Nemko Test Report:	47116RUS1
Applicant:	Overhead Door TREQ Center, Suite B 2170 French Settlement Road Dallas, Texas 75212
Equipment Under Test: **(E.U.T.)**	LRDS (Overhead)OLR (Genie) is GLR
In Accordance With:	**CFR 47, Part 15, Subpart C, 15.247 &** **Industry Canada, RSS-210** Frequency Hopping Transmitters
Tested By:	Nemko USA Inc. 802 N. Kealy Lewisville, Texas 75057-3136

TESTED BY: _____ **DATE:** **03 June 2010**

David Light, Wireless Engineer

APPROVED BY: _____ **DATE:** **31 March 2011**

Tom Tidwell, Telecom Direct

Total Number of Pages: 35

Table of Contents

Section 1. Summary of Test Results

Manufacturer: Overhead Door

Model No.: LRDS
Variants: GENIE Brand LRDS - Model #36992R which is GLR
Overhead Brand LRDS - Model #37451R which is OLR

Products are identical except for logo.

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 Part 15, Subpart C, Paragraph 15.247 and Industry Canada RSS-210, Issue 7 for Frequency Hopping Spread Spectrum devices. Radiated tests were conducted is accordance with ANSI C63.4-2003. Radiated emissions are made on an open area test site. 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
☒	Family Listing		

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 100426-0

Summary of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207(a) / RSS-Gen 7.2.2	NA
Channel Separation	15.247(a)(1) / RSS-210 8.1(b)	Complies
Time of Occupancy	15.247(a)(1) / RSS-210 8.1(c)	Complies
20 dB Occupied Bandwidth	15.247(a)(1) / RSS-210 8.1(b)	Complies
Peak Power Output	15.247(b) / RSS-210 8.4(1)	Complies
Spurious Emissions (Antenna Conducted)	15.247(d) / RSS-210 8.5	Complies
Spurious Emissions (Radiated)	15.247(d) / RSS-Gen 7.2.3	Complies
Receiver Spurious Emissions	RSS-Gen 7.2.3	Complies

Footnotes:

The EUT is battery powered.

Section 2. Equipment Under Test (E.U.T.)

General Equipment Information

Frequency Band:

☒ 902 – 928 MHz
☐ 2400 – 2483.5 MHz
☐ 5725 – 5850 MHz

Operating Frequency Range: 903.94 to 925.60 MHz

Input Power: 3 Vdc

Number of Channels: 51

20 dB Bandwidth: 81.7 kHz

Channel Spacing: 380 kHz

User Frequency Adjustment: Software controlled

Description of EUT

Wireless Remote Controller with 3 Buttons and AAA (2) Battery Power

Section 3. Channel Separation

NAME OF TEST: Channel Separation	PARA. NO.: 15.247(a)(1) RSS-210 8.1(b)
TESTED BY: David Light	DATE: 02 June 2010

Test Results: Complies.

