Exhibit 4

FCC Rule Compliance

FCC Rule	Compliance justification
90.213	As defined in FCC Section 90.213, this radar operates within the frequency range of 5450 – 5825 MHz and exceeds 90.213 footnote 13 for stability. Operation of the RADAR, based on an typical operating transmitted frequency of 5625 at 2μs pulse width results in an occupied bandwidth of approximately 16 MHz (see Figure 11).
2.983 (a) – 2.983 (c)	FCC form 731 submitted with pertinent information.
2.983 (d) (1)	The TDR 2070 emission type is pulsed RF with variable Pulse Repetition Frequency (PRF) and pulse width.
2.983 (d) (2)	The operational frequency is within the range of 5450 to 5825 MHz, changeable by changing programming plugs on the exciter. The installed hardware stability exceeds 1.0×10^{-7}.
2.983 (d) (3)	The TDR2070 operational peak power is 7.5 kW with a maximum peak power of 10.0 kW. Maximum peak power is attained by adjustment of internal components within the transmitter. Based on the maximum allowable duty cycle of 1.5% and peak power ratings, the average output power is 112 W (7.5 kW peak) to 150 W (10 kW peak). When using lower PRFs and pulse widths, the average output power would be lower. A typical average output power of 0.469 W would result from using a 0.5 μs pulse width and 125 PRF (calculated using the formula $0.62 \times 10^{-4} \times 7.5$ kW). According to Figure 8, the calculated output power of the crystal should be approximately 159 mv with an output of 8 dB plus 60 dB to account for the value of the output coupler (total value = 68 dB). See Figure 9 for the actual measured output. Using the crystal detector and the oscilloscope plot shown, the peak power level was measured directly. Mean power is not measured. It may be calculated by adding 10log of the duty cycle of the peak power. i.e., –30 dB for 0.1% duty and –18.24 dB @ maximum duty of 1.5%.

