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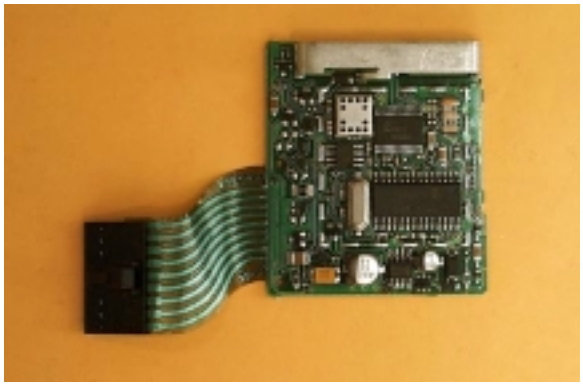
EXHIBIT E: REPORT OF MEASUREMENTS [2.1033(B6)]

Test Report for FCC ID: CB2JAG2HL3

FCC Part 2.1031, Part 15 Subpart C(15.231)

Report #0100435F
Issued 7/23/01



TRANSMITTER MODEL CB2JAG2HL3 OF HOMELINK® III SERIES

Prepared for: Mr. David Blaker
Johnson Controls Interiors, LLC
One Prince Center
Holland, MI 49423

Test Date(s): June 25-27, 2001

data recorded by

Ted Chaffee, NCE
Test Engineer, AHD

witnessed by

Craig Harder

This report prepared by:

Ted Chaffee, NCE
Technical Manager/Test Engineer, AHD

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Statements Concerning this Report

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: ±3.6 dB

Manufacturer/Applicant [2.1033(b1)]

The manufacturer and applicant:

JOHNSON CONTROLS INTERIORS, LLC.
One Prince Center
Holland, Michigan 49423

Measurement/Test Site Facility & Equipment

Test Site [2.948, 2.1033(b6)]

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 and Industry Canada. The original report filed with the FCC is, dated November 5, 1996, was accepted by the FCC in a letter dated January 15, 1997 and reconfirmed July 14, 2000, (31040/SIT 1300F2). The original report filed with Industry Canada, dated August 11, 1998, was accepted via a letter dated September 1, 1998, (file:IC3161).

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

Equipment	Model	S/N	Last Cal Date	Calibration Interval
HP EMI Receiver system	HP 8546A			
RF Filter Section	HP-85460A	3448A00283	24-Aug-00	12 month
RF Receiver Section	HP-85462A	3625A00342	24-Aug-00	12 month
EMCO BiconiLog Antenna	3142	1077	28-Jul-00	12 months
Double Ridged Horn	ONO91202-2	A00329	17-Apr-01	12 months
(3-M) Type 129FF Ultra Flex LowLoss	RG58/U	9910-12	08-Jun-01	6 months
(3-M) LMR-400 Ultra Flex	LMR400	9812-11	08-Jun-01	6 months
(10-M) Amelco 50ohm Coax	RG213/U	9903-10ab	08-Jun-01	6 months
50ohm Coax	RG223/U	9802302	11-Jun-01	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%.

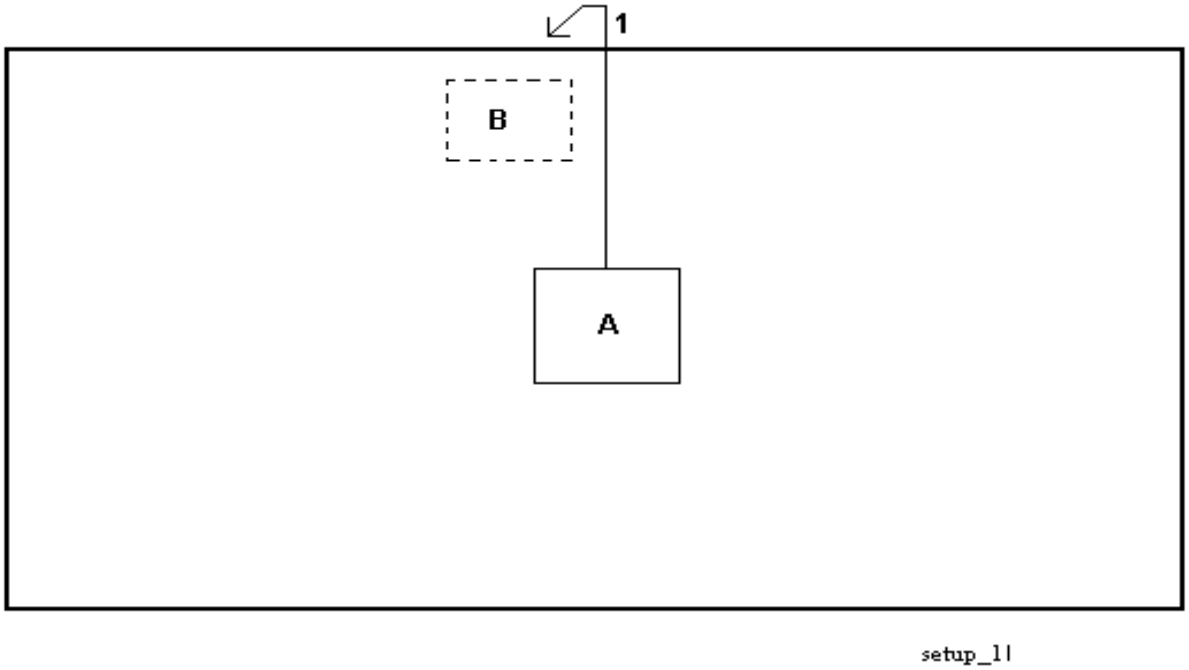
Tested Configuration /Setup: [2.1033(b8)]

Support Equipment & Cabling

Setup Diagram Legend	Description	Model	Serial No. / Part No.	EMC Consideration
A	[EUT] Universal Garage Door Opener	[JCI] CB2JAG2HL3	Y600380	FCC ID: CB2JAG2HL3
B	12V DC Power Supply	[Trygon] DL40-1	7968152	Located on the turntable base below the EUT table.
1	Power Supply Cable Harness	--	--	1.5 meters, Unshielded, 2-lead lightly twisted cable harness.

Setup Diagram

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



BASIC EUT SETUP
(Legend designation is 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 periodic operation in the allowed frequency bands above 70MHz, (Part 15.231).
3. The equipment under test was received on June 25, 2001 and this test series commenced on June 25, 2001.
4. The line conducted emission testing does not apply to this product. The device is powered from a 12 volt automobile source.
5. The frequencies selected for final evaluation include 288MHz, 310MHz, and 418MHz. This is in accordance with 47 CFR 15.31(m). The 310MHz was selected as a mid-range frequency because it is the predominant frequency used in controlling garage doors. Past correspondence with the FCC regarding the selection of frequencies and test setup suggest this judgment as appropriate.
6. Occupied Band Width of the transmitted signal, at the 20dB point, nearest the limit was measured to be 638KHz. This measurement occurred with the EUT transmitting at 288MHz with a pulse modulation of 30% duty cycle. This measurement is within the allowed 720KHz bandwidth
7. The preliminary scan for spurious emissions conducted in a shielded room indicated low level spurious signals.
8. The digital spurious emissions, nearest the limit, occurred at 72.0MHz. The quasi-peak level was measured to be 21.1dBuV/m which is18.9dB below the FCC Class B limit.
9. The field strength level of the fundamental was measured for 288MHz, 310MHz, and 418MHz. The evaluation showed the emission nearest the limit occurred while operating at 310MHz with 500Hz pulsed modulation at a 50% duty cycle. The EUT was positioned on the ‘side’ and the receive antenna oriented in the horizontal polarization. This signal was measured to be 1.0dB below the limit of 75.3dBuV/m (5833uV/m).
10. The evaluation of the field strength levels of the harmonics showed the emission nearest the limit occurred while operating at 288MHz with 500Hz pulsed modulation at 30% duty cycle. The EUT was positioned on the ‘flat’; and the receive antenna oriented in the horizontal polarization. This signal, at 576MHz, was measured to be 1.8dB below the limit of 53.8dBuV/m (490uV/m).
11. The average value of the coarse tune pulses over a 100mSec time, nearest the limit, occurred at 418MHz. The average measurement was determined to be 5865uV/m which is 4.9dB below the limit of 10,333uV/m..
12. The average value of the fine tune pulses over a 100mSec time, nearest the limit, occurred at 418MHz. The average measurement was determined to be 1857uV/m which is 14.9dB below the limit of 10,333uV/m.

Changes made to achieve compliance

1. NONE

Standards Applied to Test: [2.1033(b6)]

ANSI C63.4 - 1992, Appendix I
CFR47 FCC Part 2, Part 15, SubPart C, 15.231 Intentional Radiator; SubPart B, Digital Device

Test Methodology: [2.1033(b6)]

The pictures in this report, showing test setups, indicate the agreed upon configuration of testing for this product-type.

For the testing, the EUT was placed at the center of the table 80cm above the ground plane pursuant to ANSI C63.4 for stand-alone equipment. The 12volt supply harness was routed to the edge of the long side of the table then down to the power supply located on the turntable base.

The line conducted emission testing was not performed on this product. In its final configuration the product is powered from an automobile 12 volt system only.

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, Figure 9(c).

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
	The Average levels were determined mathematically based upon the duty cycle of the pulsed modulation of the transmitted signal.

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 evaluation the EUT was transmitting continuously.

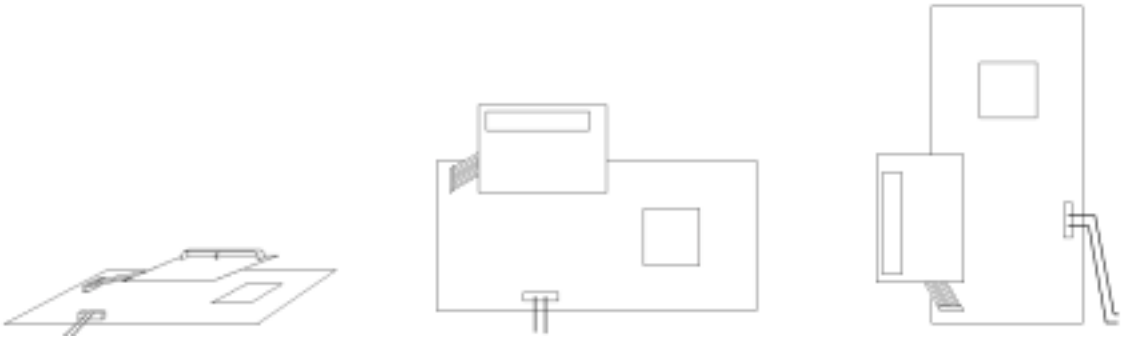
The turntable was rotated 360 degrees and the receiving antenna height varied from 1 to 4 meters to search out the highest emissions.

Preliminary tests were done at 288MHz, 310MHz, 340MHz, 365MHz, 390MHz, and 418MHz. The final measurements were made at a low band frequency (288MHz), a mid band frequency (310MHz), and a high band frequency (418MHz) pursuant to the requirements of 47CFR 15.31(m). At each frequency the EUT was placed in three orthogonal positions. At each position the 500Hz pulse modulation was adjusted to a 30%, 50%, and 80% duty cycle. At each duty cycle, measurements were taken with the receive antenna in vertical and horizontal positions.

The unit was evaluated up to the tenth harmonic of the fundamental as an intentional radiator, and up to 1000MHz as a digital device.

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: FS(dBuV/m) = RF(dBuV) + AF(dB/m) +CF(dB)

The resultant Field Strength measurement is recorded using the peak hold detector of the HP8546A.

This recorded peak level is further corrected, by calculation, to an average level by a factor determined by the duty cycle of the pulsed modulation. The duty cycle factor is determined as outlined in Appendix I4 of the standard ANSI C63.4:1992.

Formula 2: Average Level(uV/m) = [Peak Level(uV/m)] x [duty cycle factor].

Formula 2a: Average Level(dBuV/m) = Peak Level)dBuV/m) + duty cycle factor(dB).

The duty cycle factor to apply is determined for the duty cycles of 30%, 50% and 80% as follows.

