

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

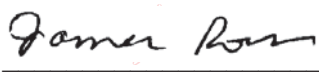
900 MHz MODULE

MODEL: 12-2121-00

Prepared for

ROBINSON ENGINEERING COMPANY, INC.  
1914 SILVER STREET  
GARLAND, TEXAS 75042Prepared by: 

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Approved by: 

JAMES ROSS

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DATE: JULY 11, 2016

|       | REPORT<br>BODY | APPENDICES |          |          |          |          | TOTAL |
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## 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 certification, approval or endorsement by NVLAP, NIST or any agency of the federal government.

Device Tested: 900 MHz Module  
Models: 12-2121-00  
S/N: N/A

Product Description: The EUT is an RF Module to be used inside Robinson Engineering Company, Inc. products.

Modifications: The EUT was not modified in order to meet the specifications.

Customer: Robinson Engineering Company, Inc.  
1914 Silver Street  
Garland, Texas 75042

Test Dates: June 9 and 10, 2016

Test Specifications: Emissions requirements  
CFR Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249

Test Procedure: ANSI C63.4, ANSI C63.10

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

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**SUMMARY OF TEST RESULTS**

| <i>TEST</i> | <b>DESCRIPTION</b>                                                                                   | <b>RESULTS</b>                                                                                                                                                                                                                                                 |
|-------------|------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1           | Spurious Radiated RF Emissions,<br>10 kHz – 9300 MHz<br>(Transmitter, Receiver, and Digital portion) | Complies with the <b>Class B</b> limits of CFR Title 47,<br>Part 15 Subpart B; and the limits of CFR Title 47, Part<br>15, Subpart C, section 15.205, 15.209 and 15.249<br>Highest reading in relation to spec limit: 93.86 dBuV/m @ 915.12 MHz (*U = 4.54 dB) |
| 2           | Conducted RF Emissions,<br>150 kHz to 30 MHz                                                         | Complies with the <b>Class B</b> limits of CFR Title 47,<br>Part 15 Subpart B; and the limits of CFR Title 47, Part<br>15, Subpart C, section 15.207<br>Highest reading in relation to spec limit: 20.96 dBuV @ 0.300 MHz (*U = 2.86 dB)                       |

## 1. PURPOSE

This document is a qualification test report based on the emissions tests performed on the 900 MHz Module, Model: 12-2121-00. The emissions measurements were performed according to the measurement procedure described in ANSI C63.4 and ANSI C63.10. 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; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.



## 2. ADMINISTRATIVE DATA

### 2.1 Location of Testing

The emissions tests described herein were performed at the test facility of Compatible Electronics, 114 Olinda Drive, Brea, California 92823.

### 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

Robinson Engineering Company, Inc.

Mahmudual Islam Engineer

Compatible Electronics Inc.

Kyle Fujimoto Test Engineer

James Ross Test Engineer

### 2.4 Date Test Sample was Received

The test sample was received on July 11, 2016.

### 2.5 Disposition of the Test Sample

The test sample has not been returned to Robinson Engineering Company, Inc. as of the date of this test report.

### 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     |
| LISN | Line Impedance Stabilization Network |
| N/A  | Not Applicable                       |
| Tx   | Transmit                             |
| Rx   | Receive                              |

### 3. APPLICABLE DOCUMENTS

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

| SPEC                                  | TITLE                                                                                                                                                                     |
|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| FCC Title 47,<br>Part 15<br>Subpart C | FCC Rules – Radio frequency devices (including digital devices) –<br>Intentional Radiators                                                                                |
| FCC Title 47,<br>Part 15<br>Subpart B | FCC Rules – Radio frequency devices (including digital devices) –<br>Unintentional Radiators                                                                              |
| EN 50147-2:<br>1997                   | Anechoic chambers. Alternative test site suitability with respect to site<br>attenuation                                                                                  |
| ANSI C63.4<br>2014                    | American National Standard for Methods of Measurement of Radio-Noise<br>Emissions from Low-Voltage Electrical and Electronic Equipment in the<br>Range of 9 kHz to 40 GHz |
| ANSI C63.10<br>2013                   | American National Standard for Testing Unlicensed Wireless Devices                                                                                                        |

#### 4. DESCRIPTION OF TEST CONFIGURATION

##### 4.1 Description of Test Configuration – Emissions

The RF Module (EUT) was connected to the host board via a 12-pin, 20-centimeter ribbon cable. The EUT was also connected to an antenna via its RF out port.

The host board was also connected to an AC/DC adapter via a small PCB connected directly to the host board.

The EUT was tested in three orthogonal axis and was programmed via dip switches on the host board so it could either transmit or receive at the low, middle, and high channels.

The EUT was investigated in both packet and transparent modes. It was determined that transparent mode was the worst case configuration and testing was done in this mode.

The X orientation is when the EUT is parallel to the ground. The Y orientation is when the EUT is perpendicular to the ground mounted vertically. The Z orientation is when the EUT is perpendicular to the ground mounted horizontally.

The EUT's amplitude and frequency did not change when the AC voltage was varied  $\pm 15\%$ .

The final radiated as well as the conducted data for the EUT as was taken in the mode described above. Please see Appendix E for the data sheets.

##### 4.1.1 Cable Construction and Termination

**Cable 1** This is a 20-centimeter unshielded cable connecting the EUT to the host board. The cable has a 12-pin connector at each end.

**Cable 2** This is a 20-centimeter braid shielded cable connecting the EUT to the antenna. The cable has an RPSMA connector at the EUT end and is hard wired into the antenna.

**Cable 3** This is a 2.5-meter unshielded cable connecting the AC/DC adapter to a small PCB directly connected to the host board. The cable is hard wired at each end.

**5. LISTS OF EUT, ACCESSORIES AND TEST EQUIPMENT****5.1 EUT and Accessory List**

| EQUIPMENT                | MANUFACTURER                  | MODEL NUMBER | SERIAL NUMBER | FCC ID        |
|--------------------------|-------------------------------|--------------|---------------|---------------|
| RF MODULE                | ROBINSON<br>ENGINEERING, INC. | N/A          | N/A           | NQHTRM900NTDB |
| AC/DC ADAPTER            | PROAM                         | 900-052      | N/A           | N/A           |
| HOST BOARD               | ROBINSON<br>ENGINEERING, INC. | 151222       | N/A           | N/A           |
| SMALL PCB POWER<br>BOARD | ROBINSON<br>ENGINEERING, INC. | 12-16120     | N/A           | N/A           |
| ANTENNA                  | N/A                           | N/A          | N/A           | N/A           |

## 5.2 Emissions Test Equipment

| EQUIPMENT TYPE                        | MANU-FACTURER              | MODEL NUMBER | SERIAL NUMBER | CALIBRATION DATE  | CAL. CYCLE |
|---------------------------------------|----------------------------|--------------|---------------|-------------------|------------|
| GENERAL TEST EQUIPMENT USED IN LAB D  |                            |              |               |                   |            |
| TDK TestLab                           | TDK RF Solutions, Inc.     | 9.22         | 700145        | N/A               | N/A        |
| Computer                              | Hewlett Packard            | p6716f       | MXX1030PX0    | N/A               | N/A        |
| LCD Monitor                           | Hewlett Packard            | 52031a       | 3CQ046N3MG    | N/A               | N/A        |
| EMI Receiver, 20 Hz – 26.5 GHz        | Agilent Technologies       | N9038A       | MY51210150    | December 29, 2015 | 1 Year     |
| RF RADIATED EMISSIONS TEST EQUIPMENT  |                            |              |               |                   |            |
| CombiLog Antenna                      | Com-Power                  | AC-220       | 61060         | September 3, 2015 | 1 Year     |
| Preamplifier                          | Com-Power                  | PAM-118A     | 551024        | May 12, 2016      | 1 Year     |
| Loop Antenna                          | Com-Power                  | AL-130       | 17089         | February 6, 2015  | 2 Year     |
| Horn Antenna                          | Com-Power                  | AH-118       | 071175        | February 26, 2016 | 2 Year     |
| Antenna Mast                          | Com Power                  | AM-100       | N/A           | N/A               | N/A        |
| System Controller                     | Sunol Sciences Corporation | SC110V       | 112213-1      | N/A               | N/A        |
| Turntable                             | Sunol Sciences Corporation | 2011VS       | N/A           | N/A               | N/A        |
| Antenna-Mast                          | Sunol Sciences Corporation | TWR95-4      | 112213-3      | N/A               | N/A        |
| RF CONDUCTED EMISSIONS TEST EQUIPMENT |                            |              |               |                   |            |
| LISN                                  | Com-Power                  | LI-215A      | 191951        | June 9, 2015      | 2 Year     |
| Transient Limiter                     | Com-Power                  | 252A910      | N/A           | October 14, 2015  | 1 Year     |

## 6. TEST SITE DESCRIPTION

### 6.1 Test Facility Description

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

### 6.2 EUT Mounting, Bonding and Grounding

**For frequencies 1 GHz and below:** The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 0.8 meters above the ground plane.

**For frequencies above 1 GHz:** The EUT was mounted on a 1.0 by 1.5 meter non-conductive table 1.5 meters above the ground plane.

The EUT was not grounded.

## 7. CHARACTERISTICS OF THE TRANSMITTER

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

### 7.1 Channel Number and Frequencies

There are 101 channels spaced every 250 kHz and the EUT uses FSK modulation.

Channel 0 = 902.62 MHz  
Channel 1 = 902.87 MHz  
Channel 2 = 918.28 MHz...  
Channel 100 = 927.62 MHz

### 7.2 Antenna

The antenna has a reverse SMA connector and will be the antenna used with the EUT.

## 8. TEST PROCEDURES

The following sections describe the test methods and the specifications for the tests. Test results are also included in this section.

### 8.1 RF Emissions

#### 8.1.1 Conducted Emissions Test

The EMI Receiver was used as a measuring meter. A quasi-peak and/or average reading was taken only where indicated in the data sheets. A transient limiter was used for the protection of the EMI Receiver input stage, and the offset was adjusted accordingly to read the actual data measured. The LISN output was measured using the EMI Receiver. 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 63:4. 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 computer software. The final qualification data is located in Appendix E.

The EUT was tested at 120 VAC. The six highest emissions are listed in Table 1.0.

#### 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, Section 15.207 for conducted emissions. Please see Appendix E for the data sheets.

## 8.1.2 Radiated Emissions Test

The EMI Receiver was used as the measuring meter. A built-in, internal preamplifier was used to increase the sensitivity of the instrument. The EMI Receiver was initially used with the Analyzer mode feature activated. In this mode, the EMI receiver can then record the actual frequency to be measured. This final reading is then taken accurately in the EMI Receiver mode, which takes into account the cable loss, amplifier gain and antenna factors, so that a true reading is compared to the true limit. A quasi-peak reading was taken only for those readings, which are marked accordingly on the data sheets. The effective measurement bandwidth used for the radiated emissions test was according to the frequency measured (200 Hz for 10 kHz to 150 kHz, 9 kHz for 150 kHz to 30 MHz, 120 kHz for 30 MHz to 1 GHz and 1 MHz for 1 GHz to 9.3 GHz).

For emissions above 1 GHz, the RMS average detector function was used to average the emissions.

The EMI test chamber of Compatible Electronics, Inc. was used for radiated emissions testing. This test site is in full compliance with ANSI C63.4, EN 50147-2 and CISPR 22. 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. 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.

The EUT was tested at a 3-meter test distance. The six highest emissions are listed in Table 2.0.

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                          | Loop Antenna     |
| 150 kHz to 30 MHz | 9 kHz                           | Loop Antenna     |
| 30 MHz to 1 GHz   | 120 kHz                         | CombiLog Antenna |
| 1 GHz to 9.3 GHz  | 1 MHz                           | Horn Antenna     |

### Test Results:

The EUT complies with the **Class B** limits of **CFR** Title 47, Part 15, Subpart B; and Subpart C sections 15.205, 15.209 and 15.249 for radiated emissions.

### 8.1.3 RF Emissions Test Results

Table 1.0 CONDUCTED EMISSION RESULTS  
900 MHz Module  
Model: 12-2121-00

| Frequency MHz         | Average Corrected Reading* dBuV | Average Specification Limit dBuV | Delta (Cor. Reading – Spec. Limit) dB |
|-----------------------|---------------------------------|----------------------------------|---------------------------------------|
| 0.300 (BL) (Receive)  | 20.96 (Avg)                     | -29.51                           | 50.47                                 |
| 0.290 (BL) (Transmit) | 21.22 (Avg)                     | -29.58                           | 50.80                                 |
| 0.262 (WL) (Receive)  | 21.53 (Avg)                     | -29.62                           | 51.14                                 |
| 0.250 (WL) (Transmit) | 21.78 (Avg)                     | -29.75                           | 51.53                                 |
| 0.250 (BL)(Receive)   | 21.60 (Avg)                     | -29.82                           | 51.41                                 |
| 0.270 (WL)(Receive)   | 21.45 (Avg)                     | -29.83                           | 51.28                                 |

Table 2.0 RADIATED EMISSION RESULTS  
900 MHz Module  
Model: 12-2121-00

| Frequency MHz       | EMI Reading (dBuV/m) | Specification Limit (dBuV) | Delta (Cor. Reading – Spec. Limit) dB |
|---------------------|----------------------|----------------------------|---------------------------------------|
| 915.12 (H) (X-Axis) | 93.86 (QP)           | 93.97                      | -0.11                                 |
| 927.62 (H) (X-Axis) | 93.83 (QP)           | 93.97                      | -0.14                                 |
| 902.62 (H) (X-Axis) | 93.58 (QP)           | 93.97                      | -0.39                                 |
| 902.62 (H) (Z-Axis) | 93.49 (QP)           | 93.97                      | -0.48                                 |
| 927.62 (H) (Z-Axis) | 92.96 (QP)           | 93.97                      | -1.01                                 |
| 927.62 (V) (Y-Axis) | 92.61 (QP)           | 93.97                      | -1.36                                 |

Notes:

- \* The complete emissions data is given in Appendix E of this report.
- (BL) Black Lead
- (WL) White Lead
- (V) Vertical
- (H) Horizontal
- (QP) Quasi-Peak
- (Avg) Average

## 9. CONCLUSIONS

The 900 MHz Module, Models: 12-2121-00, as tested, meets all of the specification limits defined in FCC Title 47, Part 15, Subpart B; and Subpart C, sections 15.205, 15.207, 15.209, and 15.249.





