

NAVY Transition Assistance Program

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N08-027 - Zeger-Abrams Incorporated

Wideband Jammer Dynamic Frequency Notch Filter for Interference Reduction: Cancellation Notch Filter (CNF)

NEED & CUSTOMER REQUIREMENT

Need: Navy needs the capability to operate high power jammers and transmitters without interfering with frequency agile blue force CNI systems. Goal is to prevent RFI from jammers and transmitters from affecting cosited radio receivers and nearby blue force receivers. RFI now greatly reduces radio range to cosite and non-cosite receivers.

Value to the Warfighter: Integrating the CNF with the power amplifier of a jammer or transmitter can restore the reception range of friendly radios by preventing jammer or transmitter spectral components at blue force receive frequencies from reaching the receive antennas.

Operational Gap: Reduce RFI from friendly transmitters and jammers by at least 30 dB at the source.

Customer Specifications: DEMONSTRATION GOALS: Form at least 4 frequency agile notches simultaneously with >30 dB notch depth in two sub-bands, VHF/UHF and UHF-S Band; have adjustable notch widths; tune over the sub-band in 1 to 50 microseconds depending on the sub-band. The 4-notch CNF subsystems shall each weigh < 4 lbs.; and each have a maximum volume of 24 cubic inches.

Technology Description: ZA's CNF is a bank of cancellation-based agile notch filters that interfaces with the input and output of the jammer or transmitter's power amplifier (PA) to form multiple spectral notches at the PA Output with < 0.5 dB of insertion loss to the passband power. Notches are kept centered at receive frequencies of friendly radios, even those that frequency hop.

TECHNOLOGY DEVELOPMENT MILESTONES (SBIR/STTR)

Milestone	TRL	Risk	Measure of Success	TRL Date
Demo notch on jammer	4	High	Test 50 dB	June 2008
Demo dual UHF notch	5	Moderate	dual 30 and 45 dB notches	Feb. 2009
Demo Low-Band module	5	Moderate	Demo lowband spec	5-20-2010
Demo CNF on Jammer	6	High	Test to full spec.	4-20-2011

Open contract: N68936-09-C-0020 ending 28 April 2011

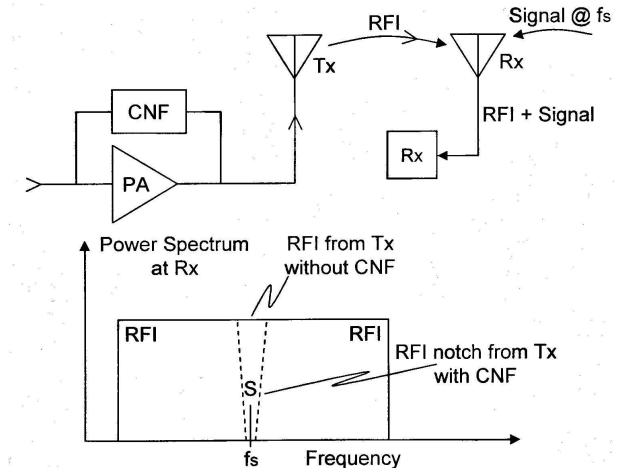
SPONSORSHIP of original SBIR/STTR Topic

SYSCOM: NAVAIR (Sponsor of original SBIR Topic)

Transition Target: Airborne jammers and transmitters, Ground and surface jammers, Ground and shipboard transmitting systems

Original Sponsoring Program: PMA-234

TPOC Phone Number: (760) 939-5642



TECHNOLOGY TRANSITION OPPORTUNITIES (PHASE III)

Other Potential Applications:

Retrofit fixed wing aircraft and UAVs for AEA interoperability with VHF, UHF, and L-band comms radios. Comms and EW equipment on Land and Amphibious Vehicles: USMC EFV, USA Humvee interoperability.

Business Model:

Depends on preferences of Primes:

1. License primes who prefer to do manufacturing (most do), as we have done in past.
2. For primes who prefer to rack & stack we will have circuit cards, etc. fabricated for us and we will do final assembly.

Objective:

1. Future and retrofit airborne and ground EW equipment Programs: obtain a clear statement of what is needed to meet interoperability requirements and the opportunity to show how ZA's system can meet those needs. A teaming or licensing agreement or a joint engineering work and funding plan with a defense hardware manufacturer/integrator who is capable of exploiting this unique notch filter to capture the EW-Comms Interoperability market.