EXHIBIT G: REPORT OF MEASUREMENTS [2.1033(B6)]

Test Report for FCC ID: FBRLCK-EI; IC:1859A-HEKEI

FCC Part 2.1031, Part 15 Subpart C(15.247); RSS-210, Issue 5

Report #0400732KC
Issued 03/14/05

FREQUENCY HOPPING 2.4GHZ TRANSCEIVER MODEL HEK-EI

Prepared for:

Mr. Harry Derks
Fleetwood Group Inc.
P.O. Box 1259
Holland, MI 49422-1259

Last Test Date(s): February 23, 2005

On the basis of the measurements made, the equipment tested is capable of operation, under normal use and maintenance, in compliance with the requirements of RSS-210 of the Industry Canada Rules.

Report prepared by:

Ted Chaffee, NCE

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Gordon Helm, NCE

Data recorded by:

Ted Chaffee, NCE
Test Engineer, AHD

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STATEMENTS CONCERNING THIS REPORT

NVLAP Accreditation: NVLAP Lab Code 200129-0
The scope of AHD accreditation is the test methods of:

IEC/CISPR 22:	Limits and methods measurement of radio disturbance characteristics of information technology equipment.
FCC Method – 47 CFT Part 15:	Digital Devices.
AS/NZS 3548:	Electromagnetic Interference – Limits and Methods of Measurement of Information Technology Equipment.
IEC61000-4-2 and Amend.1:	ElectroStatic Discharge Immunity
IEC61000-4-5:	Surge Immunity

Test Data:
This test report contains data included in the scope of NVLAP accreditation.

Subcontracted Testing:
This report contains data recorded at the University of Michigan Radiation Laboratory. The University of Michigan test facility is located at 8501 Beck Road, Belleville, Michigan 48111. This test facility has been fully described and accepted by the FCC and Industry Canada. This facility was utilized to measure emissions occurring at frequencies greater than 6GHz.

Test Traceability:
The calibration of all measuring and test equipment and the measured data using this equipment are traceable to the National Institute for Standards and Technology (NIST).

Limitations on results:
The test results contained in this report relate only to the Item(s) tested. Any electrical or mechanical modification made to the test item subsequent to the test date shall invalidate the data presented in this report. Any electrical or mechanical modification made to the test item subsequent to this test date shall require an evaluation to verify continued compliance.

Limitations on copying:
This report shall not be reproduced, except in full, without the written approval of AHD.

Limitations of the report:
This report shall not be used to claim product endorsement by NVLAP, FCC, or any agency of the US Government.

Statement of Test Results Uncertainty: Following the guidelines of NAMAS publication NIS81 and NIST Technical Note 1297, the Measurement Uncertainty at a 95% confidence level is determined to be: ± 1.4 dB

EXHIBIT 1: STATEMENTS OF ATTESTATION

Statement Attesting to the Accuracy of the Data

The measurements declared in this report were made in accordance with the procedures indicated and the energy levels emitted by this equipment were found to be within the limits applicable.

The technical test data reported herein was performed or supervised by a NARTE Certified Engineer at a NVLAP accredited facility who attests to the accuracy of the data presented and whose signature appears below.

On the basis of the measurements made, the equipment tested is capable of operation in compliance with the requirements of Part 15 of the FCC Rules under normal use and maintenance.

signed _____

Ted Chaffee, NCE
Technical Mgr. / Test Eng., AHD

NVLAP Accreditation

United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

DEPARTMENT OF COMMERCE ★ UNITED STATES OF AMERICA ★

Certificate of Accreditation

ISO/IEC 17025:1999
ISO 9002:1994

AHD (AMBER HELM DEVELOPMENT, L.C.)
DOWAGIAC, MI

is recognized by the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994. Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

June 30, 2005
Effective through

For the National Institute of Standards and Technology
NVLAP Lab Code: 200129-0

NVLAP-01C (06-01)

EXHIBIT 2: REPORT OF MEASUREMENTS [RSP-100 7.2(c), RSS-210 5.3, 6.1, 6.2.2]

Summary of Results:

1. This test series evaluated the Equipment Under Test to FCC Part 15, SubPart C, RSS -210..
2. The system tested is compliant to the requirement of CFR 47, FCC Part 15.247, SubPart C, RSS-210 for Frequency Hopping operation in the 2400-2483.5MHz frequency band.
3. The equipment under test was received on November 11, 2004 and this test series commenced on November 11, 2004.
4. The frequencies selected for final evaluation include 2401MHz, 2437MHz, and 2475MHz. This is in accordance with 47 CFR 15.31(m). The product is designed for 2401MHz to be the lowest frequency transmitted and 2475MHz to be the highest frequency transmitted.
5. The product is powered using two AA 1.5vdc batteries. There was no power line conducted evaluation.
6. The occupied bandwidth was greatest while observing 2401MHz. Using 10KHzRBW, the 99% bandwidth measured 755KHz.
7. The Band Edge measurements: All spurious below the lower band edge of 2400MHz and above the upper band edge of 2483.5MHz are greater than 20dB below the level of the fundamental carrier.
8. The output level of the fundamental was measured for 2401MHz, 2437MHz, and 2475MHz. The evaluation showed the emission nearest the limit occurred while operating at 2437MHz. The EUT was positioned on the 'end' and the receive antenna oriented in the horizontal polarization. This signal was measured with a Peak detection and the calculated EIRP was determined to be 27.0dB below the peak power limit of 1 Watt.
9. The evaluation of the field strength levels of the transmitter harmonics showed the emission nearest the limit occurred while operating at 2437MHz. This emission was measured using Peak detection and corrected for the 'hopping' duty cycle. The emission at 14622MHz was calculated to be 13.9dB below the average limit of 54dBuV/m (500uV/m).
10. The field strength emission levels local oscillator and harmonics were below the background noise floor of the measurement system. No emissions were detected.
11. The spurious emission level nearest the limit was measured while in transmitting mode. This emission, at 2335MHz, was determined to be 44.6dBuV/m Average which is 9.4dB below the limit of 54dBuV/m (500uV/m). The receive antenna was horizontally polarized.

Changes made to achieve compliance

1. None

Emission Designation [TRC-43]

The emission designation applicable to this product is 755KF1D.

The "755K" is the highest measured occupied bandwidth of the device.
"F" designates the frequency modulation.
"1" designates the modulation as single channel digital information.
"D" designates the modulation as data transmission.

Manufacturer/Applicant [2.1033(b1)]

The manufacturer and applicant:

FLEETWOOD GROUP INC.
PO Box 1259
Holland, Michigan USA 49422-1259
Alternate address
11832 James Street
Holland, Michigan USA 49424

Standards Applied to Test:

ANSI C63.4; AHD test procedures TP0101-01, TP0102-01
CFR47 FCC Part 2, Part 15, SubPart C, 15.247 Intentional Radiator; SubPart B, Digital Device
RSS-102, RSS-210 Issue 5, Amendment Nov.30,2002, ICES-00 Issue 3

Test Methodology: [RSS-210 5.3, 6]

The system was placed at the center of the table 80cm above the ground plane pursuant to ANSI C63.4 for stand-alone equipment. The setup pictures in this report indicate the configuration of testing for this product.

The product was evaluated for emissions in both transmit and a receive modes. The transmitted power output is set in firmware and the user does not have access to this location. The receiver uses a 300MHz IF with the local oscillator 300MHz above the transmit frequency.

The antenna is a foil trace on the circuit board. The antenna can not be adjusted by the user.

Most of the evaluations in transmit mode were performed with the frequency hopping function disabled. In this mode the EUT was setup up to transmit continuously, with modulation, at the three test frequencies. The measurements of the fundamental were recorded with Peak detection. The measurements of the fundamental frequencies were compared to the Peak power limit of section 15.247. The measurements of the fundamental harmonics, greater than 1GHz, were recorded with peak detection and adjusted using the duty cycle averaging. This final result was compared to the Average limits of Section 15.35.

In receive mode evaluation, the EUT was setup to receive at each of the three test frequencies; (2401MHz, 2437MHz, and 2475MHz). An external RF signal generator was used to provide a transmitting signal to the receiver.

The line conducted emission testing was not performed on this product. The product is powered from two AA 1.5Volt batteries only. The batteries were replaced during the course of testing to maintain battery ‘freshness’.

Radiated

The system was placed upon a 1 x 1.5 meter non-metallic table 80cm above the open field site ground plane in the prescribed setup per ANSI C63.4.

The table sits upon a remote controlled turntable. The receiving antenna, located at the appropriate standards distance of 3 or 10 meters from the table center, is also remote controlled.

The principle settings of the EMI Receiver for radiated testing include:

IF Bandwidth: 120KHz for frequencies less than 1GHz.
1 MHz for frequencies greater than 1GHz.

Detector Function: Peak Mode for transmitter fundamental.
Quasi-Peak for emissions < 1000MHz
Average for emissions > 1000MHz

Occupied Bandwidth settings:
RBW: 10KHz
VBW: 30KHz

At frequencies up to 1000MHz a BiconiLog broadband antenna was used for measurements.

At frequencies above 1000MHz a double-ridge Horn broadband antenna was used for measurements.

During the transmitter evaluation the EUT was transmitting continuously.

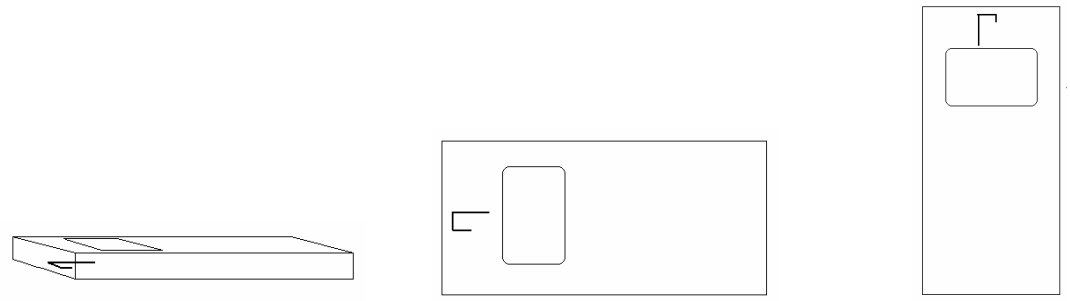
The turntable was rotated 360 degrees and the receiving antenna height varied from 1 to 4 meters to search out the highest emissions.

