



## **Anatrix Develops RadHard IP for TowerJazz Using Silvaco Tool Flow**

**Santa Clara, California – Nov 19, 2013** - Anatrix, a provider of custom analog and mixed-signal IC solutions, has developed Radiation Hardened (RadHard) by Design IP available in TowerJazz 180nm CMOS (CA18) and BiCMOS (SBC18) RadHard IP libraries.

"This IP contains analog, mixed-signal and digital circuitry, and it was designed, simulated and laid out solely using the Silvaco tool set," said Dr. Greg Pauls, President of Anatrix. The IP was manufactured, silicon verified, and is currently offered in the TowerJazz IP library.

The Anatrix RadHard IP utilizes a proprietary Radiation Hardened by Design methodology. This methodology allows Anatrix customers to achieve the required radiation-hardened tolerance without expensive and time-consuming over-engineering. A few highlights of currently available IP includes a 180nm CMOS Digital Gate Library, a 500MHz Phase Locked Loop, and an RF Gilbert Mixer. Total ionizing dose tolerance is available at 300Krad and 1Mrad levels.

"Silvaco tools were critical to our success," said Dr. Pauls. "We used Gateway for schematic entry, SmartSpice RadHard for simulation, and Harmony for all mixed-signal simulation. The ICCAD tool suite was used for layout editing, detailed parasitic extraction and verification. These projects were completed using Silvaco's PDK for TowerJazz CA18HD and SBC18HA processes."

"During silicon testing, we were able to verify that the post layout parasitic simulation we ran, prior to tapeout, predicted the IP behavior very closely leading to a first pass success. We are confident that the additional IP currently in fabrication will have similar success," added Dr. Pauls.

Mark Maurer, Vice President of Aerospace and Defense at Silvaco, said, "Our design and modeling tools have been successfully used by military and aerospace designers for decades and the work completed by Anatrix at TowerJazz represents that ongoing commitment. Radiation hardening is one of Silvaco's competences and we see increasing demand for designs that can operate in harsh environments across our global markets."

"It is interesting to see the different types of products designed by our customers," said Michel Blanchette, Regional Applications Engineering Manager at Silvaco. "We are always glad to see that our tool set and PDKs are once more contributing to our customers' success."

### **About Anatrix, LLC**

Anatrix was founded in 2005 in Larkspur, Colorado and is currently headquartered in Colorado Springs, Colorado. It provides analog, mixed-signal and custom digital IC solutions to leading IC companies. Company experience is not only in traditional commercial electronic markets but medical, optical interface, cryogenic and radiation hardened markets.

**Contact:**

Greg Pauls, PhD

President

gpauls@anatrix-ic.com

### **About Silvaco, Inc.**

Silvaco, Inc. is a leading provider of TCAD, circuit simulation, and IC CAD software tools. Silvaco's tools are used by fabs for developing semiconductor processes, and design houses for developing analog, mixed-signal, and RF integrated circuits. The company provides a complete PDK-based design flow with interfaces to third-party design platforms. Silvaco has a worldwide presence with local offices in all key industrial regions in the world.

**Contact:**

Vice President, Aerospace and Defense: Mark Maurer

mark.maurer@silvaco.com