



**Nemko Test Report:** 2015 283053A FCC15249

**Applicant:** Residential Control Systems  
12625 Danielson Ct. Suite 102  
Poway CA 92064

**Equipment Under Test:  
(E.U.T.)** SCG5


**FCC Identifier:** WIBTZW017

**Industry Canada Identifier:** 9374A-W017

**In Accordance With:** **FCC Part 15, Subpart C, 15.249 and  
Industry Canada RSS-210, Issue 8**  
Operation within the bands 902-928 MHz,  
2400-2483.5 MHz, 5725-5875 MHz, and  
24.0-24.25 GHz.

**Tested By:** Nemko USA, Inc.  
2210 Faraday Ave, Suite 150  
Carlsbad, CA 92008

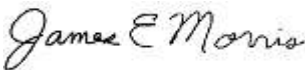
**TESTED BY:**

  
\_\_\_\_\_  
David Light, Wireless Engineer

**DATE:**

04 May 2015  
\_\_\_\_\_

**APPROVED BY:**

  
\_\_\_\_\_

**DATE:**

24 June 2015  
\_\_\_\_\_

**Total Number of Pages: 17**

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**Section 1. Summary Of Test Results**

Manufacturer: Residential Control Systems

Model No.: SCG5

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Paragraph 15.249 and Industry Canada RSS-210, Issue 8. All tests were conducted using measurement procedure ANSI C63.10-2013. Radiated Emissions were made on a semi-anechoic chamber.

- |                                     |                            |                                     |                     |
|-------------------------------------|----------------------------|-------------------------------------|---------------------|
| <input checked="" type="checkbox"/> | New Submission             | <input checked="" type="checkbox"/> | Production Unit     |
| <input type="checkbox"/>            | Class II Permissive Change | <input type="checkbox"/>            | Pre-Production Unit |

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".



NVLAP Lab Code 200116-0

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**Nemko USA, Inc.**

CFR 47, PART 15, Paragraph 15.249 and  
Industry Canada RSS-210, Issue 8  
Operation within the bands 902-928 MHz,  
2400-2483.5 MHz, 5725-5875 MHz,  
and 24.0-24.25 GHz.

*EQUIPMENT:* SCG5

REPORT NO.: 2015 283053A FCC15249

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**Summary Of Test Data**

| <b>NAME OF TEST</b> | <b>PARA. NO.</b>      | <b>RESULT</b> |
|---------------------|-----------------------|---------------|
| Conducted Emissions | 15.207 / RSS-Gen      | NA            |
| Radiated Emissions  | 15.249 / RSS-210 A2.9 | Complies      |

**Footnotes For N/A's:**

The EUT is battery powered.

**Section 2. General Equipment Specification**

**Frequency Range:** 902 to 928 MHz

**Operating Frequency(ies) of Sample:** 908.4 to 916 MHz

**Number of Channels:** 2

**Modulation Type:** 2FSK (Lower Channel)  
2GFSK (Upper Channel)

**Emission Designator:** 86K0F2D (Lower Channel)  
110KF2D (Upper Channel)

**Hardware Version:** Rev C

**Firmware Version:** 1.1.6

**User Frequency Adjustment:**

**Integral Antenna** **Yes** **No**

**Description of EUT**

Scene control keypad for lighting control.

**Section 3. Transmit Radiated Emissions**

|   |                     |
|---|---------------------|
| NAME OF TEST: Transmit Radiated Emissions | PARA. NO.: 15.249   |
| TESTED BY: David Light                    | DATE: 20 April 2015 |

**Minimum Standard:** Para no. 15.249

(a) The field strengths shall not exceed the following:

| Carrier (MHz) | Field Strength (mV/m) | Field Strength (dBµV) | Harmonic (µV/m) | Harmonic (dBµV) |
|---------------|-----------------------|-----------------------|-----------------|-----------------|
| 902-928       | 50                    | 94                    | 500             | 54              |
| 2400-2483.5   | 50                    | 94                    | 500             | 54              |
| 5725-5875     | 50                    | 94                    | 500             | 54              |
| 24000-24250   | 250                   | 108                   | 2500            | 68              |

(b) Field strength limits are specified at a distance of 3 metres.

