



Nemko Test Report: 47117RUS1


Applicant: Overhead Door
TREQ Center, Suite B
2170 French Settlement Road
Dallas, Texas 75212

Equipment Under Test: Wireless Adapter
(E.U.T.) Genie Model #37101R which is GN
Overhead Door Model #37457R which is OA

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:



David Light, Wireless Engineer

DATE:

03 June 2010

APPROVED BY:



Tom Tidwell, Reviewer

DATE:

31 March 2011

Total Number of Pages: 36

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Section 1. Summary of Test Results

Manufacturer: Overhead Door

Model No.: Wireless Adapter

Variants: Genie Model #37101R which is GN
Overhead Door Model #37457R which is OA

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 in 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

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Nemko USA, Inc.

CFR 47, Part 15.247 and Industry Canada RSS-210

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

EQUIPMENT: Wireless Adapter

PROJECT NO.: 47117RUS1

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Summary of Test Data

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207(a) / RSS-Gen 7.2.2	Complies
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:

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:

120 Vac (input to drive head)

Number of Channels:

51

20 dB Bandwidth:

81.7 kHz

Channel Spacing:

380 kHz

User Frequency Adjustment:

Software controlled

Description of EUT

Wireless adapter for Overhead Door NGX family of garage door openers.

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

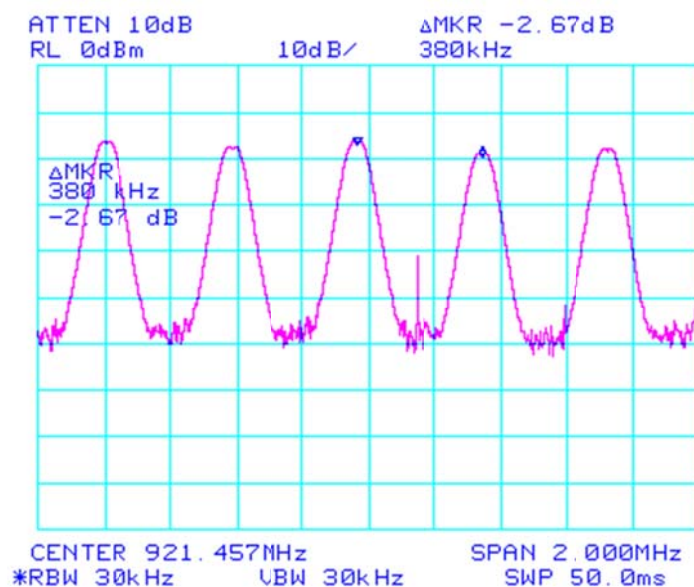
Channel Separation: 380 kHz

Equipment Used: 1464-1082-1472

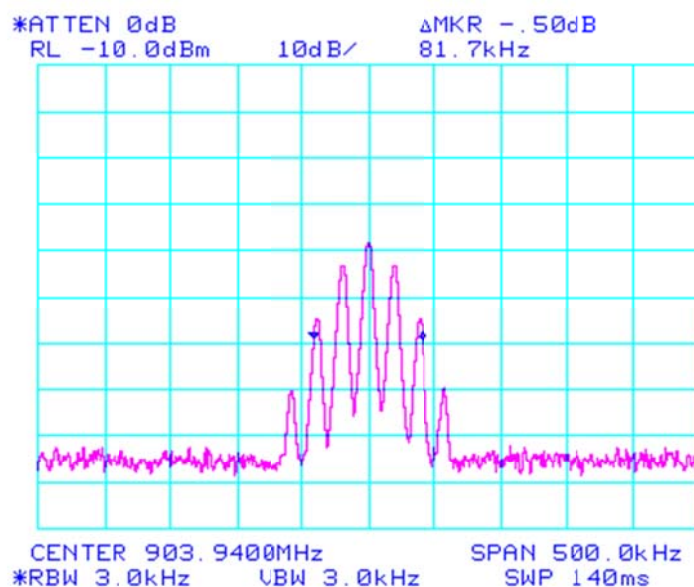
Measurement Uncertainty: 1×10^{-7} ppm

Temperature: 22 °C

Relative Humidity: 35 %

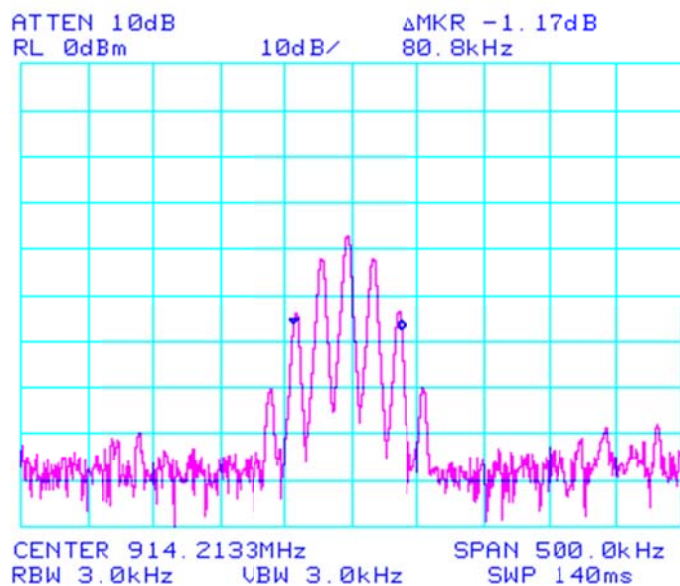
Test Data – Channel Separation**Test Data – 20 dB Bandwidth**

