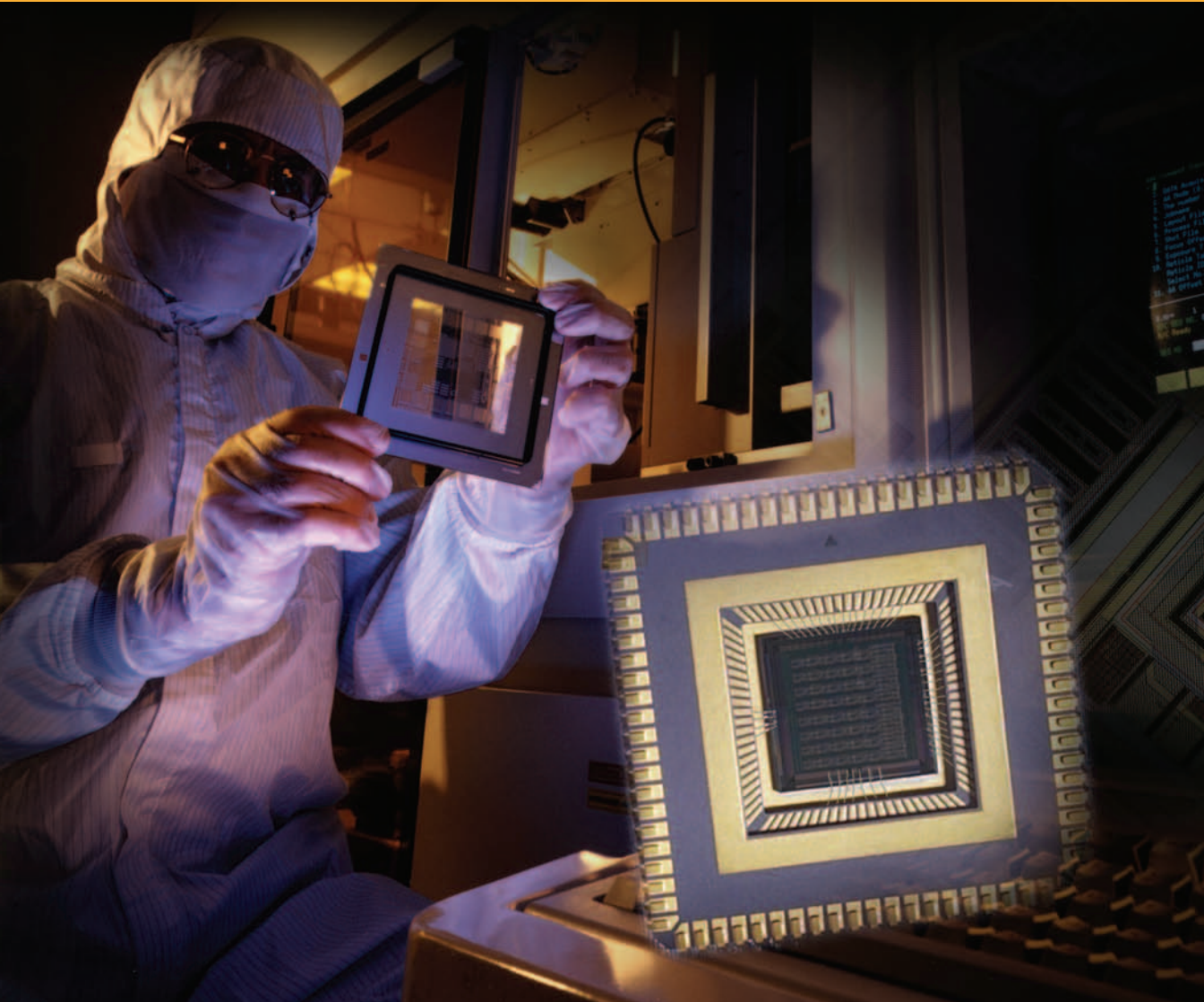
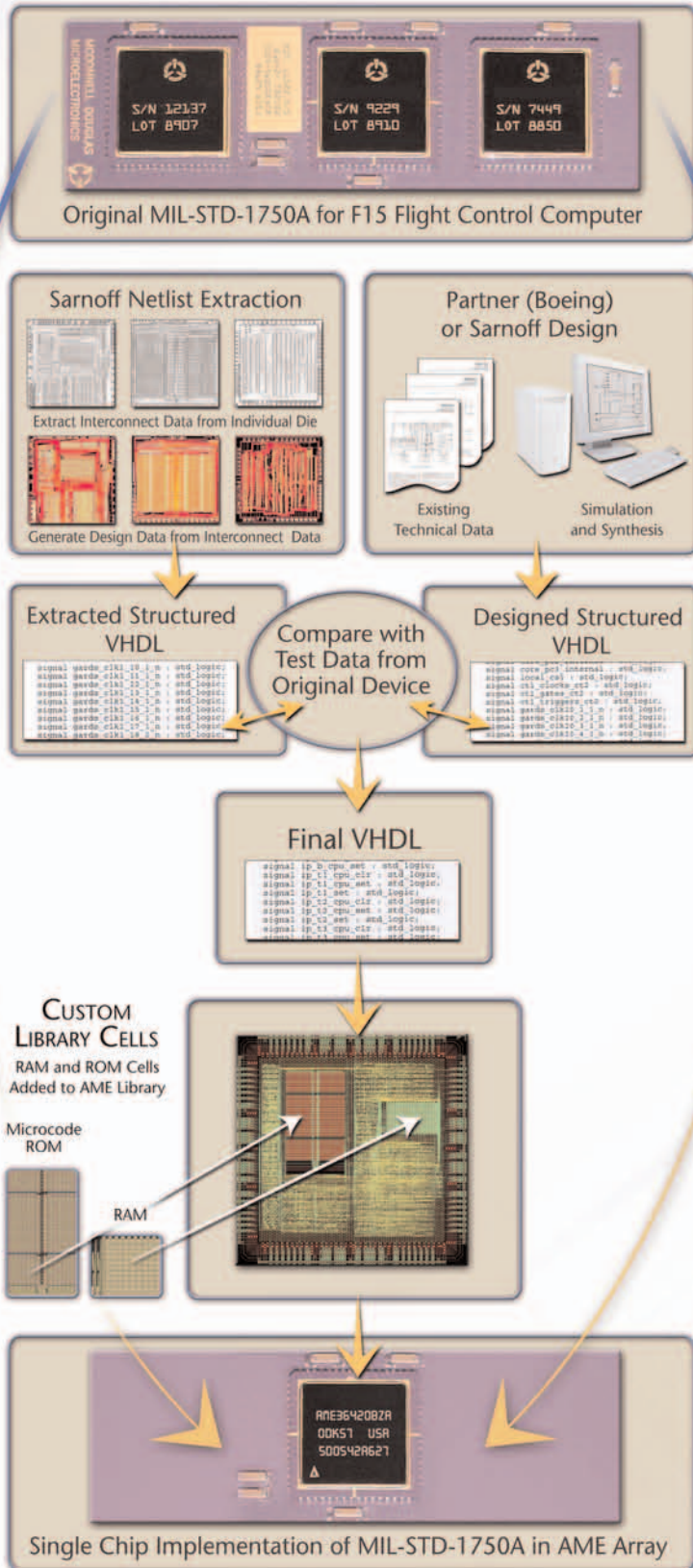


