

*FCC PART 15, SUBPART B and C
TEST REPORT*

for

eForce® Prox

KEYCARD ENTRY SYSTEM

Model: 3090P

Prepared for

ADAMS RITE MANUFACTURING CO.
260 SANTA FE STREET
POMONA, CALIFORNIA 91767

Prepared by: _____

SCOTT McCUTCHAN

Approved by: _____

JOSH HANSEN

COMPATIBLE ELECTRONICS INC.
19121 EL TORO ROAD
SILVERADO, CALIFORNIA 92676
(949) 589-0700

DATE: APRIL 29, 2010

| | REPORT BODY | APPENDICES | | | | | TOTAL |
|-------|----------------|------------|---|---|----|---|-----------|
| | | A | B | C | D | E | |
| PAGES | 18 | 2 | 2 | 2 | 12 | 9 | 45 |

This report shall not be reproduced except in full, without the written approval of Compatible Electronics.

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

TABLE OF CONTENTS

| Section / Title | PAGE |
|--|----------|
| GENERAL REPORT SUMMARY | 4 |
| SUMMARY OF TEST RESULTS | 5 |
| 1. PURPOSE | 6 |
| 2. ADMINISTRATIVE DATA | 7 |
| 2.1 Location of Testing | 7 |
| 2.2 Traceability Statement | 7 |
| 2.3 Cognizant Personnel | 7 |
| 2.4 Date Test Sample was Received | 7 |
| 2.5 Disposition of the Test Sample | 7 |
| 2.6 Abbreviations and Acronyms | 7 |
| 3. APPLICABLE DOCUMENTS | 8 |
| 4. Description of Test Configuration | 9 |
| 4.1 Description of Test Configuration - EMI | 9 |
| 4.1.1 Cable Construction and Termination | 10 |
| 5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT | 11 |
| 5.1 EUT and Accessory List | 11 |
| 5.2 EMI Test Equipment | 12 |
| 6. TEST SITE DESCRIPTION | 13 |
| 6.1 Test Facility Description | 13 |
| 6.2 EUT Mounting, Bonding and Grounding | 13 |
| 7. CHARACTERISTICS OF THE TRANSMITTER | 14 |
| 7.1 Operating Frequency | 14 |
| 7.2 Channel Number and Frequencies | 14 |
| 8. Test Procedures | 15 |
| 8.1 RF Emissions | 15 |
| 8.1.1 Conducted Emissions Test | 15 |
| 8.1.2 Radiated Emissions (Spurious and Harmonics) Test | 16 |
| 9. CONCLUSIONS | 18 |

LIST OF APPENDICES

| APPENDIX | TITLE |
|----------|---|
| A | Laboratory Recognitions |
| B | Modifications to the EUT |
| C | Additional Models Covered Under This Report |
| D | Diagrams, Charts, and Photos <ul style="list-style-type: none"> • Test Setup Diagrams • Radiated and Conducted Emissions Photos • Antenna and Effective Gain Factors |
| E | Data Sheets |

LIST OF FIGURES

| FIGURE | TITLE |
|--------|---|
| 1 | Conducted Emissions Test Setup |
| 2 | Plot Map And Layout of Radiated Site – 3 Meters |

GENERAL REPORT SUMMARY

This electromagnetic emission test report is generated by Compatible Electronics Inc., which is an independent testing and consulting firm. The test report is based on testing performed by Compatible Electronics personnel according to the measurement procedures described in the test specifications given below and in the "Test Procedures" section of this report.

The measurement data and conclusions appearing herein relate only to the sample tested and this report may not be reproduced without the written permission of Compatible Electronics, unless done so in full.

This report must not be used to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Device Tested: eForce® Prox Keycard Entry System
Model: 3090P
S/N: N/A

Product Description: The product is a 126 kHz System used for keyless doorway entry.

Modifications: The EUT was modified during the testing. Please see list of modifications in Appendix B.

Manufacturer: Adams Rite Manufacturing Co.
260 Santa Fe Street
Santa Ana, California 91767

Test Dates: The tests were performed on November 12 and 18, 2009.

Test Specifications: EMI requirements
CFR Title 47, Part 15, Subpart B, sections 15.31(e), 15.107, and 15.109; and Subpart C, sections 15.205, 15.207 and 15.209

Test Procedure: ANSI C63.4: 2003 and ANSI C63.10: 2009

Test Deviations: The test procedure was not deviated from during the testing.

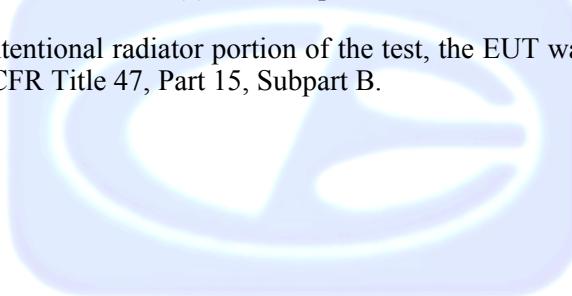
SUMMARY OF TEST RESULTS

| TEST | DESCRIPTION | RESULTS |
|------|--|---|
| 1 | Conducted RF Emissions, 150 kHz – 30 MHz | Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207 |
| 2 | Radiated RF Emissions, 10 kHz – 1 GHz | Complies with the Class B limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.209, and the voltage variation requirements in section 15.31(e). |

1. PURPOSE

This document is a qualification test report based on the Electromagnetic Interference (EMI) tests performed on the eForce® Prox Keycard Entry System, Model: 3090P. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4: 2003. The tests were performed in order to determine whether the electromagnetic emissions from the equipment under test, referred to as EUT hereafter, are within the Class B specification limits defined by CFR Title 47, Part 15, Subpart B, Section 15.31(e); and Subpart C, sections, 15.205, 15.207 and 15.209.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.



Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

2. ADMINISTRATIVE DATA

2.1 Location of Testing

The EMI tests described herein were performed at the test facility of Compatible Electronics, 19121 El Toro Road, Silverado, CA 92676.

2.2 Traceability Statement

The calibration certificates of all test equipment used during the test are on file at the location of the test. The calibration is traceable to the National Institute of Standards and Technology (NIST).

2.3 Cognizant Personnel

Adams Rite Manufacturing Co.

Brian Whipple Test Engineer

Compatible Electronics Inc.

| | |
|-----------------|-------------------------|
| Scott McCutchan | Lab Manager |
| Josh Hansen | Lab Manager |
| Jeff Klinger | Director of Engineering |

2.4 Date Test Sample was Received

The test sample was received on November 11, 2010.

2.5 Disposition of the Test Sample

The test sample was returned to Adams Rite on February 1, 2010.