For 30% (0.30): duty cycle factor(dB) = 20*Log(0.3) = -10.46
For 50% (0.50): duty cycle factor(dB) = 20*Log(0.5) = -6.02
For 80% (0.80): duty cycle factor(dB) = 20*Log(0.8) = -1.94

As an example:

A measured peak level of 50% duty cycle pulse modulated signal is 500uV/m.
Calculated to dBuV/m is 20*Log(500) = 53.98dBuV/m Peak level.
Applying the duty cycle factor: Avg. Level(dBuV/m) = 53.98 - 6.02dB = 47.96dBuV/m.

Calculation of FCC limits Part 15.231

For the frequency range 260MHz - 470MHz, the limit is a linear interpolation between 3750uV/m and 12500uV/m where the limit at 260MHz is 3750uV/m and the limit at 470MHz is 12500uV/m.

A formula to calculate the limit is established with a ratio linearly equating the frequency range to the limit range.

$(F_0 - F_L) / (F_H - F_L) = (L_0 - L_L) / (L_H - L_L)$

where F_0 and L_0 represent the frequency in question and its limit
where F_L and L_L represent the lower frequency (260MHz) and its limit (3750uV/m).
Where F_H and L_H represent the higher frequency (470MHz) and its limit (12500uV/m).

The calculations for the frequencies included in the application are:

288MHz (288 - 260) / (470 - 260) = (L_0 - 3750) / (12500 - 3750)
(28 / 210) * (8750) = L_0 - 3750
L_0 = 1166.7 + 3750
L_0 = 4916.7 uV/m is LIMIT at 288MHz

310MHz (310 - 260) / (470 - 260) = (L_0 - 3750) / (12500 - 3750)
(50 / 210) * (8750) = L_0 - 3750
L_0 = 2083.3 + 3750
L_0 = 5833.3 uV/m is LIMIT at 310MHz

418MHz (418 - 260) / (470 - 260) = (L_0 - 3750) / (12500 - 3750)
(158 / 210) * (8750) = L_0 - 3750
L_0 = 6583.3 + 3750
L_0 = 10333.3 uV/m is LIMIT at 418MHz

The limit in dB terms is calculated as the result of 20 times the log of the uV/m limit.

288MHz dB limit is 20 * LOG(4916.7 uV/m) = 73.8 dBuV/m

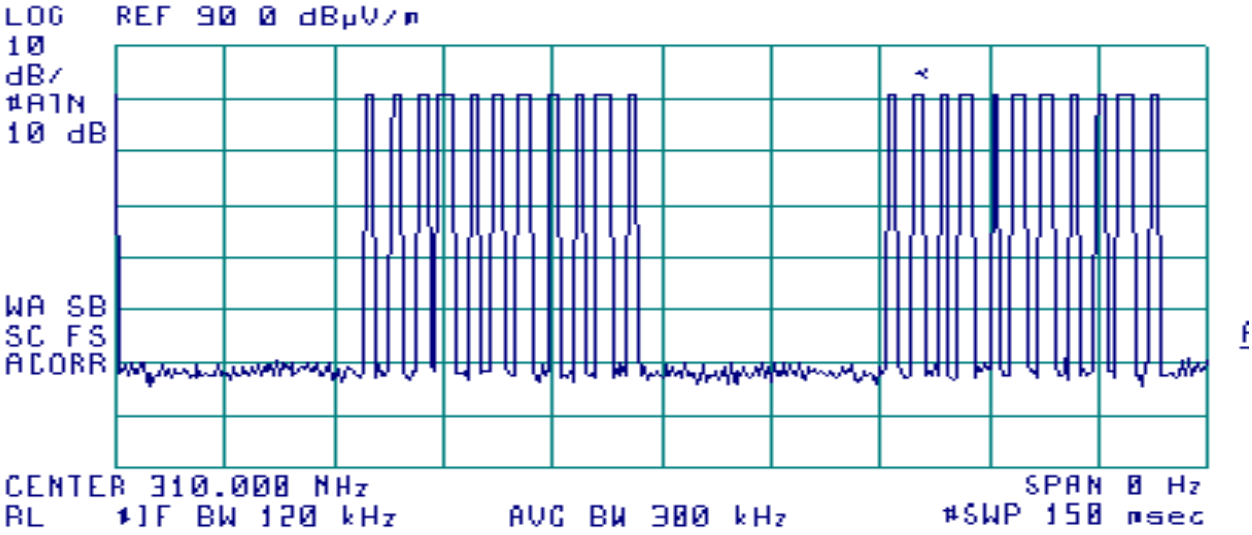
310MHz dB limit is 20 * LOG(5833.3 uV/m) = 75.3 dBuV/m

418MHz dB limit is 20 * LOG(10333.3 uV/m) = 80.3 dBuV/m

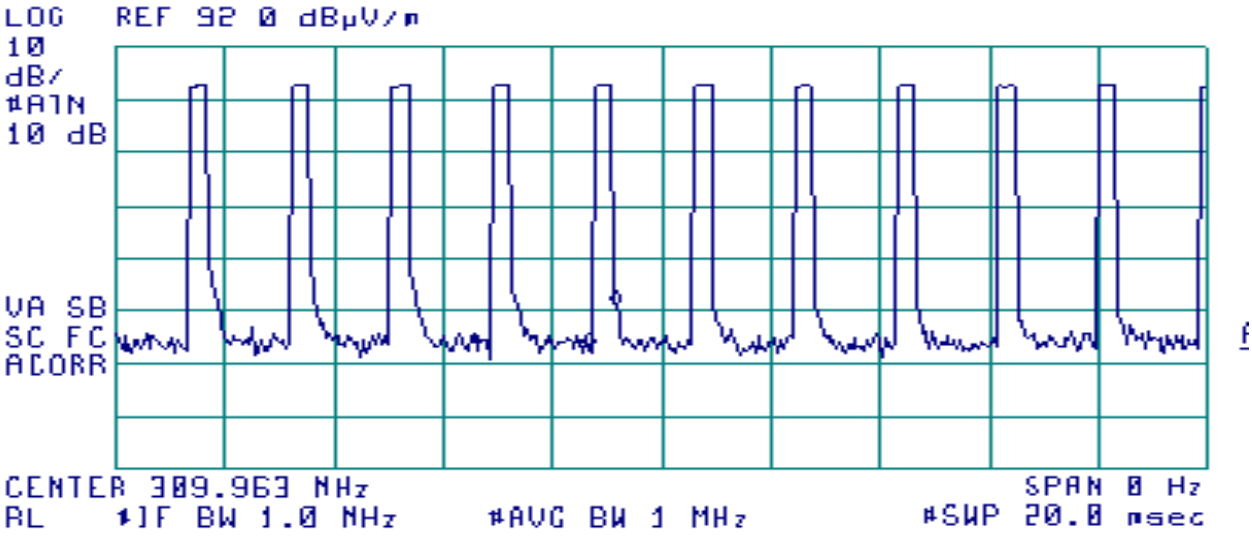
Test Data [2.1033(b6)]

Modulation Characteristics

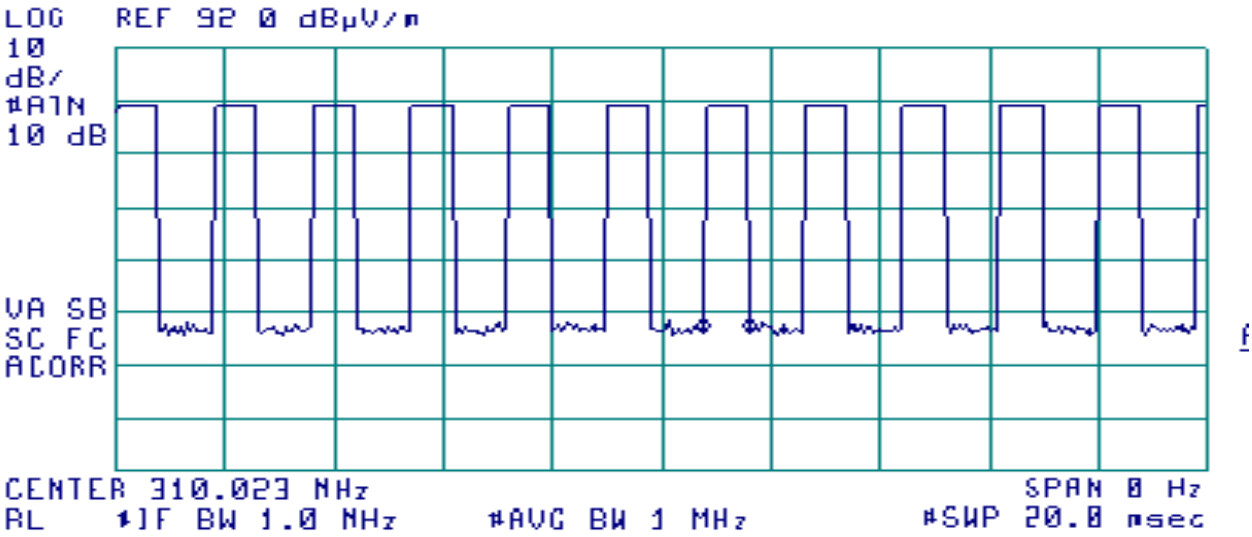
Typical encoding at 310MHz: Consisting of pulses of differing duty cycles.



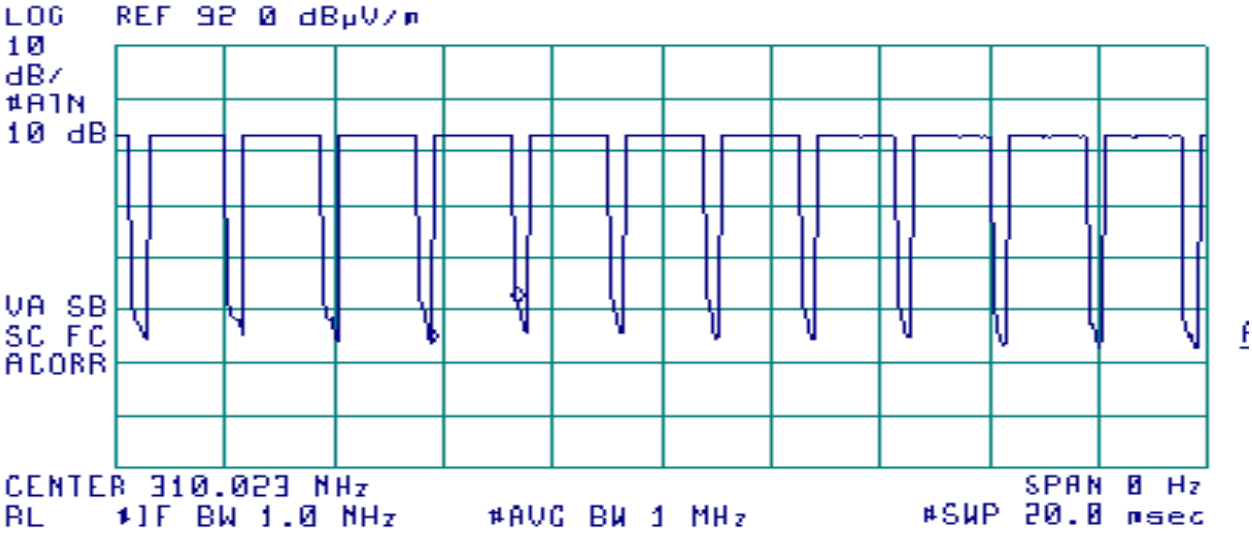
310MHz, 500Hz Modulation, 30% duty cycle