The final measurements were made at the lowest transmit frequency (2401MHz), a mid band frequency (2438MHz), and the highest transmit frequency (2475MHz) pursuant to the requirements of 47CFR 15.31(m). Measurements were recorded with the receive antenna in vertical and horizontal positions.

The unit was evaluated up to the tenth harmonic of the transmit fundamental and up to 5GHz for other spurious signals.

The orthogonal positions of EUT are:

Flat Side End



Formulas and Sample Calculations:

THE HP8546A EMI Receiver has stored in memory the antenna and coax correction factors used in this test. The resultant Field Strength (FS) in dBuV/m presented by the HP8546A is the summation in decibels (dB) of the Received Level (RF), the Antenna Correction Factor (AF), and the Cable Loss Factor (CF).

Formula 1: Field Strength FS(dBuV/m) = RF(dBuV) + AF(dB/m) +CF(dB)

With the EUT transmitting the resultant Field Strength measurement is recorded using the peak hold detector of the HP8546A.

Formula 2: EIRP

$$PG = \frac{(E*d)^2}{30}$$

E = 10^(FS(dBuV/m)/ 20) / 1000000
d = 3 meter

Where the average signal strength is to be determined, the recorded level is further corrected, by calculation, using a duty cycle correction factor. The duty cycle factor is determined by:

Formula 3: Duty Cycle factor DC factor (dB) = 20*LOG(dwell time / 100mSec).

When the duty cycle is determined to be less than 10%, the duty cycle factor to apply is determined to be 20dB. [duty cycle factor(dB) = 20*Log(0.1) = -20.0 dB]

Where it was necessary to move the EUT to 1 meter distance to take measurements a 'dB' factor which adjusts for this distance variance is used before comparing the emission level to the FCC limits. This factor is determined by the following formula.

Formula 4: Distance factor(dB) = 20*Log(3meter/1meter) = 20*Log(3) = 9.54dB.

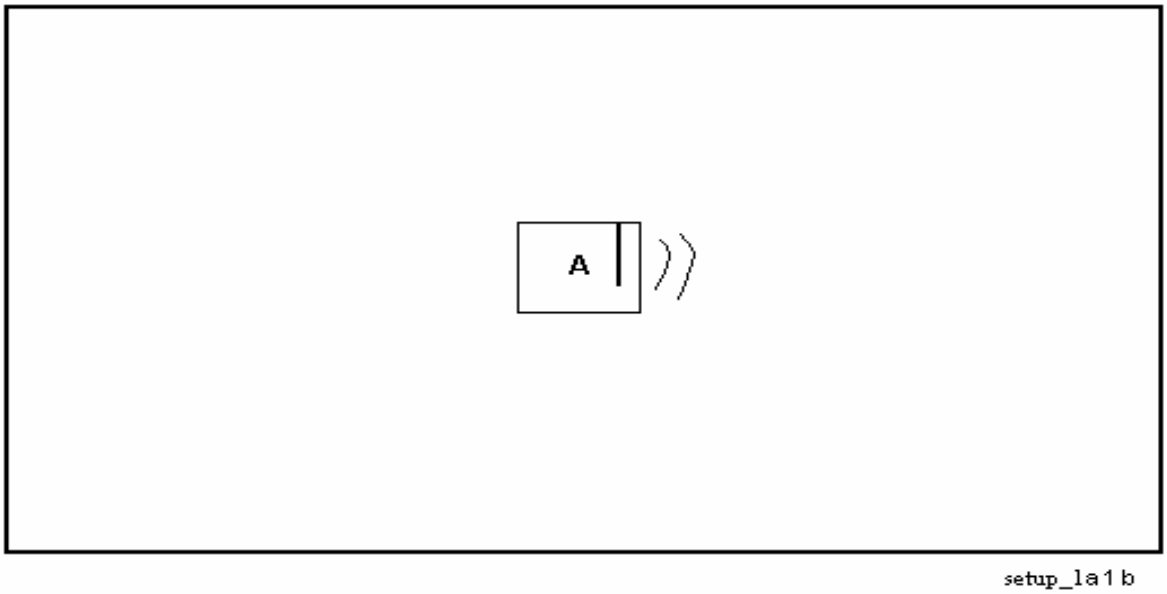
Tested Configuration /Setup: [RSS-210 5.3, 6]

Support Equipment & Cabling

Setup Diagram Legend	Description	Model	Serial No. / Part No.	EMC Consideration
A	[EUT] eInstruction cpsHE Keypad Transceiver	[Fleetwood Group] HEK-EI	preproduction	FCC ID: FBRLCK-EI IC:1859A-HEKEI

Setup Diagram

Note: Setup photographs are located in Attached Electronic File, Exhibit E.

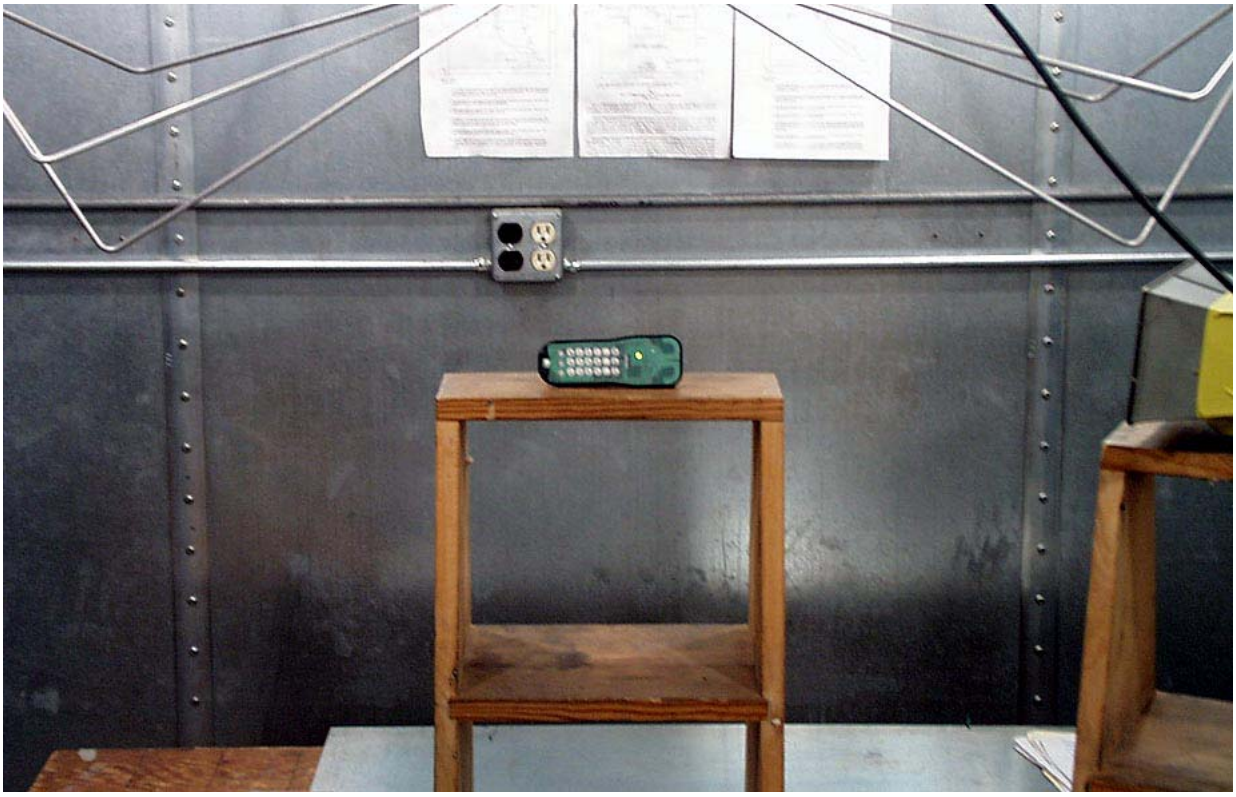


BASIC EUT SETUP
(Legend designation is above)

Setup Pictures

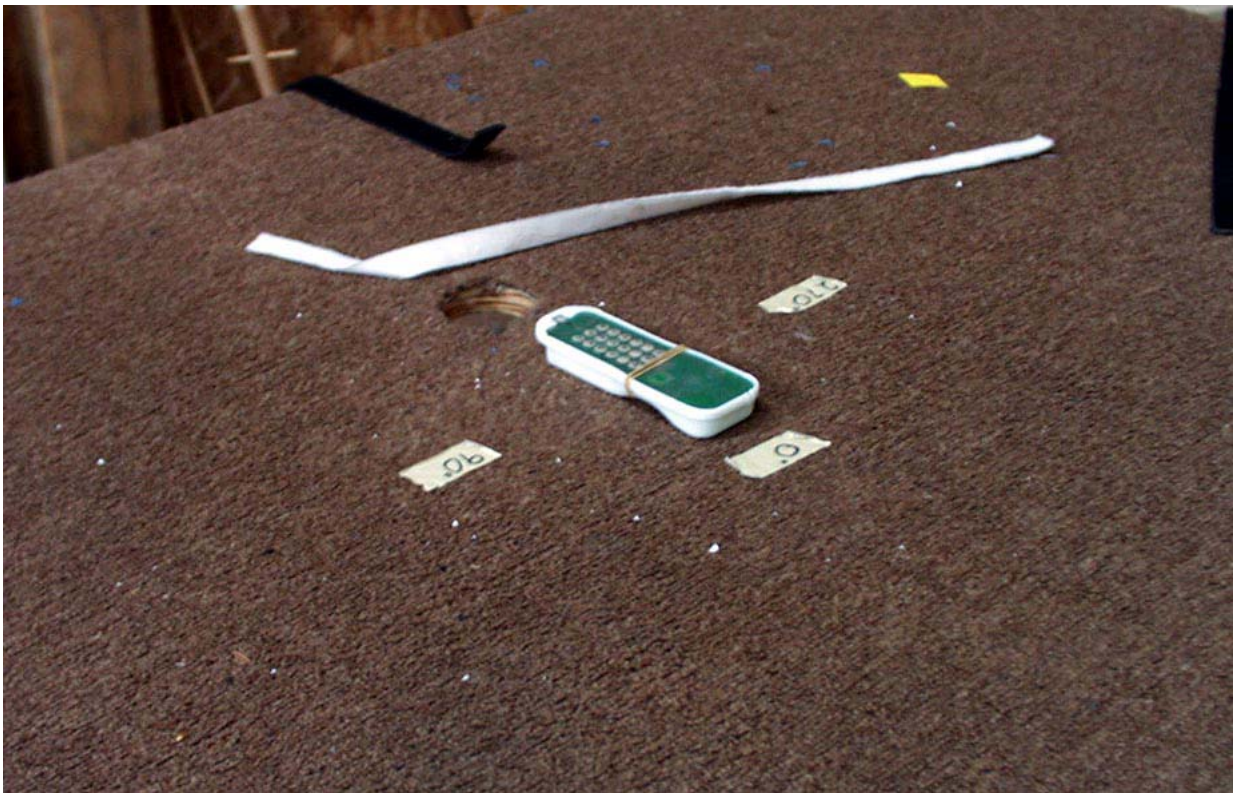
Setup Block Diagram this page
Setup for prescan page 12
Setup for direct connected evaluation page 12
Radiated Setup – Flat orientation page 13
Radiated Setup – End and Side orientations page 14