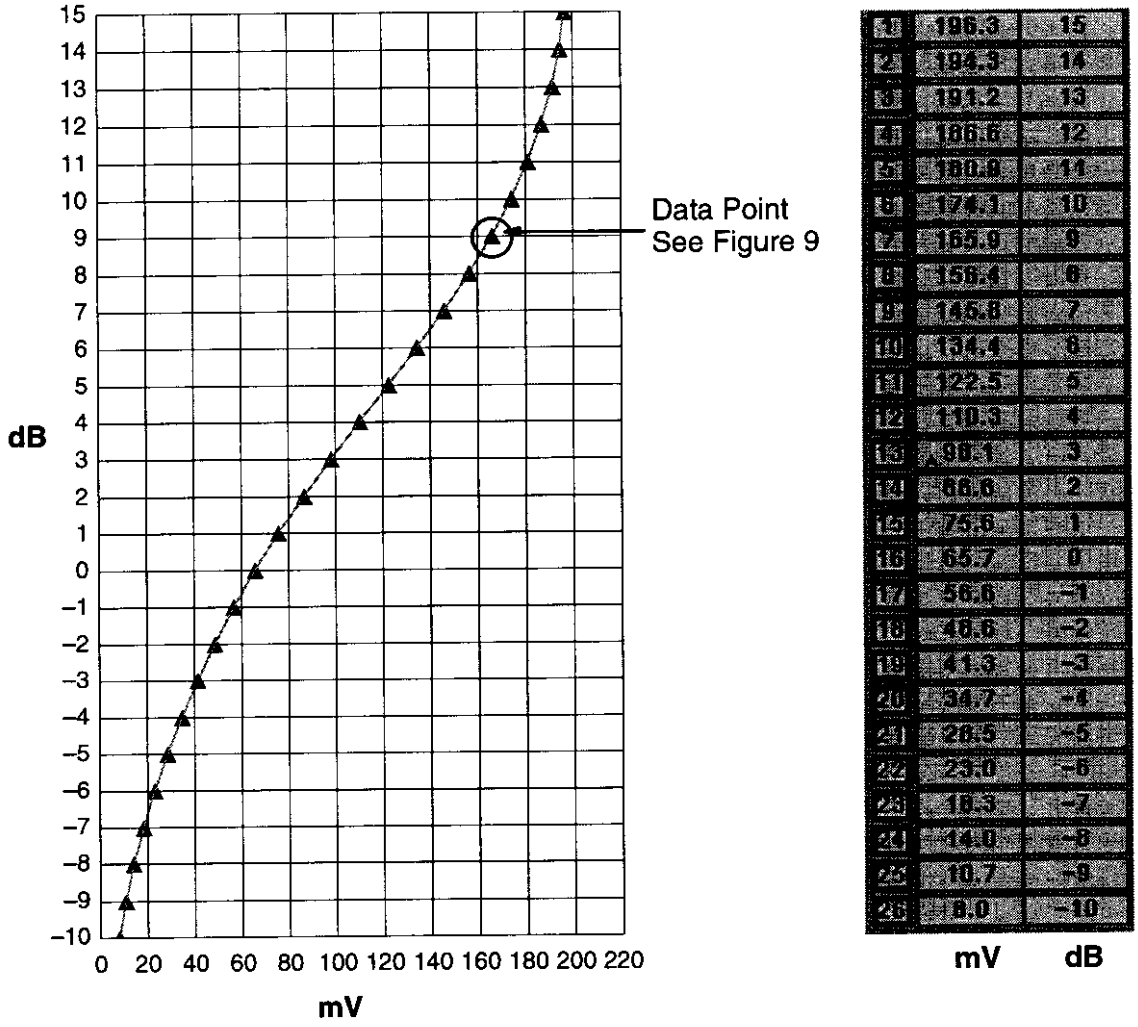


Figure 8. Crystal Calibration Curve.

2.983 (d) (4)

The maximum power of the TDR 2070 is limited to 10.0 kW by the design of the Travelling Wave Tube (TWT). The TWT is internally protected for excessive thermal and electrical conditions. Additional protection is provided to prohibit use of a duty cycle of greater than 1.5%.

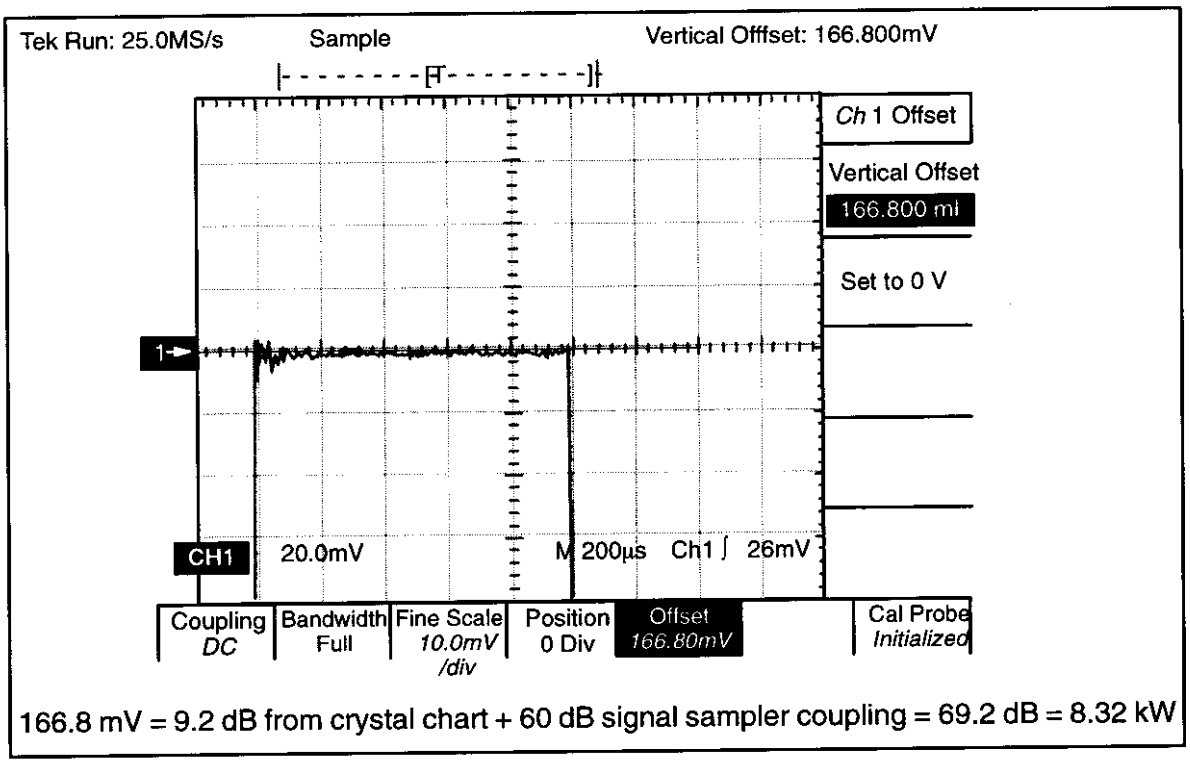


Figure 9. Output Power Level.

2.983 (d) (5) The principle voltages and currents of the output amplifier are as follows:

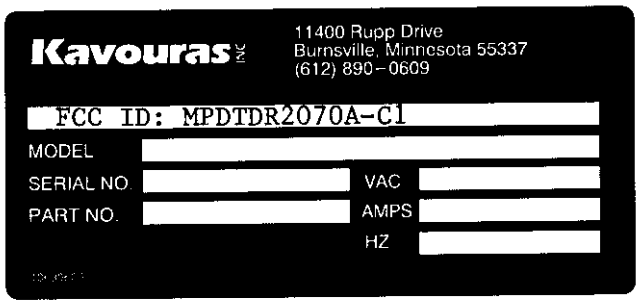
(A)	Filament current	3.34 Amps DC
(B)	Input helix intercept current	5–10 mA (typical) 20 mA (max)
(C)	Beam current	2.5–3.0 Amps
(D)	Beam voltage	15–16 ±3.5% kV (pulsed)
(E)	Detected forward power	7.5–8.5 kW (typical) 10 kW (max)
(F)	Return loss (VSWR)	16–22 dB

2.983 (d) (6) Transmitter component descriptions are contained in section three of the maintenance manual.

