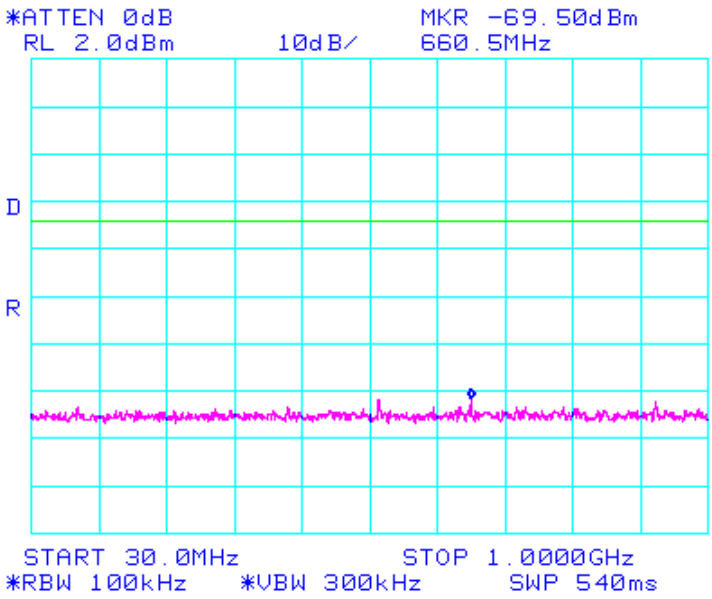
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.745 GHz | 1 | JC |



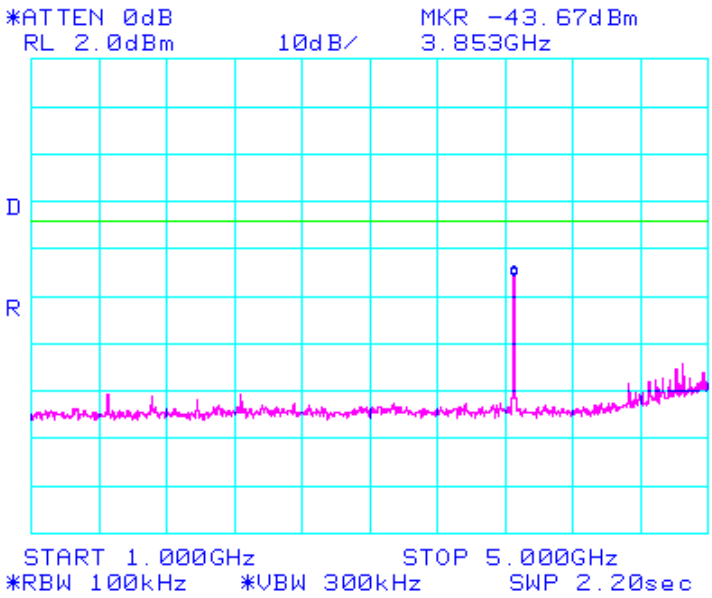

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



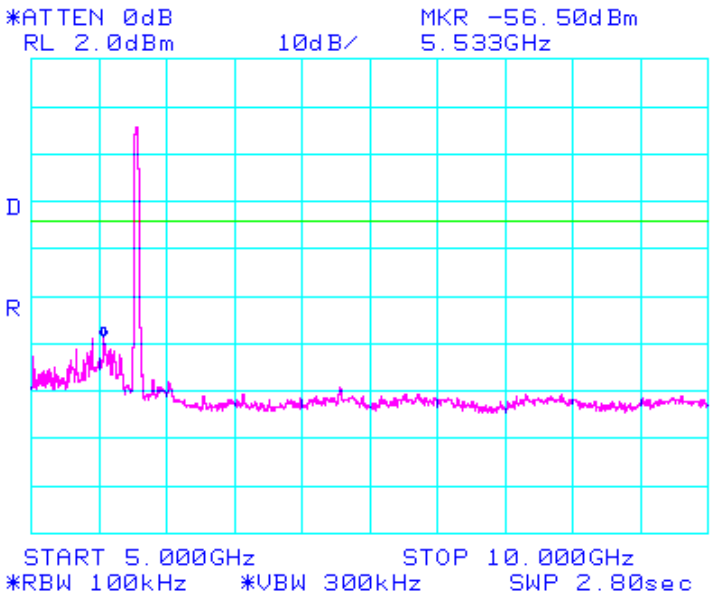
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



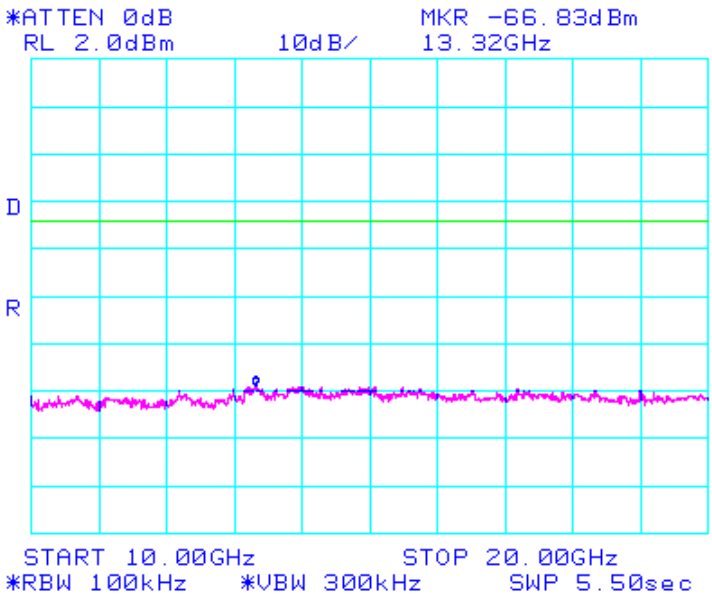

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



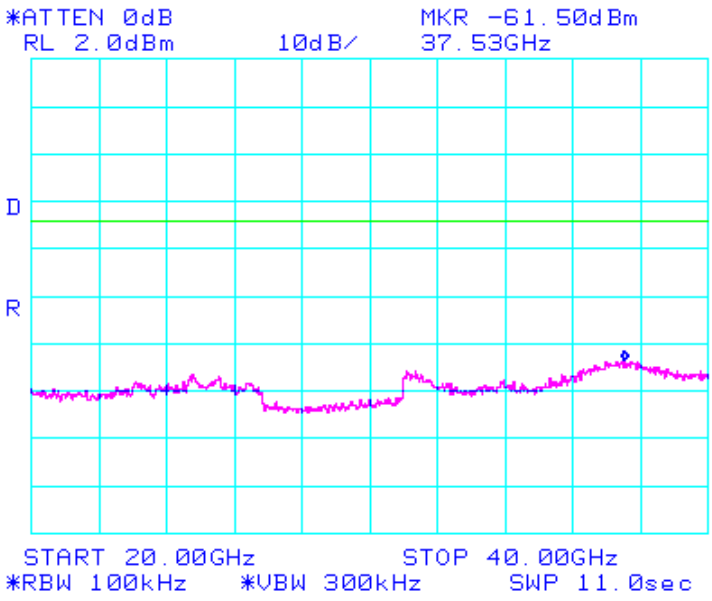
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



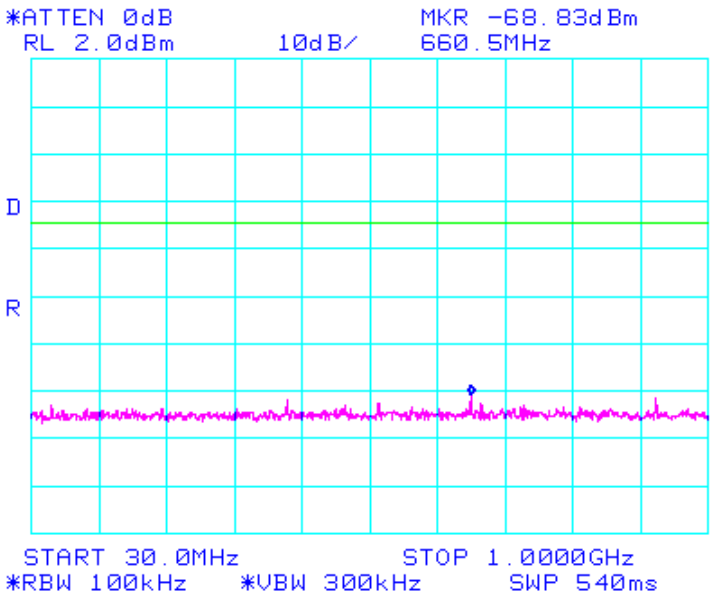

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.785 GHz | 1 | JC |



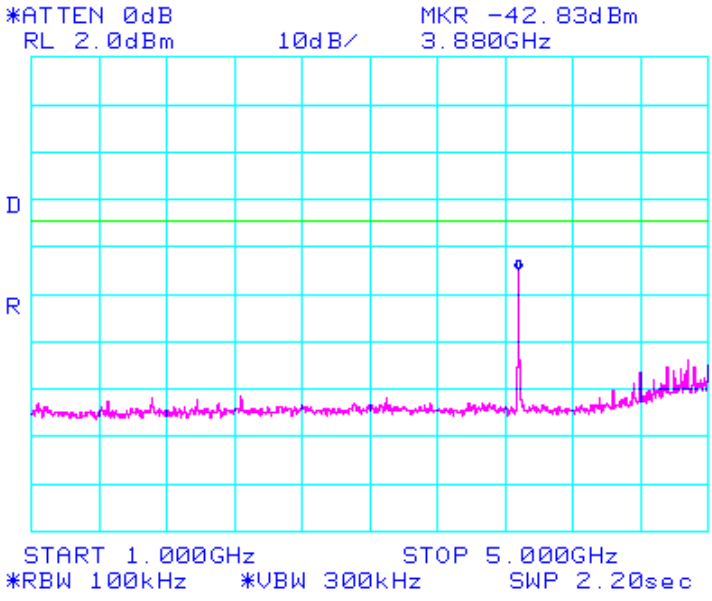
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



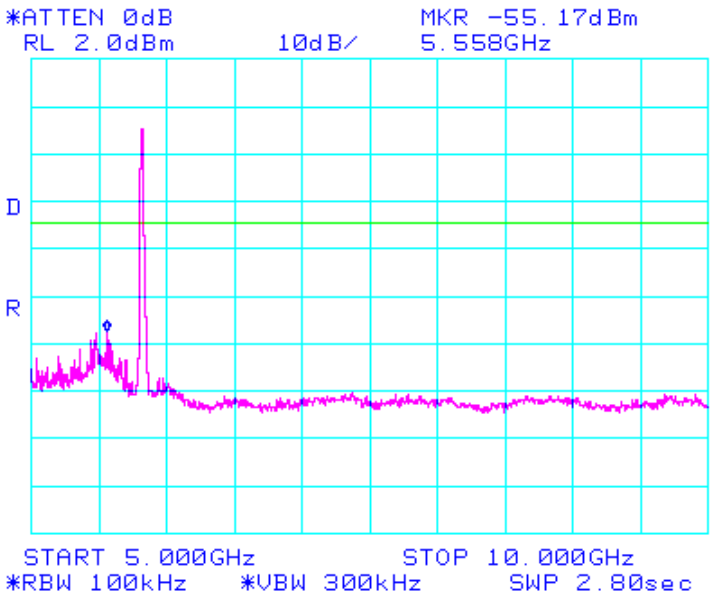

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



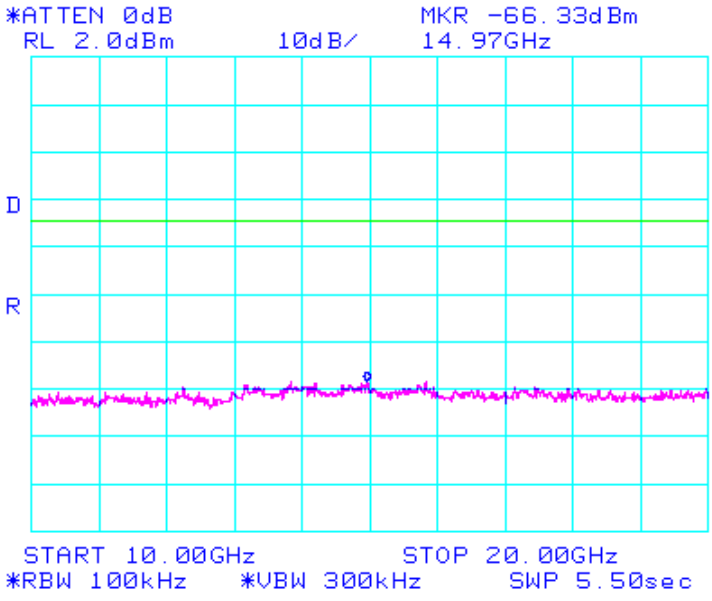
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



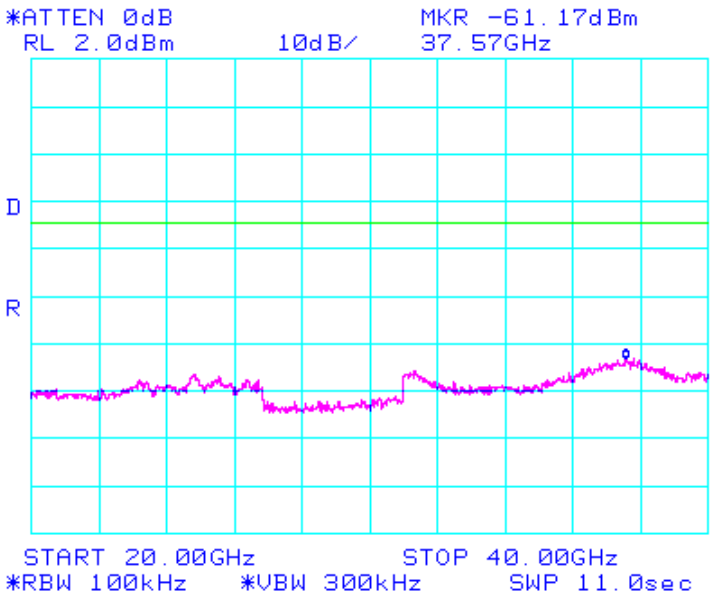

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

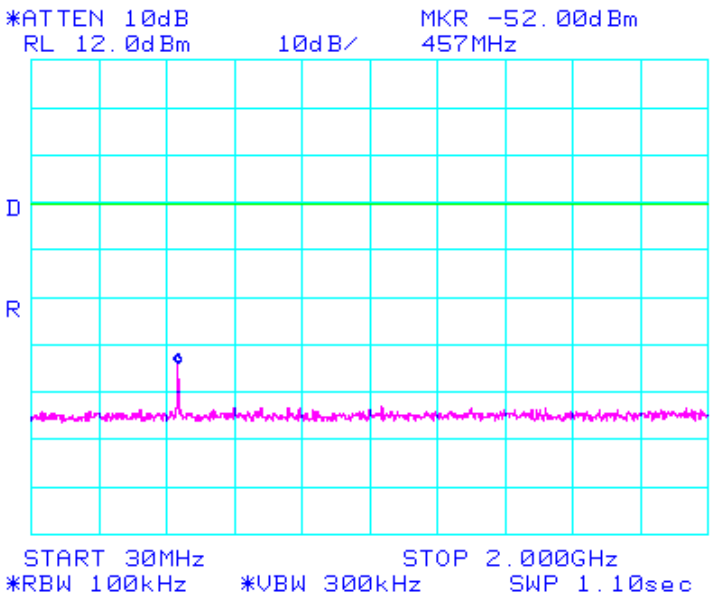
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 5.825 GHz | 1 | JC |



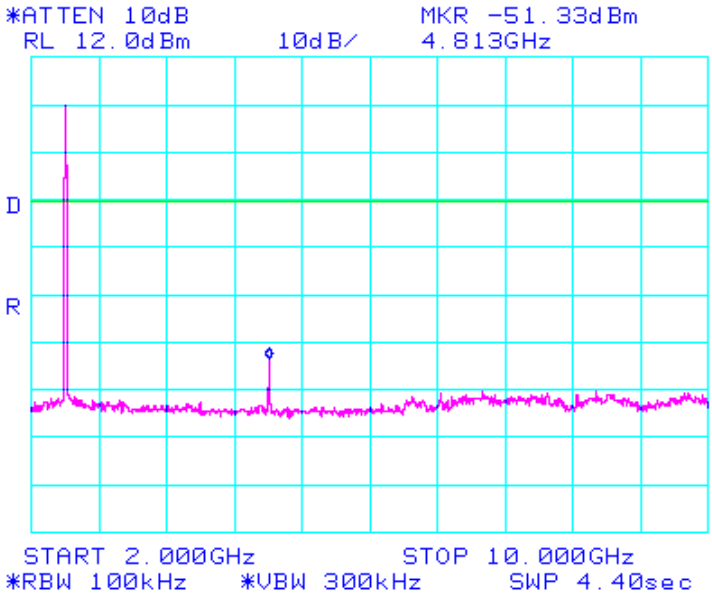
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



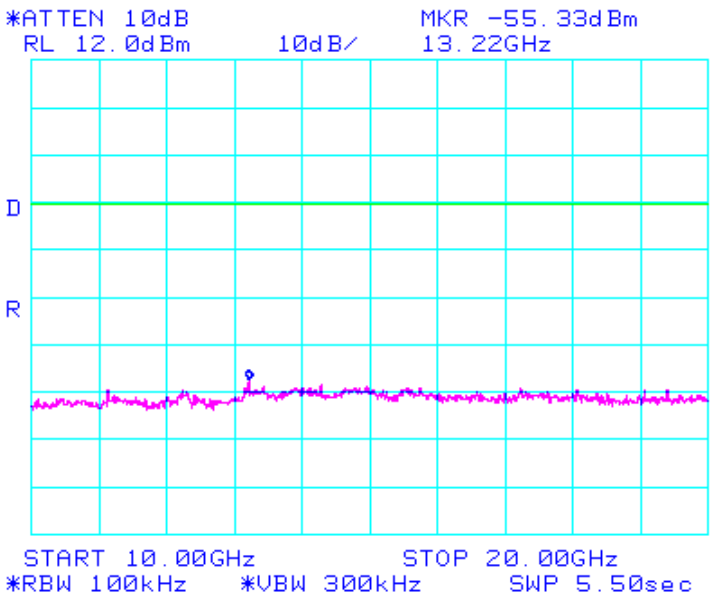

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



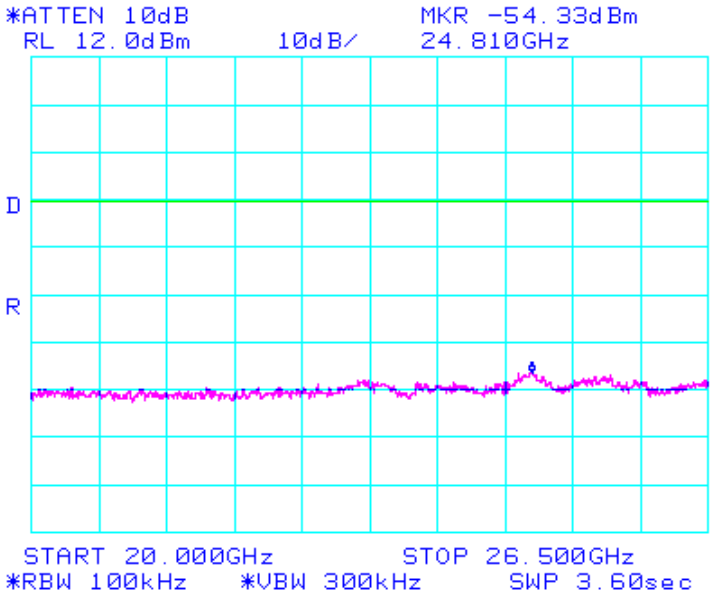
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



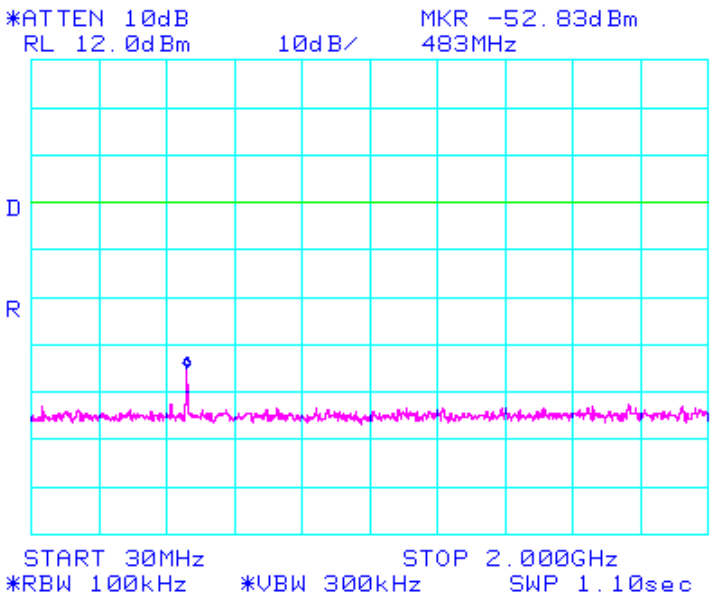

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



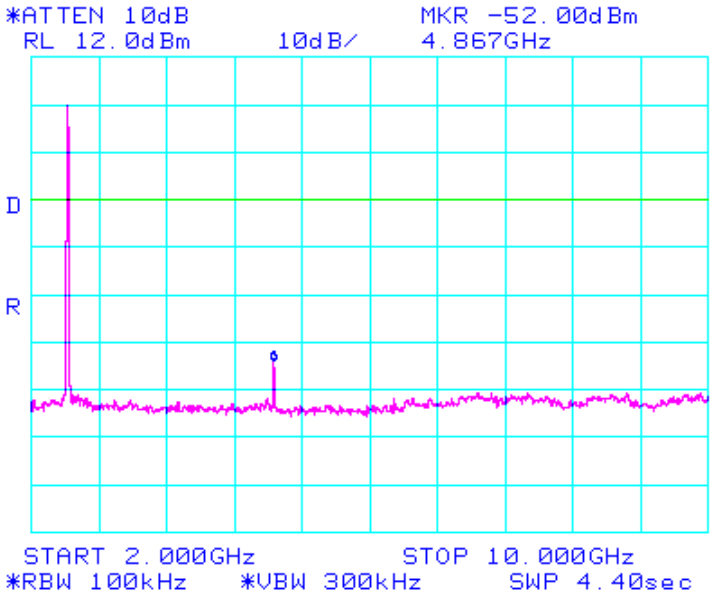
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