2.6 Abbreviations and Acronyms

The following abbreviations and acronyms may be used in this document.

| | |
|------|--------------------------------------|
| RF | Radio Frequency |
| EMI | Electromagnetic Interference |
| EUT | Equipment Under Test |
| P/N | Part Number |
| S/N | Serial Number |
| HP | Hewlett Packard |
| ITE | Information Technology Equipment |
| CML | Corrected Meter Limit |
| LISN | Line Impedance Stabilization Network |
| N/A | Not Applicable |

3. APPLICABLE DOCUMENTS

The following documents are referenced or used in the preparation of this EMI Test Report.

| SPEC | TITLE |
|---------------------------------------|---|
| FCC Title 47, Part 15 Subpart B | FCC Rules - Radio frequency devices (including digital devices) – Unintentional Radiators |
| FCC Title 47, Part 15 Subpart C | FCC Rules - Radio frequency devices (including digital devices) – Intentional Radiators |
| ANSI C63.4 2003 | Methods of measurement of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9 kHz to 40 GHz |
| ANSI C63.10 2009 | American National Standard for Unlicensed Wireless Devices |

4. DESCRIPTION OF TEST CONFIGURATION

4.1 Description of Test Configuration - EMI

The eForce® Prox Keycard Entry System, Model: 3090P (EUT) consists of a main PCB assembly, an antenna board and antenna, which were installed in a typical arrangement inside a metal door lever assembly, which was held in position (non-conductively) to a metallic stand. The EUT was connected to a bench-top DC power supply via the red and black wires of its power cable. The white and green wires of its power cable were connected to the negative terminal on the power supply, each through an individual 470 kΩ resistor. The EUT also had seven external unterminated wires, simulating connection to normally-open contacts. The EUT was continuously transmitting and receiving throughout the testing.

For conducted emissions testing, the bench-top power supply was replaced with an off-the-shelf AC to DC power adapter, typically of what could be used in an actual installation. The EUT is not marketed with a power source.

It was determined that the emissions were at their highest level when the EUT was operating in the above configuration. The final emissions data was taken in this mode of operation and cable placements were maximized. Photographs of the test setup are in Appendix D of this report.

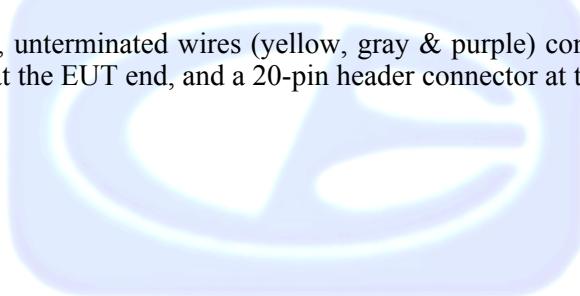


4.1.1 **Cable Construction and Termination**

Cables 1-2 These are 1 meter wires (red & black) connecting the EUT to the power source. They have a 12-pin connector at the EUT end, and are hard-wired to the power source.

Cable 3-4 These are 1 meter wires (white & green) connecting the EUT to the the negative terminal on the power source, each through a separate 470 kΩ resistor. They have a 12-pin connector at the EUT end, and are hard-wired to the resistors, which were hard-wired to the power source.

Cables 5-11 These are 1 meter, unterminated wires (yellow, gray & purple) connected to the EUT. They have a 12-pin connector at the EUT end, and a 20-pin header connector at the unterminated end.



5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT

5.1 EUT and Accessory List

| EQUIPMENT | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | FCC ID |
|---|------------------------------------|------------------|---------------|----------|
| eForce® Prox KEYCARD ENTRY SYSTEM (EUT) | ADAMS RITE MANUFACTURING CO. | 3090P | N/A | YBE3090P |
| BENCH-TOP DC POWER SUPPLY (radiated emissions only) | BK PRECISION | 1670 | 281-00414 | N/A |
| AC to DC POWER ADAPTER (conducted emissions only) | I.T.E. | W012-2120-100-1A | N/A | N/A |

5.2 EMI Test Equipment

| EQUIPMENT TYPE | MANUFACTURER | MODEL NUMBER | SERIAL NUMBER | CALIBRATION DATE | CALIBRATION DUE DATE |
|---|------------------------|--------------|---------------|------------------|----------------------|
| GENERAL TEST EQUIPMENT USED FOR ALL RF EMISSIONS TESTS | | | | | |
| Computer | Hewlett Packard | 4530 | US91925900 | N.C.R. | N/A |
| Spectrum Analyzer – Main Section | Hewlett Packard | 8566B | 2747A04875 | 5-8-2009 | 5-8-2010 |
| Spectrum Analyzer – Display Section | Hewlett Packard | 85662A | 2848A18214 | 5-8-2009 | 5-8-2010 |
| Quasi-Peak Adapter | Hewlett Packard | 85650A | 2811A01081 | 5-8-2009 | 5-8-2010 |
| Monitor | Envision | EFT720 | I9CG48A767451 | N.C.R. | N/A |
| RF RADIATED EMISSIONS TEST EQUIPMENT | | | | | |
| Biconical Antenna | Com Power | AB-900 | 15228 | 1-20-2009 | 1-20-2010 |
| Log Periodic Antenna | Com Power | AL-100 | 16016 | 1-20-2009 | 1-20-2010 |
| Preamplifier | Com-Power | PA-103A | 161206 | 11-28-2008 | 11-28-2009 |
| Loop Antenna | Com-Power | AL-130 | 17085 | 8-27-2008 | 8-27-2010 |
| Antenna Mast | Com Power | AM-100 | N/A | N/A | N/A |
| RF CONDUCTED EMISSIONS TEST EQUIPMENT | | | | | |
| Emissions Program | Compatible Electronics | SR21 | N/A | N/A | N/A |
| LISN | Com Power | LI-215 | 12081 | 7-9-2009 | 7-9-2010 |
| LISN | Com Power | LI-215 | 12072 | 7-9-2009 | 7-9-2010 |

6. TEST SITE DESCRIPTION

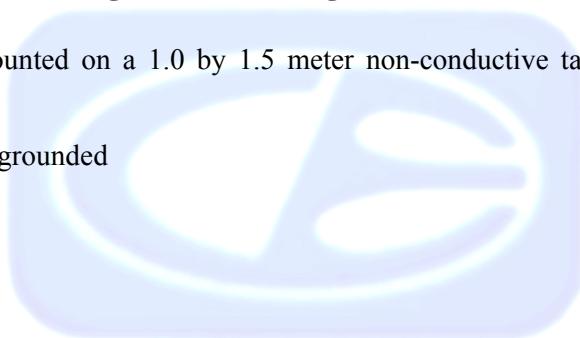
6.1 Test Facility Description

Please refer to section 2.1 and 7.1 of this report for EMI test location.

6.2 EUT Mounting, Bonding and Grounding

The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

The EUT was not grounded



7. CHARACTERISTICS OF THE TRANSMITTER

7.1 Operating Frequency

The EUT operates at 126 kHz.

7.2 Channel Number and Frequencies

The EUT is a single-channel transmitter.



8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section. Data sheets and/or plots for all tests are located in Appendix E.

8.1 RF Emissions

8.1.1 Conducted Emissions Test

The spectrum analyzer was used as a measuring meter. The data was collected with the spectrum analyzer in the peak detect mode with the "Max Hold" feature activated. The quasi-peak was used only where indicated in the data sheets. A transient limiter was used for the protection of the spectrum analyzer input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the spectrum analyzer. The output of the second LISN was terminated by a 50 ohm termination. The effective measurement bandwidth used for this test was 9 kHz.

Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The EUT was powered through the LISN, which was bonded to the ground plane. The LISN power was filtered and the filter was bonded to the ground plane. The EUT was set up with the minimum distances from any conductive surfaces as specified in ANSI C63.4: 2003. The excess power cord was wrapped in a figure eight pattern to form a bundle not exceeding 0.4 meters in length.

The conducted emissions from the EUT were maximized for operating mode as well as cable placement. The final data was collected under program control by the Compatible Electronics conducted emissions software in several overlapping sweeps by running the spectrum analyzer at a minimum scan rate of 10 seconds per octave.

Test Results:

Complies with the **Class B** limits of CFR Title 47, Part 15 Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, section 15.207.

8.1.2

Radiated Emissions (Spurious and Harmonics) Test

The spectrum analyzer was used as a measuring meter along with the quasi-peak adapter. Amplifiers were used to increase the sensitivity of the instrument. The Com Power Preamplifier Model: PA-103A was used for frequencies from 30 MHz to 1 GHz and the Com Power Microwave Preamplifier Model: PA-122 was used for frequencies above 1 GHz. The spectrum analyzer was used in the peak detect mode with the "Max Hold" feature activated. In this mode, the spectrum analyzer records the highest measured reading over all the sweeps.

The quasi-peak adapter was used only for those readings which are marked accordingly on the data sheets.

The measurement bandwidths and transducers used for the radiated emissions test were:

| FREQUENCY RANGE | EFFECTIVE MEASUREMENT BANDWIDTH | TRANSDUCER |
|-------------------|---------------------------------|----------------------|
| 10 kHz to 150 kHz | 200 Hz | Active Loop Antenna |
| 150 kHz to 30 MHz | 9 kHz | Active Loop Antenna |
| 30 MHz to 300 MHz | 120 kHz | Biconical Antenna |
| 300 MHz to 1 GHz | 120 kHz | Log Periodic Antenna |

The open field test site of Compatible Electronics, Inc. was used for radiated emission testing. This test site is set up according to ANSI C63.4: 2003. Please see section 6.2 of this report for mounting, bonding and grounding of the EUT. The turntable supporting the EUT is remote controlled using a motor. The turntable permits EUT rotation of 360 degrees in order to maximize emissions. Also, the antenna mast allows height variation of the antenna from 1 meter to 4 meters. Data was collected in the worst case (highest emission) configuration of the EUT by the Radiated Emission Manual Test software. At each reading, the EUT was rotated 360 degrees and the antenna height was varied from 1 to 4 meters (for E field radiated field strength). The gunsight method was used when measuring with the horn antenna in order to ensure accurate results.

Radiated Emissions (Spurious and Harmonics) Test (con't)

The presence of ambient signals was verified by turning the EUT off. In case an ambient signal was detected, the measurement bandwidth was reduced temporarily and verification was made that an additional adjacent peak did not exist. This ensures that the ambient signal does not hide any emissions from the EUT. The EUT was tested at a 3 meter test distance.

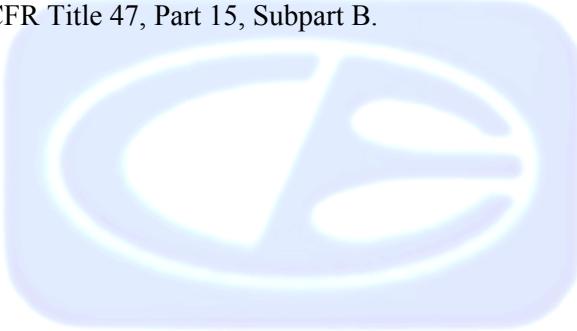
Test Results:

The EUT complies with the **Class B** limits of CFR Title 47, Part 15, Subpart B; and the limits of CFR Title 47, Part 15, Subpart C, Sections 15.209 and the voltage variation requirements contained in section 15.31(e).

9. CONCLUSIONS

With the EUT configured and operating as described in this report, the eForce® Prox Keycard Entry System Model: 3090P meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B, Section 15.31(e) and Subpart C, sections 15.205, 15.207 and 15.209.

Note: For the unintentional radiator portion of the test, the EUT was within the **Class B** specification limits defined by CFR Title 47, Part 15, Subpart B.



APPENDIX A

LABORATORY RECOGNITIONS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

LABORATORY ACCREDITATIONS AND RECOGNITIONS



For US, Canada, Australia/New Zealand, Taiwan and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025 an ISO 9002 equivalent. Please follow the link to the NIST site for each of our facilities NVLAP certificate and scope of accreditation.

NVLAP listing links

Agoura Division - <http://ts.nist.gov/Standards/scopes/2000630.htm>

Brea Division - <http://ts.nist.gov/Standards/scopes/2005280.htm>

Silverado/Lake Forest Division - <http://ts.nist.gov/Standards/scopes/2005270.htm>

**ANSI listing**[CETCB](#)

<https://www.ansica.org/wwwversion2/outside/ALLdirectoryDetails.asp?menuID=1&prgID=3&orgID=123&status=4>



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for EMC under the US/EU Mutual Recognition Agreement (MRA).



Compatible Electronics has been nominated as a Conformity Assessment Body (CAB) for Taiwan/BSMI under the US/APEC (Asia-Pacific Economic Cooperation) Mutual Recognition Agreement (MRA).

We are also certified/listed for IT products by the following country/agency:

**VCCI Listing, from VCCI site**

[Enter "Compatible" in search form](#) http://www.vcci.or.jp/vcci_e/activity/registration/setsubi.html

**FCC Listing, from FCC OET site**

[FCC test lab search](#) <https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm>



Compatible Electronics IC listing can be found at:

<http://www.ic.gc.ca/eic/site/ic1.nsf/eng/home>

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX B

MODIFICATIONS TO THE EUT

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.247 specifications.

All the rework described below was implemented during the test in a method that could be reproduced in all the units by the manufacturer.

- 1) Added a non-split ferrite core (Steward P/N: 28B0375-100) to the antenna cable. All wires passed through with one turn.



APPENDIX C

ADDITIONAL MODELS COVERED UNDER THIS REPORT

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

ADDITIONAL MODELS COVERED UNDER THIS REPORT

USED FOR THE PRIMARY TEST

eForce® Prox Keycard Entry System
Model: 3090P
S/N: N/A

There were no additional models covered under this report.