Measurement Data: See 20 dB BW plot

Measured 20 dB bandwidth: 81.7 kHz
Channel Separation: 380 kHz

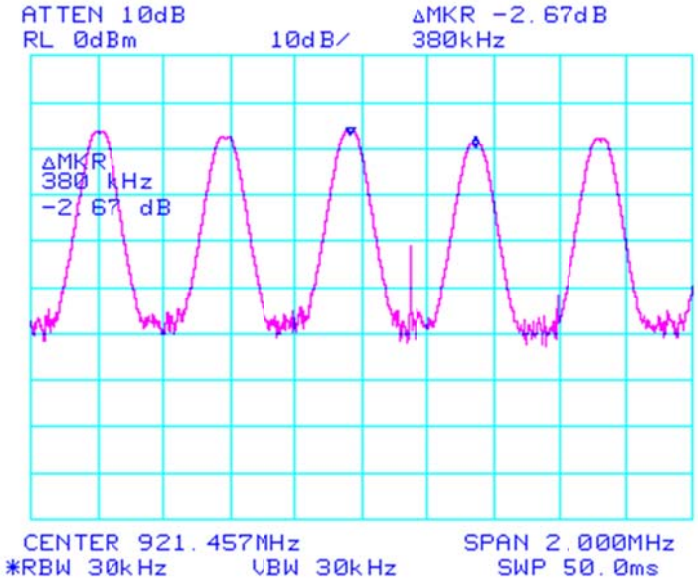
Equipment Used: 1464-1082-1472

Measurement Uncertainty: $1X10^{-7}$ppm

Temperature: 22 °C

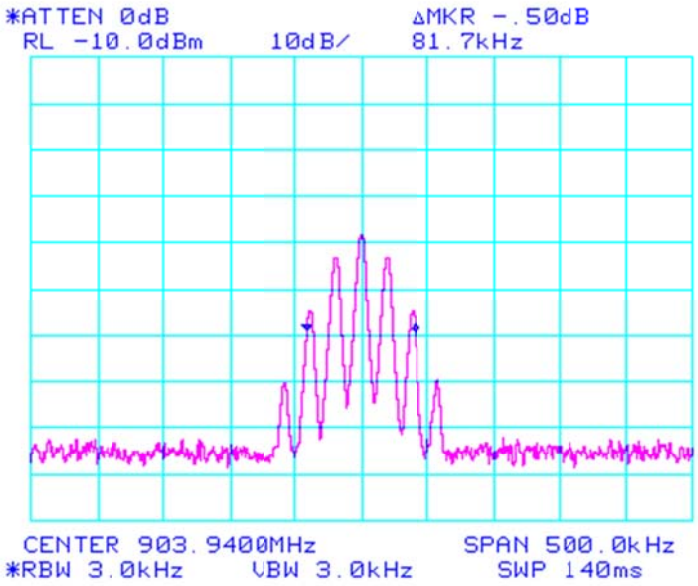
Relative Humidity: 35 %

Test Data – Channel Separation



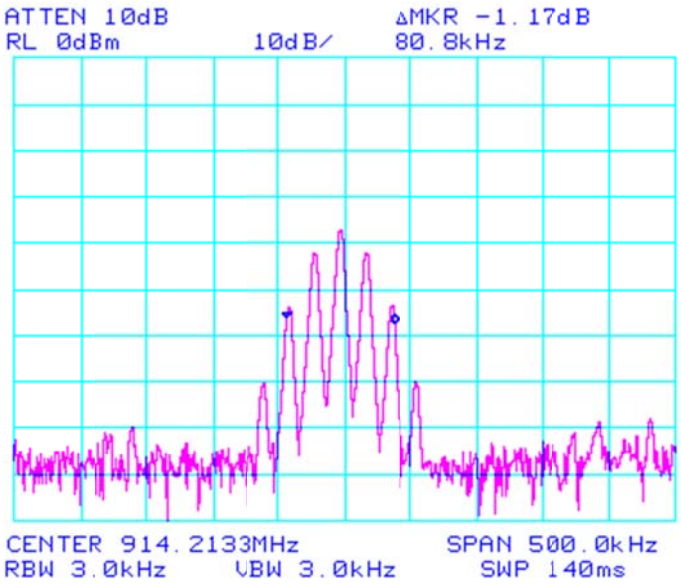
Test Data – 20 dB Bandwidth

Low Channel

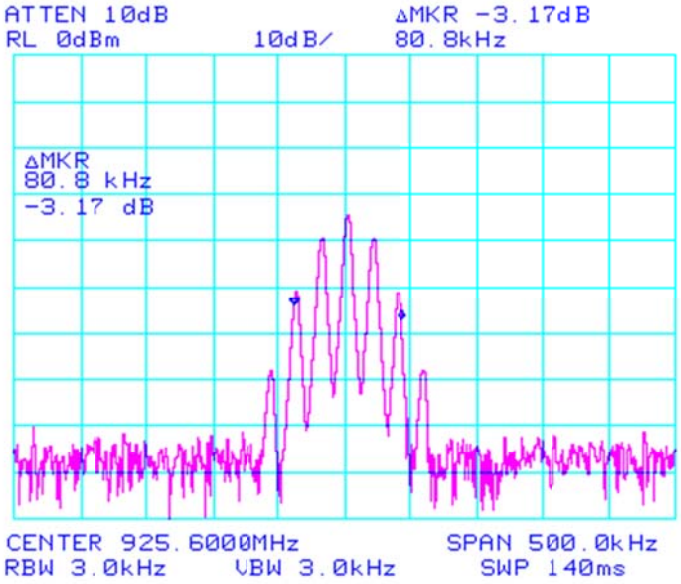


Test Data – 20 dB Bandwidth

Mid Channel



High Channel



Section 4. Time of Occupancy

NAME OF TEST: Time of Occupancy	PARA. NO.: 15.247(a)(1) RSS-210 8.1(c)
TESTED BY: David Light	DATE:02 June 2010

Test Results: Complies.

Measurement Data:

Maximum Dwell Time On Any Channel: 125 mS in 400 mS

Equipment Used: 1464-1082-1472

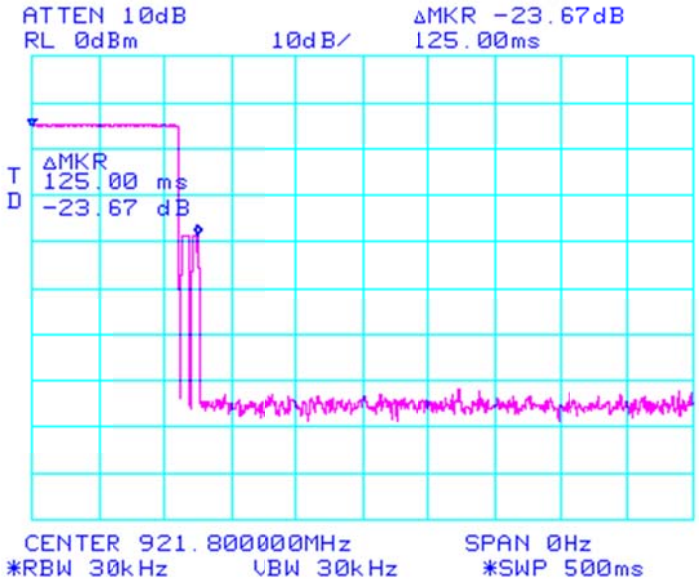
Measurement Uncertainty: $1X10^{-7}$ppm

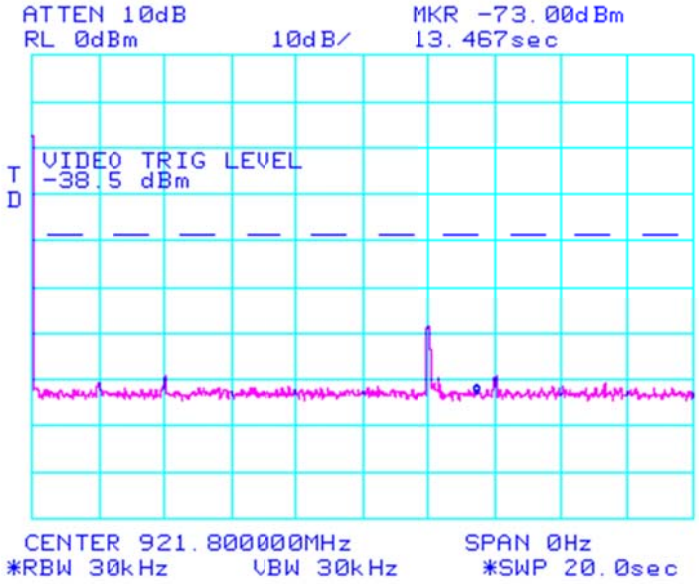
Temperature: 22 °C

Relative Humidity: 35 %

Test Data – Time of Occupancy

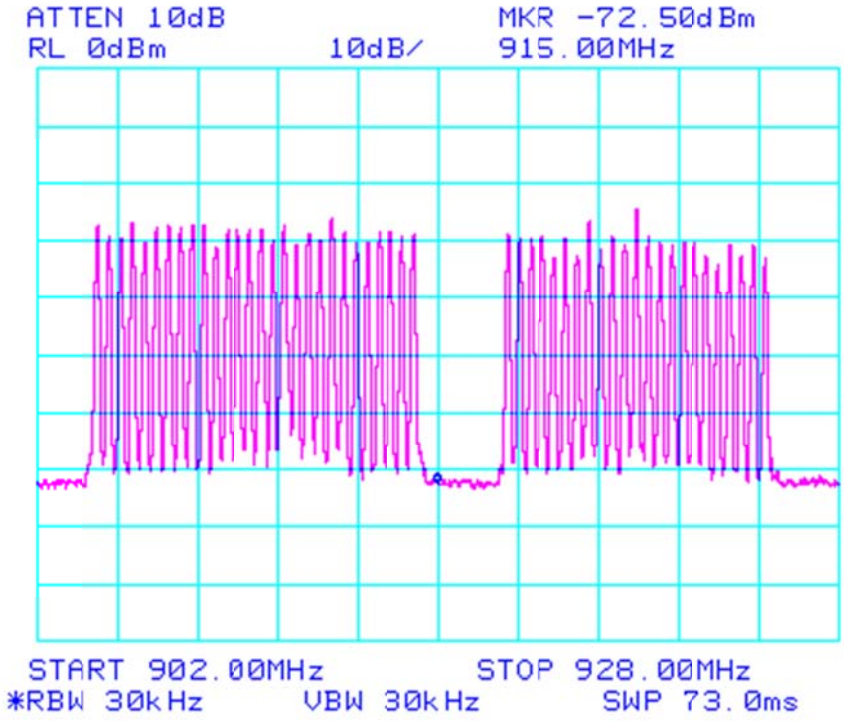
Pulse Width
125 mS





Test Data – Time of Occupancy

Number of hopping channels = 51



Section 5. Peak Power Output

NAME OF TEST: Peak Power Output	PARA. NO.: 15.247 (b) RSS-210 8.4(1)
TESTED BY: David Light	DATE: 02 June 2010

Test Results: Complies.

Measurement Data: See attached plots.

Detachable antenna? ☐ Yes ☒ No
If yes, state the type of non-standard connector used:

Frequency (MHz)	Peak Power (dBm)	Peak Power (mW)	Antenna Type	Gain (dBi)	E.I.R.P. (dBm)	E.I.R.P. (mW)
903.94	10.5	11.2	Dipole	-1.0	9.5	8.9
914.26	10.2	10.5	Dipole	-1.0	9.2	8.3
925.60	9.7	9.3	Dipole	-1.0	8.7	7.4
Maximum EIRP (mW): 8.9						

☐ This device was tested at +/- 15% input power per 15.31(e), with no variation in output power.

☒ For battery powered equipment, the device was tested with a fresh battery per 15.31(e).

☒ The device was tested on three channels per 15.31(l).

Spectrum analyzer settings: RBW=VBW=1MHz, Detector=Peak, Sweep=Auto, Span=5MHz

Equipment Used: 1464/1472/1082

Measurement Uncertainty: 1.7 dB

Temperature: 22 °C

Relative Humidity: 35 %

Section 6. Spurious Emissions (Antenna Conducted)

NAME OF TEST: Spurious Emissions (Antenna Conducted)	PARA. NO.: 15.247(d) RSS-210 8.5
TESTED BY: David Light	DATE: 02 June 2010

Test Results: Complies.

Measurement Data: See attached plots.

