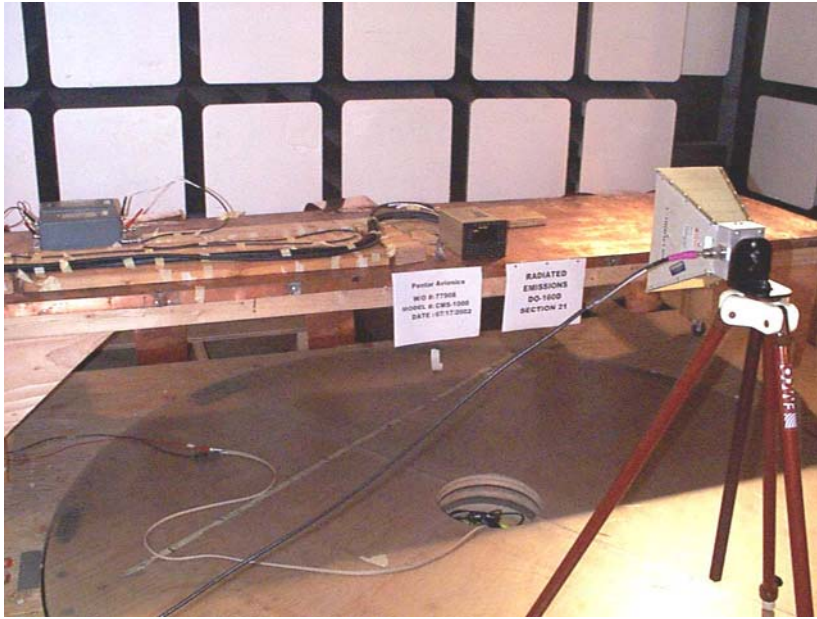
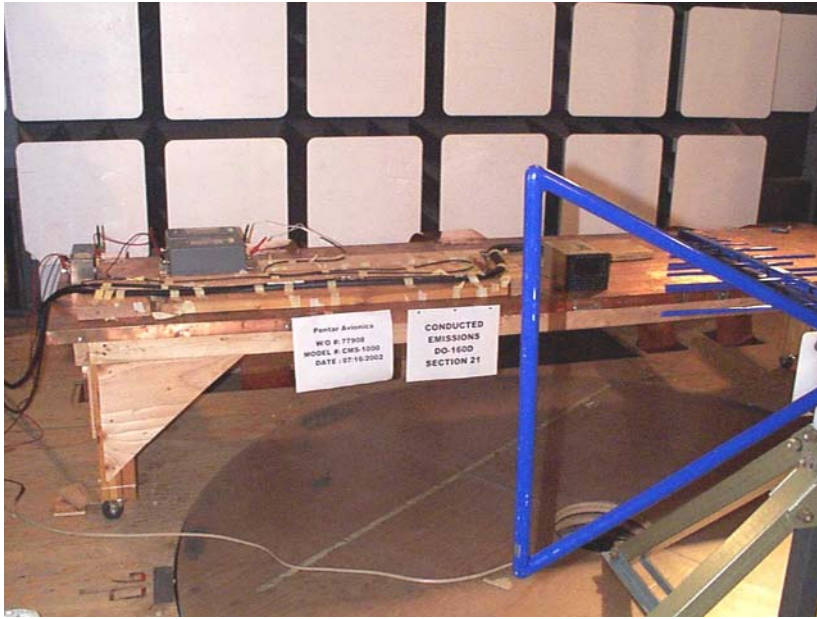
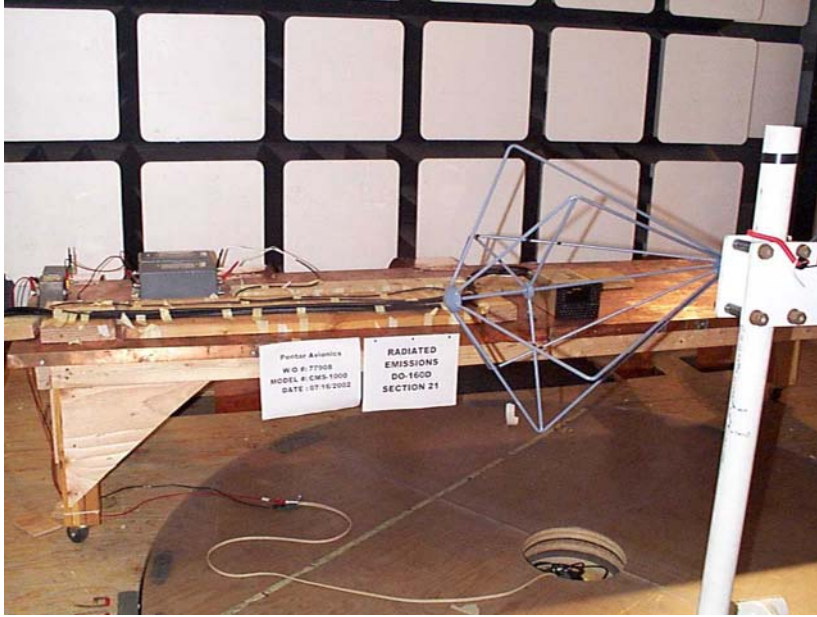














Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 10:33:03 AM

Sequence#: 1

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power up condition). Cable returns are tied together and taped to the table.

Transducer Legend:

T1=3301 #3275 No Gain 06Jun02	T2=HP 8447D-B 18Sep01 AN2307
T3=Helix Cable #2 1July2002	T4=Helix Cable#19
T5=RG-214 Cable #22 10k-6G	

Measurement Data:

Reading listed by margin.

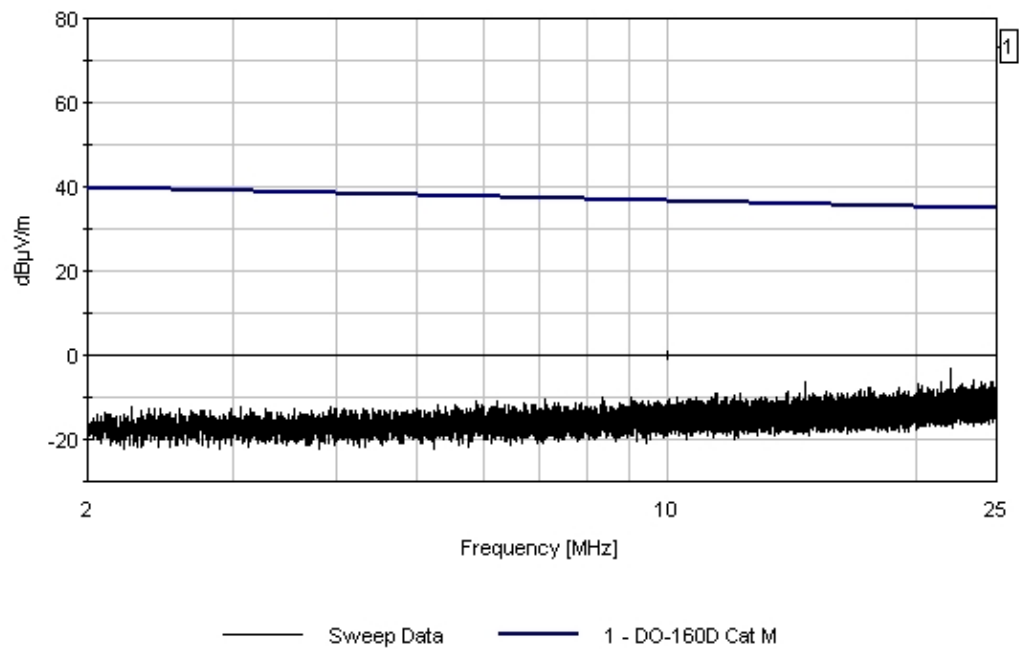
Test Distance: 1 Meter

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	22.057M	15.7	+8.5 +0.1	-28.6	+1.0	+0.3	+0.0	-3.0	35.2	-38.2	Vert
2	24.999M	11.7	+9.3 +0.1	-28.5	+1.0	+0.3	+0.0	-6.1	35.0	-41.1	Vert
3	23.479M	12.1	+8.9 +0.1	-28.5	+1.0	+0.3	+0.0	-6.1	35.1	-41.2	Vert
4	24.766M	11.4	+9.3 +0.1	-28.5	+1.0	+0.3	+0.0	-6.4	35.0	-41.4	Vert
5	24.616M	11.5	+9.2 +0.1	-28.5	+1.0	+0.3	+0.0	-6.4	35.0	-41.4	Vert
6	23.953M	11.6	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-6.5	35.1	-41.6	Vert
7	21.453M	12.5	+8.4 +0.1	-28.6	+1.0	+0.3	+0.0	-6.3	35.3	-41.6	Vert
8	24.779M	10.9	+9.3 +0.1	-28.5	+1.0	+0.3	+0.0	-6.9	35.0	-41.9	Vert
9	23.969M	11.3	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-6.8	35.1	-41.9	Vert
10	22.770M	11.6	+8.8 +0.1	-28.5	+1.0	+0.3	+0.0	-6.7	35.2	-41.9	Vert
11	24.196M	11.1	+9.1 +0.1	-28.5	+1.0	+0.3	+0.0	-6.9	35.1	-42.0	Vert
12	24.942M	10.7	+9.3 +0.1	-28.5	+1.0	+0.3	+0.0	-7.1	35.0	-42.1	Vert
13	23.357M	11.1	+8.9 +0.1	-28.5	+1.0	+0.3	+0.0	-7.1	35.1	-42.2	Vert

14	24.119M	11.0	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-7.1	35.1	-42.2	Vert
15	20.067M	12.3	+7.8 +0.1	-28.5	+1.0	+0.3	+0.0	-7.0	35.4	-42.4	Vert
16	24.834M	10.3	+9.3 +0.1	-28.5	+1.0	+0.3	+0.0	-7.5	35.0	-42.5	Vert
17	24.547M	10.4	+9.2 +0.1	-28.5	+1.0	+0.3	+0.0	-7.5	35.0	-42.5	Vert
18	14.699M	14.0	+6.6 +0.1	-28.5	+1.1	+0.3	+0.0	-6.4	36.1	-42.5	Vert
19	23.889M	10.6	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-7.5	35.1	-42.6	Vert
20	22.606M	11.0	+8.7 +0.1	-28.5	+1.0	+0.3	+0.0	-7.4	35.2	-42.6	Vert
21	24.523M	10.2	+9.2 +0.1	-28.5	+1.0	+0.3	+0.0	-7.7	35.0	-42.7	Vert
22	23.942M	10.5	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-7.6	35.1	-42.7	Vert
23	22.811M	10.8	+8.8 +0.1	-28.5	+1.0	+0.3	+0.0	-7.5	35.2	-42.7	Vert
24	20.309M	11.9	+7.9 +0.1	-28.5	+1.0	+0.3	+0.0	-7.3	35.4	-42.7	Vert
25	23.907M	10.4	+9.0 +0.1	-28.5	+1.0	+0.3	+0.0	-7.7	35.1	-42.8	Vert
26	22.629M	10.7	+8.7 +0.1	-28.5	+1.0	+0.3	+0.0	-7.7	35.2	-42.9	Vert
27	22.461M	10.8	+8.7 +0.1	-28.6	+1.0	+0.3	+0.0	-7.7	35.2	-42.9	Vert
28	22.521M	10.6	+8.7 +0.1	-28.5	+1.0	+0.3	+0.0	-7.8	35.2	-43.0	Vert
29	19.092M	12.1	+7.5 +0.1	-28.6	+1.0	+0.3	+0.0	-7.6	35.5	-43.1	Vert
30	20.681M	11.3	+8.0 +0.1	-28.6	+1.0	+0.3	+0.0	-7.9	35.4	-43.3	Vert
31	17.487M	12.4	+7.1 +0.1	-28.6	+1.1	+0.3	+0.0	-7.6	35.7	-43.3	Vert
32	17.620M	12.3	+7.2 +0.1	-28.6	+1.1	+0.3	+0.0	-7.6	35.7	-43.3	Vert
33	20.220M	11.2	+7.9 +0.1	-28.5	+1.0	+0.3	+0.0	-8.0	35.4	-43.4	Vert
34	20.800M	11.1	+8.1 +0.1	-28.6	+1.0	+0.3	+0.0	-8.0	35.4	-43.4	Vert
35	21.010M	11.0	+8.1 +0.1	-28.6	+1.0	+0.3	+0.0	-8.1	35.3	-43.4	Vert
36	21.211M	10.8	+8.2 +0.1	-28.6	+1.0	+0.3	+0.0	-8.2	35.3	-43.5	Vert
37	20.604M	11.1	+8.0 +0.1	-28.6	+1.0	+0.3	+0.0	-8.1	35.4	-43.5	Vert
38	20.315M	11.0	+7.9 +0.1	-28.5	+1.0	+0.3	+0.0	-8.2	35.4	-43.6	Vert
39	17.161M	12.1	+7.0 +0.1	-28.6	+1.1	+0.3	+0.0	-8.0	35.7	-43.7	Vert
40	19.601M	10.9	+7.7 +0.1	-28.5	+1.0	+0.3	+0.0	-8.5	35.5	-44.0	Vert