(c) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated limits of 15.209 whichever is the less attenuation.

(d) ...for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

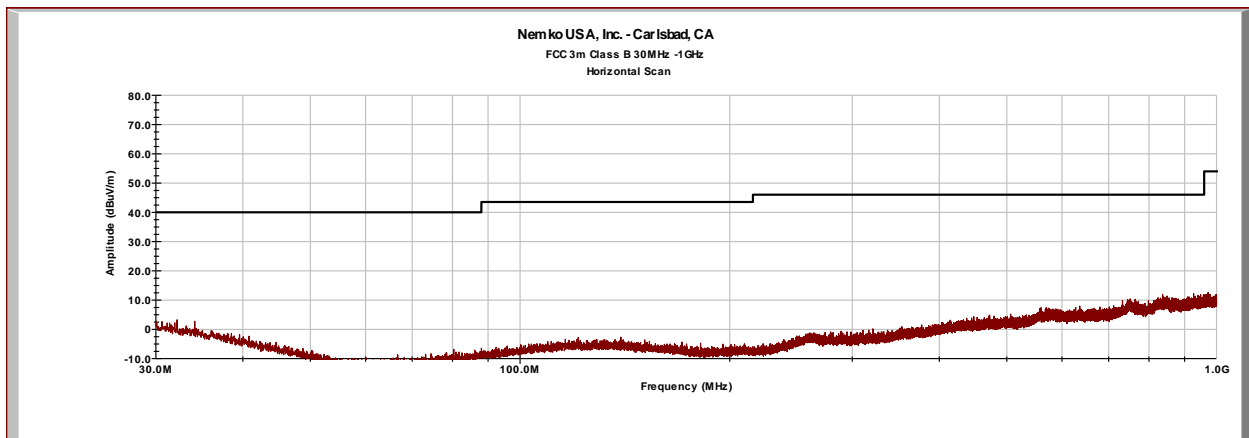
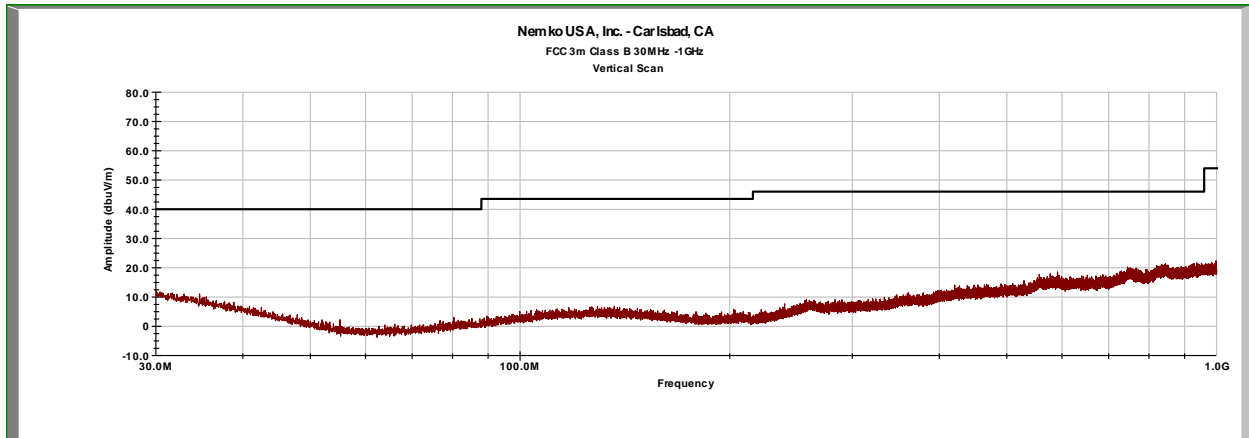
**Test Results:** Complies