Low Channel

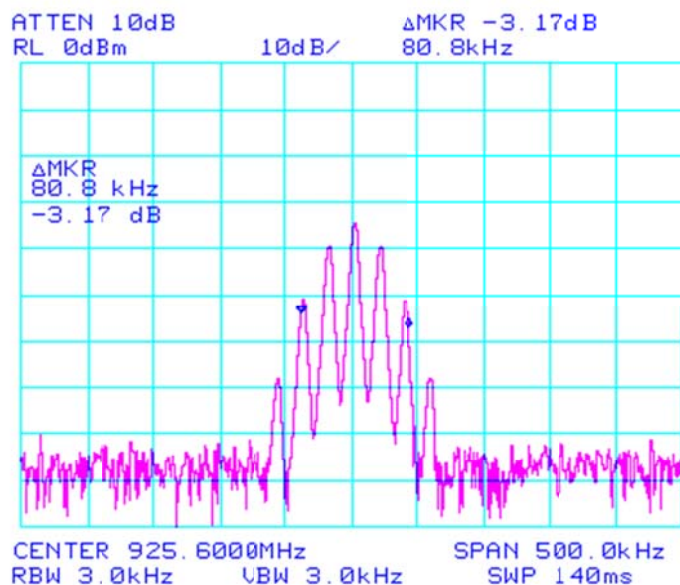


Test Data – 20 dB Bandwidth

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: 1X10⁻⁷ppm

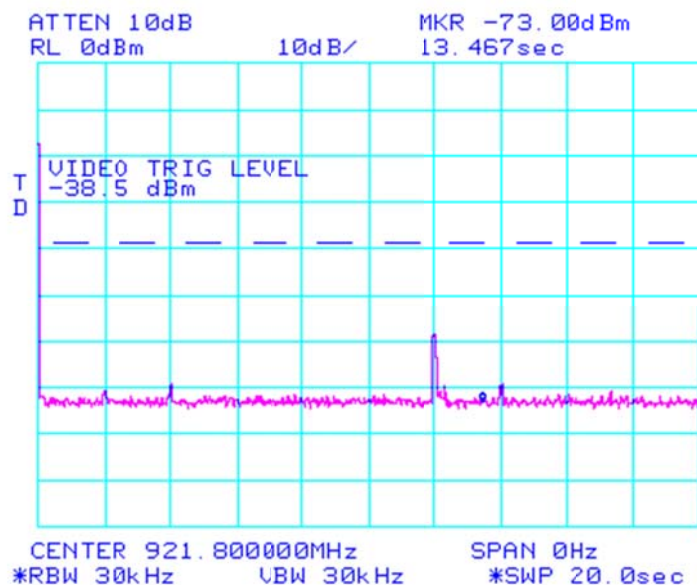
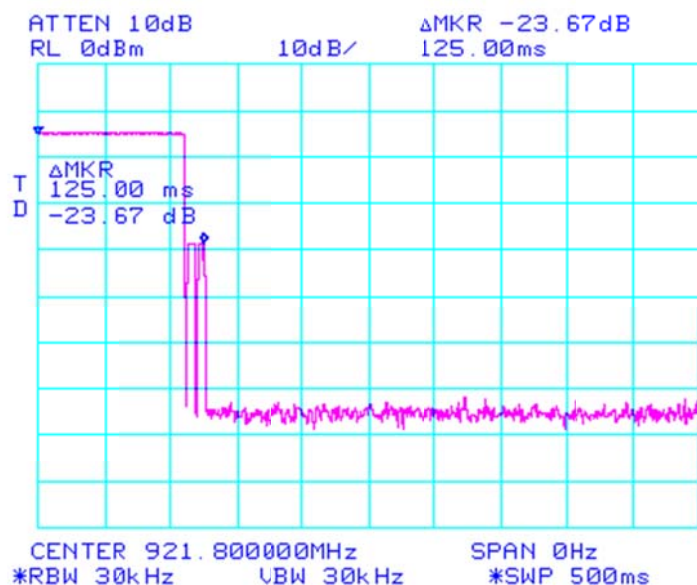
Temperature: 22 °C

Relative Humidity: 35 %