**APPENDIX A**

***LABORATORY ACCREDITATIONS AND 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, Japan, Taiwan, Korea, and the European Union, Compatible Electronics is currently accredited by NVLAP to ISO/IEC 17025. Please follow the link to the NIST/NVLAP site for each of our facilities' NVLAP certificate and scope of accreditation

**NVLAP listing links**

[Agoura Division](#) / [Brea Division](#) / [Silverado/Lake Forest Division](#)

.Quote from ISO-ILAC-IAF Communiqué on 17025:

"A laboratory's fulfilment of the requirements of ISO/IEC 17025:2005 means the laboratory meets both the technical competence requirements and management system requirements that are necessary for it to consistently deliver technically valid test results and calibrations. The management system requirements in ISO/IEC 17025:2005 (Section 4) are written in language relevant to laboratory operations and meet the principles of ISO 9001:2008 Quality Management Systems — Requirements."



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



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

**US/EU MRA list** [NIST MRA site](#)



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).

**APEC MRA list** [NIST MRA site](#)

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



**VCCI Support member:** Please visit [http://www.vcci.jp/vcci\\_e/](http://www.vcci.jp/vcci_e/)



**FCC Listing, from FCC OET site**

[FCC test lab search](https://fjallfoss.fcc.gov/oetcf/eas/reports/TestFirmSearch.cfm) <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  
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(949) 589-0700

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



**APPENDIX B**

***MODIFICATIONS TO THE EUT***

## MODIFICATIONS TO THE EUT

The modifications listed below were made to the EUT to pass FCC Subpart B and FCC 15.249 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.

No modifications were made to the EUT during the testing.





**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

900 MHz Module  
Model: 12-2121-00  
S/N: N/A

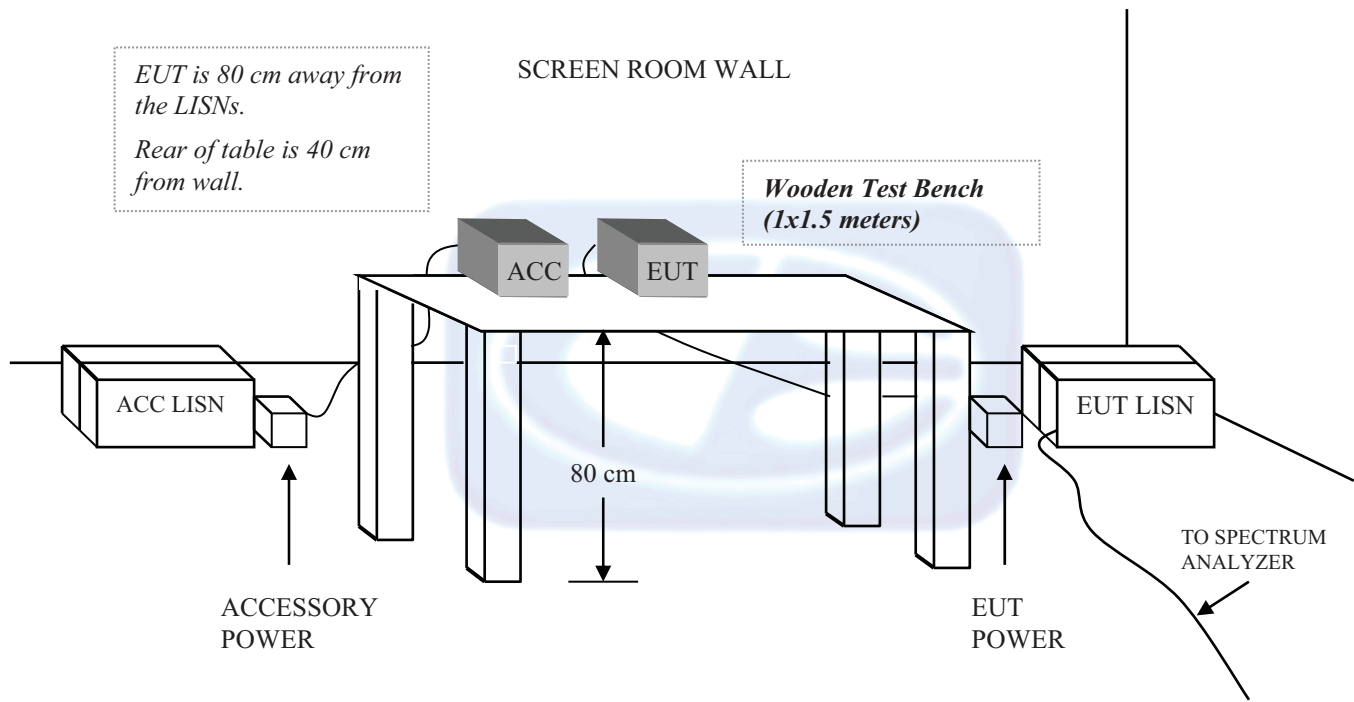
There are no additional models covered under this report.



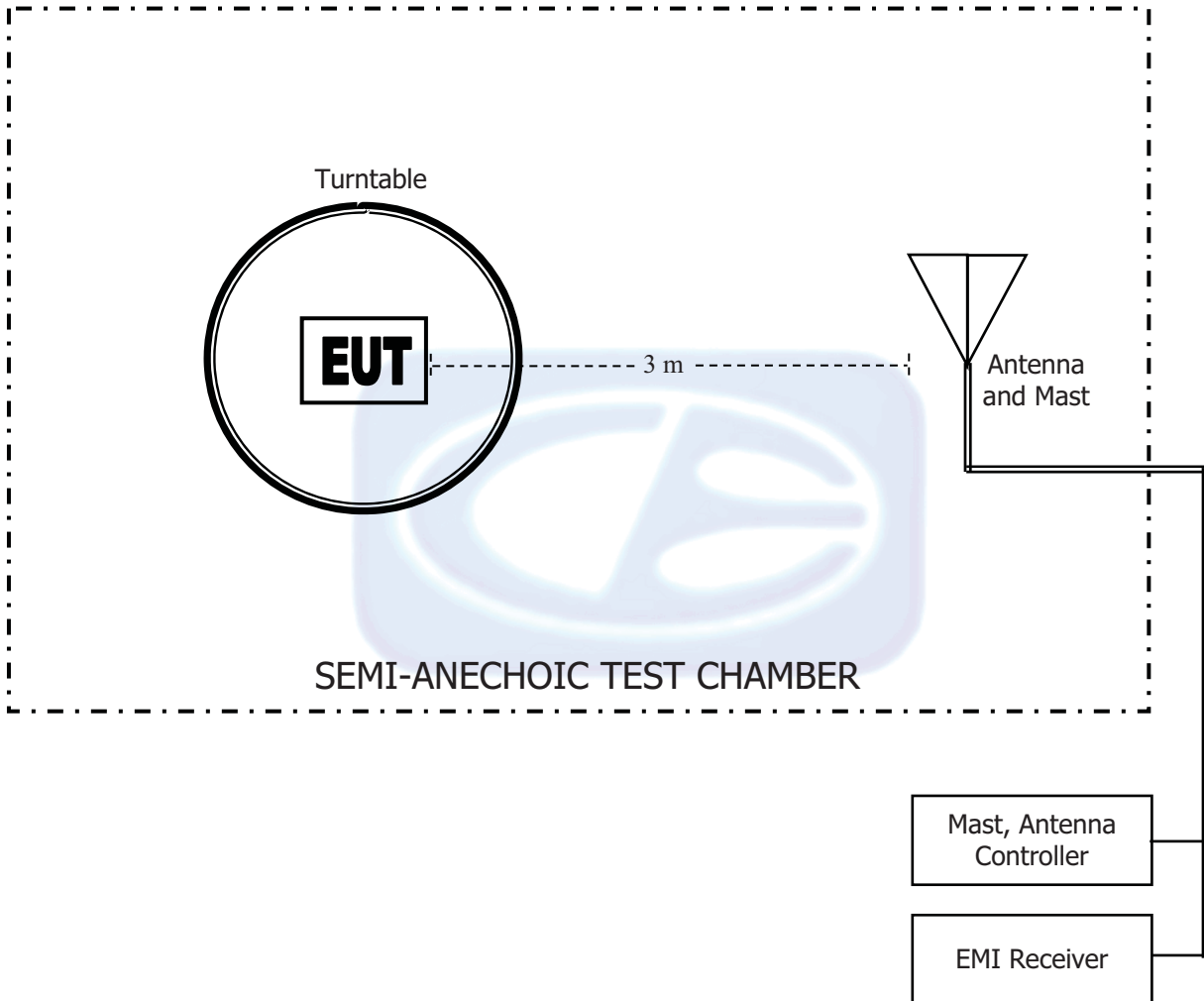


**APPENDIX D**

***DIAGRAMS AND CHARTS***

**FIGURE 1: CONDUCTED EMISSIONS TEST SETUP**

***FIGURE 2: LAYOUT OF THE SEMI MI-ANECHOIC TEST CHAMBER***



**COM-POWER AL-130****LOOP ANTENNA**

S/N: 17089

CALIBRATION DATE: FEBRUARY 6, 2015

| <b>FREQUENCY<br/>(MHz)</b> | <b>MAGNETIC<br/>(dB/m)</b> | <b>ELECTRIC<br/>(dB/m)</b> |
|----------------------------|----------------------------|----------------------------|
| 0.009                      | -33.18                     | 18.32                      |
| 0.01                       | -34.10                     | 17.40                      |
| 0.02                       | -38.65                     | 12.85                      |
| 0.03                       | -39.28                     | 12.22                      |
| 0.04                       | -40.09                     | 11.41                      |
| 0.05                       | -40.85                     | 10.65                      |
| 0.06                       | -40.88                     | 10.62                      |
| 0.07                       | -41.07                     | 10.43                      |
| 0.08                       | -41.04                     | 10.46                      |
| 0.09                       | -41.19                     | 10.31                      |
| 0.1                        | -41.20                     | 10.30                      |
| 0.2                        | -41.52                     | 9.98                       |
| 0.3                        | -41.53                     | 9.97                       |
| 0.4                        | -41.42                     | 10.08                      |
| 0.5                        | -41.53                     | 9.97                       |
| 0.6                        | -41.53                     | 9.97                       |
| 0.7                        | -41.43                     | 10.07                      |
| 0.8                        | -41.23                     | 10.27                      |
| 0.9                        | -41.13                     | 10.37                      |
| 1                          | -41.14                     | 10.36                      |
| 2                          | -40.80                     | 10.70                      |
| 3                          | -40.66                     | 10.84                      |
| 4                          | -40.61                     | 10.89                      |
| 5                          | -40.33                     | 11.17                      |
| 6                          | -40.53                     | 10.97                      |
| 7                          | -40.47                     | 11.03                      |
| 8                          | -40.48                     | 11.02                      |
| 9                          | -39.93                     | 11.57                      |
| 10                         | -39.81                     | 11.69                      |
| 15                         | -43.35                     | 8.15                       |
| 20                         | -39.16                     | 12.34                      |
| 25                         | -40.24                     | 11.26                      |
| 30                         | -43.18                     | 8.32                       |

**COM-POWER AC-220****COMBILOG ANTENNA****S/N: 61060****CALIBRATION DATE: SEPTEMBER 3, 2015**

| <b>FREQUENCY<br/>(MHz)</b> | <b>FACTOR<br/>(dB)</b> | <b>FREQUENCY<br/>(MHz)</b> | <b>FACTOR<br/>(dB)</b> |
|----------------------------|------------------------|----------------------------|------------------------|
| 30                         | 24.00                  | 200                        | 13.00                  |
| 35                         | 24.30                  | 250                        | 15.30                  |
| 40                         | 25.40                  | 300                        | 18.20                  |
| 45                         | 21.50                  | 350                        | 17.90                  |
| 50                         | 22.50                  | 400                        | 18.60                  |
| 60                         | 15.40                  | 450                        | 19.80                  |
| 70                         | 12.70                  | 500                        | 21.60                  |
| 80                         | 11.10                  | 550                        | 22.40                  |
| 90                         | 13.40                  | 600                        | 23.70                  |
| 100                        | 13.80                  | 650                        | 24.30                  |
| 120                        | 15.40                  | 700                        | 24.00                  |
| 125                        | 15.40                  | 750                        | 24.50                  |
| 140                        | 13.10                  | 800                        | 24.30                  |
| 150                        | 17.20                  | 850                        | 26.30                  |
| 160                        | 13.20                  | 900                        | 26.90                  |
| 175                        | 14.20                  | 950                        | 26.00                  |
| 180                        | 14.30                  | 1000                       | 25.60                  |