41	19.378M	11.0	+7.6 +0.1	-28.6	+1.0	+0.3	+0.0	-8.6	35.5	-44.1	Vert
42	18.971M	11.0	+7.5 +0.1	-28.6	+1.0	+0.3	+0.0	-8.7	35.5	-44.2	Vert
43	17.365M	11.5	+7.1 +0.1	-28.6	+1.1	+0.3	+0.0	-8.5	35.7	-44.2	Vert
44	17.009M	11.6	+7.0 +0.1	-28.6	+1.1	+0.3	+0.0	-8.5	35.8	-44.3	Vert
45	17.828M	11.2	+7.2 +0.1	-28.6	+1.0	+0.3	+0.0	-8.8	35.7	-44.5	Vert
46	15.559M	11.6	+6.8 +0.1	-28.5	+1.1	+0.3	+0.0	-8.6	35.9	-44.5	Vert
47	18.224M	10.9	+7.3 +0.1	-28.6	+1.0	+0.3	+0.0	-9.0	35.6	-44.6	Vert
48	14.015M	12.0	+6.5 +0.0	-28.6	+1.2	+0.2	+0.0	-8.7	36.1	-44.8	Vert
49	15.037M	11.3	+6.7 +0.1	-28.5	+1.1	+0.3	+0.0	-9.0	36.0	-45.0	Vert
50	14.425M	11.5	+6.6 +0.1	-28.6	+1.1	+0.3	+0.0	-9.0	36.1	-45.1	Vert

CKC Laboratories Date: 07/16/2002 Time: 10:33:03 AM Pentar Avionics WFO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 1 Vert MN: CMS-1000 SN: 002
Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power up condition). C



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 10:52:35 AM

Sequence#: 2

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-1GHz. Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power up condition). Cable returns are tied together and taped to the table.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=Bilog CKC 1994

Measurement Data:

Reading listed by margin.

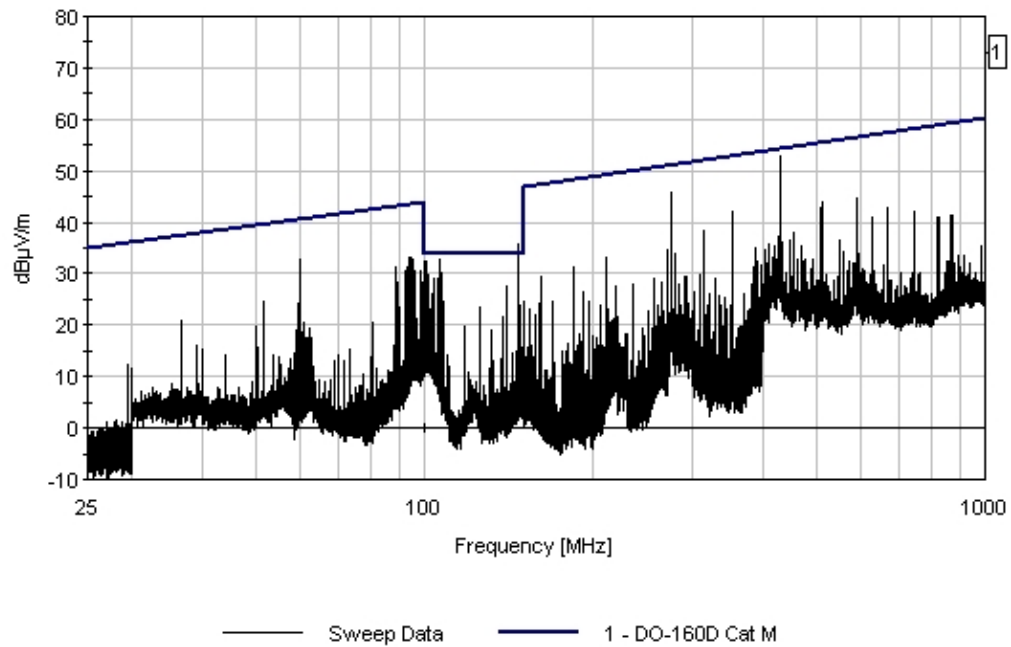
Test Distance: 1 Meter

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	146.987M	50.5	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	35.6	34.0	+1.6	Vert
2	106.096M	48.9	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	32.7	34.0	-1.3	Vert
3	100.731M	48.9	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	32.4	34.0	-1.6	Vert
4	432.132M	61.4	-28.5 +16.7	+1.7	+1.3	+0.1	+0.0	52.7	54.3	-1.6	Vert
5	106.877M	46.1	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	30.0	34.0	-4.0	Vert
6	101.532M	46.3	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	29.8	34.0	-4.2	Vert
7	103.694M	45.3	-28.2 +10.1	+1.2	+0.6	+0.0	+0.0	29.0	34.0	-5.0	Vert
8	105.305M	45.2	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	29.0	34.0	-5.0	Vert
9	275.115M	57.6	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	45.8	51.1	-5.3	Vert
10	101.471M	45.0	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	28.5	34.0	-5.5	Vert
11	274.925M	57.4	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	45.6	51.1	-5.5	Vert
12	139.630M	42.3	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	27.4	34.0	-6.6	Vert
13	275.025M	56.1	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	44.3	51.1	-6.8	Vert

14	275.045M	55.8	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	44.0	51.1	-7.1	Vert
15	275.235M	55.2	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	43.4	51.1	-7.7	Vert
16	102.903M	42.6	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	26.2	34.0	-7.8	Vert
17	59.980M	53.7	-28.4 +5.7	+1.1	+0.5	+0.1	+0.0	32.7	40.6	-7.9	Vert
18	105.265M	41.8	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	25.6	34.0	-8.4	Vert
19	275.165M	54.5	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	42.7	51.1	-8.4	Vert
20	103.644M	41.1	-28.2 +10.1	+1.2	+0.6	+0.0	+0.0	24.8	34.0	-9.2	Vert
21	275.145M	53.7	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	41.9	51.1	-9.2	Vert
22	149.980M	39.7	-28.0 +10.8	+1.3	+0.8	+0.1	+0.0	24.7	34.0	-9.3	Vert
23	107.688M	40.7	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	24.6	34.0	-9.4	Vert
24	139.980M	39.0	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	24.1	34.0	-9.9	Vert
25	147.307M	38.9	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	24.0	34.0	-10.0	Vert
26	94.164M	50.6	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	33.1	43.5	-10.4	Vert
27	124.955M	38.6	-28.2 +11.1	+1.3	+0.7	+0.1	+0.0	23.6	34.0	-10.4	Vert
28	94.064M	50.5	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	33.0	43.5	-10.5	Vert
29	93.353M	50.5	-28.4 +9.0	+1.2	+0.6	+0.0	+0.0	32.9	43.5	-10.6	Vert
30	274.855M	52.3	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	40.5	51.1	-10.6	Vert
31	95.545M	50.2	-28.4 +9.3	+1.2	+0.6	+0.0	+0.0	32.9	43.6	-10.7	Vert
32	353.723M	52.3	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	42.2	52.9	-10.7	Vert
33	102.512M	39.5	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	23.1	34.0	-10.9	Vert
34	353.643M	52.1	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	42.0	52.9	-10.9	Vert
35	147.367M	37.8	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	22.9	34.0	-11.1	Vert
36	99.830M	48.9	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	32.3	43.9	-11.6	Vert
37	510.510M	51.0	-28.7 +18.1	+1.8	+1.4	+0.2	+0.0	43.8	55.5	-11.7	Vert
38	99.980M	48.7	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	32.1	43.9	-11.8	Vert
39	589.489M	50.5	-28.7 +19.2	+1.9	+1.6	+0.2	+0.0	44.7	56.5	-11.8	Vert
40	88.518M	49.2	-28.3 +8.4	+1.2	+0.6	+0.0	+0.0	31.1	43.1	-12.0	Vert

41	107.628M	37.7	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	21.6	34.0	-12.4	Vert
42	137.487M	36.5	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	21.6	34.0	-12.4	Vert
43	137.588M	36.4	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	21.5	34.0	-12.5	Vert
44	275.195M	50.4	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	38.6	51.1	-12.5	Vert
45	147.237M	36.2	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	21.3	34.0	-12.7	Vert
46	92.442M	48.0	-28.3 +8.9	+1.2	+0.6	+0.0	+0.0	30.4	43.4	-13.0	Vert
47	92.482M	47.9	-28.4 +8.9	+1.2	+0.6	+0.0	+0.0	30.2	43.4	-13.2	Vert
48	95.686M	47.7	-28.4 +9.3	+1.2	+0.6	+0.0	+0.0	30.4	43.6	-13.2	Vert
49	98.208M	47.5	-28.3 +9.6	+1.2	+0.6	+0.0	+0.0	30.6	43.8	-13.2	Vert
50	314.264M	49.6	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	38.4	52.0	-13.6	Vert

CKC Laboratories Date: 07/16/2002 Time: 10:52:35 AM Pentar Avionics W/O#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 2 Vert MN: CMS-1000 SN: 002
25MHz-1GHz. Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power u



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: **Pentar**

Model: **CMS-1000**

S/N: **002**

Date: 07/17/2002

Time: 2:59:23 PM

Sequence#: 27

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

1-6GHz. Vertical

Transducer Legend:

T1=Heliac Cable #13	T2=Heliac 37 10k-18G
T3=Heliac Cable# 03	T4=1-18GHz Horn #1 (#1467)
T5=HP 83051A-1.trn	

Measurement Data:

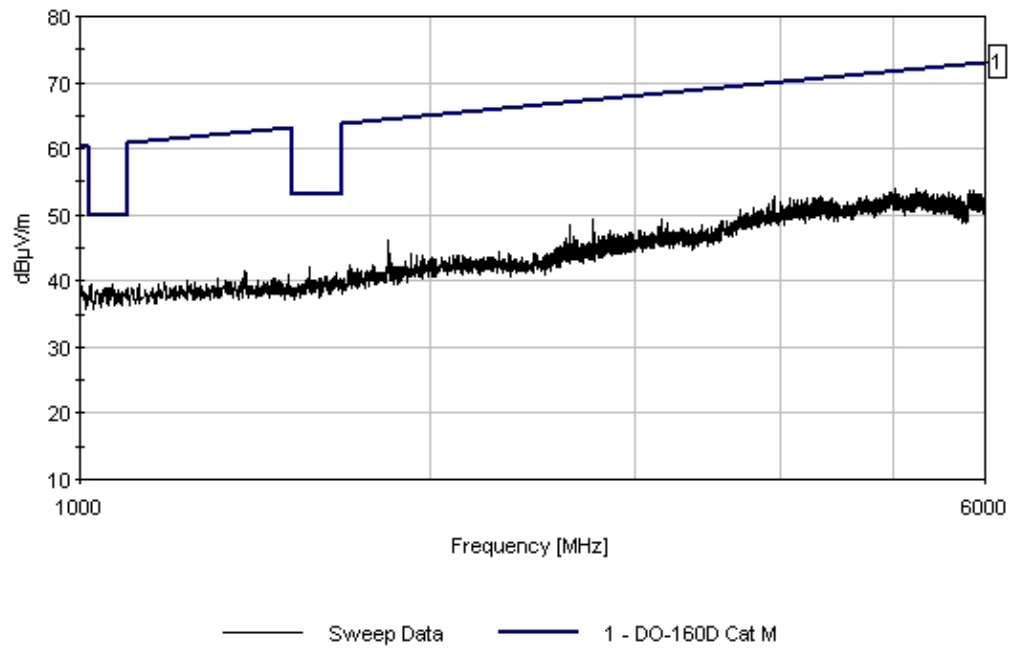
Reading listed by margin.

Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	3947.947M	42.5	+2.5 -30.9	+4.8	+0.8	+33.0	+0.0	52.7	70.0	-17.3	Horiz
2	5014.514M	40.8	+2.9 -30.0	+5.7	+1.3	+33.3	+0.0	54.0	71.7	-17.7	Horiz
3	4328.344M	41.8	+2.6 -30.7	+5.3	+1.1	+32.8	+0.0	52.9	70.7	-17.8	Horiz
4	5244.744M	40.3	+2.8 -29.9	+6.1	+1.4	+33.3	+0.0	54.0	72.0	-18.0	Horiz
5	2765.000M	43.4	+2.0 -30.4	+4.0	+0.7	+29.5	+0.0	49.2	67.5	-18.3	Horiz
6	3907.907M	41.5	+2.5 -30.9	+4.8	+0.8	+32.9	+0.0	51.6	69.9	-18.3	Horiz
7	1843.050M	45.2	+1.6 -31.9	+3.3	+0.5	+27.4	+0.0	46.1	64.6	-18.5	Horiz
8	2633.500M	43.9	+2.1 -30.4	+3.9	+0.5	+28.6	+0.0	48.6	67.1	-18.5	Horiz
9	3158.158M	42.3	+2.1 -30.8	+4.0	+0.7	+31.1	+0.0	49.4	68.4	-19.0	Horiz
10	5820.360M	40.9	+3.2 -29.7	+5.5	+0.5	+33.2	+0.0	53.6	72.8	-19.2	Horiz
11	2658.750M	41.7	+2.1 -30.4	+3.9	+0.6	+28.8	+0.0	46.7	67.2	-20.5	Horiz
12	3030.030M	40.8	+2.1 -30.7	+3.8	+0.6	+31.0	+0.0	47.6	68.1	-20.5	Horiz
13	3424.424M	41.0	+2.2 -31.0	+4.3	+0.7	+31.3	+0.0	48.5	69.0	-20.5	Horiz

14	3291.291M	40.8	+2.1 -30.9	+4.1	+0.7	+31.2	+0.0	48.0	68.7	-20.7	Horiz
15	1707.609M	42.5	+1.6 -32.1	+3.2	+0.5	+26.8	+0.0	42.5	64.0	-21.5	Horiz
16	2295.130M	41.3	+1.8 -30.9	+3.6	+0.6	+27.9	+0.0	44.3	66.1	-21.8	Horiz

CKC Laboratories Date: 07/17/2002 Time: 2:59:23 PM Pentar Avionics WFO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 27 Vert MN: CMS-1000 SN: 002
1-6GHz, Vertical



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/17/2002

Time: 3:05:21 PM

Sequence#: 28

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

1-6GHz. Horizontal

Transducer Legend:

T1=Heliac Cable #13

T3=Heliac Cable# 03

T5=HP 83051A-1.trn

T2=Heliac 37 10k-18G

T4=1-18GHz Horn #1 (#1467)

Measurement Data:

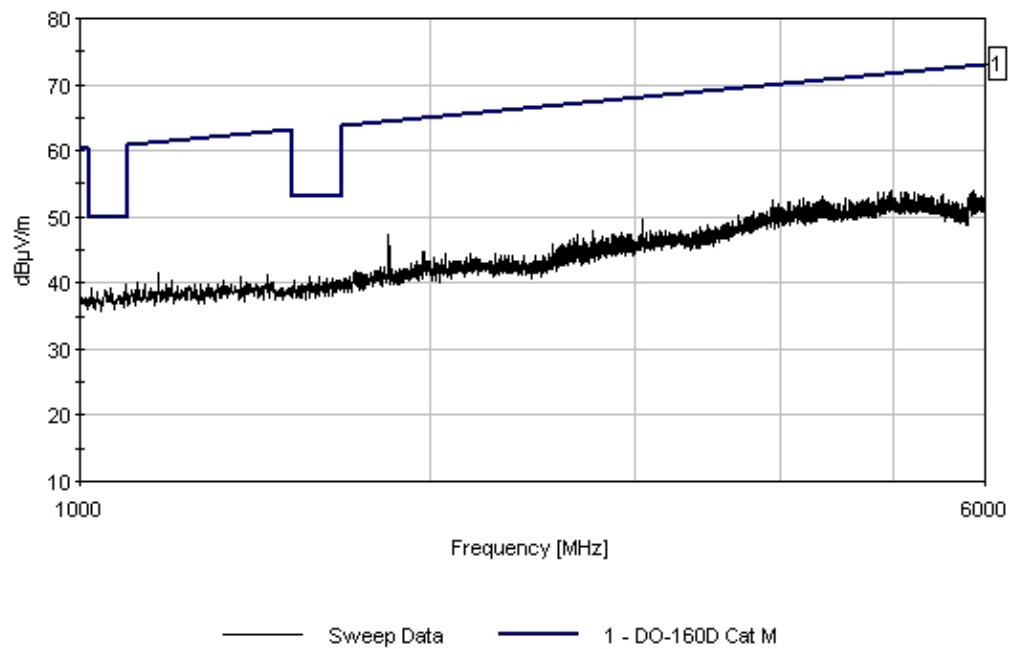
Reading listed by margin.

Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	1842.367M	46.5	+1.6 -31.9	+3.3	+0.5	+27.4	+0.0	47.4	64.6	-17.2	Horiz
2	3946.946M	42.2	+2.5 -30.9	+4.8	+0.8	+33.0	+0.0	52.4	70.0	-17.6	Horiz
3	4345.809M	41.9	+2.6 -30.7	+5.3	+1.1	+32.8	+0.0	53.0	70.7	-17.7	Horiz
4	4980.480M	40.8	+2.9 -30.0	+5.7	+1.3	+33.3	+0.0	54.0	71.7	-17.7	Horiz
5	4860.360M	41.1	+2.8 -30.2	+5.6	+1.2	+33.1	+0.0	53.6	71.5	-17.9	Horiz
6	4910.410M	40.7	+2.9 -30.1	+5.7	+1.2	+33.2	+0.0	53.6	71.6	-18.0	Horiz
7	5071.571M	40.5	+2.9 -30.0	+5.8	+1.3	+33.3	+0.0	53.8	71.8	-18.0	Horiz
8	5085.585M	40.4	+2.9 -30.0	+5.9	+1.3	+33.3	+0.0	53.8	71.8	-18.0	Horiz
9	3050.050M	42.9	+2.1 -30.7	+3.8	+0.6	+31.0	+0.0	49.7	68.2	-18.5	Horiz
10	5873.753M	41.3	+3.1 -29.7	+5.5	+0.5	+33.2	+0.0	53.9	72.8	-18.9	Horiz
11	2764.000M	42.1	+2.0 -30.4	+4.0	+0.7	+29.5	+0.0	47.9	67.5	-19.6	Horiz
12	1168.323M	42.4	+1.3 -30.7	+2.5	+0.4	+25.5	+0.0	41.4	61.3	-19.9	Horiz
13	2677.750M	42.1	+2.1 -30.4	+3.9	+0.6	+28.9	+0.0	47.2	67.2	-20.0	Horiz

14	1973.484M	42.6	+1.7 -31.4	+3.3	+0.6	+28.0	+0.0	44.8	65.1	-20.3	Horiz
15	3461.461M	41.3	+2.3 -31.1	+4.3	+0.7	+31.3	+0.0	48.8	69.1	-20.3	Horiz
16	2632.750M	41.8	+2.1 -30.4	+3.9	+0.5	+28.6	+0.0	46.5	67.1	-20.6	Horiz
17	2662.000M	41.6	+2.1 -30.4	+3.9	+0.6	+28.8	+0.0	46.6	67.2	-20.6	Horiz
18	2704.500M	41.4	+2.0 -30.4	+4.0	+0.6	+29.1	+0.0	46.7	67.3	-20.6	Horiz
19	2715.000M	40.7	+2.0 -30.4	+4.0	+0.6	+29.2	+0.0	46.1	67.3	-21.2	Horiz
20	2749.500M	40.4	+2.0 -30.4	+4.0	+0.7	+29.4	+0.0	46.1	67.4	-21.3	Horiz
21	1811.380M	41.6	+1.6 -32.0	+3.3	+0.5	+27.3	+0.0	42.3	64.4	-22.1	Horiz

CKC Laboratories Date: 07/17/2002 Time: 3:05:21 PM Pentar Avionics WFO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 28 Horiz MN: CMS-1000 SN: 002
1-6GHz. Horizontal



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 11:06:10 AM

Sequence#: 3

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-1GHz. Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power up condition). Cable returns are tied together and taped to the table.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307	T2=Heliac Cable #2 1July2002
T3=Heliac Cable#19	T4=RG-214 Cable #22 10k-6G
T5=Bilog CKC 1994	

Measurement Data:

Reading listed by margin.

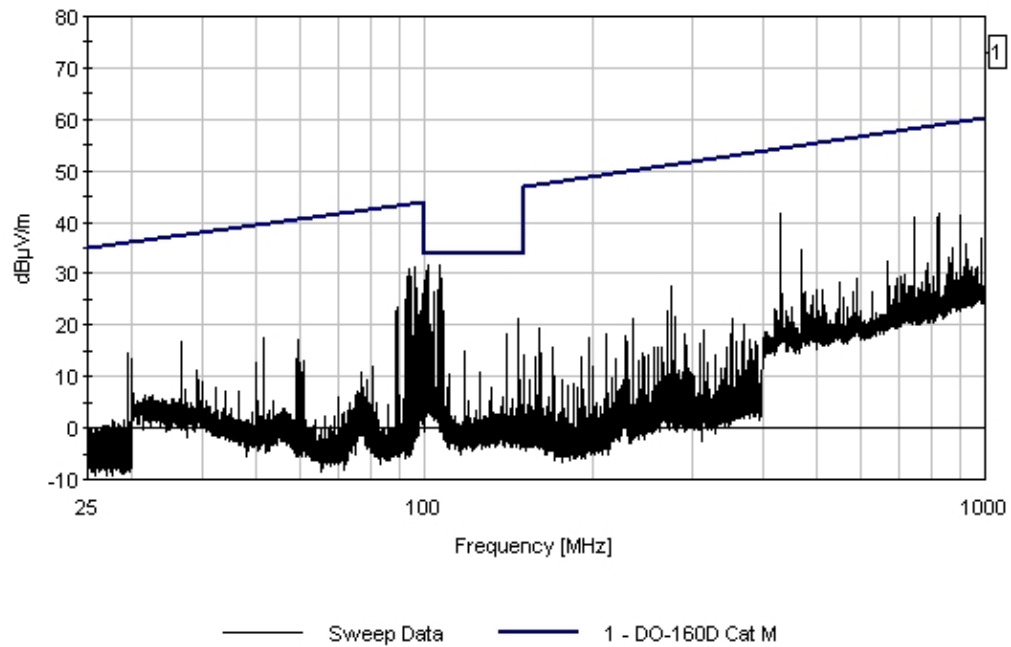
Test Distance: 1 Meter

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	106.026M	48.0	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	31.8	34.0	-2.2	Horiz
2	101.501M	48.1	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	31.6	34.0	-2.4	Horiz
3	100.741M	47.2	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	30.7	34.0	-3.3	Horiz
4	106.887M	45.1	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	29.0	34.0	-5.0	Horiz
5	100.801M	43.8	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	27.3	34.0	-6.7	Horiz
6	105.295M	43.0	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	26.8	34.0	-7.2	Horiz
7	103.724M	42.7	-28.2 +10.1	+1.2	+0.6	+0.0	+0.0	26.4	34.0	-7.6	Horiz
8	106.947M	42.3	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	26.2	34.0	-7.8	Horiz
9	103.754M	41.6	-28.2 +10.1	+1.2	+0.6	+0.0	+0.0	25.3	34.0	-8.7	Horiz
10	107.678M	38.7	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	22.6	34.0	-11.4	Horiz
11	93.353M	48.6	-28.4 +9.0	+1.2	+0.6	+0.0	+0.0	31.0	43.5	-12.5	Horiz
12	95.686M	48.4	-28.4 +9.3	+1.2	+0.6	+0.0	+0.0	31.1	43.6	-12.5	Horiz
13	432.132M	50.4	-28.5 +16.7	+1.7	+1.3	+0.1	+0.0	41.7	54.3	-12.6	Horiz