2.983 (d) (7) The interconnections of the units in the transmitter shall be as shown in the drawings and prints manual.

2.983 (d) (8) The instruction books are contained in the attached technical manual set.

2.983 (d) (9)	The RF power applied to the TWT is adjusted to achieve a value slightly below the saturation point of the TWT. The procedure requires adjusting AT1 on the RF module of the transmitter to achieve this value.
2.983 (d) (10)	Frequency determination and stabilization is provided by the exciter in the receiver. The exciter requirements are specified on the specification control document. The requirements are shown on the sample specification control drawing 91001144 SPEC.
2.983 (d) (11)	The TWT has a noise figure of $\simeq$40 dB. Further reduction of spurious transmitted radiation is achieved by the use of optional filters. The modulation limit (pulse width) is internally limited to approximately 25 μs to prevent damage or excess average power. The power limit is controlled by RF drive power, beam current, and beam voltage.
2.983 (d) (12)	This section is not applicable to this equipment.
2.983 (e)	All measurements are test results of the working equipment.
2.983 (f)	The equipment identification label is shown in Figure 10.



Top line = FCC ID: (*xxxxx*)
Model = Equipment identification nomenclature
Serial No. = xxxx (four digit serial number)
Part No. = xxxxxxxx–xx (8-digit number with 2-digit dash number)
VAC = Operating input voltage
Amps = Amperes drawn during normal operation
Hz = Input power frequency requirements

Figure 10 Equipment Identification Label

2.985 (a)	The peak value for this measurement is 68.4 dBm. RF power output measurements are achieved by use of an RF dummy load. The dummy load specifications are as shown in specification control document 11081007.
2.985 (b) & (c)	These sections are not applicable to this equipment.
2.987 (a) – (c)	These sections are not applicable to this equipment.
2.987 (d)	Compliance to the applicable rules with regard to modulation are proven by the equipment authorization procedure in paragraph 52.989 (i).
2.989 (all)	Measurement of the occupied bandwidth results in Figure 11. The occupied bandwidth is obtained from the spectrum analyzer plot by measuring the bandwidth at the –34.8 dB point.

This point is also calculated by numerically integrating the sin(x)/x curve as shown in Table I. From the integration it can be seen that the point at which 99% of the total power is contained is ±16 spectral lines (32 total) or –34.8 dB relative to the main lobe. The calculation and measurement indicate an occupied bandwidth of 16MHz with a short (2μs) pulse modulation