**COM POWER AH-118****HORN ANTENNA****S/N: 071175****CALIBRATION DATE: FEBRUARY 26, 2016**

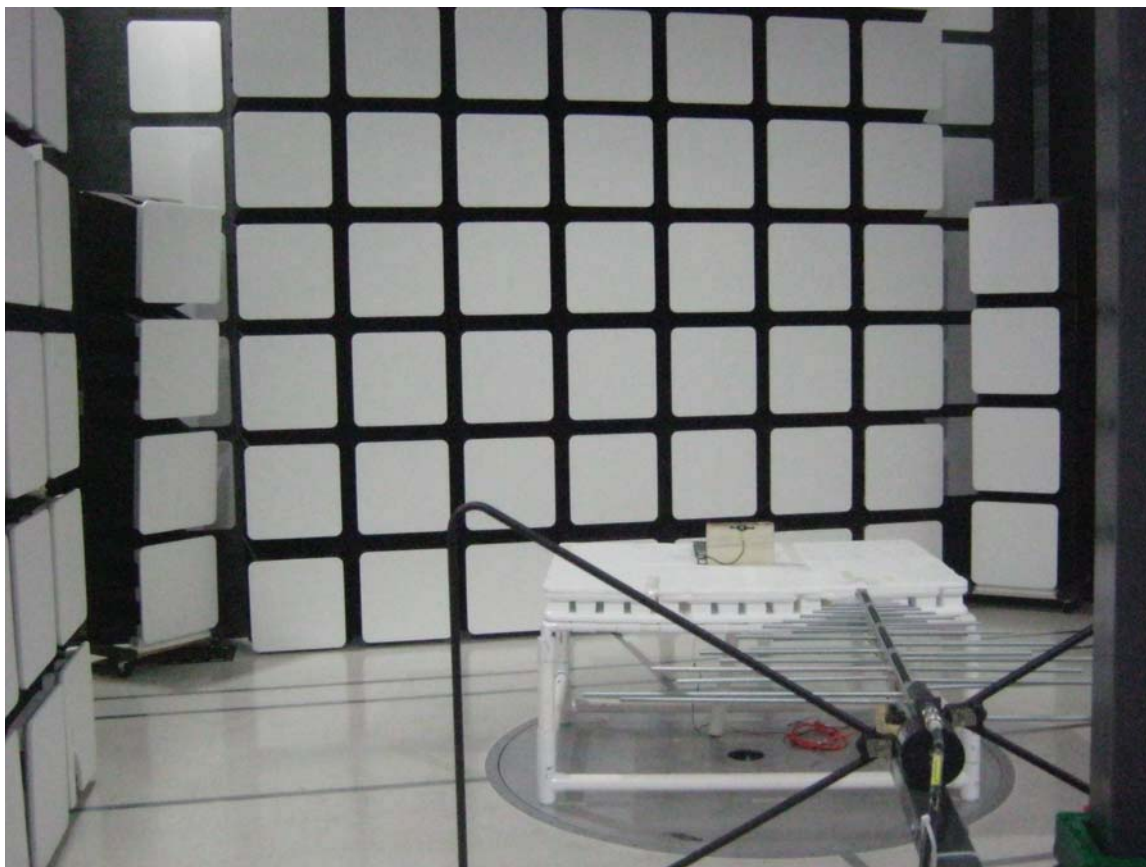
| <b>FREQUENCY<br/>(GHz)</b> | <b>FACTOR<br/>(dB)</b> | <b>FREQUENCY<br/>(GHz)</b> | <b>FACTOR<br/>(dB)</b> |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0                        | 23.93                  | 10.0                       | 39.33                  |
| 1.5                        | 25.54                  | 10.5                       | 39.64                  |
| 2.0                        | 28.09                  | 11.0                       | 41.04                  |
| 2.5                        | 30.21                  | 11.5                       | 44.29                  |
| 3.0                        | 30.15                  | 12.0                       | 41.22                  |
| 3.5                        | 30.17                  | 12.5                       | 41.50                  |
| 4.0                        | 31.90                  | 13.0                       | 41.62                  |
| 4.5                        | 33.51                  | 13.5                       | 40.63                  |
| 5.0                        | 33.87                  | 14.0                       | 39.94                  |
| 5.5                        | 35.08                  | 14.5                       | 41.84                  |
| 6.0                        | 34.81                  | 15.0                       | 42.69                  |
| 6.5                        | 34.26                  | 15.5                       | 39.03                  |
| 7.0                        | 36.33                  | 16.0                       | 39.07                  |
| 7.5                        | 37.03                  | 16.5                       | 41.40                  |
| 8.0                        | 37.56                  | 17.0                       | 43.18                  |
| 8.5                        | 40.07                  | 17.5                       | 47.01                  |
| 9.0                        | 38.92                  | 18.0                       | 46.48                  |
| 9.5                        | 38.21                  |                            |                        |

**COM-POWER PA-118****PREAMPLIFIER**

S/N: 551024

CALIBRATION DATE: MAY 12, 2016

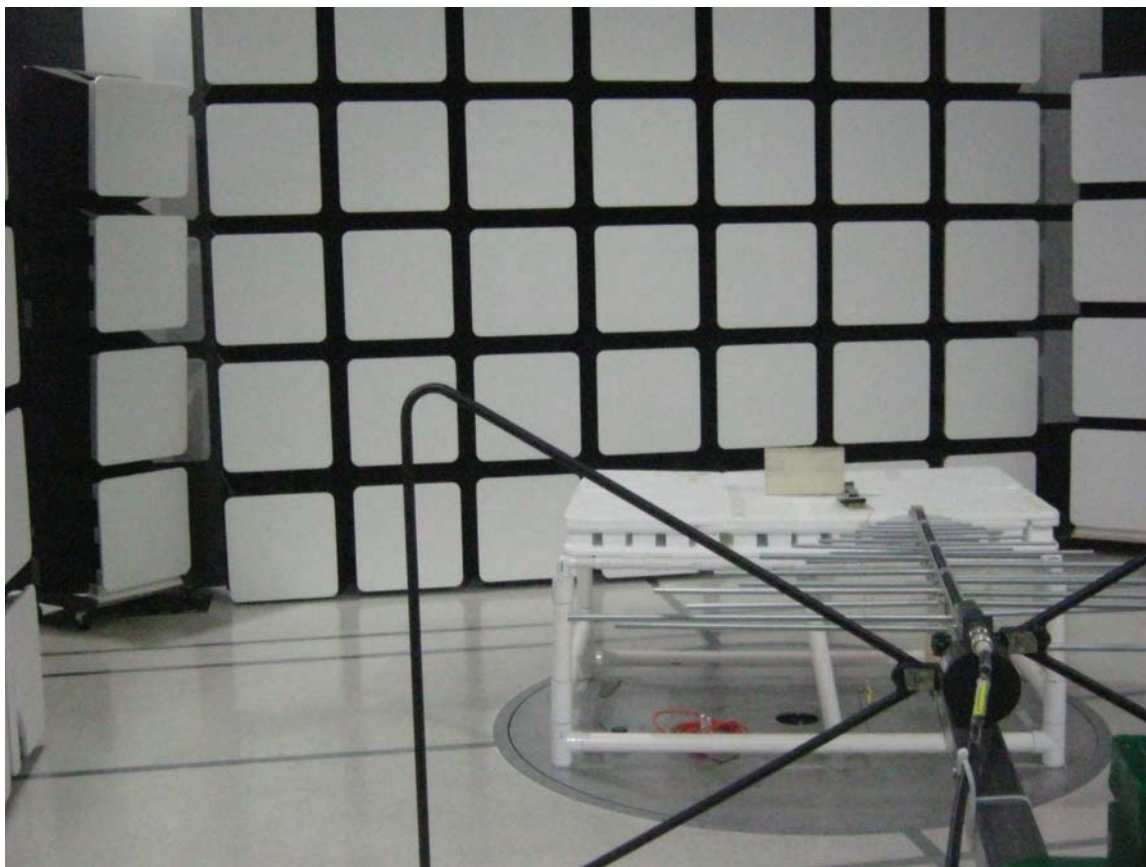
| <b>FREQUENCY<br/>(GHz)</b> | <b>FACTOR<br/>(dB)</b> | <b>FREQUENCY<br/>(GHz)</b> | <b>FACTOR<br/>(dB)</b> |
|----------------------------|------------------------|----------------------------|------------------------|
| 1.0                        | 39.84                  | 6.0                        | 39.05                  |
| 1.1                        | 39.40                  | 6.5                        | 38.94                  |
| 1.2                        | 39.58                  | 7.0                        | 39.25                  |
| 1.3                        | 39.68                  | 7.5                        | 39.09                  |
| 1.4                        | 39.91                  | 8.0                        | 39.01                  |
| 1.5                        | 39.78                  | 8.5                        | 38.60                  |
| 1.6                        | 39.50                  | 9.0                        | 38.64                  |
| 1.7                        | 39.81                  | 9.5                        | 39.67                  |
| 1.8                        | 39.89                  | 10.0                       | 39.30                  |
| 1.9                        | 39.94                  | 11.0                       | 39.15                  |
| 2.0                        | 39.57                  | 12.0                       | 39.24                  |
| 2.5                        | 40.39                  | 13.0                       | 39.49                  |
| 3.0                        | 40.63                  | 14.0                       | 39.44                  |
| 3.5                        | 40.80                  | 15.0                       | 39.94                  |
| 4.0                        | 40.86                  | 16.0                       | 40.09                  |
| 4.5                        | 39.94                  | 17.0                       | 40.06                  |
| 5.0                        | 34.47                  | 18.0                       | 39.76                  |
| 5.5                        | 39.32                  |                            |                        |



**FRONT VIEW**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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



**REAR VIEW**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – RADIATED EMISSIONS – BELOW 1 GHz

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



**FRONT VIEW**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 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**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – RADIATED EMISSIONS – ABOVE 1 GHz

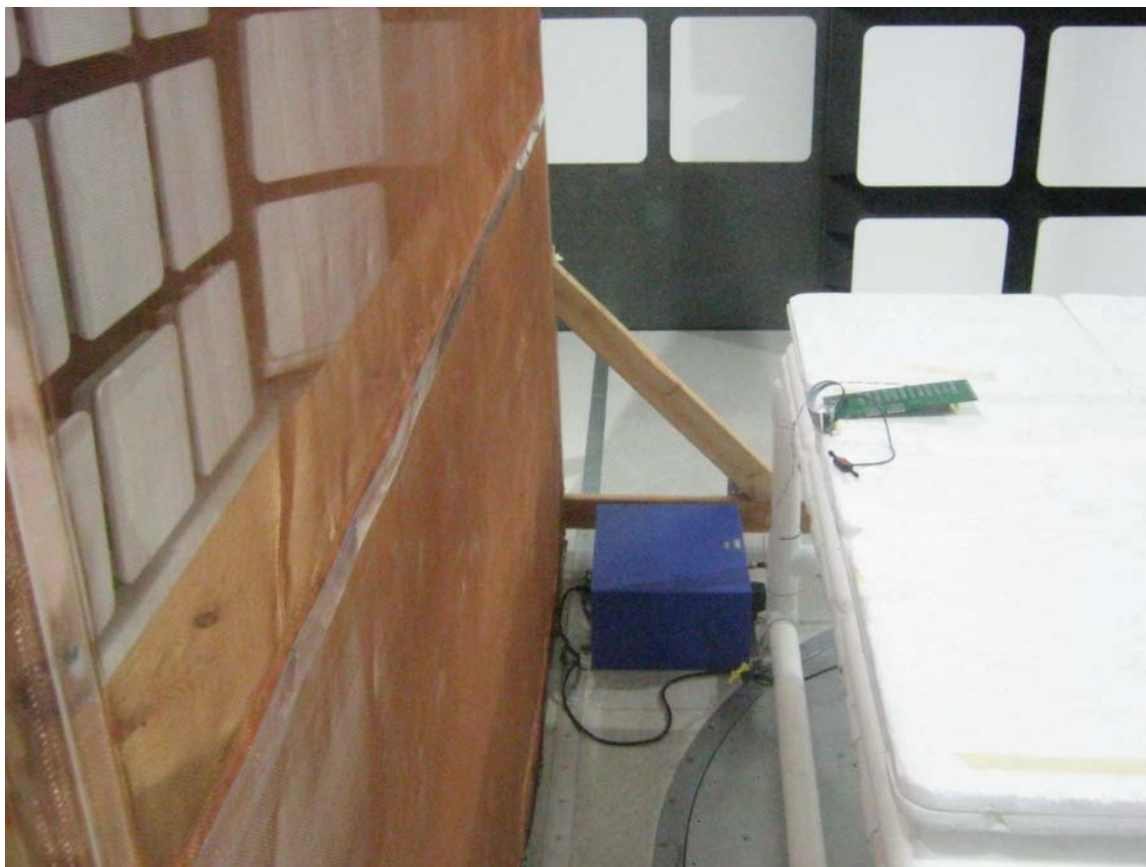
**PHOTOGRAPH SHOWING THE EUT CONFIGURATION  
FOR MAXIMUM EMISSIONS**



**FRONT VIEW**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – CONDUCTED EMISSIONS

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



**REAR VIEW**

ROBINSON ENGINEERING COMPANY, INC.  
900 MHz MODULE  
MODEL: 12-2121-00  
FCC SUBPART B AND C – CONDUCTED EMISSIONS

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



**APPENDIX E**

***DATA SHEETS***



***RADIATED EMISSIONS  
DATA SHEETS***







**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Low Channel**

**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1805.24        | 41.56             | V            | 73.97 | -32.41 | Peak                  | 41.75                   | 236.21                 |             |
| 1805.24        | 30.55             | V            | 53.97 | -23.42 | Avg                   | 41.75                   | 236.21                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2707.86        | 44.77             | V            | 73.97 | -29.20 | Peak                  | 145.50                  | 236.31                 |             |
| 2707.86        | 34.43             | V            | 53.97 | -19.54 | Avg                   | 145.50                  | 236.31                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3610.48        | 46.13             | V            | 73.97 | -27.84 | Peak                  | 260.25                  | 194.10                 |             |
| 3610.48        | 34.42             | V            | 53.97 | -19.55 | Avg                   | 260.25                  | 194.10                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4513.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4513.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5415.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5415.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6318.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6318.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7220.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7220.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8123.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8123.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9026.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9026.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Low Channel**

**Transmit Mode - Y-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1805.24        | 40.84             | V            | 73.97 | -33.13 | Peak                  | 134.00                  | 197.74                 |             |
| 1805.24        | 31.01             | V            | 53.97 | -22.96 | Avg                   | 134.00                  | 197.74                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2707.86        | 45.07             | V            | 73.97 | -28.90 | Peak                  | 291.25                  | 190.04                 |             |
| 2707.86        | 32.48             | V            | 53.97 | -21.50 | Avg                   | 291.25                  | 190.04                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3610.48        | 44.71             | V            | 73.97 | -29.26 | Peak                  | 267.50                  | 192.58                 |             |
| 3610.48        | 32.26             | V            | 53.97 | -21.71 | Avg                   | 267.50                  | 192.58                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4513.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4513.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5415.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5415.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6318.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6318.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7220.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7220.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8123.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8123.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9026.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9026.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
900 MHz Module  
Model: 12-2121-00