**Measurement Data:** See attached table and graphs.

| Meas. Freq. (MHz) | Ant. Pol. (H/V) | Atten. (dB) | Meter Reading (dBuV) | Antenna Factor (dB) | Path Loss (dB) | RF Gain (dB) | Corrected Reading (dBuV/m) | Spec. limit (dBuV/m) | CR/SL Diff. (dB) | Pass Fail Unc. | Comment |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|---------|
| 908.4             | V               | 0.0         | 56.3                 | 23.5                | 3.7            | 0.0          | 83.5                       | 94.0                 | -10.5            | Pass           |         |
| 908.4             | H               | 0.0         | 63.0                 | 23.5                | 3.7            | 0.0          | 90.2                       | 94.0                 | -3.8             | Pass           |         |
| 916.0             | V               | 0.0         | 59.2                 | 23.5                | 3.7            | 0.0          | 86.4                       | 94.0                 | -7.6             | Pass           |         |
| 916.0             | H               | 0.0         | 64.0                 | 23.5                | 3.7            | 0.0          | 91.2                       | 94.0                 | -2.8             | Pass           |         |
|                   |                 |             |                      |                     |                |              |                            |                      |                  |                |         |
|                   |                 |             |                      |                     |                |              |                            |                      |                  |                |         |

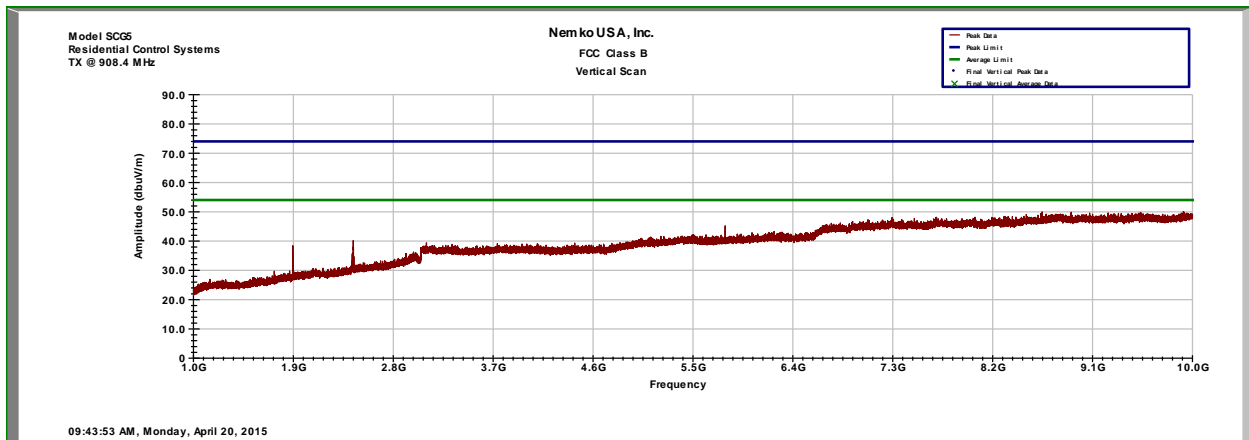
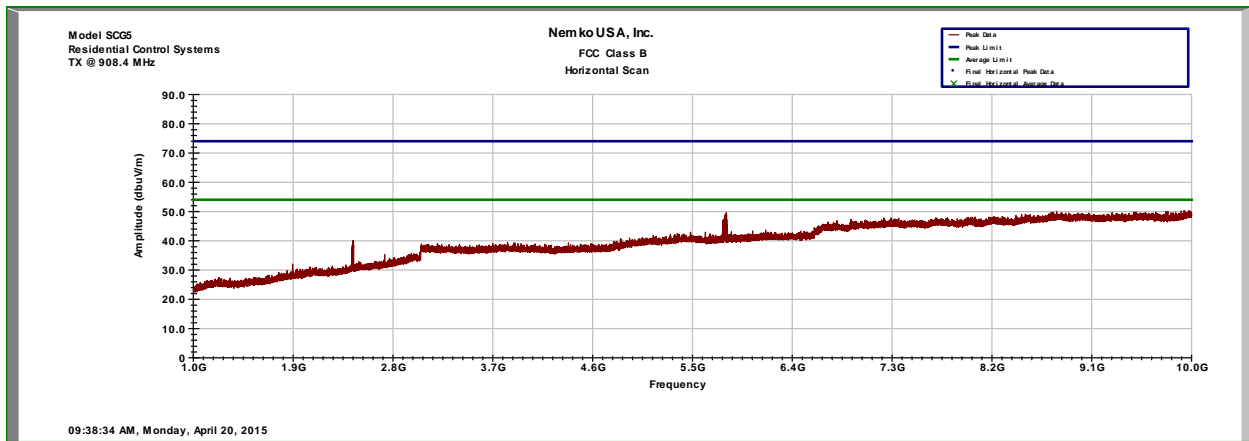
Test Data - Radiated Emissions