APPENDIX D

DIAGRAMS, CHARTS, AND PHOTOS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

FIGURE 1: CONDUCTED EMISSIONS TEST SETUP

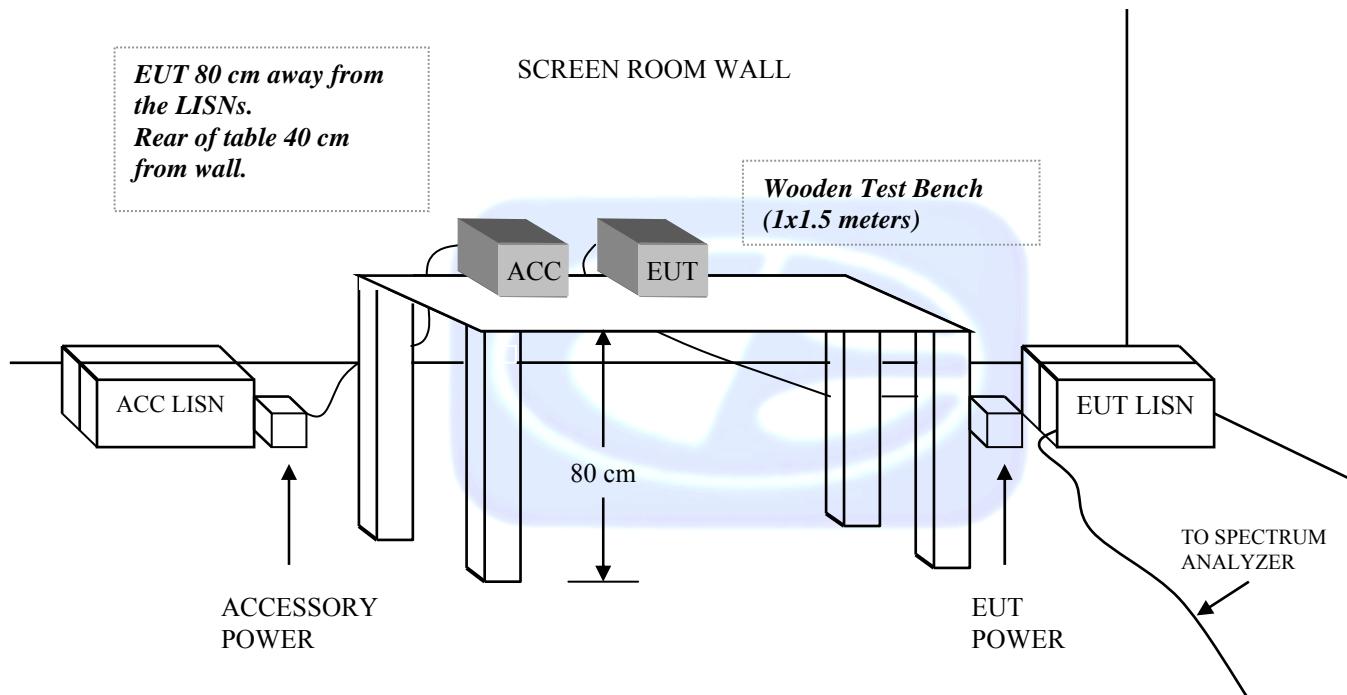
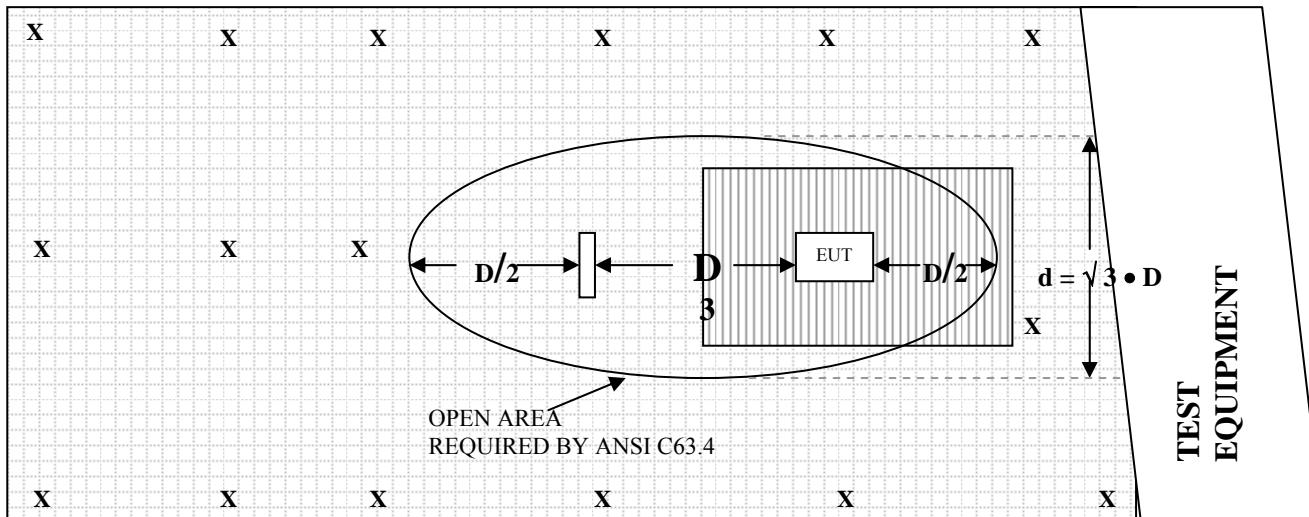


FIGURE 2: PLOT MAP AND LAYOUT OF RADIATED SITE – 3 METERS

OPEN LAND > 15 METERS



OPEN LAND > 15 METERS

| | |
|--|---|
|  = GROUND RODS |  = GROUND SCREEN |
|  = TEST DISTANCE (meters) |  = WOOD COVER |

COM-POWER AL-130

ACTIVE LOOP ANTENNA (E-FIELD)

S/N: 17085

CALIBRATION DATE: AUGUST 27, 2008

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|--------------------|----------------|--------------------|----------------|
| 0.009 | 8.5 | 0.8 | 9.97 |
| 0.01 | 9.57 | 0.9 | 10.04 |
| 0.02 | 10.21 | 1.0 | 10.21 |
| 0.03 | 10.77 | 2.0 | 10.53 |
| 0.4 | 10.47 | 3.0 | 10.4 |
| 0.05 | 9.13 | 4.0 | 10.14 |
| 0.06 | 9.9 | 5.0 | 10.57 |
| 0.07 | 9.54 | 6.0 | 10.83 |
| 0.08 | 9.4 | 7.0 | 10.43 |
| 0.09 | 9.67 | 8.0 | 10.6 |
| 0.1 | 9.67 | 9.0 | 11.4 |
| 0.2 | 7.04 | 10.0 | 10.34 |
| 0.3 | 9.77 | 15.0 | 3.53 |
| 0.4 | 9.7 | 20.0 | 10.73 |
| 0.5 | 9.7 | 25.0 | 7.13 |
| 0.6 | 10.17 | 30.0 | 8.4 |
| 0.7 | 10.14 | | |

COM-POWER AB-900

LAB J - BICONICAL ANTENNA

S/N: 15228

CALIBRATION DATE: JANUARY 20, 2009

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|--------------------|----------------|--------------------|----------------|
| 30.0 | 12.0 | 125.0 | 13.2 |
| 35.0 | 10.9 | 150.0 | 12.3 |
| 40.0 | 12.3 | 175.0 | 15.1 |
| 45.0 | 11.7 | 200.0 | 17.6 |
| 50.0 | 11.5 | 225.0 | 16.6 |
| 60.0 | 10.3 | 250.0 | 15.8 |
| 70.0 | 7.9 | 275.0 | 18.2 |
| 80.0 | 6.6 | 300.0 | 20.3 |
| 90.0 | 8.9 | | |
| 100.0 | 10.7 | | |

