Certification Test Report:	2014 12247317 FCC
Applicant:	Linear LLC 1950 Camino Vida Roble Carlsbad, CA 92008 USA
Equipment Under Test: (E.U.T.)	GD00Z-1
FCC Identifier:	EF400116
Industry Canada Identifier:	1078A-00116
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: _____ **DATE:** 15 January 2014

David Light, Wireless Engineer

APPROVED BY: _____ **DATE:** 15 January 2014

Alan Laudani
Senior RF/EMC Engineer

Total Number of Pages: 17

Table of Contents

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-anchoic 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".

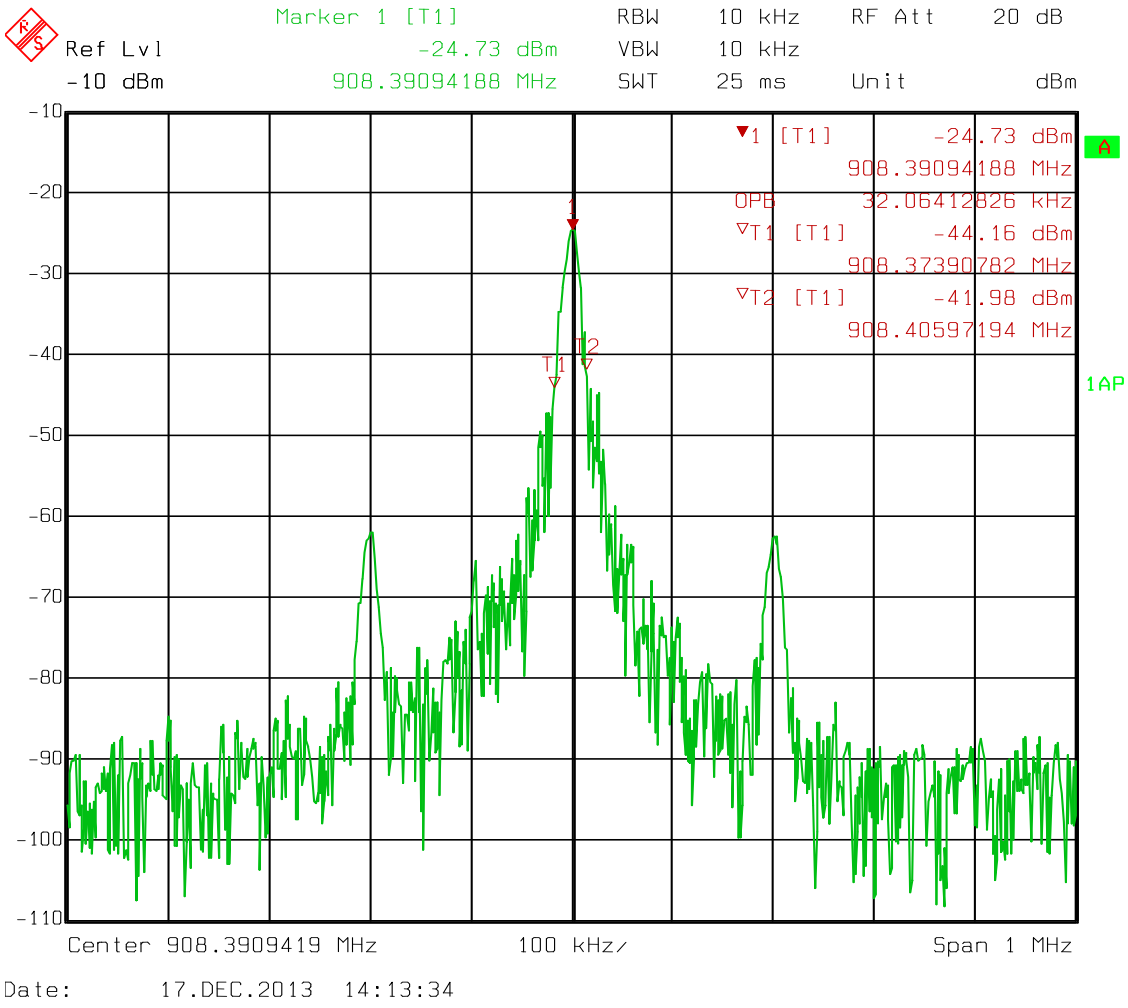
NVLAP Lab Code 200116-0

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Nemko USA, Inc. is a NVLAP accredited laboratory.