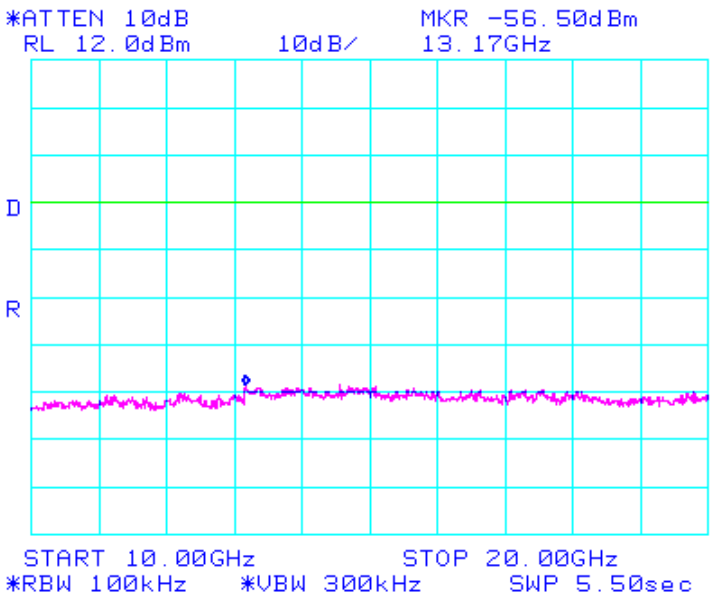

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



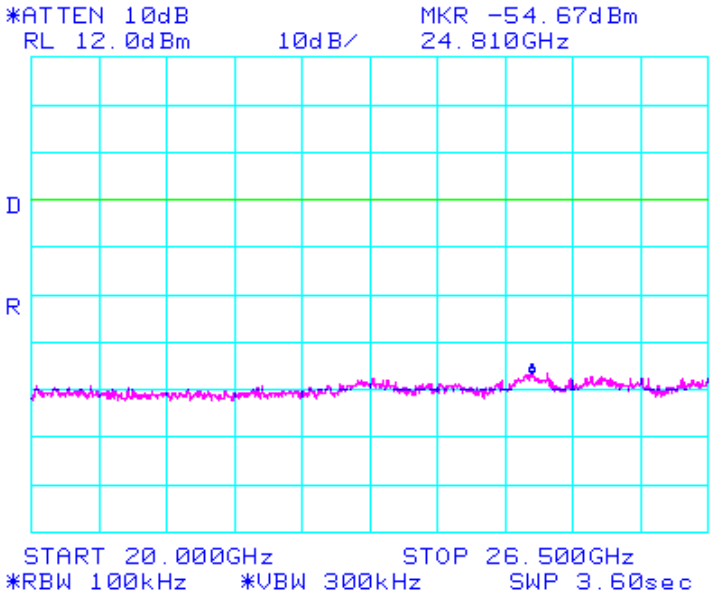
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



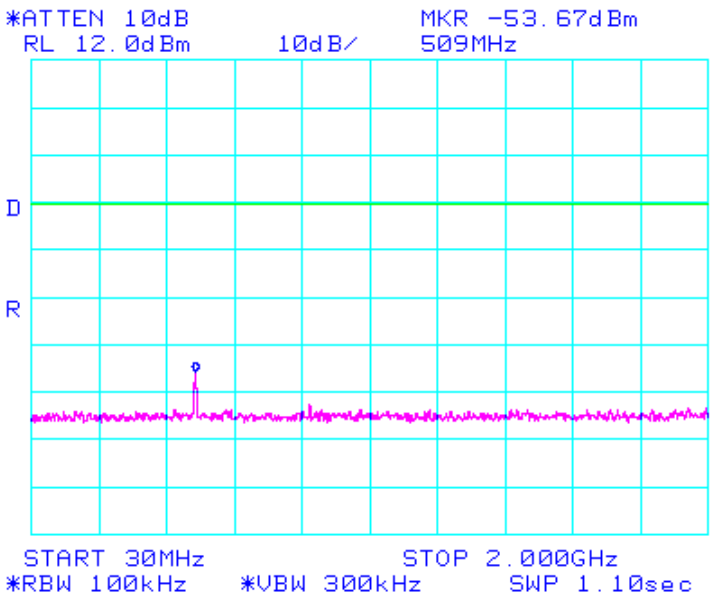

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



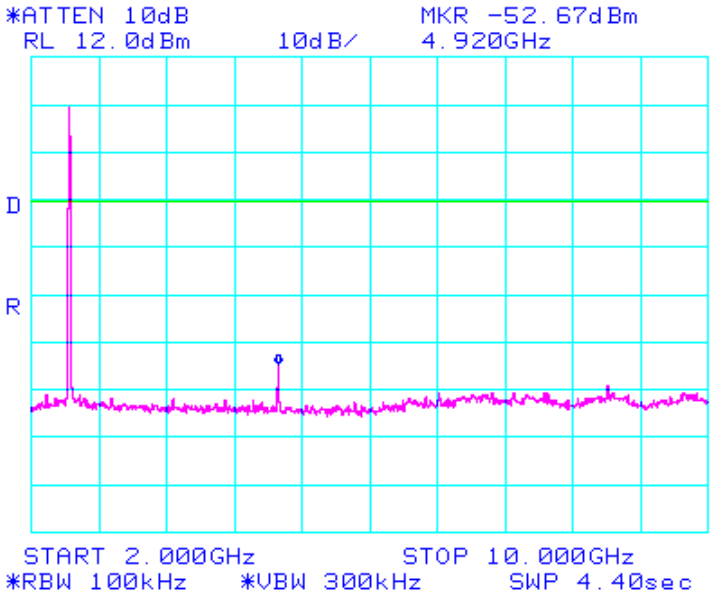
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



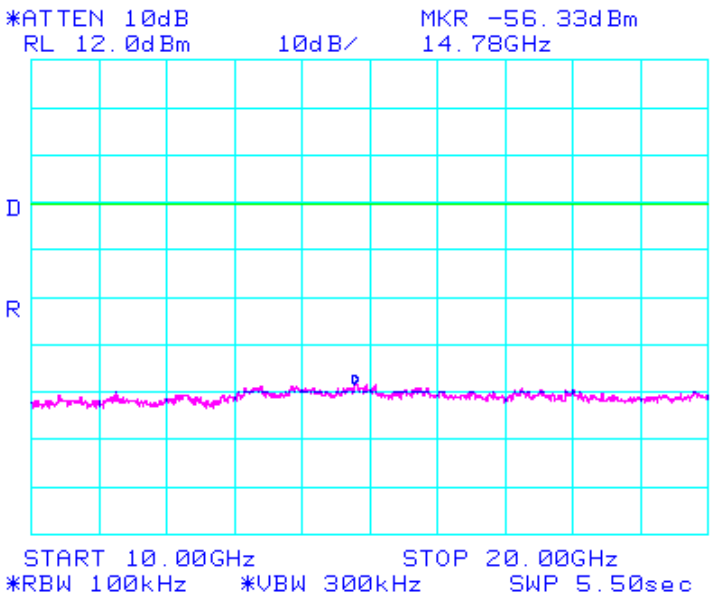

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



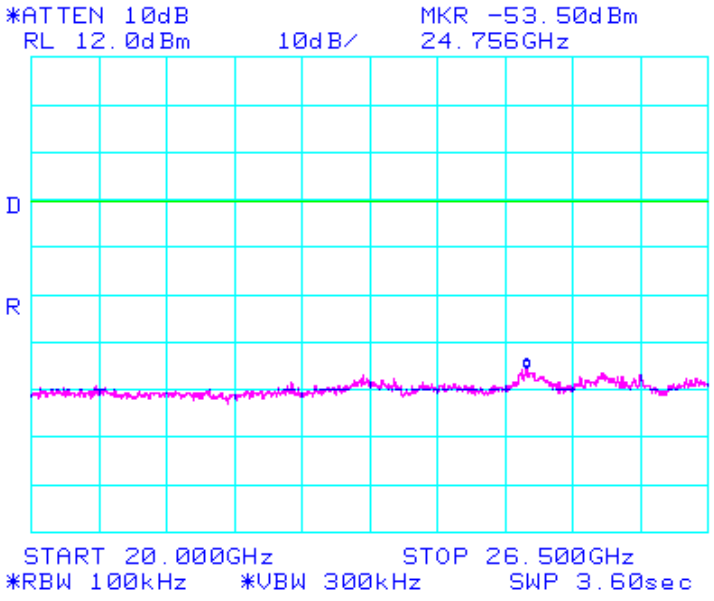
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



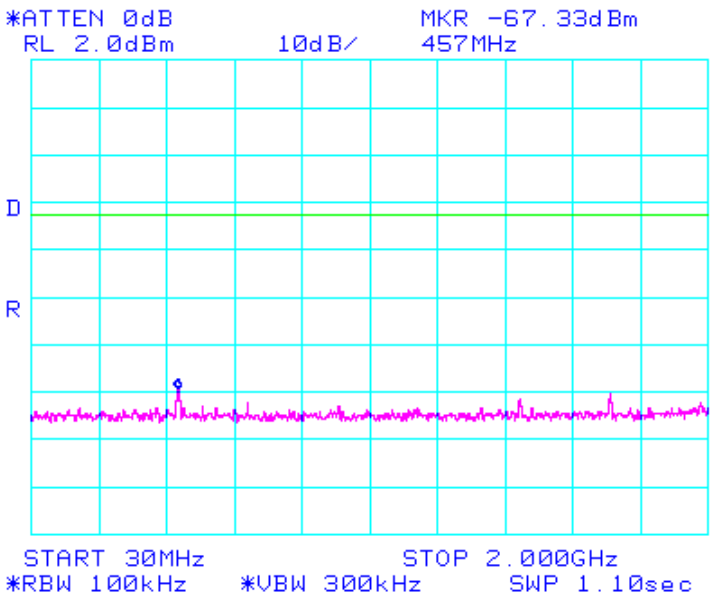

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



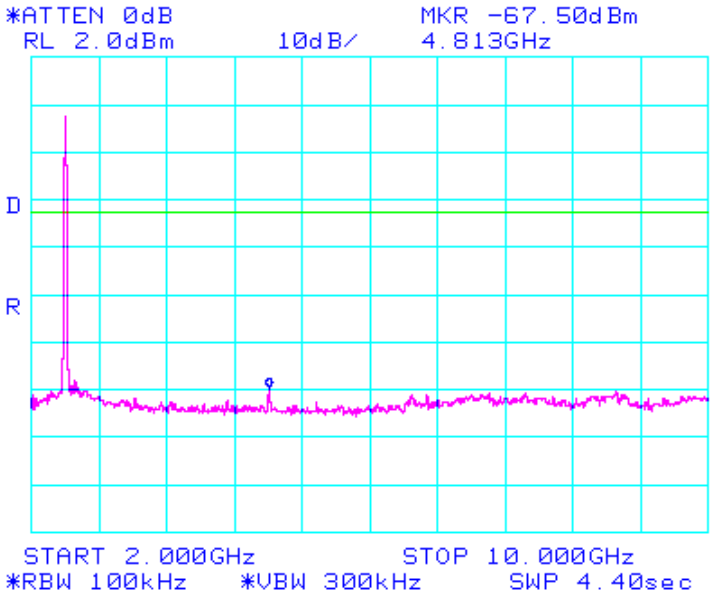
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



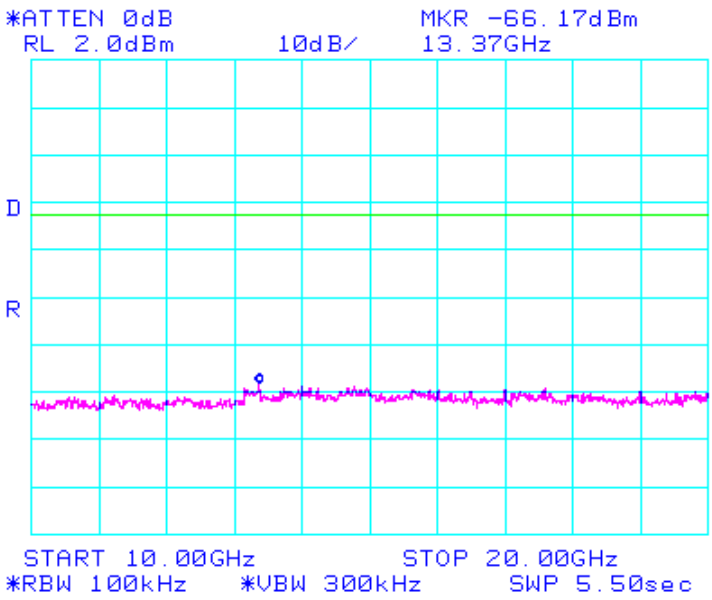

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



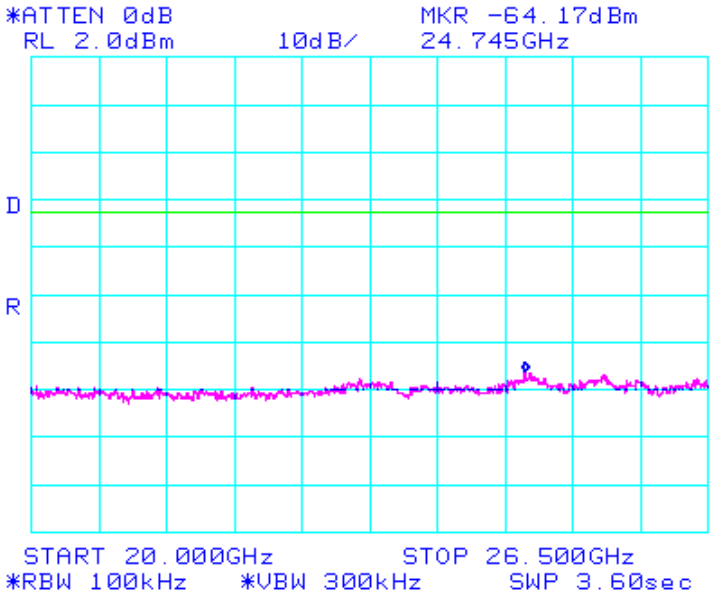
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



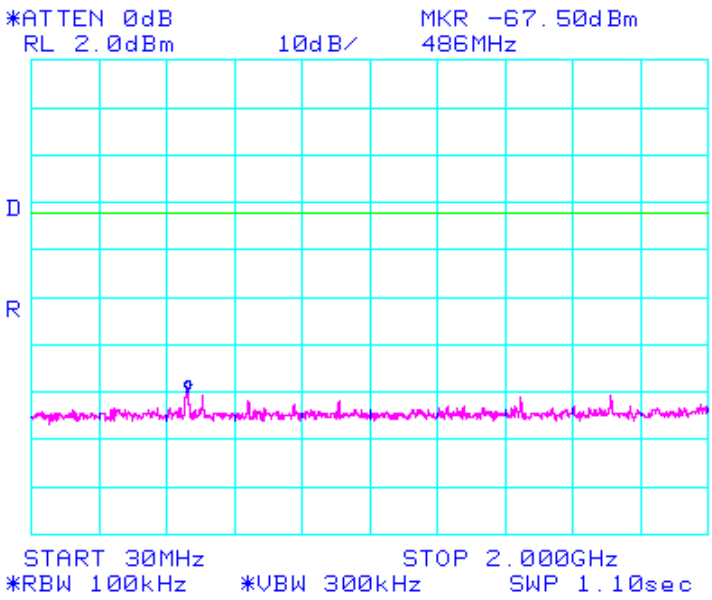

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.412 GHz | 1 | JC |



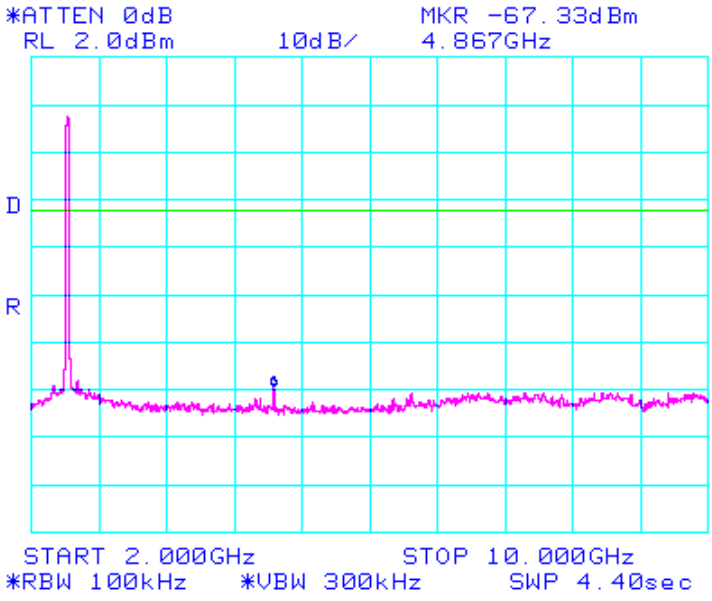
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



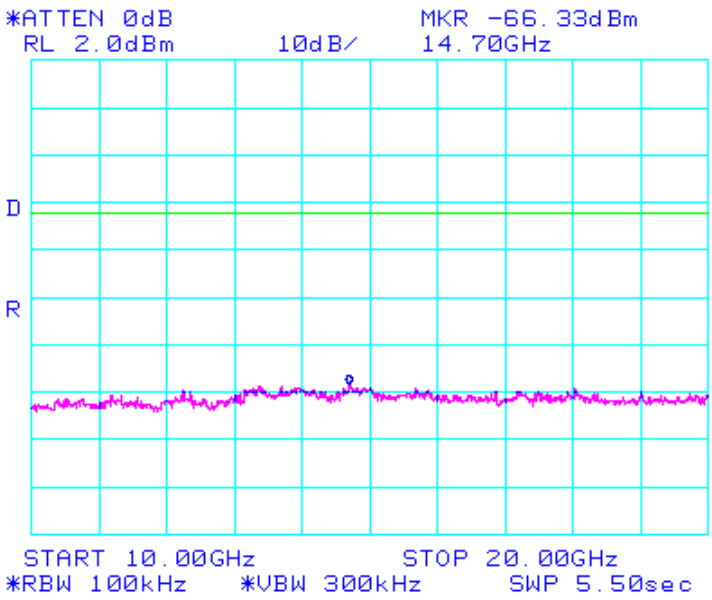

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



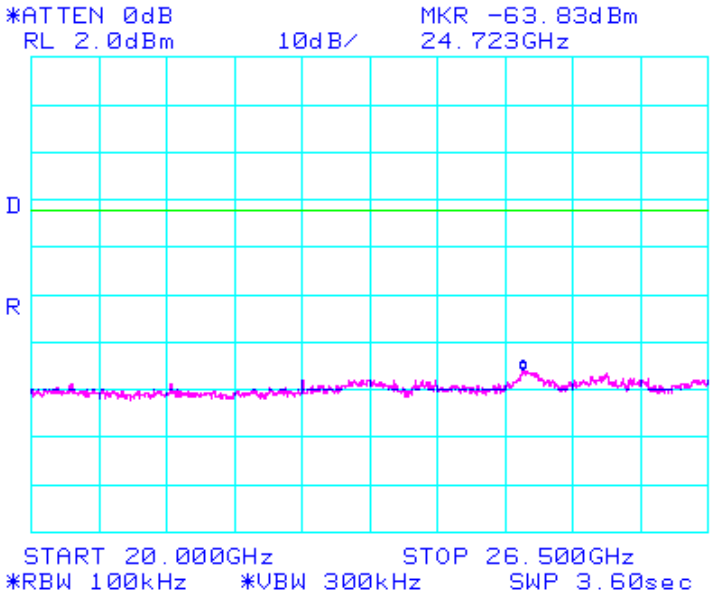
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



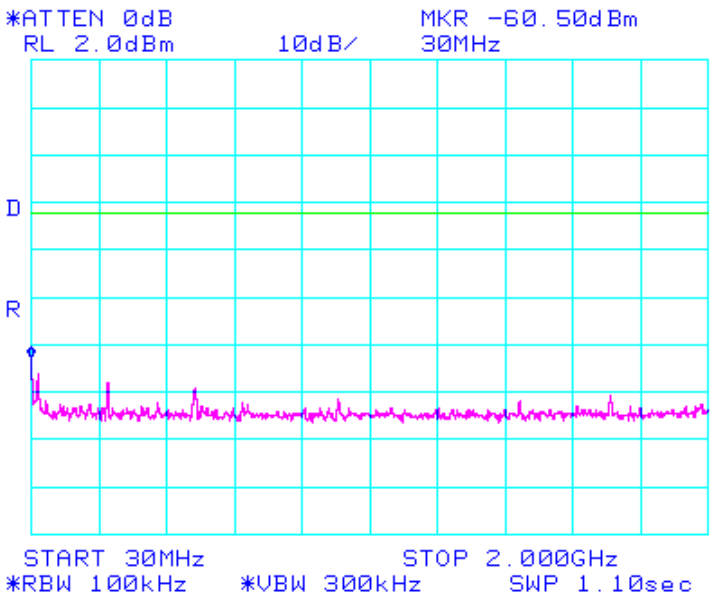

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.437 GHz | 1 | JC |



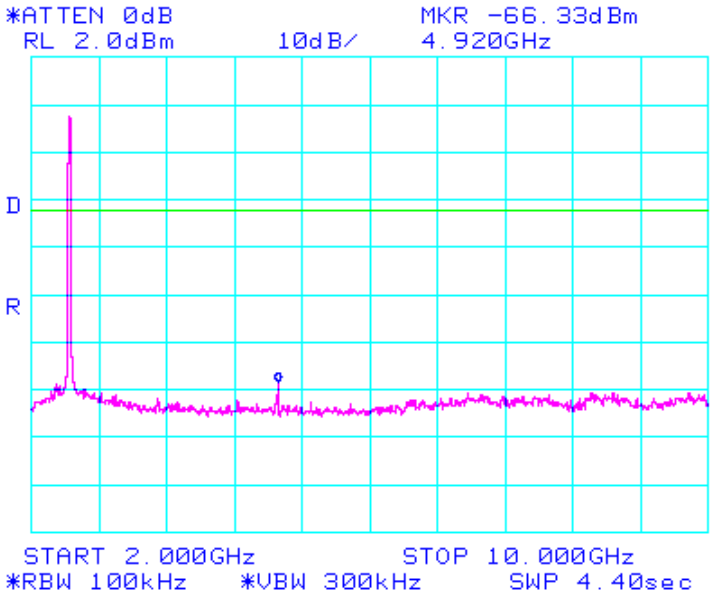
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