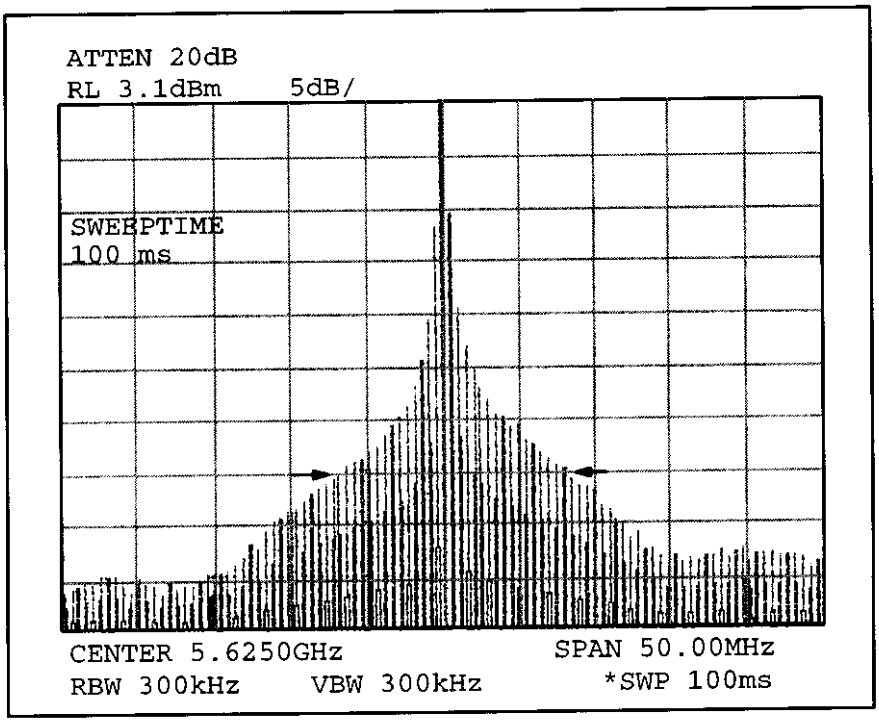


Figure 11. Occupied Band Width – First Harmonic +67.2 dBm peak

Table I. Occupied Band Width

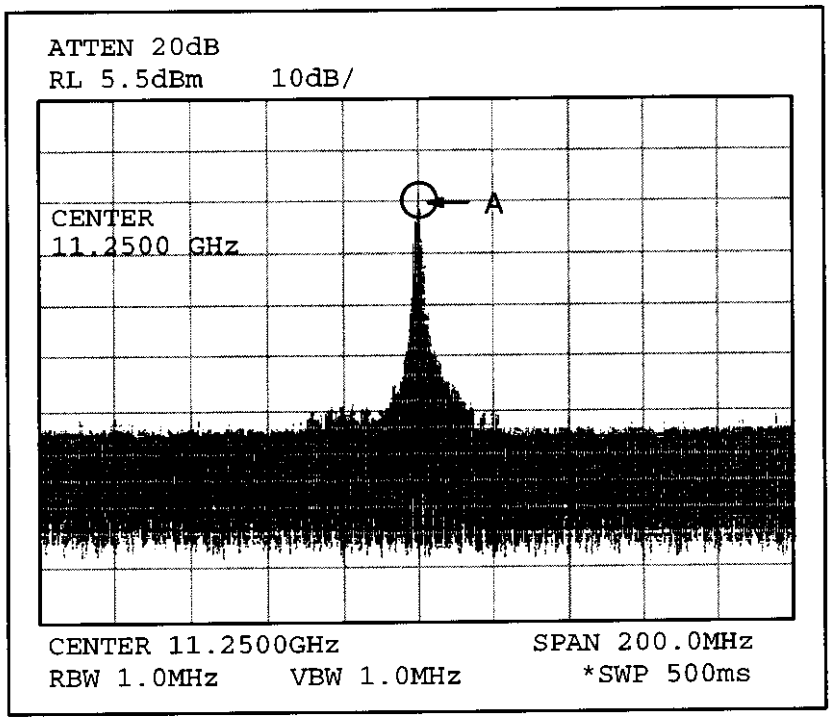
±N*	$\frac{2}{(3 + 2N)\pi}$	$\left(\frac{3}{(3 + 2N)\pi}\right)^2$	dB relative to main lobe	Total power (2–sided)	99% of total power
Main Lobe			0.00	1.00000	0.99000
0	0.21221	4.5032E–02	–13.46	1.09006	1.07916
1	0.12732	1.6211E–02	–17.90	1.12249	1.11126
2	0.09095	8.2711E–03	–20.82	1.13903	1.12764
3	0.07074	5.0035E–03	–23.01	1.14904	1.13754
4	0.05787	3.3495E–03	–24.75	1.15573	1.14418
5	0.04897	2.3981E–03	–26.20	1.16053	1.14893
6	0.04244	1.8013E–03	–27.44	1.16413	1.15249
7	0.03745	1.4024E–03	–28.53	1.16694	1.15527
8	0.03351	1.1227E–03	–29.50	1.16918	1.15749
9	0.03032	9.1901E–04	–30.37	1.17102	1.15931
10	0.02768	7.6613E–04	–31.16	1.17255	1.16083
11	0.02546	6.4846E–04	–31.88	1.17385	1.16211
12	0.02358	5.5595E–04	–32.55	1.17496	1.16321
13	0.02195	4.8191E–04	–33.17	1.17593	1.16417
14	0.02054	4.2173E–04	–33.75	1.17677	1.16500
15	0.01929	3.7216E–04	–34.29	1.17751	1.16574
16	0.01819	3.3084E–04	–34.80	1.17818	1.16639
17	0.01721	2.9604E–04	–35.29	1.17877	1.16698
18	0.01632	2.6646E–04	–35.74	1.17930	1.16751
19	0.01553	2.4110E–04	–36.18	1.17978	1.16798
20	0.01481	2.1919E–04	–36.59	1.18022	1.16842
21	0.01415	2.0014E–04	–36.99	1.18062	1.16882
22	0.01355	1.8347E–04	–37.36	1.18099	1.16918
23	0.01299	1.6880E–04	–37.73	1.18133	1.16951
24	0.01248	1.5582E–04	–38.07	1.18164	1.16982
25	0.01201	1.4428E–04	–38.41	1.18193	1.17011
26	0.01157	1.3398E–04	–38.73	1.18219	1.17037
27	0.01117	1.2474E–04	–39.04	1.18244	1.17062
28	0.01079	1.1643E–04	–39.34	1.18268	1.17085
29	0.01044	1.0892E–04	–39.63	1.18289	1.17107
30	0.01011	1.0211E–04	–39.91	1.18310	1.17127
31	0.00979	9.5925E–05	–40.18	1.18329	1.17146
32	0.00950	9.0284E–05	–40.44	1.18347	1.17164

