

A series of experimental investigations will be conducted regarding the operational maturity of a new unconventional compact transmitter technology. This technology uses a small explosive charge to shock load a ferroelectric material (PZT) causing the generation of a voltage impulse at the output terminals. The pulse is applied to tailored power conditioning circuitry and then directly coupled to a radiating structure (a dipole). The initial experimental phase will be followed by an engineering development effort that will require intermittent field validation testing. Each transmitter is intended for use as a single-shot expendable pod for the purposes of wideband radar-type and materials sensing applications. The characteristics of the emissions will be monitored by an array of sensitive free-field sensors connected to a centralized data acquisition, analysis, and archival system.