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

99% Bandwidth



Section 2. General Equipment Specification

Frequency Range:	902 – 928 MHz
Operating Frequency(ies) of Sample:	908.42 MHz Single channel
Tunable Bands:	None
Number of Channels:	1
Modulation:	GFSK
Emissions Designator:	32KF1D
Channel Spacing:	NA
User Frequency Adjustment:	None

	Yes	**No**
Integral Antenna	☒	☐

Description of EUT

The GD00Z-1 will allow a Lowes Iris Home control system to monitor the status of the Garage door via an RF tilt senor and provide this information to the control system for home security monitoring. The Iris system will talk with the GD00Z-1 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 GD00Z-1 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 GD00Z-1 also includes a 345 MHz 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 Limit (dBmV) Quasi-peak	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).

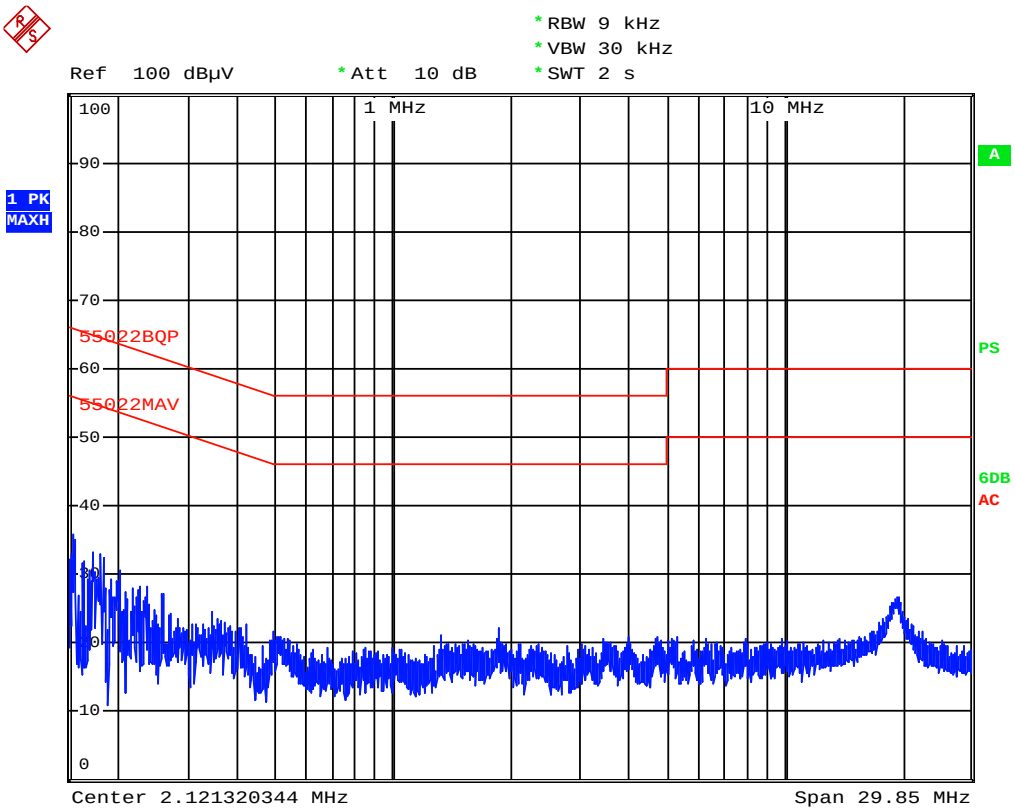
Method of Measurement: (Procedure ANSI C63.4-2003)

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.