Test Data – Time of Occupancy

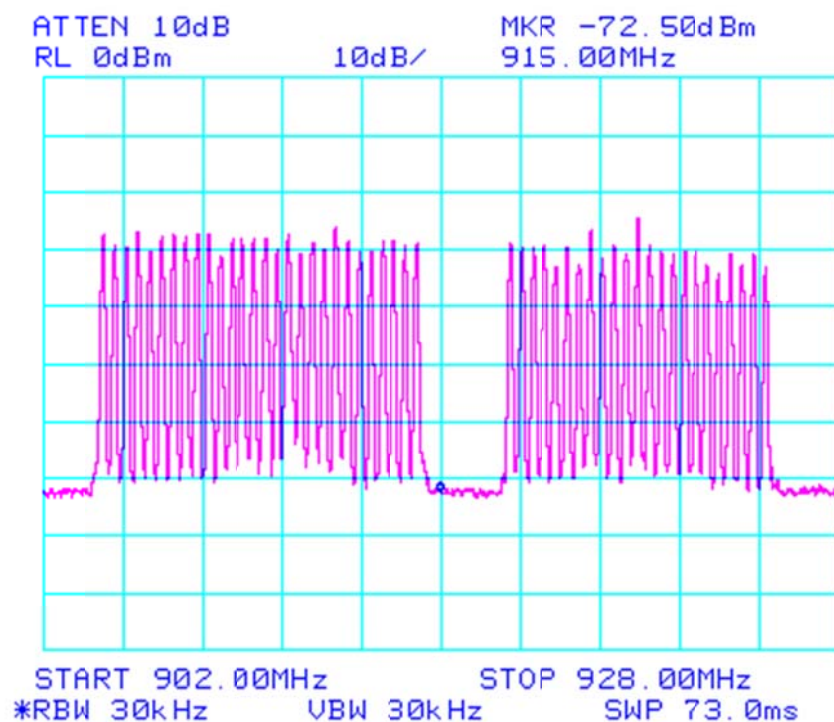
Pulse Width

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	2.1	12.6	18.2
914.26	10.2	10.5	Dipole	2.1	12.3	17.0
925.60	9.7	9.3	Dipole	2.1	11.8	15.1
Maximum EIRP (mW): 18.2						

