



Nemko Test Report: 2014 01247316 FCC

Applicant: Linear LLC
1950 Camino Vida Roble
Carlsbad, CA 92008
USA

**Equipment Under Test:
(E.U.T.)** SW-ATT-GDC

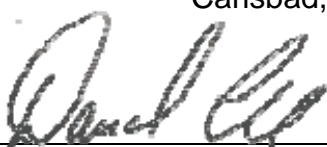
FCC ID: EF400117

Industry Canada: 1078A-00117

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.
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TESTED BY:




David Light, Wireless Engineer

DATE:

15 January 2014

APPROVED BY:



Alan Laudani
Senior RF/EMC Engineer

DATE:

25 January 2014

Total Number of Pages: 21

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Section 1. Summary Of Test Results

Manufacturer: Linear LLC

Model No.: GD00Z-1

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 Part 15.249 and Industry Canada RSS-210, Issue 8. All tests were conducted using measurement procedure ANSI C63.4-2003. Radiated Emissions were made in a semi-anechoic chamber. A description of the test facility is on file with the FCC and Industry Canada.



New Submission



Production Unit



Class II Permissive Change



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, SUBPART C, 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.

FCC ID: EF400117

IC: 1078A-00117

Report number: 2014 01247316 FCC

Summary Of Test Data

| NAME OF TEST | PARA. NO. | RESULT |
|-----------------------------|----------------------------|----------|
| Conducted Emissions | FCC 15.207 / RSS-Gen 7.2.4 | Complies |
| Radiated Emissions | FCC 15.249 / RSS-210 A2.9 | Complies |
| Receiver Spurious Emissions | RSS-Gen 6.1 | Complies |

Section 2. General Equipment Specification**Frequency Range:** 902 – 928 MHz**Operating Frequencies of Sample:** 908.42 to 919.78 MHz**Tunable Bands:** None**Number of Channels:** 4**Modulation:** OOK**Emissions Designator:** 30KA1D**User Frequency Adjustment:** None**Integral Antenna****Yes****No****Description of EUT**

The SW-ATT-GDC will allow a Lowes Iris Home control system to monitor the status of the Garage door via an RF tilt sensor and provide this information to the control system for home security monitoring. The Iris system will talk with the SW-ATT-GDC to allow unattended operation of the Garage door with a relay contact closure to the wall panel input terminals at the GDO, IF the conditions (set by UL standard 325) are met. The SW-ATT-GDC will provide a flashing bright white lamp and Buzzer sound as a warning signal required by the UL standard. The Contact closure points will also be monitored in the occurrence of someone pressing the button at the garage wall panel during the UL 325 defined warning period. The SW-ATT-GDC also includes a 433.92MHz radio receiver circuit to receive the status of the door sensor position and condition.

Section 3. Powerline Conducted Emissions

| | |
|---|---------------------------|
| NAME OF TEST: Powerline Conducted Emissions | PARA. NO.: 15.207 / 7.2.4 |
| TESTED BY: David Light | DATE: 16 December 2013 |

Minimum Standard: Conducted limits.

(a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 mH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

| Frequency of Emission (MHz) | Conducted Quasi-peak | Limit (dBmV) | |
|--------------------------------|-------------------------|--------------|--|
| | | Average | |
| 0.15-0.5 | 66 to 56* | 56 to 46* | |
| 0.5-5 | 56 | 46 | |
| 5-30 | 60 | 50 | |

* Decreases with the logarithm of the frequency.

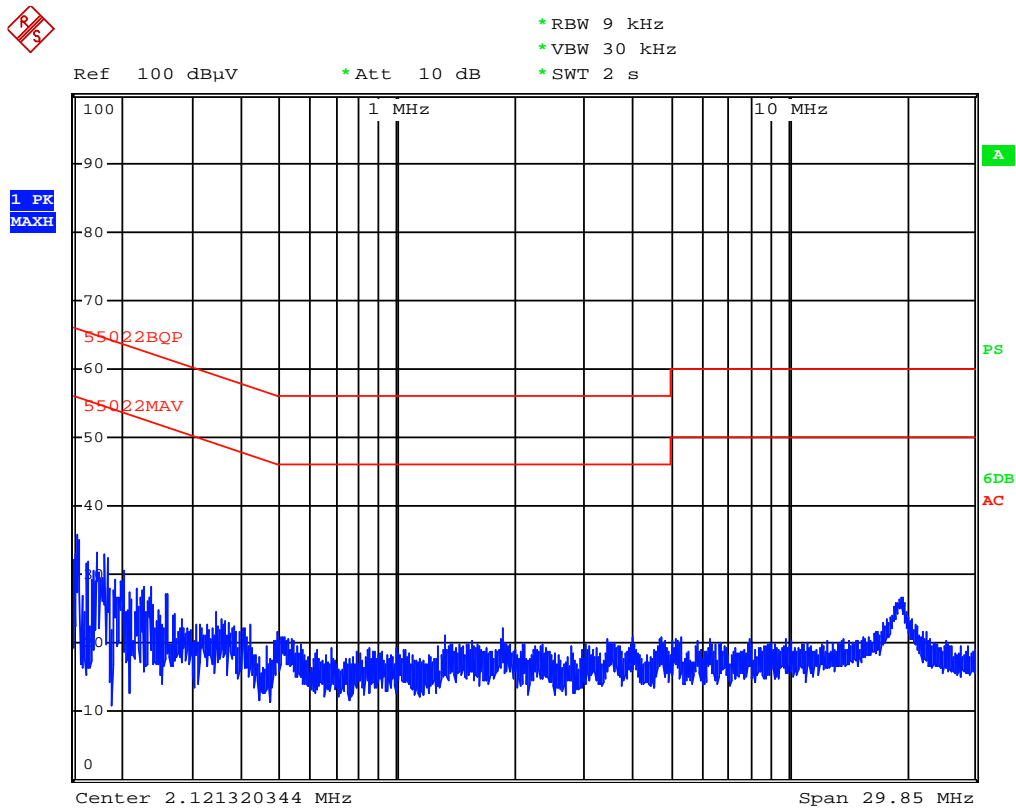
Test Results: Complies . See attached graph(s).

Measurement Data: See attached graph(s).

