# Dossier: NEXGENSEMI CORPORATION

## SBIR Award Details

**Award Title:** N/A

**Amount:** $139,941.00

**Award Date:** 2023-07-18

**Branch:** NAVY

## AI-Generated Intelligence Summary

**Company Overview:**

NEXGENSEMI CORPORATION, based in Irvine, CA, focuses on developing and manufacturing advanced Gallium Nitride (GaN) power devices and integrated circuits. Their core mission appears to be to provide disruptive GaN-on-Si solutions for high-power, high-frequency applications, particularly in defense, aerospace, and communications. They aim to solve the limitations of traditional silicon-based power devices in terms of efficiency, size, weight, and thermal management, enabling significantly smaller, lighter, and more energy-efficient systems for applications like radar, electronic warfare, and satellite communications. Their unique value proposition is providing high-performance GaN power solutions on commercially viable and scalable silicon substrates, lowering cost and improving performance compared to alternative GaN technologies like GaN-on-SiC.

**Technology Focus:**

* Development and manufacturing of discrete GaN high-electron-mobility transistors (HEMTs) and GaN power integrated circuits (ICs). Specifically, their focus seems to be on devices operating at frequencies up to 18 GHz and beyond.
* Offerings likely include both bare die and packaged GaN power amplifiers, switches, and other RF front-end components tailored for defense, aerospace, and commercial wireless applications. Devices reportedly offer up to 10x performance improvement (Power Density) over traditional Silicon offerings.

**Recent Developments & Traction:**

* In July 2023, NexGenSemi announced a partnership with Skyworks Solutions to develop and manufacture GaN power amplifiers for 5G infrastructure.
* Announced the availability of several GaN HEMT die and packaged parts during 2022 and 2023, targeting pulsed radar and communication applications.
* While specific funding details are not readily available, multiple press releases reference "significant investment" to expand manufacturing capacity, suggesting recent funding rounds, potentially undisclosed.

**Leadership & Team:**

* Dinesh Ramanathan - CEO (Information not readily available regarding prior startup experience but prior experience in power semiconductor device manufacturing).
* While CTO or President is not publicly available online, leadership likely consists of experienced engineers in GaN semiconductor development and manufacturing.

**Competitive Landscape:**

* Wolfspeed: A leading manufacturer of silicon carbide (SiC) and GaN power devices, offering a broader portfolio than NexGenSemi but potentially at a higher cost for GaN solutions.
* MACOM Technology Solutions: Develops and manufactures GaN-on-Si and GaN-on-SiC devices for various applications, including defense and aerospace. NexGenSemi differentiates itself by focusing on cost-effective GaN-on-Si solutions with a specific emphasis on high-performance parameters relevant to pulsed applications.

**Sources:**

1. [https://www.nexgensemi.com/](https://www.nexgensemi.com/)

2. [https://www.prnewswire.com/news-releases/nexgensemi-announces-gan-partnership-with-skyworks-solutions-301877681.html](https://www.prnewswire.com/news-releases/nexgensemi-announces-gan-partnership-with-skyworks-solutions-301877681.html)

3. [https://www.militaryaerospace.com/power/article/14281860/gan-high-power-rf-and-microwave](https://www.militaryaerospace.com/power/article/14281860/gan-high-power-rf-and-microwave)