Equipment Used: 1464-1472-1082

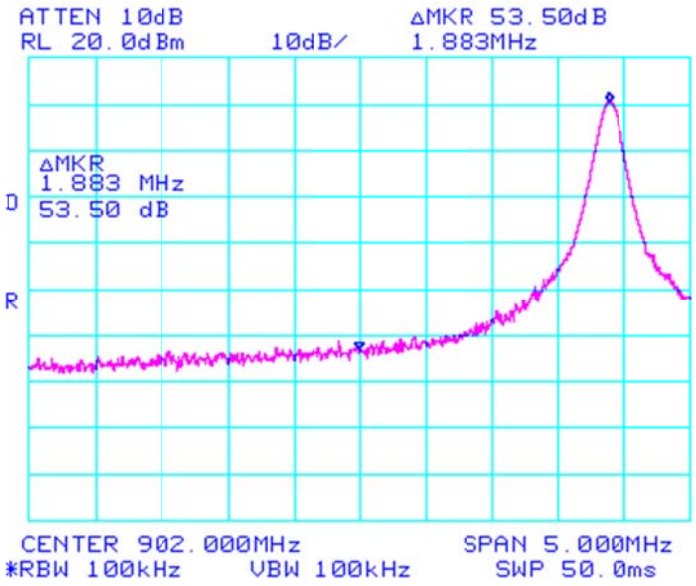
Measurement Uncertainty: $1X10^{-7}$ppm

Temperature: 22 °C

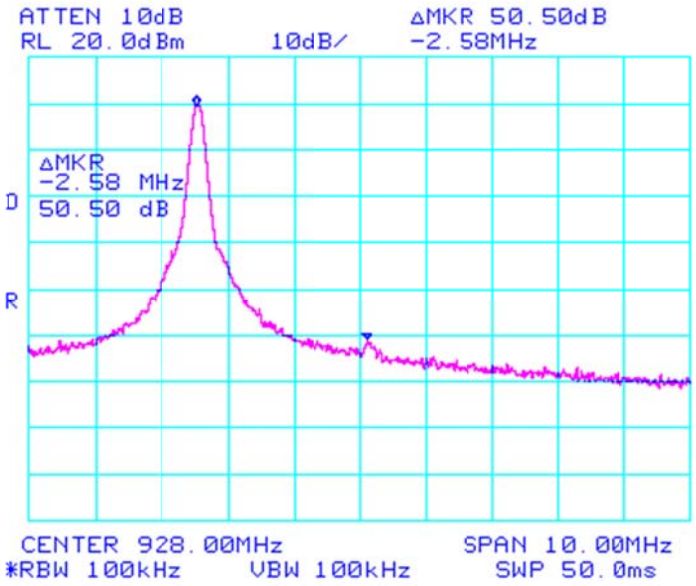
Relative Humidity: 35 %

Test Data – Spurious Emissions at Antenna Terminals

Lower Band Edge

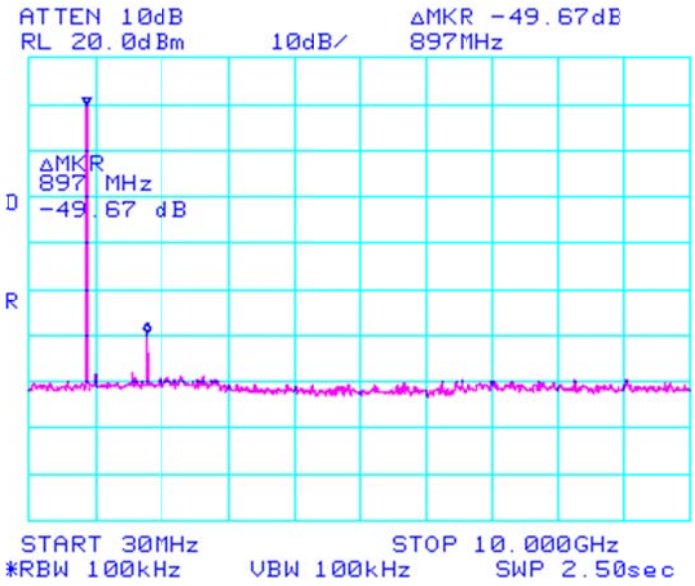


Upper Band Edge

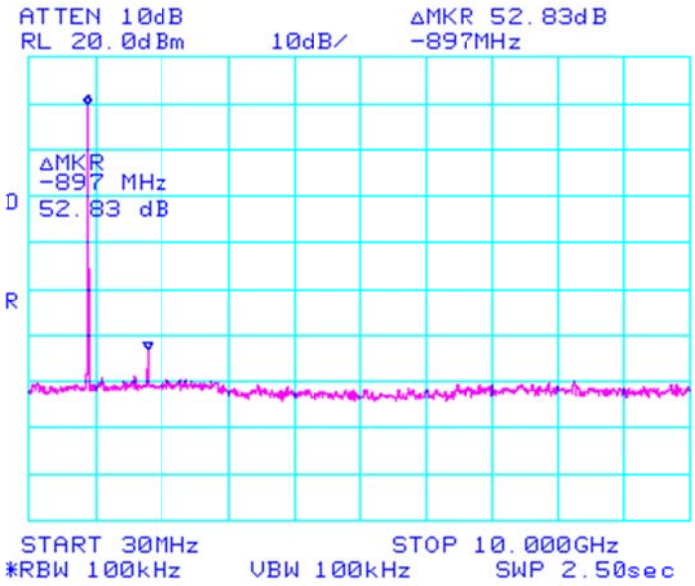


Test Data – Spurious Emissions at Antenna Terminals

Spurs – Low Channel

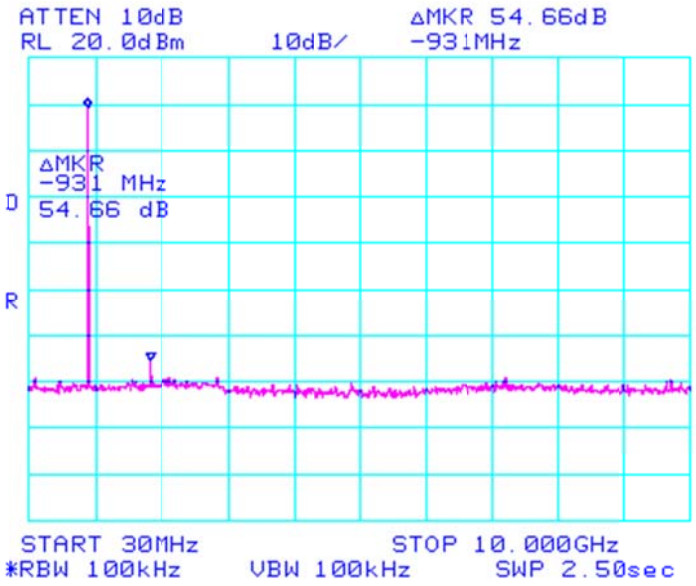


Spurs – Mid Channel



Test Data – Spurious Emissions at Antenna Terminals

Spurs – High Channel



Section 7. Spurious Emissions (Radiated)

NAME OF TEST: Spurious Emissions (Radiated)	PARA. NO.: 15.247(d) RSS-Gen 7.2.3
TESTED BY: David Light	DATE: 02 June 2010

Test Results: Complies. The worst case emission was 51.6 dBµV/m at 6480 MHz. This is 2.4 dB below the specification limit of 54 dBµV/m.

