

Awarepoint Corporation

Model: RM1
PN: 200239-01

Report No. AWAR0002 Rev 01

Report Prepared By



www.nwemc.com
1-888-EMI-CERT

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EMC Test Report



22975 NW Evergreen Parkway
Suite 400
Hillsboro, Oregon 97124

Certificate of Test
Last Date of Test: March 31, 2010
Awarepoint Corporation
Model: RM1 / PN: 200239-01

| Emissions | | | |
|----------------------------------|-----------------|------------------|-----------|
| Test Description | Specification | Test Method | Pass/Fail |
| Spurious Radiated Emissions | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Spurious Radiated Emissions | FCC 15.209:2010 | ANSI C63.10:2009 | Pass |
| Occupied Bandwidth | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Output Power | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Power Spectral Density | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| Band Edge Compliance | FCC 15.247:2010 | ANSI C63.10:2009 | Pass |
| AC Powerline Conducted Emissions | FCC 15.207:2010 | ANSI C63.10:2009 | Pass |

Modifications made to the product

See the Modifications section of this report

Test Facility

The measurement facility used to collect the data is located at:

Northwest EMC, Inc.
41 Tesla Ave.
Irvine, CA 92618

Phone: (503) 844-4066 Fax: 844-3826

This site has been fully described in a report filed with and accepted by the FCC (Federal Communications Commission) and Industry Canada (Site filing #2834B-2).

Approved By:

Don Facteau, IS Manager



NVLAP Lab Code: 200676-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government of the United States of America.

Product compliance is the responsibility of the client, therefore the tests and equipment modes of operation represented in this report were agreed upon by the client, prior to testing. This Report may only be duplicated in its entirety. The results of this test pertain only to the sample(s) tested. The specific description is noted in each of the individual sections of the test report supporting this certificate of test.

| Revision Number | Description | Date | Page Number |
|-----------------|-------------|------|-------------|
|-----------------|-------------|------|-------------|

| | | | |
|----|--|---------|----|
| 01 | Add configuration number | 5/18/10 | 37 |
| 01 | Delete reference to clocks/oscillators | 5/18/10 | 25 |

Barometric Pressure

The recorded barometric pressure has been normalized to sea level.



Accreditations and Authorizations

FCC

Accredited by NVLAP for performance of FCC radio, digital, and ISM device testing. Our Open Area Test Sites, certification chambers, and conducted measurement facilities have been fully described in reports filed with the FCC and accepted by the FCC in letters maintained in our files. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by the FCC as a Telecommunications Certification Body (TCB). This allows Northwest EMC to certify transmitters to FCC specifications in accordance with 47 CFR 2.960 and 2.962.



NVLAP

Northwest EMC, Inc. is accredited under the United States Department of Commerce, National Institute of Standards and Technology, and National Voluntary Laboratory Accreditation Program for satisfactory compliance with the requirements of ISO/IEC 17025 for Testing Laboratories. The NVLAP accreditation encompasses Electromagnetic Compatibility Testing in accordance with the European Union EMC Directive 2004/108/EC, and ANSI C63.4. Additionally, Northwest EMC is accredited by NVLAP to perform radio testing in accordance with the European Union R&TTE Directive 1999/5/EEC, the requirements of FCC, and the RSS radio standards for Industry Canada.



NVLAP LAB CODE 200629-0
NVLAP LAB CODE 200630-0
NVLAP LAB CODE 200676-0
NVLAP LAB CODE 200761-0
NVLAP LAB CODE 200881-0

Industry Canada

Accredited by NVLAP for performance of Industry Canada RSS and ICES testing. Our Open Area Test Sites and certification chambers comply with RSS-Gen, Issue 2 and have been filed with Industry Canada and accepted. Northwest EMC has been accredited by ANSI to ISO / IEC Guide 65 as a product certifier. We have been designated by NIST and recognized by Industry Canada as a Certification Body (CB) per the APEC Mutual Recognition Arrangement (MRA). This allows Northwest EMC to certify transmitters to Industry Canada technical requirements. (*Site Filing Numbers - Hillsboro: 2834D-1, 2834D-2, Sultan: 2834C-1, Irvine: 2834B-1, 2834B-2, Brooklyn Park: 2834E-1*)



CAB

Designated by NIST and validated by the European Commission as a Conformity Assessment Body (CAB) to conduct tests and approve products to the EMC directive and transmitters to the R&TTE directive, as described in the U.S. - EU Mutual Recognition Agreement.



NEMKO

Assessed and accredited by NEMKO (Norwegian testing and certification body) for European emissions and immunity testing. As a result of NEMKO's laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification (Authorization No. ELA 119).



Australia/New Zealand

The National Association of Testing Authorities (NATA), Australia has been appointed by the ACA as an accreditation body to accredit test laboratories and competent bodies for EMC standards. Accredited test reports or assessments by competent bodies must carry the NATA logo. Test reports made by an overseas laboratory that has been accredited for the relevant standards by an overseas accreditation body that has a Mutual Recognition Agreement (MRA) with NATA are also accepted as technical grounds for product conformity. The report should be endorsed with the respective logo of the accreditation body (NVLAP).



VCCI

Accepted as an Associate Member to the VCCI, Acceptance No. 564. Conducted and radiated measurement facilities have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. (Registration Numbers. - Hillsboro: C-1071, R-1025, G-84, C-2687, T-1658, and R-2318, Irvine: R-1943, G-85, C-2766, and T-1659, Sultan: R-871, G-83, C-1784, and T-1511, Brooklyn Park: R-3125, G-86, G-141, C-3464, and T-1634).



BSMI

Northwest EMC has been designated by NIST and validated by C-Taipei (BSMI) as a CAB to conduct tests as described in the APEC Mutual Recognition Agreement (US0017). License No.SL2-IN-E-1017.



GOST

Northwest EMC, Inc. has been assessed and accredited by the Russian Certification bodies Certinform VNIINMASH, CERTINFO, SAMTES, and Federal CHEC, to perform EMC and Hygienic testing for Information Technology Products. As a result of their laboratory assessment, they will accept test results from Northwest EMC, Inc. for product certification



KCC

Northwest EMC, Inc is a CAB designated by MRA partners and recognized by Korea. (Assigned Lab Numbers: Hillsboro: US0017, Irvine: US0158, Sultan: US0157)



VIETNAM

Vietnam MIC has approved Northwest EMC as an accredited test lab. Per Decision No. 194/QD-QLCL (dated December 15, 2009), Northwest EMC test reports can be used for Vietnam approval submissions.



SCOPE

For details on the Scopes of our Accreditations, please visit:

<http://www.nwemc.com/accreditations/>

How important is it to understand performance criteria?

It is the responsibility of the test laboratory to observe the results of the tests that are performed and to accurately report those results. As the responsible party (manufacturer, importer, etc) it is your responsibility to take those results, compare them against the specifications and standards, then, if appropriate make a declaration of conformity. As the responsible party it makes sense that you are fully aware of the requirements, how your device performs when tested to those requirements, and what information is being used to declare conformity.

To better assist you in making those conformity decisions, Northwest EMC has adopted a very simple, yet very clear performance assessment procedure. The following criteria is used when performing immunity or susceptibility tests:

Performance Criteria 1:

- ❑ The EUT exhibited no change in performance when operating as specified by the manufacturer. In this case no changes were observed during the test.
- ❑ In most cases this would be equivalent to Performance Criteria A. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, no changes were observed. Basically nothing happened.

Performance Criteria 2:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment recovered without any operator intervention, once the test signal was removed. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria B. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT was able to recover from those changes without any operator intervention, once the test signal was removed.

Performance Criteria 3:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment required some operator intervention in order to recover. This intervention may be in the form of changing EUT settings, or even resetting the system. The data sheets will detail the exact phenomena observed.
- ❑ In most cases this would be equivalent to Performance Criteria C. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. The EUT required some sort of operator intervention to recover. There was no permanent damage and the EUT appeared to function normally after completion of test.

Performance Criteria 4:

- ❑ The EUT exhibited a change in performance when operating as specified by the manufacturer. In this case the equipment was damaged and would not recover. The data sheets will detail the exact phenomena observed.
- ❑ In most cases there is no specific criterion to compare this to; it typically ends the test. When operating the equipment in the modes or configurations specified by the responsible party, monitoring the parameters specified, changes were observed. There was no recovery; the equipment would no longer function as intended.



Northwest EMC Locations



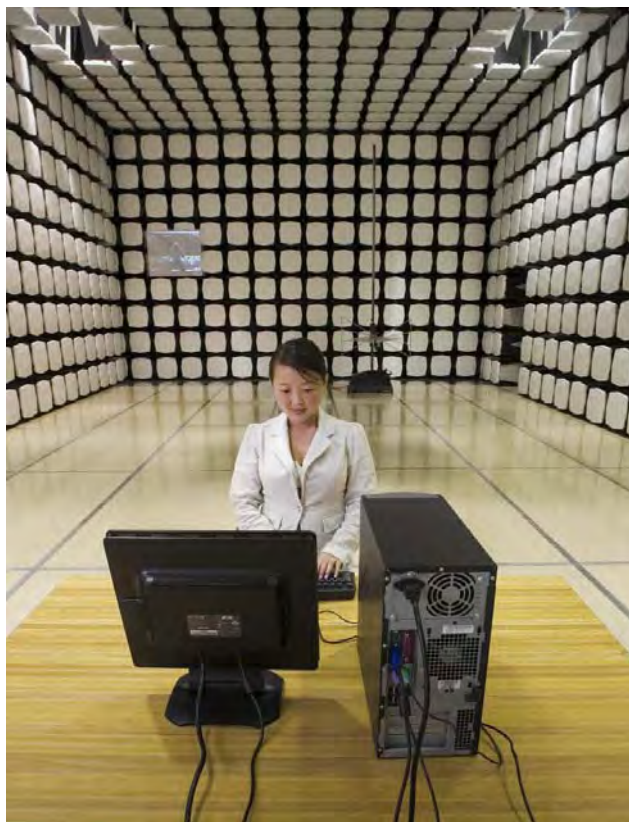
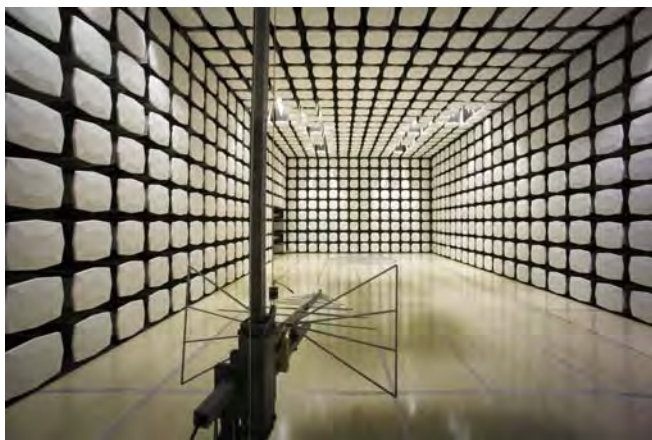
Oregon
Labs EV01-EV12
22975 NW Evergreen Pkwy
Suite 400
Hillsboro, OR 97124
(503) 844-4066

California
Labs OC01-OC13
41 Tesla
Irvine, CA 92618
(949) 861-8918

Minnesota
Labs MN01-MN08
9349 W Broadway Ave.
Brooklyn Park,
MN 55445
(763) 425-2281

Washington
Labs SU01-SU07
14128 339th Ave. SE
Sultan, WA 98294
(360) 793-8675

New York
Labs WA01-WA04
4939 Jordan Rd.
Elbridge, NY 13060
(315) 685-0796



Party Requesting the Test

| | |
|---------------------------------|-----------------------------|
| Company Name: | Awarepoint Corporation |
| Address: | 225 Broadway Ave Suite 1670 |
| City, State, Zip: | San Diego, CA 92101 |
| Test Requested By: | Eric Hoffman |
| Model: | RM1 / PN: 200239-01 |
| First Date of Test: | March 29, 2010 |
| Last Date of Test: | March 31, 2010 |
| Receipt Date of Samples: | March 29, 2010 |
| Equipment Design Stage: | Production |
| Equipment Condition: | No Damage |

Information Provided by the Party Requesting the Test

Functional Description of the EUT (Equipment Under Test):

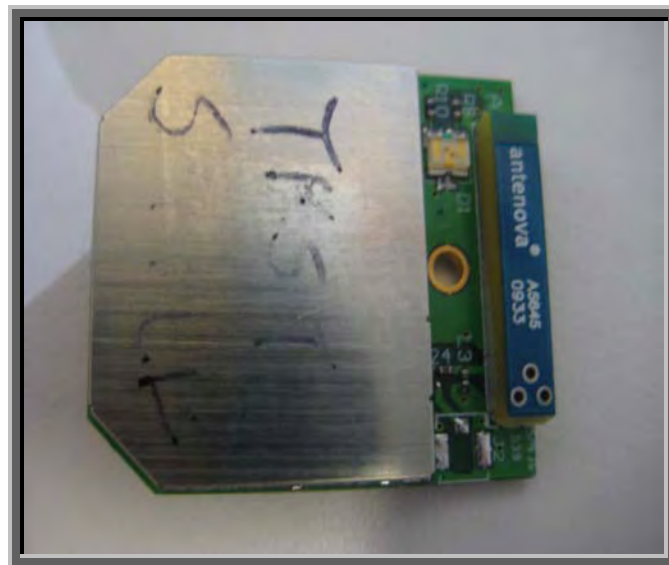
2.4 GHz DTS transmitter

Testing Objective:

Demonstrate compliance of the device to FCC 15.247 requirements.

EUT Photo





CONFIGURATION 1 AWAR0002

| EUT | | | |
|---------------------|---------------------|--------------------------|----------------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| 2.4GHz Zigbee Radio | Awarepoint | RM1 / PN: 200239-01 | 01034100515 |

CONFIGURATION 2 AWAR0002

| EUT | | | |
|---------------------|---------------------|--------------------------|----------------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| 2.4GHz Zigbee Radio | Awarepoint | RM1 / PN: 200239-01 | 01034100515 |

| Peripherals in test setup boundary | | | |
|---|---------------------|--------------------------|----------------------|
| Description | Manufacturer | Model/Part Number | Serial Number |
| AC-DC supply | Panasonic | RD-9443HA | Unknown |

| Cables | | | | | |
|---|---------------|-------------------|----------------|---------------------|---------------------|
| Cable Type | Shield | Length (m) | Ferrite | Connection 1 | Connection 2 |
| DC Cable | No | 1.8m | No | EUT | AC Mains |
| PA = Cable is permanently attached to the device. Shielding and/or presence of ferrite may be unknown. | | | | | |

| Equipment modifications | | | | | |
|-------------------------|-----------|----------------------------------|--------------------------------------|---|---|
| Item | Date | Test | Modification | Note | Disposition of EUT |
| 1 | 3/29/2010 | Spurious Radiated Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 2 | 3/30/2010 | Power Spectral Density | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 3 | 3/30/2010 | Band Edge Compliance | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 4 | 3/30/2010 | Occupied Bandwidth | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 5 | 3/30/2010 | Output Power | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | EUT remained at Northwest EMC following the test. |
| 6 | 3/31/2010 | AC Powerline Conducted Emissions | Tested as delivered to Test Station. | No EMI suppression devices were added or modified during this test. | Scheduled testing was completed. |

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

| TEST EQUIPMENT | | | | | |
|-------------------|--------------|------------------|-----|-----------|----------|
| Description | Manufacturer | Model | ID | Last Cal. | Interval |
| Antenna, Horn | EMCO | 3115 | AHB | 9/11/2009 | 24 |
| OC11 Cables | None | 1-8GHz RE Cables | OCR | 3/12/2009 | 13 |
| Spectrum Analyzer | Agilent | E4440A | AFA | 2/9/2010 | 13 |

MEASUREMENT UNCERTAINTY


A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.