SETUP POSITION FOR THE PRE-SCAN

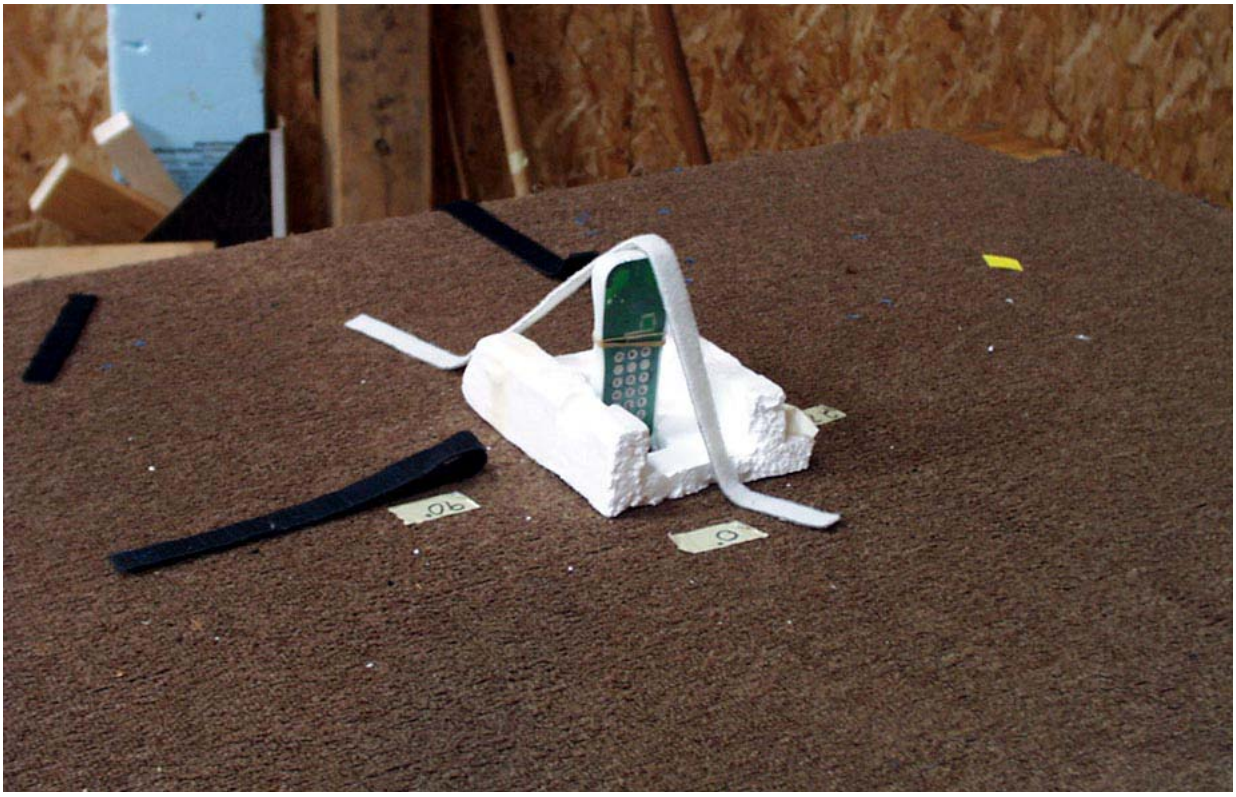


SETUP FOR THE DIRECT CONNECTED EVALUATIONS

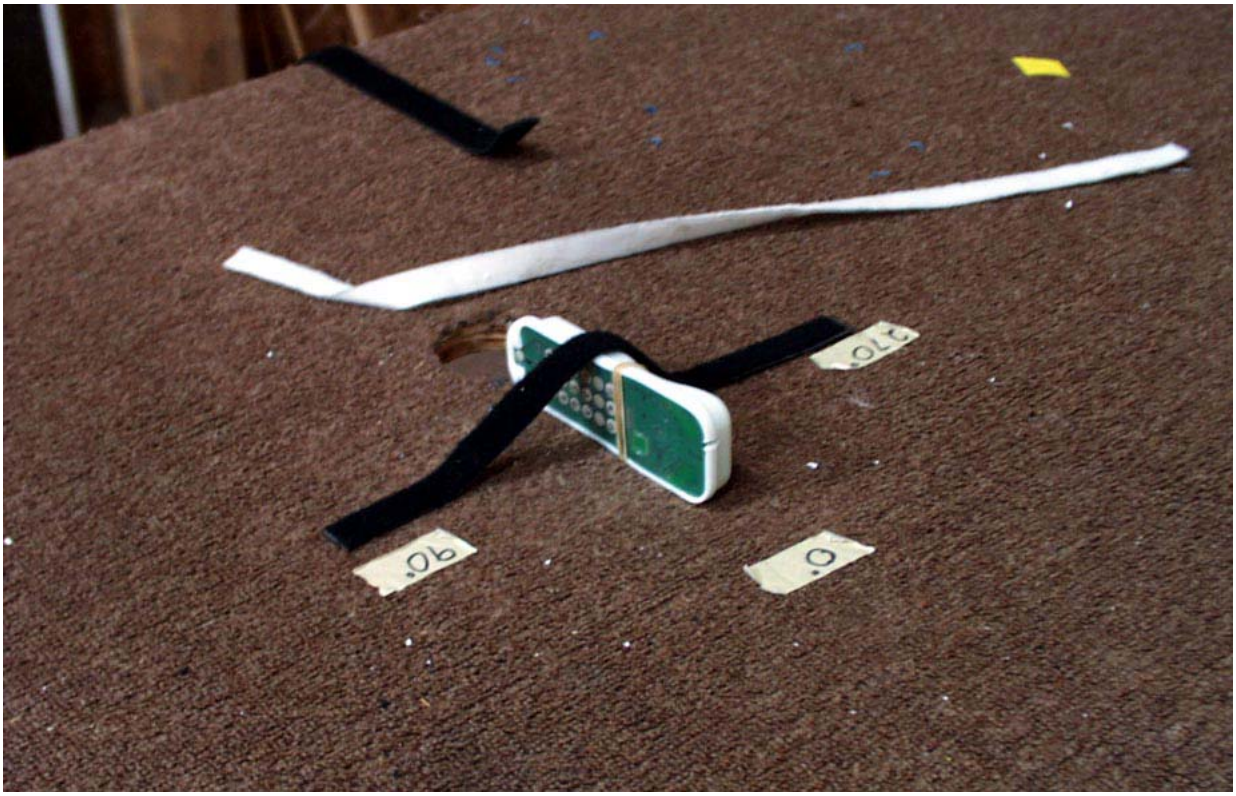
RADIATED SETUP – FLAT



RADIATED SETUP – END



RADIATED SETUP – SIDE



Test Data [RSS-210 5.3]

Antenna Characteristics [15.203, 15.204]

The radiating element 'antenna' is a foil trace on the printed circuit board. The user can not adjust nor replace the trace antenna.

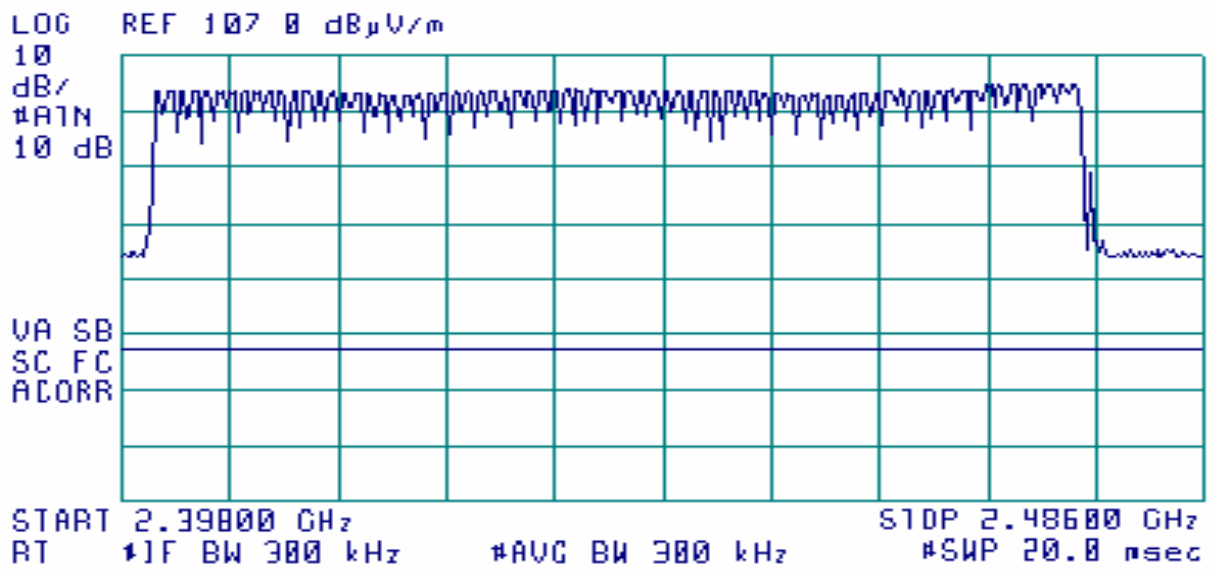
Modulation Characteristics

The transmitter is FSK modulated.
Modulation. F1 represents the bit "1", F2 represents the bit "0". F1 and F2 are separated by approximately 300KHz. Data rate is 256KB/sec

Frequency Hopping Characteristics

Number of Hopping Frequencies [15.247a1i; 6.2.2o]

Seventy Five (75) frequencies from 2401MHz through 2475MHz are available for the keypad transceiver to utilize. The base initiates the communications to the associated keypad units. Refer to 'file EINK_TechDesc.pdf' for a detailed operational description.



