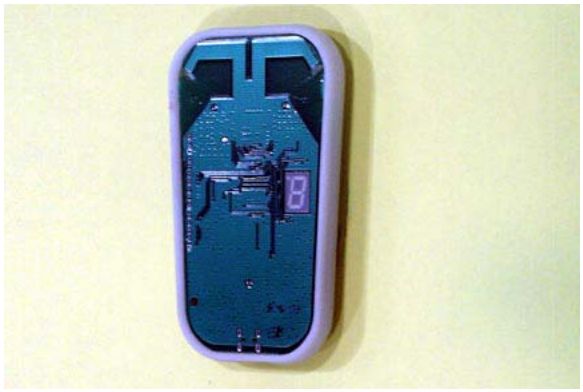
EXHIBIT E: REPORT OF MEASUREMENTS [2.1033(B6)]

Test Report for FCC ID: FBRLCB100-EI

FCC Part 2.1031, Part 15 Subpart C(15.247)

Report #0400678BF
Issued 06/16/04



FREQUENCY HOPPING TRANSCEIVER MODEL LCB100-EI

Prepared for:

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

Test Date(s): May 12, 21, June 1,2,11, 14, 2004

Report prepared by:

Ted Chaffee, NCE

Report reviewed by

Data recorded by:

Gordon Helm, NCE
Ted Chaffee, NCE

TABLE OF CONTENTS

Statements Concerning this Report

NVLAP Accreditation: NVLAP Lab Code 200129-0
The scope of AHD accreditation is the conducted emissions, radiated emissions 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 the 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

Manufacturer/Applicant [2.1033(b1)]

The manufacturer and applicant:

FLEETWOOD GROUP Inc.
P.O. Box 1259
Holland, Michigan 49422-1259

Measurement/Test Site Facility & Equipment

Test Site [2.948, 2.1033(b6)]

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	27-Aug-03	12 months
RF Receiver Section	HP-85462A	3625A00342	27-Aug-03	12 months
Solar LISN	8012-50-R-24-BNC	962137	25-Aug-03	12 months
Solar LISN	8012-50-R-24-BNC	962138	25-Aug-03	12 months
(LCI) Double shielded 50ohm Coax	RG58/U	920809	04-Feb-04	12 months
(3-M) Type 129FF Ultra Flex LowLoss	RG58/U	9910-12	04-Feb-04	6 months
(3-M) LMR-400 Ultra Flex	LMR400	9812-11	04-Feb-04	6 months
(10-M) Amelco 50ohm Coax	RG213/U	9903-10ab	04-Feb-04	6 months
50ohm Coax	RG223/U	9802302	04-Feb-04	12 months
Double Ridged Horn	ONO91202-2	A00329	20-May-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	
XN-Band Std. Gain Horn	UM NRL design		calibration by design	
X-Band Std. Gain Horn	SA 12-8.2	730	calibration by design	
Avantek RF amplifier	AFT-12665		May 2004	12 months
3ft LowLoss coax	RG142	-	with Avantek amp	
Spectrum Analyzer	HP 8593E	3412A01131	May 2004	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 40%.

Tested Configuration /Setup: [2.1033(b8)]

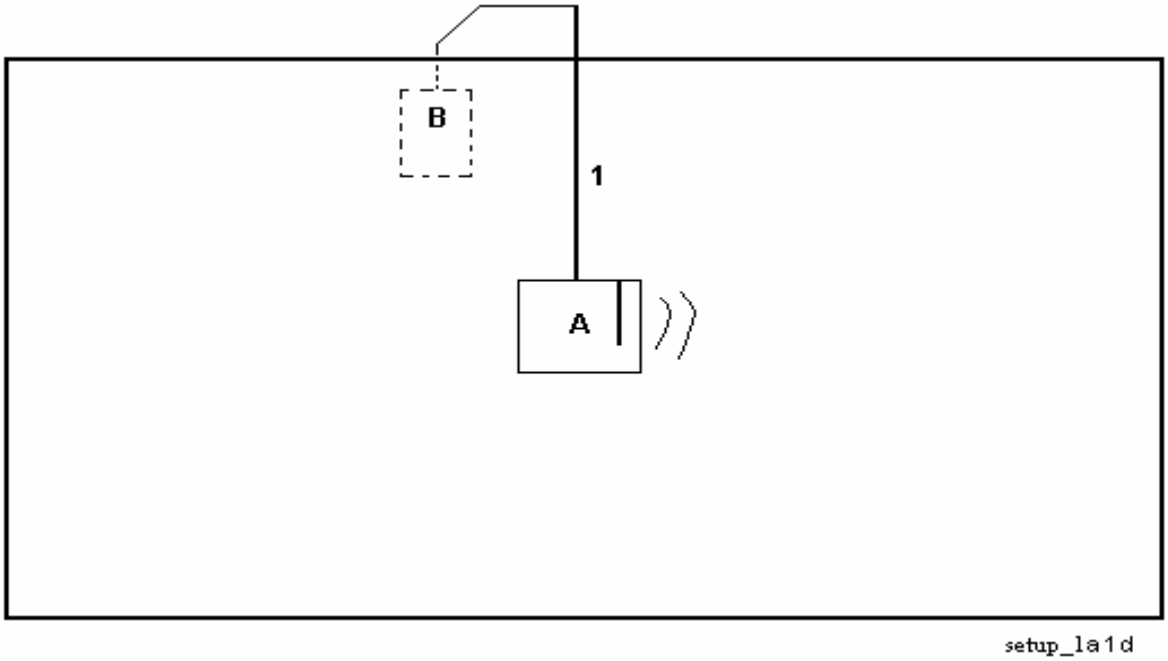
Support Equipment & Cabling

Setup Diagram Legend	Description	Model	Serial No. / Part No.	EMC Consideration
A	[EUT] eInstruction Base Transceiver	[Fleetwood Group] LCB100-EI	preproduction	FCC ID: FBRLCB100-EI
B	Power supply	[Cybiko] DBU05030	--	--
1	USB cable with power		1 meter	Shielded, USB connectors. Metal shells

Setup Diagram

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

Stand Alone Setup



Legend above

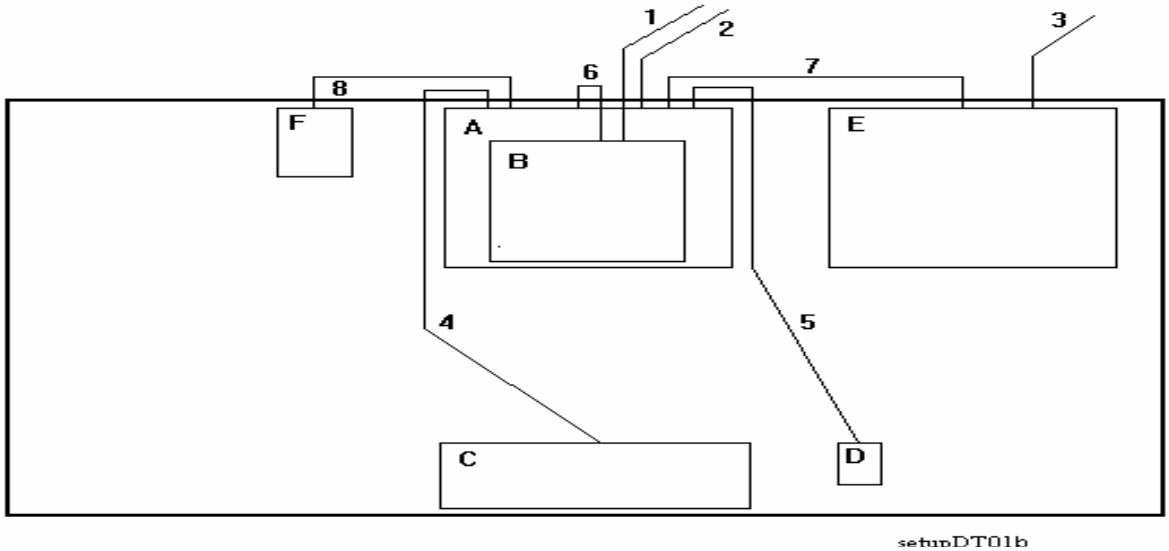
Support Equipment & Cabling PC peripheral