Method of Measurement: (Procedure ANSI C63.4-2003)

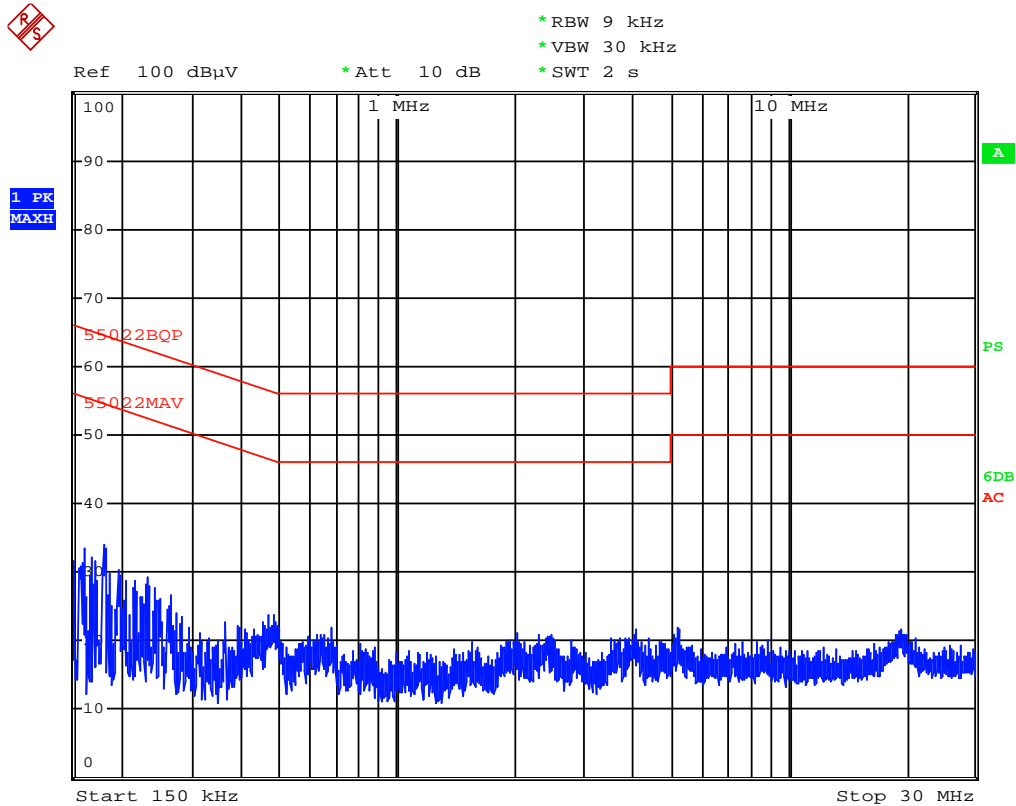
Measurements were made using a spectrum analyzer with 10 kHz RBW, Peak Detector. Any emissions that are close to the limit are measured using a test receiver with 10 kHz bandwidth, CISPR Quasi-Peak Detector.

Test Data – Powerline Conducted Emissions (Line 1)



Date: 16.DEC.2013 16:07:39

Test Data – Powerline Conducted Emissions (Neutral)



Date: 16.DEC.2013 16:08:41

Section 4. Radiated Emissions

| | |
|----------------------------------|--------------------------|
| NAME OF TEST: Radiated Emissions | PARA. NO.: 15.249 / A2.4 |
| TESTED BY: David Light | DATE: 16 December 2013 |

Minimum Standard: Para no. 15.249

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

| Carrier (MHz) | Field Strength (mV/m) | Field Strength (dB μ V) | Harmonic (μ V/m) | Harmonic (dB μ V) |
|---------------|-----------------------|-----------------------------|-----------------------|-----------------------|
| 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.

Test Data - Radiated Emissions (Peak)

Low Channel

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 300 kHz Peak Detector
>1000 MHz RBW = 1 MHz VBW = 3 MHz Peak Detector

| 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 |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|---------------|
| | | | | | | | | | | | Lower Channel |
| 908.42 | H | 0 | 64.0 | 23.5 | 6.1 | 0.0 | 93.6 | 94.0 | -0.4 | Pass | Peak |
| 1816.84 | H | 0 | 29.0 | 26.5 | 7.6 | 31.5 | 31.6 | 74.0 | -42.4 | Pass | Peak |
| 2725.26 | H | 0 | 34.0 | 28.9 | 10.2 | 30.8 | 42.3 | 74.0 | -31.7 | Pass | Peak |
| 3633.68 | H | 0 | 34.0 | 31.5 | 10.6 | 31.7 | 44.4 | 74.0 | -29.6 | Pass | Peak |
| 4542.10 | H | 0 | 32.3 | 32.3 | 11.1 | 30.7 | 45.0 | 74.0 | -29.0 | Pass | Peak |
| 5450.52 | H | 0 | 30.0 | 34.3 | 12.3 | 30.3 | 46.3 | 74.0 | -27.7 | Pass | Peak |
| 6358.94 | H | 0 | 30.4 | 34.5 | 12.9 | 30.0 | 47.8 | 74.0 | -26.2 | Pass | Peak |
| 7267.36 | H | 0 | 29.9 | 35.9 | 13.3 | 30.8 | 48.3 | 74.0 | -25.7 | Pass | Peak |
| 8175.78 | H | 0 | 29.0 | 36.9 | 14.0 | 31.7 | 48.2 | 74.0 | -25.8 | Pass | Peak |
| 9084.20 | H | 0 | 29.9 | 37.6 | 15.0 | 33.8 | 48.7 | 74.0 | -25.3 | Pass | Peak |
| 908.42 | V | 0 | 59.3 | 23.5 | 6.1 | 0.0 | 88.9 | 94.0 | -5.1 | Pass | Peak |
| 1816.84 | V | 0 | 29.0 | 26.5 | 7.6 | 31.5 | 31.6 | 74.0 | -42.4 | Pass | Peak |
| 2725.26 | V | 0 | 34.0 | 28.9 | 10.2 | 30.8 | 42.3 | 74.0 | -31.7 | Pass | Peak |
| 3633.68 | V | 0 | 34.0 | 31.5 | 10.6 | 31.7 | 44.4 | 74.0 | -29.6 | Pass | Peak |
| 4542.10 | V | 0 | 32.3 | 32.3 | 11.1 | 30.7 | 45.0 | 74.0 | -29.0 | Pass | Peak |
| 5450.52 | V | 0 | 30.0 | 34.3 | 12.3 | 30.3 | 46.3 | 74.0 | -27.7 | Pass | Peak |
| 6358.94 | V | 0 | 30.4 | 34.5 | 12.9 | 30.0 | 47.8 | 74.0 | -26.2 | Pass | Peak |
| 7267.36 | V | 0 | 29.9 | 35.9 | 13.3 | 30.8 | 48.3 | 74.0 | -25.7 | Pass | Peak |
| 8175.78 | V | 0 | 29.0 | 36.9 | 14.0 | 31.7 | 48.2 | 74.0 | -25.8 | Pass | Peak |
| 9084.20 | V | 0 | 29.9 | 37.6 | 15.0 | 33.8 | 48.7 | 54.0 | -5.3 | Pass | Peak |

