October 16, 2001

Ms Magalie Salas, Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554
USA

Comments from the General Chairs of the 6th, 7th, 8th and 9th International Conferences on Ground Penetrating Radar

Re: ET Docket No. 98-153, Revision of Part 15 of the Commission's Rules Regarding Ultra-Wideband Transmission Systems

We wish to bring to the Commission's attention that **new** ground penetrating radar products are being developed to comply with the rules proposed in the Notice of Proposed Rule Making (NPRM) released May 11, 2000. These new systems are designed specifically to meet the NPRM requirements without any compromise in GPR performance.

Existing ground penetrating radar systems use time-domain waveforms (short-pulses or impulses) to achieve ultra-wide bandwidth. Recent *comments* and *ex-parte communications* have been filed by others[1], which describe issues mainly relating to impulse or short pulse GPR systems but do not acknowledge the needs of emerging pulse-compression schemes.

However, the Commission is no doubt aware that pulse compression schemes suggested by others[2] are available to GPR designers. For example, phase-coded line-spectra, bi-phase monocycles, pseudo-random noise sequences and full-random noise waveforms can provide both low peak-to-average power in the time domain and low power spectral density in compliance with the NPRM.

We request that the Commission maintains its policy to provide technology-neutral rules in the same spirit as the NPRM, which enables the regulation of all ultra-wide band waveforms for GPR, not just those used by currently available systems. The NPRM can be applied to both short-pulse and pulse-compression GPR systems because it regulates UWB emissions via spectral density measurements in the frequency domain and oscilloscope measurements in the time domain. Such measures are technology neutral. To use rules based on pulse repetition frequency definitions would not be technology neutral, since CW-based and noise-based pulse-compression systems do not have a pulse repetition frequency.

We support the proposed definition of GPR and the proposed emissions test facility as described by others[1].

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[1] Comments of A. Peter Annan, Gary R. Olhoeft, Alan E. Schutz, and David L. Wright (15 August 2001), Ex parte communication of Peter Annan, Alan Schutz and David Wright (3 October 2001), Ex parte communication of Peter Annan and Alan Schutz (10 October 2001).

[2] "A Tutorial on Ultrawideband Technology", Filed by XtremeSpectrum Inc. (12 June 2001), Comments of Don Sinnott (11 September 2000 and 24 April 2001).

Respectfully submitted,

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