COM-POWER AL-100**LAB J - LOG PERIODIC ANTENNA****S/N: 16016****CALIBRATION DATE: JANUARY 20, 2009**

| FREQUENCY (MHz) | FACTOR (dB) |
|------------------------|--------------------|
| 300 | 13.1 |
| 400 | 15.0 |
| 500 | 17.2 |
| 600 | 18.9 |
| 700 | 19.9 |
| 800 | 23.2 |
| 900 | 22.4 |
| 1000 | 23.3 |

COM-POWER PA-103A
LAB J - PREAMPLIFIER
S/N: 161206
CALIBRATION DATE: NOVEMBER 28, 2008

| FREQUENCY (MHz) | FACTOR (dB) | FREQUENCY (MHz) | FACTOR (dB) |
|----------------------------|------------------------|----------------------------|------------------------|
| 30 | 31.5 | 300 | 31.5 |
| 40 | 31.5 | 350 | 31.3 |
| 50 | 31.5 | 400 | 31.4 |
| 60 | 31.6 | 450 | 31.3 |
| 70 | 31.5 | 500 | 30.6 |
| 80 | 31.6 | 550 | 31.0 |
| 90 | 31.6 | 600 | 30.3 |
| 100 | 31.5 | 650 | 29.9 |
| 125 | 31.7 | 700 | 29.1 |
| 150 | 31.6 | 750 | 30.0 |
| 175 | 31.6 | 800 | 32.5 |
| 200 | 31.5 | 850 | 31.5 |
| 225 | 31.4 | 900 | 31.4 |
| 250 | 31.5 | 950 | 31.9 |
| 275 | 31.5 | 1000 | 31.2 |



ADAMS RITE MANUFACTURING CO.
eForce® Prox KEYCARD ENTRY SYSTEM
MODEL: 3090P
FCC SUBPART B AND C – RADIATED EMISSIONS (9 kHz to 30 MHz)

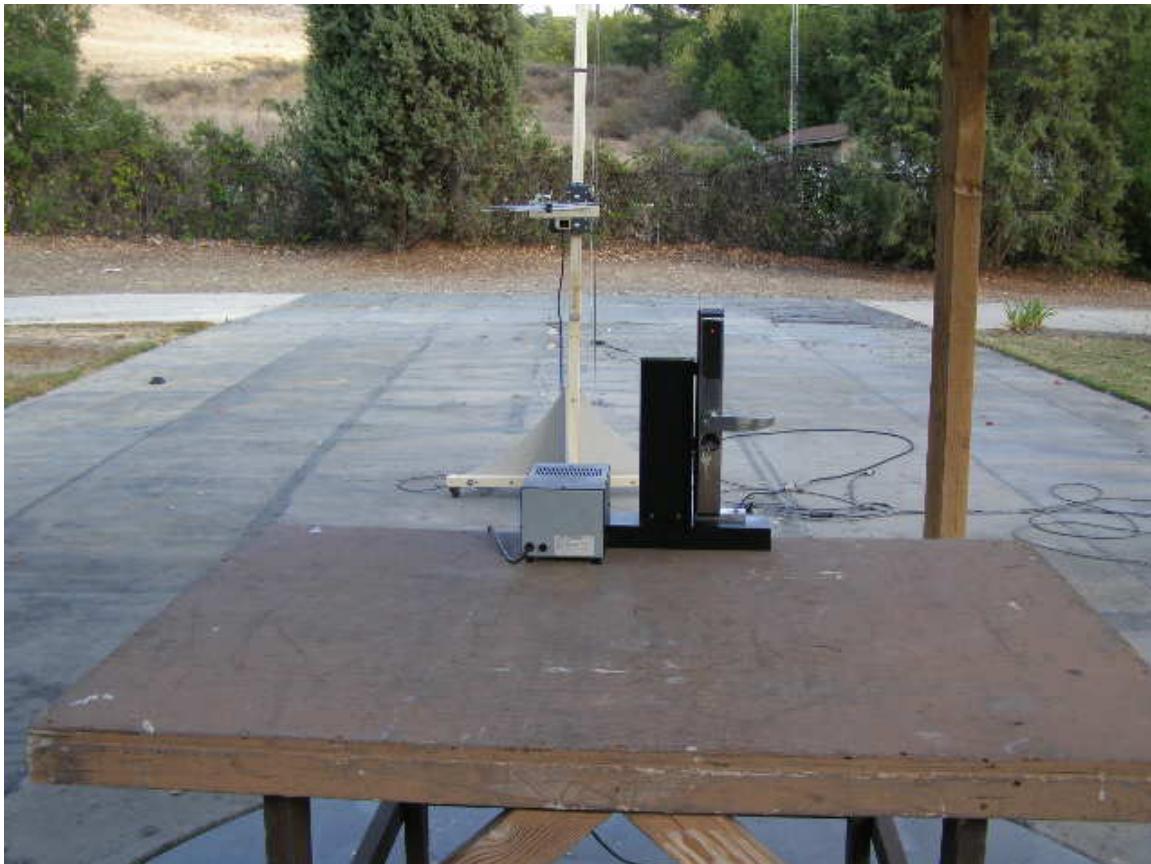
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

**FRONT VIEW**

ADAMS RITE MANUFACTURING CO.
eForce® Prox KEYCARD ENTRY SYSTEM
MODEL: 3090P
FCC SUBPART B AND C – RADIATED EMISSIONS (30 MHz to 1 GHz)

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

**REAR VIEW**

ADAMS RITE MANUFACTURING CO.
eForce® Prox KEYCARD ENTRY SYSTEM
MODEL: 3090P
FCC SUBPART B AND C – RADIATED EMISSIONS (30 MHz to 1 GHz)

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

**FRONT VIEW**

ADAMS RITE MANUFACTURING CO.
eForce® Prox KEYCARD ENTRY SYSTEM
MODEL: 3090P
FCC SUBPART B AND C – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

**REAR VIEW**

ADAMS RITE MANUFACTURING CO.
eForce® Prox KEYCARD ENTRY SYSTEM
MODEL: 3090P
FCC SUBPART B AND C – CONDUCTED EMISSIONS

**PHOTOGRAPH SHOWING THE EUT CONFIGURATION
FOR MAXIMUM EMISSIONS**

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

APPENDIX E

DATA SHEETS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

RADIATED EMISIONS

DATA SHEETS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

RADIATED EMISSIONS TEST DATA

Test Location : Compatible Electronics **Page :** 1/1
Customer : Brian Whipple **Date :** 11/12/2009
Manufacturer : Adams Rite Manufacturing Co. **Time :** 7:23:44 PM
EUT name : eForce Prox Keycard Entry System **Lab :** J
Model : 3090P **Test Distance :** 3 Meters
Serial # : N/A
Specification : FCC Part 15, Section 15.205, 15.209

Qualification Data; Frequency Range: 9 kHz to 30 MHz

Tested by: Scott McCutchan

Tempurate: 18 degrees C, 40% Humidity, 102.0 kPa

| Pol | Freq. MHz | Reading dBuV | Meas. Type | Cable Loss dB | Antenna factor dB | Amplifier gain dB | Corr'd rdg = R dBuV/m | Limit * = L dBuV/m | Delta R-L dB |
|-----|--------------|-----------------|---------------|---------------------|-------------------------|-------------------------|-----------------------------|--------------------------|--------------------|
| V | 0.126 | 46.00 | Peak | 0.00 | 8.50 | 0.00 | 54.50 | 105.57 | -51.07 |

NO HARMONICS OR OTHER SPURIOUS EMISSIONS FROM 9 kHz to 30 MHz

* Limits adjusted for 3 meter test distance using an extrapolation factor of 40 dB/decade.