Measurement Data: See attached table.

Notes:

☒ For handheld devices, the EUT was tested on three orthogonal axis'

☒ The device was tested from 30 MHz to the tenth harmonic of the highest fundamental frequency per 15.33. All readings within 20 dB of the specification limit are reported.

☒ The device was tested on three channels per 15.31(l).

☐ No emissions were detected within 20 dB of the specification limit therefore none are reported per 15.31(o). Band edge data is presented below.

Equipment Used: 1464-1484-1485-791-1480-1016-993

Measurement Uncertainty: +/-3.6 dB

Temperature: ____ °C

Relative Humidity: ____ %

Test Data - Radiated Emissions

Low Channel

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Pre-A dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2711.82	43.5	+0.8	+2.8	-32.7	+29.3	+0.0	43.7	54.0	-10.3	Vert
2	3615.76	48.0	+0.8	+2.8	-32.7	+30.3	+0.0	49.2	54.0	-4.8	Vert
3	4519.70	43.0	+1.0	+3.1	-32.5	+32.1	+0.0	46.7	54.0	-7.3	Vert
4	5423.64	43.5	+1.2	+3.5	-31.8	+33.6	+0.0	50.0	54.0	-4.0	Vert
5	6327.58	38.5	+1.3	+3.9	-31.4	+34.9	+0.0	47.2	54.0	-6.8	Vert
6	7231.52	41.7	+1.2	+3.9	-32.3	+35.8	+0.0	50.3	54.0	-3.7	Vert
7	8135.46	39.8	+1.4	+4.3	-33.1	+37.5	+0.0	49.9	54.0	-4.1	Vert
8	9039.40	41.5	+1.4	+4.1	-33.7	+37.0	+0.0	50.3	54.0	-3.7	Vert
9	2711.82	44.8	+0.8	+2.8	-32.7	+29.3	+0.0	45.0	54.0	-9.0	Horiz
10	3615.76	48.0	+0.8	+2.8	-32.7	+30.3	+0.0	49.2	54.0	-4.8	Horiz
11	4519.70	43.2	+1.0	+3.1	-32.5	+32.1	+0.0	46.9	54.0	-7.1	Horiz
12	5423.64	40.8	+1.2	+3.5	-31.8	+33.6	+0.0	47.3	54.0	-6.7	Horiz
13	6327.58	41.5	+1.3	+3.9	-31.4	+34.9	+0.0	50.2	54.0	-3.8	Horiz
14	7231.52	39.7	+1.2	+3.9	-32.3	+35.8	+0.0	48.3	54.0	-5.7	Horiz
15	8135.46	40.5	+1.4	+4.3	-33.1	+37.5	+0.0	50.6	54.0	-3.4	Horiz
16	9039.40	41.7	+1.4	+4.1	-33.7	+37.0	+0.0	50.5	54.0	-3.5	Horiz

Corr(dBuV/m) = Rdng(dBuV) + Cable(dB) + Pre amp(dB) + AF(dB)

All measurements are peak unless otherwise indicated.

Analyzer Settings:	Peak readings	RBW=VBW=1 MHz	Peak detector
	Average readings	RBW=1 MHz VBW=1kHz	Peak detector

Test Data - Radiated Emissions

Mid Channel

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Pre-A dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2773.333	43.8	+0.8	+2.9	-32.7	+29.4	+0.0	44.2	54.0	-9.8	Vert
2	3706.667	42.8	+0.8	+2.8	-32.6	+30.6	+0.0	44.4	54.0	-9.6	Vert
3	4626.667	43.3	+1.0	+3.2	-32.5	+32.5	+0.0	47.5	54.0	-6.5	Vert
4	5560.000	42.2	+1.2	+3.5	-31.9	+33.7	+0.0	48.7	54.0	-5.3	Vert
5	6480.000	42.8	+1.3	+4.0	-31.7	+35.2	+0.0	51.6	54.0	-2.4	Vert
6	7400.000	41.0	+1.2	+4.0	-32.0	+35.9	+0.0	50.1	54.0	-3.9	Vert
7	8333.334	40.5	+1.2	+4.4	-33.4	+37.1	+0.0	49.8	54.0	-4.2	Vert
8	9253.333	39.5	+1.2	+4.4	-33.8	+37.1	+0.0	48.4	54.0	-5.6	Vert
9	2773.333	44.5	+0.8	+2.9	-32.7	+29.4	+0.0	44.9	54.0	-9.1	Horiz
10	3706.667	43.5	+0.8	+2.8	-32.6	+30.6	+0.0	45.1	54.0	-8.9	Horiz
11	4626.667	43.0	+1.0	+3.2	-32.5	+32.5	+0.0	47.2	54.0	-6.8	Horiz
12	5546.667	42.5	+1.2	+3.5	-31.9	+33.7	+0.0	49.0	54.0	-5.0	Horiz
13	6480.000	39.7	+1.3	+4.0	-31.7	+35.2	+0.0	48.5	54.0	-5.5	Horiz
14	7400.000	39.2	+1.2	+4.0	-32.0	+35.9	+0.0	48.3	54.0	-5.7	Horiz
15	8333.334	41.5	+1.2	+4.4	-33.4	+37.1	+0.0	50.8	54.0	-3.2	Horiz
16	9253.333	40.3	+1.2	+4.4	-33.8	+37.1	+0.0	49.2	54.0	-4.8	Horiz