* ±N, i.e., 2N = total bandwidth

Table I. Occupied Band Width (continued)

±N*	$\frac{2}{(3 + 2N)\pi}$	$\left(\frac{3}{(3 + 2N)\pi}\right)^2$	dB relative to main lobe	Total power (2–sided)	99% of total power
33	0.00923	8.5126E–05	–40.70	1.18364	1.17180
100	0.00314	9.8349E–06	–50.07	1.18744	1.17557
317	0.00100	9.9881E–07	–60.01	1.18880	1.17691
1005	0.00032	1.0002E–07	–70.00	1.18923	1.17734
3181	0.00010	1.0004E–08	–80.00	1.18937	1.17747
10065	0.00003	9.9987E–10	–90.00	1.18941	1.17752
* ±N, i.e., 2N = total bandwidth					

2.991 The diagrams showing measured spurious emissions at the antenna terminals are shown in Figure 12 and Figure 13.



Coupling factor of signal sampler = 51.5 dB @ 11.250 GHz + 2.5 dB of cable loss @ 11.250 GHz for a total of 54 dB resulting in +36.5 dBm peak power (A).

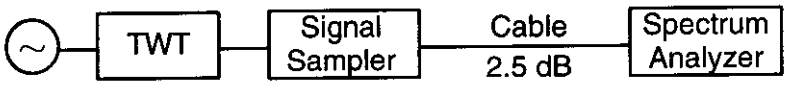
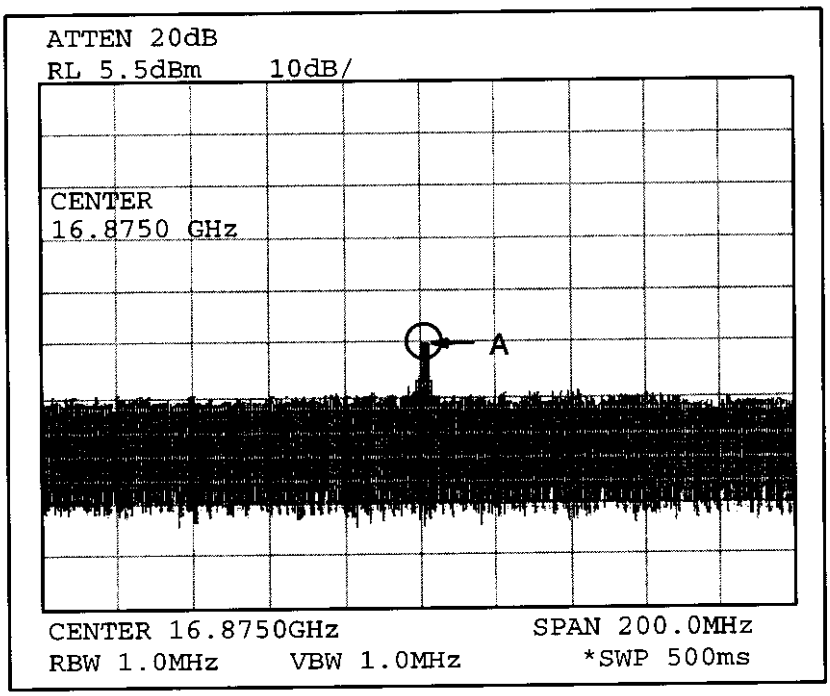


Figure 12. 5.625 GHz Second Harmonic Measurement.



Coupling factor of signal sampler = 54.4 dB @ 16.875 GHz + 9.2 dB of cable loss @ 16.875 GHz for a total of 63.6 dB resulting in +13.3 dBm peak power (A).

Figure 13. 5.625 GHz Third Harmonic Measurement.

The following spectrum analyzer plots were taken with a signal sampler at the output of the TWT with a calibration factor of:

59.9 dB at 5.625 GHz – First Harmonic (see Figure 14)
51.5 dB at 11.25 GHz – Second Harmonic (see Figure 15)
54.4 dB at 16.875 GHz – Third Harmonic (see Figure 16).

The fundamental transmit power was measured at 5625 MHz. The cable losses were 1.8 dB (main signal), 2.5 dB (second harmonic, 11.25 GHz), and 9.2 dB (third harmonic, 16.875 GHz).