Date: 06/09/2016  
Lab: D  
Tested By: Kyle Fujimoto

**Low Channel  
Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments    |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 1805.24     | 41.88          | V         | 73.97 | -32.10 | Peak            | 42.25             | 234.52           |             |
| 1805.24     | 30.30          | V         | 53.97 | -23.67 | Avg             | 42.25             | 234.52           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 2707.86     | 45.03          | V         | 73.97 | -28.94 | Peak            | 53.00             | 134.58           |             |
| 2707.86     | 33.35          | V         | 53.97 | -20.62 | Avg             | 53.00             | 134.58           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 3610.48     | 46.18          | V         | 73.97 | -27.79 | Peak            | 5.00              | 238.58           |             |
| 3610.48     | 34.12          | V         | 53.97 | -19.85 | Avg             | 5.00              | 238.58           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 4513.10     |                |           |       |        |                 |                   |                  | No Emission |
| 4513.10     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 5415.72     |                |           |       |        |                 |                   |                  | No Emission |
| 5415.72     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 6318.34     |                |           |       |        |                 |                   |                  | No Emission |
| 6318.34     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 7220.96     |                |           |       |        |                 |                   |                  | No Emission |
| 7220.96     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 8123.58     |                |           |       |        |                 |                   |                  | No Emission |
| 8123.58     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 9026.20     |                |           |       |        |                 |                   |                  | No Emission |
| 9026.20     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Low Channel**  
**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1805.24        | 44.43             | H            | 73.97 | -29.54 | Peak                  | 249.75                  | 209.56                 |             |
| 1805.24        | 38.70             | H            | 53.97 | -15.27 | Avg                   | 249.75                  | 209.56                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2707.86        | 45.49             | H            | 73.97 | -28.48 | Peak                  | 26.75                   | 142.76                 |             |
| 2707.86        | 37.38             | H            | 53.97 | -16.59 | Avg                   | 26.75                   | 142.76                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3610.48        | 44.99             | H            | 73.97 | -28.98 | Peak                  | 64.00                   | 117.80                 |             |
| 3610.48        | 34.41             | H            | 53.97 | -19.57 | Avg                   | 64.00                   | 117.80                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4513.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4513.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5415.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5415.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6318.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6318.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7220.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7220.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8123.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8123.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9026.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9026.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Low Channel**  
**Transmit Mode - Y-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1805.24        | 48.02             | H            | 73.97 | -25.96 | Peak                  | 166.75                  | 184.31                 |             |
| 1805.24        | 44.99             | H            | 53.97 | -8.98  | Avg                   | 166.75                  | 184.31                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2707.86        | 46.45             | H            | 73.97 | -27.52 | Peak                  | 273.33                  | 199.23                 |             |
| 2707.86        | 37.43             | H            | 53.97 | -16.54 | Avg                   | 273.25                  | 199.23                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3610.48        | 46.47             | H            | 73.97 | -27.50 | Peak                  | 355.00                  | 202.25                 |             |
| 3610.48        | 35.02             | H            | 53.97 | -18.96 | Avg                   | 355.00                  | 202.25                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4513.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4513.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5415.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5415.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6318.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6318.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7220.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7220.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8123.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8123.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9026.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9026.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Low Channel**  
**Transmit Mode - Z-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1805.24        | 41.38             | H            | 73.97 | -32.59 | Peak                  | 110.25                  | 167.53                 |             |
| 1805.24        | 31.54             | H            | 53.97 | -22.43 | Avg                   | 110.25                  | 167.53                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2707.86        | 46.06             | H            | 73.97 | -27.91 | Peak                  | 355.00                  | 175.25                 |             |
| 2707.86        | 37.15             | H            | 53.97 | -16.82 | Avg                   | 355.00                  | 175.25                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3610.48        | 46.38             | H            | 73.97 | -27.59 | Peak                  | 274.00                  | 178.25                 |             |
| 3610.48        | 34.25             | H            | 53.97 | -19.72 | Avg                   | 274.00                  | 178.25                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4513.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4513.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5415.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5415.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6318.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6318.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7220.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7220.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8123.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8123.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9026.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9026.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Middle Channel**  
**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 40.66             | V            | 73.97 | -33.31 | Peak                  | 180.50                  | 150.64                 |             |
| 1830.24        | 30.20             | V            | 53.97 | -23.77 | Avg                   | 180.50                  | 150.64                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 45.69             | V            | 73.97 | -28.28 | Peak                  | 12.00                   | 185.98                 |             |
| 2745.36        | 34.60             | V            | 53.97 | -19.37 | Avg                   | 12.00                   | 185.98                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 46.74             | V            | 73.97 | -27.23 | Peak                  | 185.98                  | 291.50                 |             |
| 3660.48        | 34.68             | V            | 53.97 | -19.29 | Avg                   | 185.98                  | 291.50                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Middle Channel**  
**Transmit Mode - Y-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 46.87             | V            | 73.97 | -27.10 | Peak                  | 97.50                   | 130.22                 |             |
| 1830.24        | 41.57             | V            | 53.97 | -12.40 | Avg                   | 97.50                   | 130.22                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 48.44             | V            | 73.97 | -25.53 | Peak                  | 115.50                  | 124.07                 |             |
| 2745.36        | 43.55             | V            | 53.97 | -10.42 | Avg                   | 115.50                  | 124.07                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 44.36             | V            | 73.97 | -29.61 | Peak                  | 182.00                  | 156.58                 |             |
| 3660.48        | 34.63             | V            | 53.97 | -19.34 | Avg                   | 182.00                  | 156.58                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
900 MHz Module  
Model: 12-2121-00

Date: 06/09/2016  
Lab: D  
Tested By: Kyle Fujimoto

**Middle Channel**

**Transmit Mode - Z-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 40.33             | V            | 73.97 | -33.64 | Peak                  | 80.00                   | 181.92                 |             |
| 1830.24        | 27.95             | V            | 53.97 | -26.02 | Avg                   | 80.00                   | 181.92                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 46.53             | V            | 73.97 | -27.44 | Peak                  | 23.50                   | 179.77                 |             |
| 2745.36        | 37.32             | V            | 53.97 | -16.65 | Avg                   | 23.50                   | 179.77                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 46.43             | V            | 73.97 | -27.54 | Peak                  | 255.50                  | 240.13                 |             |
| 3660.48        | 34.56             | V            | 53.97 | -19.41 | Avg                   | 255.50                  | 240.13                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Middle Channel**

**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 49.11             | H            | 73.97 | -24.86 | Peak                  | 181.75                  | 102.22                 |             |
| 1830.24        | 46.55             | H            | 53.97 | -7.42  | Avg                   | 181.75                  | 102.22                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 46.20             | H            | 73.97 | -27.78 | Peak                  | 29.50                   | 130.76                 |             |
| 2745.36        | 35.40             | H            | 53.97 | -18.57 | Avg                   | 29.50                   | 130.76                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 46.09             | H            | 73.97 | -27.88 | Peak                  | 199.75                  | 137.14                 |             |
| 3660.48        | 34.79             | H            | 53.97 | -19.18 | Avg                   | 199.50                  | 137.14                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
900 MHz Module  
Model: 12-2121-00

Date: 06/09/2016  
Lab: D  
Tested By: Kyle Fujimoto

**Middle Channel**
**Transmit Mode - Y-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 40.29             | H            | 73.97 | -33.68 | Peak                  | 339.50                  | 129.08                 |             |
| 1830.24        | 27.89             | H            | 53.97 | -26.08 | Avg                   | 339.50                  | 129.08                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 45.53             | H            | 73.97 | -28.44 | Peak                  | 135.50                  | 171.47                 |             |
| 2745.36        | 36.48             | H            | 53.97 | -17.49 | Avg                   | 135.50                  | 171.47                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 43.00             | H            | 73.97 | -30.98 | Peak                  | 66.25                   | 142.46                 |             |
| 3660.48        | 34.44             | H            | 53.97 | -19.53 | Avg                   | 66.25                   | 142.46                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Middle Channel**  
**Transmit Mode - Z-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1830.24        | 46.34             | H            | 73.97 | -27.63 | Peak                  | 10.75                   | 165.08                 |             |
| 1830.24        | 33.76             | H            | 53.97 | -20.21 | Avg                   | 10.75                   | 165.08                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2745.36        | 44.81             | H            | 73.97 | -29.16 | Peak                  | 152.00                  | 131.41                 |             |
| 2745.36        | 36.48             | H            | 53.97 | -17.50 | Avg                   | 152.00                  | 131.41                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3660.48        | 44.61             | H            | 73.97 | -29.36 | Peak                  | 56.25                   | 122.16                 |             |
| 3660.48        | 34.97             | H            | 53.97 | -19.00 | Avg                   | 56.25                   | 122.16                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4575.60        |                   |              |       |        |                       |                         |                        | No Emission |
| 4575.60        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5490.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5490.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6405.84        |                   |              |       |        |                       |                         |                        | No Emission |
| 6405.84        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7320.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7320.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8236.08        |                   |              |       |        |                       |                         |                        | No Emission |
| 8236.08        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9151.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9151.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**High Channel**  
**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1855.24        | 40.56             | V            | 73.97 | -33.41 | Peak                  | 114.50                  | 125.86                 |             |
| 1855.24        | 30.78             | V            | 53.97 | -23.19 | Avg                   | 114.50                  | 125.86                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2782.86        | 48.07             | V            | 73.97 | -25.90 | Peak                  | 55.00                   | 175.11                 |             |
| 2782.86        | 40.55             | V            | 53.97 | -13.43 | Avg                   | 55.00                   | 175.11                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3710.48        | 46.65             | V            | 73.97 | -27.32 | Peak                  | 200.00                  | 158.46                 |             |
| 3710.48        | 34.63             | V            | 53.97 | -19.34 | Avg                   | 200.00                  | 158.46                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4638.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4638.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5565.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5565.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6493.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6493.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7420.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7420.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8348.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8348.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9276.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9276.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**High Channel**  
**Transmit Mode - Y-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1855.24        | 49.90             | V            | 73.97 | -24.07 | Peak                  | 70.50                   | 156.31                 |             |
| 1855.24        | 45.70             | V            | 53.97 | -8.27  | Avg                   | 70.50                   | 156.31                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2782.86        | 49.06             | V            | 73.97 | -24.91 | Peak                  | 248.00                  | 115.29                 |             |
| 2782.86        | 41.34             | V            | 53.97 | -12.63 | Avg                   | 248.00                  | 115.29                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3710.48        | 43.47             | V            | 73.97 | -30.50 | Peak                  | 71.25                   | 143.47                 |             |
| 3710.48        | 35.37             | V            | 53.97 | -18.60 | Avg                   | 71.25                   | 143.47                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4638.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4638.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5565.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5565.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6493.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6493.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7420.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7420.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8348.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8348.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9276.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9276.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**High Channel**  
**Transmit Mode - Z-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1855.24        | 42.30             | V            | 73.97 | -31.67 | Peak                  | 107.00                  | 142.88                 |             |
| 1855.24        | 32.39             | V            | 53.97 | -21.58 | Avg                   | 107.00                  | 142.88                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2782.86        | 46.51             | V            | 73.97 | -27.46 | Peak                  | 255.50                  | 173.44                 |             |
| 2782.86        | 36.62             | V            | 53.97 | -17.35 | Avg                   | 255.50                  | 173.44                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3710.48        | 44.38             | V            | 73.97 | -29.59 | Peak                  | 108.75                  | 146.64                 |             |
| 3710.48        | 35.14             | V            | 53.97 | -18.83 | Avg                   | 108.75                  | 146.64                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4638.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4638.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5565.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5565.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6493.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6493.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7420.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7420.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8348.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8348.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9276.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9276.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**High Channel**

**Transmit Mode - X-Axis**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments    |
|----------------|-------------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------|
| 1855.24        | 40.48             | H            | 73.97 | -33.49 | Peak                  | 261.25                  | 117.68                 |             |
| 1855.24        | 31.10             | H            | 53.97 | -22.87 | Avg                   | 261.25                  | 117.68                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 2782.86        | 50.22             | H            | 73.97 | -23.75 | Peak                  | 159.75                  | 207.41                 |             |
| 2782.86        | 48.18             | H            | 53.97 | -5.79  | Avg                   | 159.75                  | 207.41                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 3710.48        | 43.43             | H            | 73.97 | -30.54 | Peak                  | 225.00                  | 180.13                 |             |
| 3710.48        | 34.75             | H            | 53.97 | -19.22 | Avg                   | 225.00                  | 180.13                 |             |
|                |                   |              |       |        |                       |                         |                        |             |
| 4638.10        |                   |              |       |        |                       |                         |                        | No Emission |
| 4638.10        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 5565.72        |                   |              |       |        |                       |                         |                        | No Emission |
| 5565.72        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 6493.34        |                   |              |       |        |                       |                         |                        | No Emission |
| 6493.34        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 7420.96        |                   |              |       |        |                       |                         |                        | No Emission |
| 7420.96        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 8348.58        |                   |              |       |        |                       |                         |                        | No Emission |
| 8348.58        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |
| 9276.20        |                   |              |       |        |                       |                         |                        | No Emission |
| 9276.20        |                   |              |       |        |                       |                         |                        | Detected    |
|                |                   |              |       |        |                       |                         |                        |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**High Channel**  
**Transmit Mode - Y-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments    |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|-------------|
| 1855.24     | 45.64          | H         | 73.97 | -28.34 | Peak            | 53.75             | 159.41           |             |
| 1855.24     | 37.81          | H         | 53.97 | -16.16 | Avg             | 53.75             | 159.41           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 2782.86     | 45.66          | H         | 73.97 | -28.31 | Peak            | 212.75            | 190.64           |             |
| 2782.86     | 37.00          | H         | 53.97 | -16.97 | Avg             | 212.75            | 190.64           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 3710.48     | 46.56          | H         | 73.97 | -27.41 | Peak            | 155.75            | 205.62           |             |
| 3710.48     | 35.53          | H         | 53.97 | -18.44 | Avg             | 155.75            | 205.62           |             |
|             |                |           |       |        |                 |                   |                  |             |
| 4638.10     |                |           |       |        |                 |                   |                  | No Emission |
| 4638.10     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 5565.72     |                |           |       |        |                 |                   |                  | No Emission |
| 5565.72     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 6493.34     |                |           |       |        |                 |                   |                  | No Emission |
| 6493.34     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 7420.96     |                |           |       |        |                 |                   |                  | No Emission |
| 7420.96     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 8348.58     |                |           |       |        |                 |                   |                  | No Emission |
| 8348.58     |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |
| 9276.2      |                |           |       |        |                 |                   |                  | No Emission |
| 9276.2      |                |           |       |        |                 |                   |                  | Detected    |
|             |                |           |       |        |                 |                   |                  |             |

**FCC 15.249**

Robinson Engineering Company, Inc.  
900 MHz Module  
Model: 12-2121-00

Date: 06/09/2016  
Lab: D  
Tested By: Kyle Fujimoto

**High Channel**  
**Transmit Mode - Z-Axis**

| Freq. (MHz) | Level (dBuV/m) | Pol (v/h) | Limit | Margin | Peak / QP / Avg | Table Angle (deg) | Ant. Height (cm) | Comments             |
|-------------|----------------|-----------|-------|--------|-----------------|-------------------|------------------|----------------------|
| 1855.24     | 51.66          | H         | 73.97 | -22.31 | Peak            | 151.50            | 129.56           |                      |
| 1855.24     | 49.53          | H         | 53.97 | -4.44  | Avg             | 151.50            | 129.56           |                      |
| 2782.86     | 46.60          | H         | 73.97 | -27.37 | Peak            | 350.25            | 157.20           |                      |
| 2782.86     | 39.56          | H         | 53.97 | -14.41 | Avg             | 350.25            | 157.20           |                      |
| 3710.48     | 46.06          | H         | 73.97 | -27.91 | Peak            | 166.00            | 110.04           |                      |
| 3710.48     | 36.20          | H         | 53.97 | -17.77 | Avg             | 166.00            | 110.04           |                      |
| 4638.10     |                |           |       |        |                 |                   |                  | No Emission Detected |
| 4638.10     |                |           |       |        |                 |                   |                  |                      |
| 5565.72     |                |           |       |        |                 |                   |                  | No Emission Detected |
| 5565.72     |                |           |       |        |                 |                   |                  |                      |
| 6493.34     |                |           |       |        |                 |                   |                  | No Emission Detected |
| 6493.34     |                |           |       |        |                 |                   |                  |                      |
| 7420.96     |                |           |       |        |                 |                   |                  | No Emission Detected |
| 7420.96     |                |           |       |        |                 |                   |                  |                      |
| 8348.58     |                |           |       |        |                 |                   |                  | No Emission Detected |
| 8348.58     |                |           |       |        |                 |                   |                  |                      |
| 9276.2      |                |           |       |        |                 |                   |                  | No Emission Detected |
| 9276.2      |                |           |       |        |                 |                   |                  |                      |