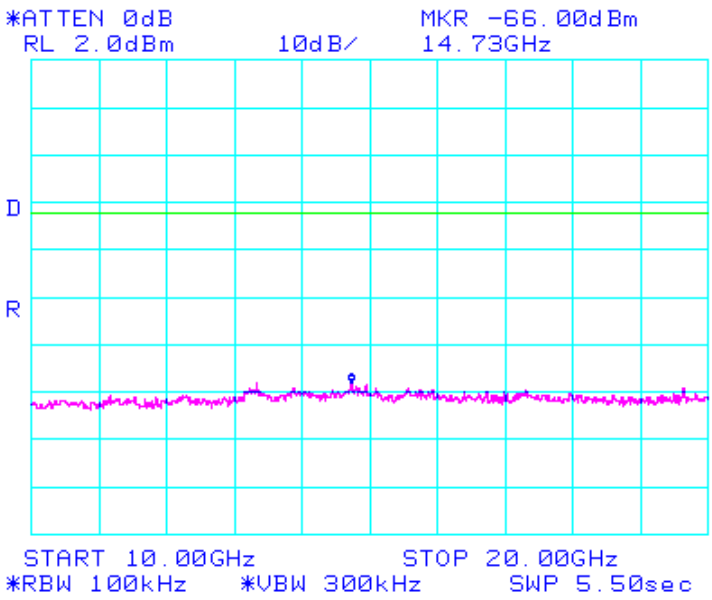

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



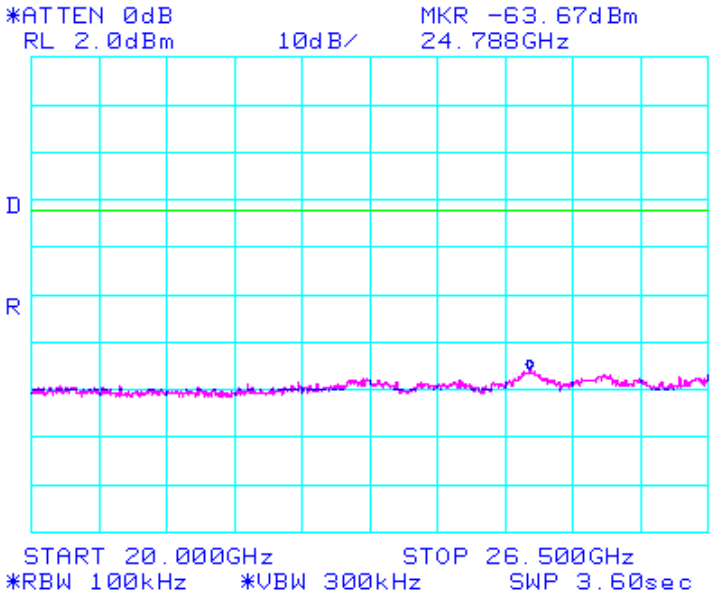
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



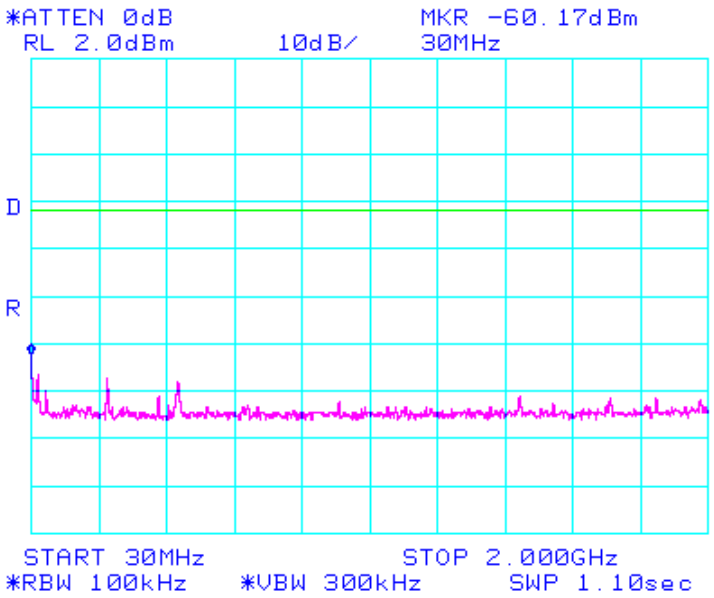

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/17/10 | 2.462 GHz | 1 | JC |



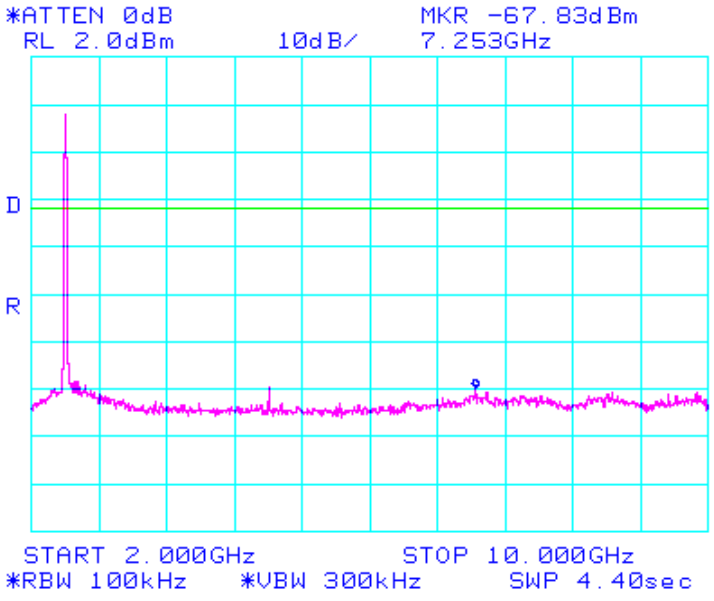
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 1 | JC |



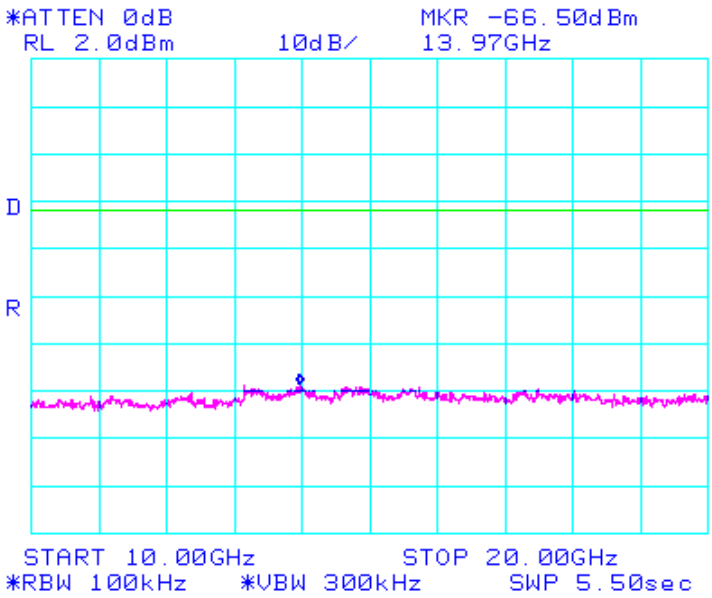

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 1 | JC |



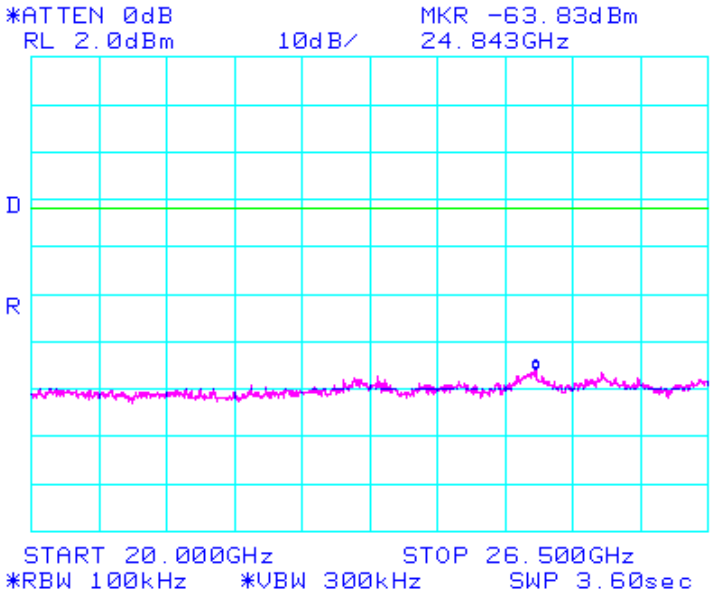
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 1 | JC |



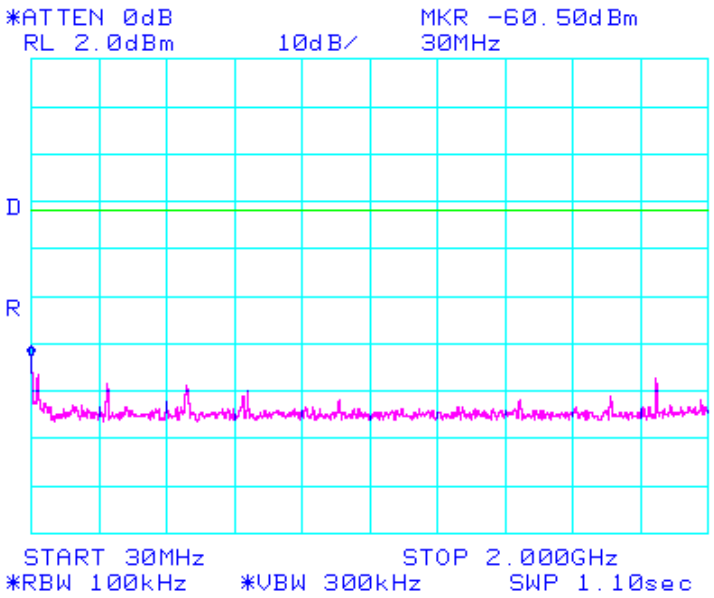

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 1 | JC |



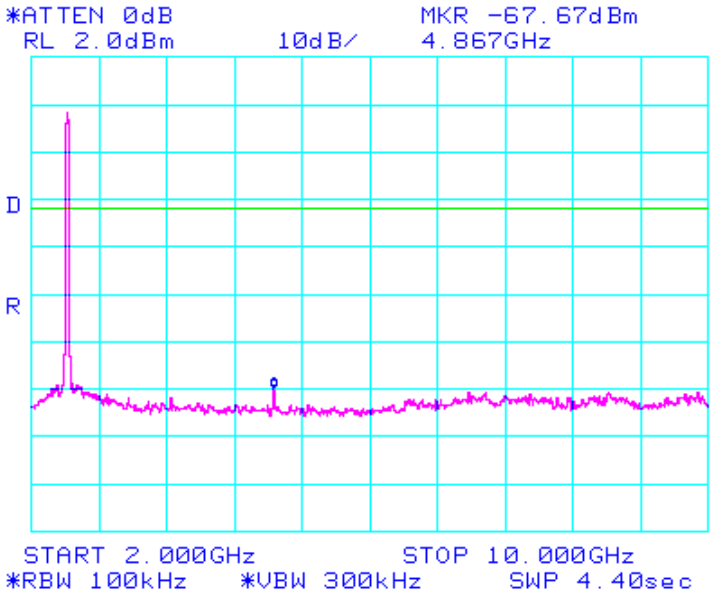
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 1 | JC |



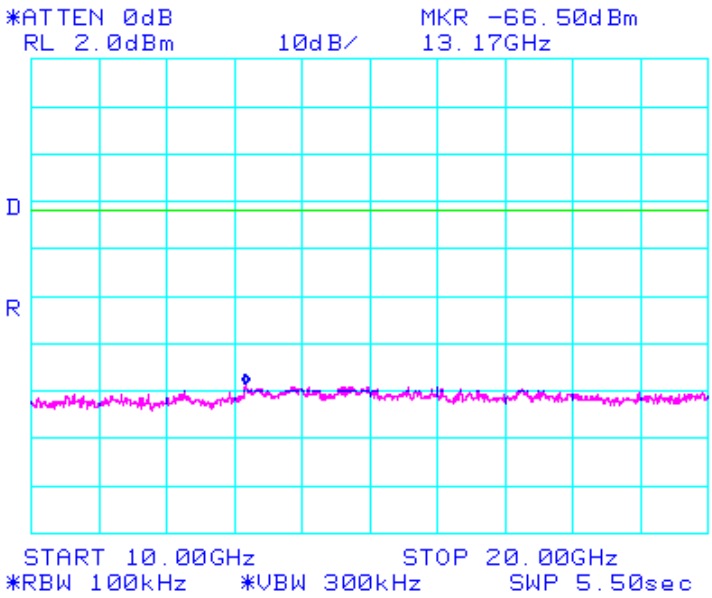

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 1 | JC |



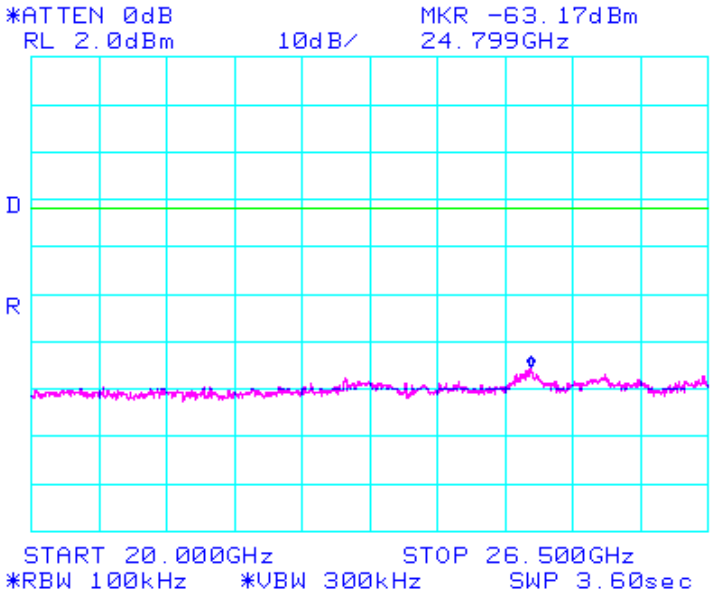
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 1 | JC |



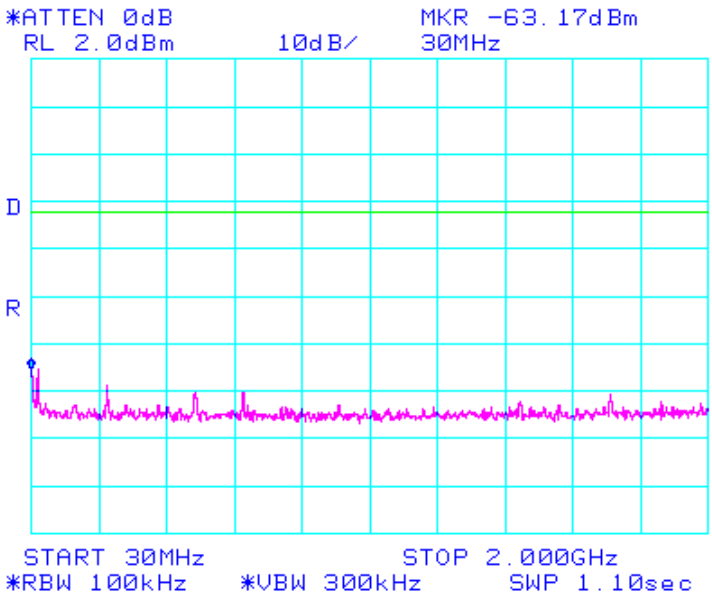

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 1 | JC |



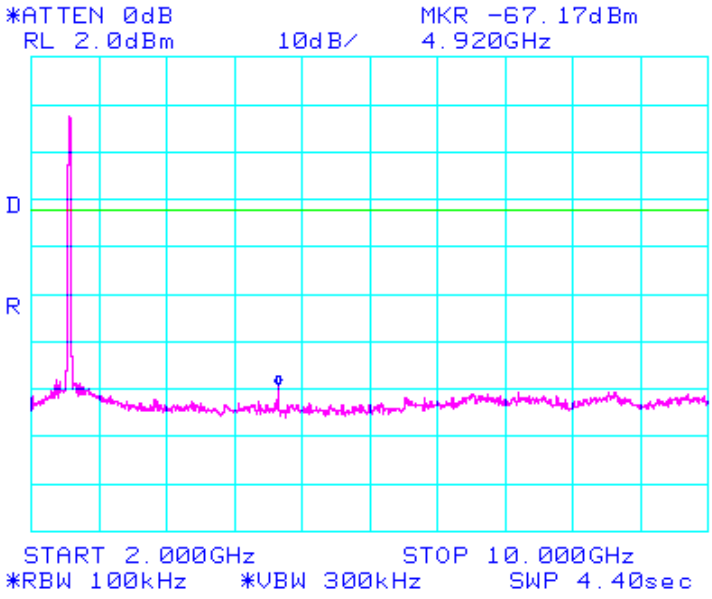
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 1 | JC |



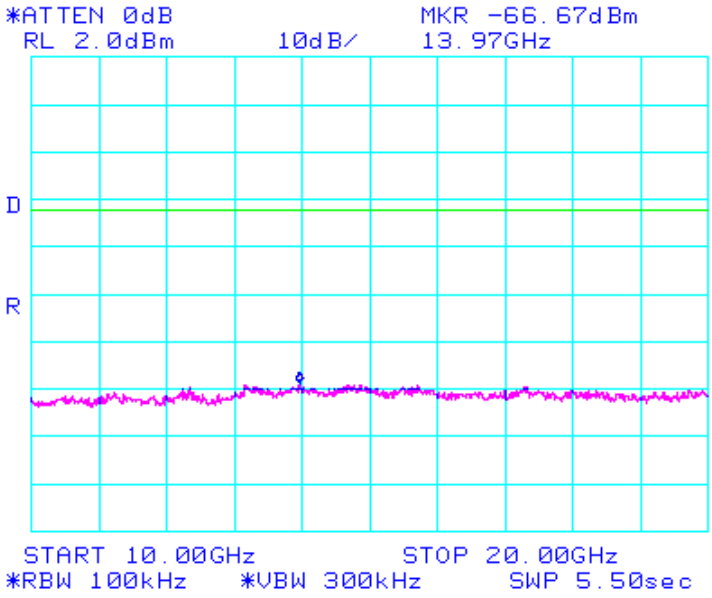

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 1 | JC |



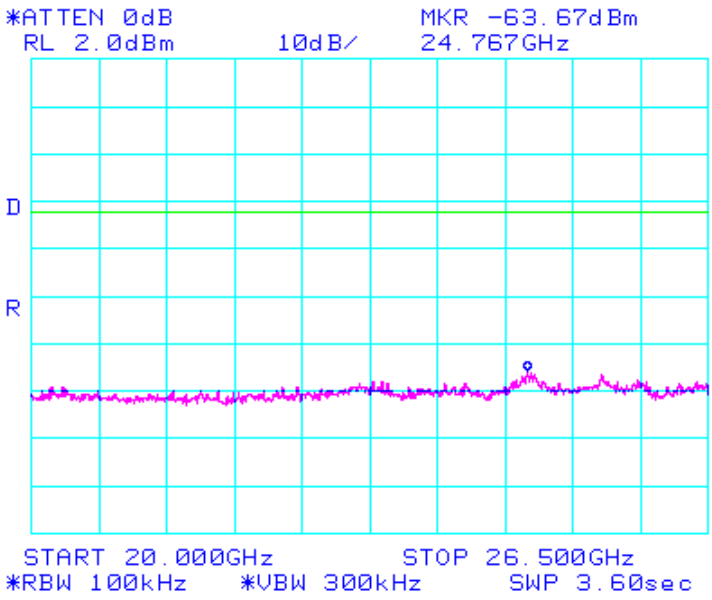
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 1 | JC |



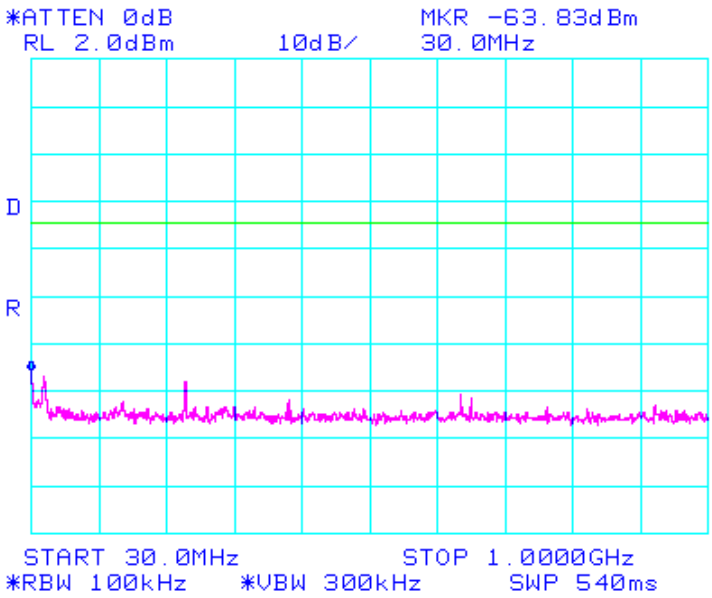

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 1 | JC |



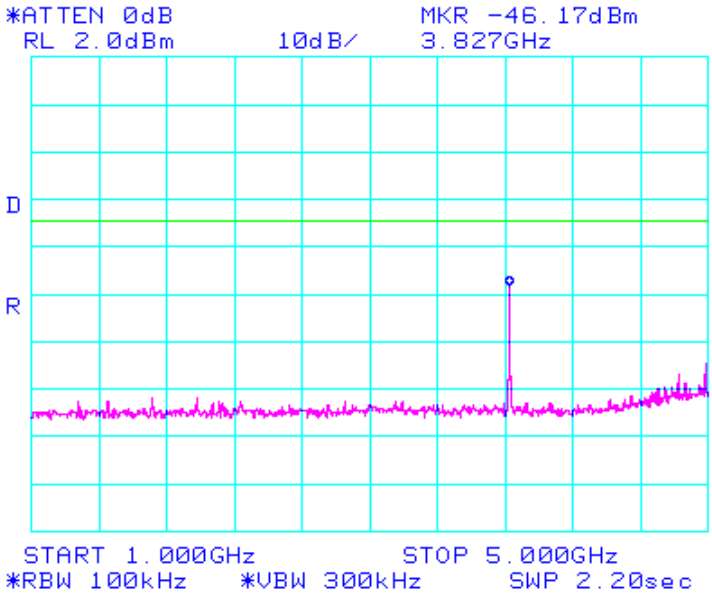
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 1 | JC |