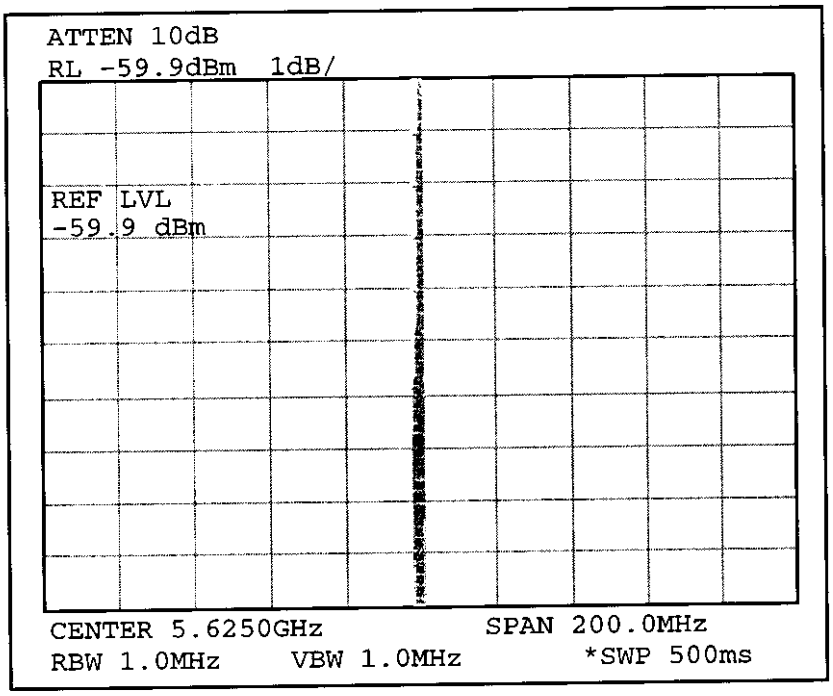


Figure 14. 5.625 GHz First Harmonic Calibration Factor

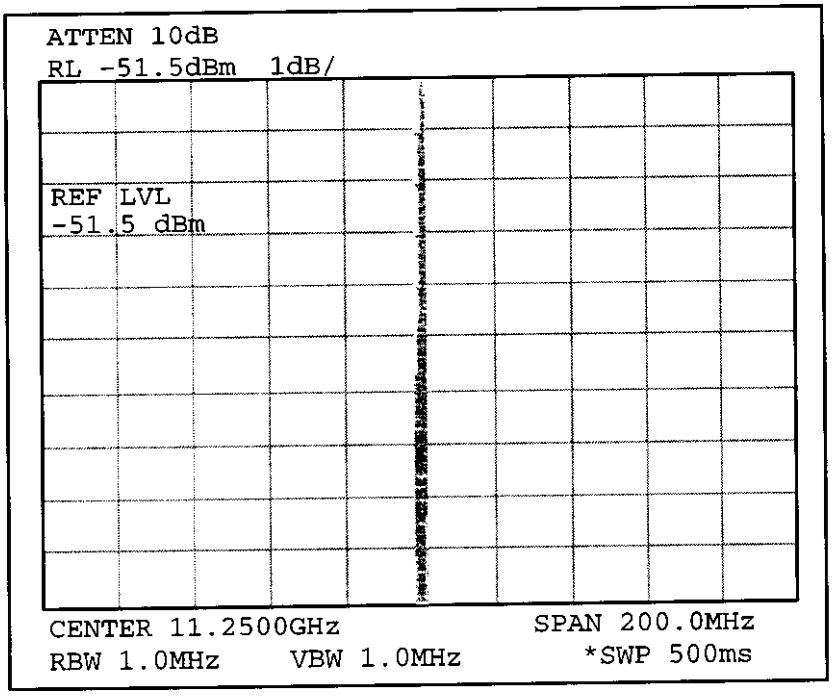


Figure 15. 5.625 GHz Second Harmonic Calibration Factor

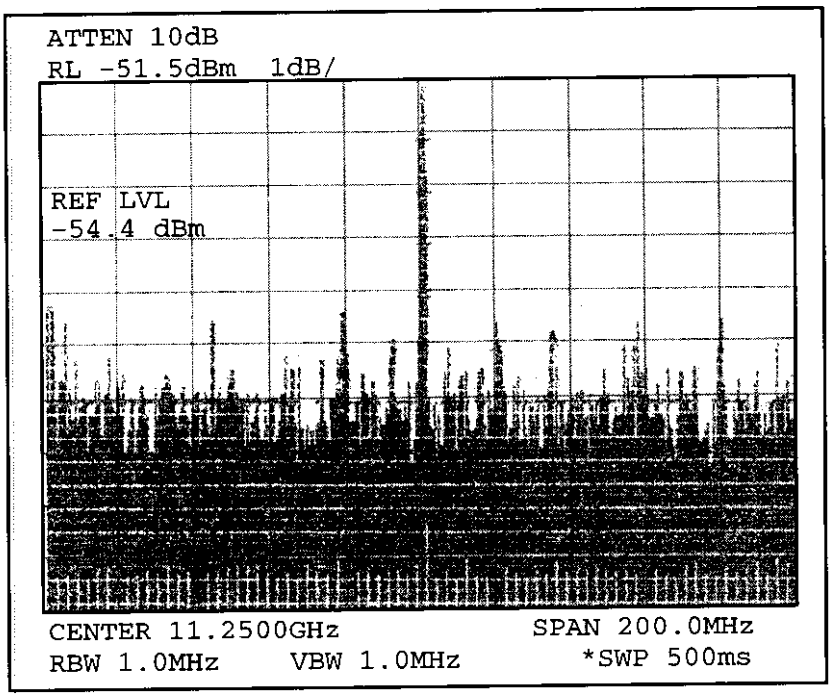


Figure 16. 5.625 GHz Third Harmonic Calibration Factor

2.993

RFI/EMI detection, viewed through a 20dB gain horn, resulted in the data shown in Figure 17 through Figure 20. No other emissions were detected at levels greater than 60dB below mean transmitter power.