**FCC Class B and FCC 15.249**

Robinson Engineering Company, Inc.  
 900 MHz Module  
 Model: 12-2121-00

Date: 06/09/2016  
 Lab: D  
 Tested By: Kyle Fujimoto

**Non Harmonic Emissions from the Tx and Digital Portion - 10 kHz to 30 MHz**

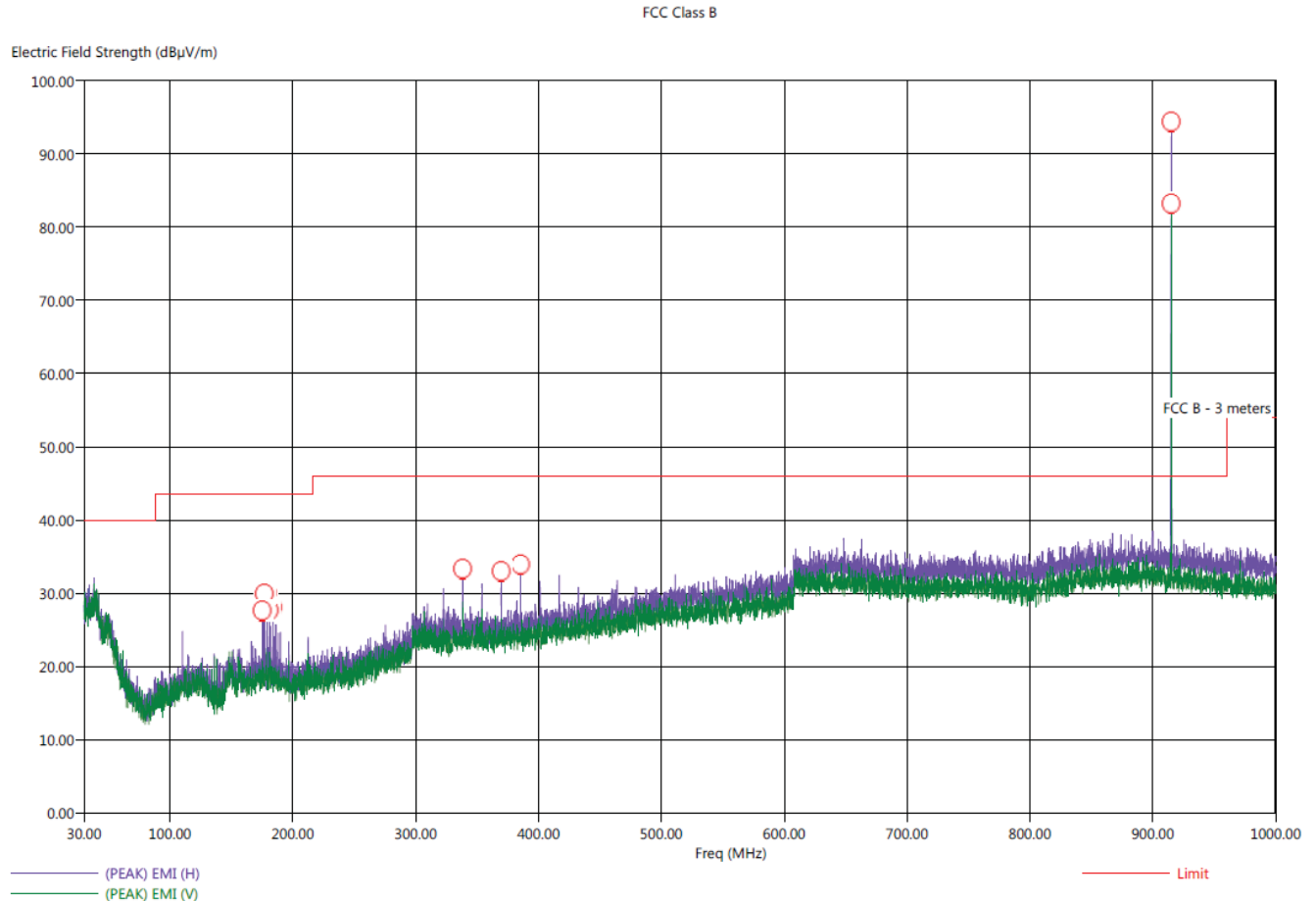
**Non Harmonic Emissions from the Tx and Digital Portion - 1 GHz to 9.3 GHz**

| Freq.<br>(MHz) | Level<br>(dBuV/m) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Ant.<br>Height<br>(m) | Table<br>Angle<br>(deg) | Comments                            |
|----------------|-------------------|--------------|-------|--------|-----------------------|-----------------------|-------------------------|-------------------------------------|
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | No Emissions Found for the          |
|                |                   |              |       |        |                       |                       |                         | Digital Portion                     |
|                |                   |              |       |        |                       |                       |                         | from 10 kHz to 30 MHz               |
|                |                   |              |       |        |                       |                       |                         | for both Vertical and Horizontal    |
|                |                   |              |       |        |                       |                       |                         | Polarizations                       |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | No Non Harmonic Emissions Found     |
|                |                   |              |       |        |                       |                       |                         | for the Tx Mode                     |
|                |                   |              |       |        |                       |                       |                         | from 10 kHz to 30 MHz               |
|                |                   |              |       |        |                       |                       |                         | for both Vertical and Horizontal    |
|                |                   |              |       |        |                       |                       |                         | Polarizations                       |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | Investigated in the X-Axis, Y-Axis, |
|                |                   |              |       |        |                       |                       |                         | and Z-Axis                          |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | No Emissions Found for the          |
|                |                   |              |       |        |                       |                       |                         | Digital Portion                     |
|                |                   |              |       |        |                       |                       |                         | from 1 GHz to 9.3 GHz               |
|                |                   |              |       |        |                       |                       |                         | for both Vertical and Horizontal    |
|                |                   |              |       |        |                       |                       |                         | Polarizations                       |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | No Non Harmonic Emissions Found     |
|                |                   |              |       |        |                       |                       |                         | for the Tx Mode                     |
|                |                   |              |       |        |                       |                       |                         | from 1 GHz to 9.3 GHz               |
|                |                   |              |       |        |                       |                       |                         | for both Vertical and Horizontal    |
|                |                   |              |       |        |                       |                       |                         | Polarizations                       |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         | Investigated in the X-Axis, Y-Axis, |
|                |                   |              |       |        |                       |                       |                         | and Z-Axis                          |
|                |                   |              |       |        |                       |                       |                         |                                     |
|                |                   |              |       |        |                       |                       |                         |                                     |



Title: Pre-Scan - FCC Class B  
File: 3 - Agilent - Pre-Scan - AC Mode - X-Axis - FCC Class B - 30 MHz to 1000 MHz - 06-09-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously transmitting at the Middle Channel - X-Axis  
Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00  
Note: The Frequency at 915.12 MHz is subject to FCC Part 15.249 limits instead.

6/9/2016 10:43:44 AM  
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B

File: 3 - Agilent - Final Scan - AC Mode - X-Axis - FCC Class B - 30 MHz to 1000 MHz - 06-09-2016.set

Operator: Kyle Fujimoto

EUT Type: 900 MHz Module

EUT Condition: The EUT is continuously transmitting at the Middle Channel - X-Axis

Comments: Company: Robinson Engineering Company, Inc.

Model: 12-2121-00

6/9/2016 11:47:49 AM

Sequence: Final Measurements

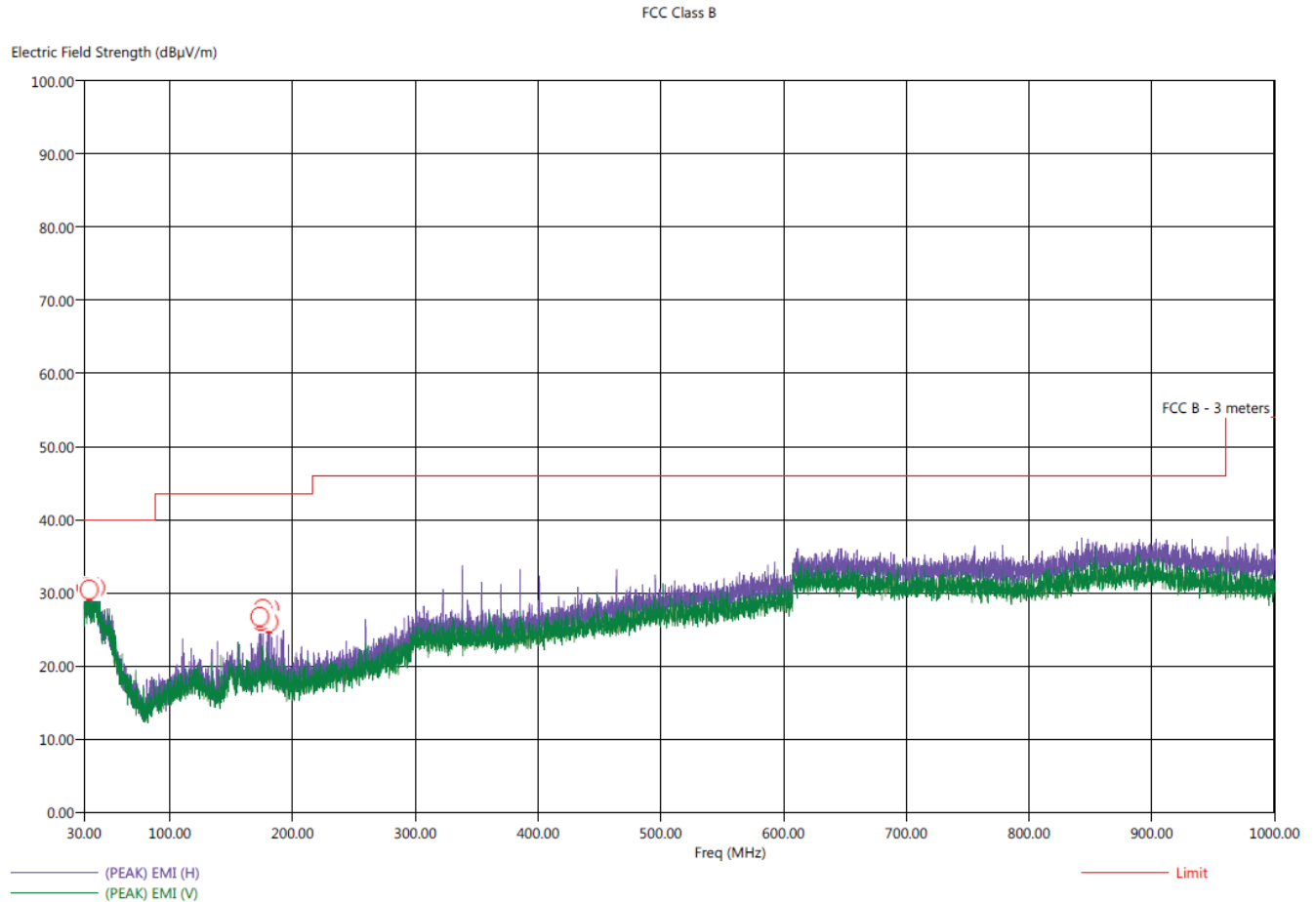
## FCC Class B

| Freq<br>(MHz) | Pol | (PEAK) EMI<br>(dBµV/m) | (QP) EMI<br>(dBµV/m) | (PEAK) Margin<br>(dB) | (QP) Margin<br>(dB) | Limit<br>(dBµV/m) | Transducer<br>(dB) | Cable<br>(dB) | Ttbl Aql<br>(deg) | Twr Ht<br>(cm) |
|---------------|-----|------------------------|----------------------|-----------------------|---------------------|-------------------|--------------------|---------------|-------------------|----------------|
| 136.60        | H   | 24.44                  | 15.42                | -19.06                | -28.08              | 43.50             | 13.60              | 0.85          | 257.25            | 223.41         |
| 175.10        | H   | 31.57                  | 22.10                | -11.93                | -21.40              | 43.50             | 14.21              | 0.99          | 112.00            | 206.76         |
| 176.90        | H   | 31.82                  | 22.27                | -11.68                | -21.23              | 43.50             | 14.24              | 1.00          | 128.25            | 127.83         |
| 179.10        | H   | 31.94                  | 22.68                | -11.56                | -20.82              | 43.50             | 14.29              | 1.01          | 106.00            | 128.13         |
| 180.90        | H   | 35.08                  | 29.97                | -8.42                 | -13.53              | 43.50             | 14.24              | 1.01          | 114.00            | 160.31         |
| 183.60        | H   | 30.75                  | 21.47                | -12.75                | -22.03              | 43.50             | 14.03              | 1.03          | 116.50            | 208.43         |
| 338.20        | H   | 35.54                  | 33.35                | -10.46                | -12.65              | 46.00             | 17.97              | 1.44          | 252.50            | 112.91         |
| 369.60        | H   | 36.77                  | 34.15                | -9.23                 | -11.85              | 46.00             | 18.19              | 1.50          | 222.00            | 112.61         |
| 385.40        | H   | 35.11                  | 32.83                | -10.89                | -13.17              | 46.00             | 18.40              | 1.53          | 80.00             | 272.13         |



Title: Pre-Scan - FCC Class B  
File: 4 - Agilent - Pre-Scan - AC Mode - Rx Mode - FCC Class B - 30 MHz to 1000 MHz - 06-09-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz RF Module  
EUT Condition: The EUT is continuously receiving at the Middle Channel - X-Axis  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/9/2016 1:09:19 PM  
Sequence: Preliminary Scan