Advanced Microcircuit Emulation

MICROCIRCUITS: SAME DESIGN, REDESIGN,
NEW DESIGN. . . YOUR CHOICE



SAMPLE DESIGN FLOW



SYSTEM SUPPORT THAT “WON’T GO OBSOLETE”

As Integrated Circuit technology advances military systems are faced with ever-increasing supportability challenges.

Most military electronic systems use multiple Integrated Circuit (IC) technologies. Due to the significant reduction in IC technology life cycles, these systems are faced with ever-increasing supportability challenges. System support issues will only increase as the life cycle of an IC generation reduces from several years to less than a few months.

The Defense Logistics Agency (DLA) sponsored Advanced Microcircuit Emulation (AME) Validation program develops, demonstrates, and provides a continuing source of advanced technology, high reliability, military-quality microcircuits.



The AME technology may be used to provide form, fit, and function solutions at the digital component level (e.g. logic devices, Application Specific-Integrated Circuits (ASICs) and Field Programmable Gate Arrays (FPGAs), static memory devices, hybrids, and microprocessors/microcontrollers). It can also be applied to consolidate multiple digital components into a single AME microcircuit, or the technology provides a continuing source of ICs for board level/system upgrades, redesigns, or new system designs, ensuring lifetime supportability.

AME technologies include Sea-of-Gates CMOS arrays ranging from 10K to 500K gates, with up to 512 pins and feature sizes down to 0.5 microns. Advanced bipolar technologies are also available to support the emulation of older logic families.

The AME design methodology supports both Sarnoff-designed and customer-designed solutions, using the AME generic design library, and a standard hardware description language (HDL/VHDL) netlist. The use of an AME generic design library minimizes the cost of using emulation solutions, and requires no data rights or funding to implement or reimplement the original process technology. The AME ICs are manufactured in Sarnoff's government sponsored, US based wafer foundry, located in Princeton, NJ. This QML-certified, foundry has a rich history of developing silicon-processing technology that has been used by the semiconductor industry for more than 30 years.

