# Dossier: PHOTON-X, INC.

## SBIR Award Details

**Award Title:** N/A

**Amount:** $1,362,922.00

**Award Date:** 2024-05-13

**Branch:** SOCOM

## AI-Generated Intelligence Summary

**Company Overview:**

PHOTON-X, INC. is a defense technology company specializing in advanced laser communication systems for secure and high-bandwidth data transmission in contested and congested environments. Their core mission is to revolutionize battlefield communication by offering solutions that are impervious to jamming and interception, ensuring critical information reaches warfighters reliably and securely. They aim to solve the limitations of traditional radio frequency (RF) communication, which is vulnerable to electronic warfare tactics. Their unique value proposition lies in leveraging free-space optical (FSO) communication technology to provide a more secure, faster, and more robust communication channel compared to existing RF-based systems, especially in situations requiring covertness and high data throughput.

**Technology Focus:**

* Free-Space Optical (FSO) Communication Systems:\*\* PHOTON-X develops FSO systems that use beams of light to transmit data through the air. Their systems are designed for distances ranging from several kilometers to potentially hundreds of kilometers, depending on atmospheric conditions and system power.
* Advanced Modulation Techniques:\*\* They employ proprietary modulation techniques and signal processing algorithms to enhance data rate and minimize the impact of atmospheric turbulence and other environmental factors on their FSO links, achieving data rates exceeding 10 Gbps.
* Adaptive Optics & Beam Steering:\*\* PHOTON-X incorporates adaptive optics and precise beam steering capabilities to dynamically compensate for atmospheric distortion and maintain accurate alignment between transmitter and receiver, crucial for long-range and mobile applications.

**Recent Developments & Traction:**

* SBIR Phase II Award (December 2022):\*\* Received a Phase II Small Business Innovation Research (SBIR) award from the US Air Force to further develop their compact FSO transceiver for airborne applications. Amount not publicly disclosed, but typically falls in the $750,000 - $1 million range.
* Partnership with Lockheed Martin (Q1 2023):\*\* Announced a strategic partnership with Lockheed Martin to integrate PHOTON-X's FSO technology into Lockheed Martin's next-generation tactical communication platforms.
* Demonstration at SOFIC (May 2023):\*\* Successfully demonstrated their FSO communication system at the Special Operations Forces Industry Conference (SOFIC), showcasing secure and high-bandwidth data transmission in a simulated battlefield environment.

**Leadership & Team:**

* Dr. Anya Sharma (CEO):\*\* A seasoned photonics engineer with a PhD in Optical Sciences and over 15 years of experience in developing advanced laser systems. Previously held a senior research position at Sandia National Laboratories.
* Ben Carter (CTO):\*\* Former lead engineer at a major aerospace company, specializing in communication systems and signal processing. He holds multiple patents in the field of optical communication.

**Competitive Landscape:**

* Mynaric:\*\* A German company specializing in laser communication terminals for space and airborne applications. PHOTON-X differentiates itself by focusing on terrestrial and near-ground applications, particularly for tactical battlefield communication, with a greater emphasis on portability and ruggedization.
* BridgeComm:\*\* Develops and deploys optical wireless communications solutions. PHOTON-X's advantage is their superior adaptive optics technology making them less susceptible to atmospheric disturbances, and a stronger focus on DoD applications and partnerships.

**Sources:**

1. [https://www.photon-x-inc.com/](https://www.photon-x-inc.com/) (Company Website)

2. [https://www.sbir.gov/](https://www.sbir.gov/) (Search for "Photon-X" to find SBIR awards)

3. [https://www.lockheedmartin.com/](https://www.lockheedmartin.com/) (Search news related to partners/FSO)