14	146.987M	36.0	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	21.1	34.0	-12.9	Horiz
15	102.542M	36.6	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	20.2	34.0	-13.8	Horiz
16	94.164M	47.1	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	29.6	43.5	-13.9	Horiz
17	99.850M	45.4	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	28.8	43.9	-15.1	Horiz
18	102.913M	35.2	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	18.8	34.0	-15.2	Horiz
19	139.980M	33.0	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	18.1	34.0	-15.9	Horiz
20	107.758M	33.9	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	17.8	34.0	-16.2	Horiz
21	96.516M	44.4	-28.3 +9.4	+1.2	+0.6	+0.0	+0.0	27.3	43.7	-16.4	Horiz
22	107.618M	33.3	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	17.2	34.0	-16.8	Horiz
23	824.824M	44.0	-28.3 +21.9	+2.2	+1.7	+0.3	+0.0	41.8	58.9	-17.1	Horiz
24	746.046M	44.4	-28.5 +20.9	+2.1	+1.7	+0.3	+0.0	40.9	58.2	-17.3	Horiz
25	98.879M	42.9	-28.2 +9.7	+1.2	+0.6	+0.0	+0.0	26.2	43.8	-17.6	Horiz
26	92.492M	42.8	-28.4 +8.9	+1.2	+0.6	+0.0	+0.0	25.1	43.4	-18.3	Horiz
27	903.186M	41.4	-28.2 +23.5	+2.3	+1.8	+0.4	+0.0	41.2	59.5	-18.3	Horiz
28	139.630M	30.5	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	15.6	34.0	-18.4	Horiz
29	747.147M	43.3	-28.5 +20.9	+2.1	+1.7	+0.3	+0.0	39.8	58.2	-18.4	Horiz
30	117.588M	30.2	-28.2 +11.0	+1.2	+0.7	+0.0	+0.0	14.9	34.0	-19.1	Horiz
31	89.459M	41.5	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	23.5	43.2	-19.7	Horiz
32	149.980M	29.2	-28.0 +10.8	+1.3	+0.8	+0.1	+0.0	14.2	34.0	-19.8	Horiz
33	88.538M	41.0	-28.3 +8.4	+1.2	+0.6	+0.0	+0.0	22.9	43.1	-20.2	Horiz
34	471.572M	42.5	-28.6 +17.5	+1.7	+1.4	+0.1	+0.0	34.6	54.9	-20.3	Horiz
35	36.747M	28.8	-28.5 +15.0	+1.0	+0.4	+0.1	+0.0	16.8	37.5	-20.7	Horiz
36	98.118M	39.5	-28.3 +9.6	+1.2	+0.6	+0.0	+0.0	22.6	43.8	-21.2	Horiz
37	29.399M	25.3	-28.6 +16.6	+1.0	+0.3	+0.1	+0.0	14.7	36.0	-21.3	Horiz
38	97.257M	39.1	-28.3 +9.5	+1.2	+0.6	+0.0	+0.0	22.1	43.7	-21.6	Horiz
39	51.461M	37.1	-28.5 +7.6	+1.0	+0.4	+0.1	+0.0	17.7	39.6	-21.9	Horiz
40	94.024M	38.8	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	21.3	43.5	-22.2	Horiz

41	106.176M	27.9	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	11.7	34.0	-22.3	Horiz
42	88.488M	38.8	-28.3 +8.4	+1.2	+0.6	+0.0	+0.0	20.7	43.1	-22.4	Horiz
43	89.419M	38.8	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	20.8	43.2	-22.4	Horiz
44	93.383M	38.7	-28.4 +9.0	+1.2	+0.6	+0.0	+0.0	21.1	43.5	-22.4	Horiz
45	106.807M	27.5	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	11.4	34.0	-22.6	Horiz
46	107.998M	27.4	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	11.3	34.0	-22.7	Horiz
47	30.020M	23.9	-28.6 +16.6	+1.0	+0.3	+0.1	+0.0	13.3	36.2	-22.9	Horiz
48	98.218M	37.8	-28.3 +9.6	+1.2	+0.6	+0.0	+0.0	20.9	43.8	-22.9	Horiz
49	102.392M	27.4	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	11.0	34.0	-23.0	Horiz
50	124.955M	25.9	-28.2 +11.1	+1.3	+0.7	+0.1	+0.0	10.9	34.0	-23.1	Horiz

CKC Laboratories Date: 07/16/2002 Time: 11:06:10 AM Pentar Avionics W/O#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 3 Horiz MN: CMS-1000 SN: 002
25MHz-1GHz. Original Power Supply. Chassis grounded with anodization via braid to table. Operating mode is idling (power u



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**
 Specification: **DO-160D Cat M**
 Work Order #: **77908**
 Test Type: **Radiated Emissions**
 Equipment: **Network Server**
 Manufacturer: Pentar
 Model: CMS-1000
 S/N: 002

Date: 07/16/2002
 Time: 11:20:52 AM
 Sequence#: 4
 Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-1GHz. Ambient.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307	T2=Heliac Cable #2 1July2002
T3=Heliac Cable#19	T4=RG-214 Cable #22 10k-6G
T5=Bilog CKC 1994	

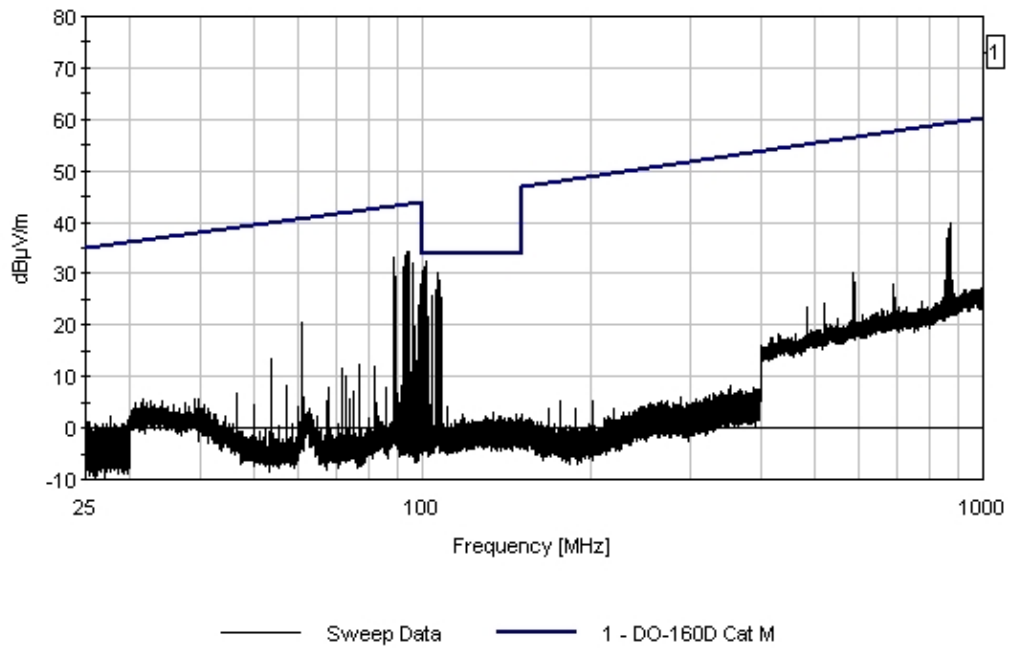
Measurement Data: Reading listed by margin. Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	101.501M	48.8	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	32.3	34.0	-1.7	Vert
2	100.731M	47.8	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	31.3	34.0	-2.7	Vert
3	106.046M	46.5	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	30.3	34.0	-3.7	Vert
4	106.887M	44.9	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	28.8	34.0	-5.2	Vert
5	105.295M	42.9	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	26.7	34.0	-7.3	Vert
6	103.724M	42.1	-28.2 +10.1	+1.2	+0.6	+0.0	+0.0	25.8	34.0	-8.2	Vert
7	107.658M	41.6	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	25.5	34.0	-8.5	Vert
8	94.034M	51.9	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	34.4	43.5	-9.1	Vert
9	88.518M	51.2	-28.3 +8.4	+1.2	+0.6	+0.0	+0.0	33.1	43.1	-10.0	Vert
10	93.343M	51.1	-28.4 +9.0	+1.2	+0.6	+0.0	+0.0	33.5	43.5	-10.0	Vert
11	95.686M	49.2	-28.4 +9.3	+1.2	+0.6	+0.0	+0.0	31.9	43.6	-11.7	Vert
12	92.472M	49.1	-28.4 +8.9	+1.2	+0.6	+0.0	+0.0	31.4	43.4	-12.0	Vert
13	102.562M	38.0	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	21.6	34.0	-12.4	Vert

14	99.840M	47.3	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	30.7	43.9	-13.2	Vert
15	89.449M	47.4	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	29.4	43.2	-13.8	Vert
16	105.375M	35.2	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	19.0	34.0	-15.0	Vert
17	106.166M	34.6	-28.2 +10.2	+1.2	+0.6	+0.0	+0.0	18.4	34.0	-15.6	Vert
18	98.889M	44.6	-28.2 +9.7	+1.2	+0.6	+0.0	+0.0	27.9	43.8	-15.9	Vert
19	94.174M	45.0	-28.4 +9.1	+1.2	+0.6	+0.0	+0.0	27.5	43.5	-16.0	Vert
20	88.448M	44.8	-28.3 +8.4	+1.2	+0.6	+0.0	+0.0	26.7	43.1	-16.4	Vert
21	89.479M	44.7	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	26.7	43.2	-16.5	Vert
22	106.957M	32.1	-28.2 +10.3	+1.2	+0.6	+0.0	+0.0	16.0	34.0	-18.0	Vert
23	99.800M	41.2	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	24.6	43.9	-19.3	Vert
24	875.275M	40.7	-28.2 +23.0	+2.3	+1.8	+0.3	+0.0	39.9	59.3	-19.4	Vert
25	98.098M	40.8	-28.3 +9.6	+1.2	+0.6	+0.0	+0.0	23.9	43.8	-19.9	Vert
26	876.276M	40.1	-28.2 +23.0	+2.3	+1.8	+0.3	+0.0	39.3	59.3	-20.0	Vert
27	60.871M	41.4	-28.4 +5.7	+1.1	+0.5	+0.1	+0.0	20.4	40.7	-20.3	Vert
28	865.465M	39.6	-28.2 +22.8	+2.3	+1.8	+0.3	+0.0	38.6	59.2	-20.6	Vert
29	874.774M	39.0	-28.2 +23.0	+2.3	+1.8	+0.3	+0.0	38.2	59.3	-21.1	Vert
30	860.060M	38.0	-28.2 +22.7	+2.3	+1.8	+0.3	+0.0	36.9	59.2	-22.3	Vert
31	96.536M	36.7	-28.3 +9.4	+1.2	+0.6	+0.0	+0.0	19.6	43.7	-24.1	Vert
32	872.072M	36.0	-28.2 +22.9	+2.3	+1.8	+0.3	+0.0	35.1	59.3	-24.2	Vert
33	859.159M	35.0	-28.2 +22.6	+2.3	+1.8	+0.3	+0.0	33.8	59.2	-25.4	Vert
34	878.178M	34.4	-28.2 +23.0	+2.3	+1.8	+0.3	+0.0	33.6	59.3	-25.7	Vert
35	585.285M	36.1	-28.7 +19.1	+1.9	+1.6	+0.2	+0.0	30.2	56.5	-26.3	Vert
36	53.694M	33.2	-28.5 +7.1	+1.0	+0.4	+0.1	+0.0	13.3	39.9	-26.6	Vert
37	101.622M	23.1	-28.2 +9.9	+1.2	+0.6	+0.0	+0.0	6.6	34.0	-27.4	Vert
38	858.358M	32.6	-28.2 +22.6	+2.3	+1.8	+0.3	+0.0	31.4	59.2	-27.8	Vert
39	89.570M	33.2	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	15.2	43.2	-28.0	Vert
40	589.790M	34.2	-28.7 +19.2	+1.9	+1.6	+0.2	+0.0	28.4	56.5	-28.1	Vert

41	862.262M	31.7	-28.2 +22.7	+2.3	+1.8	+0.3	+0.0	30.6	59.2	-28.6	Vert
42	89.529M	32.1	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	14.1	43.2	-29.1	Vert
43	693.493M	32.2	-28.6 +20.4	+2.1	+1.7	+0.3	+0.0	28.1	57.7	-29.6	Vert
44	77.257M	32.3	-28.3 +6.8	+1.1	+0.5	+0.0	+0.0	12.4	42.2	-29.8	Vert
45	110.661M	20.1	-28.2 +10.5	+1.2	+0.6	+0.0	+0.0	4.2	34.0	-29.8	Vert
46	71.762M	32.2	-28.4 +6.2	+1.1	+0.5	+0.0	+0.0	11.6	41.8	-30.2	Vert
47	857.357M	30.0	-28.2 +22.6	+2.3	+1.8	+0.3	+0.0	28.8	59.2	-30.4	Vert
48	97.247M	30.2	-28.3 +9.5	+1.2	+0.6	+0.0	+0.0	13.2	43.7	-30.5	Vert
49	81.782M	31.3	-28.3 +7.4	+1.1	+0.5	+0.0	+0.0	12.0	42.6	-30.6	Vert
50	102.412M	19.7	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	3.3	34.0	-30.7	Vert

CKC Laboratories Date: 07/16/2002 Time: 11:20:52 AM Pentar Avionics WO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 4 Vert MN: CMS-1000 SN: 002
25MHz-1GHz. Ambient.