Setup Diagram Legend	Description	Model	Serial No. / Part No.	EMC Consideration
A	Host computer	400MHz pentium	Eng.unit #IKNX74800398	Metal chassis
B	Monitor	[ZDS] ZCM-1440-XT	4DN05F099213	FCC ID: IEY44BS
C	[Gateway] E06350US003-C	Q9281A0760	FCC DoC Logo	[Gateway] E06350US003-C
D	PS/2 mouse	[Microsoft] 1.1A	01929284	FCC ID: C3KKMP5
E	Parallel printer	[Canon] BJ-200ex	STH71371	FCC ID: AZDK10110A
F	[EUT] eInstruction Base Transceiver	[Fleetwood Group] LCB100-EI	preproduction	FCC ID: FBRLCB100-EI
1,2,3	AC power cables	--	1.5 meter	Unshielded
4	Keyboard I/O cable	--	--	2 meter, Shielded, Permanently connected to keyboard.
5	Mouse I/O cable	--	--	1.5 meters, Permanently connected to mouse. Shielded.
6	Video I/O cable	--	--	2 meters, Permanently connected to monitor. Braided shield. One ferrite core molded into jacket. Bundled during testing.
7	Parallel I/O cable	--	--	2 meters, Bundled during testing. Foil with Braid shield bonded to connector shells.
8	USB cable with power		1 meter	Shielded, USB connectors. Metal shells

Setup Diagram

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

PC peripheral setup



Legend above

Summary of Results:

1. This test series evaluated the Equipment Under Test to FCC Part 15, SubPart C.
2. The system tested is compliant to the requirement of CFR 47, FCC Part 15, SubPart C for Frequency Hopping operation in the 2400-2483.5MHz frequency band, (Part 15.247).
3. The equipment under test was received on March 29, 2004 and this test series commenced on May 12, 2004.
4. The frequencies selected for final evaluation include 2401MHz, 2438MHz, 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. In 120VAC 60Hz operation, the conducted emission level nearest the limit occurred at 738KHz. The signal was measured to be 31.9dB below the Class B QuasiPeak limit when measuring phase to ground.
6. The 20dB Bandwidth was greatest while observing 2475MHz. Using 10KHzRBW, the 20dB bandwidth measured 568KHz which is less than the limit of 1000KHz.
7. The Band Edge measurements: Below the lower band edge of 2400MHz a spurious was observed at approximately 2379MHz to be 30.1dB below inband transmitter level while hopping. Above the upper band edge of 2483.5MHz) a spurious was observed to be 26.5dB below the inband transmitter level while hopping. The FCC limit (15.247c) is 20dB below the transmitter carrier level.
8. The output level of the fundamental was measured for 2401MHz, 2438MHz, and 2475MHz. The evaluation showed the emission nearest the limit occurred while operating at 2438MHz. The EUT was positioned on the 'flat' 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 25.2dB 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 2401MHz with the receive antenna horizontally polarized. This emission was measured using Peak detection and corrected for the 'hopping' duty cycle. The emission at 4802MHz was calculated to be 2.7dB 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 at a distance of 1 meter from the EUT.
11. The spurious emission level nearest the limit was measured while in transmitting mode. This emission, at 2532.4MHz, was determined to be 48.6dBuV/m Average which is 5.4dB below the limit of 54dBuV/m (500uV/m). The receive antenna was horizontally polarized.

Changes made to achieve compliance

1. None

Standards Applied to Test: [2.1033(b6)]

ANSI C63.4 - 2001
CFR47 FCC Part 2, Part 15, SubPart C, 15.247 Intentional Radiator; SubPart B, Digital Device
AHD test procedures TP0101-01, TP0102-01

Test Methodology: [2.1033(b6)]

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 maximum configurations 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.

This product contains a Nordic 2.4GHZ RF chip. 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.

The unit was also evaluated as a computer peripheral with USB serial communication. Throughout testing the unit communicated to remote computer via the USB cable.

Line Conducted

Line conducted emission evaluation for this device was performed with the unit transmitting.

The system was placed upon a 1 x 1.5 meter non-metallic table 80cm from the ground floor and 40cm from the vertical conducting plane in the prescribed setup per ANSI C63.4. This table is housed in a shielded enclosure to prevent the detection of unwanted ambients.

The mains power is nominally 120VAC, 60Hz.

The EUT was connected to the LISN being monitored by the EMI Receiver.

While monitoring the display of the EMI Receiver, via remote video monitor, the cables were manipulated to determine a position that maximized the emissions being observed. Once the highest amplitude relative to the limit was determined for the Phase current carrying line the procedure was repeated for the Neutral current carrying line.

The configuration that created an emission closest to the limit was used during the course of taking final measurements. Pictures of this final configuration are recorded in this report.

The principal settings of the EMI Receiver for line conducted testing include:

Bandwidth = 9KHz

Detector Function: scanning and signal search = Peak Detection Mode
measurements = Quasi Peak Detection and Average Detection

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.

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: Equivalent Isotropic Radiated Power $PG = \frac{(E*d)^2}{30}$

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

Where applicable, 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 dwell time is determined to be less than 10mSec, 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.

Test Data [2.1033(b6)]

Antenna Characteristics [15.203, 15.204]

The antenna is 'J' section of foil trace on the printed circuit board. The user can not adjust nor replace the trace antenna.

