AHD
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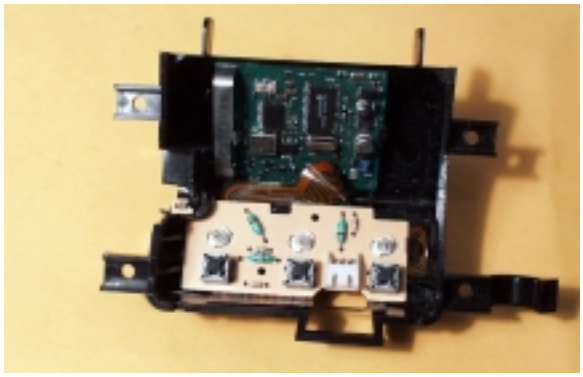
EXHIBIT K: REPORT OF MEASUREMENTS [2.1033(B6)]

Test Report for FCC ID: CB2ANHL3

FCC Part 2.1031, Part 15 Subpart C(15.231)

Report #09900273F
Issued 2/28/00



TRANSMITTER MODEL ANHL3 OF HOMELINK® III SERIES

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

Test Date(s): February 15, 2000

data recorded by

Gordon Helm, PE
Ted Chaffee, NCE

witnessed by

David Blaker
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 report filed with the FCC is, dated November 5, 1996, was accepted by the FCC in a letter dated January 15, 1997, (31040/SIT 1300F2). The 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	22-Jun-99	12 month
RF Receiver Section	HP-85462A	3625A00342	22-Jun-99	12 month
EMCO BiconiLog Antenna	3142	1077	07-Sep-99	12 months
(3-M) Type 129FF Ultra Flex LowLoss	RG58/U	9910-12	29-Oct-99	6 months
University of Mich Double Ridge Horn	0.2 - 5.0GHz	C	16-Mar-99	12 months
6 ft. Andrew DF4 Heliax		9912-02	13-Dec-99	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%.

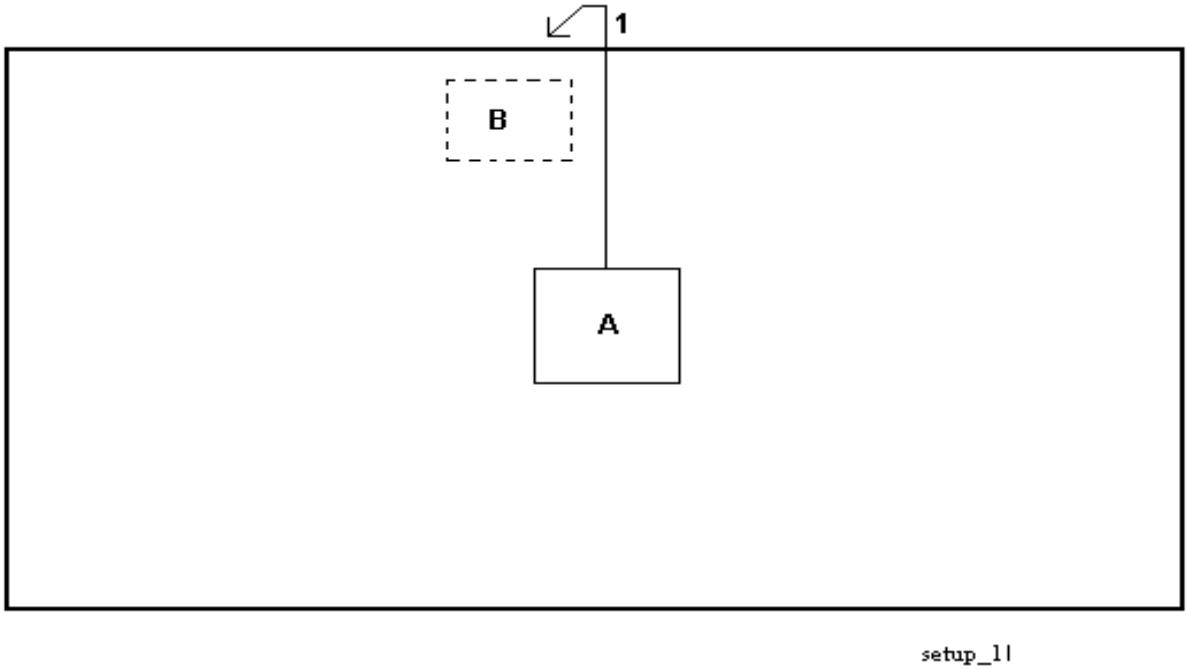
Tested Configuration /Setup: [2.1033(b8)]

Support Equipment & Cabling

Setup Diagram Legend	Description	Model	Serial No. / Part No.	EMC Consideration
A	[EUT] Universal Garage Door Opener	[JCI] ANHL3	--	FCC ID: CB2ANHL3
B	12V DC Power Supply	[Kikusui] PAB 18-3	47263914	Located on the turntable base below the EUT table.
1	Power Supply Cable Harness	--	--	2 meters, Unshielded, lightly twisted pair of wires.

Setup Diagram

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



BASIC EUT SETUP
(Legend designation is above)

Summary of Results:

1. This test series evaluated the Equipment Under Test, ANHL3, 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 December 16, 1999 and this test series commenced on December 16, 1999.
4. The line conducted emission testing does not apply to this product. The device is powered from a 12 volt automobile source.
5. The preliminary scan for spurious emissions conducted in a shielded room showed no observable spurious emissions other than the harmonics of the fundamental transmit frequency.
6. 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.
7. Occupied Band Width of the transmitted signal, at the 20dB point, nearest the limit was measured to be 540KHz. This measurement occurred with the EUT transmitting at 288MHz with a pulse modulation of 50% duty cycle. This measurement is within the allowed 720KHz bandwidth.
8. 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 418MHz with 500Hz pulsed modulation at a 30% duty cycle. The EUT was positioned on the ‘end’ and the receive antenna oriented in the vertical polarization. This signal was measured to be 0.7dB below the limit of 80.3dBuV/m (10,333uV/m).
9. 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 50% duty cycle. The EUT was positioned on the ‘side’; and the receive antenna oriented in the vertical polarization. This signal, at 576MHz, was measured to be 3.1dB below the limit of 53.8dBuV/m (492uV/m).
10. Digital Spurious Emissions: The are no detectable spurious emissions associated with the digital portion of the ANHL3.
11. The average value of the coarse tune pulses over a 100mSec time, nearest the limit, occurred at 418MHz. The measurement was determined to be 5683uV/m which is 5.2dB 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 measurement was determined to be 1654uV/m which is 15.9dB 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.

When using the Horn antenna the EUT position was raised to bring the EUT directly into the receive beam-width of the Horn antenna. Also, because the horn receive beamwidth is narrow and insensitive to the reflective component of the source emission, it was judged that the three orthogonal positions of the EUT and one polarization of the Horn antenna is sufficient to capture all the emission patterns of the EUT.

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 several transmit frequencies. 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 a 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 are:

Flat Side Edge

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

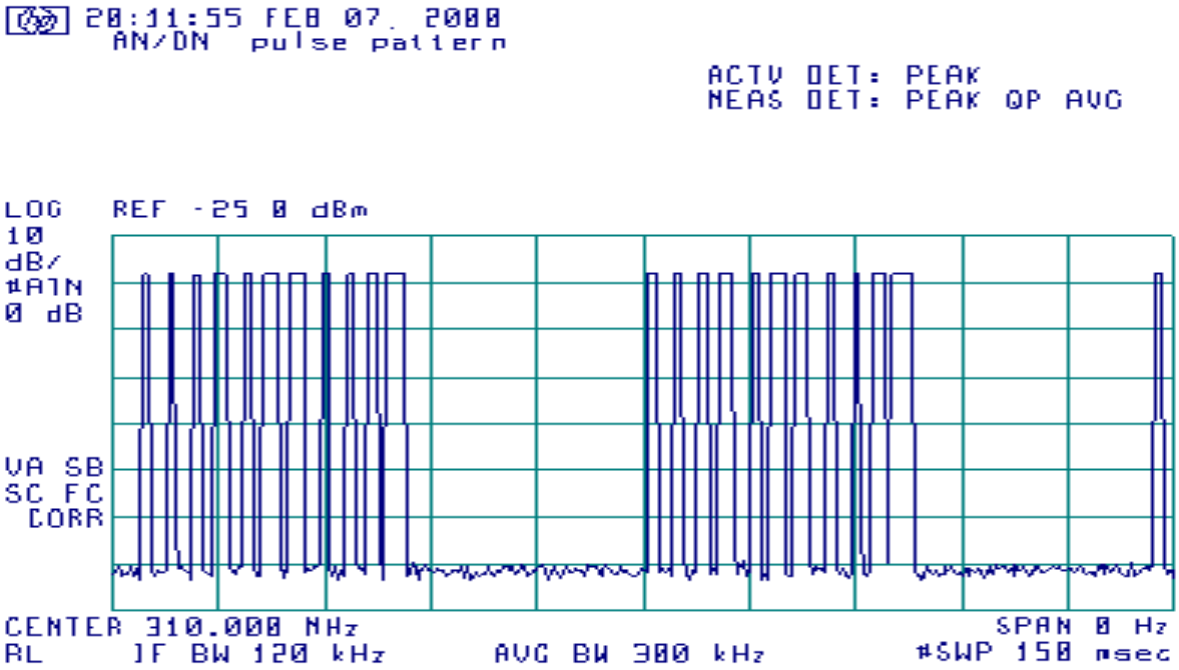
SAMPLE CALCULATION:

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.

