Product Change Notification

Change Notification #: **118423 - 00**

Change Title: **Select Cyclone® III Devices,**
PCN 118423-00, Manufacturing Site,
Adding Alternate Assembly Site

Date of Publication: **August 10, 2021**

Key Characteristics of the Change:

Manufacturing Site

Forecasted Key Milestones:

Product Transition Dates:

Last date to acknowledge receipt of this notification[1]	September 20, 2021
Earliest change implementation	March 1, 2022

Note 1: J-STD-046, section 3.2.3.1b, stipulates that lack of acknowledgement of the PCN within 30 days constitutes acceptance of the change.

Description of Change to the Customer:

This is the same change described in PCN2129 issued on August 6, 2021.

Intel is announcing the addition of Advanced Semiconductor Engineering Inc., Malaysia (ASEM) as an alternate assembly site for selected Cyclone III devices.

ASEM is a long-time qualified, high-volume assembly site for Cyclone 10 LP devices, which have the same package type as Cyclone III.

Table 1: Added Assembly Sites

	Current Site	Added Alternate Site
Assembly Site	Amkor Technology Korea (ATK)	Advanced Semiconductor Engineering Inc., Malaysia (ASEM)
Country of Origin (COO)	Korea	Malaysia

Note 1: There are no changes to the Bill of Materials (BOM)

Reason for Change:
The qualification of an additional production assembly site for the affected devices supports supply chain risk mitigation.

Method to Identify Change Product:
The changed product can be identified by the following:
• COO (Country of Origin) is Malaysia on the top mark and label for ASEM parts as indicated on Table 1

Qualification Data:
Qualification testing was performed to further evaluate the quality and reliability performance of ASEM for the products specific to this PCN.

Table 4: Reliability Test Data

- **All tests passed with zero failures**
- **Vehicle devices are Cyclone 10 LP devices which are of the same technology and package Bill of Materials (BOM).**

Test	Time point	Conditions	Vehicle Device	# of Lots	SS/Lot	Results (Fail/Total SS)
Temperature Cycle Test (TCB)	1000 Cycles	-55°C /125°C	10CL080U484	3	45	0/135
			10CL016M164	3	45	0/135
Temperature Humidity Bias (THB)	1000hrs	85ºC/85% RH	10CL080U484	3	45	0/135
			10CL016M164	3	45	0/135
Unbiased Highly Accelerated Stress Test (uHAST)	96hrs	130°C / 85%RH	10CL080U484	3	45	0/135
			10CL016M164	3	45	0/135
High Temp Storage (Bake)	2000hrs	150°C	10CL080U484	3	45	0/135
			10CL016M164	3	45	0/135

Note 1: Preconditioning performed according to J-STD-020, MSL3 @ 260C reflow
Note 2: Rel#: 17120015, 17120016, 18060019, 18060020
Note 3: Qualification testing and sample size based on standard J-STD-020 requirements

Customer Impact of Change and Recommended Action:

There is no impact to fit, function, form (except for COO top mark), quality, and reliability of the product. The products will meet existing electrical and mechanical specifications.

Qualification has been performed to evaluate the quality and reliability performance of ASEM for the products specific to this PCN (See Qualification Data Section, Table 4).

Customers are requested to:
1. Acknowledge receipt of this notification.
2. Review and inform us, at the earliest convenience, of any questions or concerns regarding this change.

Please refer to the “Product Transition Dates” for the key milestones.
Upon implementation, Intel will ship either pre-change or post-change materials.

Products Affected / Intel Ordering Codes:

Table 2

Product Family	Package – Pin Count
Cyclone III	MBGA-164
	UBGA-256
	FBGA-256

The list of affected OPNs can be downloaded in Excel form:
https://www.intel.com/content/dam/www/programmable/us/en/pdfs/literature/pcn/pcn2129-opn-list.xlsx

PCN Revision History:

Date of Revision:	Revision Number:	Reason:
August 10, 2021	00	Originally Published PCN