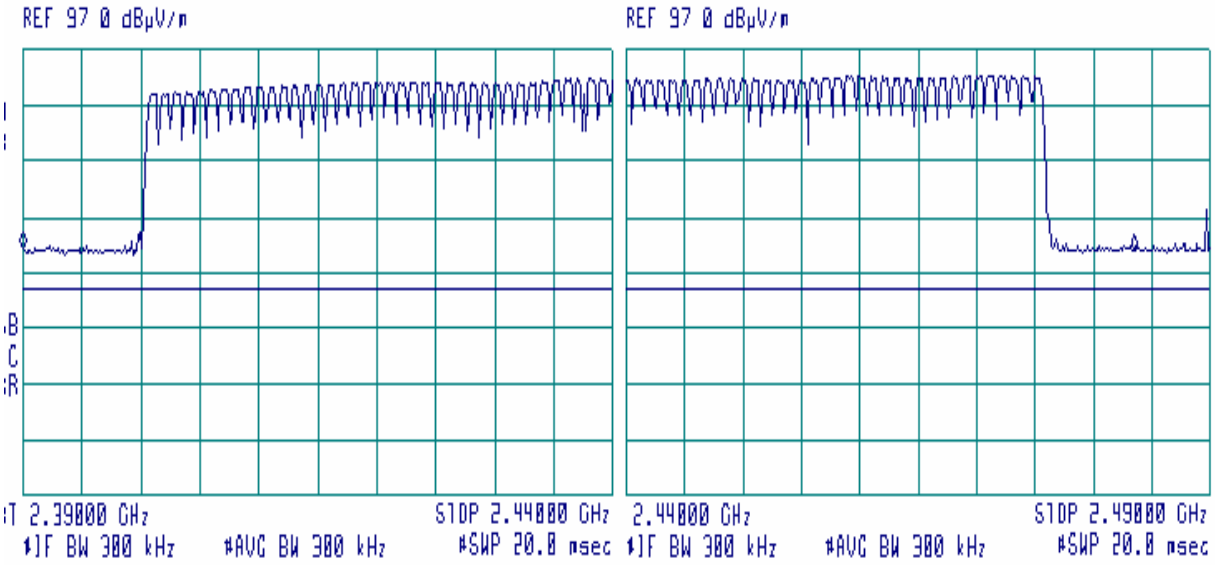
Modulation Characteristics

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]

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



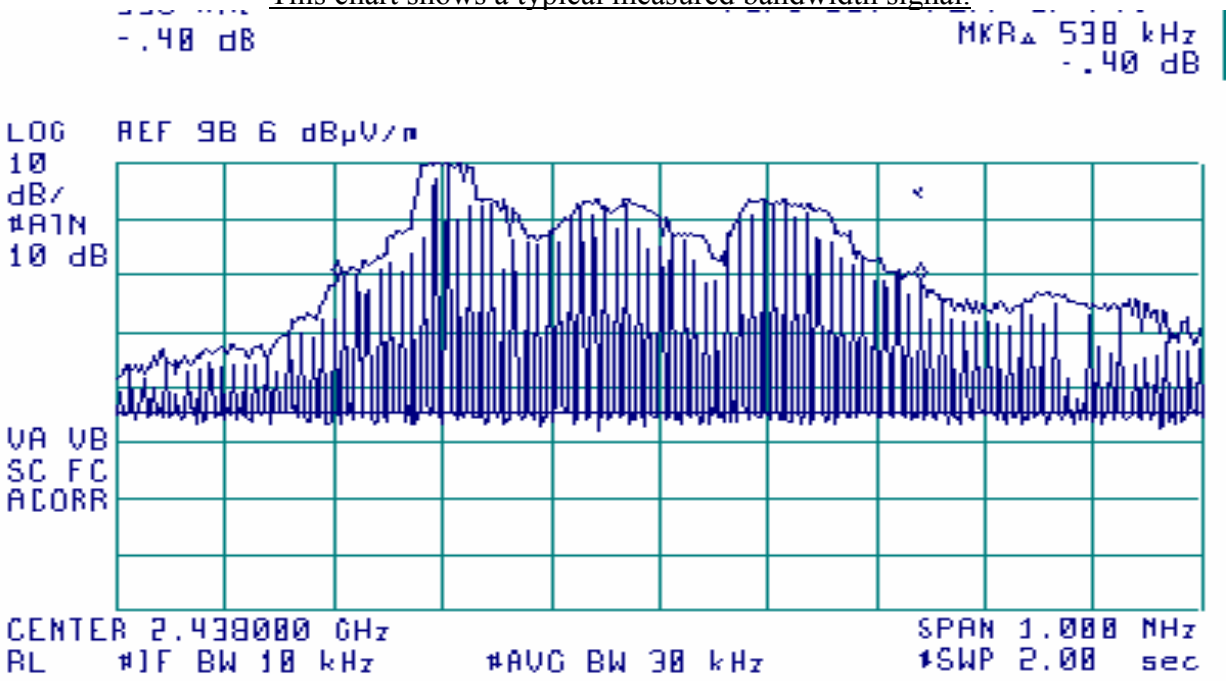
Plot scan of the FHSS profile. Seventy five transmitted frequencies can be discerned.

Carrier Frequency 20dB bandwidth [15.247a1i]

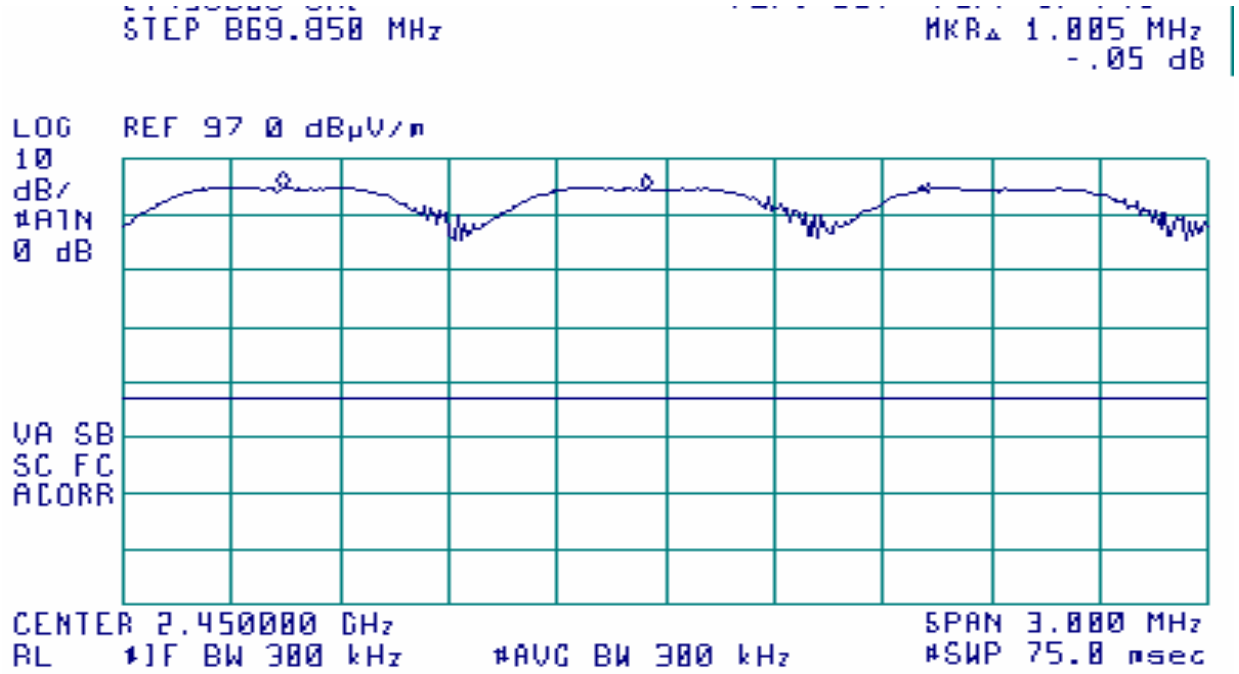
The 20dB bandwidth was measured with the unit hopping function disabled and the transmission modulated.

Fundamental (MHz)	Measured 20dB Bandwidth 10KHzRBW	LIMIT RSS-210(a3)
2401	518 KHz	1000 KHz
2438	538 KHz	1000 KHz
2475	568 KHz	1000 KHz

This chart shows a typical measured bandwidth signal.