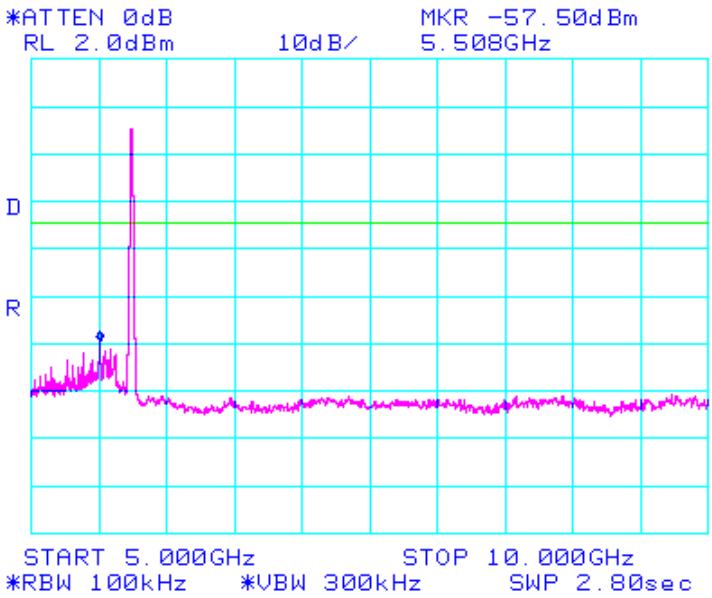

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 1 | JC |



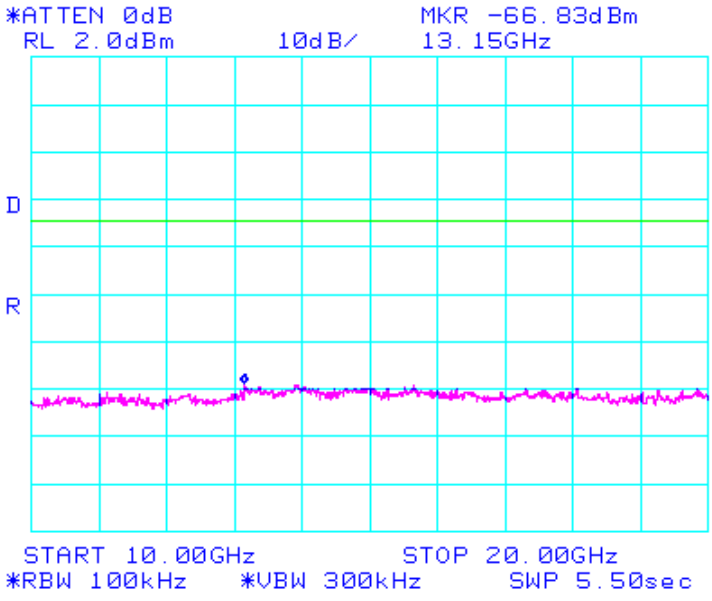
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 1 | JC |



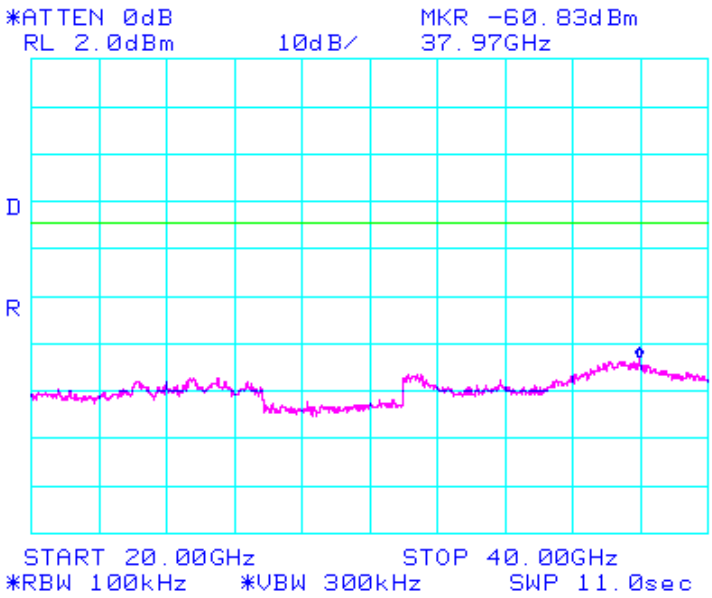

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 1 | JC |



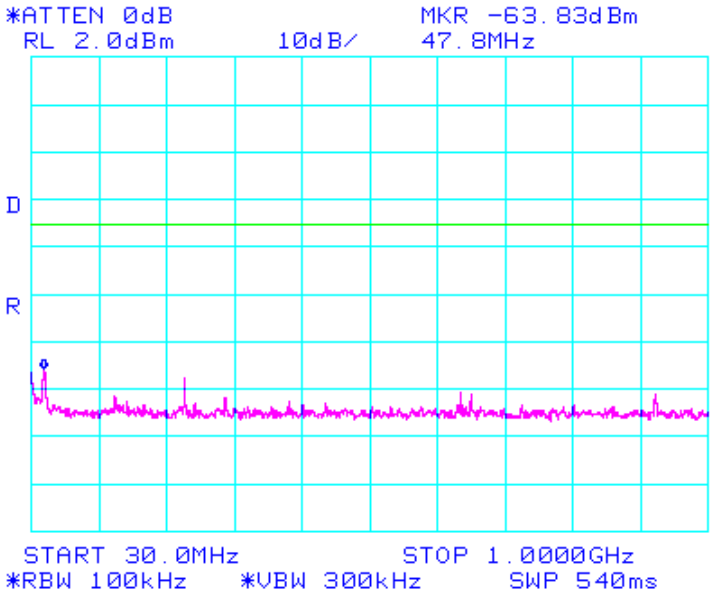
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 1 | JC |



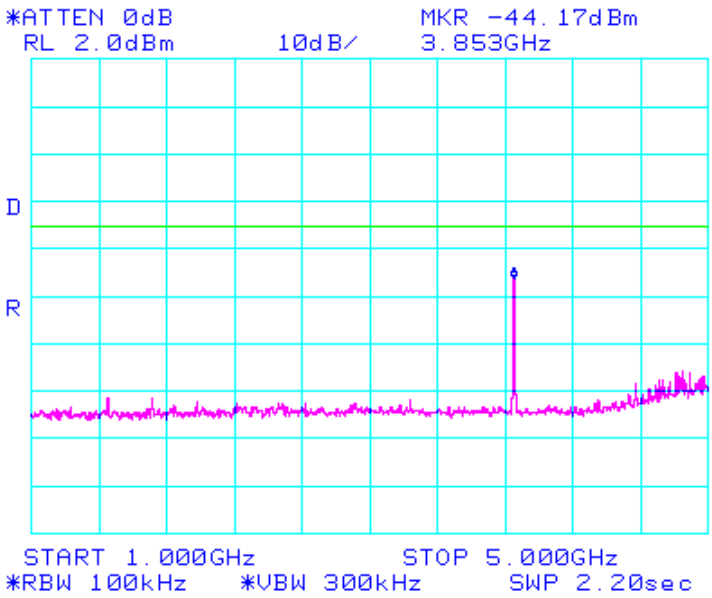

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 1 | JC |



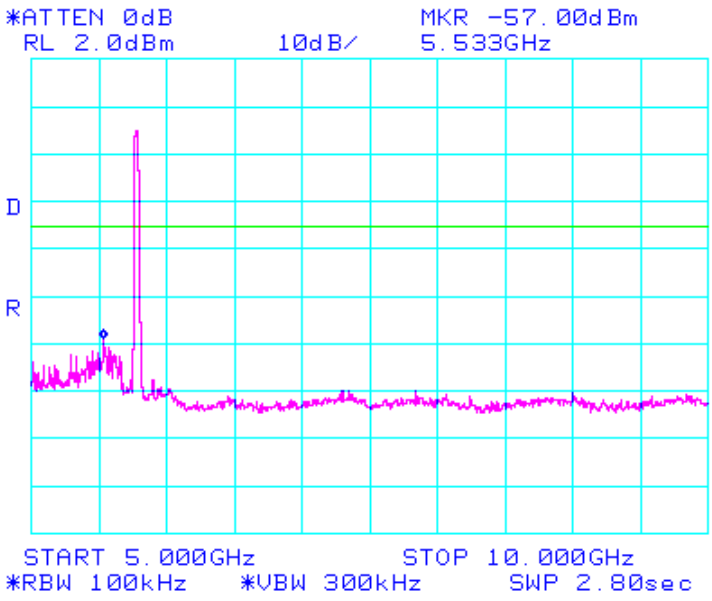
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 1 | JC |



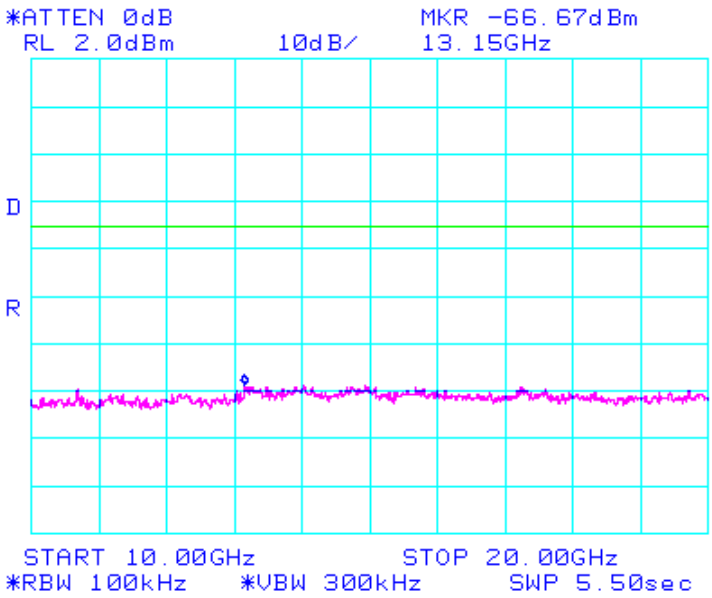

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 1 | JC |



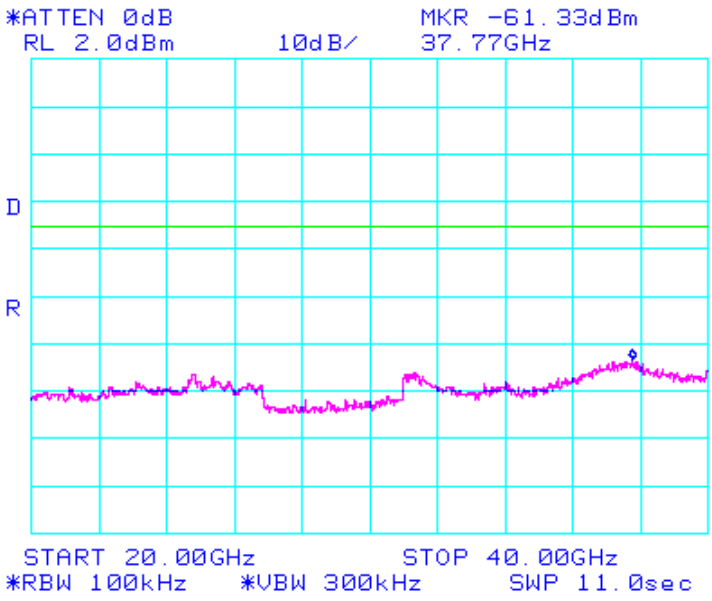
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 1 | JC |



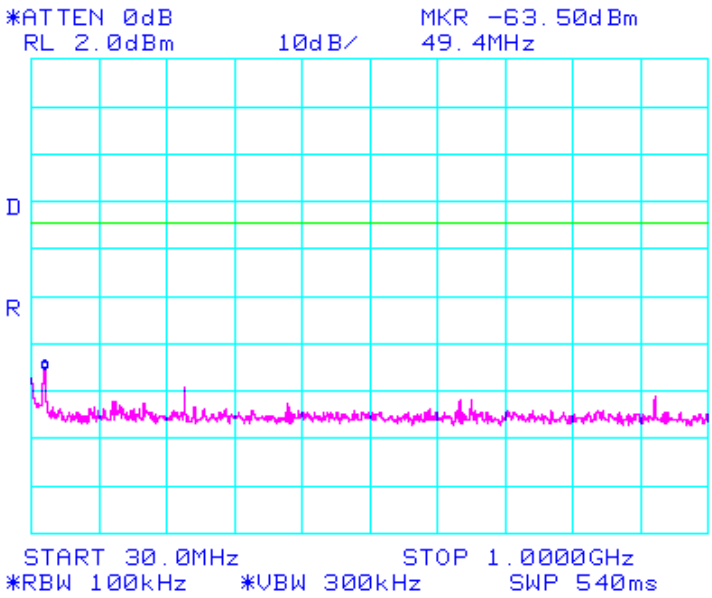

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 1 | JC |



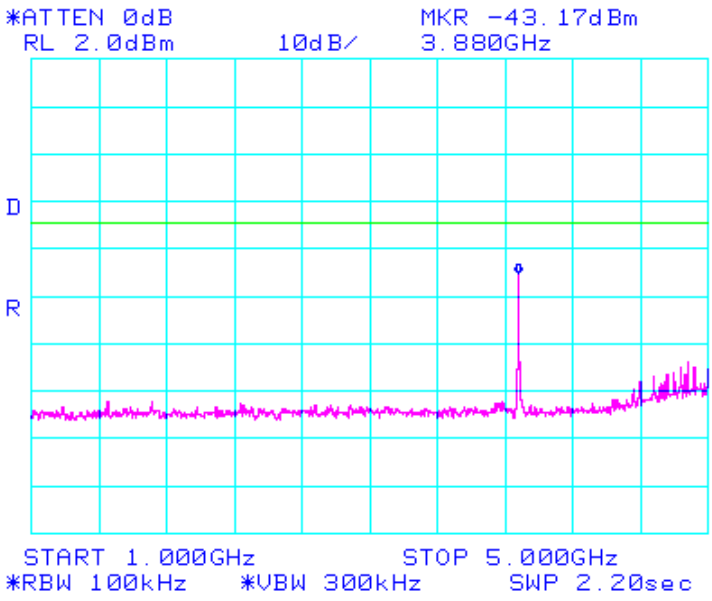
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 1 | JC |



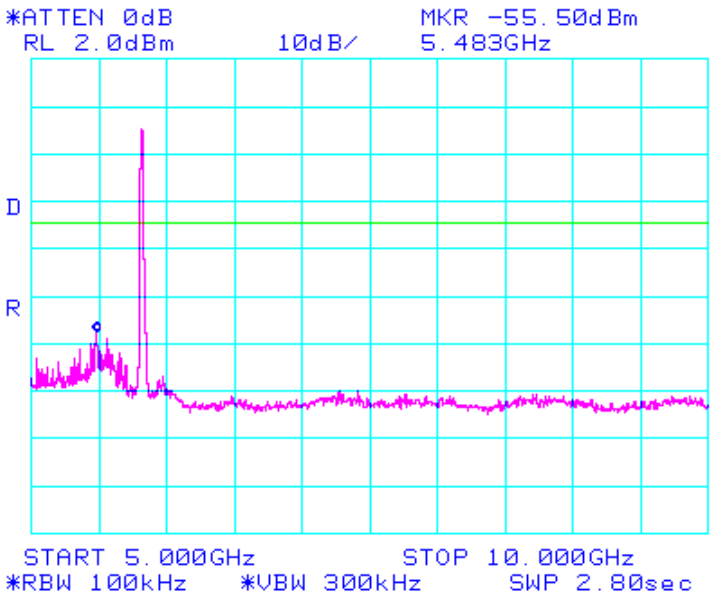

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 1 | JC |



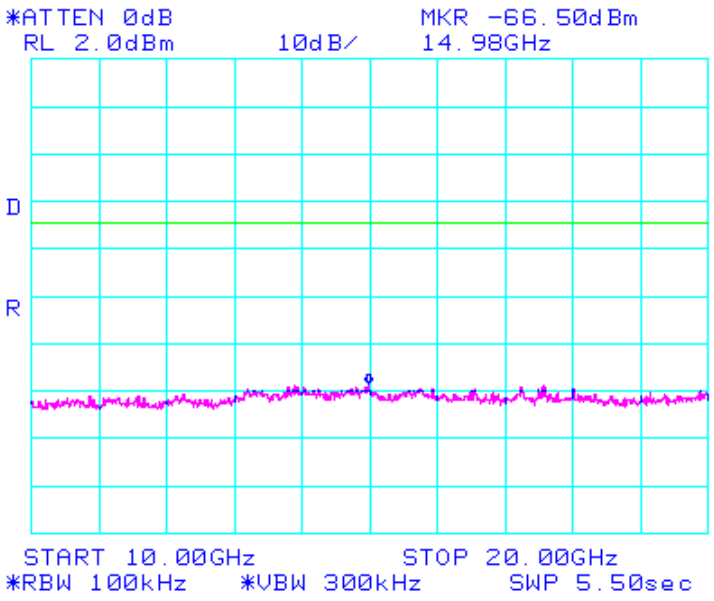
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 1 | JC |



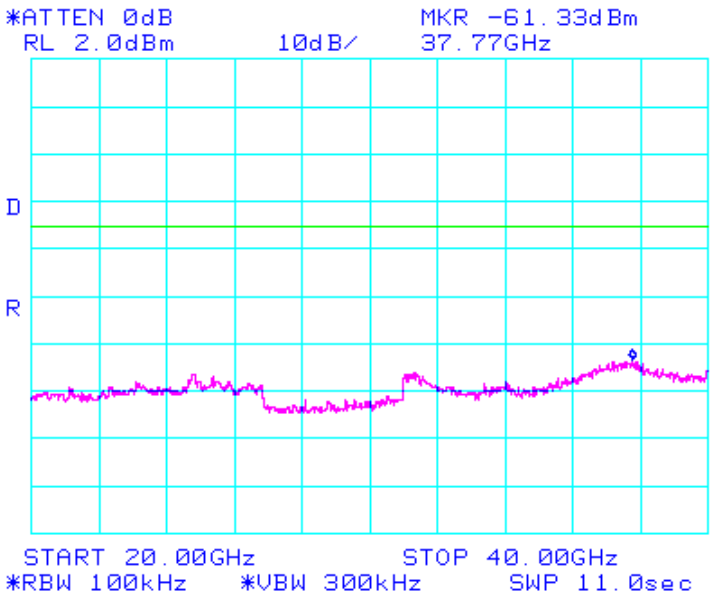

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 1 | JC |



Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

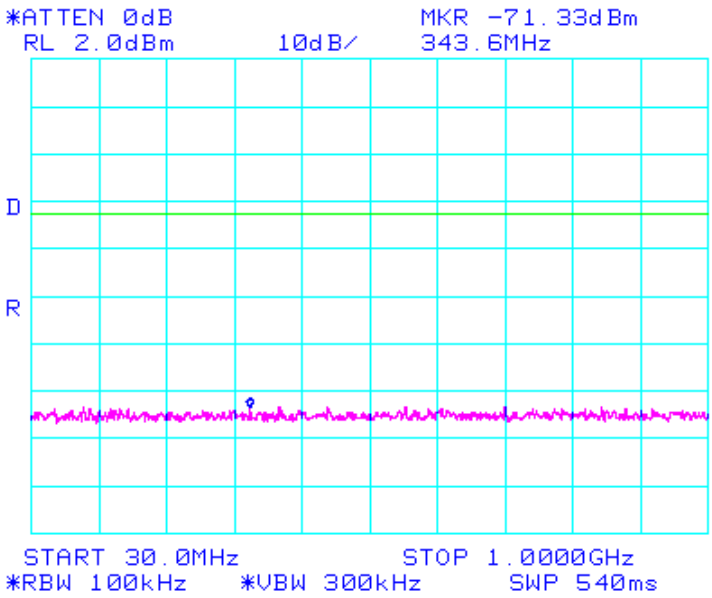
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 1 | JC |



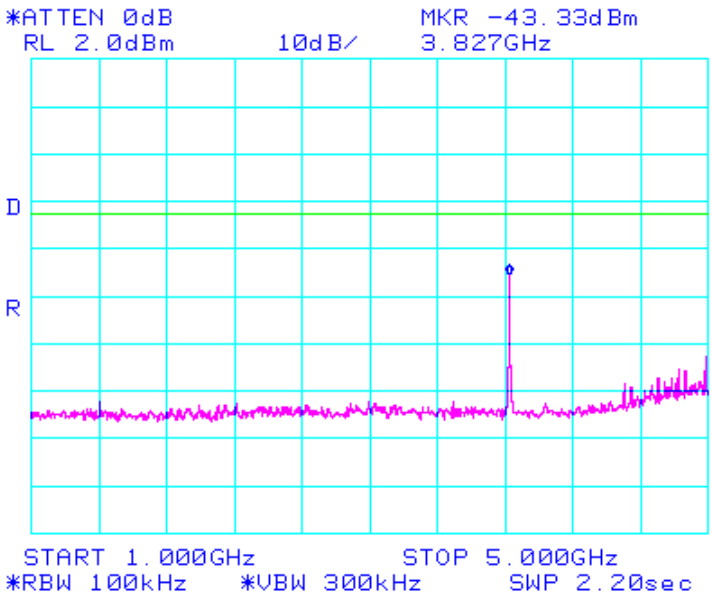
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



