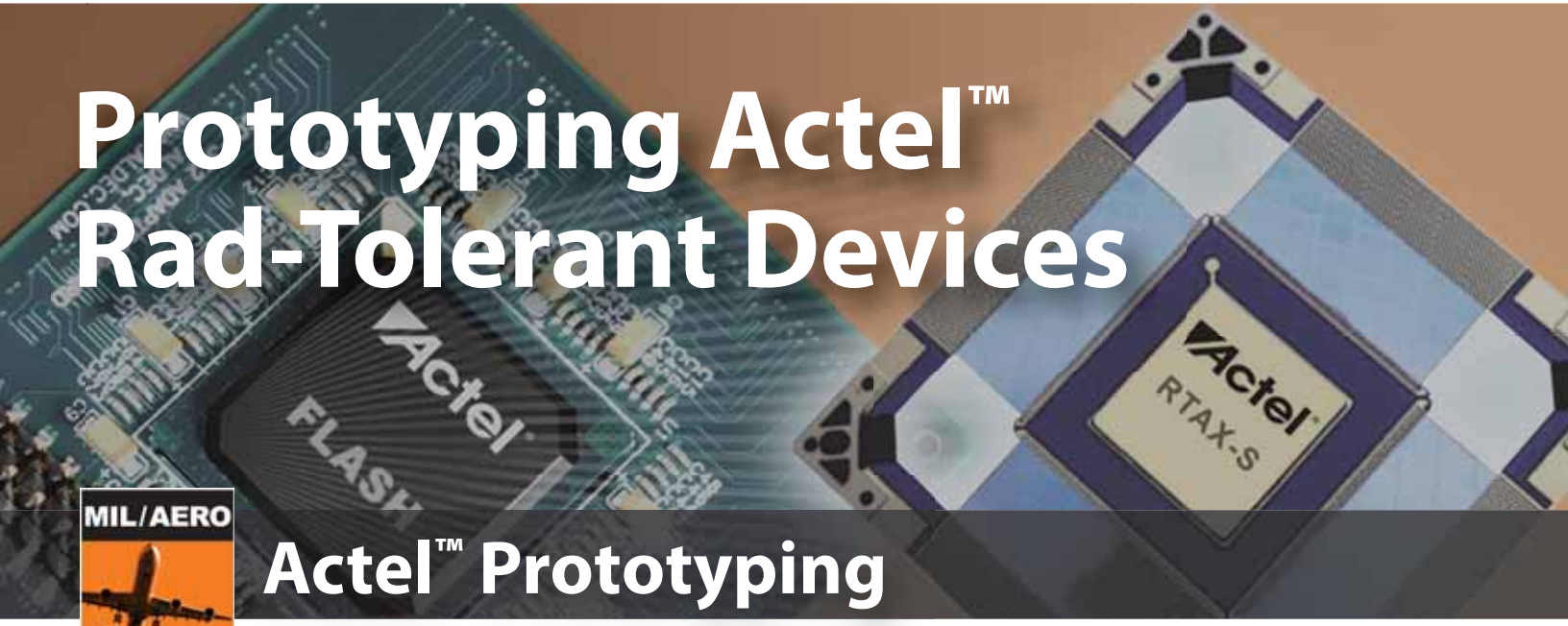
Prototyping Actel™ Rad-Tolerant Devices



MIL/AERO

Actel™ Prototyping

Aldec and Actel have joined together, offering a new, innovative, reprogrammable prototyping solution for Actel RTAX-S/SL, RTAX-DSP and RTSX-SU space-flight system designs. Unlike the traditional OTP (One Time Programmable) anti-fuse space-qualified FPGAs, the Aldec prototype adaptor uses flash-based, Actel ProASIC®3E FPGA technology, for design prototype re-programmability.

Top Features

- Supported Actel devices/capacities: RTAX-S/SL up to 4000S, RTAX-DSP and RTSX-SU devices
- Automated Device Netlist Converter:
  - Memory Conversion
  - Physical Design Constraint (PDC) file conversion

		Aldec RTAX-S/SL Prototyping Adaptors			
		RTAX250S/SL	RTAX1000S/SL	RTAX2000S/SL	RTAX4000S
CQFP PACKAGE	CQ208	•			
	CQ256			•	
	CQ352	•	•	•	•
CCGA/LGA PACKAGE	CG624	•	•	•	
	CG1152			•	
	CG1272				•

