



**Nemko Test Report:** 6L0287RUS1rev3

**Applicant:** TeraHop Networks, Inc.  
300 Satellite Blvd.  
Suwanee, GA 30024  
USA

**Equipment Under Test:** RSI11  
(E.U.T.)

**In Accordance With:** **FCC Part 15, Subpart C, 15.247**  
Frequency Hopping Transmitters

**Tested By:** Nemko USA Inc.  
802 N. Kealy  
Lewisville, Texas 75057-3136

**Authorized By:**   
Kevin Rose Wireless Engineer

**Date:** July 24, 2006

**Number of pages:** 35

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**Section 1. Summary of Test Results**

Manufacturer: TeraHop Networks, Inc.

Model No.: RSI11

Serial No.: RSI11-0622-000027

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 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.

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



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**Summary Of Test Data**

NAME OF TEST	PARA. NO.	RESULT
Powerline Conducted Emissions	15.207(a)	NA
Channel Separation	15.247(a)(1)	Complies
Time of Occupancy	15.247(a)(1)(ii)	Complies
20 dB Occupied Bandwidth	15.247(a)(1)	Complies
Peak Power Output	15.247(b)	Complies
Spurious Emissions (Antenna Conducted)	15.247(c)	Complies
Spurious Emissions (Radiated)	15.247(c)	Complies

**Footnotes:**

The device is battery powered.

**Section 2. Equipment Under Test (E.U.T.)****General Equipment Information**

**Frequency Band:**  902 – 928 MHz  
 2400 – 2483.5 MHz

**Frequency Range of Test Sample:** 2402 to 2480 MHz

**Operating Voltage:** 3.6 Vdc

**Number of Channels:** 79

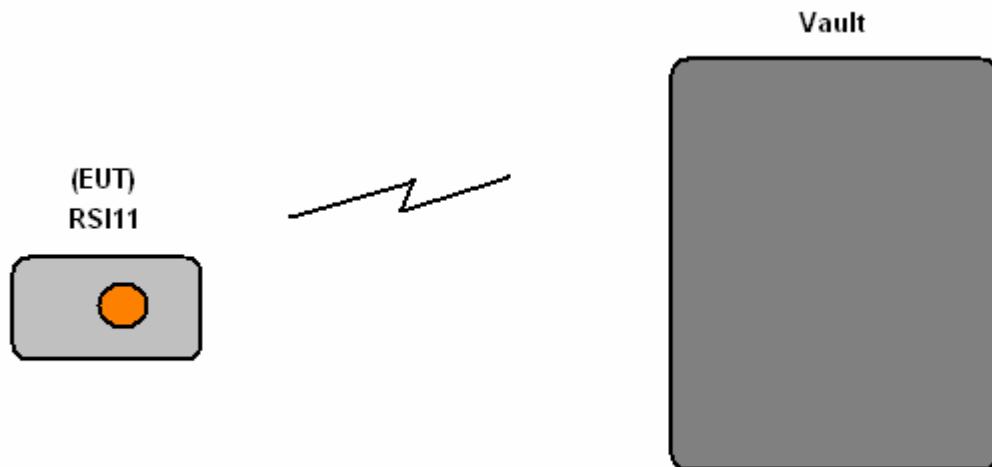
**Channel Spacing:** 1 MHz

**20 dB Bandwidth::** 880 kHz

**User Frequency Adjustment:** Software controlled

**Description of EUT**

The EUT is a key fob remote used to access a vault used for storing automobile keys in dealership parking lots. The remote is placed next to the vault and the button is pushed to activate the 127 kHz low power radio. The remote transmits an authorization code via Bluetooth to the vault. If the remote has successfully unlocked the vault, a green LED lights.

**System Diagram**

**Section 3. Channel Separation**

NAME OF TEST: Channel Separation	PARA. NO.: 15.247(a)(1)
TESTED BY: David Light	DATE: 20 July 2006

**Test Results:** Complies.**Measurement Data:** See 20 dB BW plot  
Measured 20 dB bandwidth: 880 kHz maximum  
Channel Separation: 1 MHz**Equipment Used:** 1626-1464**Measurement Uncertainty:** +/-  $1*10^{-7}$  ppm**Temperature:** 22 °C**Relative Humidity:** 35 %