310MHz, 500Hz Modulation, 50% duty cycle



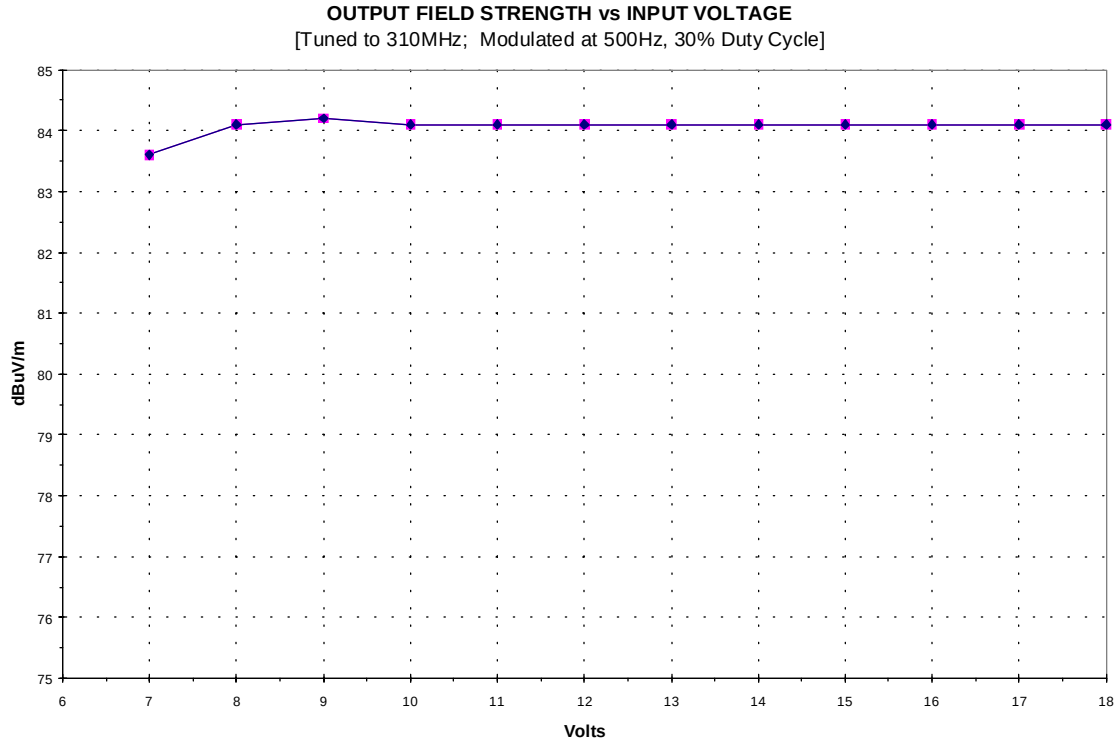
310MHz, 500Hz Modulation, 80% duty cycle



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

The relative emission level as the supply voltage varied is presented in the charts below.

TX OUTPUT vs. Voltage LEVEL DUT= CB2JAG2HL3, 310MHz, 30%duty cycle	
Volt In	TX OutPut Pk dBuV/m
6	NoOperation
7	83.6
8	84.1
9	84.2
10	84.1
11	84.1
12	84.1
13	84.1
14	84.1
15	84.1
16	84.1
17	84.1
18	84.1



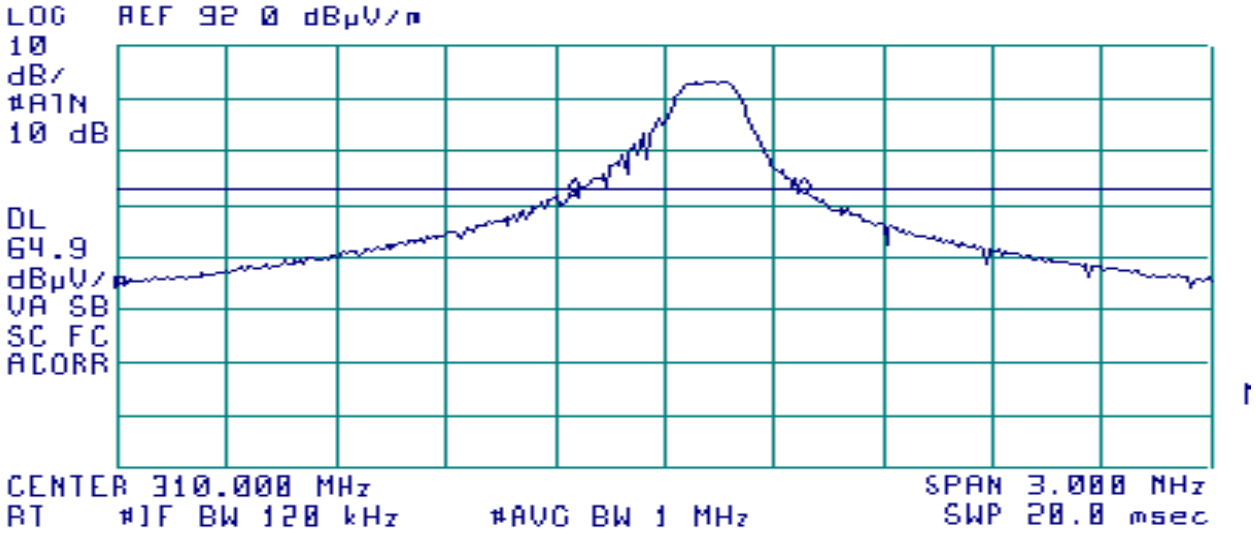
Occupied Bandwidth [15.231(c)]

The maximum allowed 20dB bandwidth is determined pursuant to 15.23(c). For fundamental signals between 70MHz and 900MHz the bandwidth allowed is 0.25% of the fundamental.

Formula 2: Allowed bandwidth = [Fundamental] x [.0025]

Fundamental (MHz)	Duty Cycle	Measured 20dB Bandwidth	LIMIT Fundamental * .0025
288	30%	638 KHz	720 KHz
"	50%	<630 KHz	720 KHz
"	80%	<630 KHz	720 KHz
310	30%	630 KHz	775 KHz
"	50%	<630 KHz	775 KHz
"	80%	<630 KHz	775 KHz
418	30%	638 KHz	1045 KHz
"	50%	<630 KHz	1045 KHz
"	80%	<630 KHz	1045 KHz

This chart shows a typical measured bandwidth signal.



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

Verification of no capability to tune within the Restricted Bands.

The unit is designed capable of tuning from 288MHz to 420MHz except that the Homelink® III firmware prevents the possibility of tuning to the restricted regions of 322-335.4MHz, 399.9-410Mhz, and the region 304-307MHz.

An exercise which attempted to train the units into these restricted bands demonstrated how well the firmware functioned. The unit could not be trained any closer than 1MHz to the restricted bands of 15.205 and no closer than 500KHz outside the band 304-307MHz.

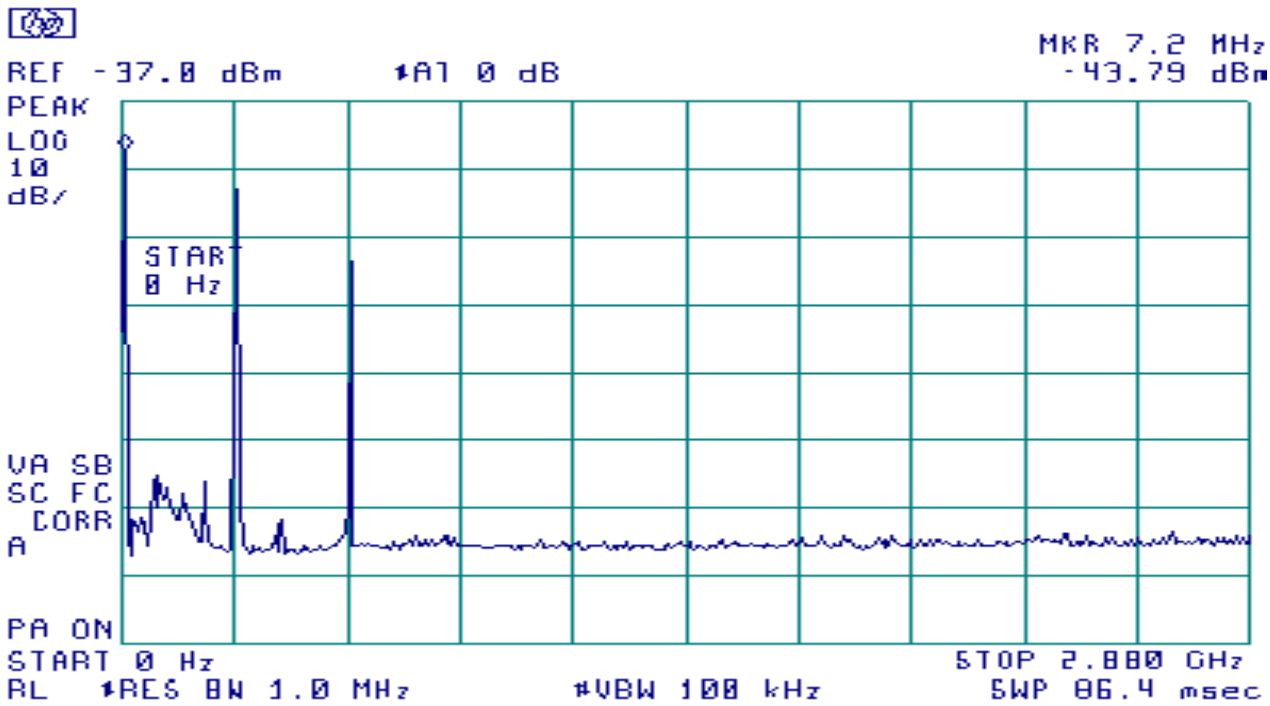
The spurious emissions observed in the restricted bands did not exceed the allowed limits for the restricted bands.

Radiated Field Strength Measurements: [15.231(b), 15.205]

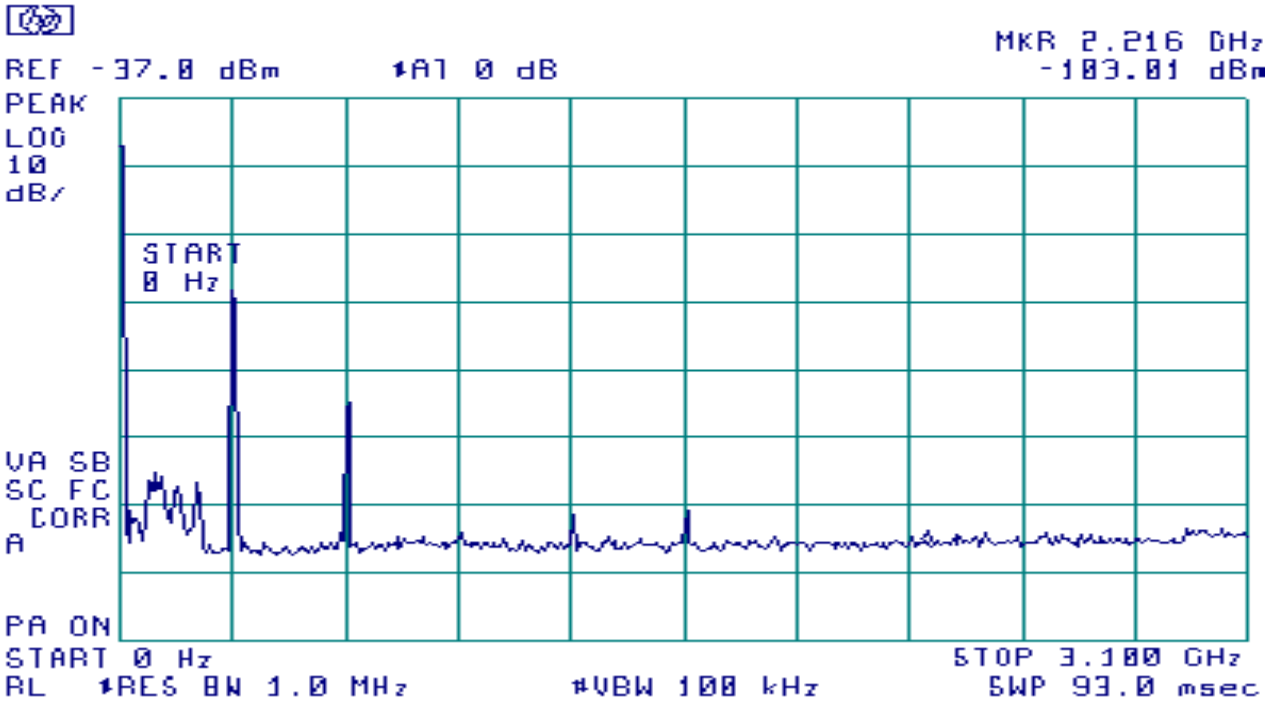
A scan of the CB2JAG2HL3 was made in a shielded room to study the emission profile of the EUT. These scans indicate there are low level spurious emissions from the unit other than the fundamental and its associated harmonics. These signals were measured at the 3-meter open area test site.