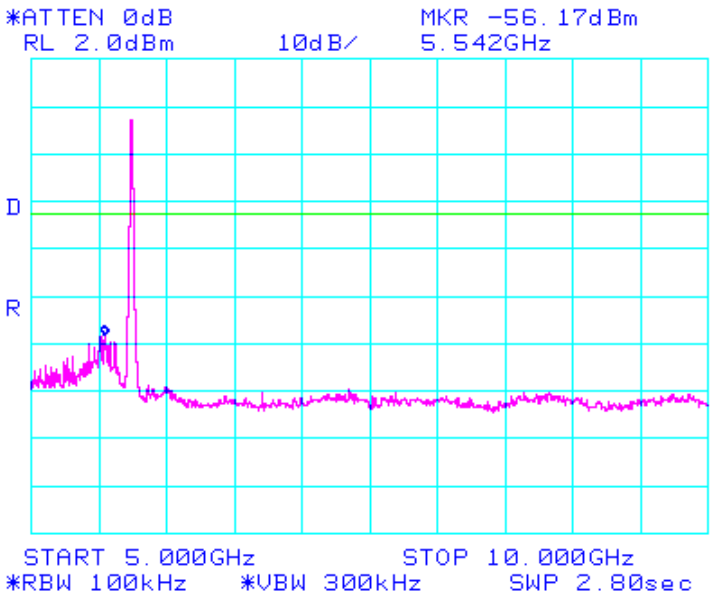

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



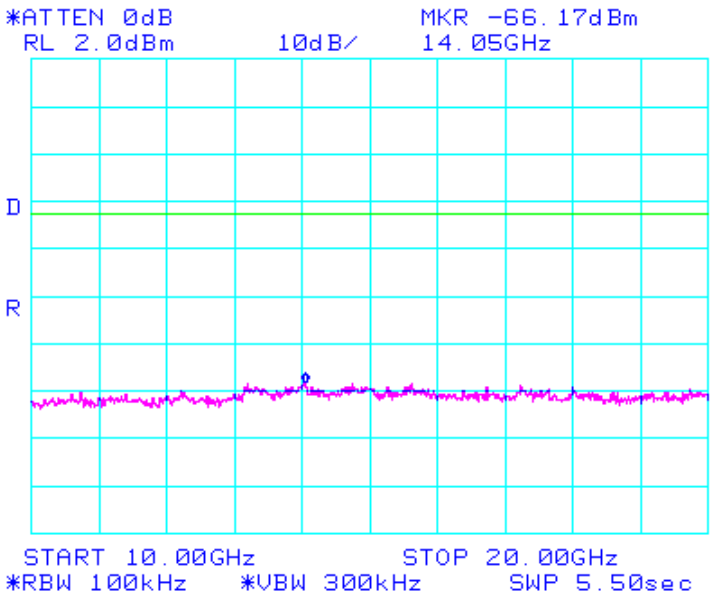
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



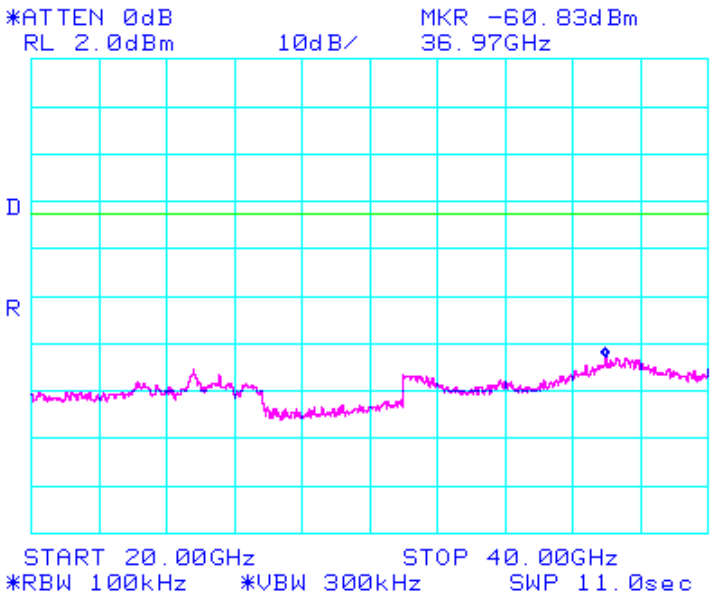

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



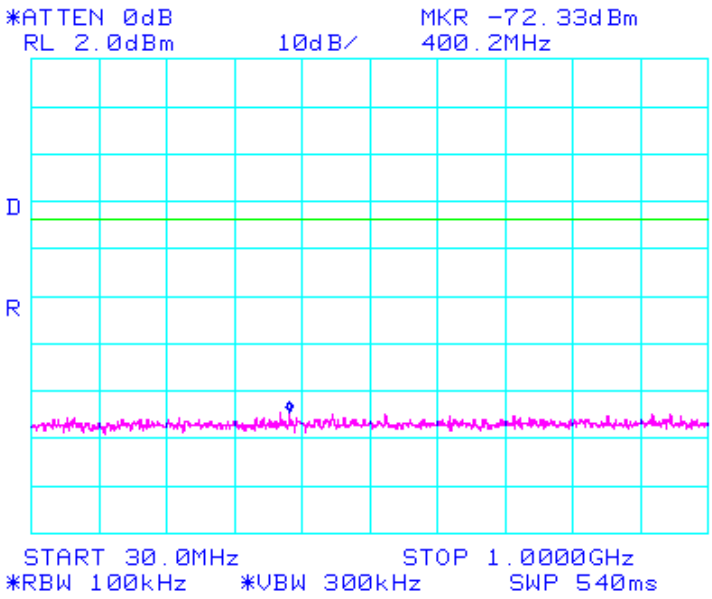
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



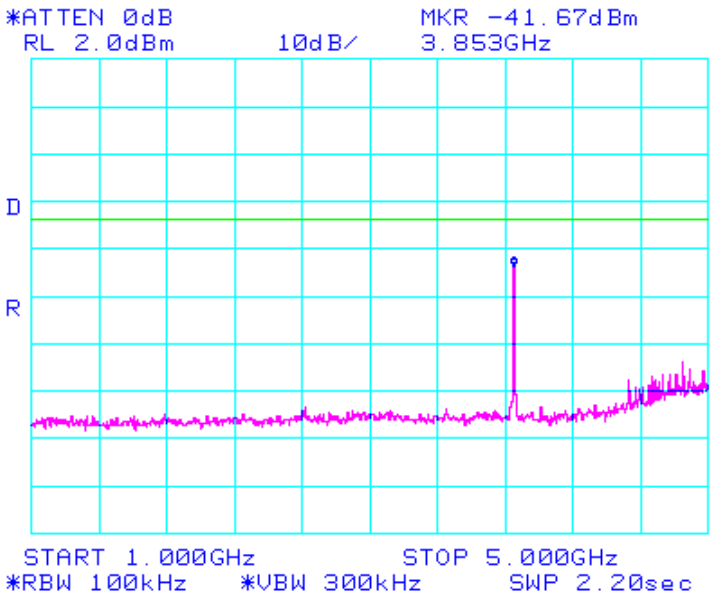

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



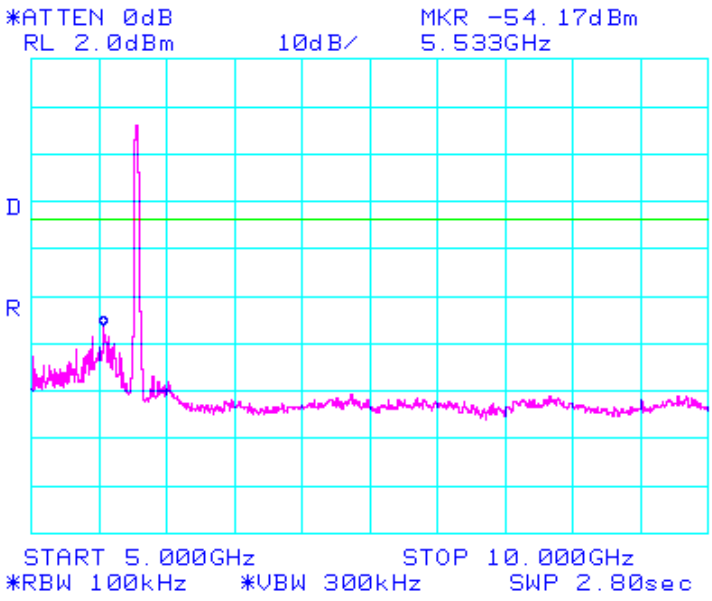
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



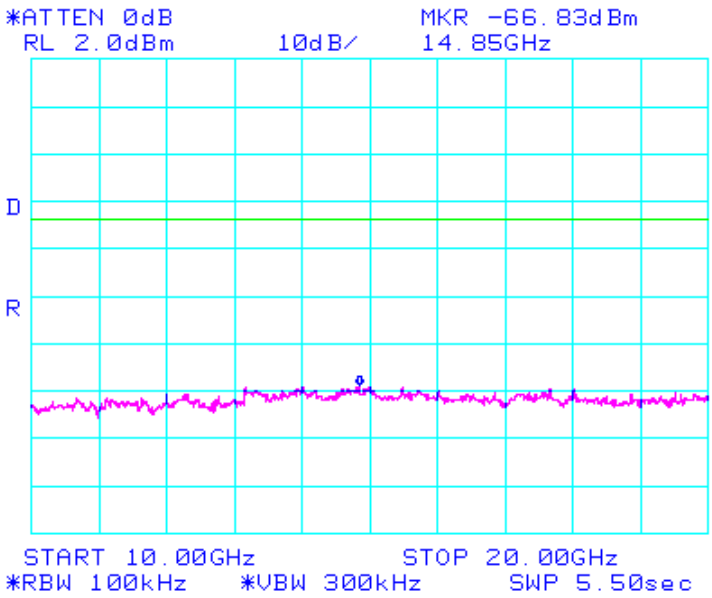

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



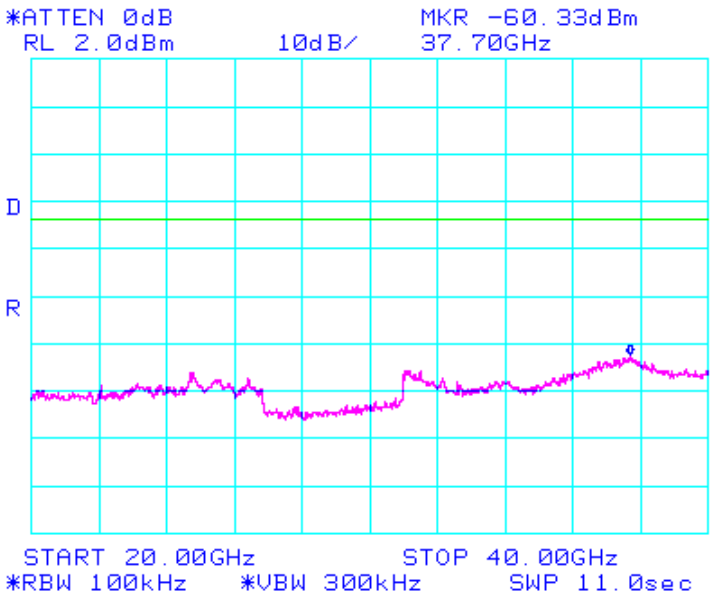
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



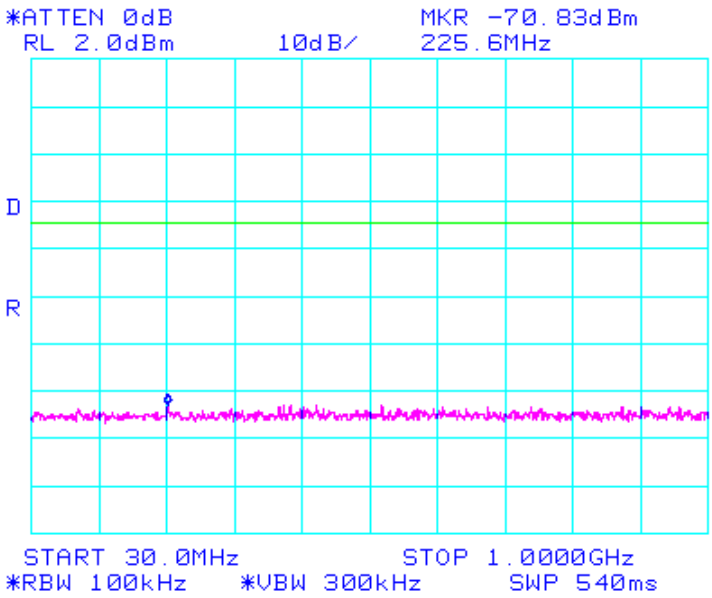

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



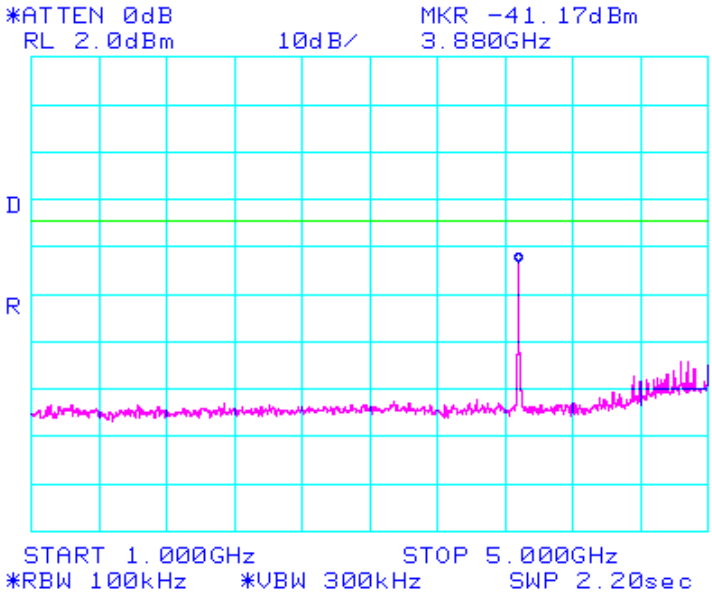
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



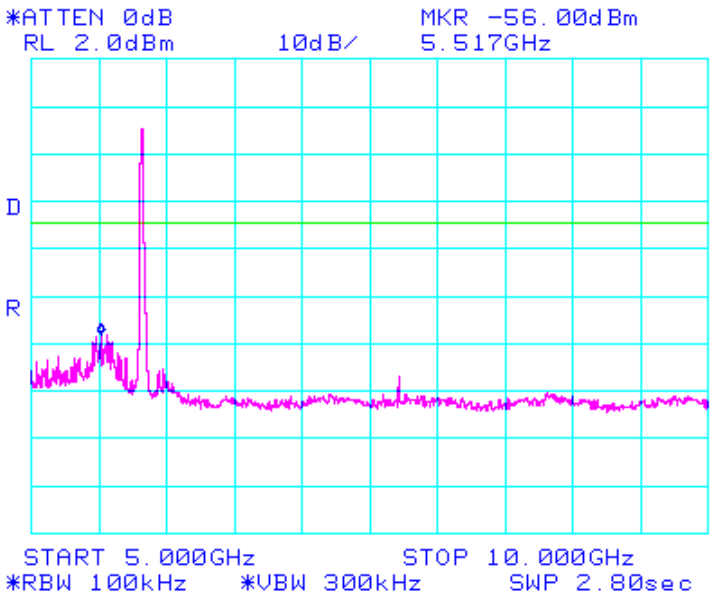

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



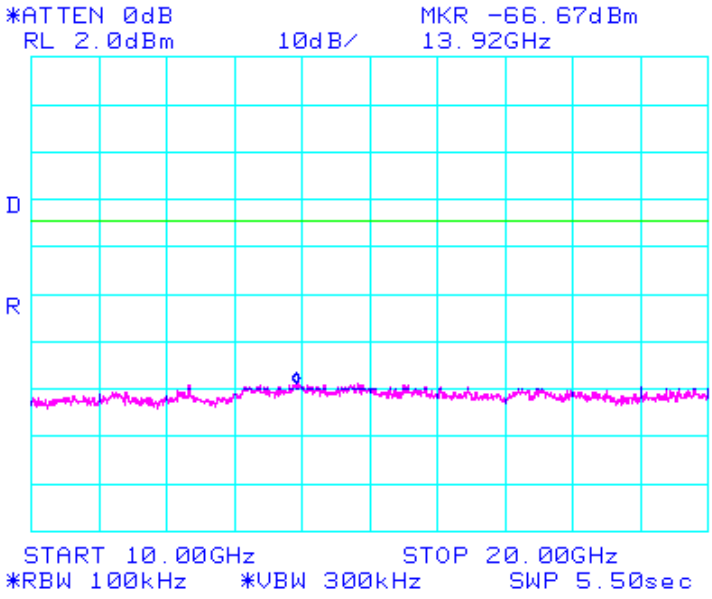
Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



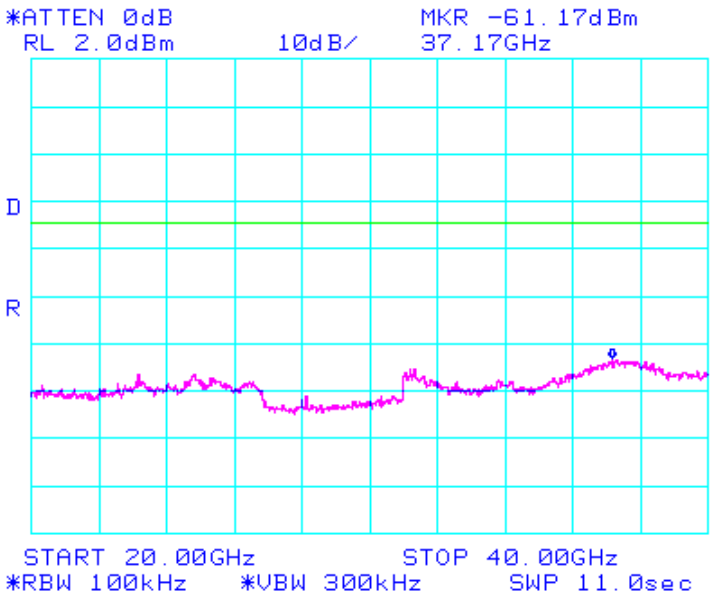

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



Conducted Out Of Band Emissions (Continued)

***802.11a Mode***

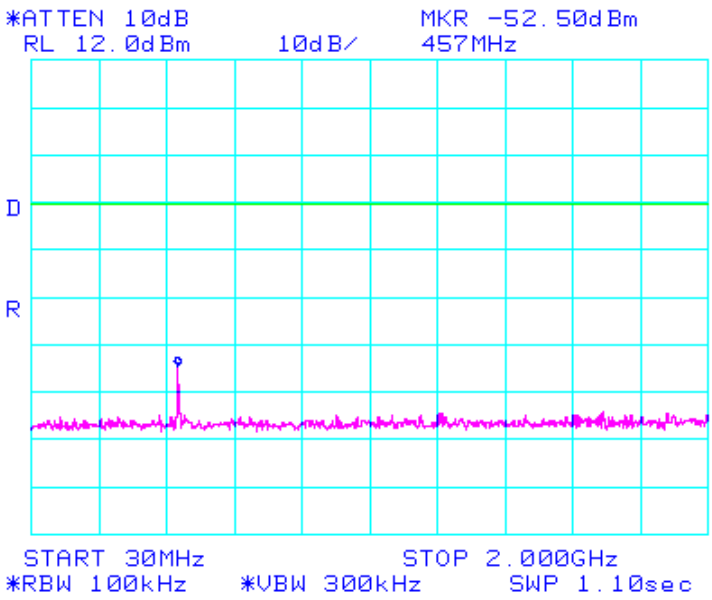
| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



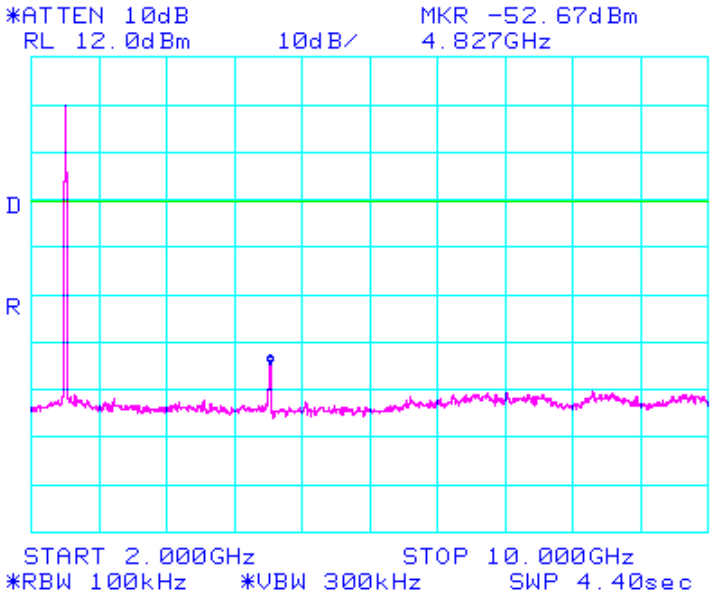
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



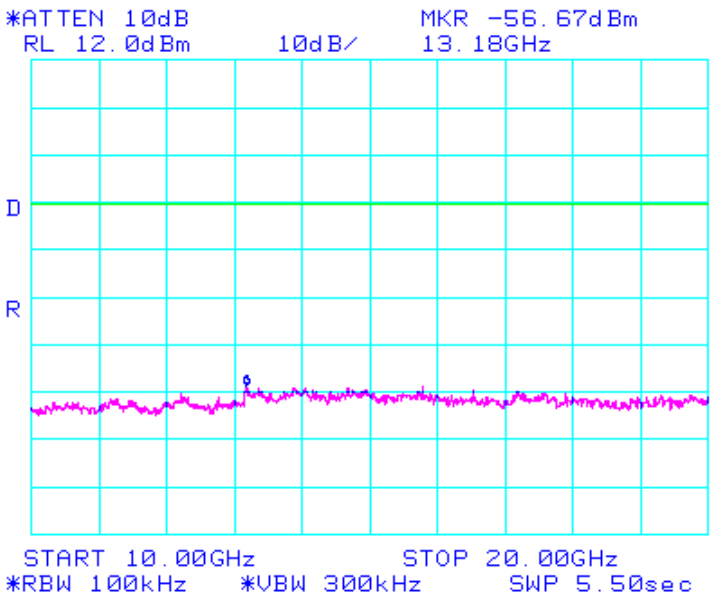

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



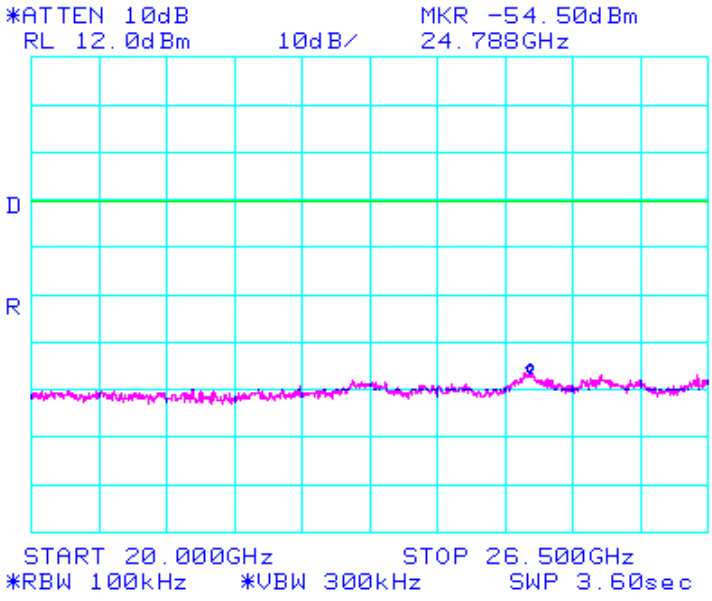
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