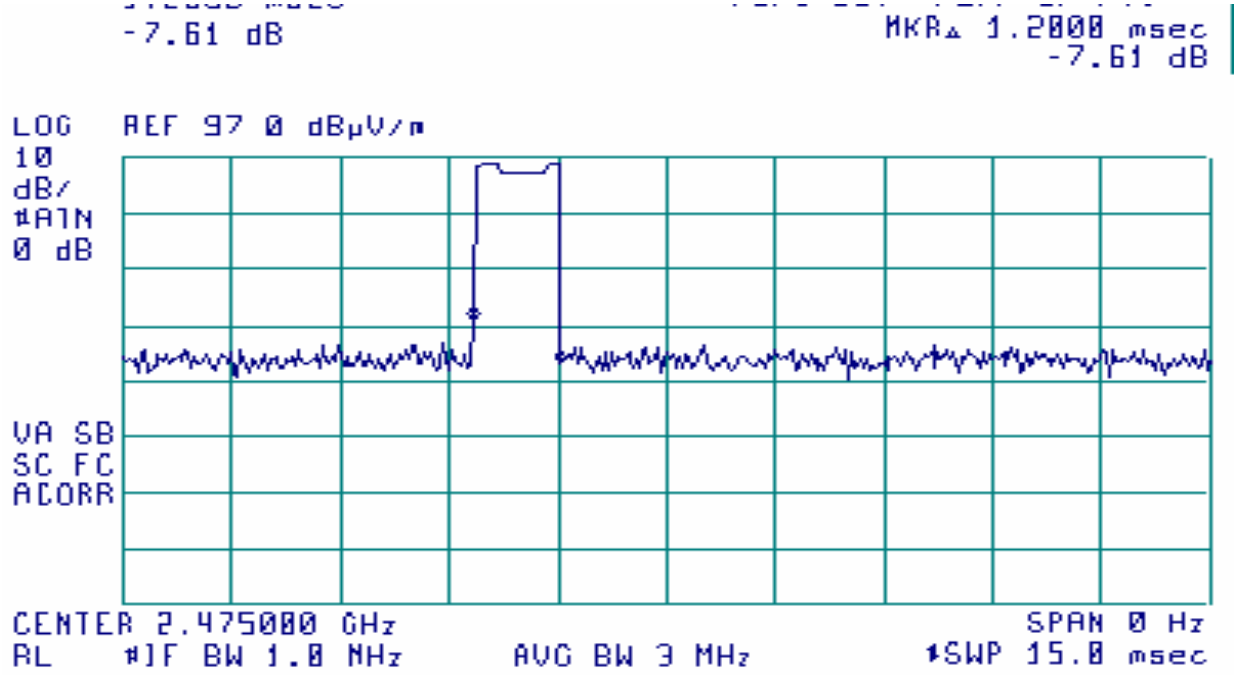


Carrier Frequency Separation [15.247a1]



Each Hopping channel is separated by 1000KHz. This is greater than the minimum requirement of 25KHz or 20dB bandwidth (568KHz). Refer to Exhibit B 'operational description' for the list of frequencies used.

Carrier Frequency Dwell Time [15.247a1i]

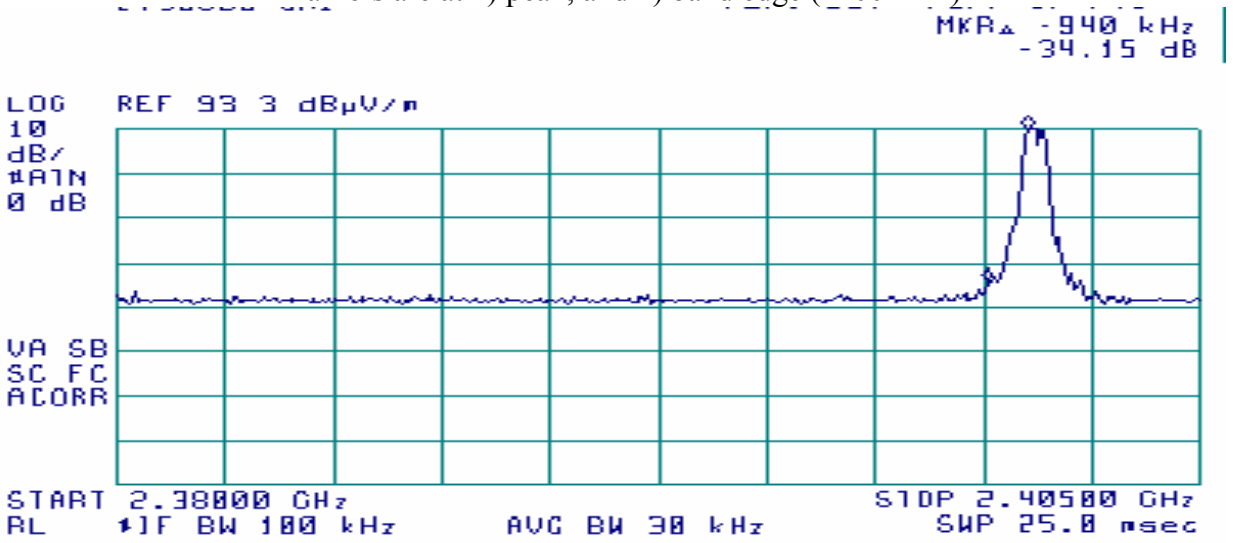


The Dwell Time of each hopping frequency is 1.2mSec. Refer to Exhibit B 'operational description' for a table showing dwell times of the system operations.

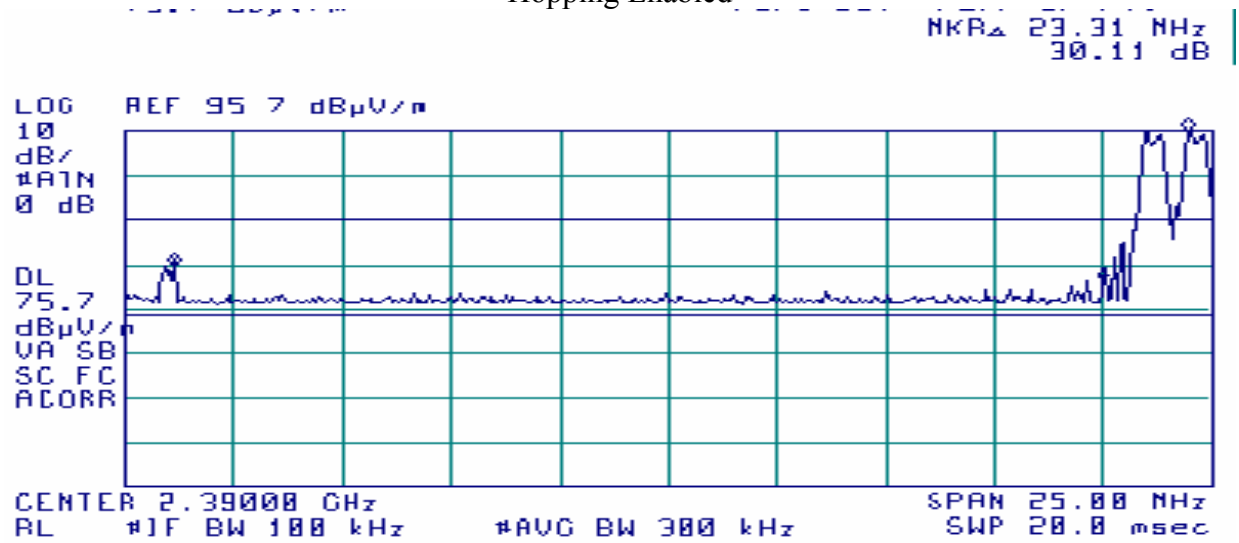
Band Edges [15.247(c)]

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.