Plot scan of the FHSS profile. Seventy five transmitted frequencies can be discerned.

Occupied bandwidth [15.247a1i; 6.2.2o]

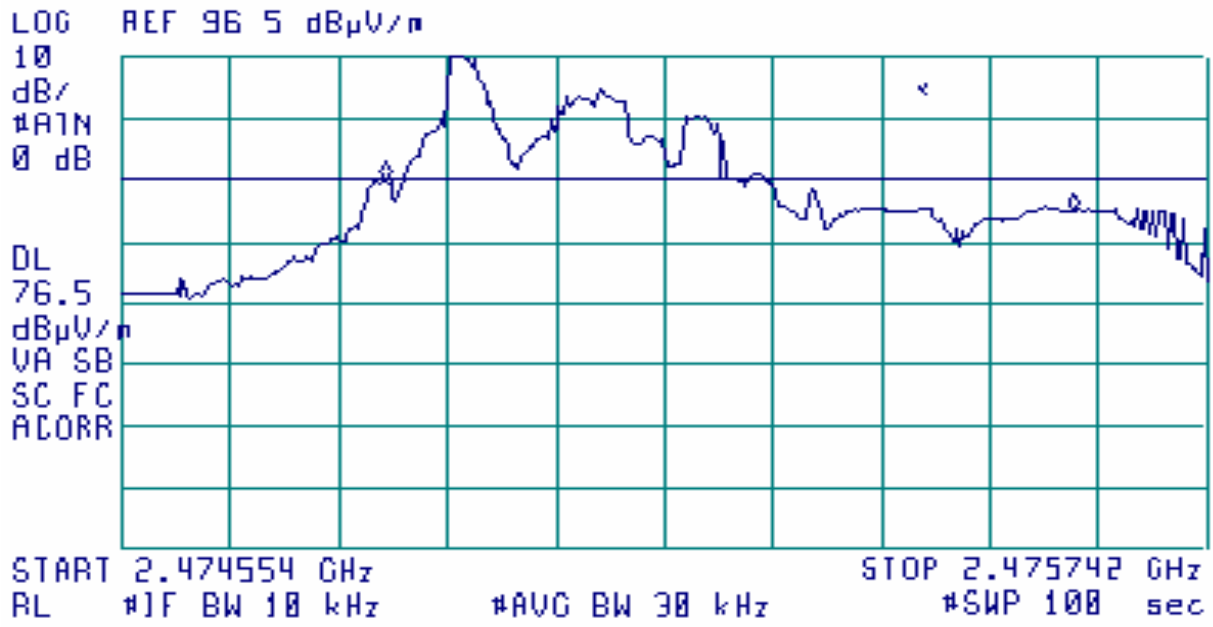
The occupied bandwidth was measured initially with the unit hopping function disabled. The transmitter is FSK modulated.

Two methods were used to determine occupied bandwidth; 20dB method and 99% method. The 99% method is reported here. The measurement procedure of both methods are described in the paper "A Discussion on the Measurement of Occupied Bandwidth" authored by Brian Kasper.

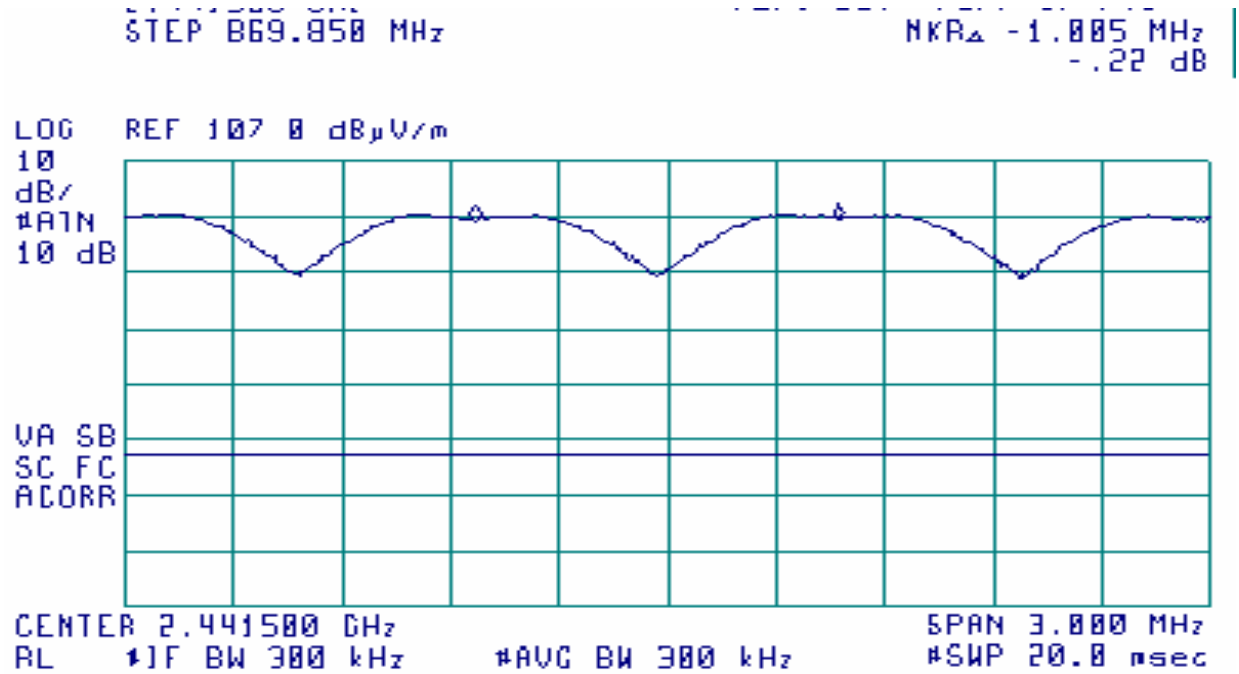
The 99% method utilized a routine which had been programmed into the HP8546A EMI Receiver by the manufacturer.

Fundamental (MHz)	Measured 99% Bandwidth 10KHzRBW	LIMIT RSS-210(a3)
2401	755 KHz	1000 KHz
2437	433 KHz	1000 KHz
2475	528 KHz	1000 KHz

<u>This chart shows greatest measured bandwidth signal.</u>

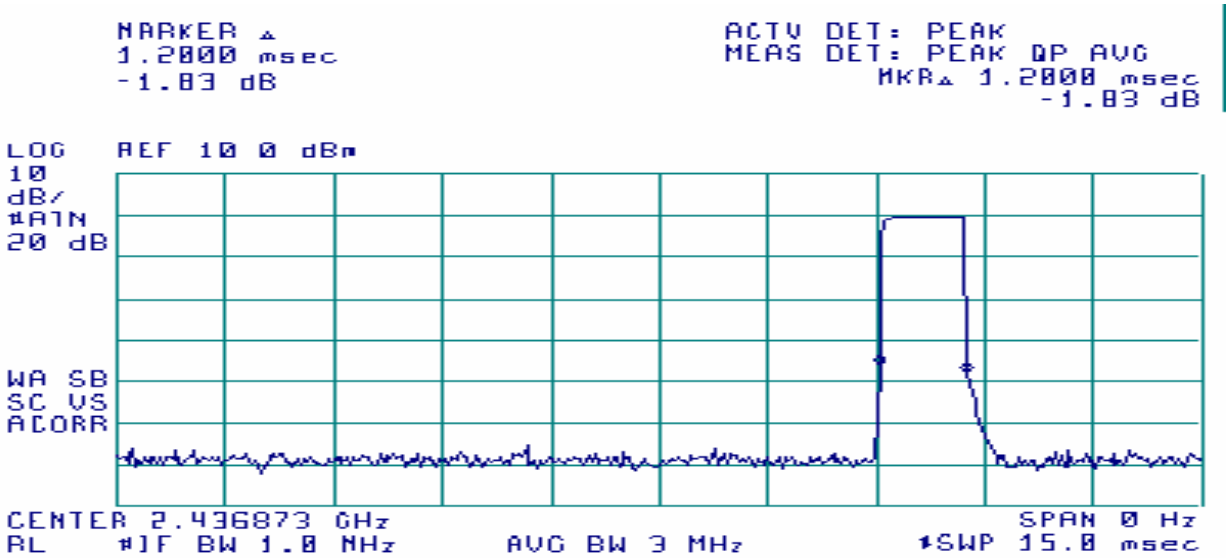


Carrier Frequency Separation [15.247a1; 6.2.2o]



Each Hopping channel is separated by 1000KHz. This is greater than the minimum requirement of 25KHz or 20dB bandwidth.

Carrier Frequency Dwell Time [15.247a1i]



The Dwell Time of each hopping frequency is 1.2mSec. Refer to Exhibit B 'operational description' for a table showing dwell times of the system operations.

Band Edges [15.247(c); 6.2.2o]

The emissions outside the 2400-2483.5MHz band are to be either 20dB below the level of the fundamental or the limits of section 15.209.