**Nemko USA**

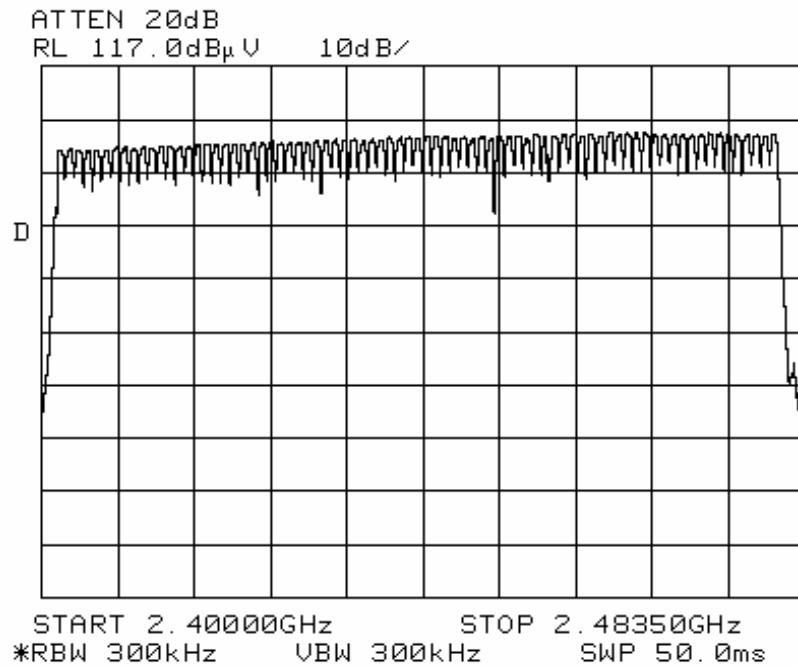
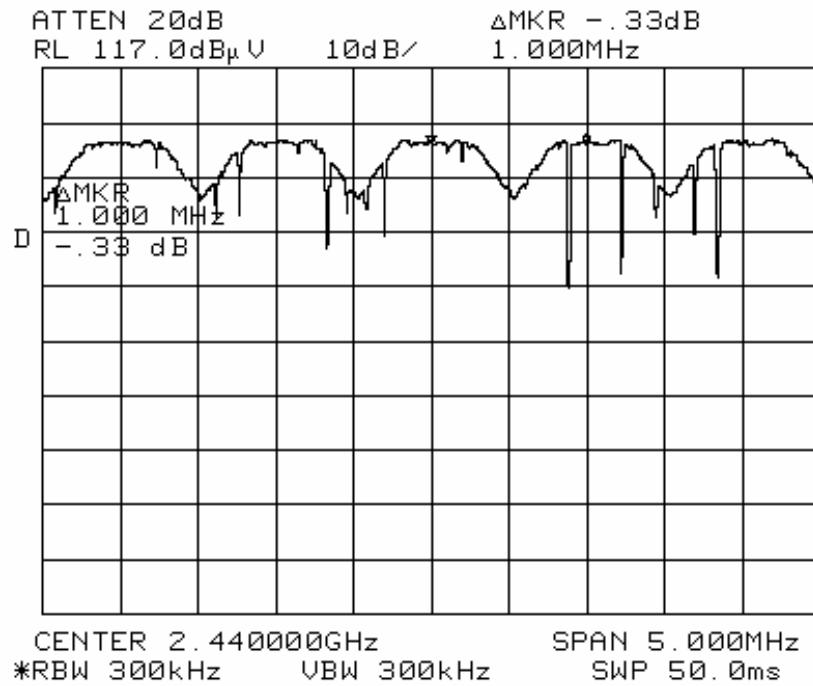
FCC PART 15, SUBPART C

*EQUIPMENT RSI11*

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

PROJECT NO.: 6L0287RUS1rev3

**Test Data – Channel Separation**



**Nemko USA**

FCC PART 15, SUBPART C

*EQUIPMENT RSI11*

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

PROJECT NO.: 6L0287RUS1rev3

## **Section 4. Occupied Bandwidth**

NAME OF TEST: Occupied Bandwidth	PARA. NO.: 15.247(a)(1)(i)
TESTED BY: David Light	DATE: 20 July 2006

**Test Results:** Complies.

**Measurement Data:** See attached plots.

**Equipment Used:** 1626-1464

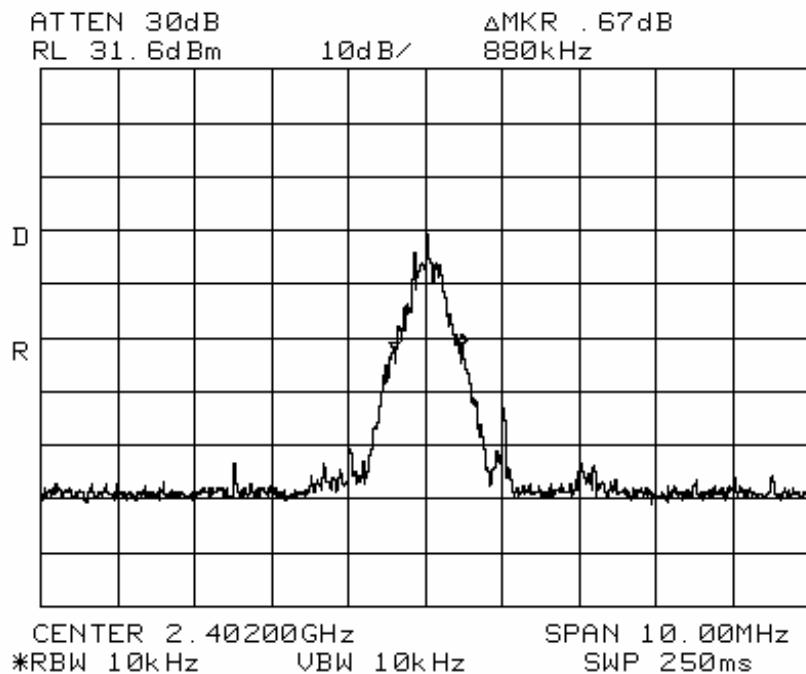
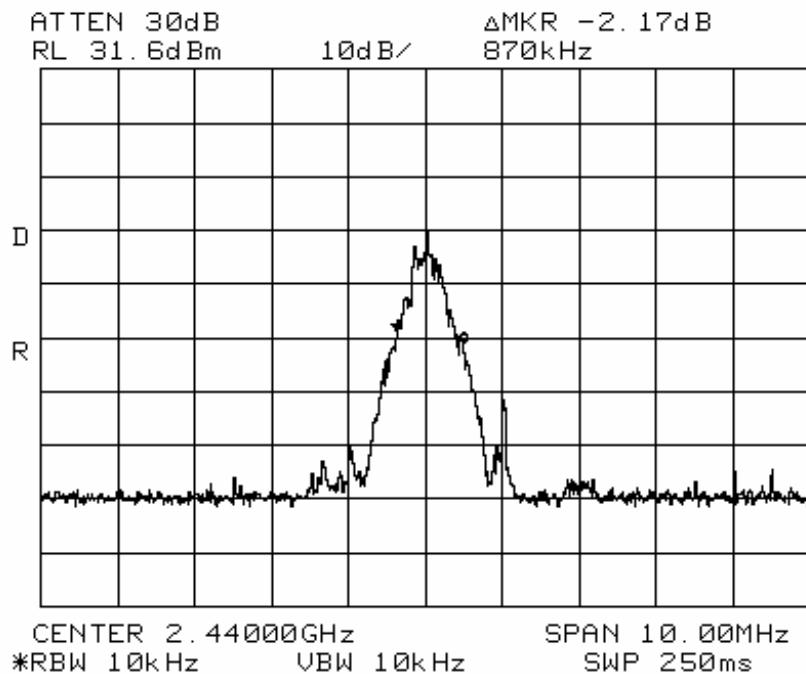
**Measurement Uncertainty:**  $\pm 1 \times 10^{-7}$  ppm