TEST DESCRIPTION

The occupied bandwidth was measured with the EUT set to low, medium, and high transmit frequencies. The measurement was made in a radiated configuration in a semi-anechoic chamber with the fundamental of the carrier full maximized for its highest radiated power. The EUT was transmitting at its maximum data rate with the typical modulation and a test duty cycle.

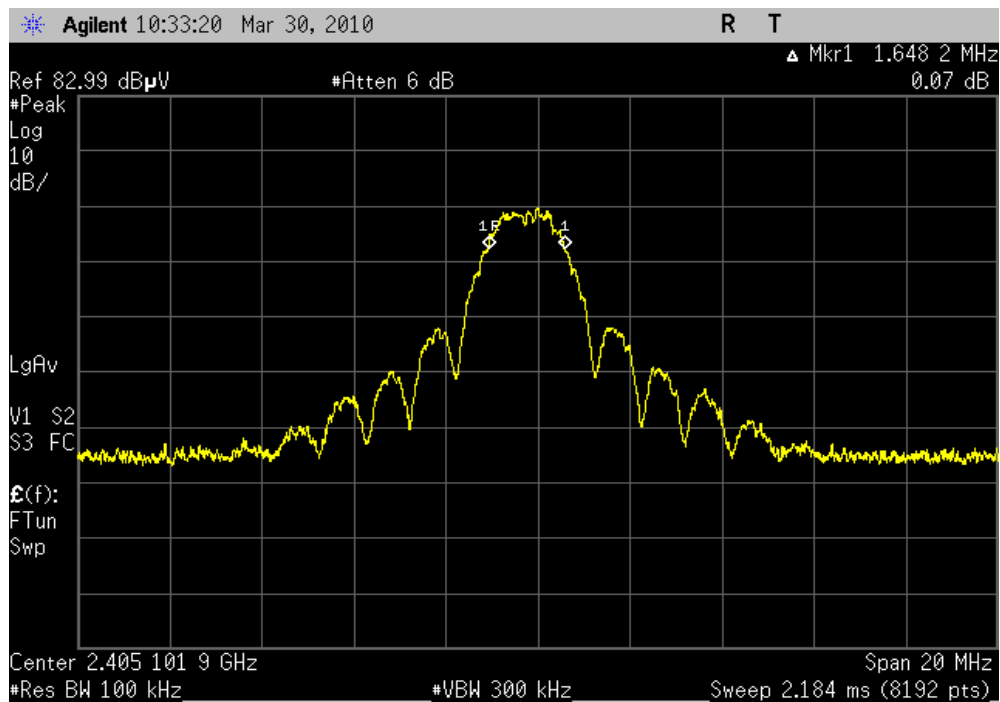
EMC

Occupied Bandwidth

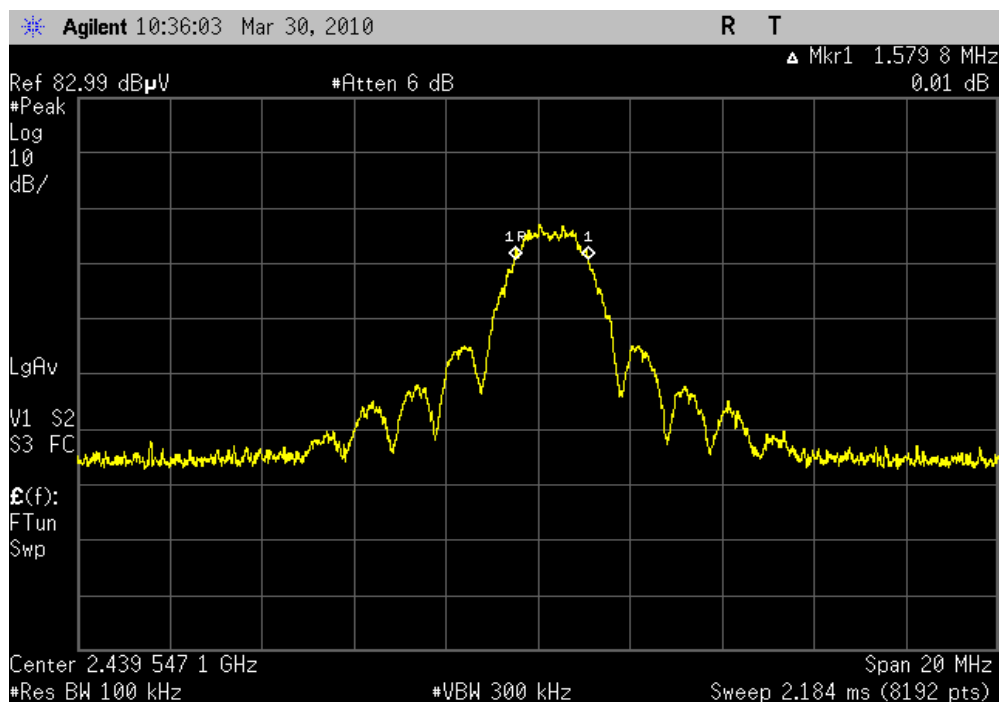
| | | | |
|--------------------------------------|---|--|----------------|
| EUT: Model: RM1 / PN: 200239-01 | | Work Order: AWAR0002 | |
| Serial Number: 01034100515 | | Date: 03/30/10 | |
| Customer: Awarepoint Corporation | | Temperature: 19C°C | |
| Attendees: Eric Hoffman | | Humidity: 30% | |
| Project: None | | Barometric Pres.: 1016mb | |
| Tested by: Jeremiah Darden | | Power: 120V/60Hz | Job Site: OC11 |
| TEST SPECIFICATIONS | | | |
| FCC 15.247:2010 | | Test Method ANSI C63.10:2009 | |
| COMMENTS | | | |
| None | | | |
| DEVIATIONS FROM TEST STANDARD | | | |
| No Deviations | | | |
| Configuration # | 1 | Signature  | |
| | | Value | Limit |
| Low 2405 MHz | | 1.648 MHz | >= 500 kHz |
| Mid 2440 MHz | | 1.579 MHz | >= 500 kHz |
| High 2475 MHz | | 1.602 MHz | >= 500 kHz |
| | | | Results |
| | | | Pass |
| | | | Pass |
| | | | Pass |

Occupied Bandwidth

| Low | | |
|--------------|------------------|-----------------------|
| Result: Pass | Value: 1.648 MHz | Limit: ≥ 500 kHz |



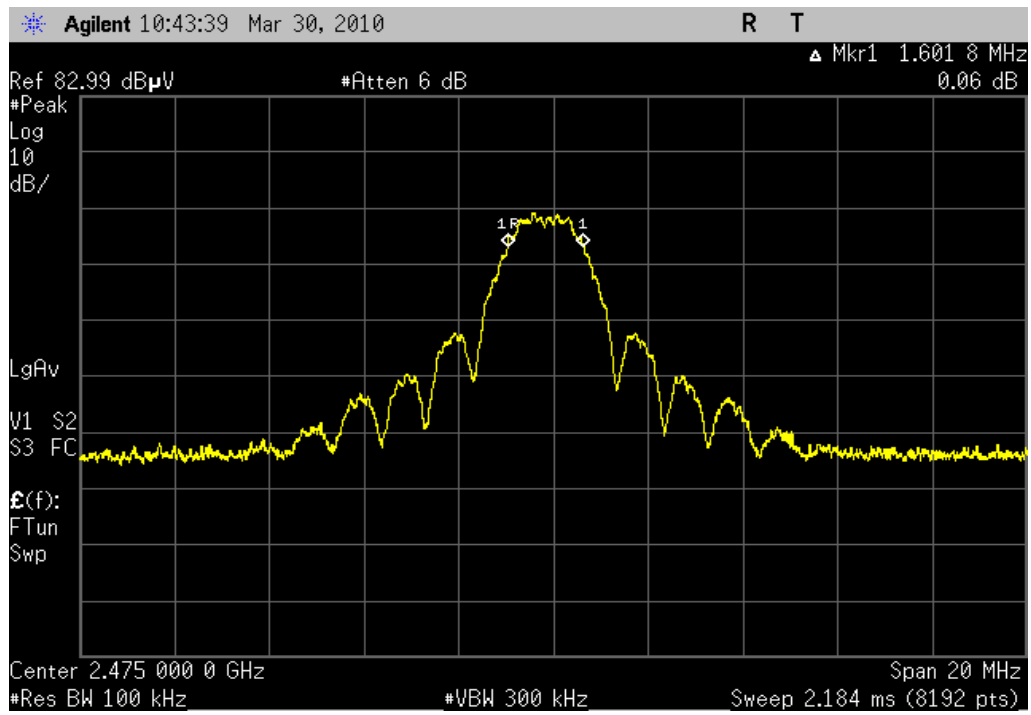
| Mid | | |
|--------------|------------------|-----------------------|
| Result: Pass | Value: 1.579 MHz | Limit: ≥ 500 kHz |



High

Result: Pass

Value: 1.602 MHz

Limit: ≥ 500 kHz

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

2405, 2440, 2475 MHz

FREQUENCY RANGE INVESTIGATED

| | | | |
|-----------------|----------|----------------|------------|
| Start Frequency | 2400 MHz | Stop Frequency | 2483.5 MHz |
|-----------------|----------|----------------|------------|

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|-------------------|--------------|------------------|-----|-----------|----------|
| Antenna, Horn | EMCO | 3115 | AHB | 9/11/2009 | 24 |
| OC11 Cables | None | 1-8GHz RE Cables | OCR | 3/12/2009 | 13 |
| Spectrum Analyzer | Agilent | E4440A | AFA | 2/9/2010 | 13 |

MEASUREMENT BANDWIDTHS

| | Frequency Range | Peak Data | Quasi-Peak Data | Average Data |
|--|-----------------|-----------|-----------------|--------------|
| | (MHz) | (kHz) | (kHz) | (kHz) |
| | 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| | 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| | 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| | Above 1000 | 1000.0 | N/A | 1000.0 |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY


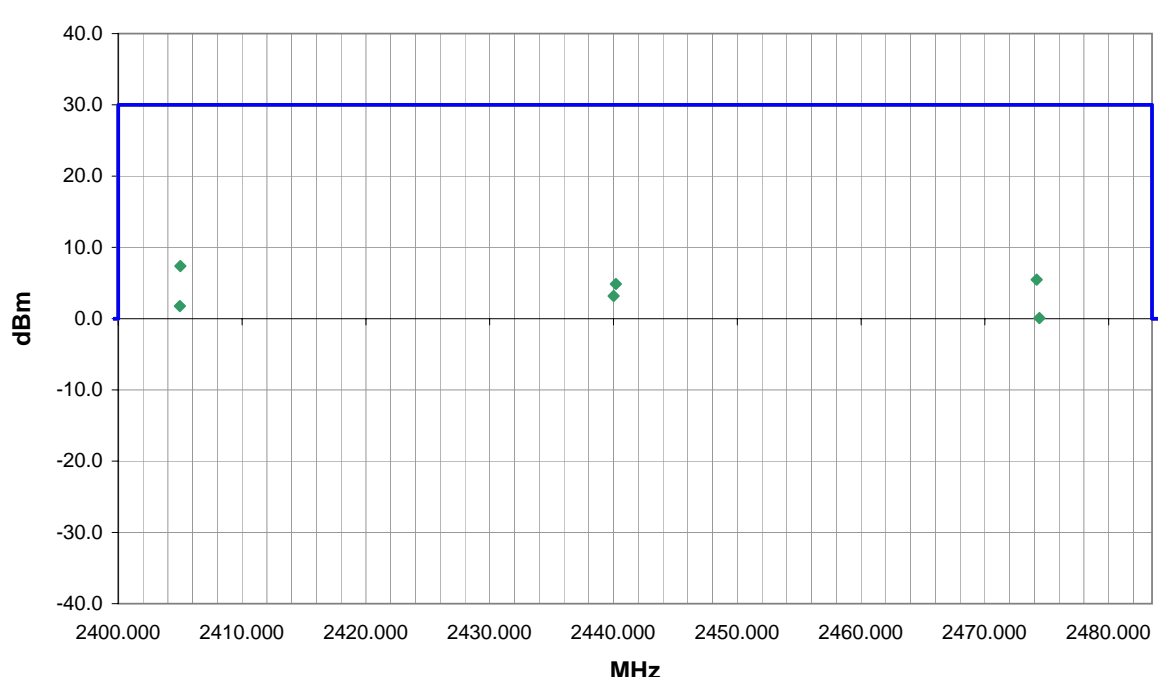
A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The peak output power was measured with the EUT set to low, medium, and high transmit frequencies. The radiated power was measured using a spectrum analyzer and horn antenna in a semi-anechoic chamber. The resolution bandwidth was set to 3 MHz and the video bandwidth was to set to 8 MHz. A peak detector was used. The EUT was transmitting at its maximum data rate. The level of fundamental emission was maximized by rotating the turntable and moving the measurement antenna from 1 – 4 meters in height.

The field strength measurement was converted to effective radiated power (EIRP) using the Friis transmission equation. A simplified version is found in ANSI C63.10:2009, Equation 5.

De Facto EIRP Limit: Per 47 CFR 15.247 (b)(1-3), the EUT meets the de facto EIRP limit of +36dBm.

| NORTHWEST | | EMI 2006.4.26 | | | | | | | | |
|---|-------|---|-----------------|--|----------|----------|--------------|------------|-------------------|------------------------|
| EMC | | OUTPUT POWER | | | | | | | | |
| EUT: Model: RM1 / PN: 200239-01 | | Work Order: AWAR0002 | | | | | | | | |
| Serial Number: 01034100515 | | Date: 03/30/10 | | | | | | | | |
| Customer: Awarepoint Corporation | | Temperature: 19C | | | | | | | | |
| Attendees: Eric Hoffman | | Humidity: 30% | | | | | | | | |
| Project: None | | Barometric Pres.: 1016 | | | | | | | | |
| Tested by: Jeremiah Darden | | Power: 3.3VDC | Job Site: OC11 | | | | | | | |
| TEST SPECIFICATIONS | | Test Method | | | | | | | | |
| FCC 15.247:2010 | | ANSI C63.10:2009 | | | | | | | | |
| TEST PARAMETERS | | | | | | | | | | |
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 | | | | | | | |
| COMMENTS | | | | | | | | | | |
| Y-axis worse case | | | | | | | | | | |
| EUT OPERATING MODES | | | | | | | | | | |
| 2405, 2440, 2475 MHz | | | | | | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | | | | | |
| No deviations. | | | | | | | | | | |
| Run # | 13 | Signature  | | | | | | | | |
| Configuration # | 1 | | | | | | | | | |
| Results | Pass | | | | | | | | | |
|  | | | | | | | | | | |
| Freq (MHz) | | Azimuth (degrees) | Height (meters) | | Polarity | Detector | EIRP (Watts) | EIRP (dBm) | Spec. Limit (dBm) | Compared to Spec. (dB) |
| 2405.010 | | 354.0 | 1.1 | | H-Horn | PK | 5.46E-03 | 7.4 | 30.0 | -22.6 |
| 2474.181 | | 161.0 | 1.1 | | H-Horn | PK | 3.52E-03 | 5.5 | 30.0 | -24.5 |
| 2440.192 | | 32.0 | 1.1 | | H-Horn | PK | 3.07E-03 | 4.9 | 30.0 | -25.1 |
| 2440.012 | | 309.0 | 1.1 | | V-Horn | PK | 2.08E-03 | 3.2 | 30.0 | -26.8 |
| 2404.981 | | 270.0 | 1.4 | | V-Horn | PK | 1.50E-03 | 1.8 | 30.0 | -28.2 |
| 2474.407 | | 79.0 | 1.1 | | V-Horn | PK | 1.02E-03 | 0.1 | 30.0 | -29.9 |

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TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|-------------------|--------------|------------------|-----|-----------|----------|
| Antenna, Horn | EMCO | 3115 | AHB | 9/11/2009 | 24 |
| OC11 Cables | None | 1-8GHz RE Cables | OCR | 3/12/2009 | 13 |
| Spectrum Analyzer | Agilent | E4440A | AFA | 2/9/2010 | 13 |

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TEST DESCRIPTION

Since the EUT has an integral antenna, the radiated emissions at the edges of the authorized bands were measured. The EUT was set to low and high transmit frequencies in each available band. The channels closest to the band edges were selected. The EUT was transmitting at its only data rate available.