	Aldec RTSX-SU Prototyping Adaptors					
	RTSX32SU	RTSX72SU	RT54SX32S	RT54SX72S	A54SX32A	A54SX72A
CQ208	•	•	•	•	•	•
CQ256	•	•	•	•	•	•
CG624		•		•		

	Aldec RTSX-DSP Prototyping Adaptors	
	RTAX2000D	RTAX4000D
CQ352	•	•
CG1272	•	•

Actel ProASIC®3E FPGA Technology

Using ProASIC3E FPGA flash-based programming technology instead of traditional OTP anti-fuse space-qualified FPGAs (AX chips) provides significant advantages, such as a smaller device size with greater routing flexibility, more switches, lower power consumption, non-volatile re-programmability with easier technology mapping and Netlist optimizations. The Actel ProASIC3E FPGA family supports devices from 15,000 to 3 million ASIC gates and includes 504Kbits of true dual-port SRAM, 620 user I/Os, 1KB of flash-ROM and provides secure IP 128-bit AES encryption/decryption.

Aldec Re-Programmable Prototyping Adaptors

The Aldec prototyping adaptor board maps the footprint of the Actel ProASIC3E FPGA device to the footprint of the Actel RTAX-S/SL, RTAX-DSP or RTSX-SU device (e.g. CQ208, CQ256, CQ352, CG624, CG1152 or CG1272). After soldering the adaptor to the PCB, a programming connector (JTAG) provides on-the-fly reprogramming of the device, without detaching the adaptor from the target PCB. In addition, a GUI-based EDIF Netlist Converter Application, is available for automatic pin re-mapping from anti-fuse to flash-based architecture. Aldec prototyping adaptors are available today, in a wide-variety of supported device capacities and packages.

RTAX-S/SL Prototyping Adaptors

CQ208

Description

- Actel ProASIC3E device
- JTAG connector
- CQ208 footprint
- Size: 37mm x 37mm

CQ256

Description

- Actel ProASIC3E device
- JTAG connector
- CQ256 footprint
- Size: 43.07mm x 43.07mm

CQ352

Description

- Actel ProASIC3E device
  Commercial or Industrial
- JTAG connector
- Power connector
- CQ352 footprint
- Size: 55mm x 55mm

CG624

Description

- Actel ProASIC3E device
  Commercial or Industrial
- JTAG connector
- CG624 footprint
- Size: 32.5mm x 34mm

CQ352 (RTAX-4000S)

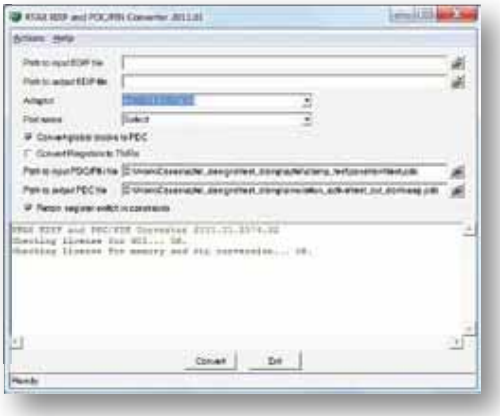
Description

Stacked MB/DB with:

- Actel ProASIC3E device
- JTAG connector
- CQ352 footprint
- Size: 55mm x 55mm

EDIF Netlist Converter

The RTAX EDIF Netlist Converter, an optional application, performs automatic conversion of the RTAX-S/SL and RTSX-SU EDIF netlist to a ProASIC3E netlist, taking into consideration the differences between RTAX-S/SL or RTSX-SU anti-fuse and ProASIC3E flash-based technologies. A pin re-mapping utility provides automatic Physical Design Constraint (PDC) file conversion, which eliminates the need for additional, time consuming manual work.



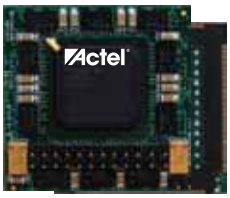
RTSX-SU Prototyping Adaptors

CQ208

Description

- Actel ProASIC3E device
- JTAG connector
- CQ208 footprint
- Size: 37mm x 37mm

CQ256



Description

- Actel ProASIC3E device
- JTAG connector
- CQ256 footprint
- Size: 43.07mm x 43.07mm

Russ McGrath
Principal Engineer
Orbital Sciences Corporation
USA

"We had a very aggressive schedule. We needed a way to quickly verify the design functionality and integrate support. The Aldec prototyping adaptor saved us two months off our development schedule and over $72,000 off our project costs."

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