**Temperature:** 22 °C

**Relative Humidity:** 35 %

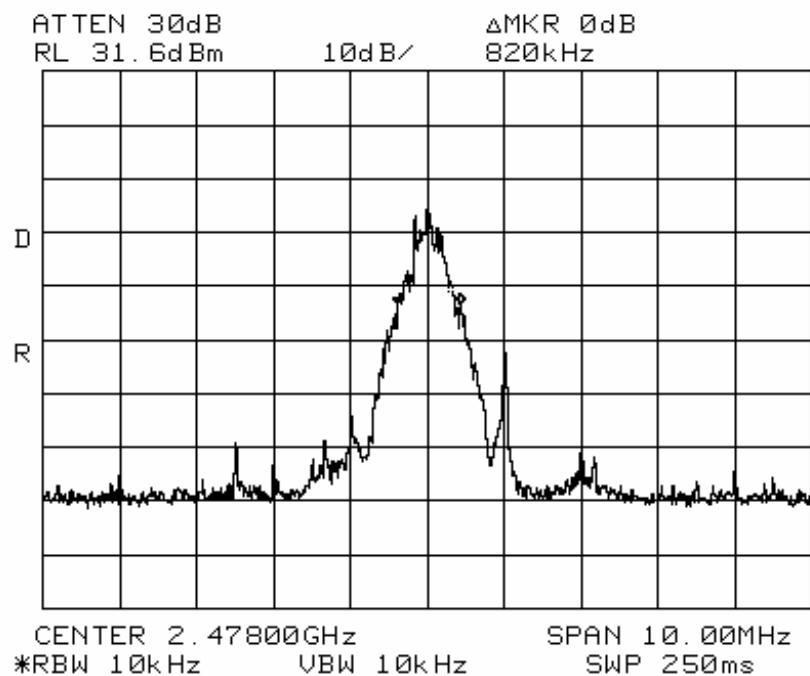
**Test Data – Occupied Bandwidth**

Lowest Channel

**Mid Channel**

**Test Data – Occupied Bandwidth**

Highest Channel



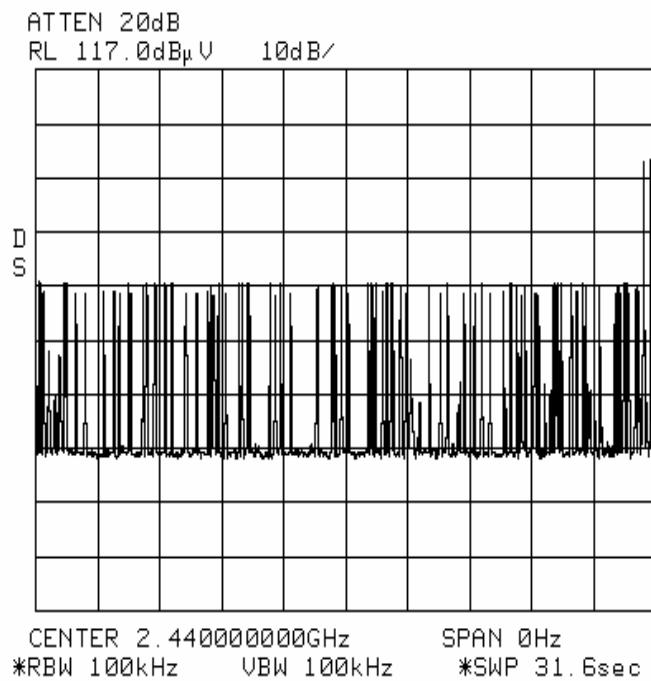
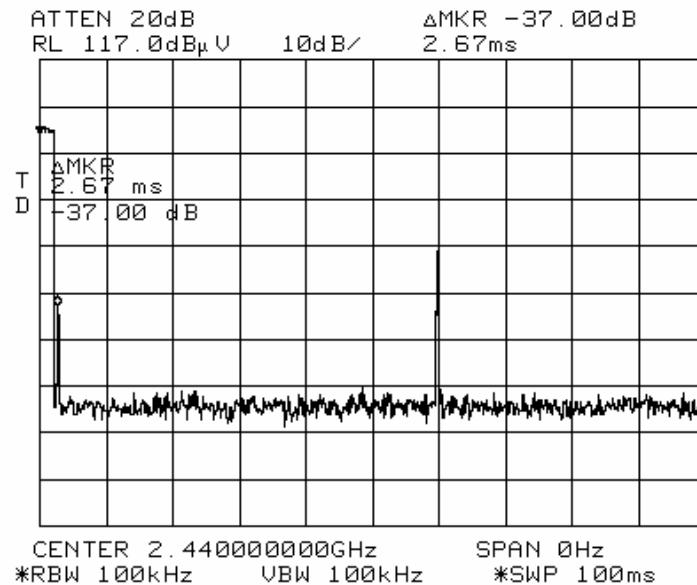
**Section 5. Time of Occupancy**

NAME OF TEST: Time of Occupancy	PARA. NO.: 15.247(a)(1)
TESTED BY: David Light	DATE: 20 July 2006