2400MHz Band Edge. EUT transmitting at lowest frequency of 2401MHz.
Hopping Disabled
Markers are at 1) peak, and 2) band edge (2400MHz)



Hopping Enabled



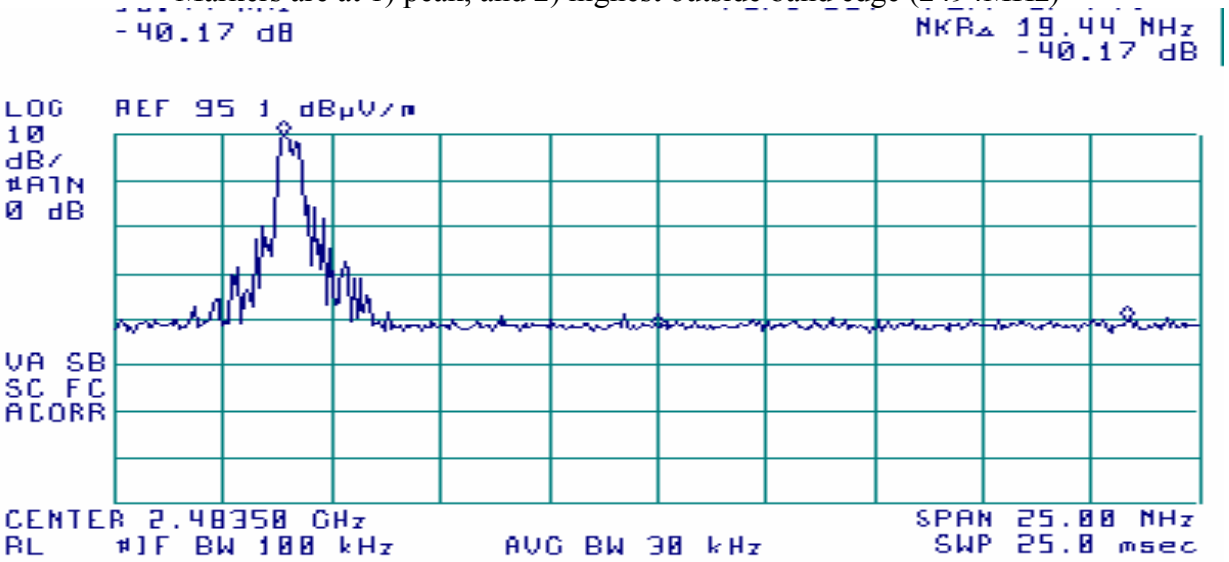
Fundamental (MHz)	Delta dBc without hopping	Delta dBc with hopping	dBc LIMIT 15.247c	
2401	-34.2dB	-30.1dB	-20 dB	Pass

The frequency observed -30.1dBc is 2378MHz. The measurement is recorded as spurious, p24.

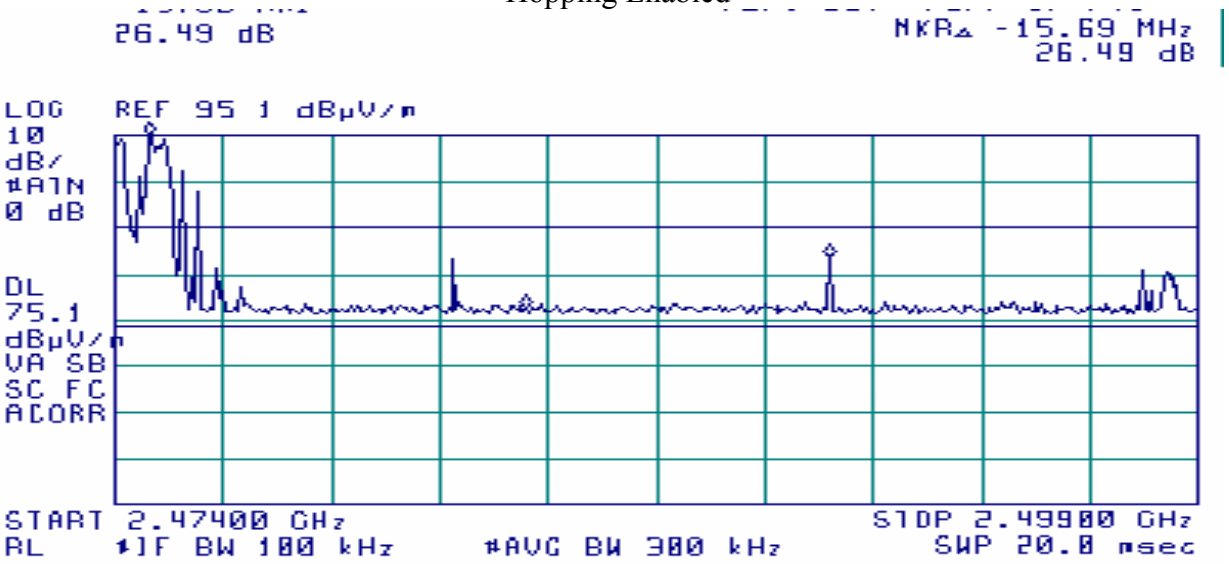
2483.5MHz Band Edge. EUT transmitting at highest frequency of 2475MHz.

Hopping Disabled

Markers are at 1) peak, and 2) highest outside band edge (2494MHz)



Hopping Enabled



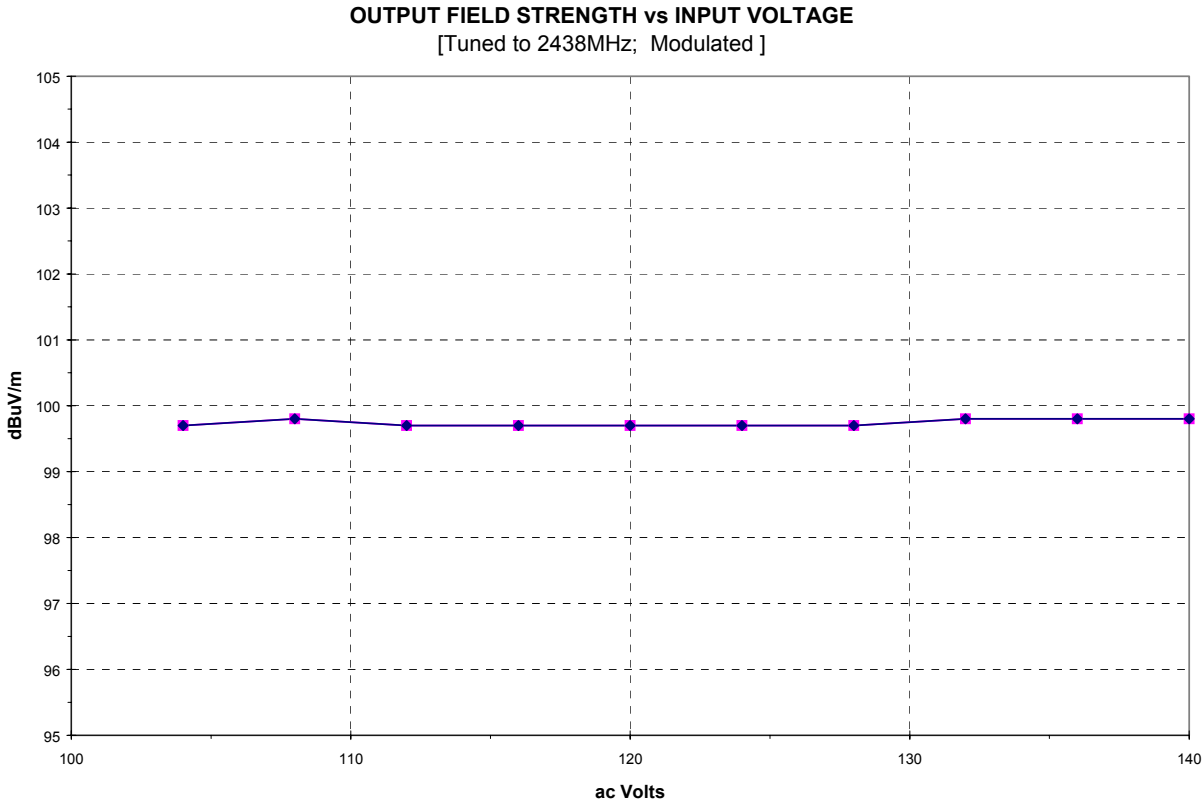
Fundamental (MHz)	Delta dBc without hopping	Delta dBc with hopping	dBc LIMIT 15.247c	
2475	-40.2dB	-26.5dB	-20 dB	Pass