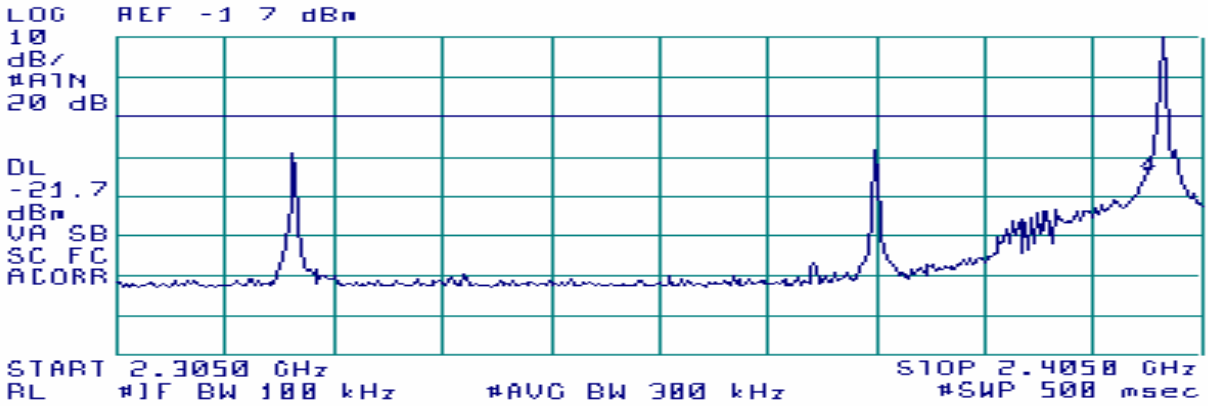
MEASUREMENT PROCEDURE:

1. The EUT output was directly connected to the spectrum analyzer.
2. The spectrum analyzer bandwidth settings are 100KHz RBW, 300KHz VBW.
3. The peak of the fundamental is determined.
4. A display line is set on the spectrum analyzer 20dB below the fundamental level.
5. The remainder of the spectrum is observed for any emissions that are greater than the 20dBc display line.

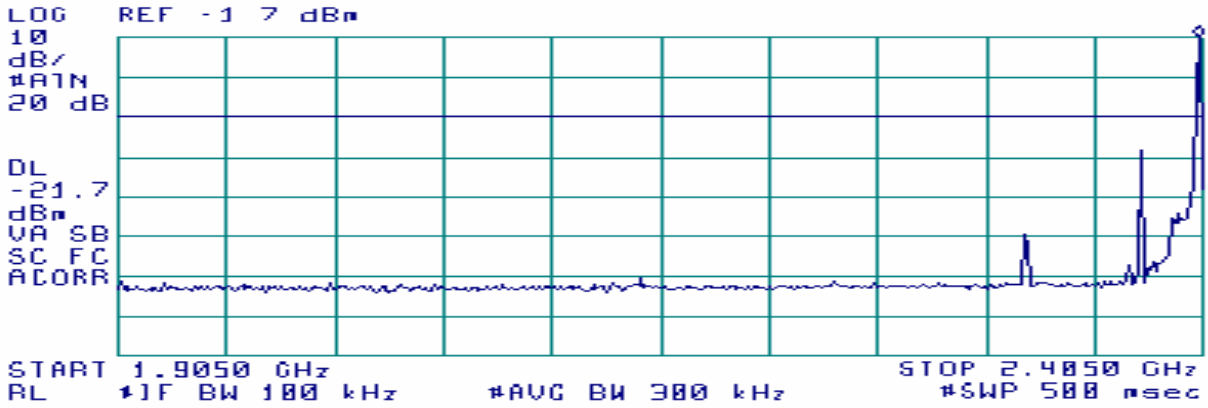
Using 100KHz resolution bandwidth, the spurious emissions outside the 2400-2483.5MHz band that is produced by the intentional radiator are greater than 20dB below the level of the fundamental frequency.

The plots on the following pages show the spectrum pattern of the EUT emissions.

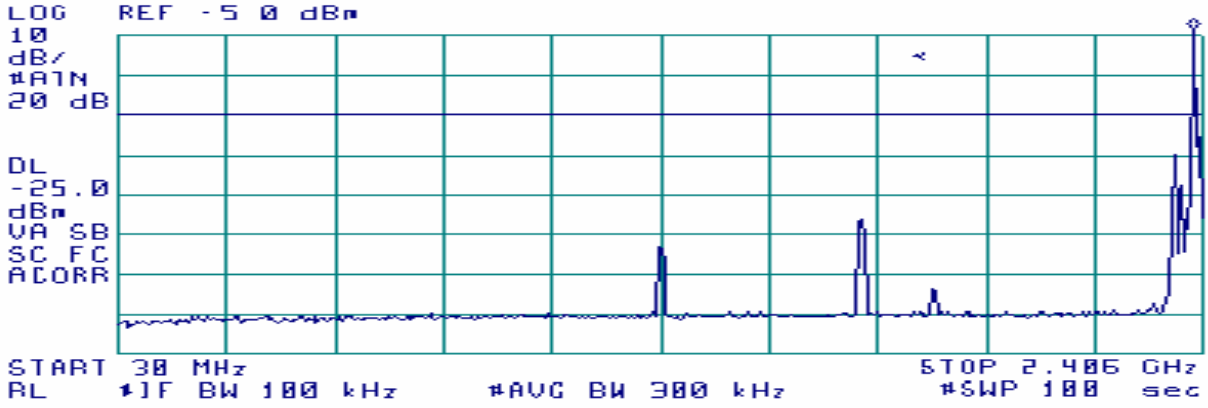
2400MHz Band Edge. EUT transmitting at lowest frequency of 2401MHz.
Hopping Disabled
100MHz span



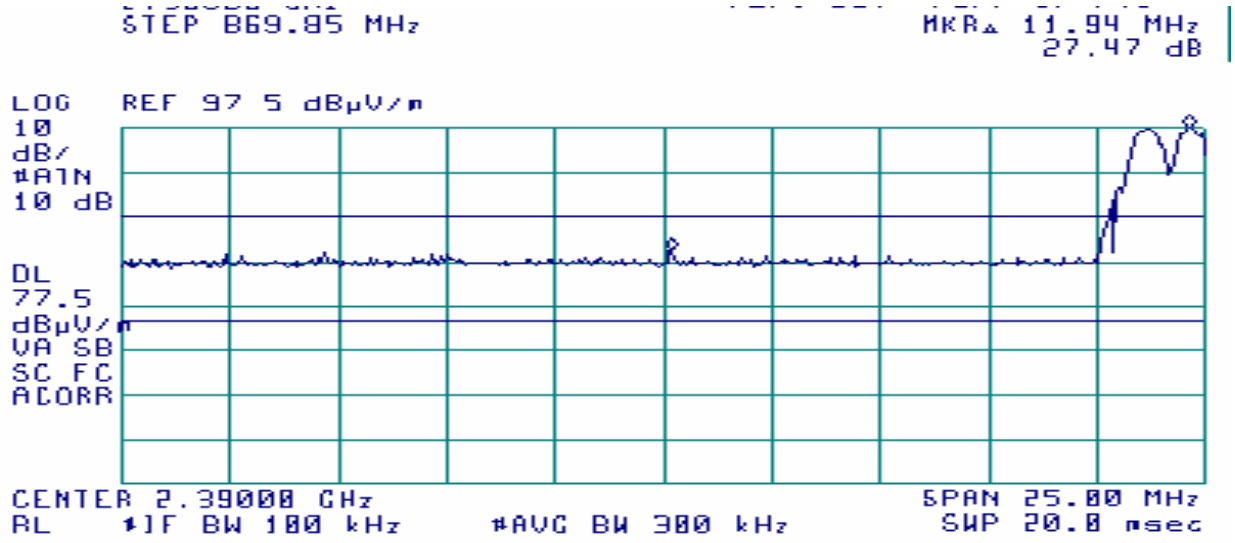
500MHz span



30MHz – 2405MHz span



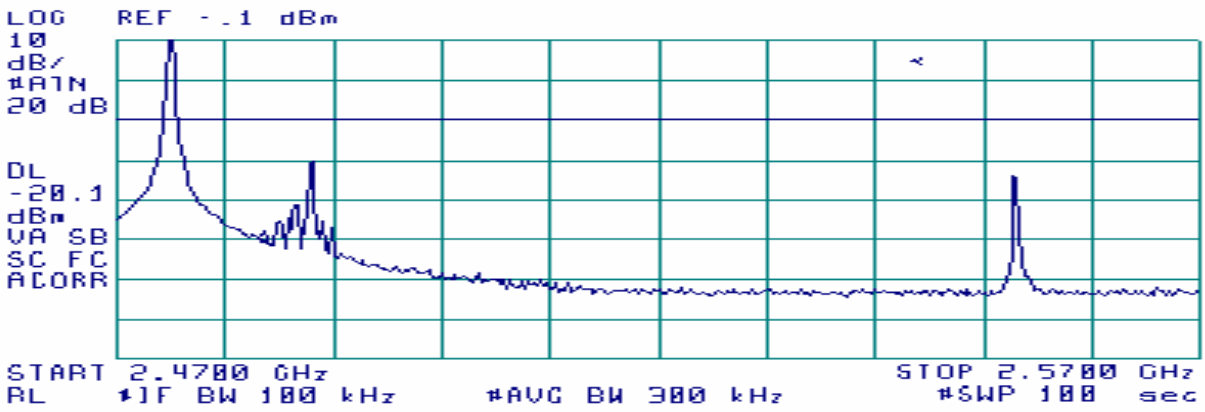
Hopping Enabled



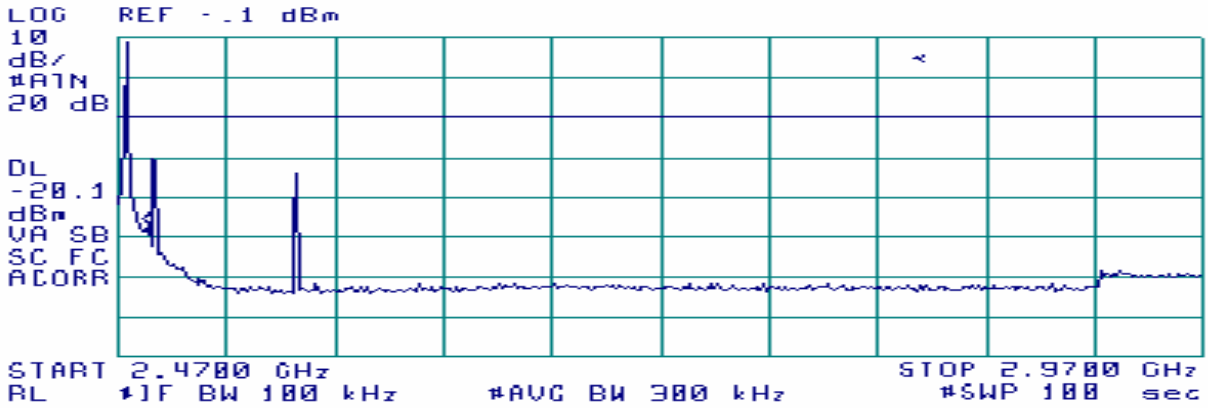
The spurious emissions are greater than -20dBc. The measurements are recorded as spurious emissions later in this report.