☒ 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

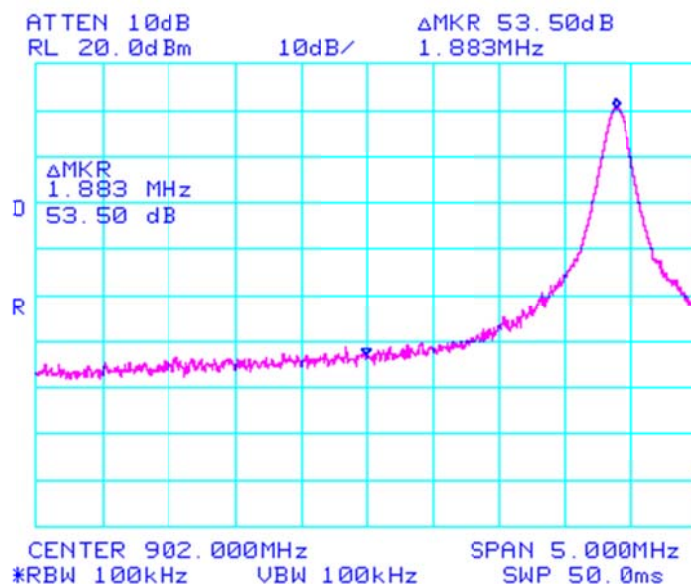
Measurement Uncertainty: 1×10^{-7} ppm

Temperature: 22 °C

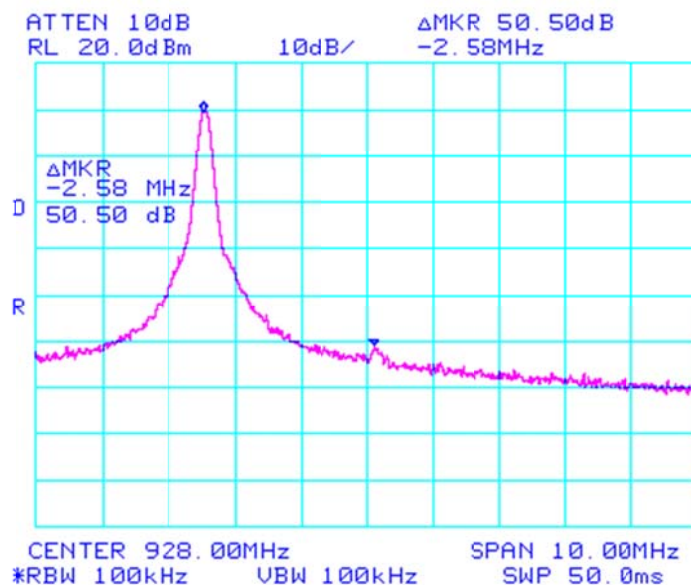
Relative Humidity: 35 %

Test Data – Spurious Emissions at Antenna Terminals

Lower Band Edge

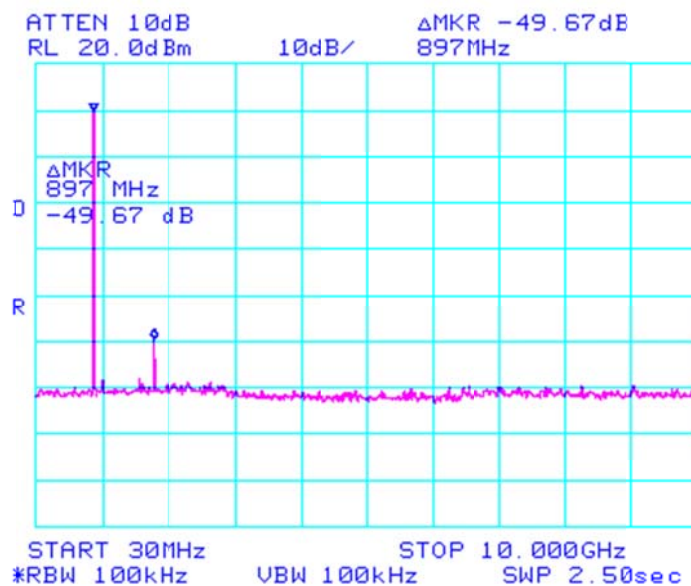


Upper Band Edge

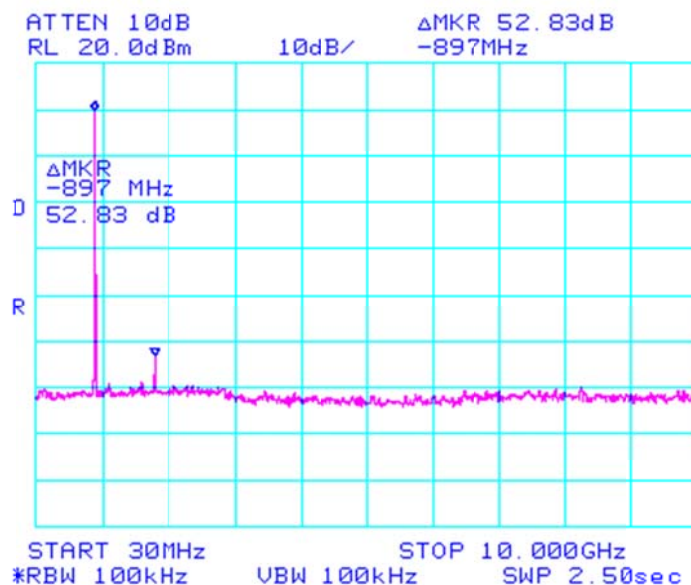


Test Data – Spurious Emissions at Antenna Terminals

Spurs – Low Channel

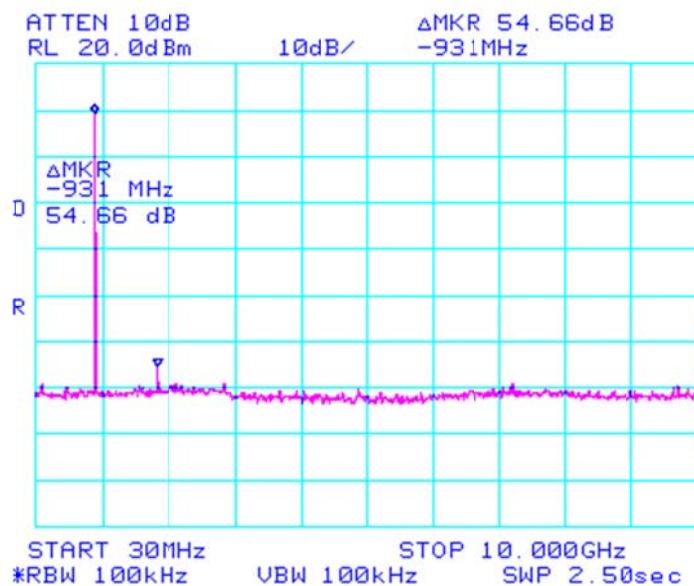


Spurs – Mid Channel



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 53 dB μ V/m at 5485.3 MHz. This is 1 dB below the specification limit of 54 dB μ V/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	5423.60	47.8	+1.2	+3.5	-31.8	+33.6	+0.0	54.3	74.0	-19.7	Horiz
2	5423.60	44.0	+1.2	+3.5	-31.8	+33.6	+0.0	50.5	54.0	-3.5	Horiz
Ave											
3	5423.60	49.0	+1.2	+3.5	-31.8	+33.6	+0.0	55.5	74.0	-18.5	Vert
4	5423.60	45.5	+1.2	+3.5	-31.8	+33.6	+0.0	52.0	54.0	-2.0	Vert
Ave											