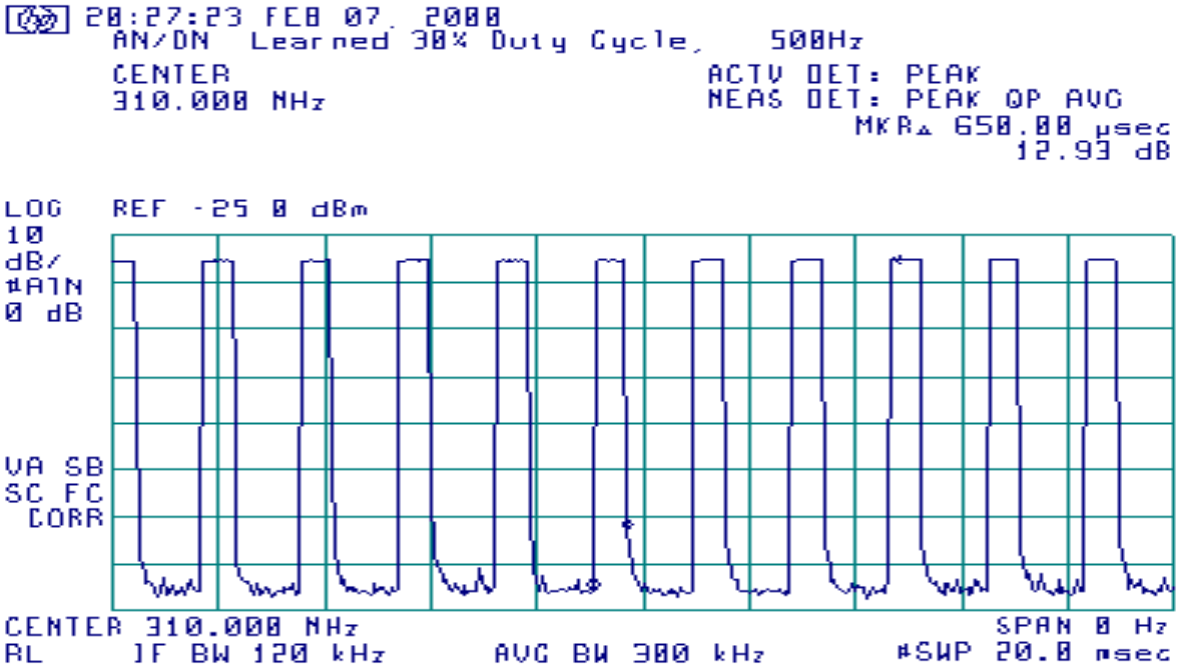
Test Data [2.1033(b6)]

Modulation Characteristics

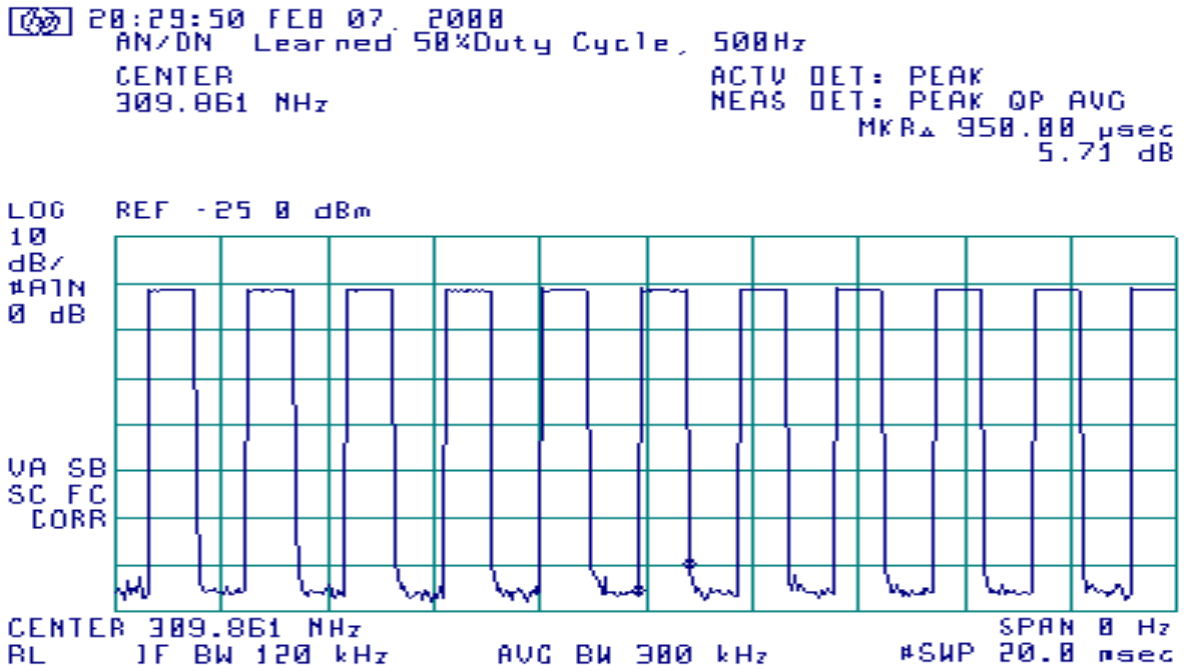
Typical encoding at 310MHz: Consisting of pulses of differing duty cycles.



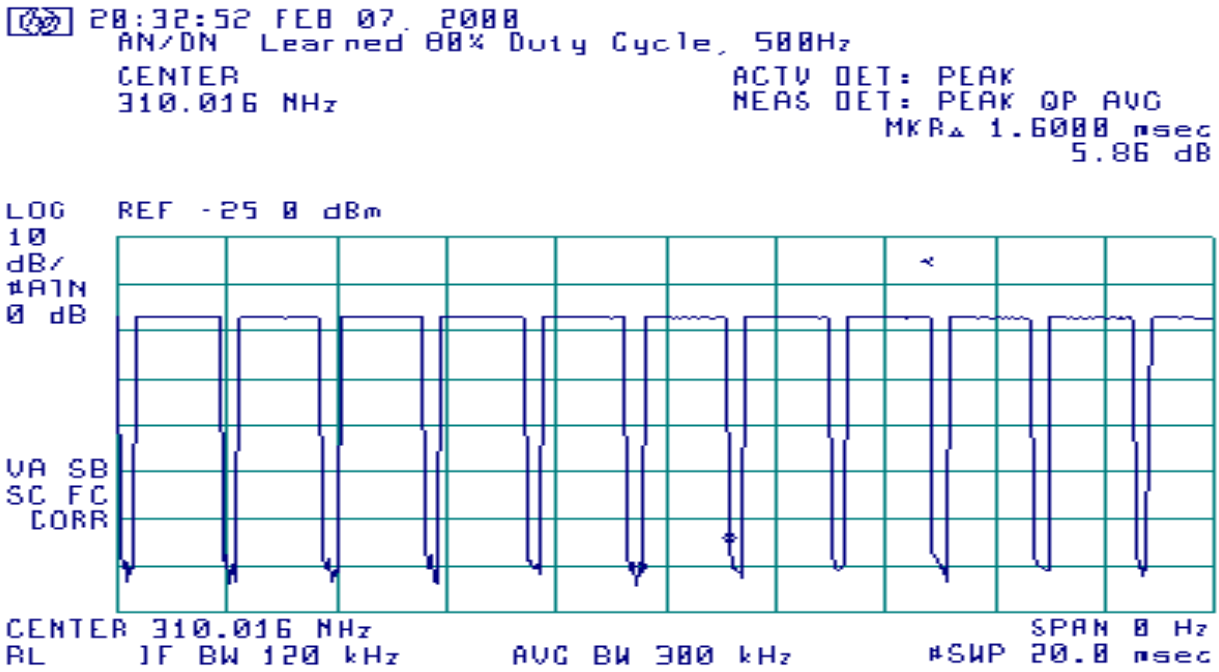
310MHz, 500Hz Modulation, 30% duty cycle



310MHz, 500Hz Modulation, 50% duty cycle



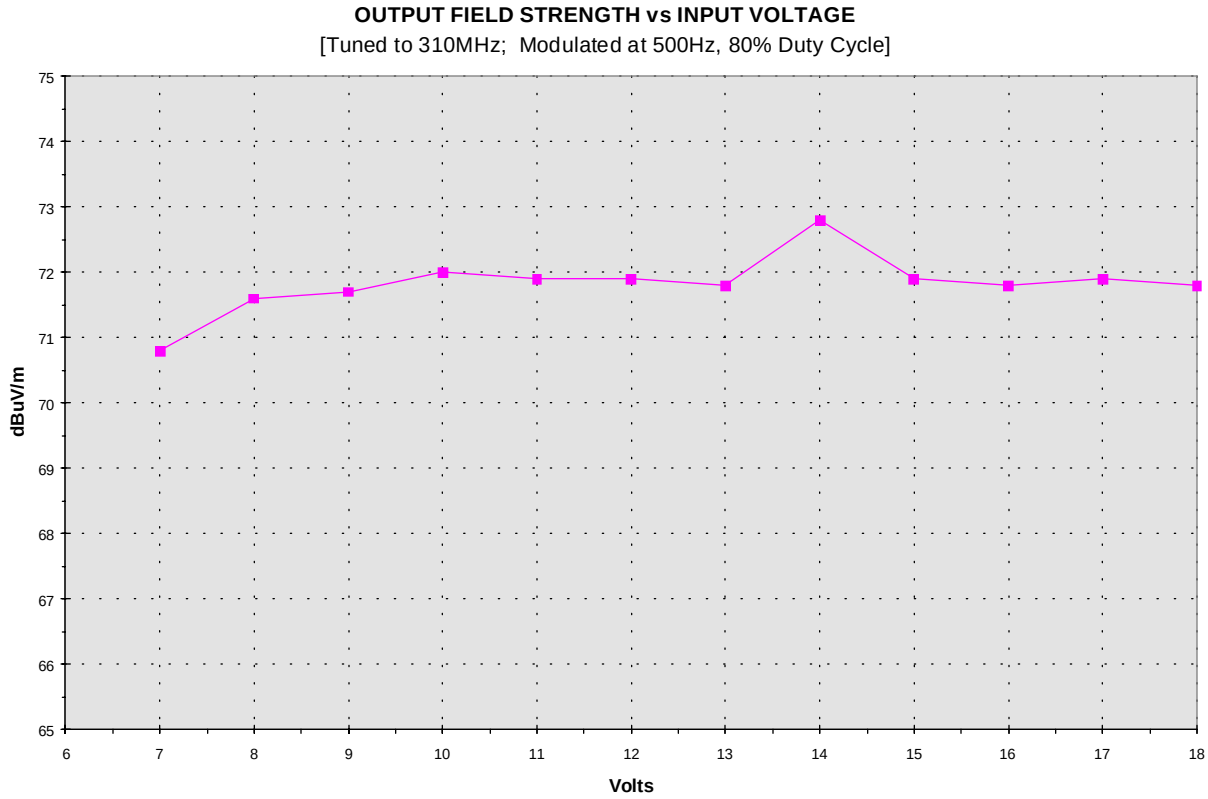
310MHz, 500Hz Modulation, 80% duty cycle