**Test Results:** Complies.**Measurement Data:** See attached plots  
Maximum Dwell Time On Any Channel: Approximately 267 mS within 31.6 second time frame. 100 hops at 2.67 mS each.**Equipment Used:** 1626-1464**Measurement Uncertainty:**  $\pm 1 \times 10^{-7}$  ppm**Temperature:** 22 °C**Relative Humidity:** 35 %

**Test Data – Time of Occupancy**

Approximately 100 hops

**One hop****Duty cycle calculation**

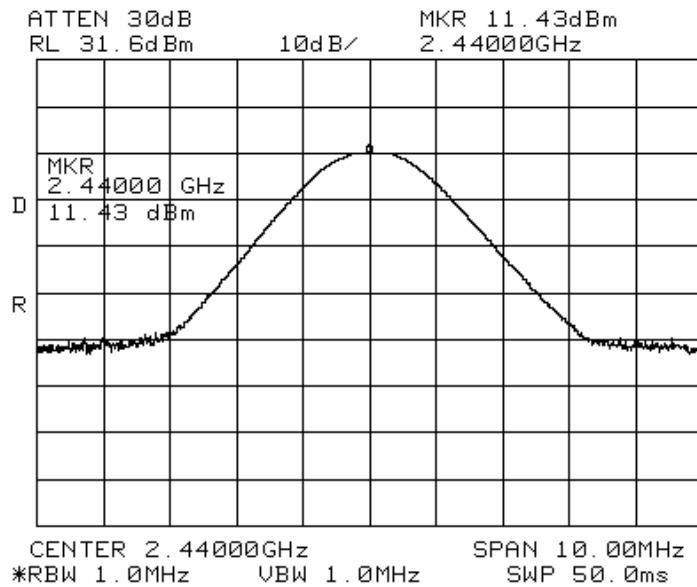
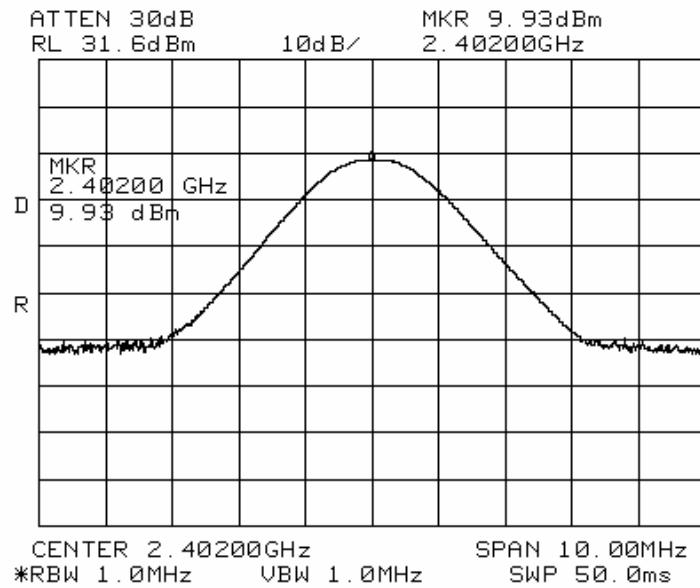
$$20 \log (\text{Time ON}(mS)/100 = 20 \log (2.67/100) = -31.5 \text{ dB}$$

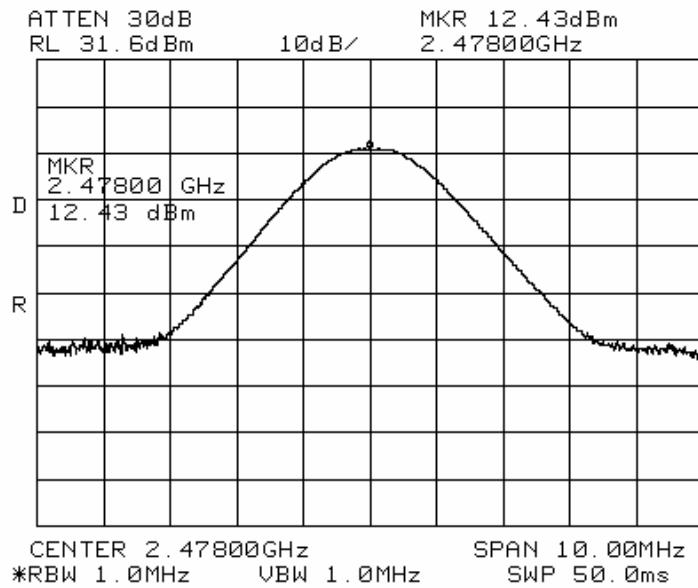
**Section 6. Peak Power Output**

NAME OF TEST: Peak Power Output	PARA. NO.: 15.247 (b)
TESTED BY: David Light	DATE: 20 July 2006

**Test Results:** Complies.**Measurement Data:** See attached plots.Detachable antenna?  Yes  No**Note:** TeraHop Networks provided a modified test sample with antenna connector for test purposes.**Equipment Used:** 1626-1464**Measurement Uncertainty:** +/- 1.7 dB**Temperature:** 22 °C**Relative Humidity:** 35 %

## Test Data – Peak Output Power



**Test Data – Peak Output Power**

**Note: This device was tested at +/- 15% input power with no variation in output power.**

**Section 7. Spurious Emissions (Antenna Conducted)**

NAME OF TEST: Spurious Emissions (Antenna Conducted)	PARA. NO.: 15.247(c)
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TESTED BY: David Light	DATE: 20 July 2006
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**Test Results:** Complies.