Lower Channel



Test Data - Radiated Emissions

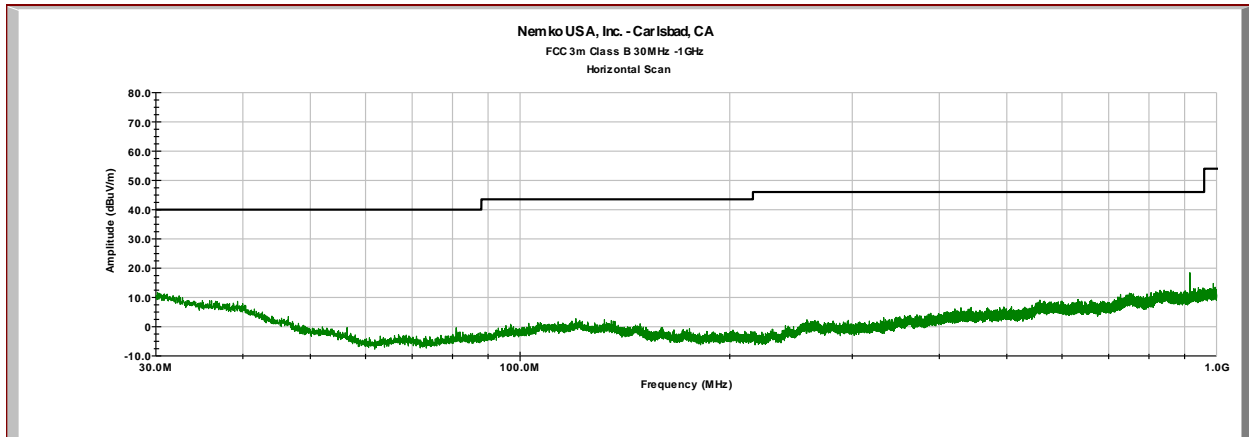
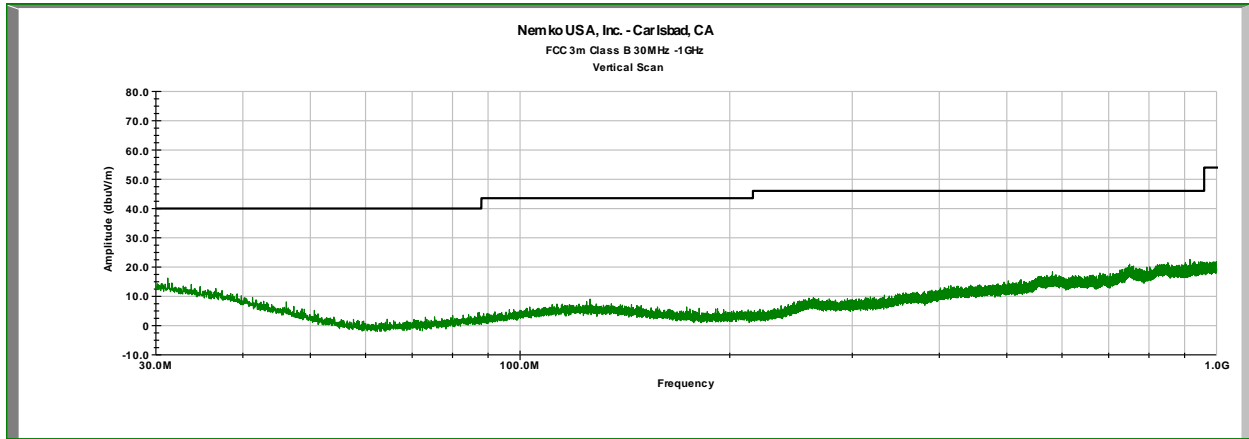
Lower Channel