Test Data - Radiated Emissions

High Channel

#	Freq MHz	Rdng dBµV	Cable dB	Cable dB	Pre-A dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2780.000	45.0	+0.8	+2.9	-32.7	+29.4	+0.0	45.4	54.0	-8.6	Horiz
2	3700.000	46.3	+0.8	+2.8	-32.6	+30.6	+0.0	47.9	54.0	-6.1	Horiz
3	4626.667	43.0	+1.0	+3.2	-32.5	+32.5	+0.0	47.2	54.0	-6.8	Horiz
4	5553.333	43.2	+1.2	+3.5	-31.9	+33.7	+0.0	49.7	54.0	-4.3	Horiz
5	6480.000	39.3	+1.3	+4.0	-31.7	+35.2	+0.0	48.1	54.0	-5.9	Horiz
6	7406.667	40.5	+1.2	+4.0	-32.0	+35.9	+0.0	49.6	54.0	-4.4	Horiz
7	8333.334	41.2	+1.2	+4.4	-33.4	+37.1	+0.0	50.5	54.0	-3.5	Horiz
8	9253.333	39.2	+1.2	+4.4	-33.8	+37.1	+0.0	48.1	54.0	-5.9	Horiz
9	2780.000	43.7	+0.8	+2.9	-32.7	+29.4	+0.0	44.1	54.0	-9.9	Vert
10	3700.000	44.5	+0.8	+2.8	-32.6	+30.6	+0.0	46.1	54.0	-7.9	Vert
11	4626.667	42.0	+1.0	+3.2	-32.5	+32.5	+0.0	46.2	54.0	-7.8	Vert
12	5553.333	41.5	+1.2	+3.5	-31.9	+33.7	+0.0	48.0	54.0	-6.0	Vert
13	6480.000	39.8	+1.3	+4.0	-31.7	+35.2	+0.0	48.6	54.0	-5.4	Vert
14	7406.667	39.2	+1.2	+4.0	-32.0	+35.9	+0.0	48.3	54.0	-5.7	Vert
15	8333.334	40.7	+1.2	+4.4	-33.4	+37.1	+0.0	50.0	54.0	-4.0	Vert
16	9253.333	41.7	+1.2	+4.4	-33.8	+37.1	+0.0	50.6	54.0	-3.4	Vert

Section 8. Receiver Spurious Emissions

NAME OF TEST: Receiver Spurious Emissions	PARA. NO.: RSS-Gen 7.2.3
TESTED BY: David Light	DATE: 02 June 2010

Test Results: Complies. The worst case emission was -60.8 dBm at 877 MHz. This is 3.8 dB below the specification limit of -57 dBm.

Test Data: Refer to attached.

Equipment Used: 1464-1082

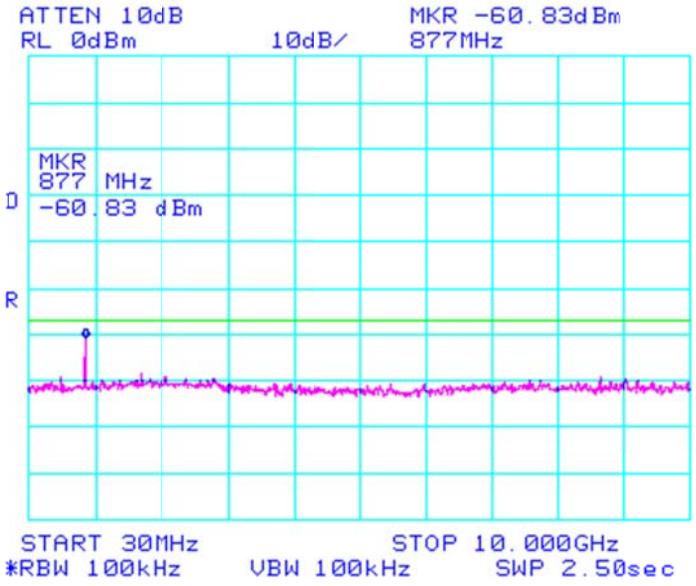
Measurement Uncertainty: +/- 1.7 dB

Temperature: 22 °C

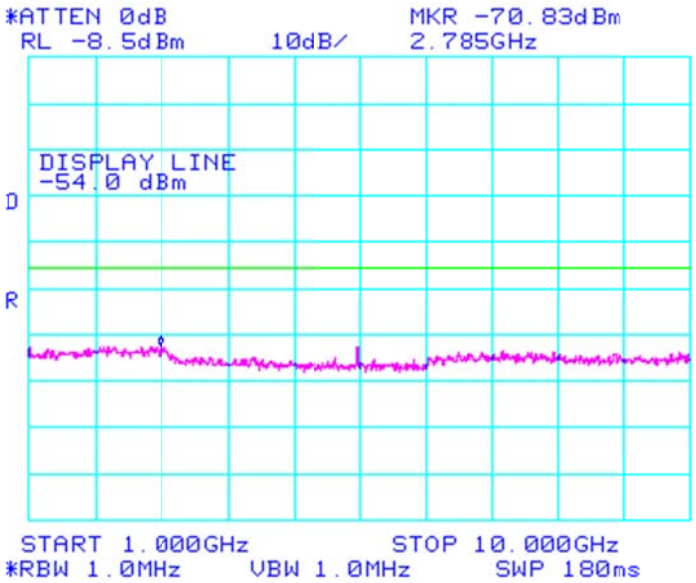
Relative Humidity: 35 %

Test Data = Receiver Spurious Emissions

Rx spurious



Rx Spurious



Section 9. Test Equipment List

Asset Tag	Description	Manufacturer	Model	Serial #	Last Cal	Next Cal
993	Antenna, Horn	A.H. Systems	SAS-200/571	162	09-Sep-2009	09-Sep-2011
1016	Preamplifier	Hewlett Packard	8449A	2749A00159	23-Jun-2009	23-Jun-2010
1082	Cable, 2m	Astrolab	32027-2-29094-72TC		N/R	
1464	Spectrum Analyzer	Hewlett Packard	8563E	3551A04428	27-Feb-2009	27-Feb-2011
1472	Attenuator, 20dB, DC 18 GHz	Omni Spectra	20600-20db		N/R	
1480	Antenna, Bilog	Schaffner-Chase	CBL6111C	2572	18-Jan-2010	18-Jan-2011
1484	Cable	Storm	PR90-010-072		23-Jun-2009	23-Jun-2010
1485	Cable	Storm	PR90-010-216		23-Jun-2009	23-Jun-2010
791	PreAmp	Nemko, USA			03-Aug-2009	03-Aug-2010

