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OET Experimental Licensing Branch
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STA Application for Demonstrating and Testing of Step-Frequency Ground Penetrating Radar
STA File Number 0368-EX-ST-2006

3d-Radar AS manufactures a Step-Frequency Ground Penetrating Radar system that can be programmed to operate in the frequency range between 140 MHz and 2000 MHz with the antenna pointed downwards towards the ground.

Since the step-frequency waveform does not fall into the category of being an Ultra-Wideband waveform, there is a need for an STA for demonstrating the system in the US. This application is for an STA in order to demonstrate and show the 3d GPR system at the GPR 2006 conference in Ohio, 19 – 22 June 2006. During the conference there will be arranged field demonstration of GPR equipment where different manufacturers can demonstrate their equipment for the delegates.

The emission characteristics of system have been measured in the FCC laboratory over the week of November 7-11, 2005 by Mr. Steve Jones. The attached table is derived from the Draft Test Report from March 31 and contains the average EIRP levels from the system in the back-lobe direction.

Regards,

Egil Eide
President, CEO

Table 5. Average EIRP Levels from Swept Measurements (Back-Lobe)

Freq (MHz)	Received P_{Avg} (dBm)			G_R @ 3m (dBi)	L_C (dB)	L_P @ 3m (dB)	Avg EIRP (dBm)		
	100 kHz	300 kHz	1 MHz				100 kHz	300 kHz	1 MHz
50	-93.6	-89.4	-82.8	-5.4	0.2	16.0	-72.0	-67.8	-61.2
100	-90.0	-85.2	-82.2	0.1	0.5	22.0	-67.6	-62.8	-59.8
200	-75.5	-72.6	-65.7	8.6	0.6	28.0	-55.5	-52.6	-45.7
300	-75.0	-71.9	-66.3	6.0	0.8	31.5	-48.7	-45.6	-40.0
400	-82.3	-78.3	-74.1	7.4	1.3	34.0	-54.4	-50.4	-46.2
500	-88.5	-82.8	-77.5	7.4	1.5	36.0	-58.4	-52.7	-47.4
600	-89.8	-83.2	-77.5	7.6	1.6	37.6	-58.2	-51.6	-45.9
700	-88.8	-83.8	-81.0	7.5	1.9	39.0	-55.4	-50.4	-47.6
800	-90.8	-86.0	-82.2	8.3	2.0	40.0	-57.1	-52.3	-48.5
900	-92.3	-87.7	-82.9	7.9	2.2	41.1	-56.9	-52.3	-47.5
1000	-92.8	-89.4	-83.7	8.0	2.3	42.0	-56.5	-53.1	-47.4
1100	-93.1	-88.2	-84.0	8.2	2.5	42.9	-55.9	-51.0	-46.8
1200	-93.3	-87.5	-85.5	9.4	2.7	43.6	-56.4	-50.6	-48.6
1300	-95.4	-90.6	-86.5	9.1	2.8	44.3	-57.4	-52.6	-48.5
1400	-93.9	-93.2	-85.4	8.9	2.9	45.0	-54.9	-54.2	-46.4
1500	-93.7	-90.3	-86.7	9.4	3.0	45.6	-54.5	-51.1	-47.5
1600	-95.1	-90.4	-86.7	9.6	3.3	46.1	-55.3	-50.6	-46.9
1700	-94.0	-90.7	-86.1	10.7	3.4	46.7	-54.6	-51.3	-46.7
1800	-88.7	-83.4	-79.6	10.2	3.5	47.1	-48.3	-43.0	-39.2
1900	-96.1	-91.2	-86.0	8.2	3.6	47.6	-53.1	-48.2	-43.0
2000	-93.8	-87.0	-81.0	9.3	3.8	48.0	-51.3	-44.5	-38.5