The frequency observed -26.5dBc is 2498MHz. The measurement is recorded as spurious, p24.

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 unit is powered by a 5vdc source. A ac/dc power supply or the USB port. A power supply was used with the EUT for this test.

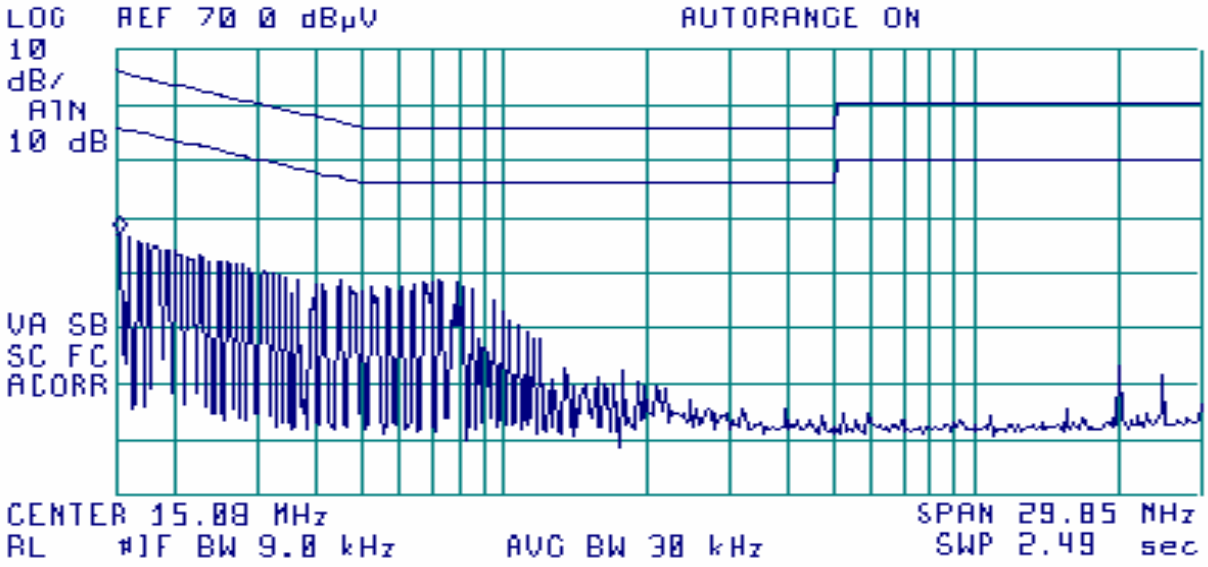
TX OUTPUT vs Voltage LEVEL 2438MHz, modulated	
Volt In Volts, 60Hz	TX OutPut Peak dBuV/m
100	99.7
104	99.7
108	99.8
112	99.7
116	99.7
120	99.7
124	99.7
128	99.7
132	99.8
136	99.8
140	99.8



Line Conducted Measurements: [15.207(a)]

Line Conducted 120VAC / 60Hz.

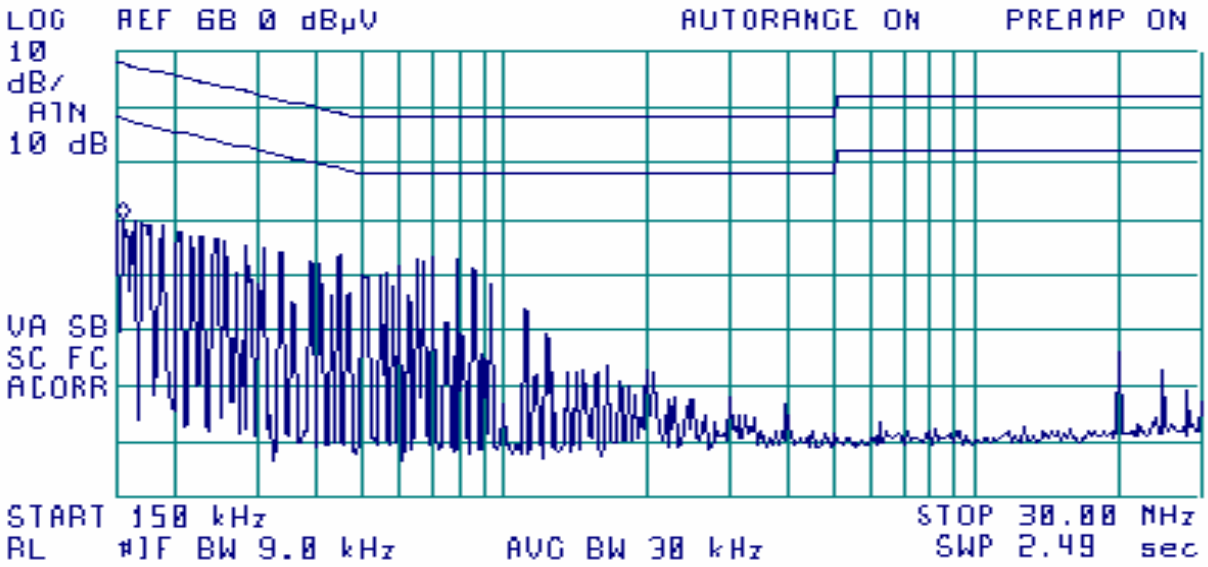
NEUTRAL to Ground Measurement.
Class B
Plot of Peak Values



Tabulated Quasi-Peak/Average Measurements.