The first series of charts show the spectrum pattern of the EUT emissions. The levels indicated are not calibrated levels. Following the charts is a table of the measured levels at the 3-meter OATS.

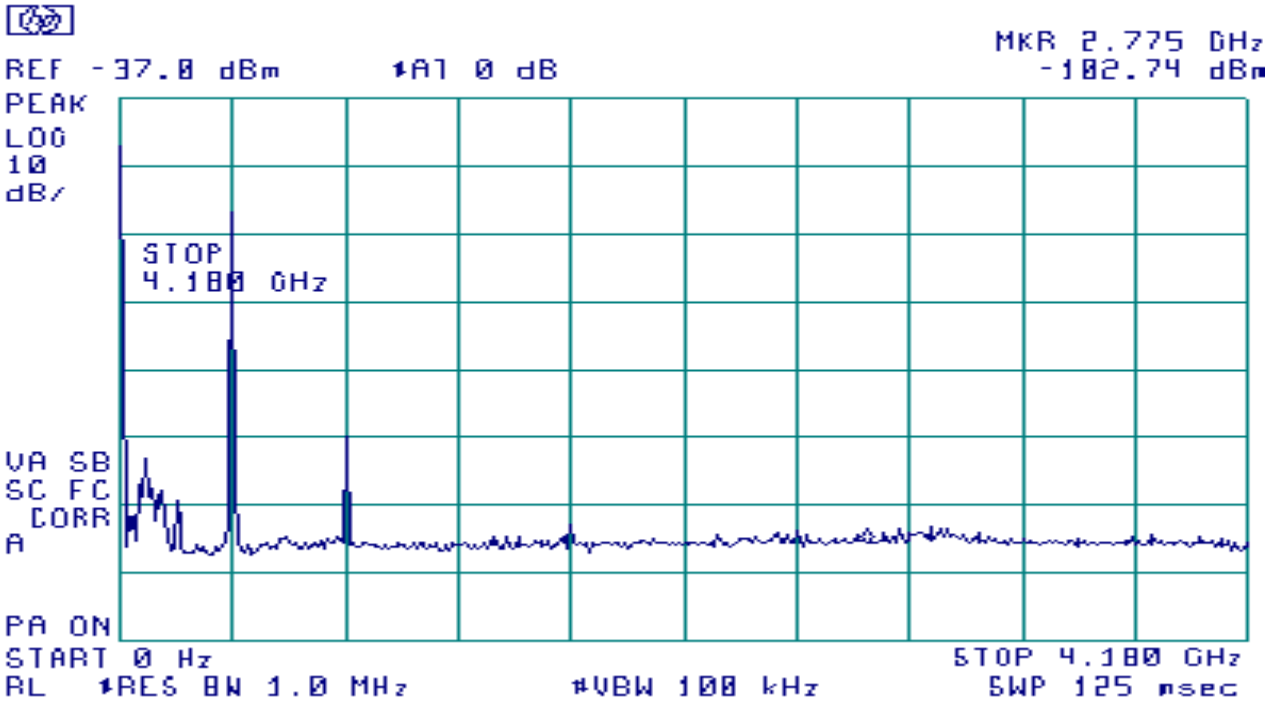
EUT trained to 288MHz operation



EUT trained to 310MHz operation

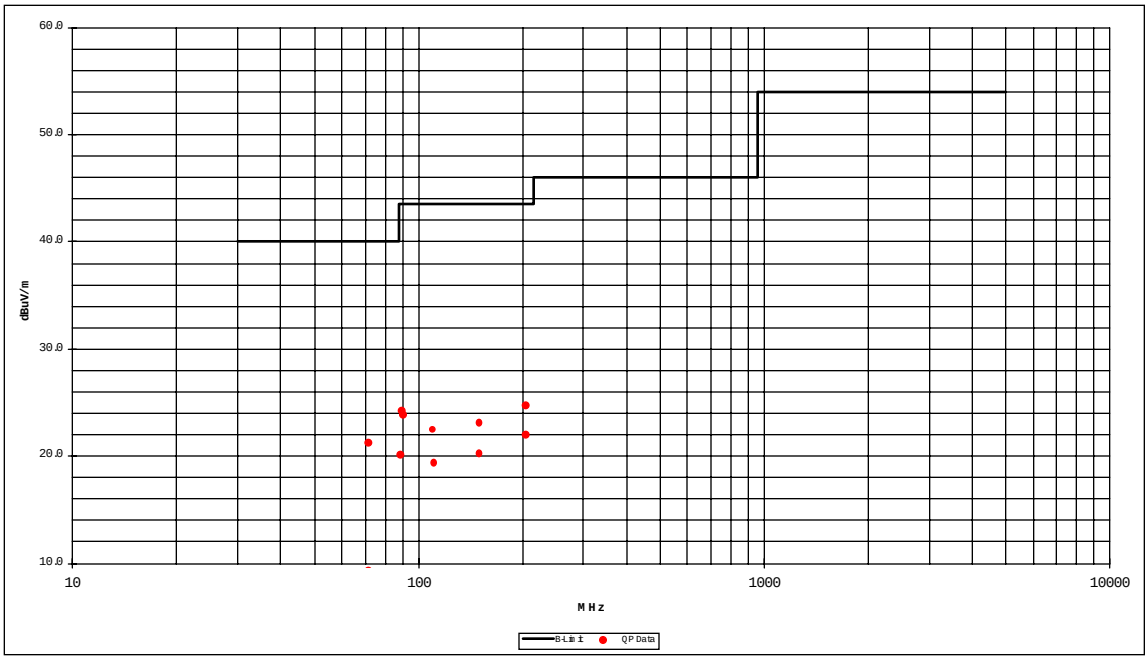


EUT trained to 418MHz operation.



Radiated Field Strength Measurements

Graph of Quasi-Peak Measurements



Tabulated Quasi-Peak Measurements.

Frequency MHz	Polarity	Quasi Peak Measurement dBuV/m	FCC Class B Limit dBuV/m	Margin dB		Included Cable + Antenna Factors dB/m
72.04	V	21.14	40.00	-18.86		7.84
89.94	V	24.15	43.50	-19.35		8.21
90.90	H	23.73	43.50	-19.77		8.30
110.11	V	22.44	43.50	-21.06		9.28
150.03	V	23.03	43.50	-20.47		9.33
205.41	V	24.60	43.50	-18.90		11.63

The frequencies for measurements were determined by the suspect list generated from the shielded room prescan. These suspect signal levels were measured to be at or below the background noise and ambient.

Field Strength Measurements of Fundamental : [15.231(b)]

MEASUREMENT PROCEDURE:

1. The EUT was trained to one of the three test frequencies.
2. The EUT was trained to one of the three test duty cycles.
3. The EUT was setup to one of the three orthogonal positions.
4. Steps 1-3 were repeated to cover all positions, duty cycles, and frequencies.

DUT Tuned to transmit at 288MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
288	side	H	81.8	30%	-10.46	71.3	73.8	**2.5**	14.7
"	"	"	78.1	50%	-6.02	72.1	73.8	**1.7**	"
"	"	"	72.8	80%	-1.94	70.9	73.8	**2.9**	"

DUT Tuned to transmit at 310MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
310	side	H	84.4	30%	-10.46	73.9	75.3	**1.4**	15.1
"	"	"	80.3	50%	-6.02	74.3	75.3	**1.0**	"
"	"	"	74.4	80%	-1.94	72.5	75.3	**2.8**	"

DUT Tuned to transmit at 418MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
418	end	V	88.8	30%	-10.46	78.3	80.3	**2.0**	18.3
"	"	"	84.8	50%	-6.02	78.8	80.3	**1.5**	"
"	"	"	79.1	80%	-1.94	77.2	80.3	**3.1**	"

Field Strength Measurements of Harmonics: [15.231(b), 15.205]

DUT Tuned to transmit at 288MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
576	flat	H	62.5	30%	-10.46	52.0	53.8	**1.8**	21.4
"	side	"	57.8	50%	-6.02	51.8	53.8	**2.0**	"
"	"	"	46.3	80%	-1.94	44.4	53.8	**9.4**	"
864	end	V	39.6	30%	-10.46	29.1	53.8	**24.7**	25.3
"	"	"	36.9	50%	-6.02	30.9	53.8	**22.9**	"
"	"	"	36.0	80%	-1.94	34.1	53.8	**19.7**	"
1152	flat	H	43.2	30%	-10.46	32.7	54.0	**21.3**	28.7
"	"	"	41.8	50%	-6.02	35.8	54.0	**18.2**	"
"	"	"	40.0	80%	-1.94	38.1	54.0	**15.9**	"
1440	side	V	48.2	30%	-10.46	37.7	54.0	**16.3**	29.4
"	"	"	45.7	50%	-6.02	39.7	54.0	**14.3**	"
"	"	"	45.0	80%	-1.94	43.1	54.0	**10.9**	"
1728	side	V	45.8	30%	-10.46	35.3	54.0	**18.7**	30.3
"	"	"	43.7	50%	-6.02	37.7	54.0	**16.3**	"
"	end	"	42.2	80%	-1.94	40.3	54.0	**13.7**	"
2016	end	V	44.2	30%	-10.46	33.7	54.0	**20.3**	31.2
"	side	H	42.1	50%	-6.02	36.1	54.0	**17.9**	"
"	-	V	41 Noise Floor	80%	-1.94	<39.1	54.0	**>14.9**	"
2304	-	V	41 Noise Floor	30%	-10.46	<30.5	54.0	**>23.5**	32.3
"	-	"	41 Noise Floor	50%	-6.02	<35.0	54.0	**>19.0**	"
"	-	"	41 Noise Floor	80%	-1.94	<39.1	54.0	**>14.9**	"
2592	-	V	41 Noise Floor	30%	-10.46	<30.5	54.0	**>23.5**	33.1
"	-	"	41 Noise Floor	50%	-6.02	<35.0	54.0	**>19.0**	"
"	-	"	41 Noise Floor	80%	-1.94	<39.1	54.0	**>14.9**	"
2880	-	V	41 Noise Floor	30%	-10.46	<30.5	54.0	**>23.5**	33.3
"	-	"	41 Noise Floor	50%	-6.02	<35.0	54.0	**>19.0**	"
"	-	"	41 Noise Floor	80%	-1.94	<39.1	54.0	**>14.9**	"