The spectrum was scanned across each band edge from at least 10 MHz below the band edge to 10 MHz above the band edge.

EMC

Band Edge Compliance

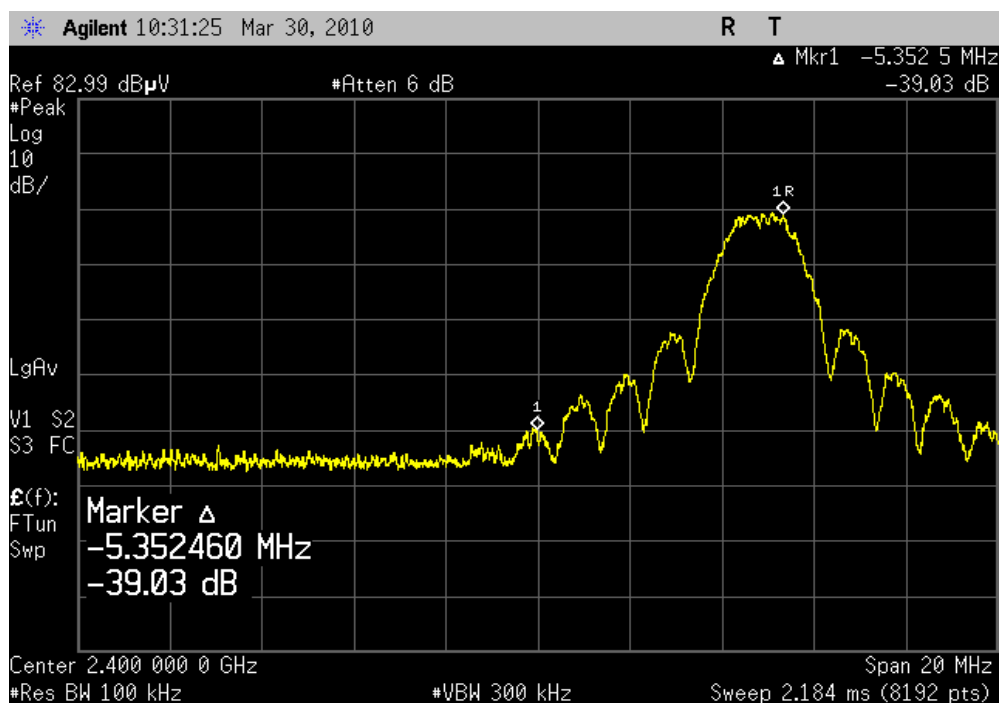
| | | | |
|--------------------------------------|---|---|----------------|
| EUT: Model: RM1 / PN: 200239-01 | | Work Order: AWAR0002 | |
| Serial Number: 01034100515 | | Date: 03/30/10 | |
| Customer: Awarepoint Corporation | | Temperature: 19C°C | |
| Attendees: Eric Hoffman | | Humidity: 30% | |
| Project: None | | Barometric Pres.: 1016mb | |
| Tested by: Jeremiah Darden | | Power: 120V/60Hz | Job Site: OC11 |
| TEST SPECIFICATIONS | | | |
| FCC 15.247:2010 | | Test Method ANSI C63.10:2009 | |
| COMMENTS | | | |
| None | | | |
| DEVIATIONS FROM TEST STANDARD | | | |
| No Deviations | | | |
| Configuration # | 1 | Signature  | |
| | | Value | Limit |
| Low 2405MHz | | -39.03dB | <= -20dB |
| High 2475MHz | | -45.17dB | <= -20dB |
| | | | Results |
| | | | Pass |
| | | | Pass |

Low 2405MHz

Result: Pass

Value: -39.03dB

Limit: <= -20dB

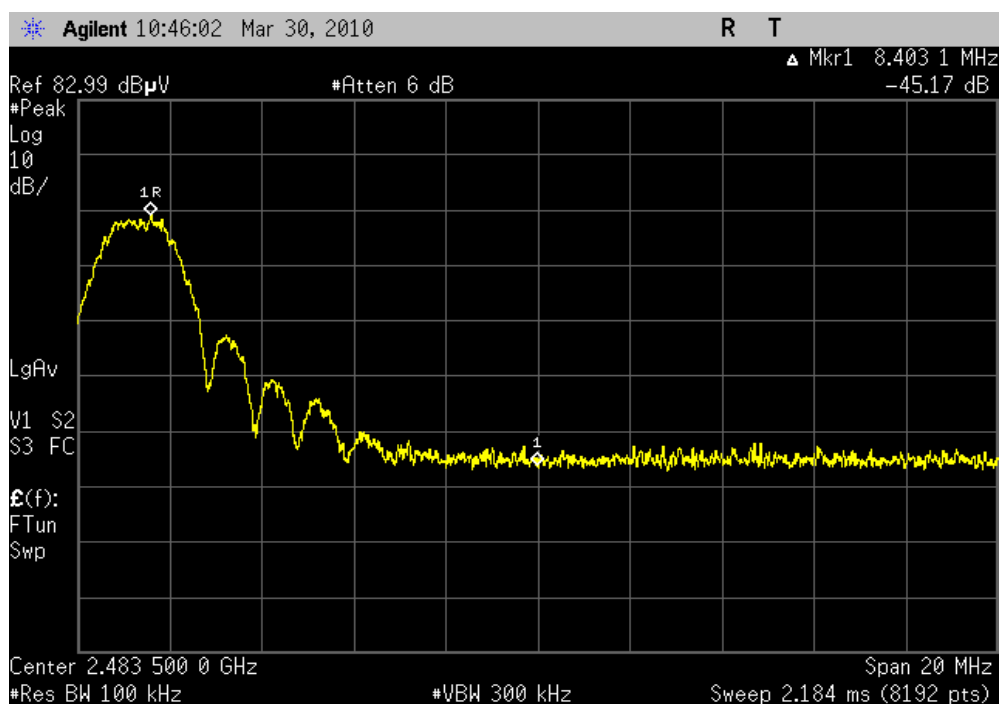


High 2475MHz

Result: Pass

Value: -45.17dB

Limit: <= -20dB



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TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|-------------------|--------------|------------------|-----|-----------|----------|
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TEST DESCRIPTION

The peak power spectral density was measured with the EUT set to low, medium, and high transmit frequencies. The radiated power spectral density was measured using a spectrum analyzer and horn antenna in a semi-anechoic chamber. The EUT was transmitting at its maximum data rate for each modulation type available. The level of fundamental emission was maximized by rotating the turntable and moving the measurement antenna from 1 – 4 meters in height. Per the procedure outlined in ANSI C63.10:2009, the spectrum analyzer was used as follows:


The emission peak(s) were located and zoom in on within the passband. The resolution bandwidth was set to 3 kHz, the video bandwidth was set to greater than or equal to the resolution bandwidth. The sweep speed was set equal to the span divided by 3 kHz (sweep = (SPAN/3 kHz)). For example, given a span of 1.5 MHz, the sweep should be $1.5 \times 10^6 \div 3 \times 10^3 = 500$ seconds. The following FCC procedure was used for modifying the power spectral density measurements:

"If the spectrum line spacing cannot be resolved on the available spectrum analyzer, the noise density function on most modern conventional spectrum analyzers will directly measure the noise power density normalized to a 1 Hz noise power bandwidth. Add 35 dB for correction to 3 kHz."

The field strength measurement of power spectral density was converted to effective radiated power spectral density (dBm/3kHz) (EIRP) using the Friis transmission equation. A simplified version is found in ANSI C63.10:2009, Equation 6.

EMC

POWER SPECTRAL DENSITY

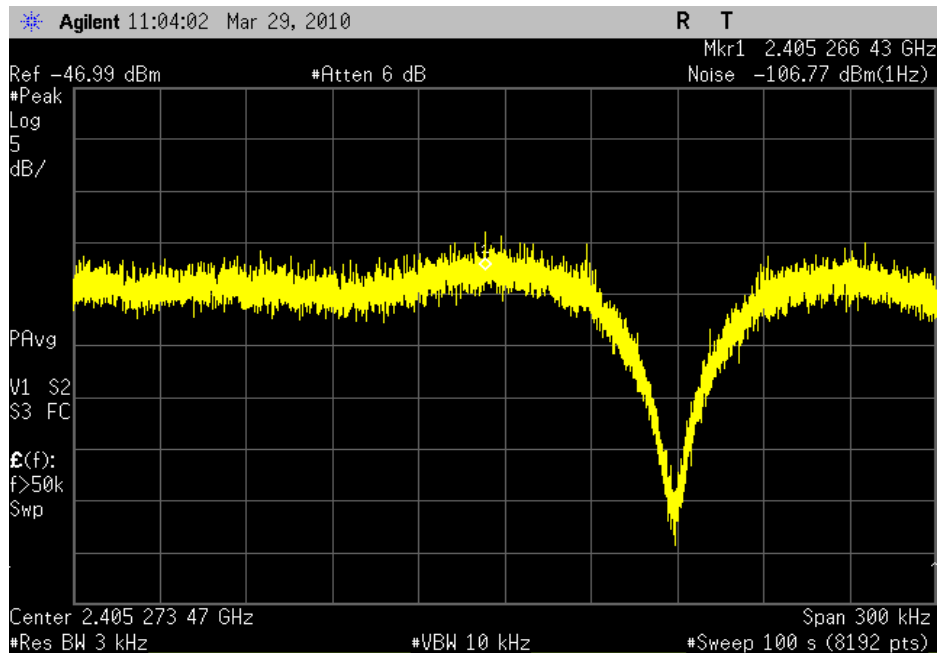
| | | | |
|----------------------------------|---|---|----------------|
| EUT: Model: RM1 / PN: 200239-01 | | Work Order: AWAR0002 | |
| Serial Number: 01034100515 | | Date: 03/30/10 | |
| Customer: Awarepoint Corporation | | Temperature: 19C°C | |
| Attendees: Eric Hoffman | | Humidity: 30% | |
| Project: None | | Barometric Pres.: 1016mb | |
| Tested by: Jeremiah Darden | | Power: 120V/60Hz | Job Site: OC11 |
| TEST SPECIFICATIONS | | Test Method | |
| FCC 15.247:2010 | | ANSI C63.10:2009 | |
| COMMENTS | | | |
| 2405, 2440, 2475 MHz | | | |
| DEVIATIONS FROM TEST STANDARD | | | |
| No Deviations | | | |
| Configuration # | 1 | Signature  | |
| | | Value | Limit |
| Low Channel | | -25.9 dBm/3kHz, EIRP | <= 8 dBm/3kHz |
| Mid Channel | | -24.3 dBm/3kHz, EIRP | <= 8 dBm/3kHz |
| High Channel | | -23.2 dBm/3kHz, EIRP | <= 8 dBm/3kHz |
| | | | Results |
| | | | Pass |
| | | | Pass |
| | | | Pass |

POWER SPECTRAL DENSITY

Low Channel

Result: Pass **Value:** -25.9 dBm/3kHz, EIRP **Limit:** <= 8 dBm/3kHz

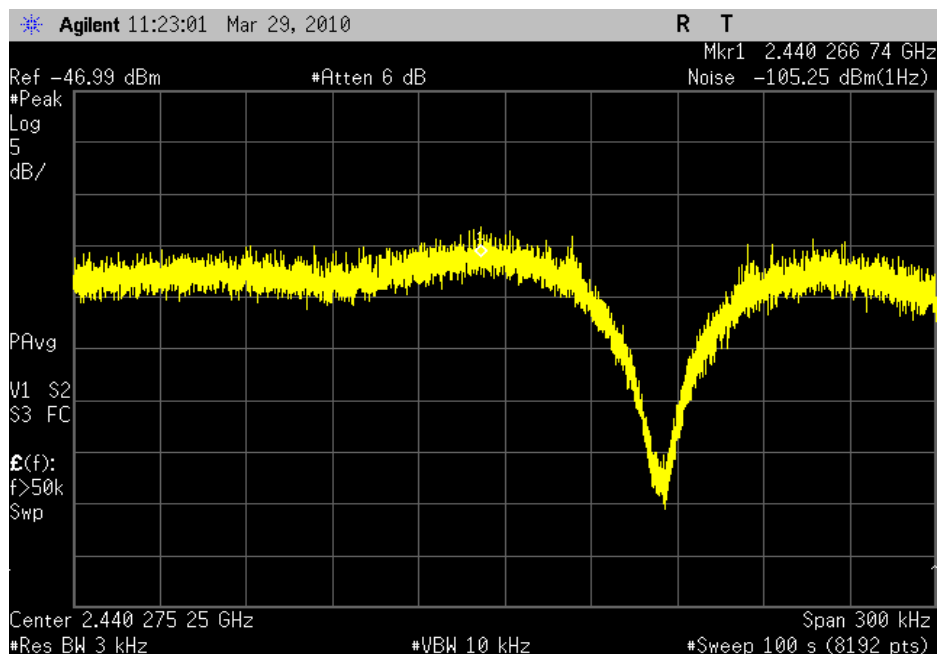
| Meter Reading (dBm/Hz) | Meter Reading (dBm/3kHz) | Factor (dB) | Field Strength PSD (dBm/3kHz/meter) | PSD EIRP (dBm/3kHz) (EIRP) |
|---------------------------|-----------------------------|----------------|--|-------------------------------|
| -106.77 | -71.77 | 34.1 | -37.67 | -25.9 |



Mid Channel

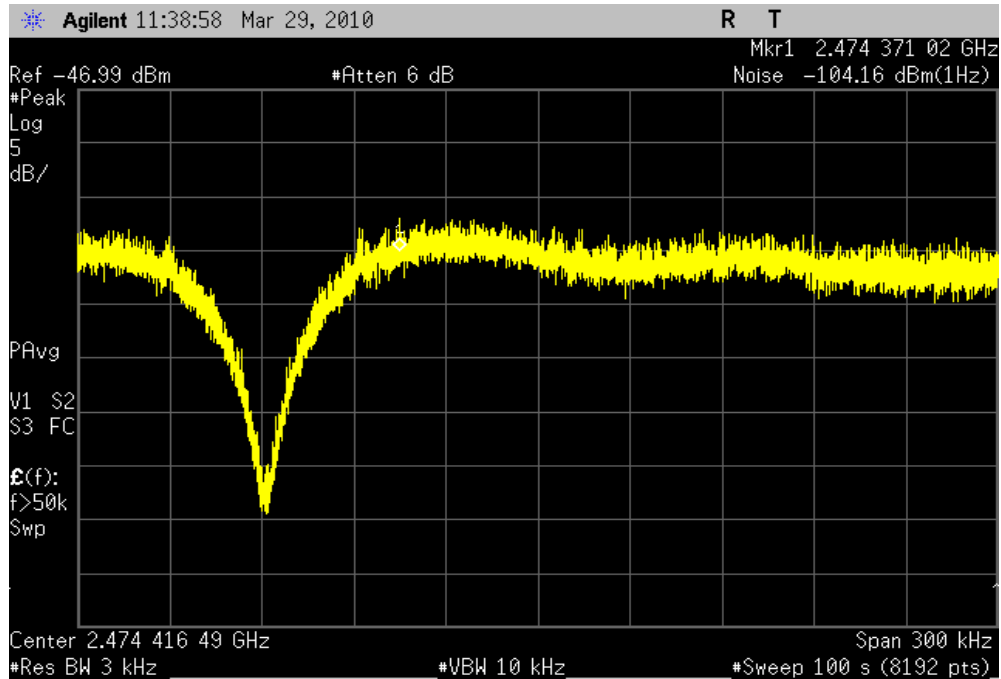
Result: Pass **Value:** -24.3 dBm/3kHz, EIRP **Limit:** <= 8 dBm/3kHz

| Meter Reading (dBm/Hz) | Meter Reading (dBm/3kHz) | Factor (dB) | Field Strength PSD (dBm/3kHz/meter) | PSD EIRP (dBm/3kHz) (EIRP) |
|---------------------------|-----------------------------|----------------|--|-------------------------------|
| -105.25 | -70.25 | 34.2 | -36.05 | -24.3 |



| High Channel | | | |
|--------------|------|--------|----------------------|
| Result: | Pass | Value: | -23.2 dBm/3kHz, EIRP |
| | | Limit: | <= 8 dBm/3kHz |

| Meter Reading (dBm/Hz) | Meter Reading (dBm/3kHz) | Factor (dB) | Field Strength PSD (dBm/3kHz/meter) | PSD EIRP (dBm/3kHz) (EIRP) |
|---------------------------|-----------------------------|----------------|--|-------------------------------|
| -104.16 | -69.16 | 34.2 | -34.96 | -23.2 |



Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

2405MHz

2440MHz

2475MHz

POWER SETTINGS INVESTIGATED

3.3VDC

FREQUENCY RANGE INVESTIGATED

Start Frequency

30MHz

Stop Frequency

26.5GHz

SAMPLE CALCULATIONS

Radiated Emissions: Field Strength = Measured Level + Antenna Factor + Cable Factor - Amplifier Gain + Distance Adjustment Factor + External Attenuation

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|--------------------|--------------|------------------------|-----|------------|----------|
| Antenna, Biconilog | EMCO | 3142 | AXJ | 2/24/2010 | 13 |
| OC10 Cables | None | 10kHz-1GHz RE Cables | OCH | 4/1/2010 | 13 |
| Pre-Amplifier | Miteq | AM-1616-1000 | AOM | 4/1/2010 | 13 |
| Spectrum Analyzer | Agilent | E4446A | AAY | 1/15/2010 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-18002650-25-10P | AOI | 4/3/2009 | 13 |
| Antenna, Horn | EMCO | 3160-09 | AHN | NCR | 0 |
| OC floating Cable | None | 18-26GHz RE Cables | OCK | 4/3/2009 | 13 |
| Pre-Amplifier | Miteq | AMF-6F-12001800-30-10P | AVP | 12/21/2009 | 13 |
| Antenna, Horn | EMCO | 3160-08 | AHK | NCR | 0 |
| Pre-Amplifier | Miteq | AMF-6F-08001200-30-10P | AVL | 4/11/2010 | 13 |
| Antenna, Horn | ETS | 3160-07 | AHX | NCR | 0 |
| Pre-Amplifier | Miteq | AMF-3D-00100800-32-13P | AVJ | 9/10/2009 | 13 |
| Antenna, Horn | EMCO | 3115 | AHB | 9/11/2009 | 24 |
| OC11 Cables | None | 12-18GHz RE Cables | OCS | 4/11/2010 | 13 |
| OC11 Cables | None | 1-8GHz RE Cables | OCR | 3/19/2010 | 13 |

MEASUREMENT BANDWIDTHS

| Frequency Range | Peak Data | Quasi-Peak Data | Average Data |
|-----------------|-----------|-----------------|--------------|
| (MHz) | (kHz) | (kHz) | (kHz) |
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

Measurements were made using the bandwidths and detectors specified. No video filter was used.

MEASUREMENT UNCERTAINTY


A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4. The measurement uncertainty estimation is available upon request.

TEST DESCRIPTION

The highest gain of each type of antenna to be used with the EUT was tested. The EUT was configured for low, mid, and high band transmit frequencies. For each configuration, the spectrum was scanned throughout the specified range. In addition, measurements were made in the restricted bands to verify compliance. While scanning, emissions from the EUT were maximized by rotating the EUT on a turntable, adjusting the position of the EUT and the EUT antenna in three orthogonal axis, and adjusting measurement antenna height and polarization, and manipulating the EUT antenna in 3 orthogonal planes (per ANSI C63.10:2009). A preamp and high pass filter were used for this test in order to provide sufficient measurement sensitivity.

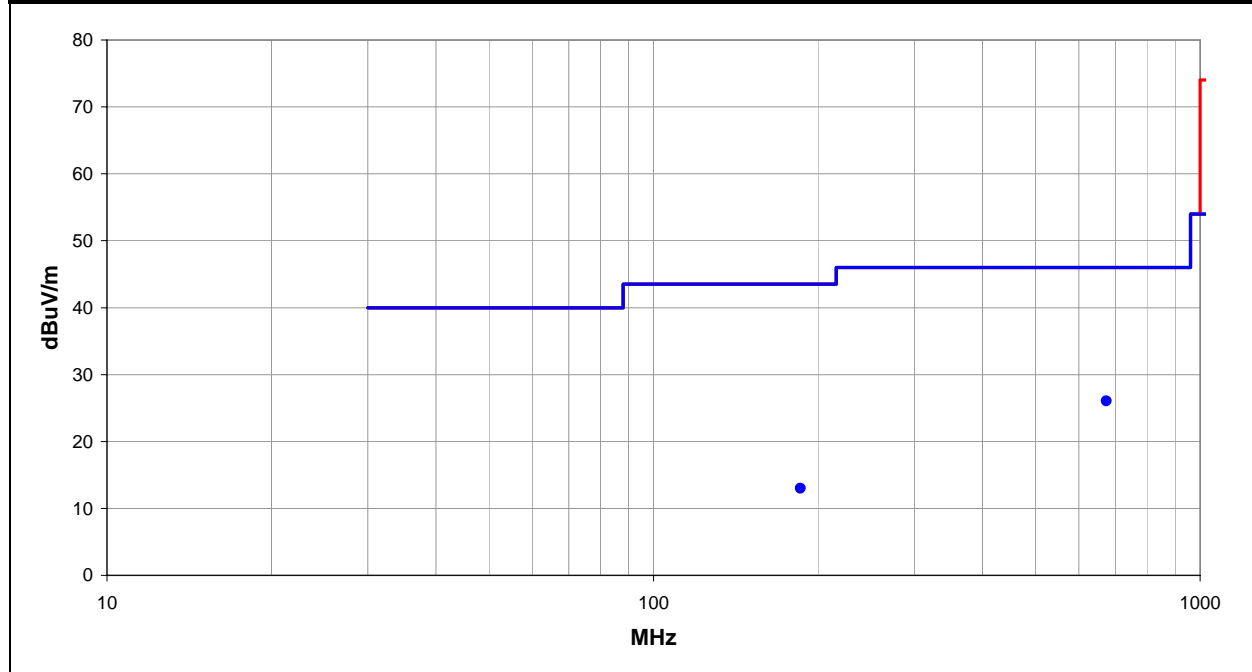
All radiated emissions were measured. The emissions that fell in the restricted bands of 15.205 were measured to the 15.209 limits and all other emissions were compared to the -20 dBc limit of 15.247(d).

EMC**SPURIOUS RADIATED DATA SHEET**


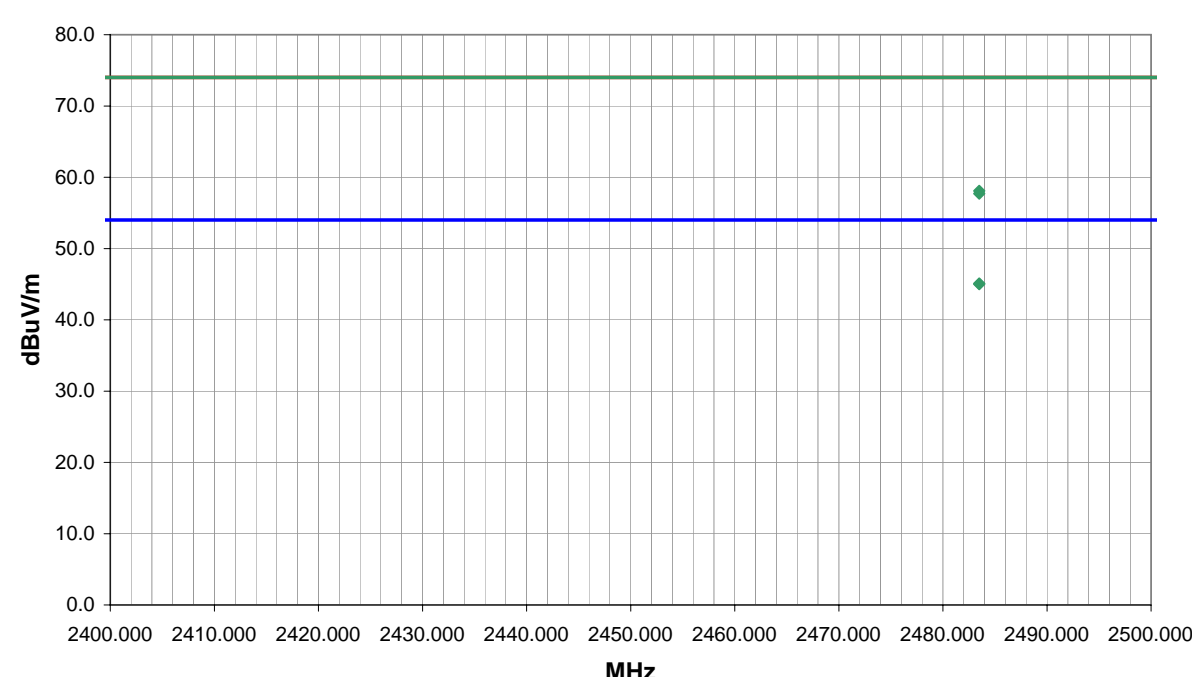
| | | | | |
|------------------------|----------------------------|--------------------------|----------|---|
| Work Order: | AWAR0002 | Date: | 03/30/10 |  |
| Project: | None | Temperature: | 19C | |
| Job Site: | OC10 | Humidity: | 30 | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Jeremiah Darden |
| EUT: | Model: RM1 / PN: 200239-01 | | | |
| Configuration: | 1 | | | |
| Customer: | Awarepoint Corporation | | | |
| Attendees: | Eric Hoffman | | | |
| EUT Power: | 3.3VDC | | | |
| Operating Mode: | 2475MHz | | | |
| Deviations: | No deviations. | | | |
| Comments: | Y-axis worse case | | | |

| | |
|---|--|
| Test Specifications FCC 15.209:2010 | Test Method ANSI C63.10:2009 |
|---|--|

| | | | | | | | |
|--------------|---|--------------------------|---|--------------------------|------|----------------|------|
| Run # | 4 | Test Distance (m) | 3 | Antenna Height(s) | 1-4m | Results | Pass |
|--------------|---|--------------------------|---|--------------------------|------|----------------|------|



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Antenna Height (meters) | Azimuth (degrees) | Test Distance (meters) | External Attenuation (dB) | Polarity/ Transducer Type | Detector | Distance Adjustment (dB) | Adjusted (dBuV/m) | Spec. Limit (dBuV/m) | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------------|-------------------|------------------------|---------------------------|---------------------------|----------|--------------------------|-------------------|----------------------|------------------------|
| 673.490 | 17.2 | 8.9 | 3.2 | 84.0 | 3.0 | 0.0 | Horz | QP | 0.0 | 26.1 | 46.0 | -19.9 |
| 185.674 | 17.3 | -4.3 | 2.2 | 1.0 | 3.0 | 0.0 | Vert | QP | 0.0 | 13.0 | 43.5 | -30.5 |

| NORTHWEST EMC | | SPURIOUS RADIATED EMISSIONS DATA SHEET | | | | | | | | | | PSA 2008.07.21 EMI 2006.4.26 | |
|---|------------------|---|-------------------|---|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|---------------------------------|--|
| EUT: Model: RM1 / PN: 200239-01 | | | | | | Work Order: AWAR0002 | | | | | | | |
| Serial Number: 01034100515 | | | | | | Date: 03/29/10 | | | | | | | |
| Customer: Awarepoint Corporation | | | | | | Temperature: 19C | | | | | | | |
| Attendees: Eric Hoffman | | | | | | Humidity: 30% | | | | | | | |
| Project: None | | | | | | Barometric Pres.: 1016 | | | | | | | |
| Tested by: Jeremiah Darden | | | | Power: 3.3VDC | | Job Site: OC10 | | | | | | | |
| TEST SPECIFICATIONS | | | | | | Test Method | | | | | | | |
| FCC 15.247: 2010 | | | | | | ANSI C63.10:2009 | | | | | | | |
| TEST PARAMETERS | | | | | | | | | | | | | |
| Antenna Height(s) (m) | | | | 1 - 4 | | Test Distance (m) | | 3 | | | | | |
| COMMENTS | | | | | | | | | | | | | |
| Y-axis worse case | | | | | | | | | | | | | |
| EUT OPERATING MODES | | | | | | | | | | | | | |
| 2475MHz | | | | | | | | | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | | | | | | | | |
| No deviations. | | | | | | | | | | | | | |
| Run # | | 7 | | <div style="text-align: right;">Signature </div> | | | | | | | | | |
| Configuration # | | 1 | | | | | | | | | | | |
| Results | | Pass | | | | | | | | | | | |
|  | | | | | | | | | | | | | |
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) | |
| 2483.496 | 29.2 | -4.1 | 203.0 | 1.4 | 3.0 | 20.0 | H-Horn | AV | 0.0 | 45.1 | 54.0 | -8.9 | |
| 2483.497 | 29.1 | -4.1 | 203.0 | 1.4 | 3.0 | 20.0 | V-Horn | AV | 0.0 | 45.0 | 54.0 | -9.0 | |
| 2483.496 | 42.2 | -4.1 | 203.0 | 1.4 | 3.0 | 20.0 | H-Horn | PK | 0.0 | 58.1 | 74.0 | -15.9 | |
| 2483.497 | 41.8 | -4.1 | 203.0 | 1.4 | 3.0 | 20.0 | V-Horn | PK | 0.0 | 57.7 | 74.0 | -16.3 | |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/29/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS


Y-axis worse case

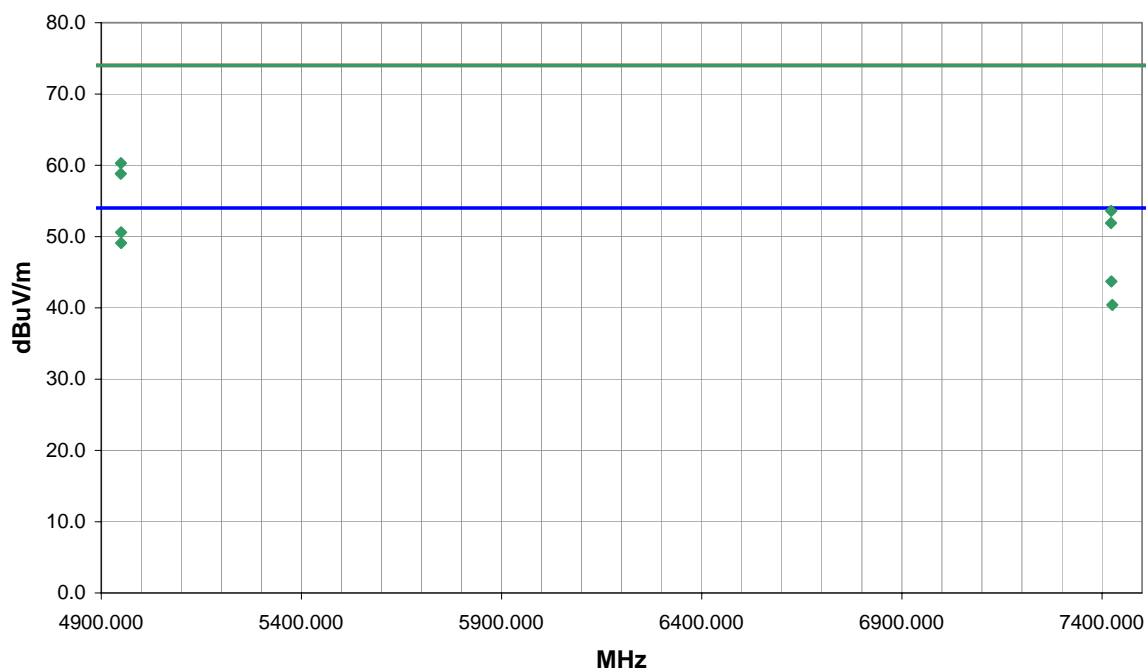
EUT OPERATING MODES

2475MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 8 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 4949.627 | 46.1 | 4.5 | 305.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 50.6 | 54.0 | -3.4 |
| 4949.643 | 44.6 | 4.5 | 205.0 | 1.1 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 49.1 | 54.0 | -4.9 |
| 7423.111 | 33.5 | 10.2 | 350.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 43.7 | 54.0 | -10.3 |
| 7425.761 | 30.2 | 10.2 | 267.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 40.4 | 54.0 | -13.6 |
| 4948.982 | 55.8 | 4.5 | 305.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 60.3 | 74.0 | -13.7 |
| 4948.780 | 54.3 | 4.5 | 205.0 | 1.1 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 58.8 | 74.0 | -15.2 |
| 7422.735 | 43.4 | 10.2 | 350.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 53.6 | 74.0 | -20.4 |
| 7422.658 | 41.7 | 10.2 | 267.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 51.9 | 74.0 | -22.1 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/29/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS

Y-axis worse case

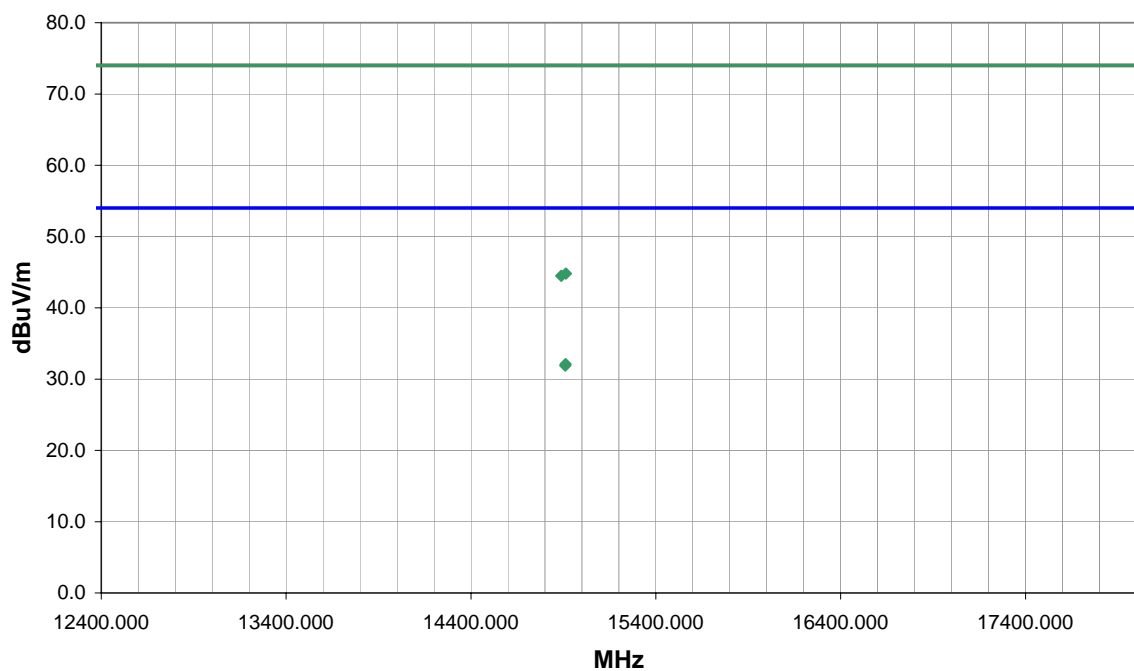
EUT OPERATING MODES

2475MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 9 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 14912.040 | 30.3 | 1.8 | 122.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 32.1 | 54.0 | -21.9 |
| 14909.880 | 30.2 | 1.7 | 337.0 | 1.2 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 31.9 | 54.0 | -22.1 |
| 14913.670 | 43.0 | 1.8 | 122.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 44.8 | 74.0 | -29.2 |
| 14888.470 | 42.7 | 1.8 | 337.0 | 1.2 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 44.5 | 74.0 | -29.5 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/29/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS


Y-axis worse case

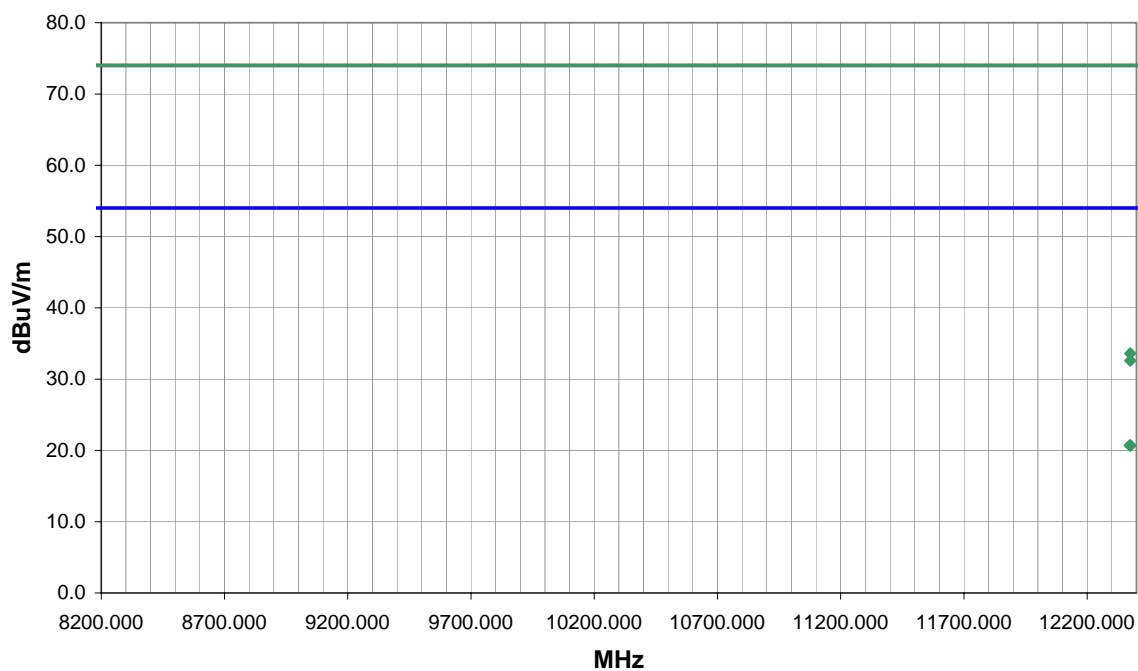
EUT OPERATING MODES

2475MHz


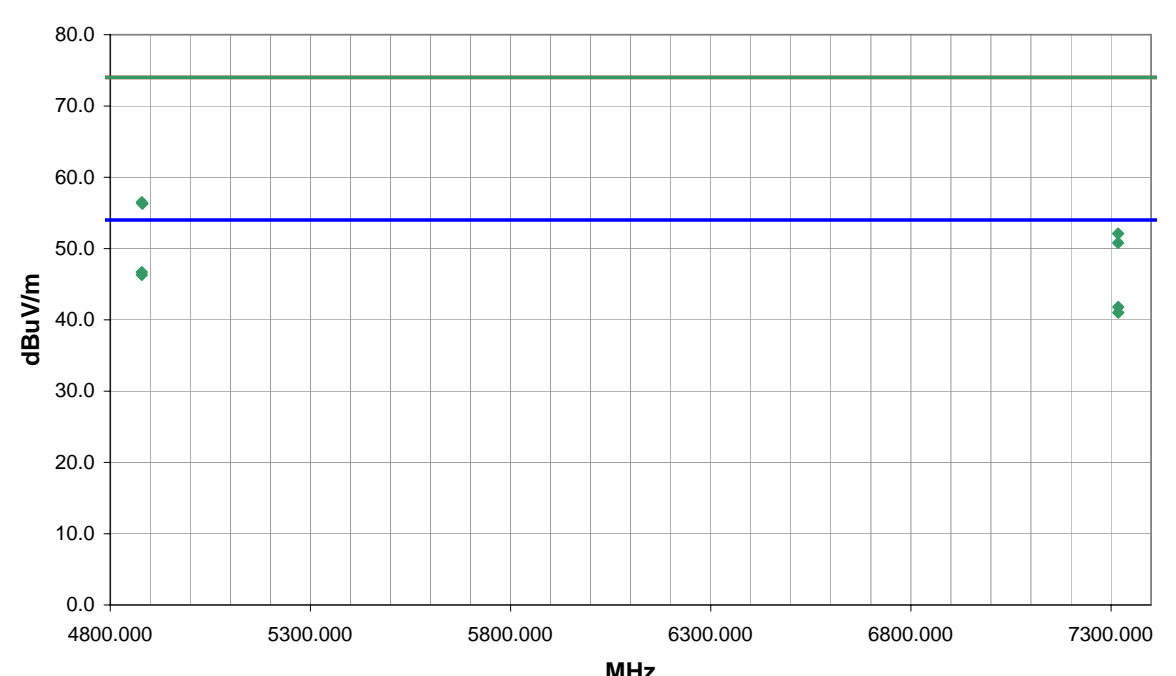
DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 10 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 12372.540 | 28.6 | -7.9 | 51.0 | 1.0 | 0.0 | 0.0 | V-Horn | AV | 0.0 | 20.7 | 54.0 | -33.3 |
| 12376.290 | 28.6 | -7.9 | 185.0 | 1.0 | 0.0 | 0.0 | H-Horn | AV | 0.0 | 20.7 | 54.0 | -33.3 |
| 12374.660 | 41.5 | -7.9 | 51.0 | 1.0 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 33.6 | 74.0 | -40.4 |
| 12374.880 | 40.5 | -7.9 | 185.0 | 1.0 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 32.6 | 74.0 | -41.4 |

| NORTHWEST EMC | | SPURIOUS RADIATED EMISSIONS DATA SHEET | | PSA 2008.07.21 EMI 2006.4.26 | | | | | | | | |
|---|------------------|---|---|---------------------------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| EUT: Model: RM1 / PN: 200239-01 | | | Work Order: AWAR0002 | | | | | | | | | |
| Serial Number: 01034100515 | | | Date: 03/29/10 | | | | | | | | | |
| Customer: Awarepoint Corporation | | | Temperature: 19C | | | | | | | | | |
| Attendees: Eric Hoffman | | | Humidity: 30% | | | | | | | | | |
| Project: None | | | Barometric Pres.: 1016 | | | | | | | | | |
| Tested by: Jeremiah Darden | | Power: 3.3VDC | Job Site: OC10 | | | | | | | | | |
| TEST SPECIFICATIONS | | | Test Method | | | | | | | | | |
| FCC 15.247: 2010 | | | ANSI C63.10:2009 | | | | | | | | | |
| TEST PARAMETERS | | | | | | | | | | | | |
| Antenna Height(s) (m) | | 1 - 4 | Test Distance (m) | | 3 | | | | | | | |
| COMMENTS | | | | | | | | | | | | |
| Y-axis worse case | | | | | | | | | | | | |
| EUT OPERATING MODES | | | | | | | | | | | | |
| 2440MHz | | | | | | | | | | | | |
| DEVIATIONS FROM TEST STANDARD | | | | | | | | | | | | |
| No deviations. | | | | | | | | | | | | |
| Run # | 11 | | Signature  | | | | | | | | | |
| Configuration # | 1 | | | | | | | | | | | |
| Results | Pass | | | | | | | | | | | |
|  | | | | | | | | | | | | |
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
| 4878.722 | 42.4 | 4.3 | 151.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 46.7 | 54.0 | -7.3 |
| 4878.718 | 42.0 | 4.3 | 95.0 | 1.9 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 46.3 | 54.0 | -7.7 |
| 7318.052 | 31.8 | 10.0 | 291.0 | 1.2 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 41.8 | 54.0 | -12.2 |
| 7318.003 | 31.0 | 10.0 | 34.0 | 1.3 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 41.0 | 54.0 | -13.0 |
| 4878.642 | 52.2 | 4.3 | 151.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 56.5 | 74.0 | -17.5 |
| 4880.477 | 52.0 | 4.3 | 95.0 | 1.9 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 56.3 | 74.0 | -17.7 |
| 7317.612 | 42.1 | 10.0 | 34.0 | 1.3 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 52.1 | 74.0 | -21.9 |
| 7317.680 | 40.8 | 10.0 | 291.0 | 1.2 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 50.8 | 74.0 | -23.2 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/29/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS


Y-axis worse case

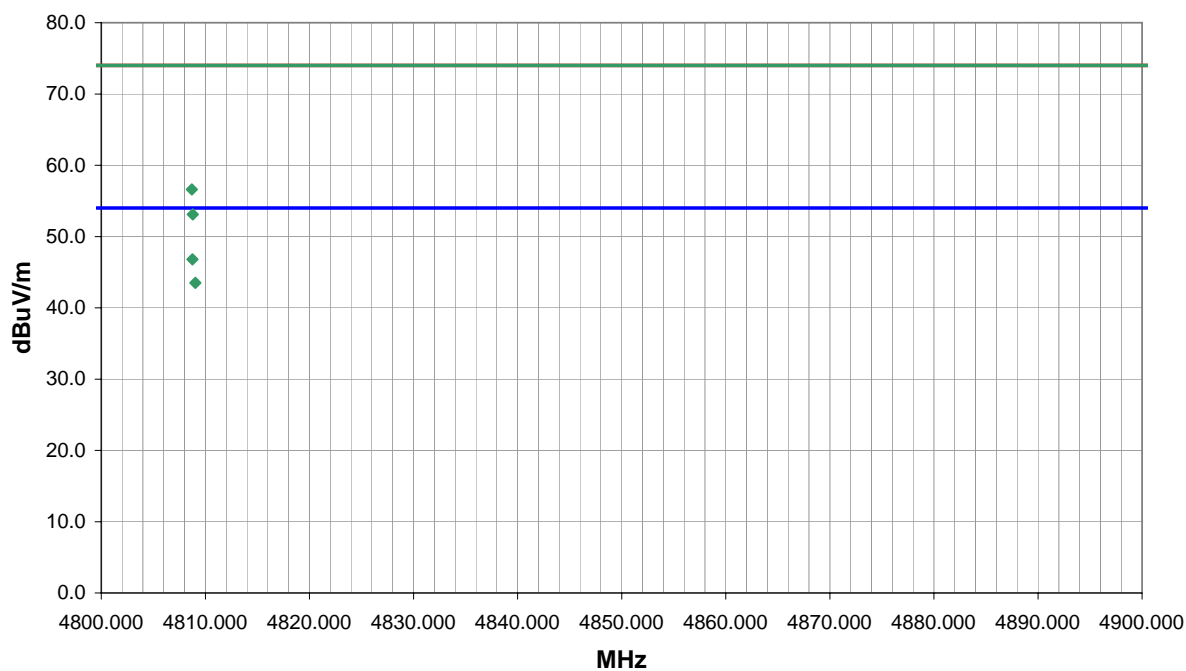
EUT OPERATING MODES

2405MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 12 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 4808.761 | 42.6 | 4.2 | 154.0 | 1.3 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 46.8 | 54.0 | -7.2 |
| 4809.039 | 39.3 | 4.2 | 346.0 | 1.0 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 43.5 | 54.0 | -10.5 |
| 4808.696 | 52.5 | 4.1 | 154.0 | 1.3 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 56.6 | 74.0 | -17.4 |
| 4808.787 | 49.0 | 4.1 | 346.0 | 1.0 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 53.1 | 74.0 | -20.9 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/30/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC11 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS

Y-axis worse case

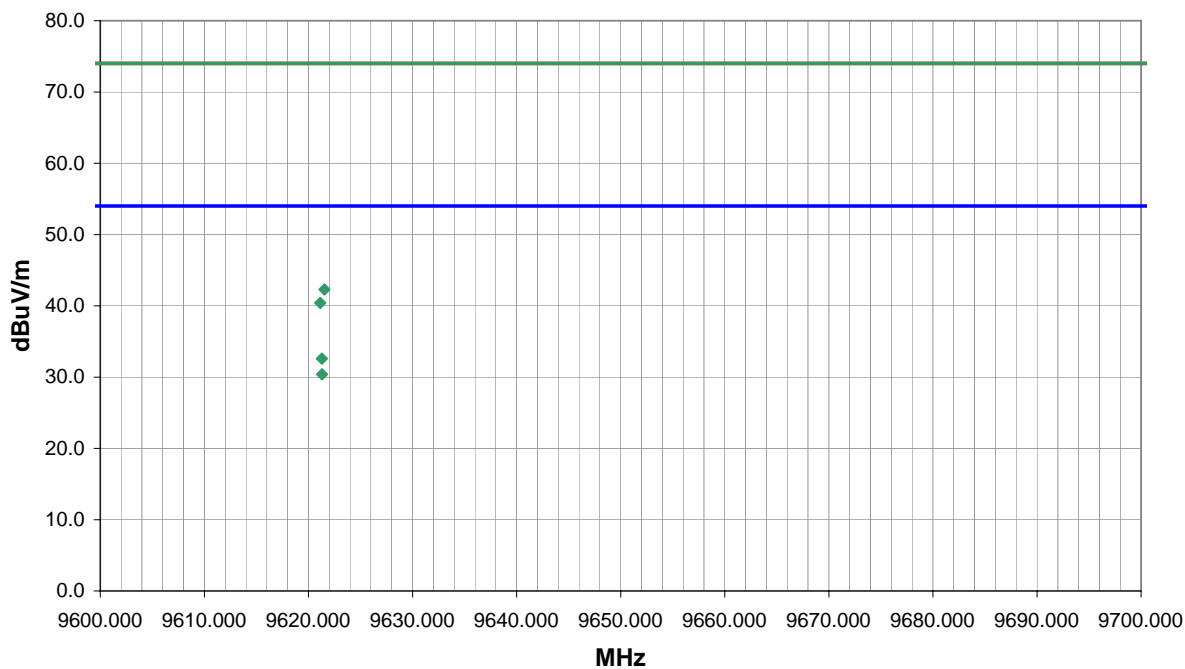
EUT OPERATING MODES

2405MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 14 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 9621.296 | 44.8 | -12.2 | 7.0 | 1.2 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 32.6 | 54.0 | -21.4 |
| 9621.312 | 42.6 | -12.2 | 15.0 | 1.4 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 30.4 | 54.0 | -23.6 |
| 9621.537 | 54.5 | -12.2 | 7.0 | 1.2 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 42.3 | 74.0 | -31.7 |
| 9621.136 | 52.6 | -12.2 | 15.0 | 1.4 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 40.4 | 74.0 | -33.6 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/30/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS

Y-axis worse case

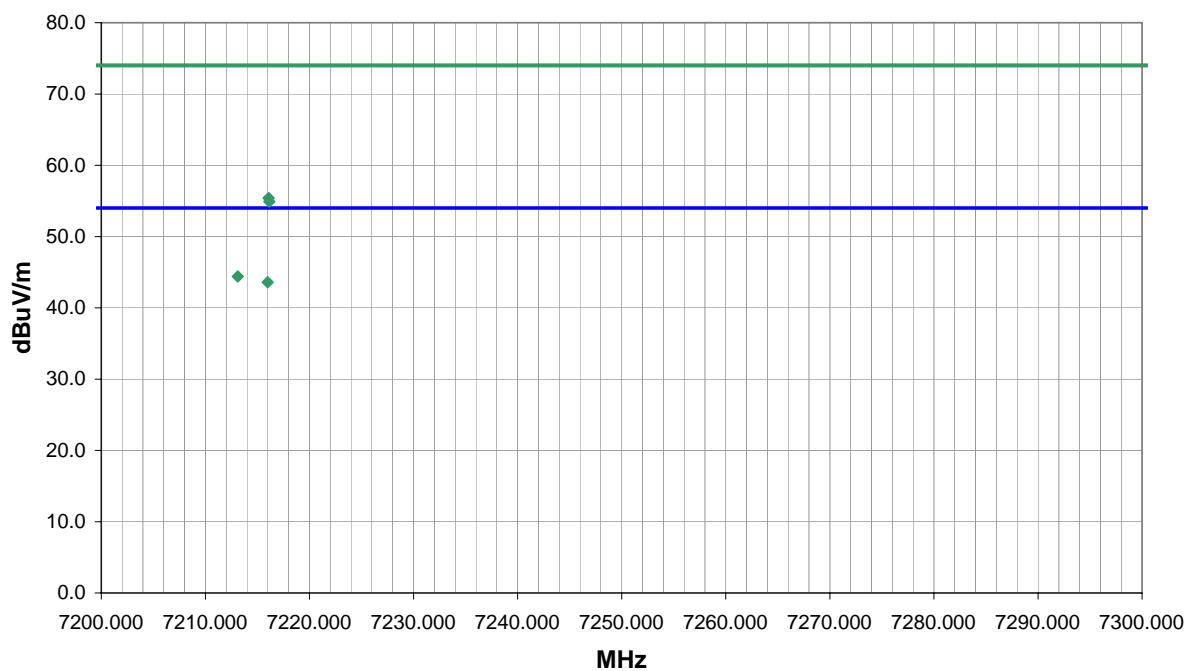
EUT OPERATING MODES

2405MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 15 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 7213.113 | 34.7 | 9.7 | 356.0 | 1.5 | 3.0 | 0.0 | V-Horn | AV | 0.0 | 44.4 | 54.0 | -9.6 |
| 7215.984 | 33.9 | 9.7 | 138.0 | 1.0 | 3.0 | 0.0 | H-Horn | AV | 0.0 | 43.6 | 54.0 | -10.4 |
| 7216.073 | 45.7 | 9.7 | 356.0 | 1.5 | 3.0 | 0.0 | V-Horn | PK | 0.0 | 55.4 | 74.0 | -18.6 |
| 7216.145 | 45.2 | 9.7 | 138.0 | 1.0 | 3.0 | 0.0 | H-Horn | PK | 0.0 | 54.9 | 74.0 | -19.1 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/30/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

Test Method

FCC 15.247: 2010

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS

Y-axis worse case

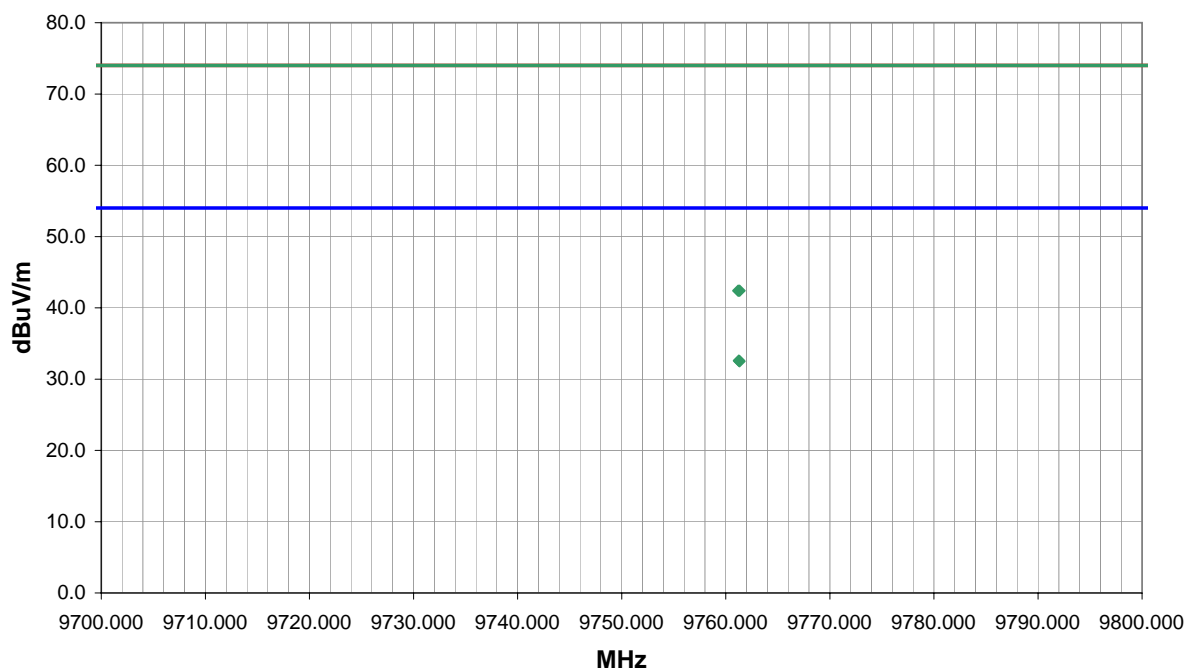
EUT OPERATING MODES

2440MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 16 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 9761.265 | 44.7 | -12.1 | 11.0 | 1.5 | 0.0 | 0.0 | V-Horn | AV | 0.0 | 32.6 | 54.0 | -21.4 |
| 9761.318 | 44.6 | -12.1 | 9.0 | 1.4 | 0.0 | 0.0 | H-Horn | AV | 0.0 | 32.5 | 54.0 | -21.5 |
| 9761.205 | 54.5 | -12.1 | 11.0 | 1.5 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 42.4 | 74.0 | -31.6 |
| 9761.315 | 54.5 | -12.1 | 9.0 | 1.4 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 42.4 | 74.0 | -31.6 |

SPURIOUS RADIATED EMISSIONS DATA SHEET

| | | | |
|----------------|----------------------------|-------------------|----------|
| EUT: | Model: RM1 / PN: 200239-01 | Work Order: | AWAR0002 |
| Serial Number: | 01034100515 | Date: | 03/30/10 |
| Customer: | Awarepoint Corporation | Temperature: | 19C |
| Attendees: | Eric Hoffman | Humidity: | 30% |
| Project: | None | Barometric Pres.: | 1016 |
| Tested by: | Jeremiah Darden | Power: | 3.3VDC |
| | | Job Site: | OC10 |

TEST SPECIFICATIONS

FCC 15.247: 2010

Test Method

ANSI C63.10:2009

TEST PARAMETERS

| | | | |
|-----------------------|-------|-------------------|---|
| Antenna Height(s) (m) | 1 - 4 | Test Distance (m) | 3 |
|-----------------------|-------|-------------------|---|

COMMENTS

Y-axis worse case

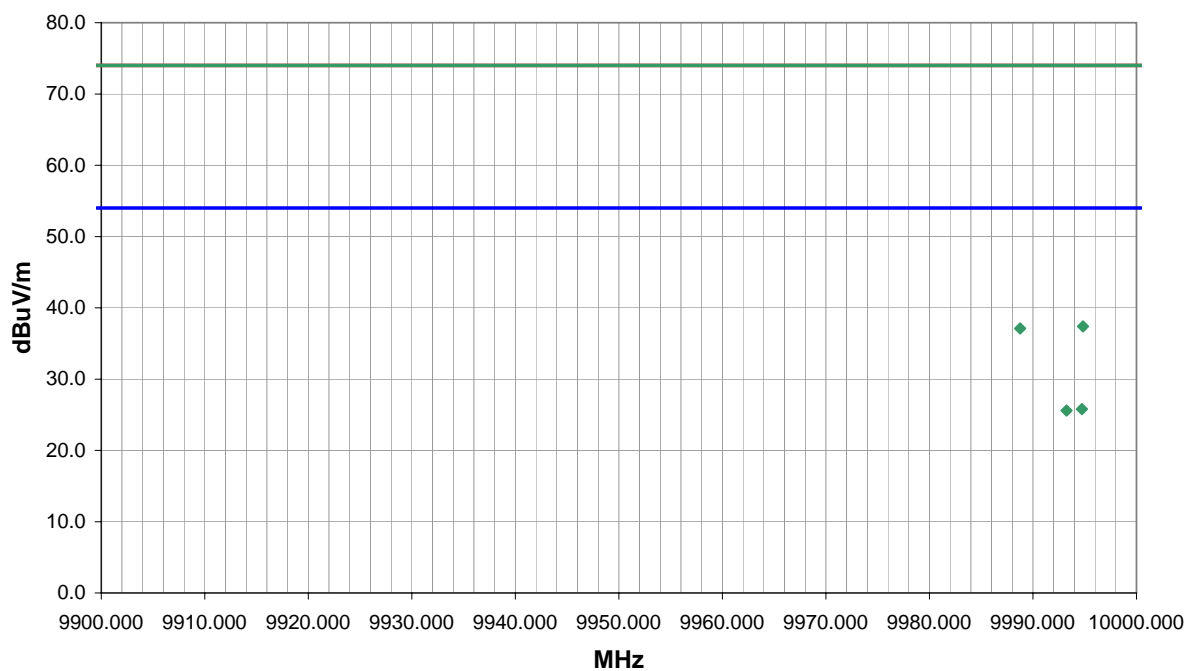
EUT OPERATING MODES

2405MHz

DEVIATIONS FROM TEST STANDARD

No deviations.

| | | |
|-----------------|------|---|
| Run # | 17 | Signature  |
| Configuration # | 1 | |
| Results | Pass | |



| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Azimuth (degrees) | Height (meters) | Distance (meters) | External Attenuation (dB) | Polarity | Detector | Distance Adjustment (dB) | Adjusted dBuV/m | Spec. Limit dBuV/m | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------------|-----------------|-------------------|---------------------------|----------|----------|--------------------------|-----------------|--------------------|------------------------|
| 9994.726 | 38.0 | -12.2 | 231.0 | 1.0 | 0.0 | 0.0 | V-Horn | AV | 0.0 | 25.8 | 54.0 | -28.2 |
| 9993.253 | 37.8 | -12.2 | 301.0 | 1.0 | 0.0 | 0.0 | H-Horn | AV | 0.0 | 25.6 | 54.0 | -28.4 |
| 9994.841 | 49.6 | -12.2 | 301.0 | 1.0 | 0.0 | 0.0 | H-Horn | PK | 0.0 | 37.4 | 74.0 | -36.6 |
| 9988.771 | 49.3 | -12.2 | 231.0 | 1.0 | 0.0 | 0.0 | V-Horn | PK | 0.0 | 37.1 | 74.0 | -36.9 |

Testing was performed using the mode(s) of operation and configuration(s) noted within the report. The individuals and/or the organization requesting the test provided the modes, configurations and settings used to complete the evaluation. The actual test parameters are specified in the test data, this includes items such as investigated frequency range (scanned) and test levels. The testing methods and performance specifications, as well as the test site used for the evaluation are indicated in the test data.

MODES OF OPERATION

2475 MHz, High channel

2405 MHz, Low channel

2440 MHz, Mid channel

POWER SETTINGS INVESTIGATED

120V/60Hz

CONFIGURATIONS INVESTIGATED

AWAR0002 - Config 2

SAMPLE CALCULATIONS

Conducted Emissions: Adjusted Level = Measured Level + Transducer Factor + Cable Attenuation Factor + External Attenuator

TEST EQUIPMENT

| Description | Manufacturer | Model | ID | Last Cal. | Interval |
|------------------|-----------------|------------------|-----|-----------|----------|
| Attenuator | Pasternack | 6N10W-20 | AWC | 1/27/2010 | 13 mo |
| OC06 Cables | None | CE Cables | OCM | 3/8/2010 | 13 mo |
| High Pass Filter | TTE | H97-100K-50-720B | HFP | 3/8/2010 | 13 mo |
| LISN | Solar | 9252-50-R-24-BNC | LIC | 3/10/2009 | 13 mo |
| Receiver | Rohde & Schwarz | ESCI | ARG | 3/15/2010 | 13 mo |

MEASUREMENT BANDWIDTHS

| Frequency Range (MHz) | Peak Data (kHz) | Quasi-Peak Data (kHz) | Average Data (kHz) |
|--------------------------|--------------------|--------------------------|-----------------------|
| 0.01 - 0.15 | 1.0 | 0.2 | 0.2 |
| 0.15 - 30.0 | 10.0 | 9.0 | 9.0 |
| 30.0 - 1000 | 100.0 | 120.0 | 120.0 |
| Above 1000 | 1000.0 | N/A | 1000.0 |

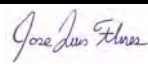
Measurements were made using the bandwidths and detectors specified. No video filter was used.