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= ANHL3, 310MHz, 80%duty cycle	
Volt In	TX OutPut Peak dBuV/m
6	no-op
7	70.8
8	71.6
9	71.7
10	72
11	71.9
12	71.9
13	71.8
14	72.8
15	71.9
16	71.8
17	71.9
18	71.8



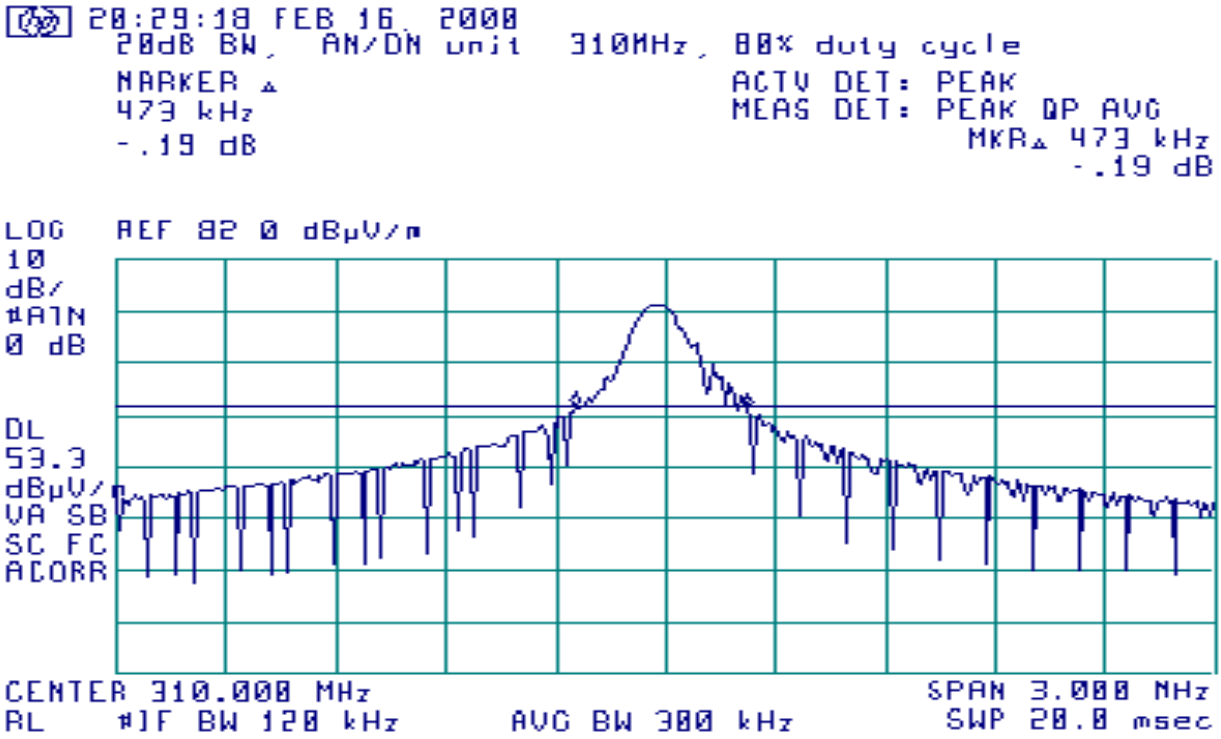
Occupied Bandwidth [15.231(c)]

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%	443 KHz	720 KHz
"	50%	540 KHz	720 KHz
"	80%	480 KHz	720 KHz
310	30%	465 KHz	775 KHz
"	50%	428 KHz	775 KHz
"	80%	473 KHz	775 KHz
418	30%	480 KHz	1045 KHz
"	50%	600 KHz	1045 KHz
"	80%	585 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 285MHz to 420MHz. These frequencies include the restricted areas of 322-325.4MHz, 399.9-410MHz, and is near the restricted area of 240-285MHz.

The restricted bands are locked out by the Homelink® III firmware. An exercise which attempted to train the units into the restricted bands demonstrated how well the firmware functioned. The unit could not be trained any closer to the restricted band area than 1MHz outside the restricted bands edges.

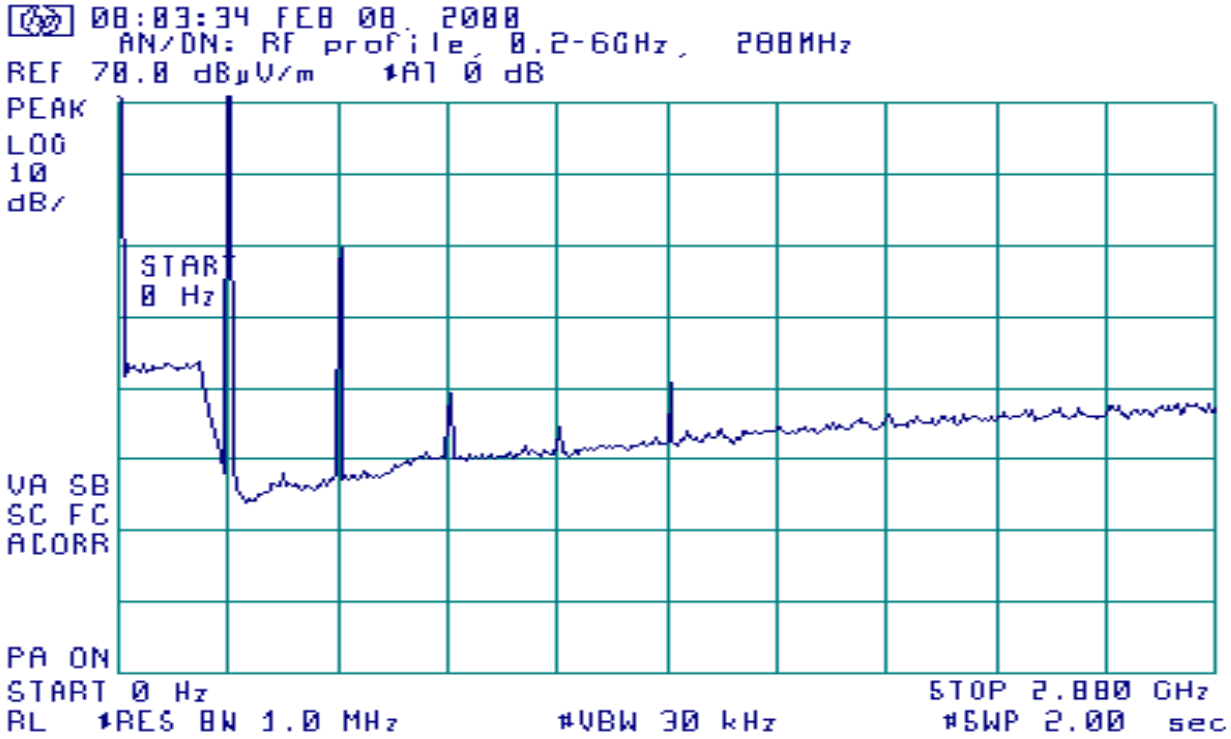
The spurious emissions observed in the restricted bands did not exceed the allowed limits for the restricted bands.

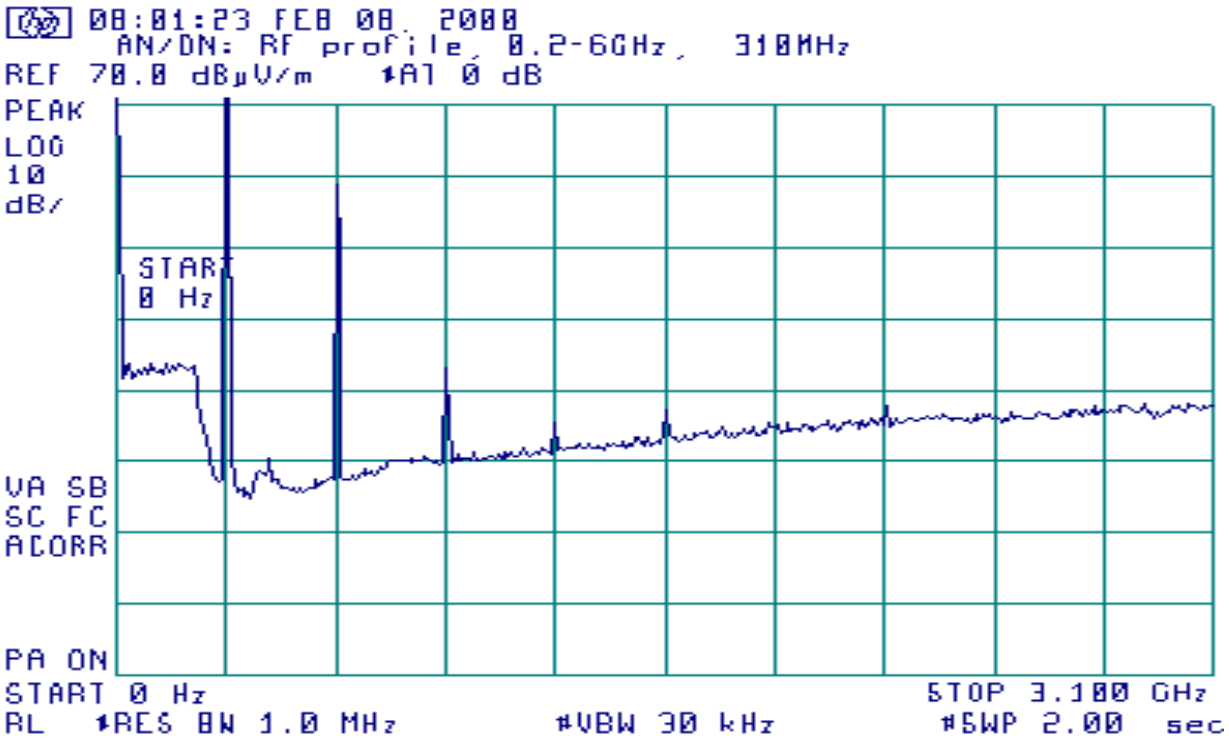
Radiated Field Strength Measurements: [15.231(b), 15.205]

A scan of the ANHL3 was made in a shielded room to study the emission profile of the EUT. These scans indicate there are no emissions from the unit other than the fundamental and its associated harmonics.