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 14:33:42

Sequence#: 5

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-1GHz. Vertical. No connection to data bundle.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=Bilog CKC 1994

Measurement Data:

Reading listed by margin.

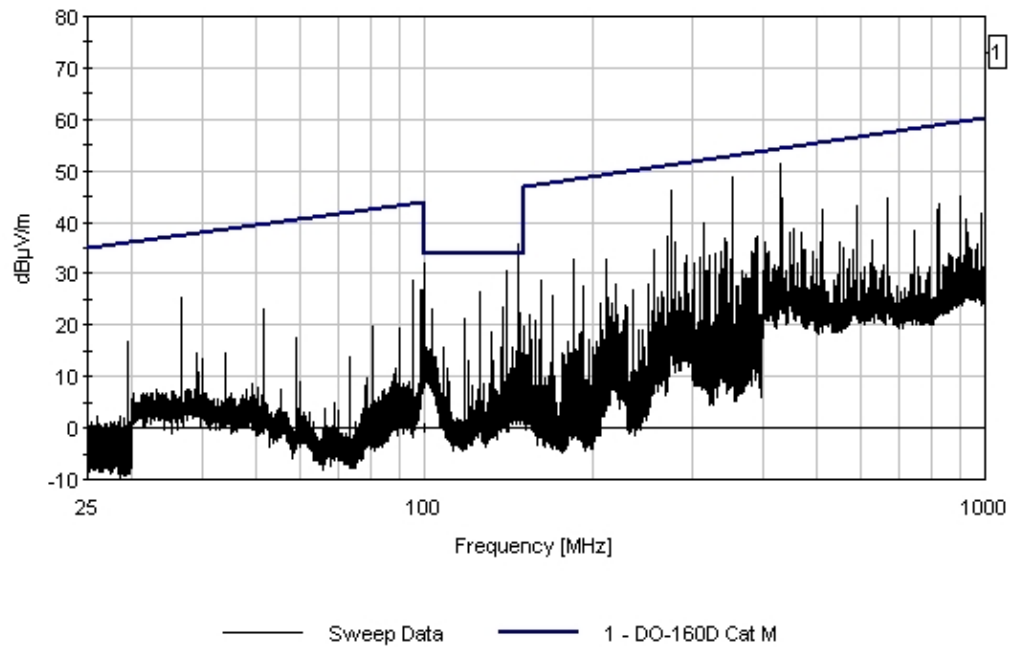
Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	146.987M	50.6	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	35.7	34.0	+1.7	Vert
2	432.132M	60.2	-28.5 +16.7	+1.7	+1.3	+0.1	+0.0	51.5	54.3	-2.8	Vert
3	139.630M	45.4	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	30.5	34.0	-3.5	Vert
4	353.423M	58.7	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	48.6	52.9	-4.3	Vert
5	353.503M	58.7	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	48.6	52.9	-4.3	Vert
6	353.633M	58.7	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	48.6	52.9	-4.3	Vert
7	353.794M	58.6	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	48.5	52.9	-4.4	Vert
8	353.543M	58.3	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	48.2	52.9	-4.7	Vert
9	274.905M	58.1	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	46.3	51.1	-4.8	Vert
10	274.955M	57.2	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	45.4	51.1	-5.7	Vert
11	274.985M	57.2	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	45.4	51.1	-5.7	Vert
12	353.363M	56.8	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	46.7	52.9	-6.2	Vert
13	275.125M	55.7	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	43.9	51.1	-7.2	Vert

14	275.045M	55.4	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	43.6	51.1	-7.5	Vert
15	124.955M	41.3	-28.2 +11.1	+1.3	+0.7	+0.1	+0.0	26.3	34.0	-7.7	Vert
16	275.165M	54.9	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	43.1	51.1	-8.0	Vert
17	275.145M	54.5	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	42.7	51.1	-8.4	Vert
18	353.743M	54.1	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	44.0	52.9	-8.9	Vert
19	353.703M	53.4	-27.7 +14.8	+1.6	+1.1	+0.1	+0.0	43.3	52.9	-9.6	Vert
20	432.833M	53.3	-28.5 +16.7	+1.7	+1.3	+0.1	+0.0	44.6	54.3	-9.7	Vert
21	139.980M	38.8	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	23.9	34.0	-10.1	Vert
22	137.477M	38.2	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	23.3	34.0	-10.7	Vert
23	102.913M	39.6	-28.2 +10.0	+1.2	+0.6	+0.0	+0.0	23.2	34.0	-10.8	Vert
24	353.313M	52.1	-27.7 +14.7	+1.6	+1.1	+0.1	+0.0	41.9	52.9	-11.0	Vert
25	274.885M	51.8	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	40.0	51.1	-11.1	Vert
26	147.287M	37.4	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	22.5	34.0	-11.5	Vert
27	147.367M	37.1	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	22.2	34.0	-11.8	Vert
28	99.980M	48.5	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	31.9	43.9	-12.0	Vert
29	314.244M	51.1	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	39.9	52.0	-12.1	Vert
30	36.747M	37.2	-28.5 +15.0	+1.0	+0.4	+0.1	+0.0	25.2	37.5	-12.3	Vert
31	274.865M	50.4	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	38.6	51.1	-12.5	Vert
32	314.364M	50.7	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	39.5	52.0	-12.5	Vert
33	117.588M	36.7	-28.2 +11.0	+1.2	+0.7	+0.0	+0.0	21.4	34.0	-12.6	Vert
34	667.968M	49.4	-28.6 +20.1	+2.0	+1.6	+0.2	+0.0	44.7	57.4	-12.7	Vert
35	137.537M	36.1	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	21.2	34.0	-12.8	Vert
36	147.207M	36.1	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	21.2	34.0	-12.8	Vert
37	147.397M	35.7	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	20.8	34.0	-13.2	Vert
38	510.711M	49.4	-28.7 +18.2	+1.8	+1.4	+0.2	+0.0	42.3	55.5	-13.2	Vert
39	589.189M	49.1	-28.7 +19.2	+1.9	+1.6	+0.2	+0.0	43.3	56.5	-13.2	Vert
40	314.274M	49.8	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	38.6	52.0	-13.4	Vert

41	314.384M	49.7	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	38.5	52.0	-13.5	Vert
42	137.568M	35.3	-28.1 +11.1	+1.3	+0.7	+0.1	+0.0	20.4	34.0	-13.6	Vert
43	271.962M	49.2	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	37.4	51.0	-13.6	Vert
44	353.213M	49.3	-27.7 +14.7	+1.6	+1.1	+0.1	+0.0	39.1	52.9	-13.8	Vert
45	149.980M	34.8	-28.0 +10.8	+1.3	+0.8	+0.1	+0.0	19.8	34.0	-14.2	Vert
46	314.224M	49.0	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	37.8	52.0	-14.2	Vert
47	510.510M	48.5	-28.7 +18.1	+1.8	+1.4	+0.2	+0.0	41.3	55.5	-14.2	Vert
48	903.286M	45.4	-28.2 +23.5	+2.3	+1.8	+0.4	+0.0	45.2	59.5	-14.3	Vert
49	274.784M	48.4	-27.5 +13.0	+1.5	+1.0	+0.2	+0.0	36.6	51.1	-14.5	Vert
50	314.434M	48.8	-27.5 +13.6	+1.5	+1.1	+0.1	+0.0	37.6	52.1	-14.5	Vert
51	147.000M	34.0	-28.0 +10.9	+1.3	+0.8	+0.1	+0.0	19.1	34.0	-14.9	Vert

CKC Laboratories Date: 07/16/2002 Time: 14:33:42 Pentar Avionics WVO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 5 Vert MN: CMS-1000 SN: 002
25MHz-1GHz. Vertical. No connection to data bundle.



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 2:50:55 PM

Sequence#: 6

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-200MHz. Horizontal.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=R&S HK-116 Bicon 01Mar02

Measurement Data:

Reading listed by margin.

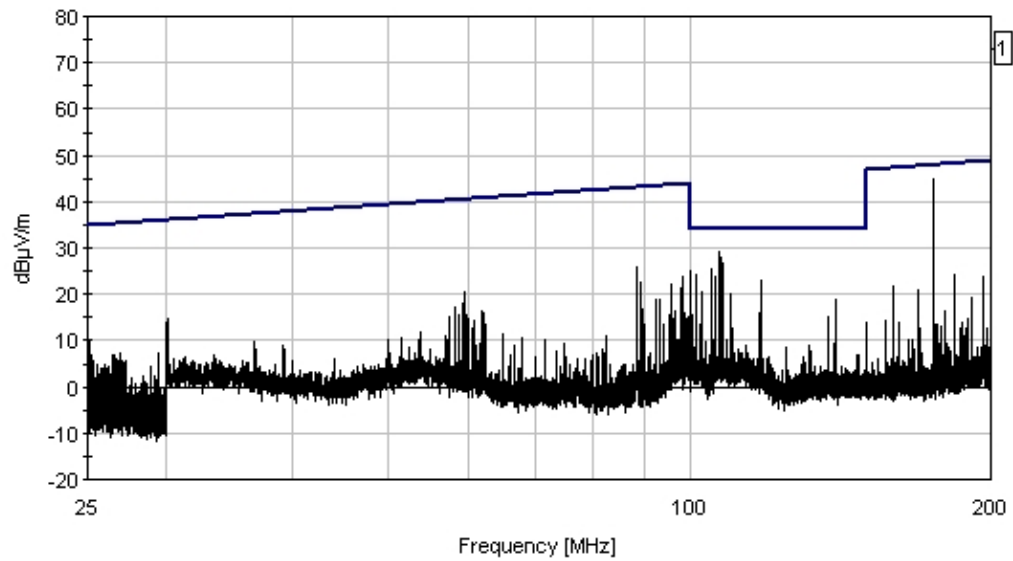
Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	175.585M	58.2	-27.9 +12.2	+1.4	+0.8	+0.2	+0.0	44.9	47.9	-3.0	Horiz
2	106.887M	46.1	-28.2 +9.5	+1.2	+0.6	+0.0	+0.0	29.2	34.0	-4.8	Horiz
3	107.678M	44.8	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	28.0	34.0	-6.0	Horiz
4	107.638M	44.3	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	27.5	34.0	-6.5	Horiz
5	107.728M	43.7	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	26.9	34.0	-7.1	Horiz
6	105.305M	42.6	-28.2 +9.3	+1.2	+0.6	+0.0	+0.0	25.5	34.0	-8.5	Horiz
7	105.335M	42.5	-28.2 +9.3	+1.2	+0.6	+0.0	+0.0	25.4	34.0	-8.6	Horiz
8	101.521M	41.8	-28.2 +9.0	+1.2	+0.6	+0.0	+0.0	24.4	34.0	-9.6	Horiz
9	101.552M	41.1	-28.2 +9.0	+1.2	+0.6	+0.0	+0.0	23.7	34.0	-10.3	Horiz
10	106.076M	40.7	-28.2 +9.4	+1.2	+0.6	+0.0	+0.0	23.7	34.0	-10.3	Horiz
11	117.848M	38.6	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	22.8	34.0	-11.2	Horiz
12	117.948M	37.4	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	21.6	34.0	-12.4	Horiz
13	102.903M	37.8	-28.2 +9.1	+1.2	+0.6	+0.0	+0.0	20.5	34.0	-13.5	Horiz

