
DATE: 3 January, 2002

TO: FCC Special Temporary Authority

FROM: Dan Zanette

Letter of Application for STA

1. Name and address: Electronics Test Centre
302 Legget Drive
Unit 100
Kanata, Ontario
Canada, K2K 1Y5
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2. The STA is required in order to allow the ETC to perform shielding effectiveness tests on a jet engine nacelle over a broad frequency range. Testing would be performed in a metal clad assembly building at Nordam.
3. The frequency range is 400 MHz to 18 GHz. In this frequency range, spot frequencies will be generated at 1% steps totaling 392 spot frequencies.
4. The shielding effectiveness test will entail the sequential generation of each frequency from a transmitting antenna for approximately 3 seconds. The generated frequency will be detected by electric field probes located approximately 1 to 1.5 meters on the other side of the test sample, in this case being a jet engine nacelle.

5. The purpose of the shielding effectiveness test is to determine the rf attenuation that the engine nacelle will provide from external rf sources to internal electronic controllers.
6. The proposed scheduled date of the test is February 1 to March 1, 2002 but is subject to change. Request maximum grant period allowable.
7. The nature of the test is engineering research.

8. The location of the test is : THE NORDAM GROUP
MANUFACTURING DIVISIONS
NACELLE/THRUST REVERSER SYSTEMS
6911 N Whirlpool DR.
Tulsa, OK 74117

Contact at NORDAM
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9. Equipment to be used will be as follows:

# Equipment	Manufacturer	Freq. Band	Model No.	Serial No.
1 DRG horn Ant.	EMCO	400 MHz-1 GHz	3106	9908-2755
1 DRG horn Ant.	Electrometrics	1 GHz- 18 GHz	RGA 60	2966
1 Signal - Gen	HP	10 MHz-20GHz	83623A	3009A00209
1 Amplifier	Empower	400MHz-1GHz	BBS3k4002066	1002
1 TWT Amplifier	Varian	8GHz-18GHz	VZM6991K3AD	6149
1 TWT Amplifier	Varian	8GHz-12.4GHz	ZX6983GLR	166
1 TWT Amplifier	Logimetrics	4GHz-8GHz	A600C-03	636
1 TWT Amplifier	Varian	2GHz-4GHz	VZ5-6953G1R	167
1 TWT Amplifier	Logimetrics	1GHz-2.4GHz	A610/LS444	6212

10. Frequencies to be used: 400MHz to 18 GHz as listed below

400000000	566641102.4	802705347.4	1137114607	1610839687
404000000	572307513.4	810732400.8	1148485753	1626948084
408040000	578030588.6	818839724.8	1159970611	1643217564
412120400	583810894.5	827028122.1	1171570317	1659649740
416241604	589649003.4	835298403.3	1183286020	1676246237
420404020	595545493.4	843651387.3	1195118880	1693008700
424608060.2	601500948.4	852087901.2	1207070069	1709938787
428854140.8	607515957.9	860608780.2	1219140770	1727038175
433142682.3	613591117.4	869214868	1231332178	1744308556
437474109.1	619727028.6	877907016.7	1243645499	1761751642
441848850.2	625924298.9	886686086.9	1256081954	1779369158
446267338.7	632183541.9	895552947.7	1268642774	1797162850
450730012.1	638505377.3	904508477.2	1281329202	1800000000
455237312.2	644890431.1	913553562	1294142494	
459789685.3	651339335.4	922689097.6	1307083919	
464387582.1	657852728.7	931915988.6	1320154758	
469031458	664431256	941235148.5	1333356305	
473721772.5	671075568.6	950647500	1346689868	
478458990.3	677786324.3	960153975	1360156767	
483243580.2	684564187.5	969755514.7	1373758335	
488076016	691409829.4	979453069.9	1387495918	
492956776.1	698323927.7	989247600.6	1401370877	
497886343.9	705307167	999140076.6	1415384586	
502865207.3	712360238.6	1009131477	1429538432	
507893859.4	719483841	1019222792	1443833816	
512972798	726678679.4	1029415020	1458272154	
518102526	733945466.2	1039709170	1472854876	
523283551.2	741284920.9	1050106262	1487583425	
528516386.8	748697770.1	1060607325	1502459259	
533801550.6	756184747.8	1071213398	1517483852	
539139566.1	763746595.3	1081925532	1532658690	
544530961.8	771384061.2	1092744787	1547985277	
549976271.4	779097901.8	1103672235	1563465130	
555476034.1	786888880.9	1114708957	1579099781	
561030794.5	794757769.7	1125856047	1594890779	

11. Effective Radiated Power (ERP): Typical Field Level 20V/m

49.00 dBm: ERP at antenna (worst case)
0.12 miles = -26 dBm
0.27 miles = -30 dBm

14.14 miles = -68 dBm, worse case

12. Emission Type: **CW**, transmission at each frequency lasts for approximately 3 seconds ie long enough for the electric field probes to perform a measurement at that frequency.
13. Antenna height above ground is 2.5 meters.
14. The test site is located approximately 15 miles outside of Tulsa Oklahoma.

Dan Zanette
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Electronics Test Centre