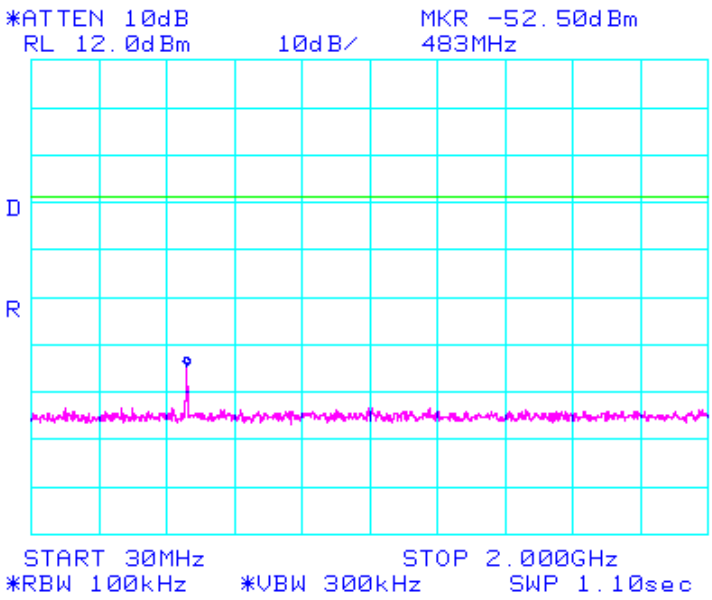

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



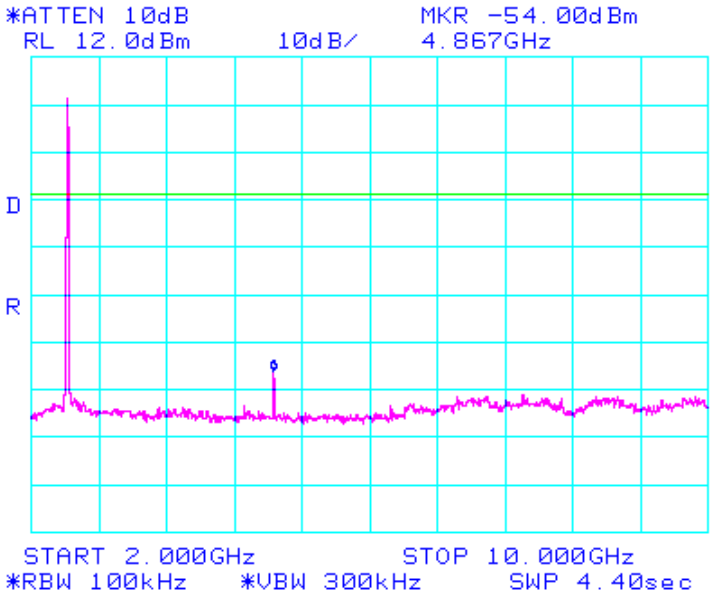
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



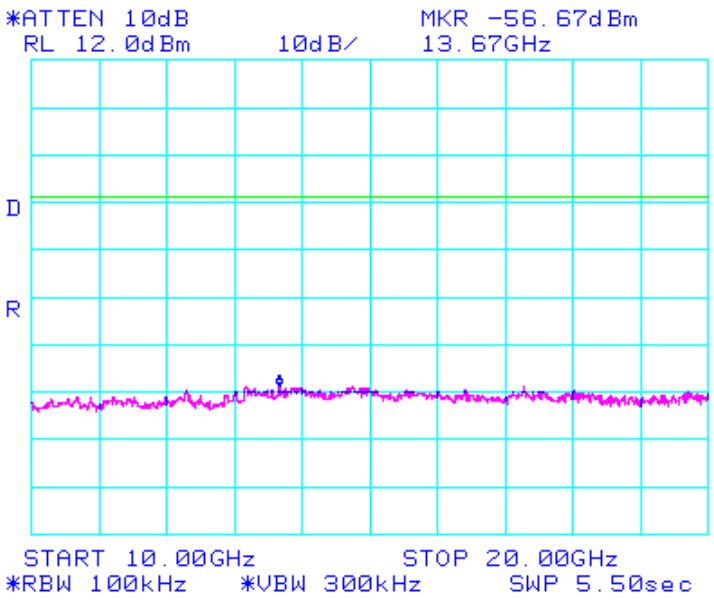

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



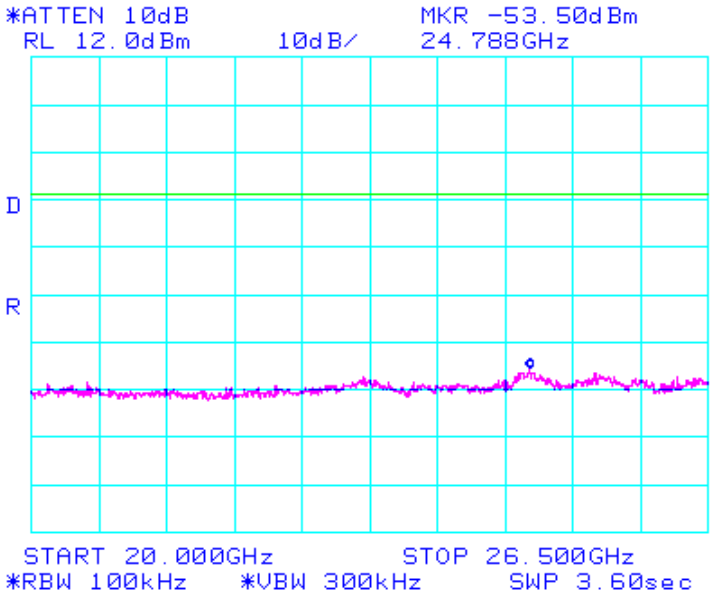
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



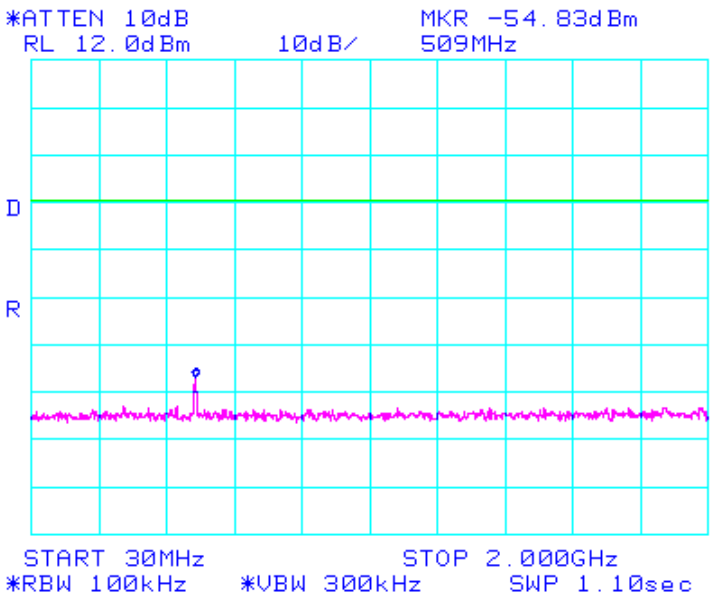

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



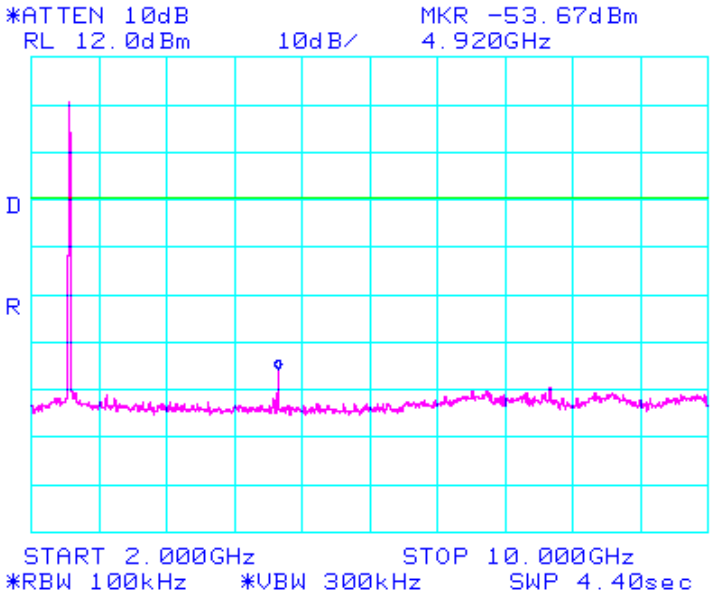
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



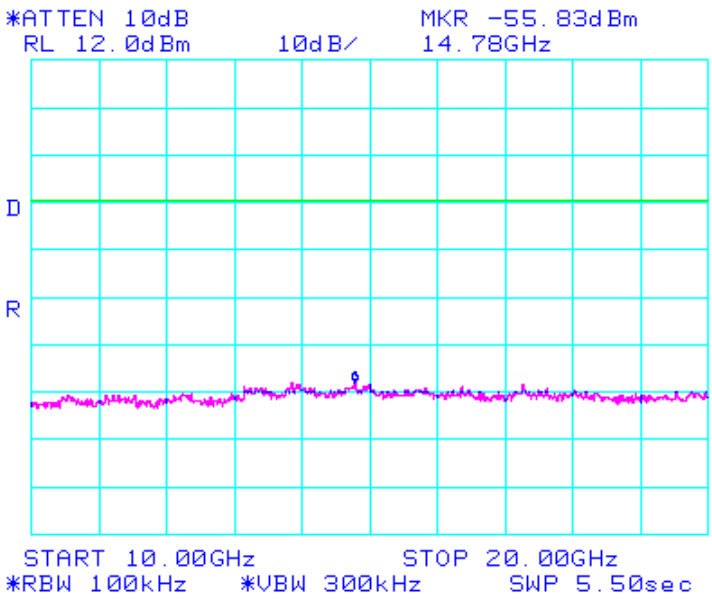

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



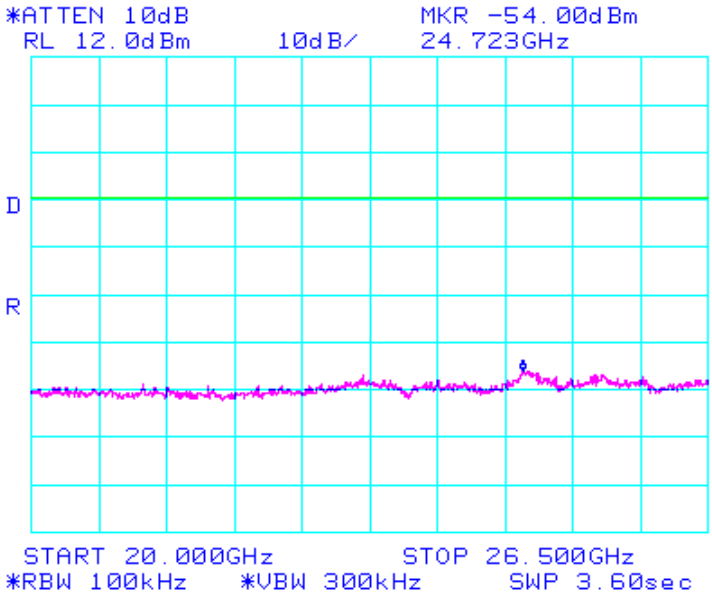
Conducted Out Of Band Emissions (Continued)

***802.11b Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



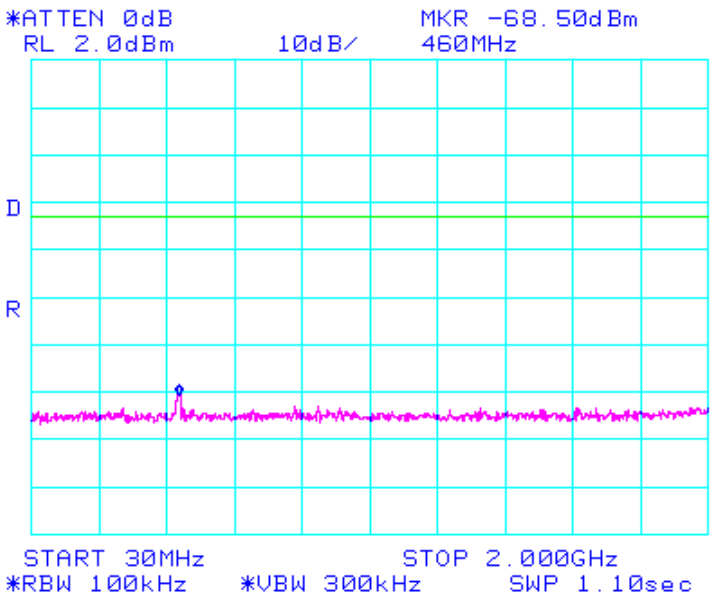

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



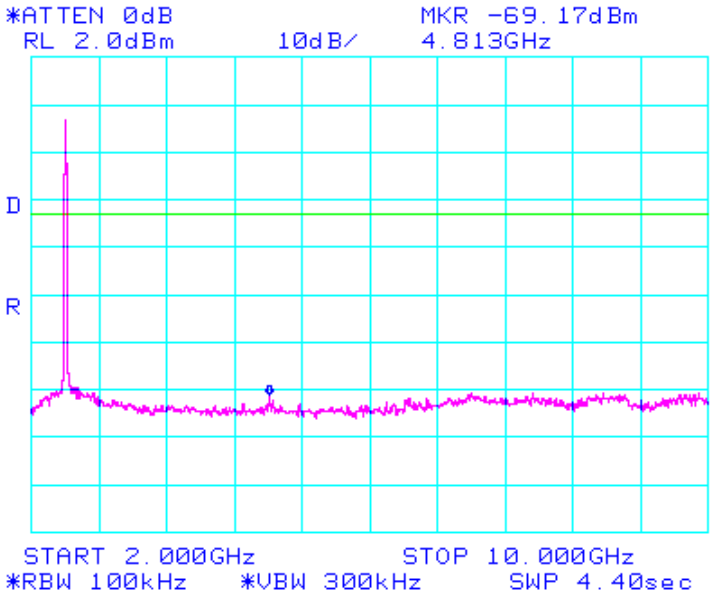
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



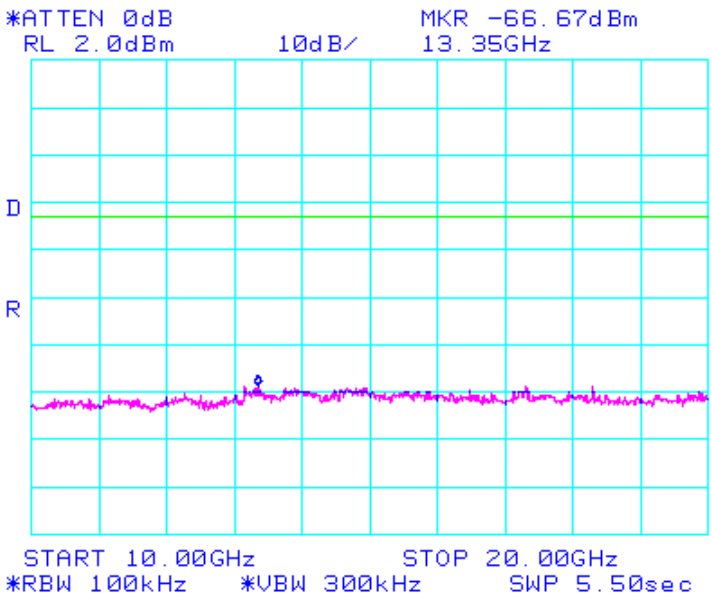

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



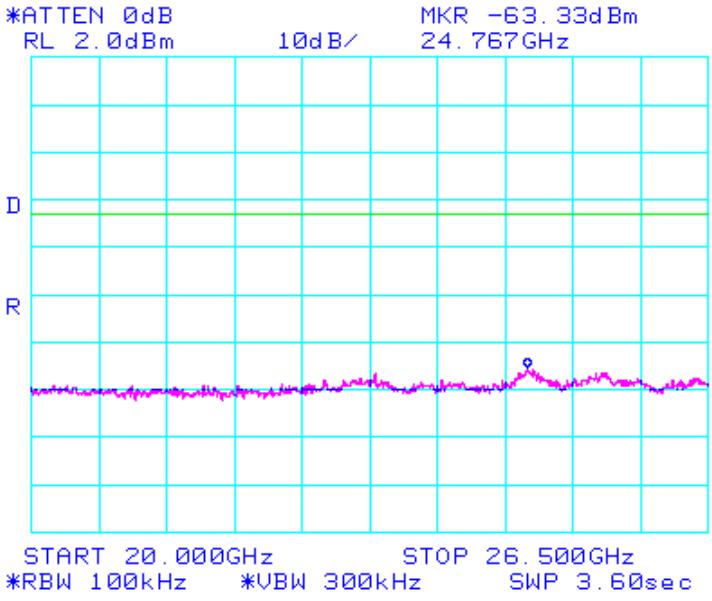
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



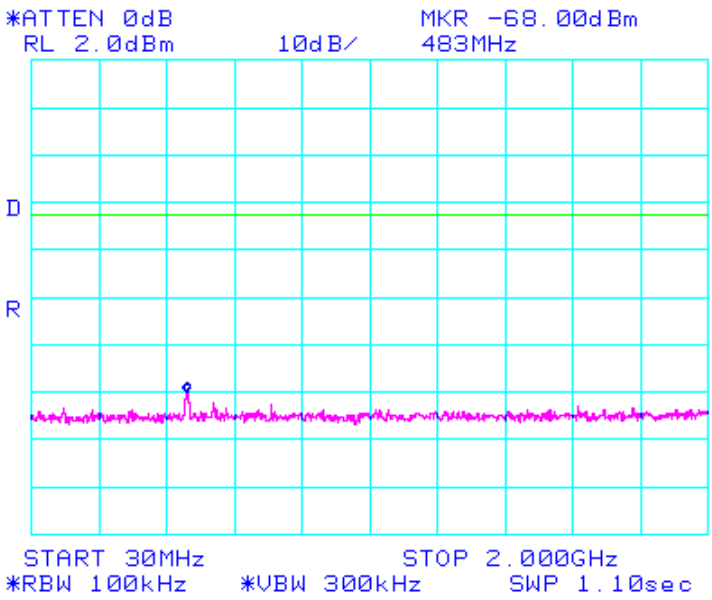

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



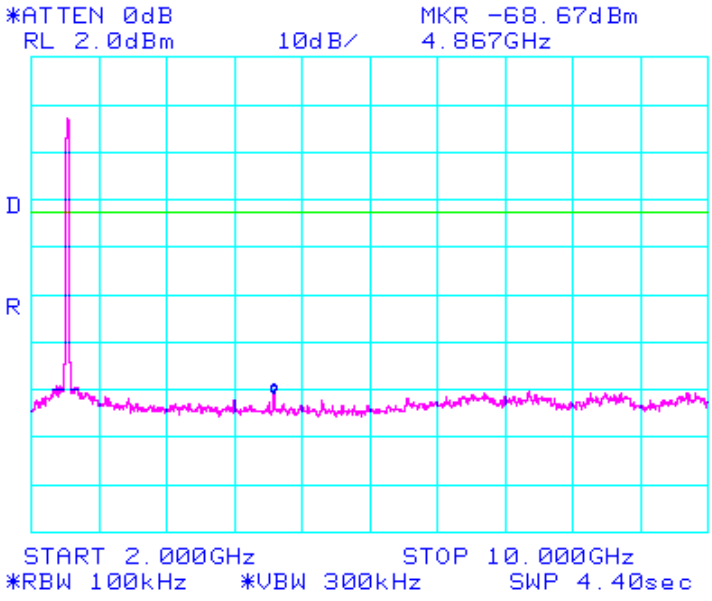
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



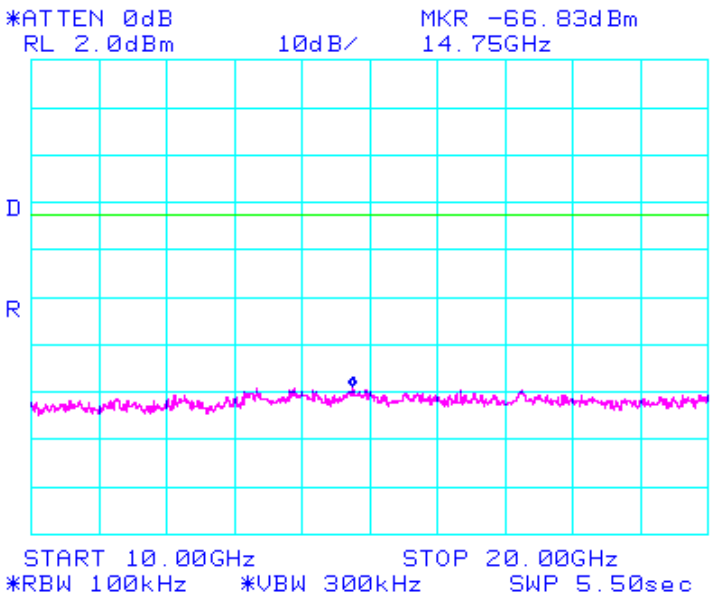

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



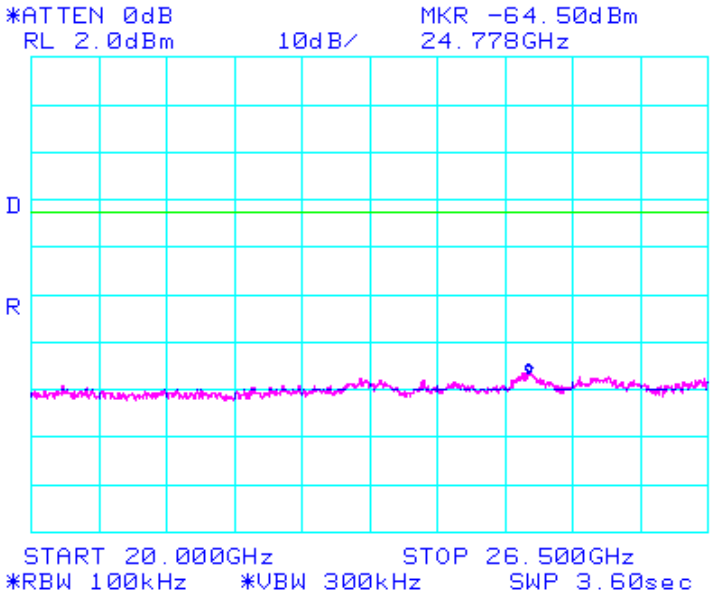
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