The following three charts show the spectrum pattern of the EUT emissions. The levels indicated are not calibrated levels.

The are no detectable spurious emissions associated with the digital portion of the ANHL3.

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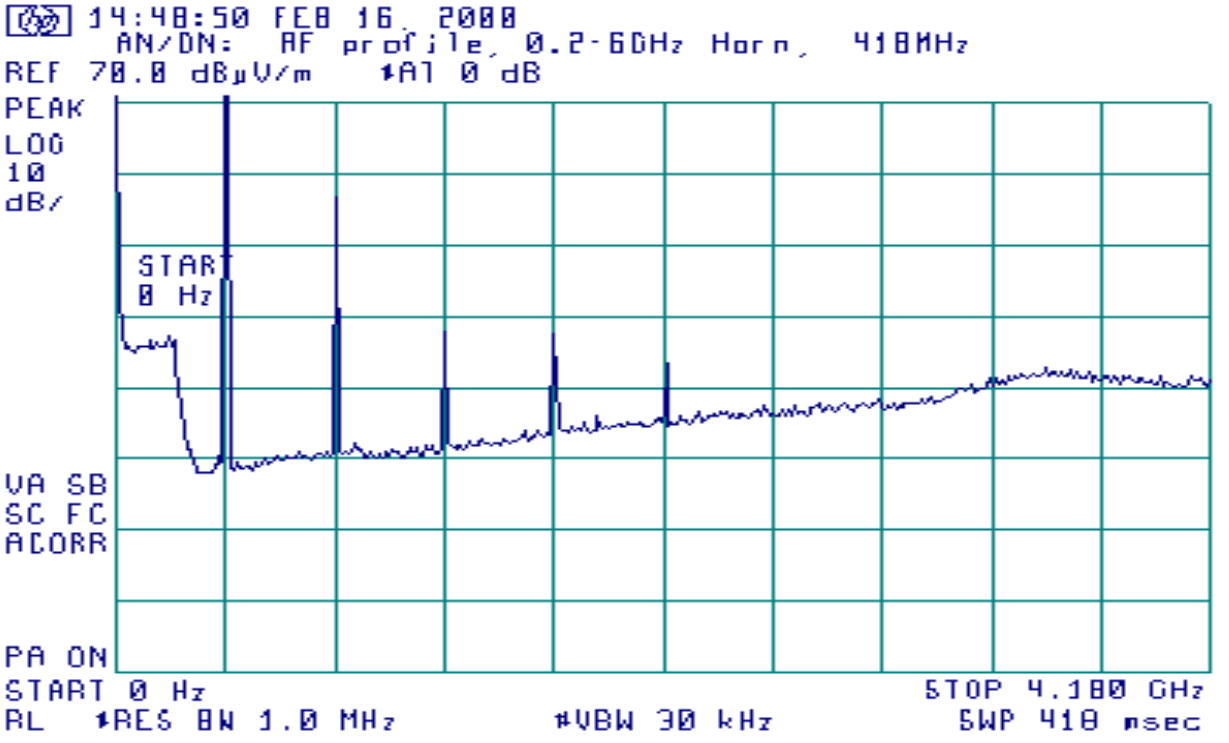
LOG
10
dB/
START
0 Hz
VA SB
SC FC
ACORR
PA ON
START 0 Hz
STOP 3.100 GHz
RL
#RES BW 1.0 MHz
#VBW 30 kHz
#SWP 2.00 sec


14:48:50 FEB 16, 2000
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REF 70.0 dBµV/m
#Atl 0 dB
PEAK
LOG
10
dB/
START
0 Hz
VA SB
SC FC
ACORR
PA ON
START 0 Hz
STOP 4.100 GHz
RL
#RES BW 1.0 MHz
#VBW 30 kHz
SWP 418 msec

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	83.5	30%	-10.46	**73.0**	73.8	**-0.8**	14.29
"	"	"	78.7	50%	-6.02	**72.7**	73.8	**-1.1**	"
"	"	"	73.3	80%	-1.94	**71.4**	73.8	**-2.4**	"

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	82.0	30%	-10.46	**71.5**	75.3	**-3.8**	14.94
"	"	"	77.4	50%	-6.02	**71.4**	75.3	**-3.9**	"
"	"	"	73.1	80%	-1.94	**71.2**	75.3	**-4.1**	"

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	90.1	30%	-10.46	**79.6**	80.3	**-0.7**	17.44
"	"	"	85.1	50%	-6.02	**79.1**	80.3	**-1.2**	"
"	flat	"	81.2	80%	-1.94	**79.3**	80.3	**-1.0**	"

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	60.5	30%	-10.46	**50.0**	53.8	**-3.8**	21.03
"	side	V	56.7	50%	-6.02	**50.7**	53.8	**-3.1**	"
"	end	H	50.5	80%	-1.94	**48.6**	53.8	**-5.2**	"
864	end	V	37.7	30%	-10.46	**27.2**	53.8	**-26.6**	24.82
"	flat	"	34.2	50%	-6.02	**28.2**	53.8	**-25.6**	"
"	"	"	32.8	80%	-1.94	**30.9**	53.8	**-22.9**	"
1152	flat	H	36.6	30%	-10.46	**26.1**	54.0	**-27.9**	20.80
"	"	"	32.0	50%	-6.02	**26.0**	54.0	**-28.0**	"
"	end	"	31.2	80%	-1.94	**29.3**	54.0	**-24.7**	"
1440	flat	H	42.4	30%	-10.46	**31.9**	54.0	**-22.1**	22.13
"	"	"	38.1	50%	-6.02	**32.1**	54.0	**-21.9**	"
"	end	"	37.5	80%	-1.94	**35.6**	54.0	**-18.4**	"
1728	end	H	42.1	30%	-10.46	**31.6**	54.0	**-22.4**	23.47
"	flat	"	35.4	50%	-6.02	**29.4**	54.0	**-24.6**	"
"	end	"	34.3	80%	-1.94	**32.4**	54.0	**-21.6**	"
2016	side	H	36.8	30%	-10.46	**26.3**	54.0	**-27.7**	24.60
"	"	"	34.2	50%	-6.02	**28.2**	54.0	**-25.8**	"
"	end	"	33.3	80%	-1.94	**31.4**	54.0	**-22.6**	"
2304	-	H	33.8 Noise Floor	30%	-10.46	**23.3**	54.0	**-30.7**	25.41
"	-	"	33.5 Noise Floor	50%	-6.02	**27.5**	54.0	**-26.5**	"
"	-	"	33.8 Noise Floor	80%	-1.94	**31.9**	54.0	**-22.1**	"
2592	-	H	33.3 Noise Floor	30%	-10.46	**22.8**	54.0	**-31.2**	26.17
"	-	"	32.9 Noise Floor	50%	-6.02	**26.9**	54.0	**-27.1**	"
"	-	"	33.0 Noise Floor	80%	-1.94	**31.1**	54.0	**-22.9**	"
2880	-	H	34.5 Noise Floor	30%	-10.46	**24.0**	54.0	**-30.0**	26.98
"	-	"	34.4 Noise Floor	50%	-6.02	**28.4**	54.0	**-25.6**	"
"	-	"	34.4 Noise Floor	80%	-1.94	**32.5**	54.0	**-21.5**	"

The are no detectable spurious emissions associated with the digital portion of the ANHL3.

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	61.1	30%	-10.46	**50.6**	55.3	**-4.7**	21.73
"	"	"	56.2	50%	-6.02	**50.2**	55.3	**-5.1**	"
"	"	"	52.1	80%	-1.94	**50.2**	55.3	**-5.1**	"
930	end	H	38.6	30%	-10.46	**28.1**	55.3	**-27.2**	25.34
"	end	V	32.6	50%	-6.02	**26.6**	55.3	**-28.7**	"
"	"	H	30.2	80%	-1.94	**28.3**	55.3	**-27.0**	"
1240	end	H	36.4	30%	-10.46	**25.9**	54.0	**-28.1**	21.24
"	flat	"	32.2	50%	-6.02	**26.2**	54.0	**-27.8**	"
"	"	"	29.2	80%	-1.94	**27.3**	54.0	**-26.7**	"
1550	flat	H	42.5	30%	-10.46	**32.0**	54.0	**-22.0**	22.65
"	"	"	38.9	50%	-6.02	**32.9**	54.0	**-21.1**	"
"	end	"	37.3	80%	-1.94	**35.4**	54.0	**-18.6**	"
1860	flat	H	39.0	30%	-10.46	**28.5**	55.3	**-26.8**	24.01
"	"	"	34.8	50%	-6.02	**28.8**	55.3	**-26.5**	"
"	"	"	33.5	80%	-1.94	**31.6**	55.3	**-23.7**	"
2170	flat	H	36.1	30%	-10.46	**25.6**	55.3	**-29.7**	25.07
"	side	"	33.6	50%	-6.02	**27.6**	55.3	**-27.7**	"
"	end	"	32.9	80%	-1.94	**31.0**	55.3	**-24.3**	"
2480	-	H	34.1 Noise Floor	30%	-10.46	**23.6**	55.3	**-31.7**	25.83
"	-	"	33.2 Noise Floor	50%	-6.02	**27.2**	55.3	**-28.1**	"
"	-	"	34.0 Noise Floor	80%	-1.94	**32.1**	55.3	**-23.2**	"
2790	-	H	34.8 Noise Floor	30%	-10.46	**24.3**	54.0	**-29.7**	26.74
"	-	"	34.5 Noise Floor	50%	-6.02	**28.5**	54.0	**-25.5**	"
"	-	"	34.3 Noise Floor	80%	-1.94	**32.4**	54.0	**-21.6**	"
3100	-	H	35.6 Noise Floor	30%	-10.46	**25.1**	54.0	**-28.9**	28.34
"	-	"	35.2 Noise Floor	50%	-6.02	**29.2**	54.0	**-24.8**	"
"	-	"	35.9 Noise Floor	80%	-1.94	**34.0**	54.0	**-20.0**	"

The are no detectable spurious emissions associated with the digital portion of the ANHL3.