Frequency	dBuV Reading		FCC / EN55022 dBuV Class B Limit		dB Margin	
MHz	QP	Avg	QP	Avg	QP	Avg
0.151	31.01	12.53	65.92	55.92	-34.91	-43.39
0.229	27.08	3.21	62.49	52.49	-35.41	-49.28
0.760	20.95	-7.63	56.00	46.00	-35.05	-53.63
0.442	22.90	-6.06	57.02	47.02	-34.12	-53.08
20.002	13.95	11.64	60.00	50.00	-46.05	-38.36
25.002	11.33	10.39	60.00	50.00	-48.67	-39.61

PHASE to Ground Measurement.
Class B
Plot of Peak Values



Tabulated Quasi-Peak/Average Measurements.

Frequency	dBuV Reading		FCC / EN55022 dBuV Class B Limit		dB Margin	
MHz	QP	Avg	QP	Avg	QP	Avg
0.155	31.10	12.75	65.75	55.75	-34.65	-43.00
0.191	29.77	9.99	64.00	54.00	-34.23	-44.01
0.227	28.08	3.12	62.55	52.55	-34.47	-49.43
0.738	24.10	-10.68	56.00	46.00	-31.90	-56.68
20.000	13.96	11.66	60.00	50.00	-46.04	-38.34
25.001	11.40	10.45	60.00	50.00	-48.60	-39.55

Restricted Bands: [15.205]

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	16.42-16.423	399.9-410	4.5-5.25
0.490-0.510	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
6.215-6.218	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			

LIMIT @ 3meter: [15.209(a)]

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.

Radiated Field Strength / Output Power Measurements: [15.209, 15.247(b,c)]

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

Direct Connect Measurements were not conducted on the keypad. Measurements were made only at the 3meter OATS and the measured field strength was used to calculate EIRP of the unit. Formulas are listed on page 10.

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

Transmit Mode. Fundamental

Frequency	Corrected PEAK Measurement	Included Cable+Antenna Factors	Turntable Azimuth	Antenna Height	Calculated EIRP	FCC Limit 15.247b	**Margin**	EUT position	Ant Pol.
MHz	dBuV/m	dB+dB/m	deg	Mtr	mWatt	mWatt	**dB**		
2401	98.9	35.2	0	1.1	2.3	1000	**-26.4**	flat	H
2438	100.0	35.39	0	1.4	3.0	1000	**-25.2**	flat	H
2475	99.72	35.58	10	1.1	2.8	1000	**-25.5**	flat	H

Receive Mode. Local Oscillator

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.

Field Strength Measurements of Fundamental & LO Harmonics: [15.247(b,c)]

MEASUREMENT PROCEDURE:

1. The EUT was tuned to one of the three test frequencies.
2. The receive antenna was set to vertical and horizontal positions.
3. Steps 1-2 were repeated to cover all positions, and frequencies.

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

Freq	Corrected PEAK Measurement	Duty Cycle averaging factor	Calculated Level w. Duty Cycle	Turntable Azimuth	Antenna Height	FCC Avg Limit 15.209 or -20dBc	**Margin**	Ant Pol.	Included Cable+Antenna Factors
MHz	dBuV/m	dB	dBuV/m	deg	Mtr	dBuV/m	**dB**		dB+dB/m
2401									
4802	71.27	20	51.27	170	1.5	54	**-2.7**	H	40.65
2438									
4876	61.36	20	41.36	180	2	54	**-12.6**	H	40.87
2475									
4950	60.76	20	40.76	40	1.7	54	**-13.2**	H	41.1

Limits determined by 20dBc below the measured fundamental level.
**These levels are at the noise floor of the measurement systems.

The measurement of the 3rd through 10th transmitter harmonic was taken at the UM Radiation Lab facility. For this test the distance between the EUT and Horn antenna is 1 meter.

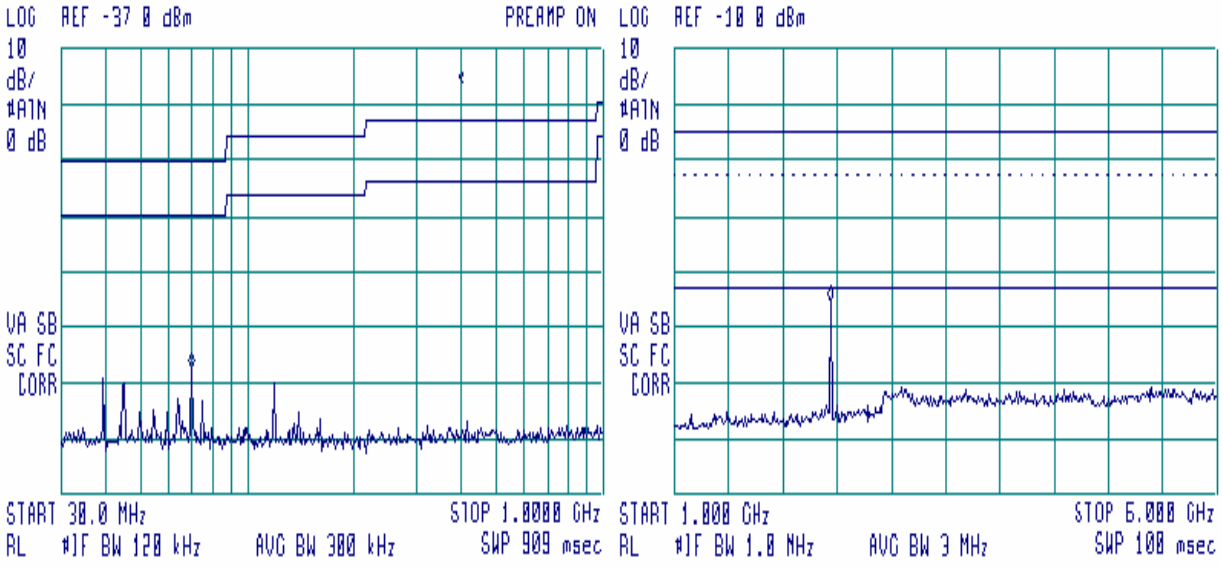
The raw data is located in a separate pdf file "EInstruction_RFb.pdf"
The explanation of the Table 5.1 data in the file "EInstruction_RFb.pdf is as follows:
In the column headings for the EInstruction_RFb.pdf are:
"Peak dBm"=Peak analyzer measurement; "Ka dBm" = Antenna/cable correction factor;
"Kg dB" = Amplifier gain; "E3" is the calculated "Peak" + "Ka" – "Kg";
"E3lim" = FCC average limit plus 20dB for Peak limit.
The first page of the "EInstruction_RFb.pdf file is the transmit data, the second page is the data while in receive only mode, and the third page is data with the receiver at a low output leve.

The 7314MHz (2438 x 3) measured nearest the limit. It was calculated to be 61.7dBuV/m peak (61.7dBuV/m – 20dB average) which is 12.3dB below the FCC limit.