2483.5MHz Band Edge. EUT transmitting at highest frequency of 2475MHz.

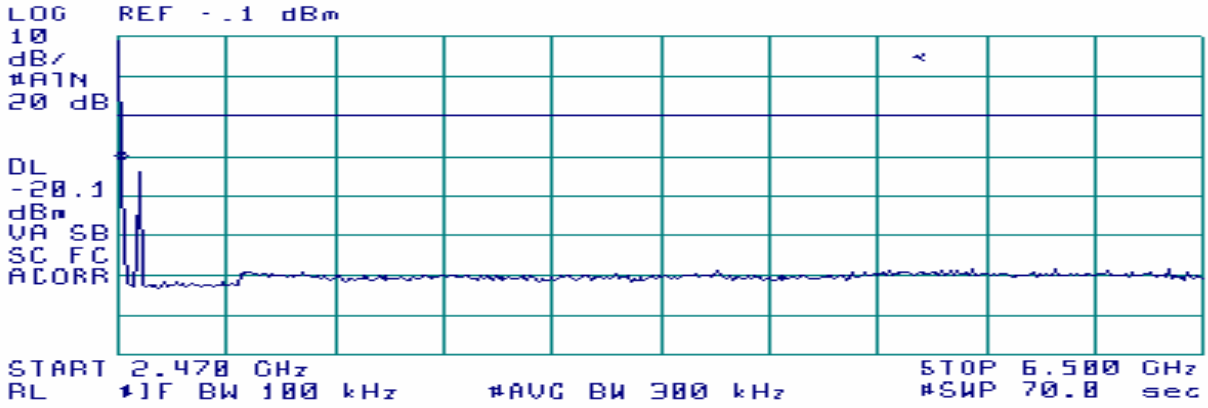
Hopping Disabled
100MHz span



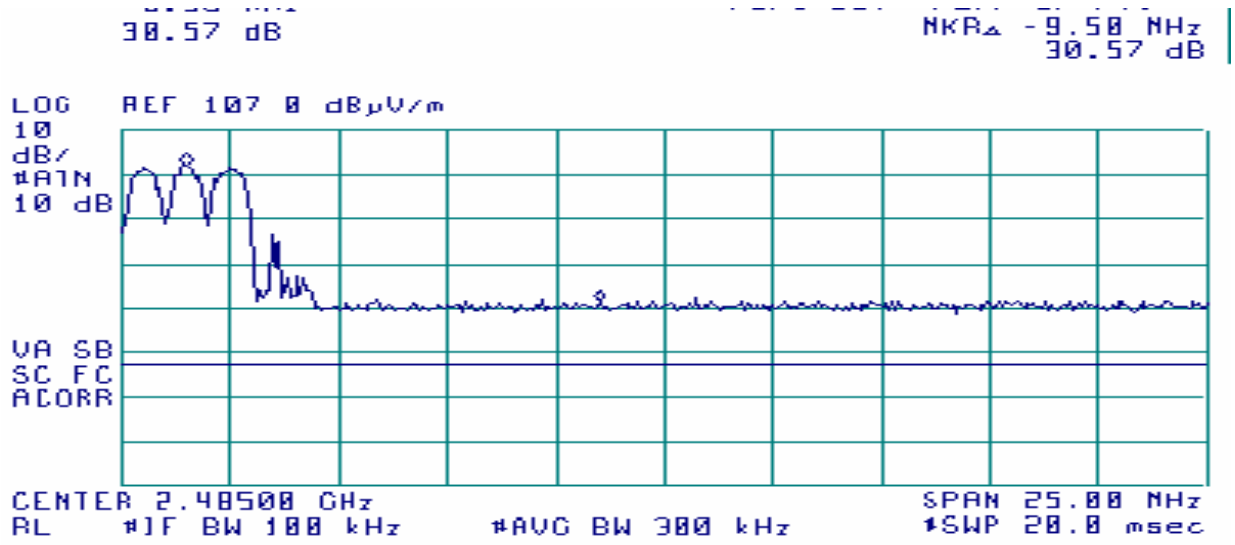
500MHz span



2.47 – 6.5GHz span



Hopping Enabled

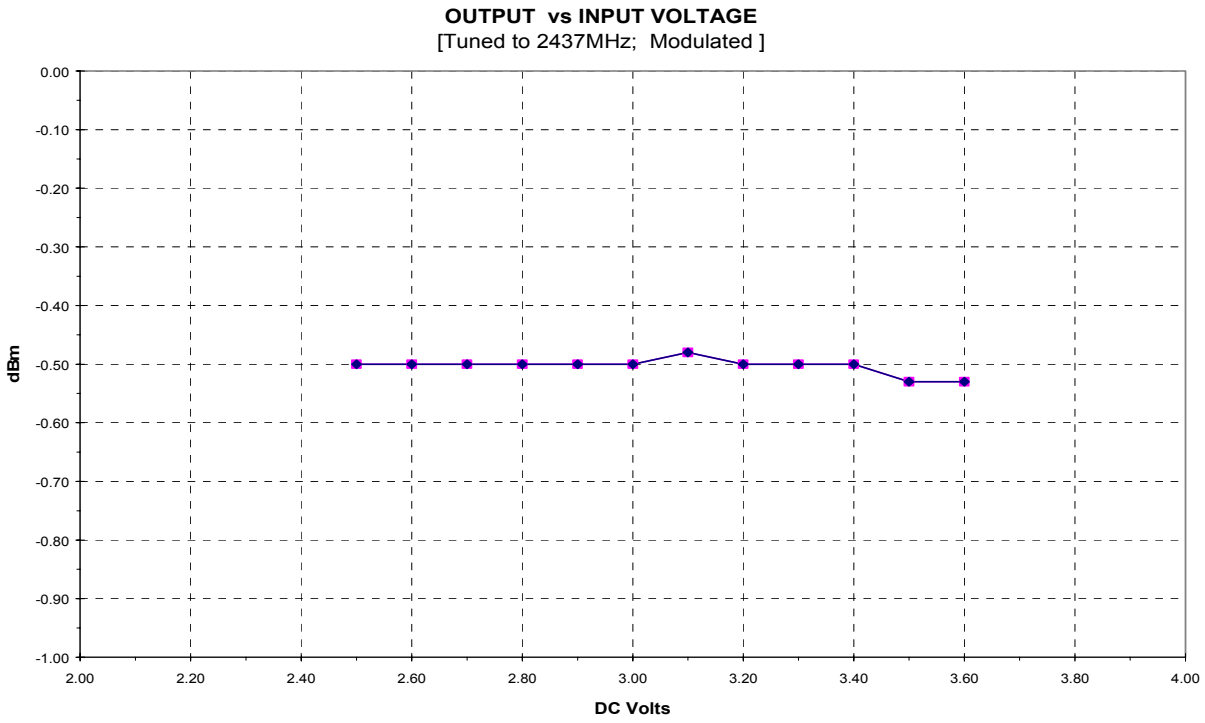


The spurious emissions are greater than -20dBc. The measurements are recorded as spurious emissions later in this report.

Relative Emission Level vs. Supply Voltage [15.31(e)]

The relative emission level as the supply voltage varied is presented in the charts below.
The voltage is varied to at least 85% to 115% of nominal supply voltage.
The unit is powered by two 1.5vdc alkaline batteries (3vdc). A variable DC power supply was used with the EUT for this test.

TX OUTPUT vs Voltage LEVEL 2437MHz modulated	
Volt In	TX OutPut Pk dBm
2.40	-0.50
2.50	**-0.50**
2.60	**-0.50**
2.70	**-0.50**
2.80	**-0.50**
2.90	**-0.50**
3.00	**-0.50**
3.10	**-0.48**
3.20	**-0.50**
3.30	**-0.50**
3.40	**-0.50**
3.50	**-0.53**
3.60	-0.53



Restricted Bands: [RSS-210 6.3, Table 2]

The following frequency bands are restricted. Only spurious emissions are permitted at levels limited by 15.209:

MHz	MHz	MHz	GHz
0.090-0.110	12.51975-12.52025	240-285	4.5-5.25
0.490-0.510	12.57675-12.57725	322-335.4	5.35-5.46
2.1735-2.1905	13.36-13.41	399.9-410	7.25-7.75
3.020-3.026	16.42-16.423	608-614	8.025-8.5
4.125-4.128	16.69475-16.69525	960-1427	9.0-9.2
4.17725-4.17775	16.80425-16.80475	1435-1626.5	9.3-9.5
4.20725-4.20775	25.5-25.67	1645.5-1646.5	10.6-12.7
5.677-5.683	37.5-38.25	1660-1710	13.25-13.4
6.215-6.218	73-74.6	1718.8-1722.2	14.47-14.5
6.26775-6.26825	74.8-75.2	2200-2300	15.35-16.2
6.31175-6.31225	108-38	2310-2390	17.7-21.4
8.291-8.294	149.9-150.05	2655-2900	22.01-23.12
8.362-8.366	156.52475-156.52525	3260-3267	23.6-24.0
8.37625-8.38675	156.7-156.9	3332-3339	31.2-31.8
8.41425-8.41475	162.0125-167.17	3345.8-3358	36.43-36.5
12.29-12.293	167.72-173.2	3600-4400	Above 38.6

LIMIT @ 3meter: [RSS-210 6.2.1 Table 3]

30-88MHz	100uV/m	40dBuV/m
88-216MHz	150uV/m	43.5dBuV/m
216-960MHz	200uV/m	46dBuV/m
above 960MHz	500uV/m	54dBuV/m

The spurious emissions observed in the restricted bands did not exceed the allowed limits for the restricted bands.