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	66.6	30%	-10.46	**56.1**	60.3	**-4.2**	24.62
"	"	"	57.7	50%	-6.02	**51.7**	60.3	**-8.6**	"
"	end	"	50.5	80%	-1.94	**48.6**	60.3	**-11.7**	"
1254	end	H	48.3	30%	-10.46	**37.8**	54.0	**-16.2**	21.31
"	"	"	39.9	50%	-6.02	**33.9**	54.0	**-20.1**	"
"	"	"	35.2	80%	-1.94	**33.3**	54.0	**-20.7**	"
1672	flat	H	49.7	30%	-10.46	**39.2**	54.0	**-14.8**	23.23
"	end	"	41.9	50%	-6.02	**35.9**	54.0	**-18.1**	"
"	flat	"	36.9	80%	-1.94	**35.0**	54.0	**-19.0**	"
2090	flat	H	43.3	30%	-10.46	**32.8**	60.3	**-27.5**	24.83
"	"	"	38.8	50%	-6.02	**32.8**	60.3	**-27.5**	"
"	end	"	35.8	80%	-1.94	**33.9**	60.3	**-26.4**	"
2508	end	H	37.7	30%	-10.46	**27.2**	60.3	**-33.1**	25.91
"	-	"	34.0 Noise Floor	50%	-6.02	**28.0**	60.3	**-32.0**	"
"	-	"	33.5 Noise Floor	80%	-1.94	**31.6**	60.3	**-28.7**	"
2926	-	H	35.4 Noise Floor	30%	-10.46	**24.9**	60.3	**-35.4**	27.10
"	-	"	34.5 Noise Floor	50%	-6.02	**28.5**	60.3	**-31.8**	"
"	-	"	34.1 Noise Floor	80%	-1.94	**32.2**	60.3	**-28.1**	"
3344	-	H	40.0 Noise Floor	30%	-10.46	**29.5**	60.3	**-30.8**	30.71
"	-	"	38.2 Noise Floor	50%	-6.02	**32.2**	60.3	**-28.1**	"
"	-	"	34.1 Noise Floor	80%	-1.94	**32.2**	60.3	**-28.1**	"
3762	-	H	38.8 Noise Floor	30%	-10.46	**28.3**	54.0	**-25.7**	31.51
"	-	"	38.2 Noise Floor	50%	-6.02	**32.2**	54.0	**-21.8**	"
"	-	"	38.3 Noise Floor	80%	-1.94	**36.4**	54.0	**-17.6**	"
4180	-	H	38.6 Noise Floor	30%	-10.46	**28.1**	54.0	**-25.9**	31.42
"	-	"	39.8 Noise Floor	50%	-6.02	**33.8**	54.0	**-20.2**	"
"	-	"	38.4 Noise Floor	80%	-1.94	**36.5**	54.0	**-17.5**	"

The are no detectable spurious emissions associated with the digital portion of the ANHL3.

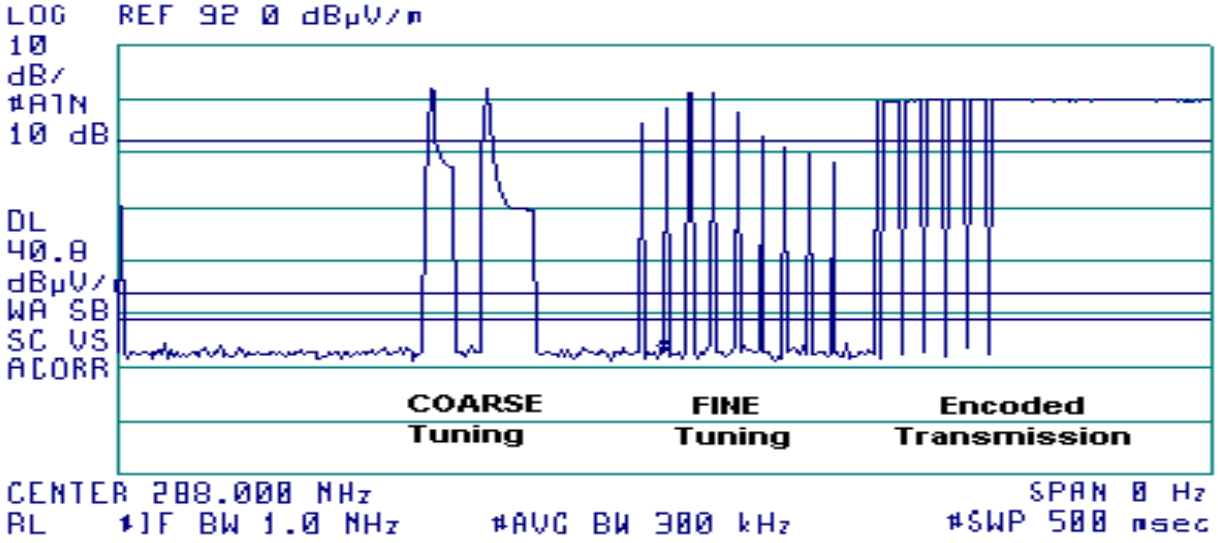
Calculation of Field Strength of Tuning Pulses: [15.231(b)], 15.31(c)]

The tuning pulses are generated each time the ANHL3 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. This rate was 250mSec sweep speed.

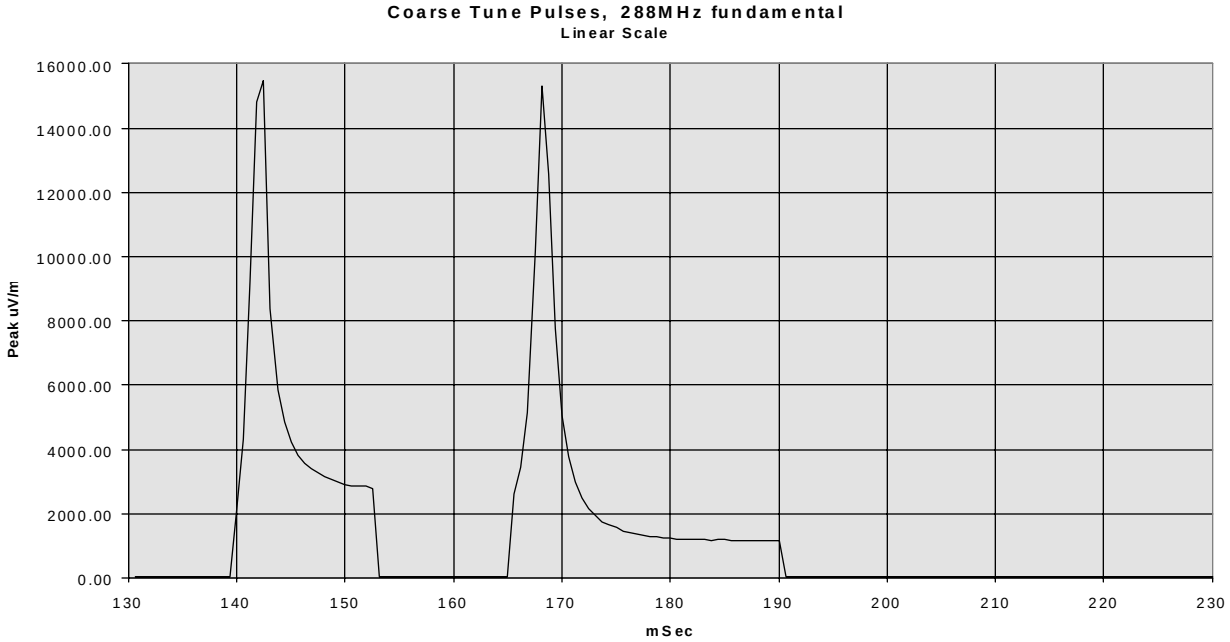
   Therefore: Number of data points per 100mSec =
   (400 pts) * 100mS / 250mS = 160 data points.

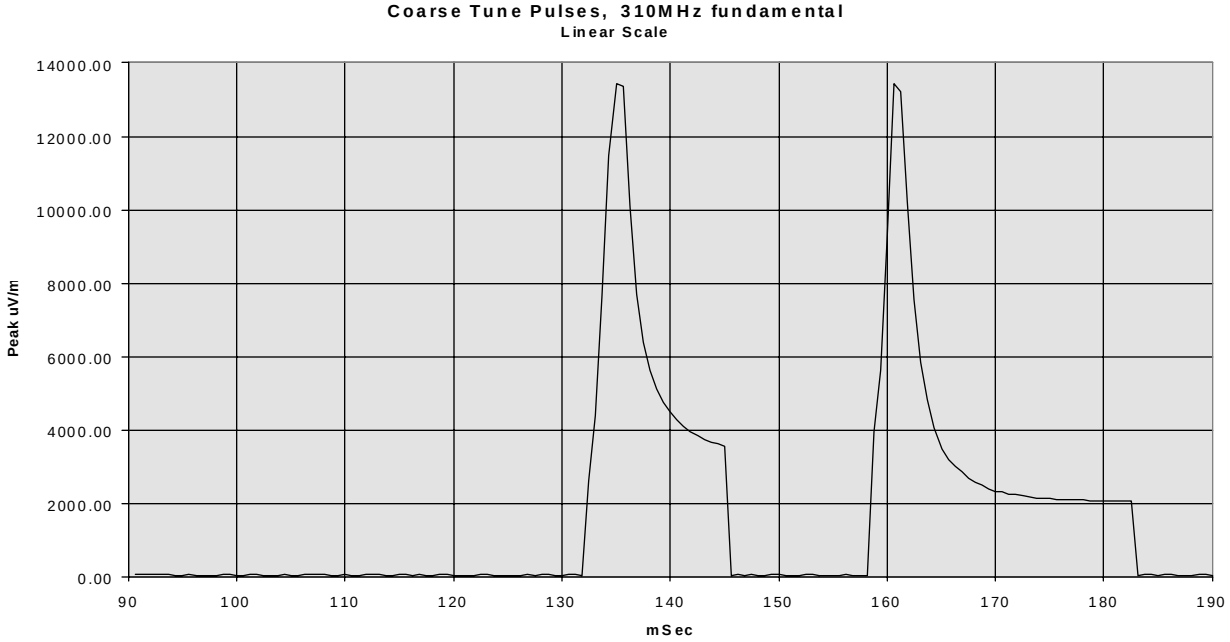
2. The AVERAGE field strength level within the 100mSec is then determined by dividing the SUM of the levels (uV/m) of all data points by the number of data points.