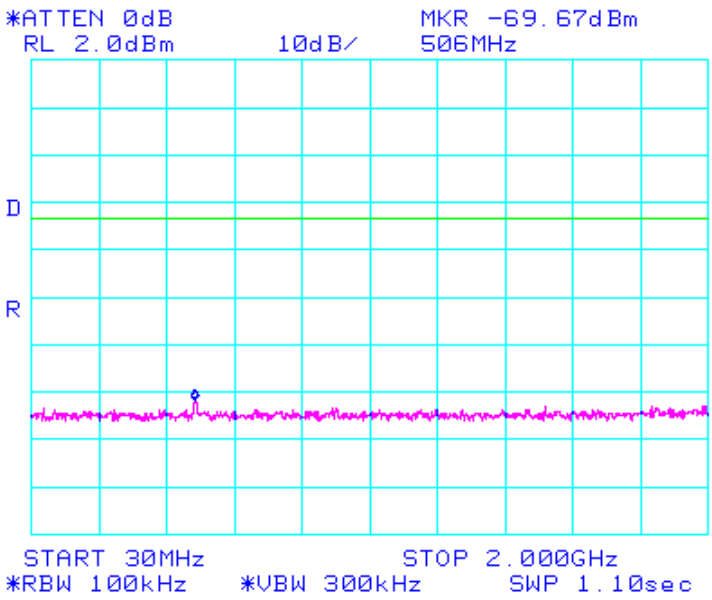

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



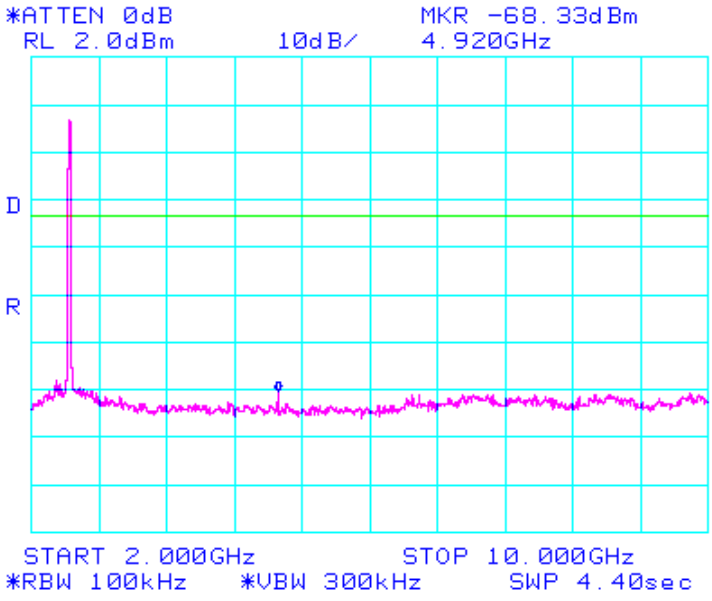
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



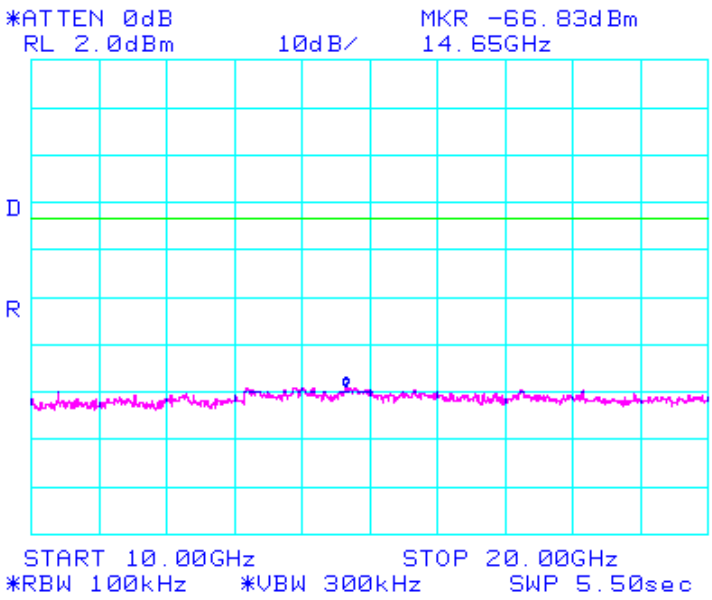

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



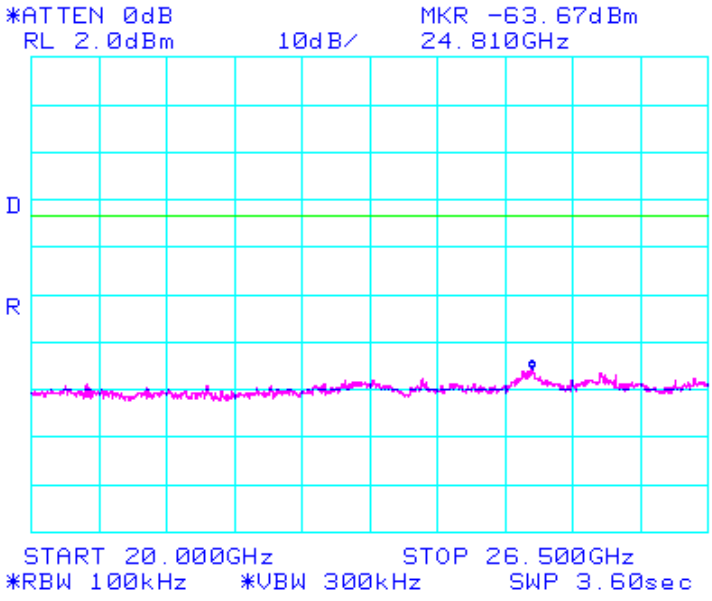
Conducted Out Of Band Emissions (Continued)

***802.11g Mode***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



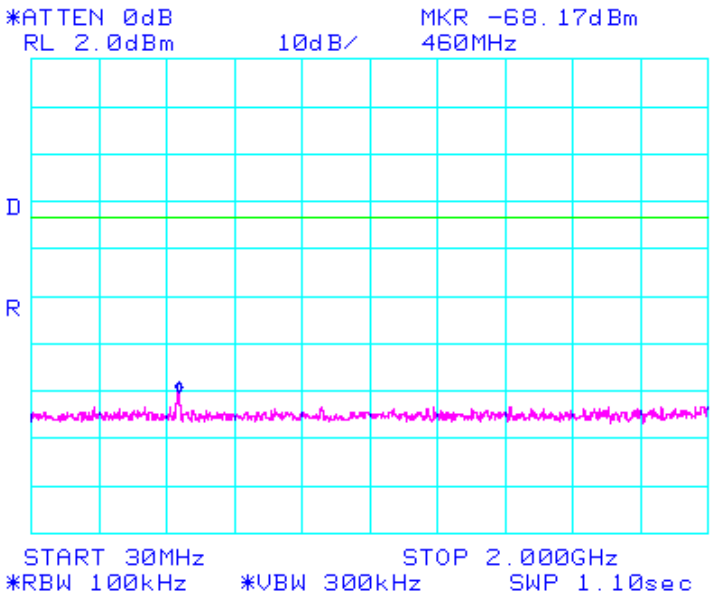

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



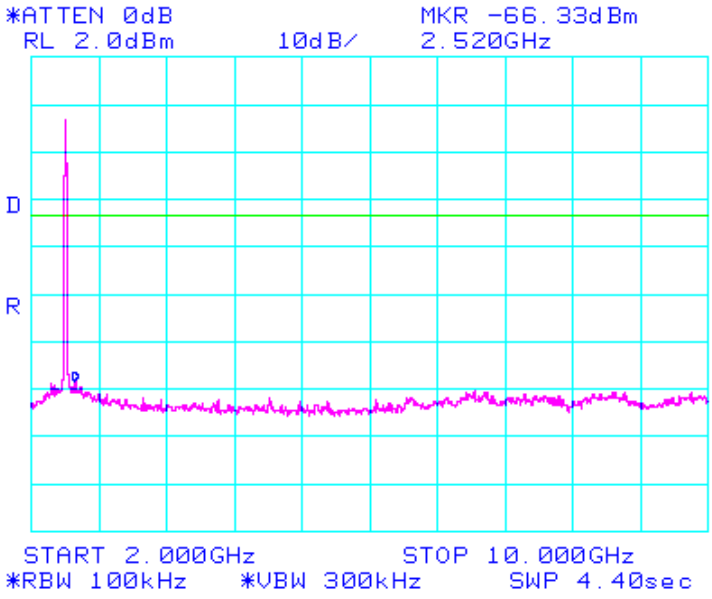
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



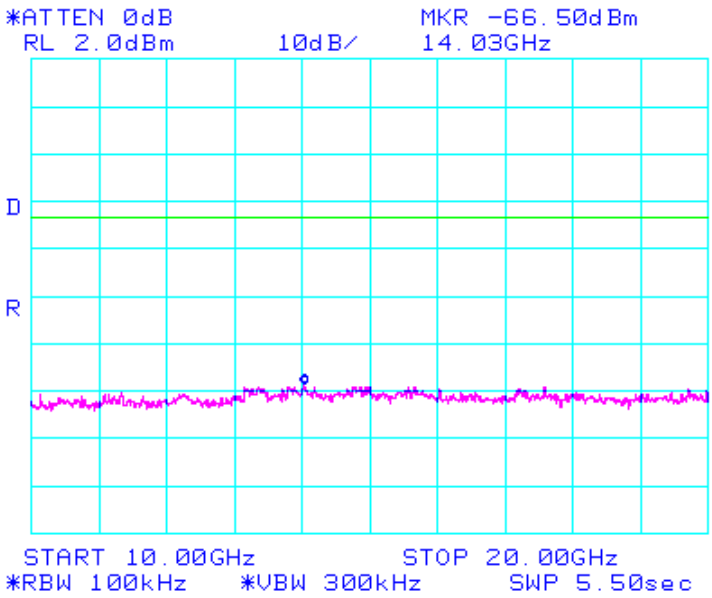

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



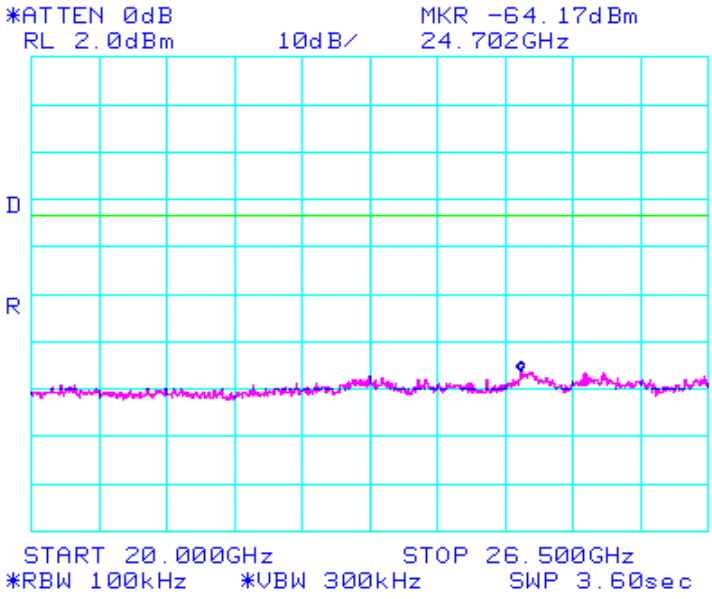
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



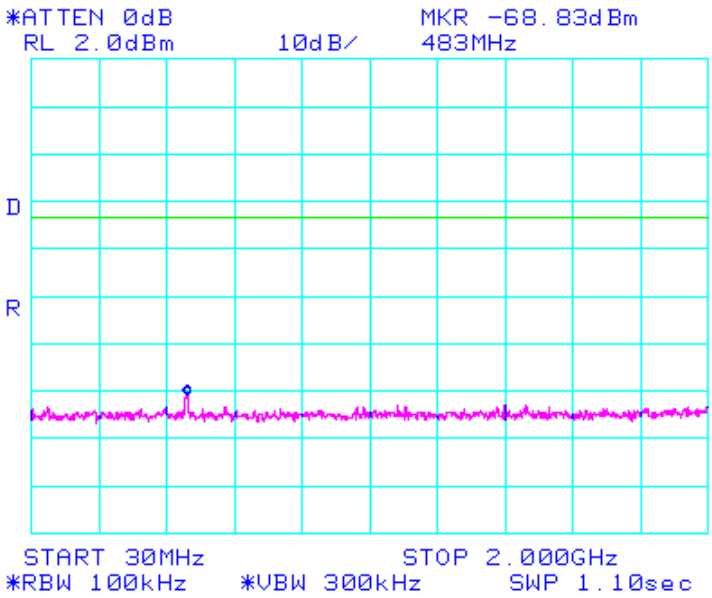

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.412 GHz | 2 | JC |



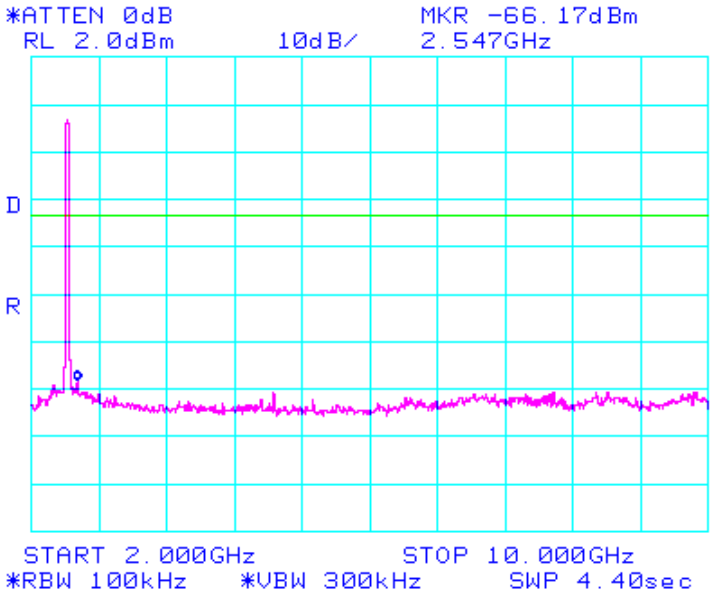
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



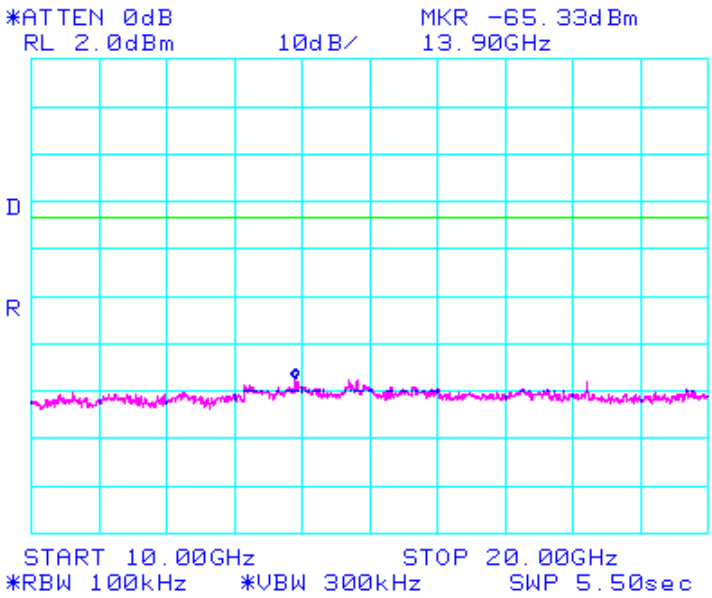

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



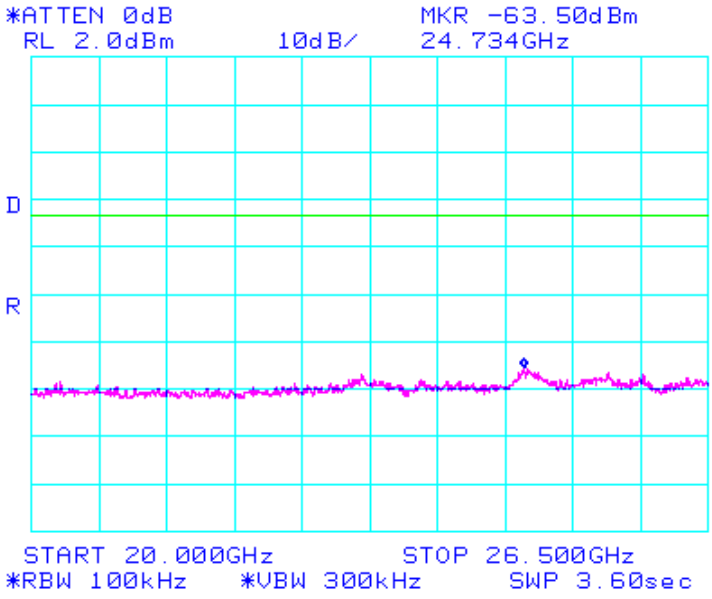
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



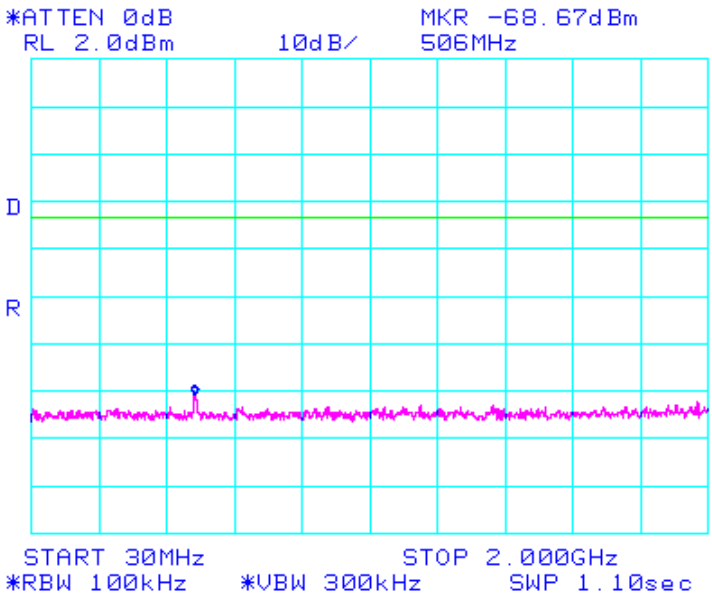

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.437 GHz | 2 | JC |



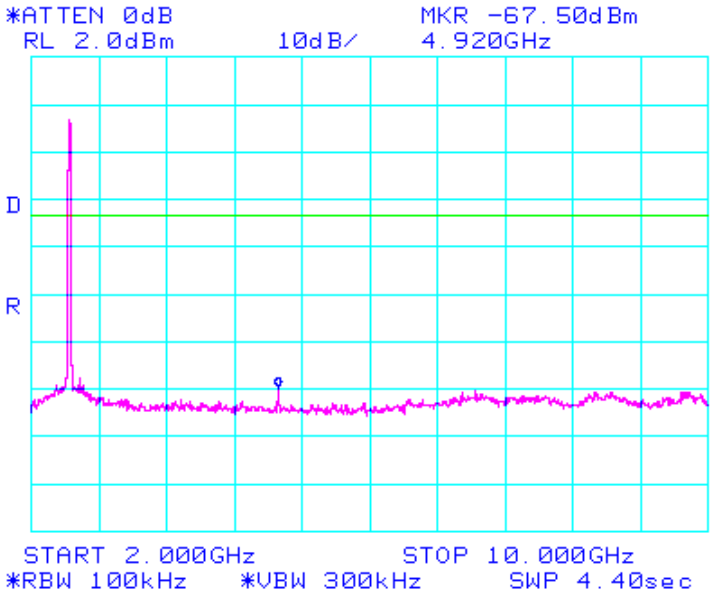
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



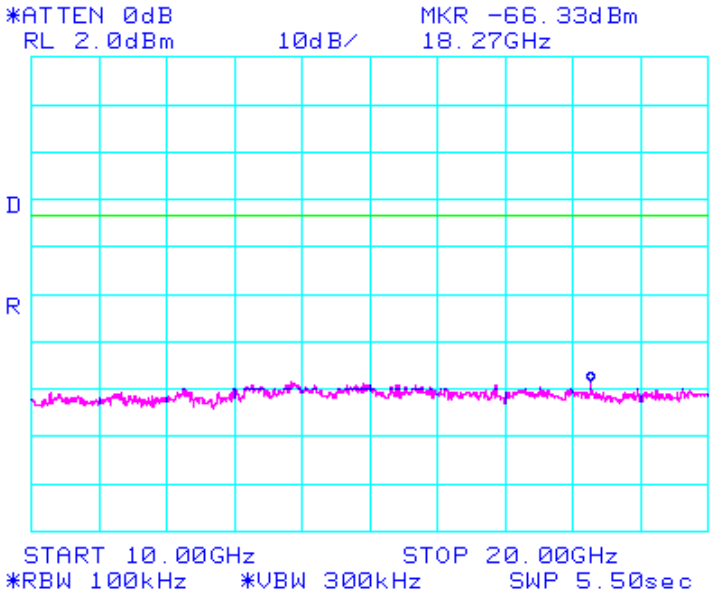

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



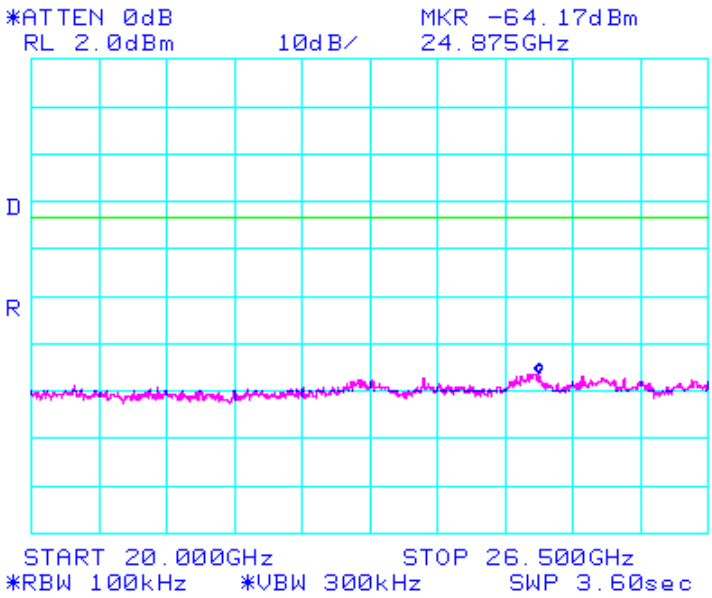
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 2.4GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