Test Data - Radiated Emissions (Average)

Low Channel

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 100 kHz Peak Detector
>1000 MHz RBW = 1 MHz VBW = 10 MHz RMS Detector

| 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 |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|---------------|
| | | | | | | | | | | | Lower Channel |
| 908.42 | H | 0 | 63.7 | 23.5 | 6.1 | 0.0 | 93.3 | 94.0 | -0.7 | Pass | Average |
| 1816.84 | H | 0 | 24.5 | 26.5 | 7.6 | 31.5 | 27.1 | 54.0 | -26.9 | Pass | Average |
| 2725.26 | H | 0 | 29.5 | 28.9 | 10.2 | 30.8 | 37.8 | 54.0 | -16.2 | Pass | Average |
| 3633.68 | H | 0 | 29.5 | 31.5 | 10.6 | 31.7 | 39.9 | 54.0 | -14.1 | Pass | Average |
| 4542.10 | H | 0 | 27.8 | 32.3 | 11.1 | 30.7 | 40.5 | 54.0 | -13.5 | Pass | Average |
| 5450.52 | H | 0 | 25.5 | 34.3 | 12.3 | 30.3 | 41.8 | 54.0 | -12.2 | Pass | Average |
| 6358.94 | H | 0 | 25.9 | 34.5 | 12.9 | 30.0 | 43.3 | 54.0 | -10.7 | Pass | Average |
| 7267.36 | H | 0 | 25.4 | 35.9 | 13.3 | 30.8 | 43.8 | 54.0 | -10.2 | Pass | Average |
| 8175.78 | H | 0 | 24.5 | 36.9 | 14.0 | 31.7 | 43.7 | 54.0 | -10.3 | Pass | Average |
| 9084.20 | H | 0 | 25.4 | 37.6 | 15.0 | 33.8 | 44.2 | 54.0 | -9.8 | Pass | Average |
| 908.42 | V | 0 | 54.8 | 23.5 | 6.1 | 0.0 | 84.4 | 94.0 | -9.6 | Pass | Average |
| 1816.84 | V | 0 | 24.5 | 26.5 | 7.6 | 31.5 | 27.1 | 54.0 | -26.9 | Pass | Average |
| 2725.26 | V | 0 | 29.5 | 28.9 | 10.2 | 30.8 | 37.8 | 54.0 | -16.2 | Pass | Average |
| 3633.68 | V | 0 | 29.5 | 31.5 | 10.6 | 31.7 | 39.9 | 54.0 | -14.1 | Pass | Average |
| 4542.10 | V | 0 | 27.8 | 32.3 | 11.1 | 30.7 | 40.5 | 54.0 | -13.5 | Pass | Average |
| 5450.52 | V | 0 | 25.5 | 34.3 | 12.3 | 30.3 | 41.8 | 54.0 | -12.2 | Pass | Average |
| 6358.94 | V | 0 | 25.9 | 34.5 | 12.9 | 30.0 | 43.3 | 54.0 | -10.7 | Pass | Average |
| 7267.36 | V | 0 | 25.4 | 35.9 | 13.3 | 30.8 | 43.8 | 54.0 | -10.2 | Pass | Average |
| 8175.78 | V | 0 | 24.5 | 36.9 | 14.0 | 31.7 | 43.7 | 54.0 | -10.3 | Pass | Average |
| 9084.20 | V | 0 | 25.4 | 37.6 | 15.0 | 33.8 | 44.2 | 54.0 | -9.8 | Pass | Average |

Test Data - Radiated Emissions (Peak)**Mid Channel**

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 300 kHz Peak Detector
>1000 MHz RBW = 1 MHz VBW = 3 MHz Peak Detector

| 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 |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|-------------|
| | | | | | | | | | | | Mid Channel |
| 911.80 | H | 0 | 64.0 | 23.5 | 6.1 | 0.0 | 93.6 | 94.0 | -0.4 | Pass | Peak |
| 1823.60 | H | 0 | 40.0 | 26.5 | 7.6 | 31.5 | 42.6 | 54.0 | -11.4 | Pass | Peak |
| 2735.40 | H | 0 | 39.6 | 28.9 | 10.2 | 30.8 | 47.9 | 74.0 | -26.1 | Pass | Peak |
| 3647.20 | H | 0 | 38.3 | 31.5 | 10.6 | 31.7 | 48.7 | 74.0 | -25.3 | Pass | Peak |
| 4559.00 | H | 0 | 38.3 | 32.3 | 11.1 | 30.7 | 51.0 | 74.0 | -23.0 | Pass | Peak |
| 5470.80 | H | 0 | 35.9 | 34.3 | 12.3 | 30.3 | 52.2 | 74.0 | -21.8 | Pass | Peak |
| 6382.60 | H | 0 | 35.0 | 34.5 | 12.9 | 30.0 | 52.4 | 74.0 | -21.6 | Pass | Peak |
| 7294.40 | H | 0 | 34.8 | 35.9 | 13.3 | 30.8 | 53.2 | 74.0 | -20.8 | Pass | Peak |
| 8206.20 | H | 0 | 34.0 | 36.9 | 14.0 | 31.7 | 53.2 | 74.0 | -20.8 | Pass | Peak |
| 9118.00 | H | 0 | 35.4 | 37.6 | 15.0 | 33.8 | 54.2 | 74.0 | -19.8 | Pass | Peak |
| | | | | | | | | | | | |
| 911.80 | V | 0 | 59.3 | 23.5 | 6.1 | 0.0 | 88.9 | 94.0 | -5.1 | Pass | Peak |
| 1823.60 | V | 0 | 40.0 | 26.5 | 7.6 | 31.5 | 42.6 | 74.0 | -31.4 | Pass | Peak |
| 2735.40 | V | 0 | 39.6 | 28.9 | 10.2 | 30.8 | 47.9 | 74.0 | -26.1 | Pass | Peak |
| 3647.20 | V | 0 | 38.3 | 31.5 | 10.6 | 31.7 | 48.7 | 74.0 | -25.3 | Pass | Peak |
| 4559.00 | V | 0 | 38.3 | 32.3 | 11.1 | 30.7 | 51.0 | 74.0 | -23.0 | Pass | Peak |
| 5470.80 | V | 0 | 35.9 | 34.3 | 12.3 | 30.3 | 52.2 | 74.0 | -21.8 | Pass | Peak |
| 6382.60 | V | 0 | 35.0 | 34.5 | 12.9 | 30.0 | 52.4 | 74.0 | -21.6 | Pass | Peak |
| 7294.40 | V | 0 | 34.8 | 35.9 | 13.3 | 30.8 | 53.2 | 74.0 | -20.8 | Pass | Peak |
| 8206.20 | V | 0 | 34.0 | 36.9 | 14.0 | 31.7 | 53.2 | 74.0 | -20.8 | Pass | Peak |
| 9118.00 | V | 0 | 35.4 | 37.6 | 15.0 | 33.8 | 54.2 | 74.0 | -19.8 | Pass | Peak |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Test Data - Radiated Emissions (Average)