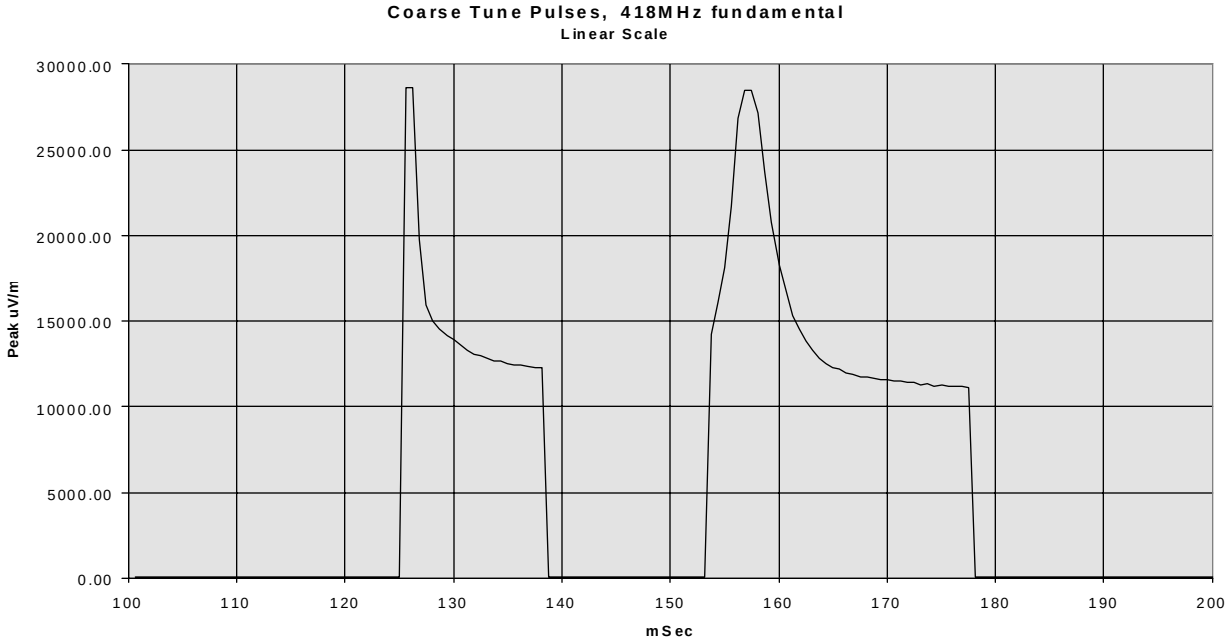
   Formula 3: Average Field Intensity

$$\text{Avg. F.I.} = (1/160) * \sum_{n=1}^{160} (\text{Level}_n)\text{uV/m}$$

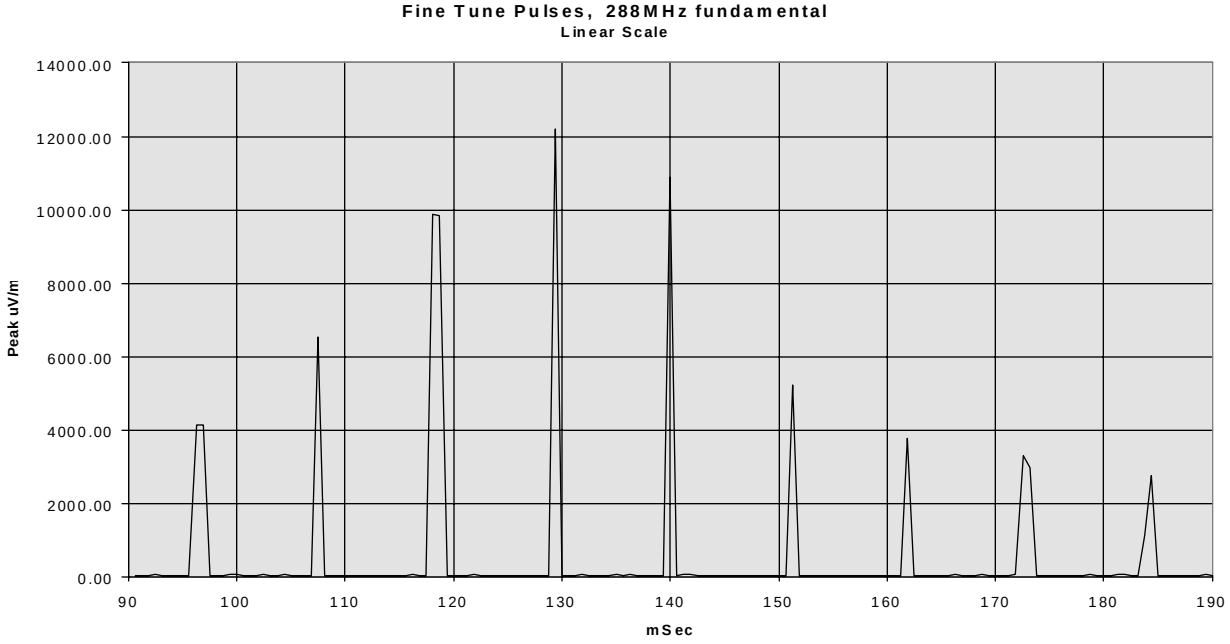
The three charts that follow are the reproduction of the coarse tune pulse traces using the number of data points representing 100mSec sweep time from the screen display of the HP8546A EMI receiver.

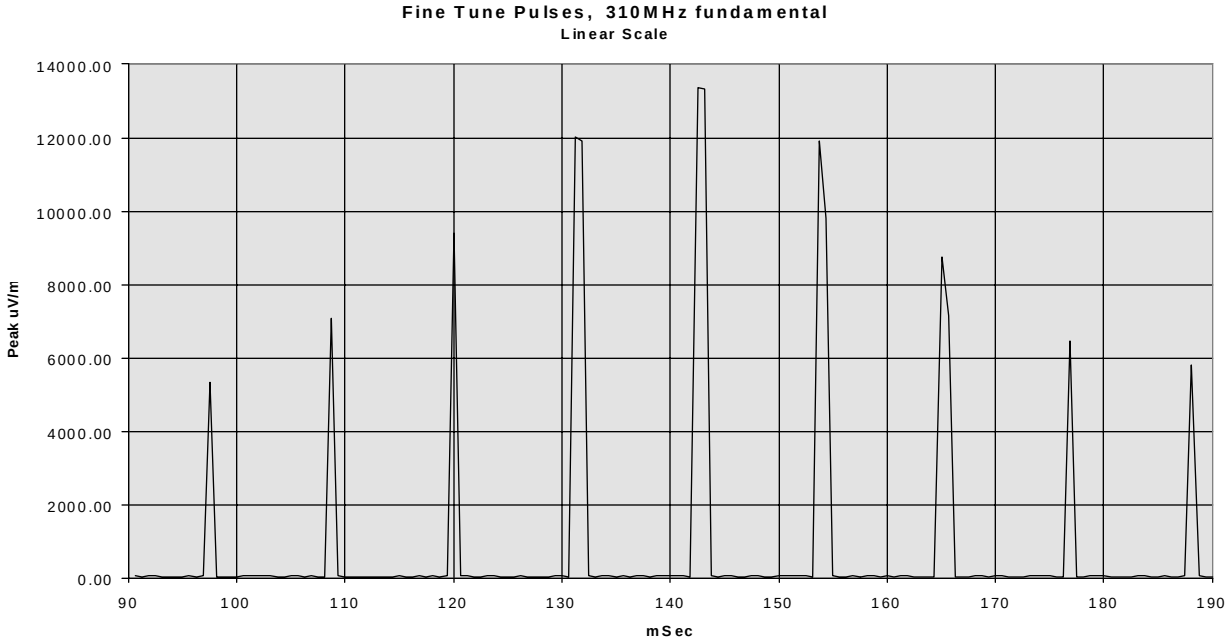


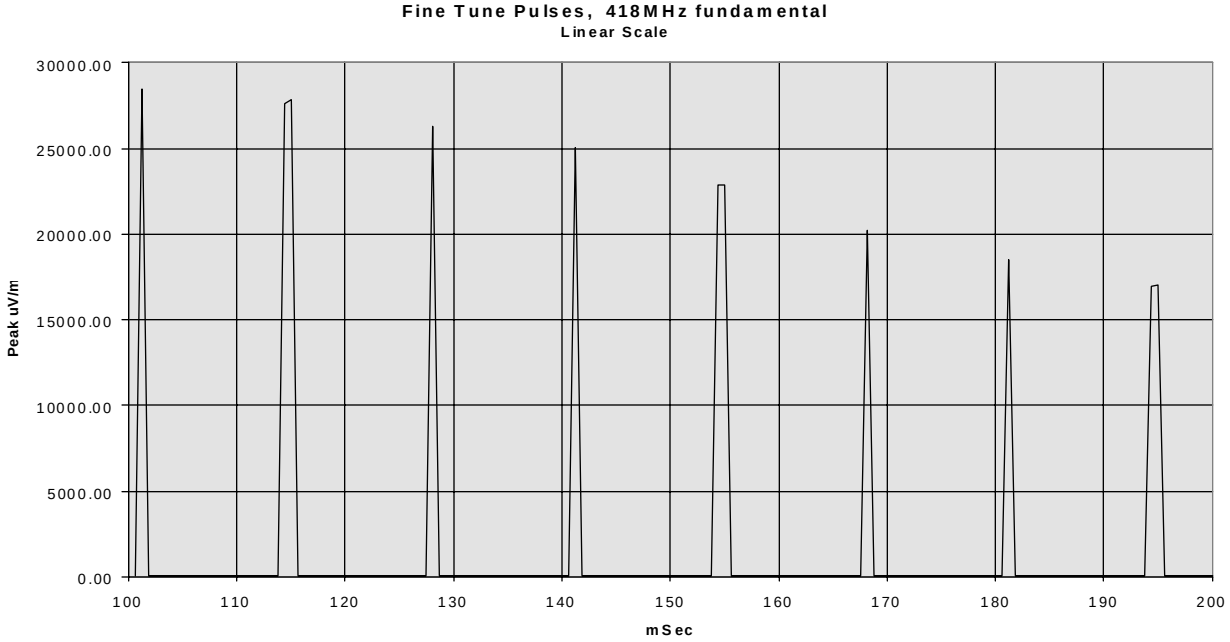

Coarse Tune Pulses, 310MHz fundamental
Linear Scale
Peak uV/m
14000.00
12000.00
10000.00
8000.00
6000.00
4000.00
2000.00
0.00
90
100
110
120
130
140
150
160
170
180
190
mSec