Measurements conditions: Temperature 22°C

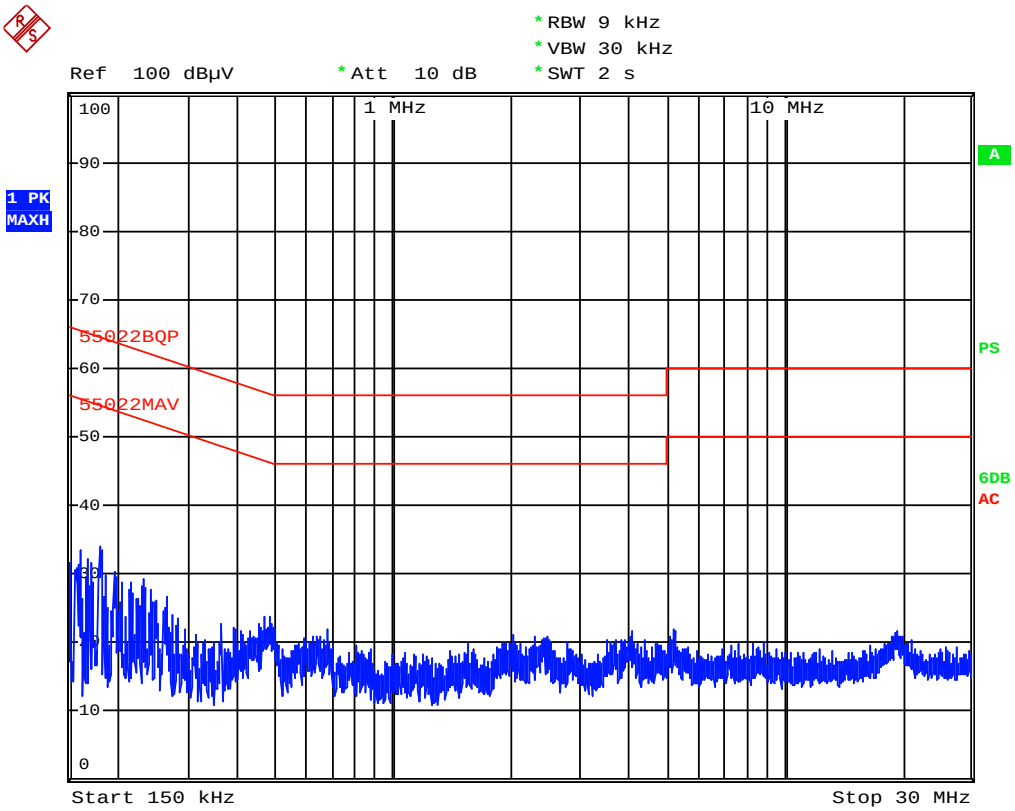
Relative Humidity 35%

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 / A2.4

(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.

Measurements conditions: Temperature 22°C

Relative Humidity 35%

Test Data - Radiated Emissions (Peak)

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
908.42	H	0	54.2	23.5	6.1	0.0	83.8	94.0	-10.2	Pass	Peak
1816.84	H	0	44	26.5	7.6	31.5	46.6	74.0	-27.4	Pass	Peak
2725.26	H	0	43.2	28.9	10.2	30.8	51.5	74.0	-22.5	Pass	Peak
3633.68	H	0	38.7	31.5	10.6	31.7	49.1	74.0	-24.9	Pass	Peak
4542.10	H	0	37.1	32.3	11.1	30.7	49.8	74.0	-24.2	Pass	Peak
5450.52	H	0	36	34.3	12.3	30.3	52.3	74.0	-21.7	Pass	Peak
6358.94	H	0	35.3	34.5	12.9	30.0	52.7	74.0	-21.3	Pass	Peak
7267.36	H	0	35.3	35.9	13.3	30.8	53.7	74.0	-20.3	Pass	Peak
8175.78	H	0	34	36.9	14.0	31.7	53.2	74.0	-20.8	Pass	Peak
9084.20	H	0	34.3	37.6	15.0	33.8	53.1	74.0	-20.9	Pass	Peak
908.42	V	0	64	23.5	6.1	0.0	93.6	94.0	-0.4	Pass	Peak
1816.84	V	0	44	26.5	7.6	31.5	46.6	74.0	-27.4	Pass	Peak
2725.26	V	0	43.9	28.9	10.2	30.8	52.2	74.0	-21.8	Pass	**Peak**
3633.68	V	0	38.7	31.5	10.6	31.7	49.1	74.0	-24.9	Pass	Peak
4542.10	V	0	37.1	32.3	11.1	30.7	49.8	74.0	-24.2	Pass	Peak
5450.52	V	0	36	34.3	12.3	30.3	52.3	74.0	-21.7	Pass	Peak
6358.94	V	0	35.3	34.5	12.9	30.0	52.7	74.0	-21.3	Pass	Peak
7267.36	V	0	35.3	35.9	13.3	30.8	53.7	74.0	-20.3	Pass	Peak
8175.78	V	0	34	36.9	14.0	31.7	53.2	74.0	-20.8	Pass	Peak
9084.20	V	0	34.3	37.6	15.0	33.8	53.1	74.0	-20.9	Pass	Peak