Output Power: [15.247(b),RSS-210 6.1.1(b), 6.5; 6.2.2o]

MEASUREMENT PROCEDURE:
Direct Connect to antenna output.
1. The EUT was trained to one of the three test frequencies.
2. Step 1 was repeated to cover all frequencies.

Transmit Mode. Fundamental

Frequency MHz	Direct Connect PEAK Measurement dBm	FCC Limit 15.247b =1 Watt	Margin dB
2401	-2.58	30dBm	-32.6
2437	-0.92	30dBm	-30.9
2475	+0.02	30dBm	-30.0

Radiated Field Strength Measurements: [RSS-210 6.1.1(b), 6.5; 6.2.2o]

Field Strength Measurements of Fundamental & LO: [15.247(a), 15.209]

MEASUREMENT PROCEDURE:
1. The EUT was trained to one of the three test frequencies.
2. The EUT was setup to one of the three orthogonal positions.
3. The receiving antenna was placed in vertical or horizontal orientation.
4. Steps 1-3 were repeated to cover all polarities, and frequencies.

Transmit Mode. Fundamental

Frequency MHz	Corrected PEAK Measurement dBuV/m	Included Cable+Antenna Factors dB+dB/m	Turntable Azimuth deg	Antenna Height Mtr	Calculated EIRP mWatt	FCC Limit 15.247b mWatt	**Margin** **dB**	EUT position	Ant Pol.
2401	96.8	35.39	90	1.6	1.44	1000	**28.4**	end	V
2437	98.2	35.61	0	1.6	1.98	1000	**27.0**	end	H
2475	97.8	35.83	170	1	1.81	1000	**27.4**	end	H

DUTY CYCLE: The on time is a maximum of 2.4mSec in a 100mSec period.
The duty cycle, for the 100mSec period, is │20Log(2.4/100)│ > 20dB.
The 20dB factor is used for the averaging calculations of emission levels above 1000MHz.
Transmit Mode. Fundamental harmonics

Freq MHz	Corrected PEAK Measurement dBuV/m	Duty Cycle averaging factor dB	Calculated Level w. Duty Cycle dBuV/m	Turntable Azimuth deg	Antenna Height Mtr	FCC Avg Limit 15.209 or -20dBc dBuV/m	**Margin** **dB**	EUT Pos.	Ant Pol.	Included Cable+Antenna Factors dB+dB/m
2401										
4802	57.9	20	37.9	190	1.1	54	**16.1**	End	V	39.01
2437										
4874	54.0	20	34.0	190	1.0	54	**20.0**	End	V	39.17
2475										
4950	55.4	20	35.4	270	1.4	54	**18.6**	end	H	39.33

(continued on next page)

The measurements of the 3rd through 10th transmitter harmonics were taken at the UM Radiation Lab facility.

Transmit Mode. Fundamental harmonics

Freq MHz	S.A. PEAK Level dBm	Calculated to dBuV/m	Antenna Factor dB/m	PreAmp Gain dB	Duty Cycle averaging factor dB	Calculated Level dBuV/m	FCC Avg Limit 15.209 or -20dBc dBuV/m	**Margin to 15.209 dB**	Ant Height Mtr	Ant Pol.
2401										
7203	-39.1	67.9	25.5	36.0	20	37.4	54	**16.6**	1.5	H
9604	-45.7	61.3	25.5	34.0	20	32.8	54	**21.2**	1.5	H
12005	-44.1	62.9	25.5	34.0	20	34.4	54	**19.6**	1.5	H
14406	-55.2	51.8	25.5	17.3	20	40.0	54	**14.0**	1.5	H
16807	-54.1	52.9	32.3	34.0	20	31.2	54	**22.8**	1.5	H
19208	-53.7	53.3	32.3	32.0	20	33.6	54	**20.4**	1.5	H
21609	-48.0	59.0	32.3	32.0	20	39.3	54	**14.7**	1.5	H
24010	-48.9	58.1	32.3	32.0	20	38.4	54	**15.6**	1.5	H
2437										
7311	-41.0	66.0	25.5	36.0	20	35.5	54	**18.5**	1.5	H
9748	-43.7	63.3	25.5	34.0	20	34.8	54	**19.2**	1.5	H
12185	-45.1	61.9	25.5	34.0	20	33.4	54	**20.6**	1.5	H
14622	-55.1	51.9	25.5	17.3	20	40.1	54	**13.9**	1.5	H
17059	-53.9	53.1	32.3	34.0	20	31.4	54	**22.6**	1.5	H
19496	-50.7	56.3	32.3	32.0	20	36.6	54	**17.4**	1.5	H
21933	-48.4	58.6	32.3	32.0	20	38.9	54	**15.1**	1.5	H
24370	-47.8	59.2	32.3	32.0	20	39.5	54	**14.5**	1.5	H
2475										
7425	-37.8	69.2	25.5	36.0	20	38.7	54	**15.3**	1.5	H
9900	-43.2	63.8	25.5	34.0	20	35.3	54	**18.7**	1.5	H
12375	-50.5	56.5	25.5	34.0	20	28.0	54	**26.0**	1.5	H
14850	-55.4	51.6	25.5	17.3	20	39.8	54	**14.2**	1.5	H
17325	-55.9	51.1	32.3	34.0	20	29.4	54	**24.6**	1.5	H
19800	-49.8	57.2	32.3	32.0	20	37.5	54	**16.5**	1.5	H
22275	-48.7	58.3	32.3	32.0	20	38.6	54	**15.4**	1.5	H
24750	-47.5	59.5	32.3	32.0	20	39.8	54	**14.2**	1.5	H

*These levels are at the noise floor of the measurement systems.

Field Strength Measurements of Local Oscillator & Harmonics:

Receive Mode. Local Oscillator

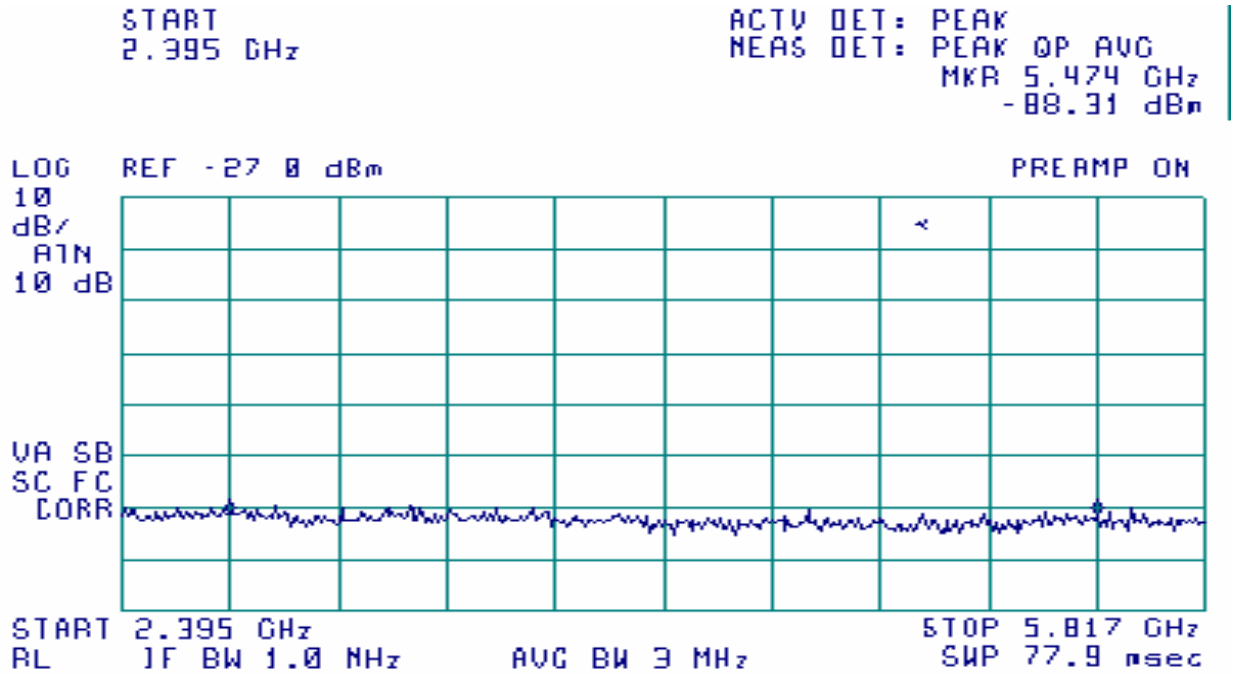
The injected LO for superheterodyne operation is 300MHz above the operating frequency.

The levels of the RF emissions of the local oscillator and harmonics were below the background noise floor of the measurement system. No emissions were detected at a distance of 1 meter from the EUT. No emissions were detected when the unit was directly connected to a spectrum analyzer.

MEASUREMENT PROCEDURE:

1. The EUT output was directly connected to the spectrum analyzer.
2. The spectrum analyzer bandwidth settings are 100KHz RBW, 300KHz VBW.
3. The spectrum is observed for emissions.

At 2437MHzMHz, the L.O. frequency is approximately 2737MHz.