**Measurement Data:** See attached plots.

**Equipment Used:** 1626-1464

**Measurement Uncertainty:** +/- 1.7 dB

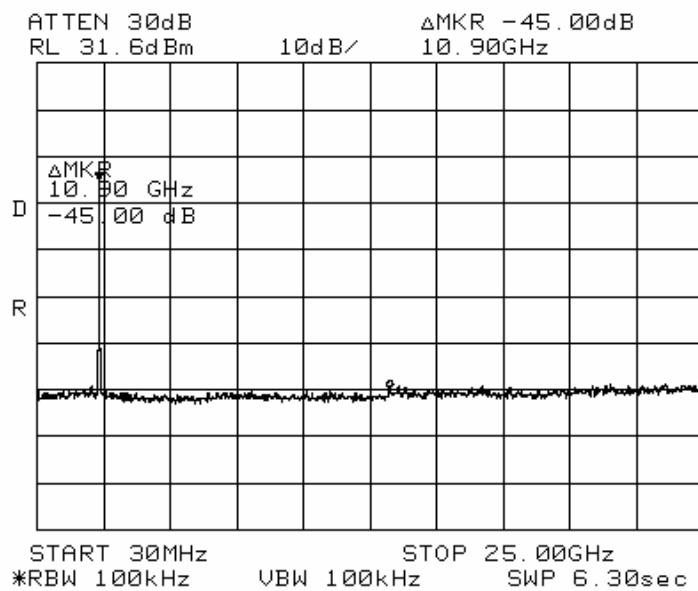
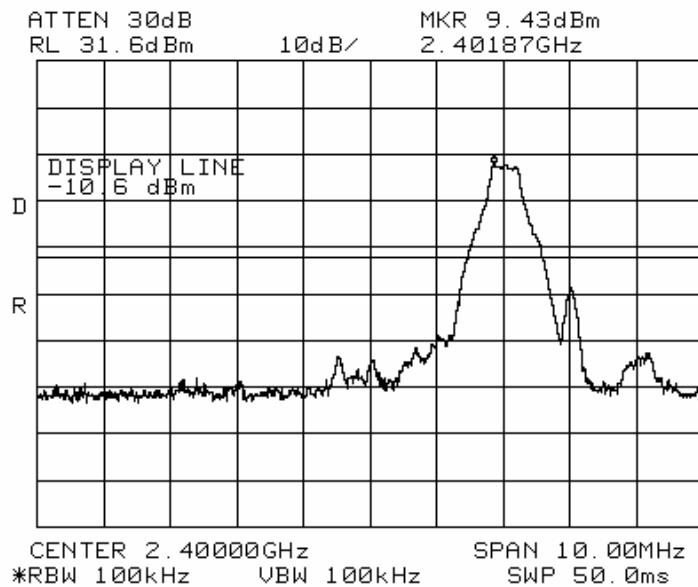
**Temperature:** 22 °C

**Relative Humidity:** 35 %

Note: The spectrum was searched thoroughly from 30 MHz to 25 GHz. The plots shown are indicative of the noise floor readings obtained.

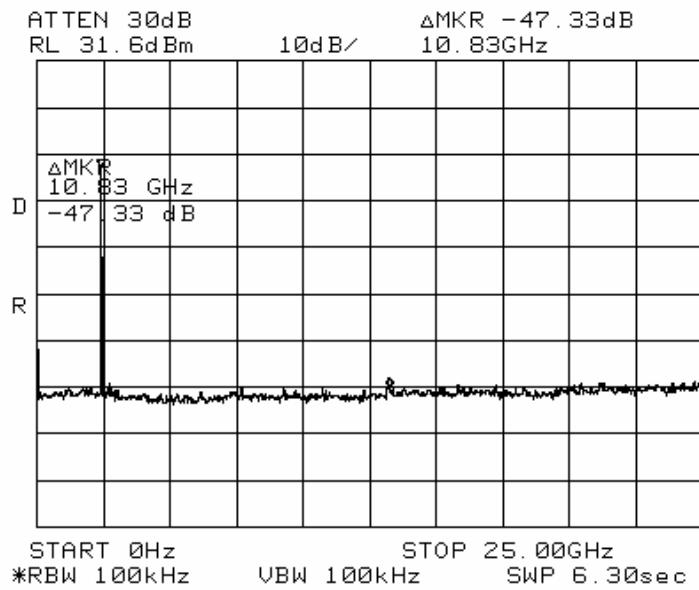
**Test Data – Spurious Emissions at Antenna Terminal**

Low Channel

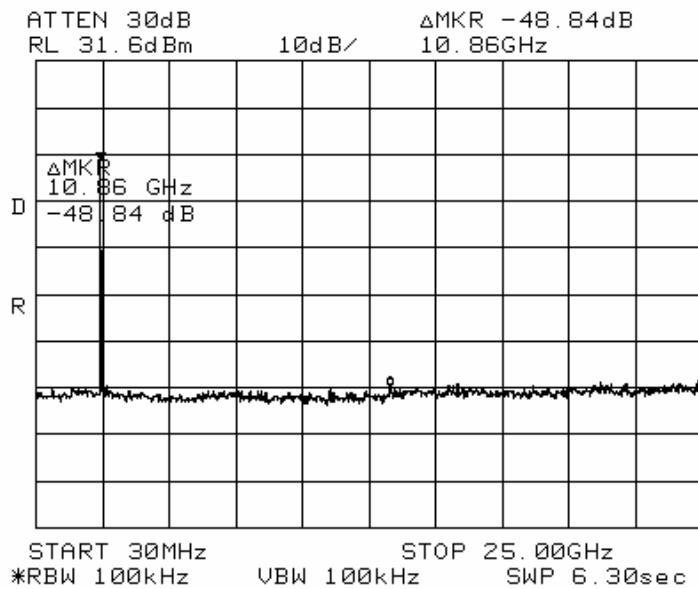


**Test Data – Spurious Emissions at Antenna Terminal**

Mid Channel



Highest Channel



**Section 8. Spurious Emissions (Radiated)**

NAME OF TEST: Spurious Emissions (Radiated)	PARA. NO.: 15.247(c)&15.209
TESTED BY: David Light	DATE: 20 July 2006