ANNEX A - TEST DETAILS

NAME OF TEST: Powerline Conducted Emissions PARA. NO.: 15.207(a)

Minimum Standard: §15.207 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 Conducted Emission (MHz)	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.

(b) The limit shown in paragraph (a) of this section shall not apply to carrier current systems operating as intentional radiators on frequencies below 30 MHz. In lieu thereof, these carrier current systems shall be subject to the following standards:

(1) For carrier current systems containing their fundamental emission within the frequency band 535-1705 kHz and intended to be received using a standard AM broadcast receiver: no limit on conducted emissions.

(2) For all other carrier current systems: 1000 mV within the frequency band 535-1705 kHz, as measured using a 50 mH/50 ohms LISN.

(3) Carrier current systems operating below 30 MHz are also subject to the radiated emission limits as provided in §15.205 and §§15.209, 15.221, 15.223, 15.225 or 15.227, as appropriate.

(c) Measurements to demonstrate compliance with the conducted limits are not required for devices which only employ battery power for operation and which do not operate from the AC power lines or contain provisions for operation while connected to the AC power lines. Devices that include, or make provision for, the use of battery chargers which permit operating while charging, AC adaptors or battery eliminators or that connect to the AC power lines indirectly, obtaining their power through another device which is connected to the AC power lines, shall be tested to demonstrate compliance with the conducted limits.

NAME OF TEST: Channel Separation	PARA. NO.: 15.247(a)(1)

Minimum Standard:

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

NAME OF TEST: Time of Occupancy PARA. NO.: 15.247(a)(1)

Minimum Standard:

Frequency Band (MHz)	20 dB Bandwidth	No. of Hopping Channels	Average Time of Occupancy
902 - 928	<250 kHz	50	=<0.4 sec. in 20 sec.
902 – 928	=>250 kHz	25	=<0.4 sec. in 10 sec.
2400 – 2483.5	-----	75	=<0.4 sec. in 0.4 seconds multiplied by the number of hopping channels employed.
5725 – 5850	-----	75	=<0.4 sec. in 30 sec.

Method Of Measurement:

The spectrum analyzer is set as follows:

RBW: 1 MHz
VBW: = RBW
Span: 0 Hz
LOG dB/div.: 10 dB
Sweep: Sufficient to see one hop time sequence.
Trigger: Video

The occupancy time of one hop is measured as above. The average time of occupancy is calculated over the appropriate period of time from above table

Avg. time of occupancy = (period from table/duration of one hop)/no. of channels multiplied by the duration of one hop.

For instance:

If a 2.4 GHz system has a measured hop duration time of 1 msec. and uses 75 channels, then the average time of occupancy would be:

(30 sec./.001 sec.)/75 chan. = 400 x 1 msec. = 400 msec. or 0.4 sec. in 30 sec.

NAME OF TEST: Occupied Bandwidth PARA. NO.: 15.247(a)(1)

Minimum Standard:

Frequency Band (MHz)	Maximum 20 dB Bandwidth
902 - 928	500 kHz
2400 – 2483.5	Not defined
5725 – 5850	1 MHz

Method Of Measurement:

The spectrum analyzer is set as follows:

RBW: At least 1% of span/div.
VBW: >RBW
Span: Sufficient to display 20 dB bandwidth
LOG dB/div.: 10 dB
Sweep: Auto

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

NAME OF TEST: Peak Power Output PARA. NO.: 15.247(b)

Minimum Standard:

Frequency Band (MHz)	No. of Hopping Channels	Maximum Peak Power Output at Antenna Port
902 - 928	at least 50	1 watt
902 – 928	25 - 49	0.25 watts
2400 – 2483.5	75	1 watt
5725 – 5850	75	1 watt

If transmitting antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Systems operating in the 2400-2483.5 MHz band that are used exclusively for fixed, point to point operation may employ transmitting antennas with directional gain greater than 6 dBi provided the maximum peak output power is reduced by 1 dB for every 3 dB that the directional gain of the antenna exceed 6 dBi.

Systems operating in the 5725 – 5850 MHz band that are used exclusively for fixed, point-to-point operation may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter peak output power.

Direct Measurement Method For Detachable Antennas:
If the antenna is detachable, a peak power meter is used to measure the power output with the transmitter operating into a 50 ohm load. The dBi gain of the antenna(s) employed shall be reported.

Calculation Of EIRP For Integral Antenna:
If the antenna is not detachable from the circuit then the Peak Power Output is derived from the peak radiated field strength of the fundamental emission by using the plane wave relation $GP/4\pi R^2 = E^2/120\pi$ and proceeding as follows:

$$P = \frac{E^2 R^2}{30G} = \frac{E^2 3^2}{30G}$$

where,

P = the equivalent isotropic radiated power in watts
E = the maximum measured field strength in V/m
R = the measurement range (3 meters)
G = the numeric gain of the transmit antenna in relation to an isotropic radiator

The RBW of the spectrum analyzer shall be set to a value greater than the measured 20 dB occupied bandwidth of the E.U.T.