Mid Channel

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 100 kHz Peak Detector
>1000 MHz RBW = 1 MHz VBW = 10 MHz RMS Detector

| 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 |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|-------------|
| | | | | | | | | | | | Mid Channel |
| 911.80 | H | 0 | 63.5 | 23.5 | 6.1 | 0.0 | 93.1 | 94.0 | -0.9 | Pass | Average |
| 1823.60 | H | 0 | 34.0 | 26.5 | 7.6 | 31.5 | 36.6 | 54.0 | -17.4 | Pass | Average |
| 2735.40 | H | 0 | 33.6 | 28.9 | 10.2 | 30.8 | 41.9 | 54.0 | -12.1 | Pass | Average |
| 3647.20 | H | 0 | 32.3 | 31.5 | 10.6 | 31.7 | 42.7 | 54.0 | -11.3 | Pass | Average |
| 4559.00 | H | 0 | 32.3 | 32.3 | 11.1 | 30.7 | 45.0 | 54.0 | -9.0 | Pass | Average |
| 5470.80 | H | 0 | 29.9 | 34.3 | 12.3 | 30.3 | 46.2 | 54.0 | -7.8 | Pass | Average |
| 6382.60 | H | 0 | 29.0 | 34.5 | 12.9 | 30.0 | 46.4 | 54.0 | -7.6 | Pass | Average |
| 7294.40 | H | 0 | 28.8 | 35.9 | 13.3 | 30.8 | 47.2 | 54.0 | -6.8 | Pass | Average |
| 8206.20 | H | 0 | 28.0 | 36.9 | 14.0 | 31.7 | 47.2 | 54.0 | -6.8 | Pass | Average |
| 9118.00 | H | 0 | 29.4 | 37.6 | 15.0 | 33.8 | 48.2 | 54.0 | -5.8 | Pass | Average |
| | | | | | | | | | | | |
| 911.80 | V | 0 | 53.3 | 23.5 | 6.1 | 0.0 | 82.9 | 94.0 | -11.1 | Pass | Average |
| 1823.60 | V | 0 | 34.0 | 26.5 | 7.6 | 31.5 | 36.6 | 54.0 | -17.4 | Pass | Average |
| 2735.40 | V | 0 | 33.6 | 28.9 | 10.2 | 30.8 | 41.9 | 54.0 | -12.1 | Pass | Average |
| 3647.20 | V | 0 | 32.3 | 31.5 | 10.6 | 31.7 | 42.7 | 54.0 | -11.3 | Pass | Average |
| 4559.00 | V | 0 | 32.3 | 32.3 | 11.1 | 30.7 | 45.0 | 54.0 | -9.0 | Pass | Average |
| 5470.80 | V | 0 | 29.9 | 34.3 | 12.3 | 30.3 | 46.2 | 54.0 | -7.8 | Pass | Average |
| 6382.60 | V | 0 | 29.0 | 34.5 | 12.9 | 30.0 | 46.4 | 54.0 | -7.6 | Pass | Average |
| 7294.40 | V | 0 | 28.8 | 35.9 | 13.3 | 30.8 | 47.2 | 54.0 | -6.8 | Pass | Average |
| 8206.20 | V | 0 | 28.0 | 36.9 | 14.0 | 31.7 | 47.2 | 54.0 | -6.8 | Pass | Average |
| 9118.00 | V | 0 | 29.4 | 37.6 | 15.0 | 33.8 | 48.2 | 54.0 | -5.8 | Pass | Average |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Test Data - Radiated Emissions (Peak)

Upper Channel

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 300 kHz Peak Detector
>1000 MHz RBW = 1 MHz VBW = 3 MHz Peak Detector

| 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 |
|-------------------|-----------------|-------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|---------------|
| | | | | | | | | | | | Upper Channel |
| 919.8 | H | 0 | 64 | 23.5 | 6.1 | 0.0 | 93.6 | 94.0 | -0.4 | Pass | Peak |
| 1839.6 | H | 0 | 39 | 26.5 | 7.6 | 31.5 | 41.6 | 74.0 | -32.4 | Pass | Peak |
| 2759.4 | H | 0 | 37.8 | 28.9 | 10.2 | 30.8 | 46.1 | 74.0 | -27.9 | Pass | Peak |
| 3679.2 | H | 0 | 35 | 31.5 | 10.6 | 31.7 | 45.4 | 74.0 | -28.6 | Pass | Peak |
| 4599 | H | 0 | 35.3 | 32.3 | 11.1 | 30.7 | 48.0 | 74.0 | -26.0 | Pass | Peak |
| 5518.8 | H | 0 | 35 | 34.3 | 12.3 | 30.3 | 51.3 | 74.0 | -22.7 | Pass | Peak |
| 6438.6 | H | 0 | 34 | 34.5 | 12.9 | 30.0 | 51.4 | 74.0 | -22.6 | Pass | Peak |
| 7358.4 | H | 0 | 33 | 35.9 | 13.3 | 30.8 | 51.4 | 74.0 | -22.6 | Pass | Peak |
| 8278.2 | H | 0 | 32 | 36.9 | 14.0 | 31.7 | 51.2 | 74.0 | -22.8 | Pass | Peak |
| 9198 | H | 0 | 32 | 37.6 | 15.0 | 33.8 | 50.8 | 74.0 | -23.2 | Pass | Peak |
| | | | | | | | | | | | |
| 919.8 | V | 0 | 58.4 | 23.5 | 6.1 | 0.0 | 88.0 | 94.0 | -6.0 | Pass | Peak |
| 1839.6 | V | 0 | 39 | 26.5 | 7.6 | 31.5 | 41.6 | 74.0 | -32.4 | Pass | Peak |
| 2759.4 | V | 0 | 37.8 | 28.9 | 10.2 | 30.8 | 46.1 | 74.0 | -27.9 | Pass | Peak |
| 3679.2 | V | 0 | 35 | 31.5 | 10.6 | 31.7 | 45.4 | 74.0 | -28.6 | Pass | Peak |
| 4599 | V | 0 | 35.3 | 32.3 | 11.1 | 30.7 | 48.0 | 74.0 | -26.0 | Pass | Peak |
| 5518.8 | V | 0 | 35 | 34.3 | 12.3 | 30.3 | 51.3 | 74.0 | -22.7 | Pass | Peak |
| 6438.6 | V | 0 | 34 | 34.5 | 12.9 | 30.0 | 51.4 | 74.0 | -22.6 | Pass | Peak |
| 7358.4 | V | 0 | 33 | 35.9 | 13.3 | 30.8 | 51.4 | 74.0 | -22.6 | Pass | Peak |
| 8278.2 | V | 0 | 32 | 36.9 | 14.0 | 31.7 | 51.2 | 74.0 | -22.8 | Pass | Peak |
| 9198 | V | 0 | 32 | 37.6 | 15.0 | 33.8 | 50.8 | 74.0 | -23.2 | Pass | Peak |
| | | | | | | | | | | | |