**Test Results:** Complies.**Measurement Data:** See attached table.**Duty Cycle Calculation:**Duty Cycle correction factor(dB) =  $20 \log (rf_{ON} \text{ in ms}/100\text{ms})$  $20 \log (2.67/100) = -31.5 \text{ dB}$ **Analyzer settings:**

Below 1000 MHz: RBW=VBW=100 kHz

Above 1000 MHz: RBW=VBW=1 MHz

**Equipment Used:** 1464-1484-1485-759-760-791-1016-993**Measurement Uncertainty:** +/- 3.7 dB**Temperature:** 22 °C**Relative Humidity:** 35 %

Notes:

1) This device was tested on three orthogonal axis'. Worst case (lying flat) data presented.

**Test Data - Radiated Emissions**

Lowest Channel

Measurement Data:			Reading listed by order taken.			Test Distance: 3 Meters					
#	Freq	Rdng	Cable Pre-A	Cable Horn	Duty Cycle	Dist	Corr	Spec	Margin	Polar	
	MHz	dB $\mu$ V	dB	dB	dB	Peak	Table	dB $\mu$ V/m	dB $\mu$ V/m	dB	Ant
1	4804.000	48.0	+1.0 +32.5	+3.2 +33.1	+0.0		+0.0	52.8	74.0	-21.2	Horiz
2	4804.000	48.0	+1.0 +32.5	+3.2 +33.1	+31.5	Avg.	+0.0	21.3	54.0	-32.7	Horiz
3	7206.000	51.0	+1.2 +32.1	+3.9 +35.8	+0.0	Peak	+0.0	59.8	74.0	-14.2	Horiz
4	7206.000	51.0	+1.2 +32.1	+3.9 +35.8	+31.5	Avg.	+0.0	28.3	54.0	-25.7	Horiz
5	9607.999	48.7	+1.1 +35.8	+4.7 +37.1	+0.0	Peak	+0.0	55.8	74.0	-18.2	Horiz
6	9607.999	48.7	+1.1 +35.8	+4.7 +37.1	+31.5	Avg.	+0.0	24.3	54.0	-29.7	Horiz
7	12010.000	43.8	+1.8 +35.3	+5.5 +39.6	+0.0	Peak	+0.0	55.4	74.0	-18.6	Horiz
8	12010.000	43.8	+1.8 +35.3	+5.5 +39.6	+31.5	Avg.	+0.0	23.9	54.0	-30.1	Horiz
13	4804.000	53.5	+1.0 +32.5	+3.2 +33.1	+0.0	Peak	+0.0	58.3	74.0	-15.7	Vert
14	4804.000	53.5	+1.0 +32.5	+3.2 +33.1	+31.5	Avg.	+0.0	26.8	54.0	-27.2	Vert
15	7206.000	50.8	+1.2 +32.1	+3.9 +35.8	+0.0	Peak	+0.0	59.6	74.0	-14.4	Vert
16	7206.000	50.8	+1.2 +32.1	+3.9 +35.8	+31.5	Avg.	+0.0	28.1	54.0	-25.9	Vert
17	9607.999	51.8	+1.1 +35.8	+4.7 +37.1	+0.0	Peak	+0.0	58.9	74.0	-15.1	Vert
18	9607.999	51.8	+1.1 +35.8	+4.7 +37.1	+31.5	Avg.	+0.0	27.4	54.0	-26.6	Vert
19	12010.000	45.0	+1.8 +35.3	+5.5 +39.6	+0.0	Peak	+0.0	56.6	74.0	-17.4	Vert
20	12010.000	45.0	+1.8 +35.3	+5.5 +39.6	+31.5	Avg.	+0.0	25.1	54.0	-28.9	Vert

**Test Data - Radiated Emissions**

Mid Channel

#	Freq MHz	Rdng dB $\mu$ V	Measurement Data: Reading listed by order taken.			Test Distance: 3 Meters				
			Cable Pre-A	Cable Horn	Duty Cycle	Dist	Corr	Spec	Margin	Polar
			dB	dB	dB	Peak	Table	dB $\mu$ V/m	dB $\mu$ V/m	dB
1	4880.000	49.8	+1.0	+3.3						-19.1
			+32.6	+33.4	+0.0					Vert
2	4880.000	49.8	+1.0	+3.3			Avg.	+0.0	23.4	54.0
			+32.6	+33.4	+31.5					-30.6
3	7320.000	51.0	+1.2	+4.0			Peak	+0.0	59.7	74.0
			+32.3	+35.8	+0.0					-14.3
4	7320.000	51.0	+1.2	+4.0			Avg.	+0.0	28.2	54.0
			+32.3	+35.8	+31.5					-25.8
5	9760.000	50.7	+1.1	+4.9			Peak	+0.0	57.8	74.0
			+36.1	+37.2	+0.0					-16.2
6	9760.000	50.7	+1.1	+4.9			Avg.	+0.0	26.3	54.0
			+36.1	+37.2	+31.5					-27.7
7	12200.000	45.2	+1.8	+5.5			Peak	+0.0	57.5	74.0
			+34.8	+39.8	+0.0					-16.5
8	12200.000	45.2	+1.8	+5.5			Avg.	+0.0	26.0	54.0
			+34.8	+39.8	+31.5					-28.0
13	4880.000	46.2	+1.0	+3.3			Peak	+0.0	51.3	74.0
			+32.6	+33.4	+0.0					-22.7
14	4880.000	46.2	+1.0	+3.3			Avg.	+0.0	19.8	54.0
			+32.6	+33.4	+31.5					-34.2
15	7320.000	49.3	+1.2	+4.0			Peak	+0.0	58.0	74.0
			+32.3	+35.8	+0.0					-16.0
16	7320.000	49.3	+1.2	+4.0			Avg.	+0.0	26.5	54.0
			+32.3	+35.8	+31.5					-27.5
17	9760.000	48.0	+1.1	+4.9			Peak	+0.0	55.1	74.0
			+36.1	+37.2	+0.0					-18.9
18	9760.000	48.0	+1.1	+4.9			Avg.	+0.0	23.6	54.0
			+36.1	+37.2	+31.5					-30.4
19	12200.000	44.5	+1.8	+5.5			Peak	+0.0	56.8	74.0
			+34.8	+39.8	+0.0					-17.2
20	12200.000	44.5	+1.8	+5.5			Avg.	+0.0	25.3	54.0
			+34.8	+39.8	+31.5					-28.7
										Horiz