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

NAME OF TEST: Spurious Emissions at Antenna Terminals PARA. NO.: 15.247(d)

Minimum Standard: In any 100kHz bandwidth outside the frequency band in which the transmitter is operating, emissions shall be at least 20 dB below the fundamental emission or shall not exceed the following field strength limits. Emissions falling in the restricted bands of 15.205 shall not exceed the following field strength limits:

Frequency (MHz)	Field Strength (μV/m @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

THE SPECTRUM WAS SEARCHED TO THE 10th HARMONIC

Method Of Measurement:

30 MHz - 10th harmonic plot
RBW: 100 kHz
VBW: 300 kHz
Sweep: Auto
Display line: -20 dBc

Lower Band Edge
RBW: At least 1% of span/div.
VBW: >RBW
Span: As necessary to display any spurious at band edge.
Sweep: Auto
Center Frequency: 902 MHz, 2400 MHz, or 5725 MHz
Marker: Peak of fundamental emission
Marker Δ: Peak of highest spurious level below center frequency.

Upper Band Edge
RBW: At least 1% of span/div.
VBW: >RBW
Span: As necessary to display any spurious at band edge.
Sweep: Auto
Center Frequency: 928 MHz, 2483.5 MHz, or 5850 MHz
Marker: Peak of fundamental emission
Marker Δ: Peak of highest spurious level above center frequency.

Number of channels tested:

Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

NAME OF TEST: Radiated Spurious Emissions PARA. NO.: 15.247(d)

Minimum Standard: In any 100kHz bandwidth outside the frequency band in which the transmitter is operating, emissions shall be at least 20 dB below the fundamental emission or shall not exceed the following field strength limits:

Emissions falling in the restricted bands of 15.205 shall not exceed the following field strength limits:

Frequency (MHz)	Field Strength (μV/m @ 3m)	Field Strength (dB @ 3m)
30 - 88	100	40.0
88 - 216	150	43.5
216 - 960	200	46.0
Above 960	500	54.0

THE SPECTRUM WAS SEARCHED TO THE 10th HARMONIC

15.205 Restricted Bands

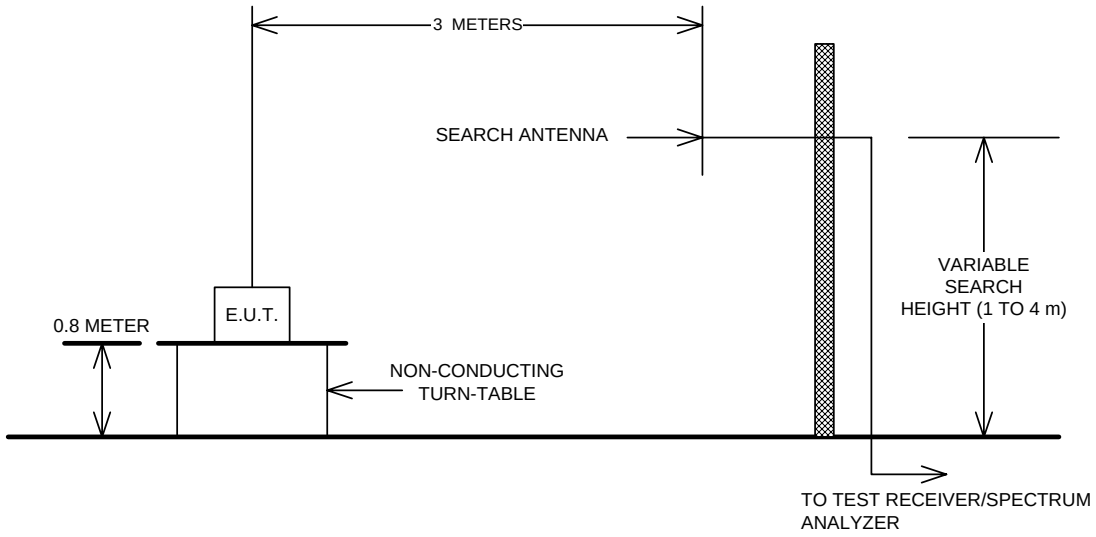
MHz	MHz	MHz	GHz
0.09-0.11	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.125-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41	1718		

Number of channels tested:

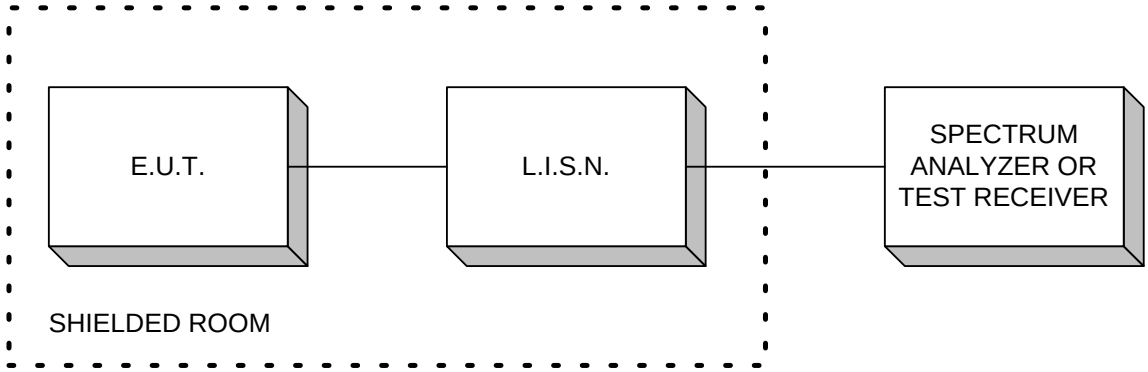
Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

ANNEX B - TEST DIAGRAMS

Test Site For Radiated Emissions



Conducted Emissions



Peak Power at Antenna Terminals