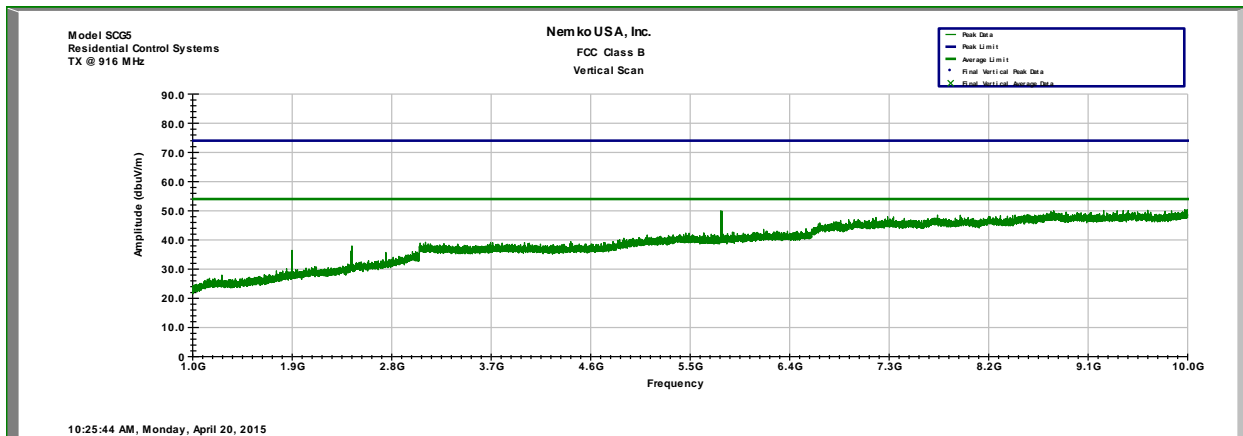
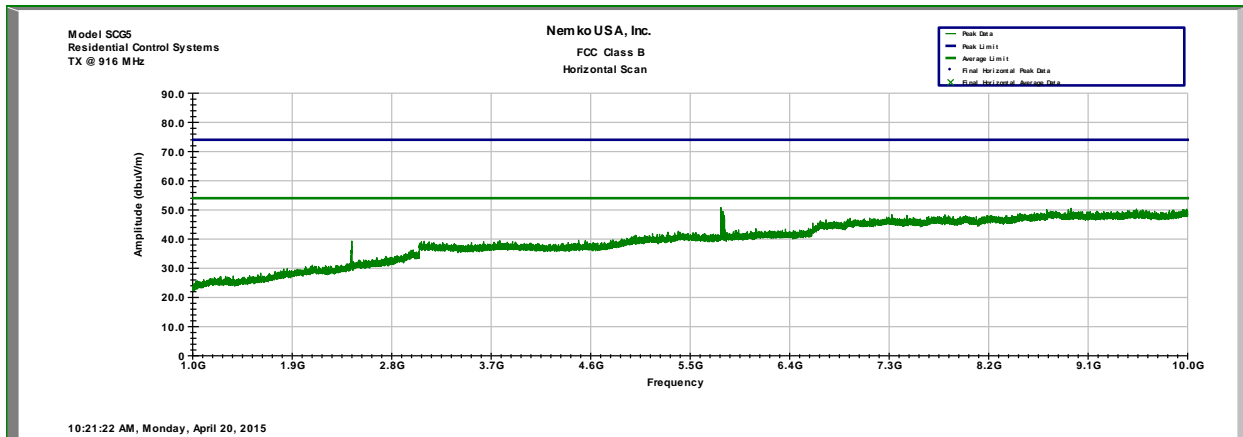
Test Data - Radiated Emissions

Upper Channel



Test Data - Radiated Emissions

Upper Channel



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**Section 4. Emission Bandwidth**

|                                  |                            |
|----------------------------------|----------------------------|
| NAME OF TEST: Emission Bandwidth | PARA. NO.: RSS-General 6.6 |
| TESTED BY: David Light           | DATE: 20 April 2015        |