14	109.980M	36.8	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	20.2	34.0	-13.8	Horiz
15	139.990M	32.6	-28.1 +12.1	+1.3	+0.7	+0.1	+0.0	18.7	34.0	-15.3	Horiz
16	108.028M	34.3	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	17.5	34.0	-16.5	Horiz
17	101.461M	34.8	-28.2 +9.0	+1.2	+0.6	+0.0	+0.0	17.4	34.0	-16.6	Horiz
18	88.508M	44.0	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	26.0	43.1	-17.1	Horiz
19	108.068M	33.4	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	16.6	34.0	-17.4	Horiz
20	108.138M	33.1	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	16.3	34.0	-17.7	Horiz
21	117.588M	31.6	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	15.8	34.0	-18.2	Horiz
22	100.721M	33.0	-28.2 +8.9	+1.2	+0.6	+0.0	+0.0	15.5	34.0	-18.5	Horiz
23	137.447M	29.4	-28.1 +11.9	+1.3	+0.7	+0.1	+0.0	15.3	34.0	-18.7	Horiz
24	99.980M	42.7	-28.2 +8.8	+1.2	+0.6	+0.0	+0.0	25.1	43.9	-18.8	Horiz
25	117.748M	31.0	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	15.2	34.0	-18.8	Horiz
26	107.978M	31.5	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	14.7	34.0	-19.3	Horiz
27	137.487M	28.6	-28.1 +11.9	+1.3	+0.7	+0.1	+0.0	14.5	34.0	-19.5	Horiz
28	98.188M	41.8	-28.3 +8.7	+1.2	+0.6	+0.0	+0.0	24.0	43.8	-19.8	Horiz
29	59.560M	39.4	-28.4 +8.0	+1.1	+0.5	+0.1	+0.0	20.7	40.6	-19.9	Horiz
30	149.980M	27.9	-28.0 +11.9	+1.3	+0.8	+0.1	+0.0	14.0	34.0	-20.0	Horiz
31	107.938M	30.6	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	13.8	34.0	-20.2	Horiz
32	102.522M	30.7	-28.2 +9.1	+1.2	+0.6	+0.0	+0.0	13.4	34.0	-20.6	Horiz
33	89.459M	40.5	-28.3 +8.5	+1.2	+0.6	+0.0	+0.0	22.5	43.2	-20.7	Horiz
34	137.568M	27.4	-28.1 +11.9	+1.3	+0.7	+0.1	+0.0	13.3	34.0	-20.7	Horiz
35	110.260M	29.2	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	12.6	34.0	-21.4	Horiz
36	30.020M	27.9	-28.6 +14.0	+1.0	+0.3	+0.1	+0.0	14.7	36.2	-21.5	Horiz
37	95.686M	40.0	-28.4 +8.7	+1.2	+0.6	+0.0	+0.0	22.1	43.6	-21.5	Horiz
38	137.588M	26.4	-28.1 +11.9	+1.3	+0.7	+0.1	+0.0	12.3	34.0	-21.7	Horiz
39	59.269M	36.7	-28.4 +8.1	+1.0	+0.4	+0.1	+0.0	17.9	40.5	-22.6	Horiz
40	98.278M	38.7	-28.3 +8.8	+1.2	+0.6	+0.0	+0.0	21.0	43.8	-22.8	Horiz

41	98.358M	38.6	-28.3 +8.8	+1.2	+0.6	+0.0	+0.0	20.9	43.8	-22.9	Horiz
42	58.178M	35.9	-28.4 +8.2	+1.0	+0.4	+0.1	+0.0	17.2	40.4	-23.2	Horiz
43	58.238M	35.7	-28.4 +8.1	+1.0	+0.4	+0.1	+0.0	16.9	40.4	-23.5	Horiz
44	108.719M	26.9	-28.2 +9.7	+1.2	+0.6	+0.0	+0.0	10.2	34.0	-23.8	Horiz
45	183.754M	36.8	-27.8 +12.7	+1.4	+0.9	+0.2	+0.0	24.2	48.2	-24.0	Horiz
46	103.674M	27.1	-28.2 +9.2	+1.2	+0.6	+0.0	+0.0	9.9	34.0	-24.1	Horiz
47	137.427M	24.0	-28.1 +11.9	+1.3	+0.7	+0.1	+0.0	9.9	34.0	-24.1	Horiz
48	92.472M	37.0	-28.4 +8.6	+1.2	+0.6	+0.0	+0.0	19.0	43.4	-24.4	Horiz
49	107.588M	26.4	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	9.6	34.0	-24.4	Horiz
50	62.092M	34.9	-28.4 +8.1	+1.1	+0.5	+0.1	+0.0	16.3	40.8	-24.5	Horiz

CKC Laboratories Date: 07/16/2002 Time: 2:50:55 PM Pentar Avionics WVO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 6 Horiz MN: CMS-1000 SN: 002
25MHz-200MHz. Horizontal.



— Sweep Data — 1 - DO-160D Cat M

Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: **Pentar**

Model: **CMS-1000**

S/N: **002**

Date: 07/16/2002

Time: 2:57:29 PM

Sequence#: 7

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

25MHz-200MHz. Vertical.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=R&S HK-116 Bicon 01Mar02

Measurement Data:

Reading listed by margin.

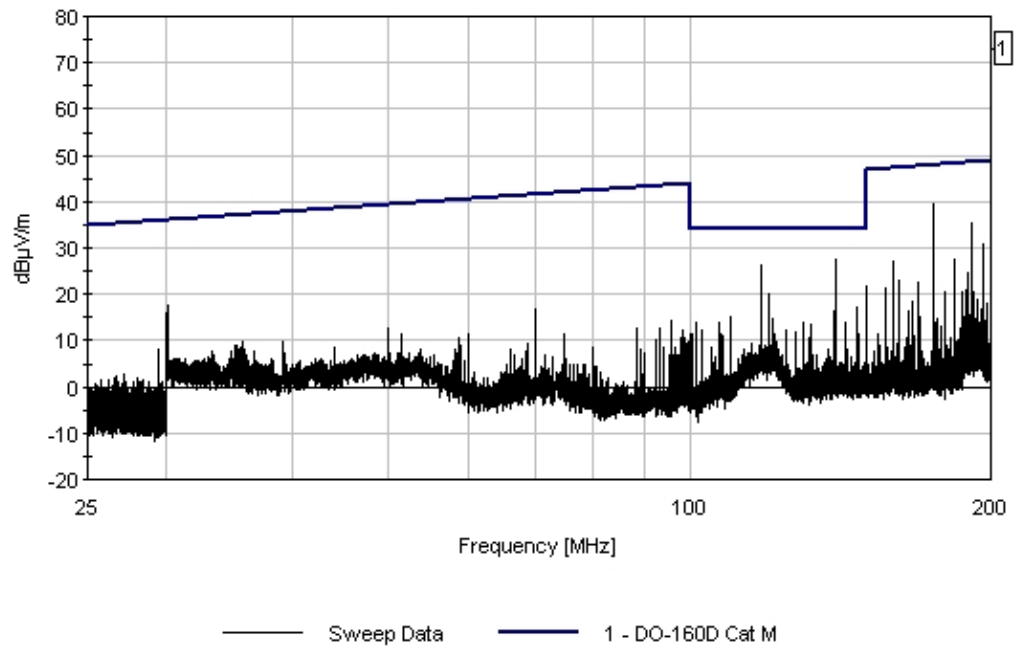
Test Distance: 1 Meter

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBμV	dB	dB	dB	dB	Table	dBμV/m	dBμV/m	dB	Ant
1	139.980M	41.5	-28.1 +12.1	+1.3	+0.7	+0.1	+0.0	27.6	34.0	-6.4	Vert
2	117.888M	41.9	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	26.1	34.0	-7.9	Vert
3	117.808M	41.8	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	26.0	34.0	-8.0	Vert
4	175.585M	52.9	-27.9 +12.2	+1.4	+0.8	+0.2	+0.0	39.6	47.9	-8.3	Vert
5	149.980M	35.6	-28.0 +11.9	+1.3	+0.8	+0.1	+0.0	21.7	34.0	-12.3	Vert
6	191.105M	47.3	-27.8 +13.4	+1.4	+0.9	+0.2	+0.0	35.4	48.5	-13.1	Vert
7	117.908M	36.3	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	20.5	34.0	-13.5	Vert
8	119.980M	35.4	-28.2 +10.7	+1.3	+0.7	+0.1	+0.0	20.0	34.0	-14.0	Vert
9	117.748M	33.2	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	17.4	34.0	-16.6	Vert
10	146.987M	31.1	-28.0 +12.0	+1.3	+0.8	+0.1	+0.0	17.3	34.0	-16.7	Vert
11	117.958M	32.0	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	16.2	34.0	-17.8	Vert
12	139.630M	30.1	-28.1 +12.1	+1.3	+0.7	+0.1	+0.0	16.2	34.0	-17.8	Vert
13	196.379M	42.1	-27.7 +13.9	+1.4	+0.9	+0.2	+0.0	30.8	48.7	-17.9	Vert

14	196.399M	41.9	-27.7 +13.9	+1.4	+0.9	+0.2	+0.0	30.6	48.7	-18.1	Vert
15	30.020M	30.6	-28.6 +14.0	+1.0	+0.3	+0.1	+0.0	17.4	36.2	-18.8	Vert
16	109.980M	31.7	-28.2 +9.8	+1.2	+0.6	+0.0	+0.0	15.1	34.0	-18.9	Vert
17	121.291M	30.0	-28.2 +10.8	+1.3	+0.7	+0.1	+0.0	14.7	34.0	-19.3	Vert
18	196.458M	40.2	-27.7 +13.9	+1.4	+0.9	+0.2	+0.0	28.9	48.7	-19.8	Vert
19	117.728M	29.9	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	14.1	34.0	-19.9	Vert
20	129.990M	28.7	-28.2 +11.4	+1.3	+0.7	+0.1	+0.0	14.0	34.0	-20.0	Vert
21	106.897M	30.7	-28.2 +9.5	+1.2	+0.6	+0.0	+0.0	13.8	34.0	-20.2	Vert
22	101.532M	31.1	-28.2 +9.0	+1.2	+0.6	+0.0	+0.0	13.7	34.0	-20.3	Vert
23	143.323M	27.5	-28.0 +12.0	+1.3	+0.8	+0.1	+0.0	13.7	34.0	-20.3	Vert
24	159.980M	41.0	-28.0 +11.8	+1.3	+0.8	+0.1	+0.0	27.0	47.3	-20.3	Vert
25	117.678M	29.4	-28.2 +10.5	+1.2	+0.7	+0.0	+0.0	13.6	34.0	-20.4	Vert
26	132.312M	27.7	-28.1 +11.6	+1.3	+0.7	+0.1	+0.0	13.3	34.0	-20.7	Vert
27	183.754M	40.1	-27.8 +12.7	+1.4	+0.9	+0.2	+0.0	27.5	48.2	-20.7	Vert
28	196.517M	38.9	-27.7 +13.9	+1.4	+0.9	+0.2	+0.0	27.6	48.7	-21.1	Vert
29	102.903M	29.7	-28.2 +9.1	+1.2	+0.6	+0.0	+0.0	12.4	34.0	-21.6	Vert
30	124.955M	27.3	-28.2 +11.1	+1.3	+0.7	+0.1	+0.0	12.3	34.0	-21.7	Vert
31	127.668M	26.7	-28.2 +11.3	+1.3	+0.7	+0.1	+0.0	11.9	34.0	-22.1	Vert
32	147.307M	25.3	-28.0 +12.0	+1.3	+0.8	+0.1	+0.0	11.5	34.0	-22.5	Vert
33	100.761M	28.9	-28.2 +8.9	+1.2	+0.6	+0.0	+0.0	11.4	34.0	-22.6	Vert
34	107.678M	28.2	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	11.4	34.0	-22.6	Vert
35	107.998M	27.7	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	10.9	34.0	-23.1	Vert
36	131.662M	25.2	-28.1 +11.5	+1.3	+0.7	+0.1	+0.0	10.7	34.0	-23.3	Vert
37	127.758M	25.4	-28.2 +11.3	+1.3	+0.7	+0.1	+0.0	10.6	34.0	-23.4	Vert
38	189.980M	36.6	-27.8 +13.3	+1.4	+0.9	+0.2	+0.0	24.6	48.5	-23.9	Vert
39	127.578M	24.6	-28.2 +11.3	+1.3	+0.7	+0.1	+0.0	9.8	34.0	-24.2	Vert
40	147.247M	23.6	-28.0 +12.0	+1.3	+0.8	+0.1	+0.0	9.8	34.0	-24.2	Vert

41	122.062M	24.8	-28.2 +10.9	+1.3	+0.7	+0.1	+0.0	9.6	34.0	-24.4	Vert
42	161.712M	36.8	-28.0 +11.8	+1.3	+0.8	+0.1	+0.0	22.8	47.3	-24.5	Vert
43	115.365M	25.4	-28.2 +10.3	+1.2	+0.7	+0.0	+0.0	9.4	34.0	-24.6	Vert
44	69.980M	35.2	-28.4 +8.4	+1.1	+0.5	+0.1	+0.0	16.9	41.6	-24.7	Vert
45	120.550M	24.5	-28.2 +10.7	+1.3	+0.7	+0.1	+0.0	9.1	34.0	-24.9	Vert
46	100.791M	26.5	-28.2 +8.9	+1.2	+0.6	+0.0	+0.0	9.0	34.0	-25.0	Vert
47	169.039M	36.0	-27.9 +12.0	+1.4	+0.8	+0.2	+0.0	22.5	47.6	-25.1	Vert
48	105.315M	25.8	-28.2 +9.3	+1.2	+0.6	+0.0	+0.0	8.7	34.0	-25.3	Vert
49	107.958M	25.0	-28.2 +9.6	+1.2	+0.6	+0.0	+0.0	8.2	34.0	-25.8	Vert
50	121.221M	23.5	-28.2 +10.8	+1.3	+0.7	+0.1	+0.0	8.2	34.0	-25.8	Vert

CKC Laboratories Date: 07/16/2002 Time: 2:57:29 PM Pentar Avionics WVO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 7 Vert MN: CMS-1000 SN: 002
25MHz-200MHz. Vertical.