Title: Radiated Final - FCC Class B  
File: 4 - Agilent - Final Scan - Rx Mode - X-Axis - FCC Class B - 30 MHz to 1000 MHz - 06-09-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz RF Module  
EUT Condition: The EUT is continuously Receiving - X-Axis Worst Case  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/9/2016 1:19:26 PM  
Sequence: Final Measurements

## FCC Class B

| Freq<br>(MHz) | Pol | (PEAK) EMI<br>(dBμV/m) | (QP) EMI<br>(dBμV/m) | (PEAK) Margin<br>(dB) | (QP) Margin<br>(dB) | Limit<br>(dBμV/m) | Transducer<br>(dB) | Cable<br>(dB) | Ttbt Agl<br>(deg) | Twr Ht<br>(cm) |
|---------------|-----|------------------------|----------------------|-----------------------|---------------------|-------------------|--------------------|---------------|-------------------|----------------|
| 31.26         | V   | 34.28                  | 28.86                | -5.72                 | -11.14              | 40.00             | 23.99              | 0.35          | 288.00            | 351.89         |
| 32.08         | V   | 23.77                  | 17.13                | -16.23                | -22.87              | 40.00             | 15.51              | 0.55          | 24.00             | 207.17         |
| 33.56         | V   | 22.94                  | 16.45                | -20.56                | -27.05              | 43.50             | 15.39              | 0.81          | 104.00            | 384.49         |
| 171.52        | H   | 22.73                  | 17.83                | -23.27                | -28.17              | 46.00             | 14.88              | 1.22          | 244.75            | 287.83         |
| 186.52        | H   | 33.82                  | 26.15                | -12.18                | -19.85              | 46.00             | 20.90              | 1.73          | 91.50             | 159.29         |
| 181.53        | H   | 36.58                  | 31.32                | -9.42                 | -14.68              | 46.00             | 25.92              | 2.66          | 113.75            | 111.17         |



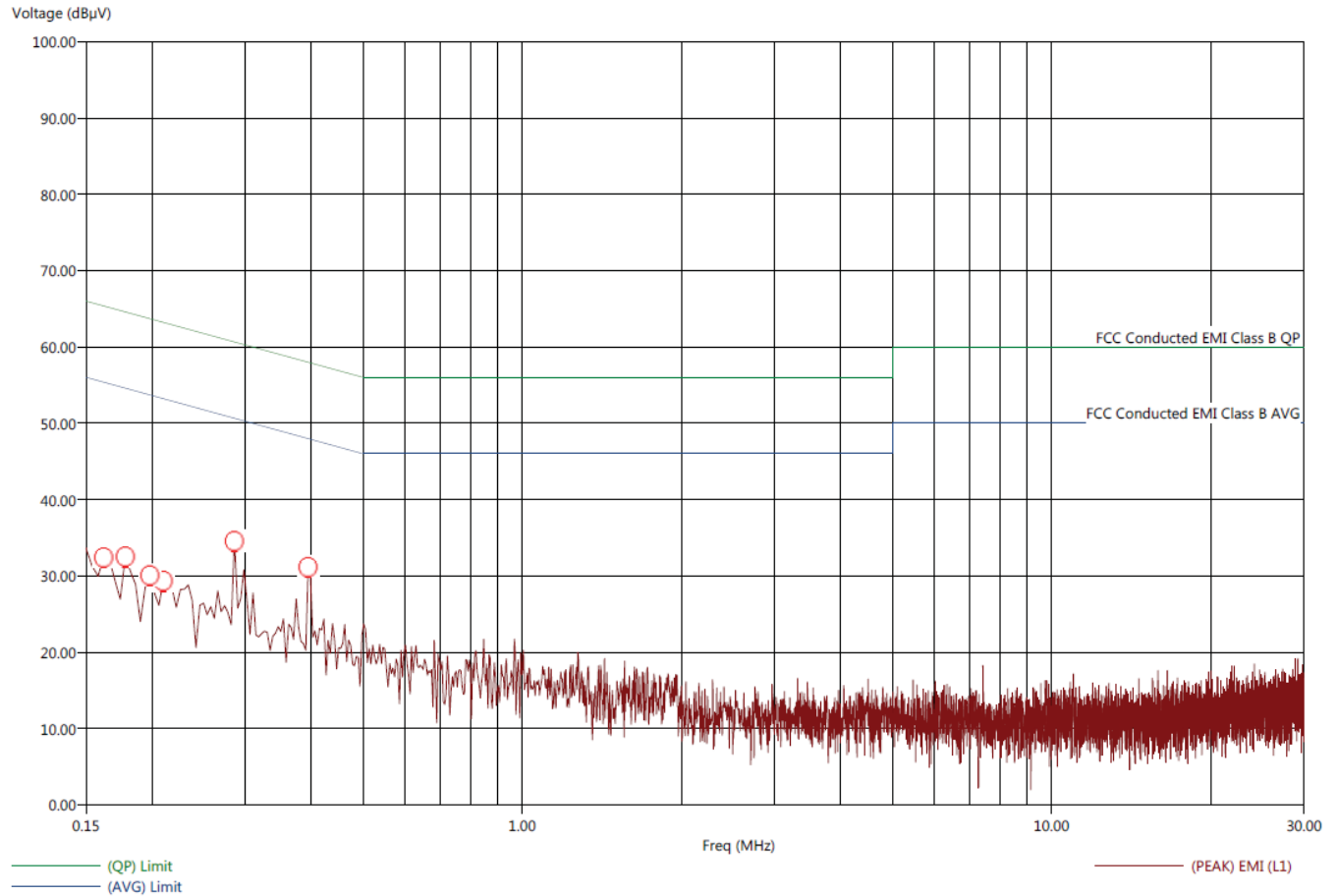


***CONDUCTED EMISSIONS  
DATA SHEETS***

Title: FCC Class B - Conducted Emissions - Black Lead  
File: 5 - Agilent - Pre-Scan - AC Mode - Tx - Black Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously transmitting at the Middle Channel  
Comments: Company: Robinson Engineering Company, Inc.  
Note: 12-2121-00

6/10/2016 8:27:46 AM  
Sequence: Preliminary Scan

FCC Class B - Conducted Emissions - Black Lead



Title: FCC Class B - Conducted Emissions - Black Lead  
File: 5 - Agilent - Final Scan - AC Mode - Tx - Black Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously transmitting at the Middle Channel  
Comments: Company: Robinson Engineering, Inc.  
Model: 12-2121-00

6/10/2016 8:32:04 AM  
Sequence: Final Measurements

## FCC Class B - Conducted Emissions - Black Lead

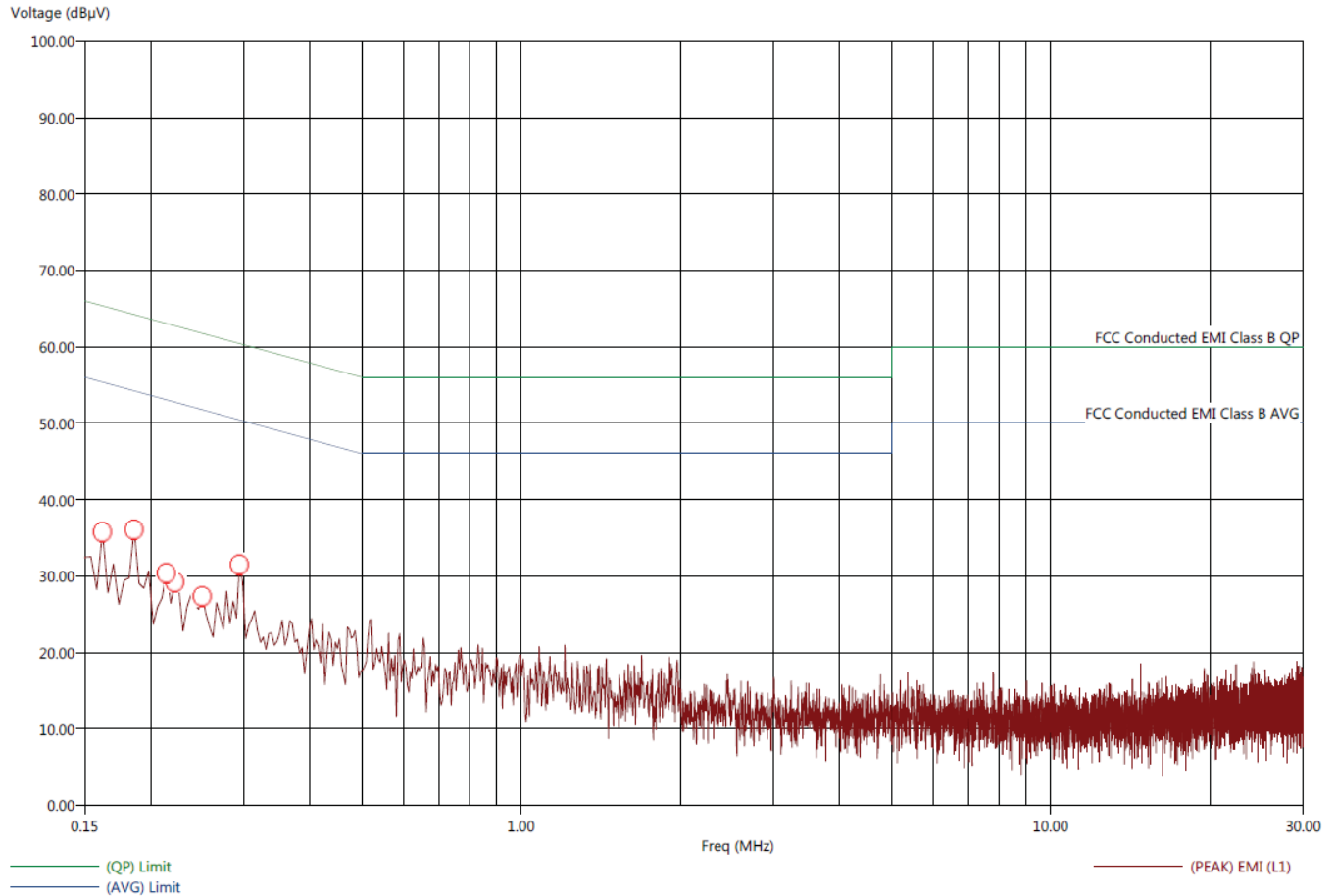
| Freq<br>(MHz) | (PEAK) EMI<br>(dBµV) | (AVG) EMI<br>(dBµV) | (AVG) Margin AVL<br>(dB) | (AVG) Limit<br>(dBµV) | Cable<br>(dB) | Transducer<br>(dB) | Filter<br>(dB) |
|---------------|----------------------|---------------------|--------------------------|-----------------------|---------------|--------------------|----------------|
| 0.16          | 39.23                | 21.55               | -33.63                   | 55.18                 | 0.07          | 0.457              | 9.83           |
| 0.18          | 40.83                | 21.10               | -33.52                   | 54.62                 | 0.07          | 0.419              | 9.83           |
| 0.20          | 38.54                | 20.20               | -33.27                   | 53.47                 | 0.08          | 0.343              | 9.83           |
| 0.21          | 37.21                | 20.10               | -33.10                   | 53.20                 | 0.08          | 0.324              | 9.83           |
| 0.29          | 35.81                | 21.22               | -29.58                   | 50.80                 | 0.08          | 0.163              | 9.83           |
| 0.39          | 31.76                | 17.77               | -29.97                   | 47.73                 | 0.08          | 0.050              | 9.84           |



Title: FCC Class B - Conducted Emissions - White Lead  
File: 6 - Agilent - Pre-Scan - AC Mode - Tx - White Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously transmitting the Middle Channel  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/10/2016 8:33:23 AM  
Sequence: Preliminary Scan

FCC Class B - Conducted Emissions - White Lead



Title: FCC Class B - Conducted Emissions - White Lead  
File: 6 - Agilent - Final Scan - AC Mode - Tx - White Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously transmitting at the Middle Chanel  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/10/2016 8:34:46 AM  
Sequence: Final Measurements

## FCC Class B - Conducted Emissions - White Lead

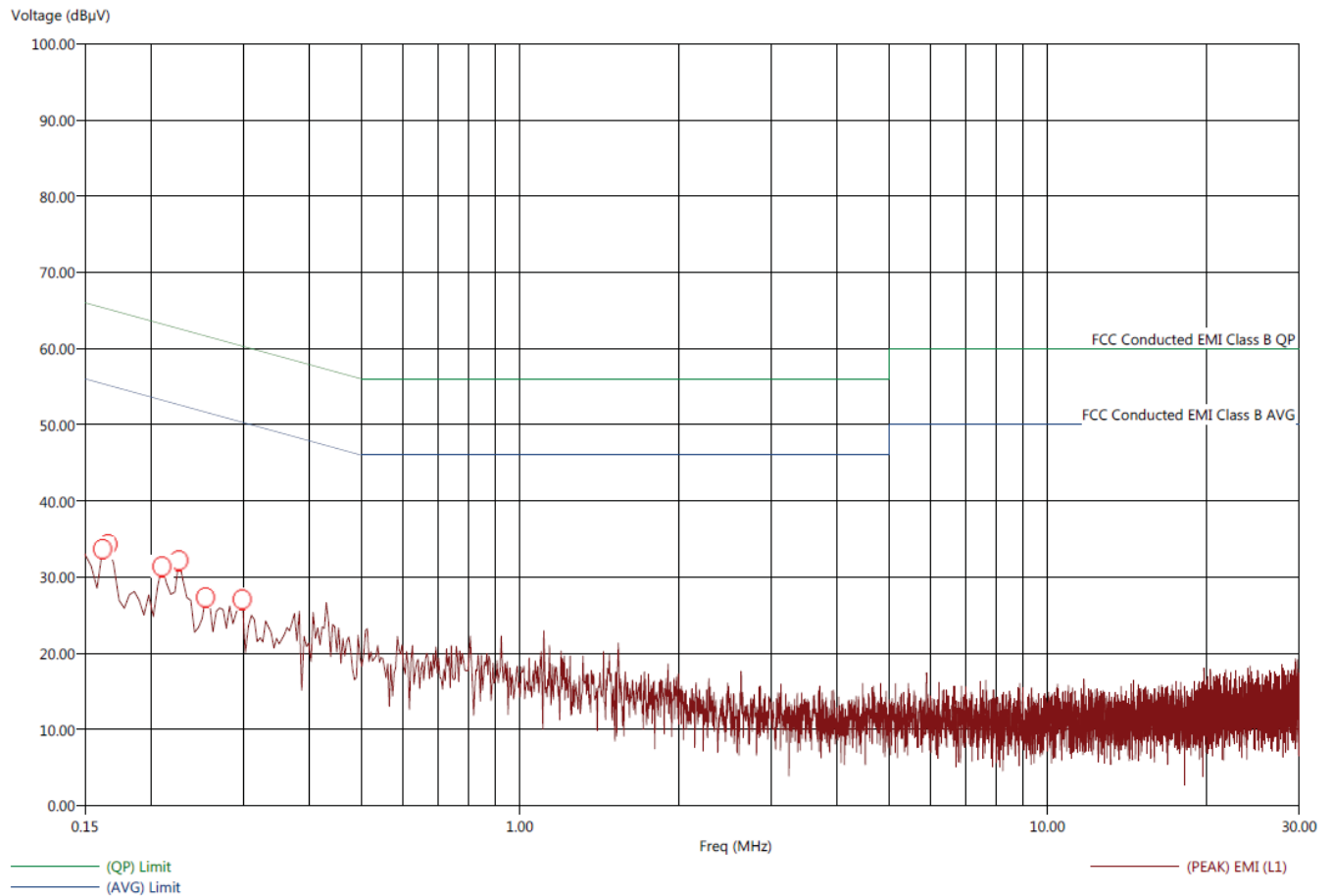
| Freq<br>(MHz) | (PEAK) EMI<br>(dBµV) | (AVG) EMI<br>(dBµV) | (AVG) Margin AVL<br>(dB) | (AVG) Limit<br>(dBµV) | Cable<br>(dB) | Transducer<br>(dB) | Filter<br>(dB) |
|---------------|----------------------|---------------------|--------------------------|-----------------------|---------------|--------------------|----------------|
| 0.162         | 37.98                | 20.44               | -34.67                   | 55.12                 | 0.07          | 0.440              | 9.83           |
| 0.186         | 37.40                | 19.58               | -34.70                   | 54.27                 | 0.07          | 0.384              | 9.83           |
| 0.214         | 36.23                | 18.87               | -34.12                   | 52.99                 | 0.08          | 0.298              | 9.83           |
| 0.222         | 36.25                | 18.86               | -33.99                   | 52.85                 | 0.08          | 0.289              | 9.83           |
| 0.250         | 36.33                | 21.78               | -29.75                   | 51.53                 | 0.08          | 0.201              | 9.83           |
| 0.294         | 35.86                | 20.70               | -29.86                   | 50.56                 | 0.08          | 0.136              | 9.83           |