In addition, the AME program is developing a sophisticated netlist extraction system to extract design data from ASICs when there is little documentation beyond a part number and existing devices. This system includes a combination of optical and electron beam microscopy, pattern recognition algorithms, and netlist extraction techniques, and has been applied to progressively more complex circuits. Currently the system is being utilized to extract the netlist of a MIL-STD-1750 microprocessor chip set employed on the F-15 as shown in the sample design flow. This netlist extraction system is applicable to most digital microcircuits.

Typical AME process flows include providing engineering samples of AME devices for customer evaluation and engineering support as needed. Following customer approval, Sarnoff manufactures military-quality devices in its on-site QML foundry. Production of an AME microcircuit is not predicated on a required production volume, and the devices remain procurable indefinitely.

Through the AME program, DLA and Sarnoff offer a flexible technology that can be utilized during any phase of a weapon system life cycle, offering a permanent solution to obsolescence at the component or board level while providing total ownership cost reductions

PROVIDING INNOVATIVE PRODUCTS TO THE WORLD



FOR MORE INFORMATION, CONTACT:
SARNOFF CORPORATION

201 Washington Road



Princeton, NJ 08540



Phone: 609.734.2168



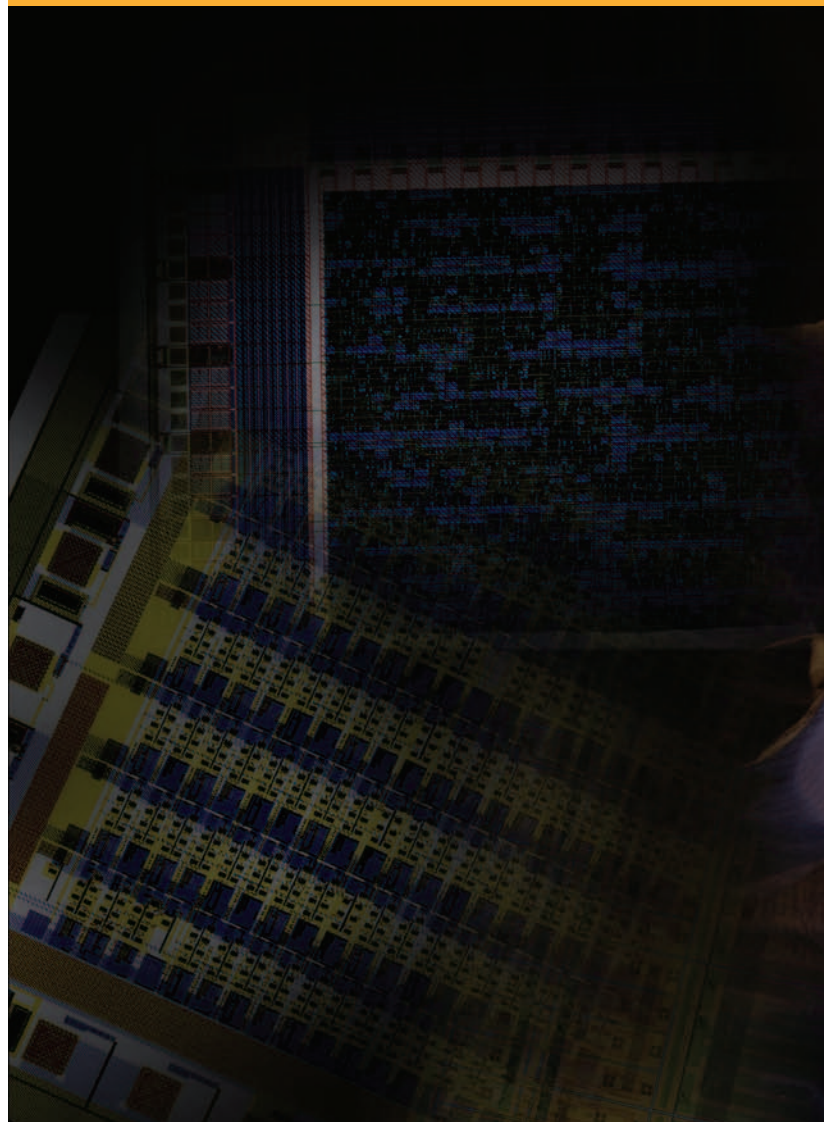
Fax: 609.720.4840



www.sarnoff.com



e-mail: bd@sarnoff.com



Sarnoff Corporation reserves the right to change these specifications without notice.
©Copyright 2005 Sarnoff Corporation. All rights reserved. 0172005