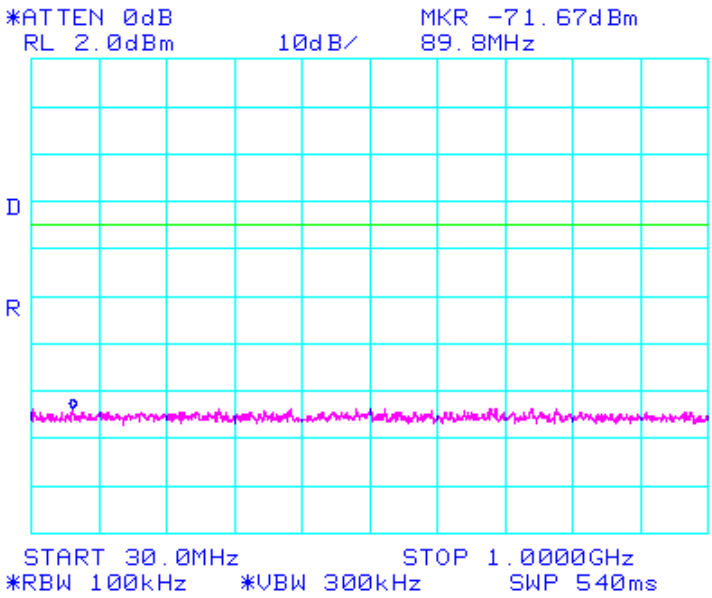

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 2.462 GHz | 2 | JC |



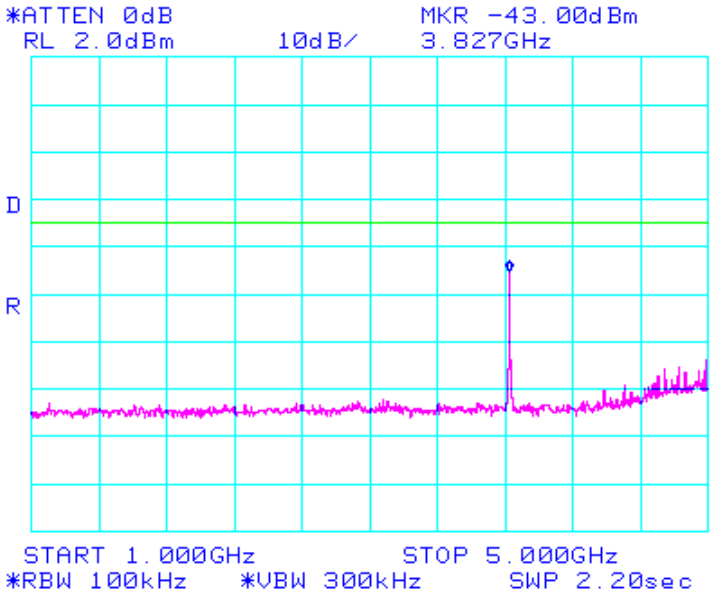
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



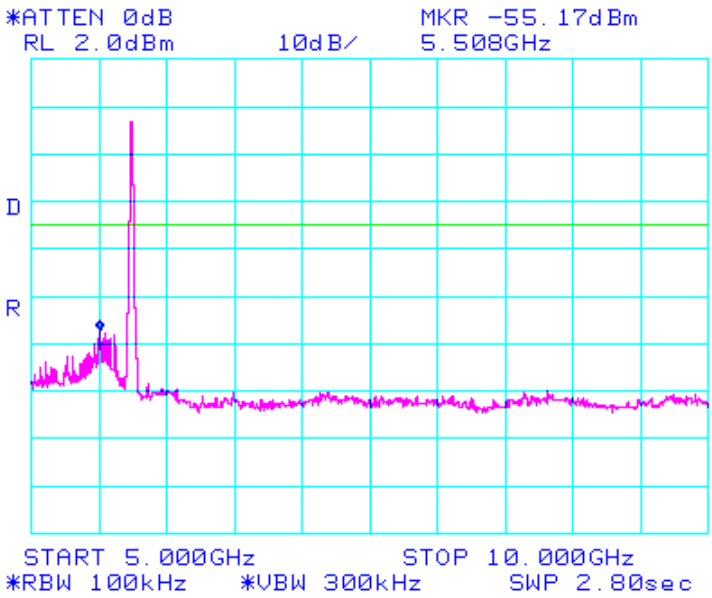

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



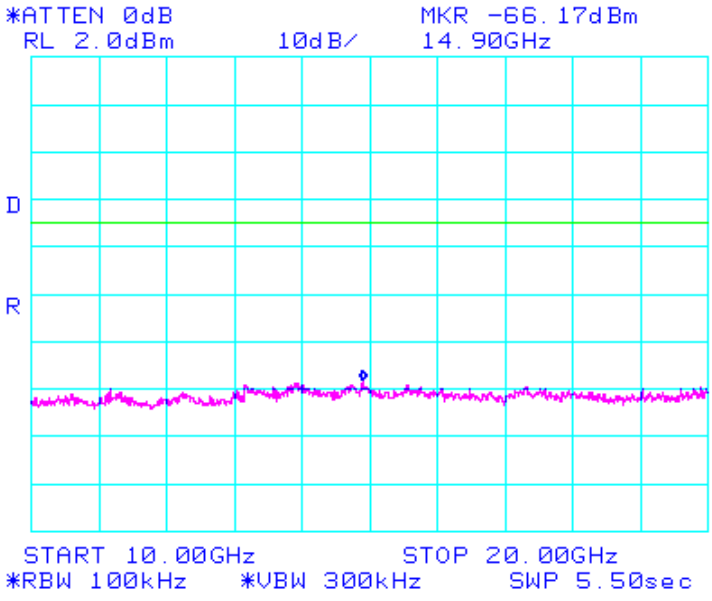
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



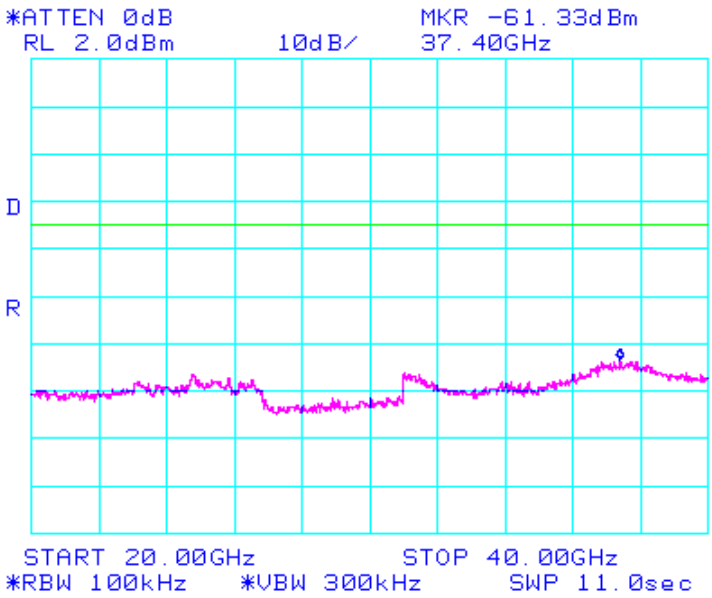

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



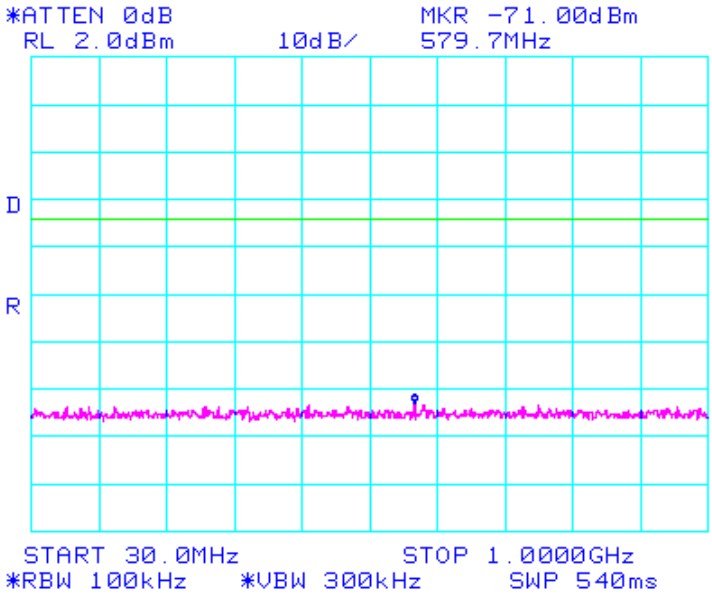
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.745 GHz | 2 | JC |



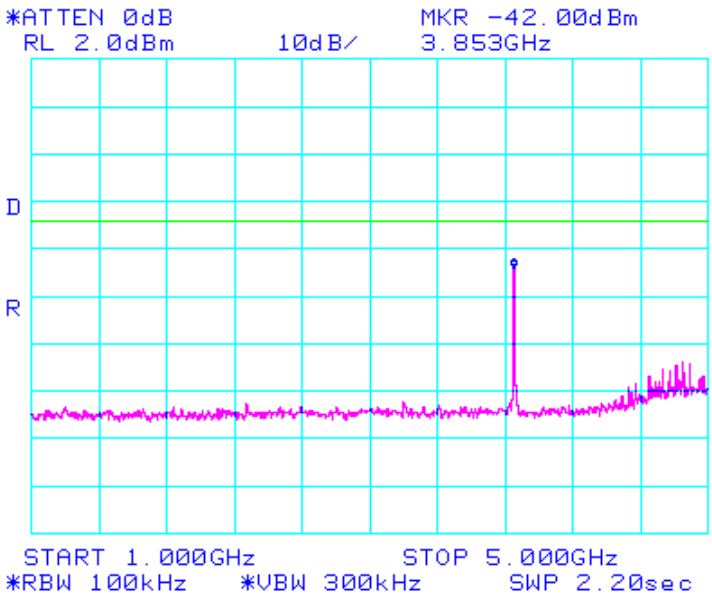

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



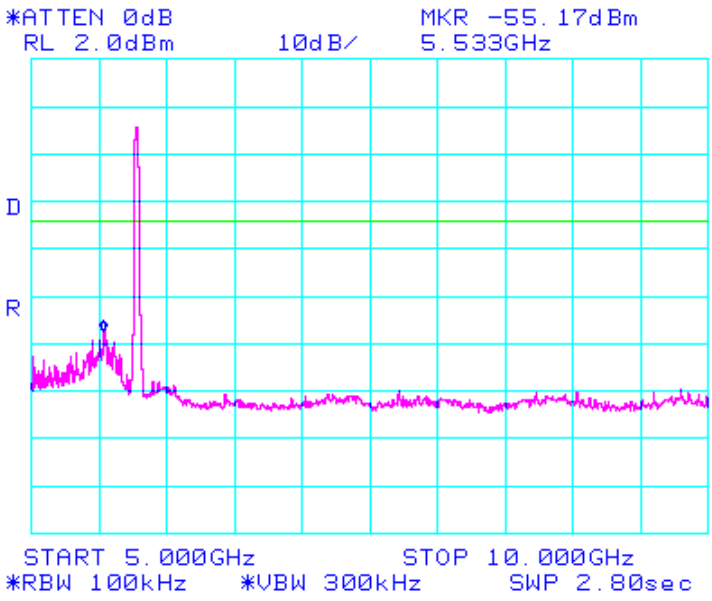
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



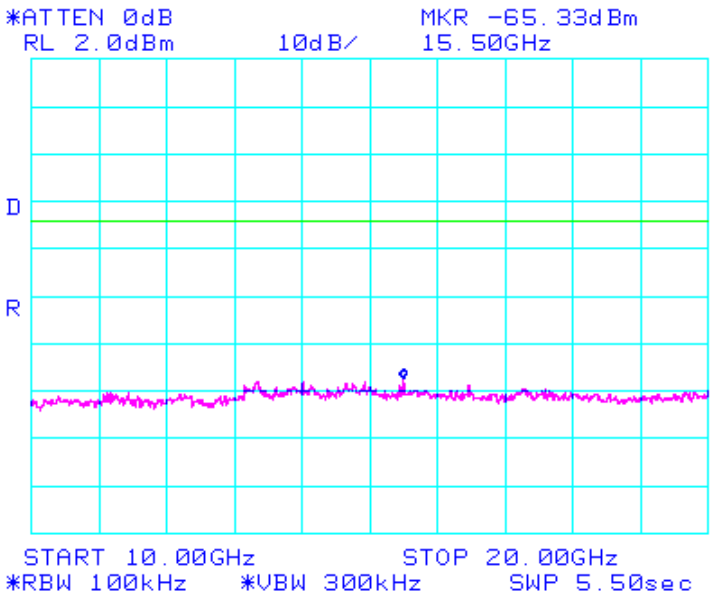

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



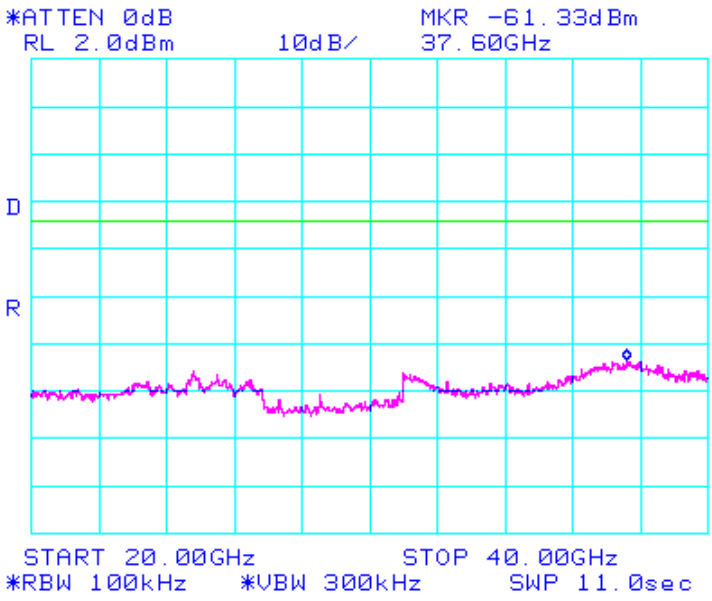
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



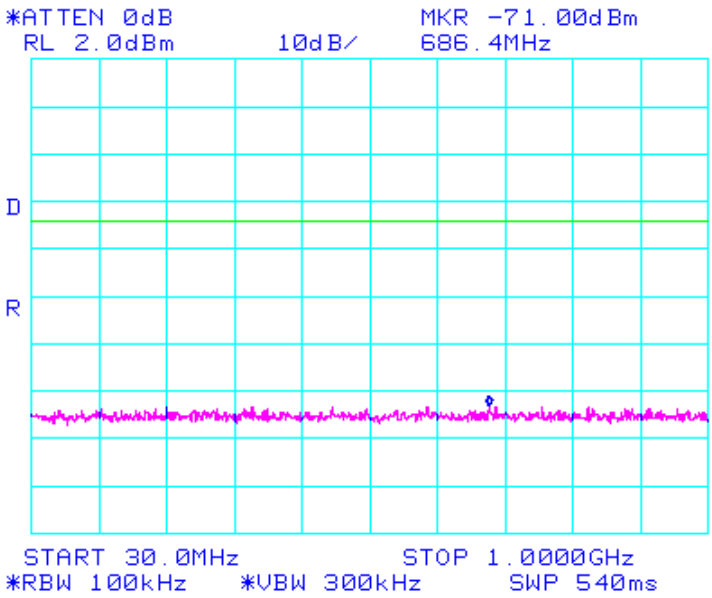

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.785 GHz | 2 | JC |



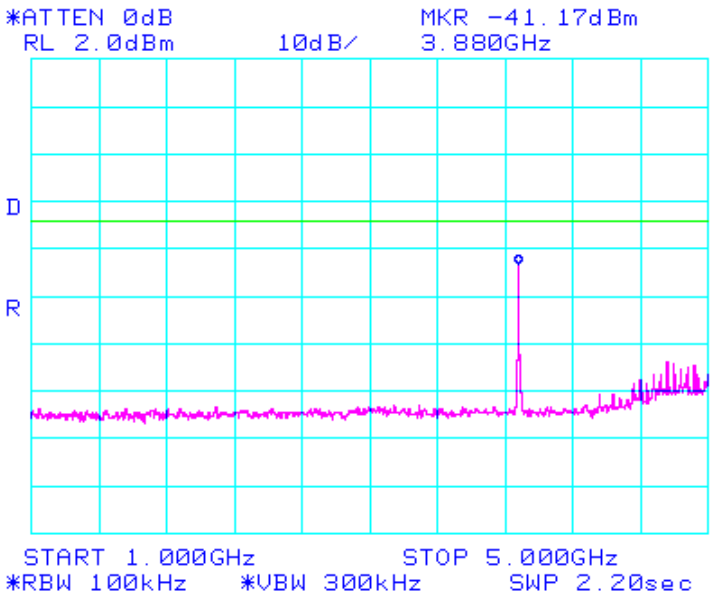
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



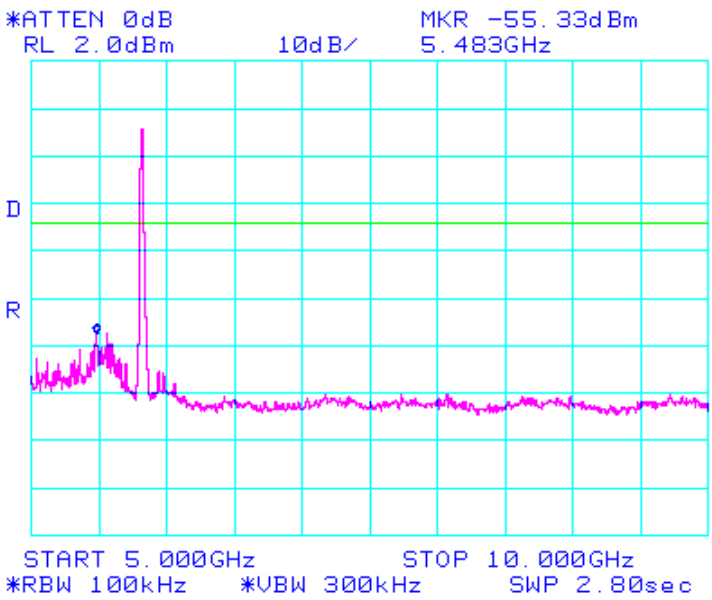

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



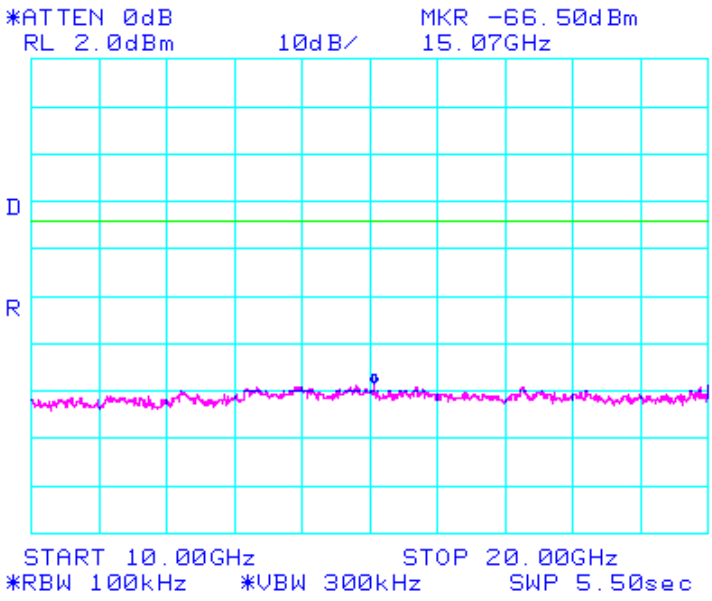
Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



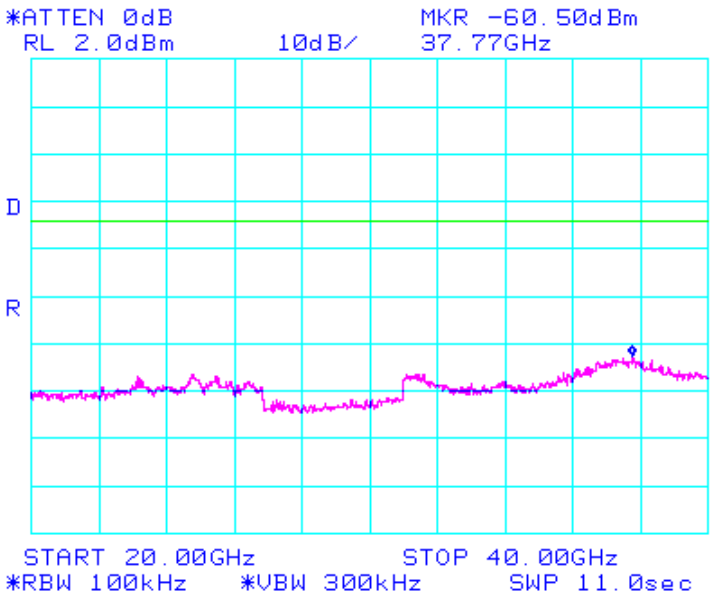

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



Conducted Out Of Band Emissions (Continued)

***802.11n Mode, 5GHz***

| *Test Date* | *Data* | *Antenna Port* | *Test Eng.* |
|---|---|---|---|
| 11/18/10 | 5.825 GHz | 2 | JC |



# APPENDIX B

## *MODIFICATIONS AND RECOMMENDATIONS*

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