Title: FCC Class B - Conducted Emissions - Black Lead  
File: 7 - Agilent - Pre-Scan - AC Mode - Rx - Black Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously receiving at the Middle Channel  
Comments: Company: Robinson Engineering Company, Inc.  
Note: 12-2121-00

6/10/2016 8:41:46 AM  
Sequence: Preliminary Scan

FCC Class B - Conducted Emissions - Black Lead



Title: FCC Class B - Conducted Emissions - Black Lead  
File: 7 - Agilent - Final Scan - AC Mode - Rx - Black Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously receiving at the Middle Channel  
Comments: Company: Robinson Engineering, Inc.  
Model: 12-2121-00

6/10/2016 8:44:04 AM  
Sequence: Final Measurements

## FCC Class B - Conducted Emissions - Black Lead

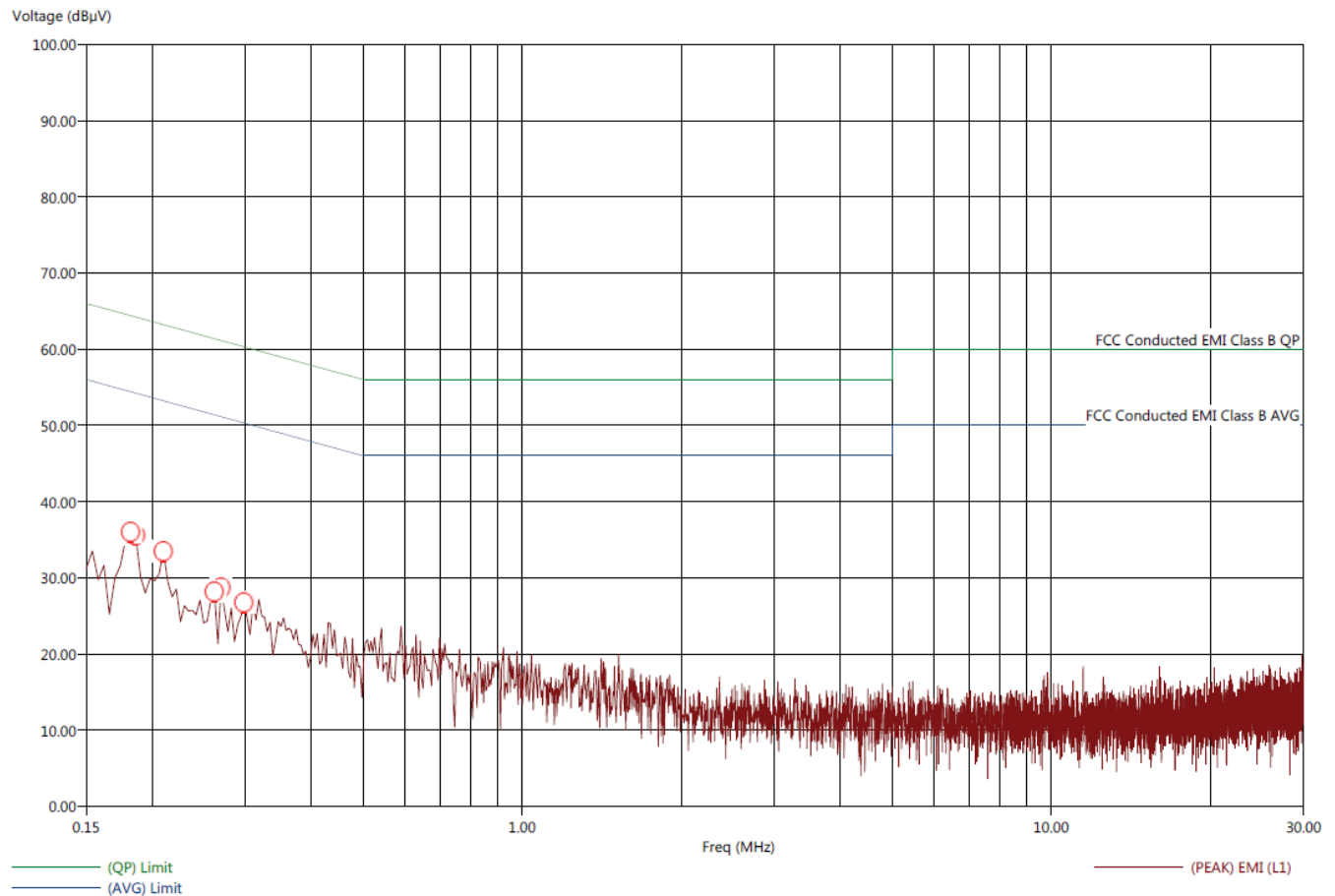
| Freq<br>(MHz) | (PEAK) EMI<br>(dBµV) | (AVG) EMI<br>(dBµV) | (AVG) Margin AVL<br>(dB) | (AVG) Limit<br>(dBµV) | Cable<br>(dB) | Transducer<br>(dB) | Filter<br>(dB) |
|---------------|----------------------|---------------------|--------------------------|-----------------------|---------------|--------------------|----------------|
| 0.16          | 39.55                | 21.73               | -33.82                   | 55.55                 | 0.06          | 0.482              | 9.83           |
| 0.17          | 40.79                | 21.53               | -33.76                   | 55.28                 | 0.07          | 0.464              | 9.83           |
| 0.21          | 38.80                | 20.19               | -33.26                   | 53.45                 | 0.08          | 0.341              | 9.83           |
| 0.23          | 37.95                | 19.46               | -33.06                   | 52.52                 | 0.08          | 0.279              | 9.83           |
| 0.25          | 35.83                | 21.60               | -29.82                   | 51.41                 | 0.08          | 0.204              | 9.83           |
| 0.30          | 34.73                | 20.96               | -29.51                   | 50.47                 | 0.08          | 0.141              | 9.83           |



Title: FCC Class B - Conducted Emissions - White Lead  
File: 8 - Agilent - Pre-Scan - AC Mode - Rx - White Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously receiving the Middle Channel  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/10/2016 8:36:26 AM  
Sequence: Preliminary Scan

FCC Class B - Conducted Emissions - White Lead



Title: FCC Class B - Conducted Emissions - White Lead  
File: 8 - Agilent - Final Scan - AC Mode - Rx - White Lead - FCC Class B - 150 kHz to 30 MHz - 06-10-2016.set  
Operator: Kyle Fujimoto  
EUT Type: 900 MHz Module  
EUT Condition: The EUT is continuously receiving at the Middle Channel  
Comments: Company: Robinson Engineering Company, Inc.  
Model: 12-2121-00

6/10/2016 8:37:53 AM  
Sequence: Final Measurements

## FCC Class B - Conducted Emissions - White Lead

| Freq<br>(MHz) | (PEAK) EMI<br>(dBµV) | (AVG) EMI<br>(dBµV) | (AVG) Margin AVL<br>(dB) | (AVG) Limit<br>(dBµV) | Cable<br>(dB) | Transducer<br>(dB) | Filter<br>(dB) |
|---------------|----------------------|---------------------|--------------------------|-----------------------|---------------|--------------------|----------------|
| 0.182         | 37.33                | 19.82               | -34.51                   | 54.33                 | 0.07          | 0.388              | 9.83           |
| 0.186         | 37.23                | 19.61               | -34.49                   | 54.10                 | 0.08          | 0.372              | 9.83           |
| 0.210         | 36.76                | 19.12               | -34.24                   | 53.36                 | 0.08          | 0.323              | 9.83           |
| 0.262         | 36.26                | 21.53               | -29.62                   | 51.14                 | 0.08          | 0.175              | 9.83           |
| 0.270         | 36.24                | 21.45               | -29.83                   | 51.28                 | 0.08          | 0.184              | 9.83           |
| 0.298         | 35.31                | 20.68               | -29.87                   | 50.55                 | 0.08          | 0.136              | 9.83           |





