

CN20019: PolarFire LSRAM Configurator Asymmetric Widths

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Description

A change has been implemented to the PolarFire two-port large SRAM configurator, dual-port large SRAM configurator, and CoreFIFO. The LSRAM configurator engine correctly generates asymmetric width configurations and optimizes the area for high-speed and low-power selections.

Reason for Change

The PolarFire LSRAM configurator engine in Libero SoC v12.4 could generate incorrect and sub-optimal configurations of asymmetric widths for certain multiples of 64 or 72. Asymmetric width configurations occur when the width of the two ports of LSRAM are not equal (for example, a FIFO, where the width of the write port is 36 and the width of the read port is 72).

Application Impact

Depending on the application, the Libero SoC v12.4 design may read incorrect data out of asymmetric width configurations. This will be apparent in simulation of non-trivial test vectors at pre-synthesis, post-synthesis, or back-annotation design stage. Memory modules inferred by synthesis are not impacted.

Action Required

No action is required if your design does not contain asymmetric width two-port large SRAM, dual-port large SRAM, or CoreFIFO components, or none of the ports is a multiple of 64 or 72, or the components read data properly in simulation.

Action is required for designs containing asymmetric width two-port large SRAM, dual-port large SRAM, or CoreFIFO components, where one of the ports is a multiple of 64 or 72 and the components read incorrect data in simulation. The recommendation is to use Libero SoC v12.5 or later for regenerating the affected components.

The change is applied to the following:

- PolarFire two-port large SRAM configurator
- PolarFire dual-port large SRAM configurator
- CoreFIFO

If viable, a simple workaround in Libero SoC v12.4 is to scale up the widths to be a multiple of 40 and ground the extra bits of the instantiated module in the RTL.

Products Affected

MPF100T-FCG484E	MPF300TL-FCG1152E	MPF300T-FCVG484I	MPF200T-1FCVG325I	MPF200TS-FCG484I
MPF100T-FCVG484E	MPF500TL-FCG784E	MPF300T-FCG784I	MPF200T-1FCVG536I	MPF200TS-FCVG484I
MPF100T-FCSG325E	MPF500TL-FCG1152E	MPF300T-FCSG536I	MPF300T-1FCG484I	MPF200TS-FCG784I
MPF200T-FCG484E	MPF100T-1FCG484E	MPF300T-FCG1152I	MPF300T-1FCVG484I	MPF200TS-FCSG325I
MPF200T-FCVG484E	MPF100T-1FCVG484E	MPF500T-FCG784I	MPF300T-1FCG784I	MPF200TS-FCSG536I
MPF200T-FCG784E	MPF100T-1FCVG325E	MPF500T-FCG1152I	MPF300T-1FCVG536I	MPF300TS-FCG484I
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MPF300TL-FCSG536E	MPF300T-FCG484I	MPF200T-1FCG784I	MPF100T-FCG325I	MPF500TS-1FCG1152I
				MPF300XT-1FCG484I

Contact Information

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Regards,

Microsemi Corporation

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