Sample Calculation for 126 kHz: Limit @ 300m = 19 uV/m = 25.57 dBuV/m

40 * log (Spec Limit Distance [300m] / Test Distance [3m]) = 80 dB distance factor

Limit @ 3 meters = 105.57 dBuV/m

RADIATED EMISSIONS TEST DATA

Test Location : Compatible Electronics **Page :** 1/1
Customer : Brian Whipple **Date :** 11/12/2009
Manufacturer : Adams Rite Manufacturing Co. **Time :** 11:30:50 AM
EUT name : eForce Prox Keycard Entry System **Lab :** J
Model : 3090P **Test Distance :** 3 Meters
Serial # : N/A
Specification : FCC Part 15, Section 15.205, 15.209

Qualification Data; Frequency Range: 30 MHz to 1 GHz

Tested by: Scott McCutchan

Tempurature: 27 degrees C, 40% Humidity, 101.6 kPa

| Pol | Freq. | Reading | Meas. Type | Cable Loss | Antenna factor | Amplifier gain | Corr'd rdg = R | Limit * = L | Delta R-L |
|-----|---------|---------|------------|------------|----------------|----------------|----------------|-------------|-----------|
| | MHz | dBuV | | dB | dB | dB | dBuV/m | dBuV/m | dB |
| V | 37.693 | 55.60 | Peak | 1.54 | 11.68 | 31.50 | 37.32 | 40.00 | -2.68 |
| V | 128.150 | 38.30 | Peak | 2.27 | 13.08 | 31.69 | 21.96 | 43.50 | -21.54 |
| V | 136.150 | 38.60 | Peak | 2.43 | 12.78 | 31.65 | 22.16 | 43.50 | -21.34 |
| V | 147.700 | 40.70 | Peak | 2.66 | 12.38 | 31.61 | 24.13 | 43.50 | -19.37 |
| V | 167.000 | 44.90 | Peak | 2.56 | 14.25 | 31.60 | 30.11 | 43.50 | -13.39 |
| V | 169.850 | 46.80 | Peak | 2.54 | 14.56 | 31.60 | 32.30 | 43.50 | -11.20 |
| V | 187.050 | 49.60 | Peak | 2.65 | 16.35 | 31.55 | 37.05 | 43.50 | -6.45 |
| V | 190.050 | 42.80 | Peak | 2.69 | 16.64 | 31.54 | 30.59 | 43.50 | -12.91 |
| V | 195.100 | 49.00 | Peak | 2.74 | 17.14 | 31.52 | 37.36 | 43.50 | -6.14 |
| V | 205.400 | 42.30 | Peak | 2.80 | 17.37 | 31.48 | 30.99 | 43.50 | -12.51 |
| V | 236.800 | 41.70 | Peak | 2.99 | 16.21 | 31.45 | 29.45 | 46.00 | -16.55 |
| V | 271.700 | 38.30 | Peak | 3.29 | 17.90 | 31.50 | 27.99 | 46.00 | -18.01 |
| V | 286.400 | 36.00 | Peak | 3.25 | 19.18 | 31.50 | 26.93 | 46.00 | -19.07 |
| V | 307.700 | 33.20 | Peak | 3.27 | 13.27 | 31.47 | 18.27 | 46.00 | -27.73 |
| H | 35.240 | 48.80 | Peak | 1.47 | 10.97 | 31.50 | 29.74 | 40.00 | -10.26 |
| H | 36.280 | 46.10 | Peak | 1.50 | 11.28 | 31.50 | 27.38 | 40.00 | -12.62 |
| H | 73.310 | 43.60 | Peak | 1.77 | 7.45 | 31.53 | 21.29 | 40.00 | -18.71 |
| H | 131.500 | 38.00 | Peak | 2.34 | 12.95 | 31.67 | 21.62 | 43.50 | -21.88 |
| H | 145.200 | 42.50 | Peak | 2.61 | 12.46 | 31.62 | 25.95 | 43.50 | -17.55 |
| H | 173.900 | 41.30 | Peak | 2.51 | 14.99 | 31.60 | 27.20 | 43.50 | -16.30 |
| H | 179.700 | 45.70 | Peak | 2.56 | 15.60 | 31.58 | 32.28 | 43.50 | -11.22 |
| H | 189.300 | 43.90 | Peak | 2.68 | 16.57 | 31.54 | 31.61 | 43.50 | -11.89 |
| H | 197.200 | 45.80 | Peak | 2.77 | 17.34 | 31.51 | 34.40 | 43.50 | -9.10 |
| H | 219.400 | 47.50 | Peak | 2.80 | 16.81 | 31.42 | 35.69 | 46.00 | -10.31 |
| H | 227.800 | 48.10 | Peak | 2.85 | 16.51 | 31.41 | 36.05 | 46.00 | -9.95 |
| H | 242.700 | 46.70 | Peak | 3.09 | 16.03 | 31.47 | 34.35 | 46.00 | -11.65 |
| H | 259.600 | 40.40 | Peak | 3.24 | 16.75 | 31.50 | 28.89 | 46.00 | -17.11 |
| H | 281.500 | 38.30 | Peak | 3.27 | 18.76 | 31.50 | 28.83 | 46.00 | -17.17 |
| H | 291.400 | 43.80 | Peak | 3.23 | 19.60 | 31.50 | 35.13 | 46.00 | -10.87 |
| H | 302.800 | 45.30 | Peak | 3.22 | 13.16 | 31.49 | 30.19 | 46.00 | -15.81 |
| H | 324.200 | 40.30 | Peak | 3.40 | 13.61 | 31.40 | 25.91 | 46.00 | -20.09 |
| H | 342.200 | 37.00 | Peak | 3.54 | 13.97 | 31.33 | 23.18 | 46.00 | -22.82 |
| H | 385.600 | 41.10 | Peak | 3.75 | 14.76 | 31.37 | 28.24 | 46.00 | -17.76 |
| H | 402.200 | 38.30 | Peak | 3.82 | 15.05 | 31.40 | 25.77 | 46.00 | -20.23 |
| V | 300.000 | 38.90 | Peak | 3.20 | 13.10 | 31.50 | 23.70 | 46.00 | -22.30 |
| V | 330.100 | 36.90 | Peak | 3.45 | 13.73 | 31.38 | 22.70 | 46.00 | -23.30 |
| V | 369.400 | 38.70 | Peak | 3.68 | 14.47 | 31.34 | 25.51 | 46.00 | -20.49 |