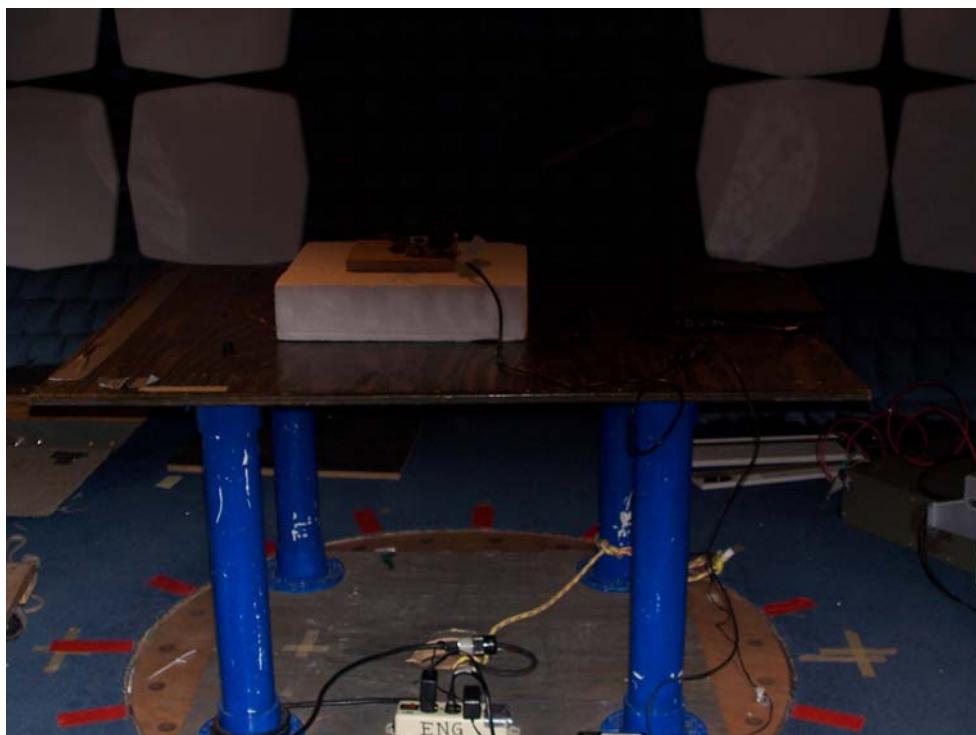
**Test Data - Radiated Emissions**

## Highest Channel

#	Freq MHz	Rdng dB $\mu$ V	Measurement Data: Reading listed by order taken.			Test Distance: 3 Meters					
			Cable Pre-A	Cable Horn	Duty Cycle	Dist Table	Corr	Spec	Margin	Polar	
1	2483.500	47.8	+0.8	+2.3		Peak	+0.0	47.1	74.0	-26.9	Horiz
			+32.8	+29.0	+0.0						
2	2483.500	47.8	+0.8	+2.3		Avg.	+0.0	15.6	54.0	-38.4	Horiz
			+32.8	+29.0	+31.5						
3	4956.000	44.2	+1.0	+3.3		Peak	+0.0	49.5	74.0	-24.5	Horiz
			+32.6	+33.6	+0.0						
4	4956.000	44.2	+1.0	+3.3		Avg.	+0.0	18.0	54.0	-36.0	Horiz
			+32.6	+33.6	+31.5						
5	7434.000	46.2	+1.2	+4.1		Peak	+0.0	54.9	74.0	-19.1	Horiz
			+32.5	+35.9	+0.0						
6	7434.000	46.2	+1.2	+4.1		Avg.	+0.0	23.4	54.0	-30.6	Horiz
			+32.5	+35.9	+31.5						
7	9912.001	47.3	+1.1	+5.0		Peak	+0.0	54.9	74.0	-19.1	Horiz
			+35.7	+37.2	+0.0						
8	9912.001	47.3	+1.1	+5.0		Avg.	+0.0	23.4	54.0	-30.6	Horiz
			+35.7	+37.2	+31.5						
9	12390.000	41.5	+1.8	+5.5		Peak	+0.0	54.4	74.0	-19.6	Horiz
			+34.5	+40.1	+0.0						
10	12390.000	41.5	+1.8	+5.5		Avg.	+0.0	22.9	54.0	-31.1	Horiz
			+34.5	+40.1	+31.5						
15	2483.500	50.8	+0.8	+2.3		Peak	+0.0	50.1	74.0	-23.9	Vert
			+32.8	+29.0	+0.0						
16	2483.500	50.8	+0.8	+2.3		Avg.	+0.0	18.6	54.0	-35.4	Vert
			+32.8	+29.0	+31.5						
17	4956.000	47.8	+1.0	+3.3		Peak	+0.0	53.1	74.0	-20.9	Vert
			+32.6	+33.6	+0.0						
18	4956.000	47.8	+1.0	+3.3		Avg.	+0.0	21.6	54.0	-32.4	Vert
			+32.6	+33.6	+31.5						
19	7434.000	49.3	+1.2	+4.1		Peak	+0.0	58.0	74.0	-16.0	Vert
			+32.5	+35.9	+0.0						
20	7434.000	49.3	+1.2	+4.1		Avg.	+0.0	26.5	54.0	-27.5	Vert
			+32.5	+35.9	+31.5						
21	9912.001	49.3	+1.1	+5.0		Peak	+0.0	56.9	74.0	-17.1	Vert
			+35.7	+37.2	+0.0						
22	9912.001	49.3	+1.1	+5.0		Avg.	+0.0	25.4	54.0	-28.6	Vert
			+35.7	+37.2	+31.5						
23	12390.000	43.3	+1.8	+5.5		Peak	+0.0	56.2	74.0	-17.8	Vert
			+34.5	+40.1	+0.0						
24	12390.000	43.3	+1.8	+5.5		Avg.	+0.0	24.7	54.0	-29.3	Vert
			+34.5	+40.1	+31.5						

