

ViArray Trusted Rad-Hard Structured ASIC

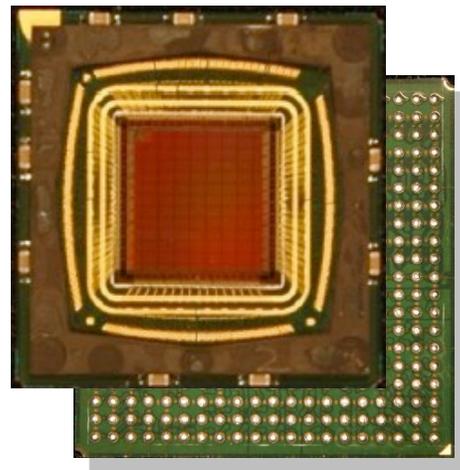
Sandia National Laboratories' structured Application Specific Integrated Circuit (ASIC) provides a radiation-hardened, via-configurable implementation platform with ASIC-like performance. Structured ASICs enable rapid turn-around, lower Non-Recurring Engineering (NRE) and development costs. Pre-qualified base arrays reduce development risk, while open architecture minimizes Diminishing Manufacturing Sources (DMS) issues, enabling safe, secure, user-defined trusted hardware, and the regular, fabric-like structure enhances verifiability of trusted parts.

Special Features

- Metal-via configurable, fabric-like structure using ViASIC™ ViaMask Technology
- Four Power-Quadrants with specialized interface circuits that allow up to four independent power supplies for power sequencing and redundancy operations
- Unused transistors and circuits are isolated from power and ground to minimize power consumption, static current and photocurrent
- On-package decoupling capacitors

Applications include:

- Command & Control
- Instrumentation
- Sensor Monitoring
- Obsolescent Parts & FPGA Emulation
- Rad-hard environment operations
- High-Reliability Systems

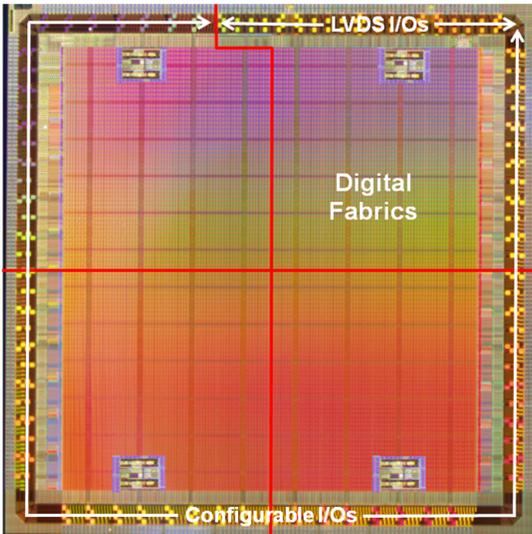


Sandia National Laboratories has historically focused on high-reliability custom solutions for high-consequence applications. Today Sandia is a DOD Category 1A Accredited Supplier of both "trusted design and foundry services" with an efficient and disciplined process, governed by the Sandia Quality Management system that is certified to the ISO 9001:2015 standard, optimized for high-mix low-volume custom radiation-hardened, digital, analog and mixed-signal ASICs. With in-house capabilities in packaging, test, failure analysis and reliability, Sandia offers a total supply-chain solution for high-reliability custom microelectronics for expanding national security applications.

ViArray Standard Platforms

Eiger

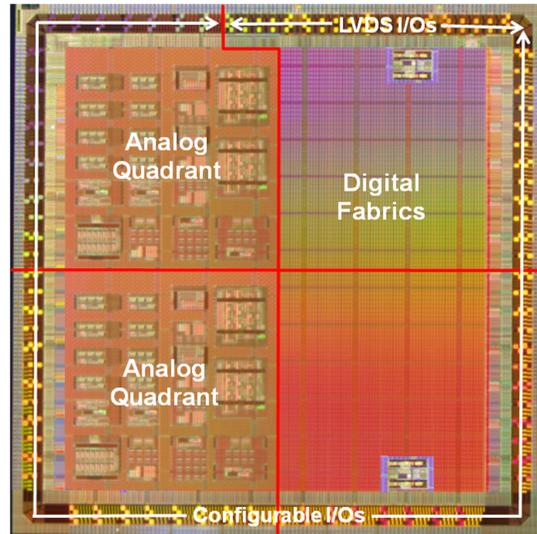
Digital Rad-Hard ViArray



Die Size 12 mm X 12mm

Whistler

Mixed-Signal Rad-Hard ViArray



Die Size 12 mm X 12mm

Digital Functions

- 276K Gates
- 368Kb Dual-Port SRAM
- 384Kb Configurable ROM
- 4 Oscillators
- 4 Phase Lock Loops
- 4 Power Supply Monitors
- 4 Power Partitions
- Isolated Unused Circuits
- 239 Configurable I/Os (PCI compatible)
- 8 Pairs LVDS I/Os

Analog Functions

- 2 Oscillators
- 2 Phase Locked Loops
- 4 Power Supply Monitors
- 4 Bandgap References
- 2 Chopper Bandgap/Bias
- 5 High Side Current Monitors
- 4 Low-Speed A-D Converters
- 4 Pipeline A-D Converters
- 8 D-A Converters, 8-bit
- 8 Multiplexers, 32:1
- 2 Temperature Sensors
- 64 Comparators
- 48 Amplifiers
- 128 Analog Switches
- 1 Analog Transient Recorder

Digital Functions

- 138K Gates
- 184Kb Dual-Port SRAM
- 192Kb Configurable ROM
- 4 Power Partitions
- Isolated Unused Circuits
- 239 Configurable I/Os (PCI compatible)
 - 4 with High/Low Voltage Analog Inputs
- 8 Pairs LVDS I/Os

Technology:

- 3.3 V
- 350 nm
- SOI CMOS

Package options:

- 400 pin plastic BGA 27x27 mm
- Other package options in development

For more information: www.sandia.gov/mesa