**Minimum Standard:** Para no. 6.6

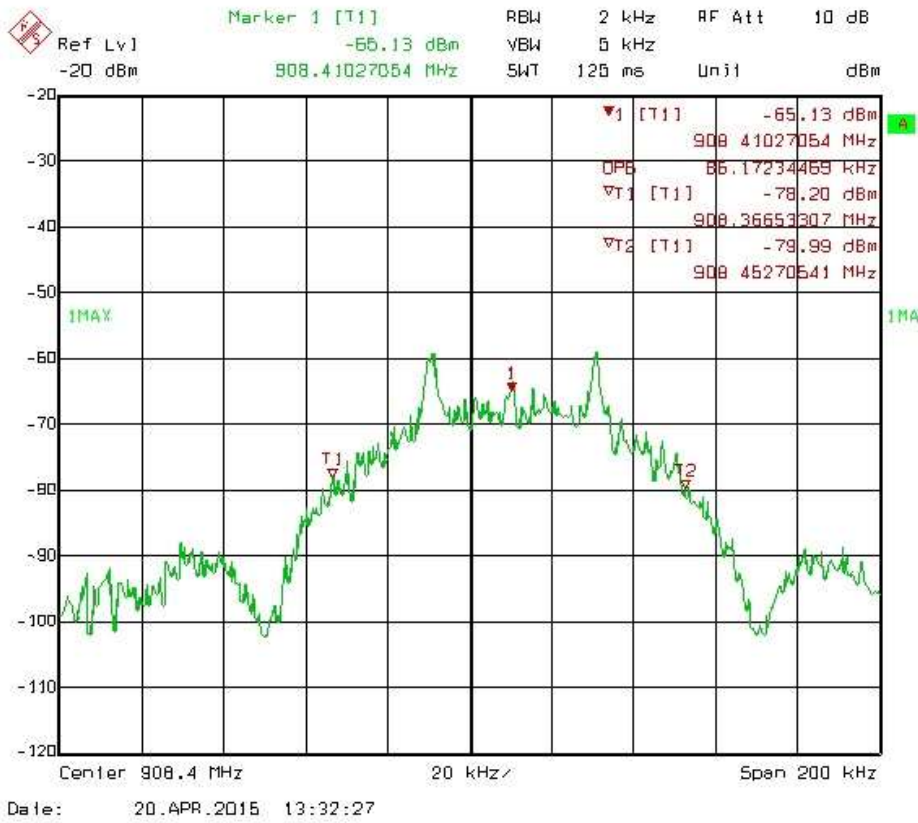
**Test Results:** Complies

**Measurement Data:** See attached graphs.

Test Data – 99% Emission Bandwidth

Lower Channel

SCG5 Lower Channel

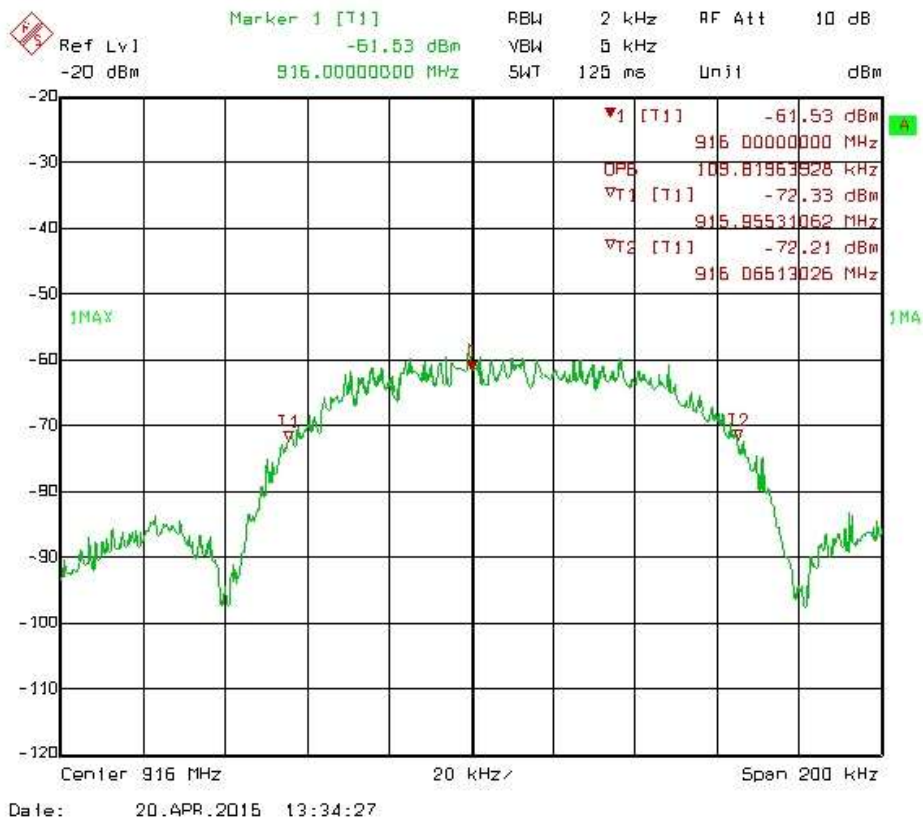


Test Data – 99% Emission Bandwidth

Upper Channel

SCG5

High Channel



**Section 5. Test Equipment List**

| Asset Tag | Description                         | Manufacturer          | Model       | Serial #   | Last Cal    | Next Cal    |
|-----------|-------------------------------------|-----------------------|-------------|------------|-------------|-------------|
| E1029     | Preamplifier<br>(20MHz to<br>18GHz) | A.H. Systems,<br>Inc. | PAM-0118    | 343        | 12-Aug-2014 | 12-Aug-2015 |