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	5485.29	49.0	+1.2	+3.5	-31.8	+33.6	+0.0	55.5	74.0	-18.5	Horiz
2	5485.29	46.2	+1.2	+3.5	-31.8	+33.6	+0.0	52.7	54.0	-1.3	Horiz
Ave											
3	5485.29	49.5	+1.2	+3.5	-31.8	+33.6	+0.0	56.0	74.0	-18.0	Vert
4	5485.29	46.5	+1.2	+3.5	-31.8	+33.6	+0.0	53.0	54.0	-1.0	Vert
Ave											

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	5553.66	48.5	+1.2	+3.5	-31.9	+33.7	+0.0	55.0	74.0	-19.0	Vert
2	5553.66	45.5	+1.2	+3.5	-31.9	+33.7	+0.0	52.0	54.0	-2.0	Vert
Ave											
3	5553.66	47.7	+1.2	+3.5	-31.9	+33.7	+0.0	54.2	74.0	-19.8	Horiz
4	5553.66	44.3	+1.2	+3.5	-31.9	+33.7	+0.0	50.8	54.0	-3.2	Horiz
Ave											

$$\text{Corr(dBuV/m)} = \text{Rdng(dBuV)} + \text{Cable(dB)} + \text{Pre amp(dB)} + \text{AF(dB)}$$

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

Section 8. Powerline Conducted Emissions

NAME OF TEST: Powerline Conducted Emissions	PARA. NO.: 15.207(a) RSS-Gen 7.2.2
TESTED BY: Art Ruvalcaba	DATE: 06 May 2010

Test Results: Complies. The worst case emission was 55.81 dB μ V at 6.5 MHz. This is 4.19 dB below the quasi-peak specification limit of 60 dB μ V.

Test Data: Refer to attached table.

Equipment Used: 1258-1988-527-1284

Measurement Uncertainty: +/- 1.7 dB

Temperature: 22 °C

Relative Humidity: 35 %

Test Data – Powerline Conducted Emissions

Nemko

Line 1 Final QP/AVG

LINE 1

Operator: Art Model Number: 4 CE NGX DC Chain_Belt unit

Company: OHD

02:41:35 PM, Thursday, May 06, 2010:

Frequency	22 B	22 B	AVG	AVG	QP	QP
MHz	QP LIMIT	AVG LIMIT	Meas	Margin	Meas	Margin
6.8004	60.000	50.000	39.525	-10.475	52.340	-7.660
6.8179	60.000	50.000	38.305	-11.695	53.120	-6.880
6.8974	60.000	50.000	37.070	-12.930	46.990	-13.010
6.9197	60.000	50.000	36.243	-13.758	51.480	-8.520
6.9923	60.000	50.000	38.863	-11.137	50.790	-9.210
7.2474	60.000	50.000	34.010	-15.990	48.860	-11.140
7.2928	60.000	50.000	33.328	-16.672	49.360	-10.640
7.4419	60.000	50.000	33.470	-16.530	47.160	-12.840
7.469	60.000	50.000	33.727	-16.273	48.800	-11.200
7.7875	60.000	50.000	27.818	-22.182	51.311	-8.689

Line 2 Final QP/Avg

Line 2

Operator: Art Model Number: 4 CE NGX DC Chain_Belt unit

Company: OHD

02:28:53 PM, Thursday, May 06, 2010:

Frequency	EN55022 B	EN55022 B	AVG	AVG	QP	QP
MHz	QP Limit	AVG Limit	Meas	Margin	Meas	Margin
6.4678	60.000	50.000	38.140	-11.860	51.530	-8.470
6.4828	60.000	50.000	38.322	-11.678	55.810	-4.190
6.6186	60.000	50.000	40.438	-9.563	53.940	-6.060
6.6209	60.000	50.000	37.203	-12.797	50.170	-9.830
6.8335	60.000	50.000	39.250	-10.750	55.050	-4.950
6.8763	60.000	50.000	40.852	-9.148	53.920	-6.080
6.8935	60.000	50.000	35.868	-14.133	53.730	-6.270
8.5202	60.000	50.000	37.693	-12.307	53.396	-6.604
8.5356	60.000	50.000	37.666	-12.334	53.796	-6.204
12.7024	60.000	50.000	31.675	-18.325	44.940	-15.060