The spectrum was searched from 30 MHz to 25 GHz

**Radiated Photographs**



## **Section 9. Test Equipment List**

Nemko ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1626	CABLE, 5 ft	MEGAPHASE 10311 1GVT4	N/A	CBU	N/A
1464	Spectrum analyzer	Hewlett Packard 8563E	3551A04428	01/14/05	01/15/07
1484	Cable	Storm PR90-010-072	N/A	08/26/05	08/26/06
1485	Cable	Storm PR90-010-216	N/A	08/26/05	08/26/06
993	Horn antenna	A.H. Systems SAS-200/571	XXX	08/01/05	08/02/07
759	ANTENNA, LOG PERIODIC	A.H. SYSTEMS SAS-200/510	556	02/13/06	02/13/07
760	Antenna biconical	Electro Metrics MFC-25	477	08/04/05	08/04/06
791	PREAMP, 25dB	Nemko USA, Inc. LNA25	398	04/20/06	04/20/07
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	04/20/06	04/20/07

**Nemko USA**

*EQUIPMENT RSI11*

FCC PART 15, SUBPART C

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

PROJECT NO.: 6L0287RUS1rev3

## **ANNEX A - TEST DETAILS**

**Nemko USA**

FCC PART 15, SUBPART C

*EQUIPMENT RSI11*

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

PROJECT NO.: 6L0287RUS1rev3

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.

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

**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 30 sec.
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 (10, 20, or 30 seconds).

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)(2)

**Minimum Standard:**

Frequency Band (MHz)	Maximum 20 dB Bandwidth
902 - 928	500 kHz
2400 - 2483.5	1 MHz
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 or spectrum analyzer with sufficient bandwidth 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(c)

**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 ( $\mu$ 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: &gt;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: &gt;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(c)

**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

**Nemko USA**

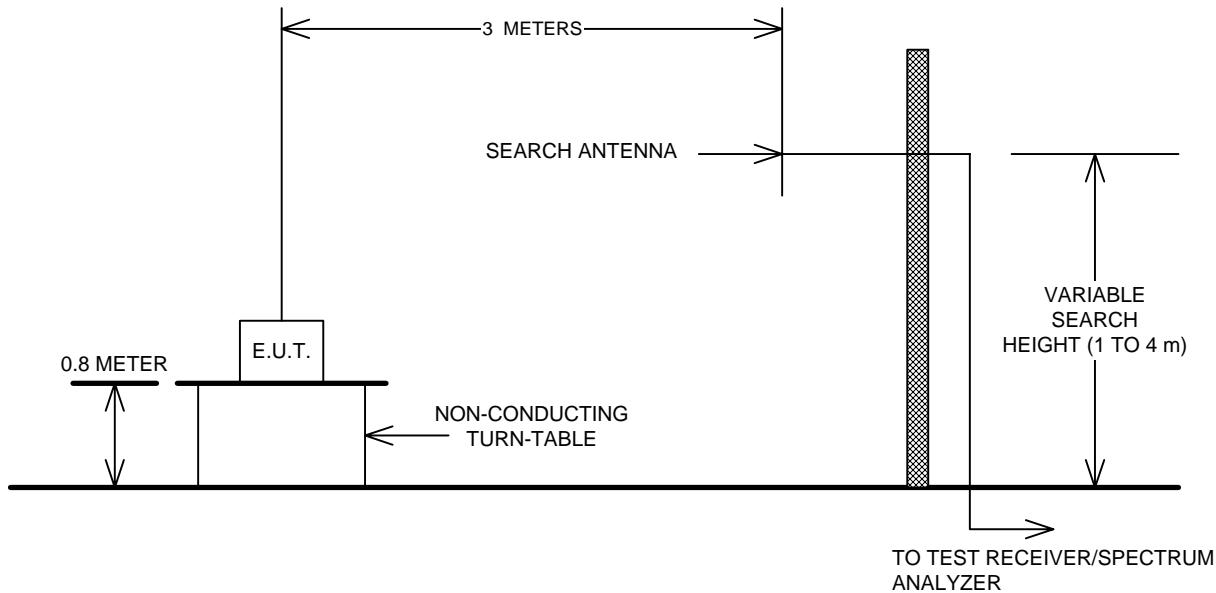
*EQUIPMENT RSI11*

FCC PART 15, SUBPART C

FREQUENCY HOPPING SPREAD SPECTRUM TRANSMITTER

PROJECT NO.: 6L0287RUS1rev3

**ANNEX B - TEST DIAGRAMS**

**Test Site For Radiated Emissions****Conducted Measurements**