***BAND EDGES  
DATA SHEETS***

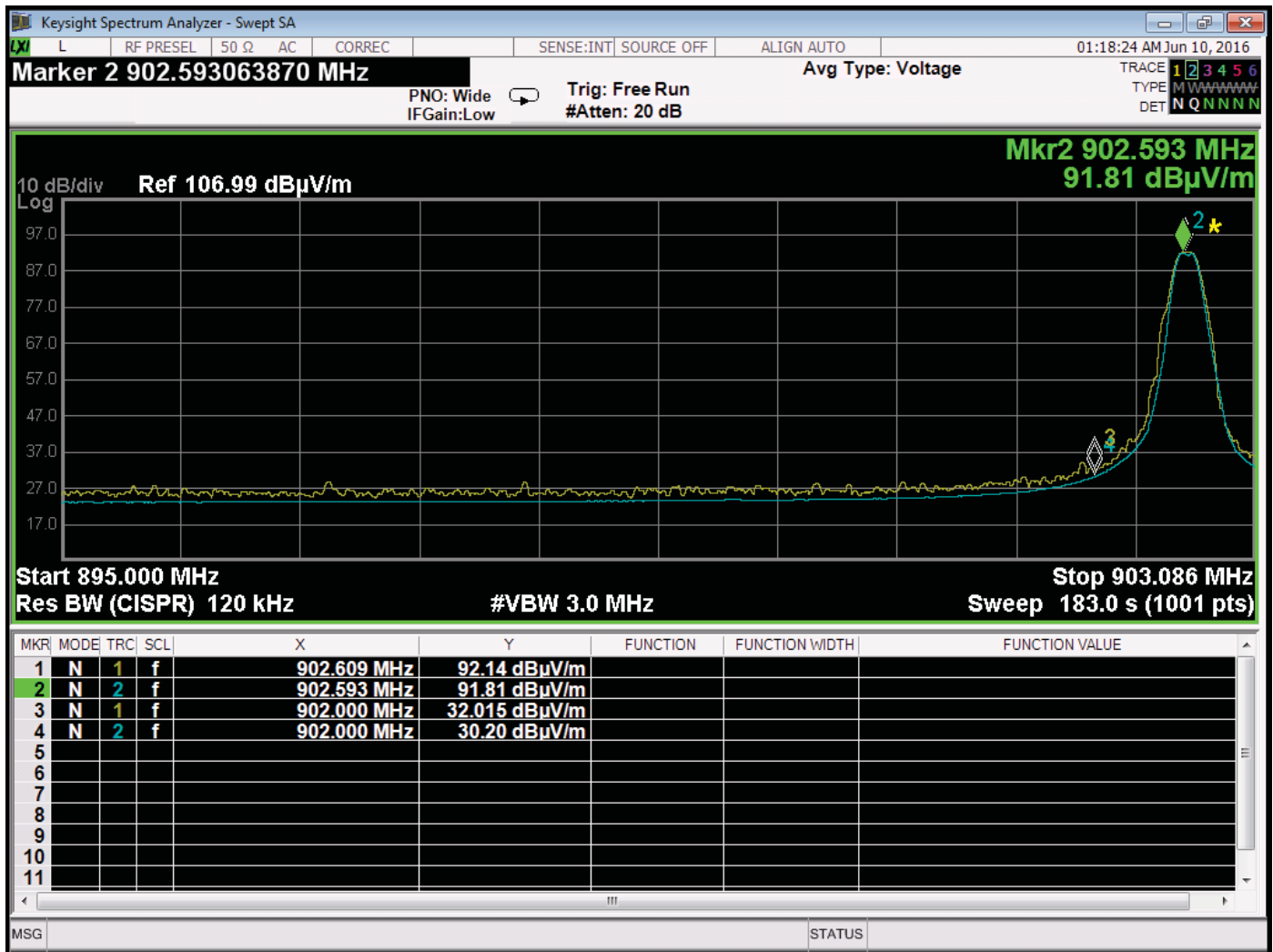
# FCC 15.249

Robinson Engineering Company, Inc.  
900 MHz Module  
Model: 12-2121-00

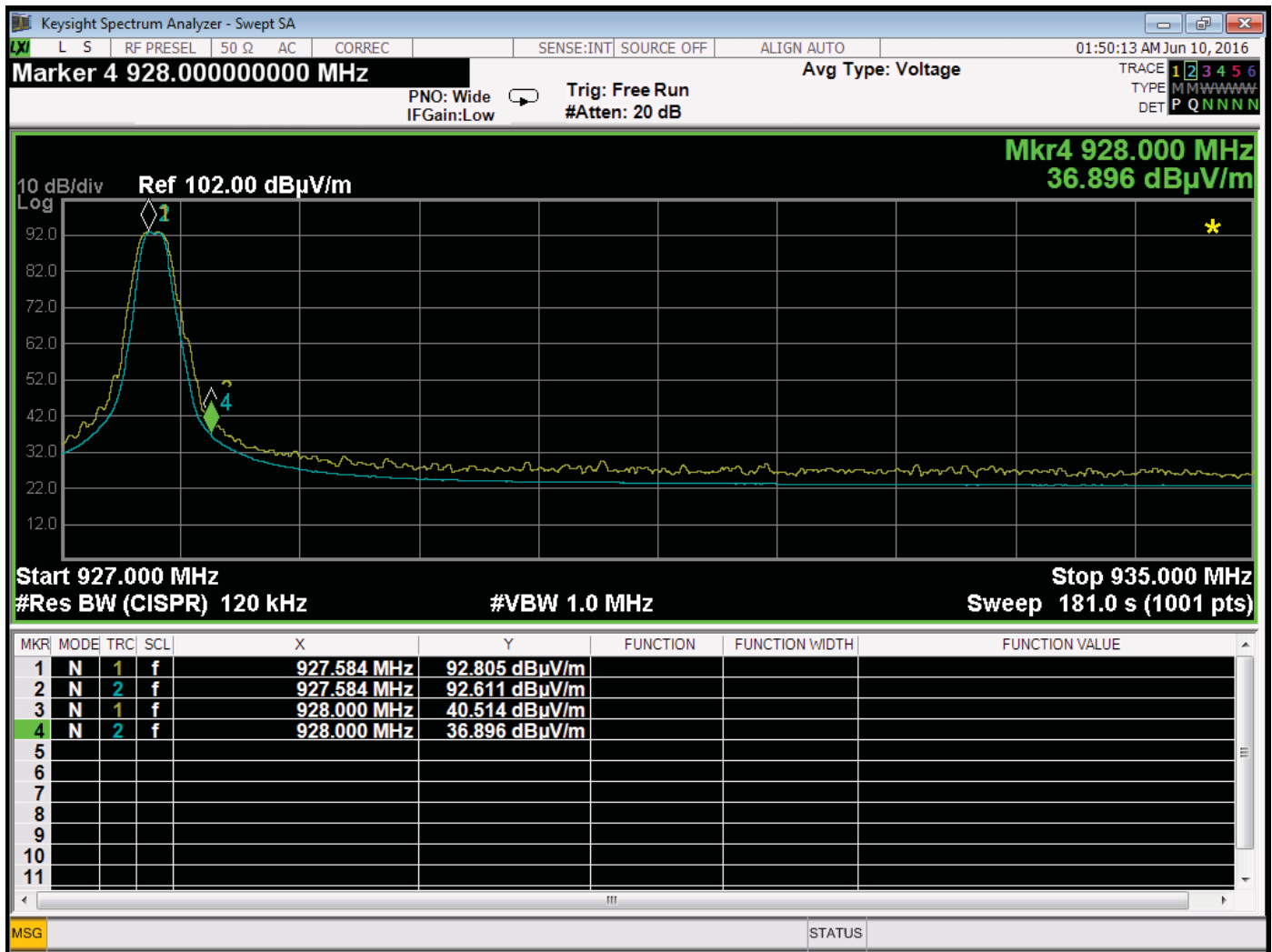
Date: 06/10/2016  
Lab: D  
Tested By: Kyle Fujimoto

## Band Edges

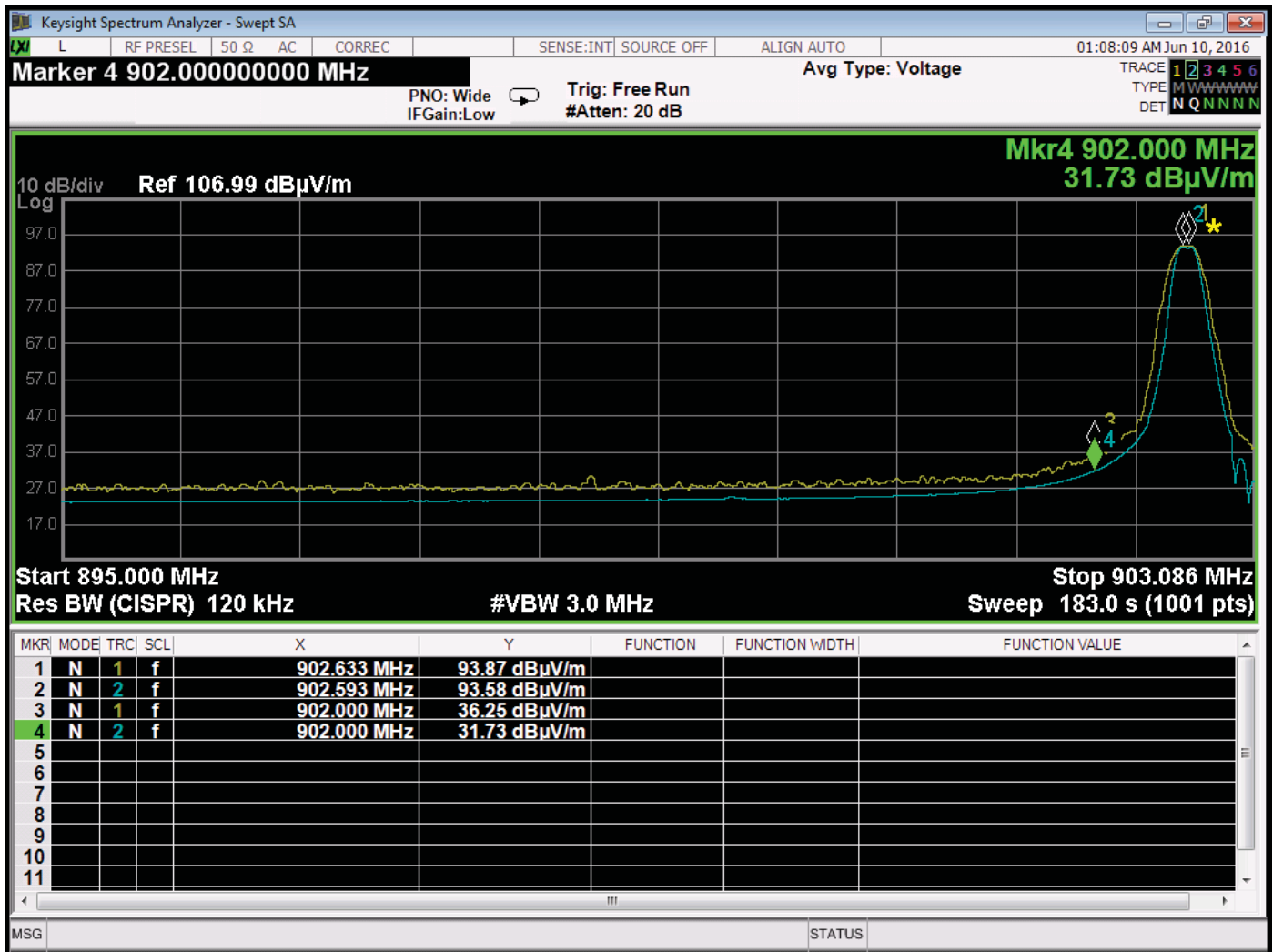
| Freq.<br>(MHz) | Level<br>(dBuV) | Pol<br>(v/h) | Limit | Margin | Peak /<br>QP /<br>Avg | Table<br>Angle<br>(deg) | Ant.<br>Height<br>(cm) | Comments                |
|----------------|-----------------|--------------|-------|--------|-----------------------|-------------------------|------------------------|-------------------------|
| 902.62         | 93.87           | H            | 93.97 | -0.10  | Peak                  | 182.25                  | 207.41                 | Low Channel             |
| 902.62         | 93.58           | H            | 93.97 | -0.39  | QP                    | 182.25                  | 207.41                 | Fund. X-Axis Worst Case |
| 902.00         | 36.25           | H            | 46.00 | -9.75  | Peak                  | 182.25                  | 207.41                 | Band Edge               |
| 902.00         | 31.73           | H            | 46.00 | -14.27 | QP                    | 182.25                  | 207.41                 | Low Channel             |
| 902.62         | 92.14           | V            | 93.97 | -1.83  | Peak                  | 263.75                  | 111.35                 | Low Channel             |
| 902.62         | 91.81           | V            | 93.97 | -2.16  | QP                    | 263.75                  | 111.35                 | Fund. Y-Axis Worst Case |
| 902.00         | 32.02           | V            | 46.00 | -13.99 | Peak                  | 263.75                  | 111.35                 | Band Edge               |
| 902.00         | 30.20           | V            | 46.00 | -15.80 | QP                    | 263.75                  | 111.35                 | Low Channel             |
| 927.62         | 94.06           | H            | 93.97 | 0.09   | Peak                  | 189.75                  | 209.02                 | High Channel            |
| 927.62         | 93.83           | H            | 93.97 | -0.14  | QP                    | 189.75                  | 209.02                 | Fund. X-Axis Worst Case |
| 928.00         | 41.55           | H            | 46.00 | -4.45  | Peak                  | 189.75                  | 209.02                 | Band Edge               |
| 928.00         | 38.08           | H            | 46.00 | -7.92  | QP                    | 189.75                  | 209.02                 | High Channel            |
| 927.62         | 92.81           | V            | 93.97 | -1.16  | Peak                  | 227.25                  | 105.20                 | High Channel            |
| 927.62         | 92.61           | V            | 93.97 | -1.36  | QP                    | 227.25                  | 105.20                 | Fund. Y-Axis Worst Case |
| 928.00         | 40.51           | V            | 46.00 | -5.49  | Peak                  | 227.25                  | 105.20                 | Band Edge               |
| 928.00         | 36.90           | V            | 46.00 | -9.10  | QP                    | 227.25                  | 105.20                 | High Channel            |
|                |                 |              |       |        |                       |                         |                        |                         |
|                |                 |              |       |        |                       |                         |                        |                         |
|                |                 |              |       |        |                       |                         |                        |                         |
|                |                 |              |       |        |                       |                         |                        |                         |



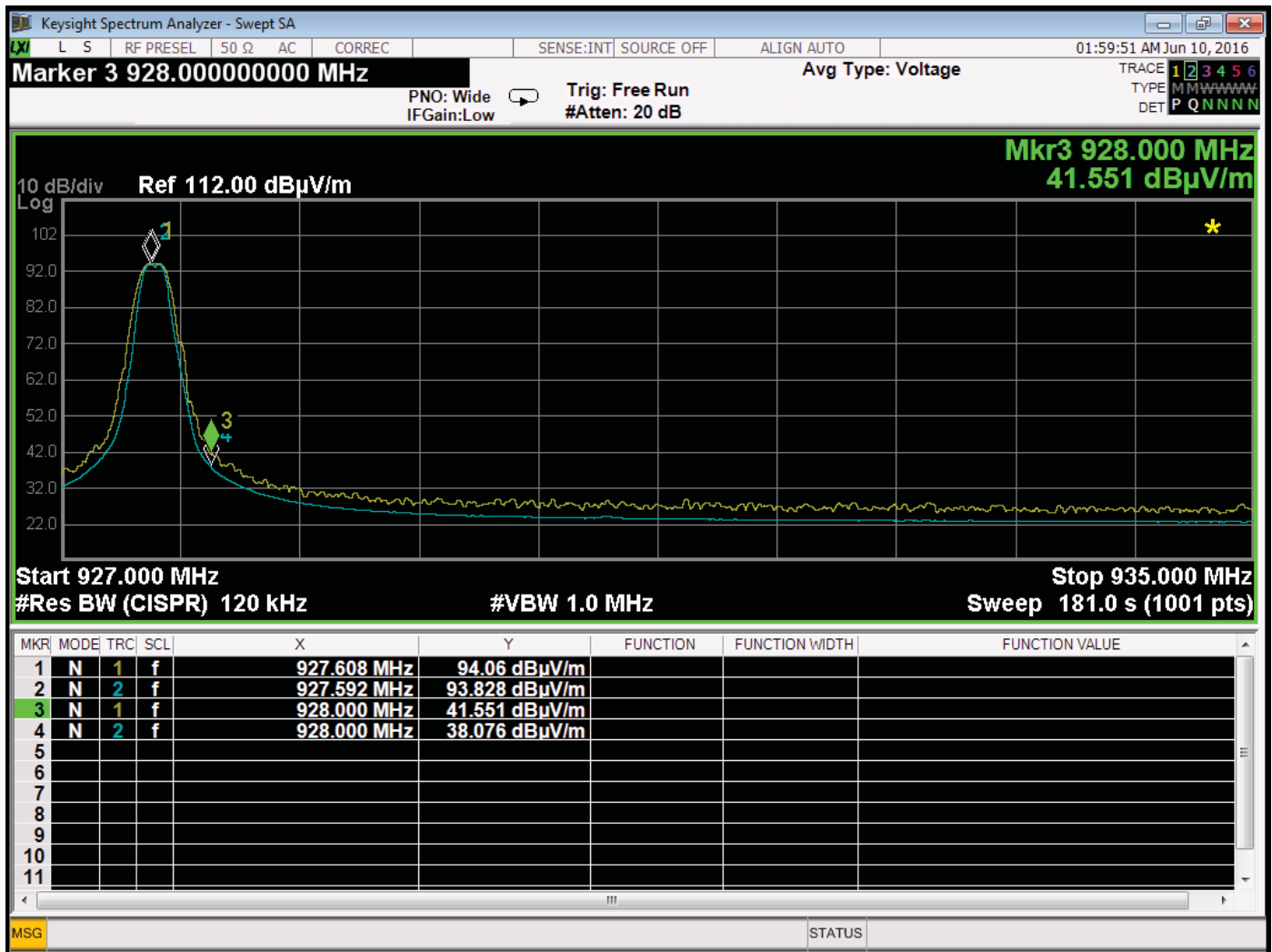
Band Edge – Vertical Polarization – Low Channel – Model: 12-2121-00 – Y-Axis Worst Case



Band Edge – Vertical Polarization – High Channel – Model: 12-2121-00 – Y-Axis Worst Case



Band Edge – Horizontal Polarization – Low Channel – Model: 12-2121-00 – X-Axis Worst Case



Band Edge – Horizontal Polarization – High Channel – Model: 12-2121-00 – X-Axis Worst Case