



SBIR TRANSITION SUCCESS STORY

DARPA SBIR INVESTMENT:
\$750K

SBIR TOPIC NUMBER:
SB072-043

PHASE III FUNDING:
\$98M

The Challenge

Reliance on solar-powered satellites and aircraft has increased sharply as the Department of War (DoW) leans more on that technology for intelligence, surveillance, and reconnaissance (ISR) missions. Long before this trend, DARPA recognized a demand in the mid-2000s for epitaxial lift-off (ELO) technology, or a technique that creates thinner, more efficient layers of semiconductor material used in solar power. MicroLink Devices created a new method of solar cell production that is now poised to meet growing demand in U.S. military operations.



Technology | Transition

Following a \$750K DARPA Small Business Innovation Research (SBIR) award in 2008, MicroLink Devices sought ways to develop solar cells suitable for space that employed ELO technology. The company focused on making the cells as light as possible to improve the performance of solar-powered satellites and aircraft. The company eventually developed a manufacturing method using ELO that allowed the cells to be removed completely from their substrates, or the material that typically supports electronic devices and circuitry. The innovative technique reduced the weight of the solar cell systems and caught the eye of officials at defense contractor Airbus, which agreed in 2016 to use the technology as part of its Zephyr High Altitude Platform Station program. The Zephyr solar-electric aircraft flies above 60,000 feet and provides persistent surveillance night and day, a unique capability due in part to MicroLink Devices' solar cells.

"The DARPA SBIR award was important for getting [Zephyr] into the stratosphere," said Noren Pan, chief executive officer and president of MicroLink Devices. "Elements of the aircraft have to be paper-thin. The plane is lightweight and you have to have enough energy to last through the night. You have solar power in the daytime, but at night, you're running on batteries. Our technology made that possible."

In 2025, MicroLink Devices was rewarded again for its innovative research. The company received \$18 million from the DoW Accelerate the Procurement and Fielding of Innovative Technologies (APFIT) program for its high-efficiency, lightweight solar power arrays. The APFIT funds are driving a major expansion at MicroLink Devices, which will use the procurement funding to order equipment and scale the production of its solar cells to serve a growing need for the technology in the satellite industry. As of June 2026, the company had generated \$80M in product sales.

Benefits to National Security

- Lighter, more efficient solar technology supports warfighter advantage with improved communications used in ISR exercises.
- Enables longer periods of surveillance for numerous military operations.
- Ability to reuse substrates for solar cells with ELO technology cuts costs of manufacturing by 50 percent, according to DARPA estimates, providing significant savings for DoW.

About MicroLink Devices

MicroLink Devices designs and manufactures solar cells and solar sheets for a variety of applications, including unmanned aerial vehicles, spacecraft, and terrestrial collectors. The company was founded in 2000 with 8 people and today has 60 employees.

Since 2003, MicroLink Devices has been a prime federal contractor on numerous programs to develop solar cells, transistors, and lasers. The development of the ELO process, funded by the DARPA SBIR award, has been a key factor in the company's success.

"When we first started to develop the liftoff technology, it was DARPA who recognized the need for it. They saw beyond what we had. After DARPA funded us, we got additional funding from other agencies to get closer to production. The DARPA SBIR award was so important."

- Noren Pan, chief executive officer and president, MicroLink Devices

Future

MicroLink Devices recently signed agreements with the U.S. Space Development Agency (SDA) and the U.S. Army to incorporate its solar cells into their communications systems. From Fiscal Year 2026 to 2028, MicroLink Devices is expected to receive \$36M and \$34.5M from the SDA and Army contracts, respectively. The company also plans to pursue private contracts with satellite communications operators and expects its solar cell product to be a successful dual-use technology with a broad array of commercial users, including companies that specialize in surveillance, weather prediction, and other industries.