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

Test Data - Radiated Emissions (Average)

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
908.42	H	0	53.9	23.5	6.1	0.0	83.5	94.0	-10.5	Pass	Average
1816.84	H	0	32	26.5	7.6	31.5	34.6	54.0	-19.4	Pass	Average
2725.26	H	0	43.2	28.9	10.2	30.8	51.5	54.0	-2.5	Pass	Average
3633.68	H	0	28	31.5	10.6	31.7	38.4	54.0	-15.6	Pass	Average
4542.10	H	0	27	32.3	11.1	30.7	39.7	54.0	-14.3	Pass	Average
5450.52	H	0	26	34.3	12.3	30.3	42.3	54.0	-11.7	Pass	Average
6358.94	H	0	25	34.5	12.9	30.0	42.4	54.0	-11.6	Pass	Average
7267.36	H	0	25	35.9	13.3	30.8	43.4	54.0	-10.6	Pass	Average
8175.78	H	0	24.3	36.9	14.0	31.7	43.5	54.0	-10.5	Pass	Average
9084.20	H	0	24.7	37.6	15.0	33.8	43.5	54.0	-10.5	Pass	Average
908.42	V	0	63	23.5	6.1	0.0	92.6	94.0	-1.4	Unc.	Average
1816.84	V	0	32	26.5	7.6	31.5	34.6	54.0	-19.4	Pass	Average
2725.26	V	0	43.5	28.9	10.2	30.8	51.8	54.0	-2.2	Pass	Average
3633.68	V	0	28	31.5	10.6	31.7	38.4	54.0	-15.6	Pass	Average
4542.10	V	0	27	32.3	11.1	30.7	39.7	54.0	-14.3	Pass	Average
5450.52	V	0	26	34.3	12.3	30.3	42.3	54.0	-11.7	Pass	Average
6358.94	V	0	25	34.5	12.9	30.0	42.4	54.0	-11.6	Pass	Average
7267.36	V	0	25	35.9	13.3	30.8	43.4	54.0	-10.6	Pass	Average
8175.78	V	0	24.3	36.9	14.0	31.7	43.5	54.0	-10.5	Pass	Average
9084.20	V	0	24.7	37.6	15.0	33.8	43.5	54.0	-10.5	Pass	Average

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

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 measurementsshall 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 (dBµV/m at 3 meters)
30-88	100	40.0
88-216	150	43.5
216-960	200	46.0
Above 960	500	54.0