CONDUCTED EMISISONS



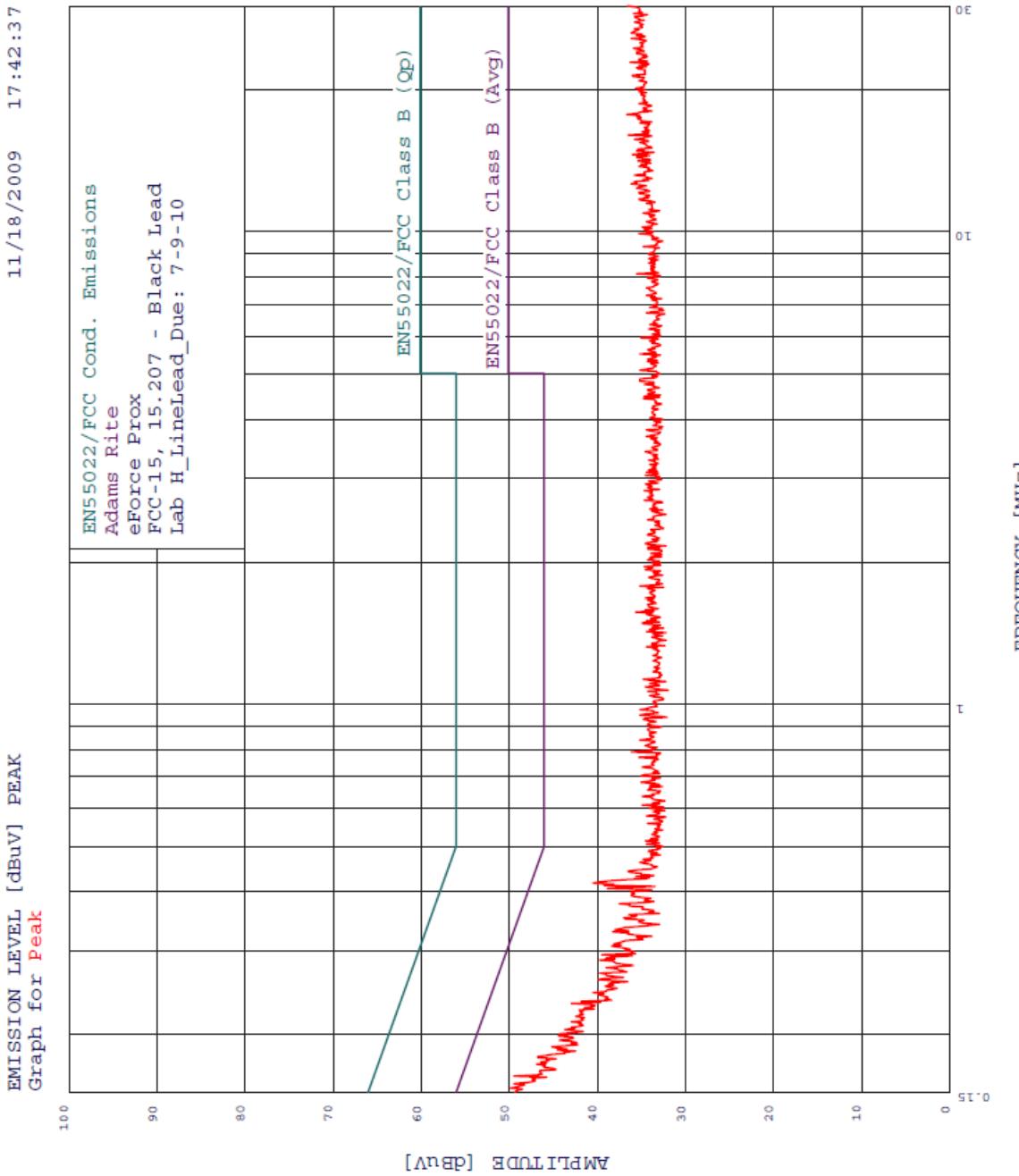
DATA SHEETS

Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400



Brea Division
114 Olinda Drive
Brea, CA 92823
(714) 579-0500

Agoura Division
2337 Troutdale Drive
Agoura, CA 91301
(818) 597-0600

Silverado Division
19121 El Toro Road
Silverado, CA 92676
(949) 589-0700

Lake Forest Division
20621 Pascal Way
Lake Forest, CA 92630
(949) 587-0400

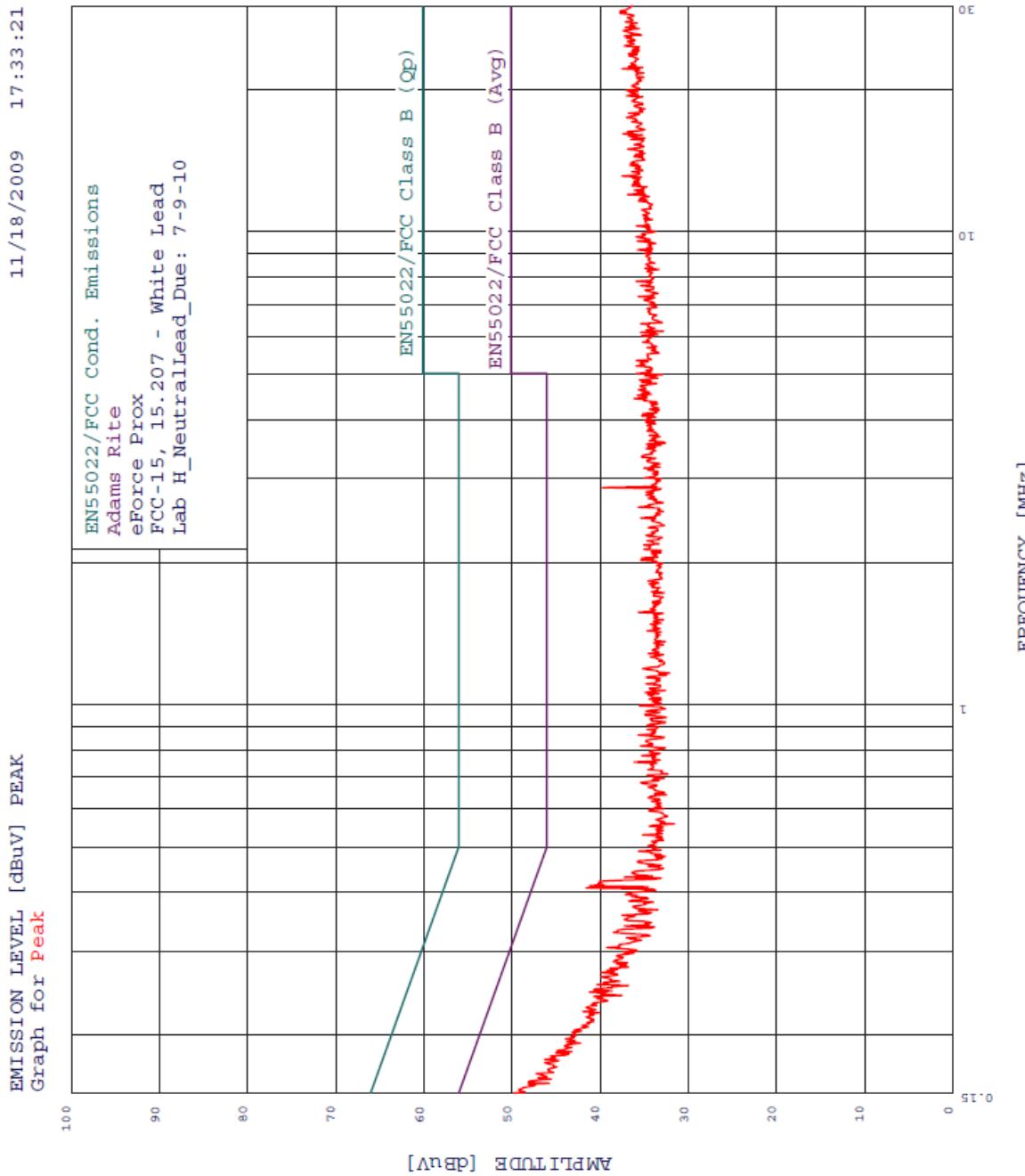
Adams Rite
 eForce Prox
 FCC-15, 15.207 - Black Lead

