

| SBIR 06.2 PHASE I - AWARD DETAILS | |
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| ORGANIZATION | CERDEC |
| TOPIC NUMBER | A06-111 |
| CONTRACT NUMBER | |
| YEAR OF AWARD | |
| AWARD START DATE | |
| AWARD COMPLETION DATE | |
| PROPOSAL NUMBER | A062-111-2356 |
| TITLE | Compact Fast Tuning Direct Digital Synthesizer (DDS) Signal Generator for Electronics Warfare (EW) Jammer Systems |
| PROJECT MANAGER | Robert Lamont (805) 557-0725 rlamont@euvis.com |
| COMPANY | Euvis Corp 790 Hampshire Rd. Suite G Westlake Village CA 91361-5931 Minority Owned: No Veteran Owned: No Number of Employees: 7 |
| KEYWORDS | DDS, DAC, DRFM, EW, Jammers, Mobile Jammers, Radio Frequency, Fast Tuning, Radar, FPGA |
| ABSTRACT | This proposal presents two approaches to increase the DDS analog output bandwidth beyond 3 GHz to extend the required jamming signal bandwidth for modern EW applications. As the sole supplier of > 3 GHz DDS and other DAC-related high speed mixed signal products in the worldwide open market, the proposed approaches are based on Euvis' existing 3.2 GHz DDS products to minimize risks. The prime approach we propose to improve the speed of the DDS is the ping-pong architecture, where parallel implementation of DDS functions allows faster processing with little demand for increased transistor speed. The second approach is to utilize the 2nd and the 3rd Nyquist band with Euvis patented Return-to-Zero or Complementary Interpolation DACs. The module to be proposed includes the developed monolithic single chip DDS integrated on PCB with FPGA as the control, command and self testing. The module can be as small as 3" x 3" for a single channel which will have the operating characteristics of low cost, sub-microsecond response time, phase coherence, low phase noise and spurious content, high reliability, small size, power and weight. |
| BENEFITS | Commercial benefits of the proposed synthesizer technology include both civilian and military applications. Potential military benefits include improved performance, reliability, and lower cost for traditional EW and RADAR, as well new applications, such as man portable IED jamming equipment. The technology will improve networked communication for both military and civilian uses, including software radio. Civilian applications include base stations for cellular and wireless networks, RADAR, and medical devices. |