Coarse Tune Pulses, 418MHz fundamental
Linear Scale
Peak uV/m
30000.00
25000.00
20000.00
15000.00
10000.00
5000.00
0.00
100
110
120
130
140
150
160
170
180
190
200
mSec

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







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	221,750	160	1386	4917	**-11.0**
310	279,072	160	1744	5833	**-10.5**
418	909,343	160	5683	10333	**-5.2**

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	84,156	160	526	4917	**-19.4**
310	130,564	160	816	5833	**-17.1**
418	264,702	160	1654	10333	**-15.9**

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
130.625	47.81	155.625	44.72	180.625	1214.79	205.625	48.47
131.25	55.78	156.25	55.08	181.25	1192.61	206.25	45.08
131.875	50.18	156.875	45.81	181.875	1192.61	206.875	53.03
132.5	54.33	157.5	45.34	182.5	1188.50	207.5	45.71
133.125	48.98	158.125	52.60	183.125	1185.77	208.125	47.21
133.75	47.81	158.75	47.21	183.75	1176.25	208.75	54.33
134.375	43.70	159.375	59.84	184.375	1221.80	209.375	44.87
135	47.04	160	56.23	185	1185.77	210	48.19
135.625	54.76	160.625	50.82	185.625	1176.25	210.625	56.89
136.25	56.56	161.25	46.45	186.25	1170.85	211.25	50.35
136.875	53.33	161.875	60.95	186.875	1176.25	211.875	49.15
137.5	48.98	162.5	46.83	187.5	1170.85	212.5	51.23
138.125	62.81	163.125	44.16	188.125	1161.45	213.125	46.94
138.75	48.58	163.75	55.78	188.75	1161.45	213.75	53.03
139.375	52.91	164.375	49.66	189.375	1161.45	214.375	48.47
140	2113.49	165	54.64	190	1154.78	215	56.23
140.625	4320.16	165.625	2603.15	190.625	49.77	215.625	53.15
141.25	9204.50	166.25	3451.44	191.25	50.70	216.25	50.18
141.875	14825.18	166.875	5128.61	191.875	50.93	216.875	52.18
142.5	15470.35	167.5	10185.91	192.5	51.64	217.5	49.77
143.125	8384.94	168.125	15310.87	193.125	48.58	218.125	45.45
143.75	5847.90	168.75	12574.77	193.75	55.65	218.75	52.18
144.375	4847.30	169.375	7762.47	194.375	47.97	219.375	62.30
145	4216.97	170	5064.07	195	48.19	220	49.95
145.625	3837.07	170.625	3775.72	195.625	46.45	220.625	54.64
146.25	3576.84	171.25	2975.09	196.25	49.77	221.25	44.00
146.875	3388.44	171.875	2471.72	196.875	46.45	221.875	53.46
147.5	3269.64	172.5	2152.78	197.5	50.35	222.5	50.35
148.125	3147.75	173.125	1938.65	198.125	49.15	223.125	49.55
148.75	3054.92	173.75	1761.98	198.75	47.70	223.75	49.37
149.375	2999.16	174.375	1655.77	199.375	51.11	224.375	47.04
150	2917.43	175	1559.55	200	46.94	225	54.20
150.625	2880.71	175.625	1470.62	200.625	46.18	225.625	49.26
151.25	2844.46	176.25	1432.19	201.25	50.58	226.25	48.87
151.875	2867.48	176.875	1370.88	201.875	54.01	226.875	49.66
152.5	2792.54	177.5	1344.31	202.5	56.10	227.5	51.23
153.125	51.11	178.125	1306.17	203.125	48.87	228.125	48.08
153.75	48.19	178.75	1274.97	203.75	53.77	228.75	45.71
154.375	54.01	179.375	1251.70	204.375	48.36	229.375	49.26
155	47.59	180	1231.69	205	48.47	230	49.37

COARSE TUNE Pulse; Fundamental Frequency = 310MHz

mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
90.625	63.97	115.625	55.46	140.625	4275.63	165.625	3209.96
91.25	60.33	116.25	53.09	141.25	4087.90	166.25	3023.43
91.875	57.48	116.875	60.46	141.875	3958.22	166.875	2870.78
92.5	55.46	117.5	53.52	142.5	3845.92	167.5	2697.74
93.125	61.59	118.125	53.09	143.125	3736.80	168.125	2564.48
93.75	60.33	118.75	58.55	143.75	3685.53	168.75	2488.86
94.375	53.64	119.375	56.10	144.375	3626.60	169.375	2398.83
95	49.77	120	52.78	145	3556.31	170	2341.53
95.625	56.10	120.625	52.24	145.625	53.52	170.625	2314.73
96.25	53.21	121.25	55.08	146.25	58.21	171.25	2256.84
96.875	50.29	121.875	49.15	146.875	54.64	171.875	2238.72
97.5	54.76	122.5	55.65	147.5	55.65	172.5	2202.93
98.125	54.64	123.125	57.28	148.125	50.06	173.125	2172.70
98.75	56.36	123.75	45.03	148.75	54.89	173.75	2145.36
99.375	59.16	124.375	52.36	149.375	63.75	174.375	2133.04
100	47.32	125	54.64	150	59.36	175	2125.69
100.625	51.29	125.625	50.18	150.625	54.08	175.625	2118.36
101.25	59.50	126.25	46.72	151.25	48.98	176.25	2096.52
101.875	56.56	126.875	55.46	151.875	54.08	176.875	2096.52
102.5	52.97	127.5	55.08	152.5	56.10	177.5	2096.52
103.125	51.11	128.125	55.46	153.125	55.65	178.125	2091.70
103.75	53.21	128.75	56.23	153.75	52.24	178.75	2074.91
104.375	57.15	129.375	49.15	154.375	50.70	179.375	2074.91
105	50.99	130	51.94	155	51.70	180	2067.76
105.625	54.26	130.625	56.10	155.625	50.87	180.625	2063.00
106.25	61.94	131.25	57.48	156.25	56.23	181.25	2063.00
106.875	55.78	131.875	51.29	156.875	52.24	181.875	2067.76
107.5	55.34	132.5	2618.18	157.5	50.99	182.5	2058.26
108.125	61.94	133.125	4390.36	158.125	52.12	183.125	50.87
108.75	55.08	133.75	7647.16	158.75	3944.57	183.75	57.15
109.375	49.77	134.375	11468.33	159.375	5642.87	184.375	57.15
110	57.61	135	13427.65	160	9343.29	185	50.47
110.625	52.54	135.625	13381.35	160.625	13427.65	185.625	55.78
111.25	54.08	136.25	10092.53	161.25	13228.18	186.25	56.69
111.875	57.48	136.875	7682.45	161.875	10221.16	186.875	49.89
112.5	55.78	137.5	6397.35	162.5	7542.23	187.5	54.64
113.125	59.84	138.125	5642.87	163.125	5841.17	188.125	54.08
113.75	51.94	138.75	5110.93	163.75	4830.59	188.75	58.55
114.375	48.87	139.375	4742.42	164.375	4064.43	189.375	57.48
115	57.28	140	4502.98	165	3499.45	190	49.49

COARSE TUNE Pulse; Fundamental Frequency = 418MHz

mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
100.625	70.96	125.625	28608.82	150.625	72.28	175.625	11168.63
101.25	74.82	126.25	28608.82	151.25	76.47	176.25	11233.11
101.875	74.64	126.875	19792.47	151.875	69.66	176.875	11168.63
102.5	70.96	127.5	15958.79	152.5	72.44	177.5	11142.95
103.125	71.53	128.125	14996.85	153.125	70.39	178.125	78.16
103.75	69.82	128.75	14571.36	153.75	14256.08	178.75	68.71
104.375	72.86	129.375	14174.25	154.375	16143.59	179.375	72.69
105	71.29	130	13931.57	155	18113.40	180	66.91
105.625	71.29	130.625	13598.78	155.625	21727.01	180.625	66.37
106.25	69.26	131.25	13304.54	156.25	26853.44	181.25	81.28
106.875	64.79	131.875	13091.82	156.875	28477.38	181.875	67.76
107.5	74.05	132.5	12971.79	157.5	28477.38	182.5	71.70
108.125	76.03	133.125	12823.31	158.125	27133.14	183.125	85.41
108.75	74.64	133.75	12691.12	158.75	23741.05	183.75	67.07
109.375	70.23	134.375	12661.93	159.375	20796.97	184.375	71.53
110	71.70	135	12516.99	160	18302.06	185	72.28
110.625	80.26	135.625	12488.20	160.625	16846.12	185.625	77.09
111.25	68.87	136.25	12459.48	161.25	15363.85	186.25	75.42
111.875	74.22	136.875	12359.47	161.875	14521.12	186.875	76.65
112.5	72.11	137.5	12316.86	162.5	13819.74	187.5	66.68
113.125	73.03	138.125	12288.53	163.125	13335.21	188.125	62.59
113.75	67.22	138.75	72.11	163.75	12867.67	188.75	64.42
114.375	69.42	139.375	97.72	164.375	12560.30	189.375	71.29
115	69.26	140	73.28	165	12288.53	190	67.76
115.625	92.36	140.625	71.29	165.625	12189.90	190.625	74.47
116.25	73.62	141.25	72.69	166.25	11981.19	191.25	74.47
116.875	68.55	141.875	78.34	166.875	11912.42	191.875	70.96
117.5	85.90	142.5	75.86	167.5	11789.63	192.5	73.03
118.125	75.25	143.125	70.79	168.125	11721.95	193.125	65.84
118.75	67.61	143.75	77.54	168.75	11694.99	193.75	77.27
119.375	73.03	144.375	72.69	169.375	11574.44	194.375	76.47
120	70.23	145	73.62	170	11574.44	195	83.18
120.625	70.55	145.625	70.55	170.625	11481.54	195.625	73.88
121.25	79.98	146.25	75.08	171.25	11508.00	196.25	81.75
121.875	77.71	146.875	74.22	171.875	11415.63	196.875	97.50
122.5	83.85	147.5	70.55	172.5	11415.63	197.5	74.64
123.125	73.28	148.125	74.47	173.125	11297.96	198.125	68.00
123.75	67.76	148.75	71.70	173.75	11324.00	198.75	70.39
124.375	83.18	149.375	78.52	174.375	11233.11	199.375	75.25
125	88.00	150	77.27	175	11297.96	200	64.57