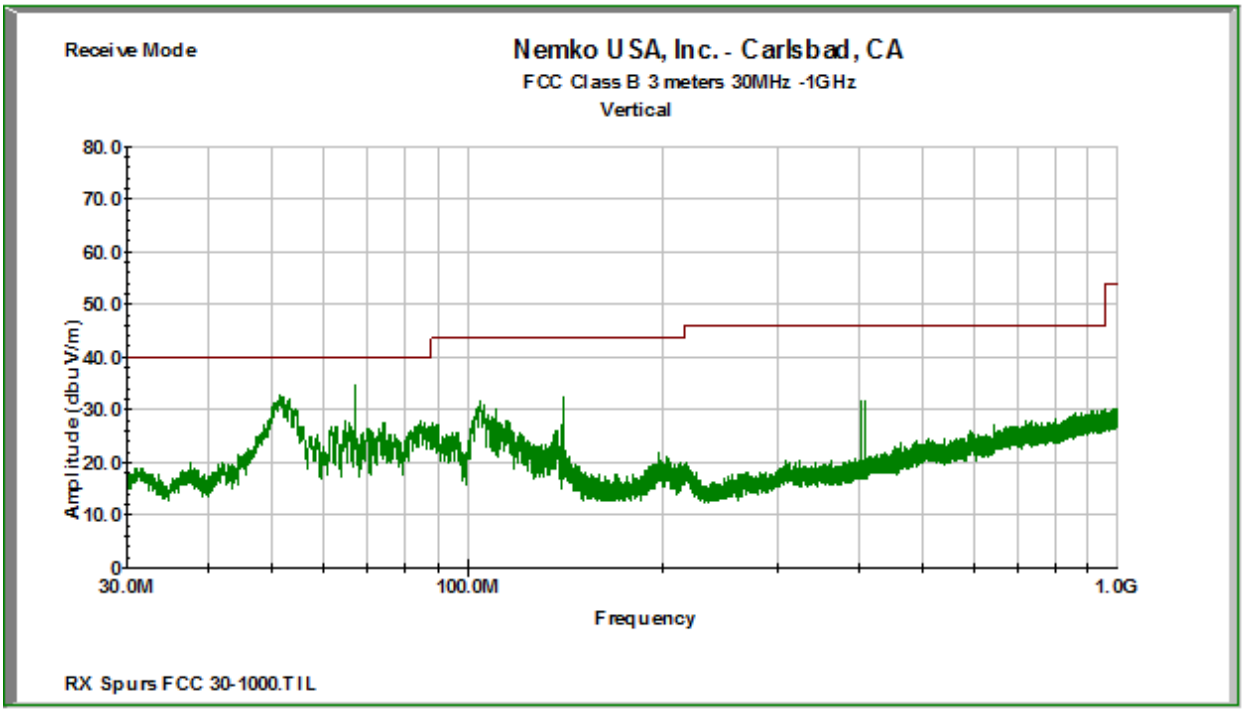
Test Results: Complies

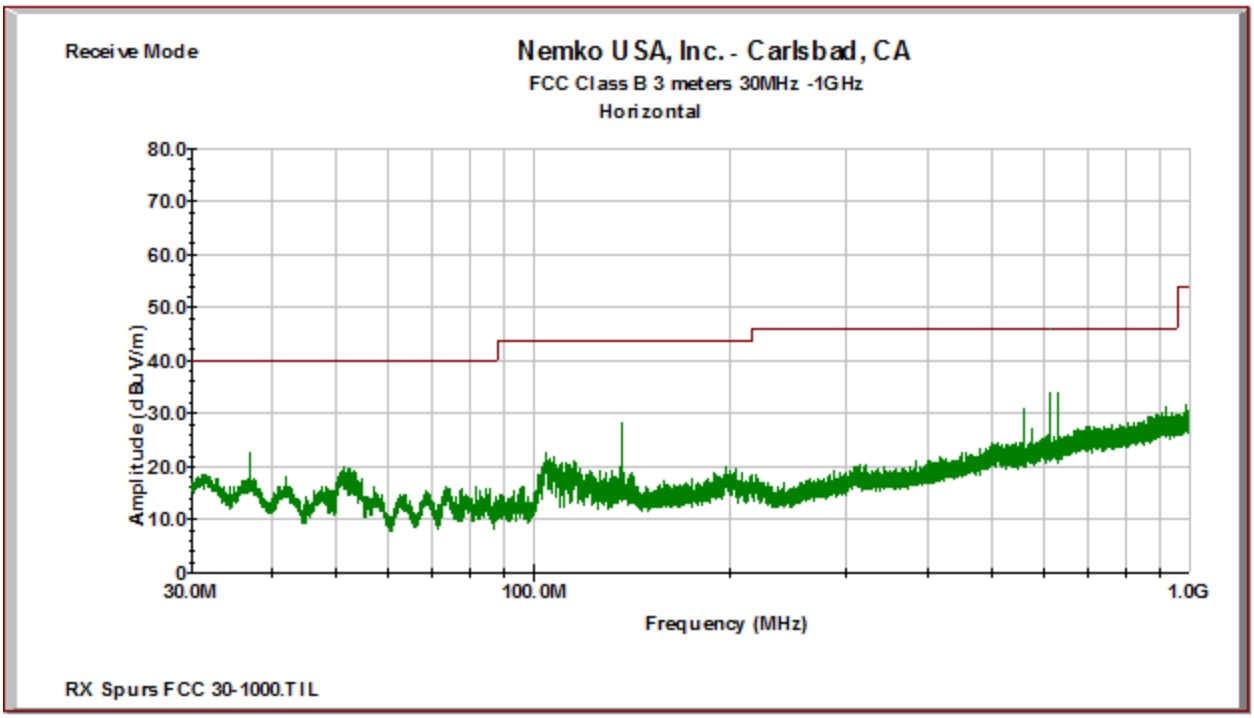
Measurement Data: See attached graph(s)

