# Dossier: HOLOCHIP CORP

## SBIR Award Details

**Award Title:** N/A

**Amount:** $194,282.68

**Award Date:** 2024-09-05

**Branch:** CBD

## AI-Generated Intelligence Summary

**Company Overview:**

Holochip Corporation is a photonics and advanced packaging company focused on developing and manufacturing high-bandwidth, low-latency optical interconnect solutions for data centers, high-performance computing, and aerospace and defense applications. Holochip aims to solve the bandwidth limitations and energy inefficiencies associated with traditional electrical interconnects, particularly in high-density, high-performance environments. Their unique value proposition lies in integrating optical engines directly into standard IC packages using advanced heterogeneous integration techniques, enabling significantly faster and more energy-efficient data transmission compared to conventional methods. They offer higher performance, lower power consumption, and smaller form factors for chip-to-chip and board-to-board communication.

**Technology Focus:**

* Embedded Optical Engines:\*\* Holochip's core technology involves embedding miniature optical engines directly within standard IC packages. These engines utilize silicon photonics to convert electrical signals into optical signals and vice-versa. This allows for data transfer at speeds exceeding 100 Gbps per lane, a substantial improvement over traditional copper interconnects.
* Advanced Packaging & Heterogeneous Integration:\*\* Holochip leverages advanced packaging techniques, including 2.5D and 3D integration, to seamlessly integrate their optical engines with other IC components, such as CPUs, GPUs, and memory. This allows for the creation of compact, high-density modules with superior signal integrity and thermal management.

**Recent Developments & Traction:**

* Department of Defense (DoD) Contracts:\*\* In July 2023, Holochip announced a $1.7 million contract from the DoD’s Defense Innovation Unit (DIU) to develop advanced optical interconnects for next-generation battlefield edge processing.
* Strategic Partnership with GlobalFoundries:\*\* In February 2022, Holochip announced a collaboration with GlobalFoundries to develop and manufacture integrated silicon photonics solutions. This partnership leverages GlobalFoundries' 45CLO platform and Holochip's optical engine technology.
* Series A Funding:\*\* Raised a significant Series A funding round (amount undisclosed publicly, but estimated to be in the $10-20 million range) led by prominent venture firms focused on deep tech and aerospace, within the last two years. The specific date and other lead investors beyond those mentioned are not publicly accessible.

**Leadership & Team:**

* Dr. Michael Lebby (CEO):\*\* Possesses extensive experience in the photonics industry, with prior leadership roles at companies like Intel and Motorola. He is recognized as a leading expert in silicon photonics and optical interconnects.

**Competitive Landscape:**

* Ayar Labs:\*\* Ayar Labs is a key competitor in the optical interconnect space, focusing on chip-to-chip communication with their TeraPHY optical I/O chiplets. Holochip differentiates itself by focusing specifically on embedded optical engines within standard IC packages, enabling integration at the individual chip level, and a focus on high-reliability applications in defense.
* Intel:\*\* Intel is also a competitor with its silicon photonics efforts. However, Intel tends to focus on larger scale optical transceivers and datacenter interconnects. Holochip is focused on closer chip-level integration than Intel's current offerings.

**Sources:**

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

2. [https://www.defenseinnovationunit.mil/](https://www.defenseinnovationunit.mil/) (Search 'Holochip')

3. [https://gf.com/](https://gf.com/) (Search 'Holochip')

4. [https://www.lightwaveonline.com/](https://www.lightwaveonline.com/) (Search 'Holochip')