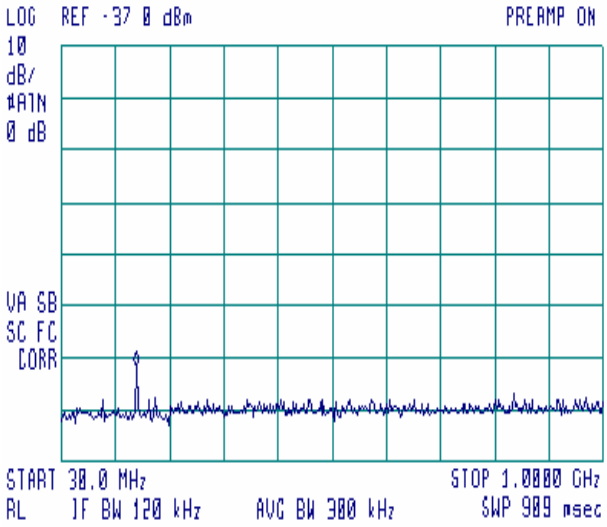


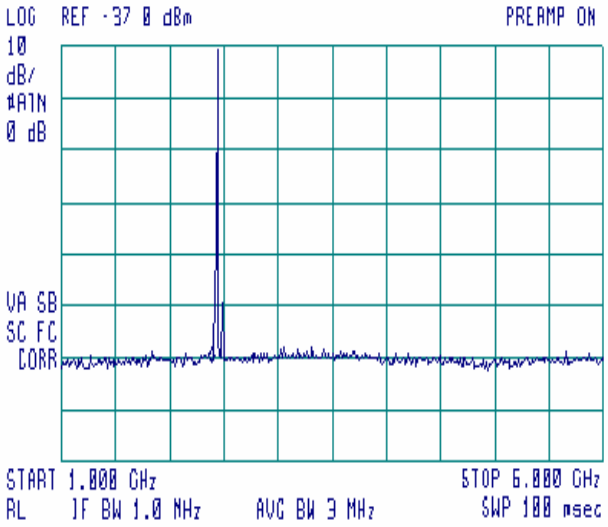
Direct connect scan. Markers 1 and 2 are one division in from the left and right respectively. Marker 1 is at the LO frequency of 2737MHz. Marker 2 is at the first harmonics frequency of 5475MHz.

Other Spurious Emissions [15.247c]

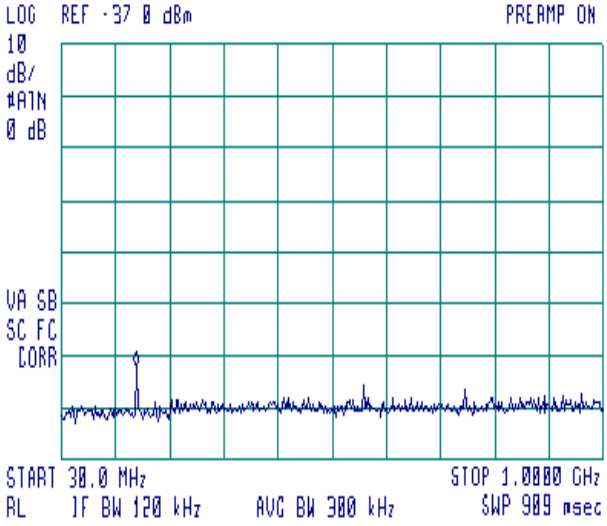
A scan of the HEK-EI was made in a shielded room to study the emission profile of the EUT. These scans indicate spurious emissions from the unit other than the fundamental and its associated harmonics. These suspect signals were measured at the 3-meter open area test site.

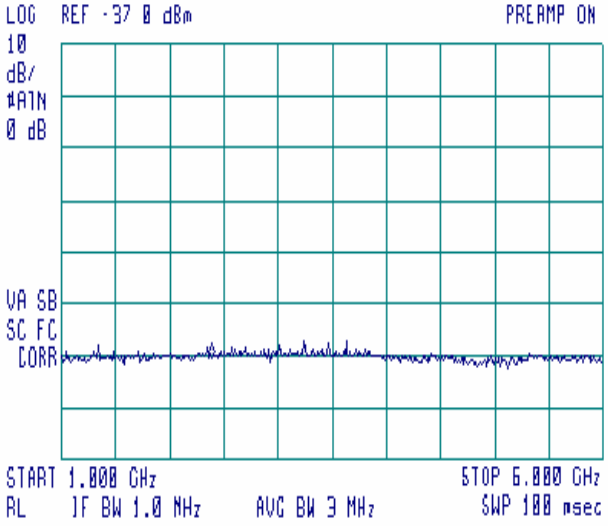
Transmitting



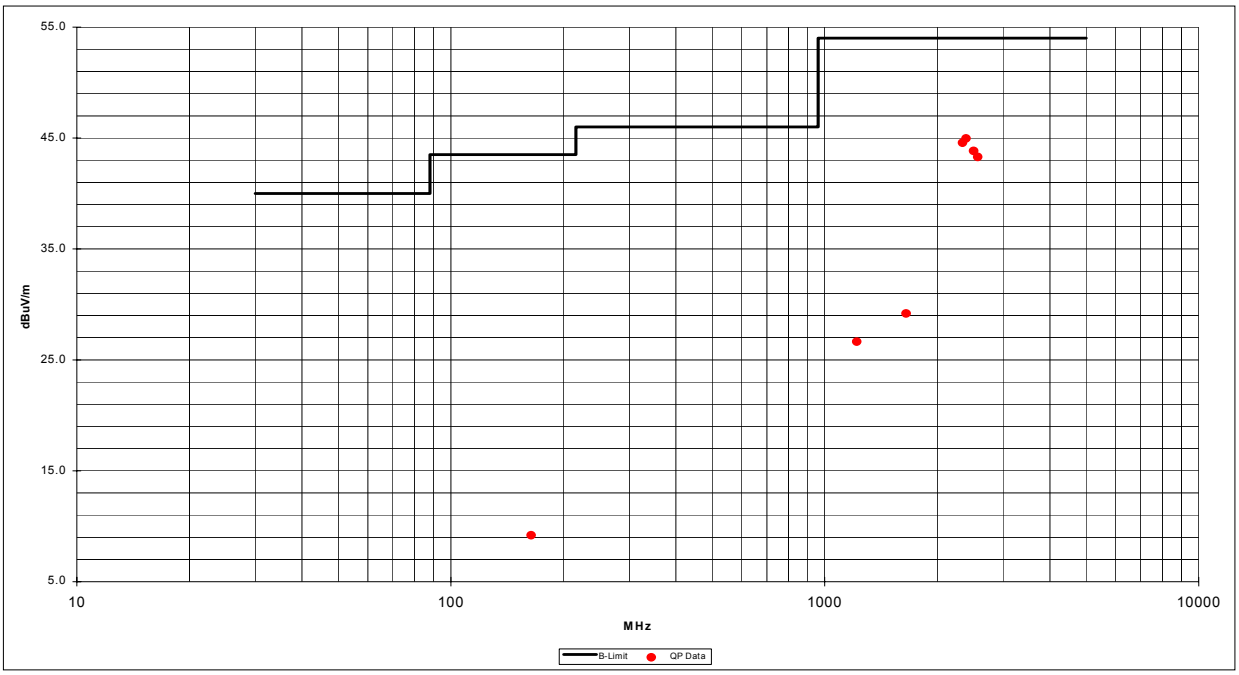


Receiving





Other Spurious emissions



Tabulated Quasi-Peak Measurements.

Frequency MHz	Corrected Measurement dBuV/m	Duty Cycle factor dB	Included Cable+Antenna Factors dB+dB/m	Turntable Azimuth deg	Antenna Height Mtr	Polarity	FCC Limit dBuV/m	**Margin dB**
EUT#3								
164.05	**9.19QP	--	10.20	-	1.0	V	43.50	**34.31**
1218.00	**26.64AVG	--	30.00	-	1.0	H	54.00	**27.36**
1650.00	**29.17AVG	--	31.75	-	1.0	H	54.00	**24.83**
#2334.91	64.57peak	20	35.00	0	1.2	H	54.00	**9.43**
#2387.89	64.96peak	20	35.32	0	1.2	H	54.00	**9.04**
#2501.56	63.83peak	20	35.98	0	1.0	H	54.00	**10.17**
#2566.30	63.29peak	20	36.23	0	1.0	H	54.00	**10.71**
EUT#1								
#2320.99	62.60peak	20	34.92	0	1.2	H	54.00	**11.40**
#2374.11	64.34peak	20	35.23	0	1.2	H	54.00	**9.66**
#2487.62	64.68peak	20	35.90	0	1.0	H	54.00	**9.32**
#2551.90	65.20peak	20	36.18	0	1.0	H	54.00	**8.80**

The frequencies for measurements were determined by the suspect list generated from the prescan of 30MHz through 6GHz.
**The measured levels represent the background floor noise of the measurement system.
#These emissions have a pulse width of 0.15mSec and a repetition rate of 20.5mSec, the 20dB factor applies.

EXHIBIT 3: MEASUREMENT FACILITIES & EQUIPMENT [RSP-100 7.1]

Test Site: [RSP100; section 7.1]

SITE 1.

The AHD test facility is centered on 9 acres of rural property near Sister Lakes, Michigan. The mailing address is 92723 M-152, Dowagiac, Michigan 49047. This test facility is NVLAP accredited (LabCode 200129-0). It has been fully described in a report filed with the FCC (No.90413) and Industry Canada (file:IC3161).

SITE 2.

The University of Michigan test facility is located at 8501 Beck Road, Belleville, Michigan 48111. This test facility has been fully described and accepted by the FCC and Industry Canada. This facility was utilized to measure emissions occurring at frequencies greater than 6GHz.

Measurement Equipment Used [2.947(d), 15.31(b)]

SITE 1.

Equipment	Model	S/N	Last Cal Date	Calibration Interval
HP EMI Receiver system	HP 8546A			
RF Filter Section	HP-85460A	3448A00283	26-Aug-04	12 months
RF Receiver Section	HP-85462A	3625A00342	26-Aug-04	12 months
EMCO BiconiLog Antenna	3142	1077	24-Aug-04	12 months
(3-M) Type 129FF Ultra Flex LowLoss	RG58/U	9910-12	25-Oct-04	6 months
(3-M) LMR-400 Ultra Flex	LMR400	9812-11	25-Oct-04	6 months
Double Ridged Horn	ONO91202-2	A00329	02-Sep-04	physical inspection

SITE 2.

Equipment	Model	S/N	Last Cal Date	Calibration Interval
C-Band Std. Gain Horn	UM NRL design		calibration by design & physical inspection.	
XN-Band Std. Gain Horn	UM NRL design		calibration by design & physical inspection.	
X-Band Std. Gain Horn	SA 12-8.2	730	calibration by design & physical inspection.	
Avantek RF amplifier	AFT-12665		06-Jul-04	12 months
3ft LowLoss coax	RG142	-	with Avantek amp	
Spectrum Analyzer	HP 8593E	3412A01131	06-Jul-04	12 months

Measurement Environment

The tests were performed with the equipment under test, and measurement equipment inside the all-weather enclosure. Ambient temperature was 22deg.C., the relative humidity 35%.