| 993       | Antenna,<br>Horn                    | A.H. Systems          | SAS-200/571 | 162        | 23-Dec-2014 | 23-Dec-2016 |
| 1036      | Spectrum<br>Analyzer                | Rohde &<br>Schwartz   | FSEK30      | 830844/006 | 15-Jul-2013 | 15-Jul-2015 |
| 1763      | Antenna,<br>Bilog                   | Schaffner             | CBL 6111D   | 22926      | 13-May-2014 | 13-May-2015 |

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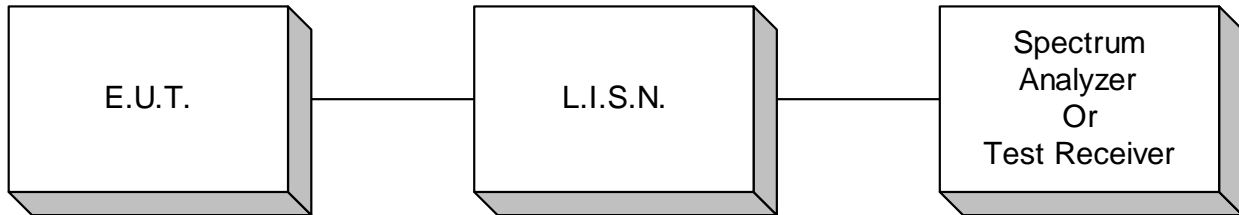
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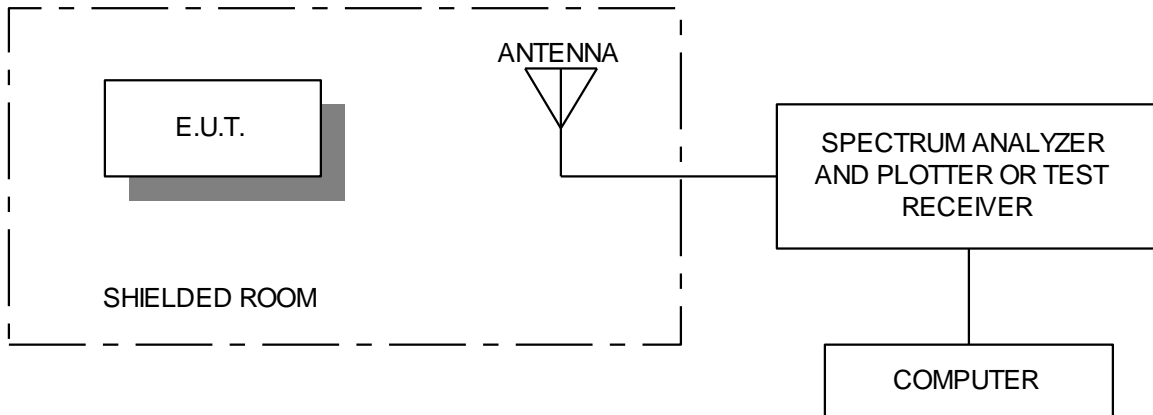
## **ANNEX A**

### **TEST DIAGRAMS**

**Conducted Emissions**



**Radiated Prescan**





**Test Site For Radiated Emissions**