Measurements conditions: Temperature 22°C

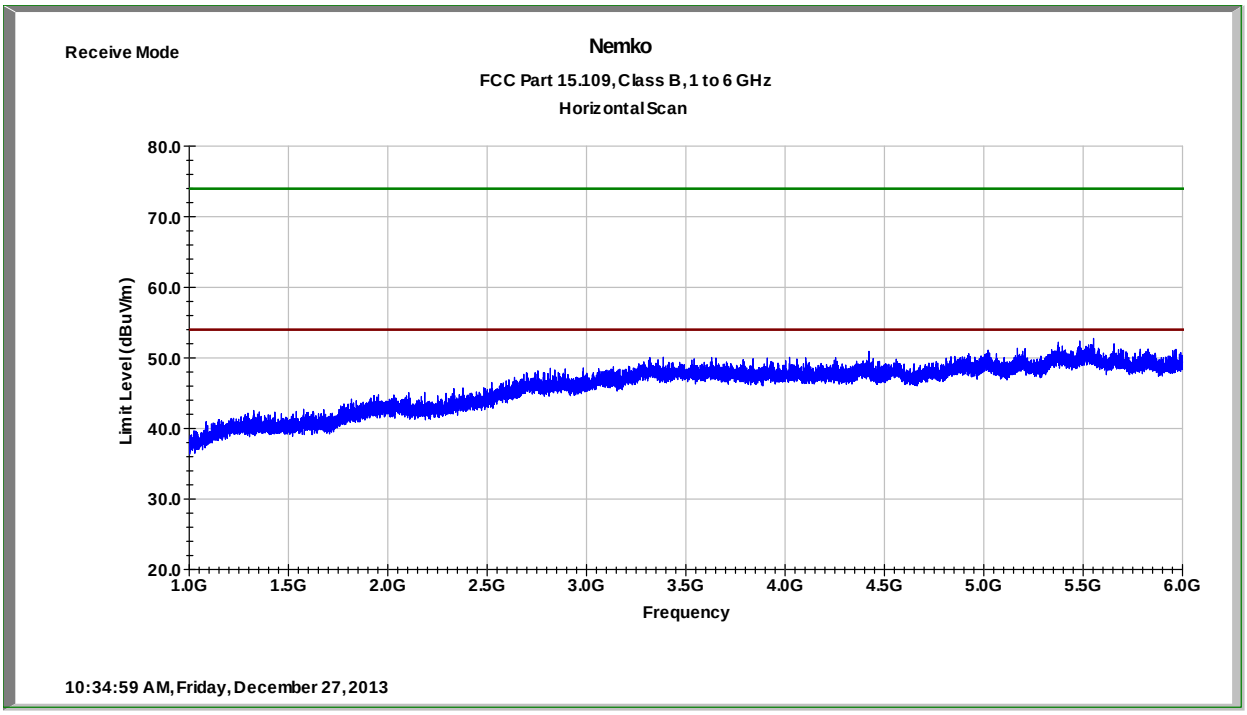
Relative Humidity 35%

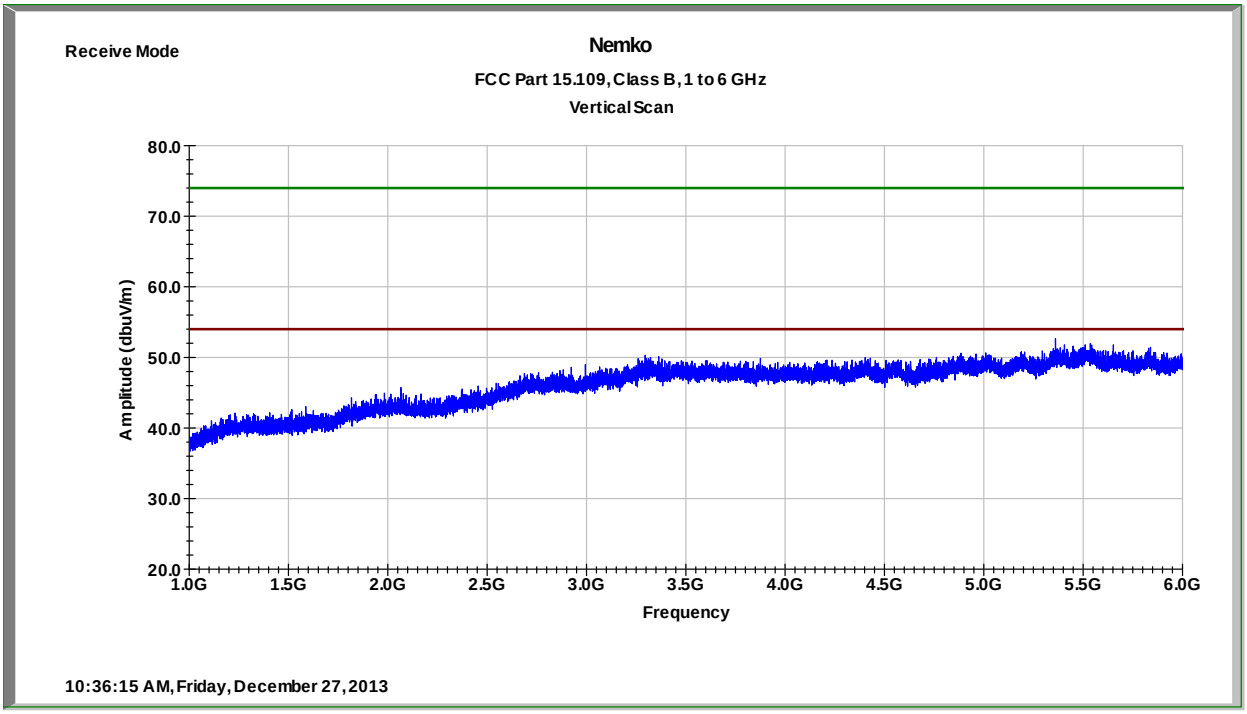
Test Data – Receiver Spurious Emissions





Test Data – Receiver Spurious Emissions





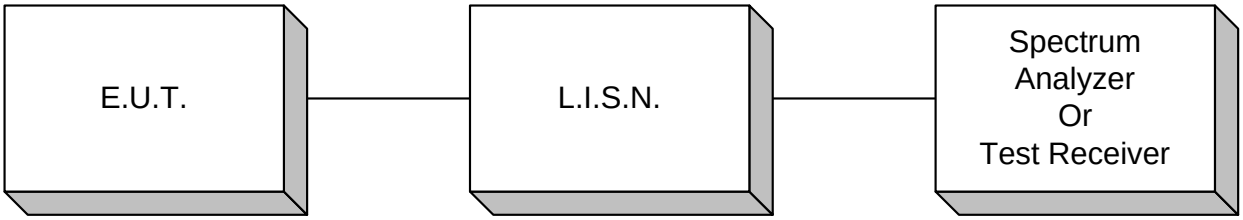
Section 6. Test Equipment List

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 & Schwartz	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

ANNEX A

TEST DIAGRAMS

Conducted Emissions



Test Site For Radiated Emissions