Test Data - Radiated Emissions (Average)

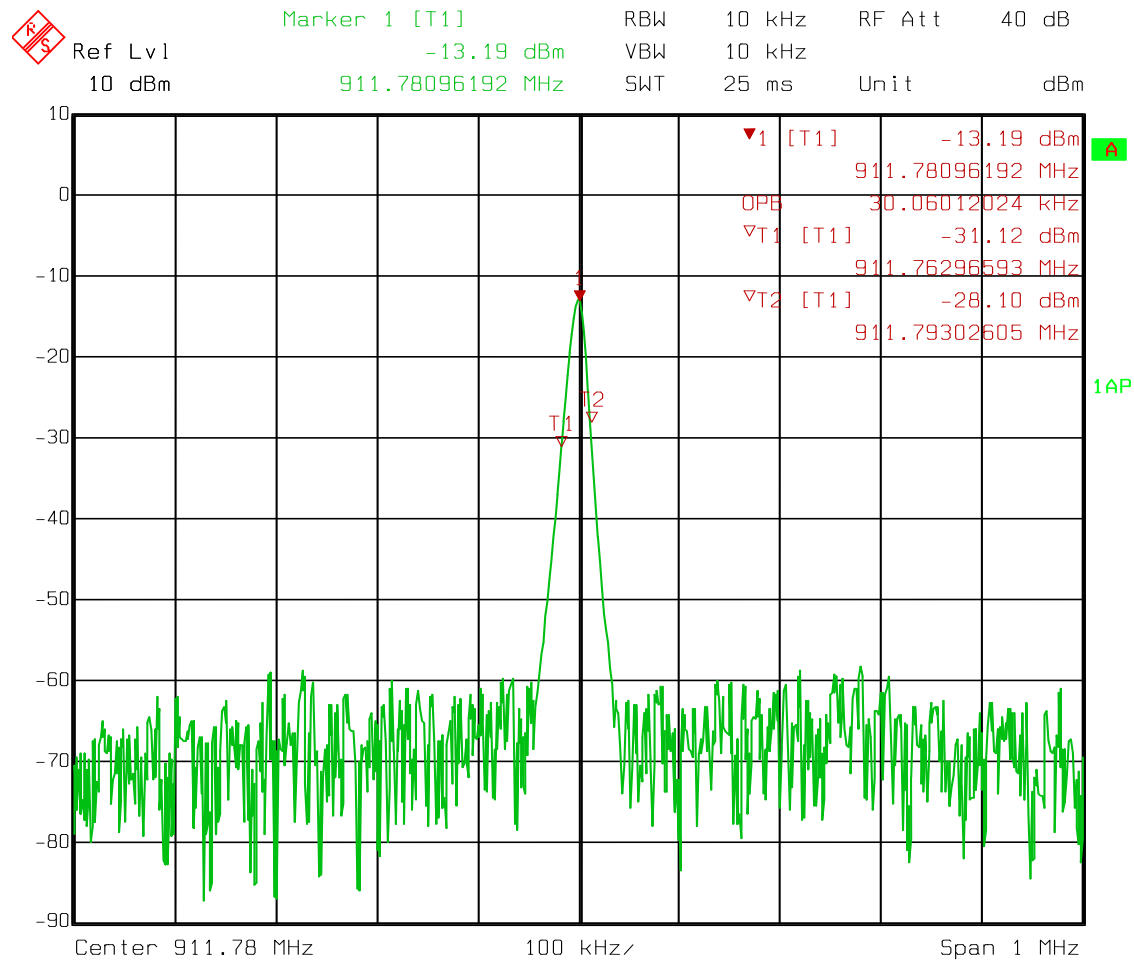
Upper Channel

Analyzer Settings: <1000 MHz RBW = 100 kHz VBW = 100 kHz Peak Detector

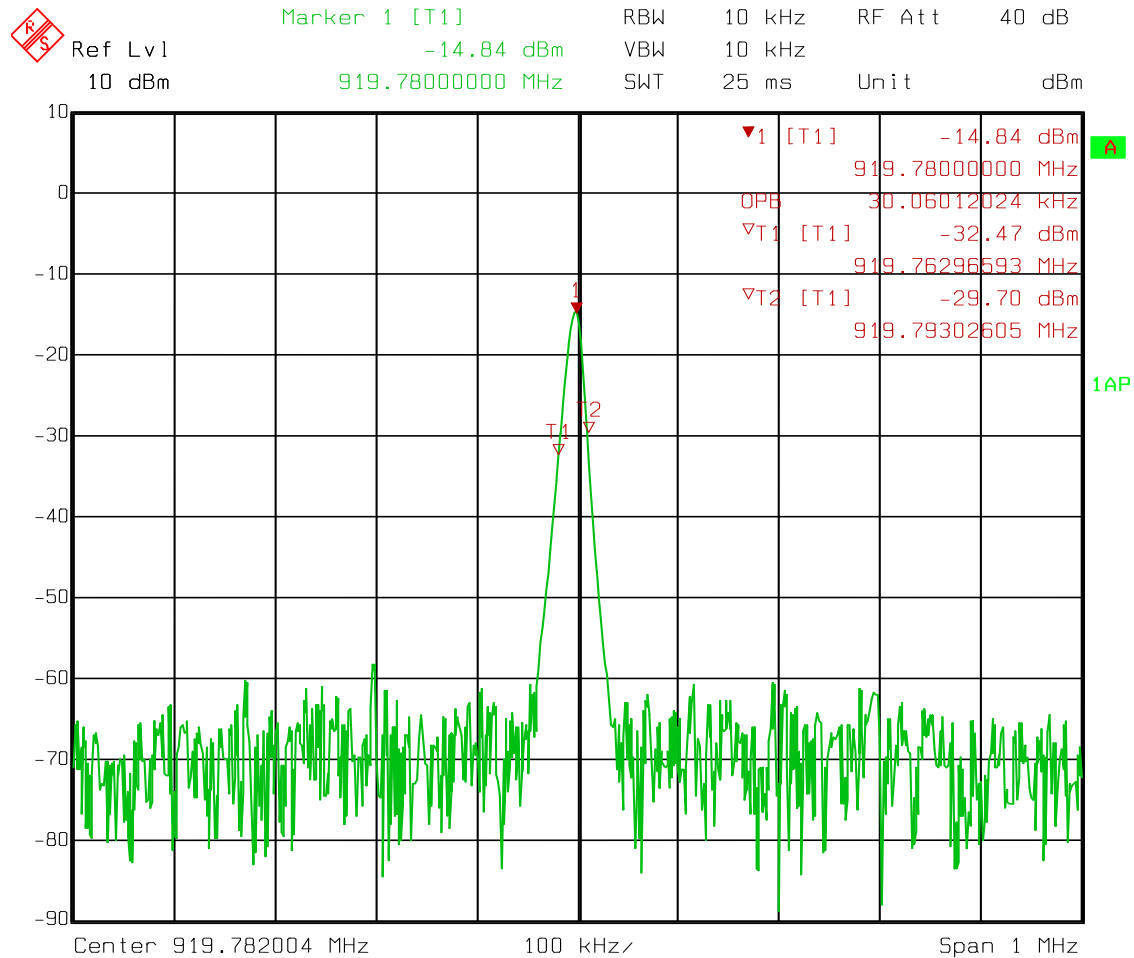
>1000 MHz RBW = 1 MHz VBW = 10 MHz RMS Detector