DUT Tuned to transmit at 310MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
620	flat	H	62.9	30%	-10.46	52.4	55.3	**2.9**	22.1
"	side	"	58.2	50%	-6.02	52.2	55.3	**3.1**	"
"	flat	"	49.8	80%	-1.94	47.9	55.3	**7.4**	"
930	flat	V	47.7	30%	-10.46	37.2	55.3	**18.1**	25.8
"	"	"	40.7	50%	-6.02	34.7	55.3	**20.6**	"
"	"	H	32.0	80%	-1.94	30.1	55.3	**25.2**	"
1240	side	V	44.4	30%	-10.46	33.9	54.0	**20.1**	29.0
"	"	"	41.7	50%	-6.02	35.7	54.0	**18.3**	"
"	end	"	38.6	80%	-1.94	36.7	54.0	**17.3**	"
1550	side	V	49.3	30%	-10.46	38.8	54.0	**15.2**	29.7
"	"	"	47.6	50%	-6.02	41.6	54.0	**12.4**	"
"	"	"	45.8	80%	-1.94	43.9	54.0	**10.1**	"
1860	flat	V	42.2	30%	-10.46	31.7	55.3	**23.6**	30.7
"	"	"	41.4	50%	-6.02	35.4	55.3	**19.9**	"
"	-	"	40 Noise Floor	80%	-1.94	<38.1	55.3	**>17.2**	"
2170	end	V	45.0	30%	-10.46	34.5	55.3	**20.8**	31.8
"	side	H	43.9	50%	-6.02	37.9	55.3	**17.4**	"
"	"	"	42.7	80%	-1.94	40.8	55.3	**14.5**	"
2480	-	V	41 Noise Floor	30%	-10.46	<30.5	55.3	**>24.8**	32.9
"	-	"	41 Noise Floor	50%	-6.02	<35.0	55.3	**>20.3**	"
"	-	"	41 Noise Floor	80%	-1.94	<39.1	55.3	**>16.2**	"
2790	-	V	42 Noise Floor	30%	-10.46	<31.5	54.0	**>22.5**	33.2
"	-	"	42 Noise Floor	50%	-6.02	<36.0	54.0	**>18.0**	"
"	-	"	42 Noise Floor	80%	-1.94	<40.1	54.0	**>13.9**	"
3100	-	V	42 Noise Floor	30%	-10.46	<31.5	54.0	**>22.5**	33.7
"	-	"	42 Noise Floor	50%	-6.02	<36.0	54.0	**>18.0**	"
"	-	"	42 Noise Floor	80%	-1.94	<40.1	54.0	**>13.9**	"

DUT Tuned to transmit at 418MHz

Freq. MHz	DUT position	Ant. Pol.	Corrected Data Peak Detector dBuV/m	Duty Cycle %	Duty Cycle Factor dB	Calculated Average Level dBuV/m	FCC Limit dBuV/m	Margin dB	Cable +Ant. Factor dB+dB/m
836	flat	H	60.1	30%	-10.46	49.6	60.3	**10.7**	25.0
"	"	"	54.8	50%	-6.02	48.8	60.3	**11.5**	"
"	"	"	46.2	80%	-1.94	44.3	60.3	**16.0**	"
1254	flat	H	49.2	30%	-10.46	38.7	54.0	**15.3**	29.0
"	side	V	44.4	50%	-6.02	38.4	54.0	**15.6**	"
"	"	"	41.9	80%	-1.94	40.0	54.0	**14.0**	"
1672	end	V	49.0	30%	-10.46	38.5	54.0	**15.5**	30.1
"	"	"	46.0	50%	-6.02	40.0	54.0	**14.0**	"
"	flat	H	43.7	80%	-1.94	41.8	54.0	**12.2**	"
2090	end	V	47.1	30%	-10.46	36.6	60.3	**23.7**	31.5
"	side	H	44.2	50%	-6.02	38.2	60.3	**22.1**	"
"	end	"	43.2	80%	-1.94	41.3	60.3	**19.0**	"
2508	side	V	41 Noise Floor	30%	-10.46	<30.5	60.3	>**29.8**	33.0
"	"	"	41 Noise Floor	50%	-6.02	<35.0	60.3	>**25.3**	"
"	flat	"	41 Noise Floor	80%	-1.94	<39.1	60.3	>**21.2**	"
2926	end	V	41 Noise Floor	30%	-10.46	<30.5	60.3	>**29.8**	33.3
"	"	"	41 Noise Floor	50%	-6.02	<35.0	60.3	>**25.3**	"
"	"	"	41 Noise Floor	80%	-1.94	<39.1	60.3	>**21.2**	"
3344	flat	V	42 Noise Floor	30%	-10.46	<31.5	60.3	>**28.8**	34.4
"	'	"	42 Noise Floor	50%	-6.02	<36.0	60.3	>**24.3**	"
"	side	"	42 Noise Floor	80%	-1.94	<40.1	60.3	>**20.2**	"
3762	side	V	42 Noise Floor	30%	-10.46	<31.5	54.0	>**22.5**	34.8
"	"	"	42 Noise Floor	50%	-6.02	<36.0	54.0	>**18.0**	"
"	end	"	42 Noise Floor	80%	-1.94	<40.1	54.0	>**13.9**	"
4180	side	V	42 Noise Floor	30%	-10.46	<31.5	54.0	>**22.5**	35.0
"	end	"	42 Noise Floor	50%	-6.02	<36.0	54.0	>**18.0**	"
"	side	"	42 Noise Floor	80%	-1.94	<40.1	54.0	>**13.9**	"

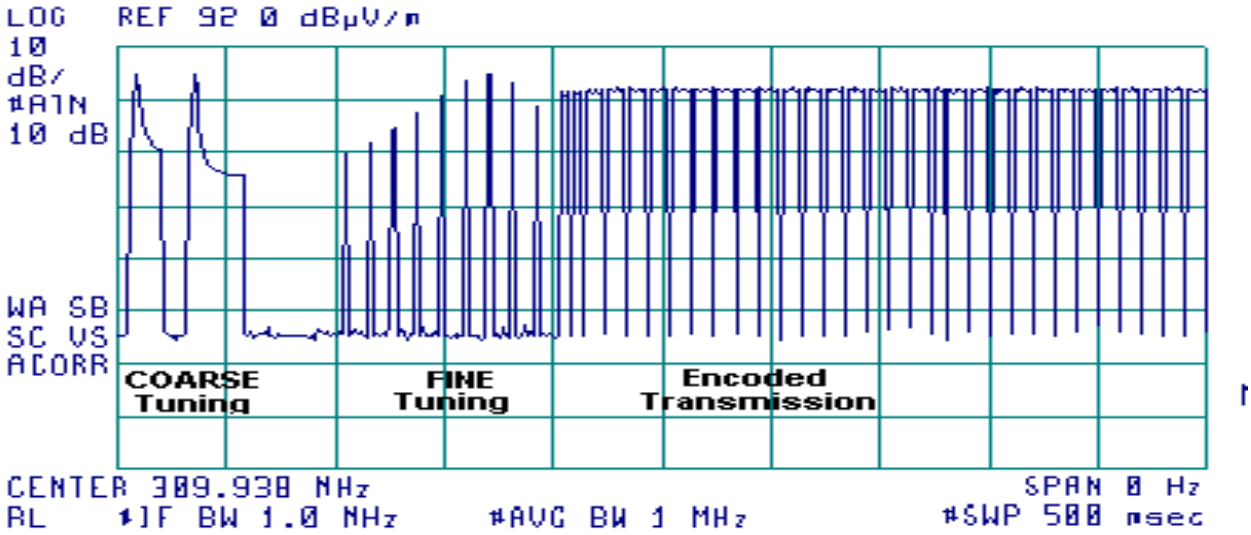
Calculation of Field Strength of Tuning Pulses: [15.231(b)], 15.31(c)]

The tuning pulses are generated each time the CB2JAG2HL3 is activated.

The tuning pulse sequence is: During the first 100mSec of activation two pulses of a 'coarse' tune. During the second 100mSec of activation are nine pulses of a 'fine' tune. At approximately 200mSec after activation the encoded transmission begins.

The signal levels of the tuning pulses were maximized by maximizing the signal levels of the pulse modulated transmission. The antenna height and turntable azimuth for maximum emission levels were adjusted while measuring the field strength of the pulse modulated transmissions.

A typical tuning pulse sequence is presented in this figure below.



To determine level of the tuning pulses for comparison to the limits, the following procedure was used.

MEASUREMENT PROCEDURE:

1. The EUT was trained to each of the three test frequencies at 30% duty cycle of the 500Hz modulating pulse.
2. The HP8456A EMI Receiver was adjusted to a fundamental frequency and set at 0Hz span, with 1MHz IF Bandwidth.
3. The trigger level was adjusted to capture the pulses of interest.
4. The EUT was activated and a single trace recorded on the Receiver in order to capture the tuning pulses.
5. The captured trace was digitally stored. The stored data points (400 data points for a full screen trace) were then used in calculations to determine the levels of the pulses.

CALCULATION OF THE FIELD STRENGTH OF THE TUNING PULSES.[15.35(c)]

Pursuant to 47 CFR 15.35(c), the field strength is determined by averaging over ONE complete pulse train up to 100mSec, including blanking intervals.

1. First was determined the number of data points captured which represented 100mSec span of time. There are 400 data points stored for one complete trace. The scan rate of the HP8546A receiver was set to capture the tuning pulses.

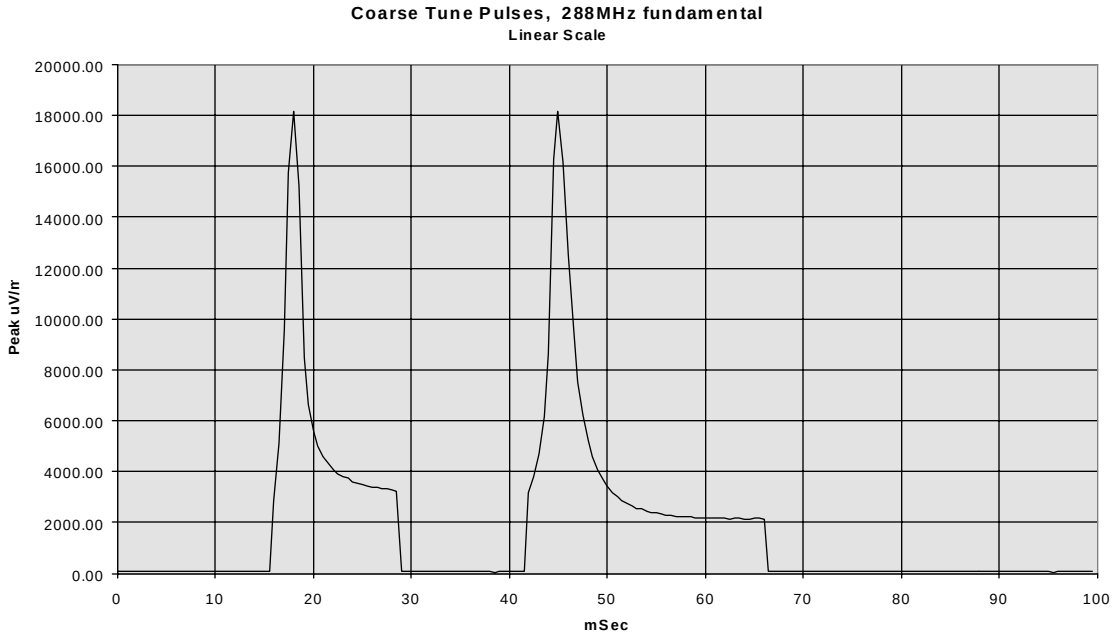
   Therefore: Number of data points per 100mSec
   = 100mSec * (400pts/scan) / (No. of mSec/scan).
   Example: If the scan rate is set at 200mSec, then the number of data points per 100mSec is 100mSec * (400pts / 200mSec) = 200 pts.

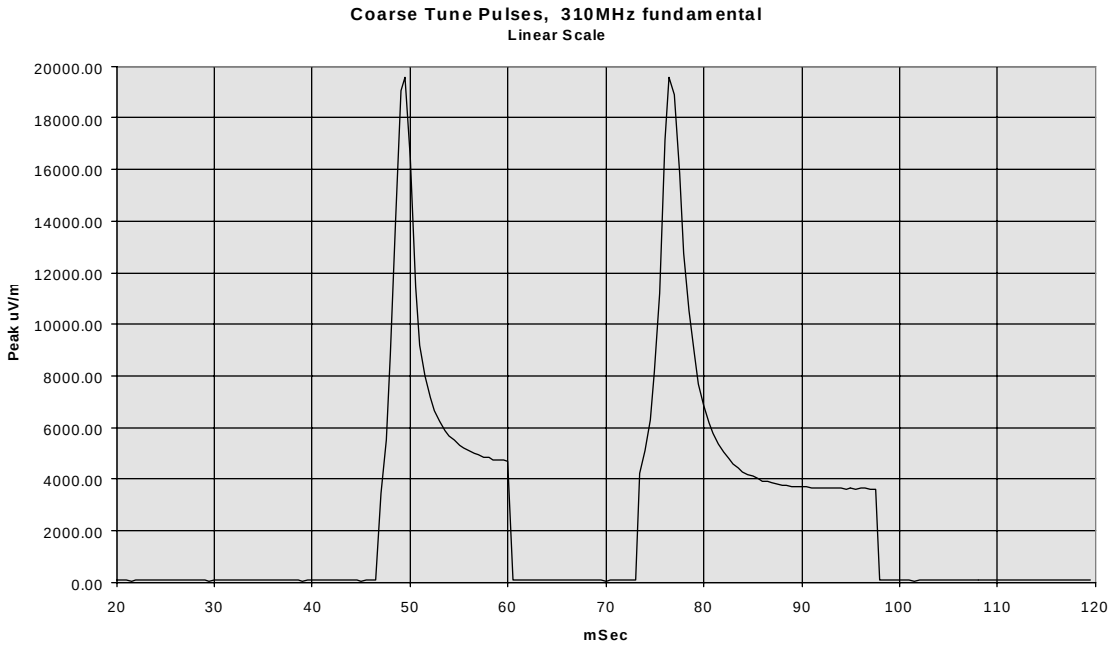
2. The AVERAGE field strength level (uV/m) within the 100mSec is then determined by dividing SUM of the levels (uV/m) of all data points by the number of data points.