Section 9. 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

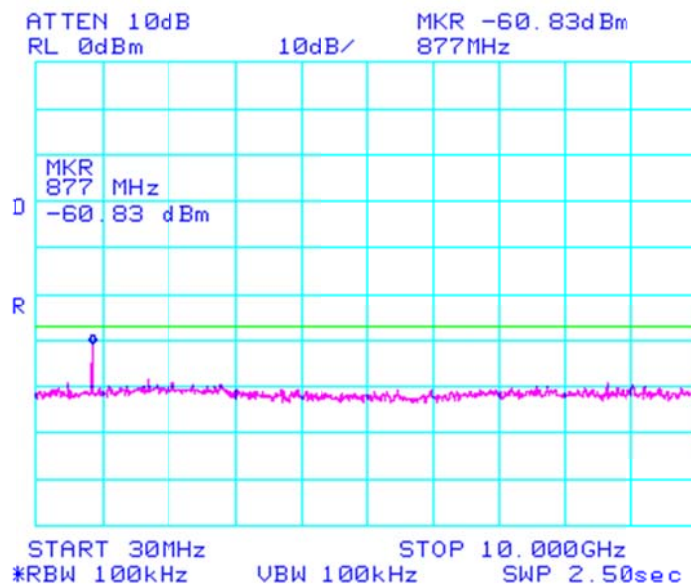
Measurement Uncertainty: +/- 1.7 dB

Temperature: 22 °C

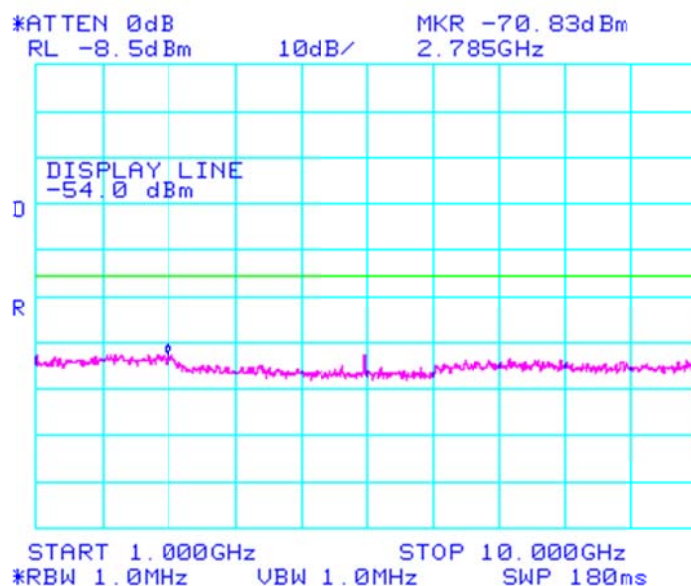
Relative Humidity: 35 %

Test Data = Receiver Spurious Emissions

Rx spurious



Rx Spurious



Section 10. 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	
1258	LISN	EMCO	3825/2	1305	24-Sep-2009	24-Sep-2010
1284	Quasi-Peak Adapter	Hewlett Packard	85650A	2521A00769	03-Jun-2009	03-Jun-2010
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
1988	Cable, Coaxial	Nemko USA, Inc.			29-Sep-2009	29-Sep-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:

$(30 \text{ sec.} / .001 \text{ sec.}) / 75 \text{ chan.} = 400 \times 1 \text{ msec.} = 400 \text{ msec. or } 0.4 \text{ sec. in } 30 \text{ sec.}$