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 3:06:34 PM

Sequence#: 8

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

200MHz-1000MHz. Vertical.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=Log CKC733

Measurement Data:

Reading listed by margin.

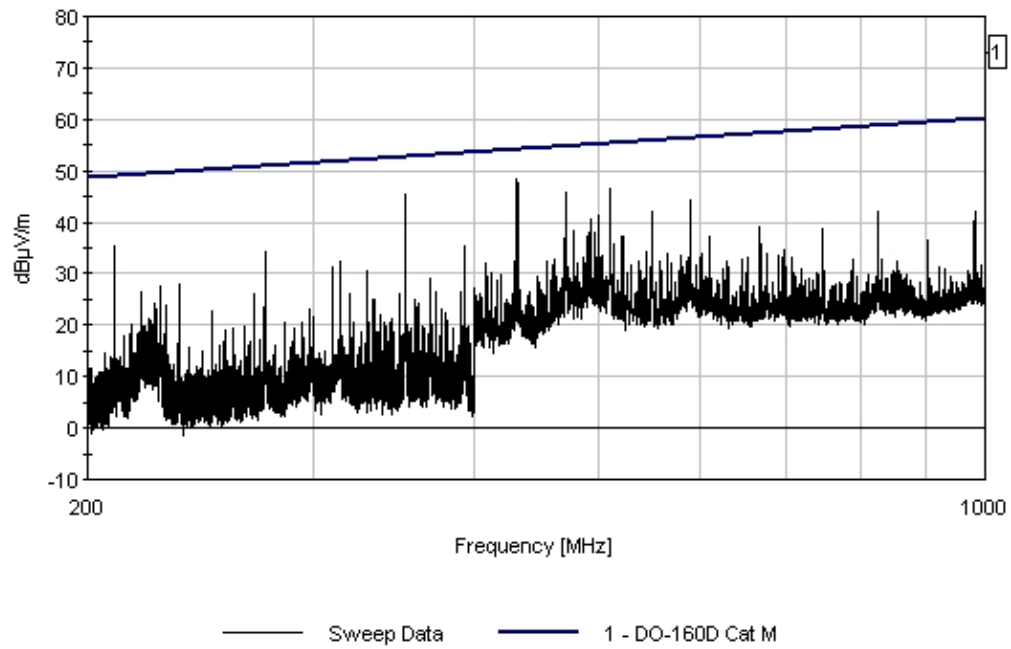
Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	432.032M	57.8	-28.5 +15.9	+1.7	+1.3	+0.1	+0.0	48.3	54.3	-6.0	Vert
2	432.232M	57.2	-28.5 +15.9	+1.7	+1.3	+0.1	+0.0	47.7	54.3	-6.6	Vert
3	353.944M	56.0	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	45.3	52.9	-7.6	Vert
4	353.503M	55.9	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	45.2	52.9	-7.7	Vert
5	353.764M	55.1	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	44.4	52.9	-8.5	Vert
6	353.594M	54.9	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	44.2	52.9	-8.7	Vert
7	353.624M	54.8	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	44.1	52.9	-8.8	Vert
8	353.453M	54.4	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	43.7	52.9	-9.2	Vert
9	471.371M	53.6	-28.6 +17.3	+1.7	+1.4	+0.1	+0.0	45.5	54.9	-9.4	Vert
10	353.694M	54.2	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	43.5	52.9	-9.4	Vert
11	353.814M	53.9	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	43.2	52.9	-9.7	Vert
12	353.674M	53.8	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	43.1	52.9	-9.8	Vert
13	353.794M	53.7	-27.7 +14.2	+1.6	+1.1	+0.1	+0.0	43.0	52.9	-9.9	Vert

14	209.990M	47.0	-27.7 +13.6	+1.4	+0.9	+0.2	+0.0	35.4	49.2	-13.8	Vert
15	210.010M	46.0	-27.7 +13.6	+1.4	+0.9	+0.2	+0.0	34.4	49.2	-14.8	Vert
16	275.025M	45.8	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	34.4	51.1	-16.7	Vert
17	274.955M	43.9	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	32.5	51.1	-18.6	Vert
18	275.175M	43.3	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	31.9	51.1	-19.2	Vert
19	275.135M	42.3	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	30.9	51.1	-20.2	Vert
20	274.885M	42.0	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	30.6	51.1	-20.5	Vert
21	274.935M	41.4	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	30.0	51.1	-21.1	Vert
22	227.838M	39.8	-27.6 +12.9	+1.4	+1.0	+0.2	+0.0	27.7	49.8	-22.1	Vert
23	235.656M	40.3	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	27.9	50.0	-22.1	Vert
24	235.706M	40.3	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	27.9	50.0	-22.1	Vert
25	275.225M	40.3	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	28.9	51.1	-22.2	Vert
26	220.020M	38.4	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	26.5	49.5	-23.0	Vert
27	274.755M	39.3	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	27.9	51.1	-23.2	Vert
28	235.766M	38.9	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	26.5	50.0	-23.5	Vert
29	274.835M	38.9	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	27.5	51.1	-23.6	Vert
30	235.886M	38.4	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	26.0	50.0	-24.0	Vert
31	235.836M	38.0	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	25.6	50.0	-24.4	Vert
32	219.980M	36.7	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	24.8	49.5	-24.7	Vert
33	269.980M	37.8	-27.5 +13.2	+1.5	+1.0	+0.2	+0.0	26.2	51.0	-24.8	Vert
34	274.795M	37.6	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	26.2	51.1	-24.9	Vert
35	225.796M	36.4	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	24.4	49.7	-25.3	Vert
36	225.886M	35.8	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.8	49.7	-25.9	Vert
37	225.906M	35.7	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.7	49.7	-26.0	Vert
38	229.980M	36.0	-27.6 +12.8	+1.4	+1.0	+0.2	+0.0	23.8	49.8	-26.0	Vert
39	225.836M	35.5	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.5	49.7	-26.2	Vert
40	226.026M	35.0	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.0	49.7	-26.7	Vert

41	226.006M	34.6	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	22.6	49.7	-27.1	Vert
42	274.735M	35.3	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	23.9	51.1	-27.2	Vert
43	226.056M	34.1	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	22.1	49.7	-27.6	Vert
44	249.980M	35.5	-27.5 +12.1	+1.5	+1.0	+0.2	+0.0	22.8	50.4	-27.6	Vert
45	274.705M	34.8	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	23.4	51.1	-27.7	Vert
46	225.606M	33.7	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	21.7	49.7	-28.0	Vert
47	274.604M	34.4	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	23.0	51.1	-28.1	Vert
48	297.661M	33.2	-27.4 +14.5	+1.5	+1.1	+0.1	+0.0	23.0	51.7	-28.7	Vert
49	299.980M	31.7	-27.4 +14.6	+1.5	+1.1	+0.1	+0.0	21.6	51.7	-30.1	Vert
50	293.994M	30.8	-27.4 +14.3	+1.5	+1.1	+0.1	+0.0	20.4	51.6	-31.2	Vert

CKC Laboratories Date: 07/16/2002 Time: 3:06:34 PM Pentar Avionics WVO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 8 Vert MN: CMS-1000 SN: 002
200MHz-1000MHz, Vertical.



Test Location: CKC Laboratories •14797 NE 95th Street • Redmond, WA 98052 • 425-883-4757

Customer: **Pentar Avionics**

Specification: **DO-160D Cat M**

Work Order #: **77908**

Test Type: **Radiated Emissions**

Equipment: **Network Server**

Manufacturer: Pentar

Model: CMS-1000

S/N: 002

Date: 07/16/2002

Time: 3:14:20 PM

Sequence#: 9

Tested By: Andrew Pace

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Network Server*	Pentar	CMS-1000	002

Test Conditions / Notes:

200MHz-1000MHz. Horizontal.

Transducer Legend:

T1=HP 8447D-B 18Sep01 AN2307

T2=Heliac Cable #2 1July2002

T3=Heliac Cable#19

T4=RG-214 Cable #22 10k-6G

T5=Log CKC733

Measurement Data:

Reading listed by margin.

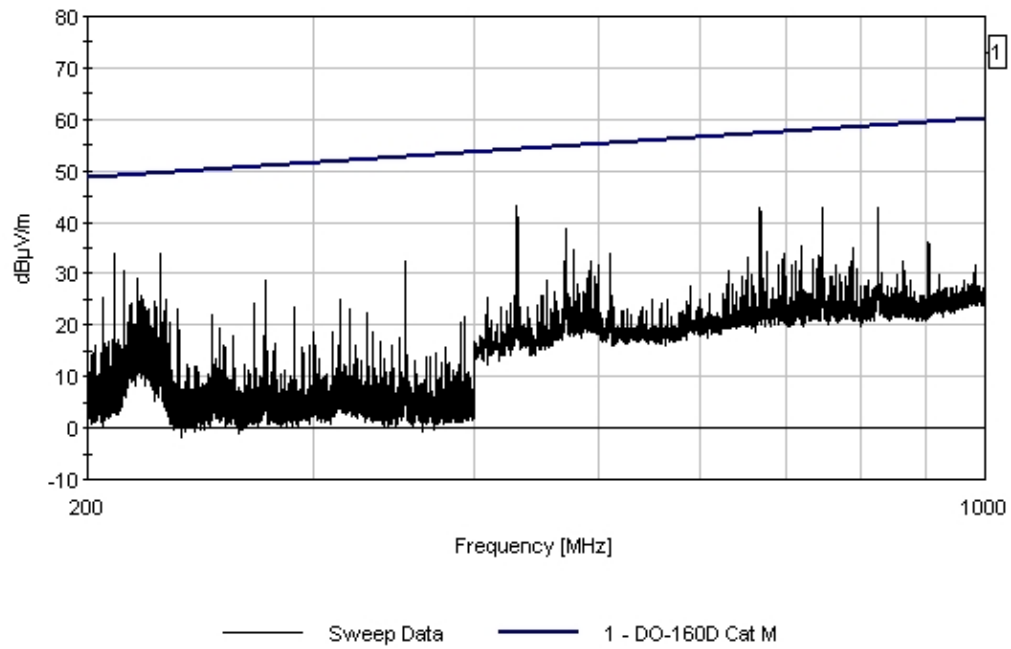
Test Distance: 1 Meter

#	Freq MHz	Rdng dBμV	T1 T5 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV/m	Spec dBμV/m	Margin dB	Polar Ant
1	209.980M	45.3	-27.7 +13.6	+1.4	+0.9	+0.2	+0.0	33.7	49.2	-15.5	Horiz
2	210.020M	45.0	-27.7 +13.6	+1.4	+0.9	+0.2	+0.0	33.4	49.2	-15.8	Horiz
3	227.838M	45.8	-27.6 +12.9	+1.4	+1.0	+0.2	+0.0	33.7	49.8	-16.1	Horiz
4	213.163M	42.1	-27.6 +13.5	+1.4	+0.9	+0.2	+0.0	30.5	49.3	-18.8	Horiz
5	218.488M	40.8	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	28.9	49.5	-20.6	Horiz
6	274.985M	40.2	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	28.8	51.1	-22.3	Horiz
7	219.019M	38.2	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	26.3	49.5	-23.2	Horiz
8	205.796M	36.7	-27.7 +13.8	+1.4	+0.9	+0.2	+0.0	25.3	49.0	-23.7	Horiz
9	219.970M	37.5	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	25.6	49.5	-23.9	Horiz
10	220.020M	37.5	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	25.6	49.5	-23.9	Horiz
11	274.955M	38.5	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	27.1	51.1	-24.0	Horiz
12	220.941M	36.9	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	25.0	49.5	-24.5	Horiz
13	275.065M	38.0	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	26.6	51.1	-24.5	Horiz

