

Questions and Answers Regarding ONR BAA # ONR 07-011
15 Feb 2007

The following document provides additional information regarding ONR Research Opportunity BAA # ONR 07-011 for Electronic Warfare Technology. White paper submissions are due on 2 March 2007.

General Information: Prior ONR Electronics-funded work in GaN-based Low-Noise Amplifiers (LNA) demonstrated the advantages of GaN in noise performance and self-protection. The current BAA seeks to elicit proposals that will determine additional performance benefits that are available in realizing GaN-based components in other parts of the receive chain. Expected advantages include integration with the LNA, and robustness (of components behind the LNA) at the typical GaN operating bias conditions and further increases in front end survivability. The goal of this focus area is to assist forward planning of Electronics Discovery and Invention technology investments in GaN-based components. Proposals that are responsive to Radar and Electronic warfare requirements are sought.

The following questions and answers are based on questions we received and is offered to help potential submitters to decide if they are eligible and what would be appropriate responses to the solicitation:

1. Question: Regarding the following paragraph:

“b. GaN Receive Chain Components.

Within this focus area proposals are sought for the development of GaN components (both analog and digital) that would enable an all GaN RF receive chain. Work on Low Noise Amplifiers (LNAs) is not solicited except to the extent required to demonstrate the impact of the primary development. The goal of this focus area is the development of robust downstream GaN components in order to optimize the return from a robust GaN LNA front end.”

When you use the term “robust,” are you looking for just the survival of components in the presence of large signals or do you intend for the circuits to stay linear at higher powers than with conventional technologies?

Answer: Robustness refers to the situation where high-level RF signals bleed through the GaN LNA without damaging it, but take out lower voltage downstream components such as SiGe-based IC’s

2. Question: (This question refers to the section in the BAA identified under Question #1) Regarding the GaN Receive Chain Components focus area - can you provide any clarification or guidance on specifically which downstream components are of interest, and what the key performance goals are?

Answer: The goal is to identify which GaN-based components of a receive chain would enhance the performance, operating survivability and overall affordability (cost, reliability, power dissipation).

3. Question: Are there specific frequency bands that are of the greatest interest?

Answer: RADAR and EW bands, frequencies up to Ku Band

4. Question: What kind of input power levels are targeted?

Answer: Assuming you mean RF input power. Current GaN-based LNA's demonstrate survivability up to 31 W/mm (normalized to input gate periphery). GaN based front-end receiver protection > 200 W would be of interest.