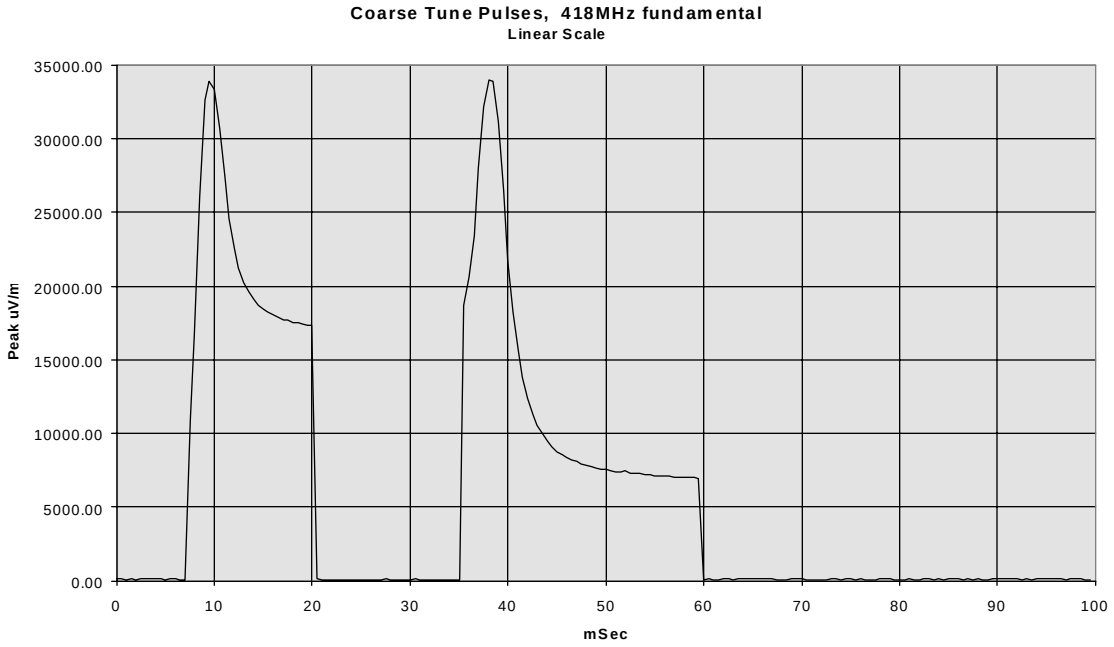
   Formula 3: Average Field Intensity

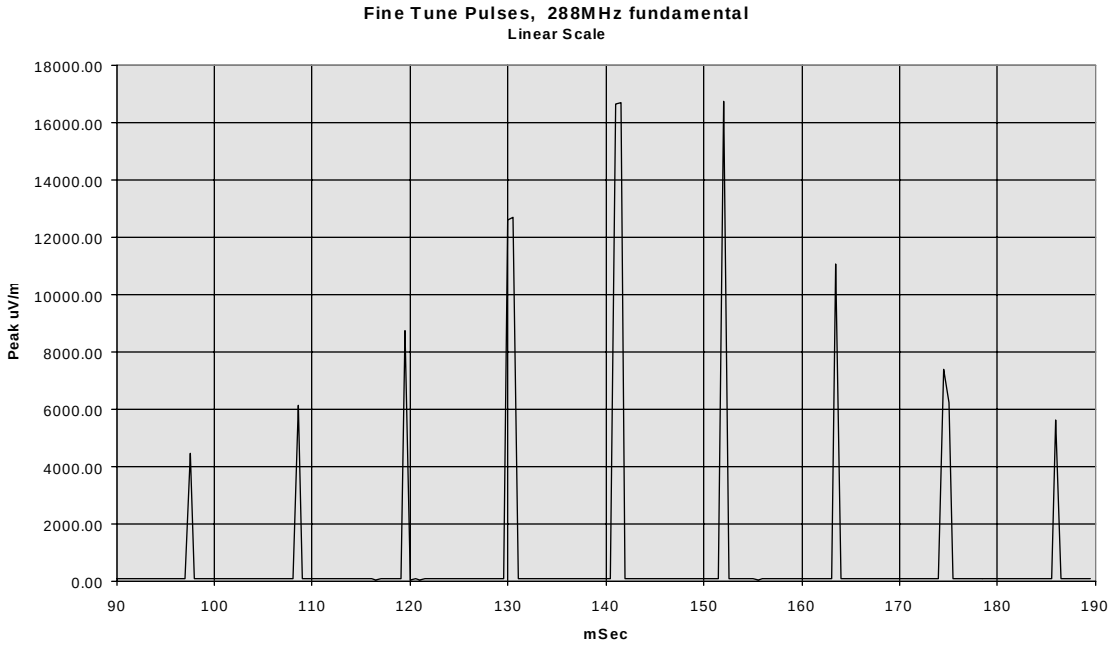
$$\text{Avg. F.I.} = \frac{\sum_{n=1}^{\text{no. of data pts}} (\text{Level}_n)\text{uV/m}}{\text{(number of data points)}}$$

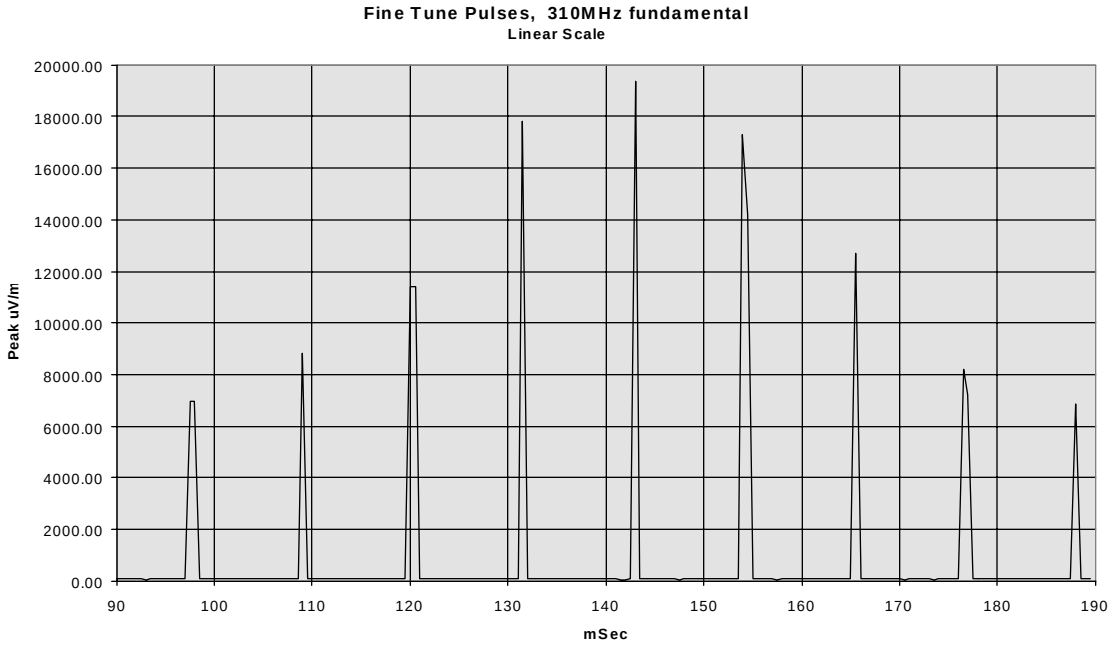
The charts that follow are the reproduction of the coarse tune pulse traces using number of data points representing 100mSec sweep time from the screen display of the HP8546A EMI receiver.

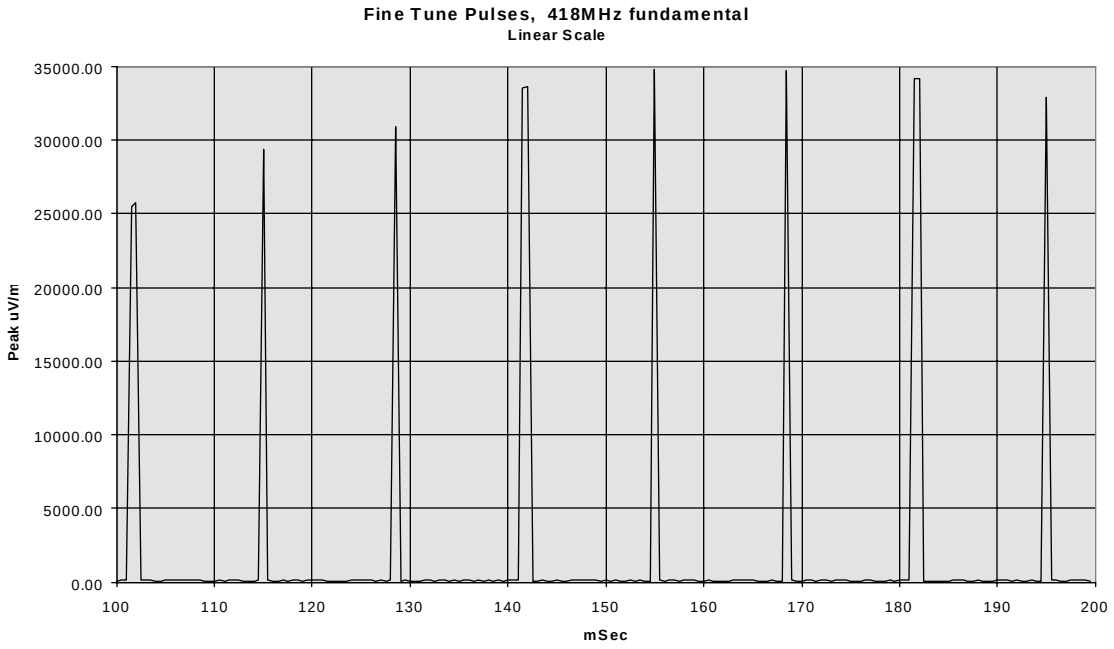



Coarse Tune Pulses, 310MHz fundamental
Linear Scale
Peak uV/m
20000.00
18000.00
16000.00
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
20
30
40
50
60
70
80
90
100
110
120
mSec


Coarse Tune Pulses, 418MHz fundamental
Linear Scale
Peak uV/m
35000.00
30000.00
25000.00
20000.00
15000.00
10000.00
5000.00
0.00
0
10
20
30
40
50
60
70
80
90
100
mSec


Fine Tune Pulses, 288MHz fundamental
Linear Scale
Peak uV/m
18000.00
16000.00
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
90
100
110
120
130
140
150
160
170
180
190
mSec


Fine Tune Pulses, 310MHz fundamental
Linear Scale
Peak uV/m
20000.00
18000.00
16000.00
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
90
100
110
120
130
140
150
160
170
180
190
mSec



The raw data used in calculating the average field intensity of the tuning pulses are presented in the Appendix of this test report.