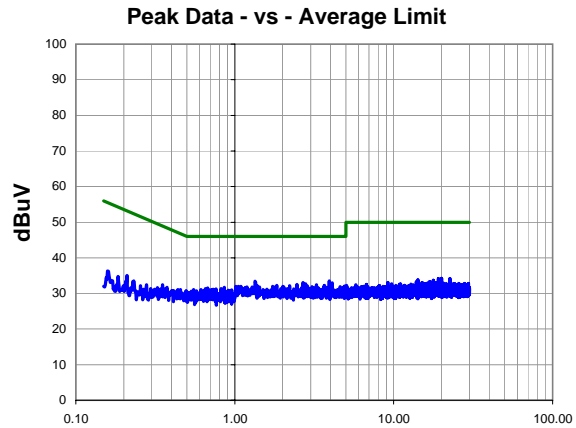
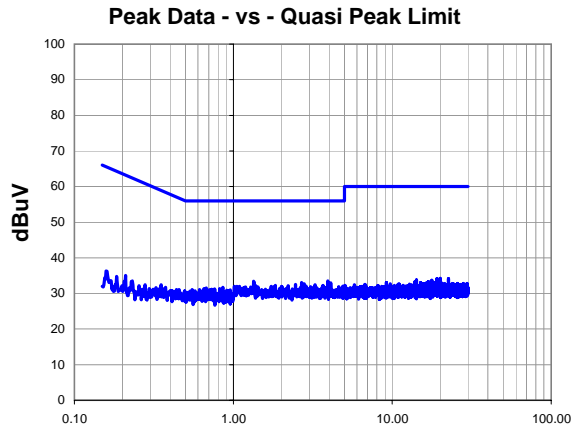
MEASUREMENT UNCERTAINTY

A measurement uncertainty estimation has been performed for each test per our internal quality document WP 342. The estimation is used to compare the measured result with its "true" or theoretically correct value. The expanded measurement uncertainty for radiated emissions measurements is less than +/- 4 dB, and for conducted emissions measurements is less than +/- 2.7 dB. Our measurement data meets or exceeds the measurement uncertainty requirements of CISPR 16-4; therefore, the test data can be compared directly to the specification limit to determine compliance. The calculations for measurement uncertainty are available upon request.


TEST DESCRIPTION

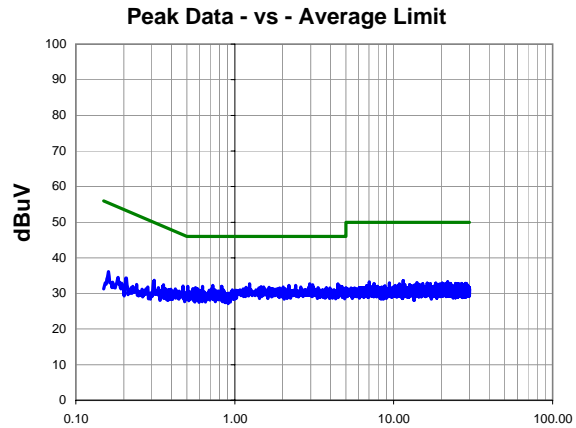
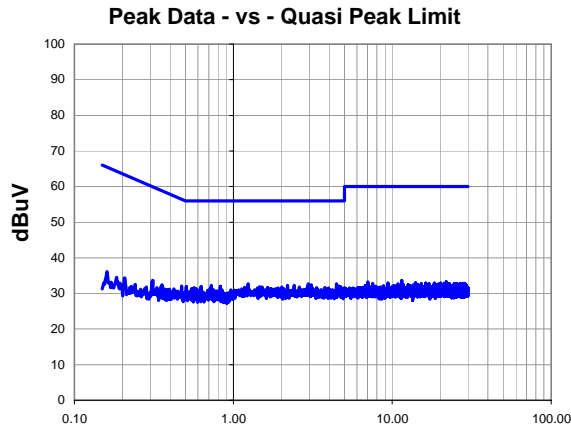
Using the mode of operation and configuration noted within this report, conducted emissions tests were performed. The frequency range investigated (scanned), is also noted in this report. Conducted power line measurements are made, unless otherwise specified, over the frequency range from 150 kHz to 30 MHz to determine the line-to-ground radio-noise voltage that is conducted from the EUT power-input terminals that are directly (or indirectly via separate transformer or power supplies) connected to a public power network. Equipment is tested with power cords that are normally used or that have electrical or shielding characteristics that are the same as those cords normally used. Typically those measurements are made using a LISN (Line Impedance Stabilization Network), the 50ohm measuring port is terminated by a 50ohm EMI meter or a 50ohm resistive load. All 50ohm measuring ports of the LISN are terminated by 50ohm.

| | | | | | | | |
|---|----------------------------|--------------------------|--|---|----|----------------|------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | | | |
| Project: | None | Temperature: | 19C | | | | |
| Job Site: | OC06 | Humidity: | 30 | | | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | | | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | | | |
| Configuration: | 2 | | | | | | |
| Customer: | Awarepoint Corporation | | | | | | |
| Attendees: | Eric Hoffman | | | | | | |
| EUT Power: | 120V/60Hz | | | | | | |
| Operating Mode: | 2440 MHz, Mid channel | | | | | | |
| Deviations: | No deviations. | | | | | | |
| Comments: | Transmit | | | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | | | |
| Run # | 1 | Line: | High Line | Ext. Attenuation: | 20 | Results | Pass |




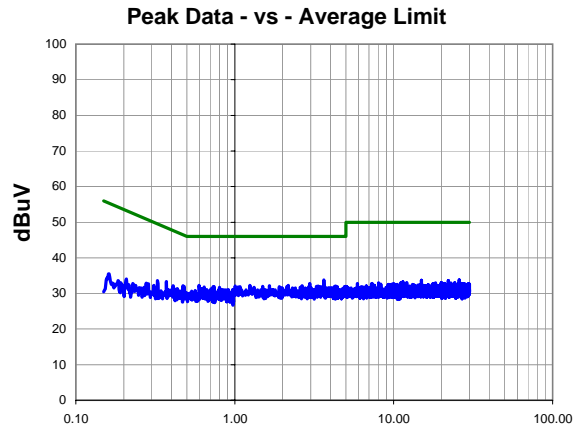
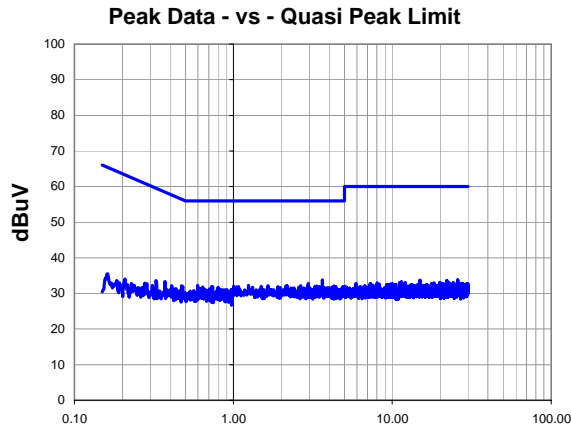
| Peak Data - vs - Quasi Peak Limit | | | | | | Peak Data - vs - Average Limit | | | | | |
|-----------------------------------|------------------|-------------|-------------|----------------|------------------------|--------------------------------|------------------|-------------|-------------|----------------|------------------------|
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) | Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
| 3.928 | 13.0 | 20.5 | 33.5 | 56.0 | -22.5 | 3.928 | 13.0 | 20.5 | 33.5 | 46.0 | -12.5 |
| 1.344 | 13.0 | 20.4 | 33.4 | 56.0 | -22.6 | 1.344 | 13.0 | 20.4 | 33.4 | 46.0 | -12.6 |
| 2.688 | 12.6 | 20.5 | 33.1 | 56.0 | -22.9 | 2.688 | 12.6 | 20.5 | 33.1 | 46.0 | -12.9 |
| 4.104 | 12.5 | 20.5 | 33.0 | 56.0 | -23.0 | 4.104 | 12.5 | 20.5 | 33.0 | 46.0 | -13.0 |
| 2.792 | 12.2 | 20.5 | 32.7 | 56.0 | -23.3 | 2.792 | 12.2 | 20.5 | 32.7 | 46.0 | -13.3 |
| 2.464 | 12.1 | 20.4 | 32.5 | 56.0 | -23.5 | 2.464 | 12.1 | 20.4 | 32.5 | 46.0 | -13.5 |
| 3.264 | 11.9 | 20.5 | 32.4 | 56.0 | -23.6 | 3.264 | 11.9 | 20.5 | 32.4 | 46.0 | -13.6 |
| 1.840 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 | 1.840 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 3.664 | 11.8 | 20.5 | 32.3 | 56.0 | -23.7 | 3.664 | 11.8 | 20.5 | 32.3 | 46.0 | -13.7 |
| 1.384 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 | 1.384 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 2.216 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 | 2.216 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 4.920 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 | 4.920 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 2.008 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 | 2.008 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 3.064 | 11.4 | 20.5 | 31.9 | 56.0 | -24.1 | 3.064 | 11.4 | 20.5 | 31.9 | 46.0 | -14.1 |
| 4.608 | 11.4 | 20.5 | 31.9 | 56.0 | -24.1 | 4.608 | 11.4 | 20.5 | 31.9 | 46.0 | -14.1 |
| 0.859 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 | 0.859 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 0.675 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 | 0.675 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.653 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 | 0.653 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 0.821 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 | 0.821 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 0.762 | 10.9 | 20.4 | 31.3 | 56.0 | -24.7 | 0.762 | 10.9 | 20.4 | 31.3 | 46.0 | -14.7 |

| | | | | | | | |
|---|----------------------------|--------------------------|--|---|----|----------------|------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | | | |
| Project: | None | Temperature: | 19C | | | | |
| Job Site: | OC06 | Humidity: | 30 | | | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | | | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | | | |
| Configuration: | 2 | | | | | | |
| Customer: | Awarepoint Corporation | | | | | | |
| Attendees: | Eric Hoffman | | | | | | |
| EUT Power: | 120V/60Hz | | | | | | |
| Operating Mode: | 2440 MHz, Mid channel | | | | | | |
| Deviations: | No deviations. | | | | | | |
| Comments: | Transmit | | | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | | | |
| Run # | 2 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |

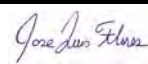


| Peak Data - vs - Quasi Peak Limit | | | | | | Peak Data - vs - Average Limit | | | | | |
|-----------------------------------|------------------|-------------|-------------|----------------|------------------------|--------------------------------|------------------|-------------|-------------|----------------|------------------------|
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) | Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
| 1.240 | 12.3 | 20.4 | 32.7 | 56.0 | -23.3 | 1.240 | 12.3 | 20.4 | 32.7 | 46.0 | -13.3 |
| 2.960 | 12.2 | 20.5 | 32.7 | 56.0 | -23.3 | 2.960 | 12.2 | 20.5 | 32.7 | 46.0 | -13.3 |
| 4.456 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 | 4.456 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 3.096 | 11.9 | 20.5 | 32.4 | 56.0 | -23.6 | 3.096 | 11.9 | 20.5 | 32.4 | 46.0 | -13.6 |
| 0.726 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 | 0.726 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 2.192 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 | 2.192 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 2.416 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 | 2.416 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 4.608 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 | 4.608 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 0.507 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 | 0.507 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 0.626 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 | 0.626 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 0.828 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 | 0.828 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 1.464 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 | 1.464 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 2.016 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 | 2.016 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 0.473 | 11.6 | 20.5 | 32.1 | 56.5 | -24.4 | 0.473 | 11.6 | 20.5 | 32.1 | 46.5 | -14.4 |
| 0.567 | 11.1 | 20.5 | 31.6 | 56.0 | -24.4 | 0.567 | 11.1 | 20.5 | 31.6 | 46.0 | -14.4 |
| 0.544 | 10.9 | 20.5 | 31.4 | 56.0 | -24.6 | 0.544 | 10.9 | 20.5 | 31.4 | 46.0 | -14.6 |
| 0.842 | 10.7 | 20.4 | 31.1 | 56.0 | -24.9 | 0.842 | 10.7 | 20.4 | 31.1 | 46.0 | -14.9 |
| 0.609 | 10.4 | 20.4 | 30.8 | 56.0 | -25.2 | 0.609 | 10.4 | 20.4 | 30.8 | 46.0 | -15.2 |
| 0.312 | 13.0 | 20.7 | 33.7 | 59.9 | -26.2 | 0.312 | 13.0 | 20.7 | 33.7 | 49.9 | -16.2 |
| 11.470 | 12.9 | 20.7 | 33.6 | 60.0 | -26.4 | 11.470 | 12.9 | 20.7 | 33.6 | 50.0 | -16.4 |

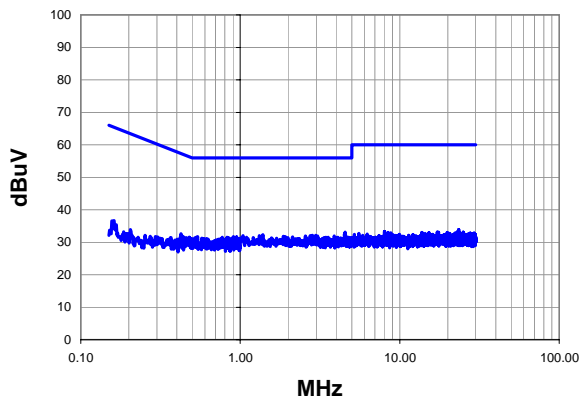
| | | | | | | | |
|---|----------------------------|--------------------------|--|---|----|----------------|------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | | | |
| Project: | None | Temperature: | 19C | | | | |
| Job Site: | OC06 | Humidity: | 30 | | | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | | | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | | | |
| Configuration: | 2 | | | | | | |
| Customer: | Awarepoint Corporation | | | | | | |
| Attendees: | Eric Hoffman | | | | | | |
| EUT Power: | 120V/60Hz | | | | | | |
| Operating Mode: | 2405 MHz, Low channel | | | | | | |
| Deviations: | No deviations. | | | | | | |
| Comments: | Transmit | | | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | | | |
| Run # | 3 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |