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)
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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 ($\mu\text{V/m}$ @ 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 ($\mu\text{V/m}$ @ 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

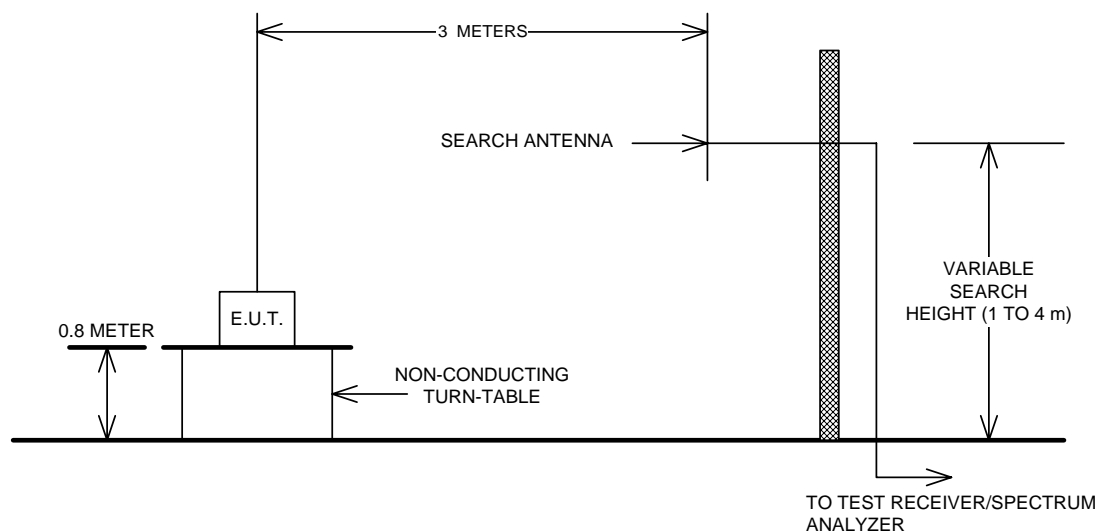
MHz	MHz	MHz	GHz
0.09-0.11	16.42-16.423	399.9-410	4.5-5.25
0.495-0.505	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.125-6.218	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:

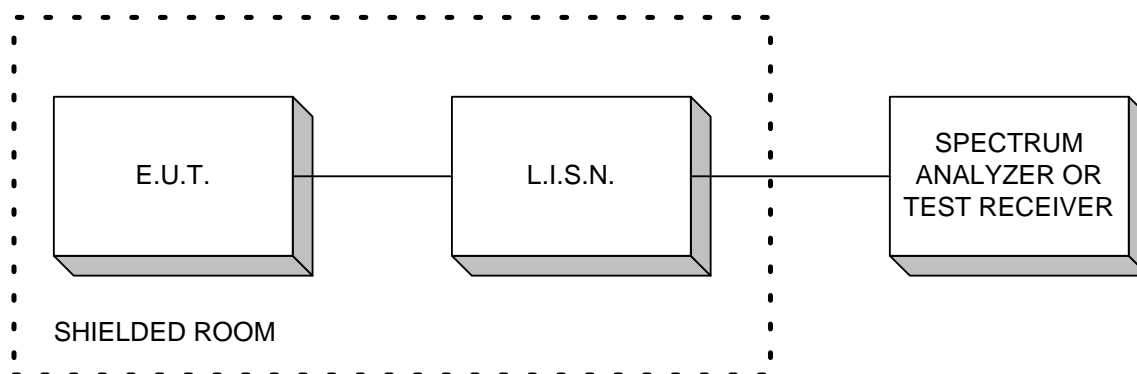
Tuning range	Number of channels tested	Channel location in band
1 MHz or less	1	middle
1 to 10 MHz	2	top and bottom
more than 10 MHz	3	top, middle, bottom

ANNEX B - TEST DIAGRAMS

Test Site For Radiated Emissions



Conducted Emissions



Peak Power at Antenna Terminals