COARSE TUNE PULSES, Calculated average over 100mSec

TX Freq. (MHz)	SUM of the levels of all data points in 100mSec span (uV/m)	Number of Data points in 100mSec span N	Average SUM/N (uV/m)	LIMIT (uV/m)	MARGIN (dB)
288	368,350	200	1842	4917	**8.5**
310	510,652	200	2553	5833	**7.2**
418	1,173,016	200	5865	10333	**4.9**

FINE TUNE PULSES, Calculated average over 100mSec

TX Freq. (MHz)	SUM of the levels of all data points in 100mSec span (uV/m)	Number of Data points in 100mSec span N	Average SUM/N (uV/m)	LIMIT (uV/m)	MARGIN (dB)
288	137,662	200	688	4917	**17.1**
310	163,086	200	815	5833	**17.1**
418	371,410	200	1857	10333	**14.9**

APPENDIX: Tune Pulses - Data Details

COARSE TUNE Pulse; Fundamental Frequency = 288MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	0	60.26	25	3471.36	50	3427.68	75	81.19
2	0.5	77.71	25.5	3427.68	50.5	3176.87	75.5	68.31
3	1	61.59	26	3400.17	51	3026.91	76	64.71
4	1.5	75.08	26.5	3380.65	51.5	2857.59	76.5	69.90
5	2	69.34	27	3322.77	52	2776.51	77	69.34
6	2.5	66.45	27.5	3307.50	52.5	2639.37	77.5	72.61
7	3	67.38	28	3269.64	53	2567.44	78	67.38
8	3.5	74.47	28.5	3228.49	53.5	2520.58	78.5	63.17
9	4	65.92	29	65.77	54	2451.88	79	73.71
10	4.5	61.87	29.5	65.61	54.5	2412.68	79.5	66.45
11	5	61.73	30	60.12	55	2360.48	80	63.53
12	5.5	71.86	30.5	64.57	55.5	2330.77	80.5	69.58
13	6	67.38	31	62.73	56	2304.09	81	63.68
14	6.5	70.71	31.5	64.86	56.5	2262.04	81.5	70.71
15	7	65.09	32	72.19	57	2249.05	82	66.68
16	7.5	67.76	32.5	74.05	57.5	2249.05	82.5	76.30
17	8	65.77	33	68.63	58	2213.09	83	71.45
18	8.5	64.57	33.5	62.37	58.5	2220.75	83.5	74.64
19	9	76.91	34	70.31	59	2190.28	84	68.87
20	9.5	79.07	34.5	72.03	59.5	2190.28	84.5	67.76
21	10	61.09	35	67.38	60	2167.70	85	63.31
22	10.5	68.87	35.5	69.18	60.5	2167.70	85.5	80.17
23	11	66.30	36	75.68	61	2177.71	86	67.92
24	11.5	80.54	36.5	76.74	61.5	2167.70	86.5	63.02
25	12	61.09	37	68.47	62	2160.23	87	74.47
26	12.5	81.47	37.5	64.86	62.5	2145.36	87.5	66.83
27	13	70.71	38	76.47	63	2172.70	88	66.15
28	13.5	66.15	38.5	58.21	63.5	2160.23	88.5	69.18
29	14	66.99	39	67.38	64	2145.36	89	63.02
30	14.5	65.61	39.5	65.92	64.5	2145.36	89.5	75.08
31	15	74.05	40	75.08	65	2160.23	90	61.59
32	15.5	72.03	40.5	67.53	65.5	2160.23	90.5	66.15
33	16	2867.48	41	65.92	66	2145.36	91	70.47
34	16.5	5134.52	41.5	62.88	66.5	61.45	91.5	70.71
35	17	9571.94	42	3202.58	67	75.51	92	64.71
36	17.5	15721.72	42.5	3815.05	67.5	70.88	92.5	66.83
37	18	18134.27	43	4704.35	68	69.90	93	72.03
38	18.5	15222.99	43.5	6137.62	68.5	64.19	93.5	65.77
39	19	8462.53	44	8639.73	69	68.87	94	65.92
40	19.5	6629.79	44.5	16292.96	69.5	67.22	94.5	67.53
41	20	5584.70	45	18176.07	70	65.61	95	66.83
42	20.5	5011.87	45.5	16162.18	70.5	58.34	95.5	56.69
43	21	4613.18	46	12516.99	71	69.58	96	71.29
44	21.5	4325.14	46.5	9616.12	71.5	65.61	96.5	73.11
45	22	4092.61	47	7542.23	72	59.98	97	79.25
46	22.5	3921.93	47.5	6201.55	72.5	72.61	97.5	64.19
47	23	3823.84	48	5205.95	73	68.08	98	66.45
48	23.5	3723.92	48.5	4565.62	73.5	68.87	98.5	61.09
49	24	3597.49	49	4059.76	74	74.30	99	66.83
50	24.5	3539.97	49.5	3672.82	74.5	65.92	99.5	72.61

COARSE TUNE Pulse; Fundamental Frequency = 310MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	20	74.64	45	63.97	70	63.31	95	3630.78
2	20.5	74.99	45.5	65.69	70.5	79.62	95.5	3622.43
3	21	83.46	46	73.03	71	76.91	96	3639.15
4	21.5	63.83	46.5	80.54	71.5	70.06	96.5	3639.15
5	22	72.86	47	3459.39	72	79.43	97	3601.64
6	22.5	94.73	47.5	5495.41	72.5	70.06	97.5	3601.64
7	23	83.95	48	8820.64	73	74.82	98	74.64
8	23.5	67.84	48.5	14076.67	73.5	4226.69	98.5	86.20
9	24	75.16	49	19054.61	74	5099.18	99	75.86
10	24.5	66.45	49.5	19565.91	74.5	6316.84	99.5	66.60
11	25	78.61	50	16443.72	75	8165.82	100	74.39
12	25.5	72.86	50.5	11481.54	75.5	11181.50	100.5	68.39
13	26	73.20	51	9204.50	76	17119.85	101	68.55
14	26.5	69.50	51.5	8007.56	76.5	19565.91	101.5	64.64
15	27	70.55	52	7161.43	77	18879.91	102	67.84
16	27.5	85.02	52.5	6645.08	77.5	15848.93	102.5	74.05
17	28	85.51	53	6230.17	78	12735.03	103	70.88
18	28.5	76.74	53.5	5888.44	78.5	10507.51	103.5	71.29
19	29	65.16	54	5675.45	79	8871.56	104	68.39
20	29.5	64.64	54.5	5495.41	79.5	7664.79	104.5	78.34
21	30	71.70	55	5333.35	80	6862.78	105	81.38
22	30.5	71.86	55.5	5193.98	80.5	6180.16	105.5	76.12
23	31	87.80	56	5081.59	81	5780.96	106	66.22
24	31.5	71.70	56.5	5011.87	81.5	5364.14	106.5	80.54
25	32	68.94	57	4943.11	82	5035.01	107	69.34
26	32.5	71.45	57.5	4864.07	82.5	4813.93	107.5	67.30
27	33	72.28	58	4825.03	83	4613.18	108	70.23
28	33.5	76.74	58.5	4758.83	83.5	4441.20	108.5	73.20
29	34	74.39	59	4736.96	84	4295.36	109	71.70
30	34.5	82.79	59.5	4747.88	84.5	4192.76	109.5	66.91
31	35	67.14	60	4698.94	85	4106.77	110	70.23
32	35.5	72.61	60.5	78.80	85.5	4013.28	110.5	65.54
33	36	73.62	61	74.82	86	3940.03	111	71.12
34	36.5	74.64	61.5	83.46	86.5	3908.41	111.5	81.38
35	37	68.00	62	87.10	87	3845.92	112	72.44
36	37.5	70.23	62.5	80.72	87.5	3823.84	112.5	77.36
37	38	72.28	63	75.16	88	3771.38	113	76.12
38	38.5	81.38	63.5	70.88	88.5	3749.73	113.5	80.54
39	39	65.01	64	69.50	89	3711.08	114	70.06
40	39.5	68.79	64.5	73.03	89.5	3698.28	114.5	72.61
41	40	83.27	65	69.10	90	3711.08	115	68.94
42	40.5	69.66	65.5	66.76	90.5	3689.78	115.5	70.23
43	41	76.91	66	71.70	91	3660.16	116	68.55
44	41.5	80.08	66.5	73.20	91.5	3681.29	116.5	67.45
45	42	67.69	67	68.79	92	3660.16	117	81.56
46	42.5	74.99	67.5	74.82	92.5	3630.78	117.5	69.50
47	43	81.38	68	88.10	93	3630.78	118	70.06
48	43.5	67.69	68.5	74.22	93.5	3639.15	118.5	69.90
49	44	69.90	69	68.55	94	3651.74	119	68.00
50	44.5	73.03	69.5	71.70	94.5	3609.94	119.5	88.61

COARSE TUNE Pulse; Fundamental Frequency = 418MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	0	116.14	25	93.97	50	7559.62	75	137.72
2	0.5	133.81	25.5	106.78	50.5	7473.09	75.5	107.03
3	1	106.41	26	112.07	51	7413.10	76	116.41
4	1.5	118.71	26.5	98.40	51.5	7379.04	76.5	113.50
5	2	107.28	27	108.14	52	7455.90	77	107.65
6	2.5	120.92	27.5	115.48	52.5	7336.69	77.5	110.28
7	3	133.81	28	112.59	53	7294.58	78	114.95
8	3.5	128.68	28.5	100.81	53.5	7261.06	78.5	114.29
9	4	120.64	29	103.16	54	7202.78	79	137.40
10	4.5	128.38	29.5	102.68	54.5	7202.78	79.5	113.24
11	5	102.45	30	96.83	55	7144.96	80	112.07
12	5.5	119.67	30.5	127.64	55.5	7144.96	80.5	106.29
13	6	116.14	31	101.86	56	7128.53	81	137.72
14	6.5	108.77	31.5	101.86	56.5	7128.53	81.5	104.59
15	7	102.09	32	110.54	57	7063.18	82	100.00
16	7.5	10901.84	32.5	102.45	57.5	7063.18	82.5	114.68
17	8	16749.43	33	97.05	58	7006.48	83	118.99
18	8.5	26061.54	33.5	106.78	58.5	7006.48	83.5	101.27
19	9	32621.21	34	111.69	59	7006.48	84	114.29
20	9.5	33845.43	34.5	99.43	59.5	6966.27	84.5	110.54
21	10	33304.28	35	103.16	60	107.65	85	114.95
22	10.5	30760.97	35.5	18728.37	60.5	147.40	85.5	131.07
23	11	27352.69	36	20606.30	61	109.65	86	136.30
24	11.5	24547.09	36.5	23388.37	61.5	107.03	86.5	104.83
25	12	22594.36	37	28022.06	62	115.48	87	134.43
26	12.5	21232.44	37.5	32210.69	62.5	118.30	87.5	113.50
27	13	20276.83	38	34001.65	63	111.43	88	122.18
28	13.5	19611.01	38.5	33845.43	63.5	118.71	88.5	110.79
29	14	19098.53	39	31188.90	64	118.99	89	107.28
30	14.5	18728.37	39.5	26485.00	64.5	120.92	89.5	119.67
31	15	18428.92	40	21752.04	65	125.31	90	115.21
32	15.5	18217.97	40.5	18217.97	65.5	118.71	90.5	119.26
33	16	18030.18	41	15613.49	66	120.64	91	122.89
34	16.5	17885.46	41.5	13835.66	66.5	117.08	91.5	117.08
35	17	17701.09	42	12359.47	67	118.03	92	122.18
36	17.5	17741.89	42.5	11324.00	67.5	109.40	92.5	111.17
37	18	17559.01	43	10531.74	68	109.65	93	118.71
38	18.5	17498.47	43.5	9977.00	68.5	103.51	93.5	108.77
39	19	17458.22	44	9495.11	69	119.67	94	131.37
40	19.5	17358.01	44.5	9078.21	69.5	117.08	94.5	127.35
41	20	17358.01	45	8790.23	70	129.27	95	114.16
42	20.5	118.99	45.5	8531.00	70.5	111.43	95.5	123.31
43	21	107.03	46	8375.29	71	108.77	96	124.59
44	21.5	106.05	46.5	8222.43	71.5	102.92	96.5	127.94
45	22	97.84	47	8090.96	72	106.29	97	113.89
46	22.5	104.35	47.5	7961.59	72.5	113.89	97.5	122.89
47	23	97.61	48	7852.36	73	125.31	98	128.38
48	23.5	112.33	48.5	7771.41	73.5	123.59	98.5	139.32
49	24	106.29	49	7691.30	74	112.33	99	113.89
50	24.5	103.51	49.5	7577.05	74.5	131.37	99.5	108.77

