



## **PROCESS CHANGE NOTIFICATION PCN0603**

### **Cyclone II Family M4K Memory Block Modification**

#### **Change Description:**

The M4K memory block used in the Cyclone™ II device family is being modified to prevent write errors that may occur under a rare set of conditions when configured in dual-port, dual-clock mode. This modification may impact  $f_{MAX}$  for certain M4K designs, as determined in Quartus® II software version 5.1 SP2 and later.

Important information regarding performance optimization and programmer object file (.pof) compatibility in specific versions of the Quartus II software is contained in the [Cyclone II FPGA Family Errata Sheet](#), located on the Altera® web site.

In accordance with JESD46-B, lack of acknowledgement of this notification within 30 days constitutes acceptance of the change.

#### **Reason for Change:**

This change is to prevent errors that may occur under a rare set of circumstances when the Cyclone II device M4K memory block is configured in the dual-port, dual-clock mode.

#### **Products Affected:**

This change affects all members of the Cyclone II product family. See Table 1 for a complete list of the affected ordering codes.

#### **Product Traceability and Transition Dates:**

Production Cyclone II devices with the M4K memory block modification will start shipping in the second quarter of 2006. The modified devices can be identified by the revision number, as indicated in Figure 1.

#### **Contact:**

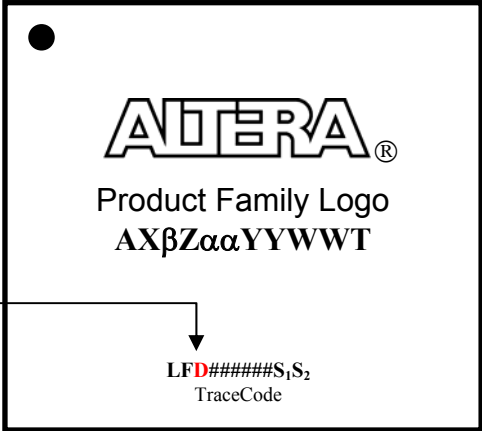
For more information on this change, contact your local Altera sales representative or Altera Customer Quality Engineering at [customer-quality@altera.com](mailto:customer-quality@altera.com).

**Table 1: Affected Cyclone II Device Ordering Codes**

Ordering Code	Ordering Code	Ordering Code	Ordering Code
EP2C5F256C6	EP2C5F256C6N	EP2C35F484C6	EP2C35F484C6N
EP2C5F256C7	EP2C5F256C7N	EP2C35F484C7	EP2C35F484C7N
EP2C5F256C8	EP2C5F256C8N	EP2C35F484C8	EP2C35F484C8N
EP2C5F256I8	EP2C5F256I8N	EP2C35F484I8	EP2C35F484I8N
EP2C5Q208C7	EP2C5Q208C7N	EP2C35F672C6	EP2C35F672C6N
EP2C5Q208C8	EP2C5Q208C8N	EP2C35F672C7	EP2C35F672C7N
EP2C5Q208I8	EP2C5Q208I8N	EP2C35F672C8	EP2C35F672C8N
EP2C5T144C6	EP2C5T144C6N	EP2C35F672I8	EP2C35F672I8N
EP2C5T144C7	EP2C5T144C7N	EP2C35U484C6	EP2C35U484C6N
EP2C5T144C8	EP2C5T144C8N	EP2C35U484C7	EP2C35U484C7N
EP2C5T144I8	EP2C5T144I8N	EP2C35U484C8	EP2C35U484C8N
		EP2C35U484I8	EP2C35U484I8N
EP2C8F256C6	EP2C8F256C6N		
EP2C8F256C7	EP2C8F256C7N	EP2C50F484C6	EP2C50F484C6N
EP2C8F256C8	EP2C8F256C8N	EP2C50F484C7	EP2C50F484C7N
EP2C8F256I8	EP2C8F256I8N	EP2C50F484C8	EP2C50F484C8N
EP2C8Q208C7	EP2C8Q208C7N	EP2C50F484I8	EP2C50F484I8N
EP2C8Q208C8	EP2C8Q208C8N	EP2C50F672C6	EP2C50F672C6N
EP2C8Q208I8	EP2C8Q208I8N	EP2C50F672C7	EP2C50F672C7N
EP2C8T144C6	EP2C8T144C6N	EP2C50F672C8	EP2C50F672C8N
EP2C8T144C7	EP2C8T144C7N	EP2C50F672I8	EP2C50F672I8N
EP2C8T144C8	EP2C8T144C8N	EP2C50U484C6	EP2C50U484C6N
EP2C8T144I8	EP2C8T144I8N	EP2C50U484C7	EP2C50U484C7N
		EP2C50U484C8	EP2C50U484C8N
EP2C20F256C6	EP2C20F256C6N	EP2C50U484I8	EP2C50U484I8N
EP2C20F256C7	EP2C20F256C7N		
EP2C20F256C8	EP2C20F256C8N	EP2C70F672C6	EP2C70F672C6N
EP2C20F256I8	EP2C20F256I8N	EP2C70F672C7	EP2C70F672C7N
EP2C20F484C6	EP2C20F484C6N	EP2C70F672C8	EP2C70F672C8N
EP2C20F484C7	EP2C20F484C7N	EP2C70F672I8	EP2C70F672I8N
EP2C20F484C8	EP2C20F484C8N	EP2C70F896C6	EP2C70F896C6N
EP2C20F484I8	EP2C20F484I8N	EP2C70F896C7	EP2C70F896C7N
EP2C20Q240C8	EP2C20Q240C8N	EP2C70F896C8	EP2C70F896C8N
		EP2C70F896I8	EP2C70F896I8N

**Figure 1: Cyclone II Device Revision Number Identification**

Device	Modified Revision
EP2C5	B
EP2C8	B
EP2C20	B
EP2C35	C
EP2C50	B
EP2C70	B



**D** in position 3 of the lot number indicates revision