



OVERVIEW

Pulscan Pulsys RAD single-photon absorption (SPA) laser system facility at Los Alamos National Laboratory is available to satellite component companies to evaluate their components destined for space and provide assurance of reliable performance in high radiation environments.

The SPA laser facility can test for radiation-induced single-event effects failures that may occur in space flight, allowing for low cost means of identifying and solving issues before launching a space asset. Unlike other single-event effects testing facilities, our SPA laser capability provides greater access to uniform and repeatable testing of complex microelectronic components. It is comprised of state-of-the-art laser devices and access to Los Alamos expertise, making it less costly to conduct tests compared to larger accelerator facilities.

Los Alamos has a legacy of successfully testing components for space missions. The SPA facility is ready to assist satellite and microelectronic component companies to expedite robust development cycles.

Sector: [Advanced Materials & Manufacturing](#)

Industry: [Devices and Instruments](#)

Market: [Aerospace; National Security](#)

PARTNERSHIP OPPORTUNITIES

Seeking to connect with aerospace and defense organizations interested in using pulsed lasers to investigate single-event effects in electronic parts.

CONTACT

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SELECTED PUBLICATIONS:

- A. Watkins, K. Gnawali and H. Quinn, "Single Event Effects Characterization Using a Single Photon Absorption Laser," 2018 IEEE AUTOTESTCON, National Harbor, MD, USA, 2018, pp. 1-4
- H. M. Quinn, D. A. Black, W. H. Robinson, and S. P. Buchner, "Fault simulation and emulation tools to augment radiation-hardness assurance testing," *IEEE Trans. Nucl. Sci.*, vol. 60, no. 3, pp 2119 – 2142, June 2013

FEATURES

- The SPA capability offers accessibility for assessment of single-event failure* on an as-needed basis in preparation for launch.
- Los Alamos researchers with radiation and reliability expertise can identify points of concern.
- SPA lasers can be injected into the top or back side of thinned and polished delidded** electronic parts.
- The SPA pulsed laser*** injects a current into the sensitive volumes of electronic parts. Laser pulse characteristics include infrared photon wavelength of 1064 nm, pulse duration of 30 ps, repetition rate of 20 MHz, and a spot size of 1 to 5 mm.
- Produces quick turnarounds and timely results.

*Not for total dose analysis

**Parts must be delidded

***SPA Laser not for sale / Los Alamos does not build laser systems as a service