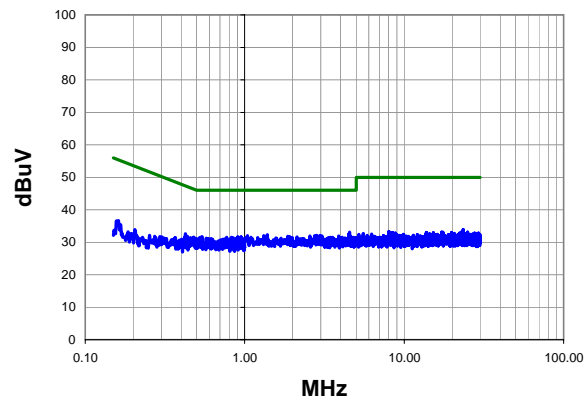
| Peak Data - vs - Quasi Peak Limit | | | | | | Peak Data - vs - Average Limit | | | | | |
|-----------------------------------|------------------|-------------|-------------|----------------|------------------------|--------------------------------|------------------|-------------|-------------|----------------|------------------------|
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) | Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
| 3.640 | 13.3 | 20.5 | 33.8 | 56.0 | -22.2 | 3.640 | 13.3 | 20.5 | 33.8 | 46.0 | -12.2 |
| 2.960 | 12.3 | 20.5 | 32.8 | 56.0 | -23.2 | 2.960 | 12.3 | 20.5 | 32.8 | 46.0 | -13.2 |
| 1.248 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 | 1.248 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 2.176 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 | 2.176 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 0.597 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 | 0.597 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 1.656 | 11.8 | 20.4 | 32.2 | 56.0 | -23.8 | 1.656 | 11.8 | 20.4 | 32.2 | 46.0 | -13.8 |
| 2.656 | 11.7 | 20.5 | 32.2 | 56.0 | -23.8 | 2.656 | 11.7 | 20.5 | 32.2 | 46.0 | -13.8 |
| 3.336 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 | 3.336 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 4.312 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 | 4.312 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 1.496 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 | 1.496 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 3.264 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 | 3.264 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 4.248 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 | 4.248 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 4.976 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 | 4.976 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 0.731 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 | 0.731 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 0.740 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 | 0.740 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 1.904 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 | 1.904 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 0.643 | 11.4 | 20.4 | 31.8 | 56.0 | -24.2 | 0.643 | 11.4 | 20.4 | 31.8 | 46.0 | -14.2 |
| 0.473 | 11.7 | 20.5 | 32.2 | 56.5 | -24.3 | 0.473 | 11.7 | 20.5 | 32.2 | 46.5 | -14.3 |
| 0.801 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 | 0.801 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 0.482 | 11.4 | 20.5 | 31.9 | 56.3 | -24.4 | 0.482 | 11.4 | 20.5 | 31.9 | 46.3 | -14.4 |

| | | | | | |
|---|----------------------------|--------------------------|--|---|---------------------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | |
| Project: | None | Temperature: | 19C | | |
| Job Site: | OC06 | Humidity: | 30 | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | |
| Configuration: | 2 | | | | |
| Customer: | Awarepoint Corporation | | | | |
| Attendees: | Eric Hoffman | | | | |
| EUT Power: | 120V/60Hz | | | | |
| Operating Mode: | 2405 MHz, Low channel | | | | |
| Deviations: | No deviations. | | | | |
| Comments: | Transmit | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | |
| Run # | 4 | Line: | High Line | Ext. Attenuation: 20 | Results Pass |

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit

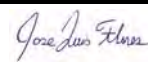


Peak Data - vs - Quasi Peak Limit

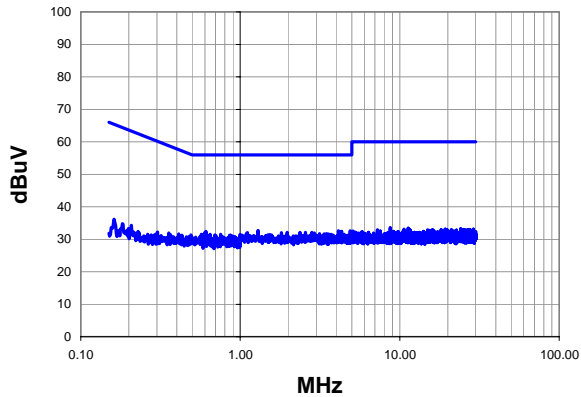
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 4.536 | 12.6 | 20.5 | 33.1 | 56.0 | -22.9 |
| 1.384 | 11.9 | 20.4 | 32.3 | 56.0 | -23.7 |
| 2.824 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 3.888 | 11.4 | 20.5 | 31.9 | 56.0 | -24.1 |
| 2.560 | 11.4 | 20.5 | 31.9 | 56.0 | -24.1 |
| 0.539 | 11.2 | 20.5 | 31.7 | 56.0 | -24.3 |
| 0.905 | 11.3 | 20.4 | 31.7 | 56.0 | -24.3 |
| 0.949 | 11.2 | 20.4 | 31.6 | 56.0 | -24.4 |
| 0.531 | 11.0 | 20.5 | 31.5 | 56.0 | -24.5 |
| 0.770 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 0.827 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 0.835 | 10.9 | 20.4 | 31.3 | 56.0 | -24.7 |
| 0.425 | 12.0 | 20.6 | 32.6 | 57.3 | -24.8 |
| 0.573 | 10.7 | 20.5 | 31.2 | 56.0 | -24.8 |
| 0.886 | 10.8 | 20.4 | 31.2 | 56.0 | -24.8 |
| 0.616 | 10.7 | 20.4 | 31.1 | 56.0 | -24.9 |
| 0.476 | 11.0 | 20.5 | 31.5 | 56.4 | -24.9 |
| 0.862 | 10.4 | 20.4 | 30.8 | 56.0 | -25.2 |
| 0.437 | 11.3 | 20.5 | 31.8 | 57.1 | -25.3 |
| 23.470 | 13.0 | 20.9 | 33.9 | 60.0 | -26.1 |

Peak Data - vs - Average Limit

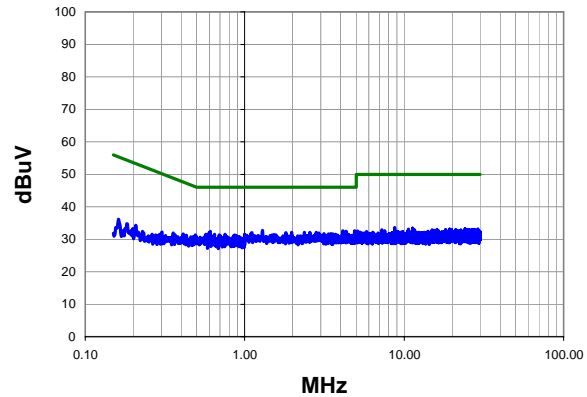
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 4.536 | 12.6 | 20.5 | 33.1 | 46.0 | -12.9 |
| 1.384 | 11.9 | 20.4 | 32.3 | 46.0 | -13.7 |
| 2.824 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 3.888 | 11.4 | 20.5 | 31.9 | 46.0 | -14.1 |
| 2.560 | 11.4 | 20.5 | 31.9 | 46.0 | -14.1 |
| 0.539 | 11.2 | 20.5 | 31.7 | 46.0 | -14.3 |
| 0.905 | 11.3 | 20.4 | 31.7 | 46.0 | -14.3 |
| 0.949 | 11.2 | 20.4 | 31.6 | 46.0 | -14.4 |
| 0.531 | 11.0 | 20.5 | 31.5 | 46.0 | -14.5 |
| 0.770 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.827 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.835 | 10.9 | 20.4 | 31.3 | 46.0 | -14.7 |
| 0.425 | 12.0 | 20.6 | 32.6 | 47.3 | -14.8 |
| 0.573 | 10.7 | 20.5 | 31.2 | 46.0 | -14.8 |
| 0.886 | 10.8 | 20.4 | 31.2 | 46.0 | -14.8 |
| 0.616 | 10.7 | 20.4 | 31.1 | 46.0 | -14.9 |
| 0.476 | 11.0 | 20.5 | 31.5 | 46.4 | -14.9 |
| 0.862 | 10.4 | 20.4 | 30.8 | 46.0 | -15.2 |
| 0.437 | 11.3 | 20.5 | 31.8 | 47.1 | -15.3 |
| 23.470 | 13.0 | 20.9 | 33.9 | 50.0 | -16.1 |

| | | | | | | | |
|---|----------------------------|--------------------------|--|---|----|----------------|------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | | | |
| Project: | None | Temperature: | 19C | | | | |
| Job Site: | OC06 | Humidity: | 30 | | | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | | | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | | | |
| Configuration: | 2 | | | | | | |
| Customer: | Awarepoint Corporation | | | | | | |
| Attendees: | Eric Hoffman | | | | | | |
| EUT Power: | 120V/60Hz | | | | | | |
| Operating Mode: | 2475 MHz, High channel | | | | | | |
| Deviations: | No deviations. | | | | | | |
| Comments: | Transmit | | | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | | | |
| Run # | 5 | Line: | High Line | Ext. Attenuation: | 20 | Results | Pass |

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit

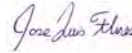


Peak Data - vs - Quasi Peak Limit

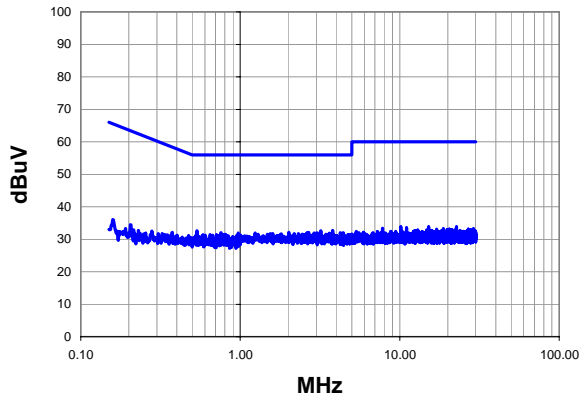
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 1.296 | 12.3 | 20.4 | 32.7 | 56.0 | -23.3 |
| 4.128 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 |
| 4.888 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 |
| 0.609 | 12.0 | 20.4 | 32.4 | 56.0 | -23.6 |
| 4.320 | 11.9 | 20.5 | 32.4 | 56.0 | -23.6 |
| 1.968 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.368 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.808 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 0.599 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 1.816 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 3.144 | 11.2 | 20.5 | 31.7 | 56.0 | -24.3 |
| 3.472 | 11.2 | 20.5 | 31.7 | 56.0 | -24.3 |
| 0.570 | 11.0 | 20.5 | 31.5 | 56.0 | -24.5 |
| 0.646 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 0.753 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 0.998 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 |
| 0.692 | 10.9 | 20.4 | 31.3 | 56.0 | -24.7 |
| 0.855 | 10.8 | 20.4 | 31.2 | 56.0 | -24.8 |
| 0.869 | 10.8 | 20.4 | 31.2 | 56.0 | -24.8 |
| 0.923 | 10.4 | 20.4 | 30.8 | 56.0 | -25.2 |

Peak Data - vs - Average Limit

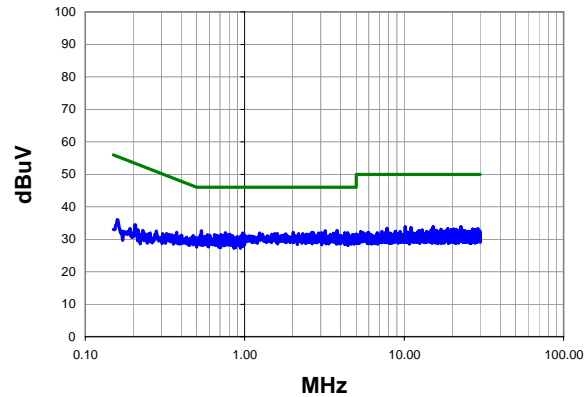
| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 1.296 | 12.3 | 20.4 | 32.7 | 46.0 | -13.3 |
| 4.128 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 4.888 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 0.609 | 12.0 | 20.4 | 32.4 | 46.0 | -13.6 |
| 4.320 | 11.9 | 20.5 | 32.4 | 46.0 | -13.6 |
| 1.968 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.368 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.808 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 0.599 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 1.816 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 3.144 | 11.2 | 20.5 | 31.7 | 46.0 | -14.3 |
| 3.472 | 11.2 | 20.5 | 31.7 | 46.0 | -14.3 |
| 0.570 | 11.0 | 20.5 | 31.5 | 46.0 | -14.5 |
| 0.646 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.753 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.998 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 0.692 | 10.9 | 20.4 | 31.3 | 46.0 | -14.7 |
| 0.855 | 10.8 | 20.4 | 31.2 | 46.0 | -14.8 |
| 0.869 | 10.8 | 20.4 | 31.2 | 46.0 | -14.8 |
| 0.923 | 10.4 | 20.4 | 30.8 | 46.0 | -15.2 |

| | | | | | | | |
|---|----------------------------|--------------------------|--|---|----|----------------|------|
| Work Order: | AWAR0002 | Date: | 03/31/10 |  | | | |
| Project: | None | Temperature: | 19C | | | | |
| Job Site: | OC06 | Humidity: | 30 | | | | |
| Serial Number: | 1034100515 | Barometric Pres.: | 1016 | Tested by: Luis Flores | | | |
| EUT: | Model: RM1 / PN: 200239-01 | | | | | | |
| Configuration: | 2 | | | | | | |
| Customer: | Awarepoint Corporation | | | | | | |
| Attendees: | Eric Hoffman | | | | | | |
| EUT Power: | 120V/60Hz | | | | | | |
| Operating Mode: | 2475 MHz, High channel | | | | | | |
| Deviations: | No deviations. | | | | | | |
| Comments: | Transmit | | | | | | |
| Test Specifications FCC 15.207:2010 | | | Test Method ANSI C63.10:2009 | | | | |
| Run # | 6 | Line: | Neutral | Ext. Attenuation: | 20 | Results | Pass |

Peak Data - vs - Quasi Peak Limit



Peak Data - vs - Average Limit



Peak Data - vs - Quasi Peak Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 3.800 | 12.2 | 20.5 | 32.7 | 56.0 | -23.3 |
| 0.536 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 |
| 3.200 | 12.1 | 20.5 | 32.6 | 56.0 | -23.4 |
| 2.016 | 11.7 | 20.4 | 32.1 | 56.0 | -23.9 |
| 2.688 | 11.6 | 20.5 | 32.1 | 56.0 | -23.9 |
| 0.757 | 11.6 | 20.4 | 32.0 | 56.0 | -24.0 |
| 2.624 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 4.248 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 4.424 | 11.5 | 20.5 | 32.0 | 56.0 | -24.0 |
| 0.973 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 1.240 | 11.5 | 20.4 | 31.9 | 56.0 | -24.1 |
| 3.600 | 11.3 | 20.5 | 31.8 | 56.0 | -24.2 |
| 0.803 | 11.1 | 20.4 | 31.5 | 56.0 | -24.5 |
| 0.648 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 |
| 0.709 | 11.0 | 20.4 | 31.4 | 56.0 | -24.6 |
| 0.585 | 10.9 | 20.5 | 31.4 | 56.0 | -24.6 |
| 0.672 | 10.8 | 20.4 | 31.2 | 56.0 | -24.8 |
| 0.896 | 10.4 | 20.4 | 30.8 | 56.0 | -25.2 |
| 10.160 | 13.2 | 20.6 | 33.8 | 60.0 | -26.2 |
| 15.190 | 13.0 | 20.8 | 33.8 | 60.0 | -26.2 |

Peak Data - vs - Average Limit

| Freq (MHz) | Amplitude (dBuV) | Factor (dB) | Adjusted () | Spec. Limit () | Compared to Spec. (dB) |
|------------|------------------|-------------|-------------|----------------|------------------------|
| 3.800 | 12.2 | 20.5 | 32.7 | 46.0 | -13.3 |
| 0.536 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 3.200 | 12.1 | 20.5 | 32.6 | 46.0 | -13.4 |
| 2.016 | 11.7 | 20.4 | 32.1 | 46.0 | -13.9 |
| 2.688 | 11.6 | 20.5 | 32.1 | 46.0 | -13.9 |
| 0.757 | 11.6 | 20.4 | 32.0 | 46.0 | -14.0 |
| 2.624 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 4.248 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 4.424 | 11.5 | 20.5 | 32.0 | 46.0 | -14.0 |
| 0.973 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 1.240 | 11.5 | 20.4 | 31.9 | 46.0 | -14.1 |
| 3.600 | 11.3 | 20.5 | 31.8 | 46.0 | -14.2 |
| 0.803 | 11.1 | 20.4 | 31.5 | 46.0 | -14.5 |
| 0.648 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 0.709 | 11.0 | 20.4 | 31.4 | 46.0 | -14.6 |
| 0.585 | 10.9 | 20.5 | 31.4 | 46.0 | -14.6 |
| 0.672 | 10.8 | 20.4 | 31.2 | 46.0 | -14.8 |
| 0.896 | 10.4 | 20.4 | 30.8 | 46.0 | -15.2 |
| 10.160 | 13.2 | 20.6 | 33.8 | 50.0 | -16.2 |
| 15.190 | 13.0 | 20.8 | 33.8 | 50.0 | -16.2 |