| Meas. Freq. (MHz) | Ant. Pol. (H/V) | Det. 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 |
|-------------------|-----------------|------------------|----------------------|---------------------|----------------|--------------|----------------------------|----------------------|------------------|----------------|---------------|
| | | | | | | | | | | | Upper Channel |
| 919.8 | H | 0 | 63.6 | 23.5 | 6.1 | 0.0 | 93.2 | 94.0 | -0.8 | Pass | Average |
| 1839.6 | H | 0 | 26.0 | 26.5 | 7.6 | 31.5 | 28.6 | 54.0 | -25.4 | Pass | Average |
| 2759.4 | H | 0 | 25.6 | 28.9 | 10.2 | 30.8 | 33.9 | 54.0 | -20.1 | Pass | Average |
| 3679.2 | H | 0 | 23.6 | 31.5 | 10.6 | 31.7 | 34.0 | 54.0 | -20.0 | Pass | Average |
| 4599 | H | 0 | 21.3 | 32.3 | 11.1 | 30.7 | 34.0 | 54.0 | -20.0 | Pass | Average |
| 5518.8 | H | 0 | 20.8 | 34.3 | 12.3 | 30.3 | 37.1 | 54.0 | -16.9 | Pass | Average |
| 6438.6 | H | 0 | 19.3 | 34.5 | 12.9 | 30.0 | 36.7 | 54.0 | -17.3 | Pass | Average |
| 7358.4 | H | 0 | 19.8 | 35.9 | 13.3 | 30.8 | 38.2 | 54.0 | -15.8 | Pass | Average |
| 8278.2 | H | 0 | 19.3 | 36.9 | 14.0 | 31.7 | 38.5 | 54.0 | -15.5 | Pass | Average |
| 9198 | H | 0 | 19.0 | 37.6 | 15.0 | 33.8 | 37.8 | 54.0 | -16.2 | Pass | Average |
| | | | | | | | | | | | |
| 919.8 | V | 0 | 58.40 | 23.5 | 6.1 | 0.0 | 88.0 | 94.0 | -6.0 | Pass | Average |
| 1839.6 | V | 0 | 26.00 | 26.5 | 7.6 | 31.5 | 28.6 | 54.0 | -25.4 | Pass | Average |
| 2759.4 | V | 0 | 25.60 | 28.9 | 10.2 | 30.8 | 33.9 | 54.0 | -20.1 | Pass | Average |
| 3679.2 | V | 0 | 23.60 | 31.5 | 10.6 | 31.7 | 34.0 | 54.0 | -20.0 | Pass | Average |
| 4599 | V | 0 | 21.30 | 32.3 | 11.1 | 30.7 | 34.0 | 54.0 | -20.0 | Pass | Average |
| 5518.8 | V | 0 | 20.80 | 34.3 | 12.3 | 30.3 | 37.1 | 54.0 | -16.9 | Pass | Average |
| 6438.6 | V | 0 | 19.30 | 34.5 | 12.9 | 30.0 | 36.7 | 54.0 | -17.3 | Pass | Average |
| 7358.4 | V | 0 | 19.80 | 35.9 | 13.3 | 30.8 | 38.2 | 54.0 | -15.8 | Pass | Average |
| 8278.2 | V | 0 | 19.30 | 36.9 | 14.0 | 31.7 | 38.5 | 54.0 | -15.5 | Pass | Average |
| 9198 | V | 0 | 19.00 | 37.6 | 15.0 | 33.8 | 37.8 | 54.0 | -16.2 | Pass | Average |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Lower Channel



Date: 17.DEC.2013 14:09:39

Test Data – 99% Bandwidth**Upper Channel**

Date: 17.DEC.2013 14:11:12

Section 5. Receiver Spurious Emissions

NAME OF TEST: Receiver Spurious Emissions

PARA. NO.: RSS-Gen 6.1

TESTED BY: David Light

DATE: 27 December 2013

Minimum Standard:

Para no. RSS-Gen 6.1

Radiated spurious emission measurements shall be performed with the receiver antenna connected to the receiver antenna terminals. Spurious emissions from receivers shall not exceed the radiated limits shown in the table below.

| Frequency (MHz) | Field Strength (microvolts/m at 3 meters) | Field Strength (dB μ V/m at 3 meters) |
|--------------------|--|--|
| 30-88 | 100 | 40.0 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46.0 |
| Above 960 | 500 | 54.0 |

Test Results:

Complies

Measurement Data:

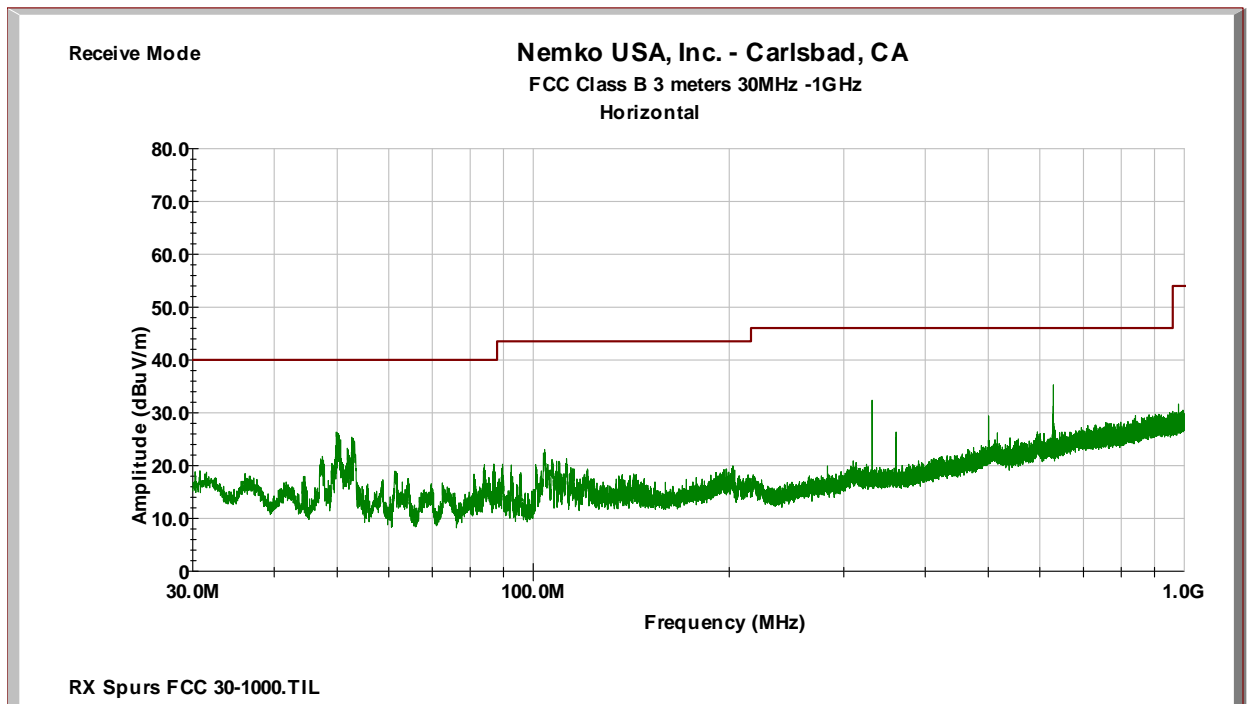
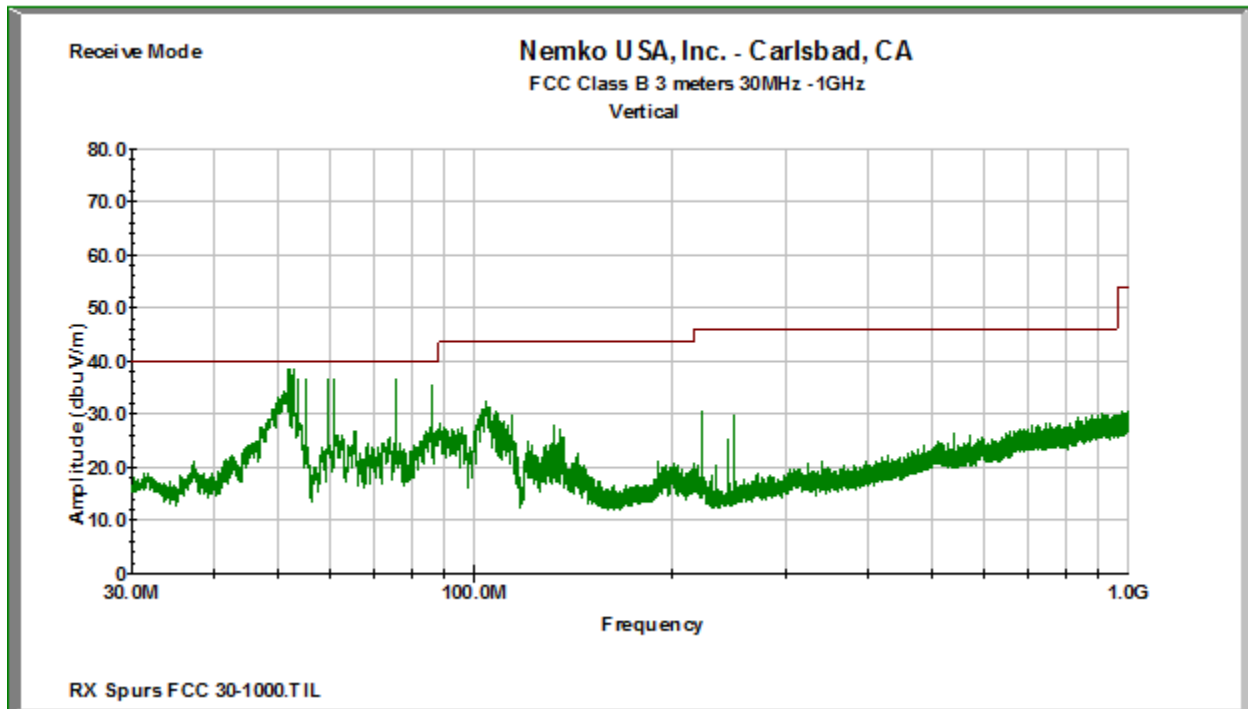
See attached graph(s)

Measurements conditions:

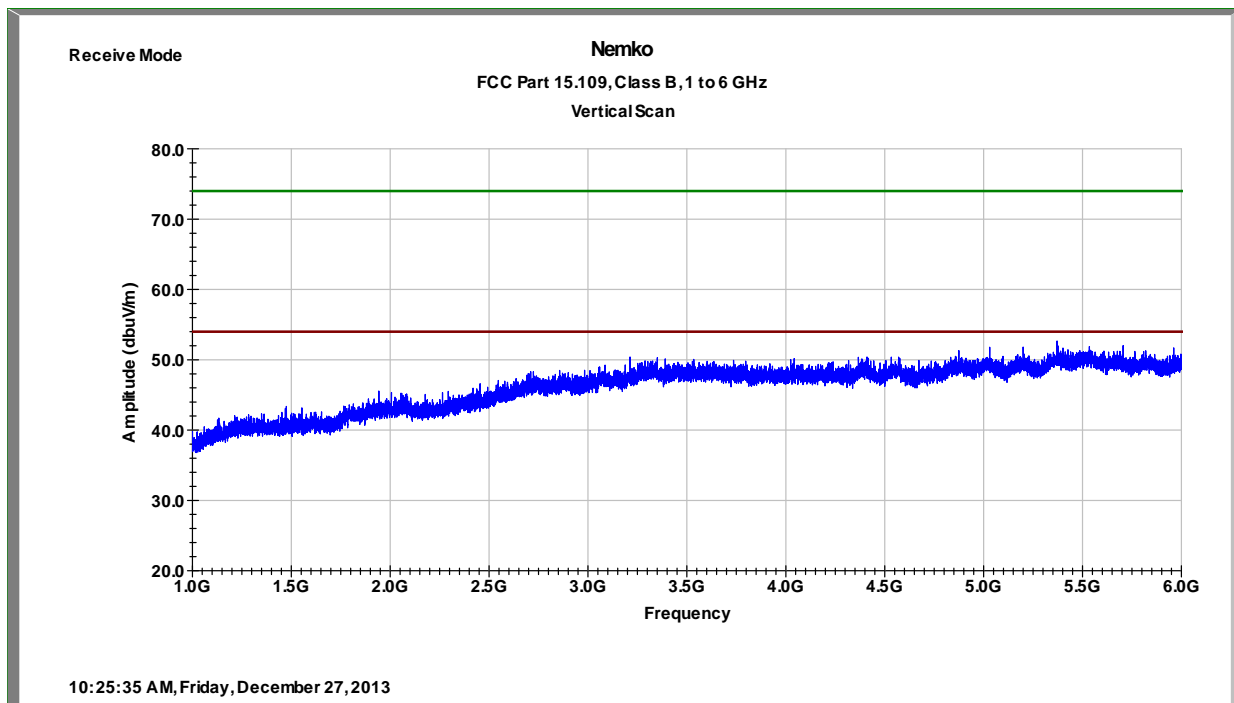
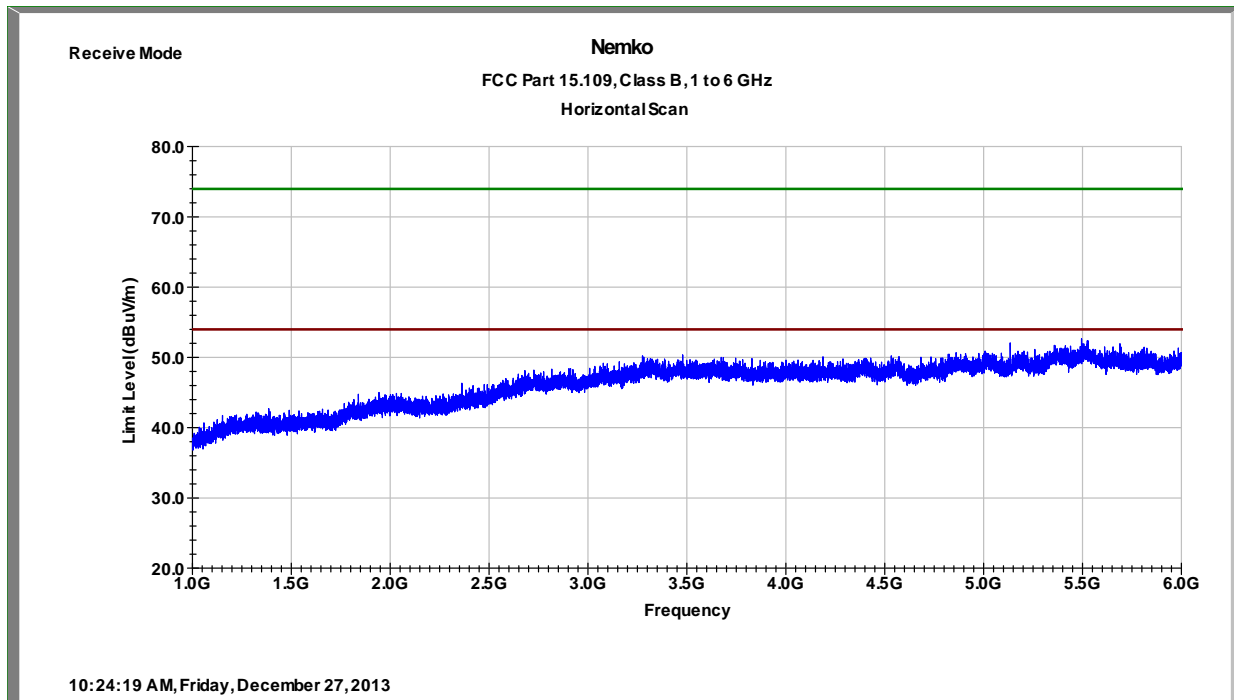
Temperature 22°C

Relative Humidity 35%

Test Data – Receiver Spurious Emissions



Test Data – Receiver Spurious Emissions



Section 6. Test Equipment List

| Asset Tag | Description | Manufacturer | Model | Serial # | Last Cal | Next Cal |
|-----------|--------------------------------------|-----------------------|------------|------------|-------------|-------------|
| 752 | Antenna, DRWG | EMCO | 3115 | 4943 | 03-Jan-2013 | 03-Jan-2014 |
| 827 | Preamplifier | Com-Power | PA-103 | 161032 | 14-Jul-2013 | 14-Jul-2014 |
| E1030 | 10 Meter Low Loss Cable | A.H. Systems, Inc. | SAC-18G-10 | 1096 | 23-Dec-2012 | 23-Dec-2013 |
| 1763 | Antenna, Bilog | Schaffner | CBL 6111D | 22926 | 07-Mar-2013 | 07-Mar-2014 |
| 1016 | Preamplifier | Hewlett Packard | 8449A | 2749A00159 | 20-Aug-2013 | 20-Aug-2014 |
| 1036 | Spectrum Analyzer | Rohde & Schwarz | FSEK30 | 830844/006 | 15-Jul-2013 | 15-Jul-2015 |
| E1019 | Two Line V- Network | Rohde & Schwarz | ENV216 | 101045 | 13-Apr-2013 | 13-Apr-2014 |
| E1026 | EMI Test Receiver 9kHz to 7GHz | Rohde & Schwarz | ESCI 7 | 100800 | 15-Jul-2013 | 15-Jul-2014 |

Nemko USA, Inc.

CFR 47, PART 15, SUBPART C, 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.

FCC ID: EF400117

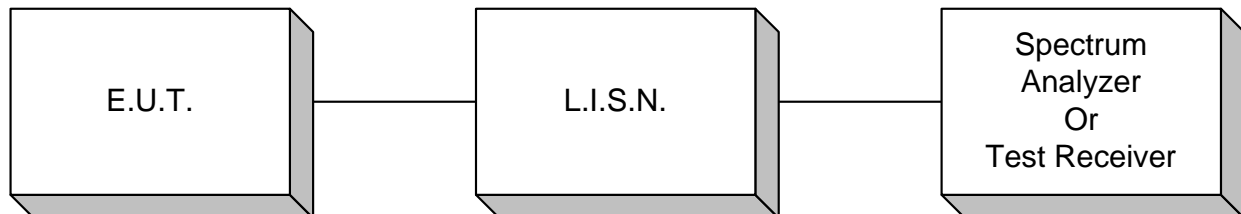
IC: 1078A-00117

Report number: 2014 01247316 FCC

ANNEX A

TEST DIAGRAMS

Conducted Emissions



Test Site For Radiated Emissions