TEST ENGINEER : Scott McCutchan

30 highest peaks above -50.00 dB of EN55022/FCC Class B (Avg) limit line

Peak criteria : 1.00 dB, Curve : Peak

| Peak# | Freq (MHz) | Amp (dBuV) | Limit (dB) | Delta (dB) |
|-------|------------|------------|------------|------------|
| 1 | 0.162 | 49.45 | 55.34 | -5.88 |
| 2 | 0.153 | 49.80 | 55.82 | -6.02 |
| 3 | 0.157 | 49.48 | 55.64 | -6.16 |
| 4 | 0.417 | 40.47 | 47.50 | -7.04 |
| 5 | 0.178 | 46.79 | 54.59 | -7.80 |
| 6 | 0.172 | 46.91 | 54.86 | -7.94 |
| 7 | 0.413 | 39.17 | 47.59 | -8.42 |
| 8 | 0.406 | 38.87 | 47.72 | -8.85 |
| 9 | 0.187 | 45.14 | 54.15 | -9.01 |
| 10 | 0.198 | 44.40 | 53.71 | -9.31 |
| 11 | 0.232 | 42.86 | 52.39 | -9.53 |
| 12 | 0.194 | 44.32 | 53.88 | -9.57 |
| 13 | 0.184 | 44.46 | 54.28 | -9.83 |
| 14 | 0.792 | 36.15 | 46.00 | -9.85 |
| 15 | 0.204 | 43.58 | 53.44 | -9.86 |
| 16 | 0.212 | 42.88 | 53.14 | -10.26 |
| 17 | 1.569 | 35.64 | 46.00 | -10.36 |
| 18 | 0.234 | 41.76 | 52.30 | -10.54 |
| 19 | 0.442 | 36.46 | 47.02 | -10.56 |
| 20 | 0.771 | 35.25 | 46.00 | -10.75 |
| 21 | 4.877 | 35.18 | 46.00 | -10.82 |
| 22 | 0.974 | 35.16 | 46.00 | -10.84 |
| 23 | 0.948 | 35.16 | 46.00 | -10.84 |
| 24 | 0.839 | 35.15 | 46.00 | -10.85 |
| 25 | 0.377 | 37.48 | 48.34 | -10.86 |
| 26 | 0.286 | 39.72 | 50.63 | -10.91 |
| 27 | 1.781 | 35.07 | 46.00 | -10.93 |
| 28 | 0.705 | 35.05 | 46.00 | -10.95 |
| 29 | 0.683 | 35.05 | 46.00 | -10.95 |
| 30 | 0.294 | 39.41 | 50.41 | -11.00 |



Brea Division
 114 Olinda Drive
 Brea, CA 92823
 (714) 579-0500

Agoura Division
 2337 Troutdale Drive
 Agoura, CA 91301
 (818) 597-0600

Silverado Division
 19121 El Toro Road
 Silverado, CA 92676
 (949) 589-0700

Lake Forest Division
 20621 Pascal Way
 Lake Forest, CA 92630
 (949) 587-0400

Adams Rite
 eForce Prox
 FCC-15, 15.207 - White Lead

TEST ENGINEER : Scott McCutchan

30 highest peaks above -50.00 dB of EN55022/FCC Class B (Avg) limit line

Peak criteria : 1.00 dB, Curve : Peak

| Peak# | Freq(MHz) | Amp (dBuV) | Limit (dB) | Delta (dB) |
|-------|-----------|------------|------------|------------|
| 1 | 0.409 | 41.58 | 47.68 | -6.10 |
| 2 | 2.870 | 39.66 | 46.00 | -6.34 |
| 3 | 0.413 | 41.18 | 47.59 | -6.41 |
| 4 | 0.158 | 48.04 | 55.56 | -7.52 |
| 5 | 0.165 | 47.22 | 55.20 | -7.98 |
| 6 | 0.177 | 46.19 | 54.63 | -8.44 |
| 7 | 0.162 | 46.93 | 55.38 | -8.45 |
| 8 | 0.174 | 46.19 | 54.77 | -8.57 |
| 9 | 0.183 | 44.97 | 54.37 | -9.40 |
| 10 | 0.184 | 44.87 | 54.28 | -9.42 |
| 11 | 4.432 | 36.17 | 46.00 | -9.83 |
| 12 | 0.755 | 36.10 | 46.00 | -9.90 |
| 13 | 0.196 | 43.84 | 53.80 | -9.96 |
| 14 | 0.431 | 37.17 | 47.24 | -10.07 |
| 15 | 0.193 | 43.74 | 53.93 | -10.18 |
| 16 | 4.504 | 35.68 | 46.00 | -10.32 |
| 17 | 1.569 | 35.65 | 46.00 | -10.35 |
| 18 | 2.610 | 35.61 | 46.00 | -10.39 |
| 19 | 4.624 | 35.61 | 46.00 | -10.39 |
| 20 | 0.862 | 35.58 | 46.00 | -10.42 |
| 21 | 0.489 | 35.65 | 46.18 | -10.53 |
| 22 | 0.995 | 35.46 | 46.00 | -10.54 |
| 23 | 4.851 | 35.45 | 46.00 | -10.55 |
| 24 | 0.818 | 35.39 | 46.00 | -10.61 |
| 25 | 2.013 | 35.39 | 46.00 | -10.61 |
| 26 | 2.475 | 35.38 | 46.00 | -10.62 |
| 27 | 0.683 | 35.32 | 46.00 | -10.68 |
| 28 | 0.440 | 36.37 | 47.06 | -10.69 |
| 29 | 4.071 | 35.30 | 46.00 | -10.70 |
| 30 | 4.799 | 35.24 | 46.00 | -10.76 |