FINE TUNE Pulses; Fundamental Frequency = 288MHz

mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
90.625	47.97	115.625	48.47	140.625	47.97	165.625	54.76
91.25	49.15	116.25	55.78	141.25	62.30	166.25	66.22
91.875	44.16	116.875	49.26	141.875	56.23	166.875	54.76
92.5	56.43	117.5	45.34	142.5	47.42	167.5	48.98
93.125	48.98	118.125	9885.53	143.125	47.70	168.125	47.42
93.75	49.15	118.75	9828.79	143.75	48.87	168.75	56.89
94.375	49.15	119.375	52.91	144.375	46.94	169.375	44.98
95	47.21	120	52.91	145	51.64	170	50.18
95.625	46.94	120.625	49.77	145.625	49.55	170.625	49.55
96.25	4135.23	121.25	53.58	146.25	51.64	171.25	54.20
96.875	4135.23	121.875	55.34	146.875	47.59	171.875	57.94
97.5	51.11	122.5	49.55	147.5	46.94	172.5	3315.13
98.125	44.98	123.125	48.75	148.125	44.36	173.125	2988.82
98.75	43.15	123.75	49.77	148.75	51.11	173.75	51.23
99.375	57.74	124.375	48.75	149.375	47.32	174.375	53.89
100	55.98	125	49.37	150	50.47	175	51.64
100.625	48.08	125.625	48.36	150.625	46.56	175.625	53.03
101.25	53.89	126.25	47.42	151.25	5223.96	176.25	47.32
101.875	54.01	126.875	49.26	151.875	48.36	176.875	49.95
102.5	61.94	127.5	53.33	152.5	50.18	177.5	44.72
103.125	44.36	128.125	47.42	153.125	46.08	178.125	54.89
103.75	52.06	128.75	51.76	153.75	45.34	178.75	59.36
104.375	56.43	129.375	12189.90	154.375	47.97	179.375	46.45
105	50.82	130	47.21	155	47.32	180	43.80
105.625	52.18	130.625	48.58	155.625	48.19	180.625	50.35
106.25	45.81	131.25	46.08	156.25	48.98	181.25	55.21
106.875	51.11	131.875	55.98	156.875	49.95	181.875	57.61
107.5	6553.90	132.5	54.76	157.5	49.95	182.5	51.46
108.125	49.77	133.125	46.18	158.125	46.08	183.125	48.98
108.75	45.08	133.75	45.60	158.75	53.58	183.75	1111.73
109.375	55.08	134.375	50.58	159.375	48.47	184.375	2747.89
110	46.45	135	55.21	160	48.75	185	53.77
110.625	51.11	135.625	51.76	160.625	45.24	185.625	52.48
111.25	49.26	136.25	55.98	161.25	49.77	186.25	54.89
111.875	50.18	136.875	54.64	161.875	3767.04	186.875	50.58
112.5	49.15	137.5	52.30	162.5	53.77	187.5	45.81
113.125	49.55	138.125	45.97	163.125	48.19	188.125	44.72
113.75	44.00	138.75	50.35	163.75	51.46	188.75	47.42
114.375	48.47	139.375	48.75	164.375	45.97	189.375	56.10
115	46.45	140	10876.77	165	50.47	190	51.76

FINE TUNE Pulses; Fundamental Frequency = 310MHz

mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
90.625	68.00	115.625	53.95	140.625	60.33	165.625	7169.68
91.25	51.94	116.25	53.39	141.25	58.68	166.25	51.82
91.875	56.10	116.875	60.95	141.875	49.26	166.875	51.70
92.5	56.36	117.5	53.09	142.5	13381.35	167.5	48.08
93.125	52.54	118.125	56.10	143.125	13335.21	168.125	57.02
93.75	53.21	118.75	50.47	143.75	62.59	168.75	61.94
94.375	50.47	119.375	57.74	144.375	51.52	169.375	53.21
95	52.24	120	9418.90	145	59.84	170	62.09
95.625	55.46	120.625	74.90	145.625	63.24	170.625	58.08
96.25	53.39	121.25	55.78	146.25	48.08	171.25	51.82
96.875	56.10	121.875	53.21	146.875	52.66	171.875	51.94
97.5	5345.64	122.5	49.49	147.5	59.84	172.5	49.37
98.125	51.52	123.125	61.80	148.125	60.46	173.125	56.82
98.75	52.54	123.75	56.36	148.75	51.11	173.75	58.41
99.375	54.26	124.375	50.06	149.375	53.21	174.375	63.46
100	53.52	125	53.39	150	55.46	175	56.36
100.625	57.15	125.625	54.26	150.625	55.21	175.625	49.89
101.25	60.46	126.25	55.91	151.25	55.78	176.25	47.59
101.875	60.12	126.875	49.89	151.875	57.02	176.875	6463.98
102.5	55.65	127.5	54.26	152.5	66.37	177.5	52.78
103.125	61.94	128.125	53.21	153.125	50.06	178.125	54.39
103.75	51.29	128.75	53.21	153.75	11898.71	178.75	56.23
104.375	52.12	129.375	58.55	154.375	9806.18	179.375	57.02
105	57.48	130	58.41	155	55.78	180	60.60
105.625	56.56	130.625	50.99	155.625	53.83	180.625	48.98
106.25	52.54	131.25	12022.64	156.25	52.36	181.25	54.89
106.875	56.36	131.875	11926.14	156.875	57.15	181.875	51.52
107.5	52.66	132.5	61.80	157.5	49.89	182.5	54.76
108.125	52.24	133.125	47.42	158.125	56.56	183.125	57.02
108.75	7095.78	133.75	58.88	158.75	58.21	183.75	59.36
109.375	70.63	134.375	60.33	159.375	51.40	184.375	51.52
110	52.78	135	49.37	160	57.94	185	53.21
110.625	52.97	135.625	57.28	160.625	54.26	185.625	67.30
111.25	49.66	136.25	55.08	161.25	63.24	186.25	51.94
111.875	54.64	136.875	55.91	161.875	56.10	186.875	54.39
112.5	51.52	137.5	57.74	162.5	51.52	187.5	58.68
113.125	45.76	138.125	48.08	163.125	54.64	188.125	5794.29
113.75	50.87	138.75	60.60	163.75	52.66	188.75	71.53
114.375	49.49	139.375	56.56	164.375	54.89	189.375	53.83
115	60.12	140	61.59	165	8759.92	190	52.36

FINE TUNE Pulses; Fundamental Frequency = 418MHz

mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m	mSec	Level uV/m
100.625	74.05	125.625	68.87	150.625	70.23	175.625	68.00
101.25	28477.38	126.25	69.26	151.25	76.65	176.25	90.89
101.875	89.43	126.875	70.79	151.875	78.34	176.875	68.16
102.5	76.91	127.5	82.70	152.5	65.61	177.5	71.70
103.125	73.45	128.125	26332.98	153.125	72.69	178.125	71.70
103.75	83.85	128.75	63.39	153.75	71.70	178.75	71.12
104.375	76.30	129.375	78.34	154.375	22855.99	179.375	67.07
105	70.55	130	64.42	155	22908.68	180	74.82
105.625	79.34	130.625	71.29	155.625	72.11	180.625	78.70
106.25	70.39	131.25	73.03	156.25	75.68	181.25	18492.69
106.875	81.28	131.875	66.37	156.875	72.11	181.875	68.16
107.5	76.30	132.5	76.91	157.5	76.30	182.5	69.26
108.125	74.82	133.125	80.91	158.125	79.62	183.125	68.55
108.75	66.68	133.75	62.88	158.75	72.28	183.75	73.28
109.375	72.44	134.375	70.55	159.375	78.52	184.375	67.61
110	69.98	135	69.66	160	69.42	185	74.64
110.625	71.29	135.625	70.55	160.625	70.23	185.625	71.53
111.25	71.12	136.25	68.87	161.25	68.31	186.25	81.10
111.875	72.11	136.875	73.88	161.875	75.68	186.875	72.11
112.5	63.75	137.5	67.61	162.5	87.50	187.5	71.70
113.125	65.61	138.125	77.71	163.125	85.41	188.125	75.08
113.75	72.44	138.75	75.86	163.75	65.84	188.75	69.26
114.375	27637.58	139.375	67.61	164.375	69.98	189.375	92.79
115	27861.21	140	72.44	165	75.08	190	73.62
115.625	67.61	140.625	68.55	165.625	71.29	190.625	76.65
116.25	64.57	141.25	25032.26	166.25	76.47	191.25	70.23
116.875	84.33	141.875	67.07	166.875	65.99	191.875	70.23
117.5	79.80	142.5	71.53	167.5	68.55	192.5	68.87
118.125	66.68	143.125	75.42	168.125	20230.19	193.125	72.44
118.75	87.10	143.75	73.45	168.75	76.30	193.75	94.62
119.375	78.16	144.375	70.39	169.375	75.86	194.375	16923.88
120	66.68	145	64.79	170	85.70	195	17021.59
120.625	72.86	145.625	66.91	170.625	62.37	195.625	73.03
121.25	73.28	146.25	74.22	171.25	82.99	196.25	73.88
121.875	67.45	146.875	70.96	171.875	90.16	196.875	70.96
122.5	66.68	147.5	73.28	172.5	82.70	197.5	76.65
123.125	74.05	148.125	73.62	173.125	64.94	198.125	75.25
123.75	64.05	148.75	80.26	173.75	74.47	198.75	73.88
124.375	69.66	149.375	67.76	174.375	69.10	199.375	73.88
125	82.99	150	73.45	175	76.91	200	79.80