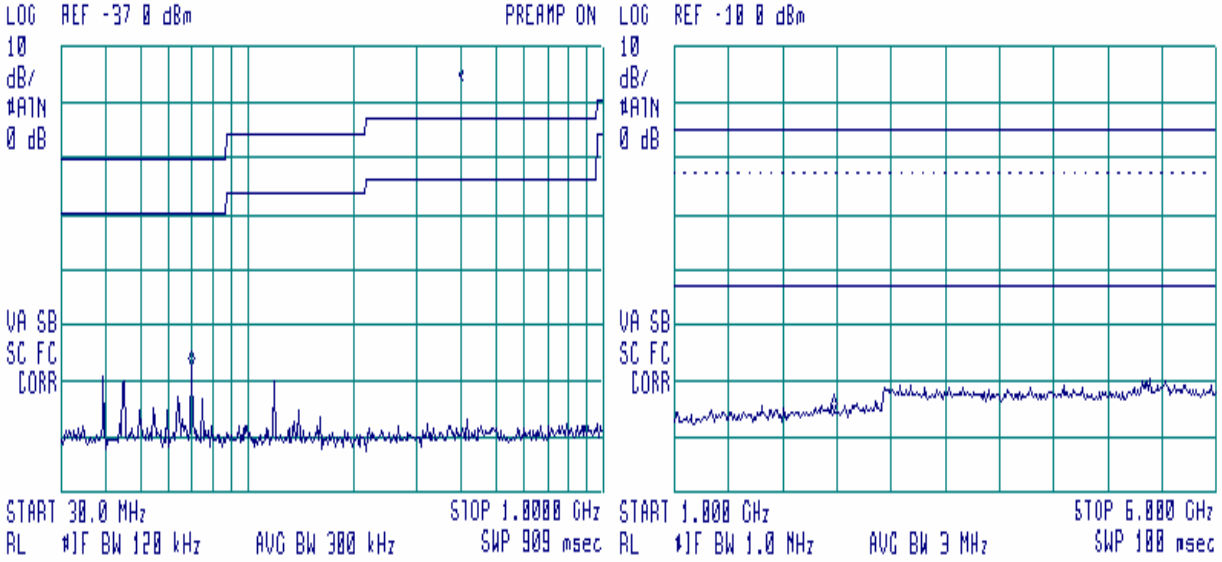
Spurious Emissions: [15.247c]

A scan of the LCB100-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. Spurious emissions tests were conducted both with the EUT as a stand alone unit and with the EUT interfacing with the serial port of a Tower PC.

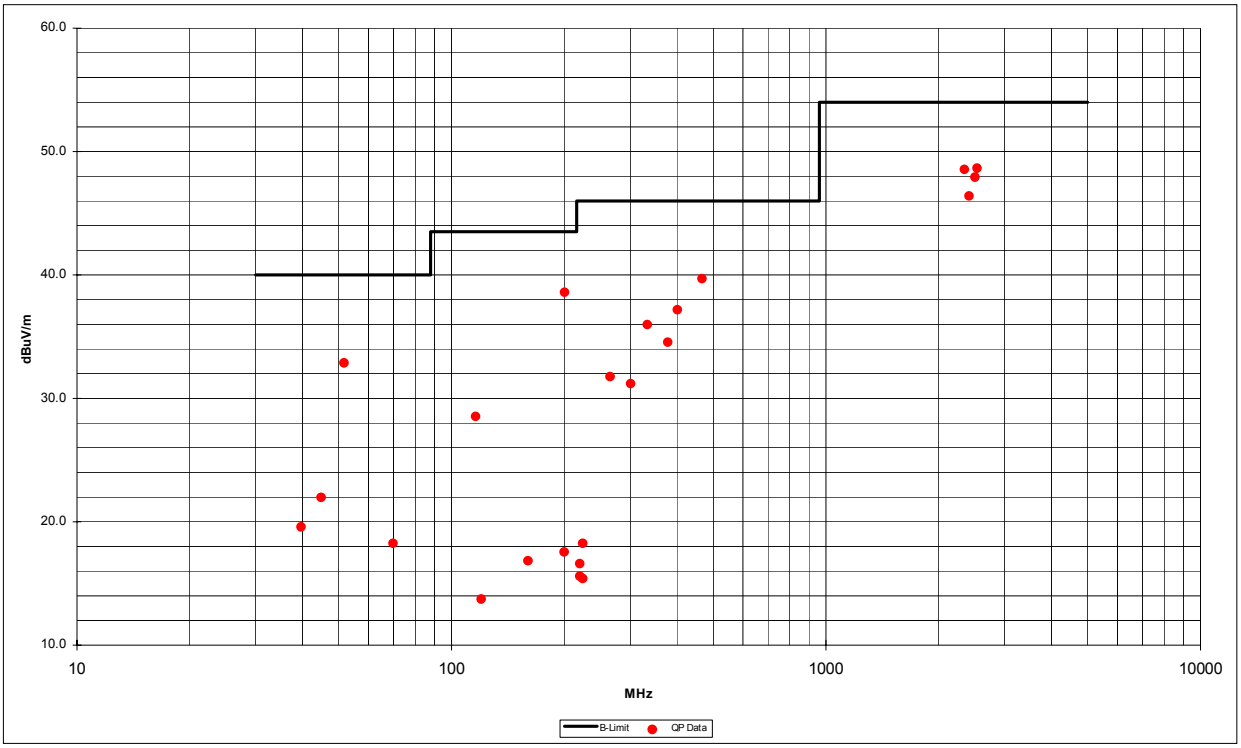
Transmitting



Receiving



Other Spurious emissions



Tabulated Quasi-Peak Measurements.

Frequency MHz	Corrected Quasi Peak Measurement dBuV/m	Duty Cycle factor dB	Included Cable+Antenna Factors dB+dB/m	Turntable Azimuth deg	Antenna Height Mtr	Polarity	FCC Class B Limit dBuV/m	Margin dB
39.65	19.59*	-	13.85	-	1.0	V	40.00	-20.41
44.89	21.98*	-	11.53	-	1.0	V	40.00	-18.02
69.87	18.26*	-	7.75	-	1.0	V	40.00	-21.74
120.09	13.74	-	8.74	0	3.0	H	43.50	-29.76
160.00	16.85	-	10.00	30	1.0	V	43.50	-26.65
200.01	17.56	-	12.11	330	1.0	V	43.50	-25.94
223.99	18.25	-	12.86	100	1.2	H	46.00	-27.75
220.13	16.61	-	12.74	110	1.0	V	46.00	-29.39
224.00	15.41	-	12.86	170	1.0	V	46.00	-30.59
#2378	65.6peak	20	45.6	0	1.1	H	54.00	-8.4
#2409.0	66.40peak	20	46.4	0	1.0	H	54.00	-7.6
#2497.9	67.93peak	20	47.9	0	1.1	H	54.00	-6.1
#2532.4	68.65peak	20	48.6	0	1.0	H	54.00	-5.4

Tabulated Quasi-Peak Measurements continued

This table represents measurements made with the EUT connected to a desktop computer. Date includes emissions associated with the computer system.

Frequency	Corrected Quasi Peak Measurement	Duty Cycle factor	Included Cable+Antenna Factors	Turntable Azimuth	Antenna Height	Polarity	FCC Class B Limit	Margin
MHz	dBuV/m	dB	dB+dB/m	deg	Mtr		dBuV/m	dB
51.66	32.88		10.03	180	1.0		40.00	-7.12
116.04	28.54		8.97	0	4.0		43.50	-14.96
200.48	38.60		12.12	330	1.0		43.50	-4.90
265.03	31.77		13.97	180	1.3		46.00	-14.23
300.70	31.19		14.82	180	1.5		46.00	-14.81
333.27	35.98		16.13	190	1.5		46.00	-10.02
378.13	34.56		17.72	270	1.1		46.00	-11.44
400.94	37.18		18.40	190	1.5		46.00	-8.82
466.56	39.71		19.74	90	1.4		46.00	-6.29
2342.20	48.56peak		34.89	0	1.0		54.00	-5.44