Product Change Notification
118423 - 00

INFORMATION IN THIS DOCUMENT IS PROVIDED IN CONNECTION WITH INTEL PRODUCTS. NO LICENSE, EXPRESS OR IMPLIED, BY ESTOPPEL OR OTHERWISE, TO ANY INTELLECTUAL PROPERTY RIGHTS IS GRANTED BY THIS DOCUMENT. EXCEPT AS PROVIDED IN INTEL'S TERMS AND CONDITIONS OF SALE FOR SUCH PRODUCTS, INTEL ASSUMES NO LIABILITY WHATSOEVER AND INTEL DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY, RELATING TO SALE AND/OR USE OF INTEL PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

A "Mission Critical Application" is any application in which failure of the Intel Product could result, directly or indirectly, in personal injury or death. SHOULD YOU PURCHASE OR USE INTEL'S PRODUCTS FOR ANY SUCH MISSION CRITICAL APPLICATION, YOU SHALL INDEMNIFY AND HOLD INTEL AND ITS SUBSIDIARIES, SUBCONTRACTORS AND AFFILIATES, AND THE DIRECTORS, OFFICERS, AND EMPLOYEES OF EACH, HARMLESS AGAINST ALL CLAIMS COSTS, DAMAGES, AND EXPENSES AND REASONABLE ATTORNEYS' FEES ARISING OUT OF, DIRECTLY OR INDIRECTLY, ANY CLAIM OF PRODUCT LIABILITY, PERSONAL INJURY, OR DEATH ARISING IN ANY WAY OUT OF SUCH MISSION CRITICAL APPLICATION, WHETHER OR NOT INTEL OR ITS SUBCONTRACTOR WAS NEGLIGENT IN THE DESIGN, MANUFACTURE, OR WARNING OF THE INTEL PRODUCT OR ANY OF ITS PARTS.

Intel may make changes to specifications and product descriptions at any time, without notice. Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined". Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them. The information here is subject to change without notice. Do not finalize a design with this information.

The products described in this document may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.

Should you have any issues with the timeline or content of this change, please contact the Intel Representative(s) for your geographic location listed below. No response from customers will be deemed as acceptance of the change and the change will be implemented pursuant to the key milestones set forth in this attached PCN.

Americas Contact: asmo.pcn@intel.com
Asia Pacific/PRC Contact: apacgccb@intel.com
Europe Email: eccb@intel.com
Japan Email: jccb.ijkk@intel.com

Copyright © Intel Corporation 2021. Other names and brands may be claimed as the property of others.

3D XPoint, ACEX, Altera, APEX, AnyWAN, Arria, Avalon, Axxia, BlueMoon, BunnyPeople, Celeron, Centrino, Cilk, CONVERGATE, Cyclone, Docea, eASIC, easicopy, Enpirion, Flexpipe, Hyperflex, Intel, the Intel logo, Intel Adaptix, Intel Agilex, Intel Atom, Intel CoFluent, Intel Core, Intel. Experience What's Inside, the Intel. Experience What's Inside logo, Intel Falcon, Intel Inside, the Intel Inside logo, Intel Nervana, Intel Optane, Intel RealSense, Intel Shooting Star, Intel Sirius, Intel SpeedStep, Intel Unite, Intel vPro, Intel Xeon Phi, Iris, Itanium, MAX, Movidius, Myriad, neon, Nios, OpenVINO, the OpenVINO logo, Pentium, Puma, Quark, Quartus, SICOFI, Simics, SMARTi, SoftSilicon, Sound Mark, StarPro, Stratix, the Stratix logo, Stay With It, the Engineering Stay With It logo, StreamSight, Tarari, The Journey Inside, Thunderbolt, the Thunderbolt logo, Transcede, Ultrabook, VTune, Xeon, X-GOLD, XMM, X-PMU and XPOSYS are trademarks of Intel Corporation or its subsidiaries in the U.S. and/or other countries.

Microsoft, Windows, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries. Java is a registered trademark of Oracle and/or its affiliates. Bluetooth is a trademark owned by its proprietor and used by Intel Corporation under license. Intel Corporation uses the Palm OS* Ready mark under license from Palm, Inc. OpenCL and the OpenCL logo are trademarks of Apple Inc. used by permission by Khronos.
Learn how to use Intel Trademarks and Brands correctly at http://www.intel.com/intel/legal/tmusage2.htm.