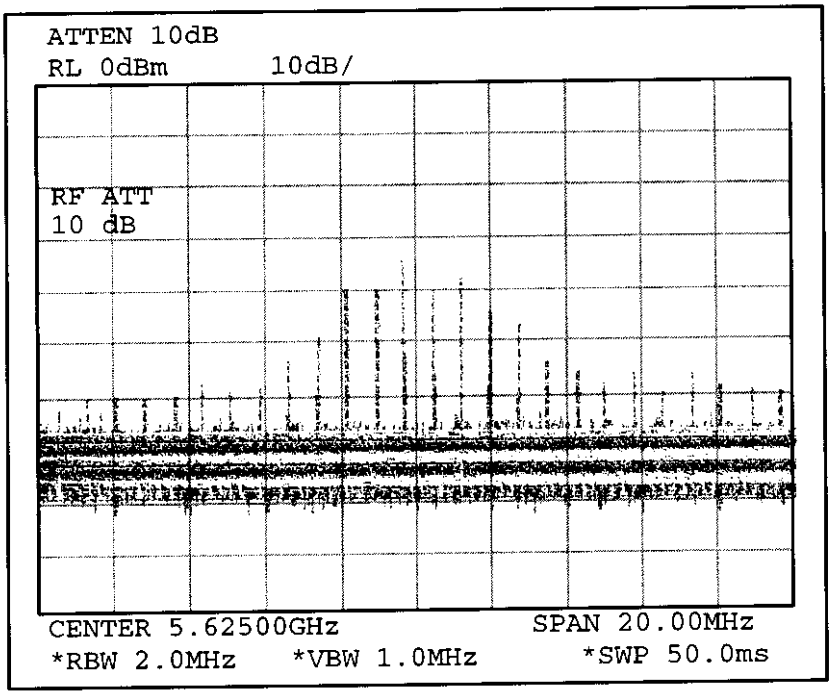


Figure 17. RFI/EMI Detection Data – Front Cabinet Horizontal Linear

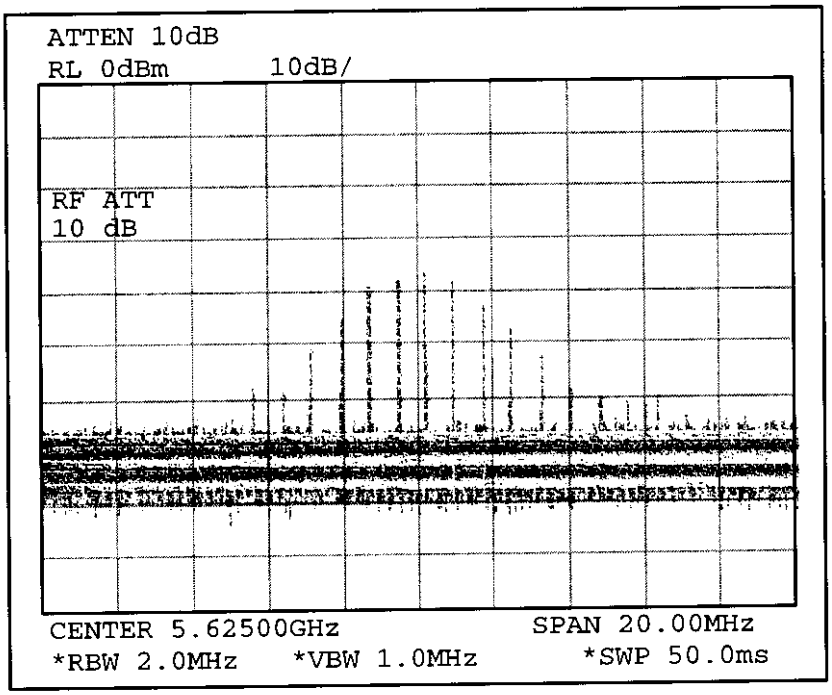


Figure 18. RFI/EMI Detection Data – Front Cabinet Vertical Linear

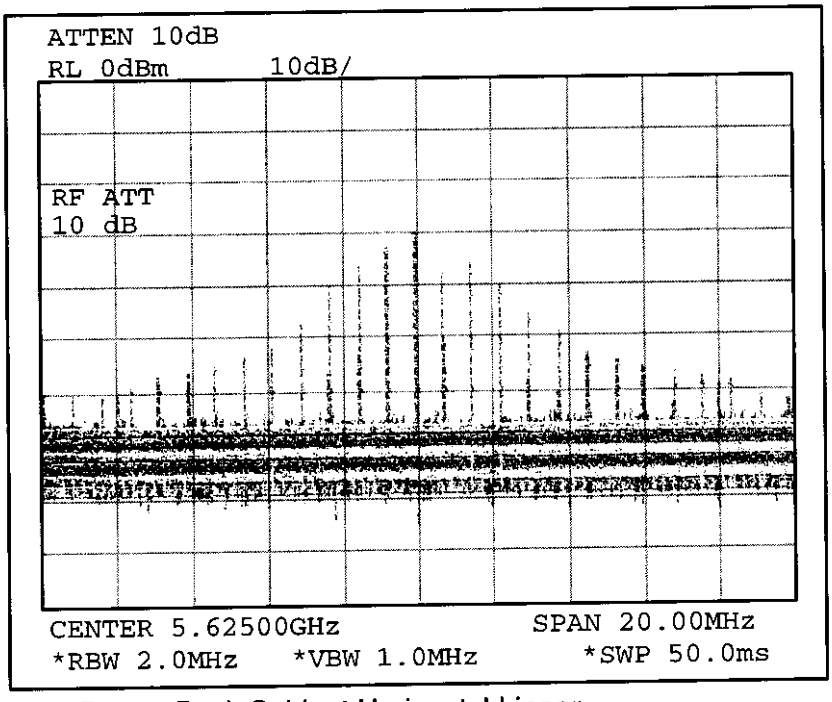


Figure 19. RFI/EMI Detection Data – Back Cabinet Horizontal Linear

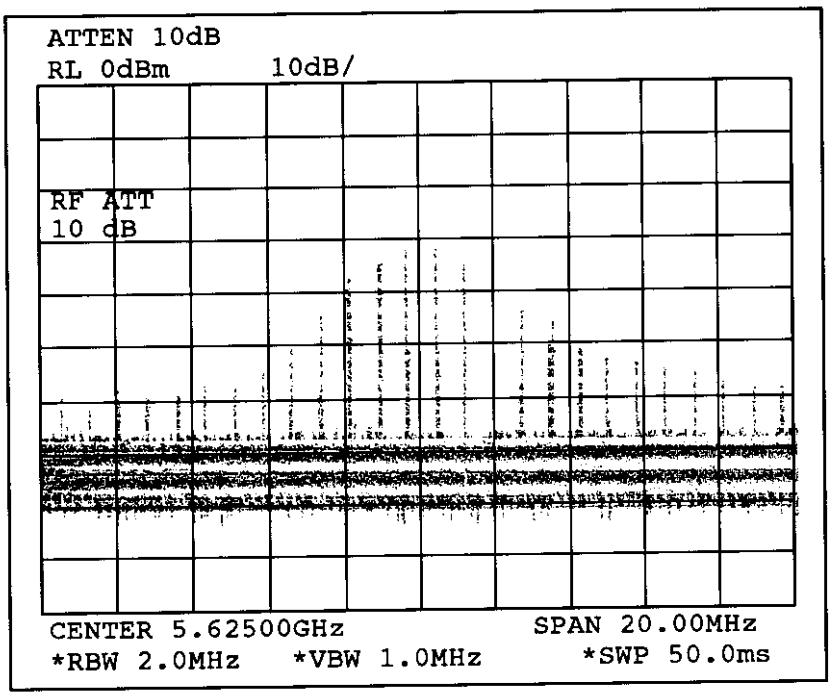


Figure 20. RFI/EMI Detection Data – Back Cabinet Vertical Linear

2.995

The Kavouras RADAR has internal ambient air temperature sensors that indicate an out-of-tolerance condition that results in equipment shutdown. Based on the temperature sensors, internal controls will not allow the equipment to operate in conditions outside of the ambient temperature range of 13°C to 35°C. Testing has proven that the frequency is stable within the entire operating temperature test range. The measured frequency at sample frequencies within the operating range are:

	5625 MHz
13°C	5624.999918 MHz
35°C	5625.000081 MHZ

All measurements made over the test temperature range (in 10° increments) fell within the low and high temperature values, indicating a stable frequency over the entire temperature range.

2.995(d)

The motor generator supplied with the radar is designed to provide the output supply voltage at a tolerance of ± 1.5% when provided with an input supply voltage with a tolerance of ± 10% of nominal. Circuitry for the motor generator will shut down the motor generator if the primary supply voltage exceeds the ± 10% limit. This equipment can not be operated if the primary supply voltage is out of nominal by more than 10%.

These tolerances and conditions have been tested and compliance verified.