



CUSTOMER ADVISORY

ADV2004

Intel® Cyclone® 10 Device EDCRC and Partial Reconfiguration Update

Description:

Intel® is notifying customers of potential problems in selected Intel Cyclone® 10 devices when Error Detection Cyclic Redundancy Check (EDCRC) is On or Partial Reconfiguration (PR) is used.

Failure signature: Unexpected output from Flipflop/DSP/M20k/LUTRAM when EDCRC or PR is used. The problems will not occur if EDCRC or PR is turned-off.

Table 1

Cause 1:	Recommended Action:
Functional failure if clock components (Flipflop/DSP/M20k/LUTRAM) are placed in LAB row Y59, with EDCRC On or PR enabled.	Implement software fix in Intel Quartus® Prime software. For more details on the software fix refer to the following Knowledge Database via this link: https://www.intel.com/content/altera-www/global/en_us/index/support/support-resources/knowledge-base/component/2019/is-there-a-problem-with-intel--fpga-when-flipflop-dsp-m20k-lutra.html
Cause 2:	Recommended Action:
Functional failure if clock components (Flipflop/DSP/M20k/LUTRAM) are placed in a random LAB row, with EDCRC On or PR enabled. This is	The optimized VCCHG value will be implemented on parts with datecode 2025 (Year 2020; WW25) and onwards. For parts before datecode 2025(Year 2020; WW25), there is no action required. Customer

caused by unoptimized internal voltage VCCHG value in test.	failure rate has been assessed to be very low (~20dppm).
---	--

For questions or support, please contact your local Field Applications Engineer (FAE) or submit a service request in the [My Intel](#) support page.

Products Affected:

All part numbers for the device densities listed below per product family.

Product Family	Device Density
Cyclone 10 GX	GX085/GX105/GX150/GX220

The list of affected part numbers (OPNs) can be downloaded in Excel form:

<https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/adv2004-opn-list.xlsx>

Reason for Change:

Due to potential problems discovered in selected Intel Cyclone 10 devices using the EDCRC/PR feature, the above update was needed to help customers mitigate it. There is no change to the Intel Cyclone 10 device silicon and materials.

Change Implementation:

Milestone	Availability
Availability of error message in Intel Quartus Prime software version 18.1.1 and above, if EDCRC and/or PR usage is detected without implementing software fix. Refer to the following KDB link for more details on the error message. https://www.intel.com/content/altera-www/global/en_us/index/support/support-resources/knowledge-base/component/2019/is-there-a-problem-with-intel--fpga-when-flipflop-dsp-m20k-lutra.html	Now
Availability of optimized internal voltage VCCHG fix in affected Intel Cyclone 10 devices	Refer Table 1: Cause 2

Contact:

For more information, please contact your local Field Applications Engineer (FAE) or submit a Service Request at the [My Intel](#) support page.

Customer Notifications Subscription:

Customers that subscribe to Intel's customer notification mailing list can receive the Customer Advisory automatically via email.

If you would like to receive customer notifications by email, please subscribe to our customer notification mailing list at:

<https://www.intel.com/content/www/us/en/programmable/my-intel/mal-emailsub/technical-updates.html>

Revision History:

Date	Rev	Description
01/10/2020	1.0.0	Initial Release

©2020 Intel Corporation. All rights reserved. Intel, the Intel logo, Altera, Arria, Cyclone, Enpirion, Max, Nios, Quartus and Stratix words and logos are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries. Other marks and brands may be claimed as the property of others. Intel reserves the right to make changes to any products and services at any time without notice. Intel assumes no responsibility or liability arising out of the application or use of any information, product, or service described herein except as expressly agreed to in writing by Intel. Intel customers are advised to obtain the latest version of device specifications before relying on any published information and before placing orders for products or services.