Actel®
POWER MATTERS

May 5, 2008

PCN Number: 0806
PCN Change Level: Minor
Subject: Axcelerator® and RTAX-S Bug in Synplify®

Dear Customer,

This notification provides information regarding a bug affecting Axcelerator and RTAX-S designs that are synthesized using the Synplicity® releases listed below. Actel offers this software, which is developed by Synplicity, as a bundled product in the Libero® Integrated Design Environment (IDE) software suite. Actel has worked closely with Synplicity to evaluate alternatives and advise our customers on the best course of action. This notice does not apply to versions other than those listed below. Customers who are not using Synplify are not affected by this bug.

Actel Releases	Synplify® 9.02A in Libero IDE v8.2, v8.2 SP1, and v8.2 SP2 (released February 2008)
	Synplify® 9.0A1 in Libero IDE v8.1, v8.1 SP1, and v8.1 SP2 (released November 2007)
	Synplify® 8.8A2 (released September 2007)
	Synplify® 8.8A1 in Libero IDE v8.0, v8.0 SP1, v8.0 SP1A, v8.0 SP1B, v8.0 SP2, and v8.0 SP3 (released June 2007)
Synplicity releases	Synplify® 9.0.2 (released 1Q2008)
	Synplify® 8.9 (released mid-2007)

The description of the problem is as follows:

- Designs utilizing an adder with a constant input may exhibit incorrect behavior in a synthesized multiplier located in a different module from the adder. Multipliers instantiated using Actel's SmartGen tool are not affected by the problem.

- The incorrect behavior of the multiplier is immediately apparent in logic simulation. If all instances of adders and multipliers in the design behave correctly during simulation or functional testing, then the problem has not occurred in that design.

Corrective actions taken to resolve the problem are described below:

- This bug is fixed in Libero IDE v8.3, which includes Synplify 9.0.2A2 and was released on March 31, 2008. Download this software version from the Actel website at http://www.actel.com/download/software/libero/.

- Synplicity's Synplify 9.2 release, which includes the fix, was released on April 14, 2008. Download from the Synplicity website http://www.synplicity.com/downloads/.

- Intensive code review and testing was conducted at Synplicity to ensure that this problem is resolved. Additional test cases have been added to Actel's test suite.

Actel recommends that customers do the following:

- All affected Synplify users are required to immediately upgrade to Libero IDE v8.3 with Synplify 9.0.2A2 or Synplify 9.2 (download from the Synplicity website http://www.synplicity.com/downloads/)

- Designs without adders will not have this problem. However, Actel always recommends using the latest version of software.

- If devices have already been programmed with designs synthesized using the above releases, customers should ensure that parts have had adequate logic function simulation and testing.

- If programmed parts are found to contain a non-functional multiplier, please contact your local Actel sales representative.

If you have any questions, please contact Actel's Application Technical Support at tech@actel.com.

Regards,

Actel Corporation

![Actel POWER MATTERS logo]

Appendix A

Table 1. Devices with Enhanced Etch Process

Actel Device	Package	Speed	Flow	DSCC Part Number
RTAX250S	CQ208, CQ352	Std, –1	B, E, EV, Proto	5962-0421901QYC
				5962-0421902QYC
				5962-0421903QYC
				5962-0421904QYC
				5962-0421901QXC
				5962-0421902QXC
				5962-0421903QXC
				5962-0421904QXC
RTAX1000S	CQ352, CGB624, CGS624, LG624	Std, –1	B, E, EV, Proto	5962-0422001QXC
				5962-0422002QXC
				5962-0422003QXC
				5962-0422004QXC
				5962-0422001QZA
				5962-0422002QZA
				5962-0422003QZA
				5962-0422004QZA
				5962-0422001QUA
				5962-0422002QUA
				5962-0422003QUA
				5962-0422004QUA
				5962-0422001QYC
				5962-0422002QYC
				5962-0422003QYC
				5962-0422004QYC
RTAX2000S	CQ256, CQ352, CGB624, CGS624, LG624, CG1152, LG1152	Std, –1	B, E, EV, Proto	5962-0422101QUC
				5962-0422102QUC

Table 1. Devices with Enhanced Etch Process

Actel Device	Package	Speed	Flow	DSCC Part Number
				5962-0422103QUC
				5962-0422104QUC
				5962-0422101QXC
				5962-0422102QXC
				5962-0422103QXC
				5962-0422104QXC
				5962-0422101QZA
				5962-0422102QZA
				5962-0422103QZA
				5962-0422104QZA
				5962-0422101QNA
				5962-0422102QNA
				5962-0422103QNA
				5962-0422104QNA
				5962-0422101QYC
				5962-0422102QYC
				5962-0422103QYC
				5962-0422104QYC
				5962-0422101QTA
				5962-0422102QTA
				5962-0422103QTA
				5962-0422104QTA
				5962-0422101QMC
				5962-0422102QMC
				5962-0422103QMC
				5962-0422104QMC
RTAX4000S	CQ352, CG1272, LG1272	Std	B, E, EV, Proto	Not Applicable
RTAX250SL	CQ208, CQ352	Std, –1	B, E, EV	Not Applicable

Table 1. Devices with Enhanced Etch Process

Actel Device	Package	Speed	Flow	DSCC Part Number
RTAX1000SL	CQ352, CGB624, CGS624, LG624	Std, –1	B, E, EV	Not Applicable
RTAX2000SL	CQ256, CQ352, CGB624, CGS624, LG624, CG1152, LG1152	Std, –1	B, E, EV	Not Applicable