FOR IMMEDIATE RELEASE
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SenseICs Awarded $850K NASA Contract to Develop a Radiation-Hard, Low-Power FMCW Signal Processing ASIC

COLUMBUS, OH – *SenseICs Corporation*, a semiconductor design company that elevates microelectronics performance for OEMs and VARs through advanced integrated circuits IP and full turnkey solutions, announced today that it has been awarded a $850,000 contract from NASA. The contract was awarded under NASA's Small Business Innovation Research (SBIR) Phase II 2024 solicitation.

The award will fund the development of a radiation-hardened frequency modulated continuous wave (FMCW) signal processing application specific integrated circuit (ASIC) called "FASIC" that significantly reduces power consumption of the power-hungry back-end components by more than one order of magnitude while maintaining high-fidelity signal processing capabilities. The FASIC will be designed to withstand the harsh radiation conditions encountered in space, ensuring robust and reliable performance in planetary exploration missions. By integrating power-efficient architectures and radiation-hardening techniques, this innovation will enable next-generation FMCW light detection and Ranging (LiDAR) systems to operate with improved energy efficiency and survivability, advancing autonomous navigation and hazard detection for space exploration, rover navigation, and commercial autonomous vehicles.

The contract was awarded under NASA's Small Business Innovation Research (SBIR) Phase II 2024 solicitation, specifically in response to the agency's call for *Component Technologies for Lidar Sensors Applicable to Guidance, Navigation, and Control (GN&C) for Precise Safe Landing*. NASA was seeking the development of hardware component technologies for advanced lidar sensors that will be utilized within entry descent and landing (EDL) and deorbit, descent, and landing (DDL) GN&C systems for precise safe landing on solid solar system bodies, including planets, moons, and small celestial bodies (e.g., asteroids and comets).

"This project builds on our heritage in radiation-hardened ASIC design and leverages the proven technologies developed by SenseICs and our partner SiLC Technologies," said Dr. Ramy Tantawy, CEO and Co-Founder. *"We're integrating SiLC's silicon photonics based FMCW engine platform with our custom radiation-hardened readout electronics frontend and a powerful on-chip FFT signal processor to realize a compact, power-efficient FMCW LiDAR solution tailored for planetary exploration missions. This system will support precision 3D mapping and autonomous exploratory missions, all within a low-SWaP, radiation-tolerant architecture."*

Dr. Tantawy emphasized the strategic alignment with NASA's objectives: *"We're excited to partner with NASA on advancing mobility systems for the Moon and beyond. By addressing critical requirements like radiation tolerance, low power consumption, and centimeter-scale depth resolution, this work will enable safer, more capable autonomous systems for both crewed and robotic missions on the lunar surface and future deep space planetary explorations."*

President and Co-Founder Dr. Shane Smith emphasized the broader potential of the technology and its regional significance: *"While this LiDAR system is engineered to meet the demands of lunar and planetary exploration, its underlying capabilities, high-resolution 3D imaging and efficient, compact design, are directly applicable to terrestrial markets,"* said Smith. *"From autonomous vehicles and robotics to infrastructure inspection and precision agriculture, this technology has the potential to transform how machines sense and interact with complex environments. Just as importantly, this award reinforces Central Ohio's role in advancing next-generation microelectronics, supporting local talent and establishing Columbus as a center for sensor innovation and high-tech manufacturing."*

Powered by a team of experts in custom IC and electronic system design, SenseICs combines patented innovations with strategic partnerships across government and academia. The company has pioneered chip solutions such as this FMCW LiDAR ASIC and continues to drive advancements in high-performance sensing for space and terrestrial applications.

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About SenseICs:

SenseICs is a small business committed to designing and developing advanced microelectronics. To meet the needs of our customers in the defense, energy, automotive, and medical industries, we combine decades of engineering expertise with a forward-thinking mindset to provide proven solutions for advanced imaging, communications, trusted microelectronics, and high radiation environments. SenseICs was founded in 2017 and is currently based in Columbus, Ohio. For more information, please visit https://senseics.com/

About NASA:

The National Aeronautics and Space Administration is an independent agency of the U.S. federal government responsible for the civil space program, aeronautics research, and space research. Established in 1958, it succeeded the National Advisory Committee for Aeronautics to give the U.S. space development effort a distinct civilian orientation, emphasizing peaceful applications in space science. It has since led most of America's space exploration programs, including Project Mercury, Project Gemini, the 1968–1972 Apollo Moon landing missions, the Skylab space station, and the Space Shuttle. Currently, NASA supports the International Space Station and the Commercial Crew Program and oversees the development of the Orion spacecraft and the Space Launch System for the lunar Artemis program.