14	219.540M	36.6	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	24.7	49.5	-24.8	Horiz
15	229.980M	37.2	-27.6 +12.8	+1.4	+1.0	+0.2	+0.0	25.0	49.8	-24.8	Horiz
16	216.176M	36.0	-27.6 +13.3	+1.4	+0.9	+0.2	+0.0	24.2	49.4	-25.2	Horiz
17	225.866M	36.5	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	24.5	49.7	-25.2	Horiz
18	275.145M	37.2	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	25.8	51.1	-25.3	Horiz
19	220.631M	35.9	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	24.0	49.5	-25.5	Horiz
20	216.026M	35.6	-27.6 +13.3	+1.4	+0.9	+0.2	+0.0	23.8	49.4	-25.6	Horiz
21	274.755M	36.9	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	25.5	51.1	-25.6	Horiz
22	220.100M	35.7	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	23.8	49.5	-25.7	Horiz
23	221.682M	35.5	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	23.5	49.6	-26.1	Horiz
24	216.096M	34.9	-27.6 +13.3	+1.4	+0.9	+0.2	+0.0	23.1	49.4	-26.3	Horiz
25	226.046M	35.4	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.4	49.7	-26.3	Horiz
26	216.196M	34.7	-27.6 +13.3	+1.4	+0.9	+0.2	+0.0	22.9	49.4	-26.5	Horiz
27	225.926M	35.2	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.2	49.7	-26.5	Horiz
28	223.403M	35.0	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	23.0	49.6	-26.6	Horiz
29	225.946M	35.1	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	23.1	49.7	-26.6	Horiz
30	269.980M	36.0	-27.5 +13.2	+1.5	+1.0	+0.2	+0.0	24.4	51.0	-26.6	Horiz
31	275.195M	35.7	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	24.3	51.1	-26.8	Horiz
32	222.202M	34.6	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	22.6	49.6	-27.0	Horiz
33	235.195M	35.4	-27.6 +12.6	+1.4	+1.0	+0.2	+0.0	23.0	50.0	-27.0	Horiz
34	229.570M	34.8	-27.6 +12.8	+1.4	+1.0	+0.2	+0.0	22.6	49.8	-27.2	Horiz
35	216.226M	33.8	-27.6 +13.3	+1.4	+0.9	+0.2	+0.0	22.0	49.4	-27.4	Horiz
36	219.840M	33.9	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	22.0	49.5	-27.5	Horiz
37	225.966M	34.2	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	22.2	49.7	-27.5	Horiz
38	218.579M	33.8	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	21.9	49.5	-27.6	Horiz
39	222.322M	34.0	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	22.0	49.6	-27.6	Horiz
40	226.106M	34.1	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	22.1	49.7	-27.6	Horiz

41	289.980M	34.2	-27.4 +14.1	+1.5	+1.1	+0.1	+0.0	23.6	51.5	-27.9	Horiz
42	218.438M	33.4	-27.6 +13.2	+1.4	+0.9	+0.2	+0.0	21.5	49.5	-28.0	Horiz
43	221.101M	33.5	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	21.5	49.6	-28.1	Horiz
44	222.883M	33.5	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	21.5	49.6	-28.1	Horiz
45	225.996M	33.6	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	21.6	49.7	-28.1	Horiz
46	274.825M	34.4	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	23.0	51.1	-28.1	Horiz
47	223.534M	33.3	-27.6 +13.1	+1.4	+0.9	+0.2	+0.0	21.3	49.6	-28.3	Horiz
48	225.365M	33.4	-27.6 +13.0	+1.4	+1.0	+0.2	+0.0	21.4	49.7	-28.3	Horiz
49	249.990M	34.8	-27.5 +12.1	+1.5	+1.0	+0.2	+0.0	22.1	50.4	-28.3	Horiz
50	275.245M	33.5	-27.5 +13.4	+1.5	+1.0	+0.2	+0.0	22.1	51.1	-29.0	Horiz

CKC Laboratories Date: 07/16/2002 Time: 3:14:20 PM Pentar Avionics WVO#: 77908
DO-160D Cat M Test Distance: 1 Meter Sequence#: 9 Horiz MN: CMS-1000 SN: 002
200MHz-1000MHz. Horizontal.



TEST PROCEDURE

1.1 Emission of Radio Frequency Energy

The unit shall be exposed to the RF emission test requirements of RTCA DO-160D, Section 21, Category M for DC operated equipment as delineated below.

1.1.1 Conducted RF Test

1.1.1.1 Test Set-up

Connect the test equipment per Figure 21-3 of RTCA DO-160D. (Note: The block which is entitled the “EUT Interface:” is the test set shown in Figure 2.1-1. The 11 pin cable is connected to the top part of the EUT in Figure 21-3 and the 61 pin cable is connected to the lower part of the EUT as depicted in Figure 21-3).

1.1.1.2 Procedure

Place the unit in the OPERATING mode. By using the clamp on interference measuring device verify that the interference currents generated from 0.150 to 30 MHz do not exceed the Category M levels in Figure 21-1 of RTCA DO-160D for the 11 pin cable, and do not exceed the Category M levels in Figure 21-2 of RTCA DO-160D for the 61 pin cable. Plots of the emissions should be generated to verify compliance.

1.1.2 Radiated RF Test

1.1.2.1 Test Set-up

Set-up the test per RTCA DO-160D Section 20.3 subparagraph a and parts 1,2 and 5 of subparagraph b with the following additions:

- i. Interference shall be measured using the peak detector function of the interference measuring equipment. Interference measuring instruments with selectable IF bandwidths (BWI) may be used and the selected BWI must be the values given in the following table. The time constant of the peak detector must be lower or equal to 1/BWI.

Frequency Bands	BWI
0.15 – 30 MHz	1 kHz
30 – 400 MHz	10 kHz
400 – 1000 MHz	100 kHz
1000-6000 MHz	1 MHz

(Note: During radiated tests, the above bandwidths may not provide a low enough noise floor to make proper measurements in the notches defined in Category M. In that case, a 10 kHz BWI shall be used for measurements in the notches with no correction factor being applied)

- ii. Field strength units are obtained by using any appropriate antenna and adding the appropriate antenna factor to the measures voltage in dB microvolts. Appropriate correction factor for cable losses and matching networks must also be applied.
- iii. When linearly polarized antennas are used, both vertical and horizontal orientations must be used.

1.1.2.2 Procedure

Place the unit in the OPERATING mode. Verify that the interference fields generated from 0.150 to 6000 MHz do not exceed the Category M levels in Figure 21-5 of RTCA DO-160D. Plots of the emissions should be generated to verify compliance.

1.1.3 Test Documentation

During the test, form 5.13 will be completed. A plot of each applied field spectrum and calibration spectrums shall be generated during the test and included in Appendix C.

1.1.4 Results

Two anomalies occurred during emissions testing.

It was noticed that during radiated emissions testing, an out of specification signal (of about 4 dB) occurred at 147 MHz. The problem was traced to the antenna terminal shield being not grounded to the chassis. This is an installation issue, not a design issue with the unit. The problem was corrected by manipulating the RF cabling. During installation of the unit in the aircraft, the installation of the RF cabling is the responsibility of the installer. Since each aircraft type may have differing cabling routing and configurations, the installer will verify that the RF cabling is configured properly.

During conducted emissions testing, it was noticed that some slight (less than 5 dB) out of specification conditions existed at about four different frequencies. Several small changes were tried. The following describes the changes which were required for successful completion of conducted emissions testing:

1. The inductance of inductor L2 on the power supply input was doubled.
2. A .02 micro-farad capacitor was added between pins 3 and 4 of power input inductor L3.
3. The value of capacitor C64 on the power supply input was increased by 1 micro-farad.
4. The PWM clock speed was changed slightly by paralleling a 13.5 pico-farad capacitor with the existing 680 pico-farad capacitor in the power supply switching circuit.

After incorporation of these changes, the unit successfully completed all RF emissions testing.

TEST EQUIPMENT USED

Equipment	Manufacturer	Model Number	Serial Number	Cal Date	Cal Due
Spike Generator	Solar	8282-1	933047	18Feb2002	18Feb2003
Pulse Transformer	Solar	8527-1	Asset # 1575	18Feb2002	18Feb2003
Oscilloscope	HP	54615B	US37340347	13Dec2001	13Dec2002
Oscilloscope Probe	Agilent	10440B	Asset # 2502	Verify before use	
Function Generator	Wavetek	166	T6370372	18Oct2001	18Oct2002
Capacitor	Mallory	44000 μ F	CGS44	No cal required	
Amplifier	Techron	7562	626155	No cal required	
Transformer	Solar	6220-1A	Asset # 1576	No cal required	
Multimeter	Fluke	85	65690296	07Nov2001	07Nov2002
Current Shunt	Empro	HA50-50A	5534	12Aug2002	12Aug2003
Relay	Leach	9224-4940	N/A	No cal required	
Spectrum Analyzer	HP	8566B	2937A06153	09May2002	09May2003
Signal Generator	Marconi	2022D	119158-055	07Nov2001	07Nov2002
Signal Generator	HP	8673C	2447A00198	27Jun2002	27Jun2003
Amplifier	AR	2000LAM4	1187	02Nov2001	02Nov2002
Amplifier	Kalmus	LA1000UE-CE	8837-1	02Nov2001	02Nov2002
Amplifier	AR	400HB	11714	02Nov2001	02Nov2002
Amplifier	Varian	VZL6943G5	868	13Nov2001	13Nov2002
Amplifier	Varian	VZS6953G5	869	13Nov2001	13Nov2002
Amplifier	Varian	VZC6963G5	867	13Nov2001	13Nov2002
Directional Coupler	AR	DC2000	12086	14Jun2002	14Jun2003
Directional Coupler	AR	DC5000	12064	14Jun2002	14Jun2003
Directional Coupler	AR	DC6000	11295	14Jun2002	14Jun2003
Current Probe	FCC	F-35	304	06May2002	06May2003
Injection Probe	FCC	F-120-3	25	07May2002	07May2003
Injection Probe	FCC	F-130-1	123	14May2002	14May2003
Field Probe	AR	FP2000	24733	14Sep2001	14Sep2002
Field Probe	AR	FP2080	16770	25Oct2001	25Oct2002
Field Monitor	AR	FM2000	18327	No cal required	
Spectrum Analyzer	HP	8566B	2937A06153	09May2002	09May2003
Pre-Amplifier	HP	8447D	2944A08601	18Sep2001	18Sep2002
Pre-Amplifier	HP	83051A	3332A00284	23Feb2002	23Feb2003
Antenna	EMCO	3301B	9404-3495	13Feb2002	13Feb2003
Antenna	EMCO	3104C	2897	24Sep2001	24Sep2002
Antenna	EMCO	3143	9608-1280	05Sep2001	05Sep2002
Antenna	EMCO	3115	9606-4854	19Feb2002	19Feb2003
Antenna	AR	AT1100	11542	25Sep2001	25Sep2002
Antenna	ARA	DRG-1020/A	101	13Nov2001	13Nov2002
Antenna	ARA	MWH-24/A	102	13Nov2001	13Nov2002
Antenna	ARA	MWH-3349/A	101	13Nov2001	13Nov2002
Antenna	EMCO	3161-03	9805-1034	13Nov2001	13Nov2002
Pulse Generator	Solar	9354-1	994240	28Jun2002	28Jun2003
10 μ F Capacitor	Solar	6512-106R	Asset # 1733	No cal required	
10 μ F Capacitor	Solar	6512-106R	Asset # 1735	No cal required	
LISN	Solar	9117-5-TS-50-N	Asset # 1421	24Jun2002	24Jun2003
LISN	Solar	9117-5-TS-50-N	Asset # 1422	24Jun2002	24Jun2003