FINE TUNE Pulses; Fundamental Frequency = 288MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	90	69.90	115	76.91	140	65.92	165	67.53
2	90.5	75.25	115.5	84.53	140.5	63.53	165.5	64.71
3	91	66.15	116	63.83	141	16634.13	166	79.25
4	91.5	67.38	116.5	57.28	141.5	16691.68	166.5	75.25
5	92	65.77	117	67.22	142	76.12	167	60.26
6	92.5	63.68	117.5	61.24	142.5	80.35	167.5	63.02
7	93	60.95	118	59.63	143	71.45	168	68.63
8	93.5	68.87	118.5	70.71	143.5	63.53	168.5	73.71
9	94	72.78	119	68.87	144	64.57	169	69.58
10	94.5	67.22	119.5	8729.71	144.5	78.16	169.5	77.36
11	95	64.71	120	56.23	145	64.34	170	64.71
12	95.5	60.95	120.5	66.30	145.5	62.37	170.5	69.18
13	96	72.03	121	56.04	146	64.86	171	76.74
14	96.5	61.24	121.5	67.22	146.5	66.68	171.5	77.36
15	97	61.73	122	77.89	147	69.74	172	63.83
16	97.5	4451.43	122.5	74.64	147.5	59.02	172.5	66.30
17	98	68.31	123	67.92	148	61.87	173	66.45
18	98.5	65.24	123.5	69.34	148.5	62.09	173.5	72.19
19	99	70.88	124	73.28	149	69.34	174	68.63
20	99.5	63.17	124.5	63.17	149.5	69.02	174.5	7404.57
21	100	72.61	125	65.61	150	64.57	175	6215.84
22	100.5	80.54	125.5	63.31	150.5	66.15	175.5	66.30
23	101	74.64	126	67.92	151	63.83	176	67.76
24	101.5	64.34	126.5	66.68	151.5	68.08	176.5	63.68
25	102	69.02	127	68.63	152	16730.16	177	74.64
26	102.5	67.38	127.5	64.34	152.5	74.90	177.5	63.31
27	103	64.19	128	64.19	153	80.35	178	68.63
28	103.5	68.47	128.5	73.28	153.5	68.31	178.5	65.39
29	104	71.29	129	68.87	154	61.87	179	63.17
30	104.5	65.92	129.5	73.45	154.5	87.90	179.5	66.83
31	105	71.04	130	12589.25	155	72.03	180	66.15
32	105.5	66.45	130.5	12691.12	155.5	55.46	180.5	67.92
33	106	71.61	131	69.58	156	63.53	181	64.71
34	106.5	62.09	131.5	61.73	156.5	58.82	181.5	71.29
35	107	70.15	132	62.73	157	68.47	182	69.18
36	107.5	70.88	132.5	79.07	157.5	70.15	182.5	62.59
37	108	65.77	133	62.59	158	62.88	183	67.53
38	108.5	6123.50	133.5	78.16	158.5	70.88	183.5	63.17
39	109	58.68	134	69.18	159	59.50	184	62.23
40	109.5	72.44	134.5	66.83	159.5	59.50	184.5	71.86
41	110	66.99	135	67.38	160	64.71	185	74.47
42	110.5	74.90	135.5	62.59	160.5	66.68	185.5	76.12
43	111	63.17	136	60.12	161	76.91	186	5616.94
44	111.5	66.15	136.5	65.09	161.5	65.61	186.5	67.76
45	112	60.95	137	78.61	162	74.47	187	63.53
46	112.5	64.34	137.5	63.31	162.5	64.57	187.5	69.90
47	113	68.08	138	68.47	163	68.87	188	62.09
48	113.5	73.88	138.5	60.26	163.5	11040.79	188.5	64.71
49	114	64.57	139	71.45	164	75.51	189	66.45
50	114.5	65.77	139.5	72.44	164.5	63.83	189.5	74.64

FINE TUNE Pulses; Fundamental Frequency = 310MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	90	78.61	115	69.50	140	73.45	165	85.90
2	90.5	76.12	115.5	78.98	140.5	69.34	165.5	12705.74
3	91	84.33	116	69.50	141	79.43	166	78.34
4	91.5	79.89	116.5	67.45	141.5	64.64	166.5	68.39
5	92	76.30	117	85.51	142	64.34	167	66.91
6	92.5	77.09	117.5	73.20	142.5	72.03	167.5	77.36
7	93	63.31	118	69.66	143	19364.22	168	70.55
8	93.5	74.64	118.5	70.71	143.5	84.14	168.5	73.45
9	94	68.39	119	71.45	144	66.07	169	65.92
10	94.5	74.05	119.5	75.16	144.5	75.42	169.5	65.92
11	95	74.99	120	11428.78	145	74.64	170	72.61
12	95.5	71.12	120.5	11415.63	145.5	82.99	170.5	61.94
13	96	76.91	121	79.62	146	70.88	171	69.34
14	96.5	73.79	121.5	66.76	146.5	68.00	171.5	77.71
15	97	80.72	122	70.55	147	67.14	172	75.60
16	97.5	6990.37	122.5	68.23	147.5	64.86	172.5	86.90
17	98	6990.37	123	78.61	148	71.70	173	74.05
18	98.5	78.16	123.5	76.30	148.5	69.10	173.5	62.95
19	99	72.44	124	82.13	149	66.76	174	66.07
20	99.5	72.28	124.5	67.45	149.5	68.94	174.5	67.84
21	100	69.34	125	80.91	150	72.86	175	77.09
22	100.5	84.82	125.5	83.95	150.5	79.43	175.5	79.25
23	101	72.03	126	71.86	151	75.16	176	74.39
24	101.5	73.79	126.5	74.99	151.5	74.64	176.5	8203.52
25	102	74.99	127	72.44	152	71.29	177	7219.38
26	102.5	68.94	127.5	71.29	152.5	72.28	177.5	76.12
27	103	70.71	128	70.55	153	69.10	178	65.69
28	103.5	72.44	128.5	66.60	153.5	68.55	178.5	83.66
29	104	74.82	129	65.54	154	17318.09	179	73.62
30	104.5	74.22	129.5	73.79	154.5	14223.29	179.5	75.42
31	105	75.42	130	76.74	155	76.74	180	68.23
32	105.5	74.05	130.5	74.64	155.5	74.64	180.5	65.92
33	106	71.29	131	80.26	156	70.71	181	71.45
34	106.5	69.34	131.5	17844.32	156.5	68.79	181.5	72.61
35	107	81.19	132	68.94	157	72.61	182	71.70
36	107.5	73.62	132.5	66.76	157.5	61.80	182.5	71.29
37	108	73.79	133	69.34	158	68.55	183	83.95
38	108.5	77.98	133.5	80.08	158.5	69.50	183.5	70.88
39	109	8820.64	134	74.64	159	77.71	184	68.94
40	109.5	66.45	134.5	74.64	159.5	70.71	184.5	82.99
41	110	68.23	135	82.32	160	89.85	185	66.60
42	110.5	71.29	135.5	73.79	160.5	68.00	185.5	78.80
43	111	73.79	136	69.10	161	68.23	186	67.69
44	111.5	69.50	136.5	73.20	161.5	80.26	186.5	83.95
45	112	68.94	137	78.16	162	82.99	187	66.91
46	112.5	71.45	137.5	74.22	162.5	71.86	187.5	74.22
47	113	74.82	138	73.20	163	67.84	188	6862.78
48	113.5	70.23	138.5	66.45	163.5	70.88	188.5	70.88
49	114	82.32	139	77.09	164	71.70	189	79.89
50	114.5	82.99	139.5	76.47	164.5	69.10	189.5	70.88

FINE TUNE Pulses; Fundamental Frequency = 418MHz

	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
1	100	105.68	125	123.31	150	129.72	175	103.16
2	100.5	129.72	125.5	142.72	150.5	109.40	175.5	105.68
3	101	115.88	126	117.76	151	125.89	176	111.17
4	101.5	25497.64	126.5	110.54	151.5	110.54	176.5	116.82
5	102	25703.96	127	128.97	152	105.44	177	121.90
6	102.5	121.62	127.5	113.24	152.5	129.72	177.5	106.05
7	103	121.20	128	117.08	153	110.54	178	112.59
8	103.5	114.16	128.5	30938.55	153.5	120.64	178.5	106.05
9	104	108.52	129	107.89	154	105.20	179	118.71
10	104.5	108.52	129.5	126.91	154.5	113.24	179.5	102.45
11	105	118.99	130	108.14	155	34833.73	180	116.82
12	105.5	128.68	130.5	102.09	155.5	119.26	180.5	117.08
13	106	119.26	131	108.14	156	100.81	181	117.35
14	106.5	132.28	131.5	125.60	156.5	123.59	181.5	34197.94
15	107	128.38	132	118.30	157	122.60	182	34119.29
16	107.5	120.92	132.5	111.43	157.5	102.45	182.5	103.75
17	108	121.90	133	128.68	158	114.16	183	109.02
18	108.5	116.41	133.5	122.18	158.5	122.89	183.5	109.90
19	109	111.43	134	109.40	159	135.21	184	108.52
20	109.5	112.98	134.5	116.41	159.5	107.89	184.5	105.20
21	110	110.28	135	101.62	160	105.44	185	99.43
22	110.5	123.31	135.5	118.03	160.5	114.95	185.5	122.89
23	111	103.75	136	135.21	161	109.40	186	117.08
24	111.5	128.97	136.5	112.07	161.5	113.24	186.5	122.89
25	112	114.16	137	125.31	162	111.43	187	109.90
26	112.5	125.89	137.5	109.65	162.5	105.44	187.5	111.17
27	113	109.90	138	126.91	163	117.35	188	118.99
28	113.5	113.89	138.5	102.09	163.5	115.21	188.5	107.65
29	114	98.40	139	119.95	164	117.08	189	106.41
30	114.5	122.89	139.5	103.51	164.5	127.35	189.5	112.59
31	115	29410.34	140	122.89	165	117.35	190	115.48
32	115.5	131.37	140.5	114.29	165.5	111.17	190.5	123.88
33	116	106.05	141	125.31	166	107.28	191	122.60
34	116.5	103.99	141.5	33573.76	166.5	113.24	191.5	107.89
35	117	120.92	142	33651.16	167	114.16	192	115.21
36	117.5	109.40	142.5	104.83	167.5	112.98	192.5	103.51
37	118	115.48	143	113.50	168	109.90	193	107.28
38	118.5	114.68	143.5	118.03	168.5	34753.62	193.5	119.26
39	119	109.02	144	103.75	169	122.60	194	109.02
40	119.5	120.64	144.5	113.50	169.5	113.50	194.5	104.35
41	120	115.48	145	143.88	170	111.43	195	32885.16
42	120.5	114.29	145.5	110.28	170.5	120.23	195.5	116.82
43	121	137.72	146	107.03	171	118.30	196	116.41
44	121.5	109.02	146.5	115.48	171.5	113.24	196.5	111.17
45	122	112.33	147	119.26	172	114.68	197	107.03
46	122.5	108.52	147.5	127.35	172.5	126.33	197.5	133.35
47	123	110.79	148	123.59	173	107.28	198	117.08
48	123.5	106.05	148.5	130.77	173.5	123.59	198.5	116.14
49	124	120.64	149	131.83	174	118.99	199	120.23
50	124.5	124